

NEPA MANUAL



COLORADO
Department of Transportation

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1. Introduction

The Colorado Department of Transportation (CDOT) invests considerable resources, time, and talent in compiling detailed information about environmental issues, conducting environmental analysis, and preparing documents to comply with the National Environmental Policy Act of 1969 (NEPA) [NEPA, 42 United States Code (USC) § 4321 - 4347]. This NEPA Manual (Manual) is a resource for CDOT staff, local agency representatives, and consultants engaged in these efforts.

What is NEPA?

- National Environmental Policy Act of 1969
- Requires federal agencies to assess and document the environmental impact of and alternatives to federal actions affecting the environment
- Includes the social and natural environments when considering potential impacts
- Includes interagency coordination and public involvement as fundamental objectives
- Potential project impacts and mitigation measures must be documented

1.1 Purpose of this Manual

The purpose of this Manual is to provide guidance on preparing and processing documents that comply with NEPA and other applicable state and federal environmental laws affecting transportation projects in Colorado. This Manual provides references and links to related federal and state laws, executive orders, regulations, and policies. It also provides “best practice” examples for various compliance processes where appropriate. It is intended that CDOT staff, local agency representatives, and consultants use this Manual to implement NEPA effectively, producing more consistent, improved environmental documents that decision-makers may use to make well-informed transportation decisions.

Users are encouraged to closely follow the level of detail and documentation presented in this Manual to standardize and streamline NEPA compliance throughout CDOT. Special situations may dictate a prudent variation from this content and format (within legal limitations). In such cases, documentation and approval by the CDOT project manager, in consultation with the Region Transportation Director (RTD) and the Region Planning and Environmental Manager (RPEM) or their representative(s), is required. Consultation with CDOT’s Environmental Programs Branch (EPB) may also be required. Depending on the funding mechanisms for the project, consultation with Federal Highway Administration (FHWA) may also be required.

Who are the “Users” of this Manual?

- Professional staff at CDOT, consultants working on CDOT projects, and local agency staff are the primary audience for this manual.
- Users should have a general understanding and some experience working with NEPA.
- Users should have a basic understanding of the required sections in a NEPA document



CDOT Policy Directive 1904.0 establishes that all divisions, regions, offices, and branches of CDOT, as well as consulting firms performing contracting work, use this Manual to maintain compliance with NEPA standards. This Manual sets forth uniform criteria and procedures for determining the applicability of NEPA requirements to specific projects and establishes procedural requirements for assuring compliance. Users of the Manual should periodically check for updated versions on CDOT's website. Additional guidance to improve the readability and functionality of NEPA documents for transportation projects is also included in the American Association of State Highway and Transportation Officials (AASHTO), American Council of Engineering Companies (ACEC), and FHWA, Improving the Quality of Environmental Documents (AASHTO, ACEC, and FHWA, 2006).

CDOT's website: <https://www.codot.gov/>

1.2 Use of this Manual

This Manual has been organized to encourage its use by a wide audience of users. To facilitate an understanding of the information presented in this Manual, call-out boxes have been included throughout. These call-out boxes have been divided into two groups. Green-shaded boxes contain tips, tools, quotes, and other items that have been highlighted for use by the reader. Gray-shaded boxes include resources, such as websites, regulatory citations, guidance documents, and other references that the user can research for additional information.

To maintain consistency among NEPA documents, CDOT has compiled a standardized list of acronyms and abbreviations, as well as terminology that should be used in CDOT NEPA documents. Deviations from the standardized list of acronyms are not recommended because standardizing usage helps assure reader-friendly documents for the public. Acronyms and abbreviations are included in **Appendix A**, and typical NEPA terminology is included in **Appendix B**.

1.3 Organization of this Manual

This Manual is organized into 10 chapters:

- ▶ **Chapter 1: Introduction** - Provides the Manual purpose and organization.
- ▶ **Chapter 2: National Environmental Policy Act and Implementing Regulations** - Introduces major regulations and guidelines applicable to transportation projects.
- ▶ **Chapter 3: CDOT's NEPA-Specific Planning and Project Development Elements** - Discusses the NEPA elements of the CDOT overall transportation planning and project development process.
- ▶ **Chapter 4: Environmental Impact Statement (EIS) (Class I)** - Outlines the preparation and process of an EIS and discusses document components and standard document sections.
- ▶ **Chapter 5: Categorical Exclusion (CatEx) (Class II)** - Discusses CDOT's process and procedures for preparing a CatEx.
- ▶ **Chapter 6: Environmental Assessment (EA) (Class III)** - Outlines the preparation and process of an EA and discusses document components and standard document sections.
- ▶ **Chapter 7: Stakeholder Involvement Guidance and Public Involvement Plan** - Summarizes how CDOT involves the public in the NEPA process and manages public comments.



- ▶ **Chapter 8: Document Review Procedures** - Outlines the CDOT NEPA document review procedures.
- ▶ **Chapter 9: Resource Considerations** - Includes resource topics often analyzed in NEPA documents and offers detailed resource-specific information about applicable regulations and policies, collection of baseline data, methodologies for impact analysis, best practices, and necessary consultation and coordination.
- ▶ **Chapter 10: National Environmental Policy Act (NEPA) Processes and Compliance for Other Federal Agencies** - Summarizes the environmental process for CDOT projects involving other federal agency funds administered through CDOT's Division of Transit and Rail.

For easy reference, this Manual includes the following appendices, which contain more detailed information on topics found throughout this Manual:

- ▶ Appendix A - Typical NEPA Abbreviations and Acronyms
- ▶ Appendix B - Typical NEPA Terminology
- ▶ Appendix C - Style Guide for NEPA Documents
- ▶ Appendix D - Quality Assurance (QA)/Quality Control (QC) Guidance for NEPA Documents
- ▶ Appendix E - Agency Coordination Plan Template
- ▶ Appendix F - Standard Language

1.4 Updating this Manual

Updating and revising this Manual will be an ongoing process because of the ever-changing status of environmental issues and laws. As a result, many of the processes and procedures in this Manual are subject to change. When this Manual is updated, the date in the footer of the affected section(s) will be changed to reflect the revision date.

While CDOT strives to keep this Manual current, it is the user's responsibility to ensure that any action taken complies with environmental laws and regulations and is based on the most current information available. This Manual lists websites and agency contacts that can assist a user with this task. This Manual will be updated regularly and revisions posted on CDOT's website.

Comments and suggestions for improving this Manual are welcome. For questions about this Manual and comments for consideration in the next revision, users may contact CDOT's Environmental Policy and Biological Resources Section Manager at EPB.

1.5 References

Association of State Highway and Transportation Officials (AASHTO), American Council of Engineering Companies (ACEC), and Federal Highway Administration. 2006. *Improving the Quality of Environmental Documents*. May. Retrieved November 2022 from https://environment.transportation.org/wp-content/uploads/2021/05/IQED-1_for_CEE.pdf.

National Environmental Policy Act (NEPA). 1969, as amended August 9, 1975. 42 USC § 4321 - 4347. Retrieved September 2016 from <http://energy.gov/nepa/downloads/national-environmental-policy-act-1969>.



2. National Environmental Policy Act and Implementing Regulations

Transportation projects must comply with a wide range of Federal and state environmental laws, regulations, permits, reviews, notifications, consultations, and other approvals. This chapter introduces major regulations and guidelines that are applicable to transportation projects in Colorado.

The National Environmental Policy Act (NEPA) and implementing regulations discussed in this chapter mandate that transportation decisions involving Federal funds adhere to these regulations. In addition, Colorado Department of Transportation (CDOT) has committed to complying with the intent and requirements of NEPA for all transportation activities, regardless of whether or not they are federally funded. Although non-Federal projects will not require Federal agency approval, the NEPA process is an excellent framework for ensuring environmental factors are considered consistent with CDOT's environmental ethic. Thus, the guiding principles of NEPA have been incorporated into the CDOT transportation planning and project development process, as well as the maintenance and operation of the state transportation system.

2.1 National Environmental Policy Act

Developed in 1969 and signed into law on January 1, 1970 (NEPA, 42 United States Code [USC] § 4321 - 4347), NEPA requires that Federal agencies use a systematic, interdisciplinary approach to decision-making when actions may affect the quality of the human environment. The purpose of NEPA is to declare a national policy that will:

- ▶ Encourage productive and enjoyable harmony between man and his environment
- ▶ Promote efforts that will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man
- ▶ Enrich the understanding of the ecological systems and natural resources important to the Nation
- ▶ Establish a Council on Environmental Quality (CEQ)

NEPA is implemented through supporting Federal regulations developed by the CEQ (CEQ 40 Code of Federal Regulations [CFR] § 1500 - 1508) and regulations established by other Federal agencies. The CEQ regulations establish requirements to be followed for any project that is “financed, assisted, conducted, or approved by a Federal agency.” Before initiating a project, it is important to determine whether or not a Federal action is involved and if and how NEPA is applicable to the project.

NEPA contains three important elements:

- Declaration of national environmental policies and goals
- Establishment of action-forcing provisions for Federal agencies to implement those policies and goals
- Establishment of CEQ in the Executive Office of the President



The primary lead Federal agency for roadway projects in Colorado, the Federal Highway Administration (FHWA) works as a partner with CDOT and local agencies to implement NEPA on federally aided or approved projects. The Federal Transit Administration (FTA) is the primary lead Federal agency for transit projects. The Federal Railroad Administration (FRA) is the primary lead for railway projects. **Chapter 10** of this Manual provides guidance for projects with FTA or FRA involvement.

2.2 Council on Environmental Quality – Regulations for Implementing the National Environmental Policy Act

In 1978, CEQ published the implementing regulations for NEPA, which apply to all Federal agencies (CEQ 40 CFR § 1500 - 1508). The CEQ regulations indicate that each Federal agency should then develop its own more specific implementing regulations for NEPA. The first section of the CEQ regulations, 1500.1 and 1500.2, brings forth the essence of the law. The CEQ purposely left many parts of the mandated procedure flexible so that each Federal agency could develop specific procedures for applying the law and regulations to its own mission and needs.

CEQ's website : <https://www.whitehouse.gov/ceq/>

2.2.1 2020 CEQ Rulemaking

In July 2020, CEQ made wholesale revisions to the NEPA regulations for the first time in more than 40 years. CEQ is now engaged in a comprehensive review of the 2020 rule pursuant to Executive Order 13990 (January 20, 2021). In its regulatory agenda, CEQ announced a phased approach to amending the NEPA regulations. On April 20, 2022, CEQ issued the Phase 1 Final Rule. Phase 2 of the Final Rule has not yet been released. These changes are not fully implemented by Federal agencies.

Notable changes from the updated rulemaking include page limits and timeframes for Environmental Assessments (EAs) and Environmental Impact Statements (EISs). More information can be accessed at <https://ceq.doe.gov/laws-regulations/regulations.html>. Key portions of the CEQ regulations are presented in the follow.

CEQ - Regulations for Implementing NEPA:

Part 1500 - Purpose and Policy

Part 1501 - NEPA and Agency Planning

Part 1502 - Environmental Impact Statement

Part 1503 - Commenting on Environmental Impact Statements

Part 1504 - Pre-decisional Referrals to the Council of Proposed Federal Actions Determined to be Environmentally Unsatisfactory

Part 1505 - NEPA and Agency Decision Making

Part 1506 - Other Requirements of NEPA

Part 1507 - Agency Compliance

Part 1508 - Definitions



2.2.2 1500.1 Purpose and Policy

NEPA is the basic national charter for protection of the environment. It establishes policy, sets goals (Section 101), and provides means (Section 102) for carrying out the policy. Section 102(2) contains “action-forcing” provisions to make sure that Federal agencies act according to the letter and spirit of the Act. The regulations implement Section 102(2). Their purpose is to tell Federal agencies what they must do to comply with the procedures and achieve the goals of NEPA. The President, Federal agencies, and courts share responsibility for enforcing NEPA to achieve the substantive requirements of Section 101.

- (a) NEPA procedures must ensure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA. Most important, NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail.
- (b) Ultimately, of course, it is not better documents but better decisions that count. NEPA’s purpose is not to generate paperwork - even excellent paperwork - but to foster excellent action. The NEPA process is intended to help public officials make decisions based on an understanding of environmental consequences and to take actions that protect, restore, and enhance the environment. These regulations provide the direction to achieve this purpose.

CDOT’s Policy Directive 1904.0 establishes the CDOT NEPA Manual as the method that CDOT and consultants working for CDOT shall use for maintaining compliance with NEPA standards.

2.2.3 When Does the National Environmental Policy Act Apply to Your Project?

Under Federal law, NEPA applies to any proposed action or transportation project that has a Federal nexus, including, but not limited to, instances where:

- ▶ Federal funds or assistance will be used at some phase of project development
- ▶ Federal funding or assistance eligibility must be maintained
- ▶ Federal permits or approvals are required, such as Clean Water Act - Section 404 Individual Permit, U.S. Department of Transportation [USDOT] Act - Section 4(f), Endangered Species Act - Biological Opinion for Section 7, etc.
- ▶ There will be new or revised access to the interstate system, which requires FHWA approval

CEQ. 1981. Memorandum for Federal NEPA Liaisons, Federal, State, and Local Officials and Other Persons Involved in the NEPA Process. Subject: Questions and Answers about the NEPA Regulations. March 16.

FHWA Technical Advisory T6640.8A. 1987. Guidance for Preparing and Processing Environmental and Section 4(f) Documents. October 30.



2.3 Joint Federal Highway Administration/ Federal Transit Administration – Environmental Impact and Related Procedures

To address the NEPA responsibilities established by CEQ, the FHWA and FTA jointly issued regulations, Environmental Impact and Related Procedures (FHWA and FTA, 23 CFR 771 § 771.101 - 771.131). FHWA guidance, complementing the regulations, was issued in the form of a Technical Advisory (T6640.8a), Guidance for Preparing and Processing Environmental and Section 4(f) Documents (FHWA, 1987). FHWA developed the Technical Advisory to provide guidance to its field offices and applicants regarding the types of information needed to comply with NEPA, Section 4(f) of the USDOT Act of 1966 (USDOT Act, 49 USC § 303), and other environmental requirements. The Technical Advisory provides detailed information on the contents and processing of environmental documents. The FTA issues guidance, often in the form of circulars, to provide grantees with direction on program-specific issues and statutory requirements. **Chapter 10** provides guidance for projects with FTA or FRA involvement.

FTA’s website <http://www.fta.dot.gov>

USDOT’s website <https://www.transportation.gov/>

FHWA and FTA adopted the policy of managing the NEPA project development and decision-making process as a coordinated process or “umbrella,” under which all applicable environmental laws, executive orders, and regulations are considered and addressed prior to the final project decision and document approval. **Figure 2-1** depicts the NEPA “umbrella” and related environmental laws, executive orders, regulations, etc. Specific discussion of the relevant laws, executive orders, and regulations can be found in **Chapter 9**.

Conclusion of the NEPA process results in a decision that addresses multiple concerns and requirements. The FHWA and FTA NEPA process allows transportation officials to make project decisions that balance engineering and transportation needs with social, economic, and natural environment factors. During the process, a wide range of stakeholders, including the public, businesses, interest groups, and agencies at all levels of government, provide input into project and environmental decisions.

Before implementing NEPA compliance for a specific project, check online to be certain there are no recent regulatory changes. At a minimum, check the CEQ website, the CDOT environmental website, and the FHWA environmental website.



Figure 2-1. NEPA Umbrella





2.4 Classes of Action

Transportation projects vary in type, size, complexity, and potential to affect the environment. Transportation project effects can vary from very minor to significant impacts on the human and natural environment. To account for the variability of project impacts, three basic “classes of action” prescribe the level of documentation required in the NEPA process:

- ▶ Class I - EIS
- ▶ Class II - Categorical Exclusion (CatEx)
- ▶ Class III - EA

The class of action determines how compliance with NEPA is carried out and documented.

Table 2-1 identifies the three classes of action. Additional information on each class of action is presented in **Chapters 4, 5, and 6**. The NEPA process is outlined on **Figure 2-2**.

If any changes to the project may affect the classification determination, the CDOT project team and FHWA jointly reconsider the appropriate classification and FHWA approves the revised classification determination. FHWA is the ultimate decision-maker for Federal project classification. If no Federal action is anticipated, CDOT can make the determination for classification without FHWA consultation.

According to CEQ regulations (40 CFR § 1500-1508), the determination that a project will have a “significant impact” is a function of both setting (previously known as context and also known as the potentially affected environment) and the degree of anticipated impacts. Setting means that the significance of the potential impact must be analyzed in several perspectives such as society as a whole (e.g., human, national), the affected region, the affected interests, and the locality. Degree (previously referred to as intensity) refers to the severity of impact. Significance of the impact will vary with the setting of the proposed action and the surrounding area (including residential, industrial, commercial, and natural sites).

As documented in CDOT’s *Environmental Stewardship Guide* (2017), CDOT recognizes that the interdisciplinary approach that NEPA advocates is key to the development and evaluation of successful transportation concepts. This approach has been adopted for all CDOT projects, including projects that require CDOT approvals, reflecting CDOT’s environmental ethic and commitment to meeting both the intent and requirements of NEPA.

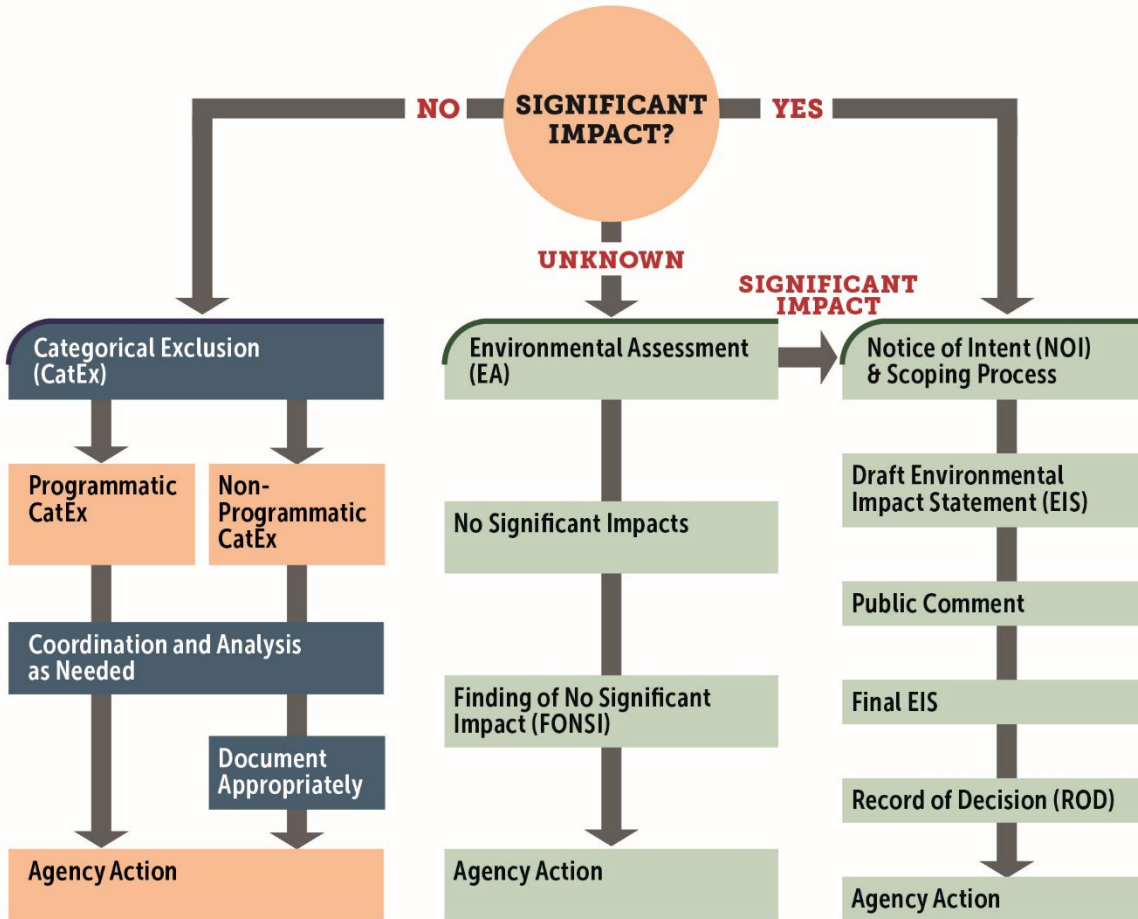


Table 2-1. NEPA Classes of Action

Class I Environmental Impact Statement (EIS) - Chapter 4	Class II Categorical Exclusion (CatEx) - Chapter 5	Class III Environmental Assessment (EA) - Chapter 6
<p>Required for actions likely to have significant environmental effects that cannot be mitigated</p>	<p>Required for actions that do not individually or cumulatively have a significant environmental effect. Necessary environmental studies and compliance with all applicable requirements are still required for the project.</p>	<p>Required for actions that do not qualify as CatEx but where there is insufficient information to determine whether the project’s impacts warrant an EIS. An EA may also be a useful tool in that it incorporates environmental considerations with project design and can aid in NEPA compliance when an EIS is not required.</p>
<p>Examples include:</p> <ul style="list-style-type: none"> ▪ A new, controlled-access freeway ▪ A highway project of four or more lanes in a new location ▪ New construction or extension of fixed rail transit facilities 	<p>Examples include:</p> <ul style="list-style-type: none"> ▪ Pedestrian facilities ▪ Landscaping ▪ Routine maintenance, including resurfacing, bridge replacement and rehabilitation, and minor widening 	<p>Examples include:</p> <ul style="list-style-type: none"> ▪ Actions that are clearly not Class II (CatEx) ▪ Actions that are clearly not Class I (EIS) ▪ New construction of highway interchange
<p>Upon completing the EIS, FHWA signs a Record of Decision (ROD) that presents the basis for the determination, summarizes any mitigation measures to be incorporated in the project, and documents any Section 4(f) approval.</p>	<p>CDOT uses two classifications of CatExs: programmatic and non-programmatic. Based on Colorado’s Risk-Based Approach, all projects can be approved as a programmatic CatEx if 23 CFR 771.117e has been met. Projects that qualify for a CatEx but do not meet 23 CFR 771.117e can be approved as a non programmatic CatEx. CDOT approves programmatic CatExs, and FHWA and CDOT approve non programmatic CatExs.</p>	<p>In coordination with FHWA, CDOT determines whether a Finding of No Significant Impact (FONSI) is appropriate or if further study is required in an EIS.</p>



Figure 2-2. NEPA Process Options (Classes of Actions)





CEQ regulations call for consideration of the following in determining significance:

- ▶ Degree of effect on public health or safety
- ▶ Presence of unique characteristics of the project area such as proximity to resources or protected areas
- ▶ Degree to which effects on the quality of the human environment are likely to be highly controversial
- ▶ Degree to which possible effects are uncertain or involve unique or unknown risks
- ▶ Degree to which the action would set a precedent for future actions with significant effects
- ▶ Contribution to cumulatively significant effects
- ▶ Degree to which there may be adverse effects to properties or districts on, or eligible for, listing on the National Register of Historic Places
- ▶ Degree to which there may be adverse effects on an endangered or threatened species or its critical habitat
- ▶ Conflict with Federal, state, or local laws for the protection of the environment
- ▶ Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial

To determine significance, the severity of the impact must be examined in terms of:

- ▶ Type, quality, and sensitivity of the resource involved
- ▶ Location of the proposed project
- ▶ Duration of the effect (short- or long-term)
- ▶ Other considerations of context

2.5 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users

In August 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users was signed into law (known as SAFETEA-LU) (23 USC § 1001 - 11167), and a new environmental review process (Section 6002) was established for highways, transit, and multimodal projects. The Section 6002 process encourages early and frequent public and agency involvement in the project development process and development of a coordination plan. The coordination plan is intended to align public and agency participation and comment in the environmental review process. SAFETEA-LU further defined the role of agencies involved with a transportation project receiving Federal funds, which, in turn, helps to expedite project delivery and address concerns relating to project implementation delays, unnecessary duplication of effort and added costs.



2.6 Moving Ahead for Progress in the 21st Century Act

In July 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law. MAP-21 authorized the funding of surface transportation programs for Federal fiscal years 2013, 2014, and 2015 and was the first long term highway authorization enacted since SAFETEA-LU in 2005.

MAP-21 transformed the policy and programmatic framework for investments to guide the growth and development of the country's vital transportation infrastructure. MAP-21 created a streamlined, performance-based, and multimodal program to address the many challenges facing the U.S. transportation system. Challenges included improving safety, maintaining infrastructure condition, reducing traffic congestion, improving efficiency of the system and freight movement, protecting the environment, and reducing delays in project delivery.

MAP-21 guidance is available on the FHWA website: <http://www.fhwa.dot.gov/map21/>

2.7 Fixing America's Surface Transportation Act

The Fixing America's Surface Transportation (FAST) Act in 2015 built on the authorities and requirements in SAFETEA-LU, MAP-21, and efforts under FHWA's Every Day Counts in an effort to accelerate the environmental review process for surface transportation projects by institutionalizing best practices and expediting complex infrastructure projects without undermining critical environmental laws or opportunities for public engagement.

The FAST Act also provided clarifications from MAP-21 by:

- ▶ Adding purpose and need and preliminary evaluation of alternatives (including elimination of unreasonable alternatives) to the list of planning decisions that can be used in the environmental review process;
- ▶ Eliminating the requirement for concurrence of other participating agencies;
- ▶ Replacing participating agency concurrence with the concurrence of cooperating agencies with responsibility for permitting, review, or project approval;
- ▶ Eliminating the requirement for approval by the state, relevant metropolitan planning organizations (MPO), and/or local or tribal governments where the project is located;
- ▶ Establishing conditions by which a PEL study can be adopted or incorporated by reference; and
- ▶ Emphasizing the preference for programmatic mitigation plans in future NEPA documents.

FAST Act guidance is available on the FHWA website: <http://www.fhwa.dot.gov/fastact/>



2.8 Executive Order 13807 Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure

On August 15, 2017, Executive Order 13807 Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects was issued. The Executive Order requires Federal agencies to process environmental reviews and authorization decisions for major infrastructure projects as One Federal Decision (OFD). A major infrastructure project is an infrastructure project for which multiple Federal authorizations will be required to proceed with construction, the lead Federal agency has determined that it will prepare an EIS under NEPA, and the project sponsor has identified the reasonable availability of funds sufficient to complete the project. The Executive Order sets a government-wide goal of reducing the average time to complete required environmental reviews and authorization decisions for a major infrastructure project to not more than two years from publication of a Notice of Intent (NOI) to prepare an EIS to issuance of a ROD.

The OFD Memorandum of Understanding for Major Infrastructure Projects (OFD MOU) establishes a process for environmental reviews of major infrastructure projects. It describes the roles and responsibilities for the lead, cooperating, and participating agencies, as well as the permitting milestones. The OFD MOU identifies three concurrence points where the lead Federal agency must request the concurrence of cooperating agencies with authorization decision responsibilities:

- ▶ Purpose and Need (prior to issuance of the NOI)
- ▶ Alternatives to be carried forward for evaluation (prior to detailed analysis in the Draft EIS)
- ▶ Identified Preferred Alternative (Prior to the Final EIS)

Concurrence points prevent delay to permitting by ensuring agencies address key concerns and issues early in the process. Once a concurrence point is reached, the lead agencies will request written concurrence. Cooperating agencies have 10 days to concur or non concur. Concurrence means confirmation by each agency that the information is sufficient for that stage in the process.

To ensure timely decision-making, agencies shall complete:

1. EAs within 1 year unless a senior agency official of the lead agency approves a longer period in writing and establishes a new time limit. One year is measured from the date of agency decision to prepare an EA to publication of an EA or a FONSI.
2. EISs within 2 years unless a senior agency official of the lead agency approves a longer period in writing and establishes a new time limit. Two years is measured from the date of the issuance of the NOI to the date a ROD is signed.



2.9 Executive Order 13985, Advancing Racial Equity and Support for the Underserved

Executive Order 13985 signed on January 20, 2021, by President Biden, changed the definition of what is covered under Environmental Justice. Environmental Justice means the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment.

The term “equity” means the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.

As guidance is pending, check the CDOT website for updates.

2.10 Infrastructure Investment and Jobs Act

The Infrastructure Investment and Jobs Act (IIJA), also known as the “Bipartisan Infrastructure Law” (BIL), was signed on November 15, 2021. The IIJA focuses on more direct funding opportunities for local governments and expands the types of infrastructure improvements eligible for funding, including multimodal, electric vehicle, and carbon emission reduction type projects. At the time that this Manual was updated, FHWA had not released a guidance document on the IIJA.

The IIJA requires special attention to climate change and equity as they relate to infrastructure, housing, and transportation, especially during the MPO planning process.

Table 2-2 outlines specific changes.

More information is available at:

https://www.environment.fhwa.dot.gov/legislation/authorizations/bil/bil_qa.aspx

When available from FHWA, IIJA information can be accessed through this website:

<https://www.fhwa.dot.gov/bipartisan-infrastructure-law/>



Table 2-2. IIJA-Initiated Changes to NEPA Processes

Category	Question	Answer
Definitions / Applicability Requirements	Does the IIJA add or modify any definitions that apply to the Sec. 139 environmental review process?	<p>The <i>environmental review process</i> definition now includes the process and schedule, including a timetable for and completion of any environmental permit, approval, review, or study under any Federal law other than NEPA. See 23 USC § 139(a)(5).</p> <p>The term <i>authorization</i> means “any environmental license, permit, approval, finding, or other administrative decision related to the environmental review process required under Federal law to site, construct, or reconstruct a project” 23 USC § 139(a)(2). Examples include Clean Water Act permits and Endangered Species Act consultation.</p> <p>The term <i>environmental document</i> “includes an environmental assessment [EA], finding of no significant impact [FONSI], notice of intent [NOI], environmental impact statement [EIS], or record of decision [ROD] under the National Environmental Policy Act of 1969.” 23 USC § 139(a)(3).</p> <p>The term <i>major project</i> means a project for which –</p> <ol style="list-style-type: none"> I. Multiple permits, approvals, reviews, or studies are required under a Federal law other than the National Environmental Policy Act of 1969 (42 USC 4321 et seq.); II. The project sponsor has identified the reasonable availability of funds sufficient to complete the project; III. The project is not a covered project (as defined in section 41001 of the FAST Act [42 USC 4370m]); and IV. Either the head of the lead agency has determined that an EIS is required or the head of the lead agency has determined that an environmental assessment (EA) is required, and the project sponsor requests that the project be treated as a major project. <p>In Sec. 139 and this guidance, the term <i>major project</i> does not have the same meaning as the FHWA <i>major project</i> term described in 23 USC § 106(h). For purposes of this guidance, the term <i>major project</i> will refer to the term as defined for the Sec. 139 environmental review process.</p>



Category	Question	Answer
Process Improvements	Did IJJA Sec. 11301 add new schedule requirements for major projects?	<p>Yes. IJJA Sec. 11301 modified 23 USC § 139(d)(10) to require all authorization decisions necessary for the construction of a major project to be completed no later than 90 days after the date of the issuance of a ROD for the major project. Similarly, major project EA (see major project definition above) schedules would need to show all authorization decisions to be completed by no later than 90 days after the date of the issuance of a FONSI.</p> <p>The head of the lead agency may extend the deadline if: (1) Federal law prohibits the lead agency or another agency from issuing the approval or permit within the 90 days; (2) the project sponsor requests that the permit or approval follow a different timeline; or (3) the lead agency determines that the extension would facilitate the completion of the major project’s environmental review and authorization process.</p>
Process Improvements	Did IJJA Sec. 11301 change the factors that should be considered when developing the project schedule?	<p>Yes. The IJJA changed the schedule requirements for any project subject to the Sec. 139 environmental review process. The coordination plan and schedule should continue to specify all anticipated opportunities for review and comment by the public and participating agencies. The Sec. 139 environmental review process allows the lead agencies to determine how detailed the schedule should be and whether to use specific dates or durations. Establishing a schedule involves consideration of the following factors, including those listed in 23 USC § 139(g)(1)(B)(ii):</p> <ol style="list-style-type: none"> I. Responsibilities of participating agencies under applicable laws; II. Resources available to the cooperating agencies; III. Overall size and complexity of the project; IV. Overall time required by an agency to conduct an environmental review and make decisions under applicable Federal law relating to a project (including the issuance or denial of a permit or license) and the cost of the project; V. Ability to have reviews occur concurrently; VI. Sensitivity of the natural and historic resources that could be affected by the project; and VII. Development of a combined FEIS/ROD (or EA, as applicable) to the maximum extent practicable, including identifying a Preferred Alternative in the DEIS when possible.



Category	Question	Answer
Process Improvements	Did IIJA Sec. 11301 change the factors that should be considered when developing the project schedule? (Continued)	<p>Sec. 11301 of the BIL also added schedule considerations specific to <i>major projects</i>. For “major projects,” to the maximum extent practicable and consistent with Federal law, the lead agency will develop, in concurrence with the project sponsor, a schedule that is consistent with an agency average of not more than 2 years for the completion of the environmental review process (23 USC § 139(g)(1)(B)(iii)).</p> <p>All FHWA, FRA, or FTA projects initiated after October 1, 2021, that require development of an EIS (or EA, if requested by the project sponsor) and meet the definition of a <i>major project</i> are subject to the 2 year average schedule requirements. The completion of the environmental review process for a major project with an EIS is measured from the date of the Notice of Intent (NOI) publication to the issuance of the ROD for an EIS and, for an EA, from the date on which the lead agency determines that an EA is required to issuance of a FONSI (or decision to pursue an EIS). The established schedule must include milestones to complete the environmental review process and any other Federal, state, or local permit, approval, or review required for the project, and must be consistent with the timeframes in 40 CFR 1501.7(i).</p>
Process Improvements	Did IIJA Sec. 11301 change the page limit for EIS projects?	<p>Yes. The IIJA modified the EIS page limit requirement to 200 pages or fewer (23 USC 139(n)(3)). However, the Council on Environmental Quality (CEQ) requirements at 40 CFR 1502.7 include a 150-page limit for the text of an EIS but allow up to a 300-page limit for projects of unusual scope or complexity. Even though the CEQ language allows up to 300 pages for certain EISs, 23 USC § 139 dictates the requirements for FHWA, FRA, and FTA projects and the lead Federal agency needs to approve any new page limits for EISs that are projected to be more than 200 pages long.</p>
Process Improvements	Did IIJA Sec. 11301 change the time limit for NEPA decisions?	<p>Yes. The statutory language in the IIJA supersedes the language in the CEQ regulations for EISs and EAs designated as major projects. For major projects, the schedule, to the maximum extent practicable, will be consistent with an agency average of not more than 2 years (23 USC 139(g)(1)(B)(iii)). Further, the project-by-project approval of exceptions in the CEQ regulations for the time limits will not be necessary for major projects.</p> <p>If a project is evaluated as an EA but it is not defined as a major project, then the EA must be completed within one year unless the senior agency official approves a new time limit, consistent with the CEQ regulations (40 CFR 1501.10(b)(1)).</p>



Category	Question	Answer
Process Improvements	Does the IIJA change the conditions under which the Federal Agencies issue separate NEPA documents for a project?	<p>Yes. IIJA Sec. 11301 modified 23 USC § 139(d)(8) so that the single environmental document language now captures EISs and EAs that are following the Sec. 139 environmental review process. To the maximum extent practicable, and for all Federal authorizations and reviews for a project, the Agencies and all Federal participating and cooperating agencies must rely on a single environmental document.</p> <p>However, the IIJA modifies 23 USC § 139(d)(8)(D) to allow the lead agency to waive the requirement to prepare a single environmental document if:</p> <ol style="list-style-type: none"> I. The project sponsor requests separate documents; II. The NEPA obligations of a cooperating agency or participating agency have already been satisfied; or <p>The lead agency determines that a single environmental document would not facilitate timely completion of the environmental review process for the project.</p>
Process Improvements	Does BIL create a new reporting requirement for all environmental documents?	<p>Yes. BIL Section 11301 created a new requirement at 23 USC § 139 (c)(6)(D). Similar to other reporting requirements, FHWA will look at the EAs and EISs completed in the previous fiscal year, calculate the time it took to complete each document from initiation to decision, and then determine the average and median time it took by class of action. FRA and FTA may provide guidance on how they calculate annually the average time taken to complete all environmental documents.</p>
Other	BIL Sec. 11312 created a new NEPA reporting requirement. Who is responsible for collecting the data and issuing the report?	<p>BIL Sec. 11312 created a new requirement at 23 USC § 157 for NEPA data reporting. USDOT must submit an annual report to Congress regarding various categorical exclusion (CE), EA and EIS data. The Agencies' Headquarters will be responsible for collecting the data from the Field Offices and coordinating report development.</p> <p>The Secretary will submit the report to the Committee on Environment and Public Works (Senate) and the Committee on Transportation and Infrastructure (House of Representatives).</p>
Other	What substantive changes did Sec. 11316 of the IIJA make to the Section 4(f) review of proposed uses of public parks, recreation lands, wildlife and waterfowl refuges, and historic sites?	<p>IIJA Sec. 11316 amended 23 USC § 138 to establish a timeline for the Agencies to approve certain proposed uses of Section 4(f) property. As of October 1, 2021, individual Section 4(f) Evaluations require consultation with the Secretaries of the Interior (DOI), Housing and Urban Development (HUD), and Agriculture (USDA) in the form of a 30-day review period on the draft Evaluation. The review period may be extended for a maximum of 15 days. If timely comments are not received from an agency, the Agencies must assume that agency has no objection to the proposed action. IIJA did not make corresponding changes to 49 USC § 303.</p>



Category	Question	Answer
Other	Will the IIJA Sec. 11316 changes to the Section 4(f) review process require a change in the Section 4(f) regulation?	Yes. The Section 4(f) regulation at 23 CFR 774.5(a) will need to be modified to reflect the new timeframe found in 23 USC § 138(a)(2)(B). Specifically, the regulation will need to reflect that the regulatory minimum of 45 days for receipt of comments is now reduced to 30 days for FHWA projects. Both the Section 4(f) regulation and the IIJA allow that if comments are not received within 15 days after the comment deadline, the administration (as defined in 23 CFR 774.17) may assume lack of objection and proceed. However, because IIJA did not amend 49 USC § 303, FRA and FTA will continue to apply the existing requirements in Part 774 (i.e., 60-day coordination period with DOI, HUD, and USDA).

Source: https://www.environment.fhwa.dot.gov/legislation/authorizations/bil/bil_ga.aspx.

2.11 Executive Order 13990

In January 2021, President Biden issued Executive Order 13990 to direct Federal agencies to review Federal regulations taken between January 2017 and January 2021 that conflicted with objectives of improving public health and the environment including the following:

- ▶ Ensuring access to clean air and water;
- ▶ Limiting exposure to dangerous chemicals and pesticides;
- ▶ Holding polluters accountable, including those who disproportionately harm communities of color and low-income communities;
- ▶ Reducing greenhouse gas emissions;
- ▶ Bolstering resilience to the impacts of climate change;
- ▶ Restoring and expanding our national treasures and monuments; and
- ▶ Prioritizing both environmental justice and employment.

In addition to Colorado Senate Bill 21-260, air quality is regulated under the 1990 Clean Air Act Amendments. Transportation Conformity, which applies to areas of the state where the National Ambient Air Quality Standards (NAAQS) have been violated in the past, requires that all federally funded transportation projects and projects of regional air quality significance be described and modeled for regional conformity. A fiscally constrained regional transportation plan must be prepared by the area MPO and must have funding included in the Transportation Improvement Program (TIP).

Executive Order 13990 also revoked Executive Order 13807 and directed the CEQ to review the 2020 NEPA regulations. On October 7, 2021, the CEQ published the first phase of a notice of proposed rulemaking to modify the 2020 NEPA regulations. The rules have not yet been finalized as of the date of this publication.

More information is available at: <https://www.energy.gov/sites/default/files/2021/02/f83/eo-13990-protecting-public-health-environment-restoring.pdf>



2.12 Colorado Senate Bill 21-260

Colorado Senate Bill 21-260 and the associated rulemaking Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions (2 Code of Colorado Regulations [CCR] 601-22) established greenhouse gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. GHG pollution includes pollutants that are anthropogenic (man-made) emissions of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride.

Major elements of the rulemaking include:

- ▶ Establishment of the GHG reduction levels for transportation planning for CDOT (statewide) and the five MPOs in the state in terms of carbon dioxide equivalents (CO₂e).
- ▶ Establishment of the process for CDOT/MPOs to determine compliance with the GHG reduction requirements. This requires MOVES emission quantification modeling of the transportation plans using the most current version of MOVES.
- ▶ If the stipulated GHG reduction levels cannot be met, the plan may still be in compliance if an adequate GHG mitigation plan is included or if certain project funding restrictions will be implemented.
- ▶ The Transportation Commission must review and approve the transportation plans and any associated actions.
- ▶ The Transportation Commission may grant waivers to individual projects.

More information is available at: <https://leg.colorado.gov/sb21-260-bill-summary>



2.13 References

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3. CDOT's NEPA-Specific Planning and Project Development Elements

The development of transportation projects is a multiphase, multiyear process that involves significant commitment of technical and financial resources. This chapter discusses the National Environmental Policy Act (NEPA) elements of the Colorado Department of Transportation's (CDOT) overall transportation planning and project development process.

3.1 Why CDOT Follows NEPA

CDOT has committed to following the intent and requirements of NEPA for all transportation projects, regardless of whether the projects have a Federal nexus (**Section 2.2.3**). Although non-Federal projects will not require Federal agency approval, the NEPA process provides an excellent framework for ensuring that environmental factors are considered consistent with CDOT's environmental ethic. Thus, the guiding principles of NEPA have been incorporated into the CDOT transportation planning and project development process, as well as maintenance and operations of the state transportation system. Additionally, CDOT is committed to following NEPA, and this NEPA Manual is the main guidance document for NEPA compliance at CDOT as stated in CDOT Policy Directive 1904.0 *National Environmental Policy Act Compliance* (CDOT, 2012).

A key principle in NEPA is the use of an interdisciplinary approach. The application of this approach will lead to good transportation decisions and ensure responsible decision-making that includes social and environmental considerations. Several actions can be taken before the NEPA process officially begins to further promote CDOT's environmental ethic and help streamline projects. These actions are discussed below.

CDOT's Environmental Ethics Statement

"CDOT will support and enhance efforts to protect the environment and quality of life for all of Colorado's citizens in the pursuit of providing the best transportation systems and services possible."



3.1.1 CDOT 10-Year Vision Plan

The CDOT 10-Year Vision Plan provides a statewide list of priority transportation projects proposed for funding through Senate Bill (SB) 1, SB 267, and SB 260, including Federal stimulus funds. The Plan has been compiled through the most expansive and inclusive planning and outreach effort undertaken in Colorado. The Plan emphasizes projects that are aligned with the wants and needs of Coloradans and focus on safety, resilience, improving existing conditions, and advanced multimodal investments to expand choice for Coloradans.

CDOT's 10-Year Vision Plan can be obtained at:

<https://www.codot.gov/programs/your-transportation-priorities/your-transportation-plan>

CDOT's *Project Development Manual* (CDOT, 2013 as amended in 2022) can be obtained at:

https://www.codot.gov/business/designsupport/bulletins_manuals/project-development-manual/revs-to-project-manual

Project management guidance, tools, templates, and examples to complete and implement CDOT's Project Delivery Plan (PDP) can be found here: <https://www.codot.gov/business/project-management>

3.1.2 CDOT Environmental Stewardship Guide and FHWA's INVEST Program

As stated in the CDOT *Environmental Stewardship Guide*, CDOT strives to be a good steward of the environment in operating and maintaining the state's transportation system, often going beyond environmental compliance and striving for environmental excellence (CDOT 2017a). Furthermore, CDOT follows a NEPA-like process for all projects regardless of the type of funding (e.g., state or Federal).

The Federal Highway Administration (FHWA) has developed a web-based tool that includes a "collection of voluntary best practices, called criteria, designed to help transportation agencies integrate sustainability into their programs and projects." This tool is referred to as the Infrastructure Voluntary Evaluation Sustainability Tool or INVEST. FHWA developed INVEST to help make the nation's transportation systems more sustainable - economically, socially, and environmentally. FHWA created INVEST specifically for transportation agencies to evaluate the sustainability of the full lifecycle of their highway and transportation programs and projects (FHWA, 2012b).

Criteria are divided into four modules: System Planning for States (SPS), System Planning for Regions (SPR), Project Development (PD), and Operations and Maintenance (OM) (FHWA, 2012b). These four modules constitute a comprehensive self-evaluation tool to aid agencies in evaluating the sustainability performance of their projects and programs. The SPS, SPR, and OM modules are used to evaluate an agency's programs, and the PD module is used to evaluate projects, from early project planning through construction (FHWA, 2012b).

CDOT's *Environmental Stewardship Guide* (CDOT, 2017) documents CDOT's environmental ethic information. This document can be obtained at:

<https://www.codot.gov/programs/environmental/resources/guidance-standards>

Information about FHWA's INVEST program can be accessed at:

<https://www.sustainablehighways.org/100/about.html>



3.1.3 Developing the Project Team

A project is initiated with the assignment of a project manager. Each CDOT Region's Program Area Engineer assigns a project to a Resident Engineer, who, in turn, assigns a CDOT project manager. The CDOT project manager guides the project through the remainder of the process.

The CDOT project manager is required to involve the Region Planning and Environmental Manager (RPEM) in the development of Form 1048A *Project Scoping/Clearance Record* and Design Scoping Review (DSR) meeting, which is used in conjunction with the *Project Development Manual* (CDOT, 2013 as amended in 2022) and preparation of a Project Development Plan (PDP) to scope the project and track documentation or activity sign-off dates.

The RPEM will involve environmental specialists, who represent physical, biological, cultural, and socio-economic resources to:

- ▶ Identify environmental considerations during the early stages of project definition
- ▶ Identify environmental issues that could impact the schedule or budget
- ▶ Guide the formal NEPA process, particularly if CDOT retains consultants for NEPA support

The environmental scoping form documents considerations for the lead team member (CDOT Region Environmental, CDOT Environmental Programs Branch [EPB], or Consultant), level of analysis and documentation (Brief, Some, Full, or Complete), and comments related to the specific environmental resource. The NEPA process is initiated immediately after the initial NEPA class of action designation (**Section 2.4**) and environmental study requirements are determined. The results of Form 1048A Sections 1 and 2 are discussed with the RPEM when an environmental study is needed. All information must be kept in the project file, which becomes part of the administrative record (further discussed in **Section 6.15**). Early coordination with the RPEM and environmental specialists will reduce the potential for time delays, increased costs, and project design changes. If the CDOT project manager and RPEM decide to contract a consultant to complete the study, they can use the CDOT *Generic Scope of Work* (CDOT, 2022b) to assign time and tasks to various team members. Section 6 of the *Generic Scope of Work* specifically refers to environmental tasks.

The environmental scoping form is available at:

<https://www.codot.gov/programs/environmental/resources/forms>

For more information on CDOT's *Generic Scope of Work* (CDOT, 2022b), refer to:

<https://www.codot.gov/business/consultants/guidance-documents/generic-scope-of-work>

Additional information on **One Federal Decision** can be obtained at:

<https://www.federalregister.gov/documents/2017/08/24/2017-18134/establishing-discipline-and-accountability-in-the-environmental-review-and-permitting-process-for>

The core of the NEPA interdisciplinary project team consists of an assigned project manager from the region, a RPEM or their designee, an EPB NEPA specialist, the consultant (as needed), the Area Engineer from FHWA's Colorado Division assigned to the project, and local agency representatives (as appropriate). Other staff members who may contribute to the project team over the course of the project will include staff from CDOT Special Units, including Right-of-Way, Access, Engineering, Bridge, Maintenance, Safety, Traffic, Utilities, Materials, Soils and Geotechnical, and others, as necessary. **Chapter 8** identifies staff and team members involved in the environmental document review process.



Outside the CDOT/FHWA project team, external agencies will also participate in the process. When different agencies have independent decision-making authority, the goal is to produce one NEPA document that will meet the regulatory requirements of all agencies. Executive Order 13807 *Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure* requires Federal agencies to process environmental reviews and authorization decisions for “major infrastructure projects” as One Federal Decision—meaning designating a single lead Federal agency and completing a single NEPA decision document. Executive Order 13807 also sets a government-wide goal of reducing the average time for each agency to complete the required environmental reviews and authorization decisions for major infrastructure projects to two years.

3.1.4 Agency Project Roles

The U.S. Department of Transportation (USDOT) agency conducting the NEPA analysis, such as FHWA or the Federal Transit Administration (FTA), serves as the lead Federal agency for NEPA compliance on transportation projects. FHWA may act as a joint lead agency with either another Federal agency (40 Code of Federal Regulations [CFR] § 1501.5 [b]) or a state or local agency under the Safe, Accountable, Flexible, Efficient Transportation Equity Act - A Legacy for Users (SAFETEA-LU) Amendments (SAFETEA-LU, 23 United States Code [USC] § 1001 - 11167). More detailed information about SAFETEA-LU can be found in **Section 2.5**.

CDOT’s **Local Agency Project Desk Reference** (formerly the Local Agency Manual (CDOT, 2022c.) was developed to assist local agency personnel involved in the design, construction, and management of state and federally funded projects. The Manual can be accessed here:

https://www.codot.gov/business/designsupport/bulletins_manuals/local-agency-project-resources

The joint lead agency is typically the project sponsor, which is a state or local government, such as CDOT, receiving Federal funds. When other transportation authorities or governmental entities serve in the role of a joint lead agency, FHWA will generally request CDOT to assist these governmental entities by acting as a program administrator for NEPA compliance. When CDOT performs NEPA, the standard used for document development and processing will be this CDOT NEPA Manual as stated in Policy Directive 1904.0 *National Environmental Policy Act Compliance* (CDOT, 2012). The project sponsors are the local agencies applying to connect to a local roadway, a state highway, or an interstate or those that receive Federal funds for a project.

A Federal, state, Tribal, or local agency having special expertise with respect to an environmental issue or jurisdiction by law may be a cooperating agency in the NEPA process. A cooperating agency has the responsibility to assist the lead agency through participation in the NEPA process at the earliest possible time. The cooperating agency also participates in the scoping process and in developing information and preparing environmental analyses (including portions of an Environmental Impact Statement [EIS] where the cooperating agency has special expertise). Cooperating agencies also make support staff available at the lead agency’s request to enhance the lead agency’s interdisciplinary capabilities.



Integrating NEPA with Project Development

- Start NEPA early
- Conduct a site visit with a multidisciplinary team, including engineering and environmental
- Involve resource specialists from the regions and headquarters to represent physical, biological, cultural, and socioeconomic resources
- Complete the environmental scoping form
- Maintain continuity of staff from project inception to completion whenever possible
- Collaborate and communicate across disciplines frequently and consistently

As defined by SAFETEA-LU, participating agencies are those with an interest in the project. The standard for participating agency status is more encompassing than the standard for cooperating agency status described previously. Therefore, by definition, cooperating agencies are participating agencies, but not all participating agencies are cooperating agencies. The lead agencies should consider the distinctions in deciding whether to invite an agency to serve as a cooperating/participating agency or only as a participating agency.

The roles and responsibilities of cooperating and participating agencies are similar, but cooperating agencies have more authority, responsibility, and involvement in the environmental review process. A distinguishing feature of a cooperating agency is that the Council on Environmental Quality (CEQ) regulations (CEQ, 40 CFR § 1500 - 1508) permit a cooperating agency to “assume on request of the lead agency responsibility for developing information and preparing environmental analyses including portions of the environmental impact statement concerning which the cooperating agency has special expertise.” An additional distinction is that, pursuant to 40 CFR § 1506.3, “a cooperating agency may adopt without recirculation of the environmental impact statement of a lead agency when, after an independent review of the statement, the cooperating agency concludes that its comments and suggestions have been satisfied.” This provision is particularly important to permitting agencies, such as the U.S. Army Corps of Engineers (USACE), who, as cooperating agencies, routinely adopt USDOT environmental documents.

Moving Ahead for Progress in the 21st Century Act (MAP-21) (Section 1205[b]) amended Section 139(c) of title 23 USC and allowed the Secretary of Transportation to designate a single Federal lead agency for purposes of environmental review if the project requires approval from more than one modal administration. MAP-21 (Section 1305[c]) amended 23 USC 139(d) by:

- ▶ Directing participating agencies to comply with the environmental review process requirements in Section 139, as amended by MAP-21;
- ▶ Requiring participating and cooperating agencies to carry out their obligations under applicable laws concurrently with the lead agency’s environmental review process, unless doing so would impair their ability to conduct needed analysis or otherwise carry out those obligations; and
- ▶ Requiring participating and cooperating agencies to formulate and implement administrative, policy, and procedural mechanisms to enable the agency to ensure completion of the environmental review process in a timely, coordinated, and environmentally responsible manner.



MAP-21 (Section 1305[a] [23 USC 139[b] [3]) included the provision for rulemaking to allow the use of programmatic approaches to conduct environmental reviews that:

- ▶ Eliminate repetitive discussions of the same issues;
- ▶ Focus on the actual issues ripe for analyses at each level of review; and
- ▶ Are consistent with NEPA and other applicable laws.

At a minimum, programmatic reviews should:

- ▶ Promote transparency, including the analyses and data used, the treatment of any deferred issues raised by agencies or the public, and the temporal and spatial scales to be used for analysis;
- ▶ Use accurate and timely information in the reviews;
- ▶ Describe the relationship between programmatic analysis and future tiered analysis;
- ▶ Describe the role of the public in the creation of future tiered analysis; and
- ▶ Be made available to other relevant Federal and state agencies, Indian tribes, and the public.

Fixing America's Surface Transportation Act (FAST Act) built on the authorities and requirements of SAFETEA-LU, MAP-21, and FHWA's Every Day Counts efforts to accelerate the environmental review process for surface transportation projects by institutionalizing best practices and expediting complex infrastructure projects without undermining critical environmental laws or opportunities for public engagement. The FAST Act added a new procedural requirement aimed at ensuring early collaboration and efficient environmental reviews. That is, to the maximum extent practicable, the lead agency shall develop a single NEPA document sufficient to satisfy the requirements for any Federal approval or other Federal action required for the project, including permits issued by other Federal agencies. Additional information about FAST Act can be found in **Section 2.7**.

3.1.5 Agency Coordination Plan

If conducting an EIS, Section 6002 of SAFETEA-LU requires that a project team complete an Agency Coordination Plan prior to the start of a project. The Agency Coordination Plan defines the roles and responsibilities of the various agencies, outlines major project milestones, and defines how input from stakeholders will be solicited. While this plan is required for EISs, it is encouraged for Environmental Assessments as well. In accordance with MAP-21, participating agencies must concur on the project schedule if a project schedule is included in the Project Coordination Plan. FAST Act requires a schedule to be part of a Project Coordination Plan and requires the creation of a checklist to help project sponsors identify natural, cultural, and historic resources in the area of a proposed project. **Appendix E** includes an example template for an Agency Coordination Plan.



CEQ regulations include criteria for designating a lead agency if a conflict exists (CEQ, 40 CFR § 1501.5), as well as the roles and responsibilities of cooperating agencies (CEQ, 40 CFR § 1501.6). External agency involvement may also be dictated by existing intergovernmental agreements (IGAs) between CDOT and/or FHWA and the agency, such as:

- ▶ Memorandum of Understanding (MOU) among CDOT, FHWA, Bureau of Land Management (BLM), and the U.S. Forest Service (USFS) Related to Activities Affecting the State Transportation System and Public Lands in the State of Colorado
- ▶ NEPA / Clean Water Act (CWA) Section 404 Merger Process for Transportation Projects in Colorado
- ▶ MOU among FHWA, U.S. Environmental Protection Agency (EPA), and CDOT that formalizes the cooperative working relationship among these agencies
- ▶ Memorandum of Agreement (MOA) between CDOT and the Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (APCD) regarding procedures for determining project level conformity and hotspot analysis.

A video explaining the **MOU among CDOT, FHWA, BLM, and USFS** is located here:

<https://www.codot.gov/programs/environmental/resources/intergovernmental-agreements>

Current IGAs can be found at:

<https://www.codot.gov/programs/environmental/resources/intergovernmental-agreements>

3.1.6 Project Lifecycle

In 1991, Colorado's General Assembly enacted legislation directing that transportation planning is to occur as a cooperative process:

...the General Assembly recognizes the Department of Transportation as the proper body, in cooperation with regional planning commissions and local government officials, for developing and maintaining the state transportation planning process and the state transportation plan. §43-1-1101 Colorado Revised Statutes

With policy direction provided at the statewide level through the Colorado Transportation Commission, regional planning commissions prepare regional transportation plans (RTP) identifying and prioritizing their long-range transportation needs for all modes. These RTPs and priorities are integrated and consolidated into the long range multimodal statewide transportation plan (SWP), which serves as the blueprint for how transportation resources are invested and projects are selected for implementation.

Decisions made during planning can be reflected in project-specific NEPA documentation without revisiting those decisions depending on the process that was followed and the magnitude and sensitivity of the related issues. CDOT project managers must also work closely with their RPEM and planning staff to understand the required components of the project that have already gone through the planning process and may not need to be revisited. For more information on integrating planning with NEPA, see **Section 3.2**.



CDOT's *Project Development Manual* (CDOT, 2013 as amended in 2022) identifies and describes the activities related to project development from conception to award of the build contract and establishes a uniform application of processes and procedures for use across CDOT. The *Project Development Manual* is organized into eight sections, each covering an important aspect of Form 1048A *Project Scoping/Clearance Record*.

The following sections of Form 1048A are important to the initiation of NEPA:

- ▶ Section 1 states that the need for a preliminary field survey to be assessed.
- ▶ Section 2 must be reviewed in coordination with the RPEM to determine the presence or absence of environmental considerations and the documentation of that information. This information will be used during the initiation of the NEPA process and will help the project team assess the need for supplemental field studies.

Section 2 also addresses route location approval and environmental compliance. In compliance with the FHWA and the FTA jointly issued regulation, *Environmental Impact and Related Procedures* (FHWA and FTA, 23 CFR 771 § 771.101 - 771.131), all proposed projects must be assigned an environmental class of action designation, which helps determine the appropriate level of environmental studies and public involvement activities required for approval by CDOT staff. The RPEM is responsible for scoping the project and, in consultation with the project team and FHWA, determining the initial class of action and the environmental studies, approvals, and permits required.

To find out more about the current **Statewide and Regional Transportation Plans** and other transportation planning related topics, see CDOT's Statewide/Regional Planning website at:

<https://www.codot.gov/programs/planning>

CDOT's *Project Development Manual* can be found at:

https://www.codot.gov/business/designsupport/bulletins_manuals/2013-project-development-manual/revs-to-project-manual

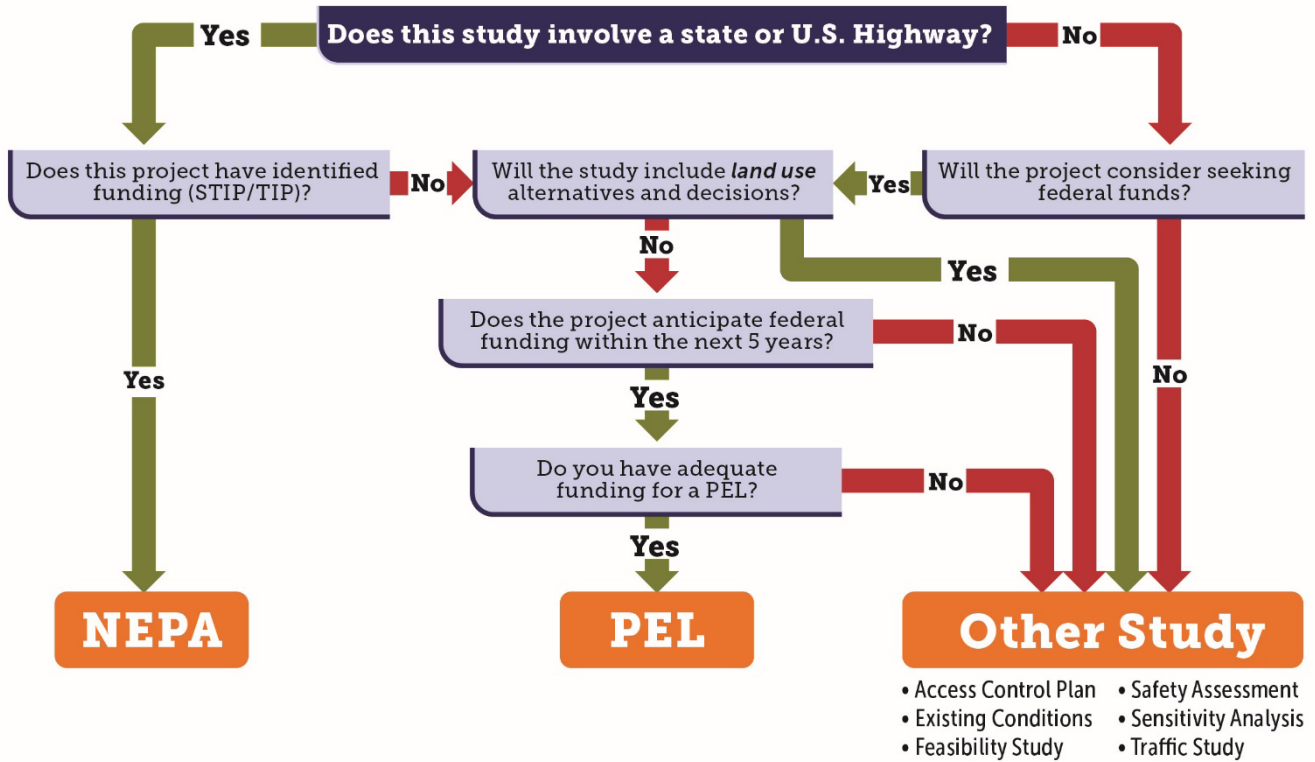
3.2 Planning and Environmental Linkages (PEL)

PEL is a study process typically used to identify potential transportation benefits and impacts, along with environmental benefits and concerns, in an area, a corridor, or a specific location. It is generally conducted before overall project construction funding and phasing are identified, and before specific problems and solutions are known. Before a PEL study is conducted, a scoping process determines whether to even do a PEL study. It needs to be determined why the study is being conducted and what questions are trying to be addressed. **Figure 3-1** presents a decision tree on whether to conduct a PEL study.

One condition that specifically needs to be considered when determining whether to do a PEL study is the shelf life of a PEL study. If NEPA does not begin within five years from the conclusion of the PEL study, the information from the NEPA study must validate the PEL alternatives analysis and confirm that conditions or policies and guidance that would affect the analysis and recommendations have not changed.



Figure 3-1. PEL Study Decision Tree





PEL studies can be used to make planning decisions and for planning analysis. These decisions and analyses, for example, can be used to identify and prioritize projects, develop the Purpose and Need for a project, determine project size or length, and/or develop and refine a range of transportation improvement alternatives. A PEL study can create a basic description of the area's environmental setting, recommend methodologies for future environmental resource analysis, and identify mitigation strategies and programmatic level mitigation for potential impacts that are most effectively addressed at a regional or a state level.

The PEL process can be helpful in discovering needs and desires and garnering project support for an overall vision when a project involves multiple jurisdictions, and it can be used as a project prioritization tool. For example, a PEL study for a corridor could result in the identification of multiple potential projects (i.e., capacity improvements for a shorter length of the corridor, and intersection improvements), which can then be prioritized for implementation.

A PEL study evaluates and recommends operational strategies based on existing and reasonably anticipated technologies at the time of the study, either as stand-alone alternatives or supplemental options to identify project recommendations that will optimize safety and operational benefits. Due to the variance of applicability over future years, the technology concepts evaluated for a PEL study should consider potential time horizons and the CDOT-identified target Connected Roadway Classification (CRC) level for the study corridor(s). As new technologies arise, recommendations and prioritized projects may move forward in the future as modified with the proven applicability of new transportation technologies.

A PEL study may determine whether corridor managed lane strategies are appropriate when considering capacity improvement alternatives. The CDOT Managed Lanes Guidelines should be referenced for guidance on the planning process and documentation for managed lane strategies. The PEL study documentation should include a memorandum outlining the decision on managed lanes with the completed Managed Lanes Decision Form. When managed lanes have been evaluated in a previous PEL study, additional evaluation may not be required within the following NEPA study pending confirmation from FHWA and the CDOT RPEM.

The CDOT Managed Lanes Guidelines (February 2019) are available here:

https://www.codot.gov/safety/traffic-safety/assets/cdot-managed-lanes-guidelines_february-2019.pdf

3.2.1 PEL Study Use in NEPA

A PEL study links planning efforts to future environmental issues and results in valuable information that can be carried forward into the NEPA process. These studies must address some aspects of NEPA to be valid for incorporation into a future NEPA analysis, although the PEL study should cost less and take less time than a NEPA process. The environmental overview and resource information within a PEL study should be used to facilitate the scoping for subsequent NEPA documentation.

The PEL study should include a project vision or Purpose and Need with a list of specific project goals, a detailed area description that identifies environmental resource issues and constraints, and stakeholder involvement, including public and agency outreach. This should occur before any alternatives are developed. For the alternatives development and evaluation in a PEL study to be used by reference in a subsequent NEPA process, the basis of the evaluation, including the project



Purpose and Need, evaluation criteria, and alternatives screening, must meet NEPA standards. **Figure 3-2** presents a flowchart displaying the PEL process and showing the four FHWA coordination points required during the study.

At the conclusion of a PEL study, CDOT requests a letter from FHWA acknowledging the completion of the study and that it was undertaken in a manner consistent with the FHWA PEL guidance (FHWA, 2012a). If the FTA is leading the PEL study, they should be consulted about their PEL acceptance process.

The adoption and the use of a PEL study in the NEPA process are subject to a determination by FHWA, with the concurrence of other stakeholder agencies, that several specific conditions have been met. These conditions are listed in Section 1310, Integration of Planning and Environmental Review, part (d) of MAP-21.

PEL is a study process used to identify transportation issues, priorities, and environmental concerns. It can be applied to make planning decisions and used for planning analysis. The primary objective of the PEL process is to assess transportation needs and priorities. Assessment can be on a program level, such as evaluating transportation funding options, or at a project level. Project-level PEL studies, which have been the majority of PELs completed, can range from large corridor studies to more localized studies, such as an interchange improvement.

More information on the CDOT PEL Program can be found at:

<https://www.codot.gov/programs/environmental/planning-env-link-program>



Figure 3-2. PEL Process Flowchart*



*Note: Not all these steps must be followed. PEL studies can determine which steps apply based on the reason for the PEL.



3.3 Context Sensitive Solutions (CSS)

Context Sensitive Solutions (CSS) represents an evolution in the philosophical approach to transportation development. It recognizes the need to develop transportation solutions that supplement and support the social, economic, and environmental context of the facility. CSS seeks a balance among four primary elements:

- ▶ Mobility
- ▶ Safety
- ▶ Preservation and enhancement of the natural environment
- ▶ Community values

Balancing these elements is accomplished using four key components:

- ▶ Project Purpose and Need
- ▶ Effective involvement of a full range of stakeholders
- ▶ Survey and analysis of environmental features
- ▶ Use of multidisciplinary teams

Using these components and balancing the four elements, CSS seeks to proactively identify and address issues early in the project development process, thereby reducing redundancy and lost time during project development, design, and construction. The early use of the four key components balances the four primary elements of CSS and leads to transportation solutions that are more effective and sustainable with fewer corrections and changes needed later.

While aesthetic treatments and visual enhancements are often features in designing a facility that is responsive to stakeholder needs, CSS should not be construed as simply a beautification requirement. CSS represents comprehensive solutions to transportation issues in such a way as to minimize negative impacts to all stakeholders and to design projects that best fit the physical setting, work with, and enhance the community and environment of which they are a part.

A specific section on CSS should not appear in any NEPA document. It should be reflected in the way the NEPA process is implemented. Ideally, CSS will influence how project decisions are made and how the other sections are written.

Because each project has a unique context, a one-size-fits-all process for CSS is not appropriate. How CSS principles and tools can be effective for each project must be developed individually, through the level of stakeholder involvement appropriate for each project.

CDOT has established **CSS guidance** specifically for the **I-70 Mountain Corridor** available at:
<https://www.codot.gov/projects/contextsensitivesolutions>



3.4 CDOT and the 1601 Process

CDOT's 1601 process is required when there is a request for an interchange or major improvements to an existing interchange. Of these 1601s, some also may require FHWA's Interchange Approval Request (IAR) process if they affect interstate travel. Although different processes, they can be completed at the same time.

The CDOT Policy Directive 1601.0 and Procedural Directive 1601.1 Interchange Approval Process describe a CDOT process to review requests for interchanges and major improvements to existing interchanges on the state and Federal-aid highway system that could affect highway travel (CDOT, 2005). The Colorado Transportation Commission established CDOT Policy Directive 1601.0 and Procedural Directive 1601.1 to provide fair and consistent procedures regarding the review and evaluation of requests for new interchanges and major improvements to existing interchanges on the state highway system.

The 1601 process requires, among other things, that the interchange:

- ▶ Be consistent with an approved fiscally constrained RTP and SWP, and included in a Transportation Improvement Program (TIP) and/or Statewide Transportation Improvement Program (STIP)
- ▶ Be the subject of approved IGAs that address the funding of the application development and review process, timeline and analytical expectations, and an IGA covering construction, operations, maintenance, and replacement of the interchange
- ▶ Have sufficient environmental, operational, and other studies performed consistent with FHWA interchange approval and NEPA requirements.

The scope of study and level of detail and effort depend on the improvement type and the complexity of the interchange proposal. The 1601 interchange approval process identifies three types of interchange requests: Type 1, Type 2, and Type 2a.

The 1601 interchange approval pre-application meeting will identify the improvement type (Type 1, 2, or 2a), as well as the appropriate scope of the study and level of detail and effort.

Type 1 requests consist of two categories: (1) Proposals for new interchanges on the state highway system with a functional classification of interstate or freeway; and (2) Any type of proposal on the state highway system not initiated by CDOT that anticipates CDOT cost-sharing participation. The Transportation Commission must approve Type 1 requests.

Type 2 requests consist of proposals for a new interchange not on the interstate or freeway system and all modifications or reconfigurations to existing interchanges. Type 2 requests must be approved by the Chief Engineer, who may elevate the request to the Transportation Commission for consideration.

Type 2a requests consist of minor interchange improvements that will have little or no impact to the state highway system or surrounding local transportation system, consistent with the definitions and guidance provided in the *FHWA Colorado Division Control of Access to the Interstate and its Right of Way* (FHWA, 2005). Type 2a approvals are delegated by the Chief Engineer to the CDOT Region Transportation Director.



To preserve the overall functionality and operability of the state of Colorado’s highway system, the applicant will implement traffic reduction or Transportation Demand Management (“TDM”) strategies to preserve the long-term functionality of the constructed interchange improvement.

The effectiveness of TDM strategies is highly dependent on the specific location, complementary strategies, nature of the travel segment being targeted, and implementation and promotion. TDM requirements apply to new Type 1 and Type 2 interchange proposals. The TDM requirement does not apply to Type 2a proposals. The proposed TDM improvements will be included for analysis in the Systems Level Study.

The steps in the 1601 interchange approval process include:

- ▶ Step 1: 1601 Pre-Application Meeting(s)
- ▶ Step 2: Initial IGA Approval
- ▶ Step 3: System Level Study Preparation
- ▶ Step 4: System Level Study Approval
- ▶ Step 5: Metropolitan Planning Organization (MPO)/Transportation Planning Region (TPR) Board Approval
- ▶ Step 6: Design and NEPA Approval Process
- ▶ Step 7: Final IGA

A System Level Study is required for both Type 1 and Type 2 proposals and should provide enough information to support the FHWA IAR or Minor Interstate Modification Request (MIMR). Type 2a proposals do not require a System Level Study but should have sufficient data to substantiate the determination of “no potential for significant impact” in accordance with the *FHWA Colorado Division Control of Access to the Interstate and its Right of Way* (FHWA, 2005).

The purpose of a System Level Study is to identify the short- and long-term environmental, community, safety, and operations impacts of a proposed interchange or interchange modification to the degree necessary for the CDOT Chief Engineer, Transportation Commission, and FHWA to make an informed decision on whether the proposed interchange or interchange modification is in the public interest. A System Level Study scope should be identified to show the build and no-build conditions of the highway network both on opening day and for a design year, typically twenty years into the future.

A System Level Study includes:

- ▶ Draft Purpose and Need Statement
- ▶ Existing and Forecasted Conditions
- ▶ Alternatives
- ▶ Planning-level Evaluation of Alternatives
- ▶ Environmental Considerations
- ▶ Funding and Phasing



The IAR approval, a two-step process, was developed to help the state manage risk and provide flexibility. The process is intended to identify fatal flaws and to help ensure that the investment in environmental documentation is not wasted. The first step is a finding of operational and engineering acceptability. The second step is the final approval. The FHWA approval constitutes a Federal action and requires that NEPA procedures are followed. Compliance with NEPA procedures need not precede the determination of engineering acceptability. However, final approval of access cannot precede the completion of NEPA. Once NEPA has been completed, approval of access is granted if no changes resulted to the accepted concept.

3.5 Funding and Fiscal Constraint in NEPA

The cost, size, and complexity of transportation projects, combined with limited available funding, often result in transportation projects being funded and implemented over a lengthy period rather than all at once. This section describes the funding and timing of project implementation in relation to the NEPA process. This discussion includes:

- ▶ Fiscal constraint requirements for initiating and completing NEPA
- ▶ Phasing and timing of construction in relation to NEPA
- ▶ Interim construction requirements
- ▶ Timing of mitigation

State regulations (2 CCR 601-22) require fiscal constraint of the SWP (this is not a Federal requirement; fiscal constraint is only required for MPO plans).

3.5.1 Funding Definitions

In describing the requirements of fiscal constraint with respect to NEPA, the following FHWA definitions (FHWA, 2011) apply:

- ▶ **Fiscal constraint** means that the metropolitan RTP, TIP, and STIP have sufficient financial information to demonstrate that a project in the RTP, TIP, and STIP can be implemented using committed, available, or reasonably available revenue resources.
- ▶ **Available funds** are funds derived from existing sources dedicated to or historically used for transportation purposes. For example, apportioned/authorized Federal-aid dollars or toll revenues for the next 2 to 4 years. [23 CFR § 450.104]
- ▶ **Committed funds** are funds that have been dedicated or obligated for transportation purposes. For example, funds obligated for a Federal-aid project or toll revenues for the next 2 years. [23 CFR § 450.104]
- ▶ **Reasonably available funds** - Determining whether a future funding source is reasonably available requires a judgment decision. Two important considerations in determining whether an assumption is “reasonable” are (a) evidence of review and support of the new revenue assumption by state and local officials and (b) documentation of the rationale and procedural steps to be taken with milestone dates for securing the funds.



3.5.2 Fiscal Constraint Requirements

FHWA and CDOT have specific requirements, based on statutes and regulations, for the demonstration of fiscal constraint for a project prior to final NEPA approval (Categorical Exclusion [CatEx], Finding of No Significant Impact [FONSI], or Record of Decision [ROD]). Fiscal constraint for a project is demonstrated by satisfying the requirements of specific transportation planning and air quality conformity regulations, as described in this section.

Conformity is required by Clean Air Act Section 176(c). This section requires that Federal agencies do not adopt, accept, approve or fund activities that are not consistent with State air quality goals.

The Metropolitan Planning Regulations (23 CFR 450.322) and the Clean Air Act (CAA) Transportation Conformity Rule (40 CFR 93.104) work together to require that a project located in an MPO (the geographic area in which the metropolitan planning process is carried out) and/or in a CAA nonattainment or maintenance area, be contained in a conforming, fiscally constrained long range RTP. The CAA requires air quality conformity to be demonstrated for major transportation projects in non-attainment and/or maintenance areas.

The following fiscally constrained transportation plans must identify all projects that are expected to receive federal funds or that will require FHWA or FTA approval:

- ▶ **RTP** - Identifies projects anticipated to be constructed over the next twenty years.
- ▶ **TIP** - Identifies capital and non-capital surface transportation projects, as well as regionally significant projects within the metropolitan planning area to be constructed in the next six years.
- ▶ **STIP** - Identifies capital and non-capital transportation projects (or phases of projects) proposed for funding under Titles 23 and 49 of the USC, as well as all regionally significant transportation projects regardless of funding source and/or requiring action by FHWA and FTA over a six-year period.

3.5.3 Transportation Planning Process Context

In 1991, Colorado's General Assembly enacted legislation providing the basis for the transportation planning process in Colorado. The law requires the development of a comprehensive fiscally constrained, long range 20-year SWP that incorporates the priorities and needs of Colorado's 15 TPRs. CDOT carries out a continued, cooperative, and comprehensive statewide multimodal transportation planning process with its 15 TPRs. Of the 15 TPRs, 10 are considered non-urban TPRs, and the 5 located in urban areas are considered MPOs. Each TPR includes the municipalities and counties within its established boundaries.

The planning process includes the development of long range multimodal RTPs by each TPR, which are integrated into the SWP. The RTPs and SWP include fiscally constrained and fiscally unconstrained vision components and identify the needs, corridor visions and strategies, and/or projects anticipated to be constructed over the next 20 or more years. The SWP combines the individual corridor visions of the TPRs into a statewide vision that links transportation goals and strategies to investment decisions.



The SWP includes an environmental section that lists conservation and management plans for resource agencies in each TPR and MPO RTP. The SWP is supported by environmental technical reports, transit technical reports, etc. Each of the 15 TPRs includes corridor visions that integrate community values, land use decisions, and environmental concerns with transportation needs. The RTPs include an environmental overview that addresses expected environmental, social, and economic impacts of the recommendations contained in the transportation plan. Colorado Revised Statute (CRS) 43-1-1103 states that the RTPs shall include expected environmental, social, and economic impacts of the recommendations contained in the transportation plan. The TPRs have updated corridor visions to identify current trends and conditions. Corridor visions increase the efficiency and accountability of the transportation system by aligning vision strategies and project priorities.

CDOT also develops a STIP that identifies the short-term project needs and priorities of the state of Colorado. In addition, under Federal law, all MPOs are required to develop a short-term capital improvement program TIP consistent with the long range RTPs for each MPO. Similar to the STIP, the TIPs for each MPO are updated every four years and include a six-year planning horizon. TIPs approved by the MPOs and Governor are included in the STIP without modification. STIP projects must be consistent with the corridor visions identified in the SWP. The RTP and SWP and corresponding TIP identify all Federally funded and regionally significant projects, if applicable.

FHWA's memoranda on fiscal constraint are available at:

Transportation Planning Requirements and Their Relationship to NEPA Process Completion - January 28, 2008
(http://www.fhwa.dot.gov/planning/tpr_and_nepa/index.cfm)

Supplement to January 28, 2008 *Transportation Planning Requirements and Their Relationship to NEPA Process Completion* - February 9, 2011
(http://www.fhwa.dot.gov/planning/tpr_and_nepa/supplementmemo.cfm)

Clarifying Guidance on Flexibilities in Fiscal Constraint - May 15, 2017
https://www.fhwa.dot.gov/planning/clarify_fiscal_constraint.cfm

3.5.4 Fiscal Constraint Requirements for NEPA

FHWA has provided guidance in two memoranda regarding the relationship of transportation planning to NEPA approval, with an emphasis on fiscal constraint. As described in the memoranda, to demonstrate fiscal constraint, certain requirements of the transportation planning process must be completed before initiating and/or finishing the NEPA process. Constraint requirements must be indicated in the NEPA document in a project phasing and implementation section, or elsewhere as appropriate.

In addition to the fiscal constraint requirements, it is incumbent on FHWA and CDOT to consider the broader context of fiscal stewardship when making NEPA decisions, including decisions on whether to initiate the NEPA process. Fiscal stewardship is a critical role and responsibility for FHWA and CDOT and is engrained throughout the transportation decision-making process: from fiscal constraint requirements in the transportation planning process, to reasonable cost estimates of alternatives in project development and the NEPA process, to financial plans and major project requirements during design and construction.



Table 3-1 details the Federal planning and NEPA requirements that must be met whether the environmental process is funded with Federal-aid.

Table 3-2 describes the fiscal constraint actions that must be in place before a final environmental decision is made.

Table 3-1. Planning Requirements for NEPA*

NEPA process	NEPA process can start:	Required actions before the Final NEPA Decision can be approved
NEPA process funded with Federal funds	<ul style="list-style-type: none"> ▪ Corridor/feasibility (Planning and Environment Linkages - PEL) studies: the study does not need to be in the fiscally constrained RTP or SWP and can start at any time, but the study must be in the Unified Planning Work Program (UPWP) or State Planning and Research (SPR) work program when funded with Metropolitan Planning (PL)/SPR funds. Chapter 3, Section 3.2 provides more guidance on the PEL process. ▪ Tier I EIS can start prior to being in the fiscally constrained RTP or SWP if the scope is for corridor planning or feasibility study and will not include decisions directly resulting in project implementation activities of any kind (e.g., Right of Way purchase). Chapter 4, Section 4.21.1 provides more guidance on Tier 1 EISs. 	N/A
NEPA process funded with Federal funds	<ul style="list-style-type: none"> ▪ NEPA study must be in the RTP or consistent with the SWP ▪ NEPA phase of the project must be in TIP or STIP 	<ul style="list-style-type: none"> ▪ One subsequent phase of project is in the STIP/TIP
NEPA process not funded with Federal funds	<ul style="list-style-type: none"> ▪ After the planning level purpose and need has been identified ▪ Project does not need to be in the fiscally constrained RTP ▪ Project does not need to be in the fiscally constrained STIP/TIP 	<ul style="list-style-type: none"> ▪ Project is in the fiscally constrained RTP ▪ NEPA phase of the project is amended into the TIP or STIP ▪ One subsequent phase of project is in the STIP/TIP ▪ Project must meet all NEPA requirements

* In accordance with the *CDOT Environmental Stewardship Guide* (CDOT, 2017), CDOT follows a NEPA-like process for all projects regardless of funding. This table deals specifically with those projects that require the NEPA process in accordance with 23 CFR 771.



Table 3-2. Fiscal Constraint Requirement before Approving the NEPA Decision

Before a Final Environmental Decision (CatEx, FONSI, ROD) is approved in:	Fiscal Constraint must be demonstrated by:
Metropolitan Areas (MPO)	<ul style="list-style-type: none"> ▪ Entire project is in the RTP ▪ At least one subsequent phase of the project to be cleared in NEPA must be in the TIP (more if within TIP timeframe) or STIP ▪ Full funding is reasonably available for the completion of the entire project ▪ Project level conformity determination for all projects subject to transportation conformity
Non-Metropolitan Areas (Outside MPO)	<ul style="list-style-type: none"> ▪ Project is consistent with the SWP ▪ At least one future phase of the project is in the STIP (more if within STIP timeframe) ▪ Full funding is reasonably available for the completion of the entire project

3.5.5 Phasing/Timing of Construction

Transportation projects are often implemented in phases. This may be done for several reasons, the most obvious of which is the ability to physically construct the project. Another reason is funding limitations that may preclude the ability to construct the entire project at one time. Phased implementation is typically detailed during final design. However, the requirements of fiscal constraint must be satisfied for NEPA approval, as described previously.

In cases where a project is implemented in more than one phase, each phase should have independent utility and logical termini to the extent that the phase provides a functional transportation system even in the absence of other phases (i.e., the phase to be implemented has the ability to operate on its own). Each phase must also meet the project purpose and need. In addition, any mitigation measures needed in response to project impacts must be implemented with the phase in which the impacts occur, rather than deferred to a later phase.

When project construction is anticipated to occur in one, two, or more phases separated by a period of time (rather than normal construction phasing), this situation should be described in the NEPA document and in the accompanying public involvement process.

The discussion should include:

- ▶ Project funding status
- ▶ Project phasing
- ▶ Implementation schedule

Often funding limitations may make it difficult to predict the timing of future phases, and in these cases, measures must be taken to ensure the independent utility of each phase. Additionally, it must be demonstrated that air quality conformity will not be jeopardized.



In establishing project phasing, FHWA, CDOT, and local agencies may establish criteria to be used as guidelines in establishing logical project phases including:

- ▶ **Independent utility/logical termini** - Each phase should have independent utility and logical termini to the extent that the phase provides a functional transportation system even in the absence of other phases.
- ▶ **Elements of purpose and need** - Each phase should contribute to meeting the purpose and need for the entire project.
- ▶ **Environmental impacts** - Individual phases should avoid the introduction of additional environmental impacts that cannot be mitigated.
- ▶ **Mitigation paired with impacts** - Each phase should include appropriate mitigation measures to match the environmental impacts of that phase.
- ▶ **Fiscal constraint** - Any phase selected must meet the requirements of fiscal constraint.
- ▶ **Air quality conformity** - Any phase selected must meet the requirements of air quality conformity.

Using criteria such as these can establish a series of logical phases. In addition to these criteria, logical sequencing of phases in terms of constructability and operation should be considered and a general priority of needs applied, with system reliability and safety often as the top priority.

3.5.6 Interim Conditions

When a project is constructed in phases, interim conditions will exist between project construction phases. In some cases, such as when phasing is done only for constructability and/or to maintain traffic on an existing facility, the interim conditions may be short term, lasting only until the next construction phase can begin. In other situations, such as limited funding, interim conditions may last for years.

In some cases where funding is limited, it may be desirable to phase the project to provide interim improvements and benefits earlier rather than waiting for funding for full construction. However, the decision to phase a project in this way should weigh the benefits with additional costs (for example, extra cost for throwaway construction that must be replaced in a future phase) and any additional impacts of phased construction for example. In general, throwaway costs should be minimized.

When interim conditions are expected to last several years, this should be described in the NEPA document. The effect on the transportation facility and any other impacts (such as access or environmental impacts) should be discussed. From a traffic operations standpoint, it is important that the interim construction does not introduce safety problems. Additionally, any interim construction should provide transportation system benefits and should not cause any portions of the transportation system to operate unacceptably or worse than it would without the interim construction. When interim conditions are expected to remain for several years, traffic and/or safety analyses may be needed to establish that the interim improvements will operate at an acceptable level of service in the future.



3.6 Roadway Devolution

Devolution is defined as the transference of a highway or a segment of highway from state ownership and control to local government ownership and control. The authorizing statutes include CRS 43-1-106, 43-1-110, 43-1-114, 42-2-101, 43-2-106, 43-2-110, 43-2-144, and 43-2-303. These statutes empower or authorize CDOT, its Chief Engineer, and the Executive Director to make determinations about abandonment of state highways to affected municipalities and counties. They also provide the authority of the locals to accept an abandoned highway and the need for the entity to establish a special fund to be used only for transportation-related expenditures.

Generally, roadway devolution will not include an interstate and will not have a Federal nexus. Roadway improvement actions are not included with the devolution, and no future actions are evaluated. Under these circumstances, CDOT uses the CDOT Categorical Exclusion Form 128 to process roadway devolutions. **Chapter 5, Categorical Exclusions**, provides specific directions on using Form 128. CDOT's Environmental Stewardship Guide (CDOT, 2017a) also further describes environmental requirements pertaining to roadway devolution.

Resource analysis to support a roadway devolution typically will not include field surveys or samplings to gather additional data. Data is derived from a windshield survey or what is readily available in databases or from previous studies (unless required by law). Environmental analysis will not identify environmental resources or sensitive receptors outside the right-of-way.

3.7 Alternative Project Delivery

This section discusses common innovative project delivery activities and how they integrate with the NEPA process.

CDOT's **Design-Build Manual** is available online here:

<https://www.codot.gov/business/alternativedelivery/assets/2016-cdot-d-b-manual>

3.7.1 NEPA Requirements and Permissible Project Activities

NEPA review and approval are required for transportation projects being advanced using any project delivery method. For all delivery methods, the NEPA process must be completed and a final NEPA decision must be reached before the project can proceed to final design and construction. FHWA Order 6640.1, as implemented by CDOT's design bulletin revised December 22, 2011 regarding permissible activities during the NEPA process, defines an expanded definition of Preliminary Design and is discussed below (CDOT, 2011).

For purposes of this section, the definition of preliminary and final design are as follows (CDOT, 2011):

- ▶ **Preliminary design** - Includes, but is not limited to, preliminary engineering and other activities and analyses, such as environmental assessments, topographic surveys, metes and bounds surveys, geotechnical investigations, hydrologic analysis, hydraulic analysis, utility engineering, traffic studies, financial plans, revenue estimates, hazardous materials assessments, general estimates of the types and quantities of materials, and other work needed to establish parameters for the final design.



Additional preliminary design activities include design and engineering activities to be undertaken for the purposes of defining project alternatives; completing the NEPA alternatives analysis and review process; complying with other related environmental laws and regulations; environmental justice analyses; supporting agency coordination, public involvement, and permit applications; development of environmental mitigation plans; development of typical sections, grading plans, geometric alignment, noise wall justifications, bridge type/size/location studies, temporary structure requirements, staged bridge construction requirements, structural design (sub and super structure), retaining wall design, noise wall design, design exceptions, guardrail length/layout, existing property lines, title and deed research, soil borings, cross sections with flow line elevations, ditch designs, intersection design/configuration, pavement design, storm/sanitary sewer design (plan/profile), culvert design, identification of removal items, quantity estimates, pavement details/elevation tables, and preliminary traffic control plans to be maintained during construction.

- ▶ **Final design** - Means any design activities following preliminary design and expressly includes the preparation of final construction plans and detailed specifications for the performance of construction work.

3.7.2 Approval to Proceed with Activities Beyond the Normal Scope of Preliminary Design

CDOT may request concurrence from FHWA to allow CDOT to go beyond the normal scope of preliminary design activities, as defined previously. Subject to FHWA approval, activities may be permitted to advance as part of preliminary design when they meet one or more of the following:

1. The activities are necessary to identify impacts and mitigation in the NEPA process
2. The activities are beneficial to enhance the project schedule and do not affect the NEPA decision
3. The activities provide vital information for other projects or agencies and do not affect the NEPA decision
4. Other reasons as deemed appropriate

Prior to activities proceeding, the CDOT RPEM and Program Engineer must write a letter to the FHWA Division Administrator and concurrence must be obtained.

3.7.3 Project Delivery Methods

CDOT currently uses three project delivery methods: design-bid-build, design-build, and construction manager/general contractor (CM/GC). These three project delivery methods are described in this section. Additional delivery methods may emerge as innovations continue.

Design-Bid-Build

Design-bid-build is the traditional project delivery method where design and construction are sequential steps in the project development process. With the design-bid-build method, CDOT may award a design contract to an engineering firm using a qualifications-based procurement process. When the preliminary and final design phase is complete, and project certification approval



indicating all environmental commitments is included, the final design is prepared and signed by the RPEM or their designee; a construction contract will be awarded to a contractor with the lowest responsive bid through a competitive process. Under this type of delivery, the NEPA decision is made after preliminary design is complete, prior to starting final design, and before the construction contract is awarded.

Design-Build

Colorado Revised Statute 43-1-1401 authorizes CDOT to use the Design-Build method.

Design-build is a project delivery method where both the final design and construction phases of the project are combined into one contract and awarded to a single entity. With this delivery method, preliminary design is typically completed in conjunction with the NEPA process, and before the design-build contractor is selected. In accordance with 23 CFR § 636.109(b)(6), the design-build contractor cannot be involved in the NEPA process or documentation. Specifically, subpart 636.109(b)(6) states: “the design-builder must not prepare the NEPA document or have any decision-making responsibility with respect to the NEPA process.” CDOT (or an independent consultant under CDOT’s direction) must prepare the NEPA document.

CDOT may award a design contract for preliminary design to an engineering firm using a qualifications-based procurement process, and that firm is then precluded from pursuing the design-build contract. With the design-build method, CDOT may award the design-build contract on a low-bid basis or best value basis through the evaluation of certain factors identified in a request for proposals. For design-build projects, the design-build contract may be awarded either before or after the NEPA decision. If the design-build contract is awarded before the NEPA decision, the design-build contract is divided into two notice-to-proceed phases. The notice to proceed Phase 1 scope is limited to preliminary design-related activities. The notice to proceed Phase 2 scope includes final design and construction. The contract should state that the range of alternatives will be considered, that the issuance of notice to proceed Phase 2 is conditional upon the selection of an alternative in the NEPA decision during notice to proceed Phase 1, and that all environmental commitments in NEPA and associated permits will be adhered to. This bypasses the project certification approval by the RPEM and adds risk regarding proper application of impact assessment and mitigation. This process is typically heavy in post-contract award oversight by CDOT environmental staff.

Other types of project delivery methods that CDOT can use include Private Public Partnerships (PPP), and design, build, operate, maintain, and finance.

Construction Manager / General Contractor (CM/GC)

CM/GC is a project delivery method where a two-phase contract is awarded to a construction manager/general contractor for preconstruction services and construction services. The CM/GC contractor works in conjunction with the design engineer, who is selected using a qualifications-based procurement process. For the CM/GC method, CDOT may award the CM/GC contract based on competitive selection based on qualifications, experience, best value, or any other combination of factors. Under the preconstruction phase of the CM/GC contract, preliminary design may occur if the design does not limit the reasonable range of alternatives. The CM/GC construction services



phase of the project may not be awarded until completion of the environmental review process. However, regulations allow the contracting agency to proceed with design activities at any level of detail for a project before completion of the NEPA review process at the expense of the contracting agency. CM/GC is generally the preferred method for environmental compliance since the construction contractor is finalizing the environmental requirements of the contract during final design BEFORE beginning construction. Therefore, not only is the environmental project certification able to be completed by the RPEM or their designee prior to construction, but the contractor is more familiar with what is expected of them regarding environmental issues and commitments.

CDOT's Design Bulletin 2011 Number 1 *Permissible Activities During the NEPA Process* provides additional guidance on innovative delivery methods and is available at:
https://www.codot.gov/business/designsupport/bulletins_manuals/design-bulletins/superseded/db-2011-01-nepa-activities/view

3.7.4 Design-Build and CM/GC Contracting Restrictions During the NEPA Process

As described previously, there are specific regulations and rules regarding the award of contracts to consulting and construction firms for project activities at various points in the NEPA process. These include conflict of interest and two stage contracting requirements. There are both Federal and state requirements. The following should be reviewed when anticipating contracting using these methods:

- ▶ 23 USC sec 112. Letting of Contracts
- ▶ 23 CFR sec 636. Design-Build Contracting
- ▶ 2 Code of Colorado Regulations (CCR) 601-15. Rules to Establish Requirements for Procurement by the Colorado Department of Transportation for Design-Build Contracts for Transportation Projects

3.7.5 Other Measures to Accelerate Project Delivery

MAP-21 has identified other permissible actions, such as advanced acquisition of real property interests and accelerated decision-making, to accelerate project delivery. An outline of MAP-21 is provided in Chapter 2, Section 2.6.

3.8 Incorporating Resiliency into NEPA

This section discusses the background, benefits and importance that CDOT leadership places on incorporating resiliency into all projects. The incorporation of resiliency into the NEPA process is currently in development. However, as the resiliency program continues to grow and the process is refined to include resiliency recommendations in projects during the NEPA process, new information will be updated in subsequent versions of the NEPA Manual.



3.8.1 Background

The State of Colorado defines resilience as “the ability of communities to rebound, positively adapt to, or thrive amidst changing conditions or challenges—including human-caused and natural disasters—and to maintain quality of life, healthy growth, durable systems, economic vitality, and conservation of resources for present and future generations” (Colorado House Bill 18-1394).

For transportation systems, resilience is the ability to keep our roads open and functional in the face of unexpected events and challenges. This can involve resilience of the assets themselves (e.g., the design and maintenance of bridges to withstand rare, yet catastrophic flood events), or adaptability of CDOT’s operations, maintenance, planning, etc., in the face of stressors and challenges. While the concept of resilience is not limited to physical threats, this is the main focus of resilience work in transportation.

Why Being Resilient Matters

Resiliency became a priority for CDOT after the 2013 flooding event along the Front Range caused severe damage to our roadway network, impacting roughly 500 miles of road and 50 bridges, and requiring more than \$700 million in emergency repairs. CDOT, businesses, and the traveling public all felt the financial impact and inconvenience.

Building on lessons learned from this and other events, CDOT has begun assessing its risk to threats to better prepare the transportation system in advance. Every day the system faces threats large and small, such as floods, high winds, avalanches, rockfall, and other unexpected events. While many of these threats are unavoidable, their effects do not have to be catastrophic or cause extended road closures. Building resilience is like an insurance policy. By identifying a threat and implementing a mitigation measure, we can reduce the risk to our system in the future. Proactive management of threats before they occur minimizes the resources needed to rebuild and restore service, minimizes the disruptions to people’s lives and to business activity, and lowers the cost to CDOT and the traveling public in the long run. National research on disaster damage and Federal government spending suggests that every \$1 spent on pre-disaster preparedness is worth \$6 in terms of future damage it mitigates.

This is why CDOT is planning for these adverse events to ensure our transportation system is better able to withstand the impact of events and recover quickly when they happen—ensuring that the routes we use every day to access our homes, businesses, schools, and hospitals remain safe and accessible to all. Examining how resiliency can be incorporated into NEPA is a major step in ensuring these objectives are met.

3.8.2 CDOT Policy Directive 1905.0

Policy Directive 1905 *Building Resilience into Transportation Infrastructure and Operations* became effective November 15, 2018, which required implementation of the principles of resiliency into Colorado’s transportation system practices. To help put this Policy into action, CDOT embarked on a project, “Integrating Resiliency at CDOT,” to demonstrate how information about risk and resiliency can be incorporated into day-to-day CDOT activities and/or daily business practices. CDOT established an Executive Oversight Committee composed of members of CDOT’s Executive Management Team and FHWA to help guide the project. Since NEPA is a required part of a project’s



life cycle, this section will discuss the benefits and processes to show how resilience can and should be included early on.

3.8.3 Benefits

CDOT's goal is to proactively manage risks, minimize disruptions to their transportation system, and adapt to changing conditions to provide continuous transportation service in Colorado. Natural hazards are the leading threat to CDOT's infrastructure both in cost to the assets CDOT owns and in risks to system users. Given the increasing prevalence of extreme weather events in Colorado, planning for resiliency is the first step in reducing that risk.

3.8.4 Process for Incorporating Resilience into NEPA

This section discusses the process on how to incorporate resiliency into NEPA.

Who Starts the Resiliency Discussion?

The agency managing the project should incorporate resiliency in the scope of work (if hiring a consultant) or the project workplan if being managed by the agency.

- ▶ CDOT (if involved) and local agencies should be informed at the onset that resiliency will be considered for potential at-risk assets so that they can help provide guidance. The degree of incorporation will be determined through an analysis process described below.
- ▶ If a local agency is managing the project, they should consider getting CDOT or an outside consultant to help lead the resiliency discussion.
- ▶ Agencies should understand that incorporating resiliency into NEPA is not a requirement and they will not be held accountable if they decide they do not want to incorporate resiliency; however, incorporating resiliency should be encouraged at all levels and understanding the benefits early on establishes a motive for people to WANT to incorporate resiliency into the project.

When Does the Resiliency Discussion Start?

- ▶ Resiliency should be first discussed as part of the reason for completing the project. It may only be a small component of the reason for the study but having the discussion early will create a "resiliency mindset" within the project team.
- ▶ Evaluation criteria related to resiliency should be analyzed and incorporated in either the Purpose and Need or goals.
- ▶ Evaluation criteria should focus on the big picture of resiliency such as how it would benefit the overall corridor, structures, or alignment. Design details like culvert size or rockfall fence types should not be included.
- ▶ These discussions will document the high-level need so future project phases can dive further into the detailed analysis to determine the most cost-beneficial options to reduce future risk.
- ▶ Resiliency measures should be included as part of the alternatives analysis.



How are Resiliency Benefits Calculated and Documented?

- ▶ The agency should perform a baseline cost benefit analysis using the Risk and Resiliency (R&R) tool¹ to assist in determining, at a high level, if resiliency features should be carried forward into the next phase of the project. A baseline evaluation should be completed and included in the study, and then a full analysis will be completed during scoping for design.
- ▶ Potential opportunities for funding resiliency in construction such as the PROTECT² formula and Federal grant opportunities should be examined and documented.
- ▶ A matrix of resilient features to include in a library of real-life examples should be created during the project. This library should be updated as projects are built so that others can see which resilient options provided a benefit to the transportation system.

How Should Resiliency Be Documented?

- ▶ The resiliency study process and conclusions should be documented in the NEPA decision document if resiliency is a major item in the Purpose and Need or goals.
- ▶ Resiliency measures should be included in the alternatives evaluation/analysis.
- ▶ Any major resiliency alternatives considered should be documented as they will be useful for future reference and assisting other project teams.

Incorporating resiliency in NEPA is a new philosophy that helps meet the intent of Policy Directive 1905. Building this practice into every NEPA process will enable CDOT to take a major step in protecting their transportation system that serves the people of Colorado. As with any new process there will be changes, improvements, and expansion to other levels of NEPA; therefore, embracing this concept will be a key to its success.

3.8.5 Resilient Recommendations in NEPA

As the program continues to develop, steps for identifying and documenting resiliency recommendations will be refined to incorporate resilient recommendations during the NEPA process. While the planning and PEL process is the time to lay the foundation for resilient ideas to be considered, other factors must be considered before they are incorporated into a project. Additional analysis will be needed to determine the most cost beneficial options to reduce future risk during future NEPA efforts.

¹ The R&R tool determines benefit-cost ratios of different assets based on threat type, the likelihood of an event occurring and the consequence to the owner and user. The tool is a quantitative risk assessment to estimate the potential loss to an asset from a given risk and calculate the reduction in risk or benefit to the asset for mitigating that risk. The resulting benefit-cost ratios can be used to determine the best mitigation method for reducing risk to an asset before an event happens or for repairing an asset after it has been damaged.
https://www.codot.gov/programs/planning/assets/risk-and-resiliency/risk-and-resiliency-tool_2022-01-20-1.xlsm

² Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) is an infrastructure program introduced in July 2022 by President Biden. The PROTECT formula is designed to help make surface transportation more resilient to natural hazards, including climate change, sea level rise, flooding, extreme weather events, and other natural disasters through support of planning activities, resilience improvements, community resilience and evacuation routes, and at risk coastal infrastructure.



3.8.6 Climate Change Effects

In January 2023, the CEQ issued interim final guidance for consideration of climate change effects in the NEPA process. Climate change effects related to a project could include accounting for vulnerabilities in planning and project development exacerbated by climate change or understanding how projects themselves might exacerbate or mitigate local environmental effects related to climate change.

Generally speaking, Colorado is expected to experience an increase in the magnitude and frequency of heat waves and wildfires, as well as extreme precipitation events, particularly in the winter months (Lukas, 2015). These climate change effects will have wide ranging impacts on Colorado's ecosystems, water resources, agriculture, energy, public health, outdoor recreation and tourism, and transportation infrastructure. For example, the increase in severity and frequency of heat waves, particularly in western Colorado, will affect the resilience of the state's roads and bridges. Road materials have a limited range of heat tolerance and bridges are particularly sensitive to extended high temperatures. These climate change effects will likely necessitate increased maintenance and construction costs, potential congestion problems, and access restriction at times (Klein, 2015). Freezing and thawing events can cause severe damages to roads and necessitate load restrictions, while more droughts can increase wildfires—causing road closures, reduced visibility, increased risk of mudslides, erosion, and flooding (Klein, 2015).

The 2023 guidance recommends practitioners identify these climate change effects early in the project development process and make note of any changes in project development, design, or alternatives to adapt to projected climate change effects. Further, the guidance recommends meaningfully engaging with communities with environmental justice concerns that may be impacted by the proposed action and consider how the impacts of the proposed action could potentially amplify climate change effects.

Because this new 2023 guidance is interim, it is possible that it will change after this version of the NEPA Manual is published. Project teams are encouraged to look for the most current version of the CEQ guidance issued and for current CDOT guidance regarding resiliency on CDOT's website.



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4. Environmental Impact Statement (Class I)

An Environmental Impact Statement (EIS) is prepared when a proposed action may significantly affect the quality of the human environment. The purpose of an EIS is to “serve as an action-forcing device to ensure that the policies and goals defined in the National Environmental Policy Act (NEPA) are infused into the on-going programs and actions of the Federal government” (Council on Environmental Quality ([CEQ] 40 Code of Federal Regulations [CFR] § 1502.1). An EIS is not merely a disclosure document; it is to be used by Colorado Department of Transportation (CDOT) in conjunction with other relevant information to plan actions and make informed project decisions.

A proposed action is what CDOT is thinking about doing when the EIS analysis begins. It may or may not be what is finally chosen to implement.

An EIS details the process through which a transportation project is developed, including consideration of a range of reasonable alternatives and detailed analysis of the potential impacts resulting from each. It documents compliance with other applicable environmental laws, regulations, and executive orders. This chapter outlines the process of an EIS from initiation to completion.

Agency coordination and public involvement are continuous throughout the process. Additional information on agency coordination and public involvement is included in **Section 3.1.2**, **Section 3.1.3**, and **Chapter 7**.

CEQ § 1508.27.

“Significantly” as used in NEPA requires considerations of both context and intensity.

4.1 EIS Initiation

CDOT is aware that as of September 1, 2020, EIS documents must be completed in 24 months, in compliance with 40 CFR 1501.10. FHWA is responsible for making a NEPA class determination on projects where FHWA is considered the lead agency. CDOT has developed a class of action determination process and will work with FHWA early in project development to determine which NEPA process activities and studies should be initiated to provide information to FHWA so that a NEPA class determination can be made for each likely EIS level project. The agencies will also develop a detailed project development schedule before formally asking for a determination that will include a targeted date for making a NEPA class determination and completion of the NEPA decision document.

For projects that are likely EIS level projects, the CDOT official authorized to sign EISs (or that official’s designee) will provide a letter applying to initiate the project to the Division Administrator. This letter of application will meet the requirements of 23 USC 139(e) and will contain the following:

1. The work to date, the termini, length, general location, and planning history of the proposed project
2. A list of other Federal approvals (e.g., Section 404 permits) anticipated to be necessary for the proposed project



3. The timeframe within which the environmental review process should be started and completed
4. A draft of the Notice of Intent (NOI)
5. Supporting documentation

The Division has 45 days to either initiate the EIS project or provide comments back to the applicant. CDOT and FHWA will publish the NOI in the Federal Register in accordance with 40 CFR 1501.9(d), and 40 CFR 1501.10(b)(2) stating that the agencies will complete the EIS within two years of the publication of the NOI. The publication date is the official start of the EIS. Compliance with 23 USC 139 is required and will help with efficient environmental reviews.

4.2 Activities Prior to Publication of a Notice of Intent (NOI)

Before initiating a new EIS and publishing a NOI for a major infrastructure project, the lead agency in consultation with the cooperating and participating agencies and project sponsor should:

- ▶ Identify cooperating and participating agencies for the project,
- ▶ Develop a draft Purpose and Need,
- ▶ Develop a draft Coordination Plan that includes a permitting timetable,
- ▶ Identify community and stakeholders affected and develop a Public Involvement Plan,
- ▶ Identify a preliminary range of alternatives,
- ▶ Determine the extent of analysis needed for each resource,
- ▶ Initiate applicable resource surveys/studies,
- ▶ Identify potentially significant environmental issues,
- ▶ Identify potential mitigation strategies, and
- ▶ Initiate permit activities as soon as possible, such as pre-application processes.

A major infrastructure project is one in which multiple Federal authorizations will be required to proceed with construction. The lead Federal agency has determined that it will prepare an EIS under NEPA, and the project sponsor has identified the reasonable availability of funds sufficient to complete the project.

CEQ § 1508.22.

“Notice of Intent” means a notice that an EIS will be prepared and considered. The notice shall briefly:

- describe the proposed action and possible alternatives;
- describe the agency’s proposed scoping process, including whether, when, and where any scoping meeting will be held; and
- state the name and address of a person within the agency who can answer questions about the proposed action and the EIS.



4.3 Agency Coordination in an EIS

At the beginning of the NEPA process that will likely be an EIS, the involved agencies will be identified, as defined below, in accordance with Section 6002 of Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU):

The direct recipients of Federal funds must serve as joint lead agencies. Typically, this is FHWA and/or the Federal Transit Administration (FTA) and CDOT. In addition to the traditional responsibilities, the lead agencies must provide increased oversight in managing the NEPA process and resolving issues.

- ▶ Federal agencies, other than the lead agency, that may have jurisdiction by law or special expertise regarding environmental impacts from the project (e.g., U.S. Fish and Wildlife Service [USFWS], U.S. Army Corps of Engineers [USACE], and U.S. Environmental Protection Agency [EPA]) serve as cooperating agencies. State or local agencies with special environmental expertise may also become a cooperating agency by agreement with the lead agencies (e.g., Colorado Parks and Wildlife [CPW] and the State Historic Preservation Officer [SHPO]). These cooperating agencies have a similar but higher degree of authority, responsibility, and involvement in the environmental review process than participating agencies.
- ▶ Federal, state, tribal, regional, and local government agencies that may have an interest in the project should be invited to serve as participating agencies. Non-governmental organizations and private entities cannot serve as participating agencies. Agencies participate in the scoping and NEPA process; identify, as early as practicable, issues of concern; and contribute to issue resolution.

Section 1305 of the Moving Ahead for Progress in the 21st Century Act (MAP 21) included a new category of participating agencies for Federal, state, and local agencies and Tribal nations that have an interest in the project. In addition, the lead agency must create a coordination plan for agency and public participation and comment. Section 1306 of MAP-21 establishes a framework for setting deadlines for decision-making with the following provisions:

- ▶ U.S. Department of Transportation (USDOT) may convene a meeting 30 days after a Draft EIS is issued with resource agencies and others to ensure all are on schedule to meet deadlines for project decisions;
- ▶ Establishes a process for issue resolution that may be initiated by USDOT; and
- ▶ Establishes financial penalties for agencies that fail to make a decision within the specified timeframe.

Section 1304 of the Fixing America's Surface Transportation (FAST) Act expands the breadth of MAP-21 to include all USDOT agencies in the definition of multimodal projects. Other changes include provisions to ensure transparency and clarity during programmatic reviews and to reduce multiple NEPA documents by requiring the lead agency to identify any Federal and non-Federal agencies that might have an interest in the project. Section 1304 also includes provisions that impose specific time frames for response by Federal agencies during the project initiation process, require a plan for coordinating public and agency participation within 90 days after the NOI to prepare environmental documentation, permit a lead agency to use an errata sheet to respond to



minor comments on a Final EIS, and finally establish a website where the status and progress of projects are publicly displayed.

One Federal Decision sets a government-wide goal of reducing the EIS process from publication of NOI to issuance of a Record of Decision (ROD) to not more than two years. Since 2010, USDOT has averaged over six years to obtain a ROD for its Environmental Impact Statements. The I-70 East EIS was a 13.5 year process from initiation of the project in July 2003 to completion of ROD 1 for Phase 1 of the project in January 2017.

The One Federal Decision Memorandum of Understanding for Major Infrastructure Projects (OFD MOU) establishes a process for environmental reviews of major infrastructure projects. The MOU describes the roles and responsibilities for the lead, cooperating, and participating agencies, as well as the permitting milestones. The OFD MOU identifies three concurrence points where the lead Federal agency must request the concurrence of cooperating agencies with authorization decision responsibilities:

- ▶ Purpose and Need (prior to issuance of the NOI)
- ▶ Alternatives to be carried forward for evaluation (prior to detailed analysis in the Draft EIS)
- ▶ Identified Preferred Alternative (prior to the Final EIS)

OFD information is available at:

<https://www.federalregister.gov/documents/2017/08/24/2017-18134/establishing-discipline-and-accountability-in-the-environmental-review-and-permitting-process-for>

The concurrence points are to prevent delay to permitting by ensuring agencies address key concerns and issues early in the process. Once a concurrence point is reached, the lead agencies will request written concurrence, and cooperating agencies have 10 days to concur or non-concur. Concurrence means confirmation by each agency that the information is sufficient for that stage in the process.

To ensure timely decision making, agencies shall complete EISs within 2 years unless a senior agency official of the lead agency approves a longer period in writing and establishes a new time limit. Two years is measured from the date of the issuance of the NOI to the date a ROD is signed.

4.4 Preparation of the Notice of Intent

Once the decision is made to prepare an EIS for a project, CDOT prepares a NOI for FHWA to publish in the Federal Register to inform the general public of the scope of the project. The NOI briefly summarizes the proposed action explaining who wants to do what, where, and why they want to do it. At this stage, it is uncertain what the outcome of the NEPA analysis will be. Therefore, the project must always be referred to as the proposed action. Any abbreviations used in the text must be minimal and, if used, must be clarified. The NOI should include the following information:

- ▶ **Agency** - Include lead and cooperating agencies. FHWA must be listed first in all cases when other agencies (Federal, state, or local) are listed as being involved in the preparation of the EIS.
- ▶ **Action** - Provide the title of the proposed action and a statement that the project is being evaluated through the EIS process.



- ▶ **Summary** - Summarize the elements of the proposed action, such as any information relevant to the project location, size, related actions, and area affected; briefly describe the scoping process for the particular action, including when and where the scoping meeting(s) will be held; and include other information obtained from the scoping meeting or field view.
- ▶ **Dates**
- ▶ **Addresses**
- ▶ **For Further Information Contact** - Provide a point of contact for the project, typically the FHWA Area Engineer and the CDOT project manager, in case the public or agencies have questions. Include name, telephone number, email address, mailing address, and fax number.
- ▶ **Supplementary Information** - Include supplementary information or studies that are relevant to the project and available to the public.

NOIs should be single-sided. For an example NOI and additional information on drafting a NOI, see https://www.environment.fhwa.dot.gov/legislation/nepa/guidance_preparing_env_documents.aspx#ab.

FHWA sends three (3) originals of the NOI, each signed in ink by the issuing officer, or one (1) original and two (2) certified copies to:

Federal Register (NF)
National Archives and Records Administration
700 Pennsylvania Avenue NW
Washington, DC 20408-00001

If a single original and two certified copies are sent, the statement “CERTIFIED TO BE A TRUE COPY OF THE ORIGINAL” and the signature of a duly authorized certifying officer must appear on each certified copy.

A record must be kept of the date each notice is mailed to the Federal Register. A copy of the notice, once published, is sent to CDOT for inclusion in the administrative record further discussed in Section 4.23.

4.5 Early Project Scoping

Scoping is the process by which a lead agency solicits input from the public and other agencies regarding the breadth and depth of issues to be addressed, as well as the minor issues related to a proposed action (CEQ 40 CFR § 1501.7). The scoping process can begin after the lead agency has published the NOI.

4.5.1 Agency Coordination Plan

The preparation of a Coordination Plan meets one of several requirements under Section 6002 of the SAFETEA-LU. The purpose of a Coordination Plan is to coordinate agency (FHWA, CDOT, cooperating and participating agencies) participation and comment during the environmental review process associated with the preparation of an EIS. In accordance with MAP 21, participating



agencies must concur on the project schedule if a project schedule is included in the project coordination plan. FAST Act requires a schedule to be part of a project coordination plan and requires the creation of a checklist to help project sponsors identify natural, cultural, and historic resources in the area of a proposed project. An Agency Coordination Plan integrates the NEPA requirements with other environmental review and consultation requirements to reduce delay in the environmental review process. Additional information on agency coordination is included in **Chapter 3, Sections 3.1.2 and 3.1.3. Appendix E** provides a template for an Agency Coordination Plan.

Those projects involving FTA can reference the guidance provided in **Chapter 10, Other Federal Agencies NEPA Compliance**.

4.5.2 Agency Scoping

The lead agency is required to invite the participation of any interested agencies, Native American tribes, project proponents, and other interested persons, and to consult with and obtain the comments of any Federal agency with jurisdiction by law or special expertise with respect to any environmental impact of the proposed action. NEPA encourages the use of scoping as early as reasonable in the project planning process and again at the initiation of the NEPA process.

Meetings and substantive contacts with government agencies regarding scoping must be documented. Correspondence with participating and cooperating agencies or the public becomes a part of the administrative record. Pertinent correspondence is also incorporated into the Draft and Final EIS, under “Summary of Public Involvement.”

For an EIS, the project team should discuss the early environmental review logistics outlined in Section 6002 of SAFETEA-LU, such as the following topics:

- ▶ **Agency Coordination Plan and Schedule** - As mentioned previously, the planned approach for public involvement and agency participation should be established early in the process and documented in a Coordination Plan. The approach should correlate with the project schedule. This plan and schedule should identify topics and issues specific to the project.
- ▶ **Reviews** - Determine the responsibility and schedules of each Federal agency to carry out its obligations under applicable laws concurrently and in conjunction with the review required under NEPA in a timely, coordinated, and environmentally responsible manner, so long as this does not impede its statutory obligations. **Chapter 8** establishes a procedure for reviewing CDOT NEPA documents, including EISs.
- ▶ **Issues of Concern** - Determine how best to coordinate and handle informative and timely communication between lead and cooperating agencies so that potential issues of concern can be identified and resolved through the appropriate procedure.

Refer to **SAFETEA-LU Environmental Review Process Final Guidance** - Pub L 109-59, Nov. 15, 2006, for additional information including, but not limited to, Project Initiation Letter (Questions 11-13); Cooperating Agencies (Questions 30 and 31); and Participating Agencies (Questions 21-29). If unsure who should be invited to participate in the NEPA process, consult with the RPEM.

<https://www.fhwa.dot.gov/hep/guidance/section6002/section6002.pdf>



4.5.3 Public Scoping

It is helpful to maintain a brief summary of public involvement activities and the issues raised as they occur (e.g., dates of key meetings and correspondence), so it can be easily added to the EIS without having to reconstruct the information from the project file.

Use simple terms understandable to a layperson.

The project team should send correspondence to property owners who may be affected by a project, as well as to organizations and individuals who have previously expressed an interest in the project or requested notification. In every case, the CDOT project manager must coordinate with the CDOT Right-of-Way office, and in some cases, the CDOT Public Relations office, to ensure that communications with property owners are handled appropriately and that a clear message is sent to the public.

Where there is a high level of public controversy, the formation of citizen committees and specialized efforts aimed at issue identification and resolution are encouraged. Public involvement efforts should follow the guidance provided in **Chapter 7**. Results from agency and public scoping can be used to better allow CDOT to focus on the topics and depth of analysis for the EIS.

4.6 EIS Documentation Content

CEQ regulations (CEQ 40 CFR § 1500 - 1500) and FHWA's Technical Advisory T6640.8A Guidance for Preparing and Processing Environmental and Section 4(f) Documents (FHWA, 1987) specify several required sections for an EIS. Technical information and studies developed to analyze impacts are summarized in the EIS and/or incorporated by reference. Technical studies that support the EIS are a part of the project file and are public documents that must be available for review.

4.6.1 Standardization of EIS Sections

CDOT has a recommended standard EIS format to ensure consistency in EISs across CDOT Regions. The following guidelines provide direction on the scale of the EIS, formatting, and how to present any supporting documentation:

- ▶ **LENGTH** - The adequacy of an EIS is measured by its functional usefulness in decision-making, not by its size or level of detail. Level of detail should be commensurate with the scale of the proposed project and the related impact.

However, the text of the final EIS (paragraphs (a)(4) through (6) of § [1502.10](#)) shall be 150 pages or fewer and, for proposals of unusual scope or complexity, shall be 300 pages or fewer unless a senior agency official of the lead agency approves in writing a statement to exceed 300 pages and establishes a new page limit.

- ▶ **LAYOUT** - Text should be presented in the portrait page setup printing format. Landscape format may be used to present large graphics, as necessary.
- ▶ **LINE SPACING** - In the spirit of CDOT going paperless, electronic copies are preferred, when applicable. Line spacing should be single-spaced and the document should be printed using both sides of the paper. Single-spaced, double-sided copies are suggested to save paper and reduce both EIS distribution and reproduction costs.



- ▶ **PAGE NUMBERING** - All pages in the EIS should be numbered and appear in a document footer at the bottom of each page. Page numbers should correspond to the appropriate chapter/appendix number of the EIS.
- ▶ **LINE NUMBERING** - All lines in the EIS should be numbered and appear in the left-hand margin. Line numbers begin back at 1 at the beginning of each new page.
- ▶ **FONT** - Print type should be of adequate size and style to be easily read. Museo Slab 500 and Trebuchet MS are the two primary typefaces of the CDOT Brand (CDOT, 2019c).
- ▶ **EXHIBITS** - Exhibits (figures, charts, tables, maps, and other graphics) are useful in reducing the amount of narrative required. Such exhibits should be technically accurate and of high quality. Avoid complex, busy figures, overly complex charts, and matrices when possible. EISs should be composed to convey to the reader, in understandable terms, the composition of the project and the extent of its impact on the human environment.
- ▶ **CROSS REFERENCING** – When referencing supporting technical documents, ensure the specific section number and section title are provided to assist the reader in accurately locating the reference. Cross referencing helps keep documents brief and concise.

The recommended CDOT outline for an EIS includes the following sections, which are discussed in detail in this chapter. However, Section 4(f) is discussed in detail in **Chapter 9** of this Manual, and public involvement is discussed in detail in **Chapter 7**.

- ▶ **EIS Cover and Consultant Information**
- ▶ **Cover Sheet**
- ▶ **Table of Contents**
- ▶ **Executive Summary**
- ▶ **Chapter 1 - Purpose of and Need for Action**
- ▶ **Chapter 2 - Alternatives Analysis**
- ▶ **Chapter 3 - Environmental Consequences (Including Mitigation Measures and Cumulative Impacts)**
- ▶ **Chapter 4 - Section 4(f) Evaluation, if required**
- ▶ **Chapter 5 - Agency Coordination and Public Involvement**
- ▶ **Chapter 6 - List of Preparers**
- ▶ **Chapter 7 - List of Agencies, Organizations, and Persons to Whom Copies of the EIS are Sent**
- ▶ **References and Citations**
- ▶ **Index**
- ▶ **Appendices**

Chapter 8, *Document Review Procedures*, of this Manual has a signature format checklist for the cover sheet.



4.6.2 EIS and Associated Technical Report Covers and Consultant Information

At the Region’s discretion, an EIS cover may be an illustration of a project; however, consultant logos and information are not to be used on the cover of any EIS or associated technical reports. Consultant information may be shown in the list of references for any supporting documentation for the EIS (i.e., Noise Impact Assessment, Air Quality Report, Preliminary Engineering Report). It is important for users of the EIS to know who prepared the document in case they have questions or comments. All consultant contributions should be documented in the list of preparers for an EIS.

FHWA Technical Advisory T6640.8A. 1987. *Guidance for Preparing and Processing Environmental and Section 4(f) Documents*. October 30 (FHWA, 1987).

AASHTO, ACEC, and FHWA. 2006. *Improving the Quality of Environmental Documents*. May.

https://environment.transportation.org/wp-content/uploads/2021/05/IQED-1_for_CEE.pdf

4.6.3 Cover Sheet

The cover sheet is a mandatory component of an EIS (CEQ 40 CFR § 1502.11). It should not exceed one page and must include the following components:

- ▶ Project name and CDOT project number
- ▶ Type of document (i.e., Programmatic or Supplemental EIS or ROD)
- ▶ Title and location of the project; identify route number, local name, project limits, and county in which project is located
- ▶ Responsible agencies, including lead agency, co-lead agency, and any cooperating agencies
- ▶ Federal authority for which the EIS is being prepared (i.e., Submitted pursuant to 42 USC 4332 (2)(c))
- ▶ Date and signature block for the CDOT Region Transportation Director, CDOT Chief Engineer, and FHWA Colorado Division Administrator (only RODs have the FHWA Colorado Division Administrator’s signature)
- ▶ An abstract or a brief project description limited to one paragraph, which includes the length, number of lanes, and major structures involved (bridges, interchanges, park-n-Ride lots, ramps, etc.). For a ROD, the abstract should include significant impacts that would result from the preferred alternative.

Appendix C, *Style Guide for NEPA Documents*, provides an example of a cover sheet.

4.6.4 Acronyms and Abbreviations

An abbreviation is a shortened form of a word and can be useful when writing technical documents as they can be used in place of bulky phrases to make sentences easier to read.

On first use, spell out the word, then put the acronym in parentheses immediately following the spelled-out version. You can use acronyms on second reference but avoid using too many because they may clutter the text. Be sure to run an acronyms check following the final draft.



4.6.5 Table of Contents

The table of contents must include the major EIS components (as discussed in this section), as well as a list of figures, tables, and appendices. It should be of sufficient detail to provide adequate direction to users reading the EIS and allow the reader to easily navigate the document.

4.6.6 Executive Summary

An executive summary is a mandatory component of an EIS (CEQ 40 CFR § 1502.12). The summary forms the reader's first and lasting impression of the EIS and should include sufficient information to allow the reader to gain a complete understanding of the issues addressed in the body of the EIS. It should list all reasonable alternatives considered, major environmental resource impacts, and proposed mitigation measures in a comparative form. The executive summary should be succinct (usually not exceeding 15 pages), but of sufficient detail to serve as a stand-alone document. The use of a matrix or table(s) is encouraged to present information concisely.

The executive summary in a Final EIS is more conclusive than in a Draft EIS. In the Final EIS, the executive summary should document specific findings, results of consultations, recommendations, commitments, and major changes from the Draft to Final document. For an EIS, the executive summary should provide the components that will be used in final decision-making and later be documented in the ROD.

In general, the executive summary should highlight for the reader the major findings and conclusions of the environmental analyses and include the following:

- ▶ Purpose of and need for the project.
- ▶ Project issues and impacts (and areas of controversy and unresolved issues if applicable) in proportion to their importance.
- ▶ A reasonable range of alternatives considered (and identification of the preferred alternative if applicable).
- ▶ Principal environmental issues and key differences among alternatives (highlight any significant impacts, impacts that cannot be avoided, impacts that can be mitigated, and additional review or permits required before taking action).
- ▶ Any recommendations, commitments, mitigation, or interagency agreements that may have been reached over the course of the study (if applicable).
- ▶ Appropriate findings reached and concluding statement of findings to comply with Executive Orders 11990 (Wetlands) and 11988 (Floodplains). A statement of no findings is required if no wetlands or floodplains are involved in the project.
- ▶ Appropriate findings reached and concluding statement of findings where there is involvement with Section 4(f) or Section 106 resources. Discussion must state that no feasible and prudent alternative exists and that all practicable measures to minimize harm have been taken. A statement of no findings is required if there are no Section 4(f) or Section 106 resources involved in the project.
- ▶ An effects determination for threatened and endangered species or their critical habitat and coordination with the USFWS. A statement of no findings is required if there are no threatened and endangered species or their critical habitat involved in the project.



- ▶ Appropriate findings reached and concluding statement of findings where there is involvement with prime or unique farmlands and coordination with the Natural Resources Conservation Service.

CEQ § 1501.12 “Summary.”

Each EIS shall contain a summary which adequately and accurately summarizes the statement. The summary shall stress the major conclusions, areas of controversy (including issues raised by agencies and the public), and the issues to be resolved (including the choice among alternatives). The summary will normally not exceed 15 pages.

4.6.7 Project Description

The EIS for a proposed transportation plan includes a detailed project description. The following information is required, but not limited to:

- ▶ A brief description of the existing transportation system
- ▶ A location map that shows the project limits and displays key landmarks
- ▶ A description of the limits of the proposed project, including its length and logical termini
- ▶ The name of the city and county where the project is to be located
- ▶ A description of the proposed improvements, including the number of lanes, type of median, and any major structures

4.7 Purpose of and Need for the Project

CEQ regulations implementing NEPA require that an EIS include a statement of purpose and need. The purpose and need chapter, typically Chapter 1 in an EIS, provides a brief but important overview of information that must be considered in defining a purpose and need statement for the project. It is essentially the foundation of the EIS and decision-making process. FHWA issued guidance that summarizes the three key points relative to the purpose and need statement (FHWA, 1990). The guidance states that the purpose and need statement should be:

- ▶ Justification of why the improvement must be implemented;
- ▶ As comprehensive and specific as possible; and
- ▶ Reexamined and updated as appropriate through the project development process.

CEQ § 1501.13 “Purpose and Need.”

The statement shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.

The purpose and need chapter in the EIS takes the goals, objectives, and corridor visions developed in a transportation plan to the next logical step—implementing those goals and objectives through on-the-ground project development. The planning level goals and objectives describe the transportation problem(s) that need to be addressed. This chapter also looks into the future an average of 20 years (based on planning horizons) to determine the needs of the project area in that future. **Chapter 3** of this Manual discusses CDOT’s planning and project development process.



A NEPA purpose and need statement within the chapter provides the details about the transportation-related needs and describes the what and why of the project. The purpose and need statement defines the criteria under which transportation alternatives are initially evaluated. Build alternatives should fully address the stated purpose and need. Those alternatives that do not fully address the purpose and need can be eliminated from further consideration. A proposed project should have clearly identified objectives for improving transportation conditions, such as:

- ▶ Achieving a transportation objective identified in an applicable statewide or metropolitan transportation plan
- ▶ Serving national defense, national security, or other national objectives, as established in Federal laws, plans, or policies
- ▶ Consistent with approved planned land use, or growth objectives established in applicable Federal, state, local, or tribal plans

A proposed project's purpose and need should be well defined and help refine the reasonable alternatives that should be analyzed to address the transportation problem.

The Proposed Action is not discussed in the purpose and need statement. The statement should be an honest, full explanation of why the agency is considering the action and what the agency objectives include.

Transportation planning data developed for regional, sub-area, and corridor planning can be an excellent primary source of information to assist in establishing a purpose and need statement. The purpose and need should briefly describe the project context including actions taken to date, other agencies and governmental units involved, actions pending, schedules, etc.

The resulting purpose and need chapter should be succinct yet include enough information to clearly identify a problem and a need to fix it that may require the expenditure of funds. It should be narrowly defined enough to serve as an effective means to screen/evaluate alternatives but not so narrow as to preclude reasonable alternatives. The initial purpose and need statement may change during the NEPA process if new information or needs are discovered or public input provides suggestions for improving the purpose and need statement. If the initial purpose and need statement changes substantially during the process, the lead agency will need to be cognizant of the impacts that will have on the selection of alternatives or the criteria used to evaluate and screen alternatives. The purpose and need statement should identify both the underlying need and purpose for the Proposed Action –what CDOT is planning to accomplish and why it is necessary—but cannot predetermine a particular alternative. This guidance does not mandate identification of any particular alternative other than the No Action alternative within the purpose and need statement but does recognize that the statement will by necessity be project specific.

The purpose and need statement should be an honest, full explanation of why the agency is considering the action and what the agency objectives are.

The purpose and need statement is vital to meeting the requirements of Section 4(f) of the Department of Transportation Act (49 USC 303); Executive Orders 11990 (Wetlands) and 11988 (Floodplains); and Clean Water Act Section 404(b)(1) Guidelines. The Section 404(b)(1) Guidelines are the only regulations other than NEPA that require a purpose statement. In addition, under the NEPA/404 Merger Process, the USACE, in consultation with the USEPA and USFWS, must concur on



the purpose and need statement for projects that require an individual Section 404 permit. This enables USACE approvals under the Clean Water Act to move forward in parallel with the NEPA process. In accordance with SAFETEA LU, the lead agency should develop the purpose and need statement and provide opportunities for participating agencies and the public to provide input.

The project's need may be considered as the transportation problem, while the purpose may be thought of as the intention to solve the problem. The CDOT Environmental Stewardship Guide (CDOT, 2017a) incorporates FHWA guidance and interpretive memoranda that provide additional guidance on how the purpose and need statement is to be written. Further guidance regarding the development of a purpose and need statement can be found in CDOT's Purpose and Need Guidance, FHWA Technical Advisory T6640.8A (FHWA, 1987), FHWA Memorandum *The Importance of Purpose and Need* (FHWA, 1990), and American Association of State Highway and Transportation Officials (AASHTO) Practitioner's Handbook *Defining the Purpose and Need and Determining the Range of Alternatives for Transportation Projects* (AASHTO, 2016a). For an EIS, purpose and need statements must be made available for public review.

FHWA Technical Advisory T6640.8A and FHWA Memorandum, *The Importance of Purpose and Need* (September 18, 1990) <https://www.environment.fhwa.dot.gov/projdev/tdmneed.asp>

AASHTO Practitioner's Handbook *Defining the Purpose and Need and Determining the Range of Alternatives for Transportation Projects* (AASHTO, 2016a) <https://environment.transportation.org/wp-content/uploads/2021/05/ph07-2.pdf>

4.7.1 Purpose of the Project

The project purpose statement is a broad statement of the primary intended transportation result and other related objectives to be achieved by a proposed transportation improvement. The purpose must be written clearly and must be supported by the identified needs. It should not include planning decisions or be written so that the selection of a specific alternative is predetermined.

The project purpose statement guides the range of alternatives that will be considered in response to the established need. As such, the statement of purpose should be broad enough to encompass a reasonable range of alternatives, but it need not be so broad that it encompasses every possible alternative. Conversely, it should not be so narrow that it precludes a range of alternatives that could reasonably meet the defined objectives or restrict decision-makers' flexibility in resolving conflicting interests.

The following are examples of possible project purposes:

- ▶ Improve traffic operations
- ▶ Accommodate high traffic volumes
- ▶ Increase multimodal travel options
- ▶ Provide lane continuity and balance
- ▶ Optimize highway system operations
- ▶ Improve connectivity among transportation modes
- ▶ Improve pedestrian/bicycle mobility
- ▶ Increase safety for motorists, pedestrians, and bicyclists
- ▶ Reduce congestion and delays



Many transportation projects are proposed with the expectation that they will help promote economic growth; however, the potential for economic development benefit does not necessarily mean that economic development should be defined as a project purpose. In most cases, the project purpose can best be expressed by addressing the transportation purpose (e.g., improve traffic operations, accommodate high traffic volumes, reduce congestion and delays, etc.) that would occur due to the planned economic development/land use changes. By focusing on the transportation system, this approach avoids defining a purpose so broad that non-transportation alternatives would be necessary for consideration to address.

Similar to economic development, environmental protection is often proposed as a project purpose. Considerations that relate to the manner in which the project is carried out, such as minimizing or mitigating environmental impacts, should be distinct from the purpose and need. Although environmental protection and community enhancement are important values/visions for a project and should be incorporated into the alternatives analysis as evaluation criteria, these issues should not be a part of the purpose and need statement itself.

4.7.2 Need for the Project

The need for the project is a more detailed explanation, with supporting data, of the specific transportation problems, deficiencies, or opportunities that exist, or are expected to exist in the future that justify the Proposed Action. The needs should be demonstrated through specific quantitative investigation. Each need for action should enable decision-makers to evaluate alternatives by providing measurable objectives or specifications.

Major milestones such as the Purpose and Need Statement should be documented in project meeting minutes and identified as a concurrence point.

The need for the project should provide the rationale for how the project addresses the identified problems, issues, and concerns. This section must outline and discuss any established community goals and objectives that pertain to the project. This section serves as the foundation for the proposed project and provides the principal information upon which the No Action alternative discussion is based. This section establishes the rationale for pursuing the action and explains how the proposed actions are consistent with local transportation planning, local comprehensive planning, land use planning, and growth management efforts.

The following are examples of possible project needs:

- ▶ **System Linkage** - Describe how the project fits into the existing transportation system.
- ▶ **Transportation Demand** - Describe relationships to any statewide plan or other transportation plan together with an explanation of the project's traffic forecasts.
- ▶ **Capacity** - Describe how the capacity of the existing transportation system is inadequate for the present or projected system load. Clearly define what level(s) of service are required for existing and proposed facilities.
- ▶ **Legislation** - State the Federal, state, or local governmental mandates that must be met by the project.



- ▶ **Social Demands or Economic Development** - Clearly identify all planned economic development/land use changes driving the need for the project. These include new employment, schools, land use plans, and recreation.
- ▶ **Modal Interrelationships** - Describe how the proposed project evaluates modes of transportation as an alternative to highway travel and how the project interfaces with and serves to complement other transportation features existing in the corridor, including existing highways, airports, rail and intermodal facilities, and mass transit services.
- ▶ **Safety** - Describe the existing or potential safety hazards within the project area, including data related to existing accident rates and other plans or projects designed to improve the situation.
- ▶ **Roadway Deficiencies** - Describe any existing deficiencies associated with the project area roadways (e.g., substandard or outdated geometrics, load limits on structures, inadequate cross section, or high maintenance costs).

The statement of need should consist of a factual, objective description of the specific transportation problem with a summary of the data and analysis that supports the conclusion that there is a problem requiring action. Quantified data, such as vehicle miles of travel, travel speeds, time of day characteristics, current and projected levels of service, accident rates, and/or road condition assessments, should be used where applicable. Full documentation, such as reports and studies developed in the project planning process, should be referenced in the need statement and must be available upon request of reviewing agencies and the public.

Often multiple deficiencies or desires establish the project need(s). These needs can be separated into two categories: area-wide needs and project corridor needs. Area-wide needs relate to system deficiencies and local government or community desires. Project corridor needs relate to route deficiencies and specific community desires within the corridor. Examples of each are provided below.

- ▶ **Area-Wide Needs:**
 - Federal, state, or local government authority desires or requirements
- ▶ **Project Corridor Needs:**
 - System linkage
 - Capacity
 - Structural sufficiency

4.7.3 Purpose and Need and the NEPA/404 Merger

A merger agreement has been developed between CDOT and the USACE for projects that must comply with NEPA and that also require a Clean Water Act Section 404 Individual permit. The merger process facilitates early and ongoing integration and coordination of Clean Water Act and NEPA requirements. For these types of projects, two or more agencies (CDOT and USACE) would have a decision to make for the same proposed action and the responsibility to comply with NEPA or a similar statute. During the development of the purpose and need for the project, those agencies should jointly develop the statement.



One of the main steps in the NEPA/404 Merger process is for the project team to present the draft purpose and need, goals and objectives, and evaluation criteria to the USACE for concurrence. The project team will then identify any alternatives screened out during preliminary screening based on practicability or significant impacts to the natural environment. This decision-making process should be thoroughly documented to provide evidence that the lead agency has not inappropriately eliminated the “Least Environmentally Damaging Practicable Alternative” (LEDPA) from further consideration and receive USACE concurrence. The CDOT NEPA/404 Merger process is a sequential process that requires concurrence at three key milestones: 1) Purpose and Need and Alternative Screening Criteria, 2) Alternatives Selected for Detailed Evaluation, and 3) the Preferred Alternative.

The CDOT NEPA/404 Merger Agreement can be found on CDOT’s website at:
<https://www.codot.gov/programs/environmental/wetlands/assets/final2019nepa404merger.pdf>

4.8 Alternatives Analysis

The alternatives analysis chapter in the EIS clearly indicates why the particular range of alternatives was developed, the process used, and public and agency input. Alternatives analysis generally occurs in Chapter 2 of an EIS. NEPA and its related regulations require that a range of reasonable alternatives and a No Action alternative be presented and evaluated in detail in an EIS. The language of NEPA has been interpreted to require that FHWA take a hard look at alternatives that result in avoidance or minimization of impacts to the environment, community, or economy. Alternatives analysis can be the single most costly aspect of developing an EIS and will require close management by the CDOT project manager.

CEQ regulations identify the alternatives chapter as the heart of the EIS. The alternatives chapter requires an agency to “rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated” (CEQ 40 CFR § 1502.14). It is not required that all possible alternatives be considered, rather that a reasonable range of alternatives be presented.

There is a logical way to step through the alternatives process that makes their analysis and screening easier to obtain.

Typically, an alternatives process occurs in the following steps:

1. Develop and describe all reasonable alternatives for the proposed action
2. Compare and screen all reasonable alternatives to eliminate unreasonable alternatives
3. Compare alternatives to determine differences in impacts and achievement of meeting purpose and need
4. Identify the preferred alternative
5. Issue a ROD selecting an alternative for implementation

As emerging transportation technologies become available such as autonomous vehicles, these priorities can be identified in the project purpose and need statement and alternatives analysis. Analysis of such technologies in NEPA will continue to evolve as technologies are implemented.



4.8.1 Developing Reasonable Alternatives to the Proposed Action

The CEQ defines the term “reasonable” as those alternatives that are “practical and feasible from a technical and economic standpoint using common sense” (CEQ NEPA’s 40 Most Frequently Asked Questions, Guidance, Question 2A). The key to a successful project is the exercise of professional judgment in determining the reasonableness of an alternative. This judgment is informed by experience and case law. Reasonable alternatives are to be evaluated and decisions made in the overall public interest taking into consideration the need for safe and efficient transportation, social, economic, and environmental impacts of the proposed transportation improvements, and national, state, and local environmental protection goals (FHWA and FTA, 23 CFR § 771.105).

Figure 4-1 provides an example of an alternatives development process.

For an EIS, a reasonable range could include:

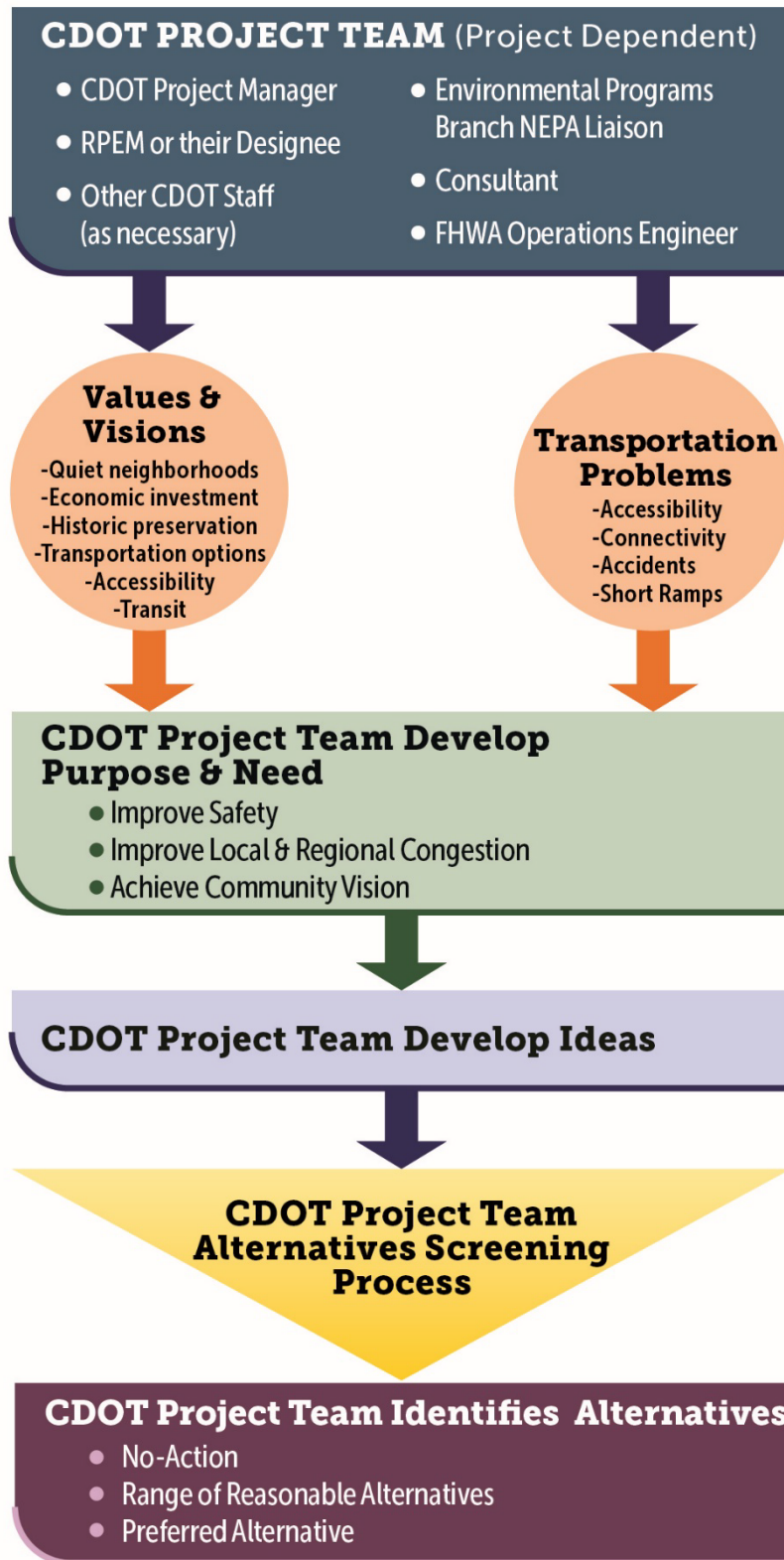
- ▶ A variety of modes (even those the lead agency cannot pursue)
- ▶ A reasonable number (representative examples)
- ▶ Avoidance alternatives (these usually get developed in accordance with other parallel regulations under the NEPA umbrella [such as Section 404, Section 4(f), Section 7, etc.])

For complete text of the NEPA language regarding reasonable alternatives, see CEQ 40 CFR § 1502.14 at the following link:

<https://ceq.doe.gov/docs/laws-regulations/NEPA-Implementing-Regulations-Desk-Reference-2022.pdf>

Alternatives should be developed to achieve the purpose of and need for the project while providing a reasonable range of alternatives for equivalent evaluation with the No Action alternative. The advantages and disadvantages of each alternative will be compared in the EIS and assessed to determine how each alternative addresses the transportation issues identified in the purpose and need, as well as potential impacts to resources identified in the Affected Environment.

Figure 4-1. Example Alternatives Development Process





CEQ requires that agencies:

- ▶ Devote substantial treatment to each alternative considered in detail so that reviewers may evaluate their comparative merits
- ▶ Include reasonable alternatives not within the jurisdiction of the lead agency
- ▶ Include the No Action alternative and carry it through screening
- ▶ Identify the agency’s preferred alternative or alternatives, if one or more exists, in the Draft EIS and identify such alternative in the Final EIS unless another law prohibits the expression of such a preference
- ▶ Include appropriate mitigation measures not already included in the alternatives
- ▶ Identify those aspects of the preferred alternative that were designed to be mitigation measures

As alternatives are defined, it is important that the scope of the alternative be comprehensive enough to address the project’s purpose and need. FHWA regulations state that to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated, the proposed action evaluated in the EIS must (FHWA and FTA, 23 CFR § 771.111(f) and CEQ, 40 CFR § 1508.25):

- ▶ Have logical termini and be of sufficient length to address environmental matters on a broad scope
- ▶ Have independent utility or independent significance; that is, be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made
- ▶ Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements

Further information on logical termini and independent utility can be found at FHWA and FTA, 23 CFR § 771.111(f).

The Federal courts have considered a fourth factor: whether or not the proposed project “irretrievably commit[s] Federal funds for closely related projects” (Piedmont Heights Civic Club v. Moreland, 637 F2d 430 [5th Cir. 1981]).

Therefore, for a transportation corridor where the improvements are so related to one another that they should be considered one project, the project scope should not be selected solely on the basis of what is programmed in a short-range improvement program. Instead, the several related construction projects should be evaluated as one project. Construction can be programmed for shorter sections or finite construction elements as funding permits. If a project is not funded and funding cannot be reasonably expected within the planning horizon for the project, a determination of whether a project-specific EIS, Tiered EIS, or PEL document is applicable for the corridor should occur in consultation with FHWA and CDOT. Tiered documents and RODs are further discussed in **Section 4.20** and **Section 4.21**. PEL documents are further discussed in **Chapter 3, Section 3.2**.

With the proper project scope determined, decision-makers and the public will have a clearer picture of the transportation requirements in the project area and a better understanding of how the proposed project will meet the purpose and need.



A comparative table of all alternatives and associated impacts can be presented in common terms that the public can easily understand. This comparison follows the resource-specific Affected Environment presentation and alternative impact evaluation and provides a comparison among all evaluated alternatives at a logical place in the document.

What constitutes a reasonable range of alternatives depends on the nature of the proposal and the facts in each case. The number of alternatives, within a reasonable range, is directly related to the purpose and need statement. A well-defined purpose and need section will assist in limiting the number of alternatives that will achieve the project goals and provide the basis for a legally defensible alternatives discussion. FHWA Technical Advisory T6640.8A provides a detailed discussion of the factors that might be considered in determining what constitutes a reasonable range of transportation alternatives.

Transportation System Management (TSM) and Transportation Demand Management (TDM) Alternatives

While each component of TSM programs may not be used exclusively as an alternative, components may be used in conjunction with broader alternatives to provide a complete package of transportation services to the public. These programs emphasize getting the most capacity out of existing or proposed transportation facilities.

Consider TSM alternatives to maximize the efficiency of the present system. These limited construction alternatives are generally relevant only for major projects in urban areas with a population greater than 200,000 residents. TSM alternatives include options such as fringe parking, ridesharing, mass transit (e.g., bus, rail), high-occupancy vehicle (HOV) lanes, and traffic signal timing. HOV lanes should be considered as an alternative for all major urban projects. For rural areas, an alternative that considers reconstruction and rehabilitation of the existing system should be included before selecting an alternative on a new alignment.

TDM strategies are implemented to make transportation systems more efficient, safe, or convenient. TDM strategies focus on changing or reducing travel demand, particularly at peak commute hours, instead of increasing roadway capacity, to make more efficient use of the current roadway system. TDM strategies include carpooling, vanpooling, guaranteed ride home programs, walking, bicycling, alternative working arrangements (e.g., telecommuting, flex-place, and flextime), and congestion pricing (such as variable toll fees).

FHWA guidance indicates that TSM/TDM alternatives should be considered even though they may not be within the existing FHWA funding authority (FHWA Technical Advisory T6640.8A). Their evaluation and consideration may require coordination with entities outside CDOT, such as regional transportation authorities, major employers, or major destinations (such as sports venues, ski areas, or other entertainment venues). Agreements must be secured with these entities before considering TSM/TDM alternatives to be viable.

CDOT has established statewide guidelines for the evaluation of managed lanes. These Guidelines support Policy Directive (PD) 1603.0 to ensure that managed lanes are strongly considered during the planning and development of capacity improvements on state highway facilities.



Several factors contribute to the emergence of managed lane projects as a tactic for consideration in congested urban areas. With limited financial resources to build new infrastructure, right-of-way (ROW) needs associated with corridor expansion, and the recognition that we cannot build our way out of congestion, managed lanes provide a solution for enhancing mobility, mode choice, and public-private partnerships to accommodate Colorado’s population and vehicle traffic growth.

CDOT’s Managed Lanes Guidelines are a tool designed to support project managers and other practitioners in addressing PD 1603.0, as well as determining the viability of managed lanes for new projects. The Guidelines are a collaborative effort among CDOT’s Transportation Systems Management and Operations (TSM&O), the Division of Transportation Development (DTD), the Division of Transit and Rail (DTR), the Office of Policy and Government Relations, the High-Performance Transportation Enterprise (HPTE), and CDOT Region 1 and 2 staff representatives. The Guidelines were developed based on previous implementations within the state, national best practices, and oversight of a CDOT Leadership Team.

CDOT’s **Managed Lanes Guidelines** can be found at: https://www.codot.gov/safety/traffic-safety/assets/cdot-managed-lanes-guidelines_february-2019.pdf

No Action Alternative

Either the term No Action alternative or No Build alternative may be used to explain the scenario of no action, but they should not be used interchangeably within the same document.

The No Action alternative is included as one of the alternatives evaluated. CEQ regulations (CEQ 40 CFR § 1502.14) require the consideration of the existing situation without the proposed action. This is called the No Action alternative and includes other programmed activities already in the Statewide Transportation Improvement Plan (STIP), approved through the NEPA process, or longer-term maintenance activities that would occur even if none of the build alternatives is selected.

The No Action alternative is fully assessed in the same manner as the other alternatives as an alternative and is used as a baseline comparison for environmental analysis against which to compare the impacts of all other alternatives.

The No Action alternative can have two meanings: 1) continue present management activities but do not do the proposed project and 2) do not take any action. It is important to indicate to readers which meaning of No Action the EIS is using. The No Action alternative also includes other projects already approved. The No Action alternative should always be fully analyzed and discussed for comparison.

The EIS should thoroughly describe the current transportation need and paint a picture of a future in which the proposed project is not implemented. For purposes of travel demand forecasting and identifying resource impacts directly related to traffic volume, such as air quality and noise, transportation projects currently planned in the project vicinity should be included along with the No Action alternative. Transportation projects that may occur independent of the No Action alternative can be located in the Transportation Improvement Plan (TIP) and STIP. These other transportation projects have committed or identified funds for construction and will be made regardless of whether or not any other improvements are made as part of the proposed action.



Travel demand forecasting predicts traffic conditions that are expected to occur on the transportation system in the design year.

The current TIP/STIP can be found at: <https://www.codot.gov/programs/planning/transportation-plans-and-studies/stip>

4.8.2 Comparing Alternatives

All reasonable alternatives under consideration need to be rigorously explored and evaluated objectively. Each alternative should provide equivalent detail, allowing the reader to evaluate their comparative merits. This does not dictate an amount of information to be provided for each alternative; rather, it prescribes a level of treatment that may, in turn, require varying amounts of information to enable a reader to evaluate and compare alternatives. Each alternative should be described briefly using maps, plans, or other visual tools. At a minimum, the discussion of each alternative should include a clear, non-technical description of the project concept, location, termini, costs, status of ROW needs, and any features of the project that help to clarify differences among alternatives. The Alternatives chapter of the EIS should be devoted to describing and comparing the alternatives, with the impact discussion limited to a concise summary in a comparative form. The Environmental Consequences chapter of the EIS is the appropriate place to discuss detailed scientific analysis of the direct and indirect environmental impacts of each alternative. However, redundancy between these sections should be avoided.

4.8.3 Screening Alternatives

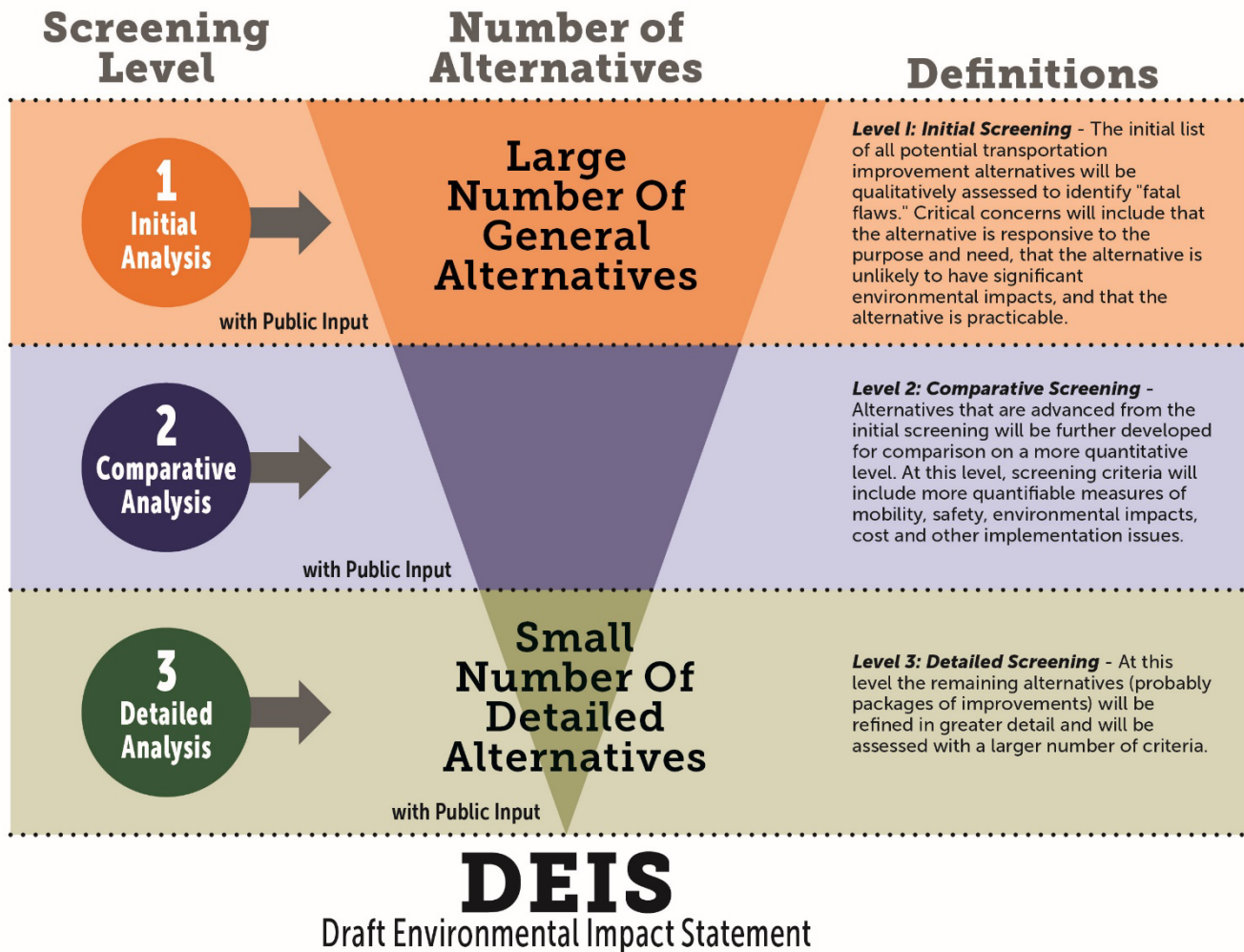
For EISs, the evaluation may consider many alternatives and screen them down several times before a preferred alternative is identified. The CDOT project manager and project team should take special note that the No Action alternative is always included as an alternative.

The EIS must include the rationale for screening out alternatives that are impractical or unfeasible from a technical, environmental, or economic standpoint. It is important to be consistent when using the developed rationale for screening alternatives. In some cases, technical memoranda that provide additional details about the alternative screening process are helpful. This documentation should be summarized in the EIS and should be made part of the project file.

Just as important as analyzing alternatives is explaining why alternatives have been eliminated from consideration during the NEPA process (the criteria used, the point in the process where alternatives were eliminated, and disclosure of the parties involved in establishing the criteria for assessing alternatives and measures of effectiveness). The alternatives documentation should also define the role of other applicable regulations such as Clean Water Act Section 404, Section 4(f) of the Department of Transportation Act, and Section 106 of the National Historic Preservation Act in avoidance and minimization. Care should be taken in the screening process not to be arbitrary or capricious and to ensure that the form and extent of screening is within the discretion of the lead agency, typically FHWA for an EIS.

Screening may be simple and straightforward, depending on the complexity of the project, or may involve several levels of analysis before the list of alternatives can be narrowed to a reasonable set for final evaluation. **Figure 4-2** provides an example alternatives screening approach. Although depicted on **Figure 4-2** as three levels of screening, screening may consist of more or fewer screening levels depending on the project.

Figure 4-2. Example Approach to Narrowing Down Alternatives



In preparing an EIS, it is important to be explicit about the rationale for generating, evaluating, and eliminating alternatives. Being as specific as possible is also essential – if an alternative is eliminated from further consideration because it “does not meet the purpose and need,” there should be adequate explanation of why this is true.

Requirements under SAFETEA-LU must be reviewed to determine how to include agencies and the public in the development and screening of alternatives, as the approach may vary among projects. Agencies and the public must have an opportunity to provide input/comments on the range of alternatives developed for the project. See **Chapter 2** for the SAFETEA-LU discussion.

CEQ requires that alternatives considered in the planning process and subsequently rejected be briefly described and the reasons for their elimination discussed (CEQ 40 CFR § 1502.14[a]). Alternatives suggested by cooperating and participating agencies or the public during scoping that are eliminated without detailed study should be adequately documented and discussed as to why



they were eliminated. Include sufficient detail in the EIS to ensure legal requirements have been met and are well documented.

4.8.4 Screening and the NEPA/404 Merger

Projects being conducted under the NEPA/404 merger should document the reasons why none of the eliminated alternatives could be considered the LEDPA and, therefore, require full USACE evaluation under their guidance. The project team should present results of the alternatives screening to USACE for concurrence (provide documentation supporting screening of alternatives based on quantitative objectives where data are available). The project team will then identify primary pros/cons of remaining alternatives with respect to aquatic ecosystems and other potentially significant effects.

The **USACE guidance** for preparing an alternatives analysis can be retrieved at:

https://www.swf.usace.army.mil/Portals/47/docs/regulatory/Handouts/Preparing_An_Alternatives_Analysis.FINAL.pdf

4.8.5 Selecting a Preferred Alternative

The preferred alternative is generally the one that the lead agency, typically FHWA, believes would best fulfill CDOT's mission and responsibilities while meeting project purpose and need, minimizing impacts to the environment (natural, cultural, and socioeconomic), and is supported by the public and resource agencies. Typically, alternatives are adjusted throughout the NEPA process to minimize harm to the environment and communities. The preferred alternative is typically the alternative that has incorporated these changes and achieves the best balance among needs, impacts, costs, etc.

Evaluation of alternatives should present the preferred alternative and all of the alternatives in comparative form to best define the issues and provide a clear basis for choice among the options.

It is not necessary to preliminarily identify a preferred alternative in the Draft EIS. The Final EIS must identify and describe the preferred alternative and the basis for that decision. An alternative is selected for implementation in the ROD (and it may not be the same preferred alternative as that described in the Draft EIS and/or Final EIS).

When a preferred alternative is clear based on the analyses developed during the Draft EIS process, CDOT is required to disclose the preliminarily identified preferred alternative at that time. Where the preferred alternative is not clear, it is not essential that the preferred alternative be identified at the draft level. However, the Draft EIS should state that:

- ▶ A preferred alternative has not been identified
- ▶ Reasonable alternatives are under consideration
- ▶ The final selection of an alternative will not be made until after any new proposed reasonable alternatives and public comments on the Final EIS have been fully evaluated

If a preferred alternative has been preliminarily identified in the Draft EIS, it is acceptable to collect additional information relevant to that alternative to more fully develop it and better understand its impacts. However, such information should not be used in comparing and deciding among the full range of alternatives being evaluated. If the preliminarily identified preferred



alternative is modified or is no longer the preferred alternative after the Draft EIS, the Final EIS must clearly identify the changes and discuss the reasons why any new impacts are not of major concern.

FHWA Environmental Review Toolkit:

<http://www.environment.fhwa.dot.gov/index.asp>

The Final EIS must identify the preferred alternative and discuss the basis for its identification (FHWA and FTA, 23 CFR § 771.125[a][1]). The discussion must provide relevant information and rationale for the identification. The identification of a preferred alternative does not lessen the responsibility to give all alternatives a similar degree of analysis and evaluation during the EIS process.

It is important to note that the analysis presented must be neutral and objective in regard to all alternatives and cannot be slanted to support a preferred alternative over other reasonable and feasible alternatives. Once the preferred alternative has been identified, it may be developed to a higher level of detail than other alternatives to facilitate development of mitigation measures or concurrence compliance with other laws, if the lead agency so directs and determines that this would not prevent an impartial decision (SAFETEA-LU § 6002 [f][4][D]).

A preferred alternative is selected in the ROD. If the identified preferred alternative from the Final EIS is modified or is not the selected preferred alternative, the ROD must clearly address the changes.

The term environmentally preferable alternative is slightly different from the term preferred alternative in that the environmentally preferable alternative promotes the national environmental policy, which ordinarily means it is the alternative that causes the least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources. For EIS projects, the ROD must identify the environmentally preferable alternative. If it is not the selected alternative, the ROD must explain why a different alternative was selected.

Therefore, the concept of an agency's preferred alternative may be different from the environmentally preferable alternative, though in many cases one alternative may be both. Identifying the environmentally preferable alternative during EIS preparation may help other agencies and the public to address the question of which alternative is environmentally preferable. However, the agency is not required to specify an environmentally preferable alternative until the preparation of the ROD.

Major milestones such as the identification of the preferred alternative should be documented in project meeting minutes and identified as a concurrence point.



4.8.6 Preferred Alternative and the NEPA/404 Merger

If an EIS project uses the NEPA/404 merger process, CDOT will provide to USACE the results of detailed analysis and recommendation for the preferred alternative/LEDPA (which may be different from the environmentally preferable alternative) for concurrence. This may happen prior to issuance of the Final EIS (or Draft EIS if a preferred alternative has been preliminarily identified).

EISs must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail (40 CFR § 1500.1(b)).

4.9 Environmental Consequences

The Environmental Consequences chapter, typically Chapter 3 in an EIS, combines the Affected Environment and the Environmental Consequences of a project.

4.9.1 Affected Environment

CEQ § 1502.15 “Affected Environment:

The EIS shall succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration.

The Affected Environment discussion provides a brief overview of early considerations when establishing the existing conditions information on the project study area – typically referred to in NEPA as describing the Affected Environment. The Affected Environment section sets the context for developing alternatives and assessing impacts.

The *FHWA Environmental Review Toolkit* website, as well as FHWA Technical Advisory T6640.8A on NEPA, provides excellent guidance for gathering data and setting up the EIS.

At this stage, the project team may also be able to identify potential environmental impacts resulting from the project. It is best to develop a good definition of the project’s Affected Environment before proceeding with project design or alternatives analysis. A complete baseline encourages more accurate project budgeting and provides a better basis for determining the appropriate level of NEPA documentation, project schedule, and funding.

Preliminary environmental analysis varies with the complexity of the project. For example, for smaller projects, the initial site visit to the project area by the project engineer and key environmental specialists may be sufficient to gather the information necessary to form existing conditions within the project area and identify potential impacts. For more complex projects, multiple site visits with a multidisciplinary team may be necessary to collect relevant existing conditions information, identify potential impacts that need to be considered, and identify future data needs including supplemental field studies. For more complex projects, it is often useful at this stage to consider the potential geographic area(s) in which indirect and cumulative impacts will be assessed, as data will often need to be gathered in a broader area than the project study area for direct impacts. The project manager should use early field visits and discussions to feed information into the overall project schedule and budget, allowing time for longer-term monitoring requirements and other environmental issues.



The description of the Affected Environment associated with the project area provides the context for evaluating environmental impacts. The existing conditions should rely heavily on information already available from known, reliable sources, including agencies responsible for environmental resources. In all cases the context and complexity of the project as they relate to the surrounding area should be considered. This data set should address all resources, ecosystems, and human communities potentially affected by the project. Data gaps should be identified and noted, since supplemental field studies may be required to provide the missing information depending on scoping conclusions and overall project need. The initial Affected Environment description should contain the following information to the extent that it is readily available and not considered confidential (i.e., specific locations of cultural artifacts):

- ▶ The status and location of important natural, cultural, social, or economic resources and systems
- ▶ Important environmental or social stress factors and constraints
- ▶ Pertinent development plans, local regulations, and local administrative standards
- ▶ Environmental and socioeconomic trends

The description of the project's Affected Environment should not only provide the existing conditions required for evaluating potential Environmental Consequences of transportation strategies, but also be a strong resource for developing alternatives that will avoid or minimize impacts associated with the project. The more complete the description, the more accurately potential impacts can be predicted.

The Affected Environment discussion should succinctly describe the environment of the area(s) to be affected by the alternatives under consideration. The descriptions should be no longer than is necessary to understand the impacts of the alternatives. Data and analyses in a statement must be commensurate with the importance of the impact, with less important material summarized, consolidated, or simply referenced. Agencies are urged to avoid useless bulk during the EIS process and concentrate efforts and attention on important issues. Verbose descriptions of the Affected Environment are themselves no measure of the adequacy of an EIS (CEQ, 40 CFR § 1502.15). Refer to AASHTO's 2006 *Improving the Quality of Environmental Documents* for suggestions on preparing good, concise, readable, and legally sufficient EISs. **Appendix C** of this Manual provides a recommended style guide for preparation of EIS.

Early descriptions should be limited to readily available information because the Affected Environment and Environmental Consequences will be further refined during preparation of the EIS. **Chapter 9** of this Manual discusses resource-specific impact analysis and mitigation measures.

Environmental Background

Environmental background information is usually collected early in the project planning process or may be generated by statewide planning processes, or the metropolitan or non-metropolitan transportation planning region and can be used to support the Affected Environment discussion. **Chapter 3** discusses CDOT's planning and project development process. Such information can also be obtained during the initial site visits.

Some background data may need to be researched before the site visit, including a review of area maps or GIS information, relevant environmental or transportation reports, previous surveys, and



consultation with resource experts including external agency personnel. Specific certifications may be required to legally conduct some of the supporting studies that require collection of field data. For example, a field survey of archaeological properties is performed by personnel who are listed in the Directory of Cultural Resource Management Agencies, Consultants and Personnel for Colorado, as holding a state permit to do fieldwork in archaeology on state, county, city, and some private lands in Colorado (but not on Federal or tribal lands). This is because there are minimum qualifications for state permits (Office of Archaeology and Historic Preservation, History Colorado, Publication #1308b, 8CCR 1504-7 Rules and Procedures Historical, Prehistorical, and Archaeological Resources Act, revised 09/11) that help to ensure that the permit holder will collect reliable and legally compliant data.

In addition, field surveys of fish and wildlife species that require handling to be surveyed may require a permit from CPW and/or the USFWS. The population status of the species to be studied frequently determines whether a permit is required. Field surveys that rely solely on observation seldom require permits.

Verify that consultants hired to perform supplemental field studies have or can readily obtain the required permits in time to perform the needed field work in the appropriate season(s). **Chapter 9** includes additional information on resource-specific methodologies.

Supplemental Field Studies

If gaps exist in the information required to characterize specific resources or identify potential project impacts, the project team may need to conduct supplemental field studies to fill these gaps.

Supplemental field studies should begin early in the process to avoid affecting the project schedule and budget. These studies are frequently restricted to specific seasons, may take a long time to complete, or need to be coordinated with other agencies.

Use the information gained from field studies to evaluate alternatives. This information should clearly support the analysis of impacts. Having the appropriately detailed information from these studies will avoid project delays and cost increases. The results of existing conditions data collection and supplemental field studies may require additional budget for data collection and additional environmental analyses. Project budgets may need to increase or could be decreased depending on the findings. Similar impacts on the project schedule should also be anticipated. **Chapter 9** provides further detail on supplemental field studies by resource.

The timeline for determining how field studies fit into the overall project schedule should be discussed during early site visits and adjusted as necessary throughout the project. The schedule could be developed during the official project scoping at the onset of the NEPA process.

4.9.2 Environmental Consequences

The analysis of Environmental Consequences and associated mitigation measures forms the basis for comparing alternatives. This section of the EIS addresses the impacts of the project alternatives on the quality of the human environment and describes the measures proposed to mitigate potential adverse impacts of the project. NEPA defines the human environment broadly to include many aspects of the natural and built environments. The analysis presented in the EIS should be of



sufficient detail to establish the reasonableness of a conclusion that an impact will or will not occur and whether the impacts are substantial. The description and analysis of impacts must be supported by the information and data presented in each specific resource section and need to estimate both the impact and significance to the human environment.

The allocation of environmental study resources should be in proportion to the importance of the potential impacts identified in the scoping process with the resource agencies and the public. Information developed in the project planning process and studies conducted by environmental specialists should provide the basis for determining what areas of the environment may be impacted and, therefore, require specific analysis in the EIS.

A summary of the results of studies undertaken should be included, but not all information resulting from specialist studies and reports needs to be incorporated. All special studies referenced are a part of the public record and must be available with the EIS at the CDOT regional office and/or local agency and public reading rooms for public inspection. Where quantitative data support conclusions, they should be included. FHWA encourages the use of charts, tables, matrices, and other graphics as a means of comparing the impacts of the different project alternatives. It should be noted that quantitative data does not always show the whole picture. Qualitative data is sometimes needed to get a clearer picture.

The key to managing the considerable amounts of data required to conduct a full NEPA analysis is to determine what is important in terms of disclosing environmental impacts. For example, if the project is in an urban setting with no farmlands, then farmland impacts are not discussed. If the project is a highway widening in an area inhabited by an endangered mammal, the wildlife surveys, background data, Biological Assessment and Biological Opinion, and a thorough discussion of avoidance and mitigation measures may all be appropriate for inclusion in the main body of the document, in an appendix, and in associated technical reports.

To aid readers in understanding the logical progression of the EIS, the structure of the Environmental Consequences section should parallel the Affected Environment section. The organization of the Environmental Consequences should be relatively consistent between technical sections. Statements that describe impacts for a particular alternative should not be repeated for another alternative if this sort of redundancy can be avoided with a better organization of the analysis. Reader understanding and simplicity should overrule format consistency.

When preparing the decision document, the impacts and mitigation measures of the alternatives, particularly the preferred alternative, may need to be discussed in more detail to elaborate on information, firm-up commitments, or address issues raised during the public comment period.

The decision document should also identify any new impacts (and their implications) that may have resulted from modification or identification of substantive new circumstances or information regarding the preferred alternative following the EIS circulation. Where new major impacts are identified between preparation of the Draft and Final EIS, a supplemental EIS may be required (CEQ, 40 CFR § 1502.9[c]). See **Section 4.21** for more details.



4.9.3 Types of Impacts

NEPA uses the terms “impact,” “effect,” and “consequence” synonymously. This Manual uses “impact.” For an action to impact (positively or negatively) the environment, it must have a causal relationship with the environment. NEPA distinguishes three types of causal impacts: direct, indirect, and cumulative.

- ▶ **Direct impacts** are caused by the action and occur at the same time and place (CEQ 40 CFR § 1508.8). For example, highway construction that occurs within a wetland would completely remove the wetland or modify the structure and function of the wetland. This would, therefore, be a direct impact on wetlands.
- ▶ **Indirect impacts** are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect impacts may include those related to induced changes in land use patterns, population density or growth rate, and related impacts on air and water and other natural systems, including ecosystems (CEQ 40 CFR § 1508.8). For example, highway construction that alters the hydrology of an area could increase or decrease overland water flow to nearby wetlands and streams, which would have an indirect effect on the structure and function of these water resources. Additional indirect impacts could occur to plant and animal species that inhabit the affected wetlands and streams.
- ▶ **Cumulative impacts** result from the incremental impact of the action when it is added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts could result from individually minor, but collectively significant, actions that take place over time (CEQ 40 CFR § 1508.7).

Impacts may be ecological, aesthetic, historical, cultural, economic, or social, or may be either beneficial or adverse. Beneficial impacts may occur when a proposed action improves a situation (e.g., lessens serious traffic congestion). However, even when the impact of an action will be generally environmentally beneficial, adverse environmental impacts may still occur in other resource areas.

Impacts discussions and associated findings should reflect realistic impact potentials rather than what might be possible if well-known requirements, mandates, and commitments to avoid, minimize, and mitigate impacts did not exist.

FHWA’s Technical Advisory T6640.8A notes that the level of impacts should not be described using the term significant (FHWA, 1987). However, when conclusions regarding the significance of an impact have received concurrence from consulting or jurisdictional agencies, this information should be included (for instance, there may be concurrence on a Finding of Adverse Effect under Section 106 of the Historic Preservation Act). Furthermore, if the term significant is used, it should be consistent with the CEQ definition and supported by factual information (CEQ 40 CFR § 1508.27).

Clearly state all assumptions and methods so that it is obvious how results and conclusions were formed. Anyone with the appropriate skills should be able to duplicate the work.



To help the project team completely understand how a resource will be impacted, context, intensity, duration, and timing must be considered. Context is defined as the setting of the proposed action and is established in the description of the Affected Environment (are the impacts site-specific, local, or regional). Intensity is considered the severity of the impact (are the impacts negligible, minor, moderate, or major).

As required by CEQ regulations, the severity of an impact requires consideration of a number of the following factors:

- ▶ Degree of effect on public health or safety
- ▶ Presence of unique characteristics of the project area such as proximity to resources or protected areas
- ▶ Degree of controversy
- ▶ Degree to which possible effects are uncertain or involve unique or unknown risks
- ▶ Degree to which the action would set a precedent for future actions with significant effects
- ▶ Contribution to cumulatively significant effects
- ▶ Degree to which there may be adverse effects to scientific, cultural, or historical resources
- ▶ Degree to which there may be adverse effects on an endangered or a threatened species or its critical habitat
- ▶ Conflict with Federal, state, or local laws for the protection of the environment

Impacts should also be characterized as temporary or permanent. Temporary impacts are generally those that result from demolition, site preparation, and construction activities, and will not persist once project construction is completed. Common examples of possible temporary impacts include dust generation, erosion, construction noise, stream diversion, or traffic congestion. When analyzing temporary impacts, all aspects of project construction should be considered within the project footprint such as use of areas to store equipment and materials or set up a construction office, construction of roads to gain access to the site, or use of areas for borrow of fill or disposal of excavated material.

Permanent impacts are those that persist after a project has been completed. Common examples of permanent impacts include creating cut and-fill areas or ROW acquisition. Some impacts, such as changes in noise levels or changes in access to local businesses or residences, may be temporary or permanent or both, depending on project specifics.

Cumulative impacts are typically discussed in Chapter 4 of an EIS. In mandating cumulative impacts analysis, CEQ seeks to ensure that EISs consider not only the project and its alternatives, but the other actions that could contribute to long-term environmental degradation. For example, a CDOT highway project may be just one piece of the bigger growth picture in a county. Other pieces of this picture include new retail (a new mall), new business parks (such as Interlocken or the Denver Tech Center in the Denver Metro Area, or Centerra in Loveland), new housing developments (occurring all around Colorado), and the competing demands of new residents for open space, parks, hospitals, and schools. In this example, land use is the resource being evaluated in a cumulative impact context; the growth in the area would supply information about the existing conditions and future conditions. Methodology for a cumulative impact section is further discussed in **Chapter 9**.



4.9.4 Mitigation and Monitoring Commitments

Prior to mitigation, CDOT always makes best efforts to:

- ▶ Avoid the impact altogether by not taking a certain action or parts of an action
- ▶ Minimize impacts by limiting the degree or magnitude of the action and its implementation

However, if avoidance or minimization is not feasible, then mitigation measures may be implemented including:

- ▶ Rectifying the impact by repairing, rehabilitating, or restoring the Affected Environment
- ▶ Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- ▶ Compensating for the impact by replacing or providing substitute resources or environments (CEQ, 40 CFR § 1508.20)

FHWA regulations require that mitigation measures presented as commitments in the final EIS be incorporated into a project (FHWA and FTA, 23 CFR § 771.109[b] and 23 CFR § 771.125[a][1]). Monitoring conducted during project construction and operation is the means to ensure mitigation measures are effectively implemented. If monitoring identifies any deficiencies in mitigating the impact, adjustments to the level, timing, and/or procedure of mitigation must be made accordingly. It is important for the project team to note that long-term mitigation measures may include multi-year environmental monitoring and other components that have an effect on project schedule, budget, and long-term maintenance and operation.

[CDOT's Mitigation Tracking Spreadsheet](#) is used to keep track of project impacts and associated mitigation commitments.

Chapter 9 includes additional information on mitigation and monitoring commitments.

Mitigation and the NEPA/404 Merger

If the EIS project is using the NEPA/404 Merger process, CDOT will provide USACE estimated unavoidable impacts of the preferred alternative to wetlands and other waters of the U.S. and a conceptual compensatory mitigation plan for concurrence. This will occur prior to the issuance of the Final EIS (or Draft EIS if a preferred alternative has been preliminarily identified). **Chapter 9** includes additional information on mitigation and monitoring commitments.

4.9.5 Other EIS Analysis Requirements

Irreversible and Irretrievable Commitment of Resources

42 USC § 4332 102(C)(v) requires a discussion of any irreversible or irretrievable commitments of resources that would be involved in the proposal should it be implemented. An irretrievable commitment of a resource is one in which the resource or its use is lost for a period of time (e.g., land used in the construction of the proposed project). An irreversible commitment of a resource is one that cannot be reversed (e.g., fossil fuels, labor, and materials used during the construction of the proposed project).



Short-Term Uses versus Long-Term Productivity

42 USC 4332 102(C)(iv) requires discussion of the relationship between local, short-term uses of man's environment and the maintenance and enhancement of long-term productivity of resources. This section compares short-term gains with the long-term expense that may result from a loss of future productivity. While it is assumed that benefits will result from the proposed project, all projects involve costs, side effects, and potential loss of natural resources that have long-term productive value. This section should point out that transportation improvements are based on state and/or local comprehensive planning that consider(s) the need for present and future traffic requirements within the context of present and future land use development.

Incomplete or Unavailable Information

When evaluating reasonably foreseeable significant adverse impacts on the human environment in an EIS, and when there is incomplete or unavailable information, it is important for the document to indicate that such information is lacking.

CEQ 40 CFR §1502.22 states:

- (a) If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the EIS.
- (b) If the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known, the agency shall include within the EIS:
 1. A statement that such information is incomplete or unavailable.
 2. A statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment.
 3. A summary of existing credible scientific evidence that is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment.
 4. The agency's evaluation of such impacts based on theoretical approaches or research methods generally accepted in the scientific community. For the purposes of this section, reasonably foreseeable includes impacts that have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.

4.10 Section 4(f) Evaluation

Section 4(f) guidance for publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites is discussed in detail in **Chapter 9** of this Manual. Section 4(f) findings are typically Chapter 5 in an EIS, if required.



4.11 Agency Coordination and Public Involvement

Chapter 7 of this Manual discusses agency coordination and public involvement guidance. Agency coordination and public involvement is typically discussed in Chapter 6 of an EIS.

4.12 List of Preparers

CEQ regulations require the inclusion of the names and brief qualifications (expertise, experience, professional disciplines) of persons primarily responsible for preparing the EIS or conducting environmental studies (CEQ, 40 CFR § 1502.17). This should include state (and/or local) agency staff, FHWA staff, and consultants preparing all or part of the document, even if the consultant's contribution was modified by the agency. Technical editors and graphic support personnel are included. FHWA's Technical Advisory T6640.8A calls for listing the FHWA personnel primarily responsible for preparing or reviewing the EIS and their qualifications. The list should also indicate the portion of the EIS that the individual prepared. This information can be presented in tables. To obtain accurate information for the list of preparers, each person should be contacted to verify educational and professional experience and the number of years employed.

4.13 List of Agencies, Organizations, and Persons to Whom Copies of the EIS Are Sent

The distribution list should name all Federal, state, and local agencies and persons to whom copies of the EIS are sent (CEQ, 40 CFR § 1502.10). FHWA's Technical Advisory T6640.8A notes that the EIS should list all entities from which comments are requested. This should include local agencies and organizations likely to have an interest in all or part of the proposed project.

4.13.1 Consultation and Coordination

The EIS summarizes public involvement, consultation, and coordination efforts. CDOT has specific policies regarding public involvement that are discussed in **Chapter 7**. In addition to the information listed previously, the consultation and coordination chapter should:

- ▶ Provide a chronology of key public and stakeholder meetings and events that have occurred on the project, including the early coordination and scoping processes
- ▶ Document all meetings with government leaders, government agencies (including cooperating and participating agencies), Native American interests, community and advisory groups, and individual citizens
- ▶ Summarize all issues raised by agencies and the public

The EIS document (both Draft and Final) should contain copies of pertinent interagency correspondence in an appendix, including consultation with USFWS, Section 106 coordination with the SHPO, and important communications with similar agencies.



4.14 References and Citations

The EIS must cite the references used in preparing the document. The citations should include the technical studies used to substantiate the analyses and conclusions in the document. They may also cite other relevant sources, such as local or regional planning documents, pertinent scientific studies, or other relevant materials. Materials prepared by other agencies in compliance with other regulatory processes (e.g., a Biological Opinion) should also be referenced. There are specific CEQ regulations for references and citations.

4.15 Appendices and Technical Reports

NEPA guidance emphasizes that EISs should be succinct statements of the information on environmental impacts and alternatives that the decision-maker and the public need to make decisions and to ascertain that significant factors have been examined. The appendices should include only material that is directly relevant to the EIS and that substantiates data that is important to the analysis and supports the conclusions.

CEQ § 1502.18 “Appendix.”

If any agency prepares an appendix to an EIS, the appendix shall:

- (a) consist of material prepared in connection with an EIS
- (b) normally consist of material that substantiates any analysis fundamental to the EIS
- (c) normally be analytic and relevant to the decision to be made
- (d) be circulated with the EIS or be readily available on request

Lengthy technical discussions should be contained in separate technical reports. Technical reports are not treated as appendices to the EIS. They are bound as separate documents and referenced. While separate technical reports are not circulated with the EIS during public review, they are public documents and must be available for review. They must also be submitted, along with copies of the preliminary draft, for CDOT headquarters (Environmental Programs Branch [EPB] and others) review and FHWA review and approval. During the public comment period, the EIS and the technical reports are placed in convenient locations for public review and copying (typically libraries or other easily accessible public buildings).

Relevant appended information may include listings (e.g., wildlife species common to the project area), letters of agreement, Memoranda of Understanding, or Referendums. The appendices to an EIS must contain all correspondence received from government agencies and private interest groups concerning the project. However, they do not include any letters between CDOT and FHWA or internal CDOT memos or letters.

Appendices contain detailed information that is not essential to a basic understanding of the document and the results obtained but may be helpful to readers. Appendices help to streamline the content of the document. They should not contain unnecessary information but be discriminating about what information is included. The Draft EIS is expected to contain the following appendices:

- ▶ Agency Coordination
- ▶ Public Involvement and Coordination



Other appendices may be added if appropriate. All appendices must be called out in the body of the document. They are lettered sequentially (i.e., Appendix A, Appendix B, etc.) at the end of the document in the order in which they are called out.

4.16 Index

The index of an EIS should include important subjects and areas of major impacts so that a reviewer need not read the entire document to obtain information on a specific subject or impact. It should have a level of detail sufficient to focus on areas of the document of reasonable interest to any reader. However, it need not identify every conceivable term or phrase.

CEQ § 1502.10 “Index.”

The CEQ regulations require that an index be prepared for all EISs. However, the regulations do not state how the index should be written.

4.17 Notice of Availability

FHWA sends the Notice of Availability (NOA) to EPA, and EPA files the NOA. FHWA can also file its own NOA, but FHWA relies on the EPA filing. The EPA’s notice in the Federal Register is the official NOA that the document is available. EPA publishes the notice on Friday, unless a holiday falls on a Friday, and then it is posted on Thursday. The designated FHWA Colorado Division Office staff will submit the electronic EIS to e-NEPA.

In preparing the NOA, a certain format must be followed. The Federal Register Drafting Handbook is available on the Internet to assist with preparing the NOA, as well as other types of notices.

Agencies should also be diligent in involving the public in the NEPA process by providing public notice of NEPA-related hearings, public meetings, and availability of environmental documents (CEQ 40 CFR § Regulations 1506.6). Publication in local newspapers (in papers of general circulation rather than legal papers) is one way to send notice to the public in addition to the Federal Register. Other means include local media, newsletters, direct mailings, posting of notices, press releases, and community organizations. **Chapter 7** discusses the specific policies that CDOT uses for public involvement. These additional advertisements should be done at the time of the NOA and at least 15 days before a public hearing.

The *Federal Register Drafting Handbook* can be accessed at: <https://www.archives.gov/files/federal-register/write/handbook/ddh.pdf>

4.18 Draft EIS

4.18.1 Comments on the Draft EIS

Chapter 8 provides specific direction on document review procedures. The Final EIS should include a copy of substantive comments from the cooperating agencies, participating agencies, and other stakeholders who commented on the Draft EIS during the public comment period. Where the response from these parties is exceptionally voluminous, the comments may be summarized. The Final EIS should provide an appropriate response for each substantive comment. If the final NEPA text is revised as a result of the comments received, a copy of the comments should contain



references indicating where revisions were made. The response should address the issue or concern raised by the commenter adequately or, where substantive comments do not warrant further response, explain why they do not, and provide sufficient information to support that position.

The Final EIS should:

- ▶ Summarize the substantive comments on social, economic, environmental, and engineering issues made at the public hearing, if one is held, or the public involvement activities
- ▶ Discuss the consideration given to any substantive issue raised and provide sufficient information to support that position

4.18.2 Circulation of the Draft EIS

Chapter 8, *Document Review Procedures*, of this Manual includes information on document distribution requirements.

After approval by FHWA and placement of the NOA, copies of all Draft EISs must be made available to the public and circulated for comments by CDOT (CEQ 40 CFR § 1502.19 and 1503.1) to the following parties:

- ▶ All public officials, private interest groups, and members of the public known to have an interest in the proposed action or the Draft EIS
- ▶ All Federal, state, and local government agencies expected to have jurisdiction, responsibility, interest, or expertise in the proposed action
- ▶ States and Federal land management entities that may be affected by the proposed action or any of the alternatives

Distribution must be made no later than the time the document is filed with EPA for Federal Register publication and must allow a minimum 30-day review period, or 45-day if the document contains a Section 4(f) evaluation (CEQ 40 CFR § 1506.9 and 1506.10).

The document should include adequate information for FHWA and CDOT to ascertain the disposition of the comment(s).

CDOT follows the FHWA directives in 23 CFR § 223 771.123 (Draft EIS), 771.125 (Final EIS), and 771.127 (ROD). Available at: <http://www.fhwa.dot.gov/legsregs/directives/fapg/cfr0771.htm>

4.19 Final EIS

4.19.1 Options for Preparing the Final EIS

CEQ regulations place heavy emphasis on reducing paperwork, avoiding unnecessary work, and producing documents that are useful to decision-makers and the public. With these objectives in mind, the Moving Ahead for Progress in the 21st Century Act (MAP-21) Section 1319, Accelerated Decision-making in Environmental Reviews, requires that, to the extent practicable, the lead agency develop a single document that combines the Final EIS and ROD. For information on what information the ROD should contain, see **Section 4.20**.



Interim guidance on **The Moving Ahead for Progress in the 21st Century (MAP-21) Section 1319 Accelerated Decision-making in Environmental Reviews** addresses the circulation and filing of a Final EIS using errata sheets.

If not practicable to do a combined Final EIS and ROD, there are three approaches to preparing the Final EIS: traditional, condensed, and abbreviated. The first two approaches can be used on any project. The third approach is restricted to the conditions specified by CEQ 40 CFR § 1503.4(c). The CDOT project team makes an initial recommendation to FHWA for which approach seems applicable for the project. FHWA will make the final determination as to which approach will be used.

Traditional - The Final EIS incorporates the Draft EIS (essentially in its entirety) with changes made as appropriate throughout the document to reflect the identification of a preferred alternative, modifications to the project, updated information on the Affected Environment, changes in the assessment of impacts, the selection of mitigation measures, wetland and floodplain findings, the results of coordination, and comments received on the Draft EIS and responses to these comments. Because a large amount of information is carried over from the Draft EIS to the Final EIS, important changes are sometimes difficult for the reader to identify. Nevertheless, this is the approach most familiar to participants in the NEPA process.

Condensed - This approach avoids repetition of material from the Draft EIS by incorporating, by reference, the Draft EIS. Thus, the Final EIS is a much shorter document than under the traditional approach; however, it should afford the reader a complete overview of the project and its impacts on the human environment.

The purpose of the condensed approach is to briefly reference and summarize information from the Draft EIS that has not changed and to focus the Final EIS discussion on changes in the project, its setting, impacts, technical analysis, and mitigation that have occurred since the Draft EIS was circulated. In addition, the condensed Final EIS must identify the preferred alternative, explain the basis for its identification, describe coordination efforts, and include agency and public comments, responses to these comments, and any required findings or determinations (CEQ 40 CFR § 1502.14(e) and FHWA and FTA, 23 CFR § 771.125(a)).

The format of the Final EIS should parallel that of the Draft EIS. Each major section of the Final EIS should briefly summarize the important information contained in the corresponding section of the Draft EIS, reference the section of the Draft EIS that provides more detailed information, and discuss any noteworthy changes that have occurred since the Draft EIS was circulated.

At the time that the Final EIS is circulated, an additional copy of the Draft EIS need not be provided to those parties that received a copy of the Draft EIS when it was circulated. Nevertheless, if due to the passage of time or other reasons it is likely that they will have disposed of their original copy of the Draft EIS, then a copy of the Draft EIS should be provided with the Final EIS (CEQ 40 CFR (a) § 1503.4(c)). In any case, sufficient copies of the Draft EIS should be on hand to satisfy requests for additional copies. Both the Draft EIS and the condensed Final EIS should be filed with EPA under a single Final EIS cover sheet (CEQ 40 CFR § 1503.4(c)).



Abbreviated - CEQ regulation 40 CFR § 1503.4(c) provides the opportunity to expedite the Final EIS preparation where the only changes needed in the document are minor and consist of factual corrections and/or explain why the comments received on the Draft EIS do not warrant further response. In using this approach, care should be exercised to assure that the Draft EIS contains sufficient information to make the findings, that the number of errata sheets used to make required changes is small, and that these errata sheets, together with the Draft EIS, constitute a readable, understandable full disclosure document. The Final EIS should consist of the Draft EIS and an attachment containing the following:

- ▶ Errata sheets making any necessary corrections to the Draft EIS
- ▶ A section identifying the preferred alternative and discussing the reasons it was identified as the preferred alternative. The following should also be included in this section where applicable:
 - Final Section 4(f) evaluations
 - Wetland finding(s)
 - Floodplain finding(s)
 - A list of commitments for mitigation measures for the preferred alternative; and copies (or summaries) of comments received from circulation of the Draft EIS and public hearing and responses thereto.

4.19.2 EIS Approval Process

Chapter 8 discusses specific details regarding the NEPA review process for Final EISs.

4.19.3 Compliance with Applicable Laws

The Final EIS should demonstrate compliance with requirements of all applicable environmental laws, executive orders, and other related requirements, such as Title VI of the Civil Rights Act of 1964. To the extent possible, all environmental issues should be resolved prior to the submission of the Final EIS. When disagreement on project issues exists with another agency, coordination with the agency should be undertaken to resolve the issues before issuing the Final EIS. Where the issues cannot be resolved, the Final EIS should identify any remaining unresolved issues, the steps taken to resolve the issues, and the positions of the respective parties. Where issues are resolved through this effort, the Final EIS should demonstrate resolution of the concerns. For a list of NEPA-related regulations that are often considered during a CDOT NEPA effort, refer to **Figure 2-1** in **Chapter 2** of this Manual.

4.19.4 Circulation of the Final EIS

The Final EIS shall be transmitted to any person, organization, or agency that made substantive comments on the Draft EIS or requested a copy, no later than the time the document is filed with EPA. In the case of lengthy documents, CDOT may provide alternative circulation processes in accordance with CEQ 40 CFR § 1502.19. CDOT shall also publish a notice in local newspapers. When the document is filed with EPA, the Final EIS shall be available for public review at the CDOT offices and at appropriate Region offices. A copy should also be made available for public review at institutions such as local government offices, libraries, and schools, as appropriate.



Chapter 8, *Document Review Procedures*, of this Manual includes information on document distribution requirements.

4.20 Record of Decision

If a combined Final EIS and ROD is not practicable, and there are no changes after the Final EIS that would warrant a Reevaluation or Supplemental document, a separate ROD follows the Final EIS and selects a preferred alternative for implementation (it may or may not be the preferred alternative from the Final EIS).

The ROD explains the reasons for the project decision, summarizes any mitigation measures that will be incorporated in the project, and documents any required Section 4(f) approval. While cross-referencing and incorporating the Final EIS (and other documents) as appropriate, the ROD must explain the basis for the project decision as completely as possible, based on the information contained in the EIS (CEQ 40 CFR § 1502.2). It is important to note that only FHWA has approval/issuing authority for a ROD, whether or not the NEPA process has been merged with, for example, USACE 404 (b)1. The ROD may not be issued sooner than 30 days after the approved Final EIS is distributed.

The following key items are addressed in the ROD:

- ▶ **Decision** - Describe the selected alternative for implementation and the basis for its selection.
- ▶ **Alternatives Considered** - Briefly describe each alternative and explain the balancing of values that formed the basis for the decision. Identify the environmentally preferable alternative(s) and, if the alternative selected is not the environmentally preferable alternative, clearly state the reasons for not selecting it. Also identify the LEDPA, if applicable.
- ▶ **Section 4(f)** - Summarize the basis for any Section 4(f) approval, when applicable (FHWA and FTA, 23 CFR § 771.127[a]).
- ▶ **Measures to Minimize Harm** - Describe the specific measures adopted to minimize environmental harm and identify those standard measures. State whether all practicable measures to minimize environmental harm have been incorporated into the decision and, if not, why they were not (CEQ 40 CFR § 1505.2[c]). Identify any impacts that cannot be mitigated. Include the CDOT Mitigation Tracking Spreadsheet in the ROD. **Chapter 9** includes additional information on mitigation and monitoring commitments.
- ▶ **Monitoring or Enforcement Program** - Describe any monitoring or enforcement program adopted for specific mitigation measures, as outlined in the Final EIS. Include the CDOT Mitigation Tracking Spreadsheet from the Final EIS in the ROD.
- ▶ **Comments on Final EIS** - Include substantive comments received on the Final EIS and the given appropriate responses. Summarize other comments and responses where appropriate.



4.21 Other Clearances (Tiered Analyses, Reevaluations, Supplemental EIS)

4.21.1 Tiered NEPA Analyses

CEQ regulations allow agencies to tier their EISs to eliminate repetitive discussions of the same issues and to focus on the actual issues needing decision at each level of environmental review. FHWA regulations (FHWA and FTA, 23 CFR § 711.111[g]) state that “for major transportation actions, the tiering of EISs as discussed in the CEQ regulation (40 CFR § 1502.20) may be appropriate.” The CDOT project team makes an initial recommendation to FHWA regarding whether a project should use a tiered approach. FHWA makes the final determination for using tiering.

Note that the term “tiering” is also used in a general sense to mean dependence on information from previously published documents, which are referenced, without repeating their information in the current document. The phrase “to tier to” another document means to incorporate by reference without repeating.

Two tiers can be used for the tiered approach. Tier 1 is equivalent to programmatic (i.e., big picture) documents, which focus on broad policy decisions like general location, mode choice, and area-wide air quality and land use implications of major alternatives. Tier 2 is equivalent to project-specific documents. These documents address site-specific details on impacts, costs, and mitigation measures. By following a tiered process and focusing the Tier 1 document on strategies for an entire corridor, the goal is to expedite the Tier 2 evaluation since overall corridor issues have been addressed up front, and detailed environmental studies have been reserved for specific project locations. Tier 2 documents allow FHWA and CDOT to focus on analyzing project-specific impacts and issues in the second tier.

With the availability of the PEL process (further discussed in **Chapter 3, Section 3.2**), Tier 1 studies are less common as they have been in the past.

4.21.2 Reevaluation of an EIS

A Reevaluation is prepared with the purpose to determine whether or not a supplement to the EIS is needed.

Before implementation of a project that received NEPA approval, CDOT must consult with FHWA before requesting any major approvals to establish whether the approved EIS remains valid. If circumstances have changed, FHWA may require a Reevaluation to determine what changes have occurred and whether new documentation or a supplemental EIS is necessary.

The Reevaluation is for the entire document or project (i.e., same limits as the original environmental document). The Reevaluation should consider the entire project but focus on the validity of the EIS and/or project decision as related to the current phase or work, major approval, or action to be taken by FHWA to advance the project. If documentation of the Reevaluation is necessary, previous phases would be referenced as previous actions and summarized as background information. The current phase would be discussed in more detail, but only to the extent that there have been changes to the project or Affected Environment. Future phases could be mentioned and discussed, but the detail could be delayed until approval is needed to proceed with the future



phase. There is no requirement to modify phases already built or reconsider previous designs when the next phase is being built.

If the project decision, Affected Environment, mitigation or other environmental commitments, or environmental requirements have not changed or if the changes examined do not result in the determination by FHWA that the environmental document is no longer valid, the Reevaluation process is completed. If the Reevaluation process determines that the approved environmental document is no longer adequate, then supplemental environmental documentation is needed to fully analyze the changes that have occurred (FHWA and FTA, 23 CFR § 771.129).

The question of whether the design year and traffic numbers need updating for the final segment or the entire project under a Reevaluation should be examined case by case and may be commensurate with the time lapse between the original environmental document and decision and the current FHWA approval action. For example, if the project is so old that the design would not be appropriate, it should probably be changed. There is no requirement to change the design year (and associated traffic numbers) of a project during Reevaluation of the environmental document.

23 USC 109 provides that a project must adequately serve the existing and planned future traffic of a highway in a manner conducive to safety, durability and economy of maintenance. In accordance with AASHTO's *A Policy on Design Standards - Interstate System*, "In all but extraordinary circumstances, the design year for new construction and complete reconstruction is to be at least 20 years beyond that which the plans, specifications, and estimate for construction for the section are approved" (AASHTO, 2016c). FHWA does not have a requirement for design year on non-interstate facilities.

A Reevaluation is required under the following conditions:

- ▶ If FHWA does not receive an acceptable Final EIS within three years from the date of the Draft EIS circulation, to determine whether there have been changes in the project or its surroundings or new information (i.e., new environmental impact not previously discussed or new regulations or laws) that would require a supplement to the Draft EIS or a new Draft EIS (FHWA and FTA, 23 CFR § 771.129(a)).
- ▶ If CDOT has not taken additional major steps to advance the project within any three-year time period of the Final EIS, the final supplemental EIS, or the last major FHWA approval action (FHWA and FTA, 23 CFR § 771.129(b)).
- ▶ After approval of the EIS, CDOT shall consult with FHWA before requesting any major approvals for major production phases (preliminary engineering, ROW acquisition, and construction advertisement) or grants to establish whether or not the approved EIS remains valid for the requested action (FHWA and FTA, 23 CFR § 771.129(c)). Consultations between CDOT and FHWA should be documented when determined necessary by FHWA.
- ▶ Any time during the project development process when a major change in the project's concept has occurred.
- ▶ For a ROD, if more than three years have elapsed since approval of the Final EIS.



4.21.3 Reevaluation of a ROD

In accordance with CFR § 771.129 (c) after approval of the ROD, the applicant shall consult with the FHWA before requesting any major approvals or grants to establish whether or not the approved environmental document designation remains valid for the requested administration action. These consultations will be documented when determined necessary by FHWA. The shelf life of a Draft EIS and a Final EIS is three years.

The conditions under which a Reevaluation of a ROD would be required are listed in **Section 4.20** in the bulleted list.

4.21.4 Revised ROD

In accordance with CFR § 771.127 (b) if FHWA subsequently desires to approve an alternative that was not identified as the preferred alternative but was fully evaluated in the final EIS, or proposes to make substantial changes to the mitigation measures or findings discussed in the ROD, a revised ROD shall be subject to review by FHWA. To the extent practicable the approved revised ROD shall be provided to all persons, organizations, and agencies that received a copy of the Final EIS pursuant to CFR § 771.125(g).

CDOT Form 1399 indicates (Section VII. Additional Requirements for Proposed Action):

- ▶ Supplemental EIS is required because the changes to the proposed action will result in significant impacts not evaluated in the EIS.
- ▶ Supplemental EIS is required because new information or circumstances will result in significant environmental impacts not evaluated in the EIS.
- ▶ A revised ROD is required because an alternative is recommended that was fully evaluated in an approved Final EIS but was not identified as the preferred alternative.

Reevaluation of a ROD vs. Revised ROD

A **reevaluation** is intended to encompass the same project limits as the original environmental document and focuses on the validity of the ROD or project decision with respect to the current phase of the project.

A **revised ROD** is intended to approve an alternative, or a new component of an alternative (e.g., interchange configuration), that was not originally in the EIS but still meets the purpose and need.

4.21.5 Reevaluation of a Tiered EIS

This section discusses the Reevaluation of a Tiered EIS. Tiered EISs are further discussed in **Section 4.21.1**. Once FHWA approves a Tier 1 document, it is assumed that the actions evaluated in the Tier 1 document will not cause significant impacts and the actions move into Tier 2 analysis. However, between the completion of the Tier 1 and the start of the Tier 2 document, new information or circumstances may result in needing to adjust what was approved in the Tier 1 document (i.e., a new component to an alternative such as consideration of tolling). Under FHWA regulations, a Reevaluation can be prepared to determine whether the new information or changes in a project require supplementation of a previously issued Tier 1 document. If the Reevaluation determines that the changes cause additional significant impacts at the Tier 1 level of analysis, then completion of a Tier 1 Supplemental EIS would be required. However, if it is determined that the new information or circumstances do not cause additional significant impacts at the Tier 1 level



of analysis, then the Reevaluation suffices for changing the findings in the Tier 1, and the change in analysis from the Reevaluation can move forward into the Tier 2 document.

4.21.6 Documenting Reevaluations Using CDOT Form 1399

CDOT Form 1399 is to be used when completing a Reevaluation. There are three primary reasons that CDOT completes a Reevaluation:

1. Project is proceeding to the next Federal major approval or action (23 CFR 771.129(c)).
2. Project changes such as laws, policies, guidelines, design, environmental setting, impacts, or mitigation have occurred. Sometimes the design that was originally approved changes in final design, resulting in newly discovered or otherwise unaccounted for impacts to resources not initially evaluated in the NEPA document. Reevaluations may also be completed to serve as field verifications to ensure that impacts documented in the initial NEPA clearance are still correct and that the same mitigation measures apply.
3. Greater than three years have elapsed since approval of the Draft EIS (23 CFR 771.129(a)) or FHWA's last major approval action for the Final EIS (23 CFR 771.129(b)). Sometimes after a preferred alternative is identified in an EA or EIS, it is not constructed due to funding limitations or other constraints. CDOT uses Reevaluations to “refresh” project information that may have exceeded its shelf life. The passing of time following the approval of a NEPA document to the point of the alternative being implemented is referred to as the shelf-life.

A Reevaluation determines whether or not the environmental document reviewed is still valid. Should it be determined that no substantial changes have occurred, the project can advance to the next phase of project development. However, should it be determined that the NEPA document is no longer valid and more information is needed, then additional work will be required.

Signature of the Reevaluation form completes the NEPA requirement for the project; however, it is not the final step in the process. The CDOT Form 128 must also be completed for all Reevaluations. Section C of the CDOT Form 128 includes information regarding Permits and Additional Requirements, and Section E includes the Environmental Project Certification. Completion of these two sections is required for the project to move into construction.

Guidance for completing Form 1399 is available at:

<https://www.codot.gov/programs/environmental/nepa-program/cdot-nepa-tools>

4.22 Supplemental EIS Analyses

Whenever there are changes, new information, or further developments on a project that may result in significant environmental impacts not identified in the most recently distributed version of the Draft or Final EIS, a supplemental EIS is necessary (FHWA and FTA, 23 CFR § 771.130). These changes occur following the last approval (Draft EIS, Final EIS, or ROD). Supplemental EISs normally do not require reinitiating the entire environmental process. Instead, the supplemental EIS is for the last approval. If a ROD has been granted, only the Final EIS will need to be supplemented.

If the changes are of such magnitude to require a reassessment of the entire action, or more than a limited portion of the overall action, FHWA/CDOT will suspend any activities that would have



adverse environmental impacts or limit the choice of alternatives until the supplemental EIS is complete.

A supplemental EIS is needed in the following cases:

- ▶ Changes have occurred in the purpose of or need for the project requiring analysis of completely new alternatives.
- ▶ Schedule changes require the evaluation of previously unexplored options.
- ▶ Changes have been made to the design or scope of the project.
- ▶ Significant changes to the Environmental Consequences of the project (determined following completion of the environmental approval process) may require supplemental documentation to determine whether the conclusions in the EIS are valid.
- ▶ FHWA or CDOT determines that new information or circumstances would result in substantial environmental impacts not evaluated in the EIS.

In some cases, supplemental information may be required to address issues of limited scope such as the extent of proposed mitigation, the evaluation of location, or design variations for a limited portion of the overall project. When this is the case, preparation of the supplemental EIS will not prevent granting new approvals, require the withdrawal of previous approvals, or require suspension of project activities for any activity not directly affected by the supplement.

A supplemental EIS will be reviewed and distributed in the same manner as its previous Draft and Final versions (FHWA and FTA, 23 CFR § 771.130[d]) to ensure that the public and interested agencies understand the changes in status of the project.

4.23 Project Files and Administrative Records

This section establishes what should be maintained in a project file and provides information for compiling the administrative record should a lawsuit be filed.

4.23.1 Project File

CDOT has adopted the *AASHTO Practitioner’s Handbook Maintaining a Project File and Preparing an Administrative Record for a NEPA Study* (August 2016) for further guidance on the administrative record documentation (AASHTO, 2016b).

<https://environment.transportation.org/wp-content/uploads/2021/05/ph01-2.pdf>

Throughout the life of a NEPA project, the entire project team generates project materials. All materials maintained by the project team are considered the project file. The size of the project file may depend on the type of project; a CatEx for an intersection improvement may have a small file, whereas an EIS for an interstate widening will have a larger file.

Items that make up the project file may include:

- ▶ Email messages and any attachments
- ▶ Letters/memoranda and any attachments
- ▶ Meeting materials (e.g., agenda, sign-in, handouts, minutes)



- ▶ GIS information and data layers
- ▶ Modeling results
- ▶ Maps, drawings, and displays
- ▶ Project websites
- ▶ Project documents in original formats (for example, Word or CAD)
- ▶ Policies, guidelines, directives and manuals, or easy references to these materials as long as they are readily available
- ▶ Articles and books (be sensitive to copyright laws governing duplication)
- ▶ Factual information or data
- ▶ Communications received from other agencies and from the public, and any responses to those communications
- ▶ Documents and materials containing information that supports or opposes the challenged agency decision
- ▶ All draft documents circulated for comment either outside the agency or outside the author's immediate office, if changes in these documents reflect significant input into the decision-making process
- ▶ Technical information, sampling results, survey information, and engineering reports or studies (keep certain technical information, such as threatened/endangered species, historic, and archaeological resource survey reports, in the files but label "SENSITIVE - NOT FOR PUBLIC RELEASE" due to their sensitive nature)
- ▶ Decision documents
- ▶ Documentation of telephone conversations and meetings, such as memoranda or handwritten notes, unless they are personal notes
- ▶ Alternatives screening and development information
- ▶ Public comment correspondence
- ▶ Documentation of public involvement efforts

As a general rule, do not include internal working drafts of documents that may be superseded by a later, more complete, edited version of the same document.

CDOT PMs are responsible for **establishing electronic naming conventions** for emails at the beginning of a project. A standard indicator should be used throughout the project in the subject line to easily track project-related emails.

All written documentation should contain a date, indicate to/from (or attendees for meetings), location (for meetings), and be clear on subject matter. The project team may want to consider establishing a template for internal communications, memos, emails (e.g., always using the project number in the subject line of an email) early in the NEPA process.

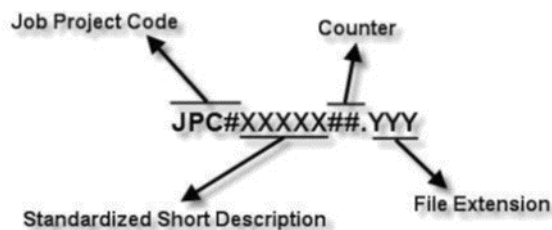


At the beginning of the project, it is important to determine the following to ensure an adequate project file:

- ▶ Who is responsible for maintaining the project file (i.e., project manager, project coordinator)
- ▶ Whether or not a database will be used to manage files
- ▶ Where files will be housed during the project
- ▶ How electronic and hard copy information will be filed; when possible, CDOT prefers electronic copies
- ▶ If a project email will be established where all email correspondence will be sent or copied to assist with record keeping

CDOT has a naming standard that uses a formula that restricts the character placement, ensures unique file names, and identifies the information contained in the file. All CDOT projects now must follow these file naming conventions. The naming standard creates consistency between projects being completed by different firms and in different Regions. Standardizing file names is necessary for effective management of the large numbers of files needed to produce project deliverables. CDOT files are named in a standard format that identifies the file's project, the data contained within it, and product used for its creation.

The naming convention is illustrated as follows:



Job Project Code (JPC) is the CDOT project code, formerly known as the project subaccount number. Example - 16602

Standardized Short Description of data may contain as many characters within reason to describe the contents and purpose of the file. Example - Aerial

Counter indicates more than one file of a specific type. Example - Aerial_02

File Extensions define the product used for its creation. Example - .doc

Full Example of a file naming convention 16602_Aerial.doc or 16602_Aerial_02.doc

The project file may be kept at a central location at a consulting firm where project files are maintained throughout the project. However, a decision must be made on how the files will be provided to CDOT at the close of the project. Given that some projects have numerous consulting firms involved, it is necessary to obtain all the appropriate files from each firm, organize into logical folders (hardcopy and electronic), and provide to CDOT. In cases where the majority of files



have been maintained electronically, a final deliverable to CDOT must include an electronic deliverable.

The CDOT Generic Scope of Work Section 2. G. Administrative Record task is a place to include the effort for maintaining the project file (CDOT, 2022). Although the task is labeled administrative record, it can be changed in the project-specific scope to include the project file, as well. Regardless of the project size, hours and effort need to be allocated in the project budget for this task.

There is no general NEPA guidance on how long a project file should be kept and Federal agencies are free to establish their own guidelines on retention of files. However, once a project has been completed, prudence dictates that the following types of data should be permanently retained:

- ▶ Design and as-built drawings and specifications in both hard copy and electronic format
- ▶ Deeds and titles
- ▶ All information considered under NEPA in selecting the alternative that was implemented

Such information may be useful in assessing and resolving future problems with project structures, ownership, or choices associated with implementation.

A well-organized project file is the foundation for putting together the administrative record.

4.23.2 Administrative Record

Should the NEPA decision be challenged in court, the project file provides a starting point for preparing the administrative record. When a project faces litigation, the administrative record must be prepared, which includes all materials that are submitted to the court.

Under the Administrative Procedure Act, a court reviews an agency's action to determine if it was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law" (5 USC § 706[2][A]). In making this determination, a court evaluates the agency's administrative record. The administrative record is the paper trail that documents the agency's decision-making process and the basis for the agency's decision.

The administrative record for each project will be drawn from the project file as needed. Not all material in the project file will necessarily become part of the administrative record; however, any information that supports the final decision should be part of it. As established by case law, the general rule is that the administrative record should contain "all documents and materials directly or indirectly considered by the agency" in making its decision.

What kinds of records should be included in an administrative record (list is not all inclusive):

- ▶ Documents vital to the "decision," such as the Draft EIS, Final EIS, or ROD
- ▶ Federal register notices (for example, the NOI)
- ▶ Agency and public comments and responses
- ▶ Public transcripts, handouts, sign-in sheets, and exhibits from public meetings
- ▶ Final versions of discipline reports/technical reports, modeling inputs, preliminary reports, studies, site evaluations, screening documents, memos, and any other documents showing the basis and reasoning for conclusions/decisions



- ▶ Planning documents, such as the long range plan (LRP) and the Statewide Transportation Improvement Program (STIP)
- ▶ Emails documenting process and smaller and larger decisions throughout the NEPA process
- ▶ Evidence of compliance with other laws, e.g., Section 4(f), National Historic Preservation Act (Section 106), Section 404 Permit, and Endangered Species Act
- ▶ Guidance relied on during the NEPA process (for example, the Section 4(f) Policy Paper)
- ▶ Anything the agency used in the decision-making process, even if not specifically mentioned by the final decision-maker
- ▶ Files by CDOT and its consultants that relate to the final decision
- ▶ Memorandum to the File memorializing a decision

An administrative record most likely will not include:

- ▶ Personal notes taken by an individual unless they are transmitted to someone or if they are in the agency file for a specific purpose.
- ▶ Privileged documents such as attorney-client privileged communication, attorney work product and deliberative product documents.
- ▶ Internal “working” draft documents—but sometimes these can be included if relevant to an important decision or shows process.
- ▶ Non-“relevant” information, including emails containing irrelevant information such as lunch plans or chit-chat between people working on the project—if this is mixed in with information relevant to a decision, it might be included anyway or segregated or redacted.
- ▶ Pre-decisional documents made prior to a final decision being made; often these take the form of emails. This is a complicated category and should be dealt with on a case-by-case basis.
- ▶ Duplicates of documents already in the record.
- ▶ Documents made after the decision (ROD, etc.) was completed.

An administrative record can be in electronic, hard copy, or a combination format. It is ultimately up to the court to decide which format is preferred. It is important to note that if electronic documents are converted to PDF format, the original source files must also be available.

For projects where litigation is expected, it is a good practice to prepare the administrative record before the ROD is signed. Some general guidance for organizing an administrative record includes ensuring all items have a date, an author, and a version number (preferably on each page if multi-page), that items are organized in a logical and an accessible way (for example, chronological or by topic), and an index completed. The index should list documents in chronological order, assign unique page numbers to documents, briefly describe each document, and include the author of each document.

FHWA is ultimately responsible for the administrative record as the decision-maker. Therefore, it is important to work closely with FHWA staff when preparing an administrative record to ensure that it contains the appropriate information and is in the appropriate format(s).



4.24 Statute of Limitations

Section 1308 of MAP-21 established a 150-day limitation on litigation claims for projects being implemented. The 150-day clock starts with Federal Register publication of a notice that a permit, license, or approval action is final. It should be noted that for projects conducted under the NEPA/404 merger agreement, the notice of final action will be placed in the Federal Register after both the NEPA and 404 approvals are complete.

The following language is standard language that should be included in all EIS documents (typically on the reverse side of the signature page). This language is also presented in **Appendix F**.

The Federal Highway Administration may publish a notice in the Federal Register, pursuant to 23 United States Code (USC) § 139(l) once the Record of Decision is approved. If such notice is published, a claim arising under Federal law seeking judicial review of a permit, license, or approval issued by a Federal agency for a highway or public transportation capital project shall be barred unless it is filed within 150 days after publication of a notice in the Federal Register announcing that the permit, license, or approval is final pursuant to the law under which judicial review is allowed. If no notice is published, then the periods of time that otherwise are provided by the Federal laws governing such claims will apply.

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5. Categorical Exclusion (Class II)

Chapter 5 discusses the Colorado Department of Transportation (CDOT) process and procedures for the Categorical Exclusion (CatEx) class of action (Class II). **Chapters 4 and 6** of the NEPA Manual address the other classes of action: Class I - Environmental Impact Statement (EIS) and Class III - Environmental Assessment (EA), respectively. Most of this chapter refers to the Federal Highway Administration's (FHWA) process for CatExs. **Chapter 10** discusses the Federal Transit Administration's (FTA) process, which is somewhat different.

5.1 Introduction

CatExs, the most common National Environmental Policy Act (NEPA) class of action, are for actions that do not individually or cumulatively have a significant environmental impact and are excluded from the requirement to prepare an EA or an EIS. CatExs are activities that previous experience has shown do not involve significant environmental impacts. CatExs have several guiding regulations, including:

- ▶ Council on Environmental Quality (CEQ) through 40 Code of Federal Regulation (CFR) 1508.4
- ▶ 23 CFR 771.117 FHWA CatExs
- ▶ 23 CFR 771.117 FTA CatExs
- ▶ *Programmatic Agreement between the Federal Highway Administration, Colorado Division and the Colorado Department of Transportation Regarding the Processing of Actions Classified as Categorical Exclusions for Federal-Aid Highway Projects, CDOT CatEx Agreement, June 2022*

The regulations describe activities that are CatExs (23 CFR § 771.117), as well as unusual circumstances that would preclude an action from being classified as a CatEx.

FHWA/FTA. 1987 as amended. Environmental Impact and Related Procedures. 23 CFR 771 § 771.101 - 771.139

As identified in 23 CFR § 771.117(a), CatExs are actions that:

- ▶ Do not induce significant impacts to planned growth or land use for the area
- ▶ Do not require the relocation of significant numbers of people
- ▶ Do not have a significant impact on any natural, cultural, recreational, historic, or other resource
- ▶ Do not involve significant air, noise, or water quality impacts
- ▶ Do not have significant impacts on travel patterns
- ▶ Do not otherwise, either individually or cumulatively, have any significant environmental impacts



According to CFR 23 § 771.117(b), any action that would normally be classified as a CatEx, but could involve unusual circumstances, will require the FHWA, in cooperation with the applicant, to conduct appropriate environmental studies to determine if the CatEx classification is proper. Unusual circumstances include:

- ▶ Significant environmental impacts;
- ▶ Substantial controversy on environmental grounds;
- ▶ Significant impact on properties protected by Section 4(f) of the Department of Transportation (DOT) Act or Section 106 of the National Historic Preservation Act; or
- ▶ Inconsistencies with any Federal, state, or local law, requirements, or administrative determination relating to the environmental aspects of the action.

CatExs require no major Federal action and have impacts that are generally well-understood. Because CatEx projects have no significant impacts on the environment, NEPA requirements are significantly less stringent than those for an EA or an EIS. For example, public involvement and alternatives analysis are not explicitly required, and the level of documentation for FHWA approval is greatly reduced. Although public involvement is not explicitly required for a Programmatic or Non-Programmatic CatEx, it is recommended to have some sort of public involvement at least for those CatExs that include some right-of-way (ROW) acquisition, construction impacts, road closures or detours, etc. Although a project may not have significant impacts, a large amount of public controversy can require preparation of an EA or an EIS as appropriate.

Classifying a project as a CatEx does not exempt it from other Federal or state environmental requirements. All applicable environmental requirements including, but not limited to, consultation pursuant to Section 7 of the Endangered Species Act or Section 106 of the National Historic Preservation Act, must be completed before FHWA or CDOT make the CatEx determination. Documentation is required to record the rationale for decision-making on projects that are categorically excluded from further consideration under the NEPA process. **Section 2.2.3** of this Manual discusses when NEPA applies to a project.

Types of CatExs

- Programmatic CatEx
- Non-Programmatic CatEx

FHWA regulations (FHWA 23 CFR § 771. 117) contain two lists of CatExs:

- ▶ **Programmatic CatExs** - These standard actions routinely occur in CDOT’s operations and maintenance of facilities and have previously been programmatically approved by FHWA and can be processed internally by CDOT (for example, roadway paving). Programmatic categories include several lists of project types:
 - C list CatExs from 23 CFR 771.117(c)
 - D list CatExs from 23 CFR 771.117(d)
- ▶ **Non-Programmatic CatExs** - These actions are often non-routine, require additional evaluation of environmental effects, and require additional FHWA review. To expedite and streamline the environmental process and to reduce paperwork for programmatic CatExs, CDOT and FHWA developed a CDOT CatEx Agreement (June 2022). The CDOT CatEx



Agreement provides expeditious processing of CatEx level actions by CDOT under the guidance and with the approval of FHWA. Evaluation criteria still must be met to proceed as a Programmatic CatEx, which is further discussed in **Section 5.3.1**.

The **CDOT and FHWA Programmatic Agreement** regarding CDOT CatEx Projects can be accessed at: https://www.codot.gov/programs/environmental/nepa-program/assets/categorical-exclusion-programmatic-agreement-2022-update_signed-jf-3.pdf

5.2 CatExs and Recent Guidance

5.2.1 Moving Ahead for Progress in the 21st Century Act

In July 2012, the Moving Ahead for Progress in the 21st Century Act (MAP 21) was signed into law. MAP-21 authorized the funding of surface transportation programs for Federal fiscal years 2013, 2014, and 2015 extensions. MAP-21 was the first long-term highway authorization enacted since the 2005 Safe Accountable Flexible Transportation Equity Act - A Legacy for Users (SAFETEA-LU).

MAP-21 enacted several new CatEx categories, including:

- ▶ Application of CatExs for Multimodal Projects
- ▶ CatExs in Emergencies
- ▶ CatExs for Projects within the Right-of-Way
- ▶ Programmatic Agreements and Additional CatExs

Because guidance for CatExs periodically changes, check the most current guidance posted on CDOT's website (as described in this Manual).

If a project does not meet any of the criteria on the CatEx Criteria List, the project will require additional NEPA approval by FHWA.

5.2.2 Fixing America's Surface Transportation Act

In December 2015, the Fixing America's Surface Transportation Act or "FAST Act" was signed into law. A major theme of the FAST Act is to accelerate overall project delivery. Two items may impact CatExs:

- ▶ **Railroad rights-of-way (Subtitle E: Section 11504)** - Requires USDOT to propose an exemption from the historic preservation requirement to assess and address potential impacts on most railroad ROW, like the CatEx exemption granted to interstate highways in 2005.
- ▶ The use of programmatic agreements to process CatExs as a group, rather than case by case or project by project. For example, there may be economies of scale to deliver multiple bridge replacements at one time.



5.2.3 Infrastructure Investment and Jobs Act

In November 2021, the Infrastructure Investment and Jobs Act (IIJA) was signed into law. The IIJA expands the definition of infrastructure and gives local governments command and control of their infrastructure. The IIJA also significantly expands the types of infrastructure improvements eligible for funding through the IIJA, including multimodal, electric vehicle, and carbon emission reduction type projects. The act requires special attention to climate change and equity as they relate to infrastructure, housing, and transportation.

The IIJA contains a few provisions to expand the use of CatExs. It requires the USDOT to identify existing CatExs for FHWA, FTA, and Federal Railroad Administration that would accelerate project delivery if they were available to other Federal agencies. USDOT must provide other agencies with existing documentation and substantiating information about those CatExs.

Previous surface transportation bills required USDOT to adopt a CatEx for projects of limited Federal assistance, currently defined as (1) projects that receive less than \$5 million of Federal funds or (2) projects with a total estimated cost of not more than \$30 million and Federal funds representing less than 15 percent of the total estimated project cost. These dollar thresholds are adjusted annually to reflect inflation since 2012. The IIJA raises these thresholds to \$6 million and \$35 million, respectively, and continues to require annual inflation adjustments (continuing to use 2012 as the base year).

5.3 Programmatic CatEx Projects

The CDOT CatEx Agreement expedites the processing of programmatic CatEx level actions that meet specific criteria. These actions do not require FHWA review or signature.

As part of the CDOT CatEx Agreement, a CatEx Criteria List has been developed (**Table 5-1**). Should any of the questions be answered in the positive (yes), the project may not proceed as a Programmatic CatEx and should proceed as a Non-Programmatic CatEx (see **Section 5.3.5**).



Table 5-1. CatEx Criteria List

CatEx Criteria Checklist

*If the project is category C26, C27, or C28, exceeding any of the starred criteria would require that category D13 be used instead.

Project Name:		Project Number:		
Environmental Project Manager:		Date Checklist Completed:		
Potential Resource and Impact			Impacts from Project	
			Yes	No
1	Through Lanes: Results in capacity expansion of a roadway by addition of through lanes;	<input type="checkbox"/>	<input type="checkbox"/>	
2*	Right of Way: Involves acquisitions (fee simple) of more than a minor amount of right-of-way. A minor amount of right-of-way is defined as not more than 10% of any adjacent parcels for transportation related facilities (e.g. rest areas, intersections, maintenance yards) (note, this requirement does not apply to "perfection of title for ROW" projects under 23 CFR 771.117(c)(5));	<input type="checkbox"/>	<input type="checkbox"/>	
3*	Displacements: Involves acquisitions that result in any residential or non-residential displacements;	<input type="checkbox"/>	<input type="checkbox"/>	
4	Early Acquisition: Includes acquisition of land for hardship or protective purposes, or early acquisition pursuant to Federal acquisition project (23 U.S.C. § 108(c));	<input type="checkbox"/>	<input type="checkbox"/>	
5*	Section 404 Permit: Requires a U.S. Army Corps of Engineers Section 404 (33 U.S.C. § 1344) permit other than a Nationwide Permit or a Regional General Permit;	<input type="checkbox"/>	<input type="checkbox"/>	
6*	Bridge Permit: Requires a U.S. Coast Guard bridge permit (33 U.S.C. § 401);	<input type="checkbox"/>	<input type="checkbox"/>	
7*	Historic Properties: Results in a determination of adverse effect on historic properties pursuant to Section 106 the National Historic Preservation Act (54 U.S.C. § 306108);	<input type="checkbox"/>	<input type="checkbox"/>	
8*	Section 4(f): Requires the use of properties protected by Section 4(f) (49 U.S.C. § 303/23 U.S.C. § 138) that cannot be documented with an FHWA <i>de minimis</i> or exception;	<input type="checkbox"/>	<input type="checkbox"/>	
9*	Section 6(f): Converts lands under the protection of Section 6(f) of the Land and Water Conservation Act of 1965 (54 U.S.C. § 200305), the Federal Aid in Sport Fish Restoration Act (16 U.S.C. 777-777k, 64 Stat. 430), the Federal Aid in Wildlife Restoration Act (16 U.S.C. 669- 669i; 50 Stat. 917), or other unique areas or special lands that were acquired in fee or easement with public-use money and have deed restrictions or covenants on the property;	<input type="checkbox"/>	<input type="checkbox"/>	
10*	Endangered Species: Requires formal consultation under Section 7 of the Endangered Species Act (16 U.S.C. 1536);	<input type="checkbox"/>	<input type="checkbox"/>	
11*	Temporary Access and Road Closures: Involves the construction of temporary access, or the temporary closure of existing road, bridge, or ramps, that would result in major traffic disruptions, unless the use of such facilities satisfy the following conditions: a. Provisions are made for access by local traffic and so posted; b. The temporary access or closure, to the extent possible, will not interfere with any local special event or festival; c. The closure does not substantially change the environmental consequences of the action; d. There is no substantial controversy associated with the closure;	<input type="checkbox"/>	<input type="checkbox"/>	
12*	Permanent Road Closures: Involves the permanent closure of existing road, bridge, or ramps, unless the following conditions are met: a. No major traffic disruptions; b. No adverse effects to through-traffic dependent business; c. No closure that substantially changes the environmental consequences of the action; d. No substantial controversy associated with the closure;	<input type="checkbox"/>	<input type="checkbox"/>	



CatEx Criteria Checklist

*If the project is category C26, C27, or C28, exceeding any of the starred criteria would require that category D13 be used instead.

Project Name:		Project Number:		
Environmental Project Manager:		Date Checklist Completed:		
Potential Resource and Impact			Impacts from Project	
			Yes	No
13	Involvement with Interstate: Any project that involves the use (under, over or through) the Interstate ROW, whether by CDOT or a third party. This also includes Interstate frontage roads which are within the Interstate ROW;	<input type="checkbox"/>	<input type="checkbox"/>	
14*	Access Control: Involves changes in access control of an Interstate highway: or disposal of Interstate right-of-way (note: for C26, C27, and C28, <i>any</i> change in access control of a highway, not just Interstates, will require the use of D13 instead);	<input type="checkbox"/>	<input type="checkbox"/>	
15*	Floodplains: Requires work encroaching on a regulatory floodway or work affecting the base floodplain (100-year flood) elevations of a water course or lake, pursuant to Executive Order 11988 and 23 CFR 650 subpart A;	<input type="checkbox"/>	<input type="checkbox"/>	
16*	Wild and Scenic Rivers: Requires a Wild and Scenic River Section 7 determination from the river-administering agency. Please note that there is only one WSR river in Colorado: Cache La Poudre River in Region 4 near Ft. Collins;	<input type="checkbox"/>	<input type="checkbox"/>	
17	Noise: Is defined as a "Type I project" per 23 CFR 772.5 and/or CDOT Noise Guidance and results in impacted receptors;	<input type="checkbox"/>	<input type="checkbox"/>	
18	Air Quality: Does the project require a project level air quality conformity analysis;	<input type="checkbox"/>	<input type="checkbox"/>	
19	Statewide Planning: Is not included in or is inconsistent with the statewide transportation improvement program, and in applicable urbanized areas, the transportation improvement program;	<input type="checkbox"/>	<input type="checkbox"/>	
20	Emergency Relief: Involves emergency relief funding or approvals;	<input type="checkbox"/>	<input type="checkbox"/>	
21	Other Circumstances: For situations that are atypical, (i.e. Superfund site) or any other issue not covered above please explain.	<input type="checkbox"/>	<input type="checkbox"/>	
For resources checked yes, please add description of project and assumed impacts with impact number:				



5.3.1 Programmatic CatEx Actions

Programmatic CatExs normally do not require any further NEPA review or approvals by FHWA.

For these actions, a Form 128 must be prepared and the CFR numbering (C1, C2, D1, D2, etc.) should be used for project tracking. If more than one programmatic CatEx category applies, the main category will be listed in the CatEx number field on CDOT Form 128, and the remaining categories will be listed in the comment box on the back part of the form. If both non-programmatic and programmatic categories apply, the project will be processed as a non-programmatic CatEx.

Form 128 is currently completed in the CDOT SAP computer tracking system, accessible to only CDOT personnel.

The following actions from 23 CFR § 771.117(c) and 23 CFR § 771.117(d) meet the criteria for CatExs in the CEQ regulation (CEQ, 40 CFR § 1508.4). Actions under these categories normally do not require any further approvals. The following types of actions are considered programmatic CatEx actions.

- C1. Activities which do not involve or lead directly to construction, such as planning and research activities; grants for training engineering to define the elements of a proposed action or alternatives so that social, economic, and environmental effects can be assessed; and Federal-aid system revisions which establish classes of highways on the Federal-aid highway system.
- C2. Approval of utility installations along or across a transportation facility
- C3. Construction of bicycle and pedestrian lanes, paths, and facilities
- C4. Activities included in the State's highway safety plan under 23 USC 402
- C5. Transfer of Federal lands pursuant to 23 USC 317 107(d) and/or 23 USC 317 when the land transfer is in support of an action that is not otherwise subject to FHWA review under NEPA
- C6. The installation of noise barriers or alterations to existing publicly owned buildings to provide for noise reduction
- C7. Landscaping
- C8. Installation of fencing, signs, pavement markings, small passenger shelters, traffic signals, and railroad warning devices where no substantial land acquisition or traffic disruption will occur
- C9. The following actions for transportation facilities damaged by an incident resulting in an emergency declared by the Governor of the State and concurred in by the secretary, or a disaster or emergency declared by the President pursuant to the Robert T. Stafford Act (42 USC 5121):
 - i. Emergency repairs under 23 USC 125; and
 - ii. The repair, reconstruction, restoration, retrofitting, or replacement of any road, highway, bridge, tunnel, or transit facility (such as a ferry dock or bus transfer station), including ancillary transportation facilities (such as pedestrian/bicycle



paths and bike lanes), that is in operation or under construction when damaged and the action:

- A. Occurs within the existing right-of-way and in a manner that substantially conforms to the preexisting design, function, and location as the original (which may include upgrades to meet existing codes and standards as well as upgrades warranted to address conditions that have changed since the original construction); and
- B. Is commenced within a 2-year period beginning on the date of the declaration.

- C10. Acquisition of scenic easements
- C11. Determination of payback under 23 USC 156 for property previously acquired with Federal-aid participation
- C12. Improvements to existing rest areas and truck weigh stations
- C13. Ridesharing activities
- C14. Bus and rail car rehabilitation
- C15. Alterations to facilities or vehicles to make them accessible for elderly and handicapped persons
- C16. Program administration, technical assistance activities, and operating assistance to transit authorities to continue existing service or increase service to meet routine changes in demand
- C17. The purchase of vehicles by the applicant where the use of these vehicles can be accommodated by existing facilities or by new facilities which themselves are within a CatEx
- C18. Track and railbed maintenance and improvements when carried out within the existing right-of-way
- C19. Purchase and installation of operating or maintenance equipment to be located within the transit facility and with no significant impacts off the site
- C20. Promulgation of rules, regulations, and directives
- C21. Deployment of electronics, photonics, communications, or information processing used singly or in combination, or as components of a fully integrated system, to improve the efficiency or safety of a surface transportation system or to enhance security or passenger convenience. Examples include, but are not limited to, traffic control and detector devices, lane management systems, electronic payment equipment, automatic vehicle locaters, automated passenger counters, computer-aided dispatching systems, radio communications systems, radio communications systems, dynamic message signs, and security equipment including surveillance and detection cameras on roadways and in transit facilities and on buses.
- C22. Projects, as defined in 23 U.S.C. 101, that would take place entirely within the existing operational right-of-way. Existing operational right-of-way refers to right-of-way that has been disturbed for an existing transportation facility or is maintained for a transportation purpose. This area includes the features associated with the physical footprint of the transportation facility (including the roadway, bridges, interchanges, culverts, drainage, fixed guideways, mitigation areas, etc.) and other areas maintained for transportation purposes such as clear zone, traffic control signage, landscaping, any rest areas with



direct access to a controlled access highway, areas maintained for safety and security of a transportation facility, parking facilities with direct access to an existing transportation facility, transit power substations, transit venting structures, and transit maintenance facilities. Portions of the right-of-way that have not been disturbed or that are not maintained for transportation purposes are not in the existing operational right-of-way.

C23. Federally funded projects:

- i. That receive less than \$5,000,000 (as adjusted annually by the Secretary to reflect any increases in the Consumer Price Index prepared by the Department of Labor, see www.fhwa.dot.gov/ or <https://www.transit.dot.gov/>) of Federal funds; or
- ii. With a total estimated cost of not more than \$30,000,000 (as adjusted annually by the Secretary to reflect any increases in the Consumer Price Index prepared by the Department of Labor, see www.fhwa.dot.gov/ or <https://www.transit.dot.gov/>) and Federal funds comprising less than 15 percent of the total estimated project cost

C24. Localized geotechnical and other investigation to provide information for preliminary design and for environmental analyses and permitting purposes, such as drilling test bores for soil samplings; archaeological investigations for archaeology resources assessment or similar survey; and wetland surveys. (note: Generally, these activities are done as part of project development and do not require a separate Form 128 or to be identified on the Form 128 for a project. A separate Form 128 will only be required when these activities are done as a stand-alone activity (e.g., geotechnical investigation for rockfall mitigation or archeological investigations done separately from construction projects))

C25. Environmental restoration and pollution abatement actions to minimize or mitigate the impacts of any existing transportation facility (including retrofitting and construction of stormwater treatment systems to meet Federal and state requirements under sections 401 and 402 of the Federal Water Pollution Control Act (33 USC 1341; 1342)) carried out to address water pollution or environmental degradation.

C26. Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (including parking, weaving, turning, and climbing) if the project meets the constraints in 23 CFR 771.117(e)

C27. Highway safety or traffic operations improvement projects, including the installation of ramp metering control devices and lighting if the project meets the constraints in 23 CFR 771.117(e)

C28. Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings if the project meets the constraints in 23 CFR 771.117(e)

Additional actions which meet the criteria for a CatEx in the CatEx regulations (40 CFR 1508.4), (40 CFR 771.117), and paragraph (a) of this section may be designated as CatExs only after Administration approval unless otherwise authorized under an executed agreement pursuant to paragraph (g) of this section. The applicant shall submit documentation which demonstrates that the specific conditions or criteria for these CatExs are satisfied and that significant environmental effects will not result. Examples of such actions include:

- D1. [Reserved]
- D2. [Reserved]



- D3. [Reserved]
- D4. Transportation corridor fringe parking facilities.
- D5. Construction of new truck weigh stations or rest areas.
- D6. Approvals for disposal of excess right-of-way or for joint or limited use of right-of-way, where the proposed use does not have significant adverse impacts (non-Interstate).
- D7. Approvals for changes in access control
- D8. Construction of new bus storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and located on or near a street with adequate capacity to handle anticipated bus and support vehicle traffic.
- D9. Rehabilitation or reconstruction of existing rail and bus buildings and ancillary buildings where only minor amounts of additional land are required and where there is not a substantial increase in the number of users.
- D10. Construction of bus transfer facilities (an open area consisting of passenger shelters, boarding areas, kiosks, and related street improvements) when located in a commercial area or other high activity center in which there is adequate street capacity for projected bus traffic.
- D11. Construction of rail storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and where there is no significant noise impact on the surrounding community.
- D12. Acquisition of land for hardship or protective purposes. Hardship and protective buying will be permitted only for a particular parcel or a limited number of parcels. These types of land acquisition qualify for a CatEx only where the acquisition will not limit the evaluation of alternatives, including shifts in alignment for planned construction projects, which may be required in the NEPA process. No project development on such land may proceed until the NEPA process has been completed.
 - a. Hardship acquisition is early acquisition of property by the applicant at the property owner's request to alleviate particular hardship to the owner, in contrast to others, because of an inability to sell his property. This is justified when the property owner can document on the basis of health, safety or financial reasons that remaining in the property poses an undue hardship compared to others.
 - b. Protective acquisition is done to prevent imminent development of a parcel which may be needed for a proposed transportation corridor or site. Documentation must clearly demonstrate that development of the land would preclude future transportation use and that such development is imminent. Advance acquisition is not permitted for the sole purpose of reducing the cost of property for a proposed project.
- D13. Actions described in 23 CFR 771.117 paragraphs (c)(26), (c)(27), and (c)(28) that do not meet the constraints in 23 CFR 771.117(e).

As part of every CatEx, the CatEx Criteria List as shown in **Table 5-1**, should be completed. Should any of the answers to the questions be yes, then the project cannot proceed as a Programmatic CatEx. The CatEx Criteria List is a required piece of each project file for every CatEx.



5.3.2 Programmatic CatEx Process

The CDOT CatEx Agreement establishes that CDOT, under certain circumstances, can determine on behalf of FHWA whether a project qualifies for a CatEx action specifically listed in 23 CFR 771.117. CDOT is also authorized to certify, to FHWA, that an action qualifies for a CatEx in a specific and limited circumstance if the action cannot be approved according to the terms of the CDOT CatEx Agreement. If a project meets the CatEx criteria in 40 CFR 1508.4 and 23 CFR 771.117(a), and there are no unusual circumstances that could require the preparation of an EA or an EIS, CDOT is authorized to certify an action qualifies for a CatEx. These projects originate either through the CDOT planning process, which is further discussed in **Chapter 3**, or as a local agency project with CDOT oversight. The following sections discuss the processes for a CDOT Project Programmatic CatEx and a Local Agency Project with CDOT Oversight Programmatic CatEx.

Conducting actions documented by Form 128 will require information input by CDOT into the CDOT SAP computer tracking system. The CDOT SAP computer tracking system is accessible to only CDOT personnel.

The term “**Local Agency**” refers to a public agency, local public agency, established publicly owned organization, or private interest that can legally enter into an agreement with CDOT for a transportation project (CDOT, 2006).

CDOT or Local Agency Project

The following is the step-by-step process for approval of a Programmatic CatEx project:

1. **Internal Scoping** - The CDOT project manager (typically an engineer) initiates the Form 463, referred to as Design Data, and coordinates with all design and specialty disciplines, including Environmental, Right-of-Way, Utilities, Hydraulics, Traffic, Bridge Materials and Maintenance, to reach consensus on the project scope and to identify the multidisciplinary project development team. The Form 463 establishes the project within the CDOT tracking system. For local agency projects, the local agency project manager (typically an engineer) coordinates with the CDOT Resident Engineer and Region Program Environmental Manager (RPEM) to prepare the scope of work. Environmental impact avoidance and minimization alternatives are discussed. The RPEM, or designee, makes preliminary determinations about the anticipated environmental clearances and permits, and the associated responsibilities for each. The RPEM, or designee, schedules and coordinates with the CDOT Environmental Programs Branch (EPB) as necessary to initiate environmental clearance processes required on Part B of Form 128.
2. **Project Schedule** - The CDOT project manager, or local agency project manager, drafts a preliminary detailed project schedule and circulates it to the multidisciplinary project development team for comments. With input from the team, the project schedule is adopted and shared with the multidisciplinary project development team.

Example CDOT CatEx schedules are located in Section 3 of CDOT’s Project Development Manual, which can be found here:

https://www.codot.gov/business/designsupport/bulletins_manuals/2013-project-development-manual/revs-to-project-manual



3. **Environmental Clearances** - The RPEM, or designee, coordinates with the Region or EPB resource specialists for initiation of the anticipated environmental clearances required for Parts A and B of Form 128 (**Figure 5-1**). For a local agency project, the local agency project manager coordinates with the project team or consultant team. On a local agency project, the project team is typically an environmental consultant hired by the local agency. CDOT may help with certain resources as time allows. Environmental resources requiring environmental clearances could include:
 - a. Air Quality (hot spot analysis)
 - b. Noise
 - c. Hazardous Materials (Initial Site Assessment [ISA] Checklist or Modified Environmental Site Assessment [MESA] or Phase I Environmental Site Assessment)
 - d. Threatened or Endangered Species or State Listed Species
 - e. Wetland Delineation (Survey)
 - f. Paleontology
 - g. Archaeology
 - h. History
 - i. Section 4(f) - Historic
 - j. Section 4(f) - Non-Historic
 - k. Section 6(f)
 - l. Other (May include Noxious Weeds, Migratory Birds, Visual/Aesthetics, Floodplains, Environmental Justice, etc.)
4. **Field Inspection Review (FIR)** - The engineering project team prepares and provides the FIR engineering design plan set, which is approximately 30 percent design, for review and comment. Based on environmental clearances documentation, the RPEM, or designee, or local agency project manager coordinates with the CDOT project manager and project team to further identify environmental impact avoidance and minimization opportunities. The RPEM, or designee, communicates information requirements and anticipated timelines for necessary clearances and permits to the CDOT project manager.
5. **Part A and B Approval** - The project team prepares the environmental documentation necessary for the environmental clearances required for the front part (Parts A and B) of Form 128. This documentation is provided to CDOT for their review and comment. A brief technical memorandum summarizing the environmental clearances completed is prepared and submitted to the RPEM.
6. **Form 128 (Parts A and B)** - Once all resources that could be impacted have been inspected and impacts assessed, the RPEM approves the front part of Form 128. Parts A and B must be completed for ROW authorization and obligation of Federal funds for ROW.
7. **Form 128 (Part C)** - The RPEM, or designee, or local agency project manager initiates coordination with the permitting agencies for Part C of Form 128. Permit requirements or other mitigation measures are communicated to the CDOT project manager for inclusion in the final plans and specifications.

Part B should be considered as “impacts” and **Part C** should be considered as “mitigation.”



8. **Final Forms** - The CDOT Resident Engineer (in some cases, the CDOT project manager) signs and submits the final Form 463 and, as applicable, submits the completed and signed Form 128 and the Form 1180 signed by the CDOT Business Manager - Plans, Specifications, and Estimates (PS&E), to FHWA and Office of Financial Management & Budget (OFMB). Form 1180 approves the project plans, specifications, and cost estimates and requests that funds be obligated for the project. If changes have been made to the project design data, submit a revised Form 463 with the coinciding Form 128.

Form 418 is initiated with FHWA whenever Federal-aid or oversight is involved for approval. FHWA receives copies of Forms 463, 128, 1180, and 418. Once FHWA approves Form 418, funds are obligated and authorized for the construction phase and the project is sent to advertisement.

CDOT Forms are available at

<https://www.codot.gov/library/forms>

9. **FOR** - Environmental impacts are definitively quantified for environmental permit applications and to ensure adequate representation in the project plans and specifications. Form 463 is completed.
10. **Summary of Mitigation** - Based on the environmental clearances documentation, the RPEM, or designee, or local agency project manager prepares a Summary of Mitigation Measures and provides this summary to the CDOT project manager for inclusion in the Final Office Review (FOR) plans and specifications, which is approximately 90 percent design. A copy of the Summary of Mitigation Measures is provided to the RPEM. **Chapter 9** includes additional information on mitigation and monitoring commitments.

CDOT's **Mitigation Tracking Spreadsheet** is not required for Programmatic CatExs but is a recommended tool to track mitigation and can be found at the link below:

https://www.codot.gov/programs/environmental/resources/forms/CDOT%20Mitigation%20Tracking%20Spreadsheet_June%202012.xlsx/view

11. **Final Check** - The final plans and specifications containing all mitigation measures are provided to the RPEM, or designee, ideally a minimum of three weeks before final clearance is required. The RPEM, or designee, verifies that the relevant information presented in the Summary of Mitigation Measures is included in the Final Check plan set. Environmental staff explain/summarize changes required to the Final Check plan set. The RPEM, or designee, reviews and compiles the clearances and permits.
12. **Environmental Project Certification** - The RPEM approves the Environmental Project Certification in Part E of Form 128 (**Figure 5-1**). This signature means that all environmental commitments identified during the environmental clearance efforts are included or otherwise handled. A copy of the version of the plan set that was approved must be kept in the file to document changes that may be made under advertisement of the project for construction that will need subsequent clearance tracking in the file.



13. **Construction** - A pre-construction meeting is held with all specialty disciplines to outline permit conditions and mitigation commitments, etc. The CDOT Construction Project Engineer, or the local agency team, begins mitigation monitoring during construction to ensure compliance with permit requirements and mitigation commitments. Note: Long-term monitoring of mitigation may be required to successfully complete mitigation obligations and permit requirements.
14. **Project Close-Out** - The project is closed once construction is final and accepted by CDOT and most of the conditions of environmental permits have been satisfied. CDOT will prepare a Form 950 for project closure once all environmental commitments have been completed for the whole project. Project documentation and records should be maintained in accordance with CDOT Procedural Directive 51.1.

5.3.3 Programmatic CatEx Documentation

Completion of CDOT Form 128 is required for all CDOT projects. **Figure 5-1** includes Form 128, along with detailed instructions for completing the form.



Figure 5-1. Form 128 and Instructions



Colorado Department of Transportation
NEPA DETERMINATION / PROJECT CERTIFICATION

A. PROJECT INFORMATION				Form:
Environmental Scoping Date:	Project #:	Subaccount #:	Related Subaccount #:	
Project Name:				
Project Description (and Location):				
Region:	CDOT Program/Residency:	Environmental PM:	FHWA Area Engineer:	
FHWA NEXUS <input type="checkbox"/> Yes <input type="checkbox"/> No Other Federal NEXUS: <input type="checkbox"/> Yes <input type="checkbox"/> No Project Lead: <input type="checkbox"/> CDOT <input type="checkbox"/> Local Agency <input type="checkbox"/> Other				
Class of Action: <input type="checkbox"/> EIS/ROD <input type="checkbox"/> EA/FONSI <input type="checkbox"/> CatEx Construction/Contracting Method: <input type="checkbox"/> Design-Bid-Build <input type="checkbox"/> Design Build				
If CatEx, the project fits the following CE number(s): <input type="checkbox"/> CM/GC <input type="checkbox"/> Other:				
B. THE NEPA PROCESS				
Resource Clearances			Revised Clearances	
<i>Check Box Only if Impacted</i>				
	Clearance Date		Revised Clearance date	Revised Clearance date
Air Quality (hot spot analysis) <input type="checkbox"/>	_____		<input type="checkbox"/>	_____
Noise <input type="checkbox"/>	_____		<input type="checkbox"/>	_____
Hazmat - ISA/MESA <input type="checkbox"/>	_____		<input type="checkbox"/>	_____
T&E and State Listed Species <input type="checkbox"/>	_____		<input type="checkbox"/>	_____
Wetland Delineation (Survey) <input type="checkbox"/>	_____		<input type="checkbox"/>	_____
Paleontology <input type="checkbox"/>	_____		<input type="checkbox"/>	_____
Archaeology <input type="checkbox"/>	_____		<input type="checkbox"/>	_____
History <input type="checkbox"/>	_____		<input type="checkbox"/>	_____
Section4(f) - Historic <input type="checkbox"/>	_____		<input type="checkbox"/>	_____
Section4(f) - Non-Historic <input type="checkbox"/>	_____		<input type="checkbox"/>	_____
Section6(f) <input type="checkbox"/>	_____		<input type="checkbox"/>	_____
Other: <input type="checkbox"/>	_____		<input type="checkbox"/>	_____
All required clearance actions indicated have been completed for the design plans referenced below. If Project is a Categorical Exclusion, no significant environmental impacts will result from this project. Construction is not authorized until approved in Part E below. Implementation of project shall include required mitigation commitments.			All required clearance actions indicated have been completed for the design plans referenced below. If Project is a Categorical Exclusion, no significant environmental impacts will result from this project. Construction is not authorized until approved in Part E below. Implementation of project shall include required mitigation commitments.	
<input type="checkbox"/> Action meets requirements to be a Programmatic CatEx per the FHWA/CDOT Programmatic Agreement for Categorical Exclusions (FHWA signature below not required).			FHWA signature is not required because:	
<input type="checkbox"/> This is an EA/FONSI or EIS/ROD. The Decision Document has already been signed by FHWA (FHWA signature below is not required).			<input type="checkbox"/> This is a Programmatic CatEx	<input type="checkbox"/> This is a Programmatic CatEx
			<input type="checkbox"/> This is a Reevaluation of an EA/FONSI or EIS/ROD (1399 form has already been signed.)	<input type="checkbox"/> This is a Reevaluation of an EA/FONSI or EIS/ROD (1399 form has already been signed.)
Design Plan Set and Date: _____ / _____ / _____			_____ / _____ / _____	_____ / _____ / _____
RPEM Signature and Date: _____ / _____ / _____			_____ / _____ / _____	_____ / _____ / _____
FHWA Division Administrator Signature (if required) I concur with the above category designation and the scope of environmental clearance/permits indicated above.			FHWA Division Administrator Signature (if required) I concur with the above category designation and the scope of environmental clearance/permits indicated above.	
Signature and Date: _____ / _____ / _____			_____ / _____ / _____	_____ / _____ / _____
Comments:				



Colorado Department of Transportation
NEPA DETERMINATION / PROJECT CERTIFICATION

C. PERMITS AND ADDITIONAL REQUIREMENTS				Form: 01
Resource Clearances		Revised Clearances		
<i>Check Box Only if Impacted</i>	Date Completed	Date Updated	Date updated	
404 Permit	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____	
401 Certification	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____	
402 Certification	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____	
Const. Stormwater Permit (CDPS)	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____	
Const. Dewatering Permit	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____	
Noxious Weed Management	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____	
SB40 Certification	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____	
Wetland Finding	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____	
Structure Demolition Permit	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____	
Hazardous Materials – Phase II	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____	
Permanent WQ	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____	
SWMP	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____	
Other:	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____	

D. Comments

E. ENVIRONMENTAL PROJECT CERTIFICATION

All clearance and permit requirements for this project have been addressed and mitigation included. The appropriate documentation is on file in the Region office.

	Clearance	Revised Clearance	Revised Clearance
Design Plan Set and Date: _____ / _____ / _____			
Certification Type:	<input type="checkbox"/> Advertisement <input type="checkbox"/> Advertisement & Construction <input type="checkbox"/> Other: _____	<input type="checkbox"/> Advertisement <input type="checkbox"/> Advertisement & Construction <input type="checkbox"/> Other: _____	<input type="checkbox"/> Advertisement <input type="checkbox"/> Advertisement & Construction <input type="checkbox"/> Other: _____
RPEM Signature & Date: _____ / _____ / _____			

Note to Project Manager: Any changes to the plans and specifications after the date of the RPEM signature in Part B that affect environmental impacts or mitigation must be approved by the RPEM.

Distribution:
RPEM (original): copies to Project Manager, Right of way (if ROW required)

CDOT Form #128b (07/21/2016)



Instructions for Filling out CDOT Form 128

Updated 12/15/2022

Completion of CDOT Form 128 is required for all CDOT projects, even those that have been cleared as fully documented (template) CatEx's, EAs or EISs. Parts A and B must be completed for Right of Way (ROW) authorization and obligation of federal funds for ROW. Parts A, B, C, and E must be completed prior to project advertisement and/or construction.

FHWA signature is required for all federally funded CatExs unless CDOT has been allowed to make a CatEx certification or determination and approval on FHWA's behalf (Programmatic CatEx). Programmatic CatExs are those that can be approved by CDOT without FHWA's signature based upon the requirements of the FHWA/CDOT Programmatic Agreement for Categorical Exclusions.

When FHWA signature is required, the FHWA will retain a copy of the signed Form 128 and return the original to the RPEM. A scanned copy is acceptable. The RPEM will be responsible for distributing copies within CDOT and maintaining the original within the Region.

FHWA approval is required for projects that exceed certain evaluation criteria, even if they would normally be considered Programmatic CatExs. Examples of reasons why a project could require FHWA approval include residential displacements, Individual Section 404 permits, individual Section 4(f) evaluations, or changes to access to the Interstate. The reason why FHWA signature is required when the project would normally be a Programmatic CatEx shall be stated in the Part B comments section.

If it is necessary for the Environmental Programs Branch to prepare a Form 128 for a statewide project, the EPB manager will be responsible for clearances, certification, and appropriate distribution.

If project revisions result in changes to the clearance/permit requirements, a revised Form 463 (Design Data) are required in addition to an updated Form 128. A CDOT Form 1399, NEPA Reevaluation, may also be appropriate.

STEP BY STEP INSTRUCTIONS FOR FILLING OUT THE FORM

Section A. Project Information

1. **Scoping Date:** An initiation date is required for FHWA annual tracking purposes. If there is no scoping meeting, please use the date of the environmental kick-off meeting. The third preference for this cell would be the date of the EPB Environmental Clearance Request.
2. **Federal Project #:** This is the federal project number including its prefix.
3. **Subaccount #:** This is the CDOT 5-digit Project Control Number (PCN).
4. **Related Subaccount Numbers:** Some projects have different subaccount numbers for the NEPA phase and the construction phase(s), especially for EA and EIS projects. Also, for smaller Design Build projects it is common to combine multiple Catex projects into one project for construction. This is where you would enter all those numbers.
5. **Project Name:** Enter the full name of the project.
6. **Project Description (and location):** Succinctly explain the full scope of work including the name of the roadway, endpoints or mileposts, etc.
7. **Region:** Enter Region(s) number. For statewide projects enter HQ.
8. **CDOT Program/Residency:** Based on how your Region divides projects, enter either the Program or Residency.
9. **Environmental PM:** Provide the name of the person who has coordinated the environmental work for the project.
10. **FHWA Area Engineer:** Provide the name of the Area Engineer who is responsible for the project.



11. **FHWA Nexus:** This is for annual tracking purposes so please make sure to check the box if this is a project with FHWA oversight.
12. **Other Federal Nexus:** This is for projects that have a federal nexus from a different agency. An example is a project that needs a 404 permit from the USACE. This field should be filled out even if there is not a FHWA nexus.
13. **Form #:** It is a way to track clearances for projects that need to be updated more than twice and require multiple Form 128s. This is applicable for projects with multiple phases, including Design Build.
14. **Project Lead:** Provide the Agency proponent. This is required for annual tracking purposes. An example of when the “Other” box would be checked is if you were working on an FTA project.
15. **Class of Action:** This form should be filled out for every project, even EIS/ROD and EA/FONSI projects, in order to document back part clearance (Section E) and project certification. For Catex projects, the Catex designation must be entered in the second line of this section. The designation must be taken from 23 CFR 771.117(c)-(d) or from the current FHWA/CDOT Programmatic Agreement for Categorical Exclusions. Project types that are not listed in 23 CFR 771.117(c)(d) or the Programmatic Agreement may still be considered as non-Programmatic CatExs; these require a transmittal letter of explanation to FHWA and are coded as “DX” CatExs.
16. **Project Delivery Method:** This is for annual tracking purposes and will help explain how the form will be used (i.e., whether the revised clearances will be used only if there are changes to the project, or if they will have to be used as a regular part of the approval process [for design-builds]). In SAP, it is anticipated that this field will be “greyed out” and populated by the Project Engineer via another function prior to the obligation of funds.

Section B. The NEPA Process

1. **Clearance Date:** The original clearance date for a resource on most CatEx projects is noted here (in the left-hand column). Each dated resource area must have corresponding clearance documentation in the project file. Resources without dates indicate the resource did not require a clearance. A brief note/memo to the file should describe the conditions of non-cleared resources (i.e., project limits remain in ROW and no excavation will occur, therefore no 4(f), 6(f) or paleo clearances are requested).

For separately or fully documented CatEx (using a template), EA, and EIS projects, these dates are left blank.

For Design Build projects, this column indicates a clearance for preliminary design (traditionally no more 30% design), as well as for Advertised plans or Bid. After awarded, subsequent environmental clearances will be obtained based on final design. The project can then be certified for construction.
2. **Check box:** The check box to the right of a resource should be checked if there is an impact or anticipated impact to that resource, or if a minimization/avoidance measure needs to be included in the construction plans (see explanation for each resource below). A clearance date will always accompany a checked box. During the clearance process it was determined if: mitigation is required, further evaluation is required, or a permit is required. Minimization or avoidance measures should be noted on the plan sheets. Here is an explanation of when to check the box for each resource:
 - **Air Quality:** checked if there is an air quality impact within non-attainment or maintenance areas.
 - **Noise:** checked if the project is classified as Type I in CDOT’s Noise Guidance and there is a noise impact, even if noise mitigation is not recommended.
 - **Hazmat:** checked if there are special handling requirements of known or potential hazardous materials or if further hazmat investigation is required prior to construction.
 - **T & E/ State Listed Species:** checked if there is an impact to federal or state listed species and/or avoidance/minimization measures are needed during construction. Clearance will include Section 7 consultation and Concurrence (if required).
 - **Wetlands:** checked if there are impacts to wetland or Waters of the US, or a permit or mitigation is required to avoid impacts.



- Paleontology: checked if there is a paleontology impact or mitigation/monitoring is required.
- Archaeology: checked if there are direct impacts to any significant archaeological sites or features, or if mitigation/monitoring is required.
- History: checked if there are *Adverse Effects* or a *No Adverse Effects* with impacts to any eligible historic site, or if mitigation/monitoring is required.
- Section 4(f) - Historic: checked if a *de minimis*, programmatic, or individual 4(f) is required, or if an exception is required that includes mitigation (e.g., temporary occupancy).
- Section 4(f) - Non-Historic: checked if a *de minimis*, programmatic, or individual 4(f) is required or if an exception is required that includes mitigation (e.g., temporary occupancy).
- Section 6(f): checked if a Temporary Non-conforming Use or Conversion is required; or if avoidance measures are required.
- Other: this box can be used for any other resource that is not listed on the form. Common examples are Environmental Justice, Visual, Floodplains or Farmlands. If you have two or more resources that you need to add, please add them to the comment box at the bottom of the page.

Date Only - If there is no impact or minimization measure to a specific resource, the check box should not be checked. However, there should be a date on the line to document when the resource was evaluated, and clearance was provided.

- Air Quality: provide clearance date if a hotspot analysis is required.
- Noise: provide clearance date if a noise analysis or review by the noise specialist is required.
- Hazmat: provide clearance date if an ISA or MESA is required.
- T & E/ State Listed Species: provide date of no effect or no impact determination.
- Wetlands: provide clearance date if a wetland delineation was conducted.
- Paleontology: provide clearance date if paleontology specialist reviewed the project.
- Archaeology: provide clearance date if an archaeological survey was done.
- History: provide clearance date for history review of the project.
- Section 4(f) - Historic: provide clearance date if the History or Archaeology reviews show that Section 4(f) is not applicable.
- Section 4(f) - Non-Historic: provide clearance date from Section 4(f) subject matter expert when there are non-historic Section 4(f) resources in the area (e.g., parks, trails, wildlife refuges).
- Section 6(f): provide clearance date if there are parks or trails in the area.
- Other: this box can be used for any other resource that is not listed on the form. Common examples are Environmental Justice, Visual, Floodplains or Farmlands. If you have two or more resources that you need to add, please add them to the comment box at the bottom of the page.

Neither Checkbox nor Date - If a resource is clearly not present in the project area or if the project scope would clearly not impact a certain resource and therefore no verification would be necessary, the check box and date line can be left blank. They can also be blank for projects that have an EIS/ROD, EA/FONSI, or separately/fully documented (e.g., template) CatEx.

3. Revised Clearances: (the middle and right-hand columns) should be filled out for NEPA reevaluations, including the following:

- If the Form 1399 is used, the resource portion does not need to be filled out, just check the box indicating that a Form 1399 was completed and provide the reevaluation date, design plan set date, and signatures are required.



- For CatExs, these columns can be used to reevaluate the project, including documenting the updated resource clearances and/or impacts. Checkboxes and dates are used in the same way as for the first column. However, only resources with new impacts should have checked boxes.
- For EAs or EISs where there are NO changes to the project or impacts, this column can be used in place of the Form 1399, and dates can be entered to show that the resources were reviewed.

These columns are applicable for Design Build projects. As mentioned above, when a Design Build project goes out for bid it is generally at 30% design. Once awarded, the contractor will be responsible for finalizing the design, so this design set needs an environmental clearance before it is released for construction. This could happen once or several times depending on how the contractor is advancing the project. Any of the above reevaluation methods could be appropriate depending on the circumstances. It also needs to be used for back part clearance (project certification) in Section E. A second form should be used if additional reevaluations are required.

4. **Design Plan Set and Date:** This section should always be filled out so that it is clear what level of design (scoping, FIR, or FOR) was used for the front part clearance in Section B. This is the plan set provided to specialist for resource clearances.
5. **RPEM Signature and Date:** Coordinate with your RPEM to determine who has authorization to sign within your region.
6. **FHWA Signature:** The checkboxes at the bottom of Section B (above the signature lines) should be checked if an FHWA signature at the bottom is not required.
7. **(In SAP) Revision Signature Section:** Check the box to open a new signature box for revisions.

Section C. Permits and additional requirements

1. **404 Permit:** This permit is needed if there will be any discharge of fill into a water of the U.S. Check the box if any 404 permit (individual, nationwide or non-notifying) is needed from the USACE. Add the date when that permit is authorized. For a NWP with no Preconstruction Notification, use the date the clearance is received from the resource specialist. If there is consultation with the USACE, but no permit is needed, do not check the box or add a date.
2. **401 Certification:** This water quality certification from the CDPHE or Tribal Authority/EPA is needed when a 404 permit is needed. If the 404 permit is a nationwide, the 401 certification is automatic - except where CDPHE is not the lead for 401 (e.g., Indian reservation, military base, etc.). If the certification is automatic, do not check the box or add a date. Check the box if 401 certification is not automatic and is needed, including if an individual 404 permit is needed. Add a date to the line when the nationwide permit/401 certification is received, or the individual permit/401 certification is received.
3. **402 Certification (Federal permit):** This is a National Pollutant Discharge Elimination System (NPDES) permit certification issued by EPA and is needed when there will be a discharge of pollutants to waters of the U.S. and when working on military bases, Indian lands, or some other federal lands. Check the box if any 402 NPDES Certification (includes all federal permits) is required. Add a date when that certification is received from the EPA or when the water quality sign-off is received from the regional water quality specialist. If there is consultation with the EPA, but no certification is needed, just add the date of that consultation.
4. **Const. Stormwater Permit (State permit):** This is a stormwater construction permit (SCP) issued by CDPHE. Projects with any construction activity that disturbs one or more acres, or is part of a larger common plan of development or sale require this permit (unless on federal lands). Check the box when the permit is required. Add a date when the water quality sign-off is received from the regional water quality specialist. Projects with no SCP will not have a checked box. If the permit is the responsibility of the contractor, note that in Section D of the 128 form and leave the date blank.
5. **Const. Dewatering Permit:** This is a Colorado Discharge Permit System (CDPS) permit issued by CDPHE for groundwater. If known during design, check the box for a project with any construction activity that requires dewatering (clean water) or remediation (contaminated water). Add a date when the water quality sign-off is received from the regional water quality specialist. If the permit is the responsibility of the contractor, note that in Section D of the 128 form and leave the date blank.
6. **Noxious Weed Management:** Check the box when a noxious weed management plan is needed for the project. Add a date when the plan document is final and complete. If the process varies, add a note in Section D of the 128 form explaining.



7. **SB40 Certification:** This certification is required from CPW when there are plans for construction in any SB40 jurisdictional stream or its bank or tributaries. Check the box if SB40 certification is required. Add a date when the certification process is complete, or clearance is received from the resource specialist. For a Programmatic SB40, use the date 15 days after the letter was sent to CPW unless CPW has requested more time or provides written concurrence during the 15-day review period. In these instances, use the date of CPW concurrence as the clearance date.
8. **Wetland Finding:** This is needed when permanent wetland impacts are greater than 500 sq. ft., or temporary + permanent wetland impacts are greater than 1000 sq. ft. Check the box if a wetland finding is required. Add a date when the finding is final and/or approved by the resource specialist.
9. **Structure Demolition Permit:** Check the box when the project will involve demolishing any structures (defined by CDPHE). However, prior to applying for and obtaining this permit, the structure must be inspected, and if necessary, abated for asbestos and lead based paint. Add a date when the permit is obtained from CDPHE, or when the resource specialist gives final clearance.
10. **Hazardous Materials - Phase II:** This is needed to obtain sound, scientifically valid data concerning actual property conditions to confirm findings from a Phase I or MESA, or to seek such data to inform evaluations, conclusions, and choices of action. Check the box if a Phase II is required. Add a date when the Phase II is complete and final.
11. **Permanent WQ:** Check the box when a project will install PWQ. Projects with no PWQ Control Measures (CMs) will not check the box; however, all projects require a PWQ clearance date. Add the date when the water quality sign-off is received from the regional water quality specialist. If the project is in an MS4 area, or if an EIS requires it, add a note stating that in Section D of the 128 form.
12. **SWMP:** Stormwater Management Plans (SWMPs) must be prepared for every construction project, regardless of the size of the disturbance area. Check the box for every construction project. Add a date when a project SWMP has been reviewed and cleared by an approved CDOT SWMP Reviewer.
13. **Other:** Use this box and date line for any other back-part permit or certification needed. Be sure to add details about this in Section D of the 128 form. (e.g., floodplain approvals, or a Section 408 permit.)

For Design Build projects, the left-hand column displays the permits that the contractor will be required to obtain, and which will be obtained by CDOT. When plans are sent to the CDOT Environmental Manager for review, a copy of the contractor-obtained permits should also be included. The Environmental PM should enter the date the permit was obtained on the appropriate line in the middle and right-hand columns.

Section D. Comments

Describe any permits obtained by the contractor after advertisement or other special conditions.

Section E. Environmental Project Certification

1. **Design Plan Set and Date:** The RPEM, or designee, must indicate the set of plans and specification (FIR, FOR, advertisement, award, etc.) that were reviewed prior to certification. The date of these plans must be provided. If the project is being certified for construction, then the plans being reviewed need to be marked as FINAL, AD or AWARD.
2. **Certification Type:**
 - a) **Advertisement** – Applicable for Design Build. By checking this box, you are releasing the project for advertisement, but not for construction. For Design Build, the project is certified for construction when the final plans are verified. This subsequent sign off will be documented in the middle column of this section.
 - b) **Advertisement & Construction** – Checked for a traditional design-bid-build project that is being released for advertisement and construction at the same time.
 - c) **Other** – An example of when this box gets checked is a CM/GC project.
3. **RPEM Signature & Date:** This is required for all projects being released for advertisement and/or construction. This signature is a certification that 1) all required clearance and permits have been obtained, 2) environmental mitigation is included in the referenced plans and specifications, and 3) the appropriate NEPA documentation is on file.



Parts A and B of Form 128 list environmental clearances to be completed as part of the Programmatic CatEx process. These environmental clearances include:

- ▶ **Air Quality** - Air quality is most relevant to projects within nonattainment or maintenance areas. See Chapter 9, Section 9.2, for additional information on conducting an air quality hot spot analysis.
- ▶ **Noise** -Type 1 projects require an examination of traffic noise. A Type 1 project generally involves construction of a roadway in a new location, physically alters the vertical or horizontal alignment of an existing roadway, or increases the number of through traffic lanes. Refer to Chapter 9, Section 9.22, for additional information on conducting a noise analysis.
- ▶ **Hazardous Materials** - Every project requires an ISA Checklist (Form 881), a MESA, or a Phase I Environmental Site Assessment. See **Section 9.25 of Chapter 9** for additional information on when an ISA, a MESA, or a Phase I is applicable depending on the size and type of project.
- ▶ **Threatened and Endangered Species and State Listed Species** - Follow the process outlined in **Section 9.9 of Chapter 9**. Otherwise, the Biological Resources Report serves as documentation for the presence or absence of threatened and endangered species in the project area.
- ▶ **Wetland Delineation (Survey)** - If wetlands are identified that would be impacted, a Wetland Delineation should be conducted for submittal to the USACE for a jurisdictional determination as outlined in **Section 9.6 of Chapter 9**.
- ▶ **Paleontology** - **Section 9.11 of Chapter 9** provides additional information on the process for the survey and documentation of the presence/absence of paleontological resources.
- ▶ **Archaeology** - **Section 9.10 of Chapter 9** provides additional information on the process for the survey and documentation of the presence/absence of archaeological resources.
- ▶ **History** - **Section 9.10 of Chapter 9** provides additional information on the process for the Section 106 review and survey of historic resources. CDOT's June 2014 Section 106 Programmatic Agreement includes a section about Section 106 consultation requirements for non-eligible, eligible, and listed bridges identified in previous statewide historic bridge inventories or newly documented as part of individual projects. Coordination with a CDOT Historian is required.

CDOT's June 2014 Section 106 Programmatic Agreement is found here:

<https://www.codot.gov/programs/environmental/archaeology-and-history/106-programmatic-agreement-1/view>

- ▶ **Section 4(f) Historic** - **Section 9.10 of Chapter 9** provides additional information on the process for the Section 106 review and survey of historic resources.
- ▶ **Section 4(f) Non-Historic** - Commonly affected Section 4(f) impacts include parks, trails, or historic properties. **Section 9.19 of Chapter 9** discusses the Section 4(f) process.
- ▶ **Section 6(f)** - **Section 9.20 of Chapter 9** provides additional guidance on Section 6(f), which relates to property purchased using Land and Water Conservation Funds.
- ▶ **Other** - Based on the preliminary determinations made by the RPEM, or designee, regarding the anticipated environmental clearances for a project, additional environmental clearances



may be required. Additional environmental clearances could include Environmental Justice, Visual/Aesthetics, Socioeconomic regarding business access changes, etc. **Chapter 9** further discusses the methodologies and processes for these resources.

Part C of Form 128 identifies permits and additional requirements to be completed as part of the environmental project certification for the CatEx. The final plans and specifications identify and include permit mitigation measures. These permits and additional requirements include:

- ▶ **404 Permit (Clean Water Act)** - Impacts to streams and related jurisdictional wetlands or stream diversions of waters of the U.S. could require a USACE Section 404 Nationwide Permit. An Individual Permit is required for projects with larger impacts to wetlands (typically greater than 0.5 acre in size). **Section 9.5 of Chapter 9** includes additional information on the permitting process. It should be noted that a Section 404 permit cannot be obtained until the USACE receives clearance on Section 106 from the SHPO (historic) AND Threatened and Endangered species consultation from the USFWS.
- ▶ **401 Certification (Clean Water Act)** - A Colorado Department of Public Health and Environment (CDPHE) Section 401 water quality certification is required if a Section 404 Individual Permit is required. This is generally the contractor's responsibility. **Section 9.5 of Chapter 9** includes additional information on the permitting process.
- ▶ **402 Certification Permits** - This permit is from the U.S. Environmental Protection Agency if the project is located on Federal land; CDPHE if located on non-Federal land:
 - **Construction Stormwater Certification (Colorado Discharge Permit System)** - Projects that disturb one acre or greater require this construction stormwater permit from the CDPHE Water Quality Control Division. Additionally, a Stormwater Management Plan in CDOT's approved format must be prepared. **Section 9.5 of Chapter 9** includes additional information on the permitting process.
 - **Construction Dewatering or Remediation Certification** - If groundwater is encountered, a CDPHE Dewatering or Remediation permit may be required. **Section 9.5 of Chapter 9** includes additional information on the permitting process.
- ▶ **Noxious Weed Management** - Project-specific plans are developed prior to advertisement when noxious weeds and their management cannot be adequately identified, handled, or proscribed in the plans and specifications.
- ▶ **SB 40 Certification** - This Colorado Parks and Wildlife permit for impacts to stream banks, stream channels, and riparian areas is required. **Section 9.9 of Chapter 9** includes additional information on the certification process.
- ▶ **Wetland Finding** - For impacts to jurisdictional and non-jurisdictional wetlands and waters of the U.S., a Wetland Finding of No Practicable Alternative is required for approval by CDOT and FHWA if a certain threshold is reached. **Section 9.7 of Chapter 9** includes additional information on preparing a Wetland Finding.
- ▶ **Structure Demolition Permit** - Prior to demolition of bridges or other structures, a permit must be obtained from the Air Pollution Control Division for possible air quality impacts. The Notification of Demolition Form should be submitted to CDPHE at least 10 days before the demolition. This is the contractor's responsibility.



- ▶ **Hazardous Materials (Phase II)** - If recommended by the ISA, MESA, or Phase I Environmental Site Assessment, a Phase II subsurface soil and groundwater investigation is required for potential hazardous materials that present a liability issue during ROW acquisition, require management during construction to protect worker health and safety and the environment, or to properly dispose of the hazardous material. A Phase II may also occur on bridge structures or buildings to be demolished for things such as asbestos. **Section 9.26 of Chapter 9** provides additional information on when a Phase II is applicable depending on project size and type.
- ▶ **Permanent Water Quality (PWQ)** - According to CDOT's MS4 Permit, every project requires a PWQ clearance.
- ▶ **Stormwater Management Plan (SWMP)** - It must be documented that the SWMP has been approved and accepted by CDOT or the local agency Water Pollution Control Manager. SWMPs must be prepared for every CatEx regardless of the size of the disturbance area. Early acquisition projects, parcel disposals, and/or projects in which there is a change in ownership (e.g., Devolutions or Relinquishments) will not require a SWMP review.
- ▶ **Other** - Any other permits specific to the project may be required and documented in this location.

CDOT Form 128 requires two signatures: one for the front part and one for the back part:

- Front part (Parts A and B) involves investigating if there are environmental areas of concern in regard to the project
- Front part (Parts A and B) is usually needed for ROW plan authorization and obligation of funds for ROW acquisition unless these areas do not have important environmental impacts and the ROW is being purchased with non-Federal funds
- Back part (Parts C and D) is needed for environmental permits and to ensure environmental commitments are in the final plans and specifications
- Back part (Parts C and D) is needed for project advertisement and obligation of funds for construction.

5.3.4 Programmatic CatEx Approval

CDOT may approve, on behalf of FHWA, those CatExs specifically listed in 23 CFR 771.117(c) and (d) that do not exceed the thresholds identified previously or in the CatEx Criteria List. CDOT will identify the applicable CatEx category from 23 CFR 771.117(c) or (d), ensure any conditions or constraints are met, verify that unusual circumstances do not apply, address any and all other environmental requirements, and complete the review with a signature evidencing approval. No project-specific review or approval of the CatEx by FHWA is required. All programmatic CatExs require the review and approval of a CDOT RPEM or designee. CDOT may coordinate with FHWA depending on the project and type of action. The RPEM, or designee, may request or invite the FHWA Area Engineer to review a Programmatic CatEx, especially if unique circumstances surround the project. CDOT may not approve actions listed in 23 CFR 771.117 (c) or (d) that exceed any of the following listed thresholds in (Table 5-1).

If the project is category C26, C27, or C28, exceeding any of the starred criteria would require that category D13 be used instead.



5.3.5 Non-Programmatic CatEx Projects

Non-programmatic CatExs are actions that meet the criteria for a CatEx in the CEQ regulations (CEQ, 40 CFR § 1508.4) if they are appropriately analyzed, documented, and approved by FHWA and their regulations (FHWA, 23 CFR § 771.117). The applicant must submit documentation that demonstrates that the specific conditions or criteria for these CatExs are satisfied and that significant environmental effects will not result from the action.

5.3.6 Non-Programmatic CatEx Criteria

To facilitate determining if a project action can proceed as a Programmatic or Non-Programmatic CatEx, CDOT has developed a list of questions on the CatEx Criteria List. If any of the questions on the CatEx Criteria List (**Table 5-1**) can be answered in the positive and cannot be resolved by amending the planned action, the project might not be approved as a CatEx and requires closer review by FHWA before determining the NEPA class of action.

5.3.7 Non-Programmatic CatEx Actions

Non-programmatic CatExs are actions that meet the definition of a CatEx in 23 CFR § 771.117 (a) and (b) but are not covered by a category in 23 CFR 771.117 (c) and (d). It is an action that does not individually or cumulatively have significant environmental impacts or have any yes answers in the CatEx Criteria List, but requires additional review by FHWA. The applicant must submit documentation that demonstrates that the specific conditions or criteria for these CatExs are satisfied and that significant environmental effects will not result from the action.

5.3.8 Non-Programmatic CatEx Process

As discussed in **Section 2.4**, CDOT staff, typically the CDOT RPEM, decide the appropriate class of NEPA documentation needed for a project in consultation with FHWA, although FHWA makes the final determination on class of action. These projects originate either through the CDOT planning process, which is further discussed in **Chapter 3**, or as a local agency project with CDOT oversight. The following sections discuss the processes for a CDOT Project Non-Programmatic CatEx and a Local Agency Project with CDOT Oversight Non-Programmatic CatEx. Conducting actions documented by Form 128 will require information input by CDOT into the CDOT SAP computer tracking system.

[CDOT's Mitigation Tracking Spreadsheet](#) is required to be completed for Non-Programmatic CatExs.



CDOT or Local Agency Project

The following is the step-by-step process for approval of a Non-Programmatic CatEx project:

1. **Internal Scoping** - The CDOT project manager or the local agency project manager (typically an engineer) coordinates with the CDOT Resident Engineer and the RPEM to prepare the scope of work. The CDOT project manager or local agency manager coordinates with all design and specialty disciplines, including Environmental, Right-of-Way, Utilities, Hydraulics, Traffic, Bridge Materials and Maintenance, to reach consensus on the project scope and to identify the multidisciplinary project development team. FHWA should be invited but can be briefed afterward if they are unable to attend. Environmental impact avoidance and minimization alternatives are discussed. The RPEM, or designee, makes preliminary determinations regarding the anticipated environmental clearances and permits, and associated responsibilities for each. The RPEM, or designee, schedules and coordinates with the CDOT EPB as necessary to initiate environmental clearance processes required on Part B of Form 128.
2. **Project Schedule** - The CDOT project manager or local agency representative drafts a preliminary detailed project schedule that is circulated to the multidisciplinary project development team for comments. The project schedule is adopted and shared with the multidisciplinary project development team. Examples of CDOT CatEx schedules can be found in the Environmental Section (Section 2) of CDOT's Project Development Manual (2013).
3. **Project Planning and Programming** - The CDOT project manager should verify that the project is included in the Statewide Transportation Plan (STP): Statewide Transportation Improvement Program (STIP). If the project is in an urban area, the CDOT project manager should verify that the project is included in the Regional Transportation Plan (RTP) and the Transportation Improvement Program (TIP). If a project is not included in the Statewide Transportation Plan, STIP, RTP, and TIP, FHWA cannot approve the project. Note: Projects that do not meet the metropolitan planning organization regionally significant project criteria are not required to be in the STIP, RTP, or TIP.
4. **Environmental Clearances** - The RPEM, or designee, or local agency representative coordinates with the Region or EPB resource specialists for initiation of the anticipated environmental clearances required for the front part (Parts A and B) of Form 128. For local agency projects, this could be an environmental consulting team.
5. **FIR** - The project team prepares and provides the FIR engineering design plan set, which is approximately 30 percent design, for review and comment. Based on environmental clearances documentation, the RPEM, or designee, coordinates with the CDOT project manager and project team to further identify environmental impact avoidance and minimization opportunities. For local agency projects, coordination with the RPEM and CDOT project manager occurs. The RPEM, or designee, communicates information requirements and anticipated timelines for necessary clearances and permits to the CDOT project manager.
6. **Form 128 (Parts A and B)** - The RPEM, or designee, approves Parts A and B of Form 128. Usually, funds for ROW acquisition can be obligated and negotiations for ROW acquisition can proceed.



7. The RPEM, or designee, or local agency team prepares the Non Programmatic CatEx documentation (see **Section 5.3.2**) and submits it to FHWA, along with Form 128 and backup clearance documentation for approval.
8. **Front Part Approval** - The FHWA project representative approves the front part of Form 128 and the associated documentation and returns the originals to the RPEM for the project file. Upon completion of Parts A and B of Form 128, funds for final design and ROW acquisition can be obligated and negotiations for ROW acquisition can proceed.
9. **FOR** - Environmental impacts are definitively quantified for environmental permit applications and to ensure adequate representation in the project plans and specifications. Form 463 is completed.
10. **Form 128 (Part C)** - The RPEM, or designee, initiates coordination with the permitting agencies for Part C of Form 128. The RPEM, or designee, satisfies the requirements identified in Part C of Form 128. The local agency project manager coordinates with the RPEM, or designee, to verify that the requirements identified in Part C of Form 128 have been completed. Permit mitigation measures are added to the mitigation and monitoring commitments and are communicated to the CDOT project manager for inclusion in the final plans and specifications.
11. **Summary of Mitigation** - Based on environmental clearances documentation, the RPEM, or designee, updates the mitigation and monitoring commitments as necessary and provides this information to the CDOT project manager for inclusion in the FOR plans and specifications, which is approximately 90 percent design. CDOT's Mitigation Tracking Spreadsheet is recommended to provide a summary to the project team for inclusion in the CatEx, FOR plans, and specifications. **Chapter 9** includes additional information on mitigation and monitoring commitments.
12. **Final Check** - The final plans and specifications containing all mitigation measures are provided to the RPEM, or designee, ideally a minimum of three weeks before final clearance is required. The RPEM, or designee, verifies that the relevant information presented in the mitigation and monitoring commitments is included in the Final Check plan set. Changes made to the plans subsequent to the Final Check plan set are explained/summarized. The RPEM, or designee, reviews and compiles the clearances and permits.
13. **Environmental Project Certification** - The RPEM, or designee, approves the Environmental Project Certification in Part E of Form 128. This signature means that all environmental commitments are included or being otherwise handled that were identified during the environmental clearance efforts.
14. **Final Forms** - The CDOT Resident Engineer (in some cases the CDOT project manager) signs and submits the final Form 463, and as applicable, the completed and signed Form 128, and the signed Form 1180 - PS&E by the CDOT Region Business Manager, to FHWA and OFMB. If changes have been made to the project design data, submit a revised Form 463 instead, along with the coinciding Form 128. OFMB then initiates the Form 418. Form 418 is initiated with FHWA whenever Federal-aid or oversight is involved for approval. Once FHWA approves Form 418, funds are obligated and authorized for the construction phase. The project is sent to advertisement.
15. **Pre-Construction** - A pre-construction meeting is held with all specialty disciplines to outline permit conditions and mitigation commitments, etc.



16. **Construction** - The Construction Project Engineer and the RPEM, or designee, begin mitigation monitoring during construction to ensure compliance with permit requirements and mitigation commitments. Note: Long-term monitoring of mitigation may be required to successfully complete mitigation obligations and permit requirements.
17. **Project Closeout** - The project is closed once construction is final and accepted by CDOT. CDOT will prepare a Form 950 for project closure. Project documentation and records should be maintained in accordance with CDOT Procedural Directive 51.1.

5.3.9 Non-Programmatic CatEx Documentation

Parts A and B of Form 128 document the necessary environmental clearances. These environmental clearances for Form 128 were previously discussed in Section 5.3.3.

There are several documentation options for a Non-Programmatic CatEx. The RPEM, or designee, and the FHWA Area Engineer should agree on and decide which option to use. Options include:

- ▶ CDOT's NEPA Template
- ▶ Technical reports
- ▶ Combination of Documented NEPA Template and EA style
- ▶ Other

Documentation that supports the CatEx determination becomes part of the administrative record and provides evidence that CDOT's decision was based on factual information and sound judgment. The level of documentation should be commensurate with the action's potential for adverse impacts and should support anticipated impacts and mitigation.

5.3.10 Non-Programmatic CatEx Approval

All Non-Programmatic CatExs require the review and approval of FHWA. The CDOT RPEM, or designee, will sign Part B of Form 128 after environmental clearances have been obtained. FHWA is sent Form 128 and the agreed-upon documentation for review and signature if the project is a Federal project. Once FHWA signs Part B of Form 128 and returns it to the CDOT RPEM for the project file, ROW negotiations can typically proceed. The RPEM will not sign Part E of Form 128 until all clearances and permits or their requirements for the project have been obtained or identified in the project plans and specifications to be handled by the contractor, FHWA has signed Part B, and mitigation or subsequent permit requirements are included in the plans and specifications.



5.4 Moving a Project Out of a CatEx Class of Action

As a project is progressing through the design stages, there may be situations where the potential impacts to environmental resources have greater severity than initially anticipated; in which case, approving the project as a CatEx may no longer be appropriate. The following items indicate when a project should move out of a CatEx class of action:

- ▶ Induces significant impacts to planned growth or land use for the area
- ▶ Requires relocation of significant numbers of people or businesses
- ▶ Has significant impacts on any natural, cultural, recreational, historic, or other resource
- ▶ Has significant air, noise, or water quality impacts
- ▶ Has significant impacts on travel patterns
- ▶ Has individual or cumulative significant environmental impacts
- ▶ Has a large amount of public controversy surrounding the project
- ▶ Has substantial controversy on environmental grounds
- ▶ Has significant impact on properties protected by Section 4(f)
- ▶ Shows inconsistencies with any Federal, state, or local law

It should be noted that there are no set thresholds for significant determinations because it takes both the context and intensity of the impact to decide significance of an impact. It is often the call of resource experts, regulatory agencies, or FHWA. It should also be noted that public involvement outreach, although not specifically required for a CatEx, can assist in keeping a project as a CatEx to avoid or minimize public controversy. If it appears adding a public involvement outreach component to a project would minimize or diminish public controversy, this might be a viable option for keeping the project as a CatEx instead of moving it to the next class.



5.5 References

Colorado Department of Transportation (CDOT). 2006. Local Agency Manual. Retrieved November 2022 from <https://www.codot.gov/business/localagency/manual>.

CDOT. 2013. Project Development Manual. Retrieved November 2022 from https://www.codot.gov/business/designsupport/bulletins_manuals/2013-project-development-manual.

CDOT. 2022a. NEPA Document Template. Retrieved January 2023 from <https://www.codot.gov/programs/environmental/resources/forms>.

CDOT. 2022b. Programmatic Agreement for the Review and Approval of Certain NEPA Categorically Excluded Transportation Projects between the Federal Highway Administration, Colorado Division and the Colorado Department of Transportation. June 2022.
https://www.codot.gov/programs/environmental/nepa-program/assets/categorical-exclusion-programmatic-agreement-2022-update_signed-jf-3.pdf.

Federal Highway Administration (FHWA)/Federal Transit Administration (FTA). 1987 as amended. Environmental Impact and Related Procedures. 23 Code of Federal Regulations (CFR) 771 § 771.101 - 771.118. Retrieved November 2022 from <https://www.ecfr.gov/current/title-23/part-771>.



6. Environmental Assessment (Class III)

An Environmental Assessment (EA) is prepared for an action where the significance of impacts is uncertain. It may also be prepared for projects that do not fit the Categorical Exclusion (Cat Ex) category and that are not expected to require the preparation of an Environmental Impact Statement (EIS), or where the Colorado Department of Transportation (CDOT) believes an EA would assist in determining the need for an EIS (23 Code of Federal Regulations [CFR] § 771.119). An EA is not merely a disclosure document; CDOT is to use it in conjunction with other relevant information to plan actions, make informed project decisions, and determine whether or not significant environmental impacts are expected.

CEQ § 1508.27 “Significantly” as used in the NEPA requires considerations of both context and intensity.

The EA should concentrate attention on environmental resources with impacts that may be significant or that could be a discerning factor in alternative selection; therefore, this approach should result in a much shorter and more focused document than with an EIS. An EA details the process through which a transportation project is developed, including consideration of alternatives and analysis of the potential impacts, as well as providing an avenue for public involvement. It documents compliance with other applicable environmental laws, regulations, and executive orders. This chapter outlines the process of an EA from initiation to completion.

Agency coordination and public involvement are continuous throughout the process. Additional information on agency coordination and public involvement is included in **Section 3.1.2**, **Section 3.1.3**, and **Chapter 7**.

6.1 EA Initiation

CDOT is aware that as of September 1, 2020, EA documents must be completed 12 months after initiation in compliance with 40 CFR 1501.10. Federal Highway Administration (FHWA) is responsible for making a National Environmental Policy Act (NEPA) class determination on projects where FHWA is considered the lead agency. CDOT will work with FHWA early in project development to determine which NEPA process activities and studies should be initiated to provide information to FHWA so that a NEPA class determination can be made for each likely EA level project. The agencies will also develop a detailed project development schedule before formally asking for a determination that will include a targeted date for making a NEPA class determination and completion of the NEPA decision document.

For projects that are likely EA level projects, a CDOT representative will provide a letter of initiation to the FHWA NEPA Program Manager and the appropriate Area Engineer requesting that the NEPA document be classed as an EA.

A letter of initiation contains the following:

1. Basic project information (a location map and preliminary project milestones as attachments).
2. A summary of the activities and studies conducted to inform the NEPA class determination.
3. A detailed schedule that maps the path to NEPA completion within one year of the class determination.



4. A list of other Federal approvals (e.g., Section 404 permits) anticipated to be necessary for the proposed project.
5. A statement specifying whether the document will be prepared according to 23 USC 139 or not.

If FHWA agrees with the NEPA class determination, they will respond in writing via a letter to formalize the initiation of the EA time limit. The date of FHWA's response acts as the beginning of the 12-month period for completing the EA. At the beginning of the NEPA process that is anticipated to be an EA, informal consultation with state and Federal agencies is undertaken. There is no formal scoping requirement for an EA; however, an early coordination process is important in defining the logical termini, length, and general location of the project, as well as purpose and need, alternatives, environmental consequences, and mitigation.

Also, at the beginning of the process, the project team will identify appropriate agencies. While Section 6002 of Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU) is required for an EIS, the decision on the use of Section 6002 for EA projects will be made by the project team, with the concurrence of the other lead agency(ies), on a case-by-case basis. According to SAFETEA-LU, the "default" assumption is that the Section 6002 environmental review process is not applied to EAs. Cooperating agencies are sent letters inviting them to participate in the development of the EA. Jurisdictional agencies, such as U.S. Army Corps of Engineers (USACE) or U.S. Fish and Wildlife Service (USFWS), are invited in writing to participate in early meetings to discuss issues and permits that may be involved in the project. When an action may affect Native American tribal lands, the Tribal Government should be involved in early coordination.

SAFETEA-LU Environmental Review Process Final Guidance - Pub L 109-59, Nov. 15, 2006, provides additional information, including, but not limited to, Project Initiation Letter (Questions 11-13); Cooperating Agencies (Questions 30-31); and Participating Agencies (Questions 21-29). If unsure who should be invited to participate in the NEPA process, consult with the RPEM.

Section 1305 of the Moving Ahead for Progress in the 21st Century Act (MAP 21) included a new category of participating agencies for Federal, state, and local agencies and Tribal nations that have an interest in the project. Section 1304 of the Fixing America's Surface Transportation (FAST) Act expanded the breadth of MAP-21 to include all U.S. Department of Transportation agencies in the definition of multimodal projects. Other changes included provisions to ensure transparency and clarity during programmatic reviews by reducing multiple NEPA documents, requiring the lead agency to identify any Federal and non-Federal agencies that might have an interest in the project, and imposing specific time frames for response by Federal agencies during the project initiation process.

Copies of early coordination letters are included in the appendices of the EA. Meetings and substantive contacts with agencies are also documented. Public and agency involvement is continuous throughout the EA process. **Chapter 7** provides more information on public and agency involvement.

Projects that involve a Recommended Alternative from a Planning and Environmental Linkages (PEL) study should reference the agency scoping conducted during the PEL in the coordination letters.



6.1.1 Agency Early Coordination Process

The lead agency (typically CDOT or FHWA) may invite the participation of any interested agencies, Native American tribes, project proponents or opponents, and other interested persons and will consult with and obtain the comments of any Federal agency with jurisdiction by law or special expertise with respect to any environmental impact of the build alternative. During the early coordination process, CDOT may request other agencies having special interest or expertise to become cooperating agencies. Agencies with jurisdiction by law must be requested to become cooperating agencies (FHWA and FTA, 23 CFR § 771.111).

Meetings and substantive contacts with government agencies during the early coordination process must be documented. Correspondence (including written correspondence and meeting minutes) with participating and cooperating agencies or the public becomes a part of the administrative record (**Section 6.15.2**). Pertinent correspondence and results of agency coordination will be incorporated into the EA, typically in an appendix.

Projects involving Federal Transit Administration (FTA) can reference the guidance provided in **Chapter 10, FTA NEPA Compliance**.

6.1.2 Public Early Coordination Process

It is helpful to maintain a summary of public involvement activities and the issues raised as they occur (e.g., dates of key meetings and correspondence), so it can be easily incorporated into the EA without having to reconstruct the information from the project file.

The project team should send correspondence to property owners who may be affected by a project, as well as to organizations and individuals who have previously expressed an interest in the project or requested notification. In every case, the CDOT project manager must coordinate with the CDOT Right-of-Way office, and in some cases the CDOT Public Relations office, to ensure that communications with property owners are handled appropriately and that a clear message is sent to the public.

Where there is a high level of public controversy, the formation of citizen committees and specialized efforts aimed at issue identification and resolution are encouraged. Public involvement efforts should follow the guidance provided in **Chapter 7**.

6.2 EA Documentation Content

CEQ regulations 40 CFR § 1500 - 1508 and FHWA's Technical Advisory T6640.8A *Guidance for Preparing and Processing Environmental and Section 4(f) Documents* (FHWA, 1987) specify several required sections for an EIS, but not specifically for an EA. However, CDOT's recommended format for an EA is similar to that of an EIS. An EA summarizes and incorporates technical information and studies developed to analyze impacts by resource. Technical studies that support the EA are a part of the project file and are public documents that must be available for review.

Projects with limited alternatives analysis (e.g., a No Action alternative and a proposed action) can be documented using CDOT's NEPA Document Template. This template was created to streamline the documentation process and discretion is given to the Regions whether to use the template. The template provides a general layout that follows traditional EA sections, as presented in



Section 6.2.1. The template has been generalized to be applicable to any NEPA class of action. As such, the template relies on technical reports for most technical information, and uses appendices to present detailed existing conditions, impacts, and mitigation measures. The guidelines set forth in the following sections are recommended for consistency across EA documentation.

CDOT has developed a **NEPA Document Template** that is the default format for most EAs. The template is located here:

<https://www.codot.gov/programs/environmental/nepa-program/cdot-nepa-tools>

A Finding of No Significant Impact (FONSI) Template is also available for use for projects that use the NEPA Document Template. The templates include a question-and-answer format with tables that summarize how the alternatives meet the purpose and need, impacts of each alternative, and mitigation commitments. Technical reports with details are included as appendices.

6.2.1 Standard EA Sections

CDOT has a recommended standard traditional EA format to ensure consistency across CDOT Regions. The following guidelines provide direction on the scale of the EA, formatting, and how to present any supporting documentation:

- ▶ **LENGTH** - The adequacy of an EA is measured by its functional usefulness in decision-making, not by its size or level of detail. Level of detail should be commensurate with the scale of the proposed project and the related impact. The text of an EA shall be no more than 75 pages, not including appendices, unless a senior agency official approves in writing an assessment to exceed 75 pages and establishes a new page limit.
- ▶ **LAYOUT** - Text should be presented in the portrait page setup printing format. Landscape format may be used to present large graphics, as necessary.
- ▶ **LINE SPACING** - Single-spaced, double-sided prints are suggested to save paper and reduce both EA distribution and reproduction costs.
- ▶ **PAGE NUMBERING** - All pages in the EA should be numbered and appear in a document footer at the bottom of each page. Page numbers should correspond to the appropriate chapter/appendix number of the EA.
- ▶ **LINE NUMBERING** - All lines in the EA should be numbered and appear in the left-hand margin. Line numbers begin back at 1 at the beginning of each new page. (Recommended for the draft).
- ▶ **FONT** - Print type should be of adequate size and style to be easily read. Museo Slab 500 and Trebuchet MS are the two primary typefaces of the CDOT Brand (CDOT, 2019).
- ▶ **EXHIBITS** - Exhibits (figures, charts, tables, maps, and other graphics) are useful in reducing the amount of narrative required. Such exhibits should be technically accurate and of high quality. Avoid complex, busy figures, as well as overly complex charts and matrices when possible. An EA should convey to the reader, in understandable terms, the composition of the project and the extent of its impact on the human environment.

Exhibits must have a legend, scale, north arrow; note any prominent features referenced in the text; and cite source material.



- ▶ **CROSS REFERENCING** - When referencing supporting technical documents, ensure the specific section number and section title are provided to assist the reader in accurately locating the reference. Cross referencing helps keep documents brief and concise.

The recommended CDOT outline for a traditional EA includes the following sections, discussed in detail in this chapter. However, **Chapter 9** of this Manual discusses Section 4(f) in detail, and **Chapter 7** discusses public involvement in detail.

- ▶ **EA Cover**
- ▶ **Cover Sheet**
- ▶ **Table of Contents**
- ▶ **Executive Summary**
- ▶ **Chapter 1 - Purpose of and Need for the Proposed Action**
- ▶ **Chapter 2 - Alternatives Analysis**
- ▶ **Chapter 3 - Affected Environment and Environmental Consequences (Including Mitigation Measures and Cumulative Impacts)**
- ▶ **Chapter 4 - Section 4(f) Evaluation, if required**
- ▶ **Chapter 5 - Agency Coordination and Public Involvement**
- ▶ **Chapter 6 - References and Citations**
- ▶ **Appendices**

The NEPA Document Template has an established format and a layout that includes the items in the bulleted list above in a streamlined format.

Use simple terms understandable to a layperson.

6.2.2 EA Cover and Consultant Information

At the Region's discretion, an EA cover may be the illustration of a project; however, consultant logos and information are not to be used on the front cover of any EA.

Consultant information may be in the list of references for any supporting documentation for the EA (i.e., Noise Impact Assessment, Air Quality Report, and Conceptual Engineering Report).

6.2.3 Cover Sheet

FHWA T6640.8A guidance recommends following the EIS cover sheet format for an EA. It should not exceed one page and must include the following components:

- ▶ Project name and CDOT project number
- ▶ Type of document
- ▶ Title and location of the project; route number, local name, project limits, and county in which project is located
- ▶ Responsible agencies, including the lead agency, co-lead agency, and any cooperating agencies



- ▶ Federal authority for which the EA is being prepared (i.e., “Submitted pursuant to 42 United States Code [USC] 4332 (2)(c)”)
- ▶ Date and signature block for the Region Transportation Director, Chief Engineer, and FHWA Division Administrator

Chapter 8, *Document Review Procedures*, of this Manual, has a signature format example for the cover sheet.

6.2.4 Acronyms and Abbreviations

An abbreviation is a shortened form of a word and can be very useful when writing technical documents as they can be used in place of bulky phrases to make sentences easier to read.

On first use, spell out the word and then put the acronym in parentheses immediately following the spelled-out version. Use acronyms on second reference but avoid using too many, as acronyms may clutter the text. Be sure to run an acronyms check following the final draft.

6.2.5 Table of Contents

The table of contents must include the major EA components (as discussed in this section), as well as a list of figures, tables, and appendices. It should be of sufficient detail to provide adequate direction to users reading the EA and allow the reader to easily navigate the document. The NEPA Document Template has the table of contents at the front of the document following the Acronyms and Abbreviations.

6.2.6 Executive Summary

The executive summary is a not a mandatory component of an EA but is highly recommended. An executive summary is not required in the NEPA Document Template but can be added if determined necessary. The executive summary should provide the components that will be used in final decision-making and later be documented in a FONSI. The summary forms a reader’s first and lasting impression of the EA and should include sufficient information to allow the reader to gain a complete understanding of the issues addressed in the body of the EA. It should discuss alternatives to the proposed action, major environmental resource impacts, and proposed mitigation measures in a comparative form. The executive summary should be succinct but of sufficient detail to serve as a stand-alone document. The use of a matrix or table(s) is encouraged to present information concisely.

In general, the executive summary should highlight for the reader the major findings and conclusions of the environmental analyses and include:

- ▶ Purpose of and need for the project.
- ▶ Identification of project issues and impacts (and areas of controversy and unresolved issues if applicable) in proportion to their importance.
- ▶ Alternatives considered (and identification of the proposed action if applicable).
- ▶ Identification of principal environmental issues and key differences among alternatives (highlight any noteworthy impacts, impacts that cannot be avoided, impacts that can be mitigated, and additional review or permits required before taking action). If impacts are



determined to be “significant,” the EA process would stop, and a decision would be made to either go forward with an EIS or change the project so that it does not have significant impacts.

- ▶ Any recommendations, commitments, mitigation, or interagency agreements that may have been reached over the course of the study (if applicable).
- ▶ Appropriate findings reached and concluding statement of findings to comply with Executive Orders 11990 (Wetlands) and 11988 (Floodplains). A statement of no findings is required if there are no wetlands or floodplains involved in the project.
- ▶ Appropriate findings reached and concluding statement of findings where there is involvement with Section 4(f) or Section 106 resources. Discussion must state that no “feasible and prudent” alternative exists and that all practicable measures to minimize harm have been taken. A statement of no findings is required if there are no Section 4(f) or Section 106 resources involved in the project.
- ▶ An effects determination for threatened and endangered species or their critical habitat and coordination with the USFWS. A statement of no findings is required if there are no threatened and endangered species or their critical habitat involved in the project.
- ▶ Appropriate findings reached and concluding statement of findings where there is involvement with prime or unique farmlands and coordination with the Natural Resources Conservation Service.

FHWA Technical Advisory T6640.8A. 1987. Guidance for Preparing and Processing Environmental and Section 4(f) Documents. October 30.

https://www.environment.fhwa.dot.gov/legislation/nepa/guidance_preparing_env_documents.aspx

AASHTO, ACEC, and FHWA. 2006. *Improving the Quality of Environmental Documents*. May.

https://environment.transportation.org/wp-content/uploads/2021/05/IQED-1_for_CEE.pdf

6.2.7 Project Description

A detailed project description is included in a traditional EA and in the NEPA Document Template for a proposed transportation project. The following information is required, but not limited to:

- ▶ A brief description of the existing transportation system
- ▶ A location map that shows the project limits and displays key landmarks
- ▶ description of the limits of the proposed project, including its length and logical termini
- ▶ The name of the city and county where the project is to be located
- ▶ description of the proposed improvements, including the number of lanes, type of median, and any major structures

Further information on logical termini and independent utility can be found at FHWA and FTA, 23 CFR § 771.111(f).



6.3 Purpose of and Need for the Project

CEQ regulations implementing NEPA require that an EA include a statement of purpose and need. The purpose and need chapter, typically Chapter 1 in an EA, provides a brief but important overview of information that must be considered in defining a purpose and need statement for the project. The purpose and need is essentially the foundation of the EA and decision-making process. FHWA issued guidance that summarizes the three key points relative to the purpose and need statement (FHWA, 1990). The guidance states that the purpose and need statement should be:

- ▶ Justification of why the improvement must be implemented;
- ▶ As comprehensive and specific as possible; and
- ▶ Reexamined and updated as appropriate through the project development process.

CEQ § 1502.13, Purpose and need: “The statement shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.”

The purpose and need chapter in the EA takes the goals, objectives, and corridor visions developed in a transportation plan to the next logical step—implementing those goals and objectives through on-the-ground project development. The planning level goals and objectives describe the transportation problem(s) that need to be addressed. This chapter also looks into the future an average of 20 years (based on planning horizons) to determine the needs of the project area in that future. For more information on CDOT’s planning and project development process, see the Project Development Manual and CDOT’s Statewide/Regional Planning website.

CDOT’s **Project Development Manual** can be accessed at:

https://www.codot.gov/business/designsupport/bulletins_manuals/2013-project-development-manual/revs-to-project-manual

CDOT’s **Statewide/Regional Planning website** can be accessed at:

<https://www.codot.gov/programs/planning>

An EA purpose and need statement provides the details about the transportation-related needs and describes the “what and why” of the project. The purpose and need statement defines the criteria under which transportation alternatives are initially evaluated. Build alternatives should fully address the stated purpose and need. Those alternatives that do not fully address the purpose and need can be eliminated from further consideration.

Transportation planning data developed for regional, sub-area, and corridor planning can be an excellent primary source of information to assist in establishing a purpose and need statement. The purpose and need should briefly describe the project context, including actions taken to date, other agencies and governmental units involved, actions pending, schedules, etc.

The resulting purpose and need chapter should be succinct yet include enough information to clearly identify a problem and a need to fix it that may require the expenditure of funds. It should be narrowly defined enough to serve effectively to screen/evaluate alternatives. The initial purpose and need statement may change during the NEPA process if new information or needs are discovered or if public input provides suggestions for improving the purpose and need statement. If the initial purpose and need statement changes substantially during the process, the lead agency



will need to be cognizant of the impacts that it will have on the selection of alternatives or the criteria used to evaluate and screen alternatives. The purpose and need statement should identify both the underlying need and the purpose for the proposed action—what CDOT is planning to accomplish and why it is necessary—but cannot predetermine a particular alternative. This guidance does not mandate identification of any particular alternative other than the No Action alternative within the purpose and need statement but does recognize that the statement will by necessity be project specific.

The project’s need may be considered as the transportation problem, while the purpose may be thought of as the intention to solve the problem. The CDOT Environmental Stewardship Guide (CDOT, 2017a) incorporates FHWA guidance and interpretive memoranda that provide additional guidance on how the purpose and need statement is to be written. Further guidance regarding the development of a purpose and need statement can be found in CDOT’s Purpose and Need Guidance, FHWA Technical Advisory T6640.8A (FHWA, 1987), FHWA Memorandum *The Importance of Purpose and Need* (FHWA, 1990), and AASHTO Practitioner’s Handbook *Defining the Purpose and Need and Determining the Range of Alternatives for Transportation Projects* (AASHTO, 2016).

CDOT’s Purpose and Need Guidance can be accessed at:

<https://www.codot.gov/programs/environmental/resources/guidance-standards/purposeandneedguidance.pdf/view>

FHWA Technical Advisory T6640.8A and the FHWA Memorandum *The Importance of Purpose and Need* can be accessed at:

https://www.environment.fhwa.dot.gov/legislation/nepa/guidance_preparing_env_documents.aspx

AASHTO Practitioner’s Handbook *Defining the Purpose and Need and Determining the Range of Alternatives for Transportation Projects* can be accessed at:

<https://environment.transportation.org/wp-content/uploads/2021/05/ph07-2.pdf>

6.3.1 Purpose of a Project

The project purpose statement is a broad statement of the primary intended transportation result and other related objectives to be achieved by a proposed transportation improvement. The purpose must be written clearly and supported by the identified needs. It should not include planning decisions or be written so that the selection of a specific alternative is predetermined.

The proposed action is not discussed in the purpose and need statement. The statement should be an honest, full explanation of why the agency is considering the action and what the agency objectives include.

The project purpose statement guides the alternatives that will be considered in response to the established need. The following are examples of possible project purposes:

- ▶ Improve traffic operations
- ▶ Accommodate high traffic volumes
- ▶ Increase multimodal travel options
- ▶ Provide lane continuity and balance
- ▶ Optimize highway system operations
- ▶ Improve connectivity among transportation modes



- ▶ Improve pedestrian/bicycle mobility
- ▶ Increase safety for motorists, pedestrians, and bicyclists
- ▶ Reduce congestion and delays

Many transportation projects are proposed with the expectation that they will help promote economic growth; however, the potential for economic development benefit does not necessarily mean that economic development should be defined as a project purpose. In most cases, the project purpose can best be expressed by addressing the transportation purpose (e.g., improve traffic operations, accommodate high traffic volumes, reduce congestion and delays, etc.) that would occur due to the planned economic development/land use changes. By focusing on the transportation system, this approach avoids defining a purpose so broad that non-transportation alternatives would be necessary for consideration to address.

Similar to economic development, environmental protection is often proposed as a project purpose. Considerations that relate to the manner in which the project is carried out, such as minimizing or mitigating environmental impacts, should be distinct from the purpose and need. Although environmental protection and community enhancement are important values/visions for a project and should be incorporated into the alternatives analysis as evaluation criteria, these issues should not be a part of the purpose and need statement.

6.3.2 Need for a Project

The need for a project is a more detailed explaining, with supporting data, of the specific transportation problems, deficiencies, or opportunities that exist or are expected to exist in the future that justify the proposed action. The needs should be demonstrated through specific quantitative investigation. Each need for action should enable decision makers to evaluate alternatives by providing measurable objectives or specifications.

The need for the project should provide the rationale for how the project addresses the identified problems, issues, and concerns. This section must outline and discuss any established community goals and objectives that pertain to the project. This section serves as the foundation for the proposed project and provides the principal information upon which the “No Action” alternative discussion is based. This section establishes the rationale for pursuing the action and explains how the proposed actions are consistent with local transportation planning, local comprehensive planning, land use planning, and growth management efforts.

The following are examples of possible project needs:

- ▶ **System Linkage** - Describe how the project fits into the existing transportation system.
- ▶ **Transportation Demand** - Explain relationships to any statewide plan or other transportation plan together with the project’s traffic forecasts.
- ▶ **Capacity** - Describe how the capacity of the existing transportation system is inadequate for the present or projected system load. Define what level(s) of service are required for existing and proposed facilities.
- ▶ **Legislation** - Identify Federal, state, or local governmental mandates that must be met by the project.



- ▶ **Social Demands or Economic Development** - Identify all planned economic development/land use changes driving the need for the project, including new employment, schools, land use plans, and recreation.
- ▶ **Modal Interrelationships** - Describe how the build alternative evaluates modes of transportation as an alternative to highway travel and how the project interfaces with and serves to complement other transportation features existing in the corridor, including existing highways, airports, rail and intermodal facilities, and mass transit services.
- ▶ **Safety** - Discuss the existing or potential safety hazards within the project area, including data related to existing accident rates, as well as other plans or projects designed to improve the situation.
- ▶ **Roadway Deficiencies** - Describe any existing deficiencies associated with the project area roadways (e.g., substandard or outdated geometrics, load limits on structures, inadequate cross section, or high maintenance costs).

The statement of need should consist of a factual, objective description of the specific transportation problem with a summary of the data and analysis that supports the conclusion that there is a problem requiring action. Quantified data, such as vehicle miles of travel, travel speeds, time of day characteristics, current and projected levels of service, accident rates, and/or road condition assessments, should be used where applicable. Full documentation, such as reports, and studies developed in the project planning process should be referenced in the need statement and must be available upon request of reviewing agencies and the public.

Multiple deficiencies or desires often establish the project need and, therefore, often become multiple needs. These needs can be separated into two categories: area-wide needs and project corridor needs. Area-wide needs relate to system deficiencies and local government or community desires. Project corridor needs relate to route deficiencies and specific community desires within the corridor.

Examples of each include:

- ▶ **Area-Wide Needs:**
 - Federal, state, or local government authority desires or requirements
- ▶ **Project Corridor Needs:**
 - System linkage
 - Capacity
 - Structural sufficiency



6.4 Alternatives Analysis

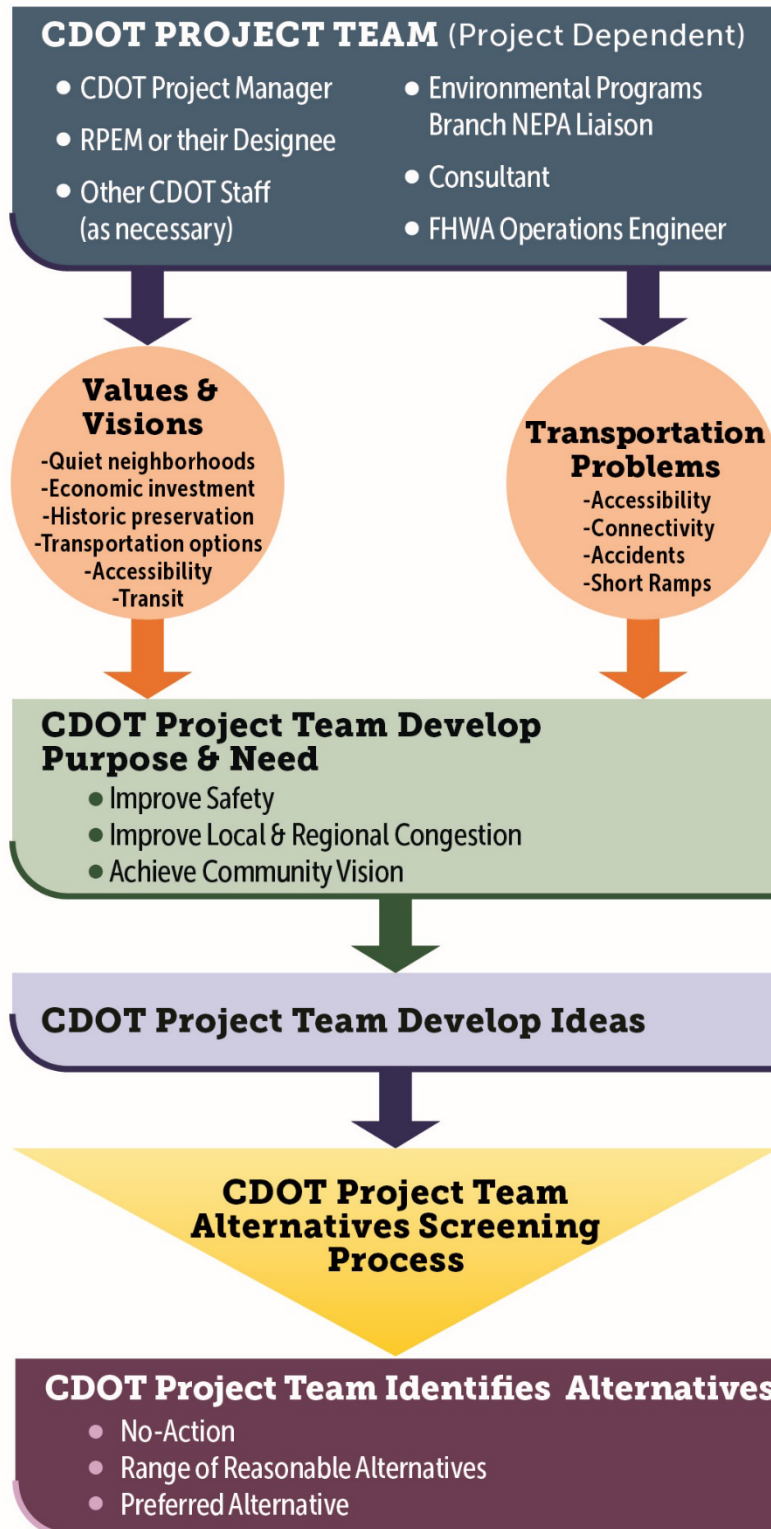
“The EA does not need to evaluate in detail all reasonable alternatives for the project and may be prepared for one or more build alternatives.” FHWA Technical Advisory T6640.8A

Alternatives analysis generally occurs in Chapter 2 of an EA. If the CDOT NEPA Document Template is being used, the alternatives analysis can be included in a technical report as an appendix to the EA. In general, the range of alternatives is often broader, and the number of alternatives subject to analysis of impacts is greater in an EIS than in an EA. For an EA, there may be only one build alternative or one build alternative with options. An EA is not required to analyze all reasonable alternatives. A build alternative and No Action alternative are sufficient for an EA.

The alternatives analysis chapter in the EA discusses alternatives to the build alternative, including the No Action alternative. The process used to develop the alternatives is discussed, and a summary of public and agency input is included. The language of NEPA has been interpreted to require that FHWA take a “hard look” at alternatives that result in avoidance or minimization of impacts to the environment, community, or economy. Alternatives analysis can be the single most costly aspect of developing the EA and will require close management by the CDOT project manager. **Figure 6-1** shows an example alternatives development process.

A comparative table of alternatives and associated impacts can be presented in common terms that will be easily understood by the public. This comparison follows the resource-specific affected environment presentation and alternative impact evaluation and provides a comparison among evaluated alternatives at a logical place in the document.

Figure 6-1. Example Alternatives Development Process





6.4.1 No Action Alternative

Either the term No Action alternative or No Build alternative may be used to explain the scenario of no action.

The “No Action” alternative includes other programmed activities already in the fiscally constrained statewide plan and approved through the NEPA process or longer-term maintenance activities that would occur even if the No Action alternative is selected. The No Action alternative is included as an alternative in an EA.

The No Action alternative is fully assessed in the same manner as that of an alternative and is used as a baseline comparison for environmental analysis against which to compare the impacts of all other alternatives.

The No Action alternative can have two meanings: (1) continue present management activities, but do not do a build alternative and (2) do not take any action. The No Action alternative also includes actions already approved in the project area. It is important to indicate to readers which meaning of No Action the EA is using. The No Action alternative also includes other projects already approved. The No Action alternative should always be fully analyzed and discussed for comparison and cannot be removed from analysis because it does not meet the purpose and need.

The EA should present a thorough description of the current transportation need and describe and project future operational/environmental conditions in which a build alternative is not implemented. For purposes of travel demand forecasting and identifying resource impacts that are directly related to traffic volume, such as air quality and noise, transportation projects currently planned in the project vicinity should be included, along with the No Action alternative. Transportation projects that may occur independently of the No Action alternative can be located in the Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program (STIP). These other transportation projects have committed or identified funds for construction and will be completed regardless of whether or not any other improvements are made as part of the build alternative. Travel demand forecasting predicts traffic conditions that are expected to occur on the transportation system in the design year.

The current TIP/STIP can be found at:

<https://www.codot.gov/programs/planning/transportation-plans-and-studies/stip>

6.4.2 Alternatives Considered but Dismissed from Further Evaluation

Since an EA is required to have only one alternative in addition to the No Action alternative, other alternatives may have existed that are no longer considered. CDOT recommends keeping information on these previous alternatives but not necessarily within the EA. The CDOT project team should decide the level of detail to present in the EA for alternatives considered. However, one option is to develop an Alternatives Analysis Technical Report to the EA that contains the information. If more than one action alternative is being evaluated in the EA, a NEPA Document Template may not be appropriate to use.



Each alternative analyzed in the EA should have equivalent detail provided, allowing the reader to evaluate their comparative merits. This does not dictate the amount of information to provide for each alternative; rather it prescribes a level of treatment that may, in turn, require varying amounts of information to enable a reader to evaluate and compare alternatives. The alternatives chapter of the EA should be devoted to describing and comparing the alternatives, with impact discussion limited to a concise summary in a comparative form. The environmental consequences chapter of the EA is the appropriate place to discuss detailed scientific analysis of the direct and indirect environmental impacts of the build alternative. However, redundancy between these sections should be avoided.

Just as important as analyzing alternatives is maintaining documentation explaining why alternatives have been considered but dismissed from further evaluation during the NEPA process (the criteria used, the point in the process where alternatives were eliminated, and disclosure of the parties involved in establishing the criteria for assessing alternatives and measures of effectiveness). The alternatives documentation should also define the role of other applicable regulations, such as the Clean Water Act Section 404, Section 4(f) of the Department of Transportation Act, and Section 106 of the National Historic Preservation Act as they pertain to avoidance and minimization. Documentation can be maintained in the project file or in the administrative record (**Section 6.15**).

Deciding which alternatives to consider but dismiss from further evaluation may be simple and straightforward depending on the complexity of the project or may involve several levels of analysis before the list of alternatives can be narrowed to a set for final evaluation.

In preparing an EA, retaining documentation to support the rationale for generating, evaluating, and eliminating alternatives is critical. This documentation can be maintained in an Alternatives Analysis Technical Report. Being as specific as possible is also essential—if an alternative is eliminated from further consideration because it “does not meet the purpose and need,” the text should provide an adequate explanation of why this is true in the project file or technical report. Alternatives suggested during the early coordination process by cooperating and participating agencies, or the public, that are eliminated without detailed study should be adequately documented in the project file or technical report and discussed as to why the alternatives were eliminated.

As emerging transportation technologies become available, such as autonomous vehicles, these priorities can be identified in the project purpose and need statement and alternatives analysis. Analysis of such technologies in NEPA will continue to evolve as technologies are implemented.

6.4.3 Identifying a Proposed Action

The proposed action is generally the alternative that the lead agency, typically FHWA, believes would meet the project purpose and need, minimizes impacts to the environment (natural, cultural, and socioeconomic), and is supported by the public and resource agencies. Typically, alternatives are adjusted throughout the NEPA process to minimize harm to the environment and communities. The proposed action is typically the alternative that has incorporated these changes and achieves the best balance among needs, impacts, costs, etc. For an EA, if there are only two alternatives (build alternative and No Action alternative), the proposed action may be obvious.



Major milestones such as the identification of the proposed action should be documented in project meeting minutes and identified as a concurrence point.

When a proposed action is clear based on the analyses developed during the EA process, CDOT is required to disclose the proposed action. Where the proposed action is not clear, it is not essential that the proposed action be identified within the EA and may be disclosed within the FONSI. However, the EA should state that the proposed action has not been identified but will be in the FONSI decision document.

If a proposed action has been identified in the EA, it is acceptable to collect additional information relevant to that alternative to more fully develop it and better understand its impacts before the FONSI is released. If the proposed action is modified after the EA, the FONSI must clearly identify the changes and discuss the reasons why any new impacts are not of major concern.

The level of analysis presented must be neutral and objective in regard to all alternatives and cannot be slanted to support a proposed action over any other alternative.

6.5 Affected Environment and Environmental Consequences

Chapter 3 in an EA typically presents the affected environment, environmental consequences, mitigation, and cumulative impacts.

6.5.1 Affected Environment

The affected environment section sets the context for assisting with decision-making and assessing impacts.

The affected environment chapter should succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration. Table 2 of the NEPA Document Template presents the affected environment. The descriptions should be no longer than is necessary to understand the impacts of the alternative(s). Data and analyses in a statement must be commensurate with the importance of the impact, with less important material summarized, consolidated, or simply referenced. Agencies are urged to avoid useless bulk during the EA process and to concentrate efforts and attention on important issues. The American Association of State Highway and Transportation Officials (AASHTO) *Improving the Quality of Environmental Documents* (AASHTO, ACEC, FHWA, 2006) provides suggestions for preparing a concise, readable, and legally sufficient EA. Appendix C of this Manual provides a recommended style guide for EA preparation.

AASHTO's *Improving the Quality of Environmental Documents* (2006) can be accessed at:
https://environment.transportation.org/wp-content/uploads/2021/05/IQED-1_for_CEE.pdf

It is best to develop a good definition of the project's affected environment before proceeding with project design or alternatives analysis. A complete baseline encourages more accurate project budgeting and provides a better basis for determining the appropriate level of NEPA documentation, project schedule, and funding. At this stage, the project team may also be able to identify potential environmental impacts resulting from the project.



Concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail (40 CFR § 1500.1(b))

Preliminary environmental analysis varies with the complexity of the project. For example, for smaller projects, the initial site visit to the project area by the project engineer and key environmental specialists may be sufficient to gather the information necessary to form existing conditions within the project area and identify potential impacts. For more complex projects, a database search, combined with multiple site visits with a multidisciplinary team, may be necessary to collect relevant existing conditions information, identify potential impacts that need to be considered, and identify future data needs including supplemental field studies or required interviews with a knowledgeable public or agencies. For all projects, this is also the stage to consider the potential geographic area(s) in which indirect and cumulative impacts will be assessed, as data will often need to be gathered in a broader area than the project study area for direct impacts. The project manager should use early field visits and discussions to feed information into the overall project schedule and budget, allowing time for longer-term analysis requirements and other environmental issues.

CEQ § 1502.15, Affected Environment, “. . . shall succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration.”

The description of the affected environment associated with the project area provides the context for evaluating environmental impacts. The existing conditions should rely heavily on information already available from known, reliable sources, including agencies responsible for environmental resources. Early descriptions should be limited to readily available information because the affected environment and environmental consequences will be further refined during preparation of the EA. In all cases, the context and complexity of the project as it relates to the surrounding area should be taken into consideration. The environmental data set should address all of the resources, ecosystems, and human communities potentially affected by the project. Data gaps should be identified and noted, since supplemental field studies may be required to provide the missing information depending on scoping conclusions and overall project need. The initial affected environment description should contain the following information to the extent that it is readily available and not considered confidential (i.e., specific locations of cultural artifacts):

- ▶ The status and location of important natural, cultural, social, or economic resources and systems
- ▶ Important environmental or social stress factors and constraints
- ▶ Pertinent development plans, local regulations, and local administrative standards
- ▶ Environmental and socioeconomic trends
- ▶ Demographic and land use data

The description of the project’s affected environment should not only provide the existing conditions required for evaluating potential environmental consequences of transportation strategies, but also be a strong resource for developing alternatives that will avoid or minimize impacts associated with the project. The more complete the description, the more accurately potential impacts can be predicted.

Chapter 9 discusses resource-specific impact analysis and mitigation measures.



Environmental Background

Environmental background information is usually collected early in the project planning process or may be generated by statewide planning processes or the metropolitan or non-metropolitan transportation planning region. It can be used to support the affected environment chapter. Such information can also be obtained during initial site visits.

Some background data may need to be researched before the site visit, including a review of area maps or geographic information systems (GIS) information, relevant environmental or transportation reports, previous surveys, and consultation with resource experts including external agency personnel.

Verify that consultants hired to perform supplemental field studies have or can readily obtain the required approvals for right of entry in time to perform the needed field work in the appropriate season(s). **Chapter 9** of this Manual provides additional information on resource-specific methodologies.

Supplemental Field Studies

If gaps exist in the information required to characterize specific resources or identify potential project impacts, the project team may need to conduct supplemental field studies to fill these gaps.

Specific certifications may be required to legally conduct some of the supporting studies that require collection of field data. For example, field survey of historic properties is performed by personnel who are listed in the Directory of Cultural Resource Management Agencies, Consultants and Personnel for Colorado, as holding a state permit to do fieldwork in archaeology and paleontology on state, county, city, and some private lands in Colorado (but not on Federal or Tribal lands). This is because there are minimum qualifications for state permits (Office of Archaeology and Historic Preservation, History Colorado, Publication #1308b, 8CCR 1504-7 Rules and Procedures Historical, Prehistorical, and Archaeological Resources Act (revised 09/11)) that help to ensure that the permit holder will collect reliable and legally compliant data.

In addition, field surveys of fish and wildlife species that require species handling may require a permit from Colorado Parks and Wildlife and/or the USFWS. The population status of the species to be studied frequently determines whether a permit is required. Field surveys that rely solely on observation seldom require permits.

Supplemental field studies should begin early in the process to avoid affecting the project schedule and budget. These studies are frequently restricted to specific seasons, may take a long time to complete, or need to be coordinated with other agencies.

Use the information gained from field studies to evaluate alternative(s). This information should clearly support the analysis of impacts. Having the appropriate detailed information from these studies will avoid project delays and cost increases. The results of existing conditions data collection and supplemental field studies may require additional budget for data collection and additional environmental analyses. Project budgets may need to increase or could be decreased depending on the findings. Similar impacts on the project schedule should also be anticipated. **Chapter 9** provides further detail on supplemental field studies by resource.



The timeline for determining how field studies fit into the overall project schedule should be discussed during early site visits and adjusted as necessary throughout the project. The schedule could be developed during the official project scoping at the onset of the NEPA process.

6.5.2 Environmental Consequences

A short introductory paragraph should be placed at the beginning of the Affected Environment and Environmental Consequences chapter briefly outlining those resources that were investigated. If there were resources that did not have impacts, the chapter should include a statement indicating that no further analysis would be required.

The analysis of environmental consequences forms the basis for comparing alternatives. This section of the EA addresses the impacts of the build alternative(s) and No Action alternative on the quality of the human environment. It also describes the measures proposed to mitigate potential adverse impacts of the project. This information is presented in the NEPA Document Template in Table 3. NEPA defines the “human environment” broadly to include many aspects of the natural and built environments. The analysis presented in the EA should be of sufficient detail to establish the reasonableness of a conclusion that an impact will or will not occur and whether the impacts are significant. The description and analysis of impacts must be supported by the information and data presented in each specific resource section and need to estimate both the impact and the significance to the human environment.

The allocation of environmental study resources should be in proportion to the importance of the potential impacts identified in the scoping process with the resource agencies and the public. Information developed in the project planning process and studies conducted by environmental specialists should provide the basis for determining what areas of the environment may be impacted and, therefore, require specific analysis in the EA, and whether or not the impacts are significant and justify an EIS.

A summary of the results of technical studies and reports undertaken should be included, but not all information resulting from technical studies and reports needs to be incorporated. Where quantitative data support conclusions, they should be included. CDOT encourages the use of charts, tables, matrices, and other graphics as a means of comparing the impacts of the build alternative(s) and No Action alternative. It should be noted that quantitative data do not always show the whole picture. Qualitative data are sometimes needed to get a clearer picture.

The key to managing the considerable amounts of data required to conduct a full NEPA analysis is determining what is important in terms of disclosing environmental impacts. For example, if the project is in an urban setting with no farmlands, then farmland impacts are not discussed. If the project is a highway widening in an area inhabited by an endangered mammal, the wildlife surveys, background data, Biological Assessment and Biological Opinion, and a thorough discussion of avoidance and mitigation measures may all be appropriate for inclusion in the main body of the document, in an appendix, and in associated technical reports.

When preparing the decision document (FONSI, if no significant impacts), the impacts and mitigation measures of the preferred alternative may need to be discussed in more detail to elaborate on information, provide more detail on commitments, or address issues raised during the public comment period. The decision document should also identify any new impacts (and their



implication) that may have resulted from the modification or identification of substantive new circumstances or information regarding the build alternative following the document's circulation.

Types of Impacts

NEPA uses the terms “impact,” “effect,” and “consequence” synonymously. This Manual uses “impact.” For an action to impact the environment (positively or negatively), it must have a causal relationship with the environment. NEPA distinguishes three types of causal impacts: direct, indirect, and cumulative.

- ▶ **Direct impacts** are caused by the action and occur at the same time and place (CEQ 40 CFR § 1508.8). For example, highway construction that occurs within a wetland would completely remove the wetland or modify the structure and function of the wetland. This would, therefore, be a direct impact on wetlands.
- ▶ **Indirect impacts** are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect impacts may include those related to induced changes in land use patterns, population density or growth rate, and related impacts on air and water and other natural systems, including ecosystems (CEQ 40 CFR § 1508.8). For example, highway construction that alters the hydrology of an area could increase or decrease overland water flow to nearby wetlands and streams, which would have an indirect effect on the structure and function of these water resources. Additional indirect impacts could occur to plant and animal species that inhabit the affected wetlands and streams.
- ▶ **Cumulative impacts** result from the incremental impact of the action when it is added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts could result from individually minor, but collectively significant, actions that take place over time (CEQ 40 CFR § 1508.7).

Impacts may be ecological, aesthetic, historical, cultural, economic, and social. Impacts may be either beneficial or adverse. Beneficial impacts may occur when a build alternative improves a situation (e.g., lessens serious traffic congestion). However, even when the impact of an action will be generally environmentally beneficial, adverse environmental impacts may still occur in other resource areas.

FHWA's Technical Advisory T6640.8A notes that the level of impacts should not be described using the term “significant” (FHWA, 1987). However, when conclusions regarding the significance of an impact have received concurrence from consulting or jurisdictional agencies, this information should be included (for instance, there may be concurrence on a Finding of Adverse Effect under Section 106 of the Historic Preservation Act). Furthermore, if the term “significant” is used, it should be consistent with the CEQ definition and supported by factual information (CEQ 40 CFR § 1508.27).

To help CDOT program managers completely understand how a resource will be impacted, context, intensity, duration, and timing must be considered. Context is defined as the setting of the build alternative and is established in the description of the “affected environment.” (Are the impacts site-specific, local, or regional?) Intensity is considered the severity of the impact. (Are the impacts negligible, minor, moderate, or major?)



CEQ regulations require that the following factors be considered in determining the severity of an impact:

- ▶ Degree of effect on public health or safety
- ▶ Presence of unique characteristics of the project area such as proximity to resources or protected areas
- ▶ Degree of controversy
- ▶ Degree to which possible impacts are uncertain or involve unique or unknown risks
- ▶ Degree to which the action would set a precedent for future actions with significant impacts
- ▶ Contribution to cumulatively significant impacts
- ▶ Degree to which there may be adverse impacts to scientific, cultural, or historical resources
- ▶ Degree to which there may be adverse impacts on an endangered or threatened species or its critical habitat
- ▶ Conflict with Federal, state, or local laws for the protection of the environment

Impacts discussions and associated findings should reflect realistic impact potentials rather than what might be possible if well-known requirements, mandates, and commitments to avoid, minimize, and mitigate impacts did not exist.

Impacts should also be characterized as temporary or permanent. Temporary impacts are generally those that result from demolition, site preparation, and construction activities and will not persist once project construction is completed. Examples of possible temporary impacts include dust generation, erosion, construction noise, stream diversion, or traffic congestion. When analyzing temporary impacts, all aspects of project construction should be considered within the project footprint such as use of areas to store equipment and materials or to set up a construction office, construction of roads to gain access to the site, or use of areas for borrow of fill or disposal of excavated material.

Permanent impacts are those that persist after a project has been completed. Examples of permanent impacts include creating cut-and-fill areas or right-of-way acquisition. Some impacts, such as changes in noise levels or changes in access to local businesses or residences, may be temporary or permanent or both, depending on project specifics.

In mandating cumulative impacts analysis, CEQ seeks to ensure that projects consider not only the project and its alternatives, but the other actions that could contribute to long-term environmental degradation. For example, a CDOT highway project may be one piece of the bigger growth picture in a county. Other pieces of this picture include new retail (a new mall), new business parks (such as Interlocken or the Denver Tech Center in the Denver metro area, or Centerra in Loveland), new housing developments (occurring all around Colorado), and the competing demands of new residents for open space, parks, hospitals, and schools. In this example, land use is the resource being evaluated in a cumulative impact context. Growth in the area would supply information about the existing conditions and future conditions. Methodology for a cumulative impact section is further discussed in **Chapter 9**.

Clearly state all assumptions and methods so that it is obvious how results and conclusions were formed. Anyone with the appropriate skills should be able to duplicate the work.



6.5.3 Mitigation and Monitoring Commitments

CDOT's Mitigation Tracking Spreadsheet can be located at:

https://www.codot.gov/programs/environmental/resources/forms/CDOT%20Mitigation%20Tracking%20Spreadsheet_June%202012.xlsx/view

Prior to mitigation, CDOT always makes best efforts to:

- ▶ Avoid the impact altogether by not taking a certain action or parts of an action
- ▶ Minimize impacts by limiting the degree or magnitude of the action and its implementation

However, if avoidance or minimization is not feasible, then mitigation measures may be implemented, including:

- ▶ Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
- ▶ Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- ▶ Compensating for the impact by replacing or providing substitute resources or environments (CEQ 40 CFR § 1508.20)

FHWA regulations require that mitigation measures presented as commitments in the EA and decision document (FONSI, if no significant impacts) be incorporated into a project (FHWA and FTA, 23 CFR § 771.109[b] and 23 CFR § 771.125[a] [1]). Monitoring conducted during project construction and operation is the means to ensure mitigation measures are implemented effectively. If monitoring identifies any deficiencies in mitigating the impact, adjustments to the level, timing, and/or procedure of mitigation must be made accordingly.

Chapter 9 includes additional information on mitigation and monitoring commitments.

6.6 Section 4(f) Evaluation

Chapter 9 of this Manual discusses in detail Section 4(f) guidance for publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites. Section 4(f) findings are typically Chapter 4 in an EA, if required.

6.7 Agency Coordination and Public Involvement

Chapter 7 of this Manual discusses agency coordination and public involvement guidance. Agency coordination and public involvement is typically discussed in Chapter 5 in an EA (if a Section 4(f) chapter is present; otherwise, Chapter 4).



6.7.1 Consultation and Coordination

Public involvement, consultation, and coordination efforts are summarized in the EA, typically in Chapter 4 or 5 (depending on whether or not a Section 4(f) analysis is present as Chapter 4). These efforts are presented in the NEPA Document Template in a question format. CDOT has specific policies regarding public involvement that are discussed in **Chapter 7**. In addition to the information in **Chapter 7**, the consultation and coordination chapter should:

- ▶ Provide a chronology of key public and stakeholder meetings and events that have occurred on the project, including the early coordination and scoping processes
- ▶ Document all meetings and other correspondence with government leaders, government agencies (including cooperating and participating agencies), Native American interests, community and advisory groups, and individual citizens
- ▶ Summarize all issues raised by agencies and the public

The EA document should contain copies of pertinent interagency correspondence, including consultation with USFWS, Section 106 coordination with the SHPO, and important communications with similar agencies within the appendix.

6.8 References and Citations

The EA must cite the references used in preparing the document. The citations should include the technical studies used to substantiate the analyses and conclusions in the document. These references must support information in tables and figures as well, which are often overlooked in documents. References may also cite other relevant sources, such as local or regional planning documents, pertinent scientific studies, or other relevant materials. Materials prepared by other agencies in compliance with other regulatory processes (e.g., a Biological Opinion) should also be referenced. There are no specific CEQ regulations for references and citations.

6.9 Appendices and Technical Reports

The EA should be a concise document and should not contain long descriptions or detailed information that may have been gathered or analyses that may have been conducted for the build alternative. NEPA guidance emphasizes that an EA should contain succinct statements of the information on environmental impacts to determine whether or not significant impacts will occur from the build alternative, and if an EIS should be prepared. The appendices should include only material that is directly relevant to the EA, that substantiates data important to the analysis, and that supports the conclusions of whether or not an EIS is warranted.

Relevant appended information may include listings (e.g., wildlife species common to the project area), letters of agreement, Memoranda of Understanding, or Referendums. The appendices to an EA must contain correspondence, or summaries of correspondence, received from government agencies and private interest groups concerning the project. However, appendices do not include any letters between CDOT and FHWA or internal CDOT memos or letters.



An appendix to an EA should:

- (a) consist of material prepared in connection with an EA
- (b) normally consist of material that substantiates any analysis fundamental to the EA
- (c) normally be analytic and relevant to the decision to be made
- (d) be circulated with the EIS or be readily available on request

Appendices contain detailed information that is not essential to a basic understanding of the document and the results obtained but information that may be helpful to readers. Appendices help to streamline the content of the document.

The EA is expected to contain the following appendices:

- ▶ Agency Coordination
- ▶ Public Involvement and Coordination

Lengthy technical discussions should be contained in separate technical reports. Technical reports are not treated as appendices to the EA. They are bound as separate documents and referenced. While separate technical reports are not circulated with the EA during public review, they are public documents and must be available for review. They must also be submitted, along with copies of the preliminary copy for CDOT Headquarters (Environmental Programs Branch [EPB] and others) review and FHWA review and approval. Some EAs may have reports available via the internet. During the public comment period, the EA and the technical reports are placed in convenient locations for public review and copying (typically libraries or other easily accessible public buildings). **Chapter 7** provides detailed guidance for the agency and public involvement process.

Other appendices may be added if appropriate. All appendices must be called out in the body of the document. They are lettered sequentially (i.e., Appendix A, Appendix B, etc.) at the end of the document in the order in which they are called out.

6.10 Compliance with Applicable Laws

The EA should demonstrate compliance with requirements of all applicable environmental laws, executive orders, and other related requirements. For a list of NEPA-related regulations that are often considered during a CDOT NEPA effort, refer to **Figure 2-1** in **Chapter 2** of this Manual.

6.11 Announcing the EA Availability

Chapter 8, Document Review Procedures, of this Manual includes information on document distribution requirements.

Agencies should be diligent in involving the public in the NEPA process by providing public notice of NEPA-related hearings, public meetings, and availability of environmental documents (CEQ 40 CFR § Regulations 1506.6). To announce the availability of the EA, publication can occur in local newspapers (in papers of general circulation rather than legal papers), local media, newsletters, direct mailings, posting of notices, press releases, and community organizations. **Chapter 7** includes CDOT's guidance for public involvement.



The EA announcement should include the following:

- ▶ A brief description of the project.
- ▶ A brief summary of environmental consequences.
- ▶ Time period and dates of the public comment period (30 days).
- ▶ Locations where the document is available for public review (examples include libraries or municipal offices).
- ▶ Location, date, and time of public meetings, if held. The EA must be available for public review at least two weeks before a public meeting (**Section 7.3.1**).
- ▶ A point of contact at CDOT for further information.

There are no differences in the announcement of a traditional EA and the NEPA Document Template.

6.12 EA Public Review

When FHWA expects to issue a FONSI for an action described in FHWA and FTA, 23 CFR § 771.115(a), copies of the EA shall be made available for public review (including the affected units of government) for a minimum of 30 days before FHWA makes its final decision (40 CFR § 1501.4[e] [2].) This public availability shall be announced by a notice similar to a public hearing notice. If, at any point in the EA process, FHWA determines that the action is likely to have a significant impact on the environment, that EA process will stop and the preparation of an EIS will be required.

The following steps summarize the public coordination process for completion of an EA.

1. Upon the announcement of availability, the public and agencies have 30 calendar days to submit comments. During this time, a public meeting or hearing is also recommended, but not required. Note that to call a public meeting a hearing, there must be a court reporter and the opportunity for members of the public to speak in front of the group.
2. After the 30-day public comment period concludes, the comments gathered are evaluated to determine where changes to the analysis would affect the decision. Responses to substantive comments must be prepared, and the comments and responses must be submitted to FHWA.

If comments received during the public availability period indicate that changes are necessary, then a clarification is made in the FONSI or an addendum to the EA is prepared to:

- ▶ Reflect changes in the build alternative(s) or mitigation measures resulting from comments received on the EA or at the public hearing (if one is held) and any impacts of the changes
- ▶ Include any necessary findings, agreements, or determination (e.g., wetlands, Section 106, Section 4(f)) required for the proposal
- ▶ Include a copy of pertinent comments received on the EA and appropriate responses to the comments

Upon conclusion of the public comment period, the public comments are considered and a determination of the significance of the impacts is made. Chapter 8 of this Manual discusses specific details regarding the NEPA review process for an EA.



6.13 Finding of No Significant Impact

If FHWA agrees with the applicant's (CDOT's) recommendations pursuant to 23 CFR §771.119(g), FHWA will prepare a separate written FONSI incorporating by reference the EA and any other appropriate environmental documents. In the case of FHWA and CDOT acting as co-lead agencies for a project, CDOT prepares the FONSI for FHWA signature.

The project described in the EA must be in a fiscally-constrained plan for FHWA to sign a FONSI.

CEQ Regulation 40 CFR §1508.13 states that a

...finding of no significant impact is a document by a Federal agency briefly presenting the reasons why an action, not otherwise excluded (40 CFR §1508.4), will not have a significant effect on the human environment and for which an environmental impact statement therefore will not be prepared. It shall include the environmental assessment or a summary of it and shall note any other environmental documents related to it (40 CFR §1501.7[a] [5]). If the assessment is included, the finding need not repeat any of the discussion in the assessment but may incorporate it by reference.

The FONSI should contain the following information:

- ▶ Selection of the Preferred Alternative for construction
- ▶ Summary of all environmental impacts associated with the project, including a statement of findings on all relevant impact categories
- ▶ Summary of full mitigation of impacts

CDOT has developed a **FONSI Template** that can be used with either a Standard EA or a NEPA Document Template. The FONSI Template is located here:

<https://www.codot.gov/programs/environmental/nepa-program/cdot-nepa-tools>

CDOT sends an announcement of availability of the FONSI to the affected units of Federal, state, and local government, and the FONSI is made available from CDOT and FHWA upon request by the public. Notice is also sent to the state intergovernmental review contacts established under Executive Order 12372.

If another Federal agency has issued a FONSI on an action that includes an element proposed for FHWA funding, FHWA will review the other agency's FONSI. If FHWA determines that this element of the project and its environmental impacts have been adequately identified and assessed, and concurs with the decision to issue a FONSI, FHWA will issue its own FONSI incorporating the other agency's FONSI. If environmental issues have not been adequately identified and assessed, FHWA will require appropriate environmental studies (FHWA Regulation 23 CFR §771.121).



6.14 EA Reevaluations

Periodically, the preferred alternative in the EA is not constructed following release of the FONSI due to funding limitations or other constraints. The passage of time following the approval of the EA to the point of the build alternative being implemented is referred to in the CDOT *Environmental Stewardship Guide* as the “shelf-life” of the EA. The *CDOT Environmental Stewardship Guide* states that “after approval of the FONSI, CDOT shall consult with FHWA prior to requesting any major approvals or grants to establish whether or not the approved environmental document remains valid for the requested Administration action.”

A **Reevaluation** is prepared with the purpose to determine whether or not a supplement to an EA is needed.

The Reevaluation is for the entire document or project (i.e., same limits as the original environmental document). The Reevaluation should consider the entire project but focus on the validity of the EA and/or project decision as related to the current phase or work, major approval, or action to be taken by FHWA to advance the project. If documentation of the Reevaluation is necessary, the previous phases would be referenced as a previous action and summarized as background information. The current phase would be discussed in more detail but only to the extent that there have been changes to the project or affected environment. Future phases could be mentioned and discussed, but the detail could be delayed until approval is needed to proceed with the future phase. There is no requirement to modify phases already built or reconsider previous designs when the next phase is being built.

If the project decision, affected environment, mitigation or other environmental commitments, or environmental requirements have not changed or if the changes examined result in the determination by FHWA that the environmental document is valid, the Reevaluation process is completed. If the Reevaluation process determines that the approved environmental document is no longer adequate, then supplemental environmental documentation is needed to fully analyze the changes that have occurred (FHWA and FTA, 23 CFR § 771.129).

Determining if the design year and traffic numbers need updating for the final segment or the entire project under a Reevaluation should be examined on a case-by-case basis and may be commensurate with the time lapse between the original environmental document and decision and the current FHWA approval action. For example, if the project is so old that the design would not be appropriate, it should probably be changed. There is no requirement to change the design year (and associated traffic numbers) of a project during Reevaluation of the environmental document.

23 USC 109 provides that the project must adequately serve the existing and planned future traffic of the highway in a manner that is conducive to safety, durability, and economy of maintenance. In accordance with AASHTO’s *A Policy on Design Standards - Interstate System*, “In all but extraordinary circumstances, the design year for new construction and complete reconstruction is to be at least 20 years beyond that which the plans, specifications, and estimate for construction for the section are approved.” FHWA does not have a requirement for design year on non-interstate facilities.



6.14.1 Documenting Reevaluations Using CDOT Form 1399

CDOT Form 1399 is to be used when completing a Reevaluation. CDOT completes a Reevaluation for three primary reasons:

1. Project is proceeding to the next major Federal approval or action 23 CFR 771.129(c).
2. Project changes such as laws, policies, guidelines, design, environmental setting, impacts or mitigation have occurred. Sometimes the design that was originally approved changes in final design, resulting in newly discovered or otherwise unaccounted for impacts to resources not initially evaluated in the NEPA document. Reevaluations may also be completed to serve as field verifications to ensure that impacts documented in the initial NEPA clearance are still correct and that the same mitigation measures apply.
3. Greater than three years have elapsed since approval of the Draft EA (23 CFR 771.129(a)) or FHWA's last major approval action for the FONSI (23 CFR 771.129(b)). Sometimes after a preferred alternative is identified in an EA or an EIS, it is not constructed due to funding limitations or other constraints. CDOT uses Reevaluations to “refresh” project information that may have exceeded its shelf life. The passing of time following the approval of a NEPA document to the point of the alternative being implemented is referred to as the “shelf-life.”

A Reevaluation determines whether or not the environmental document reviewed is still valid. Should it be determined that no substantial changes have occurred, the project can advance to the next phase of project development. However, should it be determined that the NEPA document is no longer valid and more information is needed, then additional work will be required.

Signature of the Reevaluation form completes the NEPA requirement for the project; however, it is not the final step in the process. CDOT Form 128 must also be completed for all Reevaluations. Section C of CDOT Form 128 includes information regarding Permits and Additional Requirements, and Section E includes the Environmental Project Certification. Completion of these two sections is required for the project to move into construction.

Guidance for completing the Form 1399 is available at:

<https://www.codot.gov/programs/environmental/nepa-program/cdot-nepa-tools>

6.15 Project Files and Administrative Record

This section establishes what should be maintained in a project file and provides information for compiling the administrative record should a lawsuit be filed.

6.15.1 Project File

Throughout the life of a NEPA project, the entire project team generates project materials. All materials maintained by the project team are considered the project file. The size of the project file may depend on the type of project; a CatEx for an intersection improvement may have a small file whereas an EIS for an interstate widening will have a larger file.



CDOT PMs are responsible for establishing electronic naming conventions for emails at the beginning of a project. A standard indicator should be used throughout the project in the subject line to easily track project-related emails.

Items that make up the project file may include:

- ▶ Email messages and any attachments
- ▶ Letters/memoranda and any attachments
- ▶ Meeting materials (agenda, sign-in, handouts, minutes)
- ▶ GIS information and data layers
- ▶ Modeling results
- ▶ Maps, drawings, and displays
- ▶ Project documents in original formats (for example, Word or CAD)
- ▶ Policies, guidelines, directives and manuals, or easy references to these materials as long as they are readily available
- ▶ Articles and books; be sensitive to copyright laws governing duplication
- ▶ Factual information or data
- ▶ Communications received from other agencies and from the public, and any responses to those communications
- ▶ Documents and materials that contain information that supports or opposes the challenged agency decision
- ▶ All draft documents that were circulated for comment either outside the agency or outside the author's immediate office, if changes in these documents reflect significant input into the decision-making process
- ▶ Technical information, sampling results, survey information, and engineering reports or studies; certain technical information, such as threatened/endangered species, historic, and archaeological resource survey reports, should be kept in the files but labeled "SENSITIVE - NOT FOR PUBLIC RELEASE" due to their sensitive nature
- ▶ Decision documents
- ▶ Documentation of telephone conversations and meetings, such as memoranda or handwritten notes, unless they are personal notes
- ▶ Alternatives screening and development information
- ▶ Public comment correspondence
- ▶ Documentation of public involvement efforts

As a rule, the project file should not include internal "working" drafts of documents that may be superseded by a later more complete, edited version of the same document.

All written documentation should contain a date, indicate to/from (or attendees for meetings), location (for meetings), and be clear on subject matter. The project team may want to consider establishing a template for internal communications, memos, emails (e.g., always using the project number in the subject line of an email) early in the NEPA process.

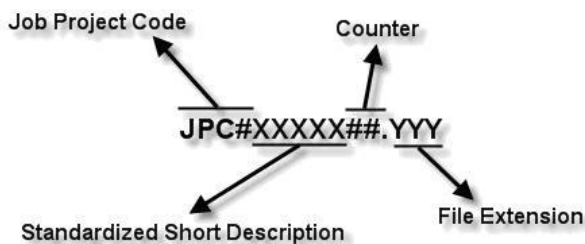


At the beginning of the project, it is important to determine the following to ensure an adequate project file:

- ▶ Who is responsible for maintaining the project file (i.e., project manager, project coordinator)?
- ▶ Will a database be used to manage files?
- ▶ Where will files be housed during the project?
- ▶ How will electronic and hard copy information be filed; when possible, CDOT prefers electronic copies.
- ▶ Will a project email be established where all email correspondence will be sent or copied to assist with record keeping?

CDOT has a naming standard that uses a formula that restricts the character placement, ensures unique file names, and identifies the information contained in the file. All CDOT projects must follow these file naming conventions. The naming standard creates consistency among projects being completed by different firms and in different Regions. Standardizing file names is necessary for effective management of the large numbers of files needed to produce project deliverables. CDOT files are named in a standard format that identifies the file's project, the data contained within it, and product used for its creation.

The naming convention is illustrated as follows.



Job Project Code (JPC) is the CDOT project code, formerly known as the project subaccount number. **Example - 16602**

Standardized Short Description of data may contain as many characters within reason to describe the contents and purpose of the file. **Example - Aerial**

Counter indicates more than one file of a specific type. **Example - Aerial_02**

File Extensions define the product used for its creation. **Example - .doc**

Full Example of a file naming convention **16602_Aerial.doc** or **16602_Aerial_02.doc**

The project file may be kept at a central location at a consulting firm where project files are maintained throughout the project. However, a decision must be made on how the files will be provided to CDOT at the close of the project. Given that some projects have numerous consulting firms involved, it is necessary to obtain all the appropriate files from each firm, organize into logical folders (hardcopy and electronic), and provide to CDOT. In cases where most files have been maintained electronically, a final deliverable to CDOT must include an electronic deliverable.



The CDOT Generic Scope of Work Section 2. G. Administrative Record task is a place to include the effort for maintaining the project file (CDOT, 2022). Although the task is labeled administrative record, it can be changed in the project-specific scope to include the project file as well. Regardless of project size, hours and effort need to be allocated in the project budget for this task.

A well-organized project file is the foundation for putting together the administrative record.

There is no general NEPA guidance on how long a project file should be kept, and Federal agencies are free to establish their own guidelines on retention of files. However, once a project has been completed, prudence dictates that the following types of data should be permanently retained:

- ▶ Design and as-built drawings and specifications in both hardcopy and electronic format
- ▶ Deeds and titles
- ▶ All information considered under NEPA in selecting the alternative that was implemented

Such information may be useful in assessing and resolving future problems with project structures, ownership, or choices associated with implementation.

6.15.2 Administrative Record

Should the NEPA decision be challenged in court, the project file provides a starting point for preparing the administrative record. When a project faces litigation, the administrative record must be prepared, which includes all materials that are submitted to the court.

Under the Administrative Procedure Act, a court reviews an agency's action to determine if it was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law" (5 USC § 706[2][A]). In making this determination, a court evaluates the agency's administrative record. The administrative record is the paper trail that documents the agency's decision-making process and the basis for the agency's decision.

The administrative record for each project will be drawn from the project file as needed. Not all material in the project file will necessarily become part of the administrative record; however, any information that supports the final decision should be part of it. As established by case law, the general rule is that the administrative record should contain "all documents and materials directly or indirectly considered by the agency" in making its decision.

CDOT has adopted the AASHTO Practitioner's Handbook *Maintaining a Project File and Preparing an Administrative Record for a NEPA Study* (July 2006) for further guidance on the administrative record documentation.

<https://environment.transportation.org/wp-content/uploads/2021/05/ph01-2.pdf>



What kinds of records should be included in an administrative record? (This list is not all inclusive.)

- ▶ Documents vital to the “decision” such as the technical reports
- ▶ Federal Register notices (for example, the Notice of Intent)
- ▶ Agency and public comments and responses
- ▶ Public transcripts, handouts, sign-in sheets, and exhibits from public meetings
- ▶ Final versions of discipline reports/technical reports, modeling inputs, preliminary reports, studies, site evaluations, screening documents, memos and any other documents showing the basis and reasoning for conclusions/decisions
- ▶ Planning documents such as the long-range plan and the Statewide Transportation Improvement Program
- ▶ Emails documenting process and smaller and larger decisions throughout the NEPA process
- ▶ Evidence of compliance with other laws, e.g., Section 4(f), National Historic Preservation Act (Section 106), Section 404 Permit, and Endangered Species Act
- ▶ Guidance relied on during the NEPA process (for example, the Section 4(f) Policy Paper)
- ▶ Anything used by the agency in the decision-making process, even if not specifically mentioned by the final decision-maker
- ▶ Files by CDOT and its consultants that relate to the final decision
- ▶ Memorandum to the File memorializing a decision.

An administrative record most likely will not include:

- ▶ Personal notes taken by an individual unless they are transmitted to someone or if they are in the agency file for a specific purpose
- ▶ Privileged documents such as attorney-client privileged communication, attorney work product and deliberative product documents
- ▶ Internal “working” draft documents—but sometimes these can be included if relevant to an important decision or shows process
- ▶ Non-“relevant” information such as emails containing irrelevant information such as lunch plans or chit-chat between people working on the project—if this is mixed in with information relevant to a decision, it might be included anyway or segregated or redacted
- ▶ Pre-decisional documents made before a final decision being made—often these take the form of emails; this is a complicated category and should be dealt with on a case-by-case basis
- ▶ Duplicates of documents already in the record
- ▶ Documents made after the decision (FONSI, etc.) was completed

An administrative record can be in electronic, hardcopy, or a combination format. It is ultimately up to the court to decide which format is preferred. It is important to note that if electronic documents are converted to PDF format, the original source files must also be available.

For projects where litigation is expected, it is good practice to prepare the administrative record before the FONSI is signed. Some general guidance for organizing an administrative record includes ensuring all items have a date, author, and version number (preferably on each page if multi-page),



that items are organized in a logical and accessible way (for example, chronological or by topic), and that an index is completed. The index should list documents in chronological order, assign unique page numbers to documents, include brief descriptions of each document, and include the author of each document.

FHWA is ultimately responsible for the administrative record as the decision maker. Therefore, it is important to work closely with FHWA staff when preparing an administrative record to ensure that it contains the appropriate information and is in the appropriate format(s).

6.16 Statute of Limitations

Section 1308 of MAP-21 established a 150-day limitation on litigation claims for projects being implemented. The 150-day clock starts with Federal Register publication of a notice that a permit, license, or approval action is final.

The following language is standard language that should be included in all EA documents (typically on the reverse side of the signature page). This language is also presented in Appendix F.

The Federal Highway Administration may publish a notice in the Federal Register, pursuant to 23 United States Code (USC) § 139(l), once the Finding of No Significant Impact is approved. If such notice is published, a claim arising under Federal law seeking judicial review of a permit, license, or approval issued by a Federal agency for a highway or public transportation capital project shall be barred unless it is filed within 150 days after publication of a notice in the Federal Register announcing that the permit, license, or approval is final pursuant to the law under which judicial review is allowed. If no notice is published, then the periods of time that otherwise are provided by the Federal laws governing such claims will apply.

6.17 References

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7. Stakeholder Involvement Guidance and Public Involvement Plan

Chapter 7 provides guidance on public involvement and stated public involvement principles of the Colorado Department of Transportation (CDOT) for National Environmental Policy Act (NEPA) projects. It is intended to fulfill Federal Highway Administration (FHWA) requirements to submit a description of the public involvement component of plans, programs, and projects considered and undertaken by CDOT. It is not intended to cover public involvement requirements required by other state, Federal, local, or Tribal laws and regulations.

This chapter also outlines public involvement considerations for CDOT staff on all Federal-aid projects as updated because of regulation changes, refinement of requirements, and guidance on public involvement activities expected to be implemented during the development of projects. In keeping with CDOT's philosophy for public involvement, a similar process will be followed for all state-funded projects, as addressed in CDOT's *Environmental Stewardship Guide* (CDOT, 2017) and this Manual.

7.1 Public Involvement Overview

Public involvement is a process by which the influence of various stakeholders is organized in relationship to decision-making. Public involvement is a key component of the environmental review and project development process. Federal laws and regulations establish basic requirements for public involvement, but developing a public involvement process that is appropriate for the project and that will lead to sustainable decisions requires careful planning and consideration, often involving elements that go beyond basic Federal requirements.

Developing a public involvement plan for a project requires knowledge of the issues that could affect, or be affected by, a project, as well as identifying and understanding the risks involved in making project decisions. Appropriate identification of internal and external stakeholders is part of this process. Stakeholders are knowledgeable about the project area and community needs. Public participation contributes to better decisions because decision-makers have more complete information-in the form of additional facts, values, and perspectives obtained through public input to bring to bear on the decision process.

Because the influence of stakeholders in decision-making changes with the decisions being made, the steps in the decision-making process change accordingly. A public involvement plan provides a framework for how stakeholders interact with the project and with decision-makers. While the plan is likely to evolve and change as circumstances dictate, a well-developed public involvement plan will chart the path the project team will take to ensure that all appropriate public involvement steps have been completed.

Meaningful public involvement is a process that lasts throughout the project lifecycle; it is not a single event or an activity. It begins early in the planning process and includes full representation from all affected communities (FHWA, 2022). Meaningful public involvement:

- ▶ Increases trust between the organization and the community
- ▶ Increases the likelihood that projects, programs, or plans will be accepted
- ▶ Creates more effective solutions



- ▶ Improves a community’s knowledge of the project, program, or plan
- ▶ Empowers people from different backgrounds to become involved in transportation decision-making
- ▶ Delivers a better project, program, or service with diverse ideas that promote equity and inclusion
- ▶ Ensures against compliance concerns with authorities such as Title VI and NEPA that require public input and nondiscrimination

Note that a public involvement plan is not the same as a project coordination plan. If a coordination plan is required per 23 USC 139 (typically associated with an Environmental Impact Statement [EIS]), the public involvement plan can be incorporated into a coordination plan to demonstrate how stakeholders relate to discussions and decisions with resource and regulatory agencies.

Chapter 4 provides additional details regarding the preparation of a project coordination plan. **Section 7.2** of this Manual discusses the development of a public involvement plan.

Although public involvement begins in planning and extends through to construction, this chapter focuses on public involvement during the NEPA process.

7.1.1 Definition of Stakeholders

Stakeholders include the general public; businesses; local, state, and Federal governmental agencies; non-governmental agencies; citizen and community groups; civic and professional organizations; and other interest groups.

Stakeholders can be external or internal to CDOT and include the general public, businesses, governmental agencies, non-governmental organizations, CDOT Maintenance, and other groups that have an interest in or will be affected by the outcome of a decision. Specific stakeholders, such as low-income communities, minority communities, Limited English Proficiency (LEP) communities, elderly, disabled, Native American Tribes, resource agencies and regulatory agencies, may also be required by legislation or regulations and based on jurisdiction.

A thorough demographic analysis is critical to meaningful public involvement and identification of impacts due to a project. It is important to identify low income, minority, and LEP populations early so that these populations can become involved and have a meaningful opportunity to participate during every phase of a NEPA project. For additional resources, **Chapter 9, Section 9.16** of this Manual provides guidance on the environmental justice analysis to identify low-income and minority populations and additional resources, such as FHWA’s Environmental Justice Reference Guide (2015) and USDOT’s Promising Practices for Meaningful Public Involvement in Transportation Decision-Making (2022).

Environmental Justice Executive Order 12898 requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects on minority and low-income populations in all its operations. This is an amplification of the non-discrimination mandate of Title VI of the Civil Rights Act of 1964. The resultant USDOT and FHWA Orders require CDOT to ensure that Environmental Justice is appropriately addressed, within the framework of existing laws, such as NEPA, in all its operations.



Guidance from the Council for Environmental Quality (CEQ, 1997) describes six principles to consider when identifying stakeholders and impacted community members:

- ▶ Consider the composition of the affected area to determine whether minority populations, low-income populations, or Tribes are present.
- ▶ Consider the potential for multiple or cumulative effects to human health or the environment, even if certain effects are not within the control or subject to the discretion of the agency proposing the action.
- ▶ Recognize the interrelated cultural, social, occupational, historical, or economic factors.
- ▶ Seek to overcome linguistic, cultural, institutional, geographic, and other barriers to meaningful participation.
- ▶ Assure meaningful community representation as early as possible in the process.
- ▶ Seek Tribal representation that is consistent with the government-to-government relationship between the United States and Indian Tribal Governments.

7.1.2 Tribal Sovereignty and Government-to-Government Consultations

Consultation with Native American Tribes recognizes the government-to-government relationship between the U.S. government and sovereign Tribal groups.

Section 9.10 of this Manual discusses the Tribal consultation coordination activities completed for each NEPA document by CDOT EPB.

Section 9.16 of this Manual discusses the environmental justice analysis to identify low-income and minority populations.

The U.S. government and the State of Colorado have unique relationships with American Indian governments as set forth in the Constitution of the United States, treaties, statutes, court decisions, and executive orders and memoranda. These form the basis of cooperative relationships between CDOT and its Tribal partners. Agencies should acknowledge the Tribal nations that historically inhabited and continue to inhabit Colorado at appropriate times, like the beginning of public meetings. Agencies should consider going beyond land acknowledgements by using tools like the online Native Governance Center's Beyond Land Acknowledgement Guide (2019).

Acknowledgments can consider the history of cultural erasure and should be trauma-informed and culturally sensitive for Indigenous communities and communities with mixed Indigenous identities.

On April 29, 1994, a Presidential Memorandum reaffirmed the Federal government's commitment to operate within a government-to-government relationship with federally recognized Native American and Alaska Native Tribes and to advance self-governance for such Tribes. The Presidential Memorandum directs each executive department and agency, to the greatest extent practicable and to the extent permitted by law, to consult with Tribal governments before taking actions that have substantial direct effects on federally recognized Tribal governments. To ensure that the rights of sovereign Tribal governments are fully respected, all such consultations are to be open and candid so that Tribal governments may evaluate for themselves the potential impact of relevant proposals.



On May 14, 1998, the President issued Executive Order 13084, *Consultation and Coordination with Indian Tribal Governments*, which was revoked and superseded on November 6, 2000, by the identically titled Executive Order 13175, which sets forth guidelines for all Federal agencies to (1) establish regular and meaningful consultation and collaboration with Native American Tribal officials in the development of federal policies that have Tribal implications; (2) strengthen the U.S. government-to-government relationships with Native American Tribes; and (3) reduce the imposition of unfunded mandates on Native American Tribes.

Recognition of the independent sovereignty of Tribal governments includes the role of the Tribes in regulating impacts to resources on sovereign property and, in some cases, resources on non-sovereign lands. Mitigation for impacts to resources under the jurisdiction of the Tribal governments must be developed in coordination with the Tribal governments as an equal party to Federal and state government.

Information obtained during the gathering of baseline information for environmental justice can inform the public involvement process (**Chapter 9, Section 9.16**) and requirements during scoping. Information from the public involvement process (meetings, demographics, etc.) can also inform the environmental justice evaluation. This information can be useful for project teams to share.

7.1.3 Purpose for Public Involvement

Public involvement acknowledges people's desire to participate in decisions that they perceive or actually will affect them. It provides a managed process that encourages and supports stakeholders so that input into the decision-making process is meaningful and considers their knowledge, values, interests, and needs.

Both the public and the decision-maker need to thoroughly comprehend the problems, opportunities, constraints, and available options if a viable solution is to be found. By including multiple perspectives, public involvement develops a more complete understanding of the scope of the issues and decisions, as well as a better awareness of the impacts of the project. Public participation contributes to better decisions because decision-makers have more complete information—in the form of additional facts, values, and perspectives obtained through public input—to bring to bear on the decision process.

Effective public involvement supports the development of sustainable decisions. It is based on the values of the stakeholders and project team, focuses on the decision to be made, and addresses the goals established for the public involvement effort.

Sustainable decisions effectively balance economic viability, technical feasibility, environmental compatibility, and public acceptability. A sustainable decision is important because it results in the development of projects that:

- ▶ Do not require significant redesign
- ▶ Are less likely to end up being litigated
- ▶ Are able to obtain all necessary permits
- ▶ Are financially responsible
- ▶ Consider the concerns and comments received from stakeholders and the public



Additionally, it is more likely that project decisions will continue to be applicable even if projects are not constructed immediately. Effectively involving stakeholders in a project's decision-making process allows the identification of issues and opportunities that might otherwise be missed. As a result, fewer issues are likely to arise after decisions are made. Non sustainable decisions can result in both the need for reevaluation and additional time and money being expended to perform those activities.

Areas in the project development process where public involvement can help develop sustainable decisions include:

- ▶ Definition of the project's purpose and need
- ▶ Development of key issues to be addressed in the NEPA process
- ▶ Agreement on the decision-making process and the roles and responsibilities of the different stakeholders in those decisions
- ▶ Key concerns and issues affecting alternative selection
- ▶ Mitigation needs and opportunities

7.2 Project Public Involvement Plan

It is recommended that each project have a public involvement strategy, but a formal project public involvement plan is mandatory for all EIS processes. Depending on the type of NEPA document being prepared, specific legal requirements for public involvement must be met. These specific requirements should be anticipated and included in the project public involvement plan and are outlined **Section 7.4**. For smaller projects, the public involvement plan may include only basic information about how the general public will be alerted to the project and receive project updates, such as how detours or closures will be communicated. **Attachment 1** identifies additional resources for developing public involvement plans, tools, techniques, and other information.

All EIS projects require a public involvement plan. A public involvement strategy is recommended for other projects with complex issues.

7.2.1 Developing a Project Public Involvement Plan

In developing an effective public involvement plan, requirements identified in the coordination plan must be considered (**Chapter 4**). No set process is required, but the following steps are recommended:

1. Identify the key issues or decisions that are relevant to project decisions
2. Gain internal commitment
3. Learn from stakeholders
4. Select the level of involvement
5. Identify how success will be evaluated
6. Define the decision process and participant objectives
7. Develop the final project public involvement plan



Attachment 2 and **Attachment 3** include detailed information on the steps for developing a public involvement plan. Each step has a series of activities intended to provide the structure that builds on one another. At the conclusion of Step 7, the project team should have a public involvement plan in place.

Many tools and techniques for involving stakeholders are available. These tools and techniques include basic informational tools such as project websites, social media, news releases, flyers, postcards, e-newsletters and bulletins; information gathering techniques like local community events, surveys, telephone townhalls, listening sessions, small group meetings, and public meetings, as well as decision-making techniques.

Attachment 3 includes examples of tools used on CDOT projects. Information on a variety of tools and techniques can be found in the Public Participation toolbox available through the International Association for Public Participation website and through other websites listed in **Attachment 1**.

The steps presented in this section are one method for developing an effective public involvement plan and are based on the International Association for Public Participation: Planning for Effective Public Participation. <http://www.iap2.org/>.

7.2.2 Elements of the Public Involvement Plan

The public involvement plan should include:

- ▶ Public involvement tools and techniques intended to be used by the project team and stakeholders
- ▶ Timeline demonstrating when specific public involvement activities will take place and how they support the project development process
- ▶ Evaluation criteria that the project team will use to determine how effective the public involvement activities were in accomplishing the stated objectives

7.2.3 Title VI Nondiscrimination Law and Limited English Proficiency

The public involvement process shall comply with Title VI of the Civil Rights Act of 1964, which states, “No person in the U.S. shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.”

Title VI bars not only intentional discrimination but also neutral practices that result in disparate impacts on individuals of a particular race, color, or national origin. To such end, CDOT must ensure that any activity that will result in disparate impacts on individuals protected by Title VI be carried out only if:

- ▶ The activity has a substantial legitimate justification;
- ▶ There are no comparably effective alternative practices that would result in less disparate impacts; and
- ▶ The justification for the action is not a pretext for discrimination.



CDOT staff and consultants should be aware of the mandate to not discriminate and seek to ensure equal access to and treatment of all individuals during NEPA processes and public involvement activities. No specific documentation is required to demonstrate Title VI compliance. However, the record should demonstrate that this standard has been met.

If complaints regarding discrimination, whether oral, written, or otherwise, are received during the NEPA process, they should be immediately submitted to the CDOT Civil Rights and Business Resource Center Title VI staff.

CDOT's Policy Directive 604.0 "Policy on Non-Discrimination" can be obtained at:

<https://www.codot.gov/business/civilrights/titlevi/title-vi-assets/policy-directive-604-0-policy-on-non-discrimination>

CDOT's Civil Rights and Business Resource Center website: <https://www.codot.gov/business/civilrights>

Additional LEP resources can be found at <https://www.lep.gov/>

Title VI and Limited English Proficiency

Ensuring access to CDOT programs and activities and non-discrimination to Limited English Proficiency (LEP) populations is deeply ingrained in Title VI. LEP populations are individuals who do not speak English as their primary language and have a limited ability to read, write, speak, or understand English. In certain circumstances, failure to ensure that LEP populations can effectively participate in or benefit from federally assisted programs and activities may violate the Title VI prohibition against national origin discrimination. Therefore, when developing a public involvement strategy, the community study area must be evaluated to identify LEP populations and determine whether language assistance measures are needed to ensure meaningful access to the process. Efforts to ensure meaningful access to LEP populations should be documented in the public involvement section of the NEPA document.

The Environmental Justice chapter also addresses public involvement as it relates to minority and low-income populations. For additional resources, review the FHWA Environmental Justice Reference Guide at https://www.fhwa.dot.gov/environment/environmental_justice/publications/reference_guide_2015/fhwaep15035..pdf

Identify LEP Populations

LEP data are available from the U.S. Census Bureau American Community Survey 5-year Estimates (Household Language by Linguistic Isolation data) and can be obtained at the Census tract level to the county level. CDOT recommends evaluating Census data based on populations 18 and older that speak English not at all, not well, and well. For comparison to the project specific community study area, LEP data should also be collected for Colorado and the county/counties within the community study area.

School district data may also be used to supplement Census data to identify LEP populations. Some individuals may not be captured in the Census data; therefore, students with English as a second language may indicate a LEP population.

Public involvement is also an important source of information for identifying LEP populations that could be affected by a project.



Determine Language Assistance Measures

When the presence of a LEP population is identified, the project team should discuss the need to incorporate language assistance measures in accordance with USDOT LEP guidance. All vital documents shall be translated into the language spoken by the affected LEP population. Other language assistance measures may include interpretation services, bilingual community liaisons, and other means for providing access to LEP services. Also, upon request, CDOT must be able to provide reasonable individualized assistance in any language. Contact the CDOT Civil Rights and Business Resource Center if assistance with individual requests is needed.

Chapter 9, Section 9.16 of this Manual provides guidance on the Environmental Justice analysis and how to identify LEP populations. **Section 9.16** also provides additional resources, such as FHWA's Environmental Justice Reference Guide (2015).

7.2.4 Measuring Community Outreach Effectiveness

Early in a study, the project team should interview organizations to establish relationships with trusted community members and confirm the best outreach methods for all community members, while emphasizing traditionally underserved community members. These community organizations and non-profit organizations could include local churches and schools within the study area. Based on input from these groups, a project team should engage with traditionally underserved community members.

Gaining and keeping momentum during a project can be difficult, especially multi-year projects. The project team can achieve better effectiveness by implementing several methods of outreach and engagement. Techniques for greater effectiveness include:

- ▶ Blend low and high technologies for broad accessibility
- ▶ Begin the media push at the start of the outreach event and while the outreach event is live
- ▶ Provide continuous media/stakeholder outreach to keep engagement in an event high
- ▶ Review results after an event and refine outreach strategies for the next event

Examples of media and social outreach include:

- ▶ Produce communications, the project website, and the virtual public event platform in the language spoken by community members, as well as in English.
- ▶ Distribute printed postcards, as well as post flyers and posters, at local churches, convenience stores, and other locations to help address concerns about lack of Internet access.
- ▶ Work with a community non-profit organization to help convene a community focus group to meet with the project team to learn about the project and provide feedback.
- ▶ Include project articles within the local community newsletter.
- ▶ Run targeted digital display advertisements on a local television station.
- ▶ Promote paid Facebook posts for zip codes surrounding the project area.



The project team should measure the effectiveness of the public outreach based on the number of public participant reviews and comments. Methods for measuring the effectiveness of public outreach include:

- ▶ Measure proportional community outreach and participation by comparing respondent demographics to Census demographics.
- ▶ Assess public perception of how much public input and feedback have influenced and/or impacted project decisions.
- ▶ Assess public perception on agency transparency and clarity about the project and whether or not trust of government agencies improved as a result of public involvement.
- ▶ Evaluate whether public involvement started early enough and was of sufficient length and frequency to be valuable.
- ▶ Measure the extent to which the public involvement was inclusive and representative of all targeted and affected populations.
- ▶ Measure the extent to which the public involvement activities used multiple methods for participation.

Analyzing the effectiveness of public participation is important to ensure that meaningful outreach is taking place and project decisions reflect the values of the interested and affected communities. Additional information about measuring the effectiveness of public involvement can be found in the National Cooperative Highway Research Program's (NCHRP) Research Report 905: *Measuring the Effectiveness of Public Involvement in Transportation Planning and Project Development* (2019).

Attachment 4 includes an example survey from NCHRP.

NCHRP Research Report 905: *Measuring the Effectiveness of Public Involvement in Transportation Planning and Project Development*

<https://www.trb.org/Main/Blurbs/179069.aspx>

7.2.5 Section 508 Compliance

Section 508 is an amendment to the U.S. Workforce Rehabilitation Act of 1973, a federal law that calls for all federal agencies to make their electronic and information technology (EIT) accessible and usable to people with disabilities. Under the law, information will be provided to people with disabilities in a way that is comparable to access available to other users. This can be accomplished via a system operated in a variety of ways rather than relying on a specific sense or ability of the user. For example, people with visual impairments may not be able to access information that is available in only a visual format, and people with hearing disabilities may not be able to access information that is available in only audio format. Section 508 intends for systems to operate in a way to accommodate accessibility-related issues. This can be applied to many different forms of EIT, including webpages and internet-based services and applications, software, telecommunication systems, multimedia presentations, and support services, among others. Some accessibility issues that agencies may want to consider include acceptable uses of flash rate, color and contrast, presentations, and video/multimedia content.



CDOT Communications has adopted Americans with Disabilities Act of 1990 (ADA) principles in making its website more accessible and compliant. Project teams can explore how to make the NEPA templates (e.g., Environmental Assessments and Findings of No Significant Impact) accessible since those documents are most frequently reviewed by the public. Accommodations for appendices and technical reports can be made upon request.

Additional information on Section 508 can be obtained at: <https://www.transportation.gov/drc/section-508>

7.3 Effective Public Involvement Strategies

7.3.1 Effective Strategies for Public Involvement

While there are no exact formulas to foster public involvement, there are creative strategies and innovative tools that make participation by the public easier and more convenient in these busy times. Tools that can be incorporated into a NEPA project public involvement plan include:

- ▶ **Timing of Meetings** (i.e., time of date and day of week) should reflect data about past turnout, local community preference, and availability that is informed by engaging community connectors, community feedback, agency experience, and consideration of meeting fatigue. Furthermore, state agencies should coordinate with one another to avoid scheduling meetings at the same time as other state agencies or at the same time as regular meetings of local government bodies in the area.
- ▶ **Location of Meetings** should be hosted in impacted communities (e.g., urban centers, predominantly Black Indigenous and People of Color communities, below-average income communities, and rural locations). If agencies are holding multiple meetings about the same topic, the agency should choose a variety of locations (different locations for each meeting) to reach a variety of community members. Agencies should consider the following when selecting in-person meeting locations:
 - Close/convenient for the target community to access
 - Near bike paths, access to public transportation, and/or free parking
 - Safe locations
 - Where local businesses can economically benefit from the meeting
 - Availability of space for childcare
 - Accessibility for people with disabilities (ADA accessibility)
 - Technology barriers and internet access issues that may make digital participation more difficult for people living in rural areas
- ▶ **Project Website** established at the beginning of the project can provide project information and public event announcements throughout the project. The project website may include a project overview, frequently asked questions (FAQs), project updates, project contact information, project schedule, summary of the decision-making process, project purpose and need, corridor history, proposed improvements, meeting summaries, project documents, and opportunities for public involvement, including the opportunity to join the project mailing list and complete an online questionnaire and comment form.



- ▶ **Social Media Platforms/Live Video Streaming** offer ways to distribute information, develop ongoing conversations with the public, and provide live video streaming of public meetings where the public can provide input without requiring in-person participation at a public meeting. Social media can be shared through CDOT’s Facebook page, CDOT’s YouTube channel, and stakeholder social media channels. Facebook posts can be promoted for zip codes surrounding the study area.
- ▶ **Online Discussion Boards and Blogging** allow the viewing of other people’s comments, which can be beneficial in generating ideas and facilitating meaningful discussions.
- ▶ **Videos/Webcasts/Podcasts** can provide a number of opportunities for public education and engagement through distribution on CDOT’s social media platforms, email blasts, and videos with English and non-English subtitles to address LEP and visually impaired persons.
- ▶ **Media Advertisements and Press Releases** can include advertisements and press releases issued to print, television, radio outlets, and social media, as well as community newsletters.
- ▶ **Telephone Town Halls/Key Person Interviews** make participation convenient, allow participants to ask questions of CDOT and the project team, and poll a large number of participants to provide input at major milestones during the NEPA process, including Purpose and Need, Alternatives Analysis, and identification of a Proposed Action/Preferred Alternative.
- ▶ **Online Interactive Mapping and Commenting Tools** help with visioning and providing project-specific information to allow the public to provide location-specific comments. These maps can also include voting/polling on specific improvements.
- ▶ **Meeting in a Box** provides a toolkit to local citizens or community leaders to host a meeting for groups within their communities.
- ▶ **Interactive Presentation Software** (such as Mentimeter) allows participants to respond in real time to a series of questions on various topics using their cell phones. This software allows participants’ responses to be projected graphically on a screen for discussion and public comments to be captured instantaneously.
- ▶ **Web-based Surveys** allow the public to provide input on a specific set of topics without requiring participation at a public meeting.
- ▶ **Mobile Kiosks/Pop-up Outreach** can be used for public education and engagement through informational kiosks or pop-up outreach in well-trafficked public spaces or during community events to solicit comments and participation.
- ▶ **Design Charrettes/Design Workshops** include a wide range of people with differing viewpoints. Attendees do not need to be a professional or an expert on the project or subject. Rather, any individual with an interest can attend and contribute meaningfully.
- ▶ **Project Email Address and Hotline** allow the public to send comments and ask questions about a project.
- ▶ **Flyers and Posters** distributed to various community venues, such as churches, recreation centers, grocery stores, civic centers, and convenience stores can help inform the public.
- ▶ **Direct Mail Postcards** announcing public events can be sent to zip codes within 0.25 mile of the project corridor. During future stakeholder outreach, the mailing list can be expanded to include additional zip codes and greater public involvement.



- ▶ **Email blasts** announcing public events and providing project updates can be sent to stakeholders and individuals who requested to be on the email list. Project update emails can be sent to keep the public apprised of project status.
- ▶ **Site Visits** of the project area can be helpful for key stakeholders to visualize the proposed improvements.
- ▶ **Virtual presentations** offer more space and time for stakeholders to collaborate and learn as they are not limited by their geographic location or an exact meeting time.
- ▶ **Simulations** provide the stakeholder a chance to see the visual representations of the improvements and could be the closest thing to reality.

Additional techniques for meaningful involvement can be found in USDOT’s Promising Practices for Meaningful Public Involvement in Transportation Decision Making (USDOT, 2022).

In addition to in-person public meetings, another option includes holding a virtual meeting through a publicly available internet application.

7.3.2 Virtual Public Meetings

The COVID-19 pandemic in 2020 resulted in mandates and guidelines for social distancing and restrictions on in-person meetings. Innovations in technology quickly filled the gaps so that community engagement could continue through virtual participation whether online, by phone, or by paper drop box. Although many benefits of meeting in-person cannot be replaced, multiple virtual public involvement tools may provide access to information, public meetings, and other engagement tools for audiences who may not have been reached without advances in virtual technology. As a result, opportunities exist for transportation professionals to expand the traditional venues of in-person meetings to reach out directly to the public in ways that are convenient and equitable to a broader and more diverse population whether online, at home, on the phone, or in traditional gathering places.

When considering virtual public meetings, be mindful of the constraints members of the public may face such as bandwidth, lack of internet or computer, lack of technological literacy, etc., which may limit some people’s ability to participate in virtual meetings.

FHWA provides tips on how to consider meaningful virtual outreach to stakeholders and the community to ensure equity.

https://www.fhwa.dot.gov/planning/public_involvement/vpi/

7.4 Required Elements for NEPA Compliance

7.4.1 Environmental Impact Statements (Class I)

Chapter 4 discusses the process and procedures for the EIS class of action (Class I). When the notice of intent (NOI) to conduct an EIS is prepared for the Federal Register, the project team provides public notification through a variety of methods, such as flyers, paid advertising in local newspaper(s), online news sites, social media, news releases, direct mail postcard invitations, and publications to reach as many people as possible, including minorities and low-income and traditionally underserved segments of the population, such as the elderly, persons with disabilities,



and those without access to transportation. Compliance with 23 USC 139 is required and will help with efficient environmental reviews.

The advertisement typically includes the following information:

- ▶ Category of NEPA document and a general description of the project,
- ▶ Date and location of the next public meeting,
- ▶ Invitation to place names on the project mailing list (physical address and/or email),
- ▶ Information required to comply with the public involvement requirements of other laws, regulations, or Executive Orders, and
- ▶ Statement that reasonable accommodations will be provided at public meetings and hearings for persons with disabilities, and translators will be provided if necessary (**Section 7.6.1**).

Attachment 5 includes an example advertisement.

As the project progresses, the project team continually adds names to the mailing list and notifies those on the list of meetings, workshops, and project updates via email blasts or mass mailings. The mailing list typically includes Federal and state agencies, local officials, regional transportation planning entities, citizen advisory groups, neighborhood/community groups, civic and professional organizations, property owners, and other interested citizens. The project team should work to ensure that the mailing list includes minority, low-income, and other underserved groups in the project area. The project team should also ensure that information sent to individuals on the mailing list is translated into an appropriate language, as necessary.

The project team must also notify Federal land management agencies and any other agencies responsible for resources protected by Federal, state, and local laws if land or resources under their jurisdiction may be impacted by the project. This includes Tribal governments (**Section 7.1.2**) and adjacent states as applicable.

CDOT must contact the appropriate local, state, and Federal agencies and the general public to gain their assistance in developing the purpose and need, identifying all reasonable alternatives, evaluating likely project impacts, and identifying possible mitigation measures. The project team will request that all Federal, state, and local agencies that have permit approval authority or right-of-way transfer responsibilities serve as cooperating agencies or participating agencies, and identify the responsibilities of those agencies during the scoping process. **Chapter 4** provides additional information on agency scoping. A primary aim of this early coordination is to identify all applicable Federal and state regulatory requirements so that all necessary environmental studies, analyses, consultation, and permit coordination requirements can be incorporated into the NEPA compliance process.

Early in the development of the project, the project team must hold at least one public scoping meeting. As with all public meetings, this meeting must be accessible to persons with disabilities and a translator must be provided as needed. Notice of the meeting should be sent to all individuals and agencies on the mailing list. In addition, flyers advertising the meeting can be published in local papers and distributed at local businesses and community gathering places. Announcements can also be posted on CDOT's social media accounts such as Facebook and Twitter. Notices must be translated when appropriate.



It is common practice for project-specific webpages to be created and hosted on the CDOT website. The CDOT project webpage serves as a central location for public members and stakeholders to get project background information, find project updates, locate key project documents, and provide feedback. At the conclusion of each major involvement effort, meeting documentation will be posted on the project webpage so that those who were unable to attend the meeting can benefit from the information presented and provide meaningful feedback.

If available at the time of the meeting, attendees will be provided with the following information:

- ▶ Need for the project
- ▶ CDOT's objectives for the project
- ▶ Project's relationship to regional and statewide transportation plans
- ▶ Potential need to acquire additional right-of-way
- ▶ Potential requirement to relocate residences or businesses
- ▶ Anticipated resources of concern

Agency representatives and members of the public are encouraged to comment on the proposed project's purpose and need, its alternatives, and its social, economic, and environmental impacts, as required by 23 USC 139(f). The CDOT Region then considers these comments as it develops and evaluates alternative solutions for the identified transportation problem(s). One or more subsequent meetings may be held to resolve as many issues as possible before completion of a Draft EIS, or the project team may decide to hold a series of meetings or workshops with various groups to explain specific project aspects and to gain input on issues of concern.

Additional measures are required to reach minority, low-income, and traditionally underserved groups such as the elderly, persons with disabilities, and those without access to transportation. These measures supplement the public involvement activities described previously. Additional activities may include:

- ▶ Providing information about the project in foreign languages
- ▶ Making information available at locations such as churches, community centers, and schools
- ▶ Holding meetings within the community at familiar locations
- ▶ Asking to be included on the agendas of regularly scheduled community or neighborhood meetings
- ▶ Providing translators at public meetings

As soon as FHWA approves the Draft EIS, it is circulated for public and agency review. FHWA distributes copies to appropriate Federal agencies and transmits copies to the Environmental Protection Agency for publication of availability in the Federal Register. The project team announces the document's availability, called a notice of availability (NOA), through a variety of notification methods, as previously mentioned, as well as in the local newspaper(s) and minority publications previously identified. The NOA must indicate where the document and explanatory information are available, give the date and location of the public hearing, request comments on the Draft EIS, indicate how to submit comments, and include any information necessary to comply with the public involvement requirements of other laws, regulations, and Executive Orders applicable to the project. The Draft EIS is made available at local sites such as libraries and municipal buildings, CDOT Region and Headquarters offices, FHWA, and at the public hearing



described below. It must be available for public review at CDOT Region and Headquarters offices and at FHWA for a minimum of 15 calendar days before the hearing and for a total period of at least 45 calendar days. This time frame can be extended if circumstances warrant.

The public hearing offers the public the opportunity to comment on the Draft EIS, the alternatives under consideration, and the anticipated impacts. Those attending have the opportunity to make written comments or to make an oral statement, which must be recorded verbatim. Translators should be provided so that everyone can be involved and provide comments. Public hearings must be held following the distribution of a Draft EIS. The first required hearing must be held at least 15 calendar days after the NOA for the Draft EIS is published in the Federal Register.

CDOT provides FHWA all written comments received during the review period and at the public hearing, as well as a certified transcript of any verbal comments made at the hearing for the record. These become part of the project record and are addressed in the Final EIS or included in the Record of Decision (ROD).

In addition to copies of the Draft EIS, the following information is made available at the public hearing:

- ▶ Purpose and need for the project and consistency with statewide, regional, and local planning
- ▶ Major design features (i.e., number of lanes, access control, bridges, interchanges, right-of-way requirements)
- ▶ Figure and description of each alternative and summary of its advantages and disadvantages
- ▶ Social, economic, and environmental impacts of each alternative
- ▶ Avoidance, minimization, and mitigation measures under consideration and enhancement measures
- ▶ Project timetable
- ▶ Right-of-way acquisition procedures, relocation assistance, and payment programs
- ▶ Explanation of the FHWA - CDOT relationship
- ▶ Source and amount of funding available and the staged funding plan, if applicable
- ▶ Information required to comply with other laws, regulations, and Executive Orders
- ▶ Procedures for making written or oral comments for the record

The Final EIS must respond to comments received during the public hearing(s).



7.4.2 Categorical Exclusions (Class II)

The CDOT Region Planning and Environmental Manager (RPEM) and FHWA consider each Categorical Exclusion (CatEx) project at the time it is categorized to identify any special project aspects that might require coordination with interested groups, agencies, or individuals. **Chapter 5** discusses the process and procedures for the CatEx class of action (Class II).

While most CatExs will not require any specific public involvement procedures, the opportunity for a public meeting or other public involvement activities may need to be offered for some CatExs as determined by FHWA and CDOT. In these situations, the project team provides public notification through a variety of methods, including flyers, paid advertising in the local newspaper(s) and online news sites, social media, news releases, direct mail postcard invitations, online event calendars, and, where possible, using public notification methods that serve minority and low-income populations and traditionally underserved segments of the population. The announcement should be advertised at least 10 calendar days before the public meeting. Notifications must include the following information:

- ▶ Category of NEPA document and a general description of the project
- ▶ Date and location of the public meeting
- ▶ Information required to comply with the public involvement requirements of other laws, regulations, or Executive Orders applicable to the project
- ▶ Statement that reasonable accommodations will be provided at public meetings for persons with disabilities and that translators will be provided if necessary

Attachment 4 contains an example meeting notice. At the end of the public meeting, the project team prepares for the record a memorandum that includes a project description, a transcript of any testimony presented at the meeting, responses to oral and written comments made by the public or agencies, and a decision on the appropriateness of the CatEx categorization. Comments will be accepted up to 10 calendar days following the public meeting. A formal public hearing may be conducted for the project at the discretion of the CDOT RPEM.

7.4.3 Environmental Assessments (Class III)

Public involvement procedures for an Environmental Assessment (EA) are similar to those required for an EIS. However, the process is more flexible to allow engagement efforts to focus on those issues of true concern or controversy. **Chapter 6** discusses the process and procedures for the EA class of action (Class III).

After categorization, the project team provides public notification through a variety of methods, such as flyers, paid advertising in the local newspaper(s) and online news sites, social media, news releases, direct mail postcard invitations, online event calendars, and, where possible, using public notification methods that serve minorities, low-income populations, and other traditionally underserved population segments. When placed, these notifications should include the following information:

- ▶ Category of NEPA document and a general description of the project
- ▶ Date and location of the first public meeting
- ▶ Invitation to be added to the project mailing list



- ▶ Information required to comply with the public involvement requirements of other laws, regulations, or Executive Orders applicable to the project
- ▶ Statement that reasonable accommodations will be provided at public meetings and hearings for persons with disabilities and that translators will be provided if necessary

Attachment 5 provides an example meeting notice.

As the EA progresses, the project team adds names to the mailing list and notifies those on the list of meetings, workshops, and project updates. The mailing list includes Federal and state agencies, local officials, regional transportation planning entities, citizen advisory groups, neighborhood and community groups, civic and environmental organizations, affected property owners, and interested citizens. Minority, low-income, and other underserved groups should be included on the mailing list.

If the project may impact land or resources under their jurisdiction, the project team must also notify Federal land management agencies, adjacent states, and agencies responsible for resources protected by Federal, state, and local laws, including Tribal governments, as applicable (**Section 7.1.2**).

The CDOT Region uses information gained in the Statewide Transportation Planning and Programming process and through project coordination with public, neighborhood/community groups, and other groups and agencies to gain information on the social, economic, and environmental impacts that are likely to result from a project.

Public hearings are not mandatory for EAs, but public meetings or other activities are recommended. The CDOT Region Transportation Director (RTD), in consultation with the RPEM and FHWA, decides whether to hold public meetings based on public interest, project complexity, the amount of right-of-way to be acquired, the number of relocations anticipated on the project, and the requirements of 23 CFR 771.111 (h) (FHWA and Federal Transit Administration [FTA], 23 CFR 771 § 771.101 - 771.131).

Public meetings are the responsibility of the CDOT Region. However, the Region may ask Headquarters staff personnel or representatives from other agencies to attend based on their areas of expertise. Notice of the meetings is provided to everyone on the project mailing list. Other public involvement tools, such as workshops, charrettes, or surveys may be used in addition to the public meetings.

The project team considers all information gathered through environmental studies, interagency coordination, and public involvement activities to prepare the EA. The document includes a summary of public involvement activities and the results of coordination with other agencies. Upon completion, the project team announces the availability of the EA and offers the opportunity for a public hearing in newspaper advertisements, press releases, and other means, as appropriate. The NOA invites comments, offers the opportunity to request a hearing, and includes any information necessary to comply with the public involvement requirements of other laws, regulations, and Executive Orders. If a public hearing is requested by only a few individuals or agencies, a meeting with the interested parties may be held in lieu of a public hearing.

The EA is made available at local sites within the project area, at CDOT Region and Headquarters offices, at FHWA, and at the public hearing—if one is held. The CDOT Region sends copies of the EA to all parties who have requested it and sends copies of the NOA to affected units of the Federal, state, and local governments and to all parties on the mailing list. The EA must be available for a



minimum of 15 calendar days before the hearing, and comments must be accepted for a total of at least 30 calendar days. If a public hearing is not held, the document is made available for comments for a minimum of 30 calendar days.

If a public hearing is held, it is conducted in the same manner as a hearing for an EIS. Comments received during the review period and at the hearing are addressed, and the comments and responses are incorporated into the Finding of No Significant Impact (FONSI). Notice of the availability of the FONSI is sent to affected government agencies and the document is made available to the public, upon request. If the completion of the EA leads to a decision to prepare an EIS, the reasons underlying this decision should be included in the NOI to prepare a Draft EIS.

7.4.4 Reevaluations and Supplemental Actions

Where a Reevaluation or Supplemental action is necessary, the CDOT Region and CDOT Environmental Programs Branch, in consultation with FHWA, determine the public involvement steps.

7.5 Senate Bill 260 Compliance

Colorado Senate Bill 21-260 (SB 21-260) and the associated rulemaking *Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions* (2 Code of Colorado Regulations [CCR] 601-22) was passed in June 2021 and, within Section 28, created the Environmental Justice and Equity Branch (Branch) within CDOT. A summary of Section 28 is included below:

The function of the Branch is to work directly with disproportionately impacted communities in the project planning, environmental study, and project delivery phases of transportation capacity projects. During the project planning and study phases of projects, technological, language, and information barriers that may prevent disproportionately impacted communities from fully participating in transportation decisions that may affect their health and quality of life should be identified and addressed. This will help alleviate access issues for disadvantaged and minority businesses during project delivery phases.

As part of Section 30, SB 21-260 also requires Enhanced CDOT Planning and Community Engagement. A summary of Section 30 is included below:

CDOT shall offer an opportunity for public input, review, update, and improve the public engagement program for planned transportation capacity projects through creating diverse and impactful ways to gather input from communities in different languages and formats. By sharing readily understandable information about potential adverse impacts (e.g., both environmental and health impacts), this will help promote transparency and increase both public participation and public confidence in project selection, planning, and implementation of potential transportation capacity projects in communities including disproportionately impacted communities.

For more information on Senate Bill 260 compliance, see <https://leg.colorado.gov/sb21-260-bill-summary>



7.6 Public Involvement Documentation

Documentation is critical to the overall public involvement process and to demonstrate that the letter and spirit of laws and regulations requiring public involvement were followed. When public involvement activities take place, documentation of the activities, the participants, the results of the activities, and any follow-up activities that may be necessary are required as part of the project file. Documentation should be prepared as quickly after the activity as possible. Some events, such as formal public hearings, require that specific documentation activities must be followed.

Basic documentation that should be collected for all public involvement activities that becomes part of the project administrative record includes:

- ▶ Advertisements used for activity/event
- ▶ Participant sign-in sheets
- ▶ Copies of handouts
- ▶ Documentation of displays or exhibits used
- ▶ Documentation of the discussions, comments, questions, and oral or written responses
- ▶ All correspondence and acknowledgements/responses
- ▶ Purpose for event/activity
- ▶ Demographic information from participants in public meetings
- ▶ All meaningful opportunities for public participation provided throughout the project development process, including activities to increase low-income and minority participation, such as consultation with affected communities to identify potential effects and possible mitigation measures, and improved accessibility to public meetings, project documents, and project decision-makers on Environmental Justice populations
- ▶ The degree to which the affected groups of minority and/or low income populations have been involved in the decision-making process related to alternative selection, impact analysis, and mitigation.
- ▶ The types of outreach and involvement processes undertaken need to be responsive to the unique characteristics of the community, including the comments and opinions of the minority and/or low income populations
- ▶ Documentation of whether language assistance measures were requested and used at public meetings

The identified primary issue(s) and the purpose for each public involvement activity should be documented. Most of this documentation will become part of the project file and the administrative record for the project. It does not need to be included within the NEPA document itself or its appendices.



Documentation in the NEPA document should:

- ▶ Identify public involvement goals and objectives
- ▶ Identify public involvement tools, techniques, and activities including the intended purpose, what was achieved, and how the public involvement activities influenced the decision-making process
- ▶ Identify a timeline for activities required for the NEPA process such as the NOI, NOA of the document, public hearing dates, and public comment periods
- ▶ Include responses to public comments for the Final EIS and FONSI; if additional comments were accepted after the Final EIS, response to those comments must be included in the ROD

7.6.1 Reasonable Accommodations Language

To accommodate all members of the public, including those with disabilities, access to public information and public meeting venues will be in accordance with the ADA of 1990 and other statutory regulations. According to the ADA, no qualified individual with a disability shall, by reason of such disability, be excluded from involvement in or be denied the benefits of services, programs, or activities of a public entity, or be subjected to discrimination by any such entity. All events held for projects receiving Federal funds and that are open to the general public must be made accessible to everyone, including persons with sight, hearing, or mobility disabilities. Special effort will be made to ensure involvement by the disability community. Public notices and other notification about public meetings must inform the public of how to ask for reasonable accommodations.

ADA Public Notice Sample Language

“Meeting locations are ADA accessible. Reasonable accommodations for participation in this event will be made upon request, including those for disabilities and translation services.”

Title VI LEP Public Notice Sample Language

“Requests for communication assistance or accommodations for special needs can be made by contacting the Public Involvement Team prior to the meeting: 303.XXX.XXXX or XXX@state.co.us.”

“Se puede hacer las solicitudes de traducción o de otras necesidades especiales por poniedose en contacto con el equipo de la participacion publica: 303.XXX.XXXX or XXX@state.co.us”

Note: The language provided should match the results of the LEP analysis.

7.6.2 Public Hearing Requirements

Public hearings are different from public meetings. Public hearings are formal events for soliciting public input, occur at specified times in the NEPA process, and are open to anyone to attend. Public meetings may occur at any time in the process, can be less formal, and may be targeted to specific stakeholders or topics. **Attachment 6** includes guidelines for conducting open forum public meetings and hearings.

Depending on the LEP constituency, a translator may be necessary.



The format of a public hearing can vary from an open house format to a formal presentation. Regardless of the format, a transcript of the hearing must be taken. Attendees must be provided the opportunity to provide comments during the hearing and after its conclusion. This usually is in the form of comment sheets that can be submitted at the hearing or mailed back at a later date.

The NOA for the document review must include the day, time, and location of the public hearing and how and to whom comments should be submitted. The NEPA document must be available for review at the public hearing and for at least 15 calendar days before the public hearing.

Information about the project should be presented and should include, but is not limited to, project purpose and need, alternatives, including the Preferred Alternative if one has been identified, impacts and mitigation associated with the project, and any other pertinent information. This information is often presented as boards displayed around the room, but other visual-aid media may also be used, especially if a formal presentation is given.

7.6.3 Comment Forms

Comment forms should be provided at every public meeting and public hearing. They should include the project manager's name and address for return by mail. Comment forms can also be available on a project website. For larger and more controversial projects with expected high public involvement, a comment tracking form is a useful tool. **Attachment 4** includes a sample comment form.

7.7 References

Council on Environmental Quality (CEQ). 1997. Environmental Justice Guidance Under the National Environmental Policy Act. December 10. Retrieved May 2023 from <https://www.energy.gov/nepa/articles/environmental-justice-guidance-under-nepa-ceq-1997>.

Colorado Department of Transportation (CDOT). 2017. Environmental Stewardship Guide. November. Accessed November 2022 from <https://www.codot.gov/programs/environmental/resources/guidance-standards>.

Federal Highway Administration (FHWA)/Federal Transit Administration (FTA). 1987 as amended in 2005. Environmental Impact and Related Procedures. 23 Code of Federal Regulations (CFR) 771 § 771.101 - 771.131. Retrieved November 2016 from <http://environment.fhwa.dot.gov/projdev/imp771pream.asp>.

FHWA. 2015. Environmental Justice Reference Guide. April 1. Retrieved May 2023 from https://www.fhwa.dot.gov/environment/environmental_justice/publications/reference_guide_2015/fhwahep15035..pdf.

National Cooperative Highway Research Program (NCHRP). 2019. Research Report 905: Measuring the Effectiveness of Public Involvement in Transportation Planning and Project Development. Retrieved May 2023 from <https://www.trb.org/Main/Blurbs/179069.aspx>.

Native Governance Center. 2019. Beyond Land Acknowledgement Guide (online). October 21. Retrieved May 2023 from <https://nativegov.org/news/a-guide-to-indigenous-land-acknowledgment/>.



U.S. Department of Transportation (USDOT). 2022. Promising Practices for Meaningful Public Involvement in Transportation Decision-Making. October. October. Retrieved November 2022 from <https://www.transportation.gov/priorities/equity/promising-practices-meaningful-public-involvement-transportation-decision-making>.



Attachment 1: Additional Public Involvement Resources

FHWA Public Involvement Website

https://www.fhwa.dot.gov/planning/public_involvement/index.cfm

FHWA Virtual Public Involvement Website

https://www.fhwa.dot.gov/planning/public_involvement/vpi/

International Association for Public Participation Website

www.iap2.org

Air Quality Planning for Transportation Officials, Interagency Consultation and Public Involvement Website

https://www.fhwa.dot.gov/environment/air_quality/publications/air_quality_planning/index.cfm

The Transportation Research Board's Committee on Public Involvement in Transportation has a special issue on its Public Involvement Website

<http://www.trb.org/Main/Public/Blurbs/161053.aspx>

FHWA's A Citizen's Guide to Transportation Decision-making Pub. No. FHWA-EP-01-013 Website

https://www.fhwa.dot.gov/planning/publications/transportation_decision_making/

FHWA/FDOT Community Impact Assessment Website

<https://www.environment.fhwa.dot.gov/guidebook/results.asp?selSub=86>

FHWA's Community Impact Assessment: A Quick Reference for Transportation Website

https://www.fhwa.dot.gov/livability/cia/quick_reference/

FHWA "Community Impact Mitigation: Case Studies" Website

https://www.fhwa.dot.gov/livability/cia/community_impact_mitigation/

FHWA Environmental Justice Website

https://www.fhwa.dot.gov/environment/environmental_justice/index.cfm

TRB's National Cooperative Highway Research Program (NCHRP) 532 Report, "Effective Methods for Environmental Justice Assessment," is designed to enhance understanding and to facilitate consideration and incorporation of environmental justice into all elements of the transportation planning process, from long-range transportation systems planning through priority programming, project development, and policy decisions.

<http://www.trb.org/Main/Public/Blurbs/152430.aspx>

International Association for Impact Assessment Website

<http://www.iaia.org/>



National Civic League, Publications Website

<http://www.nationalcivicleague.org/about-ncl/publications/>

SB21-260 BILL SUMMARY, Sustainability of the Transportation System

<https://leg.colorado.gov/sb21-260-bill-summary>

Transportation Planning Capacity Building Website

<http://www.planning.dot.gov/>

U.S. Census Bureau FactFinder Website

<https://www.census.gov/library/publications/time-series/cff.html>

U.S. Department of Transportation Promising Practices for Meaningful Public Involvement in Transportation Decision-Making

<https://www.transportation.gov/priorities/equity/promising-practices-meaningful-public-involvement-transportation-decision-making>



Attachment 2: Steps for Developing a Project Public Involvement Plan

Based on the International Association for Public Participation: Planning for Effective Public Participation; www.iap2.org

Step 1. Identify the key issues or decisions that are relevant to the project.

Activity 1: Identify the key process issues or decisions applicable to the project. This requires that some level of project scoping has been accomplished to identify the NEPA document that will be prepared (CatEx, EA, or EIS). The process can be broken down into key decisions that are critical to the successful completion of the NEPA process. For example: Purpose and Need, Screening Criteria, Alternatives Analysis, and Preferred Alternative Selection.

Activity 2: Identify the legal requirements that are applicable to the project. Each legal requirement should be further broken down into the key component issues or decisions that will affect the final decision on the permit or other legal requirement (i.e., satisfying Section 404 permit requirements).

Activity 3: Identify the key non-legal issues or concerns that may have a significant impact on the project development process. This includes those key community issues or other resource issues on which decisions will have to be made as part of the project development process. Each issue should be limited to issues or decision points relevant to the overall project decision.

Step 2. Gain internal commitment.

Activity 1: Be prepared to explain who has final decision-making authority for each key decision point in the process. Does the final decision-maker have any expectations for the public involvement process? What is the final decision-maker's previous experience with public involvement processes? How does the final decision-maker anticipate being involved with the public involvement process and the project as a whole? How well does the decision-makers interact with the various stakeholders? What decisions are the final decision-makers likely to need assistance to make?

Activity 2: Review previous public involvement strategies and stakeholder involvement programs to determine what will be the most effective way to do public involvement. What tools and techniques are the project team familiar with using? How have public involvement programs with stakeholders been conducted in the past? What processes, tools, and techniques have worked effectively with which stakeholders? Where have they not worked well? Examine the pros and cons of the various public involvement techniques that are being contemplated. Are there differing opinions as to how the public involvement process should be run? What is the base cause of these differences?

Activity 3: Review key issues and concerns developed during Step 1 to assure decision-makers agree and that any additional issues and concerns have been identified.



Activity 4: Begin identifying key stakeholders and their relationships to the key decision points in the process. How do the various issues and decisions rate in terms of importance to the decision-making process and to the various stakeholders? What is the agency's, the Region's, and the project team's previous experience with the key stakeholders? Are any of the decisions likely to be controversial? How much? How important are these decisions to the overall decision-making process?

Activity 5: Determine CDOT's expectations on the level of public involvement as it relates to the various issues and decisions that will be made as part of the project. Are there differences of opinion? What degree of flexibility in changing the level of stakeholder involvement is the agency comfortable making as the process progresses? Under what circumstances are the decision-makers less inclined to change the level of public involvement established? Why?

Step 3. Learn from the stakeholders.

Activity 1: Understand that the various stakeholders will perceive the issues surrounding the project and how decisions are to be made differently. This is the project team's first opportunity to start developing constructive relationships with the key stakeholders. Use key stakeholders to help identify other stakeholders who may have been overlooked.

Activity 2: Develop a comprehensive list of stakeholders. Do this by building on the list of key stakeholders already developed to determine the project stakeholders. Determine which stakeholders may be particularly hard to involve in the public involvement process.

Activity 3: Correlate the various stakeholders to the various issues and decisions to be made as the project develops. From the perspective of the project team, how much impact will the issue/decision have on the overall project decision-making process? Then, do the same from the perspective of the stakeholders. Are there differences between the perspective of the project team and the other stakeholders? Where do stakeholders have issues in common? Where do they differ? What are the potential alliances among stakeholders that may either support or oppose the project? Why? What level of power does a stakeholder have in relation to a given decision? How will this potentially affect the planned public involvement process?

Activity 4: Involve the stakeholders in refining the statement of the issues to be addressed or the decisions to be made. This assures that all parties are discussing the same issues and working on the same decisions. It is common to have stakeholders refine or change the decisions/issues in terms that may be different from those intended by the project team. Make sure that all terms are being read with a common definition. While this may seem like an unnecessary step, it can help avoid problems arising later where different interpretations lead stakeholders to different expectations.

Step 4. Select the level of involvement.

Activity 1: Review the internal expectations for the level of public involvement in light of the information gained from the stakeholders. What additional issues and decisions were identified? Who are the final decision-makers for any additional issues/decisions? Where is there disagreement in terms of the appropriate level of public involvement on an issue/decision? Select the level of public involvement that will be appropriate for the issue/decision and stakeholder. Craft the commitments being made to the stakeholders and be sure that the project has the resources (in time, staff, and funding) to keep the commitment.



Step 5. Identify how success will be evaluated.

Activity 1: Define the factors that will be used to determine a successful public involvement program. What process requirements must be met? What type and levels of impact on the decision-making process by stakeholders does the project want to demonstrate? What is the ultimate outcome of the process that should be demonstrated?

Activity 2: Establish indicators that will measure success or failure of your program. Indicators are tied directly to the level of involvement and will influence the types of tools and techniques used in the public involvement process. For example, if the factor being evaluated is the project's ability to inform the stakeholders about the effects of the proposed project, an indicator might be the portion of stakeholders who indicated they understood the effects. If the factor being evaluated is the agreement of the participating agencies on the project scope, indicators might include establishment of a clear purpose and need, signed by the participating agencies.

Activity 3: Define targets for each indicator being used. For each indicator, establish a successful target. This could be a percentage (percent of community members surveyed who understood the project impacts), specific actions (purpose and need statement is prominent on the project website and all printed materials), or numeric (number of people attending public scoping meeting). Targets will vary from project to project and must be achievable. Targets will define for a project when and how their public involvement program is complete and successful. If targets are not reached, the project may need to consider if additional or different public involvement activities are necessary.

Step 6. Define the decision process and participant objectives

Activity 1: If a decision-making process related to an issue already exists or is required by legislation or regulations, document the process. Where a decision-making process has not already been established, work with the project management team to develop and document a process for addressing key project issues. Make the decision-making process clear and easily understood by internal and external stakeholders.

Activity 2: Set public involvement objectives for each step in the decision process. Each step in a decision-making process is a chance to either gain or lose stakeholder trust. Develop public involvement objectives that are appropriate and work toward developing better relationships with stakeholders based on the public involvement level that has been selected for that decision and on the promises made to the various stakeholders.

Step 7. Develop the project public involvement plan

Activity 1: Develop the format for the public involvement plan. The exact format of the public involvement plan will vary depending on the complexity of the project and the various public involvement goals and objectives. The plan format may range from a brief outline to a highly detailed manual. The plan format must provide adequate information to allow internal and external stakeholders to identify the activities, outcomes, and evaluation expectations for the public involvement processes.

Activity 2: Identify and integrate existing public involvement activities into the baseline of the plan. What activities have already occurred? What promises have been made to the stakeholders?



How were those promises implemented? What other projects/programs are working with the same stakeholders?

Activity 3: Identify the techniques that will be used during the public involvement process. Review the promises being made to the stakeholders and the intended level of public involvement on the decisions. Review different public involvement techniques and choose techniques that are appropriate to the public involvement level. In choosing techniques, be conscious of the potential benefits and drawbacks of the selected techniques. Choose techniques that are possible or can be modified to be successful given fiscal and time constraints for the project.

Activity 4: Identify the schedule and resources necessary for the public involvement plan to be successful. How much time is necessary for each technique being used? What fiscal resources are available? Who has what roles and responsibilities? What additional resources may be necessary to engage stakeholders at the desired level?



Attachment 3: Public Involvement Plan Development Worksheets

Stakeholder Information

Audiences (choose from this list or add your own):

Traveling Public

Businesses/Residents within the Study Area

Businesses/Residents within the Study Area vicinity

Business Community

Neighborhood/Homeowners' Associations

Media Representatives

Minority Communities

LEP Communities

(Language[s]: _____)

People with Disabilities

Individual Property Owners (not residing within or in the vicinity of the Study Area)

Local Advocacy Groups

Local Clubs

People Experiencing Homelessness

Underserved Communities

Underserved Neighborhoods

School Districts

Fire Departments/Districts

Police Departments/Districts

Railroads

Utility Providers

Irrigation Ditch Companies/Associations

Community Facilities/Resource Providers

Freight Carriers

Other:



Stakeholder Outreach/Involvement Tools

Example Tools: (choose from this list or add your own):

Mailing List (Physical and email addresses)

E-newsletter

E-mail Blasts

Direct Mail

Flyer

Paid Advertising

Surveys

Postcards

News Releases

Public Events

Project Websites

Social Media

Instagram

Facebook

Twitter

NextDoor

YouTube

Podcasts

Videos

Live Streaming

Informational Brochures

In-person Meetings

Neighborhood/HOA Meetings

Community Centers/Facilities

Community Events/Festivals

Radio Shows/Announcements

Outreach Booth Displays

Telephone Townhalls

Online Event Calendars

Public Meetings

Open Houses

Listening Sessions

Public Hearing

Other:



Attachment 4: NCHRP Public Involvement Survey

Project Information

1. Project Name:

2. Location:

3. Date:

Representative/Demographics

4. How well do you read English?

- Not very well (please seek out someone who can assist you in completing this survey)
- Somewhat well
- Very well

5. What languages are spoken in your home? (check all that apply)

- English
- Other (please specify)



6. How well do you understand spoken English?

- Not very well
- Somewhat well
- Very well

As a reminder, your answers to all of the questions including the following demographic questions, are anonymous and will be grouped with the answers of other respondents to identify trends and patterns.

7. How do you identify?

- Male
- Female
- Gender(s) not listed here

8. What is your age?

- Under 18
- 18 – 24
- 25 – 34
- 35 – 44
- 45 – 54
- 55 – 64
- 65 – 74
- 75 – 84
- 85+



9. Are you of Hispanic or Latino origin?

- No
- Yes

10. How do you identify? (choose just one)

- White or Caucasian
- Black or African American
- American Indian or Alaska Native
- Asian or Asian American
- Native Hawaiian or Other Pacific Islander
- Other race or combination of races (please specify)

11. What was your total **household** income (before taxes) in the previous year?

- Less than \$25,000
- \$25,000 to less than \$35,000
- \$35,000 to less than \$50,000
- \$50,000 to less than \$75,000
- \$75,000 to less than \$100,000
- \$100,000 to less than \$150,000
- \$150,000 to less than \$200,000
- \$200,000 to less than \$250,000
- \$250,000 and above



12. Do you have any of the following conditions? (check all that apply)

- A hearing problem that makes it difficult for you to hear what is said in normal conversation, even with a hearing aid
- A vision problem that makes it difficult to read, even when wearing glasses or contact lenses
- A condition that limits your ability to walk or climb stairs
- Other conditions that might limit your participation in public involvement activities (please specify)
- None of the above

For this next series of questions, please use one of the following to express how much you agree or disagree with the statements. Use the "Don't know" category if you do not know or do not have an opinion. Use the "Not applicable" category for statements that are either not applicable to the public involvement for this transportation project or are not applicable at this time, but may be in the future.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree



Influence and Impact

13. How much do you agree or disagree with the following statements?

I understood how my input and engagement would be used	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable
I understood which decisions could be influenced by public input and which decisions could not	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable
I understood when I could provide input to potentially influence project decisions	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable
Project decisions reflected public input	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable



If public input was not incorporated into a project decision, I understood the reasons why	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable
I understood the purpose of the public involvement	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable
I understood how project decisions were made	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable

Transparency and Clarity

14. How much do you agree or disagree with the following statements?

I understood the <u>benefits</u> of the options/alternatives under consideration	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable
--	--



I understood the <u>financial costs</u> of the options/alternatives under consideration	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable
I understood the <u>negative impacts</u> of the options/alternatives under consideration	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable
The public was kept up to date on project progress	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable
I had access to enough information about the project	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable
Information was easy to understand	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable



Timing

15. How much do you agree or disagree with the following statements?

The public involvement process lasted long enough to allow for public input on major project decisions

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
- Don't know
- Not applicable

Project information was shared with the public well in advance of project decisions

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
- Don't know
- Not applicable

After receiving public information, I had sufficient time to understand the most important issues

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
- Don't know
- Not applicable

Inclusion

16. How much do you agree or disagree with the following statements?

Those affected by the project were encouraged to voice their opinions

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
- Don't know
- Not applicable



Public involvement activities were held in locations that are affected by the project	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable
Public involvement activities were held at transit-accessible locations	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable

Targeted Engagement

17. How much do you agree or disagree with the following statements?

Public involvement activities were held in community facilities familiar to the affected communities	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable
Public involvement activities were held in locations that were accessible to people with disabilities	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable



Opportunities for participation other than in-person meetings were offered	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable
--	--

Accessibility

18. How much do you agree or disagree with the following statements?

Translation and interpretation services were provided to people with limited English proficiency	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable
Public involvement activities were held on a variety of days and times, to accommodate people with different schedules	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable
Child care or child-friendly activities were offered to families who attended	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree Don't know Not applicable



Any barriers to participation were addressed in a timely manner.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
- Don't know
- Not applicable

Overall Satisfaction

19. Overall, I was satisfied with the public involvement process.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
- Don't know

Public Involvement Feedback

20. What are the top three things that could have been done to improve the public involvement process?

1.
2.
3.



21. What public involvement activities have you participated in for this project? (check all that apply)

- In-person public meetings/open houses
- Online public meetings/open houses
- Focus groups (usually involves 6 to 12 people meeting for 1 to 2 hours)
- Information tables at fairs, festivals, or other such community settings
- Community briefings
- Stakeholder round tables
- Door-to-door outreach
- Outreach to special populations
- Advisory committee meetings
- Other - Write In

Thank You!

Thank you for taking our survey. Your response is very important to us.



Attachment 5: Sample Comment Form and Newspaper Notice

Sample Comment Form

Project Name: _____

Public Hearing: _____

Date: _____

Time: _____

COMMENT SHEET

I have the following comments, questions, or concerns about this project:

Please use the back of this comment sheet for additional comments.

Contact Information

Name: _____

Address: _____

Phone: _____

Email: _____

Leave this comment sheet tonight, mail it to, or drop it off at the address shown on the other side no later than Month Day, Year. You may also email your comments to ****@dot.state.co.us. Thank you.



Sample Newspaper Notice

6TH AVENUE PARKWAY EXTENSION - EA RELEASE

The City of Aurora, in consultation with the Federal Highway Administration (FHWA) and Colorado Department of Transportation (CDOT) is proposing the extension of 6th Avenue Parkway between SH 30 and E-470. An Environmental Assessment (EA) has been prepared, and is available for public review and comment from June 30 through July 30, 2016.

Public Meeting:

July 14, 2016 at the Beck Recreation Center, 800 Telluride Street, Aurora, CO 80011
from 6 pm to 8 pm

To view the EA document, appendices and technical reports and submit comments, visit the project website www.auroragov.org/6thaveparkway

The EA is also available at: www.codot.gov/projects/studies-assessments/other-cdot-studies for public download and viewing. In addition, hard copies of the EA will be made available during the public comment period at the following locations:

City of Aurora Public Library
14949 East Alameda Parkway
Aurora, CO 80012

Arapahoe County
Administration Building
5334 S. Prince Street
Littleton, CO 80120

CDOT Region 1
2000 South Holly Street
Denver, CO 80222

City of Aurora
15151 E. Alameda Parkway
Public Works Suite 3200 & Planning Suite 2300
Aurora, CO 80012

Arapahoe County Public Works
6924 S. Lima Street
Centennial, CO 80112

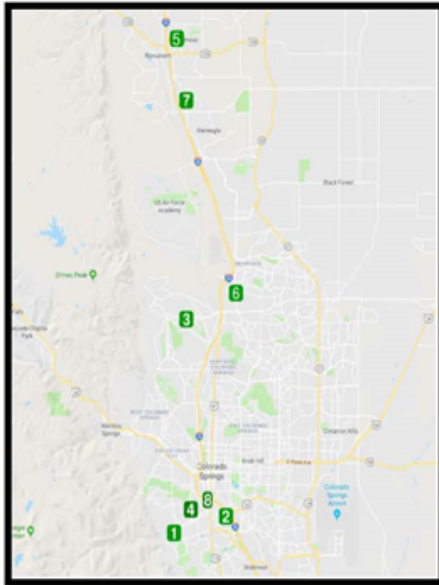
FHWA is also providing the public the opportunity to review and comment on how the project will affect and mitigate the Environmental Day Camp.



Sample Flyer



I-25 SOUTH GAP LISTENING SESSIONS



The Colorado Department of Transportation has scheduled 8 public listening sessions to inform the public about the I-25 South Gap Construction Project between Monument and Castle Rock. Come to your nearest listening session to learn all about the project and how it will affect you!

1. **Penrose House - Proby Room**
January 30, 2018 ~ 12:30 - 2 PM
1661 Mesa Avenue
Colorado Springs, CO 80906
2. **Meadows Park Community Center**
January 31, 2018 ~ 5:30 - 7 PM
1943 S El Paso Avenue
Colorado Springs, CO 80905
3. **Rockrimmon Library**
February 5, 2018 ~ 4:45 - 6:15 PM
832 Village Center Drive
Colorado Springs, CO 80919
4. **Cheyenne Mountain Library**
February 6, 2018 ~ 5:30 - 7 PM
1785 S. 8th Street
Colorado Springs, CO 80905
5. **Monument Library**
February 8, 2018 ~ 6:45 - 8:15 PM
1706 Woodmoor Drive
Monument, CO 81032
6. **Natural Grocers N. Academy**
February 12, 2018 ~ 5:30 - 7 PM
7298 North Academy Blvd.
Colorado Springs, CO 80920
7. **Natural Grocers Monument**
February 13, 2018 ~ 5:30 - 7 PM
1216 W. Baptist Rd.
Monument, CO 80132
8. **Natural Grocers S. Nevada**
February 15, 2018 ~ 5:30 - 7 PM
1604 S. Nevada Ave.
Colorado Springs, CO 80906

Project information: <https://www.codot.gov/projects/i-25-south-monument-castle-rock-ea>
Project email: i25gap@cdot.us
Project hotline: 719-297-5143



Attachment 6: Guidelines for Conducting Open Forum Public Meetings and Hearings

Format/Agenda

The open forum is a public meeting and hearing format in which the meeting is conducted like an “open house.” Under normal circumstances, the hearing or meeting is not “called to order”; rather, the event begins at a predetermined time and attendees have the opportunity to review materials at their leisure, ask questions of experts and officials, discuss the issues with each other, and submit formal comments for the project record if they so desire.

The sign-in lists compiled at public meetings/hearings may be made available upon request to outside parties in accordance with the Colorado Open Records Act (CRS 24-72-101, et seq.). This statement should be included at the top of the sign-in list, along with a notice that addresses and phone numbers will be removed and only the names and cities of residence will be provided to others.

The event should be held in a large room, such as a community center or school cafeteria, where there is plenty of space for displays and tables and for people to move about freely. In selecting a facility for public meetings and hearings, ADA requirements must be met and special needs of attendees should be anticipated. Attendees should be greeted as they enter the meeting room and given an information sheet showing how the forum is organized and where information can be found.

Basic displays should be placed at several stations around the room and focus on various aspects of the project for which the meeting is being held. For example, at a meeting to obtain public input on the Draft Environmental Impact Statement, copies of the EIS should be made available at several locations. Other stations might highlight major design features, give right-of-way information, or feature information about how the impacts to a park or wetland area will be mitigated.

The meeting should last several hours and provide an opportunity for participation from attendees on different work schedules. For instance, a meeting might include both a mid-day session (from 11:00 AM to 2:00 PM) and an evening session (4:00 PM to 7:00 PM). When determining appropriate dates, project teams must be aware of and consider other activities that may interfere with attendance.

Information and Handouts

At a minimum, each attendee should receive a meeting information sheet describing the purpose of the meeting and explaining where and how to obtain information and make comments (a room diagram might be helpful). Each attendee should also receive a summary sheet listing the names of the applicable transportation agencies and decision-making entities, along with their addresses and telephone numbers. Handouts should include all other information required by Federal laws and regulations. All information should be provided in other languages as appropriate.



Comments

Attendees should have many opportunities to discuss their concerns informally with agency officials and decision-makers and to make formal comments. The meeting format should be designed to encourage an open exchange of information between the project development staff (i.e., CDOT and FHWA personnel, consultants hired to prepare the environmental studies and documentation, etc.) and meeting attendees. Agency officials and staff should only answer questions for which they have the knowledge or technical expertise to be fully informed. When other questions arise outside these areas, the person interested in these issues should be escorted or directed to a staff member or an agency official who can provide the correct information. The key to a successful meeting is to give attendees the feeling that their concerns have been heard and their questions have been addressed honestly—even if the answer is “we don't know for sure.” This open exchange can be much more effective in achieving good relations and developing trust with the public than a sophisticated multimedia presentation facilitated by polished speakers. Therefore, it is extremely important that officials and staff members make themselves available, act like hosts and hostesses, and avoid clustering together away from the public.

Comment sheets should be available in several locations, and boxes, marked for receipt of comments, should be provided at the exit and at two or three other places in the room. In addition, attendees should be given an address and a date by which comments must be received. At public hearings, attendees may be given the opportunity to make oral comments for the record. If so, facilities must be available to record comments verbatim. A transcript of these comments must be made, and these comments must be included and addressed in the project record. Translators, when necessary, should be provided so that everyone is able to be involved and provide comments.



8. Document Review Procedures

Chapter 8 establishes a procedure for reviewing documents prepared for Colorado Department of Transportation (CDOT) projects as defined under the National Environmental Policy Act of 1969 (NEPA) (42 United States Code [USC] § 4321 - 4347), such as Environmental Assessments (EAs), Findings of No Significant Impact (FONSIs), Environmental Impact Statements (EISs), and Records of Decision (RODs). These review procedures also include individual chapters, technical reports, and Planning and Environmental Linkages (PEL) study submittals. Categorical Exclusions (CatExs) follow the processes discussed in **Chapter 5**, and Reevaluations are discussed in **Section 4.21** and **Section 6.14**. CDOT and the Federal Highway Administration (FHWA) will update this procedure, as necessary.

8.1 Review Process

The project team can consider three review options at the beginning of the NEPA project. The review option will be decided by the project team during the scoping process. For more information on the project team, see **Chapter 3**. No matter which review process the project team selects, all documents will be reviewed by the CDOT Region, CDOT Environmental Programs Branch (EPB), and FHWA Colorado Division Office (at the Area Engineer’s [AE] discretion) and may involve a separate review by FHWA legal counsel or FHWA Headquarters. All comments must be addressed or resolved before the signature copy of the document can be produced. In addition, under all review processes, the consultant needs to have a quality assurance (QA)/quality control (QC) plan in place (**Appendix D**). The QA/QC plan should be presented by the consultant to CDOT and agreed upon at the beginning of the NEPA project. **Section 8.4** discusses the necessary review periods.

A QA/QC plan shall be prepared for each project. The intent of the QA/QC plan is to cover all QA/QC activities that will be implemented for work on the project.

8.1.1 Sequential Review

In a sequential review, the project team submits the document, individual chapter, or technical report to the Region for review after the consultant has completed its QA/QC review. After the Region’s comments are backchecked and have been addressed, the Region sends the document to EPB for review. After EPB comments are backchecked and have been addressed, CDOT completes its QA/QC review, and the Region submits the document to the Federal Highway Administration Area Engineer (FHWA AE) for review. Sequential reviews are especially helpful for large, complex NEPA projects.

A comment resolution meeting(s) is recommended as an efficient method of resolving comments and expediting completion of documents. However, if comments received are relatively straightforward, comment resolution can also be handled via email or a phone call among the parties. Comment resolution meetings may be required with the Region, EPB, and FHWA at each sequential review. All comments and responses to each comment should be tracked in a comment response matrix. For more information on comment resolution, see **Section 8.5**.

CDOT’s standard comment matrix is available at <https://www.codot.gov/programs/environmental/resources/forms>



8.1.2 Concurrent Review

There are three options for a concurrent review.

- ▶ In **Option 1**, the Region reviews the document, individual chapter, or technical report and then EPB and FHWA review at the same time.
- ▶ Under **Option 2**, the Region and EPB review the document, individual chapter, or technical report at the same time. FHWA would review after the CDOT review.
- ▶ In **Option 3**, the Region, EPB, and FHWA all review the document, individual chapter, or technical report at the same time.

The intent of the concurrent review process is to shorten the review period, but it has not yet been proven to do so. Because so many parties are reviewing at the same time, many comments may require large revisions. Another full review is typically required to ensure that the revisions are acceptable to all reviewers. For this review technique to be best used, the project team should have confidence that the document from the consultant will require only minor revisions and the Region, EPB, and FHWA reviewers have similar expectations. Coordination among the reviewers is necessary prior to submittal of the document, individual chapter, or technical report.

A combined comment resolution meeting is recommended as an efficient method of resolving comments. All comments and responses to each comment should be tracked in a comment response matrix. For more information on comment resolution, see **Section 8.5**.

Concurrent review of individual sections, such as Purpose and Need and Alternatives Analysis, may be more constructive because these initial sections are integral to the NEPA process and to project development and can benefit from a collaborative process.

Sequential review may be more appropriate for larger, more complex projects; however, it is incumbent on the project team to track comments and provide consistent responses through each review cycle.

8.1.3 Team Review

In a team review, a team of selected individuals is responsible for reviewing the document, individual chapter, or technical report submittal. The intent is to have only one full review cycle. This review option requires a “hands-on” approach from team members. This team will include one lead person from either the Region or EPB for each resource of concern identified during scoping, a Region Environmental Manager, an EPB NEPA specialist, and the FHWA AE. The exact makeup of the team will depend on the complexity of the issues to be addressed. This team is typically smaller than the staff who review a document in either the sequential or the concurrent reviews.

Team members are responsible for their area of expertise, including final review and input on the adequacy of the section pertaining to their expertise. If a team member is not an EPB resource specialist, it is their responsibility to work with the EPB resource specialist throughout the process to bring their issues and concerns into the NEPA project early on. If a resource is not present in the NEPA project area and there is no team member for the resource area, the EPB NEPA specialist is responsible for coordinating with the appropriate EPB resource specialist.



Two options may be used for the team review.

- ▶ **Option 1** is a combined CDOT/FHWA review. In Option 1; the FHWA AE participates as part of the team throughout the process, including review and concurrence on draft documents and sections of draft documents.
- ▶ **Option 2** consists of a CDOT review and then a FHWA review. In Option 2, the CDOT team reviews the document and the FHWA AE participates only on resolution of substantive issues. In this option, the CDOT team would get concurrence from FHWA on issues such as the purpose and need statement, alternatives to be evaluated, and the preferred alternative. FHWA would not review the document or sections of the documents until CDOT has completed a thorough internal review of the draft document. The approach is agreed upon during scoping.

A comment resolution meeting is recommended as an efficient method of resolving comments. Comment resolution will be decided by the decision-making team, which will be composed of the Region, EPB NEPA specialist, and FHWA AE. All comments and responses to each comment should be tracked in a comment response matrix. For more information on comment resolution, see **Section 8.5**.

8.2 Document Review Calendar

EPB is responsible for maintaining the Master Document Review Calendar (calendar). As needed, the EPB NEPA specialist will request calendar updates from the Region Planning and Environmental Managers (RPEMs). The update includes review dates for non-programmatic and documented (template) CatExs, EAs, Draft EISs, Final EISs, FONSI, RODs, Reevaluations, PELs, technical reports, and individual chapters that require EPB review and the review process that will be used (**Section 8.1**). No matter which review process is chosen, the document will still be listed on the calendar.

CDOT Region Environmental Staff are asked to update the calendar quarterly. If necessary, the EPB NEPA specialist can provide support and enter information on behalf of the CDOT Region requesting assistance.

EPB uses the calendar for workload scheduling. If a document is not on the calendar, the document is reviewed at the discretion of EPB. The Regions notify the EPB NEPA specialist as soon as possible if a document's schedule has changed. If more documents are received for review than can be handled, the documents are prioritized for review based on the information provided in the calendar and discussions with the Regions. During major holiday weeks and conference weeks, the Regions are responsible for working with the EPB NEPA specialist to coordinate realistic review times.

EPB also uses the calendar to provide project updates at various agency meetings so that all are aware of when documents may be available for agency review. Meetings include the Transportation Environmental Resource Council (TERC), Environmental Protection Agency (EPA), State Historic Preservation Office (SHPO), FHWA quarterly meetings, etc. The agencies also use this information for their workload scheduling. Therefore, it is important that the calendar be updated with the most realistic information possible.



8.3 Document Review Transmittal Process

Consultants are expected to complete an independent QA/QC review of all documents to ensure that they are complete and comply with all state and federal regulations before submitting the documents for CDOT and FHWA review. At the discretion of the CDOT RPEM and Environmental Manager, consultant members of the project team are required to submit a certification letter signed by a company officer attesting to the quality, accuracy, and completeness of documents submitted for review. This certification letter should also state the specific individual(s) who read the entire document to ensure consistency within the document. This QA/QC review and certification letter must accompany formal submittal of draft or final documents submitted to the Region, EPB, and FHWA for review. If this letter is not received, EPB will not release their comments to the project team. **Figure 8-1** includes sample certification letter language.

Figure 8-1. Consultant Certification Letter to RPEM Language

<Insert Firm Name and Address>

<Insert Date>

Subject: <Insert Subject - Example: Consultant Certification Letter for X Project>

Dear <Insert RPEM Name>:

Enclosed are <Insert Number> copies of the <Insert Type of Document - EA, FONSI, Draft/Final EIS, ROD> for <Insert Project Number, Project Name>. This document has been reviewed for compliance with all applicable Federal, state, and local laws and regulations. It has been prepared in compliance with the Council on Environmental Quality Regulations for Implementing the Procedural Provision of the National Environmental Policy Act, 40 CFR § 1500-1508; 23 CFR 771; and FHWA Technical Advisory 6640.8A.

This document has been prepared by experienced, technically competent, and knowledgeable professionals. I can attest to its quality, accuracy, and completeness. An independent Quality Assurance review has been completed by <Insert Name, Title>. In my professional opinion, the quality of this document meets the standards expected by CDOT and FHWA.

Sincerely,

<Insert Firm Principal Name>

Enclosures

The RPEM will submit draft documents for review to the EPB NEPA specialist with a signed transmittal memo or email (**Figure 8-2**). The transmittal memo or email should include the NEPA project name and number, number of copies (hard/electronic) submitted, Region contact for return of comments, and any special or unusual circumstances concerning the review including other CDOT offices or agencies that will be reviewing the document. Review copies should be provided to the Region, EPB, and FHWA electronically. Hard copies of the main text may be required at the



discretion of the reviewer. Unless requested, appendices do not need to be provided in hard copy. Electronic files must be less than 50 megabytes (MB) each.

Figure 8-2. Example Transmittal Memo from RPEM to EPB NEPA Specialist

DATE: <Insert Date>
TO: <Insert EPB NEPA Specialist Name>
FROM: <Insert RPEM Name>
SUBJECT: Review of <Insert Project Number, Project Name with Type of Document (EA, FONSI, Draft/Final EIS, ROD)>

Attached for your <Insert Number such as First> review are <Insert Number> hard copies, <Insert Number> thumb drive(s) of the above-referenced document. This document was prepared by <Insert Firm Name> and the consultant certification letter is attached.

Once I have received your comments, the NEPA project team will determine if a comment resolution meeting is necessary. If a meeting will be necessary, the consultant will provide the comment matrix, including responses and any issues that need to be discussed. I will then work with you to schedule this meeting.

Attachments

Comments should be submitted using CDOT’s standard comment matrix (**Figure 8-3**). When submitting comments, the reviewer providing comments should be as specific as possible and include suggested text when requesting changes. Being clear helps the project team understand comments and will help make the response process more efficient. Responses to comments must be documented in the response column of the comment matrix and submitted back to the reviewers so that they can ensure their comments were adequately addressed. It is helpful if the response column includes the actual text changes and location (new page number/line number) in the document where the changes were made. If the response says, “Comment incorporated,” it is sometimes challenging for the commenters to determine how the comment was addressed. See **Section 8.5** for information on the comment resolution process.



When submitting documents for review, line numbers on each page should be used so that it is easier to identify where comments are located.

Watermarks can slow down computers and printers when electronic documents are being reviewed and their use should be avoided. Rather than using a watermark, it is suggested that “Draft” be put in the header or footer of the document.

Double-check with the FHWA AE to determine the correct number and type of documents required. Prior concurrence is a step in the project development process at which the FHWA Colorado Division office obtains an approval from FHWA Headquarters before proceeding with key approvals under NEPA and may be required for projects that have impacts of unusual magnitude, high levels of controversy, emerging or national policy issues under development, or issues for which the division office seeks policy assistance.

8.4 Review Period

The review period for the Regions varies depending on the project and the Region. Typically, the project team will establish the document review period as part of the project schedule.

The review period for EPB varies depending on the type of document. For EAs, FONSI, RODs, PELs, technical reports, and individual chapters, the standard review period is 10 working days. For a Draft EIS, Final EIS, and ROD, the standard review period is 20 working days. The EPB NEPA specialist will notify the Region early in the review period if problems are presented that may require additional review time.

CDOT RPEMs are asked to update the calendar quarterly. If necessary, the EPB NEPA specialist can provide support and enter information on behalf of the CDOT Region requesting assistance.

Documents scheduled for review on the calendar have a higher priority than those unscheduled. Documents must be received in the morning (before noon) at the EPB office for that day to count as the first working day. Also, the required number of copies and required transmittals must be received for the review period to begin. The number of hard copies required, if any, should be confirmed prior to the review period. Unless otherwise negotiated with the EPB NEPA specialist, incomplete documents will not be reviewed.

The RPEM and the EPB NEPA specialist may determine on a case-by-case basis that the designated review period is not sufficient or too long based on the complexity of the document and project and adjust the review period accordingly. The length of the review period may also be adjusted due to the number of other documents in for review at the same time, or for known schedule conflicts for EPB staff. Therefore, it is possible to negotiate a longer or shorter review period for all documents.

FHWA's goal is to review all documents in two (2) weeks. Some documents may take longer, depending on length and quality. EISs (Draft and Final) and Section 4(f) evaluations that require review by FHWA's legal department, document reviews by other agencies (e.g., the DOI requires 45 days), and prior concurrence review by FHWA Headquarters will be longer. Typically, 30 days is the standard review period for any required FHWA legal and prior concurrence reviews.



Typical document review timelines for EPB:

- 10 working days for standard review of individual chapters, technical reports, EAs, FONSI, and PELs.
- 20 working days for standard review of Draft EISs, Final EISs, and RODs.

FHWA's goal is to review all documents in two (2) weeks.

Thirty (30) days is the standard review period for FHWA legal and prior concurrence reviews.

Always check for the U.S. Department of the Interior's (DOI) current preference for review of external agencies' environmental documents.

8.5 Comment Resolution

Unless comments are relatively straightforward, it is recommended that a comment resolution meeting be held to clarify comments, resolve responses, and ensure that all appropriate parties are involved. For sequential and concurrent reviews, the meeting may include the following individuals: Region project manager, Region NEPA project manager, FHWA AE, EPB NEPA specialist, reviewers, and any other project team members necessary. For sequential reviews, separate meetings with EPB and FHWA may be necessary. **Section 8.1.3** identifies comment resolution meeting attendees on Team reviews. This meeting will be scheduled as soon as possible after the comments are received to maintain the NEPA project schedule. However, depending on the complexity of the comments, the consultant may need additional time to review the comments before scheduling the meeting. **Section 8.3** discusses documenting responses to comments. Final comment resolution is the responsibility of the Region.

8.6 Signature Process

The Region NEPA project manager determines through consultation with an EPB NEPA specialist, the FHWA AE, and any participating or cooperating agency(ies) that there are no outstanding issues and that all comments have been adequately addressed before beginning the signature process.

After determining the document is ready for signature, one (1) original of the signature page (**Figure 8-4**) and one (1) hard copy of the final document are sent to the EPB Manager with a transmittal memo from the Region Transportation Director (RTD) (**Figure 8-5**) and the consultant certification letter (**Figure 8-1**). The RTD's memo requests document approval through signatures; attests to the quality, accuracy, and completeness of the documents prepared by consultants; and states that CDOT, FHWA, and participating or cooperating agency comments have been addressed. The transmittal also indicates the method of delivery to FHWA (hand carry or mail).



Figure 8-4. Example Signature Page

CDOT Project <Insert #>
<Insert Project Name and Document Title>

Submitted Pursuant to:
<List Applicable Regulations>

By the
U.S. Department of Transportation
Federal Highway Administration
and
Colorado Department of Transportation

Submitted by:

_____ Date _____
<Insert Name>
Region 1 Transportation Director
Colorado Department of Transportation

Concurred by:

_____ Date _____
<Insert Name>
Chief Engineer
Colorado Department of Transportation

Approved by:

_____ Date _____
<Insert Name>
Administrator, Colorado Division
Federal Highway Administration



Figure 8-5. Example Transmittal Memo from RTD to EPB Manager

DATE: <Insert Date>
TO: <Insert EPB Manager Name>
FROM: <Insert RTD Name>
SUBJECT: Submittal of <Insert Project Number, Project Name, Document Type (EA, FONSI, Draft EIS, Final EIS, ROD)> for Signature

The <Insert Document Type (EA, FONSI, Draft EIS, Final EIS, ROD)> is ready to be signed by CDOT and FHWA. Enclosed is one copy of the <Insert Document Type (EA, FONSI, Draft EIS, Final EIS, ROD)> and two copies of the original signature page. All CDOT and FHWA <Insert any other cooperating or participating agency as necessary> comments have been resolved, incorporated into the <Insert Document Type (EA, FONSI, Draft EIS, Final EIS, ROD)>, and I have signed the document.

Please contact <Insert Region Contact Name> at <Insert Telephone Number> once the signature page has been signed by the Chief Engineer. The Region <Insert will/will not> hand carry the signature page to FHWA.

Enclosures

The EPB NEPA specialist prepares a transmittal letter from the EPB Manager to the Chief Engineer indicating that EPB has reviewed the document and recommends that it be signed (**Figure 8-6**). The EPB NEPA specialist also prepares a transmittal letter from the Chief Engineer to the FHWA Division Administrator requesting signature (**Figure 8-7**). The EPB NEPA specialist will check on the Chief Engineer’s availability, obtain the Chief Engineer’s signature, and either forward the signature page and one hard copy of the document to FHWA for signature or contact the Region to hand carry the package to FHWA. The EPB NEPA specialist will let the Region know when the Chief Engineer has signed the document.

For planning purposes, it should be assumed that the Chief Engineer will take a couple of days to sign the document.

Once the FHWA Division Administrator (or their designee) has signed the document, the FHWA AE will transmit the signed signature page to the office specified on the transmittal from the Chief Engineer.



Figure 8-6. Example Transmittal Memo from EPB Manager to Chief Engineer

DATE: <Insert Date>
TO: <Insert Chief Engineer Name>
FROM: <Insert EPB Manager Name>
SUBJECT: <Insert Project Number, Project Name, and Document Type (EA, FONSI, Draft EIS, Final EIS, ROD)> for Signature

The Environmental Programs Branch has reviewed this document and recommends the document be signed. Please sign the attached signature pages of the <Insert Document Type (EA, FONSI, Draft EIS, Final EIS, ROD)> for the above subject project. Also attached for your signature is the transmittal letter to the Federal Highway Administration. Thank you.

Attachments

Figure 8-7. Example Transmittal Letter from Chief Engineer to FHWA Division Administrator

<Insert Date>
<Insert Name>
Division Administrator
Colorado Division
Federal Highway Administration
12300 W. Dakota Avenue, Suite 180
Lakewood, Colorado 80228

Dear <Insert Division Administrator Name>:

Transmitted herewith for your signature and approval is one copy of the <Insert Document Type (EA, FONSI, Draft EIS, Final EIS, ROD)> for <Insert Project Number, Project Name (Subaccount)>.

Upon approval, please return the signed and dated title page to <Insert Name> with Region <Insert Region Number>. Thank you.

Sincerely,
<Insert Name>
Chief Engineer
Attachment



8.7 EA Distribution

Typically, the Region will identify the required number of copies and public review locations during the Scope of Work process. The Regions are responsible for sending Administrative Services - Central Files one hard copy of signed documents. Parties that may be included in the distribution are CDOT EPB, FHWA Legal, FHWA Headquarters, U.S. Environmental Protection Agency, U.S. Department of the Interior, and the Colorado State Publications Library Repository. The FHWA AE has the discretion to request additional copies and to change the format (hard copy versus electronic). Double-check with the FHWA AE to determine the correct number and format of documents required.

Following distribution, the public review period for an EA is 30 days unless the EA incorporates a Section 4(f) evaluation, in which case the DOI review requires that 45 days be provided for their review of the evaluation. All document review locations must have documents in place by the time that the notice of availability (NOA) is published.

8.8 FONSI Distribution

Typically, the Region will identify the required number of copies and review locations during the Scope of Work process. The Regions are responsible for sending Administrative Services - Central Files one hard copy of signed documents.

The FHWA AE has the discretion to request additional copies and to change the format (hard copy versus electronic). Double-check with the FHWA AE to determine the correct number and format of documents required.

After FHWA has made the FONSI determination, CDOT sends an announcement of availability of the FONSI to the affected units of Federal, state, and local government, and the FONSI is made available from CDOT and FHWA upon request by the public.

8.9 Draft and Final EIS Distribution

The number of copies of the signed document for the Regions varies on the NEPA project and varies by Region. Typically, the Region will identify the required number of copies and review locations during the Scope of Work process. The Regions are responsible for sending Administrative Services - Central Files one (1) hard copy of signed documents. Each Region is also responsible for sending the other Regions a courtesy electronic copy of each NEPA document completed.

The FHWA AE has the discretion to request additional copies and to change the format (hard copy versus electronic). Double-check with the FHWA AE to determine the correct number and format of documents required.

The FHWA AE will provide a signed letter on FHWA letterhead for the distribution with the published EIS. CDOT, or CDOT's consultant, will publish and distribute the EIS using a distribution list that has been reviewed and approved by the FHWA AE. All document review locations must have documents in place at the time that the NOA is submitted to the EPA for publication in the Federal Register and cooperating and participating agencies must have received copies of the document by the NOA.



The notice of availability (NOA) is published each Friday in the Federal Register for those EISs filed during the preceding week.

For the EIS, the EPA will publish the NOA in the Federal Register. The EIS must be submitted via e-NEPA by 5:00 pm Eastern Standard Time a week prior to the NOA publication, which occurs on a Friday. The designated FHWA Colorado Division Office staff member will submit the electronic EIS to e NEPA.

The comment period for Draft EISs is a minimum of 45 days from publication in the Federal Register. However, if a Section 4(f) evaluation is included, the DOI has an additional 15 days for a total of a 60-day comment period. The availability period for Final EISs is a minimum of 30 days from publication in the Federal Register.

A minimum 30-day period is required after publication of a Final EIS before any ROD may be issued.

8.10 ROD Distribution

The number of copies of the signed document for the Regions varies on the NEPA project and varies by Region. Typically, the Region will identify the required number of copies and review locations during the Scope of Work process. The Regions are responsible for sending Administrative Services - Central Files one hard copy of signed documents. Each Region is also responsible for sending the other Regions a courtesy electronic copy of each NEPA project completed.

The FHWA AE has the discretion to request additional copies and to change the format (hard copy versus electronic). Double-check with the FHWA AE to determine the correct number and format of documents required.

CDOT public involvement procedures require that notice of a ROD be placed in local newspapers as identified by the Region; however, a NOA in the Federal Register is not required for an individual ROD unless it is to initiate the 150-day limitations of claims clause provided in Section 1308 of Moving Ahead for Progress in the 21st Century (MAP-21). This submittal is normally combined with other project decision documents and submitted in groups by the FHWA Environmental Program Manager.

8.11 NEPA Document Completion

For information on completing the NEPA document, including legal records and shelf life, see Chapters 4 and 6.



8.12 References

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U.S. Department of Interior. 2012. Environmental Review Distribution Requirements. Retrieved November 2016 from <https://www.doi.gov/nepa/requirements-guidance/guidance-noninterior>.



9. Resource Considerations

Chapter 9 provides Colorado Department of Transportation’s (CDOT) preferences on how resources should be presented in the required chapters of National Environmental Policy Act of 1969 (NEPA) documents. **Chapters 4, 5, and 6** discuss specific format and level of detail. The CDOT project team should decide which resources discussed in this chapter should be included in the NEPA document. The level of detail for each resource should be commensurate with the importance of the resource and the potential it has to affect the decision-making process for alternative decisions.

Each resource section in this chapter is subdivided into the following elements:

- ▶ **Evaluation Process** - Identifies who is responsible for evaluating a particular resource, what to evaluate, and where it should be considered (i.e., defines the study area for the project being proposed, and when they should evaluate it). Reasons for evaluating the resource under NEPA (e.g., the “why”), how to collect and evaluate baseline information under NEPA and any other issues to consider are discussed.
- ▶ **NEPA Document Sections** - Identifies what should be included in the Affected Environment and Environmental Consequences chapter of a NEPA document for the resource, including mitigation measures. Additionally, within each resource section, cross-references are made as appropriate to other parts of this Manual where additional detail on these aspects of NEPA can be found.

Other information that should be discussed for resources includes study area boundaries and mitigation and monitoring commitments. More information is provided below.

Study Area Boundaries

The study area for stationary physical resources such as geology and soils may be the same as the project footprint because impacts to the resource will occur only where it is disturbed.

The study area for stationary biological resources such as vegetation may be slightly larger than the project footprint because emissions or effluents from project activities may indirectly impact vegetation.

The study area for mobile resources may be larger and shaped differently from the project footprint. For example, the water resources study area may extend to the edge of the watershed(s) that contain the project footprint; wildlife study areas may vary by species and extend to the boundary of species’ home ranges, which can be as large as several states; or there may be multiple geographic extents for air quality analyses such as for hotspot, inventory, or regional haze.

A “project area” or “project footprint” typically includes the area that will be directly impacted by the project. A “study area” includes the limits for resource analysis. A “project vicinity” may include a larger area surrounding the “study area.” Be sure to define terminology in NEPA documents.



Mitigation and Monitoring Commitments

Mitigation measures and monitoring commitments for impacted resources should be identified in CDOT's *Mitigation Tracking Spreadsheet* (Table 9-1), which is a tool to track mitigation and monitoring commitments identified during the NEPA process. The tracking spreadsheet is to confirm that the environmental commitments identified and documented during NEPA are fulfilled during project construction. The *Mitigation Tracking Spreadsheet* is required for Environmental Impact Statements (EISs), Environmental Assessments (EAs), and documented/non-programmatic Categorical Exclusions (CatExs). It is recommended for programmatic CatExs, but it is not required.

Mitigation and monitoring commitments are specific and include information about responsibility, monitoring, performance standards, and schedules for implementation. When developing mitigation and monitoring commitments, be sure to include design, construction, and maintenance staff to ensure that commitments are implementable. Mitigation commitments and criteria, should be developed using Colorado's SMART model:

- ▶ **Specific (S)** - To the environment that would be adversely affected and what is going to be accomplished.
- ▶ **Measurable (M)** - Criteria for providing mitigation for impacts to community and built resources, in coordination with communities and regulatory agencies.
- ▶ **Attainable (A)** - Mitigation strategies that are technically practical and within standard engineering principles.
- ▶ **Realistic (R)** - Applicability to the community and regulatory agencies, as well as financially feasible.
- ▶ **Time-oriented (T)** - Provide realistic milestones for implementation tied to the transportation delivery process through design, construction, and maintenance.

SMART criteria represent a tool for developing effective NEPA mitigation commitments that are financially feasible and implementable. The first six columns of the *Mitigation Tracking Spreadsheet* (Table 9-1) should be filled out and included as the *Summary of Impacts and Mitigation Table* in (Table 9-2).

Refer to CDOT's [Mitigation Tracking Spreadsheet](#) online.

For additional information, refer to Colorado's [SMART model](#).

The *Summary of Impacts and Mitigation Table* (Table 9-2) is required for all CDOT NEPA documents and must include all resources with identified impacts. It will be added into the full *Mitigation Tracking Spreadsheet* (Table 9-1), which will follow the project through the design, construction, and maintenance phases.



Timing of Mitigation

During the NEPA process, avoidance, minimization, and mitigation measures are developed to address project impacts. These considerations may need special attention when a project is to be constructed in more than one phase. When establishing a project phasing approach, impact avoidance and minimization may need to be re-examined to ensure that these can still be achieved with the anticipated phasing. If any new impacts will be introduced by the phasing or interim conditions, such impacts may require additional mitigation measures.

Mitigation measures should generally be implemented in the same construction phase as the impacts will occur, or earlier. In some cases, it may be appropriate to include specific mitigation in an earlier phase or to bundle mitigation for impacts in multiple phases into one phase.

Mitigation should generally not be delayed to later phases. However, there may be some situations where this is appropriate when the impacts in the interim will not be severe and cost and/or disruption of implementing the mitigation would be substantially greater in the earlier phase. Any delay in mitigation to a later phase will be carefully considered by CDOT and FHWA, and should be described in the NEPA document, as appropriate.

CDOT and FHWA will ensure that the mitigation commitments outlined in the NEPA document are implemented as part of the project design, construction, and post-construction monitoring. Identified commitments must be incorporated, as appropriate, into the construction plans and specifications for the project. CDOT and FHWA will ensure that the commitments are implemented by reviewing the project construction plans and specifications, as well as conducting periodic inspections during construction. Inspections during construction could involve both a review of project construction documentation and an observation of construction activities. The CDOT *Mitigation Tracking Spreadsheet* will be used to track and document mitigation for each phase.

For projects with mitigation implemented over time, CDOT and FHWA may monitor mitigation effectiveness and success by using a combination of field reviews, pre-construction and post-construction inspections, and post-construction monitoring, as appropriate. For projects with extensive mitigation, CDOT may elect to prepare annual reports reporting effectiveness of the mitigation measures, by agreement with some resource agencies. If mitigation is determined unsuccessful or mitigation commitments are not met, CDOT will rectify as needed.

Reasons for Evaluation Under NEPA

NEPA and its implementing regulations (40 CFR 1500) mandate that transportation decisions involving a Federal nexus or Federal funds adhere to the NEPA regulations. NEPA requires that Federal agencies use a systematic, interdisciplinary approach to decision-making when Federal actions may affect the quality of the human environment. In addition, CDOT strives to meet the intent and requirements of NEPA for state transportation activities, regardless of whether or not these activities are federally funded.



Table 9-1. CDOT Mitigation Tracking Spreadsheet with Example Text

Mitigation Commitment #	Mitigation Category	Impact from NEPA Document	Commitment from Mitigation Table in Source Document Use Exact Wording from Table in Source Document	Responsible Branch	Timing/Phase of Construction Mitigation to be Constructed	Location of Mitigation(s) in Plan Sheets/Specs Include All Page Numbers that Apply	Date Mitigation Completed	Name of Person Completing Mitigation	Agency Coordination Required? Yes or No	Name of Each Agency	Comments
1	Migratory Birds/Migratory Bird Treaty Act (MBTA)	Loss of migratory bird habitat and nests	Pre-construction survey required if construction occurs during migratory bird nesting and breeding season to identify migratory bird activity and/or nests	CDOT Region X Environmental	Design and Construction	Sheet #17	8/1/2014	Jon Smith	Yes	N/A	

Table 9-2. Summary of Impacts and Mitigation Table for NEPA Documents with Example Text

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
1	Migratory Birds/Migratory Bird Treaty Act (MBTA)	Loss of migratory bird habitat and nests	Pre-construction survey required if construction occurs during migratory bird nesting and breeding season to identify migratory bird activity and/or nests	For example, Design Engineer, Construction Engineer, Environmental (Region/EPB), Utilities Staff, ROW Staff, ROW Staff, Maintenance	For example, Design, Construction, ROW, Post-Construction, Maintenance



9.1 Geospatial Data

Geographic information systems (GIS) manage, analyze, and share spatial and temporal data for projects and organizations. GIS tools, whether desktop-, web-, or field-based, have become an essential component of environmental analyses. GIS datasets are widely available from various Federal, state, regional, and local sources and can be used for many analyses throughout the NEPA process. GIS software is commonly used as a tool to convert datasets to-and-from MicroStation, CDOT's design software platform, and to convert information between coordinate systems. The ability of GIS to assign database information to spatial locations is essential for performing overlay analyses. For example, a GIS user can determine the area of impact to property parcels from a proposed right-of-way (ROW) footprint through overlay processes in GIS. GIS software can display data based on database attribute information, allowing fast update of maps. Basic uses of GIS in the NEPA process (for transportation) include:

- ▶ **Data Management** - The most common use of GIS is as a system of records. It stores layers of environmental and design information, along with associated metadata; that is, documentation of layer contents, how the layers were created, and how they were used for a project.
- ▶ **Data Analysis** - The most powerful use of GIS is as a system of insights. Geoprocessing tools are used to create, modify, analyze, and visualize spatial and temporal data. It allows for a better understanding of sites and promotes better decision-making.
- ▶ **Data Sharing** - The most important use of GIS is as a system of engagement. GIS is commonly used to share spatial data and insights among CDOT, consultants, other agencies, and the public. Common methods of sharing include open data catalogs, interactive web applications and story maps, electronic files (shapefiles and KMZ files), and graphics. Geodatabases and shapefiles are shared electronically for CDOT partners to perform similar NEPA functions facilitating authorization, approval processes, and general communications about transportation projects.
- ▶ **Environmental Screening** - Spatial datasets are overlaid with proposed footprints of a project to better understand potential effects and constraints the project will have on environmental resources. Aerial imagery, Google Earth and Maps, and Google StreetView are commonly used for desktop surveys before project initiation or field surveys.
- ▶ **Field Surveys** - GIS applications are used on mobile devices or handheld GPS units to complete field data collection efforts such as mapping wetlands or surveying cultural resources. The applications are mainly map-based or form-based, such as ArcGIS Field Maps or ArcGIS Survey123, respectively. The mobile device location can be used or it can be paired via Bluetooth with a high-accuracy global navigation satellite systems (GNSS) receiver for increased location accuracy.
- ▶ **Map Production** - GIS is used to create web-based interactive maps, static pdf maps and hardcopy maps for public displays and published documents.
- ▶ **Evaluation of Environmental Impacts** - GIS is used to calculate quantities for environmental impacts (for example, area of wetland impacts, volumes of material removed, numbers of historic properties, etc.).
- ▶ **Simulating Environmental Impacts** - GIS is used to provide realistic, three dimensional "before and after" simulations and modeling of environmental impacts of a given project



that support decision-making. Simulations can be enhanced using other programs such as Photoshop or Lumen.

- ▶ **Measurements** - GIS is used to provide basic tools for measuring areas, distances, and volumes in addition to more complex measures, such as change detection through time.
- ▶ **Community Engagement** - Web or hard copy maps enhance public meetings, small group meetings, open houses, conferences, workshops, and websites by conveying complex information on graphic displays. GIS can also be set up as a stand-alone interactive display for meeting participants to review and comment on proposed plans.

During early project development, the following types of data used in GIS also aid in environmental clearances:

- ▶ Baseline information, including parcels, addresses, buildings, jurisdictions, land ownership, land use and zoning, topography, aerial imagery, utilities, and easements
- ▶ Resource information, including vegetation, ecological communities, wetlands, streams, roofprints, cultural resources and surveys, geologic hazards, soils, parks, trails, and viewsheds.
- ▶ Project design scenarios and alternatives

Field survey results are often used with baseline data for environmental analysis, disclosure, and electronic data deliverables. Resources such as wetlands and cultural resources require spatial data deliverables for project clearances. Field survey results are also used for regulatory coordination, including:

- ▶ Section 404 pre-construction notifications (PCNs)
- ▶ Endangered species assessments
- ▶ Biological assessments
- ▶ Section 4(f) coordination with Officials with Jurisdiction (OWJ)
- ▶ Section 6(f) agreements
- ▶ Section 106 State Historic Preservation Officer (SHPO) consultation-site reports
- ▶ Section 4(f) with FHWA, and Federal Emergency Management Agency (FEMA) flood impacts

CDOT uses ESRI's ArcGIS software as their primary GIS platform. CDOT has developed online GIS applications that provide useful spatial datasets and information for projects, including:

- ▶ **CDOT Open Data Catalog** - This is CDOT's open data website. Data can be viewed on the web or downloaded. Data categories include planning, environmental, boundaries, and more. It can be accessed at: <https://data-cdot.opendata.arcgis.com/>
- ▶ **OTIS (Online Transportation Information System)** - Provides users with spatial and non-spatial highway attribute information including geometrics, traffic counts, and pavement information through a collection of multiple tools and applications. The MapView interactive tool displays environmental and other layers. Highway statistics, traffic reports, geographic data, and maps are also available for download. Straight Line Diagrams for highway segments can be generated. Video logs of all CDOT highways can be viewed in the Windshield application. OTIS can be accessed at: <http://dtdapps.coloradodot.info/otis>



- ▶ **C-Plan** - CDOT's organizational site within the ArcGIS Online web GIS platform and a companion to OTIS. It contains a growing collection of web maps and applications covering various CDOT business areas such as Environmental, Maintenance, and Planning. Contact the GIS Support Unit to request an account to access internal content and to contribute project data. C-Plan can be accessed at: <http://cdot.maps.arcgis.com/>
- ▶ **Project Locator application (ProLo)** - Allows users to find detailed information about Statewide Long Range Transportation Planning (SWLRTP) corridors and Statewide Transportation Improvement Program (STIP) projects throughout Colorado. The tool can be accessed at: <http://dtdapps.coloradodot.info/projectlocator/>

CDOT's GIS Support Unit is located at Headquarters and access to information frequently used for transportation planning and project development, including current and projected traffic volumes, state highway attributes, summary roadway statistics, and geographic data, can be obtained here:

<http://dtdapps.coloradodot.info/otis>

CDOT staff use ArcGIS Pro and ArcMap Desktop applications for more advanced analysis and cartography. The GIS Section in the Division of Transportation Development (DTD) maintains geodatabases and imagery available for Region and Headquarters users. Within DTD's GIS Section, the GIS Support Unit can assist with data connections. For ArcGIS installation, contact the OIT Help Desk.

The following provide additional functional guidance to the primary CDOT GIS tools:

- ▶ **OTIS** - Intended for a broad range of users to access GIS maps and functions through a web browser, it does not require a software installation. Many OTIS applications are based on CDOT's linear referencing system (LRS), which allows highway and traffic attributes to be queried and tables exported. The general-purpose mapping application, MapView, allows limited queries and basic map making.
- ▶ **C-Plan** - Intended for a broad range of users to access GIS maps and functions through a web browser, it does not require a software installation. C-Plan specializes in maps and apps for targeted uses. It allows users to make their own web maps or add to existing maps with their own data, CDOT corporate data, or other organizations that have published data through ArcGIS Online.
- ▶ **ArcGIS Desktop** - Intended for users who want the most powerful spatial analysis and cartographic functions. Data can be best designed, edited, and maintained in this system. Consequently, the learning curve is steeper. Custom data connections can be made to a user's own data, CDOT corporate data, and other organizations' data. It requires a software installation by the OIT Help Desk. CDOT corporate data connections can be made through the GIS Support Unit.

CDOT maintains its spatial data assets in Universal Transverse Mercator (UTM) projection, Zone 13. Commonly, corridor projects will use survey coordinate systems, created by modifying existing coordinate systems available in GIS. Where possible, survey control diagrams should be requested to allow GIS professionals to convert environmental and design layers between survey coordinates and standard GIS projections. This will help ensure the spatial accuracy of datasets and allow design and environmental professionals to integrate the data into their respective analyses. This information should be documented and referenced in metadata for layers in survey coordinates.



Project managers should manage their data in logical folder and geodatabase structures on their computers and within their units. Communication with the DTD GIS Section and other CDOT Regions is essential for data coordination and data sharing. In some instances, it will be most advantageous for staff across the agency to have GIS data stored in DTD's corporate enterprise geodatabases to provide the best data sharing opportunity. To the extent possible, CDOT's standards for geospatial data and metadata comply with the U.S. Federal Geographic Data Committee standards for quality, content, and transfer. CDOT's Corridor GIS Data Delivery Guidelines are to be referenced and used on all CDOT projects.

GIS servers host resources, such as feature layers, web maps, and aerial imagery, allowing layers to be accessed in a web browser without being downloaded locally. These services can be useful in providing the most up-to-date information available from the data creator.

In general, a reliable way to find services is to use a search engine with the agency name and "open data" in the search. Website and GIS server links change occasionally. However, helpful GIS servers include:

- ▶ **FEMA National Flood Hazard Layer Web Map Service** - Provides access to the National Flood Hazard Layer, which includes floodplain limits, letter of map revision (LOMR) locations, and floodplain cross sections. The web map service can be accessed by adding an ArcGIS server connection to: <https://www.fema.gov/flood-maps/national-flood-hazard-layer>
- ▶ **U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory Web Map Service** - Supplies access to linear and polygon wetland data for the U.S. and its territories, as well as riparian mapping, where available. The web map service can be accessed by establishing a connection to the ArcGIS web map server at: <http://www.fws.gov/wetlands/Data/Web-Map-Services.html>
- ▶ **Denver Regional Council of Governments (DRCOG) Web Map Service** - Provides a multitude of transportation and environmental resource data, including current year municipal boundaries. The web map service can be accessed by establishing a connection to: <http://drcog.org/services-and-resources/data-maps-and-modeling>
- ▶ **Colorado Parks and Wildlife (CPW) ArcGIS Online Services** - Displays data of species habitat (species activity mapping [SAM]), movement areas, critical range, riparian mapping, potential fen and wetland areas, biodiversity data, Colorado Trail Explorer (COTREX) trails and trailheads, and various other environmental data layers. Services can be accessed by establishing a connection at: <http://www.arcgis.com/home/search.html?q=colorado%20parks%20and%20wildlife&t=groups&focus=groups>
- ▶ **Natural Resources Conservation Service (NRCS) Web Map Service** - Allows access to NRCS soil mapping for the U.S., where available. The service can be accessed by establishing a connection to: <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>
- ▶ **Curated List of Federal, State, and County ArcGIS Servers** - An open-source list of ArcGIS servers that is regularly maintained. It is an online PDF with background information and links to more than 3,000 ArcGIS servers. It can be accessed at: https://mappingsupport.com/p/surf_gis/list-federal-state-county-city-GIS-servers.pdf



- ▶ **Colorado Department of Public Health and Environment - Water Quality Control Division Services** - Provides data for Section 303(d), Total Maximum Daily Load (TMDL), and other water quality standards. Services can be accessed by establishing a connection at: <https://www.colorado.gov/pacific/cdphe/clean-water-gis-maps>

CDOT's enterprise license agreement with ESRI includes online training and occasional classroom training on GIS skills. The User Group SharePoint site has a Training page; also contact the GIS Support Unit for more information.



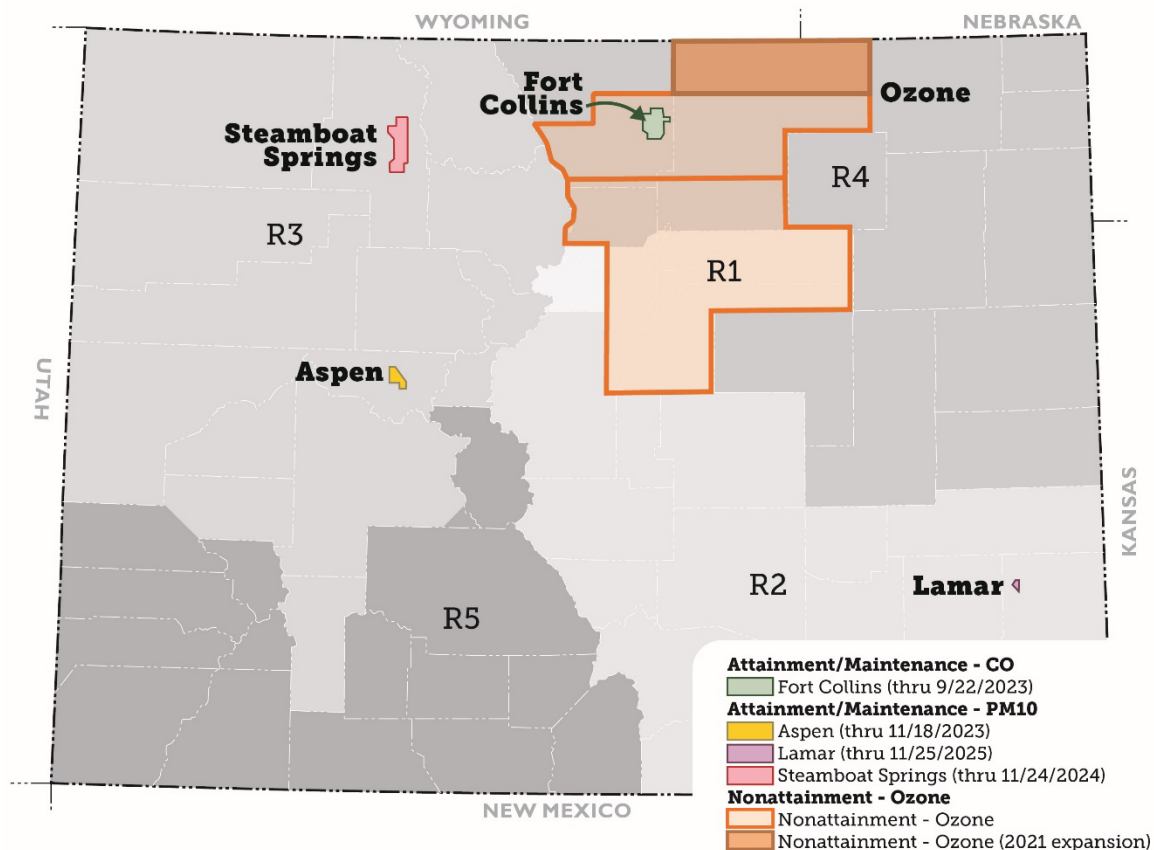
9.2 Air Quality

Air quality evaluations address emissions of air pollutants that can be harmful from transportation systems. Emissions may be from tailpipes and other vehicle-related sources.

Air quality is primarily regulated under the 1970 Clean Air Act (Title 42 United States Code Chapter 85) and amendments from 1977 and 1990 (collectively the CAA). The purpose of the CAA is to protect and enhance air quality to promote public health, welfare, and productive capacity of the nation.

The CAA addresses several criteria air pollutants through National Ambient Air Quality Standards (NAAQS). The NAAQS pollutants are carbon monoxide, particulate matter, ozone, lead, nitrogen dioxide, and sulfur dioxide. The U.S. Environmental Protection Agency (EPA) designates areas that do not meet one of the NAAQS as nonattainment areas for that pollutant. EPA may redesignate nonattainment areas where air quality has improved to meet the NAAQS as maintenance areas. Currently, Colorado has a nonattainment area for ozone and several maintenance areas for carbon monoxide and/or particulate matter less than 10 microns in diameter (PM₁₀) (Figure 9-1).

Figure 9-1. Colorado NAAQS Nonattainment and Maintenance Areas





Transportation projects in nonattainment and maintenance areas are evaluated for air quality under the CAA through what is known as the Conformity Rule. The Conformity Rule requires demonstration that pollutant concentrations near the project will meet the NAAQS.

Other CAA air pollutants include hazardous air pollutants (HAPs), a subset of HAPs known as mobile source air toxics (MSATs), and greenhouse gases (GHGs). NAAQS are not established for these pollutants.

Colorado established requirements for air quality and GHG analysis with the adoption of Colorado Revised Statute (CRS) § 43-1-128. The requirements are in addition to existing CAA and NEPA requirements for air quality and do not substitute for them.

Senate Bill 21-260 (SB21-260), signed by Governor Polis June 17, 2021, is primarily a transportation funding bill. However, air quality modeling, monitoring, and mitigation requirements were included in Section 30, which have been codified in CRS 43-1-128, Parts 4-5. CDOT consulted with the Colorado Attorney General's (AG) Office to clarify the requirements in Parts 4-5 to determine which projects these requirements apply to. CDOT received guidance from the AG that CRS 43-1-128 Part 4 shall be implemented as follows:

- ▶ Part 4a and 4c apply to all RS/TC projects in the 10-Year Plan which received a Record of Decision (ROD), Finding of No Significant Impact (FONSI), or Categorical Exclusion (CatEx) as provided by NEPA on or after July 1, 2022. This also applies to RODs and FONSIs that require a revision after July 1, 2022, but not to projects that just needed a reevaluation because reevaluations only determine if the NEPA decision document conclusion is still valid.
- ▶ Part 4b requires monitoring “during construction” and applies to all RS/TC projects under active construction, regardless of the NEPA documents decision date.

The term RS/TC project was interpreted for use with SB21-260 in the Regionally Significant and Transportation Capacity Interpretation and Examples for CDOT Projects memo dated August 31, 2022. Each 10-Year Plan project will need to be evaluated to determine if it meets the definition of an RS/TC project.

Projects may also need to evaluate air quality as a resource under NEPA, which applies to projects throughout Colorado. NEPA requires disclosure and reasonable mitigation.

CDOT has prepared detailed guidance on evaluation and documentation of air quality in the *Air Quality Project-Level Analysis Guidance (AQ-PLAG)* document (CDOT, 2019a). The instructions in the AQ-PLAG have primacy over **Section 9.2**, which is intended to summarize in simpler terms the treatment of air quality for CDOT's NEPA projects. **Subsection 9.2.1** discusses the process for evaluating air quality. **Subsection 9.2.2** discusses air quality information that should be included in each NEPA document.



When the 2019 AQ-PLAG was issued, Colorado had one ozone nonattainment area, five carbon monoxide maintenance areas, and seven PM₁₀ maintenance areas.¹ The ozone nonattainment area² encompassed parts of Larimer and Weld counties, as well as the following counties: Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson. The carbon monoxide and PM₁₀ maintenance area boundaries were smaller than the ozone nonattainment area and did not match county borders. The areas³ are shown on **Figure 9-1**. Upon reaching the 20-year mark, transportation conformity is no longer expected to apply⁴ in the area for that pollutant, but NEPA still applies.⁵

Access CDOT's [Air Quality Project-Level Analysis Guidance and the instructions](#) for more information.

9.2.1 Air Quality Evaluation Process

Air quality evaluations for CDOT and CDOT-administered projects must be performed by qualified practitioners, as defined in the AQ-PLAG.

Reasons for Evaluation of Air Quality Under NEPA

CDOT conducts air quality evaluations for its projects for multiple reasons, including:

- ▶ To fulfill requirements of the CAA and the Conformity Rule
- ▶ To fulfill NEPA requirements
- ▶ To comply with CRS 43-1-128 and the preceding Colorado SB21-260
- ▶ To comply with CDOT's Environmental Stewardship Guide (2017a), which ensures the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner

Applicable regulations and guidance for air quality resource evaluations are presented in the AQ-PLAG.

¹ EPA maintains a complete, current listing of nonattainment and maintenance areas designations on its website. This listing is referred to as the Green Book, which is available at <https://www.epa.gov/green-book>

² EPA's designation for the 2008 8-hour ozone NAAQS found in 40 CFR 81.306 identifies the ozone nonattainment area as "Denver-Boulder-Greeley-Fort Collins-Loveland." However, the EPA's designation for the 2015 8-hour ozone NAAQS found in 40 CFR 81.306 identifies the ozone nonattainment area as "Denver Metro/North Front Range." Because both the 2008 and 2015 8-hour ozone NAAQS nonattainment areas include the identical geographic boundary, and both NAAQS apply, it is acceptable to use either name. However, the more commonly used name is "Denver Metro/North Front Range."

³ Full legal descriptions of the boundaries are available at 40 CFR 81.306.

⁴ EPA determines when transportation conformity no longer applies to a specific maintenance area.

⁵ It is anticipated that this guidance will be updated when maintenance periods start to end. It should not be assumed that requirements will end at the same time that the maintenance period ends.



Conditional Exemption for Small Project in Advance of Regionally Significant Transportation Capacity (RS/TC) Projects in the 10 Year Plan

Colorado SB21-260, Section 30 requires that CDOT “minimize the adverse environmental and health impacts of planned transportation capacity projects and address inequitable distribution of burdens of such projects.” (Colorado General Assembly, 2021). In some instances, small, early-action projects take place in advance of a larger Regionally Significant Transportation Capacity Project (RS/TC) in the 10-Year Plan which are not, in of themselves, projects that would cause the impacts attributed to the larger project that makes it regionally significant. Examples include utility relocations, vegetation removal, structure or asset demolition, preservation or replacement, and other maintenance work. These projects by themselves do not qualify as a RS/TC Project, nor are they anticipated to have the air quality impact. When small project actions like these do not “cause adverse environmental impacts...which fall most heavily on communities adjacent to projects,” (Colorado General Assembly, 2021) as described in Section 30, Part 1, CDOT interprets this to mean that these small early action projects would not be required to expend state funds to comply with Part 4 until the larger elements with impacts of the RS/TC project are planned for construction.

CDOT Region Planning and Environmental Managers (RPEMs), with the assistance of the Environmental Programs Branch (EPB), will analyze these small early action phases on a case-by-case basis to document the scope of work, proximity of sensitive receptors and probability of impacts, as well as timing of these early action phases with the larger regionally significant phase of the project to make sure there is a true separation of construction activities in time and space. When it can be demonstrated that a small phase will not have an air quality impact relative to Part 4 on the surrounding communities, CDOT believes it is appropriate for this early action activity to be exempt from Part 4 which will benefit CDOT and the public by expediting project schedules and reducing project costs where no air quality impact is expected. Each early action project under review must be approved by a CDOT Air Quality Specialist and documented via a memo in the project file as a record of compliance with this legislation. The larger RS/TC project shall still be expected to meet the full requirements of Section 4.

Air Quality Analysis

All CDOT projects are evaluated at the project level. However, the analysis and documentation required varies in content and in level of detail based on project size, geographic location, and anticipated impacts. Guidance on specifics is presented in the AQ-PLAG, although the 2019 AQ-PLAG preceded CRS 43-1-128 requirements. Therefore, CDOT encourages early coordination with the EPB Air Quality and Greenhouse Gas Specialists to determine air quality and GHG requirements for projects that may meet the definitions of a RS/TC project. Project level analysis guidance for CRS 43-1-128 is located in the most recent draft of the “Interim Guidance for Project Level Compliance of CRS 43-1-128 (National Environmental Policy Act [NEPA] and Construction)” memo.



Typically, three aspects of a project are key in determining the nature and scope of an air quality analysis:

- ▶ Is any part of the project in a nonattainment or maintenance area?
- ▶ Is the project a CatEx, an EA, or an EIS?
- ▶ Is the project a RS/TC project (as interpreted by CDOT in the memo dated August 31, 2022)? <https://www.codot.gov/programs/environmental/greenhousegas/regionally-significant-and-transportation-capacity-definition-final-08312204172023.pdf>

The specifics of the air quality analysis are determined through project scoping. Generally, the analysis may include any, all, or none of these elements:

- ▶ Project scoping and coordination
- ▶ Regional conformity analysis
- ▶ Carbon monoxide project-level conformity analysis
- ▶ Particulate matter project-level conformity analysis
- ▶ Ozone project-level conformity documentation
- ▶ NEPA criteria pollutant project-level analysis
- ▶ MSAT analysis
- ▶ GHG analysis
- ▶ Construction emissions analysis
- ▶ Cumulative and indirect effects evaluations
- ▶ Pre-construction monitoring

The scope of analysis may range from a simple clearance letter to a complex, multi-pollutant examination of a challenging EIS project. The AQ-PLAG has scoping information and the requirements for air quality technical reports.

Is a project within a nonattainment or maintenance area exempt from conformity determination?

Projects Requiring Determination:

- Projects funded and/or approved by FHWA or Federal Transit Administration (FTA) and located in a nonattainment or maintenance area
- Regionally Significant projects (as determined by the Metropolitan Planning Organization [MPO])

Exempt Projects:

- State and locally funded projects (unless consultation determines project is not exempt)
- Located in an attainment area
- Categorically exempt under 40 CFR 93.126 (unless there are potentially adverse emissions impacts as determined by consultation)

9.2.2 NEPA Document Sections

Chapter 14 of the AQ-PLAG describes the content and presentation of air quality requirements for CDOT NEPA documents. When an air quality technical report has been prepared for a project, relevant information is summarized in the NEPA document.



A project is considered “cleared” when any necessary analyses have been completed, accepted by the EPB and/or Regional Air Quality Specialist, and documented. If a final air quality technical report is required, it must be reviewed and accepted by the EPB and/or Regional Air Quality Specialist. All comments submitted during these reviews must be resolved before the report can be finalized.

A CatEx is documented via CDOT’s Form 128, which contains only high-level information related to air quality and does not require much narrative to be developed. The air quality technical report is attached to Form 128, when applicable. A CatEx requires a clearance letter from the EPB and/or Regional Air Quality Specialist.

For EAs, EISs and RS/TC Projects, narrative summarizing the air quality technical report must be developed. As described in the AQ-PLAG, the air quality narrative should include the following elements, as applicable to the project.

CDOT proposed definitions for “Regionally Significant” and “Transportation Capacity” in a 2022 memo that can be accessed here: <https://www.codot.gov/programs/environmental/greenhousegas/regionally-significant-and-transportation-capacity-definition-final-08312204172023.pdf>

Affected Environment

Describe the air quality status of the project area, including the general project setting, regional NAAQS status, and identification of any nonattainment or maintenance areas. Describe applicable regulatory requirements, identify analyses performed, describe applicable Regional Transportation Plans and Transportation Improvement Programs, and describe interagency consultations.

Environmental Consequences

Compare air quality effects of each alternative and each of the following, as applicable to the project:

- ▶ Carbon monoxide conformity determination
- ▶ PM₁₀ conformity determination
- ▶ Ozone conformity determination
- ▶ NEPA criteria pollutant analysis
- ▶ MSAT analysis
- ▶ GHG analysis
- ▶ Construction emissions analysis
- ▶ Cumulative and indirect effects evaluation

Reference the conformity concurrence letter, when applicable.

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table* (Table 9-2) is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for air quality.



In addition, RS/TC projects in CDOT's 10-Year Plan must create a project-specific plan that addresses CRS Part 4(b) and 4(c) requirements. This includes a particulate matter construction plan that covers monitoring, reports to the public, and public alerts; an action plan to mitigate air quality impacts on communities, which should also include or refer to the Fugitive Dust Control Plan, if required by APCD. The Air Quality Construction Plan must be based on CDOT's plan template and must be approved by the CDOT Project Manager and CDOT Air Quality Specialist.

Colorado Revised Statute § 43-1-128

Colorado established additional requirements for air quality and GHG analysis with the adoption of [Colorado Revised Statute \(CRS\) § 43-1-128](#). The requirements are in addition to existing CAA and NEPA requirements for air quality and do not substitute for them.

As of June 15, 2023, CDOT has neither updated the AQ-PLAG to offer guidance on CRS § 43-1-128 requirements nor established a guidance document for project level GHG analysis. Interim guidance will be posted on CDOT's website when it is available.

9.3 Greenhouse Gas

GHGs are a class of pollutants that contribute to global warming and climate change. Transportation-sector GHGs include primarily carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and hydrofluorocarbons. Each of these pollutants has a different global warming potential, e.g., one ton of CH₄ is equivalent to 25 tons of CO₂ because it has a global warming potential 25 times greater than CO₂ (based on the 100-year global warming potential). Further, CO₂ accounts for 96 percent of transportation GHG emissions in the United States. Thus, all transportation-sector GHGs are often measured together as carbon dioxide equivalent (CO₂e), standardizing the warming effects of each gas relative to the most prevalent anthropogenic GHG, CO₂.

GHG emissions resulting from transportation projects have three sources: operational, construction, and maintenance emissions. In 2018 on-road transport typically accounted for nearly 80 percent of transportation operational emissions in the U.S., including both passenger and freight travel (NCHRP, no date). Off-road transport accounts for the other 20 percent, including aviation, rail, and shipping. Thus, operational emissions from CDOT projects are those emissions that typically result from added or avoided vehicle travel on the transportation network, while construction emissions from projects result from the operation of construction equipment, worker travel, materials transport and carbon embodied materials. Maintenance emissions are those that result from fuels used to maintain transportation facilities, such as snow removal, vegetation management, and other routine maintenance practices.

9.3.1 GHG Emissions Evaluation Process

Qualified practitioners must perform GHG evaluations for CDOT and CDOT-administered projects, as defined in the Greenhouse Gas Project-Level Analysis Guidance (GHG-PLAG) although the 2019 AQ-PLAG does not include the requirements for CRS 43-1-128. Therefore, CDOT encourages early coordination with the EPB Air Quality and Greenhouse Gas Specialists to determine air quality and GHG requirements for projects that may meet the definitions of a RS/TC project. Project level analysis guidance is also located in the most recent draft of the "Interim Guidance for Project Level



Compliance of CRS 43-1-128 (National Environmental Policy Act [NEPA] and Construction)” memo and should be referenced until the 2019 AQ-PLAG is updated.

Reasons for Evaluation of GHGs Under NEPA

On January 9, 2023, the Council on Environmental Quality (CEQ) issued guidance around the evaluation of GHG impacts for transportation projects. In recognition of the increasing urgency of the climate crisis, CEQ issued this update to its 2016 NEPA Guidance on Consideration of Greenhouse Gas Emissions and Climate Change as effective immediately. The newly updated guidance recommends Federal agencies to quantify a proposed action’s reasonably foreseeable direct and indirect GHG emissions and monetize the social cost of those GHG emissions. The guidance also states that NEPA reviews should consider the ways that a changing climate may impact the proposed action.

Additionally, Colorado has established requirements around the analysis of GHG emissions from transportation projects. Colorado House Bill 19-1261 (Climate Action to Reduce Pollution) established statewide GHG pollution reduction targets to reduce 2025 emissions 26 percent, 2030 emissions 50 percent, and 2050 emissions 90 percent compared to 2005 emission levels.⁶ To orchestrate a comprehensive, economy-wide plan to reach these reductions, the Governor directed state agencies to develop the *Colorado Greenhouse Gas Pollution Reduction Roadmap* (Roadmap). The Roadmap determined transportation to be the single largest source of GHG pollution in Colorado. It also identified several strategies to reduce GHGs from the transportation sector, including the addition of GHG pollution standards in regional and statewide transportation plans to reduce operational GHG emissions associated with light duty vehicles. In June 2021, the adoption of CRS § 43-1-128 (also referred to as SB21-260) turned the recommendations from the Roadmap into a requirement. Notably, these requirements apply only to RS/TC projects in CDOT’s 10 Year Plan. CDOT’s interpretation of a “[Regionally Significant Transportation Capacity Project](#),” as well as examples of projects exempt from these requirements, is provided on the following website: <https://www.codot.gov/programs/environmental/greenhousegas>

In December 2021, the Transportation Commission voted to approve the GHG Pollution Reduction Planning Standard, meeting the requirements of CRS 43-1-128 Section 3. Under this standard, CDOT and the state’s five Metropolitan Planning Organizations (MPOs) are required to achieve individually set GHG reduction levels at four time periods: 2025, 2030, 2040, and 2050. To determine compliance with these reduction levels, agencies must model their existing transportation networks and all future RS/TC projects in their transportation planning documents using travel demand models and EPA’s Motor Vehicle Emission Simulator (MOVES). Overall, the standard encourages CDOT and the MPOs to develop long range transportation plans that support travel choices that reduce GHG emissions.

Further, CRS 43-1-128 Section 4(a) says that planned RS/TC Projects must “(u)se Environmental Protection Agency Approved Models to determine air pollutant emissions for the planned project....” A RS/TC project in the approved 10 Year Plan is already included in a comprehensive GHG analysis as part of the requirements for the GHG Pollution Reduction Planning Standard. However, this analysis does not preclude additional GHG impacts analysis and mitigations at the project level as

⁶ The reduction levels in GHG Pollution Reduction Standard includes these same years, with an additional level in 2040.



part of the NEPA process. CDOT is preparing detailed guidance on evaluation and documentation of GHG emissions and mitigation in a GHG-PLAG.

CDOT conducts GHG emissions analysis for its projects for multiple reasons, including:

- ▶ To fulfill the requirements under CEQ-2022-0005
- ▶ To fulfill the additional requirements of CRS 43-1-128 Section 4(a)
- ▶ To comply with CDOT's Air Quality Policy Directive 1901.0 and the associated Air Quality Action Plan
- ▶ To comply with CDOT's Environmental Stewardship Guide (2017a), which ensures the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner

GHG Analysis

The following aspects of a project are key in determining the nature and scope of a GHG analysis:

- ▶ A CatEx - Generally, requires no analysis
- ▶ A RS/TC project in CDOT's 10 Year Plan, an EA, or an EIS

Generally, the analysis will look at CO₂, CH₄, and N₂O emissions in the study area and include these elements:

- ▶ Operational emissions from on-road vehicles
- ▶ Construction emissions, including machinery and materials
- ▶ Maintenance emissions
- ▶ Application of the social cost of GHG to the metric tons of CO₂e

As per the CEQ guidance, consideration of both direct and indirect emissions is required from proposed actions and their reasonable alternatives for EAs and EISs.

Table 9-3. Indirect and Direct Emissions

Indirect Emissions	Direct Emissions
<ul style="list-style-type: none"> ▪ Embodied carbon of upstream materials ▪ Upstream transportation emissions associated with fuel used to transport materials 	<ul style="list-style-type: none"> ▪ Operational or on-road ▪ Emissions from running construction equipment ▪ Maintenance

For all RS/TC, EA, and EIS projects, quantification of emissions in the baseline, proposed action, no action scenario, and any alternatives should include operational, construction, and maintenance CO₂, CH₄, and N₂O emissions in the study area.

9.3.2 NEPA Document Section

The GHG-PLAG describes the content and presentation of GHG requirements for CDOT NEPA documents. All projects that undergo a GHG emissions analysis should include the following elements, as applicable to the project.



Affected Environment

At a minimum, the Affected Environment chapter should:

- ▶ Include the standard language as found in the GHG-PLAG, which describes the global character of GHGs and their impact on climate change, along with the climate effects that are affecting Colorado.
- ▶ Describe the existing regulatory context as it relates to Federal, state, and local GHG and climate policies in the project area, particularly those related to transportation emissions.
- ▶ Describe the project location briefly and in general terms from the perspective of factors that affect transportation GHG emissions, including development density, traffic operations, multimodal options, and existing or planned zero emission vehicle (ZEV) infrastructure. Use relevant information from the air quality, noise, land use, transportation resources, and economic resources section but do not duplicate all of the information. The GHG-PLAG provides examples to give a general template for this discussion.
- ▶ For RS/TC, EA, and EIS projects, establish a baseline for considering the environmental effects of the proposed action by quantifying the current operational and maintenance (if applicable) GHG emissions in the project area without the proposed action. These emissions should be broken out by metric tons of CO₂, CH₄, and N₂O and then aggregated as CO₂e.

Environmental Consequences

Compare the GHG effects of each alternative to the baseline, proposed action, and no action alternative for all RS/TC, EA, and EIS projects. Each NEPA document will generate five GHG effects tables:

- ▶ **Tables 1-3:** Operational, construction, and maintenance emissions should be reported in separate tables for the applicable horizon year. These tables should report individual CO₂, CH₄, and N₂O emissions, and then aggregated as CO₂e. These tables should quantify both gross CO₂e emissions and net CO₂e emission increases or decreases, as compared to the no action scenario.
- ▶ **Table 4** should display total emissions in the applicable horizon year (operational, construction, and maintenance combined) to understand how total project GHG emissions compare, reporting on both gross emissions and net emission increases and decreases as compared to the No Action Alternative. Table 4 should also report the expected vehicle miles traveled (VMT) for the horizon year.
- ▶ **Table 5** should report the cumulative emissions over the project's lifetime, reporting gross CO₂, CH₄, and N₂O emissions and net changes, and aggregated as CO₂e. Table 5 should also report the SC GHG to the aggregate CO₂e.⁷ Project sponsors should use a discount rate of 2.5 percent, as per the requirements of SB21-260, and reference the latest Federal technical guidance on the social cost of carbon, which can be found on CDOT's GHG Program website.

⁷ The SC-GHG estimates provide an aggregated monetary measure in U.S. dollars of the future stream of damages associated with an incremental metric ton of emissions and associated physical damages (e.g., temperature increase, sea-level rise, infrastructure damage, human health effects) in a particular year.



CDOT’s GHG Program and guidelines can be accessed here:
<https://www.codot.gov/programs/environmental/greenhousegas>

Calculating Operational, Construction, and Maintenance Emissions

Operational, or on-road vehicle emissions, should be calculated for the project horizon year using EPA MOVES modeling runs. Further detail and instruction for this process can be found in the GHG-PLAG. To report cumulative operational emissions over the project’s lifetime, work with CDOT staff to use the most recent VMT/ZEV curves from the most applicable traffic demand model.

Construction and maintenance emissions should be calculated using the latest version of FHWA’s Infrastructure Carbon Estimator (ICE) or an equivalent, as well as the emissions generated by the proposed action and any alternatives.⁸ Total project construction and maintenance emissions should be reported in separate summary tables. The construction table should report the annualized construction emissions for each alternative over the project’s lifetime. The maintenance emissions should provide gross emission and net increases, or reductions as compared to the no action maintenance scenario.

Applicable technical guidance for conducting GHG evaluations for construction, maintenance, and operational emissions will be presented in the GHG-PLAG. The MOVES model analysis for individual projects is evolving and the GHG-PLAG will be updated accordingly.

In addition, the 2023 CEQ guidance states that, where relevant, agencies should identify the alternative with the lowest net GHG emissions or the greatest net climate benefits.

Table 9-4. Table 1, Operational Emission Reporting Example

Greenhouse Gas	Baseline (Year)	No Action Alternative	Proposed Action Gross Emissions (Year)	Proposed Action Net Change vs No Action (Year)	Alternative 1 Gross Emissions (Year)	Alternative 1 Net Change vs No Action (Year)
CO ₂ (MT)						
CH ₄ (MT)						
NO _x (MT)						
Total CO ₂ e (MT)						

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table* (Table 9-2) is required for all CDOT EIS and EA documents and any RS/TC Projects in the 10-year Plan.

⁸ <https://www.dot.state.mn.us/sustainability/ghg-analysis.html>



When considering mitigating a project's effects on VMT, GHGs, and other air pollutants, project sponsors should document any planned or existing activities that increase travel choices that are less GHG intensive (such as less carbon-intensive fuels), lowering VMT (such as multimodal actions), or carbon sequestering activities as project-related elements that could lower GHG emissions. For examples of GHG mitigations, please refer to Appendix A in Policy Directive 1610, which includes a list of GHG mitigation measures that have been reviewed, vetted, and scored by CDOT subject matter experts and formally approved by the Transportation Commission. However, this list is not exhaustive, and other GHG mitigation measures can be proposed at any time.

CDOT's GHG Mitigation Measures can be accessed here:

[pd-1610-0-greenhouse-gas-mitigation-measures-june2022.pdf \(codot.gov\)](https://www.codot.gov/pd-1610-0-greenhouse-gas-mitigation-measures-june2022.pdf)

It is likely that these project elements that reduce GHGs are interconnected with other programs, and those interactions can be described. For all CDOT EIS and EA documents and any RS/TC Projects in the 10-Year Plan, the NEPA document shall:

- ▶ **Comply with Procedural Directive (PD 1602.1):** Elevating Bicycle and Pedestrian Opportunities in Colorado asks project sponsors to evaluate all projects for bicycle and pedestrian opportunities. The development of new or improved bike/ped facilities can lower GHG emissions resulting from a project.
- ▶ **Comply with Procedural Directive 1601.1:** Requests for Interchange Access and Modifications to Existing Interchanges on the State Highway System requires a Transportation Demand Management (TDM) scorecard and a project-specific TDM plan.
- ▶ **Review relevant multimodal, transit, vehicle electrification, land use, Intelligent Transportation System (ITS) plans, and similar TDM plans.** Consider incorporating project components that will reduce VMT or GHGs emissions, regardless of a project's impacts.
- ▶ **Coordinate with the appropriate CDOT or MPO agency** to determine if there are programmatic funds allocated in the GHG Compliance Plan that can be used to implement GHG reductions on a project or mitigations can be found in the State Bike Plan or the State Transit Vision Documents.
- ▶ **Review documents** such as Complete Streets, Safe Routes to School, TDM, Congestion, Mitigation and Air Quality (CMAQ) or similar planning documents which would further reduce GHG emissions should be also accounted for in the GHG NEPA analysis.

Public involvement should also be used to gather comments from communities to identify community preferences for GHG reduction measures. This will help direct the allocation of project funds to measures which will be best suited for the surrounding communities and, therefore, provide the most cost-effective mitigations.

All projects shall also consider the use of construction mitigations, where practicable. This includes but is not limited to the following:

- ▶ Anti-idling requirements and enforcement
- ▶ Clean (retrofitted) equipment requirements, including solar powered equipment
- ▶ Maintaining equipment
- ▶ Efficient trips (TDM program) and onsite storage of materials



- ▶ Native planting to enhance carbon sequestration
- ▶ Project specifications and pay items that require inspections and enforcement of air quality standards

Non-RS/TC Projects in the 10-Year Plan or projects with CatEx level NEPA documentation shall be required to consider the incorporation of operational and construction mitigations, where practicable. There is an expectation, based on the goals of the Environmental Stewardship Guide (CDOT, 2017a), PD 1901 and the associated Air Quality Action Plan, that projects should incorporate measures to further address GHG reductions by considering additional GHG mitigations as project elements.

Other Issues to Consider

Environmental Justice Considerations

The burdens, risks, and hazards driven by climate change disproportionately impact communities of color and low-income populations. The NEPA process calls for identifying potential environmental justice-related issues and meaningfully engaging with communities that proposed actions and reasonable alternatives (as well as the No Action alternative) may affect. Guidance for this process is found in **Section 9.16** of this NEPA Manual. While following the guidance and requirements within that section, project sponsors should engage such communities early in the scoping and project planning process to understand any unique climate-related risks and concerns as part of the NEPA review.

Considering the Effects of Climate Change on a Proposed Action

The interim 2023 CEQ guidance recommends agencies consider climate change effects on the environment and on proposed actions in assessing vulnerabilities and resilience to the effects of climate change.

- ▶ **Affected Environment** - In considering the effects of climate change on a proposed action, the agency should describe the environment for the proposed action based on the best available climate change reports. The temporal bounds for the description of the affected environment are determined by the projected initiation of implementation and the expected life of the proposed action and its effects. Agencies should use the language in the GHG-PLAG that describes the anticipated changes to Colorado's climate and environment, including an increase in extreme heat, precipitation, and wildfire events.
- ▶ **Effects** - The analysis of climate change effects should focus on those aspects of the human environment that are impacted by the agency's potential action and climate change, or how climate change can make a resource, ecosystem, human community, or structure more vulnerable to many types of effects and lessen its resilience to other environmental effects. Practitioners should reference and consult the practices and programs conducted as part of CDOT's Resilience Program, as discussed in Chapter 3 of the CDOT NEPA Manual. For example, heatwaves and more extreme temperatures will affect the integrity and maintenance of Colorado's roadways and bridges, and extreme participation events will affect culvert capacity and functionality. Resilience measures may include alternative designs or materials, increased culvert sizing, avoiding riparian corridors where feasible, and more.



9.4 Geologic Resources, Soils, and Geohazards

Geologic features include outcrops, unique rock formations, and potential mining and energy resources. Mineral ores, petroleum, natural gas, sand, and gravel are resources related to geologic features. Impacts to geologic and soil resources from transportation projects must be assessed, as well as impacts from these resources on the project. To the extent possible, CDOT projects are designed to avoid areas containing unique geologic features and to blend into the landscape. This is to ensure the sustainability and stability of the project, as well as the preservation of these features for their value to society. Geologic features that may impact the project include formations that are unstable or erode easily, extreme topography, areas of former or active underground mining, and faults or areas of seismic activity. Soil resources include soil types and mining resources such as sand and gravel. Soil features that may affect the project include soil erodibility and permeability. Typical geohazards in Colorado include landslides, rockfalls, mudslides (debris flows), swelling soils, mine subsidence, collapsible soils, avalanches, earthquakes, flooding, and erosion.

The following subsections provide guidance on the treatment of geologic resources, soils, and geohazards for CDOT's NEPA projects. The first section discusses the process for evaluating geology and soil. The second section discusses geology and soil information that should be in each NEPA document.

CDOT's Soils & Geotechnical Program and Geohazards Program are located at 4670 Holly Street. Additional information can be obtained at:

<https://www.codot.gov/business/designsupport/materials-and-geotechnical/programs/geotech>

and <https://www.codot.gov/business/designsupport/materials-and-geotechnical/programs/geohaz>

The Colorado Geologic Survey is the geologic resource for all of Colorado:

<http://coloradogeologicalsurvey.org/>

Additional information is also available from the USGS Geologic Hazards Science Center:

<https://www.usgs.gov/centers/geohazards>

9.4.1 Geologic Resources, Soils, and Geohazards Evaluation Process

The CDOT Project or Geotechnical Engineer initiates the evaluation of the geology, soils, and geohazards in a proposed project area. Geologic resources, soils, and geohazards should be evaluated at all locations where the project will disturb them, including cut-and-fill locations and construction staging areas. These resources should be evaluated early in design and again at approximately the 30 percent design phase.



Reasons for Evaluation of Geologic Resources/Soils/ Geohazards Under NEPA

CDOT evaluates geologic resources, soils, and geohazards to:

- ▶ Ensure that geologic resources, soils, and geohazards are identified and that their natural and economic values, as well as their visual resources, are protected
- ▶ Identify potential negative impacts that the geologic resources, soils, and geohazards could have on the project if not identified and included in the design
- ▶ Comply with CDOT’s Environmental Stewardship Guide (2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner

No state or Federal laws apply specifically to geologic resources, soils, and geohazards, although some local agencies may have restrictions regarding building on certain types of soils, such as expanding soils.

Collection and Evaluation of Baseline Information

The baseline information for geologic resources is provided in the Foundation Investigation Report, and the baseline information for soils is provided in the preliminary soil survey and Pavement Design Report. The Foundation Investigative Report and Pavement Design Report are prepared at approximately the 30 percent design phase and may not be available at the NEPA phase of a project. If the Foundation Investigation Report, preliminary soil survey, and Pavement Design Report are not available during the NEPA process, a Geologic Resources, Soils, and Geohazards technical memorandum may be prepared or the information may be presented in the NEPA document. Other information sources that describe geologic and soil resources include:

- ▶ NRCS soil survey reports
- ▶ U.S. Geologic Survey (USGS) or Colorado Geologic Survey reports of geologic investigations
- ▶ Geotechnical reports prepared for the project
- ▶ Assessments of mineral and energy resources

Baseline information that is necessary for conducting the impact assessment is shown in the following textbox. This information should be used to evaluate both the potential impacts of the project on the geologic resources, soils, and geohazards and the potential impacts of the geologic resources, soils, and geohazards on project features.

Baseline Geologic/Soil Information to Include in NEPA Documents

- Extreme topography
- Unique geologic features
- Engineering properties of soil and geologic formations (e.g., expanding or erodible soils, slope stability, rockfall activity)
- Faults and seismic activity
- Resources that result from the geology/soils in the project area, for example, minerals (coal), energy (petroleum or natural gas), sand and gravel, and so on.
- Snow avalanche potential
- Potential visual/aesthetic values of geologic features can be acknowledged in the Geologic/Soil Resources Affected Environment discussion, but the related impacts should be addressed in the Visual Resources discussion.



Whenever possible, project features will be moved or altered to avoid adverse impacts to geologic resources, soils, and geohazards or to avoid adverse impacts from these resources on project features. If project features cannot be moved, CDOT will attempt to modify the project features or modify the project design to account for geologic resources, soils, and geohazards that may impact the project. The Foundation Investigation Report or Pavement Design Report may discuss required mitigation measures.

Other Issues to Consider

Construction of a transportation project does not require any permits related to the geologic resources, soils, and geohazards nor are any consultations with other state or Federal agencies necessary. CDOT's Geotechnical & Soils Program and Geohazards Program should be contacted during scoping to discuss resources, known conditions, and mitigation strategies.

9.4.2 NEPA Document Sections

The content of the sections on geologic resources, soils, and geohazards in the Affected Environment and Environmental Consequences chapter is discussed below.

Affected Environment

The Affected Environment chapter of the NEPA document describes the existing conditions and uses of the geologic resources, soils, and geohazards within the project area. A discussion of the following should be included as necessary:

- ▶ A general description of the physical setting of the project area, such as topography and geomorphology
- ▶ A graphic identifying geohazards locations and/or using a geologic column to help emphasize any recent seismic activity, major outcrops, and surface or important strata
- ▶ A general statement regarding the soil types and thicknesses, hydrologic soil types, and permeability, with a focus on geologic or soil units relevant to the project
- ▶ A description of how and where these geologic resources, soils, and geohazards interface with project features, using one or more maps to illustrate the project features and the attributes of interest
- ▶ A discussion and description of any unique features present (such as Garden of the Gods in Colorado Springs), cross-referenced to **Section 9.24 (Visual Resources)**

The level of detail in this discussion should be consistent with the extent of anticipated impacts to or from the geologic resources, soils, and geohazards. If project alternatives will not affect any geologic resources, soils, and geohazards, the document should clearly state this; no additional discussion of geologic resources, soils, and geohazards is required.



Environmental Consequences

In this chapter, describe how the proposed road construction or other project features may impact or be affected by the geologic resources, soils, and geohazards described in the NEPA document. Examples of potential impacts to geologic resources, soils, and geohazards include:

- ▶ Places where unique outcrops may have to be re-graded and will no longer provide the same view of geologic strata
- ▶ Areas containing sand and gravel deposits that will not have mining capability once the road is constructed

Geohazards could also impact the project. This information can be illustrated easily on maps that show an impact where features such as expansive soils, unstable geologic formations, old mine tunnels/features, and/or seismically active areas overlap with proposed project features. Examples of such impacts include:

- ▶ Unstable slopes that may adversely affect proposed project features, such as road design and alignment (such as landslides, rockfalls, mudslides [e.g., debris flows], and avalanches)
- ▶ Old mine tunnels and features that could collapse because of the project

Include tables showing the engineering properties of soils in the project area and their appropriateness for the various types of construction planned for the project. This information typically is included in a technical memorandum attached to the NEPA document.

After evaluating where the project may affect geologic resources, soils, and geohazards or where the geologic resources, soils, and geohazards may impact project features for each alternative, discuss the types of mitigation measures available to alleviate these potential impacts. Examples of mitigation measures include moving a project feature to avoid expansive soils or redesigning the roadbed in an area to account for the expansive soils. Visual quality mitigation methods might include using various methods of blasting rock so that drill marks are not left visible or creating planting pockets for landscaping to provide a visual (and possibly even a safety-enhancing) screen in front of exposed rock surfaces. Review the Field Inspection Review (FIR) or Pavement Design Report for mitigation measures identified during project design, if available. The NEPA document should include the information shown previously in the sidebar, as appropriate.

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table (Table 9-2)* is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for geologic resources.



9.5 Water Quality

Water Quality and Floodplains technical reports can be combined into a single report or technical memorandum, as appropriate, and in consultation with the CDOT RPEM.

Evaluation of water quality includes consideration of surface water, groundwater, climate, topography, geology, land use and beneficial uses as defined by the Water Quality Control Commission (WQCC). Because these components are complex and interrelated, their assessment is best accomplished by evaluation on a watershed scale. Although floodplains and wetlands are also considered water resources, CDOT has chosen to discuss these important resources in separate sections in this NEPA Manual. Floodplains are discussed in **Section 9.6**, and wetland resources are discussed in **Section 9.7**.

Transportation projects can impact water resources used for drinking, recreation, agriculture, and wildlife habitat. These impacts can occur during both the construction and maintenance/operation phases.

This section discusses how and why CDOT evaluates water quality as part of NEPA projects and outlines information that should be included in the Affected Environment, Environmental Consequences, and Mitigation sections of NEPA documents.

9.5.1 Water Quality Evaluation Process

The CDOT RPEM, in consultation with the Project Engineer, initiates the evaluation of water resources. Depending on the project, the RPEM may conduct the water resource evaluation in-house or contract with a consultant to prepare the evaluation. CDOT evaluates water quality impacts for the proposed alternative, including the No Action Alternative.

CDOT's Permanent Water Quality (PWQ) Program suggests including information about non-MS4 NEPA reviews to protect water quality. The earlier a Region or a project team is aware of the requirements for water quality, the more time efficient and cost effective the eventual project will be.

The water resources evaluation should begin shortly after project scoping to identify sensitive surface water, groundwater, and/or drinking water supplies. It is important to include CDOT maintenance personnel in the evaluation early on to accurately disclose effects from maintenance practices; identify existing conditions that require correction; and assist in determining the type, need, and maintenance access for permanent water quality control measures, which could include ROW purchase.

The **CDPHE WQCC website** contains a complete list of Colorado's water quality regulations at: <http://www.cdphe.state.co.us/op/wqcc/index.html>.

The website contains links to common sources of information used in CDOT NEPA documents, such as surface water classifications and standards, groundwater classifications and standards, point source discharge regulations, watershed protection regulations, drinking water regulations, and implementation of the CWA Section 303(d) requirements.



Reasons for Evaluation of Water Quality Under NEPA

CDOT conducts water resource assessments to:

- ▶ Comply with CDOT’s Environmental Stewardship Guide (2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner
- ▶ Comply with Federal acts and executive orders, state laws, and FHWA technical guidance

The regulations and certifications applicable to water resource evaluations are summarized below.

Federal Laws and Regulations

Clean Water Act (303d, 401, 402) - The CWA established the basic structure for regulating discharges of pollutants into navigable waters. It provides the statutory basis for the National Pollutant Discharge Elimination System (NPDES) permit program and the basic structure for regulating the discharge of pollutants into waters of the U.S.

- ▶ **Section 303(d)** (state designation of waterbodies that are impaired, meaning they do not meet water quality standards for their designated uses, and that require total maximum daily loads (TMDLs) to bring the waterbody up to the required water quality standard).
- ▶ **Section 401** (certification by states, territories, and authorized Native American tribes that federally permitted activities comply with state water quality standards).
- ▶ **Section 402** (NPDES, administered by Colorado under the Colorado Discharge Permit System, or CDPS). Section 402 requires NPDES permits for several types of stormwater discharges, including small and large construction land disturbances and municipal separate storm sewer systems (MS4s).

The CWA requires states, territories, and authorized Native American tribes to issue water quality standards, criteria, and guidelines, and to certify that certain permitted activities comply with established standards. The state is, therefore, responsible for establishing water quality standards and permitting requirements in Colorado, consistent with Federal law, except for reservation lands of federally recognized Native American tribes and some Federal lands, such as military facilities.

Safe Drinking Water Act (40 CFR Parts 141-143) - The Safe Drinking Water Act (SDWA) protects public health by regulating the nation’s public drinking water supply and protecting drinking water and its sources. CDOT is a stakeholder in the Colorado Source Water Assessment and Protection (SWAP) program mandated by the SDWA.

Erosion and Sediment Control on Highway Construction Projects (25 CFR 650 Subpart B) - All highways funded in whole or in part by FHWA must be designed, constructed, and operated according to standards that will minimize erosion and sediment damage to the highway and adjacent properties and abate pollution of surface and groundwater resources.

State Laws and Regulations

Colorado Water Quality Control Act (Colorado Revised Statutes [CRS] Title 25, Article 8) - The Colorado Water Quality Control Act protects and maximizes the beneficial uses of state waters and regulates water quality (CDPHE, 2020).



The EPA has delegated authority for enforcement of the CWA and SDWA to the Colorado Department of Public Health and Environment (CDPHE). Under this authority, the Colorado Water Quality Control Act was passed and the WQCC was created to provide regulations to be implemented by CDPHE to keep Colorado in compliance with the CWA. The Colorado Water Quality Control Act also established a permit system requiring the issuance and enforcement of permits for discharges of pollutants into state waters, including both surface water and groundwater. Several state regulations have been promulgated by the WQCC in implementation of the Colorado Water Quality Control Act.

Regulation No. 31 through Regulation No. 39 (5 Code of Colorado Regulations [CCR] 1002-31 to 1002-39) - These regulations provide basic water quality standards and an antidegradation rule, a system of classification, and the established classifications and water quality standards for surface waters in Colorado.

Regulation No. 41 through Regulation No. 42 (5 CCR 1002-41 to 1002-42) - These regulations provide basic standards, a system for classification, and the established site-specific water quality classifications and standards for groundwater in Colorado.

Regulation No. 93: Colorado's Section 303(d) List of Impaired Waters and Monitoring and Evaluation List (5 CCR 1002-93) - Regulation 93 establishes Colorado's list of impaired waters, including water-quality-limited segments requiring TMDLs, impaired waterbodies with approved TMDLs and 4b plans (i.e., other pollution control requirement), as well as the state's monitoring and evaluation list (M&E List). Waterbody segments with a CWA Section 303(d) impairment (i.e., does not meet designated use) require TMDLs, and TMDLs are required for only those parameters identified as impairments. Regulation 93 also assigns priority for TMDL development.

Regulation No. 61: Colorado Discharge Permit System Regulations (5 CCR 1002-61) - This regulation prescribes the requirements and procedures for implementation of the CDPS as required by the Colorado Water Quality Control Act, and it also implements the delegated NPDES program required by Section 402 of the CWA. Regulation 61 defines permit requirements for discharges of pollutants into state waters, including certain types of stormwater discharges, as well as other discharges such as manufacturing, commercial, silvicultural, aquaculture, etc. In addition to industrial/construction discharges, MS4s serving localities of a certain size also require stormwater discharges to be authorized through a permit. An MS4 includes not only a storm drainage system but also ditches, gutters, or other similar means of collecting and conveying stormwater runoff that do not connect with a wastewater collection system or wastewater treatment facility. CDHPE has identified CDOT as an owner/operator of an MS4.

Derived from Regulation 61 are several CDPHE permits that may be required on CDOT projects or for CDOT programs. These include, but are not limited to, the following:

- ▶ **CDPS General Permit Stormwater Discharges Associated with Construction Activity Authorization to Discharge under the Colorado Discharge Permit System (CDPS) (Permit No. COR400000).** CDOT refers to this permit as the **CDPS-Stormwater Construction Permit (CDPS-SCP)**. Construction projects that will disturb one acre or greater, or are part of a larger common plan of development that will disturb one acre or greater, require coverage under the CDPS-SCP. The permit requires control measures to prevent pollution or degradation of state waters; temporary and permanent stabilization measures; development, maintenance, and implementation of a stormwater management plan (SWMP);



performance of site inspections and implementing corrective actions, as necessary; recordkeeping; and reporting.

- ▶ **Authorization to Discharge under the Colorado Discharge Permit System, Permit Number COS000005**, which authorizes CDOT to discharge from its MS4 located within the “permit area,” as defined in the permit. Refer to the subsection labeled “MS4 Permit Area” on the next page for more information.
- ▶ **CDPS General Permit COG080000 for Discharges from Short-Term Construction Dewatering Activities**, which authorizes short-term (less than two years) discharges of source water (i.e., groundwater, surface water, and/or stormwater commingled with groundwater or surface water) that comes in contact with construction activities. This permit is appropriate when source water is not expected to be contaminated.
- ▶ **CDPS General Permit COG317000 for Discharges from Short-Term Remediation Activities**, which authorizes short-term (less than two years) discharges of source water from remediation activities. This permit is appropriate when the source water is expected to be contaminated.
- ▶ **CDPS General Permit COG318000 for Discharges from Long-Term Remediation Activities**, which authorizes long-term (two years or more) discharges of source water from remediation. This permit is appropriate when the source water is expected to be contaminated. CDOT will need to consider long-term cost and maintenance implications when this permit is required.
- ▶ **CDPS General Permit COG603000 for Discharges from Subterranean Dewatering Activities**, which authorizes discharges of source water from below-ground dewatering (e.g., foundation dewatering).
- ▶ **CDPS General Permit COG608000 for Discharges to Surface Water from Well Development and Pumping Test Activities**, which authorizes discharges of source water from well development and pumping test activities for non-dewatering wells to surface waters of the state.

CDPS permits may be accessed and viewed in their entirety on the CDPHE website at:

<https://cdphe.colorado.gov/water-quality-permits>

The website also provides links to helpful permitting resources and references.

Most CDOT projects are regulated by CDPHE’s CDPS program; however, in some situations the EPA or an authorized Native American tribe may be the permitting authority for an NPDES depending on project location.

Regulation No. 71 through Regulation No. 74 (5 CCR 1002-71 to 1002-74) - These are watershed-specific control regulations for Dillon Reservoir, Cherry Creek Reservoir, Chatfield Reservoir, and Bear Creek Watershed, respectively.

Regulation No. 82 (5 CCR 1002-82) 401 Certification Regulation - Regulation 82 authorizes CDPHE to certify, conditionally certify, or deny certification of licenses and permits in accordance with Section 401 of the CWA, and it sets forth conditions and procedures for the certification process.



Local Regulations

Local regulations are specific to the jurisdiction under which they belong and can be variable from city to county. The local agency's MS4 requirements should be checked before evaluating permitting requirements. While in another MS4 jurisdiction, CDOT must coordinate with local agencies so that agreement on jurisdiction and project requirements can be reached.

Municipal Separate Storm Sewer System (MS4)

Regulatory Background

In 1987, Section 402(p) was added to the CWA in response to the need to address pollution from stormwater discharges from municipal systems. The EPA subsequently promulgated NPDES MS4 regulations in two phases beginning in 1990. The Phase I regulations established requirements for 11 categories of industrial activity, including construction sites that disturbed 5 acres or more, and for discharges from large MS4s (systems serving populations of 250,000 or more) and medium MS4s (systems serving a population of 100,000 or more, but less than 250,000). In 1999, the EPA promulgated Phase II MS4 regulations to address pollution discharges from small MS4s in urbanized areas. Phase II also reduced the minimum size of construction projects requiring a permit from 5 acres of disturbed area to 1 acre or more of disturbed area.

The Water Quality Control Division (WQCD) of CDPHE issues Phase I MS4 permits as individual permits that are written to each individual MS4 permittee. CDPHE issued its first MS4 permit to CDOT, as the MS4 permittee, in 2000, effective January 2001. This original MS4 permit included only Phase I MS4 areas. Phase II MS4 areas were added to CDOT's second permit in 2007. CDOT's current MS4 permit (Permit No. COS000005) covers both the Phase I permit areas of Denver, Aurora, Colorado Springs, and Lakewood, as well as the small MS4s designated by CDPHE through the Phase II program. The current CDOT MS4 permit expired in 2020 but has been administratively extended and remains active until its renewal. A brief description of the MS4 permit follows.

MS4 Permit Area

CDOT's MS4 permit covers all areas of the Colorado state highway system and associated ROWs, as well as any properties that are CDOT-owned and operated, within another MS4 permittee's permit area. "Another permittee's permit area" is all the MS4 Phase I and Phase II permittees in Colorado. Part I.A.3 of CDOT's MS4 permit lists the geographic areas included in the permit coverage area.

To identify a project's specific water quality requirements, it is necessary to identify if a project is within CDOT's MS4 permit area. CDOT's C-Plan and OTIS ArcGIS websites identify the extents of CDOT's MS4 permit area, and either can be used to determine if a project or portion of a project is in the MS4 permit area. CDOT reviews and updates the map annually to include any Phase I or Phase II MS4 permit area changes.

Projects that are within CDOT's MS4 permit area and in another jurisdiction's ROW require additional coordination with the local agency to determine which jurisdictional MS4 permit requirements apply and how to comply with them. CDOT's MS4 permit also includes additional requirements for portions that drain into the Cherry Creek Reservoir drainage basin to comply with the watershed-specific control regulations prescribed in Regulation 72.



CDOT MS4 Program Area Overview

CDOT’s MS4 permit requires CDOT to use control measures to prevent or reduce the discharge of pollutants to state waters. The permit does this by requiring CDOT to comply with the following seven MS4 programs:

Construction Sites Program. CDOT implements this program to reduce or prevent the discharge of pollutants to the MS4 from covered construction activities, which are construction activities that result in a land disturbance of 1 acre or greater, or that are part of a larger common plan of development disturbing 1 acre or greater. The program includes procedures and requirements for selection, design, installation, implementation, and maintenance of control measures through each phase of construction until final stabilization. CDOT’s program also requires development, maintenance, and implementation of a SWMP for covered construction activities, as well as inspection, recordkeeping, and reporting requirements. Requirements of the Construction Sites Program are incorporated into project construction contracts through water quality standard specifications and related standard and project special provisions.

The MS4 Construction Sites Program does not negate the need for coverage under a CDPS-SCP for projects that meet the disturbance threshold. While CDOT’s MS4 permit applies only to CDOT MS4 areas, CDOT implements and enforces its MS4 Construction Sites Program statewide on all projects holding a CDPS-SCP, regardless of a project’s location inside or outside of CDOT’s MS4 permit area. This is done to maintain consistency and efficiency; however, reporting and oversight requirements will differ if outside CDOT’s MS4 permit area. CDOT also requires a SWMP for every construction project, regardless of the size of the disturbance area.

CDOT’s MS4 Construction Sites Program Manual, available on the CDOT Water Quality Program website, provides additional guidance including CDOT standard operating procedures, SWMP requirements, documentation/reporting requirements, and applicable training and required certifications.

The CDOT Water Quality Report outline can be obtained here:

<https://www.codot.gov/programs/environmental/water-quality/stormwater-programs/pwq-permanent-water-quality/assets/2017-3-1-final-water-quality-report-outline.pdf>

Permanent Water Quality Management. CDOT’s MS4 PWQ Program controls and reduces post-construction discharges of pollutants to its MS4. CDOT developed and implements standard operating procedures to guide the evaluation process to determine if PWQ control measures are needed and, if so, the design and approval process, construction inspection and acceptance requirements, long-term operation and maintenance procedures, tracking, and record-keeping. As part of the program, CDOT also contributes and manages a PWQ Mitigation Pool Fund to ensure compliance by dedicating funds to construct PWQ control measures that treat the CDOT MS4 area.

The MS4 PWQ Program is described in more detail below for a better understanding of how PWQ should be considered for projects.

Illicit Discharges Program. This program focuses on reducing illicit discharges, illicit connections, and illicit dumping, collectively referred to as “illicit discharges,” within the CDOT MS4 permit



area. The program uses training/education, identification, reporting, investigation, tracking, and removal to curtail illicit discharges.

Industrial Facilities Program. CDOT requires all facilities that discharge stormwater into CDOT's storm drain system to obtain a specific authorization. The program prioritizes education to promote the proper management of potential pollutants in stormwater discharges from industrial facilities.

Pollution Prevention and Good Housekeeping Program. CDOT implements this program to prevent or reduce water quality impacts from pollutants being discharged to the MS4 from CDOT's facilities and maintenance operations. The program achieves this goal through development of procedures and implementation of control measures for several types of CDOT maintenance facilities and operations with stormwater discharges not authorized under a separate CDPS discharge permit. The program also provides training to CDOT maintenance personnel on proper implementation and inspection procedures.

Public Education and Outreach. CDOT implements a public education program to promote behavior change by the public to reduce pollutants in discharges from the MS4. The program includes a variety of outreach activities for employees and the public such as brochures, fact sheets, posters, newsletters, workshops, conferences, and website development and maintenance.

Wet Weather Monitoring. CDOT implements this program to understand the impact on water quality from CDOT roads, ROWs, maintenance facilities, and permanent water quality control measure practices associated with stormwater discharges.

Program description documents describing each of CDOT's seven MS4 programs are provided on CDOT's water quality website: <https://www.codot.gov/programs/environmental/water-quality/stormwater-programs>

These documents are updated as necessary to reflect current conditions, practices, and design standards.

MS4 Permanent Water Quality Program

The CDOT PWQ Program provides direction, criteria, and procedures to ensure that permanent water quality control measures are incorporated, as appropriate, into CDOT projects. CDOT's MS4 PWQ Program is a unique program as it includes a PWQ mitigation pool to implement control measures in the MS4 permit area. In 2014, CDOT worked with the CDPHE WQCD to develop the current PWQ Program's Mitigation Pool Fund. The WQCD approved this innovative program, the first of its kind in the nation, in April 2014 under the 2007 MS4 Permit.

The Mitigation Pool Fund established a regional approach to installing PWQ control measures on projects. This new program takes the most successful elements of the PWQ Program and provides dedicated statewide funding to install larger-scale control measures that meet the requirements of protecting state waters. Using design standards proven to limit pollution in receiving waters, the Mitigation Pool Fund promotes more efficient use of taxpayer dollars, supports collaboration with local agencies, and ultimately treats CDOT's entire MS4 area.

Projects must assess and identify the potential need for PWQ control measures early in project development so that they can be incorporated into preliminary design and the environmental compliance process. Many considerations influence control measure design and selection such as physical site and hydrologic characteristics, space constraints, safety, maintenance, and regulatory



considerations. Projects may require additional ROW to accommodate onsite PWQ control measures that should be included in the environmental process. In instances where the project involves another or multiple MS4 jurisdictions, it is important to initiate early conversations to establish agreement on jurisdiction to understand what requirements will apply to the project. It should also be established early if existing PWQ control measures are present that may be affected by the project. Locations of PWQ control measures are depicted on CDOT's OTIS and C-Plan ArcGIS mapping applications.

The CDOT *Permanent Water Quality Program Manual* on the CDOT water quality program website provides guidance on evaluating if PWQ control measures are required, eligibility criteria for Mitigation Pool Funding, and relevant standard CDOT forms and procedures for required approvals. Most transportation projects are not required to treat stormwater runoff from the project's limits by constructing PWQ control measures because of new program requirements. Instead, CDOT distributes funds for design, ROW acquisition, environmental clearances, and construction of PWQ control measures that treat CDOT's MS4 area through a competitive application process. A subset of transportation projects, however, must treat runoff from the project's limits because they have a greater chance of affecting water quality. Additionally, not all projects are eligible for funding from the PWQ Mitigation Pool.

All projects that require PWQ control measures must treat a specific impervious area dictated by the site characteristic that triggered the need for PWQ treatment. There are three possible triggers: the EA/EIS trigger, the 303(d) trigger, and the Cherry Creek trigger. More than one trigger may apply, and the requirements of all triggers must be met.

The CDOT *Drainage Design Manual* (CDOT, 2019b) provides specific design criteria for PWQ control measures, including a description of those allowed for use, those disallowed without specific approval, and a summary of required documentation for proper PWQ program compliance.

The CDOT MS4 Permit *Permanent Water Quality Program*, current Phase I/II CDPS permit, SWMP preparation guidance, *Erosion Control and Storm Water Quality Guide*, *Drainage Design Manual*, and a map illustrating the locations of the Phase II areas in Colorado are available on the CDOT Water Quality website at <https://www.codot.gov/programs/environmental/water-quality/documents>

9.5.2 NEPA Document Sections

Water quality modeling and documentation in the Affected Environment and Environmental Consequences chapter of EAs and EISs is discussed below.

Affected Environment

The subsection discusses documentation needs for the Affected Environment chapter of EAs and EISs. The level of detail will vary with the importance of the watershed that the project affects and the potential impact. At a minimum, the Affected Environment chapter should contain a discussion of the following.

Introduction and Table of Common Highway Runoff Pollutants - The introduction should briefly describe why water quality is analyzed in NEPA documents. Areas to focus on include WQCC regulations and CDPS. A table of common highway pollutants should be included similar to that of **Table 9-5**.



Table 9-5. Potential Contaminants from Transportation Projects that May Impact Water Resources

Construction Phase Source	Construction Phase Pollutants
Adhesives	Phenols, formaldehydes, asbestos, benzene, naphthalene
Cleaners	Metals, acidity, alkalinity, chromium
Plumbing	Lead, copper, zinc, tin
Painting	Volatile Organic Compounds (VOCs), metals, phenolics, mineral spirits
Wood	Biological Oxygen Demand (BOD), formaldehyde, copper, creosote
Masonry/concrete	Acidity, sediment, metals, asbestos
Demolition	Asbestos, aluminum, zinc, dusts, lead
Yard operations and maintenance	Oils, grease, coolants, benzene and derivatives, vinyl chloride, metals, BOD, sediment, disinfectants, sodium arsenate, dinitro compounds, rodenticides, insecticides
Landscaping and earthmoving	Pesticides, herbicides, fertilizers, BOD, alkalinity, metals, sulfur, aluminum sulfate
Materials storage	Spills, leaks, dust, sediment
Operation Phase Source	Operation Phase Pollutants
Leaks, spills, accidents	Oil, gasoline, diesel, grease, VOCs, chemicals, other potentially hazardous materials
Vehicle traffic	Oils, grease, gasoline, diesel, benzene and derivatives, aromatic hydrocarbons, coolants, rust (iron), heavy metals (lead, zinc, iron, chromium, cadmium, nickel, copper), rubber, asbestos
Winter sanding	Sediment
Deicing	Calcium, sodium, magnesium, chloride
Landscape maintenance	Herbicides, pesticides, fertilizers, BOD, alkalinity, metals, sulfur, aluminum sulfate
Adhesives	Phenols, formaldehydes, asbestos, benzene, naphthalene
Cleaners	Metals, acidity, alkalinity, chromium
Painting	VOCs, metals, phenolics, mineral spirits

General Watershed Information - This includes the name of receiving waters and the larger tributaries. Lakes, reservoirs, and special basins under WQCC Regulations 71-75 in the project area should also be identified. Additionally, a search for basin specific studies and master plans should be completed. Flow regimes should be discussed for all surface waters. If available, a reference to the sub-basin map should be made if that work is completed as part of the hydraulic or floodplain



report. The presence of a Wild and Scenic River also needs to be mentioned. Percent impervious surface, percent agricultural land, topographic relief and any other land accounting for 20 percent or more of the total watershed area should be noted. Topographic relief and all areas of impervious surface and agricultural land uses should be noted regardless of size. All land uses that affect water quality at the project location should be noted.

Scoping Summary - Federal, state, and local agencies provide useful information about drinking water sources, wastewater treatment facility locations, water quality monitoring data, MS4 permit requirements, and fish and wildlife habitat during the scoping phase. It is important to check with the local agency's MS4 requirements and ask questions similar to the following:

- ▶ Should the contractor obtain a CDPS permit for stormwater discharges or dewatering?
- ▶ Are there standard erosion and sediment controls?
- ▶ Are there specifics with detention basins?
- ▶ Does the local agency require the contractor to obtain a stormwater permit from them?

This information should be summarized in this section.

Soils - Soil types should be mentioned if there is a history of erosion or deposition problems in the project area. To encourage infiltration of stormwater, certain highly permeable soil types should be flagged for infiltration water quality control measures.

Historic and Current Development - Mining, industrial sites, agriculture, water diversions, and stream channelization are important topics to cover in this part. If most of this information is contained in the Land Use section of the NEPA document, a simple reference can be made.

WQCC Regulations - The author should list all the WQCC regulations that apply to the watershed in the study area. This includes surface water classifications and standards, groundwater classifications and standards, point source discharge regulations and potential permits (CDPS), watershed protection regulations, drinking water regulations, and implementation of the CWA Section 303(d) requirements (impaired waters list and monitoring list - Regulation 93).

MS4 Permanent Water Quality Program Requirements - The author should address whether the project is located in CDOT's MS4 permit area and, if so, provide a brief discussion about the construction and post-construction requirements of CDOT's PWQ Program. If the project is in another MS4 jurisdiction, applicable requirements and any reached agreements on jurisdiction should also be described.

Drinking Water Sources, Wellhead Protection Areas - General locations of these resources should be identified if they occur in the study area or could be affected by the project action. The best source of information on these resources is from local governments or water supply agencies. They are also covered in WQCC Regulations #41 and #42.

Fish and Threatened and Endangered (T&E) Species Habitat - The presence of Gold Medal Trout Streams and Wild Trout Waters should be discussed. Also, the presence of T&E habitat within any stream or riparian corridor needs to be disclosed.

Groundwater - Depth below ground, private wells used for drinking water, and protected groundwater areas listed in WQCC Regulation #42 should be discussed for this topic. The CDOT



project team should decide on the radius to use for those wells that should be considered. Typically wells within the project study area should be considered.

Graphics - The Affected Environment chapter should include a map of all surface water and important groundwater features in the project vicinity. This map should be of sufficient scale to include important segments of surface waters upstream and downstream of the project. Labels for use classification, impairment, monitoring and evaluation (WQCC Regulation #93), Gold Medal Trout Streams, Wild Trout Waters, and T&E habitat should be included with each segment. The map should also illustrate the boundaries of Phase I/II and expanded MS4 permit areas. Features such as drinking water supplies, wastewater treatment facilities, and wellhead protection areas can be added with the consent of the agency with jurisdiction.

Design criteria relating to PWQ control measures are also addressed in the following documents:

- CDOT Drainage Design Manual (CDOT, 2019b) <https://www.codot.gov/programs/environmental/water-quality/drainage-design-manual-2019>
- Urban Storm Drainage Criteria Manual, Volume 1 & 2 & 3. [Criteria Manual | Mile High Flood District \(mhfd.org\)](#)

Environmental Consequences

This section discusses documentation needs for the Environmental Consequences section of EAs and EISs. The level of detail will vary with the importance of the watershed that the project affects. At a minimum, the Environmental Consequences section should compare the effects of the alternative carried forward for detailed analysis in the following 11 categories.

Impervious Surface - Calculate impervious surface for the alternative, including the No Action alternative. Compare percentages and acres in a graph or a table. Analyze other dominant land uses, along with impervious surface. If possible, include a measure of the connectedness of the impervious surface areas and their configuration and proximity within the watershed landscape. Long narrow areas oriented perpendicular to surface flow will have a different effect than an area of the same configuration oriented parallel to surface flow. Discuss the potential for downstream and upstream increases in backwater elevations from increased impervious surface areas (volume) and increased velocities of discharge (rate), including increased potential for and effects of flash floods.

Stream Modifications - Discuss stream channelization, relocation, and bank stabilization for the alternative is discussed. Disclose any major differences in stream segment impacts (in linear feet). Discuss changes in flow regimes (temporary or permanent) as a result of the project. Discuss the potential for increased erosion of streambeds and drainage areas causing increased sediment loads; both effects from higher discharge velocities in drainage channels and streams are caused, in turn, by larger impervious surface areas to be drained.

Stream Crossings - Analyze the number of stream crossings for the alternative. Give special attention to new crossings.

Fish and T&E - Disclose effects to Gold Medal Trout Streams, Wild Trout Waters, and T&E species. Refer to the Fish and T&E sections of the NEPA document.



Drinking Water Supplies and Wastewater Treatment Facilities - Address pollutant loading from roadway runoff that has the potential to affect downstream drinking water supplies and wastewater treatment facilities for the alternative. Address the potential for impairment of any designated uses of receiving streams, especially “aquatic life class 1” uses, which will most always be adversely affected by very low levels of heavy metals and polyaromatic hydrocarbons (PAHs) in highway runoff.

Use Classifications, Impairment/Monitoring Status - Discuss possible changes in stream segment Use Classifications, TMDL, and monitoring status due to highway runoff.

Water Quality Modeling - In certain instances, use water quality modeling to evaluate relative differences in pollutant loading among alternatives. The need to use a model is determined on a project-by-project basis. The decision to model is made by the RPEM in consultation with EPA, FHWA, and EPB. Written concurrence from EPA and FHWA on whether or not to model is suggested. A flow chart is shown on **Figure 9-2**.

Monitoring Needs - It is rare to conduct water quality monitoring for CDOT projects during the NEPA phase. In instances where the RPEM determines that it is necessary, this information should be included in the Environmental Consequences section. Document conclusions from the monitoring data regarding expected effects from the alternative on the receiving water. Monitoring data may also be necessary when determining the need to use a water quality model.

Construction - Discuss the area of disturbance for the alternative when there are noticeable differences among alternatives.

Maintenance - Discuss the effects of maintenance practices for the study area and any major differences among the alternatives.

Conclusion of Effects - Restate the conclusion of the biggest water quality concerns associated with the alternative.

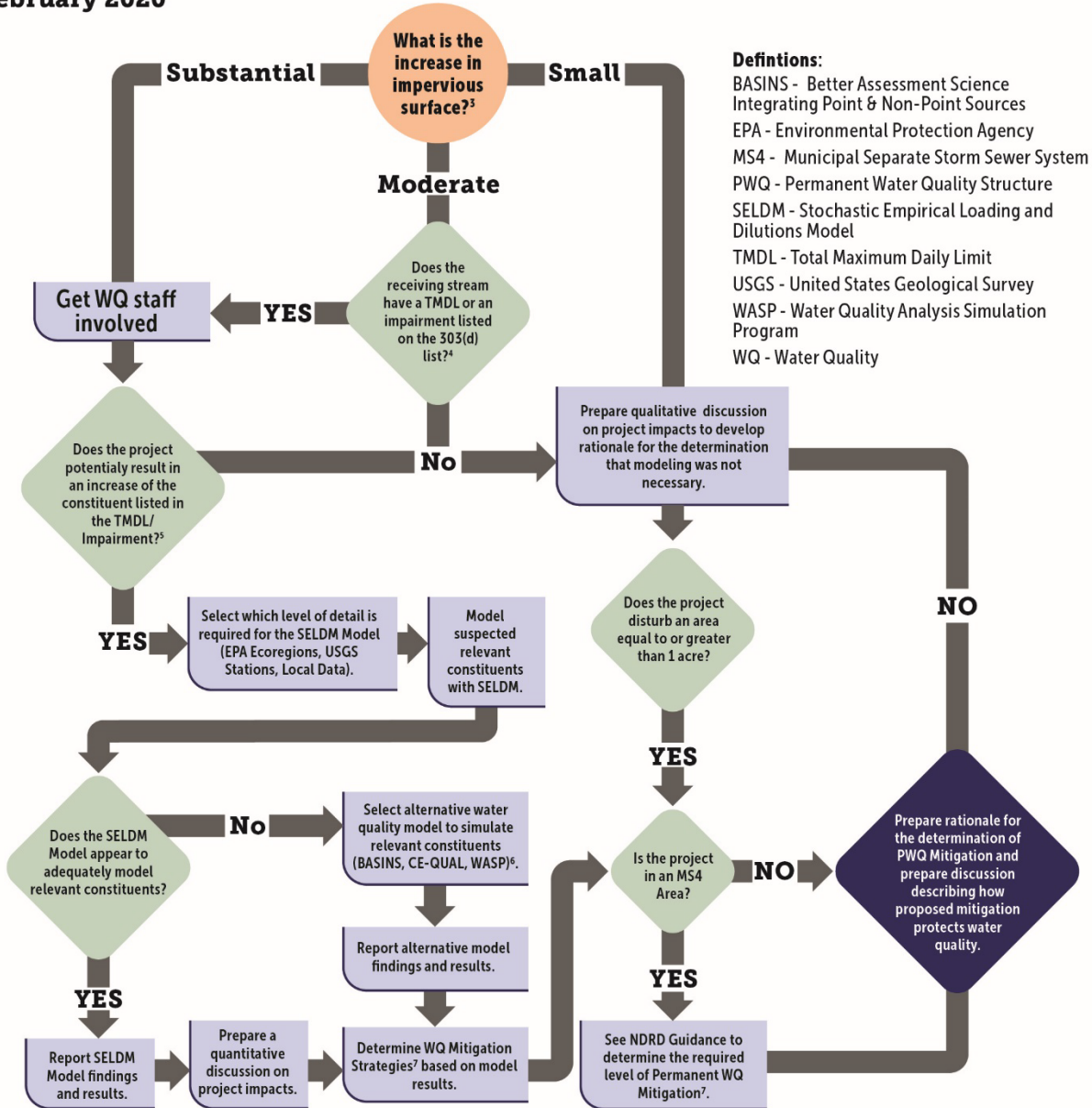
Once effects are assessed in the Environmental Consequences section, evaluate mitigation measures. Water quality control measures eliminate or reduce the identified impacts during construction, as well as during operations and maintenance. When water quality control measures are installed and maintained correctly, they are effective at mitigating water quality effects resulting from highway runoff. Water quality control measures expected to be part of a proposed action or alternative, as a mandate or requirement, can be set forth as part of the proposed description of the proposed action or alternative.



Figure 9-2. Water Quality Model Program Decision Tree

Water Quality Model Program Decision Tree
February 2020

Note that this decision tree only addresses long-term/operational WQ impacts and mitigation. All projects will also need to address short-term/construction WQ impacts and mitigation.^{1,2}



Notes:

- 1 - If a project does not fit this decision tree, contact CDOT WQ staff (Regional and EPB), and coordinate with FHWA and resource agencies to determine whether the project can obtain a waiver from this process.
- 2 - If a project is a bridge project, FHWA strongly recommends that all drainage from bridges be conveyed to the ends of the bridge and is mitigated before being discarded.
- 3 - An "increase in impervious surface" is split into three categories:^{*}
 - a) Small** - less that a 1 acre increase in impervious area.
 - b) Moderate - an increase of impervious area between 1 and 10 acres.
 - c) Substantial - greater than 10 acres of increase in impervious area.
- 4 - Sensitive waters as defined by either:
<http://www.cdphe.state.co.us/regulations/wqccregs/100293wqlimitedsegmtmdlnsnew.pdf>
 or
<http://www.cdphe.state.co.us/wq/assessmet/TMDL/TMDLs.html>
- 5 - If sufficient WQ commitments are included within the NEPA document, so that the project will not exacerbate WQ impairment, then the answer to this decision point is "No," and subsequent decisions follow the "No" path.
- 6 - Refer to the Technical Report.
- 7 - WQ Mitigation includes BMPs, PWQ, or any other approved type of mitigation.

^{*}Based on preliminary data and best professional judgment, the numbers defined above for the three categories will be changed as more data is gathered and analyzed.
^{**} Activities that are listed as excluded from NDRD permanent water quality BMP requirements per CDOT's MS4 permit, as of 12/31/2011 shall automatically be placed in the Small category.



Permanent Water Quality Control Measures

If PWQ control measures are required to be incorporated into the project, CDOT's standard process outlined in the Permanent Water Quality Program Manual should be followed in close coordination with CDOT's regional hydraulic engineer, CDOT Maintenance, the RPEM, CDOT's Landscape Architect, the Region Water Pollution Control Manager, and the Environmental Project Manager. The mitigation section of the EA and EIS should describe general locations and possible types of PWQ control measures; however, it is important that PWQ control measures be included within conceptual plans and within a larger footprint. Detailed design for water quality control measures is not necessary for a FONSI or ROD. For CatExs, exact locations and design details are usually provided in Final Office Review (FOR) plans and before RPEM signature of CDOT's Form 128.

Design criteria relating to PWQ control measures are also addressed in the following documents:
CDOT **Drainage Design Manual** (CDOT, 2019b), Chapter 16

<https://www.codot.gov/programs/environmental/water-quality/drainage-design-manual-documents-sept-2019/20210630-drainage-design-manual-chapter-16-1.pdf>

Construction Water Quality Control Measures

Construction water quality control measures and a SWMP to address erosion and sedimentation on construction sites are needed for every project in CDOT ROW (including access permits). There is no requirement to list all the construction water quality control measures for a project in an EA, an EIS, or a CatEx. These water quality control measures, along with project specifications, are included as part of the FOR plan set in final design. If the project disturbs one acre or more or is part of a larger common plan of development, the project will also require a CDPS stormwater construction permit (SCP) from the WQCD. The mitigation section of EAs and EISs should simply state that temporary water quality control measures will be included in the final design phase of the project.

A SWMP review is required if there is ground disturbance. Early acquisition projects, parcel disposals, and/or projects in which there is a change in ownership (e.g., devolutions and relinquishments), will not require a SWMP review.

Maintenance

The EA or EIS should also evaluate and discuss mitigation for maintenance activities. Interviews with CDOT maintenance personnel who are responsible for the project area are useful in determining sweeping, trash collecting, plow training, technology advances in deicing applications, product storage practices, and if they have the proper equipment to maintain PWQ if needed.

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table (Table 9-2)* is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for water quality.



9.6 Floodplains

Water Quality and Floodplains technical reports can be combined into a single report or technical memorandum, as appropriate, and in consultation with the CDOT RPEM.

A floodplain is the lowland adjacent to water bodies such as a river, creek, stream, or lake. Floodplains are designated by the size and frequency of floods large enough to cover them. Flood frequency is often described by the probability of being equaled or exceeded during any given year (percentage probability of flooding). For example, the 100-year flood has a 1 percent chance of occurring in any given year. Following are a few important definitions related to floodplains (Modified from *Metropolitan Sewer District, Louisville, KY*, Federal Emergency Management Agency [FEMA] General Provision Definitions [44 CFR 59.1]), and Section 2.4 of the CDOT *Drainage Design Manual*.

100-year Flood - A flood that has a 1-percent chance of being equaled or exceeded in any given year (also known as the 1-percent annual chance flood or base flood).

100-year Floodplain - The area of land susceptible to being inundated by a 100-year flood.

500-year Flood - A flood that has a 0.2-percent chance of being equaled or exceeded in any given year (also known as the 0.2-percent annual chance flood).

500-year Floodplain - The area of land susceptible to being inundated by a 500-year flood.

Regulatory or Base Flood Elevation (BFE) - The flood having a 1 percent chance of being equaled or exceeded in any given year. The 100-year flood has become the accepted national standard for regulatory purposes. For regulatory purposes, the floodplain is divided into two areas based on water velocity: the floodway and the flood fringe.

Conditional Letter of Map Revision (CLOMR) - FEMA's review comments on whether a proposed project complies with National Flood Insurance Program (NFIP) criteria.

Development - Any human-made changes to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations.

Floodway or Regulatory Floodway - The area of the floodplain that should be reserved (kept free of obstructions) to allow floodwaters to move downstream.

Flood Fringe - The portion of the floodplain outside the floodway that usually contains slow-moving or standing water. Because development in the fringe will not normally interfere as much with the flow of water, floodplain regulations typically allow development in this area but require that structures are protected.

If the Local Agency allows a PWQ feature, then their guidance takes primacy.

Encroachment - An activity within the floodplain or floodway including fill placement, new construction, and substantial improvements.

Flood Insurance Rate Map (FIRM) - Maps prepared by FEMA that show areas subject to flooding.

Flood Insurance Study (FIS) - A hydraulic study prepared by FEMA that accompanies a FIRM.



Floodway - The stream channel plus that portion of the overbanks that must be kept free from encroachment to convey the 100-year flood without increasing BFEs by more than 0.5 ft, as defined by the Colorado Water Conservation Board (CWCB) in Rules and Regulations for Regulatory Floodplains in Colorado, the most recent version at the time of the update of this Manual was from 2010.

Floodplain Development Permit - A permit required by the local community to build within the floodplain. The permit name may differ by community (e.g., Floodplain Use Permit).

Letter of Map Change (LOMC) - The combined term for the two letters issued by FEMA for projects located within a floodplain: CLOMR and LOMR.

Letter of Map Revision (LOMR) - FEMA's review of the as-built conditions of a constructed project and the associated changes to the floodplain. A LOMR results in an official change to the FIRM and FIS report.

No-Rise Certification - The terminology for when a proposed project causes a 0.00-ft increase in BFE between the existing conditions and the proposed conditions. Note that the existing conditions at a site may differ from the effective FEMA information due to changes in topography, new structures, local information, natural channel evolution, or other land-use and fluvial geomorphologic processes.

Special Flood Hazard Area (SFHA) - The type of 100-year floodplain as designated by FEMA. The most common types found in Colorado include:

- ▶ **Zone A** - An approximate floodplain that has not been determined using detailed hydraulic models. These do not include BFEs but are rather the shaded floodplain area themselves.
- ▶ **Zone AE** - A detailed floodplain that has been determined using a hydraulic model. These floodplains include BFEs and often a floodway.
- ▶ **Zone AH** - An area subject to ponding of flood waters with average depths between 1.0 and 3.0 feet.
- ▶ **Zone AO** - An area of shallow flooding (usually sheet flow on sloping terrain) with average depths between 1.0 and 3.0 feet.
- ▶ **Zone A1-30** - Equivalent to the Zone AE SFHA defined previously. Zones A1 through A30 are found on older FEMA floodplain maps and still exist for some parts of Colorado.
- ▶ **Zone A99** - Areas protected by a Federal flood-protection system where construction has reached specified statutory milestones. No BFEs or depths are shown within these zones.

Floodplains possess significant natural values and serve many important functions. These include water resources (such as natural moderation of floods, maintenance of water quality, and groundwater recharge), living resource services (such as fish, wildlife, and plant resources), cultural resource services (open space, natural beauty, scientific study, and outdoor recreation), and cultivated resource services (such as agriculture, aquaculture, and forestry).

CDOT is required to follow the guidelines established by the CWCB through the Rules and Regulations for Regulatory Floodplains in Colorado.



CDOT has prepared detailed guidance on evaluation and documentation of floodplains in the *Drainage Design Manual* (CDOT, 2019b). The instructions in the *Drainage Design Manual* have primacy over **Section 9.6**, which is intended to summarize in simpler terms the treatment of floodplains for CDOT's NEPA projects.

The following subsections provide guidance on the treatment of floodplains for CDOT's projects. **Subsection 9.6.1** discusses the process for evaluating floodplains. **Subsection 9.6.2** discusses floodplain information that should be in each NEPA document.

9.6.1 Floodplain Evaluation Process

CDOT evaluates the potential footprint of the alternative for all transportation projects to ensure that they would not encroach on or alter floodplains and cause future flooding or other adverse impacts to CDOT assets and to adjacent private and public properties.

The floodplain evaluation should be completed when alternatives for the proposed action are first being designed and developed. Baseline information about floodplains should be obtained and addressed before initiating the NEPA process.

Significant Impacts

If a preferred alternative includes a significant impact of floodplain encroachment, refer to Executive Order 11988 Floodplain Management (1977).

Reasons for Evaluation of Floodplains Under NEPA

CDOT conducts floodplain assessments to:

- ▶ Ensure that floodplains are identified and that their services and functions are protected to the maximum extent possible
- ▶ Comply with CDOT's Environmental Stewardship Guide (2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner
- ▶ Comply with Federal acts and executive orders
- ▶ Comply with local standards enforced at a community level by NFIP requirements for all development initiated in regulatory floodplains

The regulations, advisories, and orders are directed toward the treatment of floodplains under NEPA. The intent of these regulations is to avoid or minimize highway encroachments within 100-year (base) floodplains, where practicable, and to avoid supporting land use development that is incompatible with floodplain services. Under the requirements of Executive Order 11988 *Floodplain Management* (Executive Order 11988, 1977), all Federal-aid projects must make diligent efforts to:

- ▶ Avoid support of incompatible floodplain development
- ▶ Minimize the impact of highway actions that adversely affect the base floodplain
- ▶ Restore and preserve the natural and beneficial floodplain services
- ▶ Be consistent with the standards/criteria of the NFIP of FEMA



Complementary to Executive Order 11988, Executive Order 13690 *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input* (Executive Order 13690, 2015), was issued in January 2015 to improve the resilience of communities and Federal assets against the impacts of flooding.” The Executive Order requires agencies to prepare for and protect federally funded buildings and projects from flood risks through the development of the Federal Flood Risk Management Standard (FFRMS).

The FFRMS gives flexibility and requires agencies to select one of the three approaches for establishing the flood elevation (“how high”) and corresponding flood hazard area (“how wide”) used for project siting, design, and construction (Executive Order 13690, 2015).

In addition to Federal and state laws and regulations, local jurisdictions may have ordinances and regulations outlining higher or more stringent standards than the CWCB that must be followed. The CDOT Project Engineer must coordinate with counties, cities, regional districts, and other regulatory jurisdictions in the study area to ensure any proposed encroachment or alteration or other activities defined as development within of a floodplain meet their requirements.

Collection and Evaluation of Baseline Information

Early collection of baseline floodplain information ensures that alternatives that may encroach on or alter floodplains are identified early. The alternatives can then be designed to avoid such areas or minimize impacts to them. The CDOT Hydraulic Engineer will prepare a hydraulic study (FHWA, 23 CFR 650A), which will include the following information commensurate with the significance of the flood risk or environmental impact:

- ▶ Practicality of alternatives to any longitudinal encroachments
- ▶ Risks associated with implementation of the action
- ▶ Impacts of incompatible floodplain development
- ▶ Measures to minimize floodplain impacts
- ▶ Measures to restore and preserve the natural and beneficial floodplain services impacted

Bridge piers are considered a floodway encroachment.

The magnitude of the study will vary depending on the level of significance of the base floodplain encroachments:

- ▶ **Significant Encroachment** - May result in a high probability of loss of human life, will likely cause future damage that could be substantial in cost or extent (including interruption of service or loss of vital transportation facilities), or will cause a notable adverse impact on natural and beneficial floodplain services.
- ▶ **Minimal Encroachment** - There is floodplain involvement but the impacts on human life, transportation facilities, and natural and beneficial floodplain services are not significant and can be resolved with minimal efforts.
- ▶ **No Encroachment** - There are floodplains near the proposed alternatives, but there is no floodplain encroachment.
- ▶ **No Involvement** - There are no floodplains near the proposed alternatives.



If a proposed project will involve a regulatory floodway, the CDOT Hydraulic Engineer or designee must work with local agencies, CWCB, Regional Flood Districts and FEMA to ensure that the project is developed consistent with local floodway plans and floodplain management programs. The CatEx, EA, or EIS must document this coordination effort. An additional requirement for projects is coordination with the appropriate U.S. Army Corps of Engineers (USACE) district regulatory office. For example, when a project might encroach on a regulatory floodplain, the CDOT RPEM or resource specialist must contact the local floodplain authority early in the planning process to enable USACE's floodplain management concerns to be addressed and incorporated into the initial project design (prior to platting).

For information about the USACE's role in floodplain management, refer to the USACE Water Resources Management website at:

<http://www.iwr.usace.army.mil/>

A transportation project may affect floodplains by encroaching on, altering the floodplain width, or raising the BFE. CDOT's policy on floodplains is to prevent unnecessary use and development of floodplains or use that may result in hazards. CDOT's policy on floodways is to cause no rise in BFE without an approved CLOMR from the governing Regional, State or Federal agency identified by local floodplain administrators.

CDOT's specific procedures for evaluating impacts to floodplains are discussed in Section 3.06 of the CDOT *Project Development Manual* (CDOT, 2013b).

Design solutions should minimize impacts to the floodplain and be developed cooperatively with USACE, FEMA, and the affected communities. Once the alignment of the project alternatives is available, the CDOT Project Engineer must determine if one or more of the project alternatives could impact a regulatory (100-year) floodplain or increase flood risks in a NFIP community. Circumstances that would require coordination with the affected NFIP community and FEMA include the following (FHWA, 1982):

- ▶ A proposed crossing encroaches on a regulatory floodway and requires an amendment to the FIRM or certification of no rise in the BFE
- ▶ A proposed crossing encroaches on a floodplain where a detailed study has been performed but no floodway is designated and the maximum 0.5-foot increase in the BFE would be exceeded
- ▶ A local community is expected to enter into the regular (non-emergency) flood insurance program within a reasonable period and detailed floodplain studies are underway
- ▶ A local community is participating in the emergency flood insurance program and BFE near insurable buildings is increased or decreased by more than 0.3 feet

If insurable buildings are not affected, it is sufficient to notify FEMA of changes to BFEs because of highway construction through the local floodplain development permit process, or LOMC as required by the floodplain administrator. Once the impact analysis is complete, evaluate the potential mitigation measures available to eliminate or reduce the impacts and document them for floodplain development permit or LOMC approvals. Note that no rise certifications and LOMCs require certification from a professional engineer licensed to practice in Colorado, and if a no rise certification is not possible, a project clearance may require 18 to 24 months to prepare and approve a pre-construction CLOMR.



Other Issues to Consider

Along the Colorado Front Range, USACE has also determined that an unacceptable cumulative degradation of floodplain functions and services is occurring and it is working to reduce this problem. Therefore, it is unlikely that USACE will approve a Section 404 permit that fills part of an existing 100 year floodplain to increase developable land along the Colorado Front Range.

9.6.2 NEPA Document Sections

The content of the sections on floodplains in the Affected Environment and Environmental Consequences chapter is discussed below.

Affected Environment

The floodplain description and map should have sufficient detail to allow determination of whether the project alternatives may or will encroach on or impact these floodplains. If a preliminary evaluation of potential impact shows that no project impact on floodplains could possibly occur, no further information on floodplains is required in the Affected Environment chapter.

If the project may or will encroach on or alter a floodplain, more detailed information must be provided in the NEPA document's Affected Environment chapter, as follows:

- ▶ Discuss the uses of the floodplain, such as flood conveyance and groundwater recharge; cross reference uses by other resources to their respective sections.
- ▶ Provide a map showing the floodplain within the project area, including all locations where the project may cross these floodplains. All 100-year (base) floodplains should be identified and labeled by FEMA Zone, if present.
- ▶ Illustrate the base (100-year) floodplain by using FEMA maps and studies, including Flood Insurance Rate Maps (FIRM), Flood Insurance Studies (FIS), and local flood maps or master plans, if available. Other sources include the U.S. Geological Survey, USACE, NRCS, Bureau of Land Management (BLM), and the U.S. Forest Service (USFS) if previously mentioned maps are not available. Most regulatory floodplain information is published nationally at the FEMA Map Service Center (<https://msc.fema.gov/portal/home>) and statewide at the CWCB Colorado Hazard Mapping and Risk MAP Portal: <https://coloradohazardmapping.com/>
- ▶ Summarize information from the Project Hydraulic Engineer on hydraulic studies conducted for the alternatives and hydrologic factors that affect the floodplains in the area crossed by the proposed project.

If no impacts were identified in relationship to the CDOT project, state this in the NEPA document and conduct no further analysis.

Affected Environment Chapter of NEPA Document

- Summary of natural services, uses, and functions of floodplains
- Map showing floodplains within the project area and alignment of project alternatives, specifically identifying boundaries of 100-year floodplains
- Summary of information from hydraulic or hydrologic studies conducted by CDOT or others



Environmental Consequences

Summarize the results of CDOT’s project location hydraulic study briefly in the NEPA document. Discuss alternatives that have the same floodplain impacts together and contrast those that differ so that similarities and differences in alternative floodplain impacts are clear. The Environmental Consequences section of the NEPA document for floodplains should identify the number and location of encroachments, as well as any incompatible floodplain developments and their potential impacts. Assess both direct (construction and operational) and indirect impacts.

If any proposed alternative supports incompatible floodplain development or results in a floodplain encroachment that significantly affects the human environment (EIS only), has impacts for which the significance is not clearly established (EA), or requires a commitment to a minimum structure size or type, the EA or EIS should include an evaluation and a discussion of practicable alternatives to the significant encroachment or proposed structure. If an alternative encroaches on a floodway, the NEPA document must address the following questions:

- ▶ Can the encroachment be located so that it is consistent with the floodway/floodplain?
- ▶ Can the floodway/floodplain be revised to accommodate the proposed project?
- ▶ Can the floodway/floodplain be avoided?

For each alternative encroaching on a designated or proposed regulatory floodway, the draft NEPA document should provide a preliminary indication of whether or not the encroachment would be consistent with or require a revision to the regulatory floodway by LOMC. If any alternative results in a floodplain encroachment or supports incompatible floodplain development having significant impacts or requires a commitment to a particular structure size or type, include an evaluation and a discussion of practicable alternatives to the structure or encroachment in the NEPA document.

If the preferred alternative includes a floodplain encroachment having significant impacts, the final NEPA document must include a finding that this alternative is the only practicable alternative and refer to Executive Order 11988 Floodplain Management (1977), and National Flood Insurance Act (23 CFR 650, Subpart A), or 44 CFR Parts 59, 60, 65 and 72. This finding should be included in a separate subsection entitled “Only Practicable Alternative Finding.”

The discussion in this section must include the following information:

- ▶ Reasons why the proposed action must be located in the floodplain
- ▶ Alternatives considered and why they were not practicable
- ▶ Statement indicating that the action conforms to applicable state or local floodplain protection standards

Environmental Consequences Section of NEPA Document

- Summarize results of the Hydraulic Study
- If there is no impact, state this and conduct no further analysis
- Identify number, location, and impacts of encroachments and incompatible floodplain developments
- Provide more detailed information on location and impacts for encroachments or incompatible development having significant impacts
- Include exhibits showing alternatives, base floodplains, and where applicable, regulatory floodways



Impacts and Mitigation

The *Summary of Impacts and Mitigation Table* (Table 9-2) is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for floodplains.

Impact Mitigation Section of NEPA Document

- If an alternative encroaches on a regulatory floodway/floodplain, indicate if it would require revision to the regulatory floodway (impacts to floodplains may require a CLOMR)
- For alternatives with significant impacts, discuss practicable alternatives
- Discuss common mitigation measures for impacts
- Include a section in the final EIS discussing the “only practicable alternative” if the preferred alternative includes an encroachment having significant impacts



9.7 Wetlands

Based on the definition used by USACE in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987), the term “wetlands” is defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Wetlands are important because, among other roles, they support aquatic organisms, act as water reservoirs, and trap the particulates and chemicals that might be present in surface sheet flows before they can directly enter streams and rivers. They also serve as a source of water for terrestrial organisms, enhance ecosystem diversity, and provide an ecotone between aquatic and terrestrial environments.

The following two subsections provide guidance on the treatment of wetlands for CDOT’s NEPA projects. The first subsection discusses the process for evaluating wetlands. The second subsection discusses wetland information that should be in each NEPA document.

Wetlands are:

- Important to aquatic and terrestrial organisms
- Key components of hydrologic systems as reservoirs and for filtration
- Habitats that perform many beneficial functions
- Subject to regulation

9.7.1 Wetland Evaluation Process

The EPB or regional wetland specialist is responsible for wetland evaluation. The EPB wetland specialist assists with USACE consultation and FHWA coordination. They are also responsible for developing CDOT processes and policy relative to wetlands, evaluating wetlands within certain CatEx projects, reviewing NEPA documents, and supporting the regional wetland specialists, as needed. The regional wetland specialists are responsible for wetland evaluation on most project development activities, in coordination with the EPB wetland specialist. Regional and EPB resource specialists may be supported by consultants in wetland delineation and evaluation.

Wetland identification and delineation should occur early during project development to ensure alternative designs avoid and minimize impacts and to ensure timely involvement of the USACE. To the extent practicable, wetland delineation should take place during the growing season so that species can be more accurately identified to determine wetland boundaries. After the resource specialist delineates wetlands near a project area, the USACE must approve the boundaries of each wetland, which often includes performing a site visit with the resource specialist. In addition to approving wetland boundaries, the USACE may need to perform an approved jurisdictional determination.



Reasons for Evaluation of Wetlands Under NEPA

Wetland Legislation

- Clean Water Act
- Department of Transportation Order 5660.1A
- Colorado Senate Bill 40
- Executive Order 11990, Protection of Wetlands
- 23 CFR 771
- 23 CFR 777
- Technical Advisory T6640.8A

CDOT evaluates wetlands for several reasons:

- ▶ Wetlands provide important functions (benefits) for people and wildlife, including for state and federally listed threatened and endangered species.
- ▶ To comply with CDOT's Environmental Stewardship Guide (2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner.
- ▶ Federal agencies and their agents have a responsibility under Executive Order 11990 and U.S. DOT Order 5660.1A to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.
- ▶ To comply with legislation regulating and protecting wetlands that pertain to wetlands and water quality under the CWA.
- ▶ To satisfy the CDOT NEPA/Section 404 Merger process.

The regulations and certifications applicable to wetland evaluations are summarized below.

- ▶ **Clean Water Act 1972** - Establishes the basic structure for regulating discharges of pollutants into waters of the United States and regulating quality standards for surface waters. Section 404 of the CWA establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including certain wetlands. Last amended 1987.
- ▶ **Executive Order 11990, Protection of Wetlands 1977** - To "minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands." To meet these objectives, the Order requires Federal agencies, in planning their actions, to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided. Last amended 1977.
- ▶ **Department of Transportation Order 5660.1A 1978** - Provides policy and procedures for the evaluation and mitigation of adverse environmental impacts to wetlands and natural habitat resulting from Federal-aid projects. Last amended 2000.
- ▶ **FHWA 23 CFR 777 Mitigation of Impacts to Wetlands and Natural Habitat 2000** - Provides policy and procedures for the evaluation and mitigation of adverse environmental impacts to wetlands and natural habitat resulting from Federal-aid projects. Last amended 2000.
- ▶ **Technical Advisory T6640.8A 1985** - Indicates the importance of the evaluation of impacts to wetlands. Last amended 1987.



Certain wetlands are regulated under the CWA that requires the jurisdictional status of wetlands be determined and a Section 404 permit be obtained if jurisdictional wetlands will be impacted by a discharge. Section 401 certification may also be required if a project requires a CWA individual permit. USACE is responsible for determining whether a wetland is jurisdictional or non-jurisdictional and for issuing the appropriate Section 404 permit.

As part of their CWA responsibilities and before authorizing use of a permit, USACE must ensure compliance with the CWA. CWA guidance requires that the NEPA preferred alternative be the Least Environmentally Damaging Practicable Alternative (LEDPA). The purpose of Executive Order 11990, *Protection of Wetlands*, is to “minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial services of wetlands.” During project development, Executive Order 11990 requires that Federal agencies and their agents consider alternatives to constructing in wetland habitats and minimize impacts if an activity affecting a wetland cannot be avoided. Project alternatives that avoid wetland impacts are to be selected for further consideration to the exclusion of project alternatives that do not avoid wetland impacts based on EO 11990. FHWA has similar requirements as specified in 23 CFR 777.

Because of the need to fulfill requirements of both NEPA and CWA when wetland impacts are expected, the NEPA/404 merger process was developed. This merger process serves to facilitate early and ongoing integration and coordination of CWA and NEPA requirements. If impacts to wetlands cannot be avoided and an individual permit is required, USACE should be involved under the NEPA/404 merger process in all EISs and certain EAs.

USACE Coordination

- Early and frequent communication and coordination to ensure mutual informational needs are met
- Delineation of wetlands at a seasonally appropriate time
- SACE determination of jurisdiction
- Incorporation of sufficient data to ensure the LEDPA is among alternatives considered in detail

Collection and Evaluation of Baseline Information

The study area considered for wetland resources should include where ground disturbance is expected to occur with an additional buffer for indirect and/or unexpected impacts. In certain cases where a project might have downstream impacts to aquatic resources, wetlands and waters should be delineated outside the project study area. The wetland study area should be presented on a figure in the NEPA document.

All wetlands within the study area should be identified, characterized (e.g., according to wetland type, acreage, and functions), and mapped. In addition, wetland jurisdictional status should be determined in consultation with the USACE. Sources of wetland information and preliminary mapping include:

- ▶ Colorado Natural Heritage Program’s (CNHP) Colorado Wetland Inventory (planning level)
- ▶ CDOT’s OTIS
- ▶ Topographic maps
- ▶ Aerial photographs of the project area
- ▶ USGS National Hydrography Dataset
- ▶ Conversations with local agency personnel and adjacent landowners familiar with the wetland project area



Functional Assessment of Colorado Wetlands (FACWet) website at <https://www.codot.gov/programs/environmental/wetlands/assessment-monitoring>

Colorado Wetland Inventory website at <http://csurams.maps.arcgis.com/apps/webappviewer/index.html?id=a8e43760cb934a5084e89e46922580cc>

Colorado Natural Heritage Program website at <http://www.cnhp.colostate.edu/>

CDOT's OTIS website at <https://dtdapps.coloradodot.info/otis>

The survey of wetlands should be conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987). Supplements to the *Corps of Engineers Wetlands Delineation Manual* must be used for the appropriate region concurrently with the 1987 manual. Based on these protocols, the extent and location of each wetland within the project area must be mapped and described. The presence or absence of wetland-affiliated T&E species or critical habitat will be a component of consultation with U.S. Department of Interior (USDOI) Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA) as further described in **Section 9.10**.

- ▶ The wetland delineations should be performed when the ground is clear of snow and wetland vegetation is well-developed. Once the field work is complete, a report and map of the wetlands must be submitted to USACE for their approval. In addition, a USACE representative may review the delineation report in the field to determine the jurisdictional status for each wetland.

The appropriate USACE District Office must make the final determination of whether the proposed activity requires a permit authorization. Because this may be a lengthy process and because unavoidable project impacts on wetlands must be mitigated, it is important to complete the wetlands delineation as early in the project process as possible. Avoidance of impacts to all wetlands is always an important factor in identifying and selecting project alternatives, as well as in identifying potential impacts from alternatives that are carried through the NEPA process.

Once USACE has approved the delineation report, the wetland impacts of the project may be assessed. Direct impacts are typically quantified based on acreage and functions disturbed. These data are best determined by overlaying project alternatives with the wetland locations.

In addition, the potential for indirect impacts to wetlands from surface runoff, eroded soil, shading, or chemicals must be identified and discussed. This includes the types, extent, and timing of earth disturbances that could result in surface runoff and erosion and any chemicals that will be present in the project area during construction and operation. This can be determined by overlaying the project alternatives, wetland locations, and topography and drainage patterns.

In conducting the analysis of wetland impacts, the FHWA Technical Advisory 6640.8A guidance should be incorporated (FHWA, 1987b):

- ▶ In evaluating the wetland impact of the proposed project, address the functionality of the impacted wetlands and the impact severity. Merely listing the number of acres taken by the various alternatives of a project alternative does not provide sufficient information upon which to determine the degree of impact on the wetland ecosystem.
- ▶ In evaluating the wetland resources and potential impacts, consider the primary functions of the wetlands (e.g., flood control, wildlife habitat, groundwater recharge, etc.), the relative



importance of these functions to the total wetland resource of the area, and uniqueness that may contribute to the wetlands' importance.

- ▶ In determining the wetland impact, show the project's effects on the stability and quality of the wetland(s) by considering the short- and long-term effects on the wetlands and the importance of any loss, such as flood control capacity, shoreline anchorage potential, water pollution abatement capacity, and fish and wildlife habitat.
- ▶ Use the Functional Assessment of Colorado Wetlands (FACWet) method (CDOT, 2013a) to conduct the functional analysis.

Wetland Impacts/Mitigation

- Apply impact and mitigation measures to all wetlands, regardless of CWA jurisdiction
- Avoid whenever possible
- Minimize disturbance to extent practicable
- Identify importance of, and impact severity for impacted wetlands
- Control measures necessary to minimize indirect impacts
- USACE approval of mitigation often required with mitigation banking preferred

Wetland functions should be determined by applying the FACWet method, a CDOT- and USACE-approved wetland functional assessment method. CDOT requires a FACWet analysis for all projects with proposed permanent wetland impacts of 0.1 acre or more.

Knowing the functions of the wetlands proposed for impacts and the degree of the impact, CDOT and FHWA will be in a better position to determine the mitigation efforts necessary to offset wetland losses. The options for addressing potential impacts to wetlands, in decreasing order of desirability, are avoidance, minimization, and compensation for losses. CDOT's policy is to mitigate unavoidable impacts to all wetlands, not just those considered jurisdictional under Section 404.

Examples of Avoidance and Minimization: upland buffers, retaining walls, guardrails, shifting roadway, maintaining hydrology

Guidance on these approaches includes the following:

- ▶ Avoidance, the preferred option, is typically built into the design of an alternative by siting project activities where they will not impact wetlands. Avoidance strategies should be stated as part of the alternative description to prevent any future project modifications from altering this facet of the design.
- ▶ Avoidance of indirect impacts can often be achieved by using control measures during construction and operation. Control measures include actions such as properly installing silt fencing around the perimeter of a construction site, installing perimeter berms and liners in areas used for storage of chemicals, and designing roadway shoulders and drainage systems to direct roadway runoff to areas where it can infiltrate the soil rather than running directly into waterways.
- ▶ Minimization of impacts typically occurs when only partial avoidance can be accomplished. It may be that siting and design constraints necessitate impacting part of a wetland or that water quality control measures are not totally effective. Whatever the reason, impacts to wetlands should always be as small as practicable, given other project constraints.



- ▶ Compensatory mitigation measures that should be considered, in order of preference, include wetland mitigation banking / in-lieu fee, wetland restoration, enhancement, creation, and preservation, as specified in 33 CFR Parts 325 and 332 (2008). The Compensatory Mitigation for Losses of Aquatic Resources, (EPA, 2008) (Final Rule) contains guidelines for choosing a mitigation strategy and specific requirements under Section 404 of the CWA for developing a compensatory mitigation plan. All project wetland mitigation decisions should be made after ensuring the Final Rule guidance is followed.
- ▶ Options for compensatory mitigation include the purchase of credits from wetland mitigation banks or in-lieu fee programs or permittee-responsible mitigation on- or offsite. The use of such measures was mandated in 16 USC Chapter 29 - Water Bank Program for Wetlands Preservation and facilitated when the ISTEA Sections 1006 and 1007 made such purchases available for Federal-aid funding. The use of wetland banks by transportation projects is implemented through FHWA guidance (FHWA, 2003). The use of mitigation banks is limited to project impacts that occur in a bank's geographic service area. A preference for mitigation banking exists when impacted wetland functions are low or ROW conditions prohibit onsite mitigation.
- ▶ Prescribed monitoring requirements to ensure that wetland mitigation commitments are installed and continue to function properly. A monitoring plan with documentation of compensatory responsibilities and performance standards should be completed.

The **MOA between FHWA and CDOT** regarding programmatic approval of certain wetland findings and the Programmatic Wetland Finding Template can be obtained at:

<https://www.codot.gov/programs/environmental/wetlands/guidance.html>

Refer to **CDOT's Wetlands guidance webpage** for the most recent guidance updates:

<https://www.codot.gov/programs/environmental/wetlands/guidance.html>

Other Issues to Consider

Impacts to wetlands may be addressed by CDOT, FHWA, and USACE through the NEPA/Section 404 merger process (mandatory for EISs requiring an individual permit; discretionary for EAs) and are also subject to comment by EPA and USFWS as participating agencies. USACE will only issue an individual permit if the preferred alternative is also the LEDPA.

Information on wetland impacts and their mitigation must be included in the Wetland Finding and must be approved by CDOT or FHWA, as appropriate. A Wetland Finding is required to document a project that will incur more than 500 square feet of permanent impacts, or 1,000 square feet of temporary and permanent impacts combined. The impacts and mitigation documented in a Wetland Finding are for all wetland habitats regardless of CWA jurisdiction. If sufficient detail is available to prepare a Wetland Finding concurrently with the NEPA document, the Wetland Finding should be included as an appendix or technical report. Approval of the NEPA document also serves as approval of the Wetland Finding.



9.7.2 NEPA Document Sections

The content needed for the wetlands and waters of the U.S. section in the Affected Environment and Environmental Consequences chapter is discussed below.

Affected Environment

The wetlands and waters of the U.S. section of the Affected Environment should include:

- ▶ A brief introduction summarizing the importance of wetlands and the regulatory climate without reproducing lengthy excerpts from regulations and laws
- ▶ A methods section that gives the details on how and when the wetlands were delineated and mapped (GPS and GIS techniques)
- ▶ The study area and results of the functional assessment; a brief summary of the vegetation, soils, hydrology, and functions of each wetland or group of wetlands identified within the entire study area
- ▶ A discussion of other aquatic features and maps showing all features discussed

A few paragraphs should be sufficient to describe the study area wetlands. The wetland section should also address how the project wetlands generally relate to transportation corridors in the project vicinity. Address questions such as:

- ▶ Do the transportation corridors typically run through lowland areas, near floodplains, and/or cross a disproportionately high percentage of wetlands?
- ▶ What is the hydrogeological history of the project wetlands, and will it affect the transportation corridor in the future?

Affected Environment Section of NEPA Document

- Describe the general project setting regarding wetlands
- Focus on acreage and functions of any wetlands that may be directly or indirectly impacted
- Provide sufficient detail for project impacts to wetlands to be fully evaluated

Environmental Consequences

The Environmental Consequences section for wetlands should clearly address the:

- ▶ Acreage of potential permanent and temporary direct and indirect impacts to wetlands.
- ▶ Impact on functions. Support the text discussion with a map showing the location and extent of anticipated project impacts on wetlands for each alternative. Summarize the text discussion focusing on the wetland functional assessment and impact severity. This information should be presented as a tabulation of data that can be readily assimilated and compared. Wetland impacts must be described and alternatives compared without considering compensatory mitigation to comply with the CWA (b)(1) Guidelines in support of LEDPA identification.
- ▶ Methods section that explains how the impacts were calculated.
- ▶ Discussion of what specific direct (filling, dredging, etc.) and indirect impacts (erosion, sedimentation, shading, hydrologic modification, noxious weed invasion, etc.) are expected.



For each type of wetland impact (e.g., indirect/direct and temporary/permanent), present the proposed mitigation measures. Describe how the proposed mitigation measures were selected and how they would address the identified impacts.

In accordance with FHWA Technical Advisory 6640.8A (FHWA, 1987b), if the preferred alternative affects wetlands, the Final EIS needs to contain the finding required by Executive Order 11990 that there are no practicable alternatives to construction in wetlands. Where the finding is included, approval of the Final EIS will document compliance with the Executive Order 11990 requirements (23 CFR 771.125(a)(1)). The finding should be included in a separate subsection entitled “Only Practicable Alternative Finding” and should be supported by the following information:

- ▶ A reference to Executive Order 11990
- ▶ An explanation why there are no practicable alternatives to the proposed action
- ▶ An explanation why the proposed action includes all practicable measures to minimize harm to wetlands
- ▶ A concluding statement that “Based on the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.”

A separate wetland finding should be included as an appendix to the NEPA document or as a technical report. Refer to the 2019 Programmatic Wetland Finding Memorandum of Agreement, the programmatic wetland finding template, and the non-programmatic wetland finding checklist (CDOT, 2022) to enable compliance with the above requirement.

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table (Table 9-2)* is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for all wetlands. In compliance with Federal agency and their agents' responsibilities per Executive Order 11990 and U.S. DOT Order 5660.1A, CDOT assesses impacts to all wetland habitats regardless of CWA jurisdiction. Additionally, avoidance, minimization, and compensation measures should be considered and undertaken, to the maximum extent practicable, for all wetlands within a project study area.



9.8 Vegetation and Noxious Weeds

Vegetation is a term that encompasses the diverse plants that grow in soil and water. Oftentimes these plants are grouped based on their genetic similarity or genus (e.g., ponderosa pine, limber pine, and lodgepole pine). They can also be grouped by their structural similarity (peachleaf willow and narrowleaf cottonwood, or squaw bush and golden currant), or in plant communities (riparian forest, upland grassland, or alpine forest). A plant community is any assemblage of plants growing together in the same ecological setting. Plant communities serve as animal habitats. Collectively, the plants and animals create a biotic community. GIS maps often show land cover types, which are generally comparable to plant communities at a coarse scale of definition.

Vegetation is important because it holds soil in place and prevents erosion; removes and stores carbon dioxide from the atmosphere and releases oxygen; provides a diversity of materials used by people and other animals as food, for structures, and other products; and contributes visual resources including views, and recreational activities. Plant communities support diverse species and provide particular niches for specialized plants and animals.

Some plant species that readily move beyond their native habitat and invade new habitats are considered undesirable. Invasive species, or alien species, are defined in Executive Order 13112 Invasive Species (1999) as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem.” Transportation activities act as a vector that provides a means for potentially invasive species to move beyond existing habitats through highway corridors. Such species may severely disrupt ecosystem balance because they can quickly become abundant in a community and displace native species.

The following subsections provide guidance on the treatment of vegetation for CDOT’s NEPA projects. The first subsection discusses the process for evaluating vegetation. The second discusses vegetation information that should be in each NEPA document. The third specifically focuses on noxious weeds.

9.8.1 Vegetation Evaluation Process

The CDOT RPEM, resource specialist, or environmental project manager is responsible for early identification of vegetation communities, their critical uses, and important species. In fulfilling this responsibility, they may be supported by consultants who collect, evaluate, and summarize data on vegetation.

Vegetation communities should be identified throughout the project area that encompasses all alternatives. The study area should be at least large enough to contain all direct physical disturbances related to the project (the project footprint, haul roads, construction staging areas, etc.), as well as surrounding areas that could be indirectly impacted by the project through erosion, chemical/fuel and other pollutants, deicing operations, and roadside emissions. If possible, the surrounding area beyond the ROW fence should also be surveyed for the presence of noxious and invasive weeds that could readily move into the disturbed soils within the study area. If the presence of noxious weeds is noted, care must be taken to protect the project area and the surrounding habitats, particularly sensitive habitats or open water areas that are highly susceptible to the spread of invasive plants. The presence of vegetation communities and whether they might include special status species must also be determined.



Vegetation communities within the study area, their functions, and their component species must be identified as early as possible during project planning. This should be done before alternative corridors are selected, if possible, and must be done before alternative alignments are finalized. Field review is required to determine whether particular plant species are present within the study area, and such data may need to be collected when the species is flowering and, therefore, most obvious to an observer. Planning of vegetation surveys is critical, especially for identifying special status species and areas with noxious weeds. Timing for field studies should be determined early in the NEPA process so that they can be conducted at the proper season, in spring, summer, or fall, without undue delay to the project.

Reasons for Evaluation of Vegetation Under NEPA

CDOT evaluates vegetation for several reasons:

- ▶ Vegetation has implications for stormwater management and water and air quality
- ▶ To comply with CDOT's *Environmental Stewardship Guide (2017a)*, which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner
- ▶ To enable compliance with several legal mandates that pertain to particular vegetation species and their uses

Early identification of the vegetation communities present within the study area provides determination of the likelihood that sensitive plant or animal species might be present. It enables determination of the need for supplemental field studies so that these can be initiated at the proper time. It enables timely identification of biological red flags that might warrant development of additional or altered project alternatives.

Protection of vegetation that is not listed as T&E is determined by the importance of that vegetation to the surrounding ecosystem. Riparian vegetation and wetlands are protected under regulations specific to those communities. Plants that serve specialized functions for the animals that inhabit them (e.g., raptor nest trees, or milkweed for the Monarch butterfly) may be protected under regulations that are specific to the animal species involved.

Transportation project managers must pay special attention to vegetation because the project may include the reclamation of long stretches of roadside habitat disturbed by construction operations that can contribute to the spread of noxious and invasive weeds. The use of native wildflowers (using at least 0.25 percent of 1 percent of the landscaping budget) during reclamation is required on Federal-aid projects as noted in FHWA's *Landscape and Roadside Development (FHWA, 1978)* and *Landscaping and Scenic Enhancement (23 USC Part 319)*.

Additionally, vegetation on public lands through which a transportation project passes (e.g., BLM, USFS, National Park Service [NPS], or USFWS land, or land owned or managed by a state or regional agency) may also be protected by the mandates of the managing agency. Contact the agency managing the land within the study area for the transportation project.

In addition to the legal protection of vegetation, vegetation that provides important shade or contributes to a visual resource such as vistas should be protected to the extent that this does not interfere with implementation of the project or result in inappropriate project costs. Further, since



nearly all vegetation provides habitat for fish and wildlife, disturbance of vegetation should be kept to a minimum whenever this is reasonably possible.

Recent updates to Executive Order 13112 were amended in 2016. This order amends Executive Order 13112 and directs actions to continue coordinated Federal prevention and control efforts related to invasive species. This order maintains the National Invasive Species Council (Council) and the Invasive Species Advisory Committee; expands the membership of the Council; clarifies the operations of the Council; incorporates considerations of human and environmental health, climate change, technological innovation, and other emerging priorities into Federal efforts to address invasive species; and strengthens coordinated, cost-efficient Federal action.

The Colorado Department of Agriculture Noxious Weed Management Program is available at <https://www.colorado.gov/pacific/agconservation/noxiousweeds>

Collection and Evaluation of Baseline Information

Collection of Baseline Information

To collect baseline information on vegetation, start first with the information from the Colorado Gap Analysis Project (GAP) from which 100,000 block datasets depicting vegetation can be downloaded. These data can be characterized as follows:

- ▶ GAP data is GIS spatial data
- ▶ Data is provided in GIS formats and GIS software is required to view the data
- ▶ Data is in Universal Transverse Mercator Zone 13, North American Datum 1927 projection, and provided by 30 by 60-minute blocks
- ▶ Metadata is viewable on-screen and downloadable separate from the data
- ▶ All files are zip files, which can be uncompressed using WinZip

GAP data represent the most comprehensive statewide spatial information on vegetation. However, note that while 80 percent accuracy was the goal of GAP mapping, the 52 land cover types in Colorado were initially mapped at an accuracy of 31 percent. Nonetheless, because of their comprehensive and consistent coverage, GAP data are an excellent starting place to determine the vegetation present in the vegetation study area.

CPW's Natural Diversity Information Source is also a good reference for data. It contains downloadable GIS data on riparian and wetland mapping and the Colorado Vegetation Classification Project, as well as the GAP webpage. Additional information is provided on riparian areas and wetlands because these could not be accurately mapped with the imagery used for the overall GAP analysis.

Additional sources of spatial information on vegetation include the following:

- ▶ GIS Data Depot
- ▶ U.S. Department of Agriculture (USDA) Data Gateway
- ▶ NatureServe
- ▶ Other sites listed in aggregate at the USFWS Geographic Information System and Spatial Data portal



Ultimately, a single source of spatial data will need to be chosen to depict the vegetation in the vegetation study area. However, other data sources may provide additional, specific information that is more precise for a specific area or location.

More precise information on sensitive vegetation species can be found with the CNHP. The CNHP tracks rare species, including T&E species. It provides data on the county and USGS quadrangle in which the tracked species occur. More precise data can be obtained by request for a fee or ask EPB's Wildlife Program Manager who may have already purchased the data that would be available for projects to use for free. The presence of a tracked species in the county or quadrangle where a project is planned necessitates obtaining detailed information along proposed alignments and may be cause for realignment of one or more alternatives. Information on noxious weed species can be obtained from the Colorado Department of Agriculture. The Colorado Department of Agriculture webpage provides contact information for county weed supervisors and information on how to inventory noxious weeds if field data must be collected.

Vegetation communities are also of importance to fish and wildlife species. For example, if a vegetation community serves as an elk calving ground or heron rookery or provides a raptor nest site, it may need to be protected to maintain adequate breeding sites, as well as forage or feeding areas. Riparian areas are another example of an important and sensitive vegetation community. Not only is the vegetation important, but many fish species rely on healthy, intact riparian vegetation for their continued survival, not to mention the importance of the riparian forest on water quality. Therefore, good communication between CDOT's plant and fish and wildlife specialists is essential.

Sources of vegetation spatial information include:

- Colorado Gap Analysis Project at <http://gapanalysis.usgs.gov/data/>
- CPW's Natural Diversity Information Source at <http://cpw.state.co.us/learn/Pages/Maps.aspx/>
- USDA Data Gateway at <https://gdg.sc.egov.usda.gov/>
- NatureServe at <http://www.natureserve.org/>
- USFWS Geographic Information Systems and Spatial Data at <https://gis-fws.opendata.arcgis.com/>
- Colorado Natural Heritage Program at <http://www.cnhp.colostate.edu/>

Evaluation of Baseline Information

To evaluate baseline information, first finalize the vegetation study area and then identify the types of impacts the project could have on vegetation and the types of measures that could be used to mitigate these impacts if they cannot be avoided. More specifically:

- ▶ Include within the vegetation study area all potential areas of direct disturbance (e.g., where the ground will be disturbed for grading activities, tree/shrub branches broken or removed) and areas of indirect disturbance (e.g., where erosion might disturb the plant cover or deposition of eroded soil might cover lowland vegetation; where deicer impacts might retard plant growth, species may be altered due to hydrology, or the disturbed soil may be vulnerable to noxious and invasive weeds).
- ▶ Prepare a matrix of vegetation land cover types within the vegetation study area and types of project impacts on vegetation by alternative.
- ▶ Prepare a matrix of the impacts that could occur because of any of the project alternatives and the measures that could be used to mitigate each.



This information will inform the project-specific analysis of impacts and how they might be mitigated. Impacts of the proposed project alternatives on vegetation should be evaluated in three primary ways.

- ▶ Map the most precise spatial data that cover the vegetation study area with the expected areas of disturbance for each project alternative. As needed, develop different GIS layers for areas of project disturbance that are expected to occur in the phases of construction (e.g., for temporary disturbance during construction and for permanent disturbance during operation) and as a result of different types of disturbance (e.g., direct and indirect). Using the GIS software, tabulate the acreage of each land cover type that intersects with the areas of disturbance shown on each GIS layer. Use the calculated acreages to quantitatively compare the impacts of the project alternatives.
- ▶ In addition to this quantitative comparison of acreage impacts by vegetation land cover type, the relative importance of each vegetation land cover type should be determined, compared, and discussed. Include in the discussion the national, regional, and local importance of each vegetation type that would be impacted, as well as the importance at these three levels of the fish and wildlife habitat it provides.
- ▶ The level of detail provided should not be excessive relative to the magnitude of the anticipated impact. In all cases, the goal should be to provide the level of detail necessary to clarify the differences among the alternatives and the magnitude of those differences.

Section 9.27 discusses the development of a list of past, present, and reasonably foreseeable future projects that should be addressed for all resources in the consideration of cumulative impacts. Locate these projects on a vegetation land cover map to identify what vegetation land cover types they will impact. Discuss cumulative impacts to vegetation in more general terms, noting which vegetation land cover types will be most impacted, their relative importance, and the degree to which impacts from the transportation project considered in the current NEPA document will contribute to the cumulative impacts.

Other Issues to Consider

Other agencies may have information or guidance that will affect a particular CDOT project. Coordinate with the various agencies having resource oversight to obtain any site-specific data they may have and talk to resource specialists who know the study area to determine whether they know of vegetation that should not be disturbed or have guidance that could constrain the project. The resource agencies that would have information or guidance on vegetation impacts include CPW, USFWS, and NRCS, as well as USFS, BLM, NPS, and Colorado counties and state parks, when they manage lands that are traversed by a transportation project.

In addition to information on vegetation species and communities, very specific information on T&E plant species that may occur in the study area will need to be analyzed regarding project impacts.



9.8.2 NEPA Document Sections

The content of the vegetation sections in the Affected Environment and Environmental Consequences chapters is discussed below. The level of detail will vary with species composition, the presence of T&E species, and the value of the vegetation habitat and the potential project impact.

Affected Environment

The description of vegetation in the Affected Environment chapter of the NEPA document should:

- ▶ Include an introduction to vegetation and the importance of protecting it in and around the project area
- ▶ Present an overview of the vegetation land cover types that are present in the project region
- ▶ Define the vegetation study area for the project
- ▶ Describe how the vegetation land cover types within the study area fit within the regional context (agriculture, forestry products, open space)
- ▶ Include a map of the vegetation land cover types within the vegetation study area and provide a cross-reference to the T&E species and wetland section of the NEPA document

If no vegetation will be impacted (e.g., the project is entirely within a highly developed urban area without any surrounding vegetation), no further detail is required in the Affected Environment chapter on vegetation. Remember, even in an urban area there may be some landscaping using sod or other irrigated landscape that could be susceptible to noxious weeds.

If impacts to vegetation may, or will occur, also include the following:

- ▶ A description of each vegetation land cover type, including the locations where it occurs, its general appearance, the species that comprise it, and its importance as a plant community (fish and wildlife habitat, visual resource, economic value, recreation, etc.)
- ▶ A note showing the proximity of any special use areas such as national or state forest areas, recreation areas, or parklands
- ▶ A description of areas of contiguous habitat
- ▶ A description of land uses, if any, within or near the proposed project alternatives (developed, agriculture, forest products)
- ▶ Scoping summaries from Federal, state, and local agencies. These agencies have expert knowledge of the project areas and will provide important insights to special vegetation issues
- ▶ Identification of any noxious weeds that are within or surrounding the vegetation study area
- ▶ A statement of the likelihood of sensitive species presence and cross-reference to the T&E species discussion
- ▶ A discussion of the importance of the vegetation land cover type as habitat for fish and wildlife species cross-referenced to further discussion of this topic in the fish and wildlife section of the NEPA document



Affected Environment Chapter of NEPA Document

- Provide a map of the vegetation communities or land cover types in the vegetation study area
- Describe each vegetation community, land cover type, or surrounding area, when dealing with noxious weeds, that is expected to be impacted by the project
- Cross reference the T&E species section so that such plant species will not be overlooked by the reader

Environmental Consequences

In the impact analysis section of the NEPA document, show the map of vegetation land cover types overlain with the project areas of direct disturbance. Include the tabulation of acreages of disturbance of each land cover type by alternative. Compare and contrast the project alternatives as to their relative vegetation impacts based on their acreage of disturbance, and the relative importance of each vegetation land cover type. Note which impacts to vegetation will be temporary, in that they occur only during construction, and which will be more permanent and last throughout the project's operation. Differentiate between direct and indirect impacts and discuss each. Prepare the vegetation input for a tabular summary of impacts by alternative and the consideration of cumulative impacts.

Include how the actions in each alternative could affect each land cover type. Impacts could be something that enhances the vegetation habitat, such as mitigation, or the impacts could result in degradation of the vegetation cover, such as tree removal. Discuss measures to mitigate impacts to vegetation only after the impacts have been clearly documented and quantified. The preferred approach toward impacts is to first avoid them or, if that is not possible, then to minimize them, and then to mitigate them. In the NEPA document:

- ▶ Discuss steps that were taken and/or will be taken in the final design of alternatives to avoid impacts to vegetation
- ▶ Discuss steps taken to minimize impacts
- ▶ Discuss the types of actions taken to avoid specific patches of vegetation or to minimize the overall acreage of vegetation disturbance, such as:
 - Rerouting alternative alignments
 - Narrowing the ROW
 - Elevating a portion of the ROW
 - Minimizing the size of construction staging areas or confining them to previously disturbed sites
- ▶ For impacts that cannot be avoided, discuss mitigation measures such as:
 - Seeding with a native grass/forb mix
 - Planting trees and shrubs per SB40 commitments (1:1 trees, sod fragmentation shrubs)
 - Transplanting (moving particularly important plant populations to areas where they would not be disturbed)
 - Employing water quality control measures during construction by using erosion and sediment control water quality control measures, implementing phased seeding, and containing potential pollutants



Impacts and Mitigation

The *Summary of Impacts and Mitigation Table* (Table 9-2) is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for vegetation.

9.8.3 Noxious Weeds

As defined by the Colorado Noxious Weed Act, the term “noxious weed” means any non-native plant or parts of a non-native plant that have been designated by rule as being noxious or have been declared a noxious weed by the state of Colorado or a local advisory board, and meets one or more of the following criteria:

- ▶ Aggressively invades or is detrimental to economic crops or native plant communities
- ▶ Is poisonous to livestock
- ▶ Is a carrier of detrimental insects, diseases, or parasites
- ▶ The direct or indirect effect of the presence of this plant is detrimental to the environmentally sound management of natural or agricultural ecosystems

Reasons for Evaluation of Noxious Weeds Under NEPA

Why are noxious weeds important?

- ▶ Noxious weeds constitute a threat to the economic and environmental value of land, as hundreds of acres of crop, rangeland, roadside, and natural resources, such as habitat for wildlife and native plant communities, are being displaced by noxious weeds each year
- ▶ The spread of noxious weeds can be partially attributed to the movement of seed and plant parts on motor vehicles, and because noxious weeds are becoming an increasing maintenance problem on highway ROW in Colorado, and because the ground disturbance caused by construction projects are often colonized by noxious weed species preventing the establishment of native vegetation
- ▶ FHWA and CDOT policy and environmental ethic

The Colorado Noxious Weed Act (CRS 35-5.5) requires the control of designated noxious weeds. The Colorado Noxious Weed List categorizes noxious weeds as one of three categories. This list is updated annually and maintained by the Colorado Department of Agriculture in the following document: *Rules Pertaining to the Administration and Enforcement of the Colorado Noxious Weed Act* (Colorado Department of Agriculture Plant Industry Division 8 CCR 1206-2). The list is also accessible on the website of the Department of Agriculture’s Noxious Weed Management Program.

The noxious weed list categories and their management guidelines are:

- ▶ **List A** - All populations of List A species in Colorado are designated for eradication.
- ▶ **List B** - All populations of List B species in Colorado should be managed to stop their continued spread. For some of these species, a state noxious weed management plan has been created; in these cases, the management plan must be followed.
- ▶ **List C** - Populations of List C species are already widespread. The goal of management of List C species will not be to stop their continued spread but to provide additional education, research, and biological control resources to jurisdictions that choose to require management of List C species.



The following additional regulations are also related to noxious weed management:

- ▶ The Weed Free Forage Crop Certification Act (CRS 35-27.5)
- ▶ Rules and Regulations Pertaining to the Weed Free Forage Crop Certification Act
- ▶ State of Colorado Executive Order D 06 99 - Development and Implementation of Noxious Weed Management Programs
- ▶ State of Colorado Executive Order D 002 03 - Directing State Agencies to Coordinate Efforts for the Eradication of Tamarisk on State Lands
- ▶ Federal Executive Order 13112 - Invasive Species

Resource Mitigation and Preventative Control Measures

Measures to eradicate and prevent the establishment and spread of invasive and noxious weeds should be included in all projects, as appropriate. The impact of noxious weeds on other resources in the area (wetlands, T&E species, etc.) should be mitigated according to strategies specific to those resources.

The NEPA analysis should reference potential noxious weed preventative control measures that will be incorporated into the scope, design, and construction processes. As defined in the Environmental Consequences section, the method of control can have an adverse effect on the sensitive environments containing the noxious weeds. The document should address potential impacts of the chemical, biological, and/or mechanical control methods to the surrounding ecosystem. These methods are outlined below:

- ▶ **Minimize Soil Disturbance** - By far the most likely place for noxious and invasive weeds to take hold will be areas that have recently been cleared of vegetation and compacted by construction activities.
- ▶ **Use of Fertilizer** - Fertilizers should not be used on most projects because of their propensity to increase the growth of noxious weeds. This should be determined in consultation with a landscape architect.
- ▶ **Native Plants** - Native grasses and forbs seed will be used on all CDOT ROW for revegetation purposes. Pollinating forb species shall be included in seed mixes. Transplanting and purchasing native shrubs and xeric and salt tolerant trees from nurseries is encouraged whenever feasible.
- ▶ **Weed Free Forage Act** - Materials used for a project such as seed, mulch, and fill materials must be inspected and regulated per the Weed Free Forage Act, Title 35, Article 27.5, CRS.
- ▶ **Topsoil Management** - Salvaging topsoil from projects is encouraged to increase plant diversity and to retain the existing biotic life. When salvaging topsoil from on-site construction locations, the potential for the spreading of noxious weeds shall be considered. Topsoil should never be salvaged if contaminated by noxious weeds or seeds. Importing topsoil onto the project site should not be allowed unless it is certified weed free.
- ▶ **Equipment Management** - Equipment should remain on designated roadways and stay out of weed-infested areas until they are treated. All equipment shall be cleaned of all soil and vegetative plant parts before arriving on the project site.



- ▶ **Stakeholder Coordination** - Weed management efforts should be coordinated with local jurisdictional agencies and adjacent landowners to the extent possible.
- ▶ Cross-reference other resource topics, such as water resources, vegetation, wildlife, T&E, and floodplains, as necessary.

Integrated Noxious Weed Management Plan

The NEPA document should commit to the creation of an Integrated Noxious Weed Management Plan (INWMP) to be completed during design. Generally, the NEPA document is too early in the process (given the likelihood of weed occurrences to change significantly in a few years) to write a comprehensive weed plan unless project construction is imminent. The INWMP must address the control methods (chemical, biological, preventative, etc.) that will be put in place to limit the spread of invasive and List C species, to stop the continued spread of List B species, and to eliminate the occurrences of any List A species.

This section must discuss the practical efforts CDOT can routinely undertake to mitigate or control impacts from noxious weeds. Describe typical mitigation or control measures corresponding to specific typical impacts. Cross-reference any appendices or websites with more detailed mitigation information, if necessary. Discuss what mitigation plans or reports are necessary and under what conditions.

It is important to include CDOT maintenance personnel in the INWMP early on. CDOT maintenance will be conducting the weed management and they need input as well as to be informed. Involving CDOT maintenance personnel early can ensure that if invasive and noxious weeds are present, they can be controlled or monitored before and after construction.

Other Issues to Consider

Noxious weeds are present on most projects. The following are some additional ideas to keep in mind concerning the control of noxious weeds with pesticides:

- ▶ Pesticides and herbicides present an additional environmental hazard that must be analyzed.
- ▶ Any individual who applies pesticides or herbicides must be licensed by the state as a Commercial Applicator, Qualified Supervisor, or Certified Operator and must take continuing education courses to maintain their qualification.
- ▶ Some pesticides/herbicides may not be used near water or other sensitive areas.
- ▶ Always follow the pesticide label for instructions on proper application.

Noxious weed surveys cannot be performed in the winter because accurate identification of species and patch size will be impossible when plants are not in the correct growth stage. Coordination with local agencies should help target which noxious weed species are priorities for control. Many noxious and invasive weed species are already so widespread that effective control is difficult. Moreover, large patches of common noxious and invasive weeds are not as important to control as small infestations of rare noxious weeds. Cross-reference other permit sections or appendices if necessary.



9.8.4 NEPA Document Sections

The content of the noxious weeds section in the Affected Environment and Environmental Consequences chapters is discussed below.

Affected Environment

The Affected Environment chapter must include areas adjacent and near the project area, not just the project footprint. The existing vegetative conditions in and adjacent to the project area should be described. The following information should also be provided:

- ▶ Plant communities in the project area
- ▶ Plant and animal species that occur in the area (including those special status species that have specific regulatory protections and cross-referencing T&E topics)
- ▶ Distribution of plant species or plant communities (maps may be useful)
- ▶ Sensitive areas that occur in the region
- ▶ Agriculture uses in the area

Describe where affected environment information can be obtained and what field work may need to be conducted (and when). Describe what tools are appropriate at what time, for example, when aerial photography can be used and when field surveys may need to be conducted. Also describe any specific reports that may need to be developed and cross-reference or provide links to more detailed information (if it exists). Cross-reference other resource topics, such as water resources, vegetation, wildlife, T&E, and floodplains, as necessary. Tie regulatory requirements to noxious weed information where appropriate.

Affected Environment

The level of detail provided in the Affected Environment discussion should be relevant and related to the level of detail needed in the environmental consequences discussion. If there are no impacts, the Affected Environment discussion should be limited.

Environmental Consequences

The project should address the identification and approximate distribution of all noxious weed species in the study area and analysis of the impact of those noxious weeds on relevant resources in and adjacent to the study area.

Identification and Mapping of Existing Noxious Weeds - The first step in the process is to identify, inventory, and map the location of noxious weeds. If possible, it may be practical to combine the weed mapping with an existing vegetation or wetland survey. The weed survey should include:

- ▶ All species designated as List A, B, or C noxious weeds and any other species determined through consultation with county, parks, forest service, BLM, CDOT, and state weeds lists, inventories, and/or weed managers
- ▶ Geographical location and extent of infestation (size and density of patch) for each identified patch of noxious weeds
- ▶ The results of weed identification presented as both a map and a table, which includes species of weeds, extent, density, regulatory status, and any specific issues related to each weed



Potential Impacts from Invasive Species - Analysis of impacts should include area disturbed by construction and area adjacent to the project. Other questions to consider include:

- ▶ What are the impacts if the weeds spread within the project or adjacent to the project?
- ▶ Will ground disturbance result in an increase in weeds?
- ▶ Will the impacts affect wetland, riparian, or other sensitive habitats?
- ▶ Are impacts associated with weed control methods, e.g., herbicides?

The potential for spreading invasive species or noxious weeds from the project into agricultural areas or sensitive ecological areas should also be addressed.

Public Land Impacts - Most of the local, state, and Federal agencies have a policy addressing noxious weeds. If Federal land is adjacent to the project, then the list of prioritized noxious weeds for that agency should be obtained. The impacts of the additional weeds should be addressed in the document.

T&E Species - The document must address the impacts to identified T&E species. Will the presence of noxious weeds displace the listed plant or compete with desirable habitat vegetation? The presence of T&E species in a given area will limit the method of control for noxious weeds. Furthermore, more stringent management practices may be required in a T&E area, such as delineation via signing for controlled application and use of herbicides.

Wetlands and Open Water - The document must address the potential for contamination of herbicides adjacent to wetlands and open water. This requires special attention to recommended aquatic-use only herbicides due to potential leaching of chemicals into the groundwater table and sensitivity to fish and wildlife habitat.

Agricultural - Due to the toxicity of certain noxious weeds to livestock (including horses), bees, or adjacent croplands, address the potential impacts of the weed and use of herbicides on adjacent agricultural lands.

This section in the NEPA document should also describe the predicted environmental impacts of project alternatives on resources in the project area from the continued or further spread of noxious weeds. Impacts to be considered include direct (construction and operational) and indirect impacts. Cumulative impacts should also be considered and included in the Cumulative Impacts section of the NEPA document, if necessary. Provide examples of the types of impacts caused by the spread of noxious weeds. The level of detail included in the NEPA document should be commensurate with the extent and nature of the impacts.

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table (Table 9-2)* is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for noxious weeds.



9.9 Fish and Wildlife

The term “fish and wildlife” is typically used to identify aquatic (“fish”) and terrestrial (“wildlife”) animal species that are of interest. Typically, in a NEPA document, species of interest are confined to selected species of vertebrates (i.e., fish, amphibians, birds, and mammals) and T&E species. The vertebrate species discussed are typically those that are of particular interest to the recreating public (e.g., fishermen, hunters, and bird watchers), are particularly abundant (e.g., mice, squirrels, blue jays, and robins), are at the top of food chains (e.g., coyotes, foxes, cougars, hawks, eagles, and owls), and/or have populations that are in some jeopardy (e.g., prairie dogs and sage grouse). An exhaustive discussion of all fish and wildlife species and/or other species would not be especially practical, of much interest, or of much value.

Fish and wildlife are vital components of ecosystems and contribute to their diversity, provide a source of enjoyment for recreationists, and provide a source of food for people and other animals. It is important that populations of fish and wildlife species and the habitats that support them remain healthy.

The following subsections provide guidance on the treatment of fish and wildlife for CDOT’s NEPA projects. The first subsection discusses the process for evaluating fish and wildlife. The second discusses fish and wildlife information that should be in each NEPA document.

CDOT has a Black-tailed Prairie Dog Policy, which can be found at:
<https://www.codot.gov/programs/environmental/wildlife/guidelines>

9.9.1 Fish and Wildlife Evaluation Process

The CDOT RPEM, resource specialist, environmental project manager, EPB, regional biological specialists, or wildlife biologists are responsible for early identification of fish and wildlife species and their habitats. They are also responsible for determining whether sensitive species may be present in the project area. In fulfilling this responsibility, they may be supported by consultants who collect, evaluate, and summarize data on fish and wildlife.

Fish and wildlife populations should be identified throughout an area that encompasses all project alternatives.

Knowledge regarding how fish and wildlife populations use the habitat in the project vicinity and how humans use these populations will help define the fish and wildlife study area. Thus, the study area identified for animals is typically larger than that identified for plants because animals are mobile.

Whether the species present might include T&E species must also be determined. These species are discussed further in **Section 9.10**.

Fish and wildlife species, their populations, and their habitat within the study area must be identified as early as possible during project planning. This should be done before alternative corridors are selected if possible and must be done before alternative alignments are determined. This enables project designers to try to avoid any critical fish and wildlife impacts before they have progressed too far in developing the alternatives.



The need for field studies should also be determined early in the NEPA process so that they can be conducted at the proper season without undue delay. If field data are required to determine whether particular animal species are present within the study area, such data may need to be collected when the species are most obvious to an observer (e.g., early in the breeding season to hear the singing of songbirds; before deciduous trees have leafed out to detect raptor nests).

Reasons for Evaluation of Fish and Wildlife Under NEPA

CDOT evaluates fish and wildlife resources for several reasons:

- ▶ Fish and wildlife are vital components of ecosystems and contribute to their diversity, provide a source of enjoyment for recreationists, and provide a source of food for people and other animals
- ▶ To comply with CDOT's Environmental Stewardship Guide (2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner
- ▶ To enable compliance with many legal mandates pertaining to fish and wildlife

The regulations and certifications applicable to fish and wildlife resource evaluations are summarized below.

Fish and Wildlife Conservation Act 1980 - Authorizes financial and technical assistance to the States for the development, revision, and implementation of conservation plans and programs for nongame fish and wildlife. Last amended in 1997.

Wild Bird Conservation Act 1992 - Establishes a new Federal system to limit or prohibit U.S. imports of exotic bird species. Requires the Secretary to periodically review the Convention on International Trade in Endangered Species (CITES) and suspend trade in any CITES listed bird species (CITES, n.d.).

Wetlands Loan Act 1961 - Authorizes an advance of funds against future revenues from the sale of "duck stamps" as a means of accelerating the acquisition of migratory waterfowl habitat. Last amended 1988.

Emergency Wetlands Resources Act 1986 - Authorizes the purchase of wetlands from Land and Water Conservation Fund (LWCF) monies, removing a previous prohibition on such acquisitions. It requires the Secretary to establish a National Wetlands Priority Conservation Plan and requires the States to include wetlands in their Comprehensive Outdoor Recreation Plans. Last amended 1996.

Migratory Bird Conservation Act 1929 - Establishes a Migratory Bird Conservation Commission to approve areas recommended by the Secretary of the Interior for acquisition with Migratory Bird Conservation Funds. Last amended 1978.

North American Wetlands Conservation Act 1968 - Provides funding and administrative direction for implementation of the North American Waterfowl Management Plan and the Tripartite Agreement on wetlands among Canada, U.S., and Mexico. Last amended 1998.

Senate Bill 40 Wildlife Certification (CRS Title 33, Article 5) 1969 - Requires any State agency to obtain wildlife certification from CPW when the agency plans construction in "any stream or its bank or tributaries." Latest CDOT guidance 2022.



Migratory Bird Treaty Act 1918 - The statute makes it unlawful without a waiver to pursue, hunt, take, capture, kill, or sell birds listed therein as migratory birds. The statute does not discriminate between live or dead birds and also grants full protection to any bird parts including feathers, eggs, and active nests. Over 800 species are currently on the list.

Bald and Golden Eagle Protection Act (BGEPA) 1940 - The BGEPA prohibits any form of possession or taking of both Bald and Golden Eagles through criminal and civil sanctions, as well as an enhanced penalty provision for subsequent offenses. Further, the BGEPA provides for the forfeiture of anything used to acquire eagles in violation of the statute.

Conserving Colorado's Big Game Winter Range and Migration Corridors (Executive Order D 2019 011) - This Colorado Executive Order requires CDOT to enable safe wildlife passage, reduce wildlife-vehicle collisions, and incorporate consideration of big game migration into all levels of its planning process, to the greatest extent possible.

Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors (DOI SO 3362, 2020) - This requires BLM, USFWS, and NPS to identify and protect major migratory corridors for big game. It also instructs agencies to avoid development in the most crucial winter range or migration corridors during sensitive seasons, or that would fragment winter range and primary corridors.

In addition, state laws govern how fish, game birds, game mammals, non-game wildlife, and other species can be handled and otherwise impacted. For the most part, these laws govern the handling and intentional take of such species rather than unintentional take or habitat disruption. In addition, CPW has recommendations on buffer zones and seasonal restrictions for Colorado raptors that are viewed as guidance rather than official policy.

Collection and Evaluation of Baseline Information

Collection of Baseline Information

Baseline information on fish and wildlife is needed to generally describe the species that are common and thereby characterize the project vicinity. Baseline information is also necessary to describe in detail the species to which impacts from the project would be of concern.

Because of the mobility of fish and wildlife, the habits and behaviors of potentially impacted species need to be described, as well as their populations and habitats. To provide sufficient information to enable a thorough assessment of project impacts, information must be known for each species present, such as:

- ▶ Migration behavior
- ▶ Known migration routes and timing
- ▶ Breeding locations, behaviors, timing, and cycle length
- ▶ Rearing periods for young
- ▶ Particular habitat uses for particular life cycles
- ▶ Factors that limit the species population
- ▶ Areas of contiguous habitat
- ▶ Aspects of the species habitat that are critical for its survival



The first step in the acquisition of information on fish and wildlife is to determine what species are likely to be present in the project vicinity. Such information can be obtained from several sources, such as:

- ▶ **GAP Data** - Include information on many vertebrate animal species typically associated with the land cover types identified in the state
- ▶ **Latilong reports**, published originally by CPW in the 1980s and available in some libraries, indicate the presence/absence of mammals (Bissell and Dillon, 1982), birds (Kingery, 1987), and reptiles/amphibians (Hammerson and Langlois, 1981) in 1 degree latitude and longitude blocks across the state
- ▶ **Publications** such as Birds of Colorado (Bailey and Niedrach, 1965), the Colorado Breeding Bird Atlas (1998), Mammals of Colorado (Fitzgerald, Meaney, and Armstrong, 1994), and Amphibians and Reptiles in Colorado (Hammerson, 1982), as well as other publications on animal distribution
- ▶ Distributional data from the **Colorado Wildlife Species Database**
- ▶ Distributional information from **local CPW personnel**, who should always be consulted
- ▶ **CPW's Natural Diversity Information Source**, which provides data on many animal species in the state
- ▶ Online data on reptiles and amphibians on **Colorado Herpetological Society's website**
- ▶ **Colorado Natural Heritage Program website**, which tracks and ranks Colorado's rare and imperiled species and habitats, not all of which are T&E
- ▶ **FHWA Critter Crossing website**
- ▶ **FHWA Invasive Species website**
- ▶ **USFWS Invasive Species website**
- ▶ **NatureServe website**

Several of the above data sources contain information on the populations, behavior, and habitat use of species, as well as information on their distribution and abundance. Additional information can be found online by species-specific searches on sites such as NatureServe Explorer, or additional scientific sites such as The Birds of North America online. Highly scientific data should be needed only for species that are biologically sensitive or of high public interest and that could be severely impacted by the project.

Sources of Fish and Wildlife Data

- Colorado Gap Analysis Project at <http://gapanalysis.usgs.gov/data/>
- CPW's Natural Diversity Information Source at <http://cpw.state.co.us/learn/Pages/Maps.aspx/>
- Colorado Herpetological Society at <http://www.coloherps.org/>
- Colorado Natural Heritage Program at <http://www.cnhp.colostate.edu/>
- FHWA Critter Crossing at http://www.fhwa.dot.gov/environment/critter_crossings/index.cfm
- USFWS Invasive Species at <http://www.fws.gov/invasives/>
- NatureServe at <http://www.natureserve.org/>



Evaluation of Baseline Information

Once data have been collected on the fish and wildlife species documented or likely to be present in the study area, map their likely distribution relative to project components. For many species, this is best done by evaluating them in assemblages that use a common habitat or land cover type. Greater specificity in the assessment of impacts can be gained by assessing how particular species use their habitat and how the project will impact the habitat. Identifying the types of impacts that should be considered can best be understood through a series of examples.

CDOT follows the American Ornithological Society's guidance that every word in the common name of a bird is capitalized (i.e., Yellow-headed Blackbird).

For example, all the species that are likely to use ponderosa pine forests may be assumed to be impacted if project facilities disturb ponderosa pine habitat. Therefore:

- ▶ Small mammal species that forage and breed in ponderosa pine habitat are likely to be substantially impacted by road construction because a road will disturb the ground used for all of the mammals' activities. Small bird species that forage and nest in the ponderosa pine trees will be impacted by the loss of individual trees along the road ROW and may also be subject to roadkill, particularly if they feed by darting into the air to catch flying insects, but less so if they feed by gleaning insect larvae from tree bark.
- ▶ Large bird species that require large unbroken expanses of forest for successful breeding may be impacted by fragmentation of their habitat, even if the percentage of their home range that is disturbed is very small.
- ▶ Species such as big game that move along traditional corridors may suffer considerable impacts if roads cut across this corridor. This can result in considerable roadkill, particularly if the crossroad is in an area with poor visibility for both the game animal and the driver of the car, and if a safe means for the game animal to cross the road is not provided and its use encouraged.
- ▶ Species constrained by roadside fences may avoid roadkill impacts but be prevented from reaching traditional use areas. If these use areas are crucial for the species' survival, such as critical winter use areas, animal mortality could be high.
- ▶ Populations of amphibians that traditionally breed in a particular pond and disperse uphill from that pond after metamorphosis may be severely impacted if a road is placed on the uphill side of the pond.
- ▶ Aquatic species that move upstream or downstream for particular portions of their life cycle may be constrained from doing so if natural stream beds are replaced by culverts that are not conducive to their passage.
- ▶ Spawning beds used by aquatic species may be covered with silt or excessively scoured if surface flows are substantially altered by a transportation project.

The above examples are intended to encourage thoughtful evaluation of baseline data collected on fish and wildlife species. During this evaluation, consider what species are present, when they are present, what they are doing while present, and how important this activity is to the survival of healthy populations of the species. Also consider what would be happening on the ground throughout each day during the construction and operation of the project, as well as the permanent



impacts the project would have on the surrounding landscape. Mentally combine these two types of activities in time and space to envision project impacts.

Use of multiple GIS layers can enable calculation of acreages of impact from different project activities on various species groups. However, to be complete, impact evaluation must also thoroughly consider the type and importance of the impact to individual species or species groups. To determine the importance of impacts, consult regional information that may provide context for the project-specific impacts.

Use species-specific guidance to evaluate impacts when it is available. For example, CPW guidance on *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (Rossi, 2020) provides species-specific distance recommendations for avoiding surface occupancy near Bald Eagle, Golden Eagle, Osprey, Ferruginous Hawk, Red-tailed Hawk, Swainson's Hawk, Peregrine Falcon, Prairie Falcon, Goshawk, and Burrowing Owl nest sites, and near Bald Eagle winter night roosts and hunting perches.

Once impacts to fish and wildlife species have been thoroughly identified, they should be avoided to the maximum extent possible. This can be accomplished primarily by changing the location of project components or by constructing the project during times of the year when particular impacts can be avoided (e.g., construction during fall and winter could avoid impacts to an active raptor nest that might be disrupted by excessive human construction activity but could tolerate the passing vehicles during project operation). Mitigation measures that enable passage of fish and wildlife to cross the road more successfully will help to avoid roadkill. Many such measures are presented on the FHWA Critter Crossing website. These measures should be implemented to minimize project impacts whenever feasible.

Mitigation measures used to minimize impacts to other resources (e.g., air quality (Section 9.2), geologic resources and soil (Section 9.3), water quality (Section 9.5), floodplains (Section 9.6), wetlands (Section 9.7), and vegetation and noxious weeds (Section 9.8) often benefit fish and wildlife because they mitigate impacts to ecosystem components.

In addition to evaluating the impacts on fish and wildlife from the proposed project, the cumulative impact of that project and other projects must also be assessed. Locate projects that may affect similar fish and wildlife habitats (i.e., land cover types with which species groups are associated) and major traditional use areas (e.g., calving grounds, migration corridors, brood rearing areas, leks, traditional roost or nesting sites). Discuss cumulative impacts to fish and wildlife in general terms, noting which fish and wildlife species, habitats, and activities would be most impacted, their relative importance, and the degree to which impacts from the transportation project considered in the current NEPA document would contribute to the cumulative impacts.

Other Issues to Consider

Wildlife Crossings

When roads cross routes traveled by fish and wildlife species, individuals of some species are sometimes killed, or they may be prevented from crossing and perhaps from completing some aspect of their life cycle. Roads that cross wildlife corridors can also pose a safety hazard for drivers that may result in damage to a vehicle and injury or death to its occupant(s).

Section 1119(n) of SAFETEA-LU mandates a study of methods to reduce collisions between wildlife



and motor vehicles, as well as preparation of a report and training on the study results. The FHWA Critter Crossings website addresses this issue. As traffic on roadways increases in volume and density, wildlife/vehicle collisions become an increasingly important adverse impact to drivers, as well as wildlife species.

Consideration shall be given to the connectivity of wildlife habitat in the project area, especially connectivity of habitat for large ungulates that constitute an important safety hazard for the traveling public when roads bisect otherwise connected portions of their range or lie between spring and fall ranges. Some tools for connectivity planning include:

- ▶ Land ownership maps
- ▶ Vegetation maps
- ▶ Topographic maps
- ▶ Aerial photos
- ▶ Wildlife habitat or range maps
- ▶ Roadkill data
- ▶ West, East, and Plains Highway Prioritization Studies

Wildlife crossing structures or other mitigating techniques, such as the following and others, can serve to reconnect wildlife habitat divided by a road and reduce the incident of animal vehicle collisions:

- ▶ Warning signs
- ▶ Box culverts
- ▶ Large arched culverts
- ▶ Open-span bridges
- ▶ Wildlife overpasses
- ▶ Wildlife fencing
- ▶ Deer/elk guards
- ▶ ROW escape ramps

Senate Bill 40 Wildlife Certification (CRS Title 33, Article 5)

Colorado SB40 requires any State agency to obtain wildlife certification from the CPW when the agency plans construction in “. . . any stream or its bank or tributaries....”

In addition to CDPS requirements, CDOT must also evaluate the project for potential impacts to “any stream or its banks or tributaries...” as specified in Colorado SB40. If a project meets any of the criteria in SB40, CDOT must obtain a SB40 Wildlife Certification from the Colorado Division of Natural Resources (CDNR) or CPW before construction begins. Under a MOA between CDOT and CDNR, CDOT projects that do not meet any of the criteria outlined in Section III A of the MOA remain under the jurisdiction of SB40 but are granted a Programmatic SB40 Certification. This Programmatic Certification gives CDOT the authority to proceed with a project 15 days after the CDOT RPEM sends a letter of notification to CPW.



For projects that require a SB40 Wildlife Certification, the CDOT RPEM must submit an application between FIR and FOR, and CPW will complete its review of the application within 30 days and issue the SB40 Certification or request additional information. The application is provided in the MOA.

Other Factors

Other factors to be considered when evaluating baseline data include any regulatory or mitigation actions that may have an effect on a project. These could include things such as officially recognized block clearances for certain species, applicable mitigation banks, such as CDOT's Plum Creek Preble's Meadow Jumping Mouse Habitat Bank, specialized initiatives like the Shortgrass Prairie Initiative or CDOT/FHWA policies that may be more restrictive than a regulation. Applicable *Memoranda of Understandings* with other entities should be sought out and strictly adhered to.

Shortgrass Prairie Initiative

<https://www.codot.gov/programs/environmental/wildlife/guidelines/shortgrass-prairie-ba-and-conservation-strategy>

9.9.2 NEPA Document Sections

The content of the sections on fish and wildlife in the Affected Environment and Environmental Consequences chapters is discussed below.

Affected Environment

The Affected Environment chapter of the NEPA document should:

- ▶ Briefly characterize the important fish and wildlife species in the project vicinity and note whether there are any expected impacts from the project
- ▶ Justify how a species will or will not be impacted

Impacts could include, but are not limited to:

- ▶ Disturbance of habitat due to fragmentation, connectivity, or human encroachment
- ▶ Decrease or removal of prey base or foraging opportunities, including changes in the vegetation community
- ▶ Decrease or removal of sheltering opportunities either as part of a lifecycle (e.g., a den) or avoidance of predators
- ▶ Disruption of historic migration routes
- ▶ Increase in water contaminants that may affect species onsite or downstream
- ▶ Increase in barriers, including widened highways, guardrails, cement barriers, increased speed or number of vehicles, or increased lighting and noise
- ▶ Disruption or alteration of spawning beds
- ▶ Disruption or alteration of water regimes, temperature, or chemical makeup
- ▶ Disruption or disturbance to known lambing, fawning, or rutting areas



- ▶ Removal or depletion of water from the Upper Colorado, San Juan, or Platte River basins, which will affect species hundreds of miles downstream (Standard Platte River Depletion Language is in **Appendix F**)
- ▶ Increased competition from species that may not otherwise be a factor

If no impacts are anticipated, the section on fish and wildlife should end there. If impacts to particular species or species groups are expected, the fish and wildlife section must be expanded to include:

- ▶ A description of how the species being considered were selected and the basis for how species groups was developed, since every fish and wildlife species cannot be discussed
- ▶ Detailed information on distribution, populations, habitat features, and habitat use of these species or species groups
- ▶ The timing of particular types of habitat use and behaviors
- ▶ A discussion of the importance of maintaining a healthy and sustainable population
- ▶ A map of species habitats linked to a tabulation of important species

Environmental Consequences

In the Environmental Consequences section of the NEPA document, discuss project impacts to the species or species groups. Each impact must be described, as it is exhibited in each alternative, as it affects each species or species group. For example, discuss roadkill impacts and describe the effects of the impact and how it may differ among species or species groups as it pertains to each alternative. Then discuss alternatives that have the same roadkill impacts together and contrast those that differ so that similarities and differences in alternatives as to their roadkill impacts on fish and wildlife is clear. Include information on the importance of the impacts to the species or species groups. Impacts on fish and wildlife may be helpful to species, such as mitigation, or harmful, such as removal of high-value habitat.

Senate Bill 40 (SB 40) Certification

Mitigation for SB 40 impacts generally requires creation, restoration, and/or enhancement of impacted riparian (streamside) areas and a SWMP to address construction-related erosion/sedimentation effects. The CatEx must contain a SWMP, mitigation plan, and signed certification from CPW before the RPEM can sign Form 128. However, EAs and EISs usually provide a conceptual mitigation plan and commit to completing the SB 40 application during final design. Wetland and T&E mitigation usually applies to SB 40, and it is helpful to cross-reference the wetland and/or T&E sections of the NEPA document when this is the case.

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table (Table 9-2)* is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for fish and wildlife.

Impact/Mitigation Section of NEPA Document

- Discuss impacts by type for species or species groups
- Compare and contrast alternatives within impact type
- Summarize impacts by alternatives for inclusion in final summary of impacts by alternative
- Also consider cumulative impacts by type for species or species groups



9.10 Threatened/Endangered (T&E) Species

T&E species are species that have been listed pursuant to the Endangered Species Act (ESA). The ESA prohibits the unauthorized take of listed species and prohibits Federal agencies from funding or authorizing projects that jeopardize the continued existence of listed species or adversely modify designated critical habitat.

- ▶ An endangered species is an animal or a plant species in danger of extinction throughout all or a significant portion of its range.
- ▶ A threatened species is an animal or a plant species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
- ▶ A proposed species is an animal or a plant species proposed in the Federal Register for listing under Section 4 of the ESA.
- ▶ A candidate species is an animal or a plant species defined by the USFWS as “plants and animals for which the Fish and Wildlife Service has sufficient information on their biological status and threats to propose them as endangered or threatened under the ESA, but for which development or a proposed listing regulation is precluded by other higher priority listing activities. Conservation of these species is important because they are by definition species that may warrant future protection under the ESA.”
- ▶ Critical habitat, based on the physical or biological features deemed by the USFWS as essential to the conservation of the species, may be included with the listing of a wildlife or fish species, such as the Colorado River Basin for razorback sucker, Colorado pikeminnow, humpback chub, and bonytail chub.

Additional terms are used to describe species that have low populations but may or may not be formally listed. T&E species and other species with low populations can serve as indicator species that are particularly sensitive to adverse impacts to the environment and, thereby, are indicators of environmental problems. Their gene pool also contributes to biological diversity, uniqueness, and potential. These additional species include:

- ▶ **Species of Concern** - An informal term referring to a species that might need conservation actions ranging from periodic monitoring of populations and threats to the species and its habitat to the necessity for listing as threatened or endangered. Such species receive no legal protection and use of the term does not necessarily imply that a species will eventually be proposed for listing.
- ▶ **Species at Risk** - Any species with status under the ESA and a state’s ESA. Other species at risk are those on a state’s Fish and Wildlife Department’s sensitive species list and a state’s Department of Agriculture lists.
- ▶ **Imperiled Species** - Any species that is listed as threatened or endangered by the ESA, considered a candidate for listing, or its population is in steep decline.

The two subsections below provide guidance on the treatment of T&E species for CDOT’s NEPA projects. The first subsection discusses the process for evaluating T&E species. The second subsection discusses information on T&E species that should be in each NEPA document.



9.10.1 T&E Species Evaluation Process

Because T&E species are plants or animals that have low populations, they have requirements placed on their evaluation that are in addition to the requirements for their evaluation as plants or animals, have limited habitat availability, or have other barriers. As for plants and animals in general, the CDOT RPEM, resource specialist, or environmental project manager are responsible for early identification of T&E species and their habitats and may be supported by consultants. It should be noted that some projects will have far-reaching effects that may impact listed species well outside the construction zone. For example, water depletions can adversely affect species such as greenback trout or humpback chub hundreds of miles from the highway project's location.

Similarly, the study area for T&E species should be defined based on direct and indirect impacts that any individuals of these species might incur from a project. Even more so for these species, the study area should be large enough to enable consideration of all possible direct or indirect project impacts.

T&E species are more rigidly protected than other plant and animal species; the potential impact of a project must be known early. Impacts to T&E species and their designated critical habitat must be minimized to ensure compliance with the ESA. Early knowledge that T&E species and any critical habitat may be affected enables project designers to avoid and minimize impacts to any species before they have progressed too far in developing the alternatives. It also enables any field studies needed to determine the presence/absence of T&E species to be conducted at the correct time.

Reasons for Evaluation of T&E Species Under NEPA

CDOT evaluates T&E species for several reasons:

- ▶ Unauthorized take of listed species is subject to both civil and criminal penalties.
- ▶ T&E species and their designated critical habitat are ecologically important.
- ▶ To comply with CDOT's Environmental Stewardship Guide (2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner.

The following regulations and certifications apply to T&E resource evaluations:

- ▶ T&E plant and animal species are subject to all the regulations identified in **Section 9.8** for vegetation and in **Section 9.9** for fish and wildlife. They are also subject to protection under the ESA and subsequent amendments (Endangered Species Act, 16 USC § 35).
- ▶ Section 7 of the ESA requires that "each Federal agency . . . in consultation with and with the assistance of the Secretary [of the Interior] insure that any action authorized, funded or carried out is not likely to jeopardize the continued existence of endangered species or threatened species or result in the destruction or adverse modification of habitat of such species . . . which is determined to be critical . . . unless such agency has been granted an exemption for such action."
- ▶ Section 9 lists those actions that are prohibited under the ESA. Unauthorized take of a species listed in accordance with the ESA is prohibited. However, there are processes whereby take is allowed when it is incidental to an otherwise legal activity.



- ▶ Whereby an action without a Federal nexus but with a potential to result in the take of a listed species could be allowed under an incidental take permit obtained through Section 10 of the ESA.

Regulations governing interagency cooperation for T&E species can be found in the Joint Counterpart ESA Section 7 Consultation Regulations (Joint Counterpart Endangered Species Act, 50 CFR 402). FHWA Technical Advisory T6640.8A guidance (FHWA, 1987b) includes T&E species among the potentially significant impacts most commonly encountered by highway projects. The state of Colorado also protects T&E species under Non-game and Endangered Species Conservation, CRS Title 33, Article 2 (Non-game and Endangered Species Conservation, CRS 33 § 2).

Collection and Evaluation of Baseline Information Under NEPA

For T&E species, two parallel processes require collection and evaluation of baseline information—compliance with NEPA and with ESA. For CDOT and FHWA, compliance with ESA means initiating consultation with the USFWS when it has been determined that a proposed project may affect one or more federally listed species. If the project is likely to adversely affect one or more federally listed species, formal consultation will be required. FHWA or another Federal agency must then prepare a Biological Assessment (BA). A BA is a document prepared for the Section 7 process to determine whether or not a proposed major construction activity under the authority of a Federal action agency is likely to adversely affect listed species, proposed species, or designated critical habitat. The BA must be submitted to USFWS to obtain their Biological Opinion (BO) as to whether the project jeopardizes a listed species or its habitat. A BO is a document stating the opinion of USFWS as to whether or not a Federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. Further information on the USFWS consultation process can be found in the *Endangered Species Consultation Handbook Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act* (USFWS and National Marine Fisheries Services, 1998).

Collection of Baseline Information

The first step in addressing T&E species is to determine whether such species are impacted by the project. Use online data to obtain information on the following, at a minimum:

- ▶ Federally listed T&E species in Colorado (USFWS)
- ▶ State listed T&E species (CPW)
- ▶ County-specific species lists from the Natural Diversity Information Source (CPW)

Additional information and GIS data on listed species can be found on the following websites:

- ▶ USFWS website
- ▶ CPW (additional data may be obtained through area biologists)
- ▶ Colorado Natural Heritage Program (additional data may be requested via a prescribed process or by contacting CDOT's Wildlife Program Manager)

The latter two organizations also have databases that contain records of specific sightings of the species that they track. Some of these data are available in GIS format and can be plotted together with project features.



In addition, it is possible that some of the T&E species being impacted have critical habitat that has been formally designated by USFWS and is legally protected. Be sure to learn whether the T&E species in the project area of impact have designated critical habitat and obtain a description and map of any such habitat.

Section 9.8 and **Section 9.9** of this Manual may contain additional sources that include information on T&E vegetation and fish and wildlife species, respectively.

T&E Online Resources

- USFWS Colorado Listed Species at <https://www.fws.gov/endangered>
- CPW Species of Concern at <http://cpw.state.co.us/learn/Pages/SOC-ThreatenedEndangeredList.aspx>
- CPW's Natural Diversity Information Source at <http://cpw.state.co.us/learn/Pages/Maps.aspx>
- CPW's website at <https://cpw.state.co.us/>
- CNHP's website at <http://www.cnhp.colostate.edu/>

Evaluation of Baseline Information

The process used to evaluate baseline information for T&E plant and animal species does not differ from the process used for other plant and animal species populations. However, the rigor with which these processes are applied to T&E species should be greater because of their status. Therefore, it is also important to include:

- ▶ Documented records of species occurrence within the influence of the project
- ▶ A determination of whether or not there is potential occupied habitat and, if so, to assume the species may be present
- ▶ Evaluation of potential project impacts on T&E species, their habitat, and any designated critical habitat

Other Issues to Consider

The information used for compliance with NEPA and ESA must be consistent but may not be identical. For example, in the NEPA document, CDOT and FHWA may decide to highlight all sensitive species in a separate chapter that is titled "Sensitive Species" rather than "T&E Species," while documentation prepared to comply with ESA should address only federally listed species. Less detail may be provided for individual species in the NEPA document as long as the BA is referenced, which means that information on federally listed species in the ESA document can be summarized for the NEPA document.

A BA cannot be completed until one alternative has been selected. The USFWS has 90 days to consult with the applicant once the BA has been submitted. The BA should be submitted to the USFWS 180 days after receipt of a species list from the USFWS. The USFWS has 45 days to issue a BO. These time constraints on BA preparation mean that the formal initiation of the BA should be timed carefully. However, preparation of the species accounts in the BA can begin early in the project because informal lists of the species likely to require addressing in the BA can be obtained from the online sources listed previously. Such detailed species-specific information may benefit the development of project alternatives. Also, because the BA prepared on T&E species must ultimately be approved by USFWS, it is important to coordinate closely with this agency when collecting and evaluating information for the NEPA document.



9.10.2 NEPA Document Sections

The content of the sections on T&E species in the Affected Environment and Environmental Consequences chapters is discussed below.

Affected Environment

Determine whether the Affected Environment section on T&E species should include only these species or also discuss other species of concern. Title the section appropriately (that is, sensitive species, species of concern etc.). If other species of concern are not discussed with T&E species, they should be highlighted in the sections on vegetation and fish and wildlife.

Information on T&E species in the Affected Environment chapter should be more detailed and species-specific than what is provided in the sections on other vegetation (**Section 9.8**) and wildlife (**Section 9.9**). Discuss each T&E species separately. Provide specific information on the habitat or critical habitat each of these species occupies, what habitat features it uses, and why this is important to the species' population. The better this information, the more precisely potential impacts to the species can be identified.

Environmental Consequences

One of five findings must be made for listed species or critical habitat:

- ▶ No effect
- ▶ May affect but not likely to adversely affect
- ▶ May affect, likely to adversely affect
- ▶ Jeopardize the continued existence of the species or destruction or adverse modification of designated critical habitat
- ▶ Beneficial to the species

No consultation is required for “no effect” findings. For a finding of “may affect but not likely to adversely affect,” CDOT will informally consult with the USFWS. If USFWS concurs with the finding in writing, the Section 7 process is complete. An “adverse effect,” “jeopardy,” or “beneficial” finding requires the preparation of a BA and for FHWA or other Federal agency to enter into formal consultation. At the end of formal consultation, the USFWS will issue a BO.

Discuss the impacts to each T&E species separately. Because these species and their designated critical habitat are so stringently protected, determination of precise potential impacts to them will best meet NEPA and ESA requirements and will also benefit the project. After describing each type of impact to a species, note the importance of this impact to the species' population.

As for other resources, discuss alternatives that have the same impacts on a T&E species together and contrast those that differ so that similarities and differences in alternative impacts on a T&E species are clear. Prepare the T&E species input for a tabular summary of impacts by alternative.

For T&E species and designated critical habitat, avoidance of impacts is preferable. If the BA and NEPA document conclude that the project “may adversely affect” the species, USFWS may issue an incidental take statement in the BO. In addition, “reasonable and prudent measures” and “terms and conditions” must be adhered to during project implementation to minimize the incidental take.



If the BA and NEPA document conclude that the project “may adversely affect” the species and the USFWS BO contains a finding of jeopardy and/or adverse modification, the *Endangered Species Consultation Handbook Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act* (USFWS and National Marine Fisheries Services, 1998) outlines the necessary procedure to follow.

The lead Federal agency may:

- ▶ Adopt one of the reasonable and prudent alternatives for eliminating the jeopardy or adverse modification of critical habitat in the opinion
- ▶ Decide not to grant the permit, fund the project, or undertake the action
- ▶ Request an exemption from the Endangered Species Committee (Appendix G in the *Endangered Species Consultation Handbook Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act* [USFWS and National Marine Fisheries Services, 1998])
- ▶ Reinitiate the consultation by proposing modification of the action or offering reasonable and prudent alternatives not yet considered
- ▶ Choose to take other action if it believes, after a review of the BO and the best available scientific information, that such action satisfies Section 7(a)(2)

The lead Federal agency must notify the USFWS of its final decision on any proposed action that receives a jeopardy or adverse modification BO (50 CFR § 402.15(b)).

In either of the above situations, the process of ESA compliance becomes complex and the project may be severely delayed. The best course is to avoid potential impacts to T&E species whenever possible.

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table* (Table 9-2) is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for threatened/endangered species.



9.11 Historic Properties

Historic properties are defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). Historic resources frequently encountered during CDOT projects include buildings, roadways, railroads, irrigation ditches and canals, sewers, bridges, and culverts, though historic resources may include other man-made structures.

Refer to the **Colorado Cultural Resource Survey Manual, Volumes I and II** on how to conduct a cultural survey.

<https://www.historycolorado.org/sites/default/files/media/document/2017/1527.pdf>

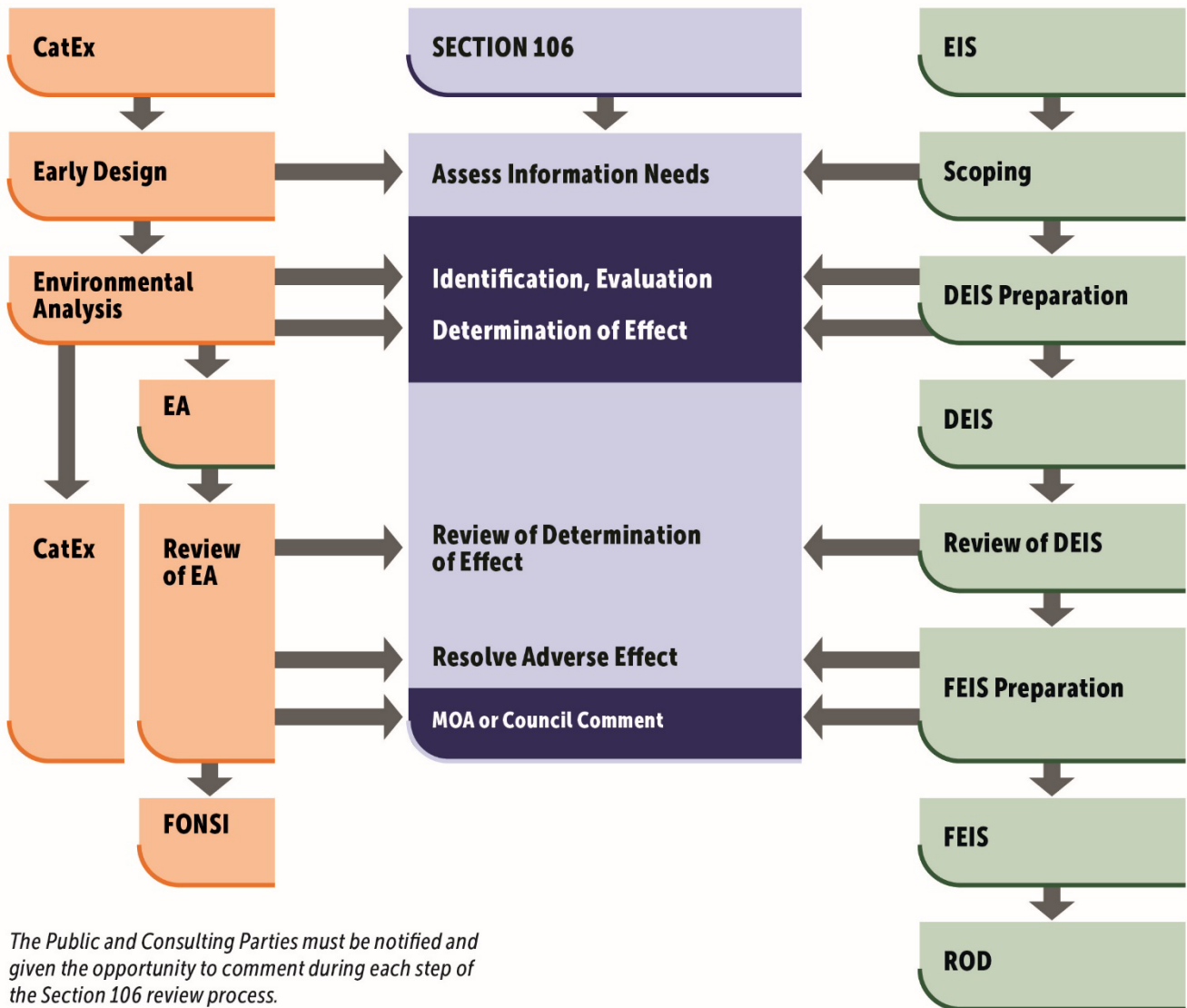
9.11.1 Historic Properties Evaluation Process

Section 106 of the National Historic Preservation Act (NHPA) describes the process that Federal agencies must follow when planning undertakings that have the potential to affect historic properties. This section outlines procedures for identifying and evaluating historic properties as required by Federal and state law. Qualified cultural resource professionals, as defined in the Secretary of the Interior's Professional Qualification Standards, are charged with identifying and evaluating historic properties that have significance and that could be affected by transportation projects facilitated by CDOT.

Cultural resource specialists in consultation with the RPEM and Project Engineers should initiate the evaluation of historic properties. CDOT identifies potential historic properties, recommends determinations of eligibility and effect, and consults with the State Historic Preservation Officer (SHPO), Indian Tribes, Native Hawaiian organizations, and other consulting parties on behalf of FHWA. FHWA has authorized CDOT to make these evaluations; however, FHWA is legally responsible for the findings and determinations made during the Section 106 process (**Figure 9-3**) and also determines whether the work done by CDOT fulfills the intent of the legislation. FHWA is also responsible for ensuring that Section 106 is undertaken early in the planning process to fulfill public coordination and SHPO review requirements. Otherwise, the agency may be unable to document that it has fulfilled its responsibilities under Section 106, causing issues for CDOT later in the process. Issues that can arise from improper Section 106 documentation include legal challenges that can delay or stop a project.

Identification and evaluation of historic properties must be conducted during the initial planning phases of the project. This includes when alternatives for the proposed action are first being designed and developed. By taking alternatives into account at the planning stage, there is an opportunity to avoid or minimize effects to historic properties and less chance of delays in the NEPA process due to undiscovered historic properties.

Figure 9-3. Coordination Between NEPA and Section 106



The Public and Consulting Parties must be notified and given the opportunity to comment during each step of the Section 106 review process.



Reasons for Evaluation of Historic Properties Under NEPA

CDOT is required by state and Federal law to identify and evaluate the significance of historic properties before commencing work related to transportation construction and maintenance activities that could potentially impact historic and/or archaeological resources. FHWA has authorized CDOT to make these evaluations. Several state and Federal regulations direct the evaluation and protection of historic properties.

36 CFR 800, Protection of Historic Properties (the regulations implementing Section 106) - Any undertaking that may result in alterations to features of a property's location, setting, or use may constitute an impact depending on a property's significant characteristics, transfer, or lease. As defined in 36 CFR 800.16(y), an undertaking is "a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal Agency, including those carried out by or on behalf of a Federal Agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license, or approval." Adverse effects can occur when historic properties listed on or eligible for listing on the NRHP are subjected to any of the following:

- ▶ Physical destruction or alteration of all or part of the property
- ▶ Isolation of the property or alteration of the property's setting when that character contributes to the property's qualification for the NRHP
- ▶ Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting
- ▶ Neglect of a property, resulting in its deterioration or destruction
- ▶ Transfer, lease, or sale of the property

Local jurisdictions may also have their own ordinances and regulations that must be followed. CDOT Cultural Resources staff must coordinate with the counties, cities, and other jurisdictions where the undertaking will or may affect historic properties.

Time Frames for the Section 106 Process

The following are average time frames for completion of the Section 106 process, from notification to completion, if all necessary information is provided in a timely manner and there are no issues:

- Adverse Effect - 6 months or more
- No Adverse Effect - 4 months
- No Historic Properties Affected - 2 months

Note: These time frames do not include Section 4(f) evaluations, which are detailed in Section 9.20.

Collection and Evaluation of Baseline Information Under NEPA and Section 106

Section 106 of the NHPA outlines procedures to determine the effects of a project on historic properties. The Section 106 and NEPA processes must be coordinated (**Figure 9-3**) to ensure that information about the presence and effects to historic properties is included and considered in the NEPA analysis.

Section 106 involves a four-step process that agencies must follow to assess NRHP eligibility of historic properties and potential impacts to them.



CDOT's process is described in the CDOT *Archaeology and History Analysis and Documentation Procedures* (CDOT Procedures Manual) (CDOT, 2018a), available online at:

<https://www.codot.gov/programs/environmental/archaeology-and-history/cultural-resources-procedures-manual/view>.

A summary of the four steps is provided below.

- ▶ **Step 1: Establish the Undertaking and Initiate Consultation with Participants in Section 106.** Step 1 involves identifying and coordinating with any interested or consulting parties, such as members of certified local governments, local historical societies, museums, historic preservation commissions, or other knowledgeable groups/individuals.
- ▶ **Step 2: Identify Historic Properties.** Step 2 involves determining whether any resources that may be affected by an undertaking have the potential to be eligible for listing on the National or State Registers of Historic Places. It is not necessary for a resource to be listed on the NRHP to be afforded protection under the law, as eligible properties are also protected. Activities include:
 - Determine Undertaking's Area of Potential Effects (APE)
 - Determinations of Eligibility for National or State Registers
- ▶ **Step 3: Assess Effects.** EPB or Regional Senior Historian, EPB Senior Archaeologist or cultural resource consultant applies the criteria of adverse effect to any eligible or listed historic properties within the APE. SHPO consultations are required. There are three kinds of effects findings:
 - No Historic Properties Affected
 - No Adverse Effect
 - Adverse Effect
- ▶ **Step 4: Resolve Adverse Effects.** In consultation with SHPO and consulting parties, develop strategies that avoid, minimize, or mitigate adverse impacts to historic properties but also meet the basic objectives of all interested stakeholders. The execution and implementation of the stipulations in an MOA provide evidence of FHWA's and CDOT's compliance with Section 106.

NRHP Eligibility Criteria

- Association with significant events
- Association with significant people
- Association with technological, engineering, or architectural significance
- Ability to yield information about prehistoric or historic site



Coordination of Section 106 and NEPA

According to 36 CFR 800.8, the NEPA process and documentation can be used for Section 106 purposes if the agency official has notified in advance the SHPO/ Tribal Historic Preservation Officer (THPO) and the Advisory Council on Historic Preservation (ACHP) that it intends to do so. The documentation must meet the standards set forth in 36 CFR 800.8 (c) (1) through 36 CFR 800.8(c)(5). Coordinating the Section 106 process within the context of NEPA processes provides an opportunity to streamline the approach to historic properties compliance, especially for projects that will or may have complex historic or archaeological resource issues. FHWA and CDOT will determine the utility of this approach early in project planning and will coordinate closely with the SHPO and ACHP. Although this process is available for use, FHWA and CDOT have found that it has had limited value in streamlining for the projects for which it has been employed.

Consultants conducting field work should review the CDOT Procedures Manual available at:
<https://www.codot.gov/programs/environmental/archaeology-and-history/>

Native American Consultation

As stipulated in the NHPA and the revised ACHP regulations, Federal agencies must afford the Native American community a reasonable opportunity to comment on and participate in Federal undertakings in the context of the Section 106 process. Federally recognized Tribes are, by law, considered sovereign nations and as such FHWA is obligated to initiate government-to-government cultural resource consultations on transportation projects when Federal funding or a Federal action is involved.

Consultation under the Colorado Register of Historic Places Act (CRS 24-80.1 and 8 CCR 1504-5)

The Register of Historic Places Act (CRS 24-80.1) states that the planning and activities of state agencies must consider the preservation of historically significant cultural resources of the state. It also outlines how state agencies should evaluate actions that have the potential to affect properties eligible for or listed in the State Register of Historic Places (SRHP). The Rules and Procedures implementing the Act (8 CCR 1504-5) include guidance regarding the evaluation of properties for State Register eligibility, how to assess effects, and consultation with the State Historical Society.

CDOT conducts consultation under the Register of Historic Places Act when projects are state funded (i.e., lack Federal funding or another nexus) and when there is the potential to affect CDOT-owned properties that may be eligible for or listed in the SRHP. CDOT also conducts the state register process for permits (e.g., special use, access, utilities) when appropriate. This process is not typically addressed in the context of NEPA. However, there may be properties that are identified as listed or eligible on the State Register that may be evaluated under Section 106 and sometimes there are projects that are state funded but require a Federal permit and Section 106 is carried out by the lead Federal agency and CDOT facilitates a State Register consultation.



Step 1: Initial Consultation and Participants

The Register of Historic Places Act requires state agencies to notify the State Historical Society of proposed actions that have the potential to affect properties that are listed in the SRHP. CDOT includes this notification, along with eligibility and effect determinations, in a letter to the SHPO. As with Section 106 consultation, CDOT has identified the SHPO as the point of contact for the SRHP consultation process.

The state act does not specifically require consultation with local interested parties or Certified Local Governments. However, following the protocol outlined in the CDOT Environmental Stewardship Guide (2017a) and as appropriate, cultural resources staff may include interested parties in the consultation process to ensure that they are aware of the project and have an opportunity to provide information about resources that may be affected by the proposed action.

Although state law does not reference the development of an APE, the Act does require state agencies to identify properties within “the area of proposed action” (24-80.1-104). For state-funded projects, CDOT does not request SHPO agreement regarding the “area of proposed action” but does provide a map or graphic depicting this area to clarify the project and resource locations.

Step 2: Identification of Properties

Step 2 involves determining if resources affected by a state-funded action have the potential to be eligible or listed in the SRHP. The EPB or Regional Senior Historian, or EPB Senior Archaeologist, will evaluate the property to determine if it meets one or more of the Criteria for Nomination as outlined in the NRHP Act:

- a) The association of such property with events that have made a significant contribution to history;
- b) The connection of such property with persons significant in history;
- c) The apparent distinctive characteristics of a type, period, method of construction, or artisan;
- d) The geographic importance of the property;
- e) The possibility of important discoveries related to prehistory or history.

Criteria for Nomination a, b, c, and e are similar to the NRHP Criteria for Evaluation (NRHP Criteria). Criterion for Nomination d (geographic importance of the property) is not addressed by the NRHP criteria. State Criteria also do not include NRHP Criterion Considerations A through G, which cover exceptional situations, including cemeteries, birthplaces, churches, reconstructed structures, memorial or commemorative structures, and structures less than 50 years old. CDOT determines if a property meets the Criteria for Nomination and consults with the SHPO to determine if the properties are significant.

Step 3: Evaluation of Effects

The Register of Historic Places Act includes guidance on how to assess effects and consult with the State Historical Society about those effects. The Act defines an “effect” as “any change in the quality of the historical, archaeological, or architectural character that qualifies the property for entry in the state register.” Unlike Section 106, the degree of effect (adverse effect, no adverse effect, no historic properties affected) is not defined in the state laws, but CDOT uses these categories to describe effects when consulting for state-funded actions.



The Act outlines the process by which state agencies consult regarding eligibility and effects. State agencies are required to notify the State Historical Society of the proposed action, identify properties within the area of the proposed action, request a determination of effect on properties, and afford the State Historical Society 30 days to review the proposed action. If there is disagreement over a finding, the state agency has 30 days to negotiate an agreement with the Historical Society. If no agreement is reached during this time, the governor makes the final determination.

CDOT has modified the consultation process so that CDOT, not the State Historical Society or SHPO, determines the significance of the property and whether there is an adverse effect. CDOT submits these determinations and requests concurrence from SHPO. If there is agreement regarding the eligibility of the resource and there is a finding of no adverse effect, the consultation process is complete.

Step 4: Resolution of Adverse Effects

The state act does not require mitigation for adverse effects. However, when an adverse effect to a property is identified for a state action, CDOT may determine that mitigation is appropriate. If so, CDOT includes mitigation recommendations in a letter to SHPO and provides SHPO an opportunity to review the final mitigation. Because there is no Federal involvement for state funded actions, it is not necessary to notify the ACHP of adverse effects and there are no requirements to execute a formal MOA. Once mitigation has been completed and reviewed by SHPO, the consultation process under the State Register of Historic Places Act is complete.

9.11.2 NEPA Document Sections

The content of the sections on historic properties in the Affected Environment and Environmental Consequences chapters is discussed below. For projects having complex historic properties issues, these sections shall contain subsections on “Historic Resources,” “Archaeological Resources,” and “Native American Consultation.”

Affected Environment

Brief but thorough data specific to the historic properties within the APE must be presented. The Affected Environment chapter must contain all relevant information related to the status and disposition of historic properties in the study area and omit data that has no bearing on the transportation decision ultimately made as a result of the FONSI or ROD. Depending on the document and the resources present in an APE, historic and archaeological resources can be discussed either jointly or independently.

Other guidelines to be considered include using data tables whenever feasible, especially if many properties are present. Lengthy narrative site descriptions should generally be avoided. An adequate document will also be specific when discussing effects and proposed mitigation of adverse effects for NRHP eligible or listed sites. Discussion shall focus on properties that require protection under the law (i.e., are eligible) and exclude information regarding non-NRHP eligible resources. Referring to the appropriate technical document or survey report is acceptable.



Environmental Consequences

This chapter of the NEPA document summarizes the efforts taken during the Section 106 evaluation process and any findings. In some cases, this will involve discussing alternatives that have the same historic property impacts together and contrasting those that differ so that similarities and differences in impacts are clear. Effects on historic properties as a result of alternatives must be quantified as specifically as possible. All interagency correspondence documenting the evaluation should be attached as an appendix to the NEPA document.

As shown on **Figure 9-4** (in **Section 9.20**), one of the steps of the Section 106 evaluation process is the resolution of adverse effects. Summarize strategies identified to avoid, minimize, or mitigate adverse effects to historic properties in this section.

Basic information to include in a NEPA document includes:

- ▶ Brief overview of the “whys and whats” of Section 106
- ▶ Brief summary of SHPO and consulting party consultation regarding methodology(s) and development of the APE, file searches, and field inventory(ies)
- ▶ The number and types of historic properties, and under which NRHP criteria they are eligible

NRHP-eligible archaeological sites are sensitive resources that are exempt from the provisions of the Freedom of Information Act (FOIA), and as such should never be reflected on maps or otherwise have specific locational data included in a NEPA document. Historic built environment resources, however, can and should be illustrated on mapping, including the APE boundary.

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table* (**Table 9-2**) is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for historic properties. Under Section 106, only properties that result in an adverse effect require mitigation.



9.12 Paleontological Resources

Paleontological resources constitute a fragile and nonrenewable scientific record of the history of life and related natural processes on earth. These resources include vertebrate, invertebrate, and plant fossils. In Colorado, plant and animal remains found in deposits post-dating the end of the Pleistocene Epoch (approximately 11,700 radiocarbon years ago), at which time modern fauna and flora were established and human occupation is well-documented, are not considered paleontological in nature. For the purposes of this Manual, paleontological resources include fossils, associated radiometrically- and/or paleomagnetically-datable rocks, sediments, or organic matter, and the physical characteristics of the fossil's associated sedimentary matrix.

The following subsections provide guidance on the treatment of paleontological resources for CDOT's NEPA projects. The first subsection provides guidance for evaluating paleontological resources. The second subsection outlines paleontological information that will be in each NEPA document.

Paleontology Regulations and Guidance

Historical, Prehistorical, and Archaeological Resources Act (Colorado Revised Statute 24-80-401 ff, aka State Antiquities Act)

- The Act protects all fossils on state owned lands and lands controlled by any subdivision of state government.

Federal Land Policy and Management Act (FLPMA) of 1976 (USC Title 43, Section 1732)

- This section authorizes the Secretary of the Interior to issue regulations providing for the use, occupancy, and development of public lands through leases, permits, and easements.

Paleontological Resources Preservation Act (PRPA) of 2009 (16 USC 470aa-aaa11)

- This Act requires the Secretaries of the Interior and Agriculture to manage and protect paleontological resources on Federal lands using scientific principles and expertise.

9.12.1 Paleontological Evaluation Process

The RPEM (or their designee), in association with the CDOT Staff Paleontologist, will initiate the evaluation of paleontological resources.

Generally paralleling the archaeological program, paleontological clearances are required to proceed to construction, commence maintenance activities, or initiate materials excavation. This applies to all projects that propose any effect of the existing road prism, all CDOT-provided materials sources, and those materials sources adjacent to interstates where direct contractor access to the roadway is an issue. Previous disturbance, including cutting and even paving of an area to be impacted, does not automatically relieve the responsibility to consider potential affects to paleontological resources, particularly on projects where excavation to previously undisturbed bedrock is anticipated. Typically (although not exclusively), the scientific importance of paleontological resources is not as intimately tied to their precise original location (as in the case of archaeological resources), so that even surface finds of fossils in previously disturbed areas can be of scientific importance; however, location information is extremely useful if available.

The paleontological evaluation will be conducted when alternatives for the proposed action are first being designed.



Reasons for Evaluation of Paleontological Resources Under NEPA

The law does not explicitly state the requirements to locate and assess the scientific importance of fossils on state- and Federal-owned lands. However, state law is implicit in its requirement to avoid any damage to, or destruction or removal of, the resource without a permit.

The CDOT Staff Paleontologist, or any paleontological consultant working for CDOT, must be named on a current State of Colorado permit to search for and collect fossils on state-owned lands. Permits are obtained from the OAHF in Denver. FHWA considers protection of fossils on FHWA-funded projects a NEPA issue, but the extent of work required to protect the resource is based on the degree of protection afforded by each state's laws.

For highway projects that cross BLM-administered lands, BLM uses the Federal Land Policy and Management Act (FLPMA) of 1976 and the Paleontological Resources Preservation Act (PRPA) of 2009 to regulate the collection of fossils. The CDOT Staff Paleontologist, or any paleontological consultant working for CDOT, must be named on a current State of Colorado BLM fossil collecting permit to collect fossils on BLM-administered lands in Colorado. Permits can be obtained from the Colorado State Office of the BLM in Lakewood.

For highway projects that cross USFS-administered lands, fossil collection is regulated under the PRPA of 2009. The CDOT Staff Paleontologist, or any paleontological consultant working for CDOT, must hold a current USFS Special-Use Permit to collect scientifically significant fossils on USFS-administered lands in Colorado.

Paleontological Reports Authored by Consultants

Consultant reports are typically expected to provide a more detailed account of the factors described under Step 1 than is typical of in-house reports because the CDOT Staff Paleontologist keeps more detailed data on file where it is readily accessible for CDOT's use.

Consultant reports will include two copies of any newly recorded fossil localities and previously recorded fossil localities for which a field survey has provided additional locality data for insertion in the CDOT Staff Paleontologist's files. Consultant reports should be submitted in electronic format.

Collection and Evaluation of Baseline Information Under NEPA

The paleontological clearance process consists of four steps: (1) initiation of paleontological clearance, (2) initial research, (3) on-the-ground reconnaissance, and (4) report of results.

Step 1: Initiation of a Paleontological Clearance

To initiate a paleontological clearance, the RPEM sends a request and accompanying data to the CDOT Staff Paleontologist. A request for paleontological clearance will provide the following information, at a minimum:

- ▶ Project name and number
- ▶ For a linear highway project, its beginning and ending mileposts
- ▶ For a linear highway project, the width of the corridor requiring clearance, measured each direction from centerline (if the corridor to be cleared is the existing ROW only, stating that fact is sufficient)



- ▶ For a materials source, its location in relation to the nearest highway milepost
- ▶ For a materials source, its legal location, either descriptive or plotted on a 1:24,000 scale topographic map
- ▶ For a materials source, the dimensions of the area for which clearance is being requested
- ▶ For any excavation, estimated depth of anticipated disturbance
- ▶ Copies of any pertinent, signed rights-of-entry forms
- ▶ A proposed clearance due date

When available, plan, profile, and cross-section sheets are a valuable data source that aids in the paleontologist's assessment of the nature and scope of proposed effects to known and potential paleontological resources. Shapefiles or KML/KMZ files outlining the project area will help expedite the initial evaluation of the project. If not provided with a paleontological clearance request, the reviewing paleontologist may request them.

Step 2: Initial Research

Upon receipt of a paleontological clearance request, the paleontologist conducts a search for pertinent published and unpublished research data. This includes researching the availability of geologic map data relevant to the proposed linear highway project corridor or materials source. This initial research may reveal that a proposed linear highway project corridor or materials source does not require on-the-ground reconnaissance for paleontological resources. This is usually because there is no potential fossiliferous geologic unit cropping out at or near the existing ground surface within the proposed project footprint. The paleontological assessment must include use of the best (usually, the largest-scale available) geologic maps in identification of geologic units encountered or expected to be encountered during paleontological survey. When CDOT requests a consultant to conduct a paleontological study, CDOT's Staff Paleontologist is available for consultation on the availability of geologic maps.

In addition to searching published and unpublished literature, a previously recorded fossil locality search is conducted, typically with a major repository museum in Colorado in a location relevant to the project. Federal agencies may also require that their fossil locality databases be consulted when a survey is conducted on CDOT ROWs that intersect federally owned lands. When CDOT requests a consultant to conduct a paleontological study, CDOT's Staff Paleontologist is available to facilitate these searches, if necessary. The CDOT Staff Paleontologist will also be consulted to determine other fossil localities known to them but not recorded in either of the above-cited museum databases (e.g., USGS fossil localities cited in USGS Bulletins, Professional Papers, and various geologic map series).

Step 3: On-the-Ground Reconnaissance

If determined to be necessary, a site visit and visual survey on state-owned lands must search out not only vertebrate fossils but also macroinvertebrate (i.e., non-microscopic animals without backbones) and macropaleobotanical (i.e., plant remains other than pollen) fossils. Federal agencies may require consideration of possible effects to vertebrate fossils only where CDOT ROW intersects federally owned lands. Intermittent shallow subsurface sampling of bedrock exposures where plant and/or invertebrate fossils may be buried will be necessary. This should include cracking of limestone concretions common in some marine shale and sandstone lithologies and probing for leaf fossils in locations where literature search and on-the-outcrop experience indicate



that they may be present. Vertebrate fossil searches may be conducted by surface examination alone.

Step 4: Report of Results

The CDOT Staff Paleontologist provides reports to the appropriate RPEM. Report text, at a minimum, includes:

- ▶ The linear highway project location, with milepost limits and legal location of the endpoints of the linear survey to the quarter-quarter-quarter-quarter section, or the materials source location, located legally and in relation to the nearest highway milepost
- ▶ Date(s) of on-the-ground reconnaissance (when applicable)
- ▶ The bedrock units known to crop out within the proposed linear highway project or materials source limits and the source(s) of that geologic data
- ▶ The results of on-the-ground reconnaissance, including identification of any newly recorded and/or relocated previously recorded fossil localities
- ▶ An assessment of all identified fossil localities' scientific significance
- ▶ A recommendation for further paleontological investigation prior to NEPA clearance or clearance to proceed to project construction, commence proposed maintenance work, or initiate materials excavation. If appropriate, the clearance to proceed to project construction, commence proposed maintenance work, or initiate material excavation will include stipulations for mitigation of impacts to paleontological resources during project construction or completion of proposed maintenance work or materials excavation.

New fossil localities identified during field reconnaissance and previously recorded localities for which field survey has provided additional data are recorded on fossil locality data sheets. These data sheets are provided by the institution designated as the repository for specimens collected under the Office of Archaeology and Historic Preservation (OAHP) permit issued to CDOT or the paleontological consultant. Federal agencies may require separate recordation of fossil localities identified on federally administered lands.

Other Issues to Consider

Although OAHP is responsible for enforcing the State Antiquities Act and, by inference, reviewing reports of surveys addressing CDOT's efforts to satisfy the act, OAHP has delegated report review responsibilities to the CDOT Staff Paleontologist. OAHP only requires that the CDOT Staff Paleontologist provide annual lists of clearance reports and fossil localities identified and specimens collected.



9.12.2 NEPA Document Sections

The content of the sections on paleontological resources in the Affected Environment and Environmental Consequences chapters is discussed below.

Affected Environment

Information from the paleontological assessment report is used to provide a brief summary in the NEPA document of the paleontological resources located within the APE, along with a brief description of those resources likely to be impacted. An EA or EIS typically includes only one to three paragraphs concerning paleontological resources in the Affected Environment chapter. Lengthy narrative fossil locality and geologic unit lithology descriptions should be avoided. If a special issue of concern is raised in the paleontological assessment report, additional information may be necessary and appropriate. In most instances, only a brief summary of the geological and paleontological data presented in the paleontological assessment report need be included in the Affected Environment chapter. If applicable, the basis for determination of identified fossil localities' scientific significance will be provided. Also, the basis for concluding that there will likely be no effects to scientifically important paleontological resources should be provided. Paleontological sites are sensitive resources that are exempt from the provisions of the FOIA and must never be reflected on maps or otherwise have specific locational data included in a NEPA document.

A NEPA document will discuss any special concerns that will require further study during the final design phase of planned construction projects within the project study corridor. Final design may be important in determining the nature and scope of any mitigation efforts required during construction. Specific subsurface soil, bedrock, and groundwater conditions that may be relevant to the nature and scope of mitigation efforts are determined at that time for use in preparing construction plans.

Environmental Consequences

The Environmental Consequences section of the NEPA document summarizes the efforts taken during the paleontological clearance process. Discuss alternatives that have the same paleontological impacts together and contrast those that differ so that similarities and differences in alternative paleontological impacts are clear. All interagency correspondence documenting the evaluation should be attached as an appendix to the NEPA document.

Effects to scientifically significant fossil localities are mitigated by avoidance and/or further collection and documentation of their associated resources. Paleontological mitigation may consist of controlled salvage excavation prior to linear highway project construction or materials source excavation, but more typically mitigation is completed through on-site monitoring of highway construction or materials excavation into bedrock deposits known to produce scientifically important fossils.

Mitigation through on-site monitoring includes the collection of any scientifically important fossils and associated scientific data uncovered during major construction or materials excavation. On-site monitoring typically is the mitigation strategy adopted when (1) potentially fossiliferous bedrock is not exposed at the ground surface prior to major construction or materials excavation, but will likely be uncovered during these efforts, and (2) fossil density at previously identified scientifically



significant fossil localities is such that controlled excavation prior to construction will not produce enough important fossils to represent a statistically valid sample in a timely and cost-effective manner. CDOT may request a paleontological consultant to conduct mitigation efforts, but such efforts will be under the direct supervision of, and/or in close cooperation with, the CDOT Staff Paleontologist.

The NEPA document will discuss concerns to be studied in depth during the final design phase of future construction projects. Final design may be an important phase in determining the nature and scope of any mitigation efforts required during construction. Specific subsurface soil, bedrock, and groundwater conditions that may be relevant to the nature and scope of mitigation efforts are determined at that time, for use in preparing construction plans.

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table* (Table 9-2) is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for paleontological resources.



9.13 Land Use

Land Use, Social Resources, and Economic Resources can be combined into a single technical report or memorandum, as appropriate, and in consultation with the CDOT Environmental Manager.

The way in which land is developed and used for various activities (e.g., residential, commercial, industrial, parks and open space) affects quality of life and the environment. Land use topics include designations created by a state, county, or city through land use plans (general plans, comprehensive plans, etc.); zoning; future land use and growth management areas; conservation easements; urban infrastructure service boundaries; annexation plans; and past, existing, and future development trends. The planning, design, and construction of roads and highways, as well as other transportation modes, are often based on land use development patterns and trends and affect existing land uses and plans and proposals for future development. Safe and efficient travel, whether by walking or taking public transportation, a car, an airplane, or a bike, is also influenced by the types and patterns of land uses.

The following subsections provide guidance on the treatment of land use for CDOT's NEPA projects. The first subsection discusses the process for evaluating land use. The second subsection discusses land use information that should be in each NEPA document. In addition, the introduction to this section of this Manual provides guidance on the treatment of resource-specific information that is the same for all resources.

9.13.1 Land Use Evaluation Process

The CDOT project team is responsible for reviewing land use in the area of potential impact and consulting with local agencies.

The current land use and future planned and proposed land uses should be assessed and evaluated for their consistency with the approved local government comprehensive development.

The land use evaluation should be completed when alternatives for the proposed action are first being designed and developed, even if that occurs before the formal initiation of the NEPA process.

Reasons for Evaluation of Land Use Under NEPA

CDOT evaluates land use for several reasons:

- ▶ Its importance in a community and to a local agency
- ▶ To comply with CDOT's Environmental Stewardship Guide (2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner

There are no land use specific regulations that FHWA and CDOT must comply with; however, the land use discussion should assess the consistency of the alternatives with the comprehensive development plans adopted for the area and (if applicable) other plans used in the development of the transportation plan required by 23 USC 134.



Collection and Evaluation of Baseline Information Under NEPA

Information on existing and planned and proposed land use is typically available from regional and local governments and MPOs, if applicable. County and city governments typically have land use plans that document existing and planned future land use within their legal geographic limits. Depending on the locale, these data may be available from the county or city planning department's website, in hard copy publications, or, preferably, from their GIS group. For largely rural areas, planning departments may have less data and generalized statewide data may need to be used. Use these sources to obtain information on the type of land use (i.e., urban, suburban, parks, agricultural, pastureland, riparian corridors, or unused grassland, shrubland, or forest). For urban and suburban land, obtain data that differentiate light industry, heavy industry, commercial, retail, and residential uses, if available. Also useful is information on residential density and Transit Oriented Development (TOD) whether the dwellings provide single family or multi-family housing. Map this information together with project facilities and provide further information on the mapped categories in tables. Coordinate the information obtained with land use information used in addressing noise impacts (**Section 9.23**). The data used in these two sections may differ in level of detail but should not be inconsistent.

Regional government entities also compile and analyze current and future land use information. In many instances, future land use assumptions at the regional level differ from those at the local level. Both figures can be used, but regional figures are often required for NEPA traffic, noise, and air quality analysis purposes. If differences are substantive, differences should be identified.

To assess the impacts of the project on land uses, envision what will happen during construction and operation of each project facility and how that activity will affect the ongoing uses of the adjacent land and future plans for changes in land use. Often, the need for a transportation project will have been identified by the county or city government, which would therefore have been involved since the very early planning of the project. Implementation of some projects may induce growth beyond what has been anticipated by the local planning departments.

Induced growth is an indirect impact that occurs when a project causes changes in the intensity and integrity, location, or pattern of land use. For transportation projects, this results from changes in accessibility that influence where development occurs. Induced growth impacts may be analyzed by modeling or by a round-table approach involving agency staff members, businesspeople, and citizens particularly well-informed regarding existing and future land use, restrictions to growth, the location of developable land, infrastructure, population and economic growth trends, and transportation systems and planned improvements, including the proposed project. However, CDOT typically should be reacting to growth and local growth plans and not inducing growth as part of the purpose or needs of the project.

If the transportation project will potentially affect adjacent land uses, work with the county and city government and the local citizens to develop acceptable mitigation measures. Measures such as elevated or depressed roadways, berms, or walls to constrain sight of and noise from the project come with a cost that must be balanced against their benefit to the nearby community.



Other Issues to Consider

Because induced growth has the potential to affect many aspects of a community in addition to its land use (e.g., the economy, existing transportation network, future growth plans, community diversity and composition), extensive public involvement (Chapter 7) may be required to characterize, evaluate, and help develop mitigation for potential impact. This has implications on the project's early planning, budget, schedule, and community buy-in.

9.13.2 NEPA Document Sections

The content of the sections on land use in the Affected Environment and Environmental Consequences chapters is discussed below.

Affected Environment

Typically, two areas are discussed in detail under the land use section: existing and future land use and consistency with local government land use planning. The level of detail provided in the document depends on the complexity of the project area and its surroundings. The section should discuss how the project will or will not meet the Statewide Long Range Transportation Plan and the local comprehensive plan, as well as any possible differences in the objectives of Federal, regional, state, and local land use plans and controls for the area concerned.

Existing and Future Land Use

This section should describe the existing and planned future land use in the project area. It should also discuss any access requirements (acceleration/deceleration lanes, signalization, etc.) imposed by a new development and any required traffic impact fees of current development trends in the project vicinity and the community at large. In discussing development trends, this section should provide:

- ▶ The development name(s)
- ▶ The development's status (i.e., existing, under construction, or proposed)
- ▶ The development's size (i.e., area, type of use, density)

If the document is an EIS, this type of information is usually found in the Affected Environment chapter. The level of detail should be appropriate to enable evaluation of the impact potential of the proposed action.

Consistency with Land Use Planning

In addition, the land use section must describe the state and local government plans and policies regarding land use controls and community growth management in the project area. This discussion should entail a brief overview of existing land use and growth management planning for the county and/or city.

The goal of this portion of the land use section is to ensure that the reader gains a clear understanding of the prevailing land use and growth management policies practiced in the county and/or city, substantiated by the state, community growth patterns and values, economic incentives, and conservation/preservation areas.



In discussing the policies of the county and/or city and state regarding land use controls, this section should also show how the existing community has grown and expanded, consistent with these plans and policies or otherwise. The section should reference appropriate sections of the approved local government comprehensive plan, community services element, and other areas that would substantiate the information presented. Where conflict exists among these policies and/or land usages within the community, these areas should be identified.

Environmental Consequences

The land use section of the Environmental Consequences section should assess and evaluate the consistency of each alternative for the proposed action with the approved local government comprehensive development plan and, if applicable, other plans used in the development of the transportation plan required by Section 134. In discussing the consistency of the proposed action with local planning, evaluate how the development of various project alternatives will directly contribute to changes in land use in the project area.

The secondary social, economic, and environmental impacts of any substantial foreseeable induced development should also be presented for each alternative to determine its importance in a community. Where possible, the distinction between planned and unplanned growth should be identified.

Section 9.27 discusses the development of a list of past, present, and foreseeable future land use development projects that should be addressed for only impacted resources in the consideration of cumulative effects. Locate these projects on a land use map. Discuss cumulative impacts to land use in more general terms, noting which land use components will be most impacted, their relative importance, and the degree to which impacts from the transportation project considered in the current NEPA document will contribute to the cumulative impacts.

Minimizing potential impacts of transportation alternatives to existing and future land use and local government's comprehensive development plans is the most acceptable form of mitigation planning for land use. Other options, such as amending land use plans or compensating for land use changes by supporting replacement land uses in other locations, are likely to be costly in terms of time and money and also require extensive negotiation between CDOT and the community leaders and decision-makers.

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table (Table 9-2)* is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for land use.



9.14 Social/Community Resources

This section has traditionally been referred to as Social Resources; however, another term in use now is Community Resources. This section of the NEPA Manual will continue to refer to the resource as Social, but keep in mind that Community is acceptable as well.

Land Use, Social Resources, and Economic Resources can be combined into a single technical report or memorandum, as appropriate, and in consultation with the CDOT Environmental Manager.

Social resources include a variety of factors that may affect quality of life for a population. Transportation projects must consider the following potential social impact concerns:

- ▶ Changes in neighborhoods or community cohesion
- ▶ Underrepresented populations
- ▶ Community resources (schools, churches, parks, shopping, emergency services, etc.)
- ▶ Community vision and values
- ▶ Community transportation resources (alternative modes, etc.)
- ▶ Community mixed-use developments, Transit Oriented Development

Because social resources tend to be more qualitative, dynamic, and intangible, public involvement and coordination with local communities may be required to gather adequate information to address this resource area. Other issues affecting the social health of a community include land use changes, economics, Environmental Justice, and relocation and acquisitions.

Public scoping input should help guide the topics and level of detail presented under Social Resources.

The following subsections provide guidance on the analysis of social resources for CDOT's NEPA projects. The first subsection discusses the process for evaluating the community composition. The second subsection discusses community information that should be in each NEPA document.

9.14.1 Social Resource Evaluation Process

The CDOT project manager and social analyst (either in-house social analysts or consultants) are responsible for early identification of the community composition and community issues. It is recommended that data collection and analysis be conducted under the supervision of persons with an educational background in sociology, regional planning, economics, or similar training.

Information on community composition and community issues should be collected and refined throughout the project. The study area should at least include communities within and immediately surrounding the proposed project. Community boundaries can often be delineated by physical barriers, land use patterns, political divisions (such as school districts), selected demographic characteristics, historical backgrounds, resident perceptions, and subdivisions and neighborhoods recognized by name and tradition. The project may also have consequences for communities beyond the immediate geographic area. In such instances, the study area for this resource needs to be expanded to include these other communities.



Community composition and community issues must be identified as early as possible during project planning. Early identification of social resource issues is important to community buy-in and project success. An integral part of the analysis is proactively involving community leaders and local political entities, as well as other segments of society important to a project. This outreach leads to decision-making that is more likely to be responsive to community concerns and goals, resulting in greater community acceptance of proposed transportation improvements, enhancing agency credibility, and ensuring equity.

Reasons for Evaluation of Social Resources Under NEPA

CDOT evaluates social resources for several reasons:

- ▶ To involve communities that will be affected by transportation projects (whether positively or negatively) and should be an important part of the process
- ▶ To comply with CDOT’s Environmental Stewardship Guide (2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner
- ▶ To comply with several legal mandates that pertain to communities and federally funded projects

CDOT must comply with Federal social regulations when implementing transportation projects in Colorado.

The regulations and guidance applicable to community resources are summarized below:

- ▶ **Section 1508.14 of CEQ Regulations (2005)** - When an EIS is prepared and economic or social and natural or physical environmental effects are interrelated, then the EIS will discuss all these effects on the human environment.
- ▶ **Sections 109(h) and 128, Title 23 of the United States Code on Highways (2012)** - Assures that community cohesion, availability of public facilities and services, and economic and social effects are assessed during highway developments.
- ▶ **Title VI of the Civil Rights Act of 1964** - Prohibits discrimination based on race, color, or national origin in any program or activity that receives Federal funds or other Federal financial assistance.
- ▶ **Americans with Disabilities Act of 1990** - Addresses the needs of people with disabilities, prohibiting discrimination in public services and public accommodations.
- ▶ **FHWA Technical Advisory T6640.8a Guidance for Preparing and Processing Environmental and Section 4(f) Documents** - Guides entities taking part in the NEPA process to consider effects on social groups, including “the elderly, handicapped, nondrivers, transit-dependent, and minority and ethnic groups are of particular concern.”
- ▶ **Major Transit Capital Investment Projects Final Rule, 49 CFR Part 611, 2001** - Prescribes actions that must be taken to be eligible for certain Federal grants. Among these actions are social considerations.



These policies require that consideration be given to qualitative factors and unquantifiable amenities and values, along with social and technical considerations in decision-making. However, social effects are not intended by themselves to require preparation of a NEPA document but should be addressed when a NEPA document is prepared, and social and natural or physical environmental effects are interrelated.

Collection and Evaluation of Baseline Information Under NEPA

Gathering baseline information can be expensive and time consuming. To avoid wasted effort, carefully define the intended use of the data, identify what data are needed, and determine whether they are readily available before beginning to gather information. In many cases, in-house staff have expertise, and in larger communities, various planning agencies and councils of government have information that can easily be obtained. Another source may be other projects' files or earlier attempts at the current project, which may then be updated. If information is not available from traditional sources, resourcefulness is needed to seek out alternative sources.

- ▶ Before using data, be aware of when they were collected, their sources, and their reliability. Use the most up-to-date data available, understand the basic assumptions used in each compilation, and recognize the purposes for which data were originally collected.

Baseline data on community composition are available from several sources including:

- ▶ **U.S. Census Bureau** - Provides easy access to community resource data and maps. U.S. Census Bureau's Decennial Census Summary File 1 and Summary File 3 - Quick Tables are a good starting point for data on demographic, social, and housing characteristics for the study area. The analysts can easily obtain Colorado state level data including economic development and gentrification down to Census Block-group level data to develop population trends, demographics, and social makeup. U.S. Census Bureau Maps and Cartographic Resources provide maps for determining community boundaries, physical characteristics, instances of joint land use, and locating activity centers within the study area.
- ▶ **Local Governments (e.g., city and county planning, labor, and social service departments)** - Provide more recent demographic, social, economic, and housing characteristics. Local governments can also provide land use and zoning plans, building-permit records, social programs, and business and marketing information that can be used to determine infrastructure, house and business locations, approved or built development, and community issues.
- ▶ **Metropolitan Planning Organizations** - Provide land-use and zoning plans, building-permit records, and real estate market surveys to determine infrastructure, house and business locations, approved or built development, and housing characteristics.
- ▶ **Local Publications (from state, local, and university libraries)** - Provide general insight, historical background, and business and marketing information. Assure all community groups are reached, including those of limited English proficiencies or unique cultural backgrounds.
- ▶ **Community Groups (such as local historical societies, Colorado Historic Preservation Office, and religious institutions)** - Provide historical background; location of historic structures, landmarks, and districts; special populations and their needs; and community issues.



- ▶ **Social Service Agencies** - Provide information on special populations and their needs, businesses, and community issues.
- ▶ **Public Scoping Meetings** (with community leaders, local political entities, special interest groups, businesses, and residents) - Provide information on community values and issues.
- ▶ **Windshield Surveys** - Provide information on locations, numbers of structures, and social activity patterns.

Use the collected baseline information to delineate and characterize the social resource study area and understand its interface with the proposed project. Work with engineers and transportation planners to consider new project options based on preliminary indications of likely community issues and special areas to avoid. The evaluation of baseline information incorporates the following components:

- ▶ Finalize the social study area, as it will vary from multiple counties to specific Census Tracts and Block data depending on the magnitude of potential social impacts and the existing community base.
- ▶ Include demographic characteristics such as ethnic composition of the existing population, age distribution, median income of the study area, low mobility status (elderly and/or disabled), and existing number of households and average household size.
- ▶ Identify the defined communities (e.g., communities recognized by name and/or practice) and perceived neighborhoods (e.g., a little section of open space, the corner grocery, a laundromat, a beauty salon, a neighborhood bar, etc.) within the study area.
- ▶ Discuss the growth policies of the local jurisdictions, such as adopted growth targets, growth management policies, or other policies relating to the location or rate of population growth.
- ▶ Briefly describe the types of transit facilities, highways, streets, and bicycle and pedestrian facilities associated with the proposal, if the proposed project will likely have an effect on such facilities.
- ▶ When it may be an issue, describe the type, size, and location of public services and facilities within the affected social environment (parks, schools, hospitals, day care centers, libraries, counseling facilities, alcohol and drug rehabilitation, bike paths, emergency services, etc.).

Impacts on social resources that may occur as a result of proposed transportation improvements include impacts on community cohesion, community facilities and services, mobility, and safety. The following subsections provide specific guidance for addressing the impacts of each alternative on these four social impact areas.

Community Cohesion

The community cohesion analysis should address such impacts of project alternatives on cohesiveness, as the following:

- ▶ Bisecting (dividing) neighborhoods
- ▶ Social isolation (isolating a portion of an ethnic group or a neighborhood)
- ▶ Facilitation of new development (infill)
- ▶ Urban renewal



- ▶ Decreased neighborhood size (relocation)
- ▶ Joint land use
- ▶ Changes in property values
- ▶ Changes in neighborhood or community access
- ▶ Changes in quality of life
- ▶ Changes in neighborhood identification
- ▶ Separation of residences from community facilities

Community social groups that will benefit from or be adversely affected by the proposed project alternatives should also be identified. It is important that all segments of the population be treated with equal consideration, including:

- ▶ Elderly persons
- ▶ Disabled persons
- ▶ Non-drivers and transit-dependent individuals
- ▶ Minority groups (refer to **Section 9.16**)
- ▶ Low-income individuals and households (refer to **Section 9.16**)

Public Services and Facilities

Analysis of project alternative impacts on public services and facilities should include actions such as the following:

- ▶ Identify the existence of public service providers, their responsibilities and facilities such as police, fire, ambulance, hospital, and schools, as appropriate, given site condition and potential project issues
- ▶ Show on a map the proximity of each facility to the project
- ▶ Define service areas, user groups, and affected populations
- ▶ Discuss each service/facility's principal involvement with the community
- ▶ Determine the value of the service/facility to the community
- ▶ Determine the project's impact on these services/facilities

Mobility

The analysis of mobility should describe and discuss changes in travel patterns and accessibility (such as vehicular, commuter, bicycle, or pedestrian). It is important to note the effects of such changes on community mobility and neighborhood interaction, especially for groups that may experience more severe mobility impacts due to physical limitations, including the elderly, disabled persons, and children.

If any of the proposed alternatives will close or move cross streets, address the impacts of closing or moving each street. If pedestrian/bicycle routes are closed or otherwise modified, identify and discuss potential impacts on community mobility/neighborhood interaction. Clearly document the views of the community and the city and/or county government on such changes.



Safety

The evaluation of safety should discuss the impacts of each project alternative on traffic and neighborhood safety. Neighborhood safety issues to be addressed include:

- ▶ Police services
- ▶ Emergency services
- ▶ Bicycle/pedestrian safety
- ▶ Increase in crime

Other Issues to Consider

Other agencies may have information or guidance that will affect a particular CDOT project. Coordinate with the various agencies having resource oversight to obtain any site-specific data they may have, talk to resource specialists who know the study area, and determine whether they know of social issues that could constrain the project. The resource agencies that are particularly likely to have information or guidance on the social makeup of the communities include local planning agencies (e.g., county, city, and community planning offices), social services agencies, and community groups, as well as the USFS and BLM when they manage lands traversed by a transportation project.

The project file should include correspondence and telephone/email contact information with community service groups, as well as meeting minutes where appropriate. The files should thoroughly document the process whereby the social service needs of the community have been taken into consideration during project development.

9.14.2 NEPA Document Sections

The content of the sections on social resources in the Affected Environment and Environmental Consequences chapter is discussed below.

Affected Environment

If the proposed project or activity impacts a population, the NEPA document should discuss the existing and projected population and the relevant demographic characteristics of the affected area and the associated city, county, or region. The level of detail should be commensurate with the importance of the social impacts. The description of the community composition in the Affected Environment chapter of the NEPA document should include social aspects that may be impacted as the result of the proposed project:

- ▶ Community cohesion
- ▶ Public services and facilities
- ▶ Mobility
- ▶ Safety



The baseline information on the social environment of the study area should be used to help develop a community profile. The community profile summarizes the history, present conditions, and anticipated future of an area. It provides an overview or a series of snapshots of the area and provides a basis for identifying potential impacts of a proposed transportation action. The community profile enables conclusions about community cohesion, public services and facilities, mobility, and safety of various groups within the social study area.

It may also be necessary to expand or supplement the information depending on the level of detail developed for the study area by communicating with community groups, stakeholders, and local sociologists. Attributes typically included in the community profile are summarized in the side bar. For additional information, consult FHWA's *Community Impact Assessment: A Quick Reference for Transportation* (FHWA, 2018).

Affected Environment Chapter of NEPA Document

- A visual map or maps that depict physical characteristics, such as neighborhood boundaries, land uses, public facilities, and commercial centers
- Narrative text that describes community characteristics, such as population demographics, social, social history and values of the communities, the importance of various facilities, and future plans
- Tables or graphics that summarize important data or conclusions, such as population demographics or employment trends

Environmental Consequences

Impacts on social resources that may occur as a result of proposed transportation improvements include impacts on community cohesion, underrepresented populations, community facilities and services, mobility, safety, visual resources, displacement, traffic, employment, and construction. Discuss alternatives that have the same social impacts together and contrast those that differ so that similarities and differences in alternative social impacts are clear. The impacts of each alternative on each of the four social impact areas—community cohesion, public services and facilities, mobility, and safety—should be addressed at a level of detail appropriate to their severity and the complexity of the project. For additional information, consult FHWA's *Community Impact Assessment: A Quick Reference for Transportation* (FHWA, 2018).

Where the evaluation determines that potential social impacts are adverse to community cohesion, public services and facilities, mobility, and/or safety, the document should discuss possible mitigation. Include the information shown in the sidebar in the NEPA document, as appropriate. This section should provide assurance that the social service needs of the community have been taken into consideration during project development.



Impacts and Mitigation

The *Summary of Impacts and Mitigation Table (Table 9-2)* is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for social resources.

Be sure to include all negative and beneficial impacts of the project. The following textbox lists possible mitigation planning activities. Note that this is not an exhaustive list.

Mitigation Planning Information to Include in NEPA Document

- Basis for the mitigation decisions and flow chart of the decision process
- Identification of mitigation strategies to avoid or minimize potential impacts to communities' well-being and incorporation into project designs as necessary
- Outreach efforts to minority and low-income populations
- Appropriateness, reasonability, and timing of the mitigation strategies relative to project planning and implementation
- Coordination required to obtain agreement on mitigation measures



9.15 Economic Resources

Land Use, Social Resources, and Economic Resources can be combined into a single technical report or memorandum, as appropriate, and in consultation with the CDOT Environmental Manager.

Economic resources include a variety of factors that may affect an area's economy. Transportation projects must consider the following potential economic impact concerns:

- ▶ Employment and tax base affected by project (retail sales, opportunity for development, tax revenues, relocation of employment centers, etc.)
- ▶ Businesses affected by project or construction (detours, bypasses, circulation)
- ▶ Housing
- ▶ Infrastructure and public services
- ▶ Changes in property values

Economic resources tend to be quantitative and tangible; however, public involvement and coordination with local communities may be required to gather adequate information to address this resource area. The economic health of a community is affected by changes in other resources such as land use, social resources, Environmental Justice, and relocations and acquisitions.

Public scoping input should help guide the topics and level of detail presented under Economic Resources.

The following subsections provide guidance on the treatment of economics for CDOT's NEPA projects. The first subsection discusses the process for evaluating economics. The second subsection discusses economic information that should be in each NEPA document.

9.15.1 Economic Evaluation Process

The CDOT project manager and economic analyst (either in-house economic analysts or consultants) are responsible for early identification of the local economies and their specific profiles. It is recommended that data collection and analysis be conducted under the supervision of persons with an educational background in economics, regional planning, or similar training.

Economic profiles of the communities should be identified throughout the project. The economic study area should include communities within and immediately surrounding the proposed project. Community boundaries can often be delineated by physical barriers, land-use patterns, political divisions (such as school districts), selected demographic characteristics, historical backgrounds, resident perceptions, and subdivisions and neighborhoods recognized by name and tradition. The project may also have economic consequences for communities beyond the immediate geographic area. In such instances, the study area needs to be expanded to include these other communities.

Economic profiles of the communities within the economic study area and issues must be identified as early as possible during the project planning. Early identification of economic issues is important to community buy-in and project success. An integral part of the analysis is proactively involving community leaders and local political entities, as well as business segments. This outreach leads to decision-making that is more likely to be responsive to community concerns and goals, resulting in greater community acceptance of proposed transportation improvements, enhancing agency credibility, and ensuring equity.



Reasons for Evaluation of Economics Under NEPA

CDOT evaluates economics for several reasons:

- ▶ The economy of an area is a vital component of a community
- ▶ To comply with CDOT’s Environmental Stewardship Guide (CDOT, 2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner
- ▶ To comply with several legal mandates that pertain to local economics and federally funded projects

CDOT must comply with Federal economic regulations when implementing transportation projects in Colorado. The regulations and guidance applicable to economic resources are summarized below.

- ▶ **Section 1508.14 of CEQ Regulations (2005)** - When an EIS is prepared and economic or social and natural or physical environmental effects are interrelated, then the EIS will discuss all these effects on the human environment.
- ▶ **Intermodal Surface Transportation Efficiency Act of 1991** - Instructs Federal agencies to consider the overall social, economic, energy, and environmental effects of transportation decisions.
- ▶ **Sections 109(h) and 128, Title 23 of the United States Code on Highways (2012)** - Assures that community cohesion, availability of public facilities and services, and economic and social effects are assessed during highway developments.
- ▶ **FHWA Technical Advisory T6640.8a Guidance for Preparing and Processing Environmental and Section 4(f) Documents** - In any NEPA document, where there are foreseeable economic impacts, the draft EIS should discuss them for each alternative.
- ▶ **Section 5309 New Starts, 49 USC 5309(e)** - Prompts a comprehensive review of the economic development effects associated with the project.
- ▶ **Major Transit Capital Investment Projects Final Rule, 49 CFR Part 611 (2001)** - Places promotion of economic development as a priority in federally funded projects.

These policies require that consideration be given to qualitative factors and unquantifiable and/or quantifiable economic amenities and values in decision-making. However, economic effects are not intended by themselves to require the preparation of a NEPA document but should be addressed when a NEPA document is prepared. Economic and natural or physical environmental effects are interrelated. The document will then discuss these effects on the human environment.

U.S. Census Bureau’s Decennial Census Summary File 1 at <https://www.census.gov/data/datasets/2010/dec/summary-file-1.html>

U.S. Census Bureau’s Decennial Census Summary File 3 at <https://www.census.gov/data/datasets/2000/dec/summary-file-3.html>

U.S. Census Bureau Maps and Cartographic Resources <https://www.census.gov/programs-surveys/geography/data/interactive-maps.html>

Bureau of Economics Regional Publications at <http://bea.gov/regional/index.htm>

Bureau of Labor Unemployment Publications at <http://data.bls.gov/cgi-bin/dsrv?la>



Collection and Evaluation of Baseline Information Under NEPA

Collection of Baseline Information

Before beginning to collect baseline information on economic resources, carefully define the intended use of the data, identify what data are needed, and determine whether they are readily available to avoid wasting time and money. Obtain needed information from in-house staff with expertise and, in larger communities, from various planning agencies and councils of government. Also review other projects' files or earlier attempts at the current project, which may then be updated.

Before using the data, be aware of when they were collected, how current they are, their sources, and their reliability. Also, be sure to understand the basic assumptions used in each compilation and recognize the purposes for which data were originally collected.

Baseline data for economic resources are available from several sources including:

- ▶ **U.S. Census Bureau** - Provides data on population and economic and housing characteristics for the study area. In U.S. Census Bureau Decennial Census Summary File 1 and File 3 Quick Tables, Colorado State level data down to Census Block-group level data are available for use in developing economic trends and indicators. Additionally, U.S. Census Bureau Maps and Cartographic Resources provide maps for determining community boundaries, physical characteristics, and locating economic activity centers within the study area.
- ▶ **Bureau of Economics Regional Publication** - Provides Colorado level data down to micropolitan statistical area data on personal income and industry employment.
- ▶ **Bureau of Labor Unemployment Publications** - Provides Colorado level data down to micropolitan statistical area data on unemployment.
- ▶ **Local Governments (revenue, labor, and planning departments, economist's office, chambers of commerce, etc.)** - Provide economic and housing characteristics that can be used to determine employment and salary by industry, employment trends, unemployment rates, tax revenues, and property values.
- ▶ **Local Businesses** - Provide information on business issues, tax revenues, and property values.
- ▶ **Local Publications (from state, local, and university libraries)** - Provide business and marketing information.
- ▶ **Public Scoping Meetings (with community leaders, local political entities, special interest groups, businesses, and residents)** - Provide information on business needs and issues.



Evaluation of Baseline Information

Collected baseline information is used to help evaluate the project and delineate the economic study area. Work with engineers and transportation planners to consider new options based on preliminary indications of likely economic issues and special areas to avoid. The evaluation of baseline information incorporates the following components:

- ▶ Finalizes the economic study area, as it will vary from multiple counties to specific Census Tracts and Block data depending on the magnitude of potential economic impacts and the existing economic base.
- ▶ Identifies the types of economic impacts the project could have on the communities.
- ▶ Briefly characterizes the current fiscal and economic conditions in the study area, including information such as tax revenue(s) (retail sales and use tax, business tax, property tax, etc.) and major contributors, employment by sector, labor force characteristics (labor earnings by sector, and personal income), employment centers in the study area, jobs versus housing balance, and relevant comprehensive plans.
- ▶ Discusses impacts to economics in somewhat general terms, noting which economic components will be most impacted, their relative importance, and the degree to which impacts from the transportation project considered in the current NEPA document will contribute to the impacts.

Other Issues to Consider

Other agencies may have information or guidance that will affect a particular CDOT project. Coordinate with the various agencies having resource oversight to obtain any site-specific data they may have, talk to resource specialists who know the study area, and determine whether they know of economic issues that could constrain the project. The resource agencies that are particularly likely to have information or guidance on economics include city and county planning offices and chambers of commerce, as well as the USFS, BLM, and NPS when they manage lands traversed by a transportation project.

9.15.2 NEPA Document Sections

The content of the sections on economic resources in the Affected Environment and Environmental Consequences chapters is discussed below.

Affected Environment

The description of economics in the Affected Environment chapter of the NEPA document should include those aspects of fiscal and economic conditions that the project is likely to impact. Economic aspects that may be impacted as a result of proposed transportation improvements include changes in growth rates, business activity, property values, and tax revenues. These impacted economic aspects are generally related to one of two factors: changes in the accessibility of an area and/or changes in the local environment.

Transportation improvements tend to affect businesses, residences, and taxing authorities in different ways; therefore, the impacts to various land uses and local government should be evaluated and addressed separately in the documentation. The types of impacts that should be evaluated for businesses, residential areas, and local taxing authorities are summarized below.



Businesses

- ▶ Changes in regional traffic (bypass impacts)
- ▶ Changes in business environment (noise, air quality, visual resources, amenities, traffic volumes and traffic speed)
- ▶ Access changes (delivery, employee, customer)
- ▶ Changes in customer and/or employee base (relocations)
- ▶ Compatibility with economic development plans
- ▶ Changes in parking availability

Residential Areas

- ▶ Changes in residential environment (noise, air quality, visual resources, amenities, traffic volumes and traffic speed)
- ▶ Changes in employment opportunities and retail shopping/services related to changes in businesses

Local Taxing Authorities

- ▶ Conversion of taxable property to public use
- ▶ Affected taxing authorities
- ▶ Revenue losses and the effect on taxing authorities

Environmental Consequences

The Environmental Consequences section of the NEPA document should identify and discuss the impacts from each alternative on the economic health of the community. Discuss alternatives that have the same economic impacts together and contrast those that differ so that similarities and differences in alternative economic impacts are clear. The section should:

- ▶ Identify affected businesses, residential areas, and/or local taxing authorities
- ▶ Show on a map the proximity of the project to each affected business or residential area
- ▶ Show on a map the jurisdictional boundaries of affected local taxing authorities
- ▶ Define the employee and customer base for affected businesses
- ▶ Discuss the value of the businesses and/or residential area to the community
- ▶ Determine the project's impact on these businesses and/or residential areas

Economic impacts are best described quantitatively, but, in certain cases, qualitative data may be the only information available to adequately characterize the area. When applicable, potential total economic impacts (direct and indirect) of alternatives associated with the project can be estimated using economic models, such as the commonly used IMPLAN Input/Output model, which can be purchased. Input/Output models generate estimates of how a given amount of a particular economic activity translates into jobs and income in the study area.



In the NEPA document, identify only those mitigation measures that are in response to project impacts and are appropriate as CDOT commitments. Summarize these measures just below the impacts they are intended to mitigate in the tabulation of economic impacts by alternative. Note whether residual economic impacts will remain after the suggested mitigation measures are applied. Discuss economic impacts as a result of induced growth as further discussed in **Section 9.27**.

Where the evaluation determines that potential economic impacts are substantial, the document should discuss possible mitigation. It is important to consider the effects on small businesses or businesses with unique customer and/or employee bases because these businesses are more sensitive to change. Include the information shown in the sidebar in the NEPA document, as appropriate.

Mitigation measures needed to resolve economic impacts can be costly. It is important to work with the project development team and the local community to choose practical solutions that result in a reasonable expenditure of public funds and help the project fit harmoniously into the community. For example, phase the project to minimize impedance to business access during peak periods. Another option could be to redesign a road segment as an underpass to avoid cutting off access to a business activity center.

For additional information, consult FHWA's *Community Impact Assessment: A Quick Reference for Transportation* (FHWA, 2018a).

Impacts and Mitigation

Be sure to include all negative and beneficial impacts of the project. The following text box lists possible mitigation planning activities. Note that this is not an exhaustive list. The *Summary of Impacts and Mitigation Table (Table 9-2)* is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for economic resources.

An Input/Output model is a regional economic impact model that provides mathematical accounting of the flow of dollars and commodities through a region's economy.

Mitigation Planning Information to Include in NEPA Document

- Basis for the mitigation decisions and flow chart of the decision process
- Identification of mitigation strategies to avoid or minimize potential impacts to communities' economic well-being for incorporation into project designs as necessary
- Appropriateness, reasonability, and timing of mitigation strategies relative to project planning and implementation
- Coordination required to obtain agreement on mitigation measures
- Reasonableness and reliability of the mitigation measures



9.16 Environmental Justice and Equity

Equity in transportation seeks fairness in mobility and accessibility to meet the needs of all community members. A central goal of transportation is to facilitate social and economic opportunities by providing equitable levels of access to affordable and reliable transportation options based on the needs of the populations being served, particularly populations that are traditionally underserved.

In Colorado, like other states, historic policies such as redlining (refusing a loan or insurance to areas deemed to be a poor financial risk) and practices such as zoning led, both intentionally and unintentionally, to racial and income segregation in housing. Industrial areas, highways, and other pollution sources were more likely to be located within or near low-income neighborhoods and communities of color. Many of these housing and land use patterns persist today. As a result, low-income communities and communities of color in Colorado continue to face greater environmental health risks, according to the CDPHE Environmental Justice Action Task Force.

Transportation projects can affect populations protected by Environmental Justice (EJ) and equity regulations through residential and business displacements, air, noise, and water pollution, soil contamination, and deterioration of visual, social, and economic resources, among others. Further discussion on how to analyze these resources can be found in other sections of **Chapter 9** of this Manual.

This section discusses how and why CDOT conducts EJ and equity analyses as part of NEPA projects and outlines information that should be included in the Affected Environment, Environmental Consequences, and Mitigation sections of NEPA documents.

The following resources will help consultants and staff in conducting EJ reviews:

- FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- Final DOT Environmental Justice Order
- Guidance on Environmental Justice and NEPA
- Environmental Justice Reference Guide
- Environmental Justice and NEPA Case Studies
- Environmental Justice Screening and Mapping Tool (EJSCREEN) at <https://ejscreen.epa.gov/mapper/>

CDOT conducts EJ and Equity analyses to:

- ▶ Comply with Federal acts and executive orders, state laws, and FHWA technical guidance
- ▶ Comply with CDOT's Environmental Stewardship Guide (CDOT, 2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner

This section addresses the regulations and certifications applicable to EJ and equity evaluations, along with their respective analysis process. The first two have a prescribed analysis process with Executive Order 12898 - *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, and Colorado SB21-260 - *Sustainability of the Transportation System*. Other Federal and state laws and orders that do not have a prescribed analysis process will also be



summarized, Title VI of the Civil Rights Act, Executive Order 13985, Colorado HB1260, and other Federal non-discrimination statutes.

During planning, it may be sufficient to identify populations at the Census-tract level. However, during NEPA, practitioners should go beyond the Census-tract level to identify minority and low-income persons or populations at a more detailed level using multiple sources of information.

9.16.1 Executive Order 12898, Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (1994), directs Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects, including interrelated social and economic effects, on low-income or minority populations resulting from their programs, policies, and activities. The Executive Order directs USDOT and other Federal agencies to take action toward:

- ▶ Avoiding, minimizing, or mitigating disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority and low-income populations;
- ▶ Ensuring the full, fair, and meaningful participation in the transportation decision-making process by all potentially affected communities; and
- ▶ Preventing the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

The USDOT issued an order on EJ, DOT Order 5610.2, to support Executive Order 12898. An updated USDOT order 5610.2(a) was issued on May 2, 2012, which was later superseded by USDOT order 5610.2(b) issued on November 18, 2020. FHWA also issued an order, the most recent of which is FHWA Order 6640.23A dated June 14, 2012.

Environmental Justice Evaluation Process

Applicability

Federal EJ requirements apply to all CDOT projects with a Federal nexus, regardless of the NEPA Class of Action. However, EISs and EAs generally have a different level of analysis than CatEx projects. Although CatEx projects are less likely to have significant impacts on EJ communities, Federal requirements still apply, and effects should still be evaluated and documented.

Exempt Projects

Certain types of CatEx projects are unlikely to have adverse impacts on communities. CDOT has created a list of project undertakings that are considered exempt from additional EJ analysis because they are known to have minimal impacts that do not adversely affect communities. Refer to CDOT's Categorical Exclusion Projects Exempt from EJ Analysis. If the scope of an exempt project changes or expands, EJ must be looked at again and EJ analysis may be necessary.

A list of CatEx projects exempt from EJ and equity analysis can be found here:

<https://www.codot.gov/business/civilrights/titlevi/ej>



Define Area of Community Study

To evaluate the impacts on and to ensure participation by minority and low-income populations, CDOT must first identify the populations impacted by the project. The following information provides guidance on identifying minority and low-income populations.

This process consists of:

- ▶ Defining the area of potential impact (i.e., community study area)
- ▶ Identifying protected populations (i.e., minority and low-income) within the community study area

Populations experiencing homelessness is an example of a protected population living in the community study area which would not show up on the census but should still be documented in the EJ analysis.

The community study area typically includes all communities within and adjacent to the project that may reasonably be affected. Community boundaries can often be delineated by Census tracts, block groups, physical barriers, land-use patterns, political divisions (such as school districts), selected demographic characteristics, historical backgrounds, resident perceptions, and subdivisions and neighborhoods recognized by name and tradition. The project may also have social consequences for communities beyond the immediate geographic area. In such instances, the community study area needs to be expanded to include these other communities.

In practice, the community study area should start with census block groups within the project area or immediately adjacent. The community study area should then expand based on the potential impact of project activities, a desktop review of the community boundary categorizations mentioned previously, community input, and professional best judgment. The technical report should include a discussion on how the community study area was identified.

Census data should not be used as conclusive evidence that there are no affected minority or low-income populations. Additional sources of information should be used to supplement these data, when readily available, and to further refine the identification of the presence of minority and low-income populations. Additional sources, which may provide data or other anecdotal information, may include religious groups, schools, homeowner and community associations, civil rights organizations, minority business associations, economic and workforce development agencies, and local businesses. Other reliable local data sources include county assessors, social service agencies, local health organizations, local public agencies, and community action agencies.

Many transportation projects have far-reaching impacts. It is, therefore, probable that the area of impact may be a considerably larger area than the literal project footprint. The determination of the community study area should be presented, reviewed, and agreed upon by the project team, in coordination with the Region or EPB EJ specialist, and documented in the public involvement process. Also, information from the public involvement process (meetings, demographics, etc.) should inform the EJ evaluation.



Identify Minority Populations

An EJ evaluation must consider minority populations present in the community study area. Under FHWA Order 6640.23A, minority populations are defined as any readily identifiable group of minority persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be affected by a proposed FHWA program, policy, or activity. For purposes of these guidelines, tribal governments are also included in this definition of minority populations. FHWA Order 6640.23A protects minority populations that include Black or African American, Hispanic or Latino, Asian American, American Indian/ Alaskan Native, and Native Hawaiian or Pacific Islander.

Minority groups should be identified using information from the U.S. Census at the tract, block group, or block level, depending on the context of the project. Generally, minority groups can be identified by comparing the minority population percentage in the community study area to the minority population percentage in the surrounding area, such as the county. A population is considered a minority population if the percentage of the people identifying as minority in the community study area is meaningfully greater than the percentage in the larger county or municipality. If it is unclear from the desktop review of census data whether a minority population is present in the project area, further investigation may be necessary, including outreach and gathering data from local organizations.

If there is more than one minority group within the community study area, the minority percentage should be based on the aggregate of all minority persons. For example, if the percentage of African American persons in an identified Census block is 20 percent and the percentage of Asian persons is 20 percent, then the total of 40 percent should be used for the minority percentage. Hispanic is classified as an ethnicity rather than a race in the U.S. Census to avoid double counting because a person who self-identifies as Hispanic may be of any race. Therefore, for purposes of EJ analysis, the total population within the geographic area being analyzed minus the total White, non-Hispanic/Latino population would generate the total minority population.

Refer to FHWA Environmental Justice Reference Guide's Data Collection Section pages 15-21, for additional data resources.

https://www.fhwa.dot.gov/environment/environmental_justice/publications/reference_guide_2015/index.cfm

Identify Low-Income Populations

Under FHWA Order 6640.23A, low-income populations are defined as any readily identifiable group of low-income persons (household income is at or below the Department of Health and Human Services [HHS] poverty guidelines) who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers, or Native Americans) who will be affected by a proposed DOT program, policy, or activity.

As with identifying minority populations, EJ evaluations must include a discussion about the low-income populations present in the community study area. Similarly, the project team should gather and analyze as much information as reasonably possible about the community study area's population. The amount of analysis necessary for identifying low-income populations will depend on the complexity of the project and the number of residents and businesses possibly affected, among other factors.



Low-income populations should be identified on a case-by-case basis, depending on the context of the project. Generally, low-income populations can be identified by comparing the low-income population percentage in the study area to the low-income population percentage in the surrounding area, such as the county. A population is considered a low-income population if the percentage of low-income individuals in the study area is meaningfully greater than the percentage in the larger county or municipality. If it is unclear from the desktop review of census data whether a low-income population is present in the community study area, further investigation may be necessary, including outreach and gathering data from local organizations.

For a list of resources that can supplement the Census and HUD data, refer to FHWA’s **Environmental Justice Reference Guide** at https://www.fhwa.dot.gov/environment/environmental_justice/publications/reference_guide_2015/fhwaep15035..pdf.

Existing Data Mapping Resources

The mapping tools described below can be helpful in identifying minority and low-income populations. Developed by FHWA and the EPA, they are recommended for assessing community demographics.

FHWA’s Office of Environment, Planning, and Realty maintains a website with more than 300 interactive GIS-based maps designed to support priorities related to safety, equity, climate change, economic development, and infrastructure. FHWA recently expanded their maps related to equity analysis and now includes maps displaying racial, ethnic, and foreign-born population data; income and poverty data; other vulnerable population data (e.g., people with disabilities, Limited English Proficiency [LEP], and households with no computer or internet access); journey to work trip data (e.g., households without car ownership and trips by transit); and economically distressed area data. These maps are based on the U.S. Census Bureau’s American Community Survey (ACS). FHWA’s GIS-based maps can be found at: <https://hepgis.fhwa.dot.gov/fhwagis/>

Refer to the CDOT **Limited English Proficiency Plan** for additional information. https://www.codot.gov/business/civilrights/titlevi/title-vi-assets/cdot-lep-guidance_2018.pdf

The Screening Tool for Equity Analysis of Projects (STEAP) is a web-based equity analysis tool for project development. It assists practitioners in identifying a project’s impact on EJ, Title VI, and LEP populations, and disadvantaged populations defined in Executive Order 13985. The tool provides for rapid screening of specified project locations anywhere in the U.S. and is intended to make buffer analysis simple for non-GIS specialists to expand access to EJ and equity screening capabilities. The Screening Tool can be found at: <https://hepgis.fhwa.dot.gov/fhwagis/buffertool/>

Environmental Justice Screen (EJSCREEN) is EPA’s web-based GIS tool that allows for nationally consistent EJ screening and mapping, combining environmental and demographic data to highlight where vulnerable populations may be disproportionately impacted by pollution. The tool features 11 EJ indices (one for each environmental indicator) based on annually updated, high-resolution environmental and demographic data. EJSCREEN uses block group-level ACS Census data, all of which is available for download. EPA’s web-based GIS tool can be found at: <https://ejscreen.epa.gov/mapper/>



Identify Community Resources and Minority Owned Businesses

Any gathering places, businesses, or services that are owned by a population protected by EJ or that are important to the EJ community should be described in the community study area. These can be identified through a desktop survey of business associations and through the public involvement process.

Proactive and Meaningful Public Participation

The NEPA document should include a discussion of major proactive efforts to ensure meaningful opportunities for public participation including activities to increase low-income and minority participation. Include in the document the views of the affected population(s) about the project and any proposed mitigation, and describe what steps are being taken to resolve any controversy that exists. Document the degree to which the affected groups of minority and/or low-income populations have been involved in the decision-making process related to the alternative selection, impact analysis, and mitigation.

In accordance with Title VI of the Civil Rights Act of 1964 and Executive Order 13166, CDOT's Policy Directive 604.0, "Policy on Non-Discrimination," provides that no person on the ground of race, color, national origin, sex, disability, or age, be excluded from participation in, be denied the benefits of, or be subjected to discrimination in any operation of CDOT or of any department or agency to which CDOT extends Federal financial assistance.

LEP persons are individuals whose primary language is not English and who have a limited ability to read, write, speak or understand English. For LEP persons, language can be a barrier to accessing the benefits of program services, understanding and exercising important rights, complying with applicable responsibilities, or understanding other information regarding federally assisted programs or activities.

An additional consideration regarding the translation of documents is the safe harbor rule. The USDOT's LEP guidance establishes a "safe harbor" regarding the requirement to translate vital documents. A "safe harbor" means that providing written translation under the following circumstances serves as strong evidence of compliance:

- ▶ CDOT provides written translation of vital documents for each eligible LEP language group that constitutes 5 percent or 1,000, whichever is less, of the population of persons eligible to be served or likely to be affected or encountered.
- ▶ If there are fewer than 50 persons in a language group that reaches the 5 percent trigger, vital written materials do not need to be translated. Rather, CDOT staff may provide written notice in the primary language of the LEP group of the right to receive competent oral interpretation of those written materials, free of cost.

Identifying Impacts on the EJ Population

If minority or low-income populations exist in the community study area, the next step in the EJ evaluation is to consider how each alternative might positively or negatively impact the low-income or minority populations. These should be split into benefits and burdens to the EJ population. Describe any benefits or burdens to the EJ population from the construction (e.g., temporary) impacts, such as change in access to minority owned businesses, noise, dust, detours, or other temporary impacts. Describe any operational effects of the proposed project, such as access



changes, or changes in noise, air quality, visual, recreational, or any other impacts. Any impacts identified in the public participation process should be discussed as well.

Identifying Disproportionately High and Adverse Effects

As described in FHWA Order 6640.23A, adverse effects are defined as the totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects. Adverse effects become disproportionately high on minority and low-income populations when the effect:

- a. is predominately borne by a minority population and/or a low-income population; or
- b. will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the nonminority population and/or non-low-income population.

High and adverse effects may result from issues unique to a community's distinct cultural practices or use of affected resources. If adverse effects to other resources are expected to occur on a project, and EJ communities are present in the community study area, the specific impacts to those communities should be assessed. Construction and other temporary impacts should also be considered. Some adverse impacts to evaluate for EJ impacts may include, but are not limited to:

- ▶ Air quality impacts
- ▶ Water quality impacts
- ▶ Noise and visual impacts
- ▶ Relocations or displacement of residences or businesses
- ▶ Park, trail, or open space impacts
- ▶ Tree and vegetation removal
- ▶ Soil contamination or increased exposure to hazardous materials
- ▶ Construction noise
- ▶ Significant traffic detours, including transit, bike, and pedestrian disruption

When assessing disproportionately high and adverse effects, other considerations include previous public engagement efforts and comments received (particularly from EJ communities), distribution of benefits, and public controversy. If one or more tribal governments are involved, the tribal consultation process under Section 106 of the NHPA may be necessary, along with government-to-government consultation. Coordination with CDOT NEPA staff or the CDOT Senior Staff Archaeologist is required.

For more information on identifying disproportionately high and adverse effects and proceeding when there are disproportionately high and adverse effects, refer to FHWA's guidance on how to address EJ in NEPA documents (2011b) and the *Environmental Justice Reference Guide* (2015).



If adverse impacts to a low-income or minority population have been identified for any alternatives, efforts must be made to avoid, minimize, and mitigate such adverse effects. Mitigation may include:

- ▶ Minimizing impacts by limiting the degree or magnitude of the action and its implementation rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- ▶ Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- ▶ Compensating for the impact by replacing or providing substitute resources or environments.

FHWA Order 6640.23A states that impacts to minority and low-income populations can be addressed by “proposing offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals affected by FHWA programs, policies, and activities.” Project staff should consider the option of applying early mitigation where applicable and soliciting community input about how to best mitigate impacts.

If disproportionately high and adverse impacts on the low-income or minority populations still exist after considering mitigation efforts, FHWA will not approve the project unless:

- ▶ There is a substantial need for the project based on the overall public interest; and
- ▶ Alternatives that would have fewer adverse effects on protected populations have adverse social, economic, environmental, or human health impacts that are more severe or would involve increased costs of an extraordinary magnitude.

Environmental Justice Documentation

Documentation for Minority Populations

Document the percentage of individuals who identify as minority in Census tract or block groups compared to the county(ies) in which the project is taking place, and other sources of information used to identify if and where minority populations exist. Once minority households are identified, they should be documented as in **Table 9-6**.

Table 9-6. Minority Populations in Community Study Area (percentage)

Area	Total Population	Black/ African American	Native American	Asian/ Pacific Islander	Hispanic or Latino	Total Minority (%)
County						
Census Block Group						
Census Block Group						
Census Block Group						



Documentation for Low-Income Households

Description of low-income populations in Census tract or block groups compared to county(ies) in which the project is taking place, and other sources of information used to identify if and where minority populations exist. Once low-income households are identified, they should be documented as in Table 9-7.

Table 9-7. Low-Income Populations in Community Study Area

Area	Low-Income Households (%)
County	
Census Tract	
Census Tract	
Census Tract	

In the report, include maps overlaying the location of minority and low-income populations in the study area.

Other important resources to community cohesion should be discussed in this section. This can include religious and social facilities, pedestrian, transit, and bicycle facilities that EJ populations use, minority owned businesses, or any other resources that are important to the community under evaluation.

The NEPA document or associated technical memorandum/report must document the use of additional data or efforts to further identify minority, low-income, or LEP populations in the community study area. As previously discussed, it is important to be sensitive to the public. If information is collected down to the block level regarding individuals or individual households, it should not be included in the NEPA document. The information should be documented and included in the project file. As discussed in **Chapter 7** of this Manual, this is a particularly important source of information relevant to this process, as potentially small or dispersed groups may be identified through the public involvement process.

Documenting Impacts

After the analysis is complete, the environmental project manager should ensure that the following information is recorded in the NEPA documents:

- ▶ The benefits and burdens on the minority and low-income populations (including any disproportionately high adverse effects).
- ▶ A comparison of the burdens/benefits (i.e., impacts) to minority and low-income populations to the burdens/benefits (i.e., impacts) of the overall population within the project area.
- ▶ Measures implemented or being considered to avoid or mitigate the adverse effects. Project staff must clearly document how each project alternative avoids, minimizes, and mitigates for adverse impacts, if necessary.



- ▶ If disproportionately high and adverse effects still exist, explain the substantial need for the project based on the overall public interest and how the alternatives that would have fewer adverse effects on the protected population would have adverse social, economic, environmental, or human health impacts that are more severe or would involve increased costs of an extraordinary magnitude.

The *Summary of Impacts and Mitigation Table (Table 9-2)* is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for EJ and equity.

9.16.2 Colorado Senate Bill 21-260

Colorado SB21-260 - The Sustainability of the Transportation System put into place a series of environmental requirements. Section 28 created the Environmental Justice and Equity Branch within CDOT, which works directly with Disproportionately Impacted Communities (DI Communities) and to identify and address any barriers that may prevent their full participation in transportation decisions. DI Communities include low-income, minority, and housing-cost burdened populations. This definition should not be confused with disproportionately high and adverse effect as described under Environmental Justice. Section 30 Parts 4-6 of SB21-260 include separate environmental requirements, including a requirement for project air quality monitoring and additional outreach to DI Communities.

Colorado Senate Bill 21-260 Evaluation Process

Applicability

SB260 requires certain projects to work with DI Communities throughout the planning, environmental study, and project delivery phases. The requirement to assess work with and evaluate impacts to DI Communities applies only if the project is an RS/TC project. An RS/TC project is a change to a transportation facility that improves travel time reliability or increases the maximum throughput.

- ▶ On urban roads, a RS/TC project is one that is at least one-centerline mile in length. Urban roads are those within a census designated area with a population of 5,000 or more. A centerline mile is measured from the start of the project to the terminus of the project.
 - On rural roadways, a RS/TC project is one that is at least one-centerline mile in length where the vehicle volume to capacity ratio (V/C) equals or exceeds 85 percent. If the V/C is less than 85 percent in a rural area, a RS/TC project will need to be at least two-centerline miles in length. Rural roadways are those within a census designated area with a population less than 5,000 persons.

Certain projects are exempt from the RS/TC project requirements. The list of exempt projects is expanded from EPA's list of projects that are exempt from conformity analysis and includes projects such as those that enhance safety, add transit, or improve air quality.

Regionally Significant Transportation Capacity projects can be found at the following link:
<https://www.codot.gov/programs/environmental/greenhousegas/regionally-significant-and-transportation-capacity-definition-final-08312204172023.pdf>



Define Area

The community study area should be defined in the same way that it is defined for an EJ analysis. In practice, the community study area should start with census block groups within the project area or immediately adjacent. The community study area should then expand based on the potential impact of project activities, a desktop review of the community boundary categorizations mentioned previously, community input, and professional best judgment. The documentation should discuss how the community study area was identified.

Identify Disproportionately Impacted Communities

DI Communities were defined in SB260, and revised in HB23-1233 (State of Colorado, 2023), as census block groups that meet the following criteria:

- (a) the proportion of the population living in households that are below 200 percent of the Federal poverty level is greater than 40 percent;
- (b) the proportion of households that spend more than 30 percent of household income on housing is greater than 50 percent;
- (c) the proportion of the population that identifies as people of color is greater than 40 percent;
- (d) the proportion of the population that is linguistically isolated is greater than 20 percent;
- (e) a statewide agency determines, after a community presents evidence of being and requests to be classified as a disproportionately impacted community, that the population is disproportionately impacted based on evidence, presented in a relevant statewide agency decision-making process, that a census block group is disproportionately impacted because it has a history of environmental racism perpetuated through redlining or through anti-Indigenous, anti-immigrant, anti-Latino, or anti-Black laws, policies, or practices and that present-day demographic factors and data demonstrate that the community currently faces environmental health disparities;
- (f) the community is identified by a statewide agency as being one where multiple factors, including socioeconomic stressors, vulnerable populations, disproportionate environmental burdens, vulnerability to environmental degradation or climate change, and lack of public participation may act cumulatively to affect health and the environment and may contribute to persistent disparities;
- (g) the community is a mobile home park, regardless of whether the mobile home park is a census block group; or
- (h) the community is located on the Southern Ute or Ute Mountain Ute Indian Reservation, regardless of whether the community is a census block group.

CDPHE has developed GIS and data resources to identify census block groups where DI Communities are located, including the eight criteria listed above. Refer to the **Existing Mapping Resources** section for DI Community data sources.

If a project area is within or partially within a census block group that is designated as a DI Community, further engagement and analysis may be necessary to determine the impacts to that community. If a DI Community is expected to be affected by the proposed project, the



environmental manager should contact the Environmental Justice and Equity Branch and the Region or EPB Specialist.

Existing Mapping Resources

Colorado EnviroScreen is an EJ mapping tool developed by CDPHE. It is developed so that a census block group that scores above the 80th percentile in the tool is presumed to be a DI Community.

The Colorado EnviroScreen mapping tool can be found at: <https://cdphe.colorado.gov/enviroscreen>

Colorado Senate Bill 21-260 Documentation

SB21-260 does not require a discussion on impacts; thus, documentation should describe how the community study area was defined and how DI Communities were identified. Documentation should also summarize how public involvement efforts were targeted toward those DI Communities and how feedback from the public was incorporated into the project design.

Documentation on state regulations should be distinct and separate from Federal requirements in the NEPA documentation. This can be included in the same technical document if the sections are clearly defined.

9.16.3 Other Laws and Orders Protecting Certain Populations

Other laws and orders identify populations with protection but do not outline a specific analysis process during NEPA. These populations should be considered during the NEPA process, especially if they have unique transportation needs, or if they will be impacted by a transportation project.

Populations with unique transportation needs or that will be impacted by a CDOT project should be considered during the NEPA process, even if they are not protected by a Federal or state law order.

Executive Order 14096

Executive Order 14096 *Revitalizing Our Nation's Commitment to Environmental Justice for All* expands the definition of "Environmental Justice" as the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment. This is a very recent Executive Order for which Federal guidance has yet to be developed. Once guidance is released, it will be posted on CDOT's website detailing compliance throughout the NEPA process.

Title VI of the Civil Rights Act of 1964

Title VI, 42 U.S. Code (U.S.C.) 2000d et seq., was enacted as part of the landmark Civil Rights Act of 1964. Federal regulations (FHWA [23 CFR part 200] and FTA [49 CFR part 21]) state that "...no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the recipient receives Federal assistance from the Department of Transportation."



Executive Order 13166

The Executive Order 13166 *Improving Access to Services for Persons with Limited English Proficiency* requires Federal agencies to examine the services they provide, identify any need for services to those with LEP, and develop and implement a system to provide those services so that LEP persons can have meaningful access to them.

Executive Order 13985

Under Executive Order 13985 *Advancing Racial Equity and Support for Underserved Communities* (2021), the term “equity” means the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality. It is important to note that transportation equity does not mean equal. An equitable transportation plan considers the circumstances impacting a community’s mobility and connectivity needs, and this information is used to determine the measures needed to develop an equitable transportation network. To attain an equitable transportation network, all components of Title VI, EJ, and nondiscrimination must be considered.

Other Federal Nondiscrimination Statutes

Other nondiscrimination statutes that afford legal protection against discrimination include:

- ▶ Section 162 (a) of the Federal-Aid Highway Act of 1973 (23 U.S.C. 324), which addresses discrimination based on sex;
- ▶ Section 504 of the Rehabilitation Act of 1973, which addresses disability discrimination;
- ▶ The Age Discrimination Act of 1975;
- ▶ The Civil Rights Restoration Act of 1987; and
- ▶ The Americans with Disabilities Act (ADA) of 1990.

Many transportation projects have far-reaching impacts. It is, therefore, probable that the area of impact may be a considerably larger area than the literal project footprint. The determination of the community study area should be presented, reviewed, and agreed upon by the project team and documented in the public involvement process. Additionally, information from the public involvement process (meetings, demographics, etc.) should inform the EJ evaluation.



Colorado House Bill 21-1266: EJ Disproportionately Impacted Communities

This law contains efforts to redress the effects of EJ on DI Communities, which are defined differently than SB-260 as:

- ▶ A community that is in a census block group where the proportion of households that are low income, that identify as minority, or that are housing cost-burdened is greater than 40 percent; or
- ▶ Any other community as identified or approved by a state agency, if the community: has a history of environmental racism perpetuated through redlining, anti-Indigenous, anti-immigrant, anti-Hispanic, or anti-Black laws; or is one where multiple factors may act cumulatively to affect health and the environment and contribute to persistent disparities.



9.17 Transportation Resources

The Colorado Transportation Commission has policies that guide CDOT by providing transportation operating principles and the transportation vision, mission, goals, and objectives. The policies establish CDOT’s position on promoting an integrated multimodal transportation system. Therefore, CDOT’s NEPA projects should consider and evaluate all reasonable travel modes within the study area.

Transportation resources include the entire transportation network within the study area, including roadway, freight, transit, rail, aviation, bicycle, and pedestrian facilities. Evaluation of these transportation resources provides a framework within which the new transportation project can be considered and evaluated.

9.17.1 Transportation Resources Evaluation Process

When CDOT is evaluating a transportation project that is expected to be federally funded, FHWA requires integration of the NEPA process with the transportation decision-making process (FHWA, 2005). Since the transportation system is typically the focal point of CDOT’s NEPA projects, purpose and need are heavily tied to the transportation problems. Therefore, the transportation system is considered and evaluated in two ways:

- ▶ Impacts of the project on the transportation system (e.g., the project results in elimination of a bus shelter)
- ▶ Transportation alternatives’ ability to address the project’s Purpose and Need.

In a transportation focused NEPA document, Transportation Resources are sometimes included in a separate Transportation Resources chapter and improvements are evaluated in the Alternatives chapter. Transportation system elements, however, may also be addressed in other chapters of the NEPA document, such as:

- **Freight** - Socioeconomics and Land Use sections
- **Bicycle/Pedestrian** - Section 4(f) and Parks/Recreation sections
- **Transit** - Environmental Justice and Equity, Socioeconomics, and Land Use sections

Reasons for Evaluation of Transportation Resources Under NEPA

CDOT evaluates transportation resources for several reasons:

- ▶ To understand and thoroughly evaluate the impacts and benefits to the transportation system that could result from a proposed action.
- ▶ To further CDOT’s mission “to provide the best multimodal transportation system for Colorado that most effectively and safely moves people, goods, and information.”
- ▶ To comply with CDOT’s Environmental Stewardship Guide (2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner.



- ▶ **23 USC 135 Statewide and non-metropolitan transportation planning** sets requirements for the creation of regular statewide transportation plans and statewide transportation improvement programs.
- ▶ To comply with **FHWA’s Vital Few Objective #1**: use integrated approaches to multimodal planning, the environmental process, and project development at a system level and/or context-sensitive solutions at the project level.

Collection and Evaluation of Baseline Information Under NEPA

Many resources are available for the collection and evaluation of the baseline transportation system. Information on the existing and future local and regional transportation system should be obtained and evaluated in close coordination with the local community(ies), regional agency (e.g., MPO), CDOT, and FHWA. If transit is present or planned in the study area, CDOT’s Transit and Rail, the local transit agency, and Federal Transit Administration (FTA) should be involved. Likewise, if aviation alternatives are being considered, the Federal Aviation Administration (FAA) and CDOT’s Division of Aeronautics should be involved.

The existing conditions and future baseline conditions should thoroughly describe and analyze the state of the multimodal transportation system within the study area today and in the future. The future baseline condition should represent the transportation system without the proposed action in the study area. Outside the immediate study area, the baseline should include only those transportation improvement projects that have committed funding during the planning horizon.

Those projects involving FTA can reference the guidance provided in **Chapter 10, FTA NEPA Processes and Compliance**.

9.17.2 NEPA Document Sections

Affected Environment

The transportation system includes roadway, freight, transit, rail, aviation, bicycle, and pedestrian facilities and how the modes connect and interrelate to form the transportation network. Evaluation of the existing and future transportation system conditions provides a baseline for alternatives development and screening.

The purpose of this effort is to gather enough information to provide a complete picture of the existing and future transportation system within the study area. The data collection effort should rely on professional judgment and general knowledge of the study area to determine the information sources needed to provide an overview of the existing and future transportation system. The level of detail of the information gathered should correspond with the importance of the specific element to the transportation system.

In NEPA, the existing and the long-range planning horizon No Action conditions are essential in determining the need for a project.



Roadway

Physical Characteristics

Information about the physical roadway network should be collected and documented, including:

- ▶ Cross-sections (e.g., ROW width, through lanes, auxiliary lanes, median, shoulder, etc.)
- ▶ Functional classification (expressway, major arterial, etc.) and access category (Regional Highway [R-A], Non-Rural Highway [NR-A], etc.)
- ▶ Access points, spacing, restrictions (right-in/right/out only) and traffic control (signalization, stop control)
- ▶ Speed mitigation infrastructure
- ▶ Interchange configurations, ramp lengths
- ▶ Lane restrictions (high occupancy vehicle [HOV] or tolled lanes)
- ▶ Freight designations (truck routes, hazardous material routes)
- ▶ Parallel transportation facilities that affect travel patterns in the study area
- ▶ Planned roadway network improvements from local agencies and regional fiscally constrained and vision plans

Traffic Composition and Operations

Existing traffic volumes and patterns for motorized traffic should be documented using thorough traffic data collection and from existing CDOT, regional, county, and municipal data sources, including:

- ▶ Daily traffic volumes and peak period intersection turning movement counts
- ▶ Posted and observed speeds (along with speed management context for each segment), travel times, and free flow travel times
- ▶ Travel patterns (e.g., trip length, local vs. regional trips, origins/destinations, trip purposes)
- ▶ Level of Service (LOS) - using the currently accepted *Highway Capacity Manual* (Transportation Research Board, 2010) methodology to provide a qualitative assessment of the traffic flow for intersections, highway or freeway segments, ramp merge/diverge/weave sections, etc.
- ▶ Hours of congestion
- ▶ Vehicle miles of travel (VMT) and vehicle hours of travel (VHT)
- ▶ Safety records and significant crash patterns
- ▶ Future traffic volumes based on regional travel demand forecasting tools (e.g., regional travel demand model) and future operational analysis based on the No Action network.

TDM/TSM

Transportation Demand Management (TDM), Transportation System Management (TSM), and transportation technology infrastructure or programs that exist within the study area should be inventoried and documented. Examples could include:

- ▶ Intelligent Transportation Systems (ITS) and transportation technology strategies and infrastructure, such as signal coordination, closed-circuit television (CCTV) camera,



automated traffic recorders, advanced warning flashers, variable speed limits, queue warnings, ramp metering, traveler information, dynamic message signs, dynamic lane use, communications infrastructure (i.e., fiber optic), enhanced lane markings, road/weather information systems, transit signal priority, connected and automated vehicle (CAV) infrastructure, etc.

- ▶ TSM strategies and infrastructure, such as maintenance and operations programs, access management plans, incident management plans, event traffic management programs, wildlife crossings, snow fence, etc.
- ▶ TDM measures such as educational information, transit or carpool incentives, park and ride facility improvements, bike sharing programs, flextime and telecommuting policy incentives, congestion pricing, parking management, etc.

Freight

Freight can be defined as the movement of goods to, from, and through the study area. In Colorado, freight is most commonly transported on the roadway network via trucks and by rail. Data collection for freight could include:

- ▶ Vehicle classification, truck counts and truck count forecasts
- ▶ Freight flow data including commodity flow databases
- ▶ Truck travel patterns
- ▶ Location of freight distribution centers, manufacturing locations, intermodal facilities, fueling locations and rest areas

Transit and Rail

The transit system includes any mass transportation service in the study area, including shuttle, bus, light rail, commuter rail, passenger rail, etc., and demand-responsive services, along with the facilities that support those services (transit stations, stops, park and ride facilities, etc.).

Transit Resources

CDOT's Division of Transit and Rail (DTR) has guidance available on the CDOT website at <https://www.codot.gov/programs/programs/transitandrail>

Information about transit routes, amenities, and infrastructure within the study area, or potentially impacted by the project, should be collected and documented, including:

- ▶ Public and private transit service providers
- ▶ Type of transit service by provider (e.g., fixed-route bus, demand responsive bus, light rail transit)
- ▶ Routing or service area
- ▶ Frequency of service (e.g., 2-times an hour peak/4-times an hour off peak) or service headways (e.g., 15-minute peak/30 minute off-peak)
- ▶ Span of service - days of week and hours of day service operates
- ▶ Ridership annually (by stop if available)
- ▶ Clientele served (e.g., commuters, seniors, disabled, EJ and state defined DI Communities)



- ▶ Connecting routes
- ▶ Origins and destinations served by impacted bus stops and along the transit route (e.g., business park, neighborhood, medical facility, grocery store)
- ▶ Number and location of passenger amenities (e.g., shelters, benches, trash receptacles, signing)
- ▶ Infrastructure improvements present (e.g., transit signals, associated “Park N Ride” parking spaces, queue jumps, bus pullouts)
- ▶ Planned (fiscally constrained and vision) transit improvements in the study area (e.g., local, regional, or statewide)

CDOT Transit Projects

CDOT could have projects that are transit focused or projects that are focused on another mode but have the potential to impact transit services. This guidance focuses on projects that have the potential to impact transit services.

Transit and rail projects will need to comply with FTA and/or Federal Railroad Administration (FRA) requirements.

Aviation

If aviation alternatives are being considered, an inventory of the existing airport facilities should be documented, including:

- ▶ Location of airports
- ▶ Category of airport: commercial service, primary, cargo service, reliever
- ▶ Type of service (e.g., commercial vs. general aviation)
- ▶ Annual enplanements and operational capacity
- ▶ Ground transportation facilities and services

Bicycle and Pedestrian

Bicycle accommodation can take several forms including on-street facilities (shared lanes, wide curb lanes, paved shoulder, bike lanes, etc.) and off street shared use paths. Pedestrians are most commonly accommodated on sidewalks or shared use paths. The existing and planned bicycle and pedestrian facilities and amenities near the project area should be documented, including:

- ▶ Existing bicycle facilities (designated bike routes, bike lanes, shared use paths, etc.)
- ▶ Existing pedestrian facilities (sidewalks, shared use paths, intersection crossing treatments, etc.)
- ▶ Bicycle and pedestrian LOS - using Highway Capacity Manual (Transportation Research Board, 2010) methodology to provide a qualitative assessment of segment and intersection LOS in the study area
- ▶ Level of Traffic Stress (LTS) - rating given to a road segment or crossing indicating the traffic stress it imposes on bicyclists.
- ▶ Bicycle and pedestrian crossing treatments (crosswalks, pedestrian push button activation, bicycle in-street actuation, etc.)
- ▶ Amenities (e.g., bike racks, bike lockers, bicycle accommodation on transit vehicles)



- ▶ Bicycle and pedestrian connections to other transportation facilities (e.g., transit stations or stops)
- ▶ Local and regional bicycle and pedestrian improvements (e.g., fiscally constrained and vision plan)

The condition and ADA compliance of these facilities also needs to be analyzed and considered. ADA ramps must also be brought into compliance within a project area, as outlined in Procedural Directive 0605-1 (CDOT, 2017b).

<https://www.codot.gov/business/civilrights/ada/assets/0605-1.pdf>

Environmental Consequences

The Environmental Consequences chapter of EAs and EISs should compare the effects of each alternative carried forward for detailed analysis for all affected travel modes in the study area. The following sections provide an overview of the range of tools and analytical techniques that can be used to evaluate how well each alternative meets the project’s stated purpose and need and to assess the project’s impacts on transportation resources in the study area.

Roadway

Travel Demand and Traffic Operations Modeling

One or more of the following four categories (e.g., Regional Travel Demand Models, Analytical/Deterministic Tools, Microsimulation, and Mesoscopic simulation) of travel demand and traffic operations models may be needed to appropriately forecast the travel demands and assess the operational conditions associated with the various transportation alternatives in the future.

As emerging transportation technologies become available such as autonomous vehicles, these priorities can be identified in the project purpose and need statement and alternatives analysis. Analysis of such technologies in NEPA will continue to evolve as technologies are implemented.

Regional Travel Demand Models

This type of transportation model is designed to forecast travel demand at a regional level. CDOT’s Information Management Branch developed and maintains a statewide travel demand model, which is used to understand the demands on and needs of a transportation system within a region and statewide.

- ▶ **Common software packages** - TransCAD, VISUM, TransModeler
- ▶ **Basic inputs** - Land use forecasts and the transportation network (roadway and transit)
- ▶ **Basic outputs** - Forecasted daily traffic volumes and transit ridership for individual corridors in a region, regional travel patterns including origins/destinations
- ▶ **Typical applications** - Regional, community, and corridor level analysis
- ▶ **Level of effort required** - A relatively low level of effort is required to adapt these tools for project-level application

The travel demand model used by a project should be adopted by the relevant MPO and verified/approved by FHWA.



Analytical/Deterministic Tools

Analytical/deterministic tools implement the procedures of the *Highway Capacity Manual* to conduct operational analyses (Transportation Research Board, 2010). The *Highway Capacity Manual* procedures use deterministic mathematical equations to calculate facility LOS. These tools predict capacity, density, speed, delay, and queuing and may use local calibration factors to adjust formulas to local conditions. These tools are validated with field data. Analytical/deterministic tools are good for analyzing the performance of isolated facilities but generally do not evaluate the interaction between multiple intersections.

- ▶ **Common software packages** - Highway Capacity Software, Synchro
- ▶ **Basic inputs** - Traffic volumes (peak hour), roadway geometry, and signalization characteristics
- ▶ **Basic outputs** - Signalized and unsignalized intersection levels of service, travel delay, freeway mainline and ramp peak hour operations, etc.
- ▶ **Typical applications** - Intersection and segment operational analysis
- ▶ **Level of effort required** - A low level of effort is required to use these tools

Microscopic Simulation Models

Microscopic simulation models are designed to provide detailed simulation of individual vehicles in a network. They evaluate the interaction between each single car, bus, or person in the simulation based on the laneage and geometry and can provide detailed information about the performance. Due to the fine detail and large amount of information required to develop microscopic simulation models, these models often focus on small areas and are developed for specific corridor and intersection studies. Microscopic models rely on user-defined travel patterns and demands and do not adjust for capacity constraints. Microscopic simulation models can be particularly useful when evaluating over-saturated traffic conditions.

- ▶ **Common software packages** - CORSIM, VISSIM, and SimTraffic (which is packaged with the Synchro analytical/deterministic tool)
- ▶ **Basic inputs** - The most extensive and detailed of the four modeling tools; all the conditions in the study area (lanes, signal timing, volumes, geometry, etc.) are required to evaluate operational performance
- ▶ **Basic outputs** - Intersection operations (i.e., LOS) and network performance including interaction (e.g., queuing) between intersections
- ▶ **Typical applications** - Individual corridors or subarea system of intersections
- ▶ **Level of effort required** - Requires a high level of effort and calibration

Mesoscopic Operational Models

Mesoscopic models are relatively new to transportation planning and bridge the divide between travel demand models and microscopic models. Mesoscopic operational models include dynamic network assignment processes that adjust driver route choices based on real-time conditions and are designed to include more detailed aspects of the roadway system (e.g., the location of auxiliary turn lanes, the existence of tolled or managed lanes or facilities, etc.) without the intense resource requirements of a full microscopic simulation model. This model type is particularly useful when analyzing the route decision-making differences resulting from congested conditions or managed



lanes, assessing the impacts of ITS technologies, supporting the decision-making for work zone planning and traffic management, evaluating congestion pricing schemes, and planning special events and emergency situations.

- ▶ **Common software packages** - DynusT, Aimsun, TransModeler
- ▶ **Basic inputs** - The basic requirements for a travel demand model with the potential for increased network information, such as auxiliary lanes, signal timing and coordination, ITS technologies, tolled lanes and HOV lanes
- ▶ **Basic outputs** - Travel origin-destination forecasts in small time increments that account for and demonstrate the impacts of congestion (e.g., rerouting, queuing) over time
- ▶ **Typical applications** - Regional or corridor level analysis
- ▶ **Level of effort required** - This model type is not as readily available as travel demand models. The regional nature of a mesoscopic model requires a considerable effort for development, calibration, and validation. Depending on the existence of an established model and the project requirements and goals, this process requires a moderate to high level of effort.

Scope of Traffic Analysis

Key aspects of traffic scoping include:

- **Horizon Years:** Traffic analysis is generally required for the existing and the long-range planning horizon year.
- **Time Periods:** Analysis should be geared to recurrent peak traffic conditions.
- **Study Area:** The study area for the transportation analysis is often larger than the area defined for most environmental resources.
- **Model Calibration:** Travel demand and traffic operations models should be validated against actual conditions and calibrated to ensure that they are reasonably representing the area and local travel conditions.

Safety

CDOT requires explicit consideration of safety in a transportation planning process. The analysis should use the concepts of Level of Service of Safety (LOSS) and pattern recognition to test the frequency and severity of crashes throughout the study area. The LOSS formulation categorizes four levels of “potential for accident reduction,” I through IV. LOSS I indicates a better-than-expected safety performance and thus a low potential for crash reduction. LOSS IV indicates a crash history significantly greater than expected for a given roadway type, thus possessing a high potential for crash reduction.

Safety Analysis Resources

- *Highway Safety Manual* - American Association of State Highway Transportation Officials (AASHTO, 2016a)
- CDOT’s Safety Performance Functions (SPF)



Freight

Projects that may require the integration of freight considerations include, but are not limited to, intersection improvements, reconstruction and rehabilitation of roadways, bridge replacements and/or rehabilitation, repaving, building roadway on a new alignment, expanding roadway corridors, interchange improvements, additions of interchanges, roadway widening, access to intermodal facilities, accommodating rail expansion with roadway improvements, and safety improvements. There are generally two types of freight considerations for CDOT transportation projects:

- ▶ **Freight-focused** - A transportation project intended to resolve a freight issue or that has a significant freight element. The project's purpose and need would likely be heavily focused on freight movement, and freight would likely be a major consideration in the alternatives evaluation process.
- ▶ **Freight-related** - A transportation project that could impact freight operations. The role of freight in the project would likely be one of several transportation considerations.

Alternatives development and evaluation should consider freight infrastructure, operations, and policy. Truck volume forecasting should be verified for accuracy, as many regional models calibrate mainly on overall traffic volumes. For both freight-focused and freight-related projects, screening of alternatives may consider:

- ▶ The degree to which the alternative solves an existing freight problem
- ▶ The degree to which the alternative satisfies all transportation needs, not just freight (i.e., a balancing of benefits)
- ▶ Direct impacts on freight movement such as access changes, facility design that could reduce truck safety, tolls that could divert trucks onto the adjacent street network, inhibiting intersection design (e.g., roundabouts), poor signal timing, increased congestion that could reduce truck travel times and/or reliability
- ▶ Indirect impacts on freight movement such as induced changes in the pattern of land use, the location of freight facilities, and effects to the supply chain
- ▶ The impacts of freight movement on environmental resources and features (air quality, water quality, noise, visual, social/EJ and equity, etc.) and the potential for an alternative to minimize the impacts

Freight Stakeholders

Freight stakeholders can be hard to engage and reluctant to disclose operational information that they deem to be proprietary and could benefit their competitors.

Statewide and regional resources are important to identify freight users of the study area.

Key input from freight stakeholders:

- Current freight uses of the facility
- Freight forecasts
- Alternatives development and refinement
- Impacts of alternatives on freight operations



Transit and Rail

The travel demand modeling tools described previously may provide some insight into how ridership and travel times are likely to change because of a project. However, a calibrated travel demand model with transit is often not available. Therefore, this section provides guidance on qualitative and quantitative off-model analysis that can be useful:

- ▶ Degree to which the alternative impacts the transit service in relation to the service's importance regionally
- ▶ Change in ridership
- ▶ Potential to incite mode shift to transit
- ▶ Influence on transit's ability to service existing clientele and key activity centers
- ▶ Compatibility with planned transit improvements
- ▶ Impacts on origins and destinations served
- ▶ Impact to transit agency or service provider
- ▶ Impact on connecting services or ability to make connections
- ▶ Change in travel time and/or reliability
- ▶ Impact on passenger amenities
- ▶ Change in transit infrastructure
- ▶ Change in access to facilities and circulation

Transit Stakeholders

- Public transit agencies
- Private for profit transit providers
- Private not for profit agencies
- Municipalities
- Regional planning entities (e.g., MPOs)
- CDOT DTR
- FTA
- FRA
- Colorado Association of Transit Agencies (CASTA)
- Human services agencies
- Transit and rail interest groups

Aviation

Although it is rare for a CDOT NEPA project to impact aviation facilities, some large studies with aviation facilities near the study areas may exist. Facilities may include runways, airports, airport towers, etc. Aviation impacts should be coordinated with the FAA, CDOT Division of Aeronautics, and local airport managers.



Bicycle and Pedestrian

Both the USDOT policy statement on bicycle and pedestrian accommodation (signed March 11, 2010) and the Colorado Transportation Commission's Bike and Pedestrian Policy Directive 1602.0 (CDOT, 2009) and subsequent State Statute 43-1-120 support the development of fully integrated active transportation networks. CDOT's Policy Directive states that "the Department shall include the needs of bicyclists and pedestrians in the planning, design, operation and maintenance of transportation facilities as a necessary component of all programs and activities." As such, bicycle and pedestrian accommodation shall be documented before finalizing the decision. The Colorado Transportation Commission's Policy Directive 605.0 (dated November 27, 2018) builds on Policy Directive 1602.0 to "ensure that all new or existing Transportation Facilities, Building Facilities, and other CDOT services are accessible to persons with disabilities." Some CDOT NEPA projects may be specifically focused on bicycle and/or pedestrian travel.

Unless currently under construction, all CDOT and local agency projects (including those in a reevaluation process) are subject to the Transportation Commission's Bike and Pedestrian Policy Directive 1602.0 and State Statute 43 1-120.

To identify the potential impacts and benefits to bicycle and pedestrian use under each alternative, the following tools may be useful:

- ▶ Maps showing the alignment of the project alternatives overlaid with existing and planned bicycle and pedestrian facilities
- ▶ Data that includes the number of people using the bicycle and pedestrian facilities and for what purpose (commuter, recreation, etc.)
- ▶ Comparison of the bicycle and pedestrian features of the project alternatives with respect to existing and planned bicycle and pedestrian facilities outlined in community transportation plans and information provided by local interest groups
- ▶ Evaluation of whether the proposed action features will have negative or positive impacts on the existing and planned bicycle and pedestrian facilities
- ▶ Completion of bicycle and pedestrian LOS evaluation and LTS evaluation for each alternative, using the methodologies presented in the *Highway Capacity Manual*
- ▶ Comparison of the bicycle and pedestrian features of the alternatives to highlight the similarities and differences among alternatives

The Environmental Consequences chapter in EAs and EISs should, at a minimum, compare the effects in the following three categories of each alternative carried forward for detailed analysis:

- ▶ **Community Needs** - Demonstrate that the project has fully considered bicycle and pedestrian transportation, condition, and expected life and has actively coordinated with local government bicycle and pedestrian agencies and public interest groups to understand and meet, where feasible, the community's needs. The information contained in this discussion should provide a firm understanding of how the proposed facilities will meet local needs and movements of bicyclists and pedestrians.
- ▶ **Public Law** - The Environmental Consequences chapter must cite the Federal legislation in Title 23 of the U.S. Code Section 109(m), documenting CDOT's full consideration of bicycle



and pedestrian accommodation and the provision of reasonable accommodation for the bicycling and walking public, including ADA compliance.

- ▶ **Community Context** - Describe any project components that will benefit the local bicycle and pedestrian network by being constructed as part of the project or by providing adequate ROW for later construction.

Bicycle/Pedestrian Stakeholders

Groups supporting the development of bicycle and pedestrian facilities on the project typically have information about existing and future needs for bicycle and pedestrian accommodation. Stakeholders could include:

- Bicycle advocacy groups
- Biking clubs
- Walking organizations
- Senior advocacy groups
- Schools

Impacts and Mitigation

The Summary of Impacts and Mitigation Table (Table 9 2) is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for transportation resources.

The mitigation section should describe project design elements that avoid or minimize impacts to the existing transportation network and detail the proposed mitigation measures and describe how they will mitigate the impact for which they were developed.

Roadway

Traffic Operations

Mitigation measures should be considered when the analysis of alternatives results in a negative impact to existing or future traffic operations and safety. These measures could include:

- ▶ Implementation of traffic control devices (e.g., traffic signals, stop signs, ramp metering)
- ▶ Intersection improvements (e.g., roundabout construction, auxiliary lanes)
- ▶ Signal timing improvements (e.g., reallocation of green time, addition of protected-only left turn phase to address safety issue)

TDM/TSM

Mitigation of impacts to the transportation system can often be performed by applying transportation technology, TDM, and TSM infrastructure and strategies, such as the following:

- ▶ ITS and transportation technology to optimize safety and operational benefits of alternatives. Existing and reasonably anticipated technologies at the time of the study should be considered with potential time horizons and the CDOT-identified Connected Roadway Classification (CRC) level for the study corridor(s). Example measures could include:
 - CAV infrastructure
 - Communications infrastructure



- Variable speed limits
- Queue warnings
- Ramp metering
- Advanced traffic signal technologies
- Road/weather information systems
- Dynamic messaging and lane use
- Wildlife detection and alert systems
- ▶ TDM strategies to change or reduce the demand for automobile use, particularly during peak periods of the day, by encouraging a change in travel behavior. Example measures could include:
 - Requiring parking fees
 - Subsidizing transit costs for employees or residents
 - Enhancing facilities and amenities for alternative travel modes (transit, bicycle, pedestrian) to encourage mode shift from single occupancy vehicles
 - Implementing TDM programs, often through major employers, to encourage telecommuting and flexible work schedules
- ▶ TSM strategies to maximize the efficiency of transportation system operations by improving traffic flow, reducing traveler delay, and enhancing safety. Such programs can also reduce emissions by changing vehicle speeds, reducing vehicle idling, and rerouting to avoid congested areas. Example infrastructure and programs could include:
 - Signal coordination
 - Enhanced maintenance and operations programs
 - Access management plans/access control plans
 - Incident management plans
 - Event traffic management programs
 - Freight management strategies
 - Enhanced intersection/destination signage
 - Wildlife crossing treatments
 - Snow fence

Freight

Appropriate mitigation of impacts on freight facilities and operations should be commensurate with the presence of freight activity and the project's impacts thereon. Working with freight stakeholders during the identification of mitigation options is critical to the success of freight-focused or freight related projects. Mitigation measures could address:

- ▶ Impacts to truck operations during construction (e.g., advance notice of construction schedules to prominent trucking companies, ensuring work zone safety measures account for corridor truck travel)
- ▶ Geometric design and pavement materials to adequately handle forecasted truck travel
- ▶ Alterations in the transportation network to minimize interactions between trucks/trains and autos/pedestrians/bicyclists



- ▶ Efficient truck routing that avoids residential communities
- ▶ Provision of loading and unloading areas for truck deliveries to stores, restaurants, and offices
- ▶ Provision of sound or visual barriers to reduce freight transportation noise and visual impacts on the adjacent area
- ▶ Provision of ITS for mountain pass safety (e.g., truck escape ramps, truck passing areas, consideration of truck speed reductions on mountain passes, truck chain stations with sufficient lighting for safety, truck parking and rest facilities) as truck parking is a bigger issue due to the truckers' time restrictions related to driving.

Freight Resources

FHWA's Integrating Freight into NEPA Analysis guidance (September 2010)

<http://ops.fhwa.dot.gov/publications/fhwahop10033/nepa.pdf>

CDOT's DTR

<https://www.codot.gov/programs/programs/transitandrail>

Transit and Rail

Mitigation measures should be considered when the analysis of alternatives results in a negative impact to existing or planned transit and/or rail services. Mitigation measures should be coordinated with transit stakeholders but could include:

- ▶ Relocation of transit stop(s)
- ▶ Enhancement of transit stop(s) (e.g., sidewalks, ramps, connections to adjacent land uses, lighting)
- ▶ Replacement, relocation, or enhancement of passenger amenities such as shelters and benches
- ▶ Rerouting of service to retain reliability and travel time
- ▶ Signing and way finding
- ▶ Transit priority features (e.g., queue jumps, signal priority)
- ▶ Pedestrian crossing treatments (e.g., crosswalks, grade separated crossings)
- ▶ New or expanded intercept parking lots
- ▶ Local agency modifications to zoning and/or setbacks to encourage transit-supportive land uses

Aviation

Mitigation measures should be considered if the alternatives analysis results in negative impacts to aviation facilities in the study area. These mitigation measures could include enhanced or new access to affected airports, traveler information, or enhanced transit service to access the affected airports.

Aviation Resources

CDOT's Division of Aeronautics at <https://www.codot.gov/programs/aeronautics>



Bicycle and Pedestrian

If the analysis of alternatives shows a negative impact on existing or planned accommodation of bicyclists or pedestrians, mitigation measures should be identified. Such mitigation measures could include:

- ▶ Expansion of or improvements to existing bicycle or pedestrian facilities to maintain a desired bicycle or pedestrian LOS
- ▶ Provision of connections to other system options such as local or regional trail system, on-street lanes or routes, etc.
- ▶ Rerouting of bicyclists/pedestrians to equivalent type facility if the proposed action would sever existing bicycle or pedestrian facilities
- ▶ Intersection or mid-block crossing treatments to enhance pedestrian safety
- ▶ Grade separations to eliminate conflicts between bicyclists/ pedestrians and autos/trains
- ▶ Provision of amenities (e.g., bike racks or bike lockers) at transit stations to enhance intermodal connections
- ▶ Signing and wayfinding

Bicycle/Pedestrian Resources

CDOT's Bicycle and Pedestrian Program at <https://www.codot.gov/programs/bikeped>



9.18 Residential/Business/Right-of-Way Relocation

The relocation and displacement analysis of the NEPA document should identify and discuss any residential, business, non-profit association, or farm operation relocations associated with the proposed project to:

- ▶ Ensure that community issues are identified and that project effects are addressed and incorporated into the decision-making process
- ▶ Try to avoid, minimize, or mitigate, where feasible, adverse community effects
- ▶ Ensure the incorporation of environmental protection and community impact considerations from the earliest stages of project or plan development
- ▶ Provide for the participation and consultation of communities affected by the proposed project throughout the life of the project development process

CDOT's Right-of-Way staff should be involved in all projects where ROW acquisition will be required or is a potential concern. It is the responsibility of environmental planners performing relocation and displacement analysis to coordinate closely with CDOT Right-of-Way staff to avoid duplication of effort, as well as better integrate information. Acquisitions and relocation issues also affect the land use and social and economic health of a community and should be addressed accordingly.

The following subsections provide guidance on the treatment of acquisition and relocation for CDOT's NEPA projects. The first subsection discusses the process for evaluating acquisition and relocation. The second subsection discusses acquisition and relocation information that should be in each NEPA document.

It is not appropriate to collect and present demographic details of individuals associated with displacement. In situations where the number of displacements is low, general demographic discussions may be appropriate. In situations where there are several displacements, demographic information from the Census or other sources may be sufficient to characterize the overall nature of the displaced individuals.

9.18.1 Relocation and Acquisition Evaluation Process

The CDOT Region Right-of-Way Manager and their acquisition and relocation Specialists (either in-house or consultants) are responsible for obtaining data on the number of relocations and the availability of replacement property using the Acquisition Stage Relocation Plan form.

CDOT's Region DTD staff should work with the staff acquisition and relocation agents to obtain project information that will be evaluated by the Region DTD staff on how the relocations and acquisitions, caused by the proposed project, would facilitate or inhibit access to jobs, educational facilities, religious institutions, health and welfare services, recreational facilities, social and cultural facilities, pedestrian facilities, shopping facilities, and public transit services within the project area. The study area is obligated to include communities within, and immediately surrounding, the proposed project. Community boundaries can often be delineated by physical barriers, land-use patterns, political divisions (such as school districts), selected demographic characteristics, historical backgrounds, resident perceptions, subdivisions, and neighborhoods recognized by name and tradition.



Possible ROW acquisitions must be identified and evaluated as early as possible during project planning. This should be done before alternative corridors are selected, if possible, and must be completed before proceeding with any ROW acquisitions.

Reasons for Evaluation of Relocation and Acquisition Under NEPA

CDOT DTD staff evaluates relocation and acquisition for several reasons:

- ▶ Relocation and acquisition of any residence, business, non-profit association, or farm operation is an involved undertaking that needs to be carefully considered before any individual or group is impacted
- ▶ To comply with CDOT's Environmental Stewardship Guide (2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner
- ▶ To comply with several legal mandates that pertain to ROW acquisitions (Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended, and pertinent state laws)

CDOT must comply with Federal relocation regulations when implementing transportation projects in Colorado. The regulations and certifications applicable to residential business ROW and relocation are summarized below.

- ▶ **FHWA Technical Advisory T6640.8a Guidance for Preparing and Processing Environmental and Section 4(f) Documents** - In any NEPA document, the relocation information should be summarized in sufficient detail to adequately explain the relocation situation, including anticipated problems and proposed solutions for all alternatives.
- ▶ **Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 100-17)** "establishes a uniform policy for the fair and equitable treatment of persons displaced as a direct result of programs or projects undertaken by a Federal agency or with Federal financial assistance."
- ▶ **FHWA's Environmental Impact and Related Procedures (23 CFR 771)** - Provides direction for FHWA on implementing NEPA.

These laws and policies provide guidance toward uniform and equitable treatment of persons displaced from their homes, businesses, farms, or other properties, by Federal and federally funded programs or projects.

Collection and Evaluation of Baseline Information Under NEPA

To comply with the FHWA Technical Advisory 6640.8A (FHWA, 1987b), information on ROW requirements is to be included in the description of project alternatives. The CDOT *Right-of-Way Manual* (2016) addresses the preparation of ROW plans. These plans are a prerequisite to Federal participation in the cost of acquiring real property and are required under state law. Preliminary development of these plans is initiated as soon as the route of the proposed project has been selected and approved by the Transportation Commission.



Collection of Baseline Information

The contents of final ROW plans are prescribed in the CDOT *Right-of-Way Manual* (2016) and include information that could enable evaluation of relocation/acquisition impacts. However, NEPA analysis occurs between the processes of describing the location of land necessary to accommodate the project and preparing ROW plans for the selected route of the proposed highway. Relevant data sources are discussed in **Section 9.14** (Social Resources) and **Section 9.15** (Economic Resources) and coordinated with CDOT Right-of-Way staff.

Evaluation of Baseline Information

To enable the identification of relocation and acquisition impacts, the baseline information must be limited to the ROW Plan boundaries for each project alternative and a larger NEPA study area that includes potentially impacted neighborhood(s), metro district(s), or other political jurisdictions. Data is collected regarding property owners and potentially displaced peoples within the project ROW Plan boundaries and NEPA study area. As appropriate to project complexity, this information can then be used to develop the following types of information regarding project impacts:

- ▶ Estimation of types of households to be displaced, including:
 - Percentage of minority households (e.g., racial, national origin, and ethnic)
 - ▶ The ROW staff provide property owners and displacees with a demographic information form at the beginning of the project. A second opportunity for CDOT to collect demographic information related to race, national origin, ethnicity, sex, and age is included on a voluntary feedback form provided to the property owners at closing and to displacees after they have been relocated. Use of the forms by the property owners and displacees is voluntary for both forms. Note that this voluntary data is not necessarily representative of a project's overall demographic makeup
 - Percentage of DI Communities, as defined by the State of Colorado. This information can be found either through Google or the DTD.
 - The Region ROW Relocation Specialists interview as many of the property owners and potential displacees who can be located. If the project requires relocation, the ROW Specialist uses an interview form for each household or business. If relocation is not required on a project, the property owners are not interviewed about their relocation needs. The interview data collected from displacees include:
 - ▶ Household size - number of adults, children, and pets.
 - ▶ Household income (in dollars).
 - ▶ Percentage of elderly households to be displaced (CDOT cannot force someone to tell us their age or other demographic information about themselves).
 - ▶ Whether any of the household members require ADA compliant housing. CDOT assumes that any relocated businesses will be moving into ADA-compliant premises.
 - ▶ During the interview, the ROW Relocation Specialist asks residential displacees if the replacement residence must be ADA-compliant.
 - ▶ The ROW Specialist asks residential displacees about their specific community needs, such as preferred school districts (school grade levels needed and preferred school distance from the replacement residence) and any other conditions or unique situations that will need to be accommodated when replacement housing is



- considered (examples include home businesses, activities that require a license or certain zoning classification).
- ▶ Number of employees (if it is a business).
 - ▶ Other data collected from business displacees.
- After the displacee interviews are conducted, the Region ROW Relocation Specialist researches the local market/areas where the household or business might relocate. Residential and business displacees are provided with at least three replacement locations that CDOT thinks might be comparable locations (“comps”) to replace what the displacees have (land, land use, zoning, proximity to schools, proximity to the same (or comparable) local customer market. Displacees do not have to use CDOT’s “comps.”
 - In addition to affordability, all residential comps must meet the Uniform Act definition of “decent, safe and sanitary.” The CDOT ROW Relocation Specialist must inspect replacement residential units before they are offered to displacees as potential replacement housing. If the displacee selects replacement housing on their own, CDOT must perform the “decent, safe and sanitary” inspection - and have all requirements met - before the ROW Relocation Specialist can take steps toward acquiring the replacement property.
 - Actions proposed to remedy insufficient relocation housing, including a commitment to housing of last resort, if necessary.
- ▶ Number, type, and size of businesses to be displaced, including special business characteristics, number of employees, and general economic impact of business dislocation(s) on community economy, plus:
 - Sites available in the area for business relocation
 - Whether any special licenses can be transferred or otherwise obtained at the potential replacement business location (liquor, marijuana growing and sales, and franchise rules that dictate minimum distance from other franchises)
 - Sign relocations
 - Summary of potential contamination concerns
 - Identification of any publicly owned lands
 - ▶ A discussion of the results of early consultation with local government(s) and any early consultation with businesses subject to displacement, including any discussions of potential sources of funding, financing, planning for incentive packaging (e.g., tax abatement, flexible zoning, and building requirements), and advisory assistance that has been or will be furnished, along with other appropriate information. Specific financial and incentive programs or opportunities (beyond those provided by the Uniform Act) to residential and business displacees to minimize impacts of the relocation may be identified, if available through other agencies or organizations.
 - ▶ A description of the actions proposed to remedy insufficient relocation housing, including, if necessary, “Last Resort Housing.” If “Last Resort Housing” is anticipated, the plan should address how this housing could be provided; that is, whether newly constructed housing must be made available or if there is sufficient replacement housing that meets the displacees’ needs in the preferred relocation area to handle “Last Resort Housing” situations.



- ▶ A statement that relocation and acquisition would be in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), making resources for relocation available without discrimination.

Relocation and ROW acquisition impacts are mitigated by avoidance to the extent feasible, such as by changing an alignment so that there are no displacements. When this is not possible, just compensation in accordance with the Uniform Act may be provided.

Other Issues to Consider

Coordination with the Region ROW Relocation Specialist is recommended as sharing personal information must be strictly limited and is not subject to Colorado Open Records Act or FOIA requests.

9.18.2 NEPA Document Sections

The content of the sections on relocations and acquisitions in the Affected Environment and Environmental Consequences chapters is discussed below.

Affected Environment

Relocation and acquisitions aspects that may be impacted by the project should be described in the Affected Environment chapter (as summarized in the sidebar). Additional information is provided in the CDOT *Right-of-Way Manual*.

Affected Environment Chapter of NEPA Document

- Describe the number of houses and/or buildings subject to displacement
- Incorporate CDOT's ROW estimates of the number of people in the study area who are subject to relocation
- Determine if the potential displacees represent a disproportionate population using voluntarily provided demographic information from the property owners and displacees
- Include market information on the availability of comparable replacement dwellings and business locations

Environmental Consequences

It is essential that the relocation and acquisition section in the Environmental Consequences chapter of the project's NEPA document identify and discuss any residential, business, non-profit association, or farm operation relocations associated with the proposed project to:

- ▶ Ensure that community issues are identified, and project effects are addressed and incorporated into the decision-making process via the DTD public meeting of affected parties
- ▶ Attempt to avoid, minimize, or mitigate, where feasible, adverse community effects
- ▶ Ensure the incorporation of environmental protection and community impact considerations from the earliest stages of project or plan development



- ▶ Anticipate any relocation problems early in the process and identify and develop proposed solutions
 - Because the displacees may not want to share their specific or special needs or situations with additional people beyond the ROW Relocation Specialist, this is a ROW Relocation Specialist function
- ▶ Provide for the participation and consultation of communities affected by the proposed project throughout the life of project development
- ▶ Discuss such topics as the number of relocations, categorized by residences, businesses, non-profit associations, farm operations, and acreage of ROW acquisitions involved; summarize information from the completed displacee interview forms
- ▶ Provide information on all project alternatives
- ▶ Discuss how the relocations caused by the proposed project would facilitate or inhibit access to jobs, educational facilities, religious institutions, health and welfare services, recreational facilities, social and cultural facilities, pedestrian facilities, shopping facilities, and public transit services

When a project requires the relocation or acquisition of residences or businesses, standard CDOT statements such as the following should be included in the NEPA document discussion of relocation or acquisition impacts. These statements are also included in Appendix F.

Model Relocation Statement

In certain situations, it may also be necessary to acquire improvements that are located within a proposed acquisition parcel. In those instances where the improvements are occupied, it becomes necessary to “relocate” those individuals from the subject property (e.g., residential or business) to a replacement site. The Uniform Act provides many benefits to these individuals to assist them both financially and with advisory services related to relocating their residence or business operation. Although the benefits available under the Uniform Act are far too numerous and complex to discuss in detail in this document, they are available to both owner occupants and tenants of either residential or business properties. In some situations, only personal property must be moved from the real property and this is also covered under the relocation program.

As soon as feasible, any person scheduled to be displaced shall be furnished with a general written description of the displacing agency’s relocation program that provides, at a minimum, detailed information related to eligibility requirements, advisory services and assistance, payments, and the appeals process. It shall also provide notification that the displaced person(s) will not be required to move without at least 90 days’ advance written notice. For residential displacees, this notice cannot be provided until a written offer to acquire the subject property has been presented, and at least one comparable replacement dwelling has been made available. Relocation benefits will be provided to all eligible persons regardless of race, color, religion, sex, or national origin. Benefits under the Uniform Act, to which each eligible owner or tenant may be entitled, will be determined on an individual basis and explained to them in detail by an assigned Right-of-Way Specialist (CDOT, 2016).



Model Acquisition Statement

For any person(s) whose real property interests may be impacted by this project, the acquisition of those property interests will comply fully with the Uniform Act. The Uniform Act is a federally mandated program that applies to all acquisitions of real property or displacements of persons resulting from Federal or federally assisted programs or projects. It was created to provide for and ensure the fair and equitable treatment of all such persons. To further ensure that the provisions contained within this act are applied “uniformly,” CDOT requires Uniform Act compliance on any project for which it has oversight responsibility regardless of the funding source. Additionally, the Fifth Amendment of the U.S. Constitution provides that private property may not be taken for a public use without payment of “just compensation.” All impacted owners will be provided notification of the acquiring agency’s intent to acquire an interest in their property, including a written offer letter of just compensation specifically describing those property interests. A Right-of-Way Specialist will be assigned to each property owner to assist them with this process (CDOT, 2016).

When relocation and acquisition impacts are identified, the document will discuss possible mitigation and include the information shown in the sidebar in the NEPA document, as appropriate.

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table (Table 9-2)* is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for relocations.

Mitigation Planning Information to Include in NEPA Document

- The availability of residential and commercial real estate for sale to accommodate potential relocation needs
- Consider and reference the Relocation Assistance Program, including types of benefits available
- An evaluation of city zoning considerations with respect to potential relocation and franchise territories for potentially relocated/acquisitioned commercial entities



9.19 Utilities and Railroad Facilities

A utility is a private or publicly owned line, facility, or system for producing, transmitting, or distributing irrigation water, communications, cable television, power, electricity, light, heat, gas, oil, crude products, water, steam, waste, stormwater not connected with highway drainage, or any other similar type of commodity that directly or indirectly serves the public (23 CFR Part 645.105(m) Utility Relocations, Adjustments, and Reimbursement, Definitions).

The following subsections provide guidance on the treatment of utilities and railroads for CDOT's NEPA projects. The first subsection discusses the process for evaluating utilities and railroads. The second subsection discusses utilities and railroads information that should be addressed in each NEPA document.

9.19.1 Utilities and Railroads Evaluation Process

The CDOT project manager will coordinate with the Regional Utility Engineering Program Manager (RUEPM) whenever there is involvement with utilities and/or a rail system on a project.

The study area will include a Subsurface Utility Engineering investigation per CRS 9-1.5-103 for existing utilities. Each Railroad within the project footprint shall complete a minimum of a diagnostic meeting and Preliminary Engineering reviews. If present, project construction will be coordinated with the existing and proposed infrastructure. It may also be necessary to relocate utilities or railroad facilities for several reasons, such as:

- ▶ A utility may conflict with proposed construction. Identify all utility conflicts within a Utility Conflict Matrix (refer to [Design Bulletin 2022-1](#))
- ▶ Road construction may provide a convenient opportunity to place new utility or upgrade existing ones (e.g., betterment)
- ▶ Existing unsafe or hazardous conditions may easily and economically be mitigated during construction
- ▶ Certain visual impacts may be replaced with a more acceptable solution (i.e., undergrounding an overhead line)
- ▶ Railroad crossing requires relocation due to impacts of the proposed roadway design, including at-grade crossings, grade separated structures (e.g., over and under passes).

Early coordination with utility and rail line owners ensures development of reasonable alternatives relative to existing utilities and railroads. The associated improvements and timely consideration of the costs associated with the potential relocation of these resources can also be fully integrated into the NEPA document. Early coordination identifies potential conflicts with existing or future utilities, rail line owners, and rail line users within the study area. Associated improvements that can be impacted include proposed/revised roadway section, drainage/irrigation facilities (storm sewer facilities, retention/detention ponds, etc.), landscaping, and any other proposed improvement with potential for subsurface disturbance.



Utility and Railroad Clearance Documentation

Utilities

- CDOT's *Project Development Manual* (CDOT, 2013b) Section 7.03 Utility Involvement for clearance process

Railroad

- Early coordination with the railroad company and with the Statewide Railroad Coordinator is critical as it may take a year or more to obtain clearance

Reasons for Evaluation of Utilities and Railroads Under NEPA

CDOT evaluates utilities and railroads for several reasons:

- ▶ Utilities and railroads are under the ownership of a private or public entity, which requires coordination and possibly relocation
- ▶ To comply with CDOT's Environmental Stewardship Guide (2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner
- ▶ To comply with several legal mandates
- ▶ Project footprint may increase due to outside drainage facilities tie in locations, e.g., City and County of Denver modifies a drainage facility one quarter mile outside the CDOT project but will need access to this facility in two years for the roadway project
- ▶ Additional structures may need to be constructed or evaluated to hold utilities, e.g., SH 82 in Glenwood Springs evaluated a new pedestrian bridge to reduce utility relocations

Legal mandates include:

- ▶ **Transportation Act, CRS 43-1-225** - The revision granted the Transportation Commission additional powers to make regulations about utility facilities, defined appropriate situations to relocate utility facilities, and clarified cost of relocating utility facilities. Last revised in 2021.
- ▶ **Eminent Domain Act, CRS 38-5-101** - Gives any utility company currently doing business in Colorado the ability to construct, maintain, and operate utilities along any public highway. Last revised in 2013.
- ▶ **State Highway Utility Accommodation Code: CFR Title 23 Section 645, 646 and 635-309b** - Prescribes the policies, procedures, and reimbursement provisions for the adjustment and relocation of utility facilities on Federal-aid and direct Federal projects. Last amended in 2021.

In addition to these regulations, other state laws and constitutional provisions concern utilities and railroads. These mandates give utilities the right to construct their lines within highway ROW, provided they meet CDOT's established criteria.



Collection and Evaluation of Baseline Information Under NEPA

CDOT has established procedures in the Project Development Manual (CDOT, 2013b), Section 7.03, for coordinating with utility companies when a project may have an impact on utilities.

A coordinated effort among the RUEPM, the Project Manager or Resident Engineer, and the Utility Owners furnishes all relevant information about the location, dimension, and characteristics of major utilities found within a proposed project corridor (i.e., all viable alternatives under consideration). The RUEPM is responsible for maintaining contact with local utility agencies and coordinating with those utility agencies during design. It is the responsibility of the project manager to evaluate and consider potential utility conflicts and recommended relocations made by the RUEPM and staff when addressing roadway impacts on utilities.

CDOT also has established procedures in the Project Development Manual, Section 7.04 (CDOT, 2013b) for coordinating with railroad companies when a project may have an impact on a railroad facility.

Section 9.27 discusses the development of a list of past, present, and foreseeable future projects that should be addressed for all resources in consideration of cumulative impacts. A utilities and railroad map should be consulted to identify which utility and railroad facilities will be impacted by projects. For input to this section, evaluate cumulative impacts to utilities and railroads in relatively general terms, noting which utility and railroad facilities will be most impacted, their relative importance, and the degree to which impacts from the transportation project considered in the current NEPA document will contribute to cumulative impacts.

9.19.2 NEPA Document Sections

The content of the sections on utilities and railroads in the Affected Environment and Environmental Consequences chapters is discussed below.

General Information to Include in NEPA Document

Utilities

- Owner
- Location
- Dimension
- Characteristics
- Type of facility/utility
- Material (if known)
- Easements/agreements/ permits (property interests)

Railroad

- Owner
- Location
- Type of crossing (at grade, etc.)
- Used or abandoned



Affected Environment

The introduction of the Affected Environment chapter of the NEPA document shall identify existing and proposed utilities and rail systems within the project area and discuss their relationship to the proposed project.

The Affected Environment chapter of the NEPA document will include the information developed to understand the utility and railroad information compiled as part of the inventory process. Present this information in the NEPA document with sufficient detail to be clear and understandable. Include general information listed in the sidebar, as well as any unique information necessary to evaluate potential impacts.

Environmental Consequences

Summarize impacts by alternative, such that similarities and differences among alternatives relative to utility and railroad impacts can be discerned.

Overall, it is in the best interest of CDOT to avoid impacts to utility and railroad facilities. This is due to the cost of relocations (as applicable) and the time and effort needed to coordinate with the entities. As noted previously, early involvement of the RUEPM and Resident Engineer in the alternatives development process is key to identifying locations of utilities and railways, possible effects to these locations, and possible avoidance alternatives. It also contributes to the development of effective agreement documents if avoidance is not possible.

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table (Table 9-2)* is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for utilities and railroads.



9.20 Section 4(f) Evaluation

Section 4(f) has been part of Federal law since 1966 when it was enacted as Section 4(f) of the USDOT Act. It is codified in 23 USC Section 138 and 49 USC Section 303. Section 4(f) requires consideration of:

- ▶ Parks and recreational areas of national, state, or local significance that are both publicly owned and open to the public
- ▶ Publicly owned wildlife and waterfowl refuges of national, state, or local significance that are open to the public to the extent that public access does not interfere with the primary purpose of the refuge
- ▶ Historic sites of national, state, or local significance in public or private ownership regardless of whether they are open to the public

The law says that FHWA (and other DOT agencies) cannot approve the use of land from publicly owned parks, recreation areas, wildlife refuges, or historic sites unless there is no feasible and prudent alternative to the use and the action includes all possible planning to minimize harm to the property. The substantive provisions of Section 4(f) apply only to agencies within the branches of the USDOT and are implemented by FHWA and FTA through 23 CFR 774.

Section 4(f) resources that may be affected by transportation uses can be divided into two principal categories:

- ▶ Significant publicly owned parks, recreation areas, and wildlife or waterfowl refuges
- ▶ Historic resources

Publicly owned land that has been formally designated and determined to be significant for park, recreation area, or wildlife and waterfowl refuge purposes is also considered a Section 4(f) resource, even if it may not be functioning as such during project development. If a governmental body has a proprietary interest in the land (such as fee ownership or an easement), it is considered publicly owned.

9.20.1 Legislative Background

In 2005, Section 6009(a) of the SAFETEA-LU made the first substantive revision to Section 4(f) since it was enacted in 1966. This amendment simplified the process and approval of projects that have only *de minimis* impacts on lands subject to protection under Section 4(f). *De minimis* impacts are of such a minor extent as to not require a full Section 4(f) evaluation. Under the new provisions, once the USDOT determines that a transportation use of Section 4(f) property results in a *de minimis* impact, analysis of feasible and prudent avoidance alternatives is not required.

In 2008, FHWA reorganized the regulations implementing Section 4(f), clarifying specific elements of the Section 4(f) approval process and simplifying the regulatory requirements. Section 4(f) regulations moved from 23 CFR 771.135 to 23 CFR 774. FHWA developed a *Policy Paper* to supplement the regulations and to aid FHWA in consistently administering Section 4(f).

In July 2012, FHWA released a new policy paper on Section 4(f). The *Policy Paper* is available at <https://www.environment.fhwa.dot.gov/legislation/section4f/4fpolicy.pdf>



The following subsections provide guidance on the evaluation of Section 4(f) resources for CDOT's NEPA projects. **Subsection 9.20.2** discusses the process for evaluating Section 4(f) resources, and **Subsection 9.20.3** discusses information about Section 4(f) properties that should be included in each NEPA document.

9.20.2 Section 4(f) Evaluation Process

A Section 4(f) evaluation is required when a project with USDOT nexus “uses” a Section 4(f) resource. A “use” is defined as one of the following:

- ▶ **Permanent incorporation/permanent easement** - Land from a Section 4(f) property is permanently incorporated into the transportation system through fee simple acquisition or permanent easement
- ▶ **Temporary occupancy** - Land occupied for construction purposes is adverse in terms of the statute's preservationist purposes
- ▶ **Constructive use** - Proximity impacts of the transportation project (e.g., noise, visual) are so severe that the activities, features, or attributes that qualify the Section 4(f) property for protection are substantially impaired

The Section 4(f) evaluation should be initiated when alternatives for the proposed action are first being designed and developed. If the Section 4(f) evaluation is part of the NEPA document, it should be completed in conjunction with the NEPA process to the extent possible.

Reasons for Evaluation of Section 4(f) Properties Under NEPA

CDOT conducts Section 4(f) evaluations for its projects for a variety of reasons, including the following:

- ▶ Section 4(f) evaluation is required by law for USDOT agencies (i.e., Federal-aid or Federal approval projects)
- ▶ To comply with mandated Section 4(f) documentation, coordination, and approval requirements
- ▶ To make special effort to preserve public park and recreation lands, wildlife and waterfowl refuges, and historic sites, consistent with USDOT policy

Determining What Type of Section 4(f) Evaluation to Complete

Collection of Baseline Information

The first step in the Section 4(f) evaluation process is to identify existing and planned Section 4(f) properties, which include the following:

- ▶ Historic sites on or eligible for the NRHP.
- ▶ Archaeological sites on or eligible for the NRHP and that warrant preservation in place as determined by FHWA and the SHPO.
- ▶ Officially designated publicly owned parks, recreation areas (including recreational trails), and wildlife or waterfowl refuges. Factors such as public access restrictions may affect whether properties qualify for Section 4(f) protection. A property that requires fees for



public access does not disqualify the property as a Section 4(f) resource. A refuge would not have to provide unrestricted access to the public to be considered a Section 4(f) property.

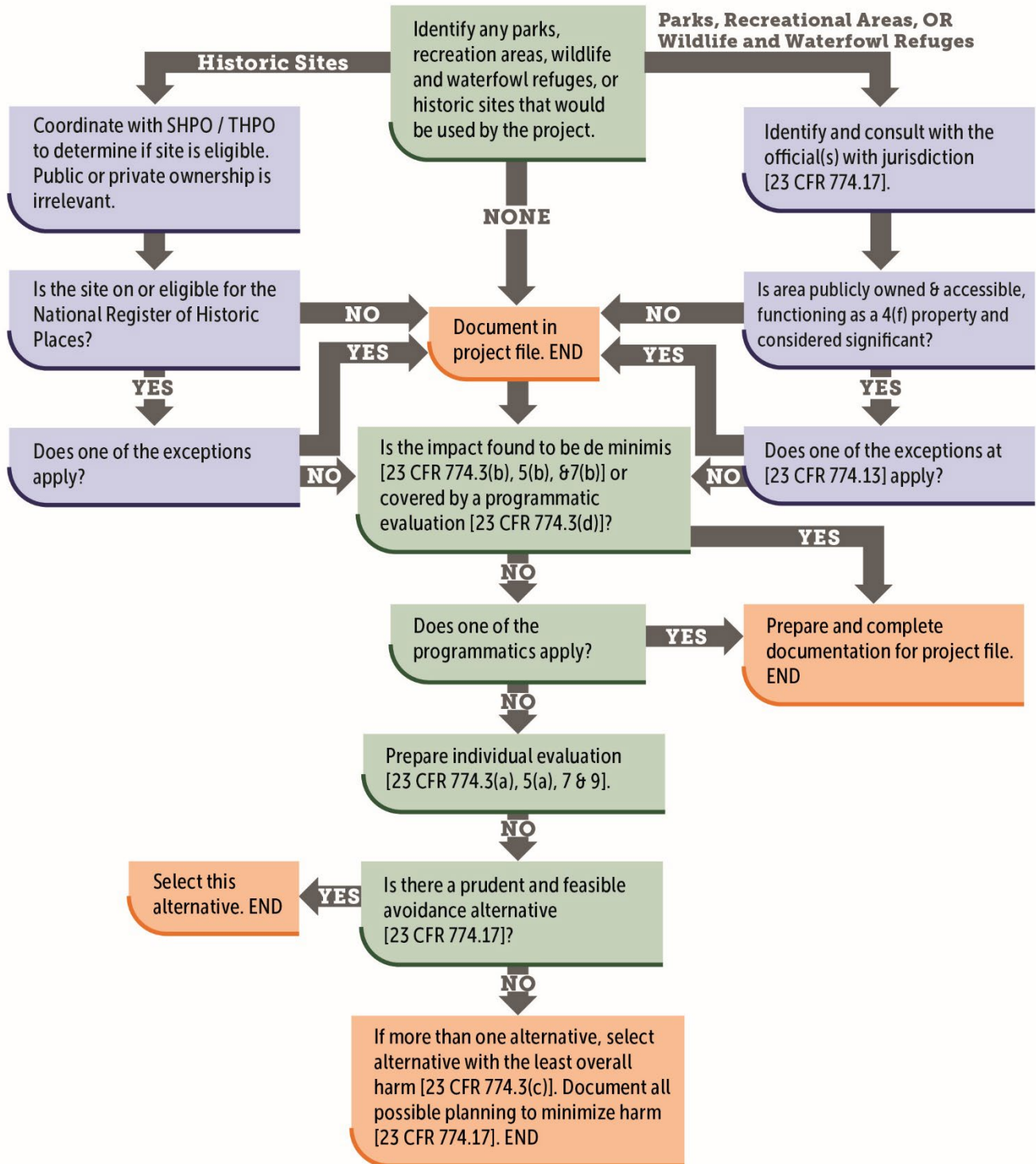
- ▶ Portions of multi-use properties, including public schools, U.S. Forest Service property, some Wild and Scenic Rivers, and open space properties, where the agency having jurisdiction over the land determines that the area of the property affected by the project has a primary recreational purpose or function and are considered significant for purposes of use as a park, recreation area, or refuge.
- ▶ Planned publicly owned parks, recreation areas (including recreational trails), wildlife or waterfowl refuges where agencies having ownership have taken significant steps toward implementation.

Once a Section 4(f) property is identified within the project area, it must be determined if there will be a “use” of land from that property within the meaning of Section 4(f). As a result, all Section 4(f) applicability determinations are made on a case-by-case basis. **Figure 9-4** presents an evaluation diagram for Section 4(f) projects.

The **Colorado Trail Explorer** is an inventory of recreation trails in Colorado:
<https://trails.colorado.gov/>



Figure 9-4. Section 4(f) Evaluation Process





Evaluation of Baseline Information

Compliance with Section 4(f) can be established through: 1) application of an exception to Section 4(f) identified in 23 CFR 774.13; 2) a *de minimis* impact determination; 3) a Nationwide Section 4(f) Programmatic Evaluation approved at the FHWA Division Office level; or 4) a full individual Section 4(f) evaluation that requires FHWA legal and external agency review prior to approval. An analysis for each property must be made and the appropriate process for the use of that property followed. However, where a project has multiple approval options, consideration of which process minimizes overall paperwork and process should be evaluated.

If a proposed alternative involves more than one Section 4(f) resource, review each resource individually to determine if the exception, *de minimis*, or programmatic evaluation is applicable. If there remain uses for which an exception to Section 4(f), the *de minimis* impact determination, or a programmatic evaluation is not appropriate, complete a full Section 4(f) evaluation for the project as a whole and include measures to minimize harm for all Section 4(f) protected properties.

The advantage of using exceptions, *de minimis*, and programmatic evaluations is that there is no requirement to circulate the draft Section 4(f) evaluation to the USDO, the USDA, or U.S. Housing and Urban Development (HUD). There is also the advantage of not needing a legal sufficiency review on a programmatic evaluation, which is necessary for full Section 4(f) evaluations. This reduces the amount of time necessary to complete the Section 4(f) evaluation. Include the complete Section 4(f) documentation in the NEPA document, usually as an appendix, and retain it in the project file as a matter of public record.

Several agencies and organizations have a role in preparing and approving programmatic Section 4(f) evaluations:

- ▶ The SHPO, as the OWJ for historic and archaeological properties
- ▶ Agencies having ownership and management of non-historic Section 4(f) properties
- ▶ EPB and Regional environmental staff
- ▶ FHWA Area Engineers
- ▶ FHWA environmental staff

The EPB Manager, RPEM, and FHWA Division Administrator approve the final programmatic Section 4(f) evaluations.

Additional information on FHWA's five nationwide programmatic evaluations for Section 4(f) properties is available at https://www.environment.fhwa.dot.gov/env_topics/4f_tutorial/evaluations_program.aspx



Exceptions to Section 4(f)

23 CFR 774.13 establishes a series of exceptions to the requirement for Section 4(f) evaluation and approval. Each exception has specific requirements that must be met (described in 23 CFR 774.13 (a) through (g)), and applicability needs to be demonstrated in the appropriate documentation. To streamline and make the Section 4(f) process more consistent, CDOT and the FHWA Colorado Division developed a Memorandum of Understanding (MOU) that outlines procedures for the preparation and approval of Section 4(f) *de minimis* findings and exceptions. Because most of the exceptions apply to a specific property, and not to the project as a whole, each Section 4(f) property in the project area must be evaluated separately. Exceptions include, but are not limited to, the following:

- ▶ The use of historic transportation facilities in certain circumstances
- ▶ Archeological sites that are NRHP listed or eligible, given certain circumstances
- ▶ Designations of parks/recreation areas/refuges made late in project development
- ▶ Temporary occupancies so minimal that they are not considered a use
- ▶ Projects for the Federal lands transportation facilities
- ▶ Certain trails, paths, bikeways, and sidewalks, under certain circumstances
- ▶ Transportation enhancement projects and mitigation activities

CDOT and FHWA have a Memorandum of Understanding for Section 4(f) *de minimis* and Section 4(f) Exceptions processes available here: <https://www.codot.gov/programs/environmental/section-4-f/section-4-f-exceptions-and-de-minimus-mou/view>

23 CFR 774.13 describes circumstances and criteria that must be met for each exception to apply. Several exceptions require coordination with the OWJ and documented agreement or a lack of objection to the findings. For example, an exception commonly applied is the temporary occupancy exception (23 CFR 774.13[d]), which is the exception for temporary occupancies of land that are so minimal as to not constitute a use within the meaning of Section 4(f). For this regulatory exception to apply, the following conditions must be satisfied:

1. Duration must be temporary, i.e., less than the time needed for construction of the project, and there should be no change in ownership of the land;
2. Scope of the work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal;
3. There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, either on a temporary or permanent basis;
4. The land being used must be fully restored, i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project; and
5. There must be documented agreement of the OWJ over the Section 4(f) resource regarding the above conditions.

In situations where the first four criteria are met for a Section 4(f) property, compile and provide the OWJ with documentation describing how and why the conditions are fully satisfied, accompanied with a request for concurrence to the findings. Upon receipt of documented



agreement from the OWJ, all conditions would then be satisfied, and the Section 4(f) exception can be applied.

Determining *de minimis* Impacts to Section 4(f) Resources

Certain uses of Section 4(f) properties are minor (*de minimis*) in nature. The requirements for *de minimis* are included in 23 CFR 774.5(b), 774.7(b), and 774.17. If, after consideration of any impact avoidance, minimization, and mitigation or enhancement measures, FHWA determines that CDOT transportation projects result in *de minimis* impacts to a Section 4(f) property, an analysis of avoidance alternatives is not necessary, and the Section 4(f) process is complete.

Because *de minimis* applies to individual uses, each property must be evaluated separately to determine if *de minimis* is appropriate for the specific use identified. An alternative with all *de minimis* impacts does not require further evaluation.

Section 4(f) Resources: Historic Properties

According to 23 CFR 774.5(b)(1)(i) and (ii), a Section 4(f) *de minimis* finding can be made only when: 1) the Section 106 process results in a finding of “no adverse effect” or “no historic properties affected” in accordance with 36 CFR part 800; 2) there is written concurrence from the SHPO and/or THPO (and ACHP if they are part of the consultation process) on the Section 106 effect determination; 3) the SHPO and/or THPO, and ACHP if participating, are notified of FHWA’s intent to make a *de minimis* finding based on the Section 106 determination; and 4) the views of the Section 106 consulting parties have been considered. Although the regulation requires notification to SHPO, CDOT typically will request that they acknowledge the *de minimis* notification.

Section 4(f) Resources: Publicly Owned Parks, Recreation Areas, and Wildlife or Waterfowl Refuges

According to 23 CFR 774.5(2)(i) and (ii), impacts that are *de minimis* for publicly owned parks, recreation areas, and wildlife or waterfowl refuges are defined as those that do not adversely affect the activities, features, and attributes of the Section 4(f) resource. The public must be afforded the opportunity to review and comment on the effects of the project on the identified Section 4(f) resource(s). After the public comment period, the OWJ over the property must provide written concurrence that the project will not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f). When identifying *de minimis* impacts on publicly owned parks, recreation areas, and wildlife or waterfowl refuges, it is important to distinguish the activities, features, and attributes of a Section 4(f) resource that are important to protect from those that can be impacted without adverse effects.

***De minimis* Impact Finding**

Only the FHWA Division Administrator can make the final *de minimis* impact finding. The *de minimis* impact finding is based on the degree or level of impact, including any avoidance, minimization, and mitigation or enhancement measures that are included in the project to address the Section 4(f) use. *De minimis* impact findings must include conditions requiring the implementation of any measures relied on to reduce the impact to a *de minimis* level.

A *de minimis* finding cannot be made for a constructive use of a Section 4(f) property. A constructive use, by definition, involves impacts such that the protected activities, features, and attributes would be substantially impaired.



A *de minimis* finding can sometimes be made for temporary uses of a Section 4(f) property, when the project does not meet FHWA's temporary occupancy exception criteria.

Public Involvement

Historic Section 4(f) properties do not require a separate public review process, but non-historic properties do require public involvement. Additional information can be found in FHWA's *Section 4(f) Policy Paper* (FHWA, 2012) and 23 CFR 774.

For parks, recreation areas, or wildlife or waterfowl refuges, in most cases a separate public review process, including the public notice or comment requirement, is not necessary because the information supporting the *de minimis* impact finding will be included in the NEPA document. The public involvement criteria related to the specific NEPA document will be sufficient to satisfy the same criteria for the *de minimis* impact finding if the information about the impacts and use of the properties is included in the public review and comment activities. There are instances (e.g., certain CatExs and Reevaluations) that do not routinely require public review and comment; however, for those where a *de minimis* finding will be made, a separate public notice and opportunity to review and comment will be necessary.

Programmatic Evaluations

FHWA developed five nationwide programmatic evaluations for Section 4(f) properties. Each programmatic evaluation has specific applicability criteria. A detailed description of their specific criteria can be found by following the links for a particular Section 4(f) evaluation.

- ▶ Final Nationwide Section 4(f) Evaluation and Approval for Federally Aided Highway Projects With Minor Involvements With Public Parks, Recreation Lands, and Wildlife and Waterfowl Refuges.
https://www.environment.fhwa.dot.gov/legislation/section4f/4f_minor_parks.aspx
- ▶ Final Nationwide Section 4(f) Evaluation and Approval for Federally Aided Highway Projects With Minor Involvements With Historic Sites:
https://www.environment.fhwa.dot.gov/legislation/section4f/4f_minor_hist.aspx
- ▶ Programmatic Section 4(f) Evaluation and Approval for FHWA Projects That Necessitate the Use of Historic Bridges:
https://www.environment.fhwa.dot.gov/legislation/section4f/4f_bridges.aspx
- ▶ Section 4(f) Statement and Determination for Independent Bikeway or Walkway Construction Projects: <https://www.environment.fhwa.dot.gov/legislation/section4f/4fbikeways.aspx>
- ▶ Section 4(f) Evaluation and Approval for Transportation Projects That Have a Net Benefit to a Section 4(f) Property:
https://www.environment.fhwa.dot.gov/legislation/section4f/4f_netbenefits.aspx

The programmatic evaluations require coordination and documentation similar to that of the regular Section 4(f) procedures, including proof that there is no prudent and feasible alternative to the use of Section 4(f) lands and that all measures to minimize harm have been taken. In addition, programmatic evaluations must demonstrate that the project meets the criteria of the appropriate nationwide programmatic evaluation. Programmatic evaluations do not require legal review and are reviewed and approved by FHWA Colorado Division staff. Therefore, programmatic evaluations are usually approved faster than individual evaluations.



Individual Section 4(f) Evaluation

Individual Section 4(f) evaluations must include sufficient analysis and supporting documentation to demonstrate that there is no feasible and prudent avoidance alternative to using the Section 4(f) property and shall summarize the results of all possible planning to minimize harm (23 CFR 774.7(a)). Individual Section 4(f) evaluations are processed in two distinct stages: draft and final. Draft evaluations must be circulated to the USDOT and shared with the OWJ. The final Section 4(f) evaluation must document the analysis and identification of the alternative that has the overall least harm. If the analysis concludes that there is no feasible and prudent avoidance alternative, then FHWA may approve, from among the remaining alternatives that use Section 4(f) property, only the alternative that causes the least overall harm considering the statute’s preservation purpose. Detailed guidance on least harm is provided in the FHWA *Section 4(f) Policy Paper* (FHWA, 2012b).

Although public review is not required by Section 4(f), the public may review and comment on a draft evaluation during the NEPA process. When a project is processed as a CatEx, the Section 4(f) evaluation must be circulated independently to the USDOT. In all cases, final Section 4(f) evaluations are subject to FHWA legal sufficiency review prior to approval.

Section 4(f) chapters should include “All Possible Planning to Minimize Harm,” not Measures to Avoid and Minimize Harm.

9.20.3 Section 4(f) Documentation in NEPA Documents

Most information related to Section 4(f) exceptions, *de minimis*, programmatic, or individual evaluations will be included in a separate Section 4(f) chapter. The Section 4(f) alternatives analysis is generally incorporated into an EIS or an EA. The body of the NEPA document describes the process and includes the findings of the Section 4(f) evaluation, while the programmatic evaluations and *de minimis* findings may be included in an appendix. The following subsections discuss the information that should be included in each chapter.

Affected Environment and Environmental Consequences

Separate identification and review of Section 4(f) resources is not necessary in the Affected Environment or Environmental Consequences chapter of the NEPA document. Affected Environment and Environmental Consequences information for the following resources will be used as part of the Section 4(f) evaluation and may include a Section 4(f) evaluation related to the property/resource for each of the following:

- ▶ Historic properties (**Section 9.11**)
- ▶ Social resources (**Section 9.14**) for parks and other public recreational properties
- ▶ Bicycle and pedestrian facilities (**Section 9.17**)
- ▶ Fish and wildlife (**Section 9.9**) for wildlife or waterfowl refuges
- ▶ Other sections as appropriate (**Section 9.13**)



Section 4(f) Compliance and Approvals

The type of Section 4(f) evaluation determines the requirements for what should be included as part of the evaluation as discussed below.

Exceptions

Application of an exception to the requirement for Section 4(f) evaluation and approval is established through demonstration of meeting the respective exception criteria in 23 CFR 774.13. This includes completion of required coordination and documented agreement with the OWJ over the Section 4(f) resource, when applicable. This documentation can be included in the appendix or attached to the NEPA document.

23 CFR 774.7(2) provides guidance on how to handle Section 4(f) evaluations in tiered NEPA documents

De minimis Findings

The *de minimis* impact determination must include sufficient supporting documentation to demonstrate that the impacts, after avoidance, minimization, mitigation, or enhancement measures are considered, are *de minimis* as defined in 23 CFR 774.17. The *de minimis* information can be presented in a chapter in the NEPA document or in an appendix.

Programmatic Evaluations

Information related to an approval to use Section 4(f) property by applying a programmatic Section 4(f) evaluation should be included in the project NEPA document (EA or EIS) or in the project file for a CatEx. The evaluation should include sufficient supporting documentation to demonstrate that the coordination required by the applicable programmatic evaluation was completed and that all specific conditions of the applicable programmatic evaluation were met.

Some of the information identified in the following sections would typically be included in a NEPA document, even in the absence of the Section 4(f) process. However, it is summarized here to fully document Section 4(f) compliance and approval protocols.

Individual Section 4(f) Evaluation

Individual Section 4(f) evaluations must include sufficient analysis and supporting documentation to demonstrate that there is no feasible and prudent avoidance alternative and shall summarize the results of all possible planning to minimize harm. For projects requiring a least overall harm analysis, that analysis must be included within the individual Section 4(f) evaluation. Additionally, the least overall harm analysis must address the seven factors set forth in 23 CFR 774.3(c)(1) and further explained in the *Section 4(f) Policy Paper* (FHWA, 2012b).



Draft Section 4(f) Evaluation

The following format and content are suggested for a draft Section 4(f) Evaluation as outlined in the 1987 *FHWA Technical Advisory T 6640.8A*:

- ▶ Description of the proposed project, including an explanation for the project purpose and need.
- ▶ Description of each Section 4(f) resource that would be used by any alternative under consideration.
- ▶ Discussion of the impacts on the Section 4(f) resource for each alternative. Impacts that can be quantified should be quantified.
- ▶ Identification and evaluation of location and design alternatives that would avoid the Section 4(f) property. Detailed descriptions of alternatives in an EIS or an EA do not need to be repeated if they are presented in other chapters.
- ▶ Discussion of all possible measures available to minimize the impacts of the proposed action on the Section 4(f) property(ies), including detailed discussion of mitigation measures in the EIS or EA. Include a preliminary least harm analysis of the Section 4(f) analysis.
- ▶ Discussion of the results of preliminary coordination with the OWJ over the Section 4(f) property and with regional (or local) offices of USDOl.

At the draft Section 4(f) evaluation stage, it should be noted that although it will contain a discussion about prudent and feasible avoidance alternatives and a preliminary least harm analysis, conclusions about these subjects are made only after the evaluation has been circulated and coordinated with the appropriate agencies and any identified issues have been adequately evaluated.

Final Section 4(f) Evaluation Format and Content

When the preferred alternative uses Section 4(f) land, the final Section 4(f) evaluation must:

- ▶ Contain all information required for a draft Section 4(f) evaluation.
- ▶ Discuss the basis for concluding that there are no feasible and prudent alternatives to the use of the Section 4(f) land. The supporting information must demonstrate consistency with the requirements for a prudent and feasible evaluation as required in 23 CFR 774.17.
- ▶ Discuss remaining prudent and feasible alternatives and include a determination of which alternative has the overall least harm as defined in 23 CFR 774.3(c)(1).
- ▶ Discuss the basis for concluding that the proposed action includes all possible planning to minimize harm to the Section 4(f) property.
- ▶ Summarize the appropriate formal coordination with the headquarters offices of USDOl (and/or appropriate agency under that department) and, as appropriate, the involved offices of USDA and HUD.
- ▶ Provide copies of all formal coordination comments, a summary of other relevant Section 4(f) comments received, and an analysis and response to any comments received. When new alternatives or modifications to existing alternatives are identified and will not be given further consideration, include information supporting the basis for dismissing these alternatives (using the prudent and feasible criteria).



- ▶ Where Section 6(f) land is involved, document the NPS’s position on the land conversion should be documented.
- ▶ Provide a concluding statement as follows: “Based on the above considerations, there is no feasible and prudent alternative to the use of land from the (identify the Section 4(f) property) and the proposed action includes all possible planning to minimize harm to the (Section 4(f) property) resulting from such use.” If the analysis of avoidance alternatives concludes that there is no feasible and prudent avoidance alternative, then FHWA may approve only the alternative that causes the least overall harm to the Section 4(f) property (23 CFR 774).

Documenting the Section 4(f) Process

The following information should be presented in the NEPA document in the Section 4(f) section of the resource evaluation or as a separate chapter or used as supporting documentation for a CatEx, as appropriate:

- ▶ Comments received after the circulation of the draft Section 4(f) evaluation
- ▶ Responses to comments
- ▶ Documentation that all possible planning has been done to minimize harm to Section 4(f) resources
- ▶ Summary of coordination with the SHPO, other OWJs and, as appropriate, the USDA and HUD including any activities since the draft NEPA document was published
- ▶ Documentation that the preferred alternative is the one with the overall least harm

Full Section 4(f) approval can take up to a year or more to process. It is important to start the process early.

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table* (Table 9-2) is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for Section 4(f).

9.20.4 Section 4(f) Evaluation Processing, Review, and Approval

Full Section 4(f) evaluations included in NEPA documents are typically incorporated and reviewed internally within the preliminary versions of that NEPA document. Once the Section 4(f) evaluation has undergone FHWA review and has been revised to include any comments, the FHWA Area Engineer will submit the NEPA document and associated Section 4(f) evaluation to FHWA legal counsel (if required) for a review period of 30 days. The FHWA legal review is conducted prior to external agency and public review.

Approval for the NEPA document and associated draft full Section 4(f) evaluation to be circulated for external review is indicated by FHWA approval of the accompanying NEPA document. External review is required by USDO. USDA and HUD may also require review.

Once the external agency review is complete, a FHWA legal sufficiency review is required prior to approval of the final full Section 4(f) evaluation. For full Section 4(f) evaluations processed as part



of an EIS, approval of the evaluation will typically occur upon approval of the Final EIS. The ROD must also include a summary of the basis for the Section 4(f) approval. In EAs, the draft Section 4(f) evaluation is included in the FHWA-approved EA. The FHWA-approved FONSI includes the final Section 4(f) evaluation. The final full Section 4(f) evaluation must be provided to USDOT and to USDA and HUD if required.

For full Section 4(f) evaluations circulated separately from NEPA documents, such as for a project classified as a CatEx or if another agency is the lead agency for the NEPA process, EPB or Regional staff, FHWA Area Engineers, and FHWA environmental staff review the preliminary draft evaluations. Upon completion of the FHWA Division review, the draft Section 4(f) evaluation is submitted to FHWA legal counsel for a 30-day review. The signed draft Section 4(f) evaluation is then forwarded to the USDOT and any entities with jurisdiction over a Section 4(f) resource. The USDA and/or HUD may also need to review the evaluation (45-day review period). Following receipt of the agency comments, the concluding statement is incorporated, and the Section 4(f) evaluation is submitted to FHWA for internal and official legal sufficiency review. The EPB Manager and the FHWA Division Administrator sign the final document and submit it to the USDOT.

Constructive Use Approval

In the case of constructive use of a Section 4(f) resource, the FHWA headquarters office must review and approve the pre-draft Section 4(f) evaluation. This coordination ideally occurs early in the project development process. During the legal review, the FHWA Area Engineer will also send a copy to FHWA headquarters. If the determination of constructive use is approved, the draft Section 4(f) document is processed normally.

Final Section 4(f) Approval

The FHWA must make a formal determination that there is no prudent and feasible alternative to the use of Section 4(f) resources and all possible planning has been done to avoid the use of a Section 4(f) property or to minimize harm to any Section 4(f) property affected by the project. This approval can be contained in a FONSI, a ROD, or a separate document.

The FHWA is ultimately responsible for making all decisions related to Section 4(f) compliance. These include whether Section 4(f) applies to a property, whether a use will occur, whether a *de minimis* impact determination may be made, assessment of each alternative's impacts to Section 4(f) properties, and whether the law allows the selection of a particular OWJ. CDOT staff also play a critical role in assessing alternatives and their impacts to Section 4(f) properties and should be included throughout the entire Section 4(f) process.



9.21 Section 6(f) Evaluation

Section 6(f) properties are those purchased or improved with grants from the Land and Water Conservation Fund (LWCF) Act. Importantly, Section 6(f) applies to all transportation projects involving possible conversions of the property whether or not Federal funding is being used for the project. The Section 6(f) evaluation and process should be conducted separately from the Section 4(f) evaluation and process.

The Land and Water Conservation Fund State Assistance Program administrative procedures and requirements are provided in the Federal Financial Assistance Manual (2021) at:

<https://www.nps.gov/subjects/lwcf/upload/LWCF-FA-Manual-Vol-71-3-11-2021-final.pdf>

9.21.1 Section 6(f) Evaluation Process

The Section 6(f) evaluation should be started when alternatives for the proposed action are first being designed and developed or during the scoping phase of a proposed action.

Reasons for Evaluation of Section 6(f) Under NEPA

CDOT evaluates Section 6(f) for several reasons:

- ▶ To preserve the intended use of public funds for land and water conservation and the protection of outdoor recreational activity
- ▶ To comply with CDOT's Environmental Stewardship Guide (2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner
- ▶ To comply with several legal mandates that pertain to the LWCF Act of 1965, Section 6(f)(3)

State and local governments often obtain grants through the LWCF to develop or make improvements to parks and outdoor recreation areas. Section 6(f) of the LWCF prohibits the conversion of property acquired or developed with these grants to a non-recreational purpose without the approval of the NPS.

Collection and Evaluation of Baseline Information Under NEPA

Once a study area, or the approximate area of impact, is established, and if there are any parks or outdoor recreational facilities in or adjacent to the area, a Section 6(f) file search should be conducted. CDOT's OTIS database has a GIS layer with LWCF grant-funded properties that can be used to help identify Section 6(f) properties in or near the study area. This information is provided by CPW, the state agency that serves as a liaison to the NPS in helping to administer the LWCF program. CPW provides CDOT with annual updates of new grants to be added and their locations. If a LWCF grant was issued for a property that could be affected by the proposed action, then CDOT needs to request an official Section 6(f) boundary map from CPW. This boundary map shows the area of the property to which the grant applies and is protected by Section 6(f) (also referred to as "LWCF-assisted area"). This could be the entire property or just a portion of it.



If it is determined that the proposed action could potentially impact a Section 6(f) property and that impact cannot be avoided, the OWJ of the Section 6(f) property and the CPW Section 6(f) State Liaison Officer (SLO) must be consulted. Impacts to the protected property and its intended outdoor recreation uses are to be minimized to the extent possible. CDOT must now determine the approximate size of the Section 6(f) property that will be converted. A conversion of use happens when any portion of a Section 6(f) property, no matter how small, will be used for a purpose other than the intended outdoor recreation use. The most likely Section 6(f) conversion trigger on a transportation project is a permanent easement or acquisition that converts land from public outdoor recreation use to transportation use. Temporary easements of less than six months may not trigger a conversion if certain criteria are met; however, CPW and NPS coordination and approval are still required.

The complexity of the Section 6(f) approval process varies based on if impacts trigger a conversion and, if so, if that conversion is characterized as a full/partial conversion or a small conversion. The approval process for each scenario is summarized below and additional information is provided in the *LWCF Federal Financial Assistance Manual* (NPS Manual) (NPS, 2021).

Temporary Non-Conforming Uses

Temporary non-conforming uses (activities other than outdoor recreation) on a portion of Section 6(f) property for less than six months may not trigger a conversion if CPW and NPS determine that required criteria are met. The following criteria apply:

- ▶ The size of the LWCF-assisted area affected by any temporary non recreation use shall not result in a significant impact on public outdoor recreation use. This means that the site of the temporary activity should be sufficiently small to restrict its impact on other areas of a LWCF-assisted area.
- ▶ A temporary use shall not result in permanent damage to the LWCF-assisted area, and appropriate measures will be taken to ensure the outdoor recreation area is restored for public recreation use and there are no residual impacts on the site once the temporary use is concluded.
- ▶ No practical alternatives to the proposed temporary use exist.
- ▶ The proposal has been adequately reviewed at the state level and has been recommended by the SLO.

The NPS has established that non-conforming uses beyond six months are not temporary and do not qualify for this exception. Continued use beyond six months will trigger a Section 6(f) conversion and require replacement property.

To obtain approval for a proposed temporary non-conforming use exception, CDOT should obtain demonstrated support and agreement with stated findings regarding impacts and mitigation measures from the OWJ of the Section 6(f) property. CDOT will then compose a letter to the Section 6(f) SLO at CPW, requesting review and approval of the proposed temporary non-conforming use exception. The request will include the following documentation required for CPW's completion of the NPS Compliance and Stewardship (C&S) Form:

- ▶ A detailed description of the proposed temporary non-conforming use and all associated activities, why it is needed, and alternative locations that were considered and why they were not pursued



- ▶ Length of time needed for the temporary non-conforming use and why
- ▶ A description of the size of the LWCF area that will be affected and expected impacts to public outdoor recreation areas, facilities, and opportunities, as well as an explanation of efforts to keep the size of the area impacted to a minimum
- ▶ A site plan map showing the location of the proposed use in relation to the LWCF boundary and drawings and/or renderings of the proposed use
- ▶ A description of any anticipated temporary and permanent impacts to the site's environment or on recreation use and how they will be mitigated during and after the non-conforming use ceases

CDOT will submit the request letter with supporting documentation and attached letter of concurrence from the OWJ to the CPW SLO for review. The CPW may comment on the documentation to resolve any issues. Upon acceptance by the CPW, the SLO will then forward the request and supporting documentation to the NPS for their review and approval.

Forms to be completed as part of the Land and Water Conservation Fund approval process are available on the NPS website at <https://www.nps.gov/subjects/lwcf/lwcf-forms.htm>

Section 6(f) Conversions

A Section 6(f) conversion is a Federal action subject to NPS NEPA processes and compliance with other Federal laws such as NHPA. A conversion may be characterized as one of the following:

- ▶ a full conversion, where the entire Section 6(f) property is being replaced
- ▶ a partial conversion, where a portion of a property is being replaced and it does not qualify as a small conversion
- ▶ a small conversion, where no more than 10 percent of the Section 6(f) property is being replaced and other project criteria are met

While the approval process for all conversions is similar, less documentation is required for approval if a project qualifies as a small conversion due to the NPS determination that these types of actions are categorically excluded from the need for an EA or an EIS. Early consultation with CPW and NPS should occur to establish if a conversion can qualify as a small conversion.

If it is determined in consultation with CPW that a Section 6(f) conversion is triggered, CDOT, in cooperation with the OWJ, must identify replacement land that is of reasonably equivalent size, usefulness and location, and of at least equal fair market value. CDOT's ROW staff should be involved in the selection of replacement property. Replacement will be required for all conversions, including full, partial, and small conversions.

The process is as follows:

- ▶ Upon identification of such land(s), CDOT must compose a letter of concurrence to the local OWJ, demonstrating that the Section 6(f) replacement land is acceptable to the local government entity. The letter must also include any special conditions, mutually agreed to by both parties, as deemed necessary, to bring about equivalent size, location, and usefulness, and of at least equal fair market value in the replacement land as required



under Section 6(f). The same professional assessor should assess the value of both the land to be converted and the replacement land.

- ▶ Coordination with the CPW and NPS should occur during this process.
- ▶ Once the local OWJ signs the concurrence letter, CDOT will compose a letter to the Section 6(f) SLO at CPW. The letter will contain a project description; a description of the Section 6(f) property(ies); avoidance considerations; impacts to the Section 6(f) property(ies), including the location and size of the conversion; planned mitigation, including the size, location, usefulness, and value of replacement land; and the attached letter of concurrence from the OWJ. The CPW may comment on the letter to resolve any issues. Upon acceptance of the letter by the CPW, the SLO will forward the letter to NPS for their review and conditional clearance. If NPS grants conditional clearance, this concludes the process for NEPA clearance.
- ▶ The local OWJ letter and the correspondence with CPW and NPS should be included in the appendix of the NEPA document.

The conversion of the Section 6(f) land to transportation ROW or permanent easement, and the acquisition of the replacement land, typically occur during the normal ROW acquisition phase of a project. The conversion proposal will establish a replacement proposal timeline that will need to be followed. The ROW staff should, therefore, be involved in the development of the replacement proposal timeline so that all parties can agree on the timing of acquisition and the development of replacement lands.

After construction is complete, but before the project is closed out, NPS will need to be contacted showing the exact amount of land converted and the exact size, location, and value of the replacement land. They will then grant their final clearance for the Section 6(f) conversion process.

Full and Partial Conversion Documentation

After CPS and NPS confirm all prerequisites set forth in 36 CFR 59.3(b) are met, as described in Chapter 8 of the NPS Manual (NPS, 2021), and agreement is obtained on the conversion details, a formal conversion proposal package is prepared. This package is prepared in coordination with the OWJ (LWCF project sponsor) and provided to the CPW SLO for review and submittal to the NPS. The formal conversion proposal submitted to NPS must include:

- ▶ SLO recommendation letter (from CPW to NPS)
- ▶ Standard Form 424, Application for Federal Assistance
- ▶ NPS C&S Form, including the environmental resources survey and a NEPA document with Section 6(f) analysis for the entire conversion proposal (the lost LWCF-assisted area, the remaining LWCF-assisted area for partial conversions, and the new replacement property)
- ▶ Project amendment form identifying changes to the original boundary caused by the conversion and the new established boundary including the replacement lands
- ▶ Signed and dated LWCF boundary area map for any remaining LWCF assisted area resulting from a partial conversion and for the new replacement lands
- ▶ NPS Description and Notification Form, which includes pertinent data about the LWCF property



Small Conversion Documentation

Small conversions are partial conversions in which no more than 10 percent of the total protected property is proposed for conversion. To qualify, the replacement property must be contiguous with the current site, or another existing park or recreation area, and otherwise meet the LWCF eligibility criteria described fully in Chapter 3 of the NPS Manual. In addition, the conversion must qualify as a NPS NEPA categorical exclusion. Documentation must show that the small conversion is not controversial and has no potential for significant environmental impacts, considering the site being removed from protection, the viability of the remaining Section 6(f) property, and the proposed replacement property.

After CPW and NPS confirm all requirements for a small conversion are met and agreement is obtained on the conversion details, a small conversion proposal package is prepared. This package is prepared in coordination with the OWJ (LWCF project sponsor) and provided to the CPW SLO for review and submittal to the NPS. The formal small conversion proposal submitted to NPS must include:

- ▶ SLO transmittal letter describing the small conversion proposal (from CPW to NPS)
- ▶ Standard Form 424, Application for Federal Assistance
- ▶ NPS C&S Form with the environmental resources survey completed indicating that a categorical exclusion is justified
- ▶ Project amendment form
- ▶ Revised LWCF boundary area map indicating the deletion of the small, converted area and the addition of the replacement property
- ▶ NPS Description and Notification Form, including Pertinent Data about the LWCF Property

9.21.2 NEPA Document Sections

The content of the sections on the Section 6(f) evaluation in the Affected Environment and Environmental Consequences chapters is discussed below.

Affected Environment

The Affected Environment chapter of the NEPA document should include the definition of Section 6(f) of the LWCF Act of 1965, general requirements for determining a Section 6(f) resource, and a brief discussion of each Section 6(f) resource(s) in the project area, including value, size, location, and use.

Environmental Consequences

The Environmental Consequences section should identify Section 6(f) properties that would be impacted by any of the project alternatives, as well as any lands proposed to replace them. The section should include a map showing the Section 6(f) properties and a description of the properties, focusing particularly on any losses or gains in specific attributes associated with the purposes for which the properties were acquired.

This section should also include information such as any local OWJ or CPW/NPS coordination/communication and any approvals obtained from the agency(ies). A mitigation plan



should be included indicating where replacement land will occur and during what project phase it should occur (preliminary design, final design, ROW process, or construction).

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table* (Table 9-2) is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for Section 6(f).



9.22 Farmlands

Farmlands are a valuable economic and cultural resource that is protected by the Farmland Protection Policy Act, [7 CFR Part 658](#).

The two subsections below provide guidance on the treatment of farmlands for CDOT's NEPA projects. The first subsection discusses the process for evaluating farmlands. The second subsection discusses farmlands information that should be in each NEPA document.

Farmland Regulations and Guidance

- [7 CFR Part 658 - Farmland Protection Act](#)
- [23 CFR Part 771 - Environmental Impact and Related Procedures](#)

9.22.1 Farmland Evaluation Process

The project team is responsible for reviewing the applicability of the Farmland Protection Policy Act and obtaining the Farmland Protection clearance from the USDA - NRCS, if necessary.

The "Impacted Farmlands of Colorado" county maps may have copies of the maps, but the most current data are available online or from the county NRCS office. If the maps indicate that the impacted area is farmland, but visual inspection of the area indicates it is clearly not being used as farmland, the Farmland Protection Policy Act does not apply.

The farmlands evaluation should be completed when alternatives for the proposed action are first being designed and developed before the formal initiation of NEPA.

Figure 9-5 identifies the steps involved in completing a Farmland Protection Policy Act analysis.

Reasons for Evaluation of Farmlands Under NEPA

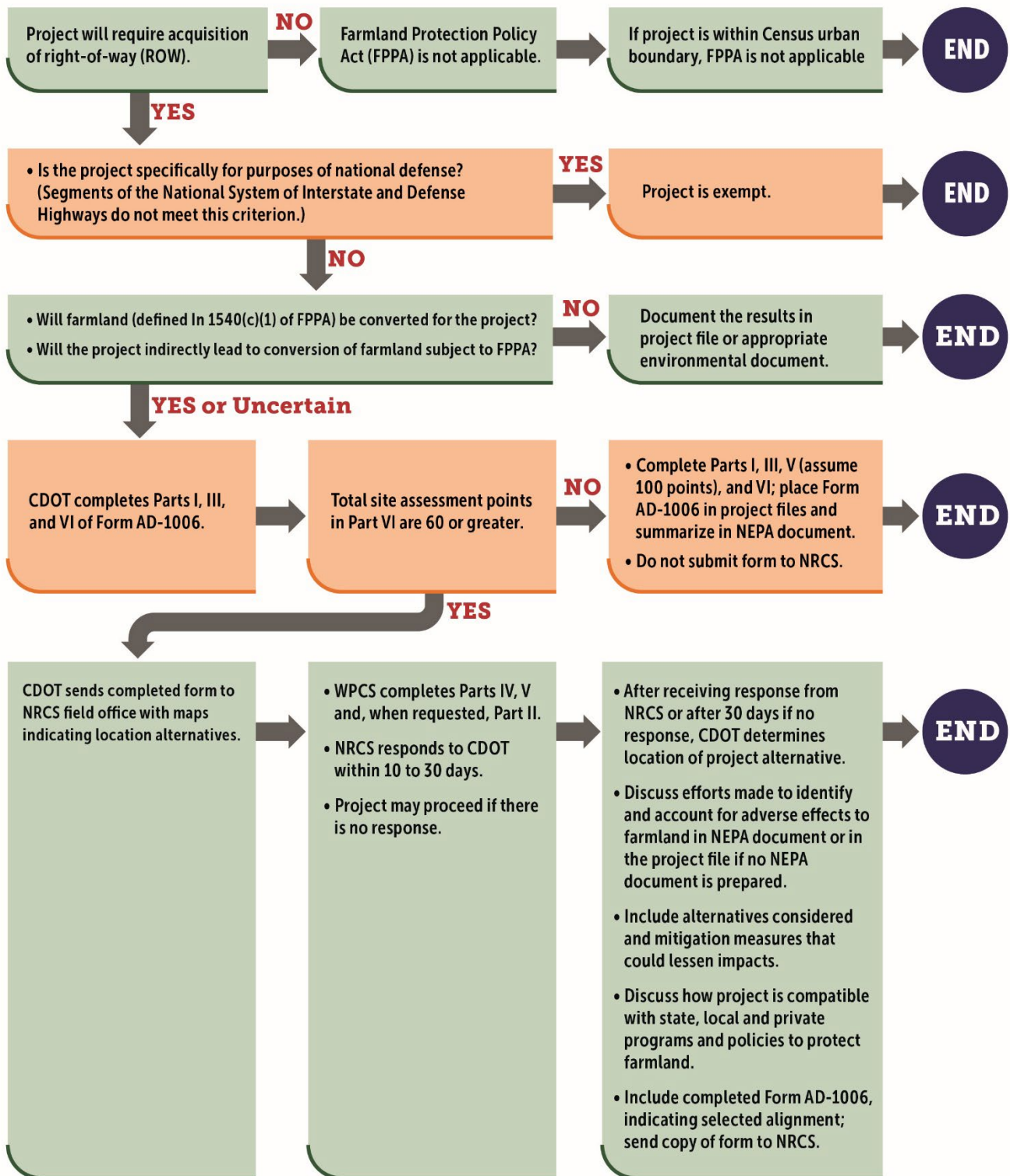
CDOT evaluates farmlands for several reasons:

- ▶ To enable identification and protection of important farmlands
- ▶ To comply with CDOT's Environmental Stewardship Guide (2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner
- ▶ To comply with several legal mandates required under the Farmland Protection Policy Act

The Federal Farmland Protection Policy Act, 7 CFR Part 658, requires Federal agencies to consider the adverse effects their programs may have on the preservation of farmland, to review alternatives that could lessen adverse effects, and to ensure that their programs are compatible with private, local, and state programs and policies to protect farmland. The Federal Farmland Protection Policy was last amended in 1981.



Figure 9-5. Completing the Farmland Protection Policy Act Analysis





Collection and Evaluation of Baseline Information Under NEPA

The Farmland Protection Policy Act defines farmlands as follows:

- ▶ **Prime farmland** is land that has the best combination of physical and chemical characteristics to produce food, feed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. Prime farmland includes land that possesses the above characteristics but is currently being used to produce livestock and timber.
- ▶ **Unique farmland** is land other than prime farmland that is used to produce specific high-value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality or high yields of specific crops.
- ▶ Other than prime or unique farmland that is of statewide importance to produce food, feed, and other crops, as determined by the appropriate state government agency or local government agency.

Clearance and coordination with the NRCS and other appropriate state and local agricultural agencies is required for all projects that require acquisition of ROW. Once the alternative ROW requirements are conceptually defined and the study area is identified as farmland, the RPEM should complete the farmland conversion impact rating, [NRCS Form AD 1006](#), and submit it to NRCS for review.

Figure 9-5 illustrates the process for completing the Farmland Protection Policy Act analysis. Note: Use Form [NRCS-CPA-106](#) for corridor projects.

Farmlands Clearance Documentation

- Identify whether conversion of farmland may occur.
- If so, follow the process outlined on [Form AD-1006](#).
- For corridor projects, use Form [NRCS-CPA-106](#).
- Incorporate alternatives to avoid farmland, potential impacts to farmland, and appropriate mitigation in the NEPA document.

Other Issues to Consider

As part of the process for [Form AD 1006](#), a farmland conversion impact rating score for the proposed project is established based on the severity of impacts on the farmland. If the site assessment criteria score (Part VI completed after return of form from NRCS) is 59 points or less for each alternative, then [Form AD 1006](#) need not be sent back to the NRCS. If the score is 60 points or greater and/or an area qualifies as prime farmland, [Form AD 1006](#) must be submitted to the NRCS.



9.22.2 NEPA Document Sections

An EA or an EIS typically should include only one to three paragraphs concerning farmland resources in the Affected Environment and Environmental Consequences chapters.

Affected Environment

The farmlands section of the Affected Environment chapter should describe:

- ▶ The general abundance of farmland in the project vicinity
- ▶ The land's primary use and economic and cultural importance

Environmental Consequences

Include a copy of the completed Farmland Conversion Impact Rating in the document, as well as correspondence to and from the NRCS. Discuss alternatives that have the same farmlands impacts and contrast those that differ so that similarities and differences in alternative farmlands impacts are clear. The NEPA document should discuss the extent to which alternatives avoid farmland impacts. Include measures to minimize and mitigate impacts to farmlands if avoidance is not possible. Mitigation measures to consider include:

- ▶ Replacement of any lost or damaged irrigation pipes or ditches
- ▶ Assurance that all remaining farmland can be irrigated
- ▶ Payment for any crops damaged during construction or restriction on a farmer's access to fields

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table (Table 9-2)* is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for farmlands.



9.23 Noise

Noise is generally defined as unwanted or excessive sound. It can interfere with sleep, work, or recreation, and in extremes may cause physical or psychological damage. The primary source of highway noise is automobile, truck, motorcycle, and bus traffic.

Physical and operational changes associated with a highway project can lead to changes in the traffic noise levels. Transportation projects may cause noise levels to either decrease or increase, although some highway improvement actions are more likely to increase noise. If a highway project is on a new alignment, resulting traffic noise levels may be considerably higher than existing noise levels.

Highway traffic noise is primarily regulated under 23 CFR 772. Federal-action and Federal-aid projects are subject to 23 CFR 772. CDOT's implementation of 23 CFR 772 is presented in the most current CDOT Noise Analysis and Abatement Guidelines (NAAG). At the time this Manual was updated, the 2020 version was the most current version (CDOT, 2020b). The NAAG also applies to some CDOT and CDOT-administered projects, even if there is no Federal participation, as described in the NAAG. The NAAG contains detailed guidance on evaluation and documentation for traffic noise, including the noise thresholds called Noise Abatement Criteria (NAC).

Projects may also need to evaluate noise as a resource under NEPA. One difference between NEPA and 23 CFR 772 is that NEPA requires a comparison of a proposed alternative with a baseline (the No Build Alternative or No Action Alternative, in the future design year) to evaluate potential changes in the traffic noise environment. NEPA requires disclosure and reasonable mitigation. For more information, refer to FHWA's Noise Policy Frequently Asked Questions #A.5 and #A.6 (FHWA, 2017).

The NAAG provides detailed technical guidance for noise analyses and has primacy over **Section 9.23**, which is intended to summarize in simpler terms the treatment of noise in CDOT's NEPA projects. **Subsection 9.23.1** discusses the process for evaluating noise. **Subsection 9.23.2** discusses noise information that should be included in each NEPA document.

The term "abatement" is commonly used for traffic noise, but in this Manual "abatement" and "mitigation" are used interchangeably.

9.23.1 Noise Evaluation Process

Noise evaluations for CDOT and CDOT-administered projects must be performed by qualified practitioners, as defined in the NAAG.

Reasons for Evaluation of Noise Under NEPA

CDOT evaluates traffic noise:

- ▶ To comply with 23 CFR 772 and related legal mandates, including CDOT's NAAG
- ▶ To fulfill NEPA requirements
- ▶ To comply with CDOT's Environmental Stewardship Guide (2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner

The NAAG describes the regulations and guidance applicable to noise.



Noise Analysis

The following steps, explained in more detail in the NAAG (CDOT, 2020b), summarize the process to determine if a proposed project will have noise impacts and if an impacted area will qualify for noise abatement to be built by CDOT under 23 CFR 772:

1. Evaluate the project to determine if it is Type I. Only Type I projects are analyzed for potential noise impacts and abatement. Type I project examples include adding through-traffic lanes or constructing interchanges. If a project is not Type I, it is Type III.
2. Conduct a noise analysis for all Type I projects to determine if receptors (e.g., homes, schools, parks, or churches) will be impacted due to the proposed project. If there are no receptors and no undeveloped, unpermitted lands within 500 feet of the proposed edge of freeways and expressways or 300 feet of the proposed edge of other roadways, noise modeling is not conducted, noise abatement is not considered, and a noise technical report is not required. An “impact” is defined as design year noise levels meeting or exceeding NACs or increasing from existing conditions by at least 10 decibels.
3. If results show that any receptors will be impacted, analyze potential noise abatement (frequently a noise barrier) for feasibility and reasonableness. For noise abatement to be included in a project, it must be both feasible and reasonable:
 - a. Feasibility has to do with constructability. There are two feasibility criteria: noise reduction and design/construction factors. The evaluation criteria describe physical considerations and concerns with the construction of an acoustically effective noise barrier at a particular site and project.
 - b. Reasonableness of noise abatement evaluates three criteria: environmental (via the Noise Reduction Design Goal [NRDG]), economic (via the cost-benefit evaluation), and social (via the Benefited Receptor Preference Survey). This process ensures a prudent use of public funds. Failure to achieve any of these criteria results in not building noise abatement.
4. Prepare a technical report documenting the methods and results of the noise analysis.

If there are no receptors within 500 feet of the proposed edge of freeways and expressways or 300 feet of the proposed edge of other roadways but there are undeveloped, unpermitted lands, an abbreviated noise analysis and technical memo are required to provide noise contour information to local government agencies.

Type I projects with a noise analysis require a noise technical report. The NAAG describes the required content of the reports. CDOT has prepared a noise technical report template that should be used for projects scoped after October 9, 2020. At the time this Manual was updated, the 2020 version was the most current version. It is available at:

<https://www.codot.gov/programs/environmental/noise/assets/cdot-noise-report-template-ver-2-sept-2020.docx>.

The CDOT Project Manager, in coordination with the RPEM and the EPB or Regional Noise Specialist, is responsible for ensuring that appropriate noise analyses are performed. Typically, if a project is determined to be Type I for noise, a consultant is hired to perform the noise analysis, including the noise modeling, and to prepare the noise technical report.



A project is considered “cleared” when any necessary analyses have been completed, accepted by the EPB and/or Regional Noise Specialist, and documented. If a noise technical report is required, the EPB and/or Regional Noise Specialist must review and accept it. All comments submitted during these reviews must be resolved before the report can be finalized. A CatEx requires a clearance letter from the EPB and/or Regional Noise Specialist.

9.23.2 NEPA Document Sections

All Type I projects that include a noise analysis require a stand-alone noise technical report. Noise analysis details belong in the technical report, not the NEPA document. For CatEx projects, the technical report is attached to Form 128 for the project and a summary is not needed in the main document. For EA or EIS projects, the technical report is included as an appendix, and the impact and abatement findings are summarized in the main document.

For projects that do not include a noise analysis, the main NEPA document should state whether the project was Type I or Type III and explain why a noise analysis was not conducted. In addition, briefly discuss construction noise and mitigation measures. For projects that include a noise analysis, the main EA and EIS should include the following sections.

Affected Environment

Describe regulatory requirements, identify analyses performed, and summarize the conclusions. Identify which date of 23 CFR 772 and CDOT NAAG were in effect and used to analyze noise. Include a summary discussion of these elements:

- ▶ Land use categories and receptors present in the Noise Study Zone
- ▶ Existing noise levels from modeling

Environmental Consequences

The section should contain a summary discussion of these elements:

- ▶ Future noise levels from modeling - Describe results for each future alternative being considered
- ▶ Noise impacts for build alternatives in the design year, both for location and type of impact (i.e., NAC exceedance or substantial increase)
- ▶ Construction noise and mitigation measures

Discussion of the evaluation of noise abatement may be needed. In cases where no noise impacts have been identified for the project, include the following text under the heading “Statement of Likelihood.”

Based on this most current analysis, highway traffic noise abatement measures were not evaluated because no receptors were impacted. Therefore, noise abatement measures are not proposed for this project. If, during final design, it is determined that any receptors are impacted, abatement measures will be evaluated and may be provided. A final decision of abatement measure(s) installation will be made during or upon completion of the project’s final design.



In cases where noise impacts have been identified and noise abatement has been evaluated, include a summary discussion of the Statement of Likelihood for each identified area of noise impacts. Describe the types of abatement actions considered and summarize the findings from the feasibility and reasonableness assessments for each. Complete this evaluation to the extent that design information is available at the time the NEPA decision document is completed. Include the feasibility and reasonableness criteria listed on Form 1209. Summarize the dimensions of the potential abatement structures. Note that the preferences of the benefiting receptors must be determined for a potential abatement measure to be reasonable, which generally occurs after NEPA clearance. Clearly indicate if potential mitigation actions were or were not found to be feasible and reasonable (to the extent possible for the project) and if they are recommended for inclusion in the project. Note that the final noise abatement decision will be made during the completion of the project's final design. Consult the EPB or Regional Noise Specialist about when the survey should be conducted on a project-by-project basis.

If a Type I project has undeveloped, unpermitted land within 500 feet of the proposed edge of traveled lanes of freeways or expressways, or within 300 feet for all other types of roads, limited noise modeling may be required to develop noise information for local public officials. In these cases, provide a summary of the distances to 66 decibel and 71 decibel traffic noise levels.

An important and challenging criterion for reasonableness is the preference of benefiting receptors. More than half of these receptors must support the abatement action for the action to be reasonable. A survey of preferences is needed during final design for the final determination on whether a possible abatement action will be implemented. The survey may happen after the NEPA decision. In the meantime, possible abatement actions that are otherwise feasible and reasonable are treated as “recommended” abatement actions.

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table (Table 9-2)* is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for noise. Noise studies for Tier 1 NEPA documents are general in nature and cannot be used to make detailed impact determinations or mitigation commitments.

Noise abatement must be constructed at the same time as the project aspects that triggered the Type I analysis (e.g., addition of lanes). If the project sponsor cannot afford the abatement, the project cannot be built.



9.24 Visual Resources

Visual resources are often thought of as vistas or overlooks. However, they can also be natural features, like water features, rock walls, mountain peaks, and vegetation. They can even include cultural features such as architecture, landscape design, urban skylines, road alignment, bridge structures, retaining walls, noise barriers, grading, signage, lighting, fencing, pedestrian/bicycle trails, stormwater facilities, or other components in the built environment. All CDOT projects, regardless of size and geographic location, should be scoped for visual resources. The long-term goal of evaluating visual resources is to consider transportation design in a broader, sustainable, and contextual perspective. Visual Impact Assessment (VIA) reinforces CDOT's Context Sensitive Solutions (CSS) principles (CDOT, 2005) and the *CDOT Landscape Architecture Manual* (CDOT, 2020a).

Visual resources are important because of the strong emotion they inspire in human viewers. They often provide a sense of community to the inhabitants of an area and may attract tourism and drive its economy. Visual resources might provide ecosystem services like stormwater retention, air quality, or carbon sequestration that contribute to public health and quality of life. CDOT values the visual resources of Colorado and emphasizes the role of VIAs and visual resource mitigation in the NEPA decision process, project design, and project implementation. Toward that end, CDOT seeks to create guidance for VIAs that meets the expectations and standards of CDOT staff, communities and counties, and Federal land management agencies. In collaboration with FHWA, CDOT created the 2020 CDOT VIA Guidelines (CDOT, 2020c) to establish a statewide standard that is meaningful to NEPA decision-making and that provides CDOT a better product, both a more useful VIA and a more context sensitive transportation improvement relative to Colorado's diverse regions, landscapes, and communities. This is a living document that has been continually improved and refined since 2019.

The CDOT VIA Guidelines (CDOT, 2020c) provide detailed guidance on evaluation and documentation of visual resources. The instructions in the VIA Guidelines have primacy over **Section 9.24**, which is intended to summarize in simpler terms the treatment of visual resources for CDOT's NEPA projects. **Subsection 9.24.1** discusses the process for evaluating visual resources. **Subsection 9.24.2** discusses visual resource information that should be included in each NEPA document.

9.24.1 Visual Resource Evaluation Process

Qualified practitioners, as defined in the VIA Guidelines (CDOT, 2020c), must conduct the visual resource evaluations for CDOT and CDOT-administered projects.

Reasons for Evaluation of Visual Resources Under NEPA

CDOT evaluates visual resources for several reasons:

- ▶ To fulfill requirements of NEPA
- ▶ To fulfill requirements of the Highway Beautification Act of 1965
- ▶ To comply with CDOT's Environmental Stewardship Guide (2017a), which ensures the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner

The VIA Guidelines present applicable regulations and guidance for visual resource evaluations.



Visual Impact Assessment

VIAs are necessary to capture key visual issues, identify adverse impacts, and develop effective mitigation for projects along transportation corridors, within adjacent communities, and near Federal lands in Colorado. Meaningful VIA documentation supports the NEPA decision-making process, addresses regulatory requirements, supports goals of communities and/or Federal land managers, and promotes context sensitivity. VIAs can be broken down into four main phases:

- ▶ **Establishment Phase** - CDOT's process includes early interdisciplinary scoping to define a VIA study area. Scoping of visual resources helps to identify stakeholders and any relevant plans, policies, and regulations early on. The scoping questionnaire determines if a VIA is necessary and establishes the appropriate level of visual resource documentation.
- ▶ **Inventory Phase** - The Inventory Phase documents landscape character (e.g., natural and cultural), from the perspective of both the traveling public and site neighbors. The product is an inventory of viewer preferences, stakeholder values, and scenic designations.
- ▶ **Analysis Phase** - CDOT evaluates adverse, beneficial, and cumulative impacts of the proposed project.
- ▶ **Mitigation** - The Mitigation Phase addresses potential visual impacts through development of specific, measurable, attainable, realistic, and tangible (SMART) mitigation strategies and collaboration with an interdisciplinary team and involved stakeholders.

In terms of schedule, VIA scoping is most effective at the earliest phase of a project, even before a scope of work has been finalized (during project planning). The Inventory Phase is similar to establishing the affected environment in a NEPA document. The Analysis Phase assesses and documents visual impacts. Identifying mitigation sets the stage for how VIAs can influence project development and be more sensitive to the surrounding visual environment during and after construction. The VIA Guidelines further address each key VIA component.

9.24.2 NEPA Document Sections

The content of the sections on visual resources in a NEPA document is discussed below. The VIA Guidelines may be applied to VIAs involving the following NEPA classes of action:

- ▶ EIS
- ▶ CatEx
- ▶ EA
- ▶ Reevaluations
- ▶ Planning and Environmental Linkages (PEL) studies

For projects that include a VIA, the main NEPA document should include the following sections.

Affected Environment

Use Table 3 (also in the VIA Templates as Appendix A) in the VIA Guidelines to assist in documenting field observation and photos of the landscape character and composition, as well as landscape context and sense of place of the landscape compositions. Table 4 (also in the VIA Templates as Appendix A) can help to document viewer inventory in coordination with visual quality inventory.



Environmental Consequences

Table 5 (also in the VIA Templates as Appendix A) in the VIA Guidelines provides a template matrix format for displaying the visual compatibility analysis of the Proposed Action with landscape character. Use Table 6 in the VIA Guidelines to evaluate viewer impact indicators, such as visual sensitivity, proximity, visual quality, and viewer position. Create and include visualizations of impacts; evaluate Section 4(f), Section 6(f), and Section 106 impacts; evaluate cumulative visual impacts; and identify opportunities to reduce visual contrast. Compare each alternative regarding the results from any visual resource analysis relevant to the project.

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table (Table 9-2)* is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for visual resources.



9.25 Energy

Energy resources typically include liquid or gaseous fuels, petroleum products, or electricity. The term “energy” is used in many other contexts and might be universally defined as “the potential for causing change.” It is a conserved quantity, which means the total energy of the universe remains constant but may be converted from one form into another. The efforts to conserve such energy sources are in part efforts to conserve currently available energy resources that can do useful work such as propel vehicles. Such efforts are also intended to minimize the consumption of energy resources, which contributes to air and water pollution.

Wise use of energy resources is important because those that are readily available are dwindling and subject to political constraints.

The following subsections provide guidance on the treatment of energy for CDOT’s NEPA projects. Note that this resource is considered only during large-scale projects that require an EIS. The first subsection discusses the process for evaluating energy use and conservation. The second subsection discusses information about energy that should be in each NEPA EIS document.

9.25.1 Energy Evaluation Process

The aspects of the current transportation system that contribute to inefficient use of energy should be discussed as should the ways in which project components will contribute toward more efficient use of energy. The discussion should focus on the project system as a unit (rather than on specific locations), including construction and operation time frames, and project aspects and components that contribute to energy economy.

Energy use should be considered throughout the design, development, construction, and use of a transportation project. Efficiencies can be incorporated in each phase.

Reasons for Evaluation of Energy Under NEPA

CDOT evaluates energy for several reasons:

- ▶ To recognize available and readily usable energy as a resource that is important to the nation’s economy and sustainability
- ▶ To comply with CDOT’s Environmental Stewardship Guide (2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner
- ▶ To comply with several legal mandates that pertain to energy production, use, and conservation



The following regulations and certifications apply to energy evaluations:

- ▶ **National Energy Policy Act, 2005** - Provides incentives for traditional energy production and for newer, more efficient energy technologies and conservation. Last amended 2005.
- ▶ **Executive Order 13211, 2001** - Requires preparation of a Statement of Energy Effects from Federal agencies responsible for “significant energy actions.” The proposed and final rulemaking notices published by the agency must include the Statement or a summary. Last amended 2001.
- ▶ **SAFETEA-LU Section 1121, 2009** - Identifies fuel-efficient vehicles among the exceptions that may be allowed in high-occupancy vehicle (HOV) lanes. Last amended 2012.

These regulations and guidance are variously relevant to transportation. Because of these, as well as broad-based national policy, energy conservation is an important factor in designing and analyzing highway projects and in conducting day-to-day life at CDOT. Beyond the legal requirements for energy conservation are environmental benefits under the NEPA umbrella.

Collection and Evaluation of Baseline Information Under NEPA

Collection of Baseline Information

Because the topic of energy is complex, focus the collection of baseline information specifically on the types of energy that will be affected by the project. The level of detail obtained for the baseline should not be greater than that which can be predicted for project construction and operation energy uses.

For existing roadways, obtain information on the traffic mix, speed, and volume at key times of the day. Use this information to characterize the annual energy consumption of current vehicular traffic. Data could also be collected on other annual expenditures of energy, such as in maintenance of the existing roadway, lighting, and signage. The specific information collected should be guided by the changes in energy use that the project will bring about. The larger the scale and complexity of the proposed project, the greater the level of detail should be in collecting baseline data on energy consumption. Except for large-scale projects, a detailed energy analysis, including computations of British thermal unit requirements, and so on, is not needed.

Evaluation of Baseline Information

Evaluate all aspects of the proposed project to identify how it will be different from the existing situation in ways that affect energy consumption or conservation. Consider questions such as the following for each alternative:

- ▶ Will the new roadway be longer and require vehicles to travel further, as well as require more lighting and more maintenance?
- ▶ Will the design, speed limit posting, and LOS of the new roadway cause vehicles to travel at speeds of maximum efficiency or at speeds higher or lower than that?
- ▶ How much energy will be expended during project construction and what energy conservation measures will be used during construction?
- ▶ Will HOV lanes be installed to encourage efficient use of the roadway and, if so, what energy savings are likely to result?



- ▶ Will incentives be provided to encourage and promote the use of fuel-efficient vehicles on the new roadway?
- ▶ Will the new roadway and the materials used for it require less maintenance?

To evaluate the energy impacts of the project, develop tables that compare existing and proposed future energy use for the entire road network affected by each project alternative.

Other Issues to Consider

Beyond regulations and guidance directed specifically at energy policy, energy conservation is woven throughout CDOT activities. CDOT's *Lighting Design Guide* (CDOT, 2019c), which provides current recommended practice for roadway lighting and criteria for typical Colorado applications, focuses on energy efficiency repeatedly as a primary benefit of various lighting fixtures. Energy dissipation is also a factor in roadside barrier material selection and drainage system design. In this and other documents, energy efficiency is an environmental concern, a safety concern, and an economic consideration.

9.25.2 NEPA Document Sections

The content of the sections on energy in the Affected Environment and Environmental Consequences chapters is discussed below.

Affected Environment

In the energy section of the Affected Environment chapter of the NEPA document, present the data collected on current energy use. Include information only on the types of energy use that the proposed project will alter, at a level of detail that can be matched with reasonable projections for the project alternatives.

Affected Environment Chapter of NEPA Document

- Constrain the types of energy use that the proposed project would alter
- Quantify the existing energy use to the same level of detail that can be projected for the project

Environmental Consequences

Discuss in general terms the construction and operational energy requirements and conservation potential of various alternatives under consideration. The discussion should be reasonable, supportable, and, when appropriate, do the following:

- ▶ Recognize that the energy requirements of various construction alternatives are similar and generally greater than the energy requirements of the No Action alternative.
- ▶ Point out that the post-construction, operational energy requirements of the facility should be less with one or more of the build alternatives. In such a situation, one could conclude that the savings in operational energy requirements would more than offset construction energy requirements and thus, in the long term, result in a net savings in energy usage.
- ▶ For large-scale projects with potentially substantial energy impacts, discuss the major direct and/or indirect energy impacts and conservation potential of each alternative.
- ▶ For direct energy impacts, refer to the energy consumed by vehicles using the facility.



- ▶ For indirect impacts, include construction energy and items such as the effects of any changes in automobile usage.
- ▶ Indicate the alternative's relationship and consistency with a state and/or regional energy plan if one exists.

The NEPA document should identify any energy conservation measures that would be implemented for each alternative. Once the preferred alternative is identified, the energy conservation measures to be implemented for that alternative should be highlighted. Measures to conserve energy could include:

- ▶ Using HOV incentives
- ▶ Implementing measures to improve traffic flow
- ▶ Reducing the energy used in lighting
- ▶ Reducing the roadway maintenance extent or frequency
- ▶ Limiting the idling of construction equipment
- ▶ Encouraging employee carpooling or vanpools for construction workers
- ▶ Encouraging the use of the closest material sources
- ▶ Locating construction staging areas close to work sites
- ▶ Using cleaner and more fuel-efficient construction vehicles
- ▶ Using alternative fuels and asphalt binders
- ▶ Implementing traffic management schemes that minimize motorist delays and vehicle idling
- ▶ Carrying out maintenance activities during periods of reduced traffic volumes
- ▶ Promoting carpooling/vanpooling
- ▶ Encouraging transit

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table (Table 9-2)* is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for energy.



9.26 Hazardous Materials

The term “hazardous materials” is an all-inclusive term for materials that are regulated as a solid waste, hazardous waste, and other materials contaminated with hazardous substances, radioactive materials, petroleum products, toxic substances, and pollutants. Because of their quantity, concentration, or physical or chemical characteristics, hazardous materials may pose a significant present or potential hazard to human health and safety or to the environment if released into the environment.

Hazardous materials assessments for site-specific projects are used to identify the potential for encountering contamination during construction, to determine whether materials management or worker health and safety may be impacted, and to assess liability as part of acquisition. Accurately identifying potential concerns early is important for effective planning and efficient completion of a project. The primary objective of completing a hazardous materials assessment is to identify sites within the project area with concerns related to hazardous materials for use in the CDOT decision-making process.

The CDOT [Hazardous Materials Guidance Manual](#) (CDOT, 2018b) provides guidance on conducting hazardous materials assessments. The purpose and intent of this guidance is to help CDOT staff and environmental professionals (EPs) identify potential existing hazardous materials concerns as an integral step of the advanced planning and environmental documentation stages of project development and, when applicable, to facilitate project alternative selection. The CDOT Hazardous Materials Guidance Manual provides detailed technical guidance for hazardous material evaluations and has primacy over

Section 9.26 is intended to summarize in simpler terms the treatment of hazardous materials in CDOT’s NEPA projects. **Subsection 9.26.1** discusses the process for evaluating hazardous materials. **Subsection 9.26.2** discusses hazardous material information that should be included in each NEPA document.

9.26.1 Hazardous Material Evaluation Process

Qualified practitioners, as defined in Section 7.0 of the CDOT *Hazardous Materials Guidance Manual*, must conduct the hazardous materials assessments for CDOT and CDOT-administered projects. CDOT Property Management should be engaged early in the project, particularly regarding any structure and/or property acquisitions and/or impacts.

Section 7.0 of the *Hazardous Materials Guidance Manual* can be accessed at:

https://drive.google.com/file/d/1gAOge9Y2aHKGbxbL_XTGc7hDQEKRO6TL/view



Reasons for an Evaluation of Hazardous Materials Under NEPA

CDOT conducts hazardous material evaluations for its projects for multiple reasons, including:

- ▶ To fulfill requirements of the Resource Conservation Recovery Act (RCRA) of 1976 and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980
- ▶ To fulfill requirements of NEPA
- ▶ To comply with CDOT's Environmental Stewardship Guide (2017a), which ensures the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner

The CDOT *Hazardous Materials Guidance Manual* (CDOT, 2018b) presents applicable regulations and guidance that apply to hazardous material assessments.

Hazardous Material Assessment

CDOT staff and consultants conducting or coordinating hazardous materials assessments and investigations should be familiar with the Federal, state, and local environmental laws and regulations that apply to hazardous materials. Additionally, it is important to keep track of and be aware of changes to laws and regulations. Regulatory changes with the potential to impact hazardous materials assessments are addressed in the CDOT *Hazardous Materials Guidance Manual*. CDOT and its consultants must work together to ensure that the appropriate regulatory agencies are involved, as required. It is also important to keep track of and be aware of changes to laws and regulations.

Based on the project scope of work and the available information on the potential for contamination, the level of effort for documentation of the hazardous materials assessment could use one or more of the following:

- ▶ Initial Site Assessment (ISA), CDOT Form 881
- ▶ Modified Environmental Site Assessment (MESA)
- ▶ Phase I Environmental Site Assessment (ESA)

In general, all three methods contain similar fundamental requirements and processes, which include:

- ▶ Standard environmental database (records) review
- ▶ Historical records review
- ▶ Visual reconnaissance
- ▶ Detailed regulatory file review
- ▶ Interagency coordination
- ▶ Identification of environmental concerns and conditions



Based on the information and recommendations provided in the initial hazardous materials assessment, further analysis of the property may be required, typically using a Phase I ESA or a Phase II ESA (which may also be known as a remedial investigation). The hazardous materials assessment for most CDOT projects would use the ISA method of documentation. The CDOT *Hazardous Materials Guidance Manual* (2018b) describes each type of assessment, fundamental steps, fundamental requirements, and additional information.

Working on CDOT hazardous material clearances? Interested in:

- Learning more about relevant laws and regulations
- Identifying hazardous materials concerns during NEPA assessments
- Understanding the various assessment methods and processes typically used by CDOT
- Recognizing CDOT-specific issues and concerns?

Take a look at the CDOT Hazardous Materials Guidance located [HERE!](#)

9.26.2 NEPA Document Sections

The content of the sections on hazardous materials in a NEPA document is discussed below. Generally, the information in the NEPA document should be sufficient to compare the scope of potentially hazardous waste involvement among the project alternatives and support the determination of a preferred alternative.

In the case of a CatEx, where a full NEPA document is not required, CDOT expects that the appropriate hazardous material information will confirm the presence/absence of hazardous materials to be evaluated before the final approval of the CatEx.

The level of effort required to conduct the hazardous materials assessment is based on several factors, including the level of environmental NEPA documentation (CatEx, EA, or EIS). Most CDOT projects are completed as a CatEx under the *Programmatic Agreement for Processing Categorical Exclusion Actions between FHWA and CDOT*, with the most recent agreement dated June 2022. For projects that include a hazardous materials assessment, NEPA documents should include the following sections.

Affected Environment

Describe regulatory requirements, identify analyses performed and the conclusions, describe applicable Regional Transportation Plans and Transportation Improvement Programs, and describe interagency consultations. Describe existing conditions and identify sites in the project area that may be potential hazardous material sites and areas of potential environmental concern.



Environmental Consequences

Compare the hazardous material potential of each alternative relevant to the project using the results from the following:

- ▶ ISA
- ▶ MESA
- ▶ Phase I ESA
- ▶ Phase II ESA
- ▶ Remedial Investigation

Impacts and Mitigation

The *Summary of Impacts and Mitigation Table (Table 9-2)* is required for all CDOT NEPA documents and must include all identified impacts and mitigation actions for hazardous materials.



9.27 Cumulative Impacts

Cumulative impacts are defined in Section 1508.7 CEQ, 40 CFR § 1500 - 1508:

The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (e.g., Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Past, present, and reasonably foreseeable future actions are considered in the analysis to identify:

- ▶ Whether the environment has been previously degraded and to what extent
- ▶ Whether ongoing activities are causing impacts
- ▶ What the trends are for activities and impacts in the area
- ▶ Whether the environment will be degraded in the foreseeable future and to what extent

The cumulative impact analysis must consider all aspects of the environment affected by the proposed action, as well as the impacts of that action in relation to other past, present, and reasonably foreseeable actions in the vicinity and/or region. Reasonably foreseeable actions are those future activities that have been committed to or that are known proposals, which could take place within the defined planning horizon.

Cumulative Impacts Regulations and Guidance

- CEQ's NEPA website at <http://energy.gov/nepa/council-environmental-quality-ceq>
- FHWA Technical Advisory T 6640.8a at <http://www.environment.fhwa.dot.gov/projdev/impTA6640.asp>
- FHWA Secondary and Cumulative Impact Assessment in the Highway Project Development Process at http://www.environment.fhwa.dot.gov/guidebook/content/Secondary_Cumulative_Impact_Assessmt.asp
- Guidance on the Consideration of Past Actions In Cumulative Effects Analysis at <http://energy.gov/nepa/downloads/guidance-consideration-past-actions-cumulative-effects-analysis>
- AASHTO Practitioner's Handbook: Assessing Indirect Effects and Cumulative Impacts Under NEPA at <https://environment.transportation.org/wp-content/uploads/2021/05/ph12-2.pdf>

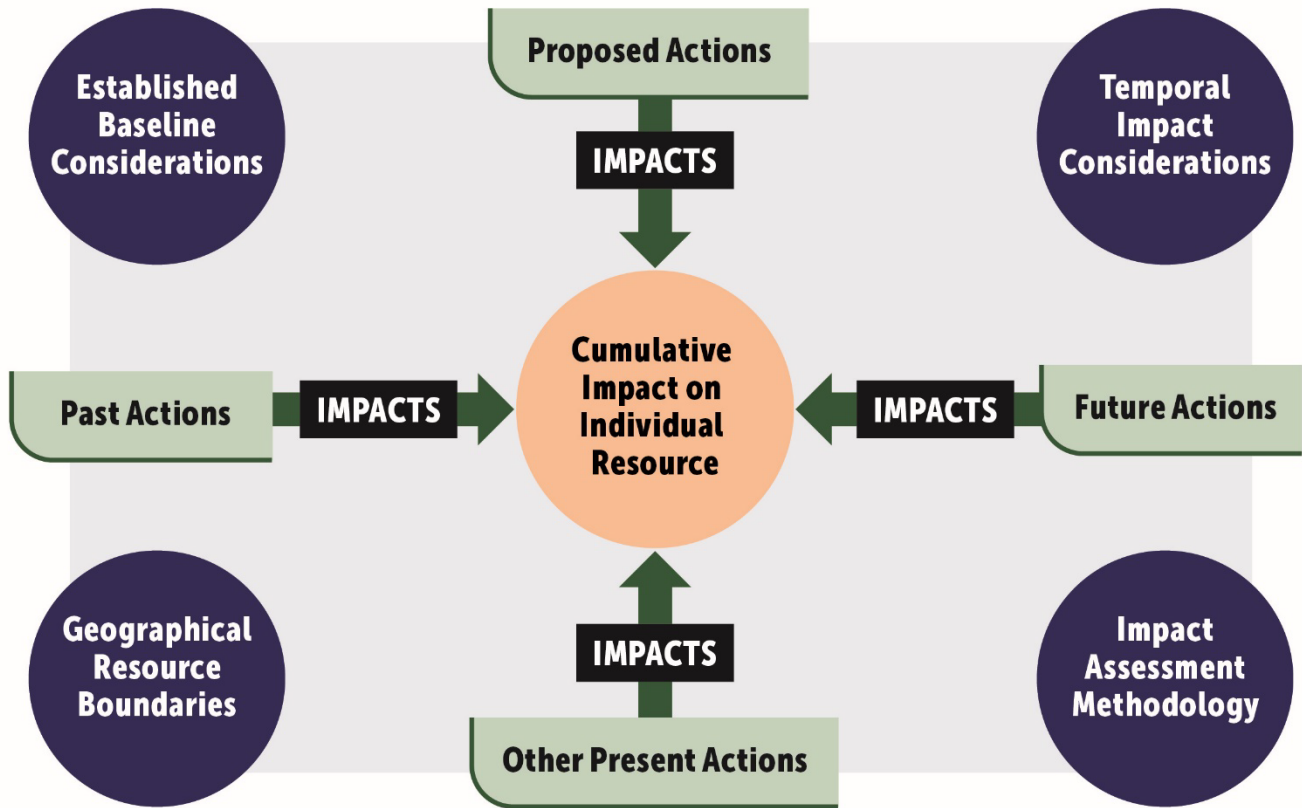
In selecting the cumulative impacts to analyze and discuss, consider scoping direction, and:

- ▶ Whether a resource(s) is important and especially vulnerable to incremental impacts
- ▶ If the proposed action is one of several actions within the same resource study area with common impacts
- ▶ Whether other proposed activities in the area will have similar impacts
- ▶ If these impacts have been historically significant for the resource
- ▶ If other environmental or planning analysis in the area has identified a cumulative impact concern

Individual resource studies and consultation with Federal, state, and local agencies should provide the basis for identifying cumulative impact issues. Previous environmental documents prepared for local and regional plans can provide guidance regarding adopted mitigation that may be applicable to reducing the cumulative impact of a specific proposed highway or off-highway project.

Figure 9-6 depicts the process for determining cumulative impacts.

Figure 9-6. Process for Determining Cumulative Impacts





Potential cumulative impacts are described for each resource within a defined cumulative impact analysis area. Generally, these areas are larger for resources that are mobile (such as wildlife) compared to resources that are stationary (such as historic and archaeological resources). In the cumulative impacts discussion, discuss only substantial impacts to those resources that may be affected.

A cumulative analysis requires the following components:

- ▶ **Spatial and Temporal Boundaries** - In establishing appropriate spatial and temporal boundaries for a cumulative impact analysis, EPA points out that there are no set or required formulas for determining appropriate scope. Decisions must be made case-by-case depending on the magnitude of project impacts and the environmental setting. For a given project, decisions are also made resource-by-resource. Generally, the boundaries for cumulative analysis are broader than the scope of analysis used in assessing direct or indirect impacts. Geographic boundaries should be defined for each resource of concern, and the periods of time considered should include the period in which the proposed action's impacts will persist. The geographic boundaries and periods of time being considered are likely to vary among resources. The NEPA document should identify the rationale used to establish the spatial and temporal boundaries of the cumulative analysis. Some thought must be given to whether the CDOT project is the cause or the effect of cumulative impacts. A larger development may be the reason for growth in the study area, and the CDOT project could just be a response to that growth.
- ▶ **Past, Present, and Reasonably Foreseeable Future Actions** - In identifying past, present, and reasonably foreseeable future actions to consider, address only those actions that incrementally contribute to the cumulative impacts on resources. Consider the current level of degradation, ongoing activities in the area causing impacts, and trends for activities and impacts in the area. To be considered "reasonably foreseeable," an action need not be a specific proposal; however, the courts have excluded actions that can be considered purely "speculative." Near-term projects identified in local, state, and Federal agency planning documents are usually considered reasonably foreseeable. In general, the description of past, present, and reasonably foreseeable projects for a cumulative impact analysis should be inclusive but does not need to identify every project in the defined spatial and temporal boundaries of the analysis.

The CEQ and EPA have highlighted the importance of cumulative impact analysis and recognized the complexity of delineating the cause-and-effect relationships among the multiple actions and the resources, ecosystems, and human communities of concern. Both CEQ and EPA have issued detailed guidance to assist in formulating cumulative analysis. The latter document was prepared to assist EPA staff in evaluating and commenting on EISs; however, it contains substantial information of use to NEPA practitioners.

EPA's Consideration of Cumulative Impacts in EPA Review of NEPA Documents (1999)

<https://www.epa.gov/sites/production/files/2014-08/documents/cumulative.pdf>



Cumulative impacts result when the impacts of an action are added to or interact with impacts of other actions that result in a compounded impact from all actions in the same geographic area over time. The cumulative impact analysis focuses on the combination of these impacts and any resulting environmental degradation on its sustainability.

While ecological and land use cumulative impacts are particularly important, other resource areas are considered, including social resources, economic resources, recreation, quality of life or community values, global climate change, and cultural resources. The level of analysis and scope of the cumulative analysis should be commensurate with the potential impacts, resources affected, scale, and other relevant factors associated with the project. These assessments involve determinations that are often complex and, to some degree, subjective.

Variation in the areas for which resource data are available may also influence the size of the cumulative impacts study area. For example, socioeconomic data may be available for Census blocks, economic data may be available for counties, and wildlife data may be available for game management units—none of which have the same boundaries.

The following subsections provide guidance on the treatment of cumulative impacts for CDOT's NEPA studies. The first subsection discusses the process for evaluating cumulative impacts. The second subsection discusses information on cumulative impacts that should be in each NEPA document.

9.27.1 Cumulative Impact Process

The CDOT project manager, together with the specialists responsible for each environmental resource expected to be impacted by the project, is responsible for evaluating cumulative impacts. Typically, the resource specialists who perform resource-specific impact analyses will collaborate, together and with their CDOT counterparts in EPB or the CDOT Regions, in providing information for the cumulative impact analysis.

The collective impacts of the proposed project and all other past, present, and future projects in the cumulative impacts study area, regardless of their ownership, sponsorship, or funding source, should be evaluated for each resource. The study area for cumulative impacts is the physical area that bounds the environmental, sociological, economic, or cultural resources of interest for cumulative analysis. The practical bounds of this statement are discussed below.

Detailed consideration of cumulative impacts should occur after project specific impacts have been identified for each resource. However, even at the start of project development, it should be possible to identify resources in the project vicinity that have been historically impacted by talking with local planning and agency personnel and asking the public at scoping meetings. Whenever possible, further impacts on the identified resources should be avoided and/or minimized through project design.



Reasons for Evaluation of Cumulative Impacts Under NEPA

CDOT evaluates cumulative impacts for several reasons:

- ▶ To consider total project impacts in combination with the impacts from other past, present, and reasonably foreseeable future actions to provide a measure of overall impacts to environmental resources
- ▶ To provide the decision-maker information on the health of an environmental resource due to past, present, and reasonably foreseeable future actions
- ▶ It is a required analysis in NEPA documents.
- ▶ To comply with CDOT's Environmental Stewardship Guide (2017a), which ensures that the statewide transportation system is constructed and maintained in an environmentally responsible, sustainable, and compliant manner.
- ▶ To comply with several legal mandates that pertain to cumulative impacts as discussed below.

The original wording of NEPA in 1969 does not contain the word “cumulative” but does direct agencies to “recognize the worldwide and long-range character of environmental problems.” CEQ's Regulations for Implementing NEPA (CEQ, 40 CFR § 1500 - 1508) introduce the consideration of cumulative impacts. The concept of cumulative impacts has continued to be developed and refined through subsequent guidance from CEQ and Federal agencies.

Evaluation of Cumulative Impacts Under NEPA

Collection of Baseline Information

The main components in the cumulative impact analysis process include:

- ▶ Determining temporal and spatial boundaries for the analysis
- ▶ Generating a list of planned projects or foreseeable activities for consideration
- ▶ Gathering data to supplement the generated list
- ▶ Achieving agreements on which resources to count, the baseline data, and its sources

The approach for each component is further described below:

- ▶ Develop temporal (e.g., time frame) and spatial (e.g., cumulative impacts study area) boundaries for the cumulative analysis based on all resources of concern and all the actions that may contribute. Generally, the temporal and spatial boundaries are based on the period of time that the impacts would persist and the natural boundaries of resources of concern (as opposed to jurisdictional boundaries), for example:
 - The most common temporal scope is from the naturally occurring baseline (as depicted in the affected environment) through the life of the project.
 - The size and shape of the cumulative impacts study area boundaries vary by resource and are larger for resources that are mobile or migrate (e.g., elk populations) compared with stationary resources. Occasionally, spatial boundaries may be contained within the project area or just a portion of the project area.



- ▶ Generate a list of past, present, and reasonably foreseeable future actions through informal contacts and formal meetings with cooperators, local agencies, and other stakeholders.
- ▶ Gather data to supplement the list of projects and activities accumulated through telephone calls, website searches, and document reviews. Enough information should be gathered to generally describe the project and impacts that occurred or may potentially occur from the project or activity.

The planning process can be used to develop any of the following:

- Population and employment projections
- Assumptions about auto ownership and household incomes
- A list of projects to include in the No Action scenario
- Explanations of travel and development trends
- Zoning and land use assumptions
- Assumptions about service by other modes
- Air quality and emissions forecasts
- Criteria for determining acceptable levels of transportation service

The AASHTO *Practitioner's Handbook: Assessing Indirect Effects and Cumulative Impacts Under NEPA* (2016b) states that assessments of indirect effects and cumulative impacts can be conducted as part of the transportation planning process and then, under certain conditions, adopted in the NEPA process for an individual project. It has been recognized that the transportation planning process can produce information that will later be used in NEPA-level studies of indirect effects and cumulative impacts. This information can expedite project-level reviews by minimizing the amount of additional data that needs to be collected.

To successfully assess cumulative impacts, the analysis must consider other projects with a broad range of activities and patterns of environmental degradation occurring near the project. The following factors are considered in identifying actions that may relate to the project:

- ▶ Proximity (either spatially or temporally)
- ▶ Probability of an action affecting the same environmental system
- ▶ The likelihood a project leads to a range of impacts or other associated activity
- ▶ Whether the impacts are similar to the project proposed
- ▶ The likelihood a project will occur, and if the project is imminent



Time, money, and reliable data constraints make detailed consideration of the past unrealistic, although some recognition of the undeveloped natural state of an area should be provided so that the abundance of predevelopment ecosystems will not be forgotten. In 2005, CEQ issued *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis* (CEQ, 2005), which states in part:

CEQ interprets NEPA and CEQ's NEPA regulations on cumulative effects as requiring analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the agency proposal for action and its alternatives may have a continuing, additive and significant relationship to those effects. In determining what information is necessary for a cumulative effects analysis, agencies should use scoping to focus on the extent to which information is "relevant to reasonably foreseeable significant adverse impacts," is "essential to a reasoned choice among alternatives," and can be obtained without exorbitant cost.

Evaluation of Baseline Information

To evaluate the cumulative impact information collected:

- ▶ Characterize each resource within the project cumulative impacts study area by obtaining data on past trends in the state of the resource and its current state. Document this information in the Affected Environment chapter of the NEPA document.
- ▶ Locate the projects identified on a map to enable easy comparison for each resource. If possible, combine several resources, such as vegetation and fish and wildlife, on a single map.
- ▶ Evaluate only the effects of resources that are expected to receive impacts under one or more of the project alternatives.
- ▶ Assess the magnitude and importance of cumulative impacts by comparing the environment in its naturally occurring state with the expected impacts of the project alternatives and other actions in the same geographic area. Base magnitude on the extent of difference between the naturally occurring environment and the anticipated condition. Base importance on whether the long-term sustainability of a resource or social system would be affected.
- ▶ Describe any cumulative impacts in somewhat general terms. Note any cumulative benefits, as well as detriments, in the analysis.
- ▶ Note the relative importance of this impact to the overall resource as it currently exists and in relation to historic trends.
- ▶ Describe the degree to which impacts from the proposed transportation project will contribute to the cumulative impacts for this resource.

Other Issues to Consider

When considering the appropriateness of evaluating a project as a CatEx, it should be remembered that a CatEx should be used only for projects that do "not individually or cumulatively have a significant effect on the human environment (Sec. 1508.4) and . . . [that] are therefore exempt from requirements to prepare an environmental impact statement." (CEQ, 40 CFR § 1500 - 1508).



9.27.2 NEPA Document Sections

The description of cumulative impacts in the NEPA document should provide a summary of cumulative impacts.

This section would include the temporal and spatial boundaries used, the baseline condition used (typically documented in the Affected Environment section), and any additional factors considered, such as:

- ▶ Federal, non-Federal, and private actions
- ▶ Potential for synergistic impacts or synergistic interaction among or between impacts
- ▶ Potential for impacts to cross political and administrative boundaries
- ▶ Other spatial and temporal characteristics of each affected resource
- ▶ Comparative scale of cumulative impacts across alternatives
- ▶ Past, present, and reasonably foreseeable future actions considered in the analysis and how the list of actions was developed (note any public meetings, agency meetings, etc.).
- ▶ Cumulative impacts identified through the analysis by resource

Conclude the discussion with project-specific text that states: “When combined with other past, present, and reasonably foreseeable future actions, the preferred alternative (or build alternatives) is (or are not) expected to negatively (or beneficially) impact the resource.”

If some of the impacts occur only during construction and would be temporary while others would be more permanent and last throughout the project’s operation, mention this. Also note which cumulative impacts are direct and which are indirect. Tables provide a useful way to present cumulative impacts if a project is complex.



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10. NEPA Processes and Compliance for Other Federal Agencies

Chapter 10 discusses the coordination process and timelines for environmental compliance on projects using Federal Transit Administration (FTA) or Federal Railroad Administration (FRA) funds administered through the Colorado Department of Transportation (CDOT) Division of Transit and Rail (DTR). Note that most major transit projects receive funding directly from FTA and are not administered and managed by CDOT. These projects, like the Regional Transportation District’s (RTD) FasTracks program and the Fort Collins Mason Bus Rapid Transit (BRT) system, are coordinated directly with FTA by the agency for the planning, design, engineering, environmental, construction, and funding processes as required. This chapter solely focuses on those projects that receive state and Federal transit funds administered by DTR; the majority of which are Categorical Exclusions (CatExs).

This chapter also discusses the FTA process and procedures for NEPA compliance. FTA’s processes for Environmental Impact Statements (EIS), CatExs, and Environmental Assessments (EA) have similarities and differences when compared to Federal Highway Administration (FHWA) processes discussed in **Chapters 4, 5, and 6**, respectively. FTA follows the same regulations and guidance as FHWA with the differences noted throughout this chapter as appropriate. The regulations found in 23 Code of Federal Regulations (CFR) 771 are issued jointly by FHWA and FTA and apply to projects funded by either agency. Currently, there is no Stewardship Agreement between FTA and CDOT as there is between FHWA and CDOT. For all FTA funded projects, National Environmental Policy Act (NEPA) approval is granted by FTA only.

FTA defines a *designated recipient* as “an entity designated, in accordance with the planning process under Sections 5303 and 5304, by the governor of a state, responsible local officials, and publicly owned operators of public transportation, to receive and apportion amounts under 49 USC 5336 to urbanized areas of 200,000 or more in population; or a state or regional authority, if the authority is responsible under the laws of a state for a capital project and for financing and directly providing public transportation.”

10.1 FRA and NEPA Compliance

In 2018, FRA joined FTA and FHWA’s CFR 771 rule, which harmonizes the NEPA implementing procedures of the three operating administrators. While the FRA has not yet been integrated with CDOT as fully as FTA and FHWA, DTR’s Passenger Rail Branch will begin working more closely with FRA on NEPA projects. The FRA is moving to adopt FHWA and FTA regulations in past bills to complement established FRA guidance on NEPA projects.

Some existing FRA guidance includes regularly held and recorded webinars primarily focused on introductory information for NEPA and key environmental reviews related to FRA processes, such as Section 106. More information on CDOT’s process with Section 106 can be found in Chapter 9. Further guidance on FRA and NEPA Classes of Action is available at their website as well, including relevant legislation for EAs, EISs, and CatExs, along with additional guidance and worksheets for completing FRA CatExs.

Visit the [FRA website and webinar resources page](#) for more information on FRA’s current NEPA guidance and resources.



10.2 FTA NEPA Compliance

As discussed in **Chapter 2**, to address the NEPA responsibilities established by the Council on Environmental Quality (CEQ), FHWA and FTA jointly issued regulations, *Environmental Impact and Related Procedures* (23 CFR 771). The regulations set forth the agencies' policy of combining all environmental analyses and reviews into a single process. It defines the roles and responsibilities of FTA and its grant applicants in preparing documents and in managing the environmental process within the various project development phases.

For all categories of NEPA documentation (EIS, CatEx, or EA), FTA makes the class of action determination (**Section 2.4** and 23 CFR 771.115) and the approval. The NEPA document and any other required environmental documentation should be complete before applying for or approving Federal assistance. Grant applicants intending to apply for CDOT-administered FTA funds should work with DTR during the application process to ensure that all information required by FTA is complete. For these funds, DTR will submit an application, along with any required NEPA documentation, on behalf of the grant applicant in FTA's grant management system, TrAMS.

Most projects that DTR administers on behalf of FTA are non-construction projects and qualify as a CatEx. Projects include routine vehicle and equipment acquisition; rehabilitation and maintenance; planning, administration, training, and operating activities; and safety, security, and communication equipment. FTA typically approves these types of projects as a c-list CatEx. Unless unusual circumstances exist, these project require no formal documentation by DTR or FTA (refer to **Section 10.2.2** for more information on FTA CatEx requirements). The CatEx determination and approval occur in TrAMS for these types of projects.

While a project involving construction may be considered a CatEx, it is not exempt from other environmental laws that may apply to the project, such as Section 106 of the National Historic Preservation Act, Section 4(f) of the U.S. Department of Transportation Act of 1966, Section 404 of the Clean Water Act, or Section 7 of the Endangered Species Act. Applicants need to apply and obtain applicable environmental permits and approvals even for projects that qualify as CatExs.

FTA NEPA-Related Regulations and Guidance:

- FHWA/FTA Environmental Impact and Related Procedures. 23 CFR 771
- FTA Categorical Exclusions. 23 CFR 771.118
- Guidance for Implementation of FTA's Categorical Exclusions. (23 CFR § 771.118)
- FTA Region 8 Bulletin No: 2016-12 FTA Environmental Standard Operating Procedures
- FTA Region 8 Bulletin No: 2016-16 Region 8 Revised Categorical Exclusion Worksheet and Instructions

All DTR and FTA projects involving construction are required to go through a Title VI Equity Analysis. This analysis takes place before design activities and includes an analysis of the impacted populations, project impacts, and potential alternative project locations. Projects should coordinate with DTR, the Equity and Environmental Justice Branch at CDOT, and FTA when conducting an equity analysis. The FTA's Title VI Circular to 4702.1B includes guidance and requirements for conducting an Equity Analysis.

For more information, refer to [FTA's guidance on Title VI](#).



If a project has unusual circumstances, such as the presence of wetlands, historic buildings or structures, parklands, or floodplains in the project area, the grant applicant must work with FTA to determine what documentation may be required.

10.2.1 Class I – Environmental Impact Statement (EIS)

The introduction of **Chapter 4** provides general information about Class I. If an EIS is deemed necessary, the FTA process is like the FHWA/CDOT process described in **Chapter 4** and can be followed with coordination and guidance from FTA.

FTA projects typically requiring an EIS include:

- ▶ New construction or extension of fixed rail transit facilities (e.g., rapid rail, light rail, commuter rail, automated guideway transit)
- ▶ New construction or extension of a separate roadway for buses or high occupancy vehicles not located within an existing highway facility

Unless it is a joint EIS process among FTA, FHWA, CDOT and a transit agency, such as RTD, CDOT will not be involved in the development, review or signing of the EIS. The Southeast Corridor EIS (TRES) is an example of a joint EIS process, where all parties were involved and signatories on the document. While CDOT staff may be part of a project team and provide input, the document will not be processed through CDOT for review or signature.

Differences to note between the FTA and FHWA/CDOT processes include:

- ▶ FTA conducts all contact and consultation with resource and regulatory agencies, and Tribes.
- ▶ Requirements for some analyses can be different. For example, noise and vibration should be assessed for proposed mass transit projects using FTA's Transit Noise and Vibration Impact Assessment guidance (2018). Some transit projects are exempt from air quality conformity and/or regional air quality emissions analyses.
- ▶ FTA issues Letters of Intent to indicate the intention to obligate future funds for multi-year capital transit projects. FTA will not issue Letters of Intent until the NEPA process is complete.
- ▶ CDOT is typically not a signatory on FTA EIS documents. The exception occurs when it is a joint project, such as the Southeast Corridor EIS (TRES). On these documents FHWA, FTA, RTD, and CDOT signed the signature page.
- ▶ FTA does not have a stewardship agreement with CDOT and does not delegate environmental review and approval to CDOT.

10.2.2 Class II – Categorical Exclusion (CatEx)

Most transit projects funded through DTR-administered FTA funds qualify as a CatEx, including many of the construction projects. FTA is responsible for determining whether the action described by the grant applicant falls within the CatEx category (i.e., the action meets all conditions listed in the CatEx regulations), whether the action is impermissibly segmented from a larger project, and whether there are unusual circumstances (e.g., substantial controversy on environmental grounds, significant impact to properties protected by Section 4(f) or Section 106) that would make a CatEx determination inappropriate.



Grant applicants should include sufficient project information for FTA to make a class of action determination (refer to Section 2.4 for more information on classes of action). For non-construction projects, a description of the project in the grant application is sufficient for FTA approval. The CatEx category is selected and approved directly in TrAMS and no further documentation is required.

While many transit projects processed through DTR are non-construction projects and fall within c-list CatExs requiring no formal documentation, a few involve construction and require additional environmental review. Documentation demonstrating compliance with other environmental requirements, such as Section 106 or Section 7, may be necessary for construction projects. DTR requires this information before they will submit an application to FTA on behalf of the grant applicant.

Before submitting an application for capital construction projects (maintenance facilities, stations, etc.), the grant applicant will initiate the design phase (e.g., conceptual design, preliminary engineering), the environmental review/clearance process, utility/third party coordination; determine right-of-way (ROW) requirements; identify the amount and source of local match, and other related activities, as applicable. Applicants cannot undertake final design, ROW acquisition, or construction prior to completion of NEPA and compliance with other environmental laws.

FTA and DTR require a grant applicant to complete the following activities before an application will be submitted to FTA on their behalf:

- ▶ Complete the Agency Profile and Capital Asset Inventory in CoTRAMS.
- ▶ Complete the CoTRAMS application, providing information on project description, amount of funding needed, purpose and need for project, project location, consistency with planning process, and any coordination activities.
- ▶ Complete and get approval of the *Region 8 Categorical Exclusion Worksheet* (CatEx worksheet) for construction projects. Projects that do not lead to or involve construction do not need to complete the CatEx worksheet. FTA will review the CatEx worksheet to determine whether the project qualifies as a CatEx and if compliance with other environmental laws is required.
 - Upon receipt of applications in CoTRAMS, DTR will identify all construction projects requiring completion of the CatEx worksheet. Primarily these are facility construction projects. Non-construction projects seeking funding will not require completion of the CatEx worksheet. FTA can assist the grant applicant with completing the CatEx worksheet.
 - The draft CatEx worksheet should be submitted to FTA **at least 45 days** prior to submitting a grant application. FTA will review the draft CatEx worksheet to determine if any unusual circumstances exist and if additional work or permits may be required.
 - DTR will submit the final CatEx worksheet as part of the grant application to FTA on behalf of the grant applicant, along with the CatEx approval letter from FTA.
- ▶ Obtain all required environmental permits.
- ▶ Technical specifications and a procurement plan, once funding is secured, for a capital equipment project.

Refer to the Region 8 page of the FTA website to review the [FTA Region 8 Categorical Exclusion Worksheet Instructions and Environmental Resources Information](#).



Differences to note between the FTA and FHWA/CDOT processes include:

- ▶ The list of projects that qualify for FTA CatExs is found in 23 CFR Part 771.118. FHWA CatExs listed in 23 CFR Part 771.117 or as added or changed by the Programmatic Agreement CDOT has with FHWA do not apply to FTA projects.
- ▶ FTA conducts all contact and consultation with resource and regulatory agencies and with Tribes as needed.
- ▶ Requirements for some of the analyses can be different. For example, noise and vibration should be assessed for proposed mass transit projects using FTA's Transit Noise and Vibration Impact Assessment guidance (2018). Some transit projects are exempt from air quality conformity and/or regional air quality emissions analyses.
- ▶ FTA CatExs for construction projects should be submitted using the FTA Region 8 Categorical Exclusion Worksheet at least 45 days before submitting a grant application.
- ▶ CDOT is not a signatory on FTA CatExs.
- ▶ FTA does not have a stewardship agreement with CDOT and does not delegate environmental review and approval to CDOT.

FTA CatEx Regulations 23 CFR 771.118

Note that the regulations use “CE” rather than “CatEx.” CDOT has traditionally used “CatEx,” and that is what the NEPA Manual reflects.

To provide a more efficient environmental review process for projects relating specifically to transit, the FTA CatEx should be followed (23 CFR 771.118), which differs from the FHWA CatEx (23 CFR 771.117). Guidance for the Implementation of FTA's Categorical Exclusion (23 CFR 771.118) was most recently updated January 5, 2023, at the time of this manual update. CatExs included in 23 CFR 771.117 (FHWA CatExs) should no longer be used for FTA's actions on projects. However, multimodal projects containing both FHWA-funded and FTA-funded elements (such as the reconstruction of a highway lane within existing ROW for express bus service) should be processed under both, as appropriate. Chapter 5 includes information about CatExs in general and about FHWA/CDOT CatEx processes.

Per CEQ's *Establishing, Applying, and Revising Categorical Exclusions under the National Environmental Policy Act* guidance (November 2010), the CatExs in 23 CFR 771.118 are presented as general categories that include limitations, as appropriate, and provide an informative, but not exhaustive, list of examples.

If an action could fall under multiple CatExs listed in section 771.118(c) due to their broad nature and/or one or more of the examples under section 771.118(d), then the best option (only one) is chosen (i.e., the CatEx that most closely fits the proposed activities) for the particular project in consultation with the FTA Region 8 Office. Ultimately, the selected CatEx must cover all aspects of the proposed project's scope, and the project description should include all project elements.

For additional details and examples for each CatEx category, refer to FTA's [Guidance for Implementation of FTA's Categorical Exclusions](#) (23 CFR. §771.118)



10.2.3 Class III – Environmental Assessment (EA)

As stated previously, FTA determines the class of action (**Section 2.4** and 23 CFR 771.115). The introduction to **Chapter 6** includes general information about Class III. If an EA is deemed necessary, the FTA process is like the FHWA/CDOT process described in **Chapter 6** and the process described in that chapter can be followed with coordination and guidance from FTA.

While CDOT staff may be part of a project team and provide input on an EA, the document will not be processed through CDOT for review or signature.

Differences to note between the FTA and FHWA/CDOT processes include:

- ▶ FTA conducts all contact and consultation with resource and regulatory agencies and with Tribes.
- ▶ Requirements for some of the analyses can be different. For example, noise and vibration should be assessed for proposed mass transit projects using FTA’s Transit Noise and Vibration Impact Assessment guidance (2018). Some transit projects are exempt from air quality conformity and/or regional air quality emissions analysis.
- ▶ FTA issues Letters of Intent to indicate the intention to obligate future funds for multi-year capital transit projects. FTA will not issue Letters of Intent until the NEPA process is complete.
- ▶ CDOT is typically not a signatory on FTA EA documents.
- ▶ FTA does not have a stewardship agreement with CDOT and does not delegate environmental review and approval to CDOT.



10.3 References

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Appendix A. Typical NEPA Abbreviations and Acronyms



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Typical NEPA Abbreviations and Acronyms

- A -

AAI	All Appropriate Inquiries
AASHTO	American Association of State Highway and Transportation Officials
ACEC	American Consulting Engineers Council
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
APCD	Colorado Department of Public Health and Environment's Air Pollution Control Division
APE	area of potential effects
AQ-PLAG	Air Quality Project-Level Analysis Guidance
AST	aboveground storage tank
ASTM	American Society for Testing and Materials

- B -

BA	Biological Assessment
BIA	Bureau of Indian Affairs
BFE	Base Flood Elevation
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	best management practice
BO	Biological Opinion
BOD	biological oxygen demand

- C -

CAA	Clean Air Act
CAL3QHC	transportation air pollutant dispersion model
CAQCC	Colorado Air Quality Control Commission
CatEx	Categorical Exclusion
CCR	Code of Colorado Regulations
CDNR	Colorado Department of Natural Resources
CDOT	Colorado Department of Transportation



CDPHE	Colorado Department of Public Health and Environment
CDPS	Colorado Discharge Permit System
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	Colorado Geological Survey
CHS	Colorado Historical Society
CLOMR	conditional letter of map revision
CMAQ	Congestion Mitigation and Air Quality
CMGC	Construction Manager/General Contractor
CNAP	Colorado Natural Areas Program
CNHP	Colorado Natural Heritage Program
CO	carbon monoxide
CORA	Colorado Open Records Act
CORRACTS	Resource Conservation and Recovery Act Corrective Action
CORSIM	comprehensive microscopic traffic simulation tool
CPW	Colorado Parks and Wildlife
CRS	Colorado Revised Statutes
CSS	context sensitive solutions
CWA	Clean Water Act

- D -

dB	decibel
dBA	A-weighted decibels
DEOG	diesel exhaust organic gases
DOD	U.S. Department of Defense
DOI	U.S. Department of the Interior
DOL	U.S. Department of Labor
DPM	diesel particulate matter
DRCOG	Denver Regional Council of Governments
DTR	CDOT's Division of Transit and Rail



- E -

EA	Environmental Assessment
EAC	Early Action Compact
EIS	Environmental Impact Statement
EJ	Environmental Justice
EJSCREEN	Environmental Justice Screen
EO	Executive Order
EOS	Environmental Overview Study
EPA	U.S. Environmental Protection Agency
EPB	Colorado Department of Transportation's Environmental Programs Branch
ERNS	emergency response notification system
ESA	Endangered Species Act

- F -

FAA	Federal Aviation Administration
FACWet	functional assessment of Colorado wetlands
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIA	Federal Insurance Administration
FINDS	facility index system
FIR	field inspection review
FIRM	flood insurance rate map
FLPMA	Federal Land Policy and Management Act
FOIA	Freedom of Information Act
FONSI	Finding of No Significant Impact
FOR	final office review
FPPA	Farmland Protection Policy Act
FRA	Federal Railroad Administration
FTA	Federal Transit Administration



- G -

GAP	Gap Analysis Program
GHG	greenhouse gas
GHG-PLAG	Greenhouse Gas Project-Level Analysis Guidance
GIS	geographic information systems
GESOW	Generic Environmental Scope of Work
gpm	gallons per minute
gps	global positioning system

- H -

HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HAP	hazardous air pollutant
HB	House Bill
HOV	high occupancy vehicle
HUD	U.S. Department of Housing and Urban Development

- I -

I-25	Interstate 25
I-70	Interstate 70
IAR	Interstate Access Request
IIJA	Infrastructure Investment and Jobs
INWMP	Integrated Noxious Weed Management Plan
ISA	Initial Site Assessment
ISTEA	Intermodal Surface Transportation Efficiency Act
ITS	intelligent transportation systems
INVEST	infrastructure voluntary evaluation sustainability tool

- L -

LEDPA	Least Environmentally Damaging Practicable Alternative
LEP	limited English proficiency
Leq(h)	hourly equivalent sound level
LOMC	Letter of Map Change



LOMR	letter of map revision
LOS	level of service
LOSS	level of service of safety
LWCF	Land and Water Conservation Fund Act

- M -

MAP-21	Moving Ahead for Progress in the 21st Century
MBTA	Migratory Bird Treaty Act
MESA	Modified Phase I Environmental Site Assessment
µg/m ³	micrograms per cubic meter
µm	micrometers
µS/cm	micro-Siemens per centimeter
MOA	memorandum of agreement
MOU	memorandum of understanding
MOVES	motor vehicle emission simulator
MPO	Metropolitan Planning Organization
MS4	municipal separate storm sewer system
MSAT	mobile source air toxics

- N -

NAAG	Noise Analysis and Abatement Guidelines
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAGPRA	Native American Graves Protection and Repatriation Act
NCHRP	National Cooperative Highway Research Program
NDIS	Colorado Natural Diversity Information Source
NEPA	National Environmental Policy Act of 1969
NFIA	National Flood Insurance Act
NFIP	National Flood Insurance Program
NFRAP	no further remedial action planned
NHPA	National Historic Preservation Act of 1966
NHS	National Highway System
NO ₂	nitrogen dioxide



NMFS	National Marine Fisheries Service
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOx	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWP	nationwide permit
NWS	National Weather Service

- O -

O3	ozone
OAHP	Office of Archaeology and Historic Preservation
OFD	One Federal Decision
OPS	Colorado Department of Labor and Employment's Division of Oil and Public Safety
OWJ	official with jurisdiction

- P -

PAH	Poly-aromatic hydrocarbons
ppb	parts per billion
ppm	parts per million
PA	Programmatic Agreement
PCN	pre-construction notification
PDM	Project Development Manual
PEL	Planning and Environmental Linkage
PM	particulate matter
PMJM	Preble's Meadow Jumping Mouse
PSD	Prevention of Significant Deterioration



- Q -

QA	quality assurance
QC	quality control

- R -

RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Information System
RFP	Request for Proposal
ROD	Record of Decision
ROI	Region of Influence
ROW	right-of-way
RPEM	CDOT Region Planning and Environmental Manager
RS/TS	Regionally Significant Transportation Capacity project
RTD	Regional Transportation District
RTP	Regional Transportation Plan

- S -

SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SB	Senate Bill
SDWA	Safe Drinking Water Act
SO ₂	sulfur dioxide
SEO	State Engineer's Office
SGPI	Shortgrass Prairie Initiative
SHPO	State Historic Preservation Officer
SLS	System Level Study
SIP	State Implementation Plan
SPUI	single-point urban interchange
SRHP	State Register of Historic Places
STIP	State Transportation Implementation Plan
STP	Surface Transportation Program
SWAP	Source Water Assessment and Protection
SWLRTP	Statewide Long Range Transportation Plan
SWMP	Stormwater Management Plan



- T -

TAZ	transportation analysis zone
T&E	threatened and endangered
TCM	transportation control measure
TDM	transportation demand management
TEA-21	Transportation Equity Act for the 21st Century
THPO	Tribal Historic Preservation Officer
TIP	Transportation Implementation Program
TMDL	total maximum daily load
TNM	Traffic Noise Model software
TOD	transit oriented development
TPR	Transportation Planning Region
TSM	transportation system management

- U -

UDFCD	Urban Drainage and Flood Control District
UMTA	Urban Mass Transportation Administration
U.S.	United States
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
USDOI	U.S. Department of Interior
USDOT	U.S. Department of Transportation
USFS	U.S. Forest Service
USFWS	U.S. Department of Interior Fish and Wildlife Service
USGS	U.S. Geologic Survey
UST	underground storage tank
UTM	Universe Transverse Mercator



- V -

VE	value engineering
VCP	Colorado Department of Public Health and Environment's Voluntary Clean-up Program
VHT	vehicle hours of travel
VIA	Visual Impact Assessment
VMT	vehicle miles of travel
VPP	visual prioritization process

- W -

WQCC	Water Quality Control Commission
WQCD	Water Quality Control Division
WSR	Wild and Scenic Rivers



Appendix B. Typical NEPA Terminology



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Typical NEPA Terminology

- # -

100-year floodplain: The area along the river corridor that would receive floodwaters during a 100-year flood event. A 100-year flood event has the probability of occurring 1 percent of the time during any given year. If a 100-year flood event occurs, the following year will still have the same probability for occurrence of a 100-year event.

1601 Policy Directive: The Colorado Transportation Commission established the *Interchange Approval Process* (CDOT, 2001; CDOT, 2005a; CDOT, 2005c) to provide fair and consistent procedures regarding the review and evaluation of requests for new interchanges and major improvements to existing interchanges on the state highway system. CDOT typically integrates the interchange approval process requirements with NEPA and the CDOT transportation planning and development process. Due to long-term financial commitments and other legal limitations associated with the requirements of this policy directive, this guidance is applicable to local municipal governments and quasi-governmental entities (such as special districts like the E-470 Public Highway Authority) requesting a new interchange or major improvements to an interchange that have not been programmed through CDOT's transportation planning and development process.

The 1601 process requires, among other things, that the interchange:

- ▶ Be part of the TPRs approved fiscally constrained RTP, STIP, and SWP
- ▶ Be the subject of approved intergovernmental agreements which addresses the funding of the application development and review process, timeline and analytical expectations, and an intergovernmental agreement covering construction, operations, maintenance, and replacement of the interchange
- ▶ Have sufficient environmental and other studies performed consistent with FHWA interchange approval and NEPA requirements

Any Colorado Transportation Commission or CDOT action on the interchange request is contingent on approval of the appropriate **environmental documentation**.

401 Certification/Water Quality Certification: Section 401 of the Clean Water Act requires the States to issue a 401 Water Quality Certification for all projects that require a Federal Permit (such as a Section 404 Permit). The "401" is essentially verification by the State that a given project will not degrade Waters of the State or otherwise violate water quality standards.

- A -

Abatement [Noise]: A reduction in the degree or intensity of traffic and other noise sources through various forms of mitigation measures, such as noise barriers or walls.

Action: A highway or transit project proposed for FHWA or FTA funding. It also includes activities such as joint and multiple use permits, changes in access control, etc., which may or may not involve a commitment of Federal funds.



Adverse Effects: In the context of Section 106, an adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

Adverse Impacts: Adverse impacts, (as defined by USDOT) and as applied to environmental justice, “may include, but are not limited to: air, noise, and water pollution and soil contamination; destruction or disruption of man-made or natural resources; destruction or diminution of aesthetic values; destruction or disruption of community cohesion or a community’s economic vitality; destruction or disruption of the availability of public and private facilities and service; vibration; adverse employment effects; displacement of persons, businesses, farms, or nonprofit organization; increased traffic congestion; isolation, exclusion or separation of minority or low-income individuals from the broader community; and the denial of, reduction in, or significant delay in the receipt of benefits of DOT programs, policies, or activities.” Individuals potentially affected by a project should be identified through demographic analysis and targeted for early public involvement.

Advisory Council on Historic Preservation (ACHP): An independent agency of the U.S. government whose members are charged with advising the President and the Congress on matters relating to historic preservation; recommending measures to coordinate activities of Federal, State, and local agencies and private institutions and individuals relating to historic preservation; and advising on the dissemination of information pertaining to such activities. The Council reviews the policies and programs of federal agencies regarding compliance with the National Historic Preservation Act (NHPA), as amended.

Affected Environment: The physical features, land area or areas to be affected by the alternatives presented in the NEPA document. This term also includes various social and environmental factors and conditions pertinent to an area.

Air Pollutants/Air Pollution: Substances in the air (considered man-made in origin) that could, at high enough concentrations, harm humans, animals, vegetation, or materials. Three major air pollutants involving transportation projects include (ground-level) ozone, particulate matter, and carbon monoxide.

Air Quality Project Level Analysis Guidance: The official CDOT guidance on the evaluation and documentation of air quality for projects in Colorado.

Alternative: One of several specific transportation improvements proposals, alignments, options, design choices, etc., in a defined study area for how, or whether to proceed with a proposed project.

Alternative Analysis: Process by which alternatives identified through the scoping process will be screened to determine how well each meets the Purpose and Need.

Americans with Disabilities Act: A national mandate for the elimination of discrimination against individuals with disabilities that provides clear, strong, consistent, enforceable standards addressing discrimination against individuals with disabilities; ensures that the Federal Government plays a central role in enforcing the standards established in the Act on behalf of individuals with disabilities; and invokes the sweep of congressional authority, including the power to enforce the



fourteenth amendment and to regulate commerce, in order to address the major areas of discrimination faced day-to-day by people with disabilities.

Annual Average Daily Traffic (AADT): The total volume of traffic passing a point or segment of highway facility in both directions for 1 year, divided by the number of days in the year.

Approval: General term referring to any document other than a permit that needs a signature by someone in authority at the agency having statutory jurisdiction over that activity. The document may be called an approval, certification, concurrence, easement, or license, all of which represent an agency saying, “Yes we authorize you to conduct this activity as long as you do it in this manner.” An approval may specify conditions under which the activity is approved.

Archaeological Resources: The locations of prehistoric or historic occupations or activities that can be used to reconstruct the way of life of cultures of the past. They may range from a single artifact to the extensive ruins of a historic military fortification.

Archaeological Resources Protection Act (ARPA): Regulates the taking of archaeological resources on federal lands by setting a broad policy that archaeological resources are important for the nation and should be protected. The act further establishes a requirement for the excavation or removal of archaeological resources from public or Indian lands with special permits. Violations of the law include civil and criminal penalties of fines and imprisonment.

Area of Potential Effect (APE): The geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for various kinds of effects caused by the undertaking.

Average Daily Traffic (ADT): The total volume of traffic passing a point or segment of a highway facility in both directions for an average weekday.

Avoidance Alternative: A general term used to refer to any alignment proposal, which has been developed, modified, shifted, or downsized to specifically avoid impacting one or more resources (e.g., an alternative that avoids an eligible historic property).

- B -

Bald and Golden Eagle Protection Act (BGEPA): The BGEPA prohibits any form of possession or taking of both Bald and Golden Eagles through criminal and civil sanctions, as well as an enhanced penalty provision for subsequent offenses. Further, the BGEPA provides for the forfeiture of anything used to acquire eagles in violation of the statute.

Best Fit Alignment: Road widening design that uses symmetrical or asymmetrical widening alignments (or a combination of both) to provide a cost-effective alternative that avoids and minimizes impacts to the natural and human environment.

Best Management Practices (BMPs): Effective, feasible (including technological, economic, and institutional considerations) conservation practices and land and water management measures that avoid or minimize adverse impacts to natural and cultural resources. BMPs may include schedules for activities, prohibitions, maintenance guidelines, and other management practices.



Base Flood Elevation (also known as Regulatory Flood Elevation) (BFE): The flood having a one percent chance of being equaled or exceeded in any given year. The 100-year flood has become the accepted national standard for regulatory purposes. For regulatory purposes, the floodplain is divided into two areas based on water velocity: the floodway and the flood fringe.

Biodiversity: Biodiversity, or biological diversity, is accepted to include genetic diversity within species, species diversity, and a full range of biological community types. The concept is that a landscape is healthy when it includes stable populations of native species that are well distributed across the landscape.

Biogenics: Vegetation sources of volatile organic compounds.

Biological Assessment (BA): The document or study prepared by the lead Federal agency or applicant under Section 7 of the ESA to determine if the Federal action will adversely affect listed species or modify designated critical habitat.

Biological Opinion (BO): A document prepared by USFWS (or National Marine Fisheries Service) that analyzes the effects of a federal action on listed species and designated critical habitat, and states if the action will jeopardize the continued existence of the listed species. If the BO authorizes incidental take, it will include an incidental take statement and terms and conditions that are binding. The USFWS will prepare a BO on whether the action will jeopardize the continued existence of a listed species. The USFWS has 135 days to formulate a final BO which completes formal consultation.

Bureau of Land Management (BLM): The BLM, an agency within the U.S. Department of the Interior, administers 262 million acres of America's public lands, located primarily in 12 Western States. The BLM sustains the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

- C -

Candidate Species: Any species of fish, wildlife, or plant considered for addition to the list of endangered and threatened species. These are taxa for which NOAA Fisheries or USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposal to list, but issuance of a proposed rule is currently precluded by higher priority listing actions.

Capacity Analysis: The use of engineering analytical tools to determine Level of Service for existing or projected traffic volumes. It is used to evaluate degrees of traffic congestion.

Categorical Exclusion (CatEx): A category of actions that do not individually or cumulatively have a significant effect on the human environment and that have been found to have no such effect in procedures adopted by a Federal agency and for which, therefore, neither an EA nor an EIS is required. An agency may decide in its procedures or otherwise, to prepare EAs for the reasons stated in 40 CFR Sec.1508.9 even though it is not required to do so. Any procedures under this section shall provide for extraordinary circumstances in which a normally excluded action may have a significant environmental effect. FHWA actions which typically qualify as Categorical Exclusions are specifically defined at 23 CFR 771.117(a).



Certified Local Governments (CLGs): Local government historic preservation entities participating in the national historic preservation program, certified by the SHPO. Existence may afford property owners in the CLG jurisdiction the opportunity to participate in local (State, county, etc.) preservation incentives (e.g., tax incentives).

Civil Rights Act of 1991: Amends the Civil Rights Act of 1964 to strengthen and improve Federal civil rights laws, to provide damages in cases of intentional employment discrimination, to clarify provisions regarding disparate impact actions, and for other purposes. The purposes of this Act are:

- ▶ To provide appropriate remedies for intentional discrimination and unlawful harassment in the workplace;
- ▶ To codify the concepts of “business necessity” and “job related” enunciated by the Supreme Court in *Griggs v. Duke Power Co.*, 401 U.S. 424 (1971), and in the other Supreme Court decisions prior to *Wards Cove Packing Co. v. Atonio*, 490 U.S. 642 (1989);
- ▶ To confirm statutory authority and provide statutory guidelines for the adjudication of disparate impact suits under title VII of the Civil Rights Act of 1964 (42 U.S.C. 2000e et seq.); and
- ▶ To respond to recent decisions of the Supreme Court by expanding the scope of relevant civil rights statutes to provide adequate protection to victims of discrimination.

Clean Air Act (CAA) of 1990: Growing public awareness and concern for controlling air pollution led to enactment of the Federal Clean Air Act of 1970. As amended in 1990, this law protects and enhances the quality of the nation’s air resources, initiates and accelerates a national research and development program to prevent and control air pollution, provides technical and financial assistance to State and local governments for air pollution control programs, and encourages and assists regional air pollution control programs.

Clean Water Act (CWA): Growing public awareness and concern for controlling water pollution led to enactment of the Federal Water Pollution Control Act Amendments of 1972. As amended in 1977, this law became commonly known as the Clean Water Act. The Act established the basic structure for regulating discharges of pollutants into the waters of the United States. It gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry. The Clean Water Act also continued requirements to set water quality standards for all contaminants in surface waters. The Act made it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit was obtained under its provisions. It also funded the construction of sewage treatment plants under the construction grants program and recognized the need for planning to address the critical problems posed by non-point source pollution.

Conditional Letter of Map Revision (CLOMR): FEMA’s review comments on whether a proposed project complies with NFIP criteria.

Code of Federal Regulations (CFR): The CFR is a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal government. The CFR is divided into 50 titles that represent broad areas subject to Federal regulation. Each title is divided into chapters that usually bear the name of the issuing agency. Each chapter is further subdivided into parts covering specific regulatory areas. Large parts may be



subdivided into subparts. All parts are organized in sections, and most citations to the CFR will be provided at the section level.

Colorado Discharge Permit System (CDPS): EPA handed the stormwater regulatory authority for the NPDES program to the State of Colorado. CDPS is Colorado's version of the NPDES program.

Comment Period: The period whereby a State or Federal agency requests public and other agency review input on a NEPA document.

Community Impact Assessment (CIA): A process to evaluate the effects of a transportation action on a community and its quality of life. The assessment process should include all items of importance to people, such as mobility, safety, employment effects, relocation, isolation, and other community issues.

Compensatory Mitigation: The restoration, establishment, enhancement, or in exceptional circumstances, preservation of wetlands and/or other aquatic resources expressly for compensating for unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization have been achieved. (Refer to **Mitigation Bank**.)

Conformity: Refers to air quality conformity regulated through 40 CFR 93 to assure attainment of criteria air pollutant standards set by the EPA for the purposes of protecting human health, and the natural and man-made environments. Projects are in conformity when they do not:

- ▶ Cause or contribute to any new violation of any standards in any area;
- ▶ Increase the frequency or severity of any existing violation of any standard in any area; or
- ▶ Delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

Context Sensitive Solutions (CSS): A collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. CSS is an approach that considers the total context within which a transportation improvement project will exist. CSS is also called Context Sensitive Design.

Cooperating Agency: Any Federal agency other than a lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal. 40 CFR Sec. 1501.6 describes the selection and responsibilities of a cooperating agency. A State or local agency of similar qualifications or, when the effects are on a reservation, an Indian Tribe, may by agreement with the lead agency become a cooperating agency.

Council on Environmental Quality (CEQ): Established by Congress within the Executive Office of the President as part of NEPA, the CEQ coordinates Federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives. The Council's Chair, who is appointed by the President with the advice and consent of the Senate, serves as the principal environmental policy adviser to the President. The CEQ reports annually to the President on the state of the environment, oversees Federal agency implementation of the environmental impact assessment process, and acts as a referee when agencies disagree over the adequacy of such assessments.



Critical Habitat: An ecosystem or part of an ecosystem designated by the USFWS needing conservation or other protective measures to ensure the survival and potential recovery of a threatened or endangered species. Critical habitat is required to be designated at the time a species is listed under the ESA unless designation would not be prudent or the critical habitat is not determinable.

Cultural Resource: Cultural resources include archeological sites, traditional sites, and the built environment resources, such as buildings, structures, objects, districts, and sites. A cultural resource that is listed on, or is eligible for, the National Register of Historic Places (NRHP) is considered a historic property for purposes of Section 106.

Cumulative Impact/Effect: Impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

- D -

Decision Document: Identifies the selected alternative.

***de minimis* Impact:** A category of impacts to Section 4(f) resources established in SAFETEA-LU whose impacts are of such a minor extent as to not require a full Section 4(f) evaluation.

Department of Transportation (DOT): Established by an act of Congress on October 15, 1966. The mission of the DOT is to serve the United States by ensuring a fast, safe, efficient, accessible, and convenient transportation system that meets our vital national interests and enhances the quality of life of the American people, today and into the future. The DOT's vision is to lead the way to transportation excellence and innovation in the 21st Century.

Design-Build Process: A construction project that combines two usually separate services into a single contract. Design-build allows an agency to contract a team of both designers and a contractor to simultaneously design and construct a project. The design-build entity may be a single firm, a consortium, joint venture, or other organization assembled for a particular project.

Determination of Eligibility: Formal recognition (by the SHPO, State Advisory Council, the Keeper of the National Register, or an agency) of a property's eligibility for inclusion, but not actual listing, in the NRHP. Determinations of Eligibility may be prepared on National Register Registration Forms.

Direct Impact/Effect: A direct impact (or effect) is caused by the proposed action or alternative and occurs at the same time and place, most often during construction. Impacts may be ecological, aesthetic, historic, cultural, economic, social, or health related. For example, a highway crossing a stream may directly impact its water quality, though such impacts can be mitigated.

Disproportionately High and Adverse Impact: The adverse impact is disproportionately high if it is predominately borne by a minority and/or low-income population, or if the adverse impact that could be suffered by the minority or low-income community is more severe or greater in magnitude than the adverse impact that could be suffered by the non-minority or non-low-income community. Cultural differences need to be factored into this analysis.



Disturbed/Maintained Land: A general land use category contained in environmental documents that includes lawns, parking lots, cleared areas, and other properties which have been substantially altered or developed. It does not include terrestrial forests, wetlands, prime farmlands, and other specific natural resource land uses.

Draft Environmental Impact Statement (DEIS): The preliminary environmental document prepared by a State or Federal agency on the environmental impacts of its project and/or program proposals. Refer to 23 CFR 771.115 for the general FHWA criteria for preparing DEISs and to 23 CFR 771.123 for the procedures for issuance.

- E -

Easement: Access given to individuals other than the owner, allowing them to use a property for a specific purpose. Examples include temporary construction and utility easements.

Effects: The CEQ regulations (40 CFR Sec. 1508.8) define types of effects that should be evaluated under NEPA. “Effects” include:

- ▶ Direct effects, which are caused by the action and occur at the same time and place; and
- ▶ Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Effects and impacts as used in these regulations are synonymous. Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.

Endangered Species: Species identified by either the State or the Federal government as likely to be in danger of becoming extinct through a significant portion of or all its range.

Endangered Species Act: Provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved and a program for the conservation of such endangered species and threatened species. All Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of the Endangered Species Act. Federal agencies shall also cooperate with State and local agencies to resolve water resource issues in concert with conservation of endangered species.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of a wetland site to heighten, intensify or improve specific function(s) or to change the growth stage or composition of the vegetation present. Enhancement is undertaken for specified purposes such as water quality improvement, flood water retention or wildlife habitat. Activities typically consist of planting vegetation, controlling non-native or invasive species, modifying site elevations or the proportion of open water to influence hydroperiods, or some combination of these. Enhancement results in a change in wetland functions and can lead to a decline in other wetland functions but does not result in a gain in wetland acres.



Environmental Assessment (EA): A concise public document for which a Federal agency is responsible that serves to briefly provide sufficient evidence and analysis for determining whether to prepare an EIS or a FONSI; aid an agency’s compliance with NEPA when no EIS is necessary; and facilitate preparation of an EIS when one is necessary. Includes brief discussions of the need for the proposal, of alternatives as required by section 102(2)(E) of the NEPA, of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted. The FHWA criteria and procedures for EAs are contained at 23 CFR 771.115 and 771.119.

Environmental Features Map: A topographic or photogrammetric map of the study area illustrating resource areas of concern, both natural and human environment. This mapping is used to identify alternatives that warrant study on a screening level basis.

Environmental Impact: See Direct Effects and Indirect Effects

Environmental Impact Statement (EIS): A detailed written statement prepared for major Federal actions that may cause significant impacts on the environment. It shall provide full and fair discussion of significant environmental impacts and shall inform decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment. Agencies shall focus on significant environmental issues and alternatives and shall reduce paperwork and the accumulation of extraneous background data. Statements shall be concise, clear, and to the point, and shall be supported by evidence that the agency has made the necessary environmental analyses. An EIS is more than a disclosure document. It shall be used by Federal officials in conjunction with other relevant material to plan actions and make decisions.

Environmental Justice (EJ): A 1994 Presidential Executive Order that directed every Federal agency to make environmental justice part of its mission by identifying and addressing the effects of all programs, policies, and activities on “minority populations and low-income populations.” The DOT’s environmental justice initiatives accomplish this goal by involving the potentially affected public in developing transportation projects that fit harmoniously within their communities without sacrificing safety or mobility. There are three fundamental environmental justice principles:

- ▶ To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- ▶ To ensure the full and fair participation by all potentially affected communities in the transportation decision making process.
- ▶ To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

Environmental Justice Screen (EJSCREEN): Environmental Justice Screen (EJSCREEN) is EPA’s web-based GIS tool that allows for nationally consistent EJ screening and mapping, combining environmental and demographic data to highlight where vulnerable populations may be disproportionately impacted by pollution. The tool features 11 EJ indices (one for each environmental indicator) based on annually updated, high-resolution environmental and demographic data. EJSCREEN uses block group-level ACS Census data, all of which are available for download.



Environmental Protection Agency (EPA): Provides leadership in the nation’s environmental science, research, education, and assessment efforts. EPA is responsible for researching and setting national standards for a variety of environmental programs and delegates to States and tribes responsibility for issuing permits, and monitoring and enforcing compliance. Where national standards are not met, EPA can issue sanctions and take other steps to assist the States and tribes in reaching the desired levels of environmental quality. EPA also works with industries and all levels of government in a wide variety of voluntary pollution prevention programs and energy conservation efforts.

Environmental Stewardship: A general Federal and State initiative that demonstrates the care and commitment for preserving and enhancing the natural and human environment in delivering and maintaining an improved transportation system.

Environmental Streamlining: Enacted into legislation for highway and transit projects with TEA-21, environmental streamlining is the term used for a new way of doing business that brings together the timely delivery of transportation projects with the protection and enhancement of the environment. In its simplest terms, environmental streamlining consists of cooperatively establishing realistic project development time frames among the transportation and environmental agencies, and then working together cooperatively to adhere to those time frames. Because major transportation projects are affected by dozens of Federal, State, and local environmental requirements administered by a multitude of agencies, improved interagency cooperation is critical to the success of environmental streamlining.

Environmentally Preferable Alternative: The alternative within the range of alternatives presented in a Draft EIS that best promotes the goals of NEPA. In general, this is the alternative that causes the least damage to the environment and best protects natural and cultural resources. In practice, one alternative may be preferable for some environmental resources while another alternative may be preferable for other resources. Note that identifying this alternative is also a requirement for Records of Decision (RODs) [40 CFR 1505.2(b)].

Executive Order (EO): Official documents, numbered consecutively, through which the President manages the operations of the Federal government.

- F -

Farmland Conversion Impact Rating: A NRCS method of determining prime and unique farmland impacts from a project based on 12 site assessment criteria. The environmental document should identify agricultural lands that score 160 points or more. The document should analyze alternatives that avoid impacts to such farmlands.

Federal Emergency Management Agency (FEMA): An independent agency of the Federal government, reporting to the President. Since its founding in 1979, FEMA’s mission has been to reduce loss of life and property and protect our nation’s critical infrastructure from all types of hazards through a comprehensive, risk-based, emergency management program of mitigation, preparedness, response, and recovery.

Federal Highway Administration (FHWA): A part of the USDOT headquartered in Washington, D.C. with the mission to enhance mobility through innovation, leadership, and public service. FHWA provides expertise, resources, and information to continually improve the quality of our nation’s highway system and its intermodal connections. FHWA undertakes this mission to enhance the



country's economic vitality, quality of life, and the environment. The services FHWA provides are designed to meet the present-day transportation needs while laying the foundation to address the future transportation needs of our Nation.

Federal Highway Administration Directive: A written communication that prescribes or establishes policy, organization, methods, procedures, requirements, guidelines, or delegations of authority. It also provides information essential to the administration or operation of the FHWA.

Federal Highway Administration Policy Memorandums: Official FHWA issuances that establish new and/or revised policy and guidance for implementing the requirements related to FHWA's programs.

Federal Lead Agency: The agency preparing or having taken primary responsibility for preparing an environmental document. Where Federal-aid funding is anticipated, the USDOT (FHWA) shall be the Federal Lead Agency in the environmental review process for a project.

Federal Nexus: A project has a Federal nexus when there is a connection with the Federal government (i.e., when any of the following occur: Federal land is within the project area, Federal money is used in the project, or Federal permits or approvals are required as part of the undertaking).

Federal Species of Concern: A plant or animal species that may or may not be listed under the Endangered Species Act as threatened or endangered in the future. Typically, federal species of concern can include those plants and animals that are uncommon to rare, there is insufficient information to include them for listing, or have specific needs or diminishing habitat and may be candidates for future listing under the ESA. Section 7 of the ESA does not afford these species Federal protection.

Federal Transit Administration (FTA): Administers a program of financial assistance for the providers of urban and rural public mass transportation. The mission of FTA is to provide leadership, technical assistance, and financial resources for safe, technologically advanced public transportation which enhances all citizens' mobility and accessibility, improves America's communities and natural environment, and strengthens the national economy. The statutory authority for FTA's programs is the Federal Transit Act, as amended.

Field Inspection Review (FIR): The review of preliminary construction plans that signifies the end of preliminary design. The goal of the FIR is to resolve outstanding issues and establish specific criteria and direction to be used in final design of the project.

Final Environmental Impact Statement (EIS): The final environmental document for a project or program action incorporating and addressing substantial concerns identified by the public or from review agencies following the issuance of the DEIS. 23 CFR 771.125 specifies FHWA requirements.

Finding of Effect: A determination by a federal agency in consultation with SHPO, pursuant to Section 106 that a proposed undertaking will have an effect on historic properties.



Finding of No Significant Impact (FONSI): A document by a Federal agency briefly presenting the reasons why an action, not otherwise excluded, will not have a significant effect on the human environment and for which an EIS. Therefore, will not be prepared. It shall include the EA or a summary of it and shall note any other environmental documents related to it. If the assessment is included, the finding need not repeat any of the discussion in the assessment but may incorporate it by reference. 23 CFR 771.121 specifies FHWA requirements.

Floodplains: The riverside land that is periodically inundated by a river's floodwaters is called the floodplain. Floodplains serve important purposes. They temporarily store floodwaters, improve water quality, provide important habitat for river wildlife, and create opportunities for recreation.

Floodway: The channel of a river or stream and the adjacent area that must be reserved to discharge the 100-year flood without cumulatively increasing the water surface elevation more than one foot.

Final Office Review (FOR): The final review conducted for all projects, of the complete set of construction plans, specifications, and the cost estimate, to ensure completeness and accuracy.

Functional Design (Conceptual Design): Very general highway design that includes horizontal and vertical alignments, edge of pavement, construction limits and right of way limits for all alignments, intersections, and interchanges within a study corridor. Functional designs are prepared on orthophotography with GIS features after project Purpose and Need is established (Concurrence Point No. 1). Functional Designs are prepared to determine constructability, estimate human and environmental impacts, and establish a project cost.

- G -

Geographic Information Systems (GIS): Tools (including computer programs) used to gather, transform, manipulate, analyze, and produce information related to the surface of the Earth. Maps, 3-D models, tables, and/or lists may represent this information.

Geology: The study of the structure of the Earth or another planet, in particular its rocks, soil, and minerals, and its history and origins.

Greenhouse Gas Project-Level Analysis Guidance (GHG-PLAG): The GHG-PLAG describes the content and presentation of GHG requirements for CDOT NEPA documents.

Groundwater: Water that occurs below the surface of the earth, contained in pore spaces. It is either passing through or standing in the soil and underlying strata and is free to move under the influence of gravity.



- H -

Habitat Fragmentation: A potential effect to wildlife species beyond direct project impacts that may fragment needed habitat for species survival. Many animals require a range of resources that are naturally patchy and therefore need to move around between resource sites. Linear projects, such as new rail lines and highway projects, can cause extensive fragmentation of wildlife habitat and result in isolated and degraded wildlife populations or increased mortality rates through direct conflicts. Wildlife passages constructed for highway projects are one potential method of minimizing direct impacts from fragmentation.

Hazardous Material: A substance or combination of substances that, because of quantity, concentration, or physical, chemical, or infectious characteristics, may either:

- ▶ Cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating illness; or
- ▶ Pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Hazardous Substance: Hazardous substances designated in 40 CFR 116 pursuant to Section 311 of the Clean Water Act include any materials that pose a threat to public health or the environment. Typical hazardous substances have one or more of the following characteristics: toxicity, corrosivity, ignitability, explosivity, and chemical reactivity. Federal regulation of hazardous substances excludes petroleum, crude oil, natural gas, natural gas liquids or synthetic gas usable for fuel. State regulation of hazardous substances includes petroleum products.

Hazardous Waste: Hazardous materials that no longer have practical use, such as substances that have been discarded, spilled, or contaminated, or that are being stored temporarily before proper disposal.

High Occupancy Vehicle (HOV) Lanes: A network of barrier-separated roadways that allow buses, vanpools, and carpools to move higher volumes of passengers on roadways.

Historic Property: Under the NHPA, any district, site, building, structure, or object included in or eligible for the NRHP.

Human Environment: Interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment.

- I -

Improve Existing (Widen Existing): Option that involves improvements to the existing roadway, as an alternative to a road on new location.

Indirect Impacts/Effects: Indirect impacts (or effects) caused by the proposed action or alternative that are later in time or farther removed in distance, but still reasonably foreseeable. May include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems.



Infrastructure Investment and Jobs (IIJA): Also known as the “Bipartisan Infrastructure Law” (BIL). Signed on November 15, 2021. The IIJA focuses on more direct funding opportunities for local governments, as well as expanding the types of infrastructure improvements eligible for funding including multimodal, electric vehicle, and carbon emission reduction type projects.

Infrastructure Voluntary Evaluation Sustainability Tool (INVEST): A web-based tool that includes a “collection of voluntary best practices, called criteria, designed to help transportation agencies integrate sustainability into their programs and projects.” This tool is referred to as the Infrastructure Voluntary Evaluation Sustainability Tool or INVEST. FHWA developed INVEST to help make the nation’s transportation systems more sustainable - economically, socially, and environmentally. INVEST was created specifically for transportation agencies to evaluate the sustainability of the full lifecycle of their highway and transportation projects and programs.

Intelligent Transportation System (ITS): An integrated application of a wide range of advanced technologies and ideas, which, in combination, can improve mobility and transportation productivity, enhance safety, maximize the capacity of existing transportation facilities, conserve energy resources and reduce adverse environmental effects and transportation problems.

Interagency Agreement (IAG): A general term used to denote a form of legal contract between two government organizations. As a Federal contract instrument, an IAG is different from MOUs or MOAs in that there are typically monetary considerations for agreed to services in an IAG.

Intergovernmental Agreements (IGA): The process of determining and settling project obligations between the State and local agencies (city, county, etc.). They address such issues as funding and cost responsibilities, maintenance responsibilities, transfer of jurisdiction of roadway from one agency to another, criteria for local land use and access management decisions, etc.

Intermodal: Interconnectivity between various transportation types (modes).

Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA): On December 18, 1991, the President signed the ISTEA providing authorizations for highways, highway safety, and mass transportation for the next 6 years. The purpose of the ISTEA is clearly enunciated in its statement of policy: “to develop a National Intermodal Transportation System that is economically efficient, environmentally sound, provides the foundation for the Nation to compete in the global economy and will move people and goods in an energy efficient manner.”

Intermodal Surface Transportation Efficiency Act Management Systems: Systems intended to provide additional information and improved analysis to support development of metropolitan and statewide transportation plans, programs, and projects. In particular, management systems are expected to improve the establishment of project funding priorities across modes and the analysis of trade-offs among the full range of potential transportation investments being considered.

Interstate Access Request (IAR): The Federal Highway Administration (FHWA) has retained all approval rights to the control of access to the interstate system. To obtain approval from FHWA to access the interstate, a request for access must be submitted to FHWA through the CDOT. FHWA access approval is required when access on the interstate system is added or modified. This applies to all access changes on the interstate system regardless of funding and oversight. Each entrance or exit point, including “locked gate” and temporary construction access, to the mainline interstate is considered an access point. This guidance is limited to new interchanges, modifications to existing



interchanges involving access control revisions for new ramps, or relocation or elimination of existing ramps.

Invasive (Nuisance) Species: An alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.

Isolated Wetland: A wetland that is not adjacent to, or does not have a surface water connection to, navigable waters, tributaries to navigable waters, or non-isolated wetlands; unless it has a clear nexus (link) to interstate commerce, it is not normally regulated by the USACE under Section 404.

- J -

Jeopardy: A significant adverse effect on listed species or critical habitat to the extent that USFWS determines that the proposed action would jeopardize the continued existence of the listed species under the Endangered Species Act.

Joint Lead Agency: More than one agency can be a Joint Lead Agency. Any project sponsor that is a State or local governmental entity receiving funds under Title 23 U.S. Code or Chapter 53 of Title 49 U.S. Code for the project shall serve as a joint lead agency with the USDOT/FHWA for purposes of preparing any environmental document under the NEPA and may prepare any such environmental document required in support of any action or approval by the Secretary if the Federal lead agency furnishes guidance in such preparation and independently evaluates such document and the document is approved and adopted by the Secretary prior to the Secretary taking any subsequent action or making any approval based on such document, whether or not the Secretary's action or approval results in Federal funding.

Jurisdiction By Law: Agency authority to approve, veto, or finance all or part of the proposal.

Jurisdictional Wetlands: All naturally occurring wetlands, wetlands unintentionally created as the result of construction activities, and those created specifically for the compensation of wetland losses. However, not all wetlands created for compensation purposes are jurisdictional. They still must maintain a "significant" nexus to a water of the U.S. These wetlands are regulated by the USACE and local jurisdictions.

- L -

Land Use Plan: A plan that establishes strategies for the use of land to meet identified community needs.

Land and Water Conservation Fund (LWCF) Act: State and local governments often obtain grants through the LWCF to develop or make improvements to parks and outdoor recreation areas. Section 6(f) of the LWCF prohibits the conversion of property acquired or developed with these grants to a non-recreational purpose without the approval of the DOI's National Park Service (NPS)

Lead Agency: Lead agency means the agency or agencies preparing or having taken primary responsibility for preparing the EIS.



Least Environmentally Damaging Practicable Alternative (LEDPA): The practicable alternative that minimizes impacts to aquatic resources, considering impacts to listed species and other aspects of the human environment.

Legislation: A bill or legislative proposal to Congress developed by or with the significant cooperation and support of a Federal agency but does not include requests for appropriations. The test for significant cooperation is whether the proposal is in fact that of the agency rather than another source. Drafting does not by itself constitute significant cooperation. Proposals for legislation include requests for ratification of treaties. Only the agency that has primary responsibility for the subject matter involved will prepare a legislative EIS.

Letter of Map Change (LOMC): The combined term for the two letters that are issued by FEMA for projects located within a floodplain: CLOMR and LOMR.

Letter of Map Revision (LOMR): FEMA's review of the as-built conditions of a constructed project and the associated changes to the floodplain. A LOMR results in an official change to the Flood Insurance Rate Maps and Flood Insurance Studies report.

Level of Service (LOS): LOS refers to the overall quality of traffic flow at an intersection or mainline section. Levels range from very good, represented by LOS A, to very poor, represented by LOS F. LOS C or better operating conditions are typically considered acceptable.

Listed Animal or Plant Species: Refers to a species that is listed as a State or Federal threatened or endangered species. Before a plant or animal species can receive legal protection, it must first be placed on the state or federal list of threatened or endangered species.

Logical Termini: Logical termini for project development are defined as (1) rational end points for a transportation improvement, and (2) rational end points for a review of the environmental impacts.

Long-range Transportation Plan (LRTP): A long-range strategy and capital improvement program developed to guide the effective investment of public funds in transportation facilities. The plan is updated every five years and may be amended because of changes in projected Federal, State, and local funding, major improvement studies, congestion management system plans, interstate interchange justification studies and environmental impact studies.

Low-income: A person whose median household income is at or below the Department of Health and Human Services poverty guidelines for that size of household.

Low-income Population: Any readily identifiable group of low-income persons who live in a geographic area, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who would be similarly affected by a proposed USDOT program, policy, or activity.



- M -

Major Federal Action: Actions with effects that may be major and which are potentially subject to Federal control and responsibility. Major reinforces but does not have a meaning independent of significantly. Actions include the circumstance where the responsible officials fail to act and that failure to act is reviewable by courts or administrative tribunals under the Administrative Procedure Act or other applicable law as agency action.

- (a) actions include new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by Federal agencies; new or revised agency rules, regulations, plans, policies, or procedures; and legislative proposals. Actions do not include funding assistance solely in the form of general revenue sharing funds, distributed under the State and Local Fiscal Assistance Act of 1972, 31 U.S.C. 1221 et seq., with no Federal agency control over the subsequent use of such funds. Actions do not include bringing judicial or administrative civil or criminal enforcement actions.
- (b) Federal actions tend to fall within one of the following categories:
 - (1) Adoption of official policy, such as rules, regulations, and interpretations adopted pursuant to the Administrative Procedure Act, 5 U.S.C. 551 et seq.; treaties and international conventions or agreements; formal documents establishing an agency's policies which will result in or substantially alter agency programs.
 - (2) Adoption of formal plans, such as official documents prepared or approved by Federal agencies which guide or prescribe alternative uses of Federal resources, upon which future agency actions will be based.
 - (3) Adoption of programs, such as a group of concerted actions to implement a specific policy or plan; systematic and connected agency decisions allocating agency resources to implement a specific statutory program or executive directive.
 - (4) Approval of specific projects, such as construction or management activities located in a defined geographic area. Projects include actions approved by permit or other regulatory decision as well as Federal and Federally assisted activities.

Major Structures: Bridges, retaining walls, tunnels, and large reinforced concrete culverts.

May Affect - Not Likely to Adversely Affect: A finding that a project may cause an effect to a listed species, but the effect is wholly beneficial, discountable, or negligible.

Moving Ahead for Progress in the 21st Century (MAP-21): The Federal surface transportation legislation (Public Law 112-141) that authorizes funding for surface transportation programs for fiscal years 2013 into 2015.

Metropolitan Planning Organization (MPO): A regional policy body, required in urbanized areas with populations over 50,000, responsible for carrying out the metropolitan planning requirements of Federal highway and transit legislation in cooperation with State and other transportation providers; develops transportation plans and programs for the metropolitan area.

Minimization: Minimization involves measures developed during the planning phase of a project to reduce proposed impacts to a resource. Minimization measures could include alignment shifts.



Minority: A person who is:

- ▶ Black (a person having origins in any of the Black racial groups of Africa);
- ▶ Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or the Spanish culture or origin, regardless of race);
- ▶ Asian (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or
- ▶ American Indian or Alaskan Native (a person having origins in any of the original peoples of North America, and who maintains cultural identification through tribal affiliation or community recognition).

Minority Population: Any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy, or activity.

Mitigation: “Mitigation” includes:

- ▶ Avoiding the impact altogether by not taking a certain action or parts of an action.
- ▶ Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- ▶ Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- ▶ Preservation.
- ▶ Compensating for the impact by replacing or providing substitute resources or environments (40 CFR Sec. 1508.20).

Mitigation Bank:

- ▶ A site where wetlands and/or other aquatic resources are restored, established, enhanced, or in exceptional circumstances, preserved expressly for providing compensatory mitigation in advance of authorized impacts to similar resources. For the purposes of Section 10/404, use of a mitigation bank may only be authorized when impacts are unavoidable.
- ▶ Wetland restoration, establishment, enhancement, and in exceptional circumstances, preservation, and contributions to such activities, undertaken expressly for compensating for unavoidable wetland impacts or losses due to construction of one or more (highway) projects. Mitigation banks are usually developed in advance of project construction for situations when compensatory mitigation cannot be achieved on-site or where on-site mitigation would not be as environmentally beneficial.

Mobility: The efficient operation of the multi-modal transportation system infrastructure by maximizing the throughput of vehicles or people traveling in a given corridor.

Motor Vehicle Emission Simulator (MOVES): An air quality pollutant emissions calculation software at the project level scale used to estimate daily cumulative pollutant emissions.



- N -

Noise Analysis and Abatement Guidelines (NAAG): The NAAG contains detailed guidance on evaluation and documentation for traffic noise, including the noise thresholds called Noise Abatement Criteria (NAC).

National Ambient Air Quality Standards (NAAQS): Levels of air pollutants prescribed by regulations that may not be exceeded. EPA establishes National Ambient Air Quality Standards for major pollutants, including (ground-level) ozone, particulate matter, carbon monoxide, sulfur dioxide and nitrogen dioxide.

National Environmental Policy Act of 1969 (NEPA): The Federal law that establishes the U.S. government policy towards the environment. NEPA's fundamental policy is to "encourage productive and enjoyable harmony between man and his environment." Federal agencies are required to assess the environmental impacts of their proposed actions.

National Highway System (NHS): The Interstate System, as well as other roads important to the nation's economy, defense, and mobility; developed by the USDOT in cooperation with the States, local officials, and metropolitan planning organizations.

National Historic Preservation Act of 1966 (NHPA): An act to establish a program for the preservation of additional historic properties throughout the nation. Authorizes the Secretary of the Interior to maintain a National Register of Historic Places; directs the Secretary to approve state historic preservation programs that provide for a State Historic Preservation Officer with adequate qualified professional staff, a state historic preservation review board, and public participation in the state program; authorizes a matching grants-in-aid program to the states; directs federal agencies to take into account the effects of their activities and programs on historic properties; establishes the Advisory Council on Historic Preservation to advise the President, Congress, and federal agencies on historic preservation matters; gives the Advisory Council the authority to issue regulations instructing federal agencies on how to implement Section 106 of the act; establishes the Certified Local Government program; establishes a National Historic Preservation Fund program; and codifies the National Historic Landmarks program.

National Pollutant Discharge Elimination System (NPDES) Permit: A Federal permit issued for point source (end of pipe) discharges under the NPDES [per Section 402 of the Clean Water Act]; also used to regulate stormwater discharges from certain urban areas and developing counties.

National Register of Historic Places (NRHP): The nation's official list of cultural resources worthy of preservation. Properties listed in the NRHP include districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture. The NRHP is administered by the National Park Service, which is part of the USDOT. Section 106 of the NHPA applies to resources listed in or eligible for listing in the NRHP.

Natural Resource Conservation Service (NRCS): A Federal agency that provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.



National Wetlands Inventory (NWI): The NWI of the USFWS produces information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats. Congressional mandates in the Emergency Wetlands Resources Act require USFWS to map wetlands, and to digitize, archive and distribute the maps. With funding from other Federal, State, Tribal, local and private organizations, the USFWS has produced final maps for much of the nation. Approximately half are digitized and available to the public on the internet. Hard-copy maps are available through Cooperator-run Distribution Centers. A Congressional mandate also requires USFWS to produce status and trends reports to Congress at 10-year intervals. NWI maps and digital data are distributed widely throughout the country and the world. NWI wetlands status and trends and other reports are used widely and referenced in policy decisions.

Nationwide Permit/Nationwide General Permit: General permits are USACE authorizations that are issued on a nationwide or regional basis for a category or categories of activities. This refers to both those regional permits issued by District or Division Engineers on a regional basis and to nationwide permits that are issued by the Chief of Engineers through publication in the Federal Register. Nationwide Permits are general permits issued on a nationwide basis to authorize minor activities with minimal evaluation time. The thresholds for the impacts and the types of activities allowed under the Nationwide Program are established as national policy.

Native Plant: Any plant species that is indigenous to the state of Colorado.

New Location: A proposed alternative that does not use the alignment or right-of-way of an existing roadway or corridor.

No Action Alternative: The alternative in a plan that proposes to continue current management direction. "No action" means the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative activity to go forward.

No-Build Alternative: The proposed action would not take place and the resulting environmental effects from taking no action would be compared with the effects of the build alternatives. It also serves as a baseline for comparison to the proposed build alternatives.

Noise Abatement Criteria (NAC): The noise level above which projects will require consideration of noise abatement measures when studies identify a noise impact.

Non-Attainment: Designated areas of the country where air pollution levels persistently exceed the National Ambient Air Quality Standards for ozone (1-hour and 8-hour), carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter (PM₁₀ and PM_{2.5}) or lead.

Non-jurisdictional Wetlands: Those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, canals excavated in uplands, stormwater detention ponds, wastewater treatment facilities created in uplands, and certain agricultural activities and landscape amenities created in uplands. Grass-lined swales and wastewater treatment facilities can be constructed in wetlands but must be so designated and specifically designed for water treatment purposes. Mitigation is required to compensate for the wetland lost to such a facility. Non-jurisdictional wetlands do not have to be artificial; for example, prairie potholes or other depressional wetlands not connected to a water of the U.S. can be non-jurisdictional wetlands.



Non-Point Source: Any source of pollution that enters the environment through some means other than a discrete conveyance, such as a pipe from a sewage treatment plant. Non-point source pollution is diffuse in character. The main form of non-point source pollution is the polluted runoff that drains into our streams, rivers, lakes, and estuaries.

Notice of Intent (NOI): An announcement published in the Federal Register that informs the public that an EIS is required to be prepared to address a project's potential environmental impacts. The FHWA Division prepares the NOI in accordance with 23 CFR Part 771.123 and 40 CFR Part 1508.22 as soon as a decision has been reached to prepare an EIS. The NOI briefly describes the project and study area, its purpose and need, preliminary alternatives (if there are any identified), the agency contact person (name and address), and what the chief environmental issues should be. A NOI is only issued for projects requiring the preparation of an EIS once the Lead Federal Agency (i.e., FHWA) has made its determination.

Noxious Weed: Any plant or part of a plant that is not native to Colorado and has been designated by rule as being noxious or has been declared a noxious weed by the Colorado Department of Agriculture or a local advisory board, and meets one or more of the following criteria:

- (a) Aggressively invades or is detrimental to economic crops or native plant communities;
- (b) Is poisonous to livestock;
- (c) Is a carrier of detrimental insects, diseases, or parasites;
- (d) The direct or indirect effect of the presence of this plant is detrimental to the environmentally sound management of natural or agricultural ecosystems.

Noxious Weed Management Plan: A document which identifies species and locations of noxious weeds in a project area and details the planning and implementation of an integrated program to control noxious weed species.

- O -

Obliterate: To remove all or part of the roadway and/or pavement.

Off-site Mitigation: Off-site mitigation may be used when there is no practicable opportunity for on-site mitigation, or when off-site mitigation is environmentally preferable. According to pending Federal guidance, one of the best tools for determining when off-site or out-of-kind mitigation is environmentally preferable is a holistic watershed plan. However, the TEA-21 preference is for wetland banking unless locally important wetland functions will be lost if banking is chosen. After banking, the preference would be on-site mitigation and off-site as a last resort.

On-site Mitigation: On-site, in-kind mitigation means compensatory mitigation which replaces wetlands or natural habitat area or functions lost because of a highway project with the same or like wetland or habitat type and functions adjacent or contiguous to the site of the impact.



One Federal Decision (OFD): An Executive Order requiring Federal agencies to process environmental reviews and authorize decisions for “major infrastructure projects” (i.e., designating a single lead Federal agency and completing a single NEPA decision document). This Executive Order also set a government-wide goal of reducing the average time for each agency to complete the required environmental reviews and authorization decisions for major infrastructure projects to two years.

Origin/Destination (O/D) Study: Study of travel patterns for a town/city/region in which households or vehicles (depending on study type) are asked questions related to their daily travel. Examples of data may include type of trip, length of trip, time of day and starting and ending points of trips. Data collected allows for calibration of a travel demand model to the traveler characteristics of an area.

Orthophotography: A digital image that has been differentially rectified to within a specific 2-dimensional geospatial accuracy and resolution that accounts for image distortion due to camera orientation, image orientation parameters, lens distortion, and earth surface topography. Digital orthophotography has an x, y coordinate system and typical resolutions of 0.5-inch, 1-foot, and 2-feet.

Official with Jurisdiction (OWJ): During a Section 6(f) analysis, the OWJ must be consulted with and a request for concurrence of the stated findings regarding impacts and mitigation measures provided.

- P -

Participating Agencies: Participating agencies, as defined by SAFETEA-LU, are those Federal or non-Federal agencies that may have an interest in the project. The standard for participating agency status is more encompassing than the standard for cooperating agency status described above. Therefore, cooperating agencies are, by definition, participating agencies. But not all participating agencies are cooperating agencies. The lead agencies should consider the distinctions in deciding whether to invite an agency to serve as a cooperating/participating agency or only as a participating agency.

Peak Hour: The 1-hour period during which the roadway carries the greatest number of vehicles. Traffic impacts are typically evaluated during the morning and afternoon peak hours when the greatest number of motorists are traveling to and from work.

Planning and Environmental Linkage (PEL): A PEL is a flexible study process used to identify transportation issues, priorities, and environmental concerns.

Phased Projects: Larger projects, which are divided into segments and are funded at different timeframes for right-of-way acquisition and construction.

Point Source: Readily identifiable inputs where waste is discharged to the receiving waters from a pipe or drain.

Preferred Alternative: A term for the alternative, which the lead agency believes would fulfill its statutory mission and responsibilities, considering social, economic, environmental, technical, and



other factors. While the preferred alternative is a different concept from the environmentally preferable alternative, they may also be the same for some projects.

Preliminary Design: Specific design that includes horizontal and vertical alignment, edge of pavement, construction limits, roadway superelevation and right-of-way limits. Preliminary designs are prepared on preliminary mapping to evaluate constructability, impacts to the human and natural environment and to re-establish project cost.

Prime (or Unique) Farmlands: Land classified under the FPPA that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor and without intolerable soil erosion. Unique farmland is land other than prime farmland that is used to produce specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, fruits, and vegetables.

Project Study Area: The area between logical termini in which alternatives can be developed that meet the Purpose and Need for the proposed improvement.

Proposed Action: The proposed project, for example: bridge, interchange, bypass, new highway lane, etc.

Public Comment Process: The public comment process is a formalized process required by the NEPA in which a Notice of Availability must be published in the Federal Register which provides public notice that a Draft EIS and associated information, including scoping comments and supporting documentation, is available for public review and input pursuant to the Freedom of Information Act. In addition, formal public hearings must be conducted on the Draft EIS when required by statute or the CEQ NEPA Regulations.

Public Hearing: A public proceeding conducted to acquire information or evidence that will be considered in evaluating a proposed transportation project and/or a Department of the Army permit action and that affords the public an opportunity to present their views, opinions, and information on such projects and permit actions.

Public Scoping Process: Scoping is a formalized process used to gather the public's and other agencies' ideas and concerns on a proposed action or project. A NOI is published in the Federal Register announcing the agency's intent to prepare an EIS and a request for written public/other agency scoping comments to further define the goals and data needs for the project. In addition, although not required by the NEPA nor the CEQ NEPA Regulations, public scoping meetings may be held and integrated with any other early planning meetings relating to the proposed project.

Purpose and Need: In a broad context, the general intent and justification for an intended action to address a specified transportation-related problem. The statement should clearly demonstrate that a "need" exists and should define the 'need' in terms understandable to the general public. The statement should clearly describe identified and documented problems that the proposed action is to correct. Basis may include capacity and transportation demand, safety, legislative directive, economic development/planned growth, modal interrelationships, system linkage and roadway deficiencies. The statement provides the basis for developing a range of reasonable alternatives and, ultimately, the identification of the preferred alternative.



- R -

Receptors [Noise]: Entities such as residential homes, apartments, parks, places of worship and churches, schools, commercial businesses, and other facilities that can be affected by noise pollution from a proposed project. Noise receptors may potentially receive an increased, decreased or “no-change” level of noise from ambient to future conditions based on noise modeling. For widening projects, noise receptors are those existing entities and facilities along the right-of-way that may or may not receive a potential noise increase. For new location projects, noise receptors are those entities located within several hundred feet of the proposed centerline of the new road.

Record of Decision (ROD): The last step in the EIS process and the lead agency's (normally FHWA) decision that identifies the alternative selected for implementation. The ROD should:

- ▶ State the basis for the decision;
- ▶ Identify all the alternatives considered and specify the "environmentally preferable alternative"; and
- ▶ State whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted and, if not, why they were not.

The ROD may not be issued sooner than 30 days after the approved final EIS is distributed, nor 90 days after the Draft EIS is circulated.

Reevaluation: A written evaluation of the draft EIS prepared by the applicant in cooperation with the Federal agency if an acceptable final EIS is not submitted to the Federal agency within 3 years from the date of the draft EIS circulation. This evaluation determines if a supplement to the draft EIS or a new draft EIS is needed.

A written evaluation of the final EIS will be required before further approvals may be granted if major steps to advance the action (e.g., authority to undertake final design, authority to acquire a significant portion of the right-of-way, or approval of the plans, specifications and estimates) have not occurred within three years after the approval of the final EIS, final EIS supplement, or the last major Federal agency approval or grant.

After approval of the EIS, FONSI, or CE designation, the applicant shall consult with the Federal agency before requesting any major approvals or grants to establish if the approved environmental document or CE designation remains valid for the requested Federal agency action. These consultations will be documented when determined necessary by the Federal agency (23 CFR 771.129).

Regionally Significant Transportation Capacity (RS/TS) Project: A transportation project that serves regional transportation needs, such as access to and from the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, or transportation terminals as well as most terminals themselves. Such projects would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel.



Regulatory Agency: An agency that has jurisdiction by law.

Relocation: The adjustment of utility facilities required by a highway project. Relocation includes removing and installing facilities, acquiring necessary property rights in the new location, moving, or rearranging existing facilities, or changing the type of facility, including any necessary safety and protective measures. Also means constructing a replacement facility, functionally equal to the existing facility, where necessary for continuous operation of the utility service, project economy, or for staging highway construction.

Resilience: The ability of communities to rebound, positively adapt to, or thrive amidst changing conditions or challenges—including human-caused and natural disasters—and to maintain quality of life, healthy growth, durable systems, economic vitality, and conservation of resources for present and future generations.

Right-of-Way (ROW): A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

Right-to-Know: A general term referring to governmental requirements concerning a citizen's or a community's "right-to-know" about environmental and public health concerns, such as spills and releases of toxic chemicals.

Riparian Areas: Lands adjacent to waterbodies. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects waterbodies with their adjacent uplands. Riparian areas are adjacent to streams, lakes and estuarine-marine shorelines and provide ecological functions and services and help improve or maintain local water quality.

Riparian Buffers: Vegetation along the banks of rivers and streams which filter nutrients and pollutants from runoff.

- S -

SAFETEA-LU (Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users): The Federal surface transportation legislation (Public Law 109-59) that authorizes programs for highways, highway safety, and transit for the 5-year period 2005-2009.

Scope: The range of actions, alternatives, and impacts to be considered in an EIS. The scope of an individual statement may depend on its relationships to other statements. To determine the scope of EISs, agencies shall consider three types of actions, three types of alternatives, and three types of impacts:

- a. Actions (other than unconnected single actions) which may be:
 1. Connected actions, which means that they are closely related and therefore should be discussed in the same impact statement. Actions are connected if they:
 - (a) Automatically trigger other actions which may require EISs.
 - (b) Cannot or will not proceed unless other actions are taken previously or simultaneously.
 - (c) Are interdependent parts of a larger action and depend on the larger action for their justification.



2. Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.
 3. Similar actions, which when viewed with other reasonable foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography. An agency may wish to analyze these actions in the same impact statement. It should do so when the best way to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions is to treat them in a single impact statement.
- b. Alternatives, which include:
1. No-action alternative.
 2. Other reasonable courses of actions.
 3. Mitigation measures (not in the proposed action).
- c. Impacts, which may be:
1. Direct.
 2. Indirect.
 3. Cumulative.

Scoping Process: A process that allows early identification of potentially significant environmental issues. This process begins with an introduction to the environmental review agencies and the public, the purpose of which is to initiate coordination and involvement activities that will span the life of the project. Agencies with specialized knowledge of these areas may be asked to participate as cooperating agencies, while other agencies are required by law to participate in project development.

Secondary Effect: An effect or environmental impact from a proposed action that is caused by the action and is later in time or farther removed in distance but are still reasonably foreseeable. A secondary effect may include land use pattern changes resulting from the construction of a new highway, air quality changes within a locality, etc.

Section 106: The section of the NHPA that requires Federal agencies to consider the effects of their undertakings on historic properties, and to afford the ACHP a reasonable opportunity to comment. The historic preservation review process mandated by Section 106 is outlined in 36 CFR 800 "Protection of Historic Properties," the regulations issued by the ACHP.

Section 309 of the Clean Air Act, as amended: Section 309 of the Clean Air Act authorizes the EPA to review certain proposed actions of other Federal agencies in accordance with NEPA and to make those reviews public.

Section 4(f): National legislation that stipulates that the FHWA will not approve any program or project which requires the use of any publicly owned park, recreation area, or wildlife or waterfowl refuge, or any land from an historic site of national, State, or local significance unless:

- ▶ There is no feasible and prudent alternative to the use, and
- ▶ All possible planning to minimize harm resulting from such use is included.



Section 404 Permit: A USACE permit to authorize the discharge of dredged or fill material into waters of the U.S. pursuant to section 404 of the Clean Water Act (33 U.S.C. 1344).

Section 6(f): Section 6(f) of the Land and Water Conservation Act (LWCA) that mandates that no property acquired or developed with assistance under the LWCA shall, without the approval of the Secretary, be converted to other than public outdoor recreation uses. The Secretary shall approve such conversion only if they find it to be in accord with the then existing comprehensive statewide outdoor recreation plan and only upon such conditions as he/she deems necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location.

Significant Impacts: Any number of social, environmental, or economic effects or influences which may be brought about as a result of the implementation of a transportation improvement that are of such a magnitude or degree of intensity or duration as to require the preparation of an EIS under NEPA. Significant impacts may include effects that are direct, indirect, or cumulative and include both the short-term and long-term duration of the effect. FHWA project development and environmental planning requirements under transportation decision-making refers to the context of an action and intensity or the severity of impact.

Significantly: As used in NEPA requires considerations of both context and intensity:

- a. **Context.** This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.
- b. **Intensity.** This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:
 1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.
 2. The degree to which the proposed action affects public health or safety.
 3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
 4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.
 5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
 6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
 7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.



8. The degree to which the action may adversely affect districts, sites highways, structures, or objects listed in or eligible for listing in the NRHP or may cause loss or destruction of significant scientific, cultural, or historical resources.
9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act
10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

Solid Waste: Federal regulations define solid waste as any garbage, refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material, including solid, liquid, semisolid, or contained gaseous material, resulting from industrial, commercial, mining, and agricultural operations and from community activities. Solid waste also includes hazardous wastes.

Special Expertise: Statutory responsibility, agency mission, or related program experience.

State Historic Preservation Officer (SHPO): The official appointed or designated by the Governor of each State pursuant to Section 101(b)(1) of the NHPA to administer the State historic preservation program or a representative designated to act for the SHPO. The SHPO consults with Federal and State agencies during Section 106 review, reviews NRHP nominations, and maintains file data on cultural resources.

State Implementation Plan (SIP): A term referred to under the Clean Air Act requirements that comprise the regulations and other materials for meeting clean air standards. May include State regulations that EPA has approved, orders requiring pollution control at individual companies, and planning documents such as area-specific compilations of emissions estimates and computer modeling analyses that demonstrate that regulatory limits can be met.

Streaming Tool for Equity Analysis of Projects (STEAP): A web-based equity analysis tool for project development. It assists practitioners in identifying a project's impact on EJ, Title VI, and populations with LEP, and disadvantaged populations defined in Executive Order 13985.

Stormwater: Rainwater (or other water that results from precipitation such as snowmelt) that flows over land and into natural and artificial drainage systems. Stormwater runoff is a major transporter of non-point source pollutants.

Stormwater Management Plan (SWMP): Protects sensitive waters by maintaining a low density of impervious surfaces, maintains vegetative buffers, and transports runoff through vegetative conveyances.

Substantive Comments: A phrase that may be used to describe the type or degree of review comments. Typically involve regulatory concerns or issues identified by a review agency. Substantive comments may differ from other review comments in being less advisory in nature and more prescribed.



Supplemental Draft Environmental Impact Statement (EIS): A Draft EIS that has been updated or supplemented with new or revised information. Under NEPA, numerous documents may be supplemental, including EAs, Final EISs, etc. Decisions to supplement EISs rest with the Lead Federal Agency.

Surface Waters: Water present above the substrate or soil surface.

System Level Study (SLS): Required by CDOT Policy Directive 1601 for new interchanges or major improvements to existing interchanges. Identifies the short and long-term environmental, community, safety and operational impacts of a proposed interchange, or interchange modification, on the State Highway system and surrounding transportation system to the degree necessary for the Transportation Commission, Chief Engineer, or Regional Transportation Director as appropriate, to make an informed decision whether a proposed new interchange or interchange modification is in the public interest. A Systems Level Study must include a preliminary financial plan that identifies which parties are responsible for applicable costs.

System Linkage: Regarding the purpose and need of a project, this term refers to the need to provide roadway improvements due to discontinuity of the existing roadway network. For example, this may refer to the need to provide a more direct connection between activity centers or to create continuity in terms of facility type and function. Information about system linkage explains how the project fits in with the transportation system, including the relationship to other plans and other modes. Data to support this need includes roadway network discontinuity, travel time comparison, travel demand studies, Intra-State and Strategic Corridor systems, Military/Homeland security needs, and access needs.

Socioeconomics: Study of the effects of both social and economic factors on individuals and communities.

Statewide Transportation Improvement Program (STIP): A staged, multiyear, statewide, intermodal program of transportation projects which is consistent with the statewide transportation plan and planning processes and metropolitan plans, TIPs, and processes.

- T -

Technical Reports: Determine the impacts to social and environmental elements (i.e., air quality, noise, traffic, aesthetics, wetlands, wildlife, socioeconomics, historic resources, land use, etc.). The Technical Reports are summarized in the environmental document (i.e., EA, EIS, Supplemental EIS).

Threatened and Endangered (T&E) Species: Plants or animals that can receive protection under the ESA which are placed on a Federal list. Listing a species as either threatened or endangered is a strict legal process. An endangered species is one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered in the near future.



Tiering: Tiering refers to the coverage of general matters in broader EISs (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basinwide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared. Tiering is appropriate when the sequence of statements or analyses is:

- ▶ From a program, plan, or policy EIS to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis.
- ▶ From an EIS on a specific action at an early stage (such as need and site selection) to a supplement (which is preferred) or a subsequent statement or analysis at a later stage (such as environmental mitigation). Tiering in such cases is appropriate when it helps the lead agency to focus on the issues which are ripe for decision and exclude from consideration issues already decided or not yet ripe.

Transportation Demand Management (TDM): The TDM program assists communities with the development of services and facilities for alternative transportation methods. Methods of accomplishing this goal include rideshare programs, park and ride lots, telecommuting programs, and incentive programs to encourage the use of alternatives to driving alone.

Transportation Demand Measures: The use of incentives, and market devices to shift travel into non-motorized or higher-occupancy modes, and/or shift travel onto less congested routes.

Travel Demand Model: A tool that has specific analytical capabilities, such as the prediction of travel demand and the consideration of destination choice, mode choice, time-of-day travel choice, and route choice, and the representation of traffic flow in the highway network. These are mathematical models that forecast future travel demand based on current conditions, and future projections of household and employment characteristics. Travel demand models were originally developed to determine the benefits and impact of major highway improvements in metropolitan areas.

Transportation Enhancement (TE): TE activities benefit the traveling public and help communities to increase transportation choices and access, enhance the built and natural environment, and provide a sense of place. To be eligible for funding, a TE project must fit into one or more of the 12 eligible categories and relate to surface transportation.

Transportation Equity Act for the 21st Century (TEA-21): The TEA-21 was enacted June 9, 1998, as Public Law 105-178. TEA-21 authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 6-year period 1998-2003.

Transportation Improvement Program (TIP): Short-term (three to five years) plan of approved policies developed by an MPO for a jurisdiction that is fiscally constrained.

Transportation Systems Management (TSM): A part of the transportation planning process which identifies short-range, low-cost improvements for the urban transportation system (including both roads and public transportation). Its goal is to insure the most efficient use of the present transportation system, and it may identify improvements such as better fare structures for buses, traffic engineering changes, and new management systems for public transportation.



- U -

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970: Provides for uniform and equitable treatment of persons displaced from their homes, businesses, or farms by Federal and Federally assisted programs and to establish uniform and equitable land acquisition policies for Federal and Federally listed programs. Whenever acquiring real property for a program or project by a Federal agency results in displacing anyone, the agency shall reimburse and provide relocation planning, assistance coordination, and advisory services.

U.S. Army Corps of Engineers (USACE): Federal agency that is the world's largest public engineering, design, and construction management agency. Much of the USACE infrastructure mission is related to its water resources mission. The USACE builds and maintains a variety of water resource related infrastructure including locks and dams, flood reduction structures and reservoirs, hydroelectric facilities, and other projects.

U.S. Department of Interior Fish and Wildlife Service (USFWS): A Federal agency whose mission is to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.

U.S. Department of Interior Forest Service (USFS): A Federal agency that manages public lands in national forests and grasslands. The mission of the USFS is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations.

U.S. Department of Interior Geological Survey (USGS): The soil science agency for the Department of Interior. It is a multi-disciplinary science organization that focuses on biology, geography, geology, geospatial information, and water. It is an independent fact-finding agency that collects, monitors, analyzes, and provides scientific understanding about natural resource conditions, issues, and problems. The USGS focuses its efforts on four major areas: natural hazards, resources, the environment, and information and data management.

Utility Relocations: When moving a utility for a road project, the utility's service should be restored so that it may continue to provide its product to its users in a fashion like that which existed prior to its relocation because of the highway project.

- V -

Vehicles Per Day (VPD): The number of vehicles that travel on a road each day.

Visual Impact Assessment (VIA): VIAs are necessary to capture key visual issues, identify adverse impacts, and develop effective mitigation for projects along transportation corridors, within adjacent communities, and near Federal lands in Colorado. Meaningful VIA documentation supports the NEPA decision-making process, addresses regulatory requirements, supports goals of communities and/or Federal land managers, and promotes context sensitivity.

Visual Resources: Visual resources are those physical features that make up the visible landscape, including land, water, vegetative and man-made elements. These elements are the stimuli upon which actual visual experience is based. Visual resources are not, however, limited to elements or features that are of outstanding visual quality. A location or element in the visual environment can



have visual values attributed to it by its viewers regardless of its quality. Viewer sensitivity can confer visual significance on landscape features and areas that would otherwise appear unexceptional.

- W -

Wetland: A wetland is defined by the USACE as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include swamps, marshes, bogs, and similar areas.

Wetland Delineation: A survey conducted by a qualified person to determine the extent of wetland and the types of wetlands that would be impacted by a project. To be a jurisdictional wetland, a wetland must exhibit hydrophytic vegetation, hydric soils, and wetland hydrology. Wetland delineations are conducted in accordance with the USACE Wetland Delineation Manual and associated Regional Supplements.

Widen Existing: Increasing the width of the current roadway and/or adding additional lanes in each direction of travel to increase the capacity of safety of an existing roadway.

Wild and Scenic Rivers (WSR): Designation as a wild and scenic river is our nation's strongest form of protection for free-flowing rivers and streams. They have remarkable scenic, recreational, geologic, fish and wildlife, historic or other similar values that led Congress to add these waterways to the National Wild and Scenic Rivers System. The Forest Service manages over 5,000 of those wild and scenic rivers miles. The Cache la Poudre River is the only WSR in Colorado.

- Z -

Zoning: A general term referring to local land use controls and classifications of types of land uses, such as commercial, industrial, residential, recreational, agricultural, etc. Frequently, a misused term referring to the local or regional legal process of reclassifying land uses for different or changed purposes.



Appendix C. Style Guide for NEPA Documents



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1. Introduction

The content of this appendix is largely unchanged since Version 3 (2013) for economy and efficiency. The State of Colorado released updated “[brand guidelines](#)” in 2023. Brand elements (fonts, colors, etc.) may differ from the guidance in this appendix. Authors are encouraged to confer with the Region Planning and Environmental Manager about using the State’s current brand elements in CDOT documents.

This appendix discusses the recommended content, format, style, and presentation for preparation of National Environmental Policy Act (NEPA) documentation. Although this appendix focuses on Environmental Impact Statements (EISs) and Environmental Assessments (EAs), the information also applies to the supporting technical documents (including memoranda, meeting minutes, correspondence, technical reports, etc.), which are prepared in support of NEPA documents. This style guide does not address technical or regulatory issues.

This guidance is expected to help promote clarity, accuracy, and consistency and provide for uniformity in document development. The guidance is not intended to be prescriptive but includes some useful tools to help project team members with document organization, content, and formatting at the onset of projects. The recommendations in this style guide come from a variety of different standard reference style guides. For information not contained in this style guide, one of these standard style guides should be referenced. **Section 7** provides a list of the standard reference style guides.

It is extremely important to maintain the following when preparing NEPA documents:

- ▶ Document quality
- ▶ Efficiency in technical and policy review
- ▶ Consistency in information development
- ▶ Expediency in CDOT and FHWA review and approval
- ▶ Clarity to all readers/reviewers

Council on Environmental Quality (CEQ) regulations specify a recommended format for NEPA EIS documents (CEQ, 40 Code of Federal Regulations [CFR] § 1502.10), which is consistent with the CDOT recommended format. The Colorado Department of Transportation (CDOT) recommends using a format for EISs that clearly presents alternatives to encourage good analysis and support efficient and effective decision-making. EAs also have a similar structure and format; however, the level of detail will vary commensurate with the scale of the proposed project and the related impact and following project scoping.

For additional discussion of the major components of NEPA documents, refer to **Chapters 4 and 6** of this NEPA Manual, CEQ’s regulations for implementing NEPA (CEQ, 40 CFR § 1502.10 through 1502.18), and Federal Highway Administration (FHWA) Technical Advisory T 6640.8A Guidance for Preparing and Processing Environmental and Section 4(f) Documents (FHWA, 1987). Suggested guidance to improve the readability and functionality of NEPA documents for transportation projects also is included in the American Association of State Highway and Transportation Officials report, *Improving the Quality of Environmental Documents* (AASHTO et al., 2006).

Quality NEPA documents effectively tell the project story through clear, concise writing; effective organization and formatting; and effective use of visual elements. AASHTO/ACEC/FHWA *Improving the Quality of Environmental Documents*



2. Standard Document Content and Format

CDOT has developed a [NEPA Document Template](#) that is the default format for most EAs.

CDOT has a recommended standard document outline to ensure consistency in NEPA documents across CDOT Regions. The recommended CDOT outline for an EIS or EA document includes the following content, which is discussed in more detail in this appendix:

- ▶ Cover
- ▶ Cover Sheet/Signature Page
- ▶ Executive Summary (not required for an EA, but recommended)
- ▶ Table of Contents, List of Figures, List of Tables, and List of Abbreviated Terms
- ▶ Purpose of and Need for the Project
- ▶ Alternatives Analysis
- ▶ Affected Environment
- ▶ Environmental Consequences and Mitigation
- ▶ Section 4(f) Evaluation (if required)
- ▶ Agency Coordination and Public Involvement
- ▶ List of Preparers (not required for an EA)
- ▶ Distribution List of Agencies, Organizations, and Persons to Whom Copies of the NEPA document are sent (not required for an EA, but recommended)
- ▶ References and Citations
- ▶ Index (not required for an EA)
- ▶ Appendices

The text of the final EIS shall be 150 pages or fewer unless a new page limit is established by an agency official of the lead agency; the text of an EA shall be no more than 75 pages, following the same approval approach as an EIS.

2.1 Front Cover

The front cover should include the following components:

- ▶ Project name and designation of administrative action (i.e., Draft or Final, Programmatic or Supplemental, EA or EIS, Finding of No Significant Impact [FONSI] or Record of Decision [ROD]).
- ▶ Responsible agencies, including the lead agency, co-lead agency, and any cooperating agencies.
- ▶ Document date



At the Region's discretion, a document cover may be superimposed over an illustration of a project; however, consultant logos and information are not to be used on the front cover of any environmental documents. Consultant logos may be shown on the title page of a NEPA document and any supporting documentation for a NEPA document (e.g., Noise Impact Assessment, Air Quality Report, Preliminary Engineering Report). All consultant contributions to an EIS should be documented in the list of preparers.

2.2 Cover Sheet/Signature Page

The cover sheet/signature page is a mandatory component of a NEPA document (CEQ, 40 CFR § 1502.11). It should not exceed one double-sided page and must include the following components:

- ▶ Designation of administrative action (i.e., Draft or Final, Programmatic or Supplemental, EA or EIS, Finding of No Significant Impact [FONSI] or Record of Decision [ROD]).
- ▶ Title and location of the project; identify route number, local name, project limits, and county in which the project is located.
- ▶ Responsible agencies, including the lead agency, co-lead agency, and any cooperating agencies.
- ▶ Cite the federal authority for which the document is being prepared (i.e., Submitted Pursuant to 42 USC 4332 (2)(c)).
- ▶ Provide date and signature block for the FHWA Division Administrator, CDOT Region Transportation Director, and CDOT Chief Engineer.
- ▶ Brief project abstract limited to one paragraph. The abstract should include a short project description and the purpose and need for the project. For FONSI or ROD, the brief abstract should include reasons why the action would not have a significant effect on the human environment (FONSI) or the significant effects from the project (ROD).
- ▶ The date by which comments must be received.
- ▶ A disclaimer stating the 180-day statute of limitations on legal actions following publication of a Federal Register notice that the final environmental approval or permit has been issued for a project.

The CDOT and FHWA Colorado Division signature process for NEPA documents is a formal, established process to assure that appropriate parties have reviewed the documents in the appropriate order. For additional information, a NEPA Document Signature Page Format Checklist is included in **Chapter 8**, NEPA Document Review Procedures. **Figure 2-1** includes an example Cover Sheet/Signature Page Layout. Information within the brackets in **Figure 2-1** is intended to be customized for each project.



Figure 2-1. Sample Cover Sheet/Signature Page Layout

[INSERT Federal Identification Number]

[INSERT CDOT Project #]

[INSERT Project Name]

[INSERT Type of Document -DEIS, FEIS, EA]

Draft Section 4(f) Evaluation (if required)

Submitted Pursuant to

42 USC 4332 (2)(c), 49 USC 303, & 16 USC 460 (if Section 6(f) Evaluation required)

By the

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL TRANSIT ADMINISTRATION (if applicable)

and

COLORADO DEPARTMENT OF TRANSPORTATION
[INSERT Cooperating Agencies, if applicable]

Submitted by:

[INSERT Name] Date _____
Region [INSERT Region Number] Transportation Director
Colorado Department of Transportation

Concurred by:

[INSERT Name] Date _____
Chief Engineer
Colorado Department of Transportation

Approved by:

[INSERT Name] Date _____
Division Administrator, Colorado Division
Federal Highway Administration

[INSERT Statute of Limitations Disclaimer in ROD or FONSI]

A Federal agency may publish a notice in the Federal Register, pursuant to 23 United States Code (USC) § 139(1), indicating that one or more Federal agencies have taken final actions on permits, licenses, or approvals for a transportation project. If such notice is published, claims seeking judicial review of those Federal agency actions will be barred unless such claims are filed within 150 days after the date of the notice, or within such shorter time period as is specified in the Federal laws pursuant to which judicial review of the Federal agency action is allowed. If no notice is published, then the periods of time that otherwise are provided by the Federal laws governing such claims will apply.



2.3 Executive Summary

The executive summary is a mandatory component of an EIS (CEQ, 40 CFR § 1502.12), and is recommended for an EA. The summary is the reader’s introduction to the NEPA document and should include sufficient information to allow the reader to gain a complete understanding of the issues addressed in the body of the NEPA document. It should list all reasonable alternatives considered, major environmental resource impacts, and proposed mitigation measures in a comparative form. The summary should use a matrix or table(s) to present information concisely. Detail in an executive summary should be succinct, but of sufficient detail to serve as a stand-alone document that can be used for decision-making regarding the recommended Preferred Alternative. It is useful to include a project map in the summary.

Additional information concerning the elements of the Executive Summary is included in **Chapter 4** (Environmental Impact Statement [Class I]) and **Chapter 6** (Environmental Assessment [Class III]).

2.4 Table of Contents

The Table of Contents for NEPA documents must include the major document components, as discussed in this section, as well as a list of tables and figures and appendices. It should be of sufficient detail to provide a “road map” to reading the document and allow the reader to easily navigate the document. The executive summary should be included in the Table of Contents. It is recommended that Table of Contents includes first, second, and third-level headings only. A list of supporting technical documents is also recommended for inclusion in the Table of Contents. **Figure 2-2** provides a sample Table of Contents for an EIS and **Figure 2-3** provides a sample Table of Contents for a NEPA decision document.

2.5 Purpose and Need for the Project

A statement of the purpose and need for action is a mandatory component of a NEPA document (CEQ, 40 CFR § 1502.13). It is essentially the foundation of the NEPA document and decision-making process. The purpose and need statement establishes why the agency is proposing a specific transportation project. A concise, well-justified purpose and need section explains to the public and decision-makers why the proposed expenditure of funds is necessary and worthwhile, and why the priority of the project is warranted relative to other needed transportation projects. The purpose and need statement establishes the basis for selecting reasonable alternatives and the ultimate selection of a Preferred Alternative.

Additional information concerning the elements of the purpose and need statement is included in **Chapter 4** (Environmental Impact Statement [Class I]) and **Chapter 6** (Environmental Assessment [Class III]).

CDOT’s Purpose and Need Guidance

FHWA Technical Advisory T 6640.8A. and FHWA Memorandum, *The Importance of Purpose and Need* (September 18, 1990)



Figure 2-2. Sample Table of Contents for an EIS

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Note: Organizing the List of Figures or List of Tables by chapter may be useful for larger NEPA documents.



Figure 2-3. Sample Table of Contents for a Decision Document

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Appendix D – Agency Coordination And Comments

Appendix E – [Insert Project Name] Environmental Assessment and Appendices



2.6 Alternatives Analysis

A NEPA document helps to make informed decisions from among reasonable alternatives. In order to define the scope of the NEPA document, it is important to accurately present the range of reasonable alternatives. Additional information concerning the elements of the alternatives analysis is included in Chapter 4 (Environmental Impact Statement [Class I]) and Chapter 6, (Environmental Assessment [Class III]).

2.7 Affected Environment

Present your discussion of the affected environment on a resource-by-resource basis, in the same order that resources are evaluated in the environmental consequences section, if a separate chapter. The Affected Environment section is required to indicate the presence or absence of resources that must be covered by law and regulation. If resources are absent from the project area, it is helpful to identify these resources in the beginning of the chapter. Also, similar resources should be grouped together (e.g., water resources, wetlands, and floodplains). However, these resource areas are not all-inclusive. Additional topics or issues may be needed to establish a thorough understanding of the affected area. NEPA documents must concentrate on the issues that are “truly significant to the action in question, rather than amassing needless detail” (40 CFR 1500.1[b]). Additional information concerning the elements of the Affected Environment section is included in Chapter 4 (Environmental Impact Statement [Class I]) and Chapter 6 (Environmental Assessment [Class III]).

2.8 Environmental Consequences and Mitigation

Information concerning the elements of the Environmental Consequences section, including mitigation and monitoring commitments is included in Chapter 4 (Environmental Impact Statement [Class I]) and Chapter 6 (Environmental Assessment [Class III]).

2.9 List of Preparers

The list of preparers includes the credentials of personnel who contributed to the project. Gather the following information so that the list of preparers can be compiled: full name, job title(s) and license(s), discipline area, educational degree(s), years of experience, and contribution (role on the project). Example 1 and Example 2 show two ways to present the list of preparers.



Example 1 - List of Preparers

Federal Highway Administration

Jane Doe, PE
Program Delivery Engineer
BS, Civil Engineering
25 years of experience

Consultant Name

Sarah Doe
Water Resources
MS, Environmental Policy
BA, Environmental Science
5 years of experience

Colorado Department of Transportation

Jeff Doe, PE
CDOT Region 1 Resident Engineer
MS, Civil Engineering
BS, Civil Engineering
13 years of experience

Jane Doe, PE
CDOT Region 1 Project Engineer
MS, Civil Engineering
BS, Civil Engineering
15 years of experience

Example 2 - List of Preparers

Agency/Project Team Member	Background (Education, License)	Experience
Federal Highway Administration Jane Doe Program Delivery Engineer	BS, Civil Engineering PE (Colorado)	25 years of experience in transportation engineering
Colorado Department of Transportation Jeff Doe CDOT Region 1 Resident Engineer	MS, Civil Engineering BS, Civil Engineering PE (Colorado)	15 years of experience in transportation engineering
Consultant Company Name Sarah Doe Environmental Specialist Water Resources	MS, Environmental Policy BA, Environmental Science	5 years of experience NEPA analysis

2.10 Distribution List

The distribution list includes all agencies and persons to whom copies of the EIS (not required for an EA, but recommended) are sent. Additional information concerning the elements of the distribution list is included in **Chapter 4** (Environmental Impact Statement [Class I]). Avoid using acronyms abbreviations and acronyms in the distribution list. **Example 3** provides a sample distribution list.



Example 3 - Sample Distribution List

Federal Agencies

Jane Doe, Title
Federal Highway Administration
12300 W. Dakota Ave., #180
Lakewood, CO 80228

State Agencies

Jane Doe, Title
Colorado Division of Wildlife
4207 W Country Road 16E
Loveland, CO 80537

Libraries and other Document Viewing Locations

Greeley Lincoln Park Library
919 7th St., #100
Greeley, CO 80631

Regional Agencies

Jane Doe, Title
North Front Range Metropolitan Planning
Organization
235 Matthews Street
Ft. Collins, CO 80524

Local Agencies

Jane Doe, Title
City of Loveland Parks and Recreation
Department
500 East Third
Loveland, CO 80537

2.11 References and Citations

Be sure to acknowledge all referenced material (e.g., ideas, data, photographs, illustrations, publications of other works in the subject area) using in-text citations and a list of references. It is important to cite documents (e.g., book, technical research reports, and maps), personal communications (e.g., phone conversations, emails, meetings), and unpublished data appropriately. See below for selected examples. Reference your standard style guide of choice for more specific information. **Section 7** provides a list of the standard reference style guides.

2.11.1 In Text Example

Citations in the text for documents should be written (Last Name of First Author/Organization, Date of Source Material/Year of Publication) as shown below:

- ▶ The Colorado Department of Public Health and Environment has classified the South Platte River as a Recreation II water body (CDPHE, 2001).
- ▶ Large game species are not present in the project area (J. Smith, personal communication, Colorado Division of Wildlife, June 1, 2008). Note: Personal communications are not typically included in reference lists because they are not recoverable.

2.11.2 Reference List Examples

The reference list should be compiled generally using the following reference guidelines.

Report

Federal Highway Administration (FHWA). 1990. Pollutant Loadings and Impacts from Highway Stormwater Runoff. Volumes I, II, and III. FHWA RD 88-006; FHWA-RD-88-007; and FHWA-RD-88-008. April.



Regulation

Colorado Department of Public Health and Environment (CDPHE). 2006. Regulation 42: Site Specific Water Quality Classification and Standards for Groundwater. Water Quality Control Commission.

Book

Forman, R. T. 1995. Landscape mosaics: The ecology of landscapes and regions. Cambridge, UK: Cambridge University Press.

Book Chapter

Dennis, S. 2001. Theoretical and legal foundations of public involvement. In S. Dennis (Ed.), Natural resources and the informed citizen (pp. 147-153). Champagne, Illinois: Sagamore Publishing.

Technical Journal Article

Rhodes, Rocky. 2009. "Evaluation of Asphalt Types Used for Noise Suppression in the Desert Southwest U.S." in *Journal of Asphalt*, April 15.

Electronic Sources

Electronic sources refers to any material transmitted through a computer (databases, the worldwide web and internet sites, online journals and magazines, newsgroups, discussion grouped, online forums, e-mail messages, etc.). The following should be recorded for all referenced electronic material: the complete URL (web address) for that page, author and title of the material, date of the material itself, and date you accessed this material. It is recommended that the material referenced is printed out for the administrative record. If the document is lengthy, print out the first few pages and any other pertinent information only. Also save an electronic copy of the document to the project file.

Electronic source references should be written as such:

United States Environmental Protection Agency (EPA). 2008. Urban BMP Performance Tool. Retrieved January 27, 2008, from <http://cfpub.epa.gov/npdes/stormwater/urbanbmp/bmpeffectiveness.cfm>.

Sample List of References

American Association of State Highway Transportation Officials (AASHTO). 2004. A Policy on Geometric Design of Highways and Streets.

Consultant Company Name. 2008. Package Concept Plans. Prepared for the Highway XX Project EIS.

Consultant Company Name. 2008. Technical Memorandum: Land Use Conditions and Impacts. Prepared for the Highway XX Project EIS.



2.11.3 Appendices

Appendices contain detailed information that is not essential to a basic understanding of the document and the results obtained but may be helpful to certain readers (e.g., technical agency reviewers). Appendices help to streamline the content of the main document. However, like the main document, appendices should not contain unnecessary information; be very discriminating about what information you include. The NEPA document is expected to contain the following appendices:

- ▶ Agency Coordination (e.g., agency correspondence, meeting minutes)
- ▶ Public Involvement and Coordination (e.g., copies of public hearing notifications)

Other appendices may be added, as appropriate. All appendices must be called out in the body of the main document. They are lettered sequentially (i.e., Appendix A, Appendix B, etc.) at the end of the document in the order in which they are called out. **Figure 2-4** includes an example Appendices Cover Page.

Figure 2-4. Sample Appendix Cover Sheets

Appendix A: Public Involvement

This appendix contains the following project documents listed in the order they are presented.

- ▶ CDOT Press Releases
- ▶ Project Newsletters
- ▶ Invitations to Public Hearings
- ▶ Public Meeting Summaries

Appendix B: Agency Coordination

Appendix B includes correspondence to and from agencies and minutes from meetings with agencies.

Date	Letter Recipient/ Meeting Attendees	Letter Submitter/ Meeting Initiator	Subject
January 1, 2009	Multiple Resource Agencies (CPW, USFWS)	[INSERT Name], CDOT	Invitation letters to resource agency scoping meeting
January 24, 2009	U.S. Army Corps of Engineers (USACE), FHWA, EPA, CDOT	[INSERT Name], CDOT	Scoping meeting
March 2, 2009	USDA Natural Resources Conservation Service (NRCS)	[INSERT Name], CDOT	Letter to NCRS Platte Valley District requesting soil lists for Prime or Unique Farmland, and/or Farmlands of Statewide or Local Importance
May 1, 2009	State Historic Preservation Officer (SHPO)	[INSERT Name], CDOT	Review of Area of Potential Effect (APE)



2.12 General Format and Style Guidelines

The following guidelines provide direction on the scale of the NEPA document, formatting, and how to present any supporting documentation. Use these guidelines at the start of every project to customize a project-specific writing style guide. It is also helpful to create a project-specific template for your technical authors to use that contains information on your selected style for fonts, tables, headings, graphic formatting, references, bulleted lists, etc. Additionally, provide your technical authors with a list of project terminology for document consistency. A sample list of some terms that might be useful to include in a list of project terminology follows.

Example List of Common Terminology

Avenue, not Ave.

bridge (don't uppercase with name of bridge, i.e., Broadway bridge)

Boulevard, not Blvd.

CDOT, not the CDOT

CDPHE, not the CDPHE

CO 99 not CO99 or CO-99 (county route numbers)

Drive, not Dr.

EPA, not the EPA

1st, not 1st

park-n-Ride (within RTD district), not park n Ride or Park-n-Ride

park-and-ride (outside RTD district)

railroad (capitalize proper name of railroad, but not word "railroad," e.g., "Burlington Northern Santa Fe railroad, not Burlington Northern Santa Fe Railroad, since the correct proper name is Burlington Northern Santa Fe Railway)

SH 99, not SH-99 or SH99

Street, not St.

U.S., not US

USACE, not the USACE not COE

2.12.1 Length

The adequacy of a NEPA document is measured by its functional usefulness in decision-making, not by its size or level of detail. Level of detail should be commensurate with the scale of the proposed project and the related impact. To help eliminate lengthy NEPA documents, it is useful to incorporate supporting information in appendices and technical reports and reference them throughout the NEPA document.

When supporting technical documents are referenced, ensure that specific section numbers and section titles are provided to assist the reader in locating the reference accurately within the document. Cross-referencing also helps keep NEPA documents short and concise.

Keep the document short and straightforward. Try to limit the average sentence length to 20 words or less.



2.12.2 Page Layout

Engage your reader with easy-to-read layouts.

- ▶ **Orientation** – Present text in the portrait page setup printing format. Landscape format may be used to present large graphics or tables, as necessary, but should be used sparingly.
- ▶ **Column Format** – Use the one-column format for documents instead of the two-column format. Two-column documents can be difficult to navigate and read in electronic format.
- ▶ **Spacing** – Single space documents. CDOT requires that the document be printed using both sides of the paper, when possible. Place a single space after punctuation marks at the end of a sentence.
- ▶ **Page Numbering** – Number all pages in the document. The number should appear in a document footer at the bottom of each page. Page numbers should correspond to the appropriate chapter/appendix number of the document (e.g., 1-1, 2-1, A-1). To help reduce document size, avoid adding unnecessary blank pages to the document that read “This page is intentionally left blank.”
- ▶ **Line Numbering** - All lines in the document should be numbered and appear in the left-hand margin. Line numbers begin back at 1 at the beginning of each new page.
- ▶ **Justification** – Left justify body text.
- ▶ **Headers** – Include the document type (Draft or Final EA or EIS, ROD, FONSI) and project name in the document header.
- ▶ **Footers** – Include the chapter name and page number in the document footer.

2.12.3 Font and Styles

Body Text

Body text is used in the body of the document. The print type should be of adequate size and style to be easily read, such as 11-point or 12-point font in the Trebuchet MS family

Heading Text

Headings are a helpful cross-referencing tool for the document reader. The level-one heading is generally the largest font size, with subheadings decreasing in font size. Using different colors may help make headings easier to find in the document. CDOT’s preferred font for heading text is Museo Slab 500.

Graphics

Integrate visual graphics into NEPA documents, including figures, tables, cross-sections, side-bars (also referred to as call-outs), and other graphics, to reduce the amount of narrative required and make documents more reader-friendly. Graphics help to convey to the reader, in understandable terms, the composition of the project and the extent of its impact on the human environment.

Graphics should be technically accurate and of high quality. Avoid complex, busy figures, overly complex charts, and matrices when possible. When tables are overly complex, consider using a bar



chart as an alternate way of demonstrating the information. Produce graphics that clearly depict information regardless of whether the document is printed in black and white or color. **Table 2-1** provides an example table format. In general, include data in a table when presenting more than three pieces of data.

Table 2-1. Existing Land Use within Project Study Area

Major Land Use	Acres	Percent
Developed Land	2,748	51%
Agricultural Land	825	15%
Upland Habitat	1,630	30%
Water Features	55	1%
Wetland Habitat	32	<1%
Mines/Quarries	88	2%
Total	5,378	100%

Sources: City of Lakewood, 2008; Project Field Data, 2008

Other helpful suggestions related to graphics include:

- ▶ Graphics should have succinct but definitive titles.
- ▶ Number graphics sequentially within each chapter. List the chapter number first, followed by a hyphen, and then the graphic number (e.g., Table 1-2, Figure 2-3).
- ▶ Reference all graphics within the text of the NEPA document. Place the graphic on the page immediately after it has first been referenced, or integrate the graphic within the text on the same page as the reference.
- ▶ If the graphic requires a full-page, try to keep it on one 8.5 x 11-inch portrait page.
- ▶ Graphics should include a source citation.
- ▶ Certain graphics, such as maps, should include a scale and legend, if appropriate.
- ▶ When maps are used, the orientation should be north/south, with the north end at the top of the page.
- ▶ Ensure that streets, neighborhoods, streams, etc. that are mentioned in the text are clearly labeled on the map.

Create map templates for graphics.

2.12.4 Document Production

Print documents on recycled paper and, when possible, make electronic copies should be made available on re-writable CDs. CDOT requires double sided copies to save paper and reduce both document distribution and reproduction costs and use of materials. Single-sided documents must be the exception and not the rule. To help reduce document size, avoid adding unnecessary blank pages to the document that read “This page intentionally left blank.”



2.13 Responses to Public and Agency Comments

Figure 2-5 and **Figure 2-6** are examples of how to incorporate responses to public and agency comments into NEPA documents. Information within the brackets within **Figure 2-5** and **Figure 2-6** is intended to be customized for each project

Specifically, **Figure 2-5** provides an example of how to incorporate responses into a NEPA document when numerous, long public and agency comments are received. **Figure 2-6** provides an example of how to incorporate responses into a NEPA document where only a few, short public and agency comments are received. In this case, it is acceptable to incorporate the response within the text.

This format (side-by-side comment and response with the comment and its response on the same page) is suggested as the easiest for a person to read and can be used for all responses to comments regardless of number or length. This may entail breaking the comment into sections. Also, numbering the comment and the response helps the reader identify those that go together. If a comment response is repeated, it is acceptable to refer back to the first instance of the comment response (**Figure 2-5**). This table can also be used for individual public comments. If the original comment is handwritten and it is typed into the table and broken up, be sure to include all of the original comments in an appendix.



Figure 2-5. Sample Comment Response Format #1

Sample 1

Comment	Response to Comment
[INSERT AGENCY NAME, INSERT CONTACT NAME] Comment #1 Comment # 1-1: [INSERT Comment] Comment # 1-2: [INSERT Comment]	Response to Comment #1-1: [INSERT Response] Response to Comment #1-2: [INSERT Response]
[INSERT CONTACT NAME, INSERT AFFILIATION (if any or private citizen)] Comment #1 Comment #1-1: [INSERT Comment] Comment #1-2: [INSERT Comment]	Response to Comment #1-1: [INSERT Response] Response to Comment #1-2: [INSERT Response]

Sample 2

Comment #	Subject	Comment	Response to Comment	Comment From
1	Water Quality	[INSERT Comment]	[INSERT Response]	[INSERT Commenter Name(s)]
2	Wetlands	[INSERT Comment]	[INSERT Response]	[INSERT Commenter Name(s)]



Figure 2-6. Sample Comment Response Format #2

4.1 Public Comments and Responses

4.1.1 Written Comments

Copies of the written comments are included in Appendix (INSERT Appendix Letter). Each written comment and a corresponding response are listed below.

1. COMMENT FROM [INSERT NAME]

[INSERT Method of Delivery - i.e., email to project manager], [INSERT Date]:

[INSERT Comment]

RESPONSE:

[INSERT Response]

4.1.2 Public Hearing Comments

[INSERT number] people commented at the Public Hearing and those comments are included in Appendix [INSERT Appendix Letter] Public Hearing Transcript. Each comment and corresponding response are listed below.

1. COMMENT FROM [INSERT NAME]:

[INSERT Comment]

RESPONSE:

[INSERT Response]

4.2 Agency Comment and Responses

Written comments were received from [INSERT Agency Names] during the comment period and have been included in Appendix [INSERT Appendix Letter], Agency Coordination and Comments. Letters from the [INSERT Agency Names] have been summarized and responses to comments are provided below. Changes to the EA text have been recorded in Section [INSERT Section Number], Clarifications to the Environmental Assessment.



3. Usage

This section provides guidelines on how to use numbers, abbreviated terms and acronyms, capitalization, compound words, and bulleted lists.

3.1 Numbers

The following are the basic rules for using numbers in technical material.

Written in words:

- ▶ Spell out numbers 1 through 9 and numbers less than 100 preceding a unit modifier containing a figure.
Example: One, two, three, and four; twelve 4-foot boulders
- ▶ Spell out numbers at the beginning of a sentence. If the number requires more than two words, reword the sentence.
Example: Five streams are located in the project area.
- ▶ Use ordinals
Example: Use first, second, and third, rather than 1st, 2nd, and 3rd
Note: Superscripts should not be used in formal names (e.g., 20th century).
- ▶ Percent
Example: Approximately 12 percent of the project area is within the South Platte River watershed.

Written as numbers:

Use four digits when referring to a year.

- ▶ Numbers 10 and above
Example: The project area encompasses 11 communities.
- ▶ Where numbers both above and below 10 are used in a sentence, use numerals.
Example: The wetlands along the project from east to west are 4, 7, 18, and 23 acres in size, respectively.
- ▶ Numbers less than one should be written as numbers.
Example: The project is 0.4 mile long.
- ▶ Avoid making numbers less than one plural in a sentence. (**Incorrect:** The project is 0.4 miles long. **Correct:** The project is 0.4 mile long.)
- ▶ Fractions
Example: Write the number 2½ or convert it to a decimal (i.e., 2.5), but be consistent with the method you select. Exception: Spell out fractions without a whole number (e.g., one-third of the project area)



- ▶ Quantities and Measurements (Time, decimals, ratios, percentages, measurements, page numbers, money, proportion, ages)

Example 1: Approximately 12 percent of the project area is within the South Platte River watershed.

Example 2: The development is 3 years old.

- ▶ Decimals expressed in figures. Remember to use a zero before the decimal in numbers less than zero. Zero should be omitted after a decimal point unless they indicate exact measurements. Keep significant figures consistent in tables of data. Generally, rounded numbers should not exceed the hundredth place.

Example: 0.46

- ▶ Approximate numbers in the millions or higher should be expressed as follows: 2.4 million, 3 billion, etc.

- ▶ Use numerals when a number scale is used.

Example: On a scale of 1 to 10.

3.1.1 Dates

- ▶ Express complete dates in month-day-year sequence. Separate the date by the appropriate punctuation from the remainder of the sentence.

Example: The hazardous materials site visit was completed on July 1, 2008, by the staff.

- ▶ Do not include an apostrophe when referring to a decade or century.

Example: 1970s, rather than 1970's.

- ▶ Use four digits when referring to a year.

Example: 1995, rather than '95.

3.1.2 Money

- ▶ Use figures to express exact or approximate amounts of money, and generally round up to the whole dollar amount.

Example: The cost to construct the underpass is approximately \$500,000.

- ▶ Do not include decimal points or zeros for whole dollar amounts.

Example: \$125 rather than \$125.00.

- ▶ Express related numbers in the same way.

Example: \$350,000 to \$500,000, rather than \$350,000 to \$0.5 million.

3.1.3 Measurements

CDOT has decided that all NEPA documents will use the English System of measurement (U.S. customary, e.g., inch/pound).



3.2 Abbreviated Terms and Acronyms

Appendix A of this NEPA Manual contains a list of abbreviations and acronyms typically used in NEPA documentation. On first reference, terms that are used more than twice should be spelled out, followed by the abbreviation or acronym in parentheses. Spelling out the term on first reference must be done on first reference, in each chapter, and in each appendix in which the term appears. Not everyone will read the entire document. In figures and tables, define abbreviated terms and acronyms in a general footnote to the table. Spell out measurements (e.g., feet, pounds) unless included in a table. When possible, avoid an over reliance on abbreviations and acronyms; remember that your reader is the public. Terms used only once or twice should not be abbreviated.

Be sure to list the abbreviated term or acronym with its spelled-out version in a List of Abbreviated Terms and Acronyms.

3.3 Capitalization

Capitals are used for two basic purposes: to mark a beginning (as of a sentence) and to indicate a proper noun, pronoun, or adjective.

Capitalize the initial letter of:

- ▶ The first word of every sentence
- ▶ The first word of a direct quotation, if it was capitalized in the original source
Example: According to the report, “Displacement of businesses, agricultural operations, and houses would be mitigated through relocation.”
- ▶ The first word after each bullet in bullet text
Example:
 - Erosion
 - Sedimentation
 - Reduced habitat quality
- ▶ Each word in a title or heading, with the exception of conjunctions, prepositions, and articles
Example: Archaeological Resources Survey, Biological Assessment, and Abbreviated Terms and Acronyms
- ▶ Professional titles preceding a name and not separated by a comma
Example: Vice President Carol Jones, *but* Carol Jones, vice president
- ▶ Proper nouns, pronouns, and adjectives
Example: Names, geographical references, government agencies, organizations, historical periods, historical events, months, days of the week, holidays
- ▶ Derivatives of proper names
Example: Swainson’s Hawk, Aleutian Canada Geese



- ▶ Descriptive terms, if they refer to a definite geographical region or designate the inhabitants of some geographical region
Example: a Southern accent, West Grant Avenue, but west of the Rockies, West Coast (of the United States), Lower 48 (States)
- ▶ Names of religions, denominations, and religious orders
Example: Judaism, Chapel Hill Adventist Church, but the local Baptist church
- ▶ Scientific names identifying genus, but not species
Example: *Pieris rapae*, *Ranunculus acris*

On first reference, the proper name and scientific name identifying genus should be used (e.g., Ute Ladies' - Tresses orchid [*Spiranthes diluvialis*]). For bird species, every word in the common name of the bird should be capitalized for example: Yellow-headed Blackbird. Following the first use, the proper name should be used. This should be done in the Executive Summary, each chapter, and each appendix the term appears.

Do not capitalize:

- ▶ The words government, city, county, state, or federal when used generically
Example: county population; City and County of Denver; near the city of Denver or, more appropriately, near Denver [see "City of..." in Section 4])
- ▶ Seasons of the year
Example: spring, summer, fall, winter 2008
- ▶ Abbreviations for units of measurement (e.g., length) used in tables.
Example: Use the abbreviation ft, rather than Ft
- ▶ Spelled-out chemical names
Example: polychlorinated biphenyls
- ▶ Professional titles separated from a name by a comma
Example: John Doe, senior environmental planner; data from the biologist, Jane Doe

3.4 Compound Words

A compound word is one that is formed by the union of two or more words; for example, soundwall or right-of-way. "Soundwall" is an example of a closed compound, where there is no space or hyphen between words. Hyphenated compounds like "right-of-way" are joined by a hyphen. Use a hyphen to prevent mispronunciation or avoid ambiguity. When you are uncertain whether or not a word is an accepted compound, refer to your dictionary.

Examples of Closed Compounds:

- | | |
|-----------------|--------------|
| ▶ Runoff | ▶ Onsite |
| ▶ Setup | ▶ Offsite |
| ▶ Groundwater | ▶ Stormwater |
| ▶ Overcrossing | ▶ Northeast |
| ▶ Undercrossing | |



Examples of Hyphenated Compounds when followed by a noun:

- ▶ On-ramp (drivers take the on ramp to I-25, but the on-ramp speed is 25)
- ▶ Off-ramp (the truckers were directed to the off ramp, but the off-ramp toll gate did not function)
- ▶ Off-road (the land use in the neighborhood is considered off road, but the off-road impacts are plentiful)
- ▶ North-northeast

Place a hyphen between words that form a compound adjective, directly preceding the word being modified:

- ▶ Single-family home, but the home houses a single family
- ▶ Coal-fired power plant, but the power plant is coal fired
- ▶ Well-drained soil, but the soil is well drained

Place a hyphen in adjective compounds beginning with a number as shown:

- ▶ 8-hour day
- ▶ 30-foot pole
- ▶ 3-to-1 ratio
- ▶ 10- to 20-foot drop
- ▶ 42- to 60-inch-diameter outfall

Do not hyphenate numbers when they are used to indicate a measurement versus an adjective. Below are some examples:

- The road is 80 miles long
- The project will replace 18 feet of pipeline

3.5 Bulleted Lists

Bulleted lists are generally used to highlight important information within the text of NEPA documents. As a general rule, if you have more than three items that you would like to emphasize in your list, consider adding the items to a bulleted list. Following are some general guidelines about bulleted lists:

- ▶ Use a lead-in sentence to introduce bulleted lists, followed by a colon.
- ▶ Capitalize the first word for each item in the list.
- ▶ Punctuate the end of the sentence only if it is a complete sentence.
- ▶ Avoid having more than 6 items in a bulleted list.
- ▶ Avoid using articles (e.g., a, an, the) at the beginning of bulleted lists.

3.6 Emphasis

- ▶ Bold should be used in text when a reference has been made to a Table, Figure, and Section/Chapter within the document.

Example: Land uses within the project area are listed in **Table 2-1**.



4. Elements of Composition

This chapter provides some hints on word use that can help make your technical writing more concise.

Use simple terms understandable to a lay person.

4.1 Word Use

The guiding principle in technical writing is to keep it simple, short, and concise. One simple exercise is to scan your writing for words ending in “ion” - these words usually indicate prepositional phrases where a simple verb will do, and over writing, in general. **Table 4-1** includes a list of some overwritten expressions that can be replaced by the preferred word or phrase to the right.

Table 4-1. Overwritten Expressions and Preferred Words or Phrases

Overwritten Expression	Preferred Word or Phrase
a majority of	most
a number of	many
anticipate	expect
as per your request	as requested
as to whether	whether
as yet	yet
at the present time	now
based on the fact that	because
due to	because
end result	result
fewer in number	fewer
finalize	end, complete
for the purpose of	for
in close proximity	close, near
in connection with	with, along with
in need of	needs
in order to	to
in the event that	if
it is suggested that	initiate



Overwritten Expression	Preferred Word or Phrase
it should be noted that	note that
on a daily basis	daily
perform	do
prior to	before
take into consideration	consider
terminate	end
traverse	cross, go through, go over
utilize	use
with reference to	about

Although the goal is to keep NEPA documents simple, short, and concise, it is better to use an extra sentence to explain an idea or a technical term to ensure that readers understand the concept, when needed.

Example: Suspended sediment increases turbidity and reduces aquatic plant life productivity. Turbidity refers to water clarity. Therefore, water will appear murkier when more suspended sediment is present.

Example: There are four sites with recognized environmental conditions. Recognized environmental conditions are sites with the presence of potential or known soil and groundwater contamination from hazardous materials.

Overall, try to avoid over-using technical jargon. Select terms that a public reader will understand. For example, use the term clean up instead of remediate.

Example: Within the project area there are several gas stations that have undergone clean-up due to leaking underground storage tanks.

4.2 Active Voice and Passive Voice

CDOT recommends using an active voice to make your writing stronger and more direct. When you write in active –rather than passive–voice, you usually use fewer words, resulting in a shorter document. Always use active voice when describing mitigation on local agency projects in an effort to be clear about the mitigation responsibility (i.e., CDOT versus local agency).

Here’s an example of active and passive voice.

Passive: The bridge would be constructed by CDOT.

Active: CDOT would construct the bridge.



Another example of passive voice commonly used is:

Passive: There are several factors to be considered in deciding which alternative to select.

To make this active, restructure so that someone is doing the action:

Active: CDOT and FHWA will consider several factors to determine which alternative to select.

NEPA documents lend themselves to passive voice sentence construction; you must make a real effort to rewrite them in active voice. You can turn around the passive sentences by adding an appropriate subject but be aware that you could be faced with another concern: using the same subject repeatedly. Consequently, you must think about the flow of your text. Use active voice as much as possible, but don't be afraid to include a passive voice sentence for variety.

4.3 Sentence Structure

4.3.1 Parallel Construction

Sentence elements (i.e., verbs, nouns, adjectives, infinitive phrases) of equal rank must be “balanced” or “matched.”

Incorrect: The purpose of the roadway project is safety, to reduce congestion, and so that commuters would bypass the historic downtown business district.

Correct: The purpose of the roadway project is to improve safety, reduce congestion, and allow commuters to bypass the historic downtown business district.

Notice that in the correct example a verb is matched by a verb and a noun by a noun - “improve safety,” “reduce congestion,” and “allow commuters.” The same is true in the following example:

Incorrect: The mitigation would involve replacing and replanting shrubs, an analysis for the presence of beetles, and the Colorado Parks and Wildlife (CPW) would have to be informed before any plants are removed or destroyed.

Correct: The mitigation would involve replacing and replanting shrubs, analyzing whether beetles are present, and informing the CPW before removing or destroying any plants.

Notice that the verbs in the correct example match in form (“replacing and replanting,” “analyzing,” “informing,” and “removing or destroying”).



Parallel structure also applies to bulleted lists.

Incorrect:

The duties of the environmental planner are:

- ▶ To coordinate the environmental document preparation
- ▶ Writing the environmental document
- ▶ Analysis of the data gathered by the specialists

Correct:

The duties of the environmental planner are to:

- ▶ Coordinate the environmental document preparation
- ▶ Write the environmental document
- ▶ Analyze the data gathered by the specialists

Remember, you can write your sentences any number of ways to achieve parallel construction. The way you do it is up to you but make sure your elements agree.

4.3.2 Subject-Verb Agreement

The number of the subject always determines the number of the verb. Do not be confused by words or phrases that come between the subject and the verb.

Incorrect: The historical importance of the site—its high architectural integrity and its link with Denver’s earliest pioneer family—have been established.

Correct: The historical importance of the site—its high architectural integrity and its link with Denver’s earliest pioneer family—has been established.

Use a singular verb following each, either, everyone, everybody, neither, nobody, and someone.

Incorrect: Neither of the alternatives have a substantial impact on visual quality.

Each of the households being displaced are assigned a relocation advisor.

The easiest way to remember this is to avoid the phrase “of the” as shown in the improved versions below.

Correct: Neither alternative has a substantial impact on visual quality.

Each household being displaced is assigned a relocation advisor.

In this way, subject/verb agreement is more evident.

The word none is usually followed by the singular verb form, since none usually means “no one” or “not one.”

Incorrect: None of the alternatives are without substantial biological impacts.

Correct: None of the alternatives is without substantial biological impacts.



Whenever two or more nouns are joined by “and”, the verb form will almost always be plural.

Example: The Chatfield Dam and the Cherry Creek Dam are located upstream of the project area.

When nouns are joined by with, as well as, in addition to, except, together with, and no less than, the subject is still considered singular, meaning that the verb also remains singular.

Example: The Chatfield Dam as well as the Cherry Creek Dam is located upstream of the project area.

4.4 Punctuation

This section outlines the preferred punctuation for NEPA documents.

4.4.1 Apostrophe

- ▶ Use chiefly to indicate the possessive case (except for the word its), indicate contractions, and create certain plurals (e.g., BTU’s)

Example: For more information, please refer to CDOT’s revised NEPA Manual.

- ▶ Do not use an apostrophe with acronyms

Example: 2 EISs, rather than 2 EIS’s. (Note: You do use an apostrophe in the unlikely event that you’re talking possessive EIS. “The EIS’s appendices were bulky.” In cases like this, try to re-write the sentence to avoid possessive EIS: “The appendices in the EIS were bulky.”)

4.4.2 Brackets

- ▶ Use to set off editorial matter within quoted material (i.e., information added to the work of another author)

Example: “Construction of the Chatfield Dam [located in the project area] began in 1967”

- ▶ Use as parentheses within parentheses

Example: It can be assumed that an alternative with a higher predicted load (i.e., a greater quantity of constituent [such as dissolved copper] leaving the road) would have more water quality impacts than another alternative.

4.4.3 Comma

- ▶ Mark brief pauses in the flow of ideas and avoid misunderstandings.

- ▶ In a series of three or more terms, use a comma after each term

Example: frogs, snails, and turtles

- ▶ Enclose parenthetical expressions (unrestricted clauses) between commas.

Example: Alternative 2, which crosses over the river, would affect spawning gravels.

- ▶ Put a comma before a conjunction introducing an independent clause.

Example: Alternative 3 crosses over the river, but it does not affect any spawning gravel sites.



- ▶ Comma use in bulleted lists is optional, but not recommended. If commas are used, place an “and” after the second to the last item in the list.

Example:

- Frogs,
- Snakes, and
- Turtles

4.4.4 Period

- ▶ Periods indicate an idea is complete.
- ▶ Do not use periods in acronyms

Example: CPW, not C.P.W.

- ▶ Use a period after most abbreviations

Example: e.g., i.e., etc.

- ▶ Do not use a period after abbreviated units of measure

Example: ft, rather than ft.

- ▶ Use in bulleted lists only for items that are complete sentences

Example: The actions identified below will help avoid construction impacts:

- If lead paint is present, this material must not be allowed to flake off and enter receiving waters.
- Caissons used to create bridge piers could require dewatering. A discharge permit and a treatment strategy will be needed before dewatering activities can occur.

4.4.5 M-Dash

You use the m-dash (slightly longer than a regular dash) in tables and figures to indicate range (e.g., 1990-2000). Words should be used in body text in place of the dash (e.g., from 1990 to 2000).

To insert an m-dash, from the Word pull-down menu, select Insert, Symbol, and select the Special Character tab. You can also use the keyboard shortcut (Ctrl + Num- [This is the dash on the number keypad, not the dash to the right of and above the letter “p”].)

Section 4.4 includes general guidance on the use of the hyphen (i.e., En-dash).

4.4.6 Parentheses

If a parenthetical expression is an independent sentence, its first word should be capitalized and the period (or other punctuation) should be included inside the parenthesis. (This sentence is an example of how an independent parenthetical statement should look.)

If a parenthetical expression occurs within a sentence (even if it could stand alone as an independent sentence) it is not capitalized and no period is placed inside the parenthesis; however, a question mark or an exclamation point may be used (just like the parenthetical statements in this sentence!).



4.4.7 Colon

- ▶ Use to indicate an enumeration, a quotation, an example, or an explanation will follow.
- ▶ Use phrases such as: such as, as follows, the following, these things prior to the colon.
Example: Several resources need re-analysis, as follows: water quality, wetlands, and wildlife.
- ▶ Do not use a colon if the list follows a verb.
Example: The road improvements include a widened shoulder, new sidewalk, and new pedestrian crossing.
- ▶ Use to separate numbers.
Example: The vote passed 2:1.

4.4.8 Semicolon

- ▶ Use to link independent clauses not joined by a conjunction (and, but, for, yet).
Example: Alternative 1 affects 0.005 acre of wetlands and waters of the U.S.; Alternative 2 affects 0.003 acre of wetlands and waters of the U.S..
- ▶ Use to link clauses joined by a conjunctive adverb (consequently, furthermore, however)
Example: Existing I-70 mainline and ramp operations are marginally acceptable; however, the eastbound off-ramp intersection with Youngfield Street operates at LOS F [or failing] during the afternoon peak hour.
- ▶ Use to separate phrases that contain commas
Example: Portland, Oregon; Springfield, Illinois; and Savannah, Georgia.
- ▶ Place semicolon outside of quotations and parentheses
Example: The speed limit is currently 65 miles per hour (mph); an increase to this limit may be considered in the future.

4.4.9 Quotation Marks

- ▶ Use to set off word-for-word quoted material from another source
- ▶ Punctuation associated with the quoted material should be included inside the quotation marks.
- ▶ Cite the source directly after the quote, but do not include within the quotation marks.
Example 1: “Construction of the Chatfield Dam began in 1967” (Source, Date, page number).
Example 2: Mid-sentence quote: According to the report, “Water quality in the South Platte River has improved” (Source, Date, page number), although no specific water quality data was provided.
Example 3: End of the sentence quote: The Colorado Department of Public Health and Environment (2001) reported “improved water quality in Sand Creek” (page number).



- ▶ Use an ellipsis (i.e., ...) when omitting material from a quotation.
Example: As summarized by Baker and Knight (2000), "...road density exhibits an apparent threshold of 0.37 miles per square mile, above which natural populations of certain large vertebrates decline" (p.98).

Reference your standard style guide of choice for more specific information on quotation marks. **Section 7** provides a list of the standard reference style guides.

5. Commonly Misused Words and Expressions

This chapter addresses more than just the misuse of English grammar and words. It also addresses style. To communicate effectively, you want to make clear, definite statements. This means that you must have a clear and definite understanding of the words that you use and how you use them.

- ▶ **About.** Approximately. About is an estimate and less exact than approximately, which implies an attempt at calculation.
- ▶ **Accept. Except.** Accept is a verb meaning "to receive."
Example: They accepted the offer of assistance.
Except means "other than" or "excluding."
Example: All roads, except Gunther Avenue, will be repaved.
- ▶ **Aesthetic. Esthetic.** Aesthetic is preferred.
- ▶ **Affect. Effect. Impact.** Affect is a verb meaning "to influence" or "to change." It is rarely used as a noun. Effects and impacts are synonymous. Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.
Example: The weather may affect construction.
Effect is used as a noun meaning "result" or "outcome."
Example: The effects of heavy rain would be runoff.
Effect can also be used as a verb meaning "to bring about," "to accomplish."
Example: The heavy rain effected substantial flooding and runoff.
As a noun, impact means "the force of impression of one thing on another: a significant or major effect." It is a much stronger word than effect; use it accordingly. In most of your document writing, you will not use impact as a verb, which refers to pressing things together, such as impacted teeth. (**Incorrect:** The project impacted the subdivision. **Correct:** The project affected the subdivision.)
- ▶ **Aggravate. Irritate.** To aggravate is "to make worse, more serious, or more severe." To irritate is "to provoke" or "to annoy."



- ▶ **Among.** Between. Among implies more than two. Between implies only two.
- ▶ **And/or.** This is a shortcut that is discouraged. The meaning can almost always be better put, with less ambiguity.
- ▶ **Apparent. Evident.** Obvious. All refer to something easily perceived. Apparent applies to that which can readily be seen or perceived: an apparent effort. Evident applies to that which facts or circumstances make plain: His innocence was evident. Obvious applies to that which is unquestionable, because of being completely manifest or noticeable: an obvious change of method.
- ▶ **Archaeology. Archeology.** Archaeology is preferred.
- ▶ **Assure. Ensure. Insure.** Ensure, insure, and assure are synonyms and interchangeable in many contexts where they indicate the making certain or inevitability of an outcome.
Example: Changing the alignment will ensure that all impacts to wetlands are avoided.
Insure sometimes stresses the taking of necessary measures beforehand (such as an insurance policy).
Example: The project contractor is properly insured.
Assure distinctively implies the removal of doubt and suspense from a person's mind (a guarantee of an outcome.)
Example: The contractor assured the project manager that the project schedule will be met.
- ▶ **Being.** Do not use after “regard as”. (**Incorrect:** This location is regarded as being the best. **Correct:** This location is regarded as the best.)
- ▶ **build alternatives.** Notice the capitalization of this term. Build Alternative is the name of a specific alternative and a proper noun (capitalize); build alternatives is not specific and refers to a group of alternatives (do not capitalize). Capitalize when referring to a specific alternative, such as Alternative 2.
- ▶ **But.** Do not use after doubt or help. (**Incorrect:** no doubt but that; could not help but see. **Correct:** no doubt that; could not help seeing.)
- ▶ **Can. May.** Means “am (is, are) able.” Do not use in place of may, which expresses permission or possibility.
- ▶ **Capitol. Capital.** Capitol refers to the building or group of buildings in which state government functions are conducted, while capital refers to accumulated goods, net worth, a letter, or the city serving as a seat of government.
- ▶ **City of...** When referring to a city, do not use the construction City of...unless you are referring to the city government. Simply write the name of the city. (**Incorrect:** The City of Lakewood is located west of the City and County of Denver. **Correct:** Lakewood is located west of Denver. **Incorrect:** Denver is improving pedestrian and bike lanes throughout the city. **Correct:** The City and County of Denver is improving pedestrian and bike lanes throughout the city.)
- ▶ **Clearance. Clearances.** These words should generally be avoided as they imply that all review and analysis is complete and never has to be revisited. Examples of preferred wording would be “...compliance with the Historic Preservation Act...and... consultation with appropriate agencies.”



- ▶ **Commonly.** Generally. Usually. All words can be used to describe something that occurs more often than not.
Example: Generally, a site visit will be required for a new project.
- ▶ **Typically.** Use to describe something that occurs in a typical manner or circumstance.
Example: Typically, the public comment period lasts 30 days.
- ▶ **Criterion. Criteria.** Criterion is singular and criteria is plural.
- ▶ **Data. Datum.** Data is plural and is best used with a plural verb. (These data are...). Data is the plural of datum.
- ▶ **Different than.** Than is not the correct preposition. It should be different from.
- ▶ **Disinterested.** Do not confuse this word with uninterested, which means “not interested in.” Disinterested means “impartial” or “unbiased.”
- ▶ **e.g., i.e., etc.** E.g. is an abbreviation for “for example”. I.e. is an abbreviation for “that is”. Etc. is an abbreviation for “and so forth”. Always use commas after these abbreviations. If your sentence includes, “e.g.”, do not follow this with “etc.”, because this would be repetitive.
- ▶ **Fact. Information.** Use this word only when referring to something “actual” or “verifiable.” This word should not be used in matters of judgment (e.g., the fact that the location is beautiful). Information is the knowledge obtained from investigation, study, or instruction and can include facts and data.
- ▶ **Facility.** Avoid this word. Use the specific word, such as hospital, office, church, gymnasium, and school instead of facility, unless there are multiple facilities to which you are referring.
Example: There are several important community facilities in the project area.
- ▶ **Farther. Further.** Farther is best used when referring to distance. Further is best used when referring to time or quantity.
Example: “Hard” ground is more reflective and will produce louder sound levels farther from the source. The proposed development, combined with projected regional growth, will place additional traffic demands on the interchange that will further degrade operations.
- ▶ **Foreseeable future.** This phrase is intended primarily to be used in conjunction with cumulative impacts (40 CFR 1508.7). Avoid using this phrase in other contexts. Be specific.
- ▶ **However.** Do not use the word “however” at the beginning of a sentence when you actually mean “nevertheless.” “However” generally works best when not placed in the first position.
- ▶ **Imply. Infer.** These words are not interchangeable. To imply is “to suggest” or “to indicate” something without expressing it. To infer is “to deduce” or “to arrive at a conclusion by reasoning from evidence.”
- ▶ **Irregardless. Regardless.** Do not use irregardless. It is an American dialectal term for regardless. Although it is becoming more accepted in speech, it is not appropriate for print. Use regardless.



- ▶ **Its. It's.** Its is a possessive pronoun.
Example: CDOT is a state government agency. Its mission is to improve mobility across Colorado.
It's is the contraction of it is. The use of "it's" should be avoided in technical writing.
Example: It's too early to develop specific relinquishment details for each build alternative.
- ▶ **-ize.** Avoid "izing." Unfortunately, this suffix is added to many words: finalize, educationalize, containerize, prioritize, utilize. Do not apply -ize to a noun to create a verb. You will often find that a useful verb already exists. Consult your dictionary or thesaurus for better options.
- ▶ **Less. Fewer.** Less refers to value, degree, or amount. Fewer refers to countable items.
- ▶ **Lie. Lay.** Lie means "to occupy a certain relative place or position or to have a place in relation to something else." Avoid using the word lay.
Example: The project area lies north of Denver.
- ▶ **Like.** Do not use for the conjunction as. (**Incorrect:** Biologists will complete protocol surveys, like CPW requires. **Correct:** Biologists will complete protocol surveys, as required by the CPW.)
- ▶ **Mitigate.** Mitigate is a verb meaning "to cause to become less harsh or hostile," and should normally not be attached to a preposition (i.e., mitigate for, mitigate against). Also make sure you refer mitigation to the correct noun. Do not mitigate for the kit fox; instead, mitigate effects on the kit fox.
- ▶ **Neither...nor.** Use this construction only when connecting a subject of two or more singular words.
Example: Neither air quality nor water quality would be impacted.
- ▶ **Nor.** After a negative expression, the correct word is or. (**Incorrect:** CDOT would not relocate any farm nor business without providing proper relocation services. **Correct:** CDOT would not relocate any farm or business without providing proper relocation services.)
- ▶ **Numerous. Many. Several. Various.** Use numerous or many to describe something that consists of great numbers of units or individuals (e.g., numerous accidents have occurred on this stretch of road) Use several to describe something that has an indefinite number more than two and fewer than many. Use various to describe something that has an indefinite number greater than one (e.g., various methods of public outreach will be implemented).
- ▶ **One of the most.** There is nothing wrong with the grammar here. This is just an empty phrase. Try omitting it and see if it takes away from the meaning of your sentence—in most cases it will not.
- ▶ **Over. More than.** Over implies position. Do not use over when you mean more than.
Example: There are more than 250 businesses in the project area.
- ▶ **Percent. Percentage. %.** Percent means "per hundred." Percentage means "proportion or share in relation to a whole." The symbol, %, is only acceptable in tables or figures. Do not use the symbol in the document text.
- ▶ **Possess.** This word sounds more impressive than have or own, which is exactly why it should be avoided.



- ▶ **Principal. Principle.** When used as a noun, principal means “a person in authority.” As an adjective, it means “chief,” “main,” or “most important.” Principle is a noun only, and means “rule,” “code,” or “doctrine.”
- ▶ **Proposed Action. Preferred Alternative.** The proposed action is the action that CDOT proposes to take. The Preferred Alternative is how you accomplish the proposed action - construct a four-lane arterial roadway.
- ▶ **Respective. Respectively.** These words can usually be left out and the sentence restructured. In most cases, this will enhance clarity and readability.
- ▶ **Right-of-way (ROW).** The term right-of-way should always be hyphenated and lowercase (unless at the beginning of a sentence or part of a title). The acronym, however, is not hyphenated. The plural is rights-of-way.
- ▶ **Signalize.** This bit of jargon, which means “to install traffic signals,” can be done away with. Why not simply install traffic signals? This wording does not take away from the technical meaning of the term, and improves clarity and general understanding.
- ▶ **Significant.** Avoid using significant in environmental documents, as this has a specific meaning under NEPA (42 United States Code [USC] 4321 et seq). Substantial is usually an appropriate substitute. Use subjective words carefully in your documents.
- ▶ **Than. Then.** These two words are often confused. Then generally means “at that time” or “next in order of time or position.” Than is a term used for comparison. Be careful not to leave out any necessary words when using than in a sentence; it can cause ambiguity. (**Incorrect:** Alternative 1 would affect air quality more than Alternative 2 [grammatically, this means that Alternative 1 would affect air quality more than Alternative 1 would affect Alternative 2]. **Correct:** Alternative 1 would affect air quality more than Alternative 2 would.)
- ▶ **That. Which.** Use that for restrictive clauses (those that cannot be removed without distorting the meaning of a sentence). Use which for nonrestrictive clauses (those that can be put in parentheses or removed). Which is normally set off by commas.
- ▶ **Transpire.** This word is often incorrectly used to mean “happen” or “come to pass.” The correct meaning is “to be revealed” or “to become known.”
- ▶ **Who. That/Which.** Use “who” to refer to human beings and animals with a given name. That and which are used to refer to inanimate objects or animals without a given name.
- ▶ **Windshield Surveys.** This term should either be avoided or defined when it is used. To the average reader this would imply a survey of windshields, when it actually means a survey conducted by driving by a site and visually inspecting it from the automobile.
- ▶ **Would. Will. Shall.** Use “would” in all cases where no definite course of action has been decided. Use “will” only when a definite course is known, or with the qualifier if. (**Incorrect:** CDOT would build a soundwall adjacent to the residential area. **Correct:** CDOT will build a soundwall adjacent to the residential area.) Avoid the use of shall. Please note that mitigation requirements are commitments, while impacts are not considered definite until a Preferred Alternative is selected.
- ▶ **Verbal. Oral.** Verbal applies to spoken rather than written words. Oral applies only to spoken words.



6. List of Helpful Resources

Improving the Quality of NEPA Documents

American Association of State Highway and Transportation Officials (AASHTO), American Council of Engineering Companies (ACEC), and Federal Highway Administration (FHWA). 2006. Improving the Quality of Environmental Documents. May. Retrieved December 2012 from http://www.environment.fhwa.dot.gov/projdev/pd_doc_quality.asp

Ready-Friendly Document Tool Kit

Washington Department of Transportation. 2008. Ready-Friendly Document Tool Kit. June. Retrieved December 2012, from: <http://www.wsdot.wa.gov/Environment/ReaderFriendly.htm>

Standard Reference Style Guides

American Psychological Association. 2009. Publication Manual of the American Psychological Association, 6th Edition. July.

Modern Language Association of America (MLA). 2008. MLA Style Manual and Guide to Scholarly Publishing, 3rd Edition. June.

MLA. 2009. MLA Handbook for Writers of Research Papers, 7th Edition. March.

University of Chicago Press. 2010. The Chicago Manual of Style, 16th Edition. August.

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Council on Environmental Quality (CEQ). 1978. National Environmental Policy Act (NEPA) Regulations. 40 Code of Federal Regulations (CFR) § 1500 - 1508. Retrieved December 2012 from http://ceq.hss.doe.gov/nepa/regs/ceq/toc_ceq.htm.

Federal Highway Administration (FHWA). Technical Advisory T 6640.8A. 1987. Guidance for Preparing and Processing Environmental and Section 4(f) Documents. October 30. Retrieved December 2012 from <http://www.environment.fhwa.dot.gov/guidebook/vol2/doc7i.pdf>.

FHWA. 1990. The Importance of Purpose and Need. September 18.

Washington Department of Transportation. 2008. Ready-Friendly Document Tool Kit. June. Retrieved December 2012 from: <http://www.wsdot.wa.gov/Environment/ReaderFriendly.htm>



Appendix D. Quality Assurance (QA)/Quality Control (QC) Guidance for NEPA Documents



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1. Introduction

The Colorado Department of Transportation (CDOT) is strongly committed to sound engineering design, application of sound scientific principles in its analyses, and the production of quality documents. This Quality Assurance (QA)/Quality Control (QC) guidance for National Environmental Policy Act (NEPA) documents is designed to provide a functional and easily understood set of guidelines to maintain and ensure quality during the preparation of NEPA documents including: Categorical Exclusion (CatEx) documentation, Environmental Assessments (EA), and Environmental Impact Statements (EIS). These documents are public documents that are referenced by private individuals, companies, government agencies, and non-governmental organizations. The public nature of these documents requires them to be based upon accurate technical information and environmental analysis, to be well-written, easy to read, and to provide full and honest disclosure.

Quality Assurance is the process that is followed to ensure the preparation of quality NEPA documents, while Quality Control refers to the systems in place to evaluate quality.

“To provide the best multi-modal transportation system for Colorado that most effectively moves people, goods and information”

CDOT’s Mission Statement

1.1 Purpose

The purpose of QA is to ensure that the project team’s processes are sound and that QC is properly provided on every project. In other words, QA is an oversight (or audit) function to make sure that QC is being properly conducted. The purpose of this QA/QC guidance is to provide a framework to ensure that:

- ▶ Quality work is consistently performed and that quality deliverables are consistently produced
- ▶ Multidisciplinary data acquisition and design efforts are coordinated
- ▶ Design is sufficiently complete to produce a planning-level cost estimate for the purposes of project funding and supporting the impact and mitigation analysis in a NEPA document
- ▶ Project continuity occurs in record-keeping and document review
- ▶ Orderly procedures are established to provide QC for engineering design and scientific calculations, drawings, and specifications
- ▶ Environmental and design attributes meet established industry or agency standards and comply with applicable agency requirements
- ▶ Project documents have undergone the necessary technical editing (including grammar, punctuation, and spelling), proofreading, and editorial process

“The ultimate goal is to produce better NEPA documents for public use, improve the legal defensibility of the document and process, comply with the intent of NEPA, and make better project decisions.”

AASHTO/ACEC/FHWA *Improving the Quality of Environmental Documents*



1.2 Scope

“CDOT has committed to complying with the intent and requirements of NEPA for all transportation activities, regardless of whether or not they are federally funded.”

CDOT Environmental Stewardship Guide

A QA/QC plan shall be prepared for each project. The intent of the QA/QC plan is to specify all QA/QC activities that will be implemented for work on the project. Just as CatEx, EA, and EIS documents vary in scope and complexity, the QA/QC plan prepared will be project-specific and tailored to meet the needs of the project and project team. Since professional staff at CDOT, consultants working on CDOT projects, and local agency staff are the primary audiences for this Manual, the objective of this guidance is not to be overly prescriptive. The author of the QA/QC plan should be defined in the project-specific scope of work. Example QA/QC Table of Contents from projects QA/QC plans are included in **Attachment 1** and **Attachment 2**.

At a minimum, CDOT recommends the QA/QC plan contain the following sections:

- ▶ Name of the Quality Assurance Manager (defined in Section 2.2)
- ▶ Name of a designated staff member to conduct the technical editing of the NEPA document, including technical memoranda, reports, and supporting documentation, prior to CDOT, the Federal Highway Administration (FHWA), and other agency review. This may be the same person as the Quality Assurance Manager.
- ▶ Brief description of the project scope of work and key deliverables
- ▶ Project leadership organization chart
- ▶ Names of the Project Manager and each major discipline task manager, including sub-consultants and/or vendors
- ▶ One major point of contact from the project team who will be responsible for coordination between the project team, CDOT, FHWA, and other agencies
- ▶ Concise discussion of the responsibilities of the Project Manager and each major discipline task manager
- ▶ Project team contact list
- ▶ Outline of the filing system to be used for the project, including procedures for geographic information system (GIS) data management, computer aided design and drafting (CADD) data management, and computer file maintenance, as appropriate
- ▶ Verify that all environmental and design attributes meet established industry or agency standards and comply with all applicable jurisdictional codes and requirements
- ▶ Ensure engineering design is sufficiently complete to produce a preliminary, planning-level cost estimate for the purposes of project funding (for complete design, construction, and implementation of required mitigation) and to support environmental analysis
- ▶ Summary of the procedures to be used for document proofreading, quality, completeness and accuracy. **Chapter 8** of this Manual establishes a procedure for FHWA and CDOT review of documents prepared for CDOT NEPA projects.

Planning is the beginning. Quality in work is not an accident.



1.3 Engineering Design and Environmental Analysis

CDOT is committed to maintaining the quality and integrity of the engineering design and environmental analyses performed in support of the NEPA process. The purpose of this section is to acknowledge that engineering design and environmental analysis have resource specific QA/QC protocols that need to be applied but are not defined in this guidance. Engineering design will conform to the applicable standards of CDOT unless directed otherwise by the CDOT Project Manager. Additional information on the QC processes for engineering design is included in the CDOT Project Development Manual (CDOT, 2013).

Due to the volume and variety of environmental data collected and analyses performed for a NEPA project (wetlands, historic properties, water quality, noise, air quality, hazardous materials, farmlands, etc.), CDOT does not mandate a specific QC process for these activities. However, CDOT expects the environmental analyses performed to be in accordance with industry standards and for these analyses to be conducted by a person(s) who possesses sufficient specific education, training, and experience necessary to exercise professional judgment and develop opinions and conclusions that are sufficient to meet industry standard objectives and performance factors in accordance with the appropriate guidance for each resource. Additional information on specific data requirements and methodologies for these environmental resources is included in **Chapter 9** of this Manual.



2. Project Management

CDOT expects the project team for all NEPA projects to accomplish the work in an effective and timely manner. Proactive project management is essential to plan, monitor, and control all aspects of a project, including the project team, to produce a quality document on time and within budget. Key components of the project management philosophy are:

- ▶ Comprehensive project scoping
- ▶ Collaborative public process
- ▶ Project team identification
- ▶ Dedication to product quality and defensibility
- ▶ Estimating and budgeting
- ▶ Scheduling
- ▶ Monitoring progress and performance
- ▶ Taking corrective action as required

For additional information on project management expectations, the *Generic Scope of Work Basic Contract* (CDOT, 2011) references project management and coordination requirements on a project-specific basis.

“The best way to eliminate quality problems is to minimize the chance of making mistakes with good planning, adequate preparation, and the necessary support.”

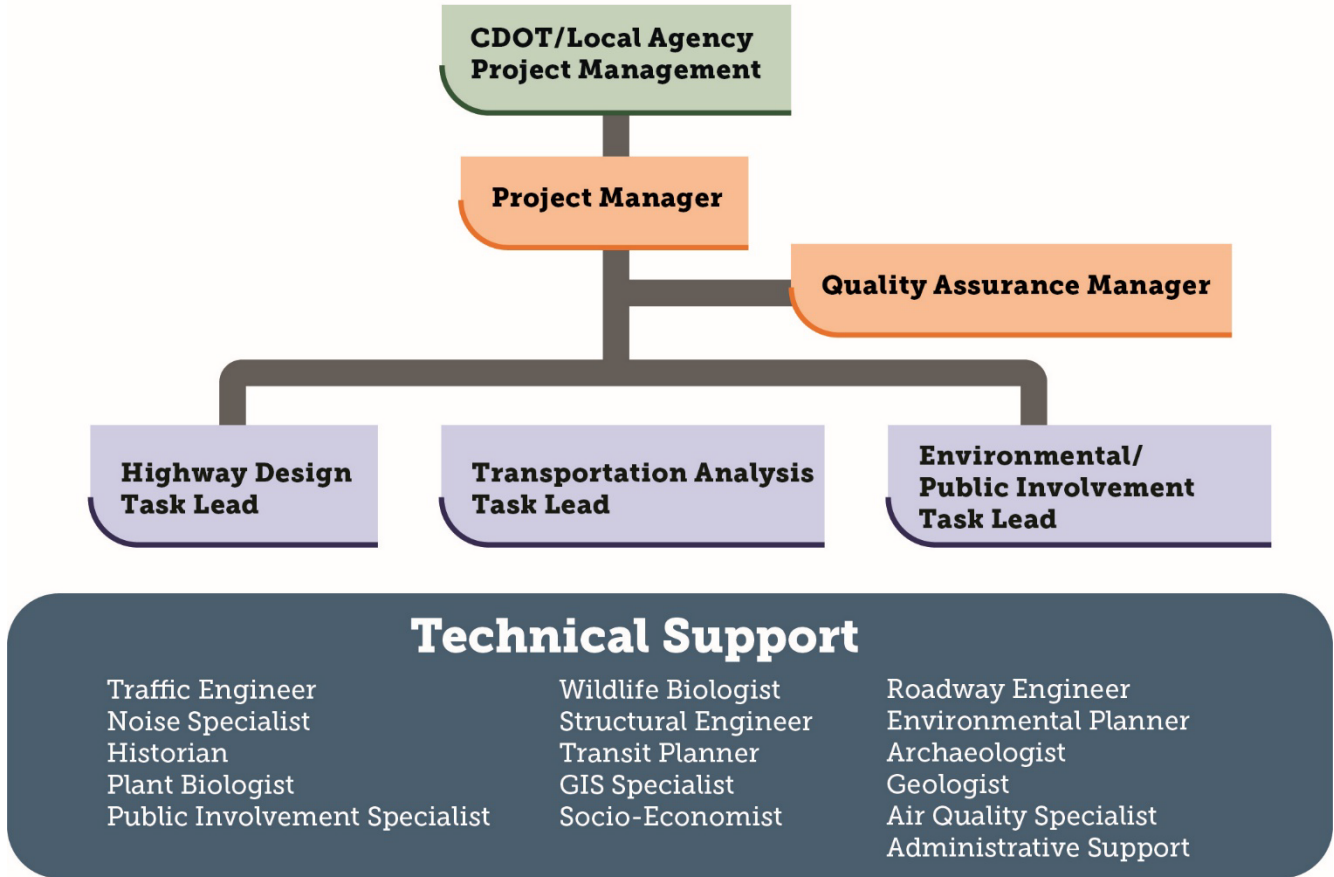
PSMJ Resources, Inc. *The Ultimate Project Management Manual*

2.1 Project Team

The QA/QC plan should be prepared at the beginning of a project. Following review and approval by the CDOT Project Manager, the QA/QC plan should be distributed to all project team members to serve as a virtual blueprint for the project and a reference source for all project team members, CDOT, FHWA, and other agencies. To ensure an understanding of workflow and coordination responsibilities, a project leadership organization chart is recommended for inclusion in the QA/QC plan. An example project leadership organization chart is shown on **Figure 2-1**.



Figure 2-1. Project Leadership Organization Chart



2.2 Project Team Responsibilities

It is important that each party in a NEPA project understand their role and role definition to meet the quality expectations of the project. It is the responsibility of project team members to follow the procedures outlined in their project-specific QA/QC plan and work efficiently with one another during the preparation of the NEPA documents. As an example, specific positions and associated responsibilities are summarized below.



2.2.1 Project Manager

The Project Manager shall:

- ▶ Prepare periodic project schedule updates
- ▶ Hold internal staff meetings, as necessary, to keep the project on schedule
- ▶ Communicate with the CDOT or Local Agency Project Manager, QA Manager, and Highway Design, Transportation Analysis, and Environmental/ Public Involvement Task Leads
- ▶ Organize monthly project management meetings, prepare agendas, and prepare meeting notes
- ▶ Prepare “to do” action item lists
- ▶ Develop and maintain project files to document the NEPA process and important decisions
- ▶ Coordinate with the CDOT or Local Agency Project Manager on preparation of the Administrative Record, if necessary
- ▶ Prepare monthly invoicing
- ▶ Notify the CDOT or Local Agency Project Manager immediately when tasks beyond the scope may be necessary
- ▶ Ensure that QC procedures are followed for engineering design, environmental analyses, and NEPA document preparation

2.2.2 Quality Assurance Manager

The QA Manager shall:

- ▶ Coordinate the QA/QC processes with the Project Manager
- ▶ Maintain and ensure product quality during preparation of the NEPA documents
- ▶ Track when and how technical reviews have occurred
- ▶ Ensure that QA/QC processes have been followed

“Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in Environmental Impact Statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusion in the statement.”

Council on Environmental Quality (CEQ) Regulations 40 Code of Federal Regulations (CFR) 1502.24



2.2.3 Highway Design Task Lead

The Highway Design Task Lead shall:

- ▶ Communicate with the Project Manager on meeting the project schedule in relation to highway design tasks
- ▶ Hold internal staff meetings as necessary in relation to highway design tasks
- ▶ Develop and maintain project files in relation to highway design tasks
- ▶ Oversee refinement and screening of the alternatives that will generally satisfy current and projected transportation needs
- ▶ Coordinate between roadway, structures, and hydraulic design team members for the alternatives
- ▶ Ensure QC procedures are followed during engineering design in accordance with applicable CDOT standards

2.2.4 Transportation Analysis Task Lead

The Transportation Analysis Task Lead shall:

- ▶ Communicate with the Project Manager on meeting the project schedule in relation to transportation analysis tasks
- ▶ Hold internal staff meetings as necessary in relation to transportation analysis tasks
- ▶ Develop and maintain project files in relation to transportation analysis tasks
- ▶ Oversee transportation analysis for refinement and screening of the alternatives that will generally satisfy current and projected transportation needs
- ▶ Ensure QC procedures are followed during transportation analysis in accordance with applicable CDOT standards

2.2.5 Environmental/Public Involvement Task Lead

The Environmental/Public Involvement Task Lead shall:

- ▶ Communicate with the Project Manager on meeting the project schedule in relation to environmental/public involvement tasks
- ▶ Hold internal staff meetings as necessary in relation to environmental/public involvement tasks
- ▶ Develop and maintain project files in relation to environmental/public involvement tasks
- ▶ Oversee the evaluation and documentation of the social, economic, and environmental impacts of the alternatives
- ▶ Facilitate preparation of the NEPA document and associated technical reports/technical memoranda
- ▶ Oversee the environmental resource specialists and subconsultants for identification of existing conditions, environmental impacts, and mitigation



- ▶ Coordinate public involvements tasks, such as maintaining the project mailing list, with the project team
- ▶ Ensure QC procedures are followed for environmental analysis in accordance with established industry or agency standards

2.2.6 Technical Editor

The Technical Editor shall:

- ▶ Develop a consistent “look and feel” for the NEPA documents
- ▶ Review and edit each of the NEPA documents for ease of understanding, spelling, grammar, punctuation, and overall flow, consistency, and use of one voice
- ▶ Provide QC for NEPA documents

Environmental Impact Statements shall be written in plain language and may use appropriate graphics so that decision-makers and the public can readily understand them. Agencies should employ writers of clear prose or editors to write, review, or edit statements, which will be based upon the analysis and supporting data from the natural and social sciences and the environmental design arts.

CEQ Regulations 40 CFR 1502.8



3. Records and Documents

In accordance with the American Association of State Highway and Transportation Officials (AASHTO) Practitioner’s Handbook 01 *Maintaining a Project File and Preparing an Administrative Record for a NEPA Study* (AASHTO, 2006), the term “project file” refers to the files maintained by the project team during the NEPA process. The term “administrative record” refers to the documents that are actually submitted by an agency upon request of another party. The goal in managing the project file will be to facilitate development of the Administrative Record if necessary.

“Maintaining an accurate and up-to-date project file is an important task in any NEPA study, regardless of whether litigation is anticipated.”

AASHTO Practitioner’s Handbook 01 Maintaining a Project File and Preparing an Administrative Record for a NEPA Study

The project team must manage document storage, search existing documents, and extract information as necessary to streamline workflow and acquire important information. Document management requires the implementation of document control procedures to track documents generated, file documents, and provide access to previously generated documents. The project file consists of both hard copy and electronic files. CDOT does not currently have a policy for the retention of draft documents. The QA/QC plan should be project-specific and tailored to meet the needs of the project and project team. The following sections provide an example of document retention guidelines, as well as potential electronic file naming protocols.

Draft reports should be labeled draft and include “Working Draft - Do Not Cite or Distribute” in the header or footer.

3.1 Guidelines for Document Retention

“Poor organization and format are frequent criticisms of NEPA documents. Organization and format should help the reader easily understand document content.”

NCHRP 25-25(01)

- ▶ A copy of all documents related to the project and the NEPA process are to be forwarded to the Project Manager or their designee who is responsible for document control. This includes all correspondence, data, reports, substantive e-mails relating to the process or the project, telephone records, meeting minutes and notes. It also includes digital files, such as GIS and CADD data, which will be maintained in accordance with the procedures outlined in the *CDOT CADD Manual* (CDOT, 2011). The *CDOT Corridor GIS Standards* (CDOT, 2001) defines standards for GIS data to coordinate efforts for GIS data creation and compilation to eliminate duplicative efforts, increase data accuracy, streamline project reviews, and document the history of design/construction data. The *CDOT CADD Manual* (CDOT, 2011) provides standardized procedures for CADD and associated electronic files to facilitate the



exchange of information between CDOT regions, specialty groups, and consultants. These documents will be logged in and become a part of the project's document control files.

- Public Involvement documents. Documents related to public involvement including notices of meetings, committee meeting minutes, and correspondence. Public comments will be included in document control, and may be included in the Administrative Record depending on their content. Appropriate correspondence to include will be determined by project management or technical support personnel.
 - Correspondence between FHWA and CDOT. Important issues related to final FHWA decisions will be resolved by letter. E mails between FHWA and CDOT will be included in document control, and may be included in the Administrative Record depending on their content. Appropriate correspondence to include will be determined by project management or technical support personnel.
 - Correspondence between CDOT, FHWA, and other agencies.
 - All reports, data, and memorandums that were prepared to provide detail to supplement information presented in the NEPA document.
 - All documents related to internal processes that lead to a decision or a change in direction for the project.
 - NEPA documents and any amendments or supplements.
- ▶ When documents are sent to the Project Manager or their designee, project team members must give these documents designations in keeping with the Document Filing Codes (Table 3-1). For example, members must consider which documents were used as a resource to conduct analyses, create mapping, etc. The Project Manager or their designee will decide whether the document will be allocated to the Administrative Record.
 - ▶ All e-mails relating to the process or the project that are determined to be non-substantive by individual contributors are to be saved in separate folders labeled "e-mails." Then on a weekly or monthly basis the individual contributors import all of these stored e-mails. This process is necessary because some e-mails will be subject to requests made under the Colorado Open Records Act, even if they are not part of Document Control or the Administrative Record.
 - ▶ All documents that project staff consider confidential, or that a third party has asked to keep confidential, such as locations of certain cultural resources, should be marked "CONFIDENTIAL" and kept in a separate file. The team is required by law to produce a "Vaughn" list regarding those documents. A Vaughn list includes: the type of document, the date of the document, who prepared the document, a brief description of the subject matter or the document's contents, who has received copies of the document, and the grounds for claiming that the document is confidential.

"The project file allows the project team to locate important documents quickly, which reduces inefficiency and duplication of effort, while also reducing the risk of overlooking information. The project file also enables an agency to respond to document requests under the Freedom of Information Act (FOIA) and similar State public records laws."

AASHTO Practitioner's Handbook 01 *Maintaining a Project File and Preparing an Administrative Record for a NEPA Study*



3.2 Format for Titles of Electronic Files

Documentation related to NEPA projects include letters, memorandums, facsimiles, phone logs, electronic mail, transmittal letters, meeting agendas, meeting minutes, technical reports, and NEPA process documents. The following table provides suggested protocols for the naming of electronic files.

Table 3-1. Format for Titles of Electronic Files

Document Type	Formatting	Example
Letters	LTR - Subject-Author-Date	LTR - Water quality SJS 040404.doc
Reports	RPT - Subject Author Rev Date	RPT - Draft EIS TA 040404.doc
Memo	MEM - Subject Author Date	MEM - Open House 2 HM 050104
Facsimile	FAX - From-Subject Date	FAX - VH Open house 050104
E-mail	EMA - From Subject Date	EMA - Sub-Consultant Agreement 050104
Drawing	DWG - name-date	DWG-Alternative 1-060907
Presentation	PPT - Subject date rev	PPT - Small Grps 050104 Rev 2
Agenda	AG- Title Date	AG- TAC 070604
Meeting Minutes	MM- Title date	MM- PM 061004
Agreements	AGM - Company Date	AGM - FHU 061004
Directories	DIR - Title Date	TAC - Member Directory 061004
Small Groups	SMG - Group Date	SMG - Ft. Collins Chamber 040104
News Releases	NEW - Title Date	NEW - New Highway 010404
Public Open Houses	OPN - Description Date	OPN - Comments Sheet 061004
Purpose & Need	PAN - Description Date Rev	PAN - Draft 060404 Rev 4

3.3 Audit

To verify that the QA/QC plan has been followed, it is recommended that a third-party not involved in the project conduct an audit of the project. The objective of the audit is to identify strengths and weaknesses in the QA/QC plan and to develop protocols to improve the QA process. The project audit should verify that the QA/QC plan was followed, review documentation maintained by the designated QA Manager, and provide recommendations to improve QA.

“CDOT will support and enhance efforts to protect the environment and quality of life for all of Colorado’s citizens in the pursuit of providing the best transportation systems and services possible.”

CDOT’s Environmental Ethics Statement



3.4 Open Records Request

All of the documents discussed in Section 3.2, including personal notes and e-mails, are subject to the Colorado Open Records Act and/or Freedom of Information Act (FOIA). If a records request is made, CDOT and the entire project team may be required by law to respond to the request within 72 hours. Therefore, it is important for all team members to stay current on sending a copy of all documents related to the project and the NEPA process to the Project Manager or their designee. Implementation of a QA/QC plan should facilitate requests under the Colorado Open Records Act and/or FOIA.

All requests for information under the Colorado Open Records Request Act and/or FOIA are to be processed in the following manner:

- ▶ The request is sent to the CDOT Project Manager and to the CDOT Legal Assistant, with no action taken by the project team unless directed by them or their designee.
- ▶ Once directed, the project team develops an estimate of the cost to provide the requested information.
- ▶ Once CDOT receives the funds from the requesting party to cover the cost of providing the information, the project team prepares the information and a copy of it for CDOT records.
- ▶ The project team also develops a complete listing of the information provided and gives that list to CDOT.
- ▶ The project team keeps track of all costs associated with the production of the information and provides a full accounting of the costs along with the information

Colorado Open Records Act. 24 Colorado Revised Statutes (CRS) § 72
Freedom of Information Act. 5 United States Code (USC) § 552



4. Quality Assurance Process

A QA/QC plan provides a means to identify and correct errors and omissions before the NEPA documentation is provided to the public and other agencies for review. The project's size and complexity will determine the detail required of the plan. For simple projects, the plan may be only a few sentences outlining the required reviews, individuals to conduct the reviews, and the review milestones. The following section provides an example of a QA process for NEPA documents.

No matter how well a NEPA project is managed, some mistakes and omissions will occur.

4.1 NEPA Document Review Quality Assurance Process

Sound QA procedures dictate that reports and other important documents are reviewed by someone other than the author. An example process to be followed for the NEPA documents is as follows (Figure 4-1).

Step 1# - Draft Review

- ▶ The Resource Specialist (author) prepares the Technical Reports/Memoranda.
- ▶ The Technical Editor, the Environmental/Public Involvement Task Lead, and/or peer reviews the report and return comments to the Resource Specialist (author).
- ▶ The Resource Specialist responds to comments received.

Step #2 - Final Review

- ▶ The Environmental/Public Involvement Task Lead verifies that comments have been responded to and conducts a final review of the document.

Step #3 - Report Submittal

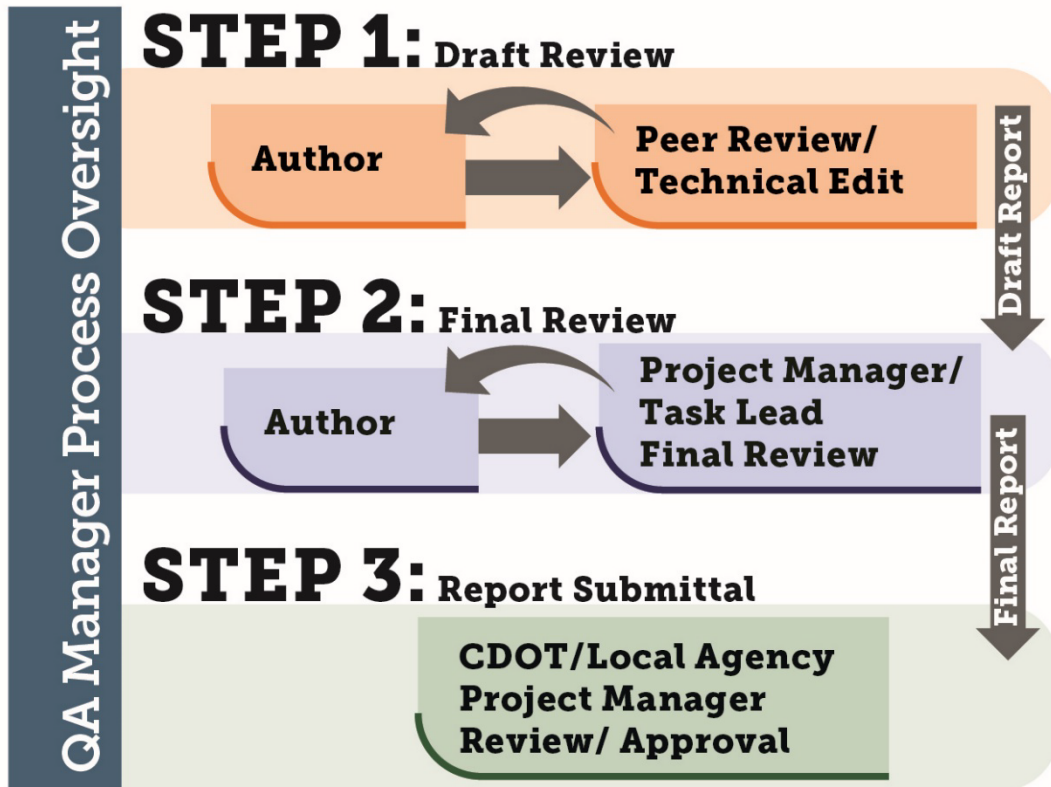
- ▶ The Environmental/Public Involvement Task Lead or the Project Manager submits the document to FHWA and CDOT staff for review and approval

QA Manager Process Oversight

- ▶ Maintain and ensure product quality during preparation of the NEPA documents
- ▶ Track when and how technical reviews have occurred
- ▶ Ensure that QC processes have been followed
- ▶ Provide verification to Project Manager that QC processes have been followed, such as a hard copy with suggested changes



Figure 4-1. Quality Assurance Process





5. Summary

A QA/QC plan shall be prepared for each NEPA project and will cover all QA/QC activities that will be implemented for work on the project. The project's size and complexity will determine the detail required of the plan. This QA/QC guidance for NEPA documents is designed to provide a functional and easily understood set of guidelines to maintain and ensure quality during the preparation of NEPA documents and outline potential components of a project-specific QA/QC plan.

6. References

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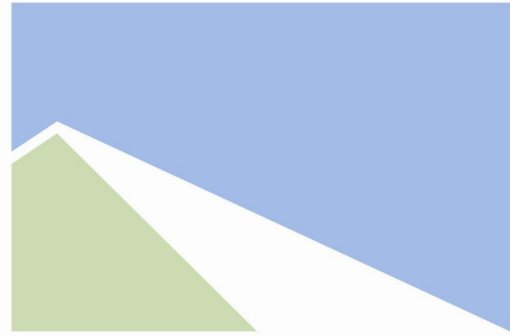


Attachment 1
North I-25 EIS
Quality Assurance Program
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NORTH I-25 EIS



information. cooperation. transportation.

QUALITY ASSURANCE PROGRAM

Prepared for:

**Colorado Department of Transportation
Region 4
2207 East Highway 402
Loveland, CO 80537**

Prepared by:

Felsburg Holt & Ullevig
6300 South Syracuse Way, Suite 600
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October 23, 2007

FHU Reference No. 07-190

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Attachment 2
Quality Assurance/Quality Control Plan
for the North Meadows Extension
to US 85 and I-25 EA



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Quality Assurance/Quality Control Plan for the North Meadows Extension to US 85 and I-25

February 2008

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Appendix E. Agency Coordination Plan Template



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Agency Coordination Plan

[__(TITLE HERE)___ Environmental Impact Statement]

[Project Logo(s)]

Prepared for:

Colorado Department of Transportation

[Federal Highway Administration (Colorado Division)]

In cooperation with

[List cooperating agencies]

PROJECT # **[Here]**

DATE **[Here]**



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1. Purpose of Agency Coordination Plan

Note to the CDOT Project Manager: This document is established to serve as a template for you to develop a project-specific Coordination Plan for your project. Please read it carefully. Sections in red and using brackets are instructions to the CDOT Project Manager or are to be filled in for each specific project. However, the entire document should be reviewed thoroughly to ensure it accurately reflects the details of the project. All instructions and red, bold text in brackets [] should be removed prior to sending to the Project Management Team (PMT). The PMT may elect to use this process for Environmental Assessments (EA) as well; therefore, Environmental Impact Statements (EIS) and EA documents will be referred to herein as NEPA documents. If using this template for an EA, please delete references to a “Draft” NEPA Document. The advantage to using the Coordination Plan for an EA is to have it completed if an EA may need to be elevated to an EIS at any point.] [The following BEGINS TEMPLATE:]

This Coordination Plan meets one of several requirements under Section 6002 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act - A Legacy for Users (SAFETEA-LU) of 2005. All Environmental Impact Statements (EIS) for which the Notice of Intent (NOI) was published in the Federal Register after August 10, 2005, must follow SAFETEA-LU’s requirements. Section 6002 of SAFETEA-LU requires preparation of a Coordination Plan for projects requiring an EIS as defined by the National Environmental Policy Act (NEPA). This Coordination Plan establishes an approach for coordinating agency (Federal Lead, Joint Lead, Cooperating, and Participating) and public participation including comment during the environmental review process. This Coordination Plan defines the process by which the Project Management Team (PMT) will communicate information about the [insert project name here] NEPA project to the Federal Lead, Cooperating, Participating and other interested agencies and to the public. The PMT consists of an assigned Project Manager from the CDOT Region, a CDOT Region Planning and Environmental Manager (RPEM) or their designee, a CDOT Headquarters Environmental Programs Branch (EPB) NEPA partner, the consultant (as needed), the Operations Engineer from the Federal Highway Administration (FHWA) Colorado Division assigned to the project, and local agency representatives [agency]. The plan also identifies how input from agencies and the public will be solicited and considered.

The [insert agency name here] is expected to provide funding for this project; therefore, [insert agency name here] serves as the Lead Agency for the project. CDOT, as the direct recipient of federal funds for the project, is a Joint Lead Agency. The City of _____ and _____ County [name partners here], who are subrecipients of Federal funds may be invited to serve as Joint Lead agencies. The parties listed previously are part of a project-designated PMT for this project.



This Coordination Plan:

- ▶ Provides a brief project background description.
- ▶ Identifies Lead, Joint Lead, Cooperating, and Participating agencies to be involved in agency coordination.
- ▶ Identifies the responsibilities of Lead, Joint Lead, Cooperating, and Participating agencies.
- ▶ Establishes collaboration at key points throughout the NEPA process. Examples of collaboration points (at the PMT's discretion) include, but are not limited to, defining the project's purpose and need, determining the project alternatives to be evaluated, determining input on the selection of the Preferred Alternative, soliciting input on mitigation strategies, and providing input to the **[Draft and]** Final NEPA documents as appropriate.
- ▶ Identifies the public involvement activities that will also provide opportunities for agency involvement.



2. Project Background

The _____ **[insert project name here]** NEPA document is being prepared to address transportation needs in the **City(ies) of _____ an _____ County(ies)**. The Study Area for this project is bound by **[name Highway _____ on the west, _____ on the east, _____ on the north and _____ on the south]**. The location of the Study Area is shown on Figure 1. Other **key roads in the Study Area include _____, _____, _____, _____, and _____.**

As a part of this study, a draft purpose and need statement has been prepared and is being refined based on input from agencies and the public. The purpose of the project, as currently defined, is to **[insert project purpose here: e.g., satisfy an increase in forecasted traffic demand while improving safety consistent with best design practices, etc.]**

Proposed improvements will take into account the requirements and needs of CDOT and the FHWA, **the City(ies) of _____, _____ County(ies)**, and residents, along with the consideration of the social, environmental and cultural resource impacts of these improvements. The needs of the project, as currently defined, are to **[insert project needs here: e.g., satisfy an increase in forecasted traffic demand while improving safety consistent with best design practices, etc.]**

Reasonable alternatives to be evaluated could include **[insert applicable alternatives below]:**

- ▶ No-Build (always required in NEPA as a baseline “alternative”)
- ▶ Transportation System Management (TSM) activities
- ▶ Upgrades to the existing roadways
- ▶ One or more alternatives that would construct a new roadway on new location

The alternatives to be investigated in the NEPA document will be developed and refined based on input from agencies and the public during the initial coordination and scoping period along with subsequent agency and public involvement opportunities. **Chapter 4, Section 4.7** of the NEPA Manual provides guidance for alternatives analysis.



3. Agency Responsibilities

Under SAFETEA -LU, the Lead Agency (or Joint Lead Agency), listed in **Table 1** and **Table 2** has the responsibility to:

- ▶ Identify and involve Cooperating and Participating Agencies, and Tribal governments
- ▶ Develop a Coordination Plan
- ▶ Provide opportunities for public and Participating Agency involvement in defining the purpose and need
- ▶ Provide opportunities for public and Participating Agency involvement in determining the range of alternatives
- ▶ Collaborate with Participating Agencies in determining methodologies and the level of detail for the analysis of alternatives
- ▶ Provide increased oversight in managing the process and resolving issues

The responsibilities listed above are in addition to those responsibilities that the Lead Agency has traditionally performed for transportation projects listed in 23 Code of Federal Regulations (CFR) part 771 and 40 CFR parts 1500 - 1508.

The Cooperating and Participating Agencies for this project, listed in **Table 3** and **Table 4**, have roles and responsibilities that include, but are not limited to:

- ▶ Participating in the NEPA process starting at the earliest possible time, especially with regard to development of the purpose and need statement, range of alternatives, methodologies and the level of detail for the alternatives analysis
- ▶ Identifying, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts and to participate in the issue resolution process
- ▶ Responding in writing to the letter of invitation within **[30 days]** from receipt to decline or accept the role and involvement
- ▶ Providing meaningful and timely input on unresolved issues
- ▶ Participating in the scoping process
- ▶ Reviewing and providing comment on the Preferred Alternative and the NEPA document
- ▶ Other additional responsibilities identified by the PMT

In addition to the roles and responsibilities listed above, Cooperating Agencies may have additional responsibilities that are not required of Participating Agencies. Cooperating Agencies have a higher degree of authority, responsibility, and involvement in the environmental review process. **[For example, projects being dictated by the NEPA/404 merger may have the U.S. Army Corps of Engineers acting as a Cooperating Agency.]** Distinctions for Cooperating Agencies include:

- ▶ Assuming, by request of the Lead Agency, responsibility for developing information and preparing environmental analyses including portions of the NEPA document for which the Cooperating Agency has special expertise
- ▶ Adoption of the NEPA document without recirculation after an independent review and the Cooperating Agency concludes that its comments and suggestions have been satisfied



The Participating Agencies will have defined opportunities for meaningful participation in the decision making process for the project. Specific opportunities are provided via the agency collaboration points that have been defined for this project.

[Use the following paragraph if this Coordination Plan is being prepared retroactively for a project]

Because this project was already underway before August 10, 2005, the initial agency coordination and the agency and public scoping process for this project has already occurred during **[indicate months or years here]**. This initial coordination provided input from agencies and the public to help determine the purpose and need for the project, input on potential concept alternatives to be considered and identification of issues that need to be examined as part of the NEPA document process.

A meeting was conducted in **[insert appropriate month and year here]** for those agencies that agreed to be Cooperating and Participating Agencies, listed in Table 3 and 4. Those agencies were provided with a copy of the draft purpose and need for their review and provided comments by **[insert appropriate date here]**.



4. Initial Coordination

This section details the process to include various agencies in this Coordination Plan.

4.1 Notice of Intent

Following project initiation, the Lead Agency, with assistance from the Joint Lead Agency, **[prepared a Notice of Intent (NOI) for the Federal Register indicating the plan to prepare an EIS, as required by the Council on Environmental Quality (CEQ) Regulations (40 CFR 1501.7)] or [notified the public of their intent to begin the NEPA process]. The NOI was published in the Federal Register on [insert appropriate date here].** Media releases were sent to project area newspapers, providing notification of the preparation of the NEPA document. The newspapers included the Denver Post and **[insert local newspapers here].**

[Use the following paragraph if this Coordination Plan is being prepared retroactively (after August 10, 2005) for a project]:

Because this project was already underway before August 10, 2005, this project falls within the retroactive timeframe since the NOI to prepare an EIS was published by FHWA in **[insert date here]**. There are steps in the SAFETEA-LU process associated with this Coordination Plan that will occur out of sequence from what would normally occur. On **[insert date here]**, in conformance with the provisions specified in Section 6002 of SAFETEA-LU, CDOT formally notified FHWA in writing of its intent to initiate the EIS process for this project. Additional guidance on developing Coordination Plans for Agency and Public Involvement has been received and this document has been prepared to fulfill Section 6002 requirements.

4.2 Lead Agency and Joint Lead Agency

The **[insert agency name here]** is expected to provide funding for this project; therefore, **[insert agency name here]** serves as the Lead Agency for the project. **The City(ies) of _____ and _____ County(ies) [name partners here],** that have contributed to funding for this project, are also Joint Lead agencies that are providing overall guidance and management of this project. CDOT **[and others as appropriate]** is the project sponsor receiving SAFETEA-LU funds and is, therefore, a Joint Lead Agency. The information for Joint Lead Agency(ies) that have agreed to participate is listed in **Table 2.**

The contact information for Lead Agency(ies) that have agreed to participate is listed in **Table 1.** **[Note to CDOT project managers: federal funding as noted in this example paragraph is only one of many potential “federal nexus” reasons for FHWA to be the lead agency for this project. Please be sure to use the appropriate federal nexus (for example, new federal interstate interchange, federal permits, etc.)]**



Table 1. Lead Agency

Lead Agency	Contact Person/Title	Phone	E-Mail

Table 2. Joint Lead Agency

Joint Lead Agency	Contact Person/Title	Phone	E-Mail

4.3 Cooperating and Participating Agencies

The Joint Lead Agency sent letters at the beginning of the project to **[insert number of agencies here]** agencies to invite them to become a Cooperating Agency or Participating Agency for this project. Responses to the letters resulted in **[insert number here]** Cooperating Agencies and **[insert number here]** Participating Agencies.

4.3.1 Cooperating Agencies

Cooperating Agencies are those government agencies specifically requested by the Lead or Joint Lead Agency to participate during the environmental evaluation process for the project. FHWA’s regulations (23 CFR 771.111[d]) require that those federal agencies with jurisdiction by law (with permitting or land transfer authority) be invited to be Cooperating Agencies for a NEPA document. In addition, the Lead and Joint Lead Agency may request other agencies to become Cooperating Agencies. Cooperating Agencies are also invited to be Participating Agencies. Cooperating Agency invitations for this project were accepted by those listed in **Table 3**. If determined appropriate by the PMT, the Cooperating Agencies may be offered the opportunity for review and comment on project documents.

Table 3. Cooperating Agencies

Cooperating Agency	Agency Role	Contact Person/Title	Phone	E-Mail



If, during the project, new information indicates that an agency not previously invited to be a Cooperating Agency does, indeed, have authority, jurisdiction, acknowledged expertise, or information relevant to the project, then the Joint Lead Agency, in consultation with the Lead Agency, will promptly extend an invitation. The Joint Lead Agency, in consultation with the Lead Agency, will consider whether this new information affects any previous decisions on the project.

4.3.2 Participating Agencies

SAFETEA-LU (Section 6002) created a new category of involvement in the environmental review process for NEPA documents, known as Participating Agencies. These are federal and non-federal governmental agencies that may have an interest in the project because of their jurisdictional authority, special expertise, and/or statewide interest in the project. **[Insert number here]** federal and state agencies have agreed to be Participating Agencies for this project. Participating Agency invitations for this project were accepted by those listed in **Table 4**. If determined appropriate by the PMT, the Participating Agencies may be offered the opportunity for review and comment on project documents.

Table 4. Participating Agencies

Participating Agency	Agency Role	Contact Person/Title	Phone	E-Mail

4.4 Other Interested Agencies and Organizations

4.4.1 Local Agencies and Organizations

Other agencies and organizations may be identified as having an interest in the project through the public involvement process or for permit, approval, certification, or concurrence purposes. For example, an agency may have information on a particular resource within the project area that would be useful to the PMT. Meetings with these agencies and organizations may occur to discuss topical information, but their overall role is expected to be minimal. The PMT will inform these agencies of major decisions and solicit them for information, as necessary.

4.4.2 Non-Participating Agencies and Organizations

Several agencies were invited to be Participating Agencies but for various reasons declined. These agencies will still be involved with the NEPA process by being on the project mailing list, will be points of contact for data required for the NEPA document, and will be furnished copies, or portions of, the **[Draft and]** Final NEPA document for review and comment as determined appropriate by the PMT.



4.5 Environmental Streamlining Collaboration Points

To reduce delay in the environmental review process, the following collaboration points are recommended to occur after the Lead, Joint Lead, Cooperating, and Participating Agencies have been identified. However, once the agencies are identified and the collaboration process has begun, it is not too late for other agencies to participate that were not initially identified, assuming the existing agencies already committed to the process agree to including these additional agencies. It is recommended, although not required, that a Draft Coordination Plan be in place before beginning the collaboration process. The agencies listed in Tables 1 through 4 are expected to be involved in the following five collaboration points in the environmental review process for the **[insert project name here]** NEPA document:

- ▶ Collaboration Point 1 - Purpose and Need
- ▶ Collaboration Point 2 - Project Alternatives to be Evaluated
- ▶ Collaboration Point 3 - **[Draft]** NEPA Document
- ▶ Collaboration Point 4 - Preferred Alternative and Preliminary Mitigation
- ▶ Collaboration Point 5 - Final NEPA Document

The process for coordination associated with each collaboration point for this project is summarized below; however, specific directions are listed in the referenced NEPA Manual chapters. The collaboration points discussed below are provided as milestones and are not meant to take the place of other NEPA and permitting requirements necessary.

4.5.1 Collaboration Point 1 - Purpose and Need

Chapter 4 of the CDOT NEPA Manual provides detailed guidance on how to develop a purpose and need statement. It is recommended that the purpose and need statement be defined after participating and cooperating agencies are identified.

The purpose of this collaboration point is to ensure that Cooperating and Participating Agencies have a meaningful opportunity to provide input on the purpose and need statement. Once provided the purpose and need statement, the PMT and the Cooperating and Participating Agencies are provided **[30 days]** from receipt to review and provide a response on the project purpose and need statement. **[adjust language here as appropriate to this project] At the end of the 30-day review period, CDOT will receive comments from the Lead Agency with a statement of support or statement of non-support. If determined appropriate by the PMT, comments may also be provided from the Cooperating and Participating Agencies.** CDOT assumes that those agencies from which it has not received a response at the end of the **[30-day]** period have no comments that need further consideration.

Based on the output of Collaboration Point 1, the project consultant will revise, as appropriate, the purpose and need statement.



4.5.2 Collaboration Point 2 – Project Alternatives to be Evaluated

Chapter 4 of the CDOT NEPA Manual provides specific guidance for how CDOT prefers to conduct alternatives analysis.

The purpose of this collaboration point is to ensure that Cooperating and Participating Agencies have a meaningful opportunity to provide input during alternatives development and screening. Based on the output of Collaboration Point 1, the project consultant will prepare a “Project Alternatives to be Evaluated” information package. It is important for appropriate agencies to have been involved with the development of the alternatives that are presented in the package. The information package will be forwarded to the PMT and to the Cooperating and Participating Agencies.

The information package may include the following:

- ▶ Revised purpose and need statement
- ▶ Description of the evaluation criteria that will be used to evaluate the effectiveness of an alternative in meeting the purpose and need of the project and explanation of how those evaluation criteria will be used
- ▶ Description of any other factors, besides purpose and need, that will be considered in the screening of alternatives, such as cost and environmental factors
- ▶ Methodologies to be used and level of detail required in the analysis of each alternative
- ▶ A summary table of project alternatives to be evaluated and their effectiveness in addressing the purpose and need of the project
- ▶ A map showing the location of the project alternatives
- ▶ Qualitative results of the preliminary alternatives analysis and environmental screening (based on existing data sources and GIS inventories)
- ▶ Discussion and agreement of the elements of the No-Build Alternative

The PMT and appropriate Participating and Cooperating Agencies will be given a **[30-day]** period from receipt of the package to review and provide a response. **[adjust language here as appropriate to this project]** At the end of the 30-day review period, CDOT will receive comments from the Lead Agency with a statement of support or statement of non-support. If determined appropriate by the PMT, comments may also be provided from the Cooperating and Participating Agencies. CDOT assumes that those agencies from whom it has not heard at the end of the **[30-day]** period have no comments that need further consideration.

The output of Collaboration Point 2 will be a decision from the PMT, the Cooperating and Participating Agencies on:

- ▶ Appropriate methodologies to be used and the level of detail required in the analysis of each alternative
- ▶ The alternatives to be carried forward into the **[Draft]** NEPA document
- ▶ Any revisions to the purpose and need statement
- ▶ The scopes and study methodologies to be used and the level of detail anticipated in the analysis of each alternative



4.5.3 Collaboration Point 3 – [Draft] NEPA Document

Chapter 8 of the CDOT NEPA Manual should be referenced for the distribution and review procedures of NEPA documents prepared for CDOT projects. Review options for the [Draft] NEPA document should be established during the scoping process. **[A 30-day review period is recommended by SAFETEA-LU; however, the project team may adjust, as necessary.]**

Based on the output of Collaboration Point 2, the project consultant will prepare a [Draft] NEPA document. Upon completion of the [Draft] NEPA document, the PMT will determine which agencies, if any, will be given the opportunity to review and comment. Those agencies not provided with an official comment and review period of the document may be provided a status meeting. The status meeting can serve as a check-in with the agencies to explain the status of the document and to address issues specific to their areas of interest and responsibility. Alternately, agencies may be provided with sections of documents, technical reports, or modeling results to review and provide comments. It is the discretion of the PMT to decide what and how information is disseminated for review and comment.

The PMT and the appropriate Cooperating and Participating Agencies, if any, will be given a **30-day period** from receipt of the [Draft] NEPA document to review and provide a response. **[adjust language here as appropriate to this project]** At the end of the 30-day review period, CDOT will receive comments from the Lead Agency with a statement of support or statement of non-support. **If determined appropriate by the PMT, comments may also be provided from the Cooperating and Participating Agencies.** CDOT assumes that those agencies from whom it has not heard at the end of the **[30-day]** period have no comments that need further consideration.

The output of Collaboration Point 3 will be concurrence from the PMT, the Cooperating and Participating Agencies on:

- ▶ The adequacy of the [Draft] NEPA document
- ▶ Specification as to whether additional information is needed to fulfill other applicable environmental reviews or consultation requirements
- ▶ Specification on any additional information needed to comment adequately on the [Draft] NEPA document analysis of site-specific effects associated with the granting or approving by the agency of necessary permits, licenses, or entitlements

Based on FHWA’s approval of the Draft NEPA document for circulation, one or more public meetings will be conducted during the 45-day review in accordance with NEPA requirements and requirements in the project’s Public Involvement Plan. **[adjust timeframes and number of hearings as appropriate for this project]** Project teams should follow the project-specific Public Involvement Plan and the guidance provided for stakeholder involvement in Chapter 7 of the CDOT NEPA Manual.



4.5.4 Collaboration Point 4 – Preferred Alternative and Preliminary Mitigation

Chapter 9 of the CDOT NEPA Manual should be referenced for mitigation measures specific to impacted resources.

Based on the output of Collaboration Point 3, along with the PMT’s consideration of any issues, concerns, and opportunities identified during the public meetings, the project consultant will prepare a “Preferred Alternative and Preliminary Mitigation” information package. The information package will be forwarded to the PMT and to the appropriate Cooperating and Participating Agencies, as determined appropriate. It is the discretion of the PMT how, and to whom, the information package is disseminated for review and comment.

The information package may include the following:

- ▶ Narrative describing the various elements of the Preferred Alternative
- ▶ Rationale for recommending the Preferred Alternative
- ▶ A preliminary mitigation summary describing the various elements of the proposed mitigation including a map locating the elements of the Preferred Alternative and preliminary mitigation

The Lead Agency, the PMT, the Cooperating and Participating Agencies will be given a **[30-day]** period from receipt of the package to review and provide a response. **At the end of the 30 day period, CDOT will receive a statement of support or statement of non-support, with comments, if provided.** CDOT will assume concurrence from those agencies from whom it has not heard at the end of the **[30-day]** period.

The output of Collaboration Point 4 will include concurrence among the Lead, Joint Lead, the PMT, the Cooperating and Participating Agencies on:

- ▶ Recommendation of the Preferred Alternative and preliminary mitigation. When avoidance of impacts to a resource is not practical, the Cooperating and Participating Agencies with jurisdiction by law or special expertise will assist the PMT and the project consultant in determining or reviewing appropriate and practical mitigation, including all practical measures to minimize harm. If an agency determines that it does not have enough information to make a recommendation on mitigation measures, it will comment to that effect. If the project impacts are deemed substantial by a regulatory or resource agency to the extent that permits would probably be denied, the Agencies that are party to this Coordination Plan will advise the Lead agencies to modify the project to reduce impacts.

Based on the output from Collaboration Point 4, the PMT will recommend a Preferred Alternative.



4.5.5 Collaboration Point 5 – Final NEPA Document

Chapter 8 of the CDOT NEPA Manual should be referenced for review and distribution procedures for NEPA documents prepared for CDOT projects.

Based on the output of Collaboration Point 4 and the comments received from the public hearing on the **[Draft]** NEPA document, the project consultant will prepare a Final NEPA document. This document will be circulated to the Cooperating and Participating Agencies for their review and comment. Based on the Lead Agency’s approval, the Final NEPA document will be made available for public and agency review for a minimum of 30 days **[NOTE to PMT—the length of the public review period must be approved by FHWA]**. This period is the last period during which comments on the environmental evaluation process will be received from the public and agencies. Upon addressing the comments received in the comment period, the PMT will forward the Final NEPA document to the Lead Agency with a request for a decision document.

4.6 Other Opportunities for Agency Involvement

Chapter 7 of the CDOT NEPA Manual provides guidance on public and stakeholder involvement.

Beyond the collaboration points outlined herein, the **[insert name of project here]** NEPA document also includes other strategies for encouraging agency input and involvement. The project’s Public Involvement Plan was developed to include agencies and stakeholders in meaningful ways, such as:

- ▶ to solicit input
- ▶ to develop two-way communication
- ▶ to document opinions
- ▶ to achieve informed consent for the document’s findings and recommendations

The Public Involvement Plan should be referenced for project-specific strategies to disseminate information to the public. The following public involvement elements provide such opportunities and are meant to reflect those commitments from the Public Involvement Plan **[add or delete the following elements as necessary to match the Public Involvement Plan]**.

4.6.1 Newsletters

The PMT will distribute project-related newsletters. These newsletters will provide important information on purpose and need, alternatives development/evaluation, results, and next steps. The newsletters will be mailed to stakeholders, such as property owners, public officials, elected officials, agencies, and any other interested individuals.

4.6.2 Agency and Public Scoping Meetings

The PMT will prepare for and conduct an agency scoping meeting for Cooperating and Participating Agencies and for those federal, state, and local agencies not part of the PMT. Following the agency meeting, a public scoping meeting will be conducted.



4.6.3 Project Website

The PMT will maintain and update a project website [\[insert website link here\]](#). In addition to containing project information, this site will allow stakeholders to sign up to receive project update information.

4.6.4 Project Information Meetings

Agencies/stakeholders will be invited to all public project meetings.

4.6.5 Project Management Team Workshops

Because the PMT is composed of several entities, workshops will be conducted to present information and make decisions. As needed or requested, agencies and stakeholders may attend these workshops.



Appendix F: Standard Language



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Standard South Platte River Depletion Language

This project has elements that will cause a depletion to the South Platte River basin. To address the effects this depletion will have on federally listed species downstream that depend on the river for their survival, CDOT, as a state agency, is participating in the South Platte Water Related Activities Program (SPWRAP). CDOT is cooperating with the Federal Highway Administration (FHWA), which provides a federal nexus for the project. In response to the need for formal consultation for the water used from the South Platte basin, FHWA has prepared a Programmatic Biological Assessment (PBA) dated February 22, 2012 that estimates total water usage until 2019. The PBA has since been extended through 2032 and addresses the following species: Least Tern (interior population) (*Sternula antillarum*), pallid sturgeon (*Scaphirhynchus albus*), Piping Plover (*Charadrius melodus*), western prairie fringed orchid (*Platanthera praeclara*), and the Whooping Crane (*Grus americana*). On April 4, 2012, the U.S. Department of Interior Fish and Wildlife Service (USFWS) signed a Biological Opinion that concurs with this approach and requires a yearly reporting of water usage. The extension, which has the same reporting requirements, was signed by the USFWS on March 29, 2019. The water used for this project will be reported to the USFWS at the year's end after the completion of the project as per the aforementioned consultation. Effects to species not addressed in the PBA or affected by causes other than water depletions to the South Platte will be analyzed separately.

Right-of-Way and Relocation Standard Language

Relocation Statement

In certain situations, it may also be necessary to acquire improvements that are located within a proposed acquisition parcel. In those instances where the improvements are occupied, it becomes necessary to “relocate” those individuals from the subject property (residential or business) to a replacement site. The Uniform Act provides for numerous benefits to these individuals to assist them both financially and with advisory services related to relocating their residence or business operation. Although the benefits available under the [Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, (Uniform Act)] are far too numerous and complex to discuss in detail in this document, they are available to both owner occupants and tenants of either residential or business properties. In some situations, only personal property must be moved from the real property and this is also covered under the relocation program. As soon as feasible, any person scheduled to be displaced shall be furnished with a general written description of the displacing agency's relocation program that provides, at a minimum, detailed information related to eligibility requirements, advisory services and assistance, payments, and the appeal process. It shall also provide notification that the displaced person(s) will not be required to move without at least 90 days advance written notice. For residential relocatees, this notice cannot be provided until a written offer to acquire the subject property has been presented, and at least one comparable replacement dwelling has been made available. Relocation benefits will be provided to all eligible persons regardless of race, color, religion, sex, or national origin. Benefits under the



[Uniform] Act, to which each eligible owner or tenant may be entitled, will be determined on an individual basis and explained to them in detail by an assigned right-of-way Specialist.

Acquisition Statement

For any person(s) whose real property interests may be impacted by this project, the acquisition of those property interests will comply fully with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act). The Uniform Act is a federally mandated program that applies to all acquisitions of real property or displacements of persons resulting from federal or federally assisted programs or projects. It was created to provide for and ensure the fair and equitable treatment of all such persons. To further ensure that the provisions contained within this act are applied “uniformly,” CDOT requires Uniform Act compliance on any project for which it has oversight responsibility regardless of the funding source. Additionally, the Fifth Amendment of the U.S. Constitution provides that private property may not be taken for a public use without payment of “just compensation.” All impacted owners will be provided notification of the acquiring agency’s intent to acquire an interest in their property including a written offer letter of just compensation specifically describing those property interests. A right-of-way specialist will be assigned to each property owner to assist them with this process.

Statute of Limitations Standard Language

The Federal Highway Administration may publish a notice in the Federal Register, pursuant to 23 United States Code (USC) § 139(l), indicating that one or more Federal agencies have taken final action on permits, licenses, and approvals for a transportation project. If such notice is published, claims seeking judicial review of those Federal agency actions will be barred unless such claims are filed within 150 days after the date of publication of the notice, or within such shorter time period as is specified in the Federal laws pursuant to which judicial review of the Federal agency action is allowed. If no notice is published, then the periods of time that otherwise are provided by the Federal laws governing such claims will apply.



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