

# Colorado Department Of Transportation Planning and Environmental Linkages (PEL) Handbook



**COLORADO**

Department of Transportation

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# Planning and Environmental Linkages (PEL) Handbook

June 2022



This document supersedes the CDOT Planning and Environmental Linkages (PEL) Handbook dated January 2016.



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## List of Acronyms

		- A -
ADA	Americans with Disabilities Act	
APCD	Air Pollution Control Division	
		- C -
CatEx	Categorical Exclusion	
CCR	Code of Colorado Regulations	
CDOH	Colorado Department of Highways	
CDOT	Colorado Department of Transportation	
CDPHE	Colorado Department of Public Health and Environment	
CEQ	Council on Environmental Quality	
CFR	Code of Federal Regulations	
CO2e	carbon dioxide equivalents	
CPW	Colorado Parks and Wildlife	
		- E -
EA	Environmental Assessment	
EIS	Environmental Impact Statement	
ESA	Environmental Site Assessment	
		- F -
FAST	Fixing America’s Surface Transportation Act	
FHWA	Federal Highway Administration	
FONSI	Finding of No Significant Impact	
FTA	Federal Transit Administration	
		- G -
GHG	Greenhouse Gases	
GIS	Geographic Information Systems	
		- H -
HMWMD	Hazardous Materials and Waste Management Division	
		- I -
IGA	Intergovernmental Agreement	
IIJA	Infrastructure Investment and Jobs Act	
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991	
ITS	Intelligent Transportation System	
		- L -
LOS	Level of Service	
LOSS	Level of Service of Safety	
		- M -
MAP-21	Moving Ahead for Progress in the 21st Century Act	
MOE	Measures of Effectiveness	
MPO	Metropolitan Planning Organization	





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- N -

NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NRHP	National Register of Historic Places

O

OFD	One Federal Decision
OTIS	Online Transportation Information System

- P -

PEL	Planning and Environmental Linkages
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- R -

ROD	Record of Decision
ROW	Right-of-Way
RPEM	Region Planning and Environmental Manager
RTP	Regional Transportation Plan

- S -

SAFETEA-LU	Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users
SHPO	State Historic Preservation Officer
SLS	System Level Study
STIP	Statewide Transportation Improvement Program
SWP	Statewide Transportation Plan

- T -

TEA-21	Transportation Equity Act of the 21st Century
TDM	Transportation Demand Management
TERC	Transportation Environmental Resource Council
TIP	Transportation Improvement Program
TPR	Transportation Planning Region

- U -

USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service

- V -

V/C	Volume to capacity ratio
VHT	Vehicle Hours of Travel
VMT	Vehicle Miles of Travel

- W -

WQCD	Water Quality Control Division
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## CDOT PEL Handbook June 2022 Update

The Colorado Department of Transportation (CDOT) first published its Planning and Environmental Linkages (PEL) Handbook in December 2012 (with an update in January 2016) to provide guidance and recommend best practices for developing PEL studies for transportation projects in Colorado. Since the current Handbook was completed, CDOT has conducted or been involved with several additional PEL studies and has gained a significant amount of experience on a variety of projects. The following table summarizes some of the more considerable changes made during this revision.

Chapter	Description of Updates
<b>Table of Contents/General</b>	Reformatted the layout and revised the symbols used for references and helpful tips.
<b>Chapter 1.0</b>	Added new content related to the PEL process with an emphasis on the flexibility of the PEL process to allow completion of either a complete PEL study or individual elements of a PEL study. Added new graphics to depict this flexibility and the transition from a PEL study to National Environmental Policy Act (NEPA) documentation, and added a new graphic on the NEPA, PEL, or Other Study Decision Tree decision-making process. Added new content and a graphic on CDOT’s recently updated Interchange Approval Process.
<b>Chapter 2.0</b>	Added new content related to the Fixing America’s Surface Transportation (FAST) Act, Executive Order 13807, Executive Order 13990, Colorado Senate Bill 21-260 and the Council on Environmental Quality (CEQ) 2020 NEPA regulations.
<b>Chapter 3.0</b>	Revised the PEL process and Long-Range Planning in accordance with current planning practices.
<b>Chapter 4.0</b>	Added new content related to the PEL process with an emphasis on the flexibility of the PEL process to allow completion of either a complete PEL study or individual elements of a PEL study. Revised Coordination Points to match current practice. Added new graphics and content related to Existing Conditions, Traffic Operations and Safety, Purpose and Need, PEL Alternatives Evaluation Guidance, Travel Demand Management, and Technology Options.
<b>Chapter 5.0</b>	Added new content related to the PEL process with an emphasis on the flexibility of the PEL process to allow completion of either a complete PEL study or individual elements of a PEL study.
<b>Chapter 6.0</b>	Clarified the NEPA from PEL transition process.
<b>Chapter 7.0</b>	Updated best practices and lessons learned.





## 1.0 Introduction to the PEL Process

The Colorado Department of Transportation (CDOT) developed this Planning and Environmental Linkages (PEL) Handbook (Handbook) in coordination with the Federal Highway Administration (FHWA) to provide guidance on the PEL process in Colorado. The PEL process represents an approach to transportation decision-making that considers environmental, community, and economic goals early in the planning stage and carries them through project development, design, and construction. A PEL study can lead to a seamless decision-making process that accomplishes the following:

- Minimizes duplication of effort
- Fosters improved stakeholder relationships
- Promotes environmental stewardship and cost-effective solutions
- Reduces delays in project delivery timeframes and implementation
- Enhances grant/funding opportunities

This Handbook provides CDOT staff, as well as local governments, regional planning agencies, and consultants, guidance on developing and carrying out PEL studies for transportation programs or projects in Colorado. It provides recommendations and best practices but is not regulatory or mandatory. It is assumed the professionals using this Handbook will have experience in the field of transportation planning and the National Environmental Policy Act (NEPA) process. Guidance related to federal requirements for transportation planning and NEPA are referenced but not detailed here, nor does anything in this Handbook supersede CDOT or FHWA regulations or guidance on planning or NEPA.

This Handbook and the practices outlined within are updated as needed to capture changes in guidance and processes based on PEL study experiences. CDOT's PEL website contains up-to-date information about the PEL process and the current version of the Handbook. In addition, CDOT offers a training course for the PEL process that can be arranged through CDOT's PEL Program Manager at the Environmental Programs Branch of CDOT Headquarters.

### 1.1 What is the PEL Process?

The PEL process is conducted before NEPA, before all project construction funding is identified, and before issues are known or solutions have been considered. A PEL is a flexible study process used to identify transportation issues, priorities, and environmental concerns. It can be applied to make planning decisions and used for planning analysis. These decisions and analyses, for example, can be used to identify and prioritize future projects, develop the purpose and need for a project, determine project size or length, and/or develop and refine a range of alternatives. Project decisions may include developing the purpose and need, recommending one or more refined alternatives to be evaluated in future NEPA processes, identifying stakeholders and issues of potential concern, prioritizing future projects, or developing key components for future analysis. Planning decisions may include determining what financial measures are needed (such as tolling) or what type of improvement, including modes, might meet transportation needs.

PEL studies can be conducted for a variety of transportation improvements, such as:

- Urban and Rural Interstate Corridors
- Urban and Rural State Highway or Major Arterial Corridors
- Existing and New Interchanges



Items in lightbulb call-out boxes include tips, tools, quotes, and other items that have been highlighted for the reader.

For example, PEL studies are any type of transportation planning study conducted at the corridor or subarea level to link planning information directly or by reference into the NEPA process. The adoption and use of a PEL study in the NEPA process is subject to a determination by the FHWA.



Items in computer call-out boxes are websites, regulatory citations, guidance documents, and other references that the reader can research for additional information.

For example, CDOT's PEL Program website is available at: <https://www.codot.gov/programs/environmental/planning-env-link-program/overview.html>



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- Major Arterial Intersections
- Multimodal Infrastructure like bike paths
- Transportation System Subareas

PEL studies should be conducted for transportation improvements that have the potential for 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 (Clean Water Act - Section 404 Individual Permit, US Department of Transportation Act - Section 4(f), Endangered Species Act - Biological Opinion for Section 7, etc.); and
- There will be new or revised access to the interstate system, which requires FHWA approval.

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 PEL studies completed, can range from large corridor studies to more localized studies, such as an interchange improvement. In all types of PEL studies, the goal is to gather enough detail so that the information developed can be used in future planning or NEPA. The PEL study process offers flexibility to complete either a full PEL study or the individual elements of the PEL process (**Figure 1-1**). For example, a project may be in the early planning stages and require only the development of a Vision or a Purpose and Need Statement, and an entire PEL study is not necessary.

Additional deliverables that can be part of a PEL study include:

- Access Management Plan
- Access Control Plan
- Right-of-Way Mapping and Survey

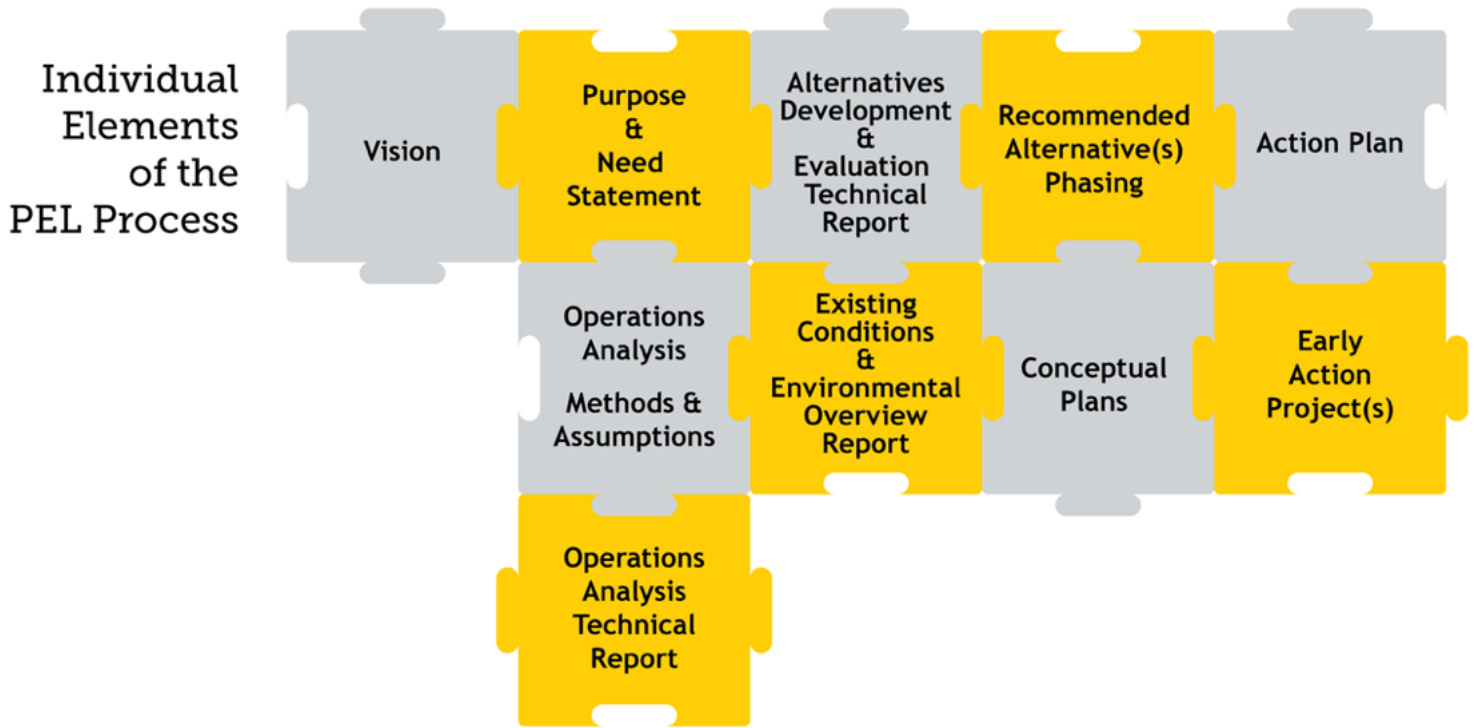
Before a PEL study is conducted, a pre-scoping process determines the reason for and expected outcomes of a PEL study, including why the study is being conducted and what question(s) will be addressed. If a program or project is likely to have federal involvement in the future, a PEL study is a good tool to help streamline future NEPA processes. Completing a PEL study, however, does not guarantee federal funding.





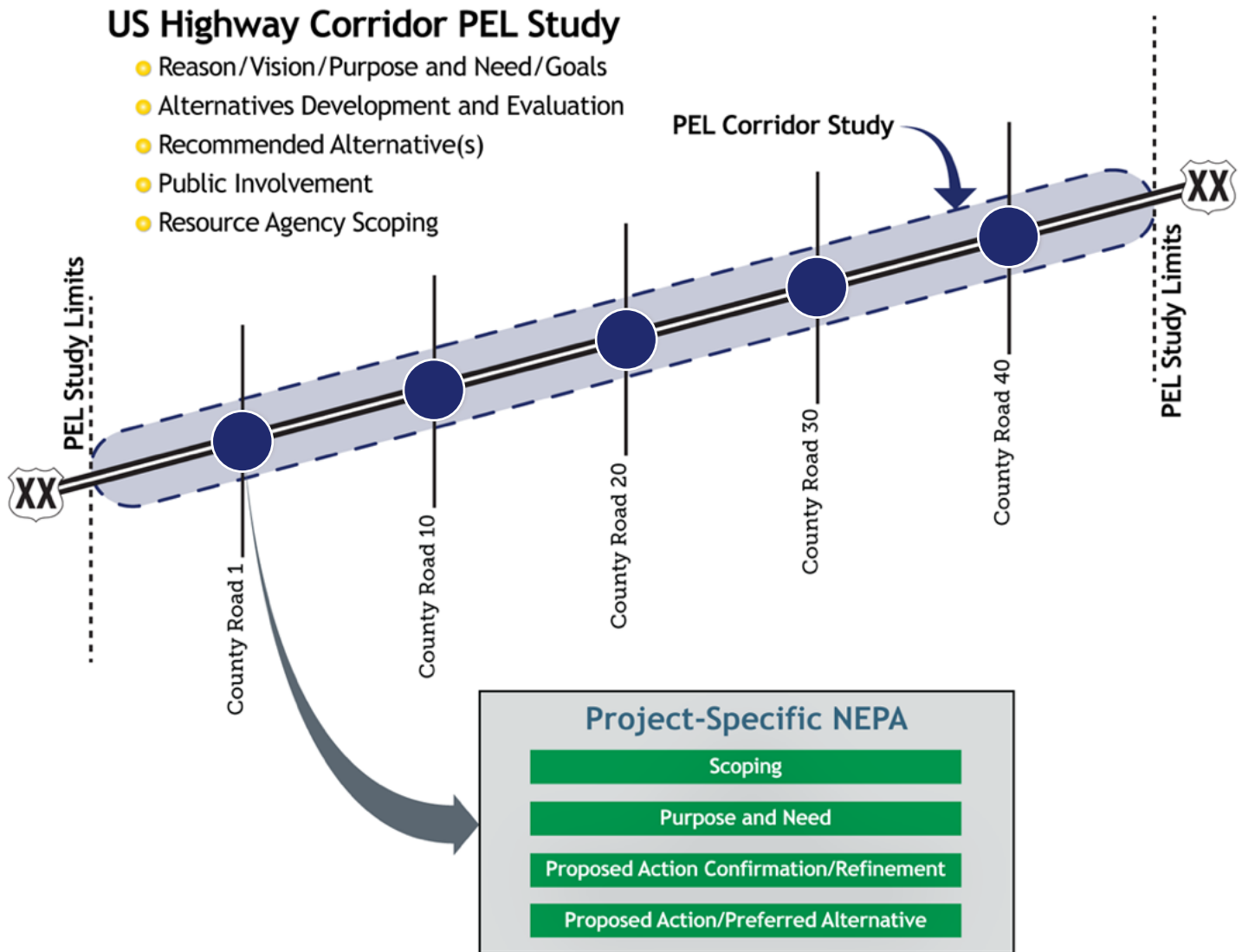
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Figure 1-1 Planning and Environmental Linkages (PEL) Study and Associated Documentation



Various outcomes can result from the PEL process: a specific project or project phase may be identified to advance into project development and NEPA; a corridor vision could be created with goals; a set of improvements could be identified with recommendations for priorities to address transportation needs over a longer term; or the process might suggest that no immediate projects should be advanced because the needs do not warrant immediate action. A PEL study can be used as a tool to prioritize improvements. For example, a PEL study for a corridor could result in the identification of multiple potential phases or subsequent projects (such as capacity improvements for a shorter length of the corridor and intersection improvements) that can be prioritized for implementation. PEL studies provide context for future NEPA decisions, such as creating a basic description of the environmental setting, deciding on methodologies for analysis, and identifying programmatic level mitigation for potential impacts most effectively addressed at a regional or state level (Figure 1-2). The PEL process can also help inform the class of NEPA process required for future projects and support the use of streamlining tools, such as CDOT’s Environmental Assessment (EA) or Documented Categorical Exclusion Template. It is important to note that CDOT and FHWA make the final determination of the NEPA Class of Action for a project, as appropriate.

Figure 1-2 Example Corridor PEL Study and Project-Specific NEPA Process



Although a PEL study addresses some aspects of NEPA, the PEL study should cost less and take less time than the NEPA process. A PEL study is not intended as a substitute for the NEPA process but is a way to streamline the NEPA process, focus project development, and make more informed decisions during NEPA. Identifying priorities through the PEL process helps coordinate planning efforts across jurisdictions, provides a useful tool to identify political needs and desires, and gives context to an area without intensive studies often required for the NEPA process.

Figure 1-3 displays the potential steps in the full PEL process. Not all steps in the flowchart must be conducted for each PEL study. The reason for and desired outcome of the study will determine the steps to follow. Four FHWA Coordination Points are required during the study:

1. Reason for the study and desired outcomes
2. Operations analysis methodology, purpose and need, goals, and objectives
3. Alternatives evaluation and documentation
4. Finalization of the PEL study report





Figure 1-3 Planning and Environmental Linkages Process Flowchart



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

The adoption and use of a PEL study in the NEPA process is subject to a determination by FHWA, with input from other participating agencies, that 10 conditions have been met. These 10 conditions are outlined in 23 United States Code (USC) 168(d) and are listed in **Section 2.2**. One important consideration when determining whether to conduct a PEL study is whether a project will advance into NEPA for a portion of or all of the project within 5 years of study completion. **Chapter 6.0** presents additional information on preparing for a NEPA process after a PEL study.

## 1.2 Benefits of Conducting a PEL Study

Conducting a PEL study provides multiple benefits to CDOT, FHWA, local agencies, resource agencies, and other project stakeholders. PEL studies can help inform planning decisions, streamline NEPA, and serve as a platform for stakeholders to discuss and prioritize transportation issues and project implementation. Depending on the contents and objectives of the PEL study, benefits may include the following:

- Building on decisions and information developed during the planning process in NEPA
- Developing a purpose and need statement that provides the foundation for alternatives development and evaluation
- Identifying and engaging affected jurisdictions and resource agencies at early stages and throughout the planning process
- Building collaborative working relationships with affected jurisdictions, resource agencies, and the public by enhancing participation and coordination efforts
- Conducting ongoing coordinated involvement of FHWA, CDOT, resource agencies, and local agencies
- Increasing qualitative and quantitative consideration of environmental impacts early in the transportation planning process to help projects selected for funding proceed more quickly through the NEPA process during the project development phase
- Identifying key environmental resources (i.e., resources that could require avoidance or minimization of impacts during alternatives development; or resources with lengthy environmental clearance processes that could affect the project schedule and budget) earlier in the process to tailor the environmental analysis during the NEPA process



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- Encouraging environmental stewardship by incorporating environmental analysis and mitigation in the planning process
- Reducing the duplication of work by conducting some detailed quantitative and qualitative environmental resource analysis at the planning stage
- Improving the quality of information needed to make sound planning decisions and develop the most environmentally responsible and sustainable projects
- Assisting with Class of Action determination (Categorical Exclusion [CatEx], Environmental Assessment [EA], Environmental Impact Statement [EIS]) prior to project development
- Developing a clear project description and purpose and need statement
- Preparing preliminary cost estimates of alternatives for NEPA studies and identifying funding
- Developing Programmatic Agreements with resource agencies, as applicable, by early analysis of environmental resources
- Identifying logical termini and project sections with independent utility and recommending a project phasing and action plan
  - Provides stakeholders a plan they can use to base decisions on such as land use, development, and preservation of right-of-way
  - Can lead to other beneficial studies and plans, such as Access Management Plans, Access Control Plans, and ROW Mapping and Surveying

## 1.3 Reasons Not to Conduct a PEL Study

Sometimes projects or corridors are not well suited to a PEL study because of timing, funding, or other considerations. PEL studies can be expensive and may not be useful if projects are too far into the future.

For example, PEL studies should not be conducted when:

- The lead agency is unsure of the reason for the study;
- Solutions have already been identified (in this case, the project should conduct a feasibility study or start the NEPA process if funding is available);
- The project does not have potential federal involvement or federal funding;
- The lead agency will be unable to initiate the NEPA process within 5 years of completion of the PEL study;
- Other types of studies will provide the information needed, such as access plans, a traffic study, or an existing conditions overview (**Figure 1-4** is a decision tree for the use of PEL studies, NEPA, and other planning studies); and
- The project has construction funding (in this case, the project should start the NEPA process).

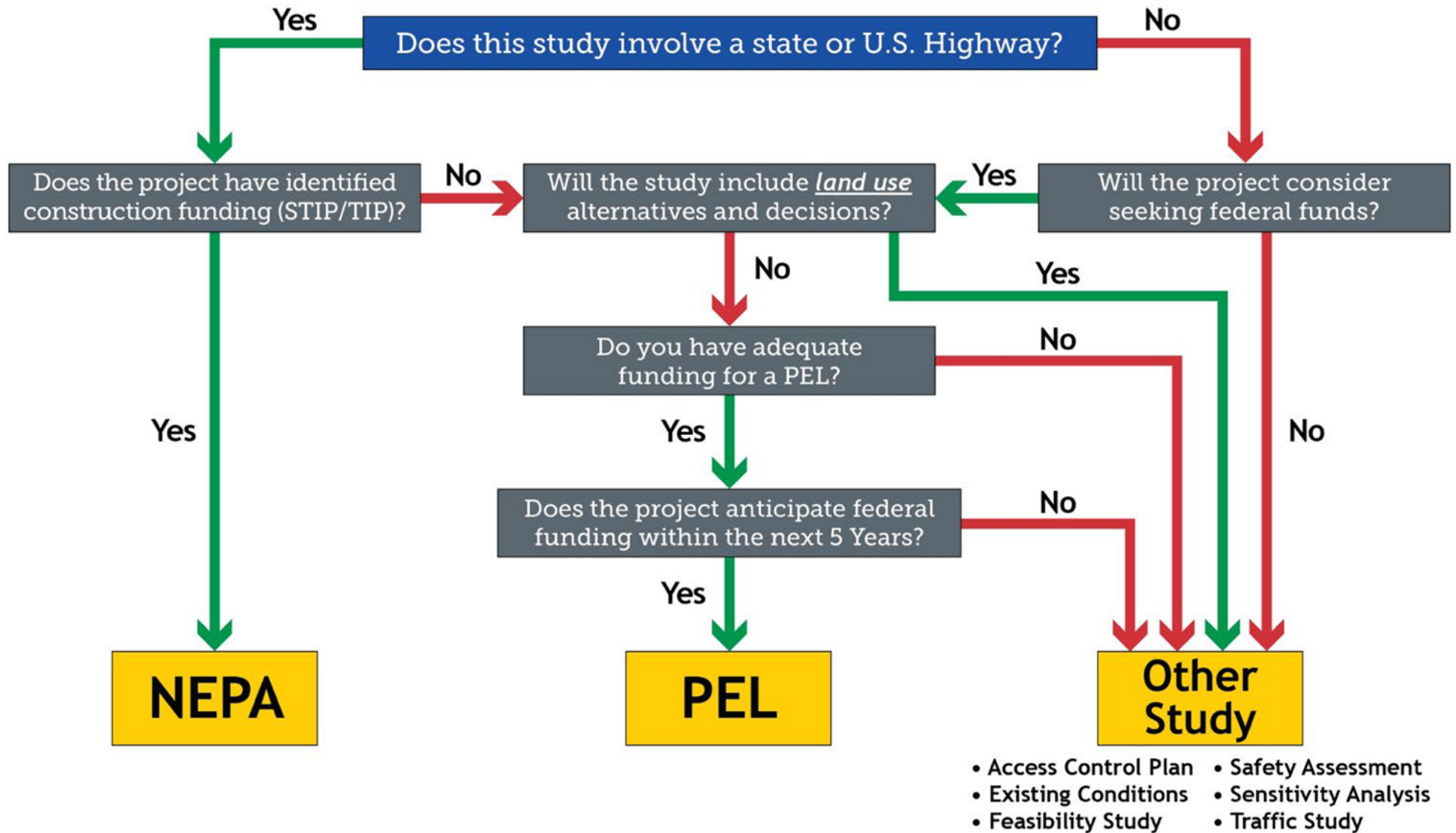


PEL studies should not be conducted for the primary purpose of obtaining federal funding, and completion of a PEL study does not guarantee federal funding.

A PEL study does not reduce the level of analysis required for decision-making under NEPA. PEL studies should not be conducted with the intent of minimizing or short-cutting NEPA requirements or of “downgrading” a NEPA Class of Action from an EA to a Documented CatEx, for instance. Although the PEL process is a federally recognized process for streamlining the NEPA process, the completion of a PEL study does not guarantee federal funding for a project. PEL studies should not be conducted for the primary purpose of obtaining federal funding.



Figure 1-4 NEPA, PEL, or Other Study Decision Tree







## 1.4 Relationship Between Planning Studies and NEPA in Project Development



“...the planning process and the environmental assessment required during project development by NEPA should work in tandem, with the results of the transportation planning process feeding into the NEPA process.”

FHWA and FTA, 2005

Although PEL studies are often conducted to facilitate future NEPA processes and future NEPA processes can incorporate PEL study recommendations only if proper steps and coordination occur, key differences exist between the PEL and NEPA processes, particularly regarding alternatives and environmental evaluations. For instance, a PEL study that evaluates alternatives should focus on identifying feasible solutions and provide ample information about the concepts for use in a future NEPA alternatives analysis process (**Chapter 6.0**). The NEPA process, however, determines the Proposed Action and Preferred Alternative. Additionally, PEL study environmental evaluations do not need to address all regulatory requirements that should be addressed in a NEPA study. Instead, a PEL study should provide context on environmental constraints but will not include detailed environmental studies.

Early resource agency and stakeholder scoping, combined with a focused public outreach program, is an important PEL process step that directly ties to and helps to focus future NEPA processes (**Section 4.4**). Early scoping should be conducted with resource agencies and stakeholders to ensure that the PEL study addresses relevant topics. This coordination during the PEL process focuses the NEPA effort substantially by providing context to issues of concern and avoiding unnecessary effort analyzing less important issues.

## 1.5 CDOT's Interchange Approval Process

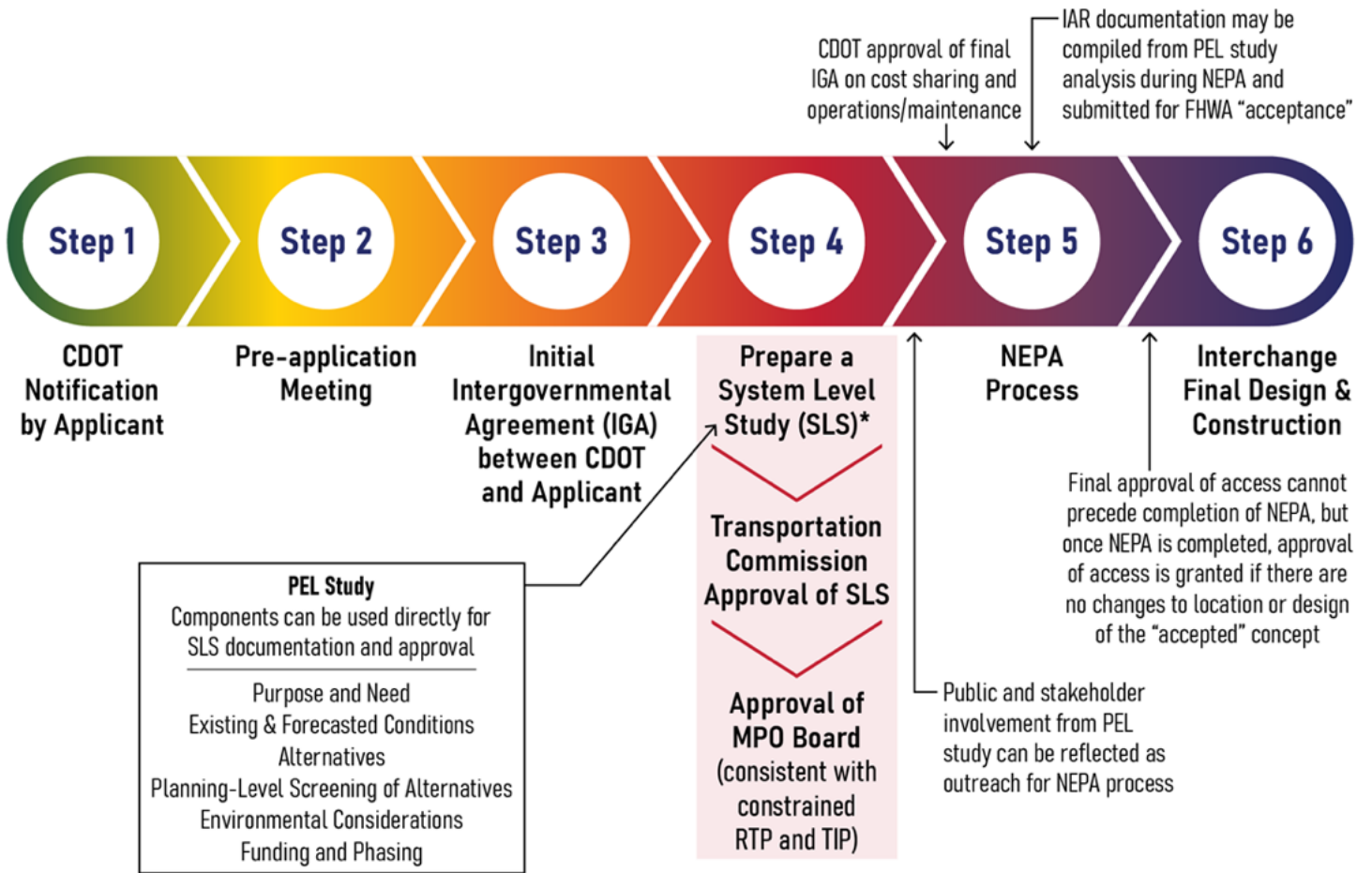
A PEL Alternatives Development and Evaluation process (**Section 4.5.7**) can result in one or more sets of Recommended Alternatives that include a new or modified interchange on the state or the federal-aid highway system. CDOT's Policy and Procedural Directive 1601 (1601 Process) is an established process to review and approve new interchanges or major improvements to existing interchanges that connect with the state or the federal-aid highway system. As part of the 1601 Process, a System Level Study (SLS) must be completed and includes information such as purpose and need, existing and future transportation conditions, planning-level alternatives analysis, and environmental considerations. The information from a PEL study can be pulled directly into a SLS as part of the 1601 Process, including the requirements for Transportation Demand Management (TDM) elements to be included in an interchange project, such as bicycle, pedestrian, or transit improvements. **Figure 1-5** shows the general 1601 Process and how information from a PEL study can be incorporated into that process.

When conducted properly, a PEL study will provide continued coordination and documentation that will streamline project development through the CDOT 1601 interchange approval process, which includes the NEPA process, final design, and construction.



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Figure 1-5 Interchange Approval Process (1601) and PEL Study





## 2.0 PEL Process Guidance and Resources

Use of the PEL process is not a legal requirement for project development. However, if PEL study results are to be adopted in the NEPA process, the PEL study must adhere to legal requirements and published guidance. Be aware that current regulations and existing conditions can change between the time the PEL is completed and the time when funding is secured in order to begin the NEPA process for a project.

### 2.1 Legal and Regulatory Background

Both transportation planning and NEPA documentation have been required for transportation projects since the passage of the Federal Highway Act of 1962 and the National Environmental Policy Act of 1969 (signed on January 1, 1970). The transportation planning process is required by 23 USC 134-135 and 49 USC 5303-5306. These sections set out the process for developing long-range transportation plans to address future transportation needs. In the transportation context, NEPA attempts to ensure environmentally sound transportation infrastructure investments by addressing the social, economic, and environmental impacts of the project location and design. The process also requires public and agency coordination and involvement. **Figure 2-1** and the following section summarizes transportation legislation as it applies to the planning and environmental process.

The Fixing America's Surface Transportation (FAST) Act (2015) and Infrastructure Investment and Jobs Act (IIJA) (2021) clarified and expanded upon previous acts.

The FAST Act also provided clarifications from the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (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 organization (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.

The IIJA includes \$550 billion for new programs and \$650 billion for the continuation of programs previously authorized under the FAST Act. The IIJA significantly expanded the types of infrastructure improvements eligible for funding through the IIJA, including multimodal, electric vehicle, and carbon emission reduction type projects. The IIJA also includes a large focus on equity as it relates to housing and transportation, especially during the MPO planning process. It will be important to consider these elements during the PEL process, especially when identifying potential projects for future NEPA phases and understanding the types of grants for which individual project may be eligible.



#### Statewide Transportation Planning in the 20th Century

1909: Colorado's first highway bill was passed by forming a three-member Highway Commission to approve work and allocate funds. The Commission members first took their posts on January 1, 1910.

1917: The State Highway Fund was created and a State Highway Department was formed.

1947: The Federal Works Administration approved the first National System of Interstate and Defense Highways. In Colorado, approved routes included I-25 from the Wyoming border to Raton Pass and I-70 from Denver to the Kansas border.

1953: The state legislature passed a new law reorganizing the Highway Department and renamed it the Colorado Department of Highways (CDOH).

1956: Congress passed the Federal Interstate Highways Act.

1991: CDOH became the Colorado Department of Transportation (CDOT).



## One Federal Decision

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 one 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 2 years from publication of a notice of intent to prepare an EIS to issuance of a Record of Decision (ROD). In response, the Council on Environmental Quality (CEQ) published a notice of proposed rulemaking on January 10, 2020, proposing broad revisions to NEPA regulations. In keeping with the proposed rule, a final rule promulgated on July 16, 2020, revised the NEPA regulations and took effect on September 14, 2020.

As part of the 2020 NEPA regulations, FHWA and other federal agencies were directed to set time limits for EA and EIS NEPA clearance actions:

- **Environmental Assessments** 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 the date a finding of no significant impact (FONSI) is signed.
- **Environmental Impact Statements** 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 notice of intent to the date a ROD is signed.

On January 20, 2021, *Executive Order 13990 Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis* was issued. The Executive Order established an administration policy to address a host of social and environmental impacts, including environmental justice and climate change. 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.



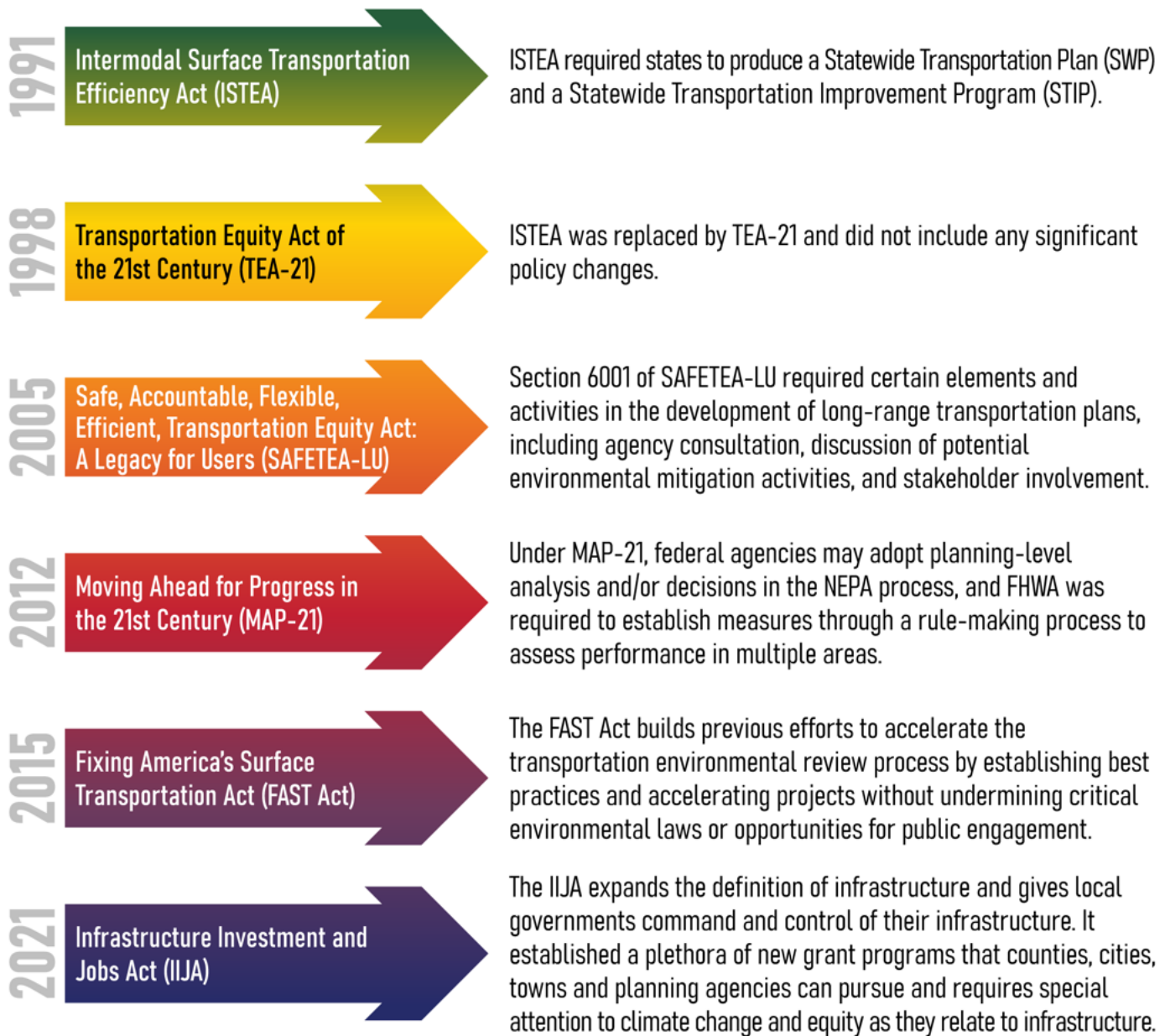
The PEL study and the associated documentation are good tools to help streamline future NEPA processes by conducting NEPA pre-scoping activities prior to the determination of the appropriate NEPA Class of Action.





# CDOT PEL Handbook

Figure 2-1 Federal Acts Timeline





## 2.2 Legal Requirements

Although the use of the PEL process is voluntary, the adoption of planning products in NEPA is subject to legal requirements set forth by MAP-21, codified in 23 USC 168, and refined by the FAST Act. The adoption of planning products, including PEL studies, for future use in NEPA proceedings may occur only when the following conditions are met:

1. The study was conducted in accordance with federal law.
2. The study was developed in consultation with the appropriate federal and state resources agencies and Indian tribes.
3. The study included multidisciplinary consideration of systems-level or corridor-wide needs and effects, including effects on the human and natural environment.
4. During the planning process, notice was provided that the study may be adopted during a subsequent review process.
5. After initiation of an environmental review process but prior to determining whether to use planning products the lead agency must have made documentation available to stakeholders and considered any comments.
6. There is no significant new information or circumstance that has reasonable likelihood of affecting the continued validity of product.
7. The study has a rational basis and is based on reliable and reasonably current data and scientific methodologies.
8. The study is documented in sufficient detail to support the decision or results of the analysis and to meet requirements for use in the environmental process.
9. The study is appropriate for adoption and use in the environmental review process and is sufficient to meet the requirements of NEPA.
10. The study was approved not later than 5 years prior to the date on which information is adopted in the NEPA review. **Chapter 6.0** describes protocols for using PEL study data in NEPA studies based on the age of the data.



A planning product is defined in 23 USC 168 (a)(2) as “a detailed and timely decision, analysis, study, or other documented information that (a) is the result of an evaluation or decision-making process carried out during transportation planning, including a detailed corridor plan or a transportation plan developed under section 134 that fully analyzes impacts on mobility, adjacent communities, and the environment; (b) is intended to be carried into the transportation project development process; and (c) has been approved by the State, all local and tribal governments where the project is located, and by any relevant metropolitan planning organization.”



## 2.3 FHWA and Federal Transit Administration (FTA) PEL Guidance

On April 5, 2011, FHWA issued *Guidance on Using Corridor and Subarea Planning to Inform NEPA* (FHWA, 2011a). This guidance document describes how corridor and subarea planning can be used to bridge transportation planning and the NEPA processes as described in Appendix A of 23 Code of Federal Regulations (CFR) 450 - Linking the Transportation Planning and NEPA Processes. Chapter 4.0 of *Guidance on Using Corridor and Subarea Planning to Inform NEPA* (FHWA, 2011a) focuses on elements that make a planning study viable for NEPA, including information on environmental analysis and documentation, and Appendix B of that document contains useful case studies.

## 2.4 The PEL Process and Every Day Counts Initiative

In 2009, FHWA introduced the Every Day Counts initiative to identify and deploy innovations that shorten project delivery, enhance roadway safety, and protect the environment. The PEL process is an Every Day Counts initiative that encourages the use of information developed in planning to inform the NEPA process. To be used in NEPA, a PEL study must involve interested state, local, tribal, and federal agencies, as well as the public. Decisions are to be documented in an identifiable format (such as the PEL Questionnaire) and made available for review during the NEPA scoping process. PEL documentation can be appended to or referenced in the NEPA document. The legal authority to use planning information in the NEPA process was explicitly clarified in the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU), including flexibility in agency funding choices, and has subsequently been included in current law.

## 2.5 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 (CO<sub>2</sub>e).
- 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.



The CDOT Planning and Environmental Linkages Program web page is available here: <https://www.codot.gov/programs/environmental/planning-env-link-program/overview.html>

The Guidance on Using Corridor and Subarea Planning to Inform NEPA is available here: [https://www.environment.fhwa.dot.gov/env\\_initiatives/pel/corridor\\_nepa\\_guidance.aspx](https://www.environment.fhwa.dot.gov/env_initiatives/pel/corridor_nepa_guidance.aspx)

The FHWA Environmental Review Toolkit PEL web page is available here: [https://www.environment.fhwa.dot.gov/env\\_initiatives/pel.aspx](https://www.environment.fhwa.dot.gov/env_initiatives/pel.aspx)

The FHWA and FTA rule on Statewide and Nonmetropolitan Transportation Planning; Metropolitan Planning is available here: <https://www.federalregister.gov/documents/2016/05/27/2016-11964/statewide-and-nonmetropolitan-transportation-planning-metropolitan-transportation-planning>

The FHWA Colorado Division and CDOT PEL Questionnaire is available here: <https://www.codot.gov/programs/environmental/planning-env-link-program>

This PEL Questionnaire was updated in September 2019 and differs slightly from the National FHWA Questionnaire. This revised questionnaire helps the transition from PEL to NEPA a somewhat better than the previous version.



A best practice using the questionnaire is to complete it at the very beginning of the study and add to it as the study progresses. This keeps the study focused on the reasons for doing the study.

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).

These air quality regulations and their implications and future environmental analysis requirements should be considered as part of the PEL process and noted in the PEL document.

## 2.6 FHWA PEL Questionnaire

To aid agencies in incorporating PEL principles into their planning and environmental review processes, FHWA introduced the PEL Questionnaire to ensure that planning information and decisions are properly documented for use in the NEPA review process. The National PEL Questionnaire is an adaptation of the questionnaire jointly developed by CDOT and the FHWA Colorado Division. The FHWA Colorado Division PEL Questionnaire, titled *FHWA Planning and Environmental Linkages Questionnaire*, is consistent with 23 CFR 450 and FHWA policies pertaining to corridor studies (FHWA, 2011b).

In Colorado, the FHWA Colorado Division PEL Questionnaire serves as a guide for conducting a PEL study and provides questions and issues to consider related to the different planning elements that may be addressed in a particular study. The FHWA Colorado Division PEL Questionnaire summarizes the planning process and includes questions related to corridor vision, purpose and need, range of alternatives and evaluation criteria, agency and public coordination, environmental resources, and the relationship to future NEPA documents. PEL studies are not required to address all of these topics, and only the relevant portions of the FHWA Colorado Division PEL Questionnaire should be used. The FHWA Colorado Division PEL Questionnaire is intended to guide the PEL process and provide documentation with the submittal of the planning study. **Chapter 5.0** further discusses documentation requirements.

## 2.7 Additional Resources

Other CDOT resources for the PEL process that can be found on CDOT's PEL web page, include a PEL training course, the CDOT Environmental Resources Scoping Form, the *CDOT NEPA Manual* (CDOT, 2020a), and the *CDOT Project Development Manual* (CDOT, 2013).

### PEL Training Course

A one-day training course developed for CDOT staff provides the following information:

- What? When? Why should you conduct a PEL?
- How do you scope a PEL?
- How to conduct a PEL?
- How to go from PEL to NEPA?

This training course is provided virtually and in person. To schedule a training course for CDOT staff, contact the PEL Program Manager.





## CDOT PEL Scoping Form

The CDOT PEL Scoping Form is used during the scoping phase of a PEL study and can be used when developing the scope of work for a PEL study. It provides a comprehensive list of environmental resources that may be analyzed during a PEL study and prompts for considerations such as who will be the lead team member and what level of analysis and documentation will be required for each resource.

## CDOT Project Development Manual and CDOT NEPA Manual

The *CDOT Project Development Manual* (CDOT, 2013) provides guidance on activities and processes needed to develop a project from conception to award. The *CDOT NEPA Manual* (CDOT, 2020a) provides guidance on the activities, processes, and regulations to be followed during the NEPA phase of a project. These manuals may be helpful in understanding how a PEL study fits into the overall development of a project and what future NEPA requirements may entail for resources pertinent to a particular PEL study. The CDOT NEPA Manual summarizes the PEL process in the context of planning and project development and sets forth public involvement requirements for NEPA processes that are generally followed for CDOT PEL studies as well.

## CDOT Environmental Stewardship Guide

The *CDOT Environmental Stewardship Guide* (CDOT, 2017) describes how CDOT carries out its stewardship of the environment. The stewardship guide may be useful in the development of study vision statements, purpose and need, and goals and objectives for alternatives evaluation.



The *CDOT PEL Program Manager Contact Information* is available at:

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

The CDOT PEL Scoping Form is available at: [Forms – Colorado Department of Transportation \(codot.gov\)](#)

The *CDOT Project Development Manual* is available at: [2013 Project Development Manual – Colorado Department of Transportation \(codot.gov\)](#)

The *CDOT NEPA Manual* is available at: [CDOT NEPA Manual – Colorado Department of Transportation \(codot.gov\)](#)

The *CDOT Environmental Stewardship Guide* is available here: [cdot-environmental-stewardship-guide-nov-2017 \(codot.gov\)](#)



## 3.0 Long-Range Transportation Planning and the PEL Process

This chapter provides an overview of the Colorado Transportation Planning process, describes the ways in which elements of the PEL concept can be incorporated into long-range transportation planning activities, and considers how long-range transportation planning can guide and inform PEL studies. Recommendations for strengthening the connections between long-range transportation planning and the overall PEL process are also included.

### 3.1 The Framework for the Transportation Planning Process in Colorado

In accordance with federal transportation law, CDOT carries out a continuing, cooperative, and comprehensive statewide multimodal transportation planning process with its 15 Transportation Planning Regions (TPRs). Of these, 10 are non-urban TPRs, and the 5 TPRs located in urban areas are governed by MPOs. Each TPR comprises the municipalities and counties within its established boundaries.

Transportation Planning Element	Description and Relation to Other Plans
MPOs and TPRs create Regional Transportation Plans (RTP).	RTPs include fiscally constrained components and identify the needs, corridor strategies, and/or projects anticipated to be constructed over the next 20-plus years.
CDOT incorporates RTPs into the Statewide Transportation Plan (SWP).	The SWP combines the individual elements of the TPRs into a statewide vision that links transportation goals and strategies to investment decisions.
CDOT develops a Statewide Transportation Improvement Program (STIP).	The STIP identifies the state's short-term project needs and priorities over a rolling 4-year period.
MPOs are required by federal law to develop a short-term capital improvement program or Transportation Improvement Program (TIP).	The TIP must be consistent with the RTPs and is also updated every 4 years. The TIP is included in the STIP without modification.



#### Transportation Planning Products Defined

The SWP is Colorado's long-range transportation plan. The SWP, prepared by CDOT's Division of Transportation Development, identifies future needs for Colorado's transportation system, establishes a transportation vision for the state, and outlines the strategic direction necessary to achieve these goals. It is a 25-year multimodal plan that outlines the state's transportation needs from both a fiscally constrained and an unconstrained perspective.

The STIP is a planning document that identifies the transportation projects CDOT intends to fund over a rolling 4-year period. It must be consistent with corridor visions outlined in the long-range regional and statewide plans.

A TIP is a short-term capital improvement program developed by MPOs. CDOT incorporates TIP priorities into the SWP.

Information gathered during the long-range transportation planning process can inform the NEPA process. A PEL study facilitates and strengthens this process. CDOT has incorporated information useful to PEL and NEPA studies into the long-range planning process. Each interstate, U.S. Highway, and State Highway corridor in all 10 of CDOT's rural TPRs has a Corridor Profile that is a synthesis of the public and agency feedback, stakeholder insight, and key data used to identify the transportation needs across the state. The MPOs set their own transportation priorities and goals and provide a vision for their corridors. Corridor Profiles and Corridor Visions can help guide the development of a corridor-specific PEL study by aligning vision strategies with transportation needs and priorities.



## 3.2 Integration of the PEL Concept in the Long-Range Planning Process

A key goal of the PEL concept is to integrate environmental issues and requirements early in the planning process to improve coordination and efficiencies in project development and implementation. Steps in the long-range planning process where this can be achieved are described below.

### 3.2.1 Development of Corridor Visions and Needs



Colorado's

transportation planning law is codified in Colorado Revised Statutes (CRS) 4311103, with additional regulations outlined in Code of Colorado Regulations (CCR) 2604-2.

Federal transportation planning law is codified in 23 USC 134 and 23 USC 135, with additional regulations in 23 CFR 450, 23 CFR 500, and 49 CFR 613.

To learn more about the recently adopted 2045 Statewide and Regional Transportation Plans, and other transportation planning-related topics, visit CDOT's Statewide/Regional Planning web page at:

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

CPLAN – CDOT's web-based mapping and information system  
<https://cdot.maps.arcgis.com/home/index.html>

The SWP is corridor-based, including approximately 350 corridors statewide. Corridor visions include strategies aimed at meeting each corridor's unique transportation needs. Needs should be supported by population, employment, traffic, and safety data, as well as other appropriate considerations. A well-developed corridor vision and need statement can help prioritize corridors that would be candidates for PEL studies. It can also provide a basis for the development of the purpose and need in future PEL and NEPA studies.

A first step in determining whether a PEL study is appropriate is to review the SWP and relevant RTP. If the area is considered a low priority, a PEL study may not adequately support long-range planning and may not be justified. The reasons for initiating a PEL study should be directly linked to the priorities contained within the SWP and RTP.

A PEL study would be most effective for those areas where there is consensus that a transportation problem exists, it is identified as a priority in the SWP and relevant RTP, and there is no consensus about how to address the transportation problem. A PEL study can be used to consider options and identify solutions, constraints, and funding opportunities to advance projects in these priority areas.

The SWP and RTPs identify priority corridors and develop corridor profiles, which include an assessment of corridor characteristics, goals, and potential strategies. RTPs develop corridor-specific visions and provide information about existing conditions and environmental constraints. Specific corridor profiles and visions should support the decision to conduct a PEL study.

Once a decision to conduct a PEL study has been made, information included in the SWP and RTP can provide a foundation for the development of the study. **Table 3-1** describes key elements of the NEPA environmental review process and identifies potential ways in which the long-range transportation planning process can help to define and inform a PEL study. Each of these elements is defined in **Section 4.5**.

### 3.2.2 Identification of Key Environmental Issues

The RTPs include an overall characterization of the environmental setting for each corridor and, when possible, identify critical environmental resources, areas of potential concern for impacts, and high-level strategies for mitigation (e.g., wetland mitigation banking, habitat preservation). Although information is collected at a higher level, identification of environmental issues in priority corridors can assist with scoping for PEL studies and facilitate the development of future environmental studies and documentation.



### 3.2.3 Documentation and Data Management

Documentation included as part of the SWP could be useful in future environmental studies. For example, technical reports documenting agency coordination and consultation conducted as part of the long-range planning process could assist with stakeholder identification, categorization of critical environmental concerns, and overall scoping for a PEL study.

CDOT's Online Transportation Information System (OTIS) provides online information frequently used for transportation planning and project development. Information is provided on current and projected traffic volumes, state highway attributes, summary roadway statistics, and geographic data.

CDOT also developed a web-based mapping and information system called CPLAN, which is accessible through OTIS, designed to make it easier for agencies and the public to access CDOT maps and information. Geographic data pertaining to the SWP are visible in CPLAN, along with similar data provided by other resource agencies. Key users of CPLAN include CDOT's planning partners, environmental resource and regulatory agencies, city and county governments, transit agencies, bike and pedestrian organizations, other transportation planning organizations, and the general public. Data from CPLAN can be used to support PEL studies. In addition, data collected as part of a PEL study can be added to the database to facilitate data sharing and transportation planning activities. Such data management activities could be included in the scope of a PEL study.

## 3.3 Long-Range Transportation Planning Defines and Supports PEL Studies

Long-range transportation planning provides the basis for a PEL study. Priority projects established through long-range transportation planning are most likely to be funded and constructed. When considering whether a PEL study would be beneficial for a particular corridor or transportation problem, the SWP and RTP should be used to answer the following:

### 3.3.1 Identification as a Priority in the SWP and RTP

A first step in determining whether a PEL study is appropriate would be to review the SWP and relevant RTP. If the area is considered a low priority, a PEL study may not adequately support long-range planning and may not be justified. **The reasons for initiating a PEL study should be directly linked to the priorities contained within the SWP and RTP.**

### 3.3.2 Component of the Transportation Network Related to the Overall System

A PEL study would be most effective for those areas where there is consensus that a transportation problem exists, it is identified as a priority in the SWP and relevant RTP, and there is no consensus about how to address the transportation problem. **The PEL study can be used to consider options and identify solutions, constraints, and funding opportunities to advance projects in these priority areas.**

### 3.3.3 Available Information in the SWP and RTPs

The SWP and RTPs identify priority corridors and develop corridor profiles, which include an assessment of corridor characteristics, goals, and potential strategies. RTPs develop corridor-specific visions and provide information about existing conditions and environmental constraints. **Specific corridor profiles and visions should support the decision to conduct a PEL study.**

Once a decision to conduct a PEL study has been made, information included in the SWP and RTP can provide a foundation for the development of the study. **Table 3-1** describes key elements of the NEPA environmental review process and identifies potential ways in which the long-range transportation planning process can help to define and inform a PEL study, which can then be used in key elements of the NEPA process. These elements are defined in **Section 4.5**.



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**Table 3-1 Information Developed through Long-Range Transportation Planning and Applicability to the PEL Study Process**

Element of the NEPA Environmental Review Process		Does Long-Range Planning help to Define the PEL Process?
<b>Establish Logical Termini</b>	Project termini should be determined during the earliest phases of the project. As defined by FHWA, logical termini are rational end points for a transportation improvement project and a review of the potential environmental impacts.	<b>Yes.</b> The SWP, RTPs, and STIP broadly define the areas identified for improvement. Limits would need to be revisited and defined once a PEL study is identified, particularly in areas where it is clear that improvements are needed but consensus regarding potential solutions has not been reached. The PEL study may identify multiple projects with logical termini within the broad corridors defined in the long-range transportation planning process.
<b>Develop Purpose and Need</b>	The purpose and need provide the justification for the project and drive development of the range of alternatives.	<b>Potentially.</b> The SWP provides a corridor vision that has information about the corridor’s transportation needs to help frame the project’s purpose and need.
<b>Develop and Analyze Alternatives</b>	Developing and evaluating alternatives are the heart of the NEPA process, identifying one or more solutions to satisfy transportation needs and protect environmental and community resources.	<b>Potentially.</b> The SWP neither directly identifies or evaluates alternatives nor conducts a fatal flaw analysis. However, the SWP and RTPs do discuss potential solutions that could serve as the starting point for the development of a range of alternatives.
<b>Document Affected Environment</b>	Documenting the existing resources and the condition of the environment helps prioritize impact analysis and identify important constraints. The affected environment discussion should include the existing social, economic, and environmental settings surrounding the project. It should also identify environmentally sensitive features in the project corridor.	<b>Limited.</b> The RTP provides general demographic information and corridor conditions. Environmental information that support the characterization of the affected environment is limited.  However, specific data related to many of the resources are not provided and would need to be developed as part of a PEL study or future NEPA processes.
<b>Identify Environmental Constraints and Impacts</b>	This analysis identifies the potential impacts, both beneficial and adverse, of project alternatives. This information is used to compare the impacts of project alternatives, develop reasonable mitigation measures, and aid in decision-making.	<b>Limited.</b> The SWP and, more specifically, the RTP identify general corridor conditions and provide limited environmental information and constraints that can help prioritize environmental impact analyses.
<b>Identify Mitigation Strategies</b>	Mitigation must be considered for all impacts, regardless of their significance. The potential measures that could be taken to mitigate project impacts should be described in detail.	<b>Potentially.</b> Although project-specific impacts are not evaluated in the SWP and RTPs, mitigation strategies are included in the plans in some instances.
<b>Conduct Public Involvement and Agency Coordination</b>	Public and agency involvement is required at various steps in the NEPA process and is a cornerstone of NEPA.	<b>Yes.</b> The SWP includes public and stakeholder participation. Those involved in planning efforts include TPRs and MPOs, the Statewide Transportation Advisory Committee (elected or appointed officials), FHWA, state and federal agencies, advocacy groups, tribal governments, and the public.





## 4.0 How to Conduct a PEL Study

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Previous chapters have described what a PEL study is and why a PEL study might be conducted. This chapter provides guidance on how to conduct a PEL study consistent with FHWA and FTA guidance. Studies that transition into project development and NEPA are most common and are discussed in detail in this chapter. PEL studies can also be used to support policy or program development, such as the implementation of new technology. These program-level PEL studies follow a similar process to project-related PEL studies: both types tailor the PEL approach to the reasons for the PEL study. PEL concepts are also applicable to the long-range planning process covered in **Chapter 3.0**.

PEL studies can also be smaller studies that look at just one or two elements of planning or NEPA, such as determining logical termini or completing a CDOT PEL Scoping form and conducting an environmental overview of environmental resources that could affect the alternatives development and evaluation process. In general, PEL studies should include some or all of the following steps:

- Determine the reason for the PEL study
- Develop a project scope of work
- Determine FHWA and CDOT involvement
- Identify stakeholders and participation methods
- Conduct all or individual PEL study steps outlined in the scope of work
  - Vision
  - Purpose and Need
  - Operations Analysis Methods and Assumptions
  - Operations Analysis Technical Report
  - Alternatives Development and Evaluation Technical Report
  - Existing Conditions and Environmental Overview Report
  - Recommended Alternative(s) Phasing
  - Recommended Alternative(s) Conceptual Plans
  - Action Plan
  - Early Actions and Early Action Projects
- Identify next steps

For a PEL study to be a “PEL study,” it needs to do the following:

- Involve FHWA
- Solicit public input
- Solicit resource agency input
- Use the FHWA Colorado Division PEL Questionnaire to guide and document the study
- Obtain study acceptance letters from CDOT and FHWA

### 4.1 *Determine the Reason for the PEL Study*

After following the decision-matrix depicted on **Figure 1-4** and deciding that a PEL study is the appropriate study, the first step in the process is deciding the reason for the PEL study:

- What are the objectives of the study?
- What are the desired outcomes?
- What are the expected uses of the PEL study?

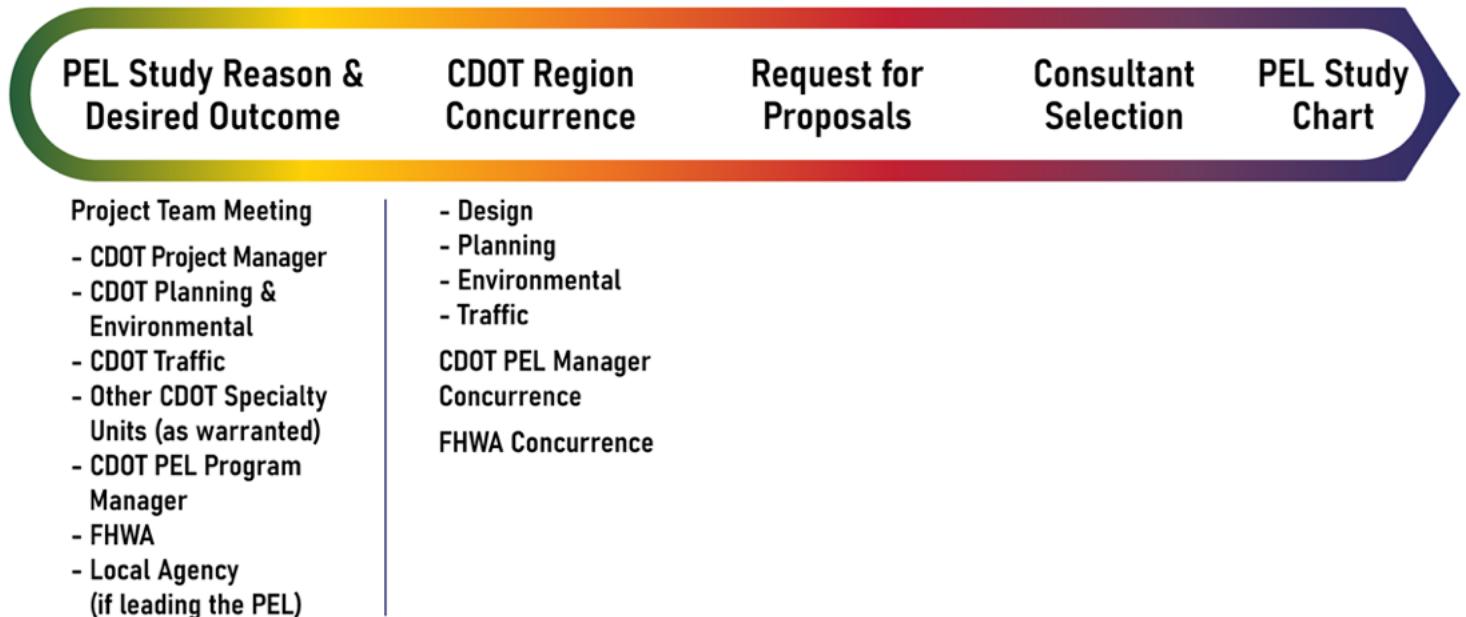


A PEL study can address program-related or project-related needs. Reasons for a PEL study might include prioritizing improvements along a corridor and developing a range of alternatives to consider (Figure 1-2).

To initiate the PEL process before beginning the study, the CDOT Region (and local agency if the study is a local agency project) should hold a pre-scoping meeting with FHWA and the CDOT PEL Program Manager to confirm the project is suitable for PEL and clarify the reason for conducting the study. This meeting will help determine whether the PEL process is the appropriate method to study the issues being considered or whether another type of study or planning process would be more appropriate (Figure 1-4).

For those studies suited to the PEL process, the pre-scoping meeting should determine which steps in Section 4.5 will be addressed by the study. Once the reason for the PEL study has been determined, the project can be initiated and a scope of work developed. Figure 4-1 depicts the PEL study scope of work development process. This process is meant to involve FHWA and all CDOT Specialty Units, as warranted, as early as possible to facilitate a smooth scoping process. The goal of implementing this process is to draft better scopes of work, requests for proposals, and focus on the PEL study.

**Figure 4-1** PEL Study Scope of Work Development Process



## 4.2 Develop and Understand the Scope of Work

Once a decision has been made that a PEL study is appropriate, the CDOT region and/or local agency assigns a Project Manager, who is responsible for developing a scope of work for the PEL study. The CDOT Program Engineer assigns the project to a Resident Engineer, who, in turn, assigns a Project Manager. The Project Manager guides the project through the remainder of the process. The Project Manager is required to involve the Region Planning and Environmental Manager (RPEM) or designee, Region Traffic Manager, the PEL Program Manager, other CDOT specialty units (as warranted) and FHWA Area Engineer in scoping the project, developing a scope of work, and tracking documentation or project milestones. Early coordination will reduce the potential for time delays, increased costs, and changes to a project.

An internal CDOT project team meeting with the Resident Engineer, Project Manager, RPEM or designee, PEL Program Manager, Traffic, other CDOT specialty units, and FHWA Area Engineer is recommended for preparation and review of a project-specific scope of work. The FHWA Colorado Division PEL Questionnaire and CDOT PEL Scoping Form can be useful tools when modifying the PEL Generic Scope of Work and developing the project-specific scope of work. The PEL Generic Scope of Work is similar to the Generic Scope of Work for typical CDOT projects but has been revised to facilitate the PEL process, and the FHWA Colorado Division PEL Questionnaire



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provides a practical framework for identifying the work to be completed during a PEL study and can also be used to chart progress through the study.

The FHWA Colorado Division PEL Questionnaire requests that lead agencies decide at the start of a PEL study how the work will later be incorporated into subsequent NEPA efforts and decide whether the PEL study will meet standards established by NEPA regulations and guidance. These decisions should be taken into account when developing the scope of work. **Figure 4-2** provides an example PEL study schedule for a study that follows every step in the PEL process.

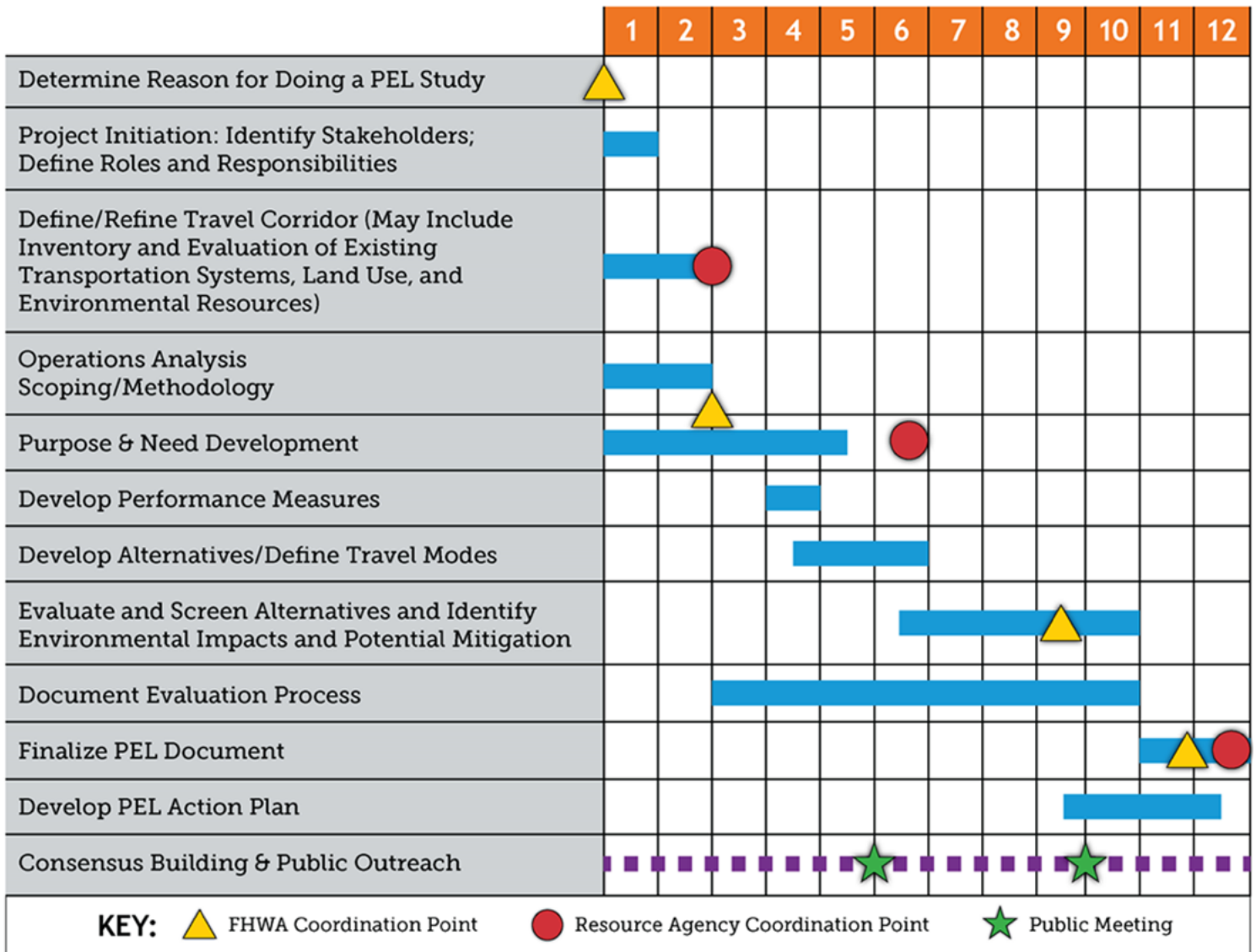
The project-specific scope of work may include items such as the following:

- Define and refine the travel corridor
- Identify the appropriate travel demand model, existing and future transportation system, and affected environment at an appropriate level of detail
- Develop the methodology for and conduct the operations analysis (traffic, transit, bicycle, pedestrian, and safety)
- Prepare a purpose and need
- Develop and evaluate alternatives
- Document preparation consistent with the requirements presented in **Chapter 5.0** so that information developed can be appended or referenced in a NEPA document
- Conduct outreach to the general public
- Coordinate with resource agencies about resource conditions and study results
- Coordinate with local stakeholders (such as municipalities and counties)
- Coordinate with FHWA at the Coordination Points presented in **Section 4.3.1**

FHWA does not require an action plan identifying the potential funding, phasing, and prioritization of the project as part of the PEL study. However, action plans are useful in preparation for project delivery and may be included in the project-specific scope of work at the discretion of the project sponsor.



Figure 4-2 Sample PEL Project Schedule



## 4.3 Determine Who Will Be Involved in the Study

### 4.3.1 FHWA Involvement in CDOT-Led PEL Studies

FHWA involvement in PEL studies is required for projects that have a federal nexus and are likely to require compliance with NEPA in the future. Although the PEL process is voluntary and flexible, certain steps and Coordination Points are required for the PEL study to be incorporated into the NEPA process. FHWA sometimes participates in planning activities throughout the PEL study process, but in all cases, PEL studies are required to involve FHWA at four formal Coordination Points (Figure 1-3 and Figure 4-2). Coordination Points are check-in points that confirm the progress to date, review any issues or concerns, and lay out next steps to the next Coordination Point. These check-ins are intended to help reduce delay in the overall study review process (to avoid back tracking) and to facilitate future NEPA processes by ensuring that required elements for incorporating the PEL study into future NEPA processes are included.



The following four FHWA Coordination Points are required for PEL processes:

- Coordination Point 1 – Determining the reason for the PEL study
- Coordination Point 2 – Operations Analysis Methodology and Purpose and Need
- Coordination Point 3 – Alternatives Development and Evaluation
- Coordination Point 4 – PEL Document (draft and final review)

Each Coordination Point coincides with a project milestone and is summarized below. Coordination Points 1, 2, and 3 do not require a formal acceptance letter from CDOT and FHWA; however, FHWA and CDOT review and agreement to Coordination Points 1, 2, and 3 should be documented in meeting minutes or an email. Coordination Point 4 requires an acceptance letter from CDOT and FHWA. **Appendix A** contains sample FHWA and CDOT acceptance letters for completion of a PEL study. Additional Coordination Points are sometimes helpful but are not required.

If only individual components of a PEL study are being completed (**Figure 1-1**), acceptance letters from CDOT and FHWA may be warranted to provide formal acknowledgement of the component completed. The need for acceptance letters should be determined as part of Coordination Point 1 for the completion of individual components of a PEL study.

## Coordination Point 1 – Determining the Reason for the PEL Study

Coordination Point 1 provides an opportunity for FHWA to give input on the reason for the study and the PEL Manager to give input on the purpose and scope of the PEL study before developing the scope of work. Reviewing the reasons for and expected outcomes of the PEL study are important for determining which portions of the FHWA Colorado Division PEL Questionnaire and PEL Generic Scope of Work are applicable in the documentation, which, in turn, guides the project-specific scope of work.

## Coordination Point 2 – Operations Analysis Methodology and Purpose and Need

Coordination Point 2 provides an opportunity for FHWA and CDOT Traffic to provide input on the operations analysis methodology for the study, as well as the purpose and need statement. The operations analysis methodology, operations analysis technical report, and the purpose and need statement will be revised based on this input, as appropriate.

## Coordination Point 3 – Alternatives Development and Evaluation

Coordination Point 3 ensures FHWA has an opportunity to provide input during alternatives development, refinement, evaluation, and the recommendation of alternative(s) to be evaluated in future NEPA documentation. The output of Coordination Point 3 will be a decision on:

- Appropriate methodologies to be used and the level of detail (qualitative and/or quantitative) required in the alternatives evaluation process
- Development of evaluation criteria and performance measures for the alternatives evaluation process based on the purpose and need, objectives, and goals
- Elimination of alternatives that:
  - Do not meet purpose and need or
  - Due to the magnitude of a combination of negative impacts on the community and environmental and cultural resources when there is another alternative that meets purpose and need and avoids or minimizes these impacts
- Identification of alternatives to:
  - Be recommended to be carried forward in the alternatives evaluation
  - Not be recommended to be carried forward due to the magnitude of negative impacts on the community or environmental and cultural resources or a lack of support by the local agencies or when there is another alternative that better meets the purpose and need
- Documentation of alternatives development, evaluation, and refinement decision-making process





## Coordination Point 4 – PEL Document

Based on the inputs of Coordination Points 1, 2, and 3, a PEL study document will be prepared. The output of Coordination Point 4 will be concurrence on:

- Adequacy of the document for incorporation into future NEPA processes
- Specification for changes or additional information needed for the final document
- Recommendations for future projects and/or NEPA processes that may arise from the PEL study

At the conclusion of Coordination Point 4, formal acceptance letters should be obtained from CDOT and FHWA to document FHWA's involvement with the study (**Appendix A**). The acceptance letter will document the accomplishments of the PEL study, next steps necessary for the project to move forward into NEPA, and acknowledgement of the decisions made in the PEL study.

### 4.3.2 FHWA and CDOT Involvement in Local Agency PEL Studies

When a local agency decides to conduct a PEL study, the local agency must hold a pre-scoping meeting with CDOT and FHWA to determine the reasons for and expected outcomes of the study and the appropriateness of the PEL process to meet those objectives. This constitutes Coordination Point 1 – Determining the Reason for the PEL Study. Additional Coordination Point requirements will be determined as part of the pre-scoping meeting.

## 4.4 Identify Stakeholders and Participation Methods

Similar to the CDOT planning and NEPA processes, stakeholder involvement is a key component of the PEL process that encourages stakeholder participation in the decision-making process from conception to completion. The goal of a stakeholder involvement program is to provide appropriate involvement throughout the process and solicit community feedback on steps such as the purpose and need statement, alternatives developed, the alternatives evaluation process, environmental analysis, and mitigation strategies. This section provides guidance on stakeholder involvement and key Coordination Points for CDOT PEL studies. It is not intended to cover public involvement requirements related to other state, federal, local, or tribal laws and regulations.

At a minimum, stakeholders, especially the public, should be engaged and provided an opportunity to review and provide input on:

- Draft Purpose and Need Statement
- Alternatives Development and Evaluation process and results, including the Recommended Alternative(s)

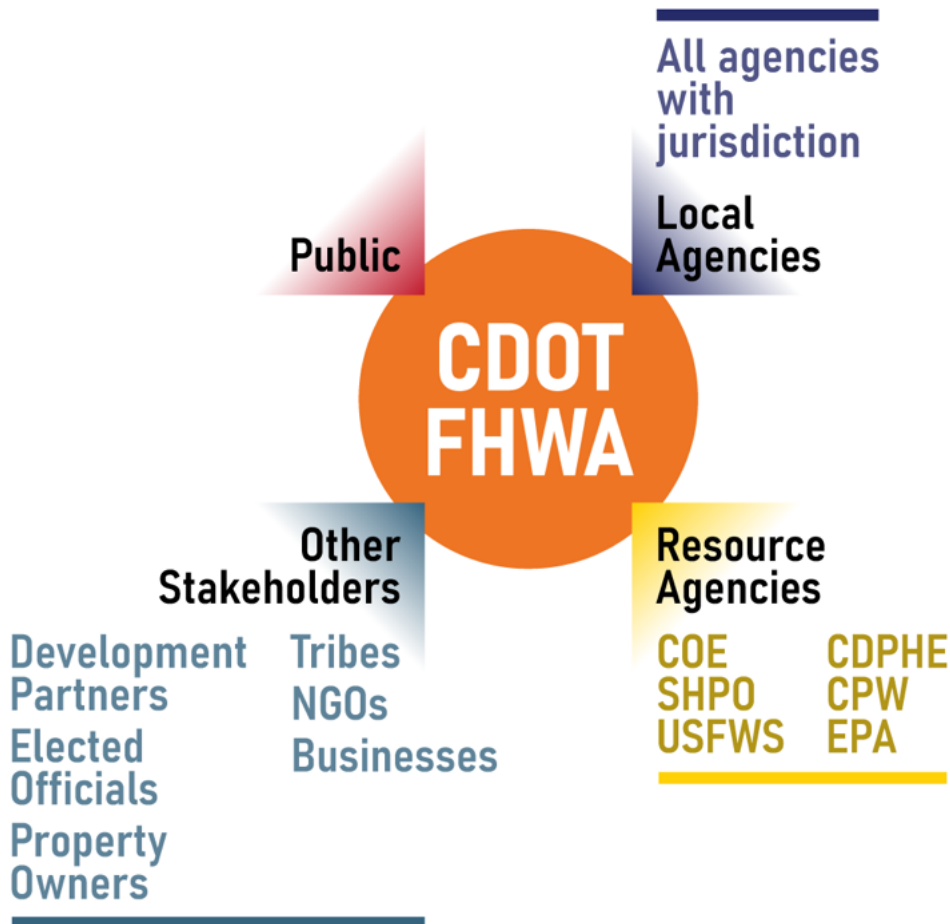
In general, stakeholder involvement for CDOT PEL projects follows Chapter 7 of the CDOT NEPA Manual (CDOT, 2020a). Stakeholder involvement for a PEL study should be focused, manage public expectation, and not overcommit due to the planning-level of analysis and time required for a construction project to be developed from a PEL study. It is important to note that while the engagement techniques identified in the CDOT NEPA Manual are applicable for PEL studies, the NEPA public involvement requirements are much more robust and regimented than those for a PEL study.



## 4.4.1 Identify Project Stakeholders

Early and continuous stakeholder engagement is one key to a successful PEL study. Stakeholders can include the general public, businesses, government agencies, non-government organizations, and other groups with an interest in the PEL study (Figure 4-3). The range of stakeholders is not limited to the geographic jurisdiction of the study but includes all individuals/groups that may potentially be affected by the project. These stakeholders will vary in composition depending on the size of the PEL study and the questions being asked/addressed by the PEL study. Stakeholder participation helps acceptance of the overall study and recommendations that come out of the study. Stakeholder involvement also fosters relationship building within agencies, between agencies, and with the public. Therefore, one of the top priorities during the PEL process is to identify study stakeholders, which can be accomplished by talking to key decision-makers within the study area.

Figure 4-3 Example Study Stakeholders



For the FHWA Colorado Division PEL Questionnaire, the project team will need to provide:

**Agency Coordination:**

- Provide a synopsis of coordination with federal, tribal, state, and local environmental, regulatory, and resource agencies.
- What transportation agencies did you coordinate with or were involved in the PEL study?
- What steps will need to be taken with each agency during NEPA scoping?

**Public Coordination:**

- Provide a synopsis of your coordination efforts with the public and stakeholders.
- Did the public, stakeholders, and agencies have an opportunity to comment during the alternative evaluation process?
- Were there unresolved issues with the public, stakeholders, and agencies?



## Resource and Regulatory Agencies



The TERC PEL Partnering Agreement is the framework for coordination with resource and regulatory agencies during the PEL process. Unlike under NEPA, agency involvement in a PEL study is voluntary on the part of the agency.

The TERC web page is:  
<https://www.codot.gov/programs/environmental/transportation-environmental-resources-council-terc>

“The PEL approach enables agencies to be more effective players in the transportation decision-making process through its focus on building interagency relationships. By encouraging resource and regulatory agencies to get involved in the early stages of planning, agencies have an opportunity to help shape transportation projects.”

FHWA and CDOT have standing relationships with federal, state, and local resource agencies through the Transportation Environmental Resource Council (TERC), which was formed in 2002 to provide a forum to discuss state transportation decisions and plan for environmental stewardship. In 2009, 15 TERC member agencies signed a PEL Partnering Agreement endorsing the use of a PEL approach in a manner that meets agency needs, expedites transportation project delivery, and fosters proactive working relationships among governmental agencies. The PEL Partnering Agreement promotes continued coordination, “including our commitment to active participation in the PEL approach, effectively communicating our agency’s needs to the transportation agencies, and providing resources as agreed upon to assure that the planning processes are able to move forward” (TERC, 2009). The PEL Partnering Agreement is the framework for coordination with resource and regulatory agencies during the PEL process. Unlike under NEPA, agency involvement in a PEL study is voluntary on the part of the agency.

If a PEL study will identify and evaluate environmental resources, all federal, state, and local agencies with jurisdiction by law or special expertise with regard to issues related to the PEL study should be notified of the study once it begins. This notification typically takes the form of a letter from CDOT introducing the study, providing the opportunity to ask questions about the study, and informing agencies that CDOT will request additional input when the Existing Conditions Report is available. **Appendix A** contains samples of the coordination letters between CDOT and the resource agencies.

Earlier PEL studies requested resource agencies provide comments early in the study process, but practice has shown that agencies provide the most effective comments when they are able to comment on an Existing Conditions and

Environmental Overview Report. Therefore, after the draft Existing Conditions and Environmental Overview Report is completed, the agencies should be invited to participate in the process through review and comments on the report. Regulatory and/or resource agencies to consider include, but are not limited to, the following:

- U.S. Fish and Wildlife Service (USFWS)
- U.S. Army Corps of Engineers (USACE)
- U.S. Environmental Protection Agency
- Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (APCD)
- CDPHE Hazardous Materials and Waste Management Division (HMWMD)
- CDPHE Water Quality Control Division (WQCD)
- State Historic Preservation Officer (SHPO)
- Colorado Parks and Wildlife (CPW)

Coordination with resource and regulatory agencies is necessary to confirm all applicable constraints (and the severity of those constraints) have been recorded during the process. The coordination opportunities are generally project-specific and vary in intensity for different resource and regulatory agencies based on the scope and breadth of issues within a given study area. However, in the event that agencies choose not to provide input, the PEL products can still be carried forward into the NEPA process with the recognition that additional coordination will likely be required during the NEPA phase. All coordination and consultation with SHPO should occur through the appropriate CDOT Historian, not from the project team – no exceptions.

Resource agencies can provide specific technical expertise and regulatory oversight on various environmental issues and potential project impacts. All agencies with expertise or jurisdiction related to the PEL study should be invited to provide comments on the Existing Conditions and Environmental Overview Report and should be



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sent the final PEL document and information about next steps. The SHPO may require additional coordination, which must be conducted through the CDOT Historian. The amount of coordination with the SHPO is project-specific and based on project timing and priorities. Although PEL studies do not create an Area of Potential Effects because there is no federal undertaking as part of a PEL study, the Existing Conditions and Environmental Overview Report should contain enough information for the SHPO to provide comments or direction on next steps and/or the significance of historic property issues for future NEPA processes.

A copy of the final PEL document should be sent to the resource agencies.

## Local Agencies

At the start of a PEL study, any local agencies that might be impacted by the project should be invited to participate. These agencies provide vital information concerning existing and future land uses and transportation-related data. Also, coordination with the surrounding local agencies helps support the overall study results and the decision-making process, which transitions into future NEPA processes. In some cases, local agencies will be the lead for the PEL study, and their participation will be more significant as the project sponsor.

## Public

Including the general public at the start of the PEL process helps to identify issues, attempts to provide more information about the overall study and understanding of recommendations that come out of the study, and fosters relationships with the public.

## Other Stakeholders

Other stakeholders in the process may include non-governmental organizations, private entities, tribal governments, TPRs/MPOs, other planning and development partners with knowledge of plans and policies that affect the study area, elected officials, and residents and businesses within the study area. These stakeholders may have an interest in the study area and can assist with input on the study.

### 4.4.2 Identify Participation Methods

There are a variety of appropriate public participation techniques for various stages in the PEL process. Outreach techniques should be context-sensitive and tailored to the study area (e.g., provide a translator, if necessary). Stakeholder involvement comes in many forms, as described below:

- Informational outreach techniques (e.g., public and small group meetings, news releases, newsletters, mailers, and websites) are well-suited for use both during the early steps in the PEL process and as a way to keep the public informed throughout the process.
- Data-gathering techniques (e.g., surveys and study phone hotlines) are useful to obtain information from the public or other selected stakeholder groups.
- Participation techniques (e.g., virtual and in-person public meetings, public engagement periods, smaller group meetings, technical committees, visualizations, electronic town halls) are useful for obtaining specific input and feedback about the project area, purpose and need, alternatives, and environmental resources affected.

For information and guidance about public outreach techniques and examples, refer to Chapter 7 of the CDOT NEPA Manual (CDOT, 2020a).



## 4.5 Steps for Conducting a PEL Study

The steps for conducting a PEL study depend on the reason for the PEL study, which should be considered and documented in the scope of work. Sections 4.1, 4.2, and 4.3 explain the early activities that shape a PEL study.



PEL studies are project-specific and will not all follow the same steps or contain the same level of detail or information.

The FHWA Colorado Division PEL Questionnaire provides a list of items to consider in conducting a PEL study and assist with the transition to the NEPA process. However, PEL project teams have the flexibility to conduct a PEL study that responds to all of the FHWA Colorado Division PEL Questionnaire items or a smaller, more focused PEL study that responds to pieces of the FHWA Colorado Division PEL Questionnaire. Smaller, more focused PEL studies are generally conducted when there is a particular issue that needs to be studied (such as safety issues or access management in a specific corridor).

However, large corridor or program-level PELs may also streamline the PEL process steps, as the investment in detailed traffic or environmental studies may be better suited to the NEPA process, leaving the PEL study to identify the important issues to be addressed in the NEPA process but not necessarily to address those issues in the PEL study. PEL studies follow unique processes specific to the PEL study's objectives and will not all contain the same level of detail or information.

This section provides guidance on conducting steps based on the FHWA Colorado Division PEL Questionnaire, with the understanding that many studies may not follow each step and the information needed to complete a step may vary. Determining which portions of the FHWA Colorado Division PEL Questionnaire are applicable and the methods by which the information will be collected and analyzed are important parts of the scoping process.

### 4.5.1 Define Study Extents

The study extents should be identified based on a preliminary analysis of the independent utility and logical termini. Identification of the study extents is important to identify which resources will be evaluated (or not) as part of the study. The initial study area may be refined as the purpose and need statement is developed and the transportation needs are identified for recommended projects. For planning- or program-level PELs, the study extent may be regional or statewide or may not be location-specific, but study area extents should still be identified based on the PEL study goals.



Further information on logical termini and independent utility can be found in FHWA regulation 23 CFR 771.111(f). For more information, visit: <https://www.fhwa.dot.gov/legsregs/directives/cfr23toc.htm>

### 4.5.2 Independent Utility/Logical Termini

For project-focused PEL studies, the study area for resources reviewed, and any phase of the project identified in an action plan, must have logical termini and independent utility. Independent utility and logical termini mean that a project would be functional even in the absence of other projects in the area. This lays the appropriate groundwork for future NEPA analyses. According to NEPA and Transportation Decision-making: The Development of Logical Project Termini (FHWA, 1993), logical termini and independent utility can be defined as:

- Rational end points for a transportation improvement
- Rational geographic extent for a review of the environmental impacts by resource

CDOT follows the general principles identified in FHWA regulation [23 CFR 771.111(f)] for establishing logical termini and independent utility, as described below:

- Connect logical termini and independent utility and be of sufficient length to address environmental matters on a broad scope
- Have independent utility or independent significance, i.e., 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





Determining the methods and assumptions for the assessment of existing and future multimodal operations is a critical piece to inform the Purpose and Need (Section 4.5.6) and the evaluation of alternatives. Therefore, the approval of the multimodal traffic operations methods and assumptions is a Coordination Point 2 in the PEL study process.

During development of an Action Plan (Section 4.7.3) for corridor PEL studies, independent utility and logical termini will need to be identified for each independent project phase to the extent that the phase provides a functional transportation system even in the absence of other project phases. For further information and guidance about independent utility/logical termini, refer to Section 4.7 of the CDOT NEPA Manual (CDOT, 2020a).

### 4.5.3 Planning Context

The planning context based on the SWP and RTPs is the foundation for development of a PEL study. Decisions made during planning can be reflected in project-specific PEL studies and subsequent NEPA documentation without revisiting those decisions depending on the transportation planning process that was followed and the magnitude and sensitivity of the related issues. **It is important to remember that although a PEL study may recommend**

**alternatives for implementation or elimination, the final determination regarding eliminated alternatives and the proposed action is made during the NEPA process.**

The project team should begin by reviewing the current SWP and RTPs within which the corridor is identified, as well as the STIP and TIP for any improvements in the area that are currently programmed. In addition, the project team should review the plans of local agencies within the study area. These plans could include:

- Local Agency Comprehensive Plans
- Local Agency Land Use Plans
- Local Agency Transportation Plans
- CDOT and Local Agency Corridor Plans and Previous NEPA Documents
- Local Agency Parks and Recreational Plans
- Local Agency Neighborhood Plans
- Local Transit Agency Plans
- Local Agency Bicycle/Pedestrian Plans
- Access Management Plans
- Access Control Plans
- Local Agency Drainage Plans

The Existing Conditions and Environmental Overview Report should summarize the planning context of the PEL study area.

### 4.5.4 Determining Operations Methodology

For studies that involve multimodal traffic operations analysis and forecasting for future transportation conditions, an important part of the PEL study initiation is to identify the methods and assumptions with coordination and approval by CDOT and FHWA prior to the start of multimodal data collection and analysis. The CDOT *Traffic Analysis and Forecasting Guidelines* (2018), developed with a core team of CDOT and FHWA representatives, outline expected procedures and assist in selecting appropriate methodologies, tools, and measures of effectiveness (MOEs) for traffic analysis and forecasting in Colorado.

Determining the methods and assumptions for the assessment of existing and future multimodal operations is a critical piece to inform the purpose and need (Section 4.5.6) and the evaluation of alternatives. Therefore,



A multimodal system accommodates all modes of travel in the transportation system, including automobile, bicycle, pedestrian, railroad, and transit.

#### Scope of Traffic Analysis

Key aspects of the traffic scoping include:

- **Horizon Years:** Traffic analysis is generally required for the anticipated opening year 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 traffic analysis will be larger than the area defined for most environmental resources



the approval of the multimodal traffic operations methods and assumptions is a Coordination Point 2 in the PEL study process.

A technical memorandum of the operations and forecasting methods and assumptions should be submitted for review and comment by CDOT Region Traffic and FHWA study representatives. The memorandum should include:

- Study area and/or network for transportation system operations analysis
- Proposed MOEs
- Data collection methods and time periods
- Traffic analysis methods and assumptions
  - Proposed traffic analysis tools
  - Expected analysis time periods (with procedure for determination of time periods from data collection)
- Travel demand forecasting methods and assumptions
  - Forecasting years
  - Forecasting tools and models
- Documentation

The traffic analysis and forecasting methods should follow NEPA standards (e.g., forecasts using the approved regional travel demand model, if applicable). The PEL study documentation for the traffic operations analysis and forecasting may consist of a separate traffic analysis report or a memo to be included as an appendix in the PEL Study Report. Keep in mind, however, that traffic analysis and modeling can add a large cost to a PEL study. The traffic operations analysis for each subsequent project must be updated to the current 20-Year Planning Horizon travel demand model for the relevant MPO or Statewide model during the NEPA process.

## 4.5.5 Research and Define the Existing and Future Transportation Systems

The transportation system includes the entire transportation network within the project extents, including roadway, railroad, transit, bicycle, and pedestrian facilities. Evaluating the existing and future transportation system conditions provides a framework for alternatives development and evaluation in the PEL study and provides the supporting documentation for the purpose and need, as discussed in **Section 4.5.6**. The existing transportation system is the transportation network within the project extents as it exists today. The future transportation system is the transportation network within the project extents as it would be 20 to 25 years in the future if all of the transportation improvements listed in the SWP or RTP were implemented, including transit, bicycle, and pedestrian improvements.

Defining the existing and future transportation system helps provide a picture of the existing and future transportation system within the project extents and determine how the alternatives impact future traffic conditions. This effort, which is often documented in an existing conditions report, relies on professional judgment and general knowledge of the project corridor to determine the information sources needed to provide an overview of the existing and future transportation system. **Figure 4-4** provides an example of an Existing Conditions and Environmental Overview Report. The level of detail of the information gathered should correspond with the importance of the specific element to the transportation system. Transportation system elements are described below.



## Roadway Network

Information about the roadway network should be collected and discussed by regional planning classification categories (freeway, major regional arterial, principal arterial, and minor arterials). Specific information includes:

- Highway through and auxiliary lanes
- Right-of-way (ROW) and access
- Arterial lanes and access
- Access categories for state highways (if applicable)
- Traffic volumes
- Major concentrations of travelers
- Travel markets that use the transportation system geographic locations of the origins and destinations
- Trip purpose (commuter/non-commuter trips)
- Local versus regional trips
- Average length of trip
- Adjacent and parallel transportation facilities that have an impact on the project corridor
- Signalization, access points, interchanges, ramp lengths
- Intelligent Transportation System (ITS) infrastructure and other existing technology elements
- Existing TDM programs and other system management strategies (e.g., an existing corridor incident management plan)

Other roadway network information includes current roadway features (such as roadway categorization per the State of Colorado Highway Access Code), lane configurations, roadway and ROW widths, adjacent landowner characteristics, building set-backs, and locations with existing Access Control Plans.



Figure 4-4 Example of Transportation Context



SH 66 Planning and Environmental Linkages Study



### 3.0 Transportation Context

This section discusses the characteristics, needs, and operations of the major transportation elements being evaluated as part of the PEL, including the roadway, transit services, bicycle facilities, pedestrian facilities, and railroads. The discussion focuses on the current conditions of these major elements, how are they operating, where there are potential improvement needs, and what conditions will be in the future if no improvements are implemented. Section 3 highlights the overall needs of the transportation system for future improvement.

#### 3.1 Vehicular Roadway

The first transportation element to be discussed is the characteristics and operations of the roadway or transportation network within the study area. This includes an evaluation of both the existing (2017) and future No Action (2040) roadway performance under current and projected traffic volume loads.

##### Existing Conditions

This section describes the existing characteristics and operating conditions of the SH 66 corridor within the study area between WCR 19 on the east and US 36 on the west end. The project limits have been extended on the west end to include a small portion of US 36 up to the McConnell Drive intersection, which is approximately 0.70 mile west of the US 36 and SH 66 intersection. The topics included in this section include the roadway characteristics, travel characteristics, and traffic operations.

##### Roadway Characteristics

Existing roadway features are important in determining and pinpointing deficiencies in the existing facility that may warrant improvement depending on the proposed improvements. These features include the lanes, shoulders, acceleration/deceleration lanes, speed, number of access points, and the roadway classification.

<b>Classification</b>	SH 66 is a combination of a Non-Rural Arterial, Regional Highway, and Non-Rural Principal Highway. The functional class is Principal Arterial. Figure 3.1 illustrates the class distributions along SH 66.
<b>Lanes</b>	In general, the existing travel lanes are 12 ft with eastbound and westbound lanes separated by either a double yellow stripe or a yellow solid stripe/dashed for passing areas (see travel lanes & shoulders picture).
<b>Shoulders</b>	Shoulder widths vary widely along the corridor. Depending on the classification of the roadway, the required shoulder may be 4 ft to 10 ft.
<b>Acceleration / Deceleration Lanes</b>	Acceleration lanes are used in the corridor for traffic entering the roadway. The length of these lanes is determined by the travel speed of the roadway being entered and how long it takes a vehicle to accelerate to that speed to merge into the through lane. Deceleration lanes are used in the corridor for right turns and left turns. These lanes allow vehicles to start slowing down, get out of the traveled lanes, and not impede the traffic that is traveling at the posted speed limit. These lanes tend to be more for storage of vehicles while they are turning left.
<b>Speed</b>	The speed is set along SH 66 based on the classification of the roadway segment and by the municipality that the road may be going through, like Longmont or Lyons.
<b>Accesses</b>	SH 66 is not a limited access roadway, where accesses are limited and controlled to reduce accidents and other effects to those traveling along SH 66. There are many uncontrolled accesses along the corridor, mostly from homes and ranches. They may need improvements like wider shoulders or auxiliary lanes to improve safety.

See the roadway field maps in Appendix A for specific details at mileposts along the corridor.



Travel Lanes & Shoulders



Acceleration / Deceleration Lanes



Left Turn Lanes



The Level of Service of Safety (LOSS) concept quantifies how a road segment is performing regarding the expected crash frequency and severity for its average annual daily traffic. The number of deviations from the norm (expected crash frequency and severity) represents specific levels of safety:

- LOSS-I – Indicates low potential for crash reduction
- LOSS-II – Indicates low to moderate potential for crash reduction
- LOSS-III – Indicates moderate to high potential for crash reduction
- LOSS-IV – Indicates high potential for crash reduction

## Traffic Safety and Operations

The collected traffic data and MOEs for traffic operations should be summarized as coordinated and approved by CDOT and FHWA at project initiation (**Section 4.3.1**). Outputs from the traffic analysis may include the following:

- Delay
- Demand Volume
- Density
- Flow Rate
- Level of Service (LOS)
- Mode Split
- Number of Stops
- Queue Length
- Speed
- Travel Time
- Vehicle Hours of Travel (VHT)
- Vehicle Miles of Travel (VMT)
- Volume-to-Capacity (v/c) Ratio

The CDOT *Traffic Analysis and Forecasting Guidelines* (2018) provides definitions and applications for potential traffic operations MOEs.

SAFETEA-LU requires consideration of safety in the transportation planning process. Safety is one of eight federal planning factors. The most current crash data along the study area roadways over a three- to five-year period, depending on the number of crashes and area conditions, should be compiled, evaluated, and summarized to identify crash trends and safety-related issues. Note project corridor locations identified as having safety-related issues by past CDOT Safety Assessment Reports. The safety evaluation should include crash totals by severity and type of crash. Bicycle, pedestrian, and wildlife crashes should be noted with locations and trends.

CDOT uses the concept of Level of Service of Safety (LOSS) and pattern recognition to describe the frequency and severity of crashes throughout a corridor. The LOSS formulation categorizes four levels of “potential for crash reduction,” with levels I through IV. Level I indicates a better than expected safety performance and, thus, a low potential for crash reduction. Level IV indicates a crash history significantly greater than expected for a given roadway type, thus a high potential for crash reduction.

## Railroads

The study area should be assessed for existing and planned freight and passenger rail facilities, including locations, ROW widths, location and types of crossings, stations, speed of travel, crossing signalization, safety records, schedules, and usage rates.

This assessment helps develop an understanding of the potential constraints and requirements railroad facilities and operations may place on the alternatives analysis/development.

For additional information and guidance about railroads, refer to Section 9.18 of the CDOT NEPA Manual (CDOT, 2020a).





## Transit Services

A PEL study should address transit types, including service levels within the study area. Information about transit services should also include routes and frequency. The study area should also be assessed for planned and existing intermodal connection facilities and stations, such as locations and sizes of park-and-ride lots, transit stations, and other facilities that encourage intermodal travel. Information about usage rates and capacity should also be collected.



Bicycle and pedestrian facility information is available in CDOT's Statewide Bicycle and Pedestrian Plan. The plan establishes goals, objectives, and investment criteria for using limited resources to enhance the state's bicycle and pedestrian programs/infrastructure.

This assessment helps to identify missing transportation infrastructure, as well as multimodal connections among transit, vehicles, bicycle, and pedestrian facilities that could or should be addressed as part of the alternatives development/analysis.

### Bicycle and Pedestrian Facilities

The study area should be assessed for existing and planned bicycle and pedestrian facilities. Information about bicycle and pedestrian facilities should include locations and widths of routes, sidewalks, paths, trails, crosswalks, and lanes within the study area and connections to other transportation facilities. Americans with Disabilities Act (ADA) accessibility should also be considered.

This assessment helps to identify missing bicycle, pedestrian, and ADA-accessible infrastructure, as well as multimodal connections among transit, vehicle, bicycle, and pedestrian facilities that could be addressed as part of the alternatives development/analysis.



For the FHWA Colorado Division PEL Questionnaire, the project team will need to identify if there are recent, current, or reasonably foreseeable planning studies or projects in the vicinity and the relationship of the project to those studies.

### Utilities

Existing and proposed utilities should be assessed via a review of utility company maps and field review. Utilities include a private or publicly owned line, facility, or system for producing, transmitting, or distributing 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).

This assessment helps to identify utilities that may require coordination with utility owners and/or relocation during future project development.

Early coordination with utility owners assists with identifying potential conflicts with existing and future utility owners. Information about existing and future utilities is also useful for the development of alternatives in relation to existing utilities and costing of potential utility relocations.

## Other Projects in the Study Area

A PEL study should identify and consider other transportation or large development projects (ongoing and future) in or within the vicinity of the study area. Identification of such projects facilitates early coordination with other nearby projects, helping to achieve consistency and support of these other projects.



## 4.5.6 Identify Purpose and Need

The project purpose and need statement should be developed in coordination with agency stakeholders with review by the general public. The goal in drafting the purpose statement is to define as specifically as possible the fundamental reasons why the project is being proposed, expressed as a desired transportation outcome.



Further guidance regarding purpose and need can be found in CDOT's Purpose and Need Guidance in the CDOT NEPA Manual, FHWA Technical Advisory Guidance for Preparing and Processing Environmental and Section 4(f) Documents (FHWA, 1987), FHWA Memorandum The Importance of Purpose and Need (FHWA, 1990), and the FHWA Memorandum Regarding Integration of Planning and NEPA Processes (FHWA and FTA, 2005).

The development of the project purpose and need should follow FHWA guidelines on transportation decision-making ([https://www.environment.fhwa.dot.gov/nepa/trans\\_decisionmaking.aspx](https://www.environment.fhwa.dot.gov/nepa/trans_decisionmaking.aspx)).

For information and guidance about developing a purpose and need, refer to Chapter 4 and Chapter 6 of the CDOT NEPA Manual (CDOT, 2020a).

The purpose and need should focus on transportation-related needs, emphasizing the needs related to the transportation system and/or infrastructure. For example, many transportation projects are proposed, at least in part, because it is believed they will help promote economic growth, but the potential for economic development benefit should not be defined as a project purpose. Instead, the purpose could be defined as providing the transportation infrastructure needed to support an economic development plan. **Figure 4-5** summarizes the differences between:

- Why is a PEL study being conducted?
- What is the vision for the study area?
- What are the transportation needs for the study area?
- What additional goals should be addressed?

Detail provided during planning reduces the amount of time spent on purpose and need development during the NEPA process. For some studies, the purpose and need statement may be a general vision and articulation of broad needs or specific to a localized transportation problem. For large corridors or programs, the purpose and need should be general enough to capture the localized issues inherent with individual projects (i.e., a project-specific purpose and need).

Developing a purpose and need statement is essentially the foundation of NEPA and the decision-making process. According to CEQ Regulation 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 Preferred Alternative. A thoughtful purpose and need developed during a PEL study will increase the relevance of the PEL study information in NEPA and help focus the PEL study in the same way that the purpose and need is foundational for the NEPA process.

### Identify Goals

During the development of a PEL purpose and need, there will often be items that are desired by local agencies, stakeholders, or the public that may not meet the FHWA requirements to be included as part of the purpose and need. However, these items are still important to consider during the development and evaluation of alternatives. Project goals can also be used as evaluation criteria in Level 2 and beyond, as discussed in **Section 4.5.7**. **Figure 4-6** provides an example of a purpose and need statement and associated project goals. **Figure 4-7** illustrates existing and projected operational and safety deficiencies used to develop a purpose and need statement for a PEL study along an urban arterial in the City and County of Denver.



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Figure 4-5 Example PEL Study Reason, Vision, Purpose & Need, and Goals

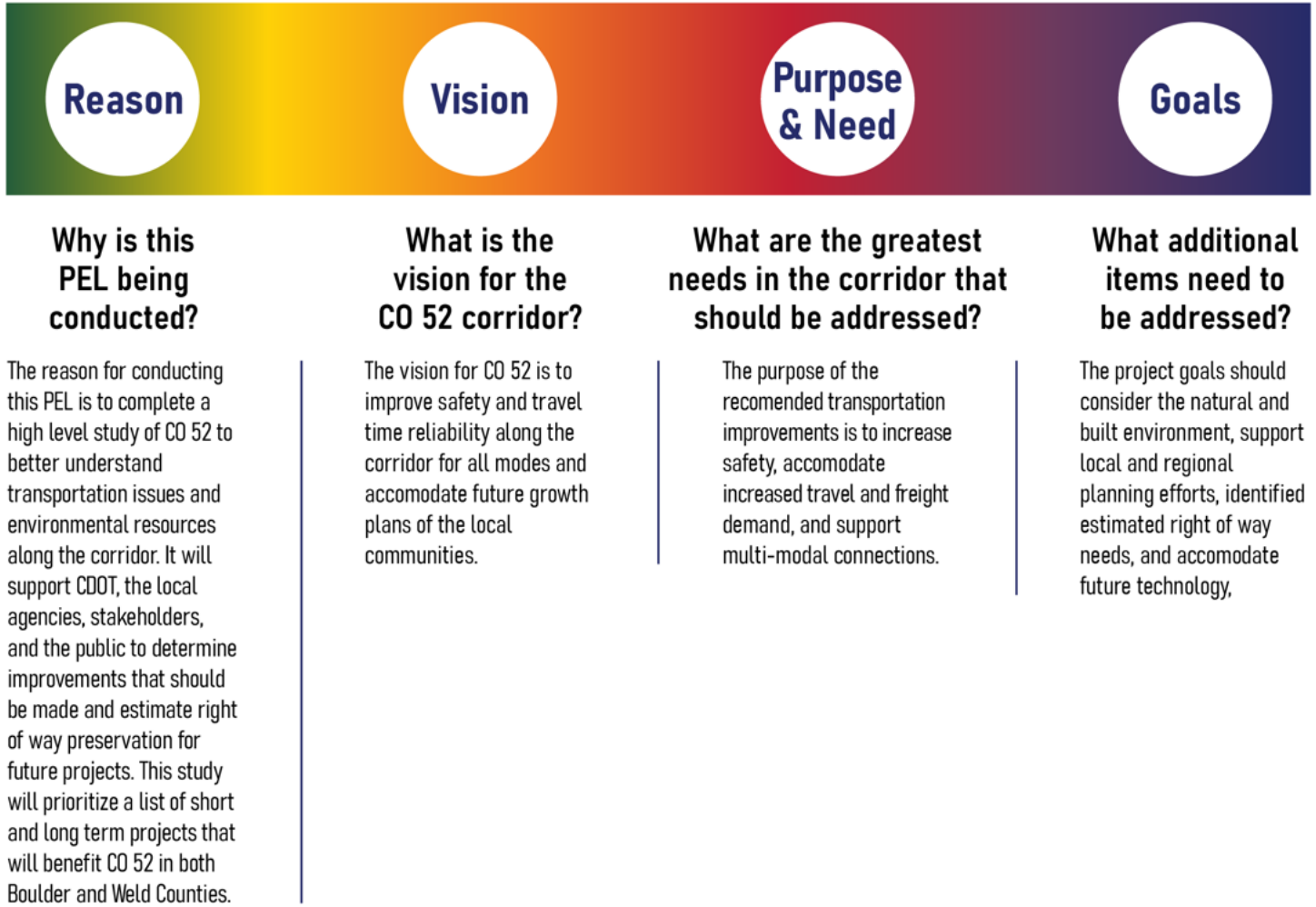




Figure 4-6 Example Purpose and Need Statement and Project Goals



WestConnect Coalition PEL

PEL REPORT

MAY 2018

## Purpose

The purpose of recommendations from this study is to improve safety for all users, reduce recurring congestion, and improve existing and future operational performance while reflecting the local community context along the WestConnect corridor from C-470 at Kipling Street, along US 6 through Golden, to CO 93 at CO 170.

## Need

Transportation improvements are needed to address:

- **Safety Concerns:** There are safety concerns with higher than expected crashes along several segments along the WestConnect corridor. Significant crash types along the corridor are related to congestion, wildlife movements, and adverse weather conditions.
- **Recurring Congestion:** Drivers along the WestConnect corridor experience substantial delays and queues during peak weekday commuting and weekend recreational travel periods. Congestion is expected to worsen by 2040 with longer recurring peak periods of delay and slower speeds, as well as new areas of congestion as traffic volumes are expected to increase due to local and regional population and employment growth.
- **Poor Operational Performance:** Varying geometric characteristics along the WestConnect corridor create traffic disruptions, particularly weaving and merging conflicts due to lane drops and intersection/interchange configurations, as well as variable free flow speeds due to grades, adverse weather, and limited passing opportunities on two-lane segments. Pedestrian and bicyclist conditions create multimodal conflicts and operational issues. Transit service between population and employment centers along the corridor is limited in times and headways.

## Secondary Project Goals

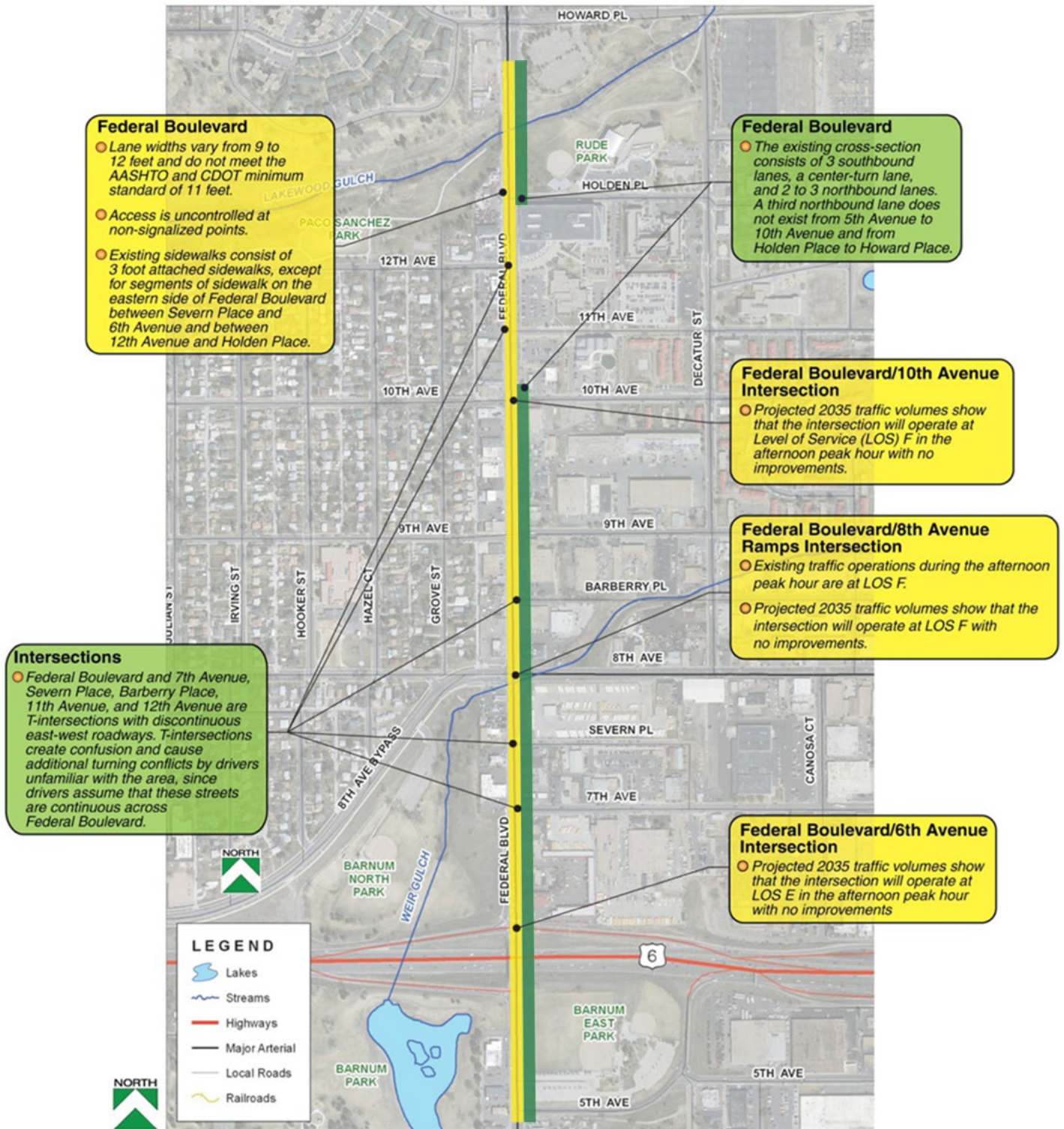
Additional goals of the transportation improvements for the WestConnect study corridor are to:

- Enhance multimodal mobility options to serve travel demand for all users
- Support local and regional planning efforts
- Provide effective connections with identified corridor projects
- Avoid or minimize environmental impacts
- Balance local access and regional mobility
- Accelerate project delivery with realistic funding opportunities
- Complement local community surroundings and context
- Recognize emerging technology





Figure 4-7 Example of Existing and Projected Operational and Safety Deficiencies







## 4.5.7 Alternatives Evaluation Process

CDOT developed PEL Alternatives Evaluation Guidance (2020b), which is intended to supplement this Handbook and be used as standalone guidance. The following section provides a summary of the alternatives guidance.

### PEL Alternatives Development and Evaluation Process

The intent of the alternatives development and evaluation process is to identify and screen a broad range of reasonable improvement alternatives for the area/corridor being studied. The application of the evaluation process is flexible, and the process used should recognize the diverse elements of the specific study's transportation system and surrounding environment.

The alternatives development and evaluation process includes developing evaluation criteria based on the project purpose and need and goals, developing a range of reasonable alternatives, and narrowing options and alternatives through a multi-tiered evaluation process. A PEL study is not

required to screen alternatives down to a single Recommended Alternative. **Most PEL studies conclude with several Recommended Alternatives.**

The evaluation process will document the elimination of alternatives to limit the need for consideration during future NEPA process(es) and identify transportation projects that will be more fully evaluated during future project development and NEPA documentation. The PEL alternatives evaluation process is flexible. All levels of evaluation do not need to be completed for the study to be valuable at informing NEPA.

**Figure 4-8** presents an example of how a PEL study alternatives process could be structured.



For the FHWA PEL Questionnaire, the project team will document the range of alternatives considered, evaluation criteria, and evaluation process. The following questions will be answered:

- What types of alternatives were looked at?
- How were evaluation criteria and evaluation processes selected?

For eliminated or not carried forward alternative(s), briefly summarize the reasons for eliminating or not carrying forward the alternative(s).

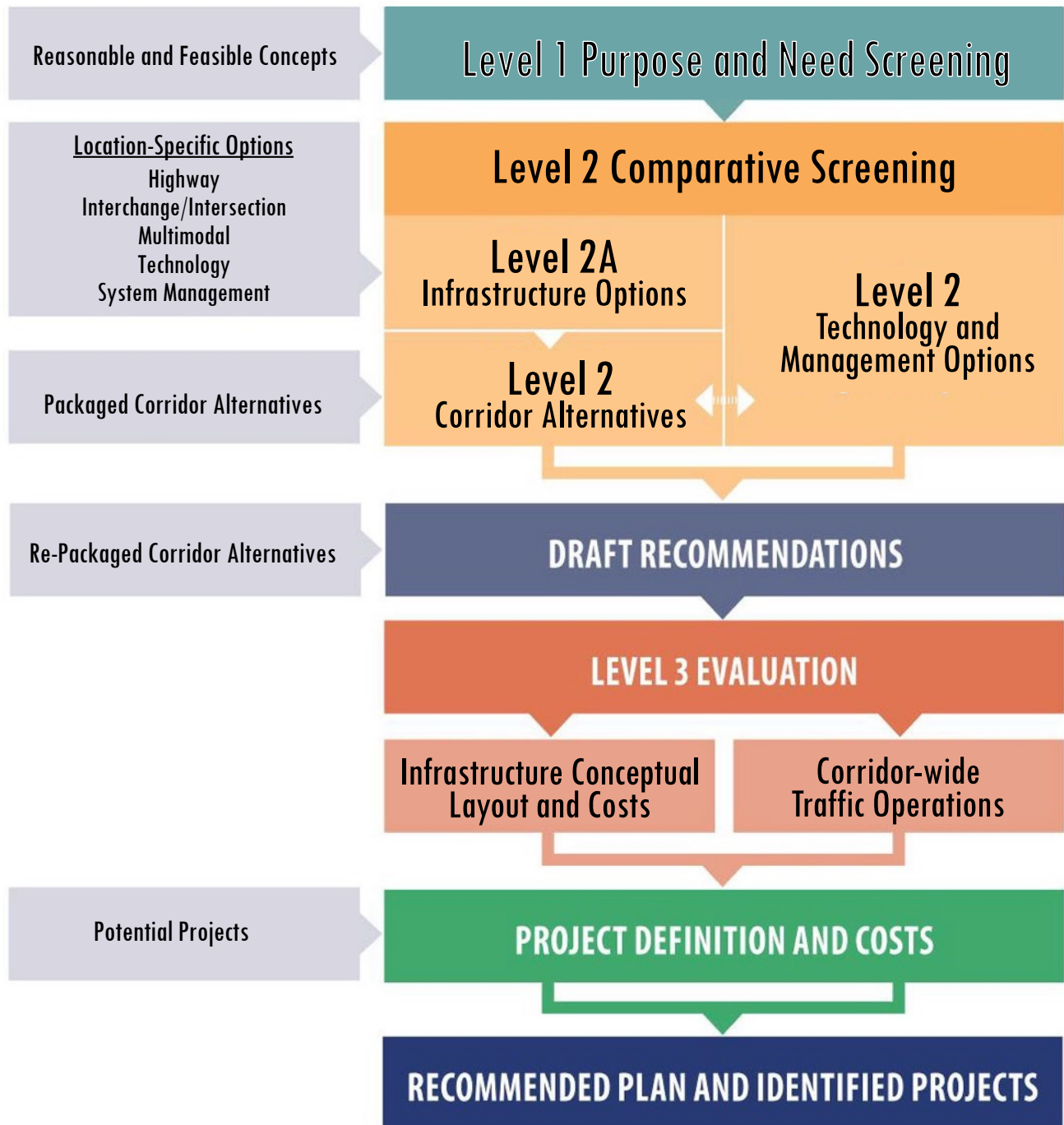
- Which alternatives should be brought forward into NEPA and why?
- Did the public, stakeholders, and agencies have the opportunity to comment during this process?
- Were there unresolved issues with the public, stakeholders, or agencies?



For information and guidance about the alternatives analysis process, refer to the PEL Alternatives Evaluation Guidance (CDOT, 2020b), located online at [https://www.codot.gov/programs/environmental/planning-env-link-program/pel-alts-evaluation-guidelines\\_final\\_june2020.pdf](https://www.codot.gov/programs/environmental/planning-env-link-program/pel-alts-evaluation-guidelines_final_june2020.pdf), and Section 4.7 of the CDOT NEPA Manual (CDOT, 2020a), located online at: <https://www.codot.gov/programs/environmental/nepa-program/nepa-manual>



Figure 4-8 Example Alternatives Evaluation Process





## Identify Evaluation Criteria

Alternatives may be evaluated with respect to the transportation benefits provided, public input, and environmental consequences. The complexity of the evaluation process depends on the complexity of the study. Alternatives evaluation may involve several levels of analysis before the list of alternatives can be narrowed to a reasonable set for final evaluation.

### Level 1- Purpose and Need Evaluation Criteria

The Level 1 evaluation will consist of determining those alternatives that meet purpose and need. Level 1 evaluation criteria should be developed to screen concepts using the primary elements of the project purpose and need, using Yes-or-No questions to determine if an alternative meets the purpose and need. An alternative/concept that has a “No” answer to any of the questions is considered to not fully meet the project purpose and need. **Figure 4-9** provides an example of Level 1 Evaluation Criteria.

**Figure 4-9** Example: Level 1 Evaluation Criteria (US 85 PEL Study)

The following questions represent the overarching ability of the alternatives to meet the individual needs. If an alternative could not meet any of the following criteria, then the alternative was eliminated from further consideration. However, if an alternative met only one need, it was included for further consideration.

- ▶ **Safety Problem** – Will the alternative potentially improve existing and future conditions crashes?
- ▶ **Mobility Problem** – Will the alternative potentially improve existing and future conditions crashes?
- ▶ **Railroad Proximity Problem** – Does the alternative address congestion and safety on US 85 caused by the proximity of the Union Pacific Railroad (UPRR)?
- ▶ **Access Problem** – Does the alternative remove or improve problematic accesses to decrease congestion in the corridor?
- ▶ **Alternative Mode Problem** – Does the alternative address the configuration of US 85 to accommodate the current and future transit infrastructure and enhance bicycle/pedestrian crossings?

### Level 2 and Beyond: Comparative Evaluation Criteria

The purpose of the Level 2 evaluation is to establish a means for comparing how well alternatives perform in meeting the project purpose and need in a cost-effective and least environmentally harmful manner.

Concepts/alternatives carried forward from the Level 1 evaluation may be combined and/or refined to provide more information for further assessment in the Level 2 evaluation. More information can be added, as appropriate, to understand the projected study area traffic flows and potential safety components and community and environmental benefits and impacts, but the level of design should remain at a conceptual level. To compare the impacts of alternatives, cross-sections and/or conceptual alignments may be developed with ROW width assumptions for each alternative based on appropriate standards for the roadway classification and multimodal elements.



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Criteria are generally categorized by a category such as “safety,” “reliability,” or “environmental”; criteria associated with the category; and performance measures for each criterion that indicate how the criterion will be assessed. The performance measures can be quantitative or qualitative in nature. **Figure 4-10** shows an example of Level 2 evaluation criteria. While most PEL studies do not include alternatives evaluation past the Level 2 evaluation, more detailed comparative criteria can be developed should additional evaluation levels be required.

At the PEL study stage, extensive traffic modeling is not required and usually not preferred when other methods are available. For example, evaluation criteria and performance measures for travel demand and reliability for a corridor can use the available regional travel demand model to compare alternatives. Project cost should be considered as an evaluation criterion only with a high-level assessment of general magnitude of cost (i.e., low, moderate, high, very high). Magnitude of costs is for information only and alternatives should not be screened out based solely on project cost.

**Figure 4-10 Example: Level 2 Evaluation Criteria (WestConnect PEL Study)**

Category	Criteria	Performance Measure
Safety	Ability to address identified unsafe physical or operational conditions	Qualitative assessment of expected change in frequency and severity of crashes at locations identified in Safety Assessment Report
	Potential multimodal conflict points	Vehicular, pedestrian, and bicyclist conflict points at intersections Qualitative assessment of pedestrian and bicyclist perception of comfort and safety
Traffic Operations	Roadway capacity related to 2040 travel demand	Volume-to-capacity (V/C) ratio for the highway options for 2040 daily traffic volumes
	Intersection delay during 2040 peak hours	Overall intersection Level of Service (LOS) for 2040 AM and PM peak hours
Multimodal Operations and Connectivity	Enhanced regional biking and walking options	New infrastructure and/or wayfinding provided for pedestrians and bicyclists
	Enhanced transit options	Additional routes, frequency, and/or stop enhancements
Community	Design and operational context related to local community surroundings	Qualitative assessment of consistency of infrastructure and operations with existing and future local surroundings
	Impacts on existing properties	Number of properties that may be impacted based on conceptual layout Acres of properties that may be impacted based on conceptual layout
	Support of local and regional planning efforts	Noted consistencies and inconsistencies with recommendations within documented plans as identified in Corridor Conditions Report
Environmental Resources	Impacts on environmental resources within the built and natural environment	Qualitative and quantitative assessment of notable benefits and/or impacts to environmental resources based on existing conditions identified in Environmental Scan Report
Implementability	Construction costs	Assessment of conceptual-level probable construction costs (low, moderate, high, very high)
	Ease and cost of maintenance	Assessment of ease and accessibility for maintenance and conceptual-level probable maintenance costs (low, moderate, high, very high)





## 4.5.8 Alternatives Development

Initial concepts/alternatives for improvements should be developed from reasonable options focused on addressing the project purpose and need and issues identified in the evaluation of existing and future conditions. These initial alternatives should be coordinated with agency stakeholder input, public input, and technical input of the project team. The No-Action Alternative must be carried forward through the entire evaluation analysis as a baseline for comparison, even if it does not address the project purpose and need.

A PEL study may determine whether corridor managed lane strategies are appropriate when considering capacity improvement alternatives. The *CDOT Managed Lanes Guidelines* (2018) may be referenced for guidance on the planning process and documentation for managed lane strategies.

For long corridors with varying issues and surrounding environments, initial concepts/alternatives may be categorized for the first levels of evaluation before compiling corridor-wide recommendations. Example categories include:

- Highway
- Intersections/interchanges
- Multimodal elements
- Corridor management
- Technology



“...if the planning process is used to screen or narrow the range of alternatives... then the planning-based analysis of alternatives should describe the rationale for determining the reasonableness of the alternative or alternatives; should include an explanation of why an eliminated alternative would not meet the purpose and need or was otherwise unreasonable; and should be made available for public review during the NEPA scoping process and comment period.”

(FHWA and FTA, 2005)



The CDOT Managed Lanes Guidelines are available here:

<https://www.codot.gov/about/transportation-commission/documents/2018-agendas-and-supporting-documents/october-2018/7-managed-lanes-discussion.pdf>

The initial alternatives developed for the PEL study are expected to be high-level concepts without design details. Corridor alternatives may consist of simple alignments with a general cross-section. Intersection/interchanges may be general concepts (e.g., diamond interchange, roundabout, continuous flow intersection) using simple illustrations or examples from other locations.

### Define No-Action Alternative

Similar to the NEPA process, a PEL study should evaluate a No-Action Alternative. The No-Action Alternative typically does not meet purpose and need but is used as a baseline against which to compare alternatives. The No-Action Alternative does not provide any improvements beyond the existing transportation system; however, the No-Action Alternative includes safety and maintenance activities required to sustain an operational transportation system.

For information and guidance about defining the No-Action Alternative, refer to Section 4.8.1 and Section 6.4 of the CDOT NEPA Manual (CDOT, 2020a).

### Technology Options

A PEL study may evaluate and recommend operational strategies based on existing and reasonably anticipated technologies at the time of the study, either as stand-alone alternatives or as supplemental options, to identify project recommendations to optimize safety and operational benefits.

Due to the difference in type and magnitude of benefits and impacts, technology elements may be evaluated separately from the alternatives consisting of infrastructure options. The type and placement of new technology elements should properly integrate with existing ITS infrastructure. Technology options will supplement the safety and operational performance of corridor infrastructure improvements, but alone may be insufficient to meet project purpose and need. These options may be combined with corridor infrastructure improvements to identify project recommendations to optimize safety and operational benefits.





## Examples of technology elements:

- Enhanced Signal Detection
- Adaptive Signal Control
- Transit Signal Priority
- Enhanced Communications Infrastructure
- Queue Warning System
- Ramp Metering
- Dynamic Lane Use
- Variable Message Signs
- Variable Speed Limits
- Road Weather Information System
- Enhanced Lane Markings
- Wildlife Detection and Alert Systems

## System Management Options

Similar to technology options, a PEL study should evaluate and recommend system management strategies based on existing and potential future area planning and agency programs, either as stand-alone alternatives or as supplemental options to identify project recommendations that will optimize safety and operational benefits.

System management strategies focus on programs, plans, and minor infrastructure improvements.

## Examples of system management elements:

- Travel Demand Management (TDM) Strategies
- Multimodal Programs
- Freight Management Strategies
- Enhanced Maintenance and Operations Programs
- Access Management Plan
- Incident Management Plan
- Event Traffic Management Program
- Wildlife Crossing Infrastructure

## Alternatives Evaluation

A PEL study often develops, refines, and screens alternatives several times. The goal of the evaluation process is to identify and refine the transportation improvements that best meet the purpose and need of the project, while minimizing impacts to the human and natural environment. As such, documentation of the alternatives analysis and evaluation is critical if such recommendations are used during future NEPA processes. Documentation should include criteria (e.g., technical, environmental, economic) used to screen alternatives, a list of the parties involved in establishing alternatives evaluation criteria, and the reasons alternatives were eliminated, carried forward, recommended, or not recommended.

Use of the correct terminology during the alternatives evaluation process is critical to the use of alternatives in future NEPA project phases.

### The following terms are to be used during the Level 1 evaluation:

- **Eliminated** = Does not meet purpose and need, has a fatal flaw, and/or is considered unreasonable (with notes provided on reasons)
- **Retained or Carried Forward** = Carried forward for further evaluation in Level 2 evaluation
- **Retained as an Element or Eliminated as a Stand-Alone** = Does not fully meet purpose and need but will be evaluated as a packaged element of larger-scale alternative

### The following terms are to be used during the Level 2 (or beyond) evaluation:

- **Eliminated** = Does not meet purpose and need established with this study or the alternative is unreasonable due to impacts and/or infeasibility
- **Carried Forward** = Considered reasonable and feasible and may be considered for further evaluation in this study or subsequent NEPA and project development
- **Recommended** = Considered reasonable and feasible and recommended for consideration as the Preferred Alternative during subsequent NEPA and project development
- **Not Recommended** = Will not be evaluated further in this study due to comparatively negligible benefits and higher impacts than other alternatives, but may be studied further with subsequent NEPA and project development



## Level 1 Purpose and Need Evaluation

During the Level 1 evaluation, alternatives are usually evaluated qualitatively, primarily using available data and the professional judgment of the project engineering and planning staff. Any alternative/concept that has a “No” answer to any of the questions is considered to not fully meet the project purpose and need. If a concept should be evaluated quantitatively and with more criteria to make an informed decision for recommendation, it can be carried forward to Level 2 evaluation for further evaluation. To identify the best solution possible, concepts can also be retained as elements to consider with alternatives that are carried forward to Level 2 evaluation. For example, a pedestrian/bicyclist grade separation may not fully meet the purpose and need as an independent alternative for a highway corridor, but it could be retained as an element to include in Level 2 alternatives to enhance multimodal safety and operational improvements along the corridor. **Figure 4-11** provides an example of a Level 1 evaluation matrix.

## Level 2 (and beyond) Comparative Evaluation

The purpose of the Level 2 evaluation is to establish a means for comparing how well alternatives perform in meeting the project purpose and need in a cost-effective and least environmentally harmful manner. **Concepts/alternatives carried forward from the Level 1 evaluation may be combined and/or refined to provide more information for further assessment in the Level 2 evaluation.** More information can be added, as appropriate, to understand the projected study area traffic flows and potential safety components and community and environmental benefits and impacts, but the level of design should remain at a conceptual level. To compare the impacts of alternatives, cross-sections and/or conceptual alignments may be developed with ROW width assumptions for each alternative based on appropriate standards for the roadway classification and multimodal elements.

The Level 2 evaluation expands measures for each evaluation criterion from Level 1 evaluation and provides additional evaluation criteria based on project goals. In Level 2 evaluation, the alternatives are evaluated to identify fatal flaws related to infeasibility or unacceptable community or environmental impacts and to compare how well each concept meets the project purpose and need and goals. **The results of the Level 2 evaluation identify the alternatives that are most practical or feasible to carry forward as study recommendations.**



Figure 4-11 Example: Level 1 Evaluation Criteria (US 85 PEL Study)

**US 85 PEL LEVEL 1 ALTERNATIVE DEVELOPMENT AND EVALUATION**

Note: Retained alternatives will not all be appropriate for the entire length of US 85, and some may be a consideration for only short select sections.

Alternative	Safety Problem: Will the alternative potentially improve existing and future conditions crashes?	Mobility Problem: Will the alternative potentially improve existing and future conditions crashes?	Railroad Proximity Problem: Does the alternative address congestion and safety on US 85 caused by the proximity of the Union Pacific Railroad (UPRR)?	Access Problem: Does the alternative remove or improve problematic accesses in order to decrease congestion in the corridor?	Alternative Mode Problem Does the alternative address the configuration of US 85 to accommodate the current and future transit infrastructure and enhance bicycle/pedestrian crossings?	Summary of Results	Additional Comments
<b>Functional Class</b>							
Freeway (F-W)	Yes	Yes	No	Yes	No	Retained	
Enhanced Expressway (E-X)	No	Yes	No	Yes	No	Retained	
Standard Expressway (R-A or R-B)	No	Yes	No	Yes	No	Retained	
Enhanced Arterial (NR-A)	No	Yes	No	Yes	No	Retained	
Arterial Roadway (NR-B)	No	Yes	No	Yes	No	Retained	
Main Street (NR-C)	No	No	No	No	Yes	Retained	
<b>Managed Lanes</b>							
No Managed Lanes (No Action)	No	No	No	No	No	Retained	Retained to evaluate as baseline condition
HOV Lanes	No	Yes	No	Yes	No	Retained	
Toll Lanes	No	Yes	No	Yes	No	Retained	
HOT Lanes	No	Yes	No	Yes	No	Retained	
Truck Only Lanes	Yes	Yes	No	Yes	No	Retained	
<b>General Purpose Lanes</b>							
No Additional General Purpose Lanes (No Action)	No	No	No	No	No	Retained	Retained to evaluate as baseline condition
2 Additional General Purpose Lanes	No	Yes	No	Yes	No	Retained	
<b>Alignment</b>							
Current alignment (No Action)	No	No	No	No	No	Retained	Retained to evaluate as baseline condition
Bypass towns	No	Yes	Yes	Yes	No	Retained	Retained for consideration within developed areas.
Realign US 85 to the east (extended lengths)	No	No	Yes	No	No	<b>Eliminated</b>	Moving the roadway to the east would be too close to the planned upgrade to WCR 49 thus negating the benefits of a parallel system. It would also create significant community disruption through removing residential and business accesses, splitting of properties along realigned roadway, and would require substantial improvements to the surrounding transportation system.
Realign NB US 85 east of UPRR	No	No	Yes	No	No	<b>Eliminated</b>	Alternative would cause the highway to be a more significant barrier by creating a wider swath of southbound, railroad, and northbound traffic needing to be crossed by pedestrians



## Level 2 Evaluation for Technology and System Management Options

The evaluation of the technology elements and system management options should focus on the criteria developed for the overall alternatives evaluation. Options remaining after this evaluation may be combined with the infrastructure improvements and further considered for the final recommendations, including specific locations for technology applications and/or system management options within the project area. An example of the results of a Level 2 evaluation of technology options is shown below. **Figure 4-12** presents an example of a 40-mile corridor that was broken into five discrete segments. Recommendations for the technology options are indicated by segment.

**Figure 4-12. Sample Summary of Level 2 Technology Evaluation (US 24 PEL Study)**

TECHNOLOGY ALTERNATIVE	RECOMMENDATION	SEGMENT				
		POWERS TO CONSTITUTION	CONSTITUTION TO FALCON	FALCON TO PEYTON	PEYTON TO CALHAN	CALHAN TO RAMAH
Enhanced Signal Detection	Carry Forward	■	■	■		
Adaptive Signal Control	Carry Forward	■	■	■		
Queue Warning System	Carry Forward	■	■	■		
Variable Message Signs	Carry Forward		■	■	■	■
Variable Speed Limits	Carry Forward	■	■	■	■	■
Road Weather Information System	Not Recommended					
Enhanced Lane Markings	Carry Forward	■	■	■	■	■
Wildlife Detection and Alert Systems	Not Recommended					

## Recommend Alternative(s) for Future NEPA Studies

A PEL study is not required to screen alternatives down to a single Recommended Alternative. In fact, it is a best practice to not screen down too far. **Most PEL studies conclude with several Recommended Alternatives.** Even so, all of the Recommended Alternatives from a PEL study are not required to be evaluated in NEPA. Results of the alternatives evaluation should be clear on the study recommendations that may move forward into future study. Next steps should be outlined for potential implementation of the Recommended Alternatives and/or separate project phases, including anticipated process requirements and conceptual costs. **Section 4.7.3** describes how to document the next steps as part of an action plan.

If managed lanes are considered with the alternatives evaluation, the PEL study documentation should include a memorandum outlining the decision on managed lanes with the completed CDOT Managed Lanes Decision Form. When managed lanes have been evaluated in a previous PEL study, additional evaluation is not required within the following NEPA study.

**Chapter 6.0** provides more detail on taking the PEL study recommended alternative(s) into NEPA.

### 4.5.9 Conduct Environmental Overview

The scope of the environmental overview for a PEL study will vary depending on the type of and reason for the PEL, which will be outlined in the scope of work. The PEL scoping form is intended for use on PEL studies only, since the analysis required for NEPA projects is more detailed and governed by regulatory requirements. An environmental overview is not an exhaustive list of environmental resources but should focus on those resources that may affect the alternative development and evaluation process or may affect future NEPA projects in terms of budget and schedule.



It is important to remember that although the PEL study may recommend alternatives for implementation or elimination, the final determination regarding eliminated and preferred alternatives is made during the NEPA process.



For the FHWA Colorado Division PEL Questionnaire, the project team will need to provide information about which resources were reviewed. For each resource reviewed, provide the following:

- Is this resource present in the area and what is the existing environmental condition for this resource?
- In the PEL study, at what level of detail was the resource reviewed and what was the method of review?
- What issues need to be considered during NEPA, including potential resource impacts and potential mitigation requirements (if known)?
- How will the data provided need to be supplemented during NEPA?
- List resources not reviewed in the PEL study and why. Indicate whether or not these resources will need to be reviewed in NEPA and explain why.

The goal of the overview should be to identify resources that may affect future NEPA actions, project schedules, or project costs; understand potential impacts on these resources; and identify potential avoidance, minimization, and mitigation measures. Resources that may affect future project development include those that may require avoidance or minimization of impacts during alternatives development, have lengthy environmental clearance processes, or are likely to be controversial or complicated.

## Scoping and Identifying Important Resources

At the start of the project, the project team must identify key environmental resources in the study area that could require avoidance or minimization of impacts during alternatives development, such as wetlands, hazardous materials sites, or floodplains. The project team should also identify potentially affected resources that have lengthy environmental clearance processes, such as historic resources, recreational resources, wetlands and other waters of the U.S., and protected species. The CDOT NEPA Manual (CDOT, 2020a) and CDOT Project Development Manual (CDOT, 2013) provide more information about resource considerations and regulatory requirements that future individual projects would need to address, to assist project teams in identifying key resources in the PEL study. The FHWA Colorado Division PEL Questionnaire provides a list of resource considerations in Question 8 (see text box at left).

Development of an “environmental overview” section for a PEL study is similar to the development of the Affected Environment section of an EA or EIS; however, the overview will be at a higher level, focusing on identifying key issues and resources to be considered in future NEPA and design activities, rather than conducting lengthy field reviews and impact analyses on an exhaustive list of resources. **Figure 4-13** provides an example of an environmental overview.

The level of detail included in the “environmental overview” or “existing conditions” section is project-specific and will vary based on factors, such as the type and location of the project. For instance, a project requiring design-level detail would require more detail concerning the environmental resources within the study area than a planning-level project that may identify trends or big picture constraints. Quantifying resource impacts in the study area may or may not be desired, depending on the scope and objectives of the particular PEL study. The resource information should also consider, build from, and be consistent with other environmental studies that have been completed or are nearing completion in the study area.

The PEL may consider cumulative impacts analysis by identifying the geographic context for analysis, projects that may contribute to cumulative effects, resources sensitive to cumulative impacts, or other factors. The goal of considering cumulative impacts in a PEL study is to “look broadly at future land use, development, population increases, and other growth factors. CDOT could conduct a PEL study solely for the purpose of creating a baseline that future projects could use for cumulative impacts analysis.

After identifying key environmental resources, the project team must identify specific study areas for each resource. Resource-specific study areas will vary and may be the same as the project footprint or larger than the project footprint. For additional resource-specific information and guidance, refer to Chapter 9 of the CDOT NEPA Manual (CDOT, 2020a). Preliminary environmental data collection and analysis varies with the complexity of the project. The baseline information should rely heavily on information already available from





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agencies responsible for environmental resources (e.g., USFWS). Baseline information is typically collected using geographic information systems (GIS) data, combined with a site visit of the study area. For additional information and guidance about GIS, refer to Section 9.1 of the CDOT NEPA Manual (CDOT, 2020a).

Other data sources might include relevant environmental or transportation reports pertinent to the study area, previous surveys within the study area, and consultation with resource experts, including external agency personnel.

## Identifying Impacts

The analysis of potential impacts forms the basis for comparing the PEL study alternatives. NEPA uses the term “impact,” “effect,” and “consequences” synonymously. This Handbook uses the term “impact,” consistent with the CDOT NEPA Manual (CDOT, 2020a). Impacts may be environmental (e.g., ecological, historical) or social and may be either beneficial or adverse. Beneficial impacts may occur when an alternative improves a situation (e.g., lessens serious traffic congestion).

Early in the planning stages, the project team should be able to identify potential environmental impacts and key environmental resources in the study area. The level of analysis will vary based on project-specific factors; however, the analysis will not be as robust as that conducted during a NEPA study but should be of sufficient detail to screen out “fatal flaws” associated with design alternatives. The description and analysis of impacts must be supported by the information and data presented in each of the specific resource sections. As previously discussed, data and analyses should be commensurate with the importance of the potential impact, as identified during the scoping process (**Chapter 5.0**), with less important material summarized, consolidated, or simply referenced. It is easy to do a detailed impacts analysis during a PEL study because that is what most practitioners are used to doing during the NEPA process. However, environmental conditions and engineering design will likely change by the time the project is funded and the NEPA process begins. It is better to do the detailed impacts analysis during the NEPA process.

For additional information and guidance about assessing potential impacts for a project, refer to Section 4.9, Section 6.5, and Chapter 9 of the CDOT NEPA Manual (CDOT, 2020a).



Figure 4-13 Example Environmental Overview



## 4.0 Environmental Overview

This chapter summarizes existing environmental conditions of the project corridor. The environmental resources studied were selected based on the characteristics of the study area and input from stakeholders. The resources considered generally are consistent with NEPA, its implementing regulations, and FHWA and CDOT guidelines.

### 4.1 Floodplains and Floodways

This section summarizes regulatory floodways and floodplains in the study area. Regulatory Floodplains or Special Flood Hazard Areas (SFHA) are designated areas that are subject to inundation by the 1-percent-annual-chance (100-year) flood event. A regulatory floodway indicates the area of the channel or river and adjacent land areas that must be reserved to discharge the base flood (100-year) without cumulatively increasing the water surface elevations more than a designated height.

#### Next Steps for Implementation

<b>WHO?</b>	Potential agency and stakeholder involvement	<ul style="list-style-type: none"> <li>FHWA</li> <li>CDOT</li> <li>FEMA</li> </ul>	<ul style="list-style-type: none"> <li>Local Community Floodplain Administrators</li> <li>US Army Corps of Engineers (USACE)</li> <li>Public Stakeholders</li> </ul>
<b>WHAT?</b>	Resource findings	Table 4.1 identifies existing FEMA designated floodplains in the study area.	
<b>WHERE?</b>	Resource locations	Figure 4.1 shows existing FEMA designated floodplains in the study area.	
<b>WHEN?</b>	Critical schedule considerations	<p><b>Floodplain Development Permit (FDP)</b> - Work proposed in a floodplain/floodway requires a permit that must be supported by a floodplain analysis and significantly complete design. This could take several months to develop depending on the design schedule.</p> <p><b>Conditional Letter of Map Revision (CLOMR)</b> - Impacts to a floodplain/floodway over a certain threshold may require a CLOMR from FEMA before a FDP will be issued. A CLOMR requires the same floodplain analysis required for a FDP; however, additional documentation is required for the existing floodplain conditions and to demonstrate that the impacts to the floodplain cannot feasibly be mitigated. A CLOMR takes several months to develop before it can be submitted to FEMA for review. FEMA review can take up to 90 days before comments must be issued. These map revisions are subject to multiple comment and review rounds and usually take at least six months to be issued.</p>	
<b>WHY?</b>	Regulatory setting and general context	<p><b>Executive Order (EO) 11988 Floodplains Management</b>- All federal-aid projects must make diligent efforts to:</p> <ul style="list-style-type: none"> <li>avoid support of incompatible floodplain development</li> <li>minimize the impact of highway actions that adversely affect the base floodplain</li> <li>restore and preserve the natural and beneficial floodplain services</li> <li>be consistent with the standards/criteria of the National Flood Insurance Program (NFIP)</li> </ul> <p>In addition to federal and state laws and regulations, local jurisdictions may have ordinances and regulations that must be followed.</p>	
<b>HOW?</b>	NEPA pre-scoping considerations	CDOT evaluates the potential alternative footprint for all transportation projects to ensure they would not encroach on or alter floodplains and cause future flooding or other adverse impacts. The floodplain evaluation should be completed when proposed action alternatives are first being designed and developed.	
<b>NEXT STEPS?</b>	Funding, design, construction, and mitigation implications	Design solutions should minimize impacts to the floodplain and be developed cooperatively with USACE, FEMA, and the affected communities. If an alternative encroaches on a regulatory floodway/floodplain, an evaluation is necessary to determine if the encroachment would require a revision to the regulatory floodway (impacts to floodplains may require a CLOMR). For alternatives with significant impacts, provide a discussion of practicable alternatives or mitigation.	

Table 4.1 Floodplains and Floodways

Drainageway	Special Flood Hazard Area Description	Regulatory Floodway?
<b>Zone AE</b>		
Saint Vrain – in the western and eastern parts of the corridor	Zone AE is part of the SFHA where base flood elevations have been determined.	Yes – in the westernmost part of the corridor
<b>Zone A</b>		
Saint Vrain – in the western and eastern parts of the corridor	Zone A is part of the SFHA where base flood elevations have not been determined, but a shaded, generalized floodplain is shown on the FEMA Flood Insurance Rate Map (FIRM).	Yes – in the westernmost part of the corridor
<b>Zone X</b>		
Unnamed, throughout the corridor	Zone X is part of the FEMA 500-year flood area, or the area that has a 0.2 percent annual chance of flooding. On FEMA's Flood Insurance Rate Map, the study area surrounding SH 66 that is not designated as Zone AE or Zone A is identified as Zone X.	No

#### Risk and Resiliency

In September 2013, a prolonged period of heavy rain and catastrophic flooding occurred in northern Colorado, which led to extensive infrastructure damage along drainageways. The heavy flooding particularly affected communities along the SH 66 PEL study area.

Going forward, identifying risks and planning for potential extreme weather impacts is increasingly recognized as an important consideration to developing more resilient infrastructure. Across the country and internationally, transportation officials have begun to plan and design transportation infrastructure in consideration of extreme weather events and climate change. While transportation facilities are designed to handle a broad range of impacts based on historic climate conditions, preparing for climate change and extreme weather events is being recognized as critical for protecting the integrity of transportation systems and the necessary investment of funds.

This PEL Study includes an ongoing assessment of risks, in particular flood potential, along SH 66 and will evaluate possible solutions to build a more resilient highway corridor.





## Recommending Mitigation Strategies

A PEL study could identify potential mitigation strategies for impacts identified with the alternatives. Per the CDOT NEPA Manual (CDOT, 2020a), mitigation strategies include measures that:

- Rectify the impact by repairing, rehabilitating, or restoring the affected environment
- Reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action
- Compensate for the impact by replacing or providing substitute resources or environments (CEQ, 40 CFR 1508.20)

The mitigation section of the PEL document should include:

- Avoidance and minimization strategies
- Mitigation strategy
- Basis for the mitigation strategies
- Appropriateness, reasonableness, and timing of the mitigation strategies relative to project planning and implementation
- Coordination required to obtain agreement on mitigation strategies
- Implementation and monitoring of mandated mitigation strategies
- Reasonableness and reliability of the mitigation strategies

For many environmental resources, mitigation in a PEL study will be standardized since the level of data collection and impact analysis required for a PEL study is meant to identify fatal flaws and next steps rather than mitigation for impacts from a Preferred Alternative, which occurs during the NEPA process. The mitigation measures in a PEL study are typically “next steps” to be addressed during a NEPA process. The following are examples of potential standardized mitigation measures that would be included in the PEL study. The standard mitigation strategies should be confirmed with the CDOT Environmental Project Manager during the PEL study (Table 4-1).

**Table 4-1 Standard Mitigation Strategies**

Resource	Standard Mitigation
<b>Noise</b>	<p>A noise assessment should be performed to determine noise sensitive receptors that may be impacted by the Recommended Alternative. Typically, any receptors within 500 feet of the roadway are included in the analysis to be sure that they will not exceed the noise abatement criterion threshold. The noise assessment should include modeling both existing and future conditions to evaluate if mitigation may be required.</p> <p>For noise mitigation to be recommended as part of the project, it must be considered both “reasonable and feasible” based on CDOT criteria. Noise mitigation is feasible if it can be constructed without major engineering or safety issues, provides a reduction of at least 5 decibels to at least one impacted receptor, and a wall that is 20 feet high or less reduces noise by at least 7 decibels at a minimum of one benefitted receptor. Reasonableness deals with whether the barrier can be designed to achieve a noise reduction of 7 decibels at a minimum of one benefitted receptor, whether the barrier can be constructed in a cost-efficient manner, and the desires of the community. All three of these criteria must be met for a barrier to be considered reasonable to construct.</p>
<b>Cultural Resources</b>	<p>Avoidance of impacts to historic properties listed or evaluated as eligible for inclusion on the National Register of Historic Places (NRHP) is preferred over mitigation. A Section 106 review and State Historic Preservation Officer coordination will be required for further project development of elements of the Recommended Alternative.</p> <p>Historic sites of national, state or local significance in public or private ownership including NRHP listed and eligible properties are considered Section 4(f) resources. An adverse effect determination under Section 106 typically results in a “use” under Section 4(f) of the US DOT Act of 1966. Use of Section 4(f) resources should be avoided and minimized wherever possible. A Section 4(f) evaluation may be required if use of these resources is imperative as a result of a corridor project.</p>



Resource	Standard Mitigation
<b>Wetlands and Waters of the U.S.</b>	A wetland delineation should be completed during the next phase of project development in the areas that could be impacted by project-related activities. Impacts to wetlands should be avoided where feasible. If waters of the U.S., including wetlands, in the study area are under the jurisdiction of the USACE, impacts would likely be permitted under a USACE Section 404 permit. Only the USACE has the authority to make final determinations regarding jurisdiction, permitting, and mitigation. CDOT mitigates all wetland impacts at a 1:1 ratio (up to or equal to USACE mitigation, not in addition) regardless of USACE jurisdictional status, or mitigation requirements.
<b>Threatened and Endangered Species, Species of Special Concern, Migratory Birds and Eagles</b>	<p>During subsequent NEPA processes and project development, the compiled special-status species lists will be reviewed with possible consultation with the USFWS and CPW. A survey for suitable habitat for the federally and state-listed species may need to be conducted during an on-site reconnaissance survey. Depending on the presence of habitat and potential impacts to those habitats, consultation with the USFWS may be required.</p> <p>When wildlife impacts are expected, build adequate time into the design schedule to consider temporary and permanent impacts and allow time for a biological resources report, Senate Bill 40 reporting, consultation, and consequent permitting. Consider the development of wildlife crossings or fencing with future projects.</p>
<b>Social Resources and Environmental Justice</b>	<p>A detailed analysis of the impacts to the community related to the implementation of the Recommended Alternative(s) should be conducted. Coordination with local business owners, residents, planners, and other local officials should occur. Ongoing coordination with local planners should be an essential part of future project development to ensure that changes resulting from the Recommended Alternative(s) are compatible with environmental regulations and the local planning offices. Additionally, ongoing conversations with property owners, businesses, and residences potentially affected should also be a critical part of future project development.</p> <p>Identify low-income and minority populations early so that these populations can become involved and have a meaningful opportunity to participate during every phase of a project. Specialized outreach may be necessary based on the extent of anticipated impacts and stakeholder concerns. In addition, the project team will need to determine whether language assistance measures are needed to ensure meaningful access to the process. Consideration of businesses and community facilities important to low-income, minority, and limited English proficiency populations is also critical</p>
<b>Hazardous Materials</b>	<p>Determine and conduct the appropriate type of hazardous materials documentation (Phase 1 Environmental Site Assessment (ESA), Modified Phase I ESA, or CDOT Initial Site Assessment) at site-specific locations to evaluate hazardous materials that may require remediation prior to acquisition or development. Based on the results of the future investigations, a Phase II ESA may be required and includes further subsurface investigations to delineate the specific horizontal and vertical extents of contamination. During the design process, this information can be used to identify avoidance options, when possible, and to develop specific contaminated soils/groundwater material management or mitigation measures.</p> <p>A Phase II ESA and remedial activities could require additional funding. These activities are associated with the acquisition of properties. Regarding construction phase implications, hazardous materials concerns within the construction area will require the use of CDOT Standard Specification 250: Environmental, Health and Safety Management. A Materials Management Plan should also be used if construction activities are anticipated to encounter hazardous materials.</p>

For additional information and guidance about mitigating potential impacts for a project, refer to Chapter 9 of the CDOT NEPA Manual (CDOT, 2020a).

## 4.6 Risk and Resiliency

Given the increasing prevalence of extreme weather events and risks associated with human activities, planning for resiliency is gaining increasing recognition as an important consideration in infrastructure development and operations and can be assessed as part of the PEL process. These types of considerations are distinct from responding to an emergency event (such as an automobile accident or a medical emergency). CDOT's goal in

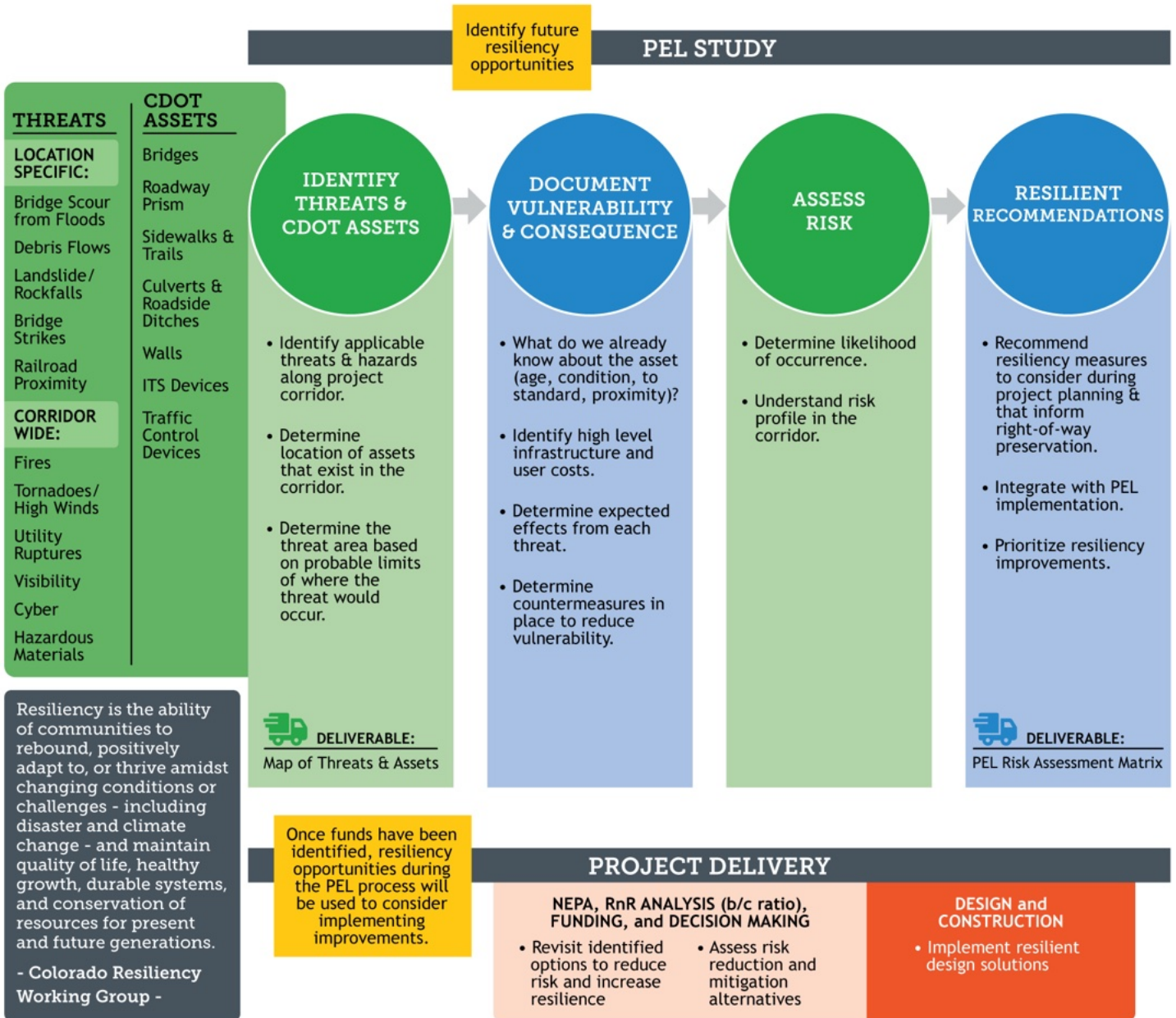




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this assessment is to inform planning decisions and incorporate resiliency considerations where transportation assets may be vulnerable to risk in the context of two distinct considerations: physical threats and operational threats. **Figure 4-14** presents an example risk and resiliency physical assessment process.

**Figure 4-14 Example: Risk and Resiliency Physical Assessment Process**



## 4.7 Identify Next Steps for Project Implementation

The next steps, like all steps in the PEL process, depend on the type, timing, and recommendations of a PEL study. A PEL study is intended to provide the framework for implementing transportation improvements, considering needs, funding, and requirements for future NEPA documentation. In addition, a PEL study provides information to support the NEPA process, including identifying issues that require additional evaluation and recommending methods to address those issues in any future NEPA documentation.





## 4.7.1 Amendments to Local Agency, Regional, and Statewide Transportation Plans

As discussed in **Section 4.5.3**, the planning context of a PEL study area should be understood as part of the existing conditions. A PEL study should be consistent with and honor previous efforts in local agency plans; however, there may be cases where changed conditions or results of a PEL study should be reflected through amending an existing local agency plan, such as a local agency comprehensive or transportation plan. Further discussed in **Section 4.7.3**, the Action Plan should identify the project sponsor, whether locally agency or CDOT, and identify the process for adoption of the project into the local agency plan, as well as the RTP or SWP as funding is identified. Outstanding Issues

A PEL study should identify any actions that need to happen before a future NEPA process can occur. These things could include, but are not limited to the following:

- Resources that need additional research
- What funding sources are reasonably available

## 4.7.2 Action Plan

In cases where a project or a program is anticipated to be implemented in more than one phase, care must be taken to ensure that the transportation system operates acceptably at the conclusion of each phase. Additionally, the action plan must demonstrate compliance with other statutory requirements.

Mitigation strategies and next steps needed in response to project impacts are typically implemented with the phase in which the impacts occur, rather than deferred to a later phase.

Independent phases for the project should meet the following criteria:

- 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 overall project or program
- Environmental Impacts – Individual phases should not introduce substantial additional environmental impacts that cannot be mitigated
- Mitigation Strategies and Next Steps – Each phase should include appropriate strategies to mitigate the environmental impacts of that phase

Establishing meaningful project phases and connecting them with potential funding packages helps to further the projects identified in a PEL study. In addition to these criteria, project phases should be sequenced and prioritized logically in terms of constructability and operations.

Given the variability in the amount and timing of funding, the project team can work with project stakeholders to identify and prioritize projects for a range of funding scenarios to maximize benefits within available funding. As part of a PEL study, the project team may develop an action plan that provides the following information:

- Prioritize transportation needs
- Identify funding that can be reasonably expected to be available for major transportation projects within the current planning horizon, as identified in the RTP and SWP
- Define logical project phases that can be implemented as individual projects based on funding availability, as well as groups of project phases that can be packaged as a larger project if funding becomes available, considering the projected funding sources with the transportation needs
- Identify interim projects that can be implemented with limited funding
- Identify project sponsors (a local agency or CDOT) for each individual project and interim projects



## 5.0 Documentation Requirements for a PEL Study

The PEL study process and results must be recorded in a PEL document at the end of the study. This chapter provides information on the documentation requirements for a PEL study, including the study analysis and decisions [fulfilling conditions set forth in 23 USC 168(d)], the FHWA Colorado Division PEL Questionnaire, and technical reports.

**Appendix B** contains an example PEL document table of contents for a comprehensive PEL study. Many PEL studies may focus on a smaller number of steps, depending on the study objectives, and the resulting PEL document would include less information than shown in the example table of contents.

### 5.1 Documentation of Study Analysis and Decisions



“...any work from the planning process must have been documented and available for public review during the planning process. Such documentation should be in a form that can easily be appended to the NEPA document or incorporated by reference.”

FHWA and FTA, 2005

Thorough documentation of the PEL study analysis and decisions made is crucial to the transition into the NEPA process. The body of the PEL document should provide detailed information from the PEL study analysis and decisions, in a format that can be included in the NEPA document as an appendix or by reference. If any information is incorporated by reference, it must be readily available for agency or public review. Completed PEL documents can be found on CDOT’s website.

Typically, the information from the PEL study does not contain the level of information or analysis required for a NEPA level of study and would be supplemented during the actual NEPA process; however, the actual level of detail for a PEL study should be clarified during development of the project scope of work (**Section 4.2**). Analysis and documentation requirements should be agreed upon at the beginning of the study and incorporated into the scope of work.

The PEL document should include enough information to show that the PEL study fulfills the requirements set forth in 23 USC 168 (**Section 2** lists the requirements) for the adoption of planning products for future use in NEPA processes.

The PEL document should include documentation of the public involvement process so that the documentation can be carried forward into any future NEPA process. Basic documentation that should be collected for all public involvement activities includes information, such as the following:

- Advertisements used for activity/event
- Copies of handouts
- Documentation of displays or exhibits used
- Purpose for event/activity
- Number of public meetings and contact lists
- Locations, times, and dates of public meetings
- Meeting attendance (i.e., sign-in sheets)
- Meeting summaries (i.e., transcripts and meeting notes)

For additional information and guidance about public involvement documentation, refer to Section 7.4 of the CDOT NEPA Manual (CDOT, 2020a).





## 5.2 FHWA Colorado Division PEL Questionnaire

The FHWA Colorado Division PEL Questionnaire is intended to provide documentation of the PEL study and should be included with the submittal of the PEL document (e.g., as part of executive summary, chapter, or appendix). As discussed in **Section 2.6**, PEL studies are not required to address all of the topics in the FHWA Colorado Division PEL Questionnaire, and only the relevant topics should be addressed and completed. The FHWA Colorado Division PEL Questionnaire should be considered a tool for organizing and following the PEL process, and project teams should use it as a guidance document, completing sections as the PEL study progresses rather than using it solely as an “after-the-fact” documentation tool. The FHWA Colorado Division PEL Questionnaire can also be useful for organizing and identifying documentation as a project transitions from planning to NEPA analysis.



A copy of the FHWA Colorado Division PEL Questionnaire is available at: <https://www.codot.gov/programs/environmental/planning-env-link-program>

## 5.3 Technical Reports

Technical reports prepared for a PEL study supplement the PEL document, are project-specific, and are identified based on the characteristics of the study area and input from stakeholders. Technical reports may include documents such as an Environmental Scan Report, Roadway Existing Conditions Report, or Alternatives Report.

When identifying technical reports needed for a PEL study, the project team evaluates which reports are necessary for PEL process decision documentation and those that will be necessary for future NEPA documentation.



## 6.0 Transitioning from a PEL Study to the NEPA Process for Federally Funded Projects



For several projects transitioning to NEPA from PEL, a PEL to NEPA Transition Report or Technical Memorandum was prepared on a trial basis. *CDOT has determined that these PEL to NEPA Transition documents should NOT be prepared.* Project teams should rely on the information included in the completed PEL Questionnaire.

If additional analysis is required prior to or in support of NEPA, this analysis should be incorporated into the appropriate NEPA documentation appendix, such as a Proposed Action Refinement Technical Memorandum or Proposed Action Selection Technical Report.

PEL studies are conducted to link transportation planning and the environmental process. For federally funded projects, a PEL study provides a foundation for NEPA scoping, informing the project purpose and need, defining the important issues to be addressed in the NEPA process, providing alternative recommendations, and providing context for how the project could be advanced. Although NEPA studies are often conducted without a previous PEL study, starting the NEPA process with information developed in a PEL study provides many benefits, including:

- Defined project purpose and need
- Reduced work effort
- Improved communication with stakeholders
- Earlier recognition of potential environmental issues
- Streamlined project delivery process

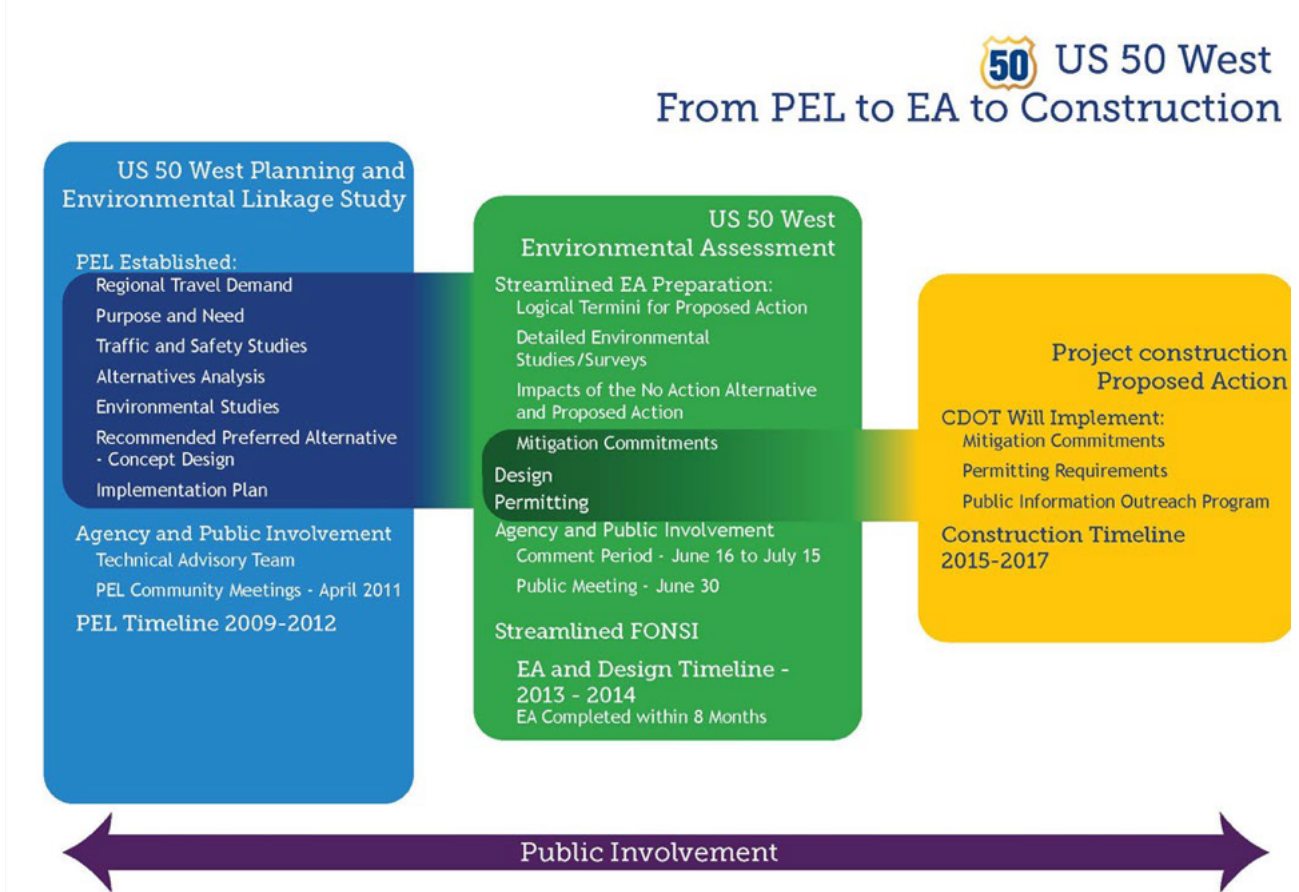
Completing a PEL study does not reduce the level of documentation required by NEPA. However, having a completed PEL study may clarify the project and provide information to more efficiently complete the NEPA process. **Figure 6-1** depicts the transition from the PEL process to the NEPA process and construction for US 50 West.

As discussed in **Chapter 1.0**, a PEL study can be used for different reasons, including planning analyses, discovering political needs and desires among multiple stakeholders, and prioritizing projects. For studies expected to move into the NEPA process in the future, the FHWA Colorado Division PEL Questionnaire provides a list of items to consider to assist with the transition to the NEPA process. Some PEL studies may respond to all of the FHWA Colorado Division PEL Questionnaire items, while others may respond to pieces of the FHWA Colorado Division PEL Questionnaire. The scope of work is developed based on the reasons for and the expected outcomes of the PEL study. Regardless of a PEL study's scope, the results of the study can provide useful information for use in the NEPA process.



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Figure 6-1 Example PEL Process to NEPA Process to Design and Construction (US 50 West)







A PEL study that is greater than 5 years old does not automatically require completion of a new PEL study. A PEL study that is greater than 5 years old requires validation of the decisions-made, information and data presented as part of the PEL study. This can include an update of the operations analysis to the most current 20-Year planning horizon or confirmation of the Recommended Alternative(s) identified.

A PEL study can inform all steps in the NEPA process, and PEL documentation can and should be referenced and formally incorporated into and/or appended to the NEPA documentation. The completion of a PEL study should reduce the time required for all classes of NEPA study, particularly CatExs and EAs. A PEL study also provides information needed to inform the class of NEPA action by determining the possibility that the action (project or program) is likely to have significant impacts.

The adoption and use of a PEL study in the NEPA process is subject to a determination by FHWA, with the concurrence of other stakeholder agencies, that specific conditions have been met (listed in **Section 2.2**). One condition is that the PEL study must have been approved not later than 5 years before the date on which information is adopted in the NEPA review. **Chapter 6.0** describes protocols for using PEL study data in NEPA studies based on the age of the data.

## 6.1 Scoping the NEPA Study Using PEL Study Information

NEPA studies that follow a PEL study should be scoped with an understanding of what PEL study information is available and how it should be incorporated into the NEPA study. NEPA scoping is defined as an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. The PEL study likely accomplished and documented these issues, as well as issues requiring more detailed study in the NEPA process.

The FHWA Colorado Division PEL Questionnaire documents how PEL study information should be used during the NEPA process and should be reviewed by the NEPA project team before scoping the NEPA study. The FHWA Colorado Division PEL Questionnaire addresses the following items related to the typical steps in the NEPA process:

- Scoping
  - How the PEL methodology should be presented in NEPA
  - What steps should be taken with each agency during NEPA scoping
  - Whether any unresolved issues exist with the public, stakeholders, or agencies
  - How to use PEL study information when coordinating with agencies and the public during the NEPA process
  - Critical issues identified in the PEL study that need consideration in the NEPA process
- Purpose and Need
  - What steps will need to be taken during the NEPA process to convert the PEL study vision/purpose and need into a project-level purpose and need statement



PEL studies can assist in scoping NEPA projects because they typically identify resources that do not require detailed analysis and provide recommendations for methodology and schedule for resources that do require analysis. This information may assist CDOT in determining whether the project is simple enough to use CDOT's streamlined NEPA document template for a CatEx or EA.



CDOT's Environmental Scoping Form is available online at:  
<https://www.codot.gov/programs/environmental/resources/forms>



- Alternatives
  - Which project alternatives should be brought forward into the NEPA process and why
- Environmental Analysis and Mitigation
  - Which resource issues need to be considered during the NEPA process
  - Which environmental resources were evaluated in the PEL study and why, and how environmental resource data will be supplemented during the NEPA process
  - Which environmental resources were not evaluated in the PEL study and why, and whether they should be reviewed during the NEPA process
  - Mitigation strategies that should be analyzed during the NEPA process

Once the project team has reviewed the FHWA Colorado Division PEL Questionnaire to determine what information is available to bring into the NEPA study and how, the NEPA study can be appropriately scoped to include any follow-on steps identified in the questionnaire. CDOT’s Environmental Scoping Form is a recommended tool for identifying key resource and stakeholder considerations for the NEPA study. Additionally, a PEL study may document certain conditions or follow-on steps that will affect the NEPA schedule or budget. For example, if a PEL study identified the presence of resources with lengthy environmental clearance processes, these should be factored into the project schedule and budget. If a PEL study identified resources that need avoidance or minimization in the project design, this should be factored into the preliminary design scope. If a PEL study identified resources not present or of no concern for the project, the NEPA scoping process should confirm these conclusions and, if appropriate, eliminate or minimize the consideration of these resources in the NEPA process.

The remaining sections in this chapter discuss the specifics of how the NEPA process can incorporate each of the PEL Study Steps discussed in **Section 4.5**.

## 6.2 Incorporating Purpose and Need



“The purpose and need for a programmatic review will differ from the purpose and need for a project- or site- specific EA or EIS. The purpose and need for a [programmatic document] should be written to avoid eliminating reasonable alternatives and focused enough for the agency to conduct a rational analysis of the impacts and allow for the public to provide meaningful comment on the programmatic proposal.”  
CEQ, 2014

The purpose and need statement is an important component of the NEPA process. It helps articulate transportation needs that should be addressed and provides the basis to evaluate how well alternatives meet needs, in context of their environmental impacts and other costs and benefits. NEPA documentation typically includes several components for the purpose and need: the purpose for the project; the needs the project aims to address; identification of transportation system deficiencies; and the extent or logical termini of the project.

A NEPA study may incorporate purpose and need information exactly as it was developed in the PEL study if the PEL study was adopted within 5 years of the initiation of the NEPA study, or it may modify the purpose and need to capture localized issues that are inherent to the individual project undergoing NEPA review. For example, the purpose and need for a corridor PEL study is likely to be broader than that for an individual project within the corridor. In such a case, the NEPA study should develop a project-specific purpose and need that relates to the broader corridor purpose and need and should explain the relationship between the two. The CEQ guidance on the use of programmatic NEPA reviews (CEQ, 2014) contains a relevant brief discussion on the relationship between a

programmatic purpose and need, and a subsequent project-specific purpose and need. The CEQ guidance notes that project-specific purpose and need statements focus primarily on the issues relevant to the specific proposal without needing to duplicate the material prepared at the programmatic level.

In identifying a project’s purpose, needs, and objectives, a PEL study usually identifies problems that need to be resolved, such as safety concerns, traffic congestion, or infrastructure deficiencies. This information can be used in the NEPA process as supporting information if the PEL study was adopted within 5 years of the NEPA study.



If the NEPA study focuses on a specific project identified in a PEL action plan, the PEL study likely identified the project's logical termini and explained its independent utility. Logical termini and independent utility must be identified and justified in NEPA under FHWA regulations. PEL studies often provide information to support the identification of logical termini and independent utility that can be validated and incorporated into NEPA directly.

If the PEL study occurred more than 5 years before the NEPA study, the data used in the PEL study may no longer be a good representation of conditions in the study area. The information used to develop the purpose and need and logical termini must be reviewed to see if conditions or the planning context have changed. If conditions have not changed, the NEPA study may use the information from the PEL study and explain why that information is still useful to the decision-making process. FHWA should be consulted on this decision.

## 6.3 Incorporating Transportation System, Safety, and Operations Data

A PEL study describes the existing and future transportation system within the study area to 1) support the purpose and need and 2) provide a framework for alternatives development. The NEPA analysis must evaluate the transportation system to determine the alternatives' ability to address the project's purpose and need—which is tied heavily to transportation problems—and to define the impacts of the project on the transportation system.

When a NEPA study follows a PEL study, it can incorporate the PEL study transportation system and operations data if the PEL study is less than 5 years old and if the 20-Year planning horizon for the relevant MPO or Statewide travel demand model has not changed. Information about traffic volumes, travel patterns, or crash patterns, for example, may be important in understanding the operation of the existing and future transportation system. The traffic operations analysis for each project must be updated to the current 20-Year planning horizon travel demand model. If such data are less than 5 years old, no major changes have occurred since the data were gathered, and the current 20-Year planning horizon is still relevant, the NEPA study can use these data directly in support of the project's purpose and need or alternatives and impact analyses. For example, a NEPA study for a project addressing congestion at an intersection could rely on LOS, turning movement, and queue length information from a recent PEL study to support the project purpose and need. Similarly, travel demand modeling outputs that show how a particular alternative would operate in the design year may be used during the NEPA study as part of the transportation impacts analysis, if the PEL study is less than 5 years old and the current 20-Year planning horizon has not changed. Safety assessments are typically prepared based on 5 years of crash history and may need to be updated with the most current set of data at the discretion of FHWA and the CDOT Region Traffic Engineer.

If a preceding PEL study is more than 5 years old by the time the NEPA study is approved, the information must be reviewed during the NEPA process to determine whether the PEL study results are still usable or new data need to be gathered, including updated travel demand modeling.

## 6.4 Incorporating Alternatives Analysis

Frequently, the goal of a PEL study alternatives analysis is to identify and refine the transportation improvements that could meet the project purpose and need or the vision for the study area. PEL studies may develop and refine alternatives, recommending one or more alternatives to be carried forward in the NEPA analysis, as well as eliminating alternatives that should not be considered further because they do not meet the purpose and need or are otherwise infeasible.

Different classes of NEPA actions require different levels of alternatives development and analysis (refer to the CDOT NEPA Manual [CDOT, 2020a] for more information):

- ▶ CatExs do not explicitly require an alternatives analysis, although any environmental impact avoidance and minimization alternatives must be discussed.
- ▶ EAs require consideration and analysis of an Action Alternative and No-Action Alternative only, and do not require an agency to analyze all reasonable alternatives. If other alternatives were considered, the



CatExs do not require an alternatives analysis. EAs require consideration of an Action Alternative and No-Action Alternative only. EISs must evaluate a reasonable range of alternatives and a No-Action Alternative.



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EA must document why they were dismissed. EAs must also discuss any environmental impact avoidance and minimization alternatives.

- EISs must evaluate in detail a reasonable range of alternatives and the No-Action Alternative. An EIS must document why alternatives were dismissed from further consideration and discuss any environmental impact avoidance and minimization alternatives. The CDOT NEPA Manual (CDOT, 2020a) provides a step-by-step process for EIS alternatives analysis.

The alternatives identified in the PEL study often provide the framework for NEPA alternatives analysis and recommendations. The decision of which PEL study alternatives to advance into NEPA depends on the timing and class of NEPA documentation and the project context:

- If the NEPA process is a CatEx or EA and occurs within 5 years of the PEL study adoption, the NEPA project team can choose to proceed with only one of the recommended alternatives from the PEL study, even if additional alternatives were recommended. The NEPA document should provide background on the alternatives development and evaluation conducted during the PEL study to substantiate the reason for proceeding with only one action alternative (and the No-Action Alternative if it is an EA) in the NEPA process.
- If the subsequent NEPA process is a CatEx or EA and occurs within 5 years of the PEL study adoption, the NEPA project team may choose to analyze more than one action alternative. The project team may choose to advance more than one of the PEL study alternatives into the NEPA process for a variety of reasons. Sometimes no clear “preferred alternative” emerges from the PEL study, and further analysis in the NEPA process is warranted. Sometimes the NEPA scoping process identifies a new alternative not considered in the PEL process or demonstrates a lack of consensus around a single action alternative. Other times, considering more than one alternative would be prudent if any conditions have changed—such as implementation of nearby projects or changed environmental conditions—or if the project is controversial.
- If the subsequent NEPA process is a CatEx or an EA, and the PEL study will be more than 5 years old when the NEPA study occurs, the PEL study alternatives analysis must be reviewed to determine whether the analysis and results are still usable or whether conditions have changed, before proceeding with a recommended alternative. If conditions have changed, additional alternatives may need to be considered. FHWA should be consulted about these decisions.
- If the subsequent NEPA document is an EIS, all reasonable alternatives, including all of the PEL alternatives, must be fully considered in the EIS regardless of how recently the PEL study was adopted.

The alternatives analysis process for each class of NEPA action should follow the guidance in the CDOT NEPA Manual (CDOT, 2020a). In cases where the PEL study already developed alternatives, set evaluation criteria, followed a NEPA-like alternatives evaluation and evaluation process, documented the results and recommendations, and coordinated with FHWA, all of these inputs can be used in the NEPA study. The results and recommendations from the PEL study can directly inform and substantially shorten the NEPA alternatives analysis process.

If the PEL study was adopted more than 5 years before the NEPA study, the NEPA study must review the PEL analysis for any class of NEPA document (CatEx, EA, or EIS). The NEPA study will need to assess all of the alternatives that met the project purpose and need and confirm that conditions or policies and guidance that would affect the analysis and recommendations have not changed. For example, if an older PEL study recommended an interchange alternative that includes auxiliary lanes and ramp metering and recommended eliminating an alternative that includes ramp metering only, the traffic inputs, other existing conditions surrounding the interchange, and CDOT’s current policies and practices regarding ramp metering would need to be revisited during the NEPA study to confirm the PEL study alternatives recommendations and analysis are still usable.

It is important to remember that although a PEL study may recommend alternatives for implementation or elimination, the final determination regarding eliminated and preferred alternatives is made during the NEPA process.



## 6.5 Incorporating Environmental Evaluation Data

**Chapter 4.0** describes the environmental overview and evaluation conducted for PEL studies. The level of detail for PEL study environmental evaluations varies. Even the most detailed PEL studies do not address all of the requirements of NEPA and other environmental regulations, but rather aim to help focus future NEPA analysis on important issues and resources relevant to a specific project area and NEPA decision. The goal of a PEL evaluation is to identify environmental and other project constraints—such as project schedule and costs—that may affect future NEPA decisions; potential project impacts; and potential avoidance, minimization, and mitigation strategies or measures.

A PEL study environmental evaluation should balance the collection of environmental data with the timeframe for project development. In most cases, the PEL study should compile readily available data about environmental and social conditions, identify resources that may require avoidance or minimization of impacts during alternatives development, and recommend the likely level of analysis that will be required in the NEPA process, including identifying resources that have lengthy environmental clearance processes.

As with other project information, environmental data and analyses completed during the PEL study provide useful context to the NEPA process. While many environmental and social resources will require additional analysis during NEPA, the PEL study provides a “head start” to the NEPA process by (1) identifying the level of detailed analysis needed for each resource, and (2) providing recommendations for the methods and schedule for additional analyses that will be required during NEPA.

To assist with the transition to the NEPA process, the FHWA Colorado Division PEL Questionnaire requests documentation of the following:

- Existing conditions of all resources reviewed
- Level of detail and methodology of review
- Issues that need to be considered during the NEPA process, including potential resource impacts and mitigation strategies or requirements
- Supplemental data that will be needed during the NEPA process
- Documentation of resources that were not reviewed in the PEL study and why
- Whether non-reviewed resources need review under NEPA

This information feeds directly into the CDOT NEPA scoping process and can be included on the Environmental Scoping Form (online NEPA tools), which may be prepared to assist with internal and external NEPA scoping. If a PEL study was adopted within 5 years of the NEPA study, the resource information gathered during the PEL study can be incorporated into the NEPA study and supplemented as needed, following the guidance in the CDOT NEPA Manual (CDOT, 2020a), to fulfill the requirements of NEPA and other environmental regulations. If a PEL study was adopted more than 5 years before the NEPA study, the PEL study’s resource information will need to be validated, updated, and supplemented during the NEPA process. The PEL study information can, nonetheless, help focus the NEPA analysis on those resources that are most likely to need avoidance, minimization, or mitigation and that may affect the project design, schedule, or budget.





## 6.6 Incorporating Input from Resource and Regulatory Agencies

NEPA requires the involvement of federal, state, and local agencies in the development of EISs and EAs. For CatExs, the lead agency should identify any aspects of the project that might require coordination with other agencies. Other environmental laws are also addressed during the NEPA process, such as the Clean Water Act or the National Historic Preservation Act, and these laws require the involvement of regulatory agencies that enforce the laws.

Unlike under NEPA, agency involvement in a PEL study is voluntary on the part of the agency. As described in **Chapter 4.0**, a PEL study should invite participation by federal, state, and local agencies with jurisdiction by law or special expertise with issues related to the study area. These agencies may provide comments during a PEL study on environmental issues and potential project impacts; however, because a PEL study is a planning-level study, no legally binding agreements or decisions are made with any agencies.

The PEL study documentation and FHWA Colorado Division PEL Questionnaire will provide specific information about how resource and regulatory agency input should be used during the NEPA process, including:

- What steps should be taken with each agency during NEPA scoping
- Whether unresolved issues exist with any agencies
- How to use PEL study information when coordinating with agencies during the NEPA process
- Critical issues identified by agencies during the PEL study that need consideration in the NEPA process
- Agency input on mitigation strategies that should be analyzed during NEPA

Agency input during the PEL study allows NEPA project teams to more accurately scope the NEPA study, with an understanding of how and when the NEPA study should involve agencies and what issues of agency concern will need to be evaluated in more detail. Agency involvement during a PEL study also streamlines the NEPA study because agencies are familiar with the project and their concerns have been considered in project planning before starting preliminary design and NEPA. This can lead to enhanced decision-making and more efficient solutions.

## 6.7 Incorporating Input from the Public

NEPA requires the involvement of the general public, including interested groups and individuals, in the development of EISs and EAs. For CatExs, the lead agency should identify any aspects of the project that might require coordination with interested groups or individuals.

A PEL study should also involve the public, with the goal of soliciting community input on steps such as the purpose and need statement, alternatives development and evaluation, environmental analysis, and mitigation strategies.

The PEL study documentation will provide specific information about when and how public input was obtained, how it helped shape the recommended alternative(s) and analysis, and how it should be used during the NEPA process. The FHWA Colorado Division PEL Questionnaire will provide information about how to use the public input in subsequent NEPA studies, including the following:

- Whether any unresolved issues exist for the public or stakeholders
- How to use PEL study information when coordinating with the public during the NEPA process
- Critical issues identified by the public that need to be considered in the NEPA process

This information about the PEL study public involvement process will enable the NEPA project team to more accurately scope the NEPA study, with an understanding of whether any outstanding or critical issues need to be considered or whether any particular types of outreach techniques should be continued from the PEL study to the NEPA study.



Agency input during a PEL study provides information about issues of agency concern, input on mitigation strategies, and a head start on agency coordination. However, PEL studies are planning-level studies and do not make any legally binding agreements with agencies.



## 7.0 PEL Process Best Practices in Colorado

**Table 7-1** presents best practices from recently conducted PEL studies. These best practices were identified by project teams and validated by CDOT’s PEL Program Manager. Final PEL study documents provide more detail on the process and outcomes of the studies and are available on CDOT’s website.

All studies identified extensive stakeholder coordination as a best practice. Successful studies engaged key stakeholders, such as local agencies (cities and counties), and often regional councils of government and transit agencies. CDOT collaborated with key stakeholders to gather input on project visioning, obtain endorsement of the details for the transportation analysis, and define transportation needs. Stakeholder input was also important during the development and evaluation of alternatives. CDOT coordinated alternatives evaluation with stakeholders to prioritize improvements and reach consensus on recommendations. PEL studies provide a unique opportunity to engage stakeholders early in the project development process to understand community priorities, articulate a common vision for transportation improvements appropriate to the local context, and clarify the roles and responsibilities stakeholders have in implementing recommended improvements.

**Table 7-1** PEL Best Practices in Colorado

PEL Study, Lead Agency, and Completion Date	Best Practices
Federal Boulevard, 5th Avenue to Howard Place Denver led 2009 completion	<ul style="list-style-type: none"> <li>▪ Managed public expectations and did not overstate the project’s ability to meet expectations and address immediate needs.</li> <li>▪ Coordinated with adjacent projects, which led to cost savings and better outcomes.</li> <li>▪ During alternative development and analysis, emphasized “priority” environmental resources that could potentially affect future NEPA actions.</li> <li>▪ Included a cumulative impact analysis because the recommended alternative would be phased over a long period.</li> <li>▪ Used template EA for the NEPA process, which required less documentation and a shorter timeframe (8 months) than typical.</li> </ul>
US 50 West, Swallows Road to Baltimore Avenue, Pueblo CDOT led 2012 completion	<ul style="list-style-type: none"> <li>▪ Comprehensively evaluated and screened alternatives and reached consensus on a recommended plan and preferred alternative for the corridor.</li> <li>▪ Created a robust travel demand model to examine alternative route capacity and conduct level of service failure analysis for different highway sections, helping prioritize improvements.</li> <li>▪ Identified initial improvements that would have independent utility and fit within immediately available funding (as of December 2015, two projects are underway, both with EA NEPA documents).</li> <li>▪ Established strong purpose and need, robust transportation modeling and analysis, environmental studies, and thorough alternatives evaluation during the PEL study that allowed future NEPA processes to move quickly into environmental surveys, impact analysis, and mitigation decisions.</li> <li>▪ Established a Memorandum of Agreement to enhance interagency coordination.</li> </ul>
I-70 and Kipling Street CDOT led 2013 completion	<ul style="list-style-type: none"> <li>▪ Identified lower cost incremental improvements to help reach a long-term solution.</li> <li>▪ Identified strategies to reduce throwaway work on interim projects.</li> <li>▪ Conducted extensive public outreach during the alternatives evaluation including community focus group meetings for area residents, businesses, and multimodal travel advocates, as well as individual meetings with property owners. Presented information in easy-to-digest format for the public.</li> <li>▪ Focused environmental analysis on key stakeholder concerns. Conducted a health impact assessment and analyzed land use and business impacts of the recommended alternatives.</li> <li>▪ Incorporated results of interviews with stakeholders into alternatives development, resulting in consensus on recommendations.</li> </ul>



# CDOT PEL Handbook

PEL Study, Lead Agency, and Completion Date	Best Practices
SH 79, Bennett CDOT led 2013 completion	<ul style="list-style-type: none"> <li>▪ Conducted thorough alternatives analysis of the transportation network and connections surrounding the state highway.</li> <li>▪ The Recommended Alternative identified a set of discrete long-term improvements that could be implemented by different agencies.</li> <li>▪ Independent utility analysis identified four separate actions for improvements; the first of these actions was a CatEx for a railroad grade separation.</li> <li>▪ State Highway corridor recommendations included identification of locations for full movement and potential future access, providing guidance for potential local development.</li> </ul>
Vail Simba Run CDOT led 2013 completion	<ul style="list-style-type: none"> <li>▪ When construction funding became available for the project, CDOT transitioned the PEL study into the NEPA process. There is no need to finish a PEL study if adequate funding becomes available to address all of the desired improvements.</li> </ul>
SH 7, US 287 to US 285 CDOT led 2014 completion	<ul style="list-style-type: none"> <li>▪ Studied multimodal needs and involved Regional Transportation District, helping identify local agencies' desire for additional transit. After the study, local agencies presented a transit plan to the Regional Transportation District based on the PEL recommendations.</li> <li>▪ Strong stakeholder facilitation and independent discussions with local agencies established a common vision for the corridor, addressed contentious issues, and achieved consensus on recommendations.</li> <li>▪ The study's recommendations provided a firm plan for transportation along the SH 7 corridor, allowing local agencies to effectively guide their future development plans.</li> <li>▪ Led to development of the SH 7 Coalition for advocacy of the corridor improvements by the municipalities along the corridor.</li> </ul>
I-25 North CDOT led 2014 completion	<ul style="list-style-type: none"> <li>▪ Identified short-term improvements that were compatible with (and did not preclude) already-approved long-term improvements from the North I-25 EIS.</li> <li>▪ Provided a consistent message that short-term solutions were inadequate to fully address transportation needs, and the long-term solution required the EIS Preferred Alternative. This message helped manage expectations about what the study could accomplish through short-term recommendations.</li> <li>▪ Engaged FHWA in setting the study's goals, methodology, and terminology.</li> </ul>
I-225, I-25 to Yosemite Street CDOT led 2014 completion	<ul style="list-style-type: none"> <li>▪ Traffic and safety analysis clarified and changed the understanding of corridor needs, which directly informed the purpose and need and helped focus the project and alternatives analysis.</li> <li>▪ Engaged local agencies that would benefit from improvements in the study area, even though they had no jurisdiction in the study area.</li> <li>▪ Conducted effective telephone town hall and used the same phone communication system to advertise the in-person public meeting.</li> <li>▪ Conducted a three-level evaluation to screen 65 basic alternative components down to two recommended alternatives.</li> </ul>
Wadsworth, 35th Ave to 46th Ave City of Wheat Ridge led 2015 completion	<ul style="list-style-type: none"> <li>▪ Heavy public outreach: block-by-block meetings, three public meetings, and property owner coordination.</li> <li>▪ Served as a pilot for preparation of a PEL to NEPA Transition Report. <i>CDOT has determined that these PEL to NEPA Transition documents should NOT be prepared.</i> Project teams should rely on the information included in the completed PEL Questionnaire.</li> </ul>



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PEL Study, Lead Agency, and Completion Date	Best Practices
Clifton US 6 CDOT led 2015 completion	<ul style="list-style-type: none"> <li>▪ At Level 1, evaluated and screened out new alternate connections for US 6 outside the main street through the Clifton business district.</li> <li>▪ Considered multimodal facilities and safety for all users in the purpose and need and alternatives evaluation, which considered improvements that balanced community mobility needs and regional traffic flows.</li> <li>▪ Engaged community representatives through community focus group meetings for businesses, resident, emergency providers, and multimodal advocates.</li> </ul>
US 85 (I-76 to Weld County Road 100) CDOT led 2017 completion	<ul style="list-style-type: none"> <li>▪ Coordinated closely with 13 municipalities, 2 counties, and 3 MPOs.</li> <li>▪ Provided basis for amendment of the US 85 Access Control Plan (1999).</li> <li>▪ Developed Location Recommendations and Alternative Concepts information sheets that provided an overview, prioritization, summary of the screening process, and next steps.</li> </ul>
US 24 East CDOT led 2018 completion	<ul style="list-style-type: none"> <li>▪ During evaluation of existing conditions along the 40-mile highway corridor, used data on land use, traffic volumes, and road use/classification to identify corridor segments for evaluation of alternatives and project recommendations.</li> <li>▪ Provided an infrastructure project implementation plan with timeframes for recommended improvement projects prioritized by mobility, operations, and safety, as the main purpose and need elements.</li> <li>▪ Identified modifications to the existing Access Control Plan along the corridor and used the PEL study public outreach as necessary public engagement for CDOT approval of the modifications.</li> </ul>
WestConnect Coalition CDOT led 2018 completion	<ul style="list-style-type: none"> <li>▪ Coordinated closely with established corridor agency Coalition throughout alternatives evaluation and study decision points to build consensus on project recommendations and documentation of agency support.</li> <li>▪ Developed and evaluated technology options and system management strategies with overall alternatives evaluation.</li> <li>▪ Provided focused evaluation and recommendations for wildlife crossings, based on the documented wildlife concerns and safety issues along the corridor.</li> </ul>
CO 66 CDOT led 2020 completion	<ul style="list-style-type: none"> <li>▪ Developed a reader-friendly, easy-to-use graphical format for the Corridor Conditions Report documenting current and future land use, the transportation system, and environmental resources.</li> <li>▪ Provided a study report summary and PEL Questionnaire Highlights at the beginning of the PEL study report for an easy reference summary of the PEL process and to support transition into the NEPA process for specific projects.</li> </ul>
29 Road Interchange at I-70 Mesa County led 2020 completion	<ul style="list-style-type: none"> <li>▪ Conducted an unique stakeholder engagement program to support long-term implementation of the transportation improvements and solicitation of funding.</li> <li>▪ Facilitated the transition from decades long planning to project delivery with the interchange approval process (1601) and the NEPA process.</li> </ul>



# CDOT PEL Handbook

The PEL studies shown in **Table 7-1** led to the collection of a wide variety of lessons learned, which will help guide implementation of future studies. As detailed further in the following list, lessons learned from project teams were grouped into categories related to stakeholder communication, traffic modeling, FHWA coordination, and transitioning to the NEPA process. In addition to these items, project teams noted that strong project management from both CDOT and the consultant is needed to keep studies focused and moving forward.

- Scoping the PEL study
  - PEL studies should not conduct so much data gathering and analysis that they become a NEPA study in all but name. PEL studies are meant to improve decision-making at a broad level and to inform future actions. PEL studies do not need to be as detailed as NEPA studies, and keeping them at a higher level of analysis will reduce duplication of effort in later phases.
- Communication with stakeholders
  - Studies should focus on quality of communication between the project team and stakeholders, particularly for important messages. CDOT and the project team should provide clear messaging instructions to ensure that a consistent message is presented to stakeholders. When messaging to stakeholders is not consistent, friction and misunderstandings may occur.
  - CDOT and the project team should clearly state the desired study goals and outcomes to local agencies and obtain local agency agreement with these goals early in the study. The desired study goals and outcomes should then be reiterated to the local agencies at each major milestone so everyone remains in agreement and aware of the study's focus. Conducting a chartering session at the start of the study and a visioning workshop early in the process can set the stage for consensus building and may help keep agencies and CDOT better focused on the same outcomes.
  - PEL studies are successful at extensive coordination with stakeholders, but sometimes CDOT and the project team accommodate stakeholder desires unrelated to the study's focus, which can detract from the study's central purpose and delay progress; these tangential issues can also inflate the scope of the study. CDOT and the project team should work to keep stakeholder discussions focused on issues related to the study's central goals.
- Travel demand and traffic modeling
  - Travel demand and traffic model details should be discussed with and agreed upon by FHWA as early as possible in the study, with early stakeholder endorsement of these details. The following items should be agreed upon by CDOT and FHWA: existing and future years for the traffic model; tools (software); techniques (meso, micro, macro); and measures of effectiveness. Documenting these details in a white paper to FHWA is helpful.
  - Because the alternatives analysis requires measures of effectiveness related to the study's goals and objectives, it is critical that studies select modeling tools that can quantify the appropriate measures for the study.
  - PEL studies should consider providing a single traffic analysis report, rather than dividing the traffic analysis between the Existing Conditions Report and the PEL document (with traffic forecasts and alternatives evaluation). A single traffic report would allow traffic analysis to be appended directly to 1601 Interchange Access Requests and NEPA documents.
  - Level of failure analysis based on interim traffic projections (i.e., between existing conditions and design year) can be very helpful for prioritizing projects and funding.
- Coordination with FHWA
  - The project team can help FHWA provide timely reviews by including an executive summary of reports that highlight key points needing FHWA attention.
  - Determine early in the study that the specific activities within the FHWA Coordination Points will involve FHWA and obtain agreement on these activities from both FHWA and key project team members.
  - Highlight and clarify the relationship with other federal projects in the PEL study area.
  - Receive FHWA acceptance of the final PEL study in the form of a formal acceptance letter.





# CDOT PEL Handbook

## ➤ Design and Recommendations

- Discuss conceptual alternative designs with stakeholders before evaluation to keep CDOT and stakeholders moving forward together. Stakeholder input improves the ability of the alternatives to meet both stakeholder and transportation needs.
- Provide cost estimates in a format that can be easily adapted to different packaging scenarios. For example, providing costs for individual alternative components allows small projects to be mixed and matched fairly easily in different packages.

## ➤ Transitioning to the NEPA process

- Local agencies should revisit the intended class of NEPA action with CDOT before developing the scope of work for a follow-on NEPA process. Although the PEL study may have identified certain classes of NEPA action for different improvements within the PEL study's recommendation, the class of action could change if the proposed action or project limits change. Discussing the class of action with CDOT can allow local agencies to properly scope the projects before moving forward with the NEPA process.
- Be mindful of the time between the PEL study and transition into the NEPA process to ensure that PEL studies and their analyses do not become stale (generally, 5 years or less between PEL and NEPA processes).
- Do not force a single recommendation into the NEPA phase if more than one alternative can meet the purpose and need.
- Because corridor PEL studies are often made up of smaller projects and not one large improvement, creating "fact sheets" for each project could be a valuable tool. These fact sheets would have the conceptual design, overall project goal, how it meets the purpose and need, any necessary permitting/environmental documentation, estimated costs, and a brief summary of other alternatives considered. These fact sheets would provide local agencies (or CDOT) a quick reference for projects to advance, without having to search through the PEL documentation.



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# CDOT PEL Handbook

## APPENDIX A: EXAMPLE FHWA AND CDOT ACCEPTANCE LETTERS AND RESOURCE AGENCY LETTERS

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# CDOT PEL Handbook

## EXAMPLE FHWA PEL ACCEPTANCE LETTERS

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U.S. Department  
of Transportation  
**Federal Highway  
Administration**

**Colorado Division**

07/09/2018

12300 W. Dakota Ave., Suite #180  
Lakewood, Colorado 80228  
720-963-3000

Marc Ambrosi  
Long Range Transportation Planner  
Boulder County Transportation Department  
2525 13<sup>th</sup> St., Suite #203  
Boulder, CO 80304

**Subject: State Highway 7 (75th Street to US 287) Planning and Environmental Linkages (PEL) Study**

Dear Marc:

This letter is to acknowledge the completion of the State Highway 7 (75th Street to US 287) PEL Study undertaken by Boulder County. This process has been conducted in a manner consistent with Federal Highway Administration (FHWA) and CDOT PEL guidance. The benefits of this streamlining effort will undoubtedly be realized in terms of time and cost savings on future National Environmental Policy Act (NEPA) studies conducted with the study limits.

The completed PEL Questionnaire submitted to CDOT in April 2018 provides a good summary of the work completed in the PEL study and the information that will be needed once projects enter the NEPA process. As individual projects are initiated and funding becomes available, it will be necessary for Boulder County to meet with CDOT on a project-by-project basis to determine the scope of the NEPA study and the extent to which the PEL can be used to supplement the NEPA effort. Further coordination with FHWA and the Federal Transit Administration (FTA) may also be required.

We look forward to future coordination associated with the State Highway 7 PEL Study. If you have any questions regarding this letter, please feel free to contact me at (720) 963-3072 or [patricia.sergeson@dot.gov](mailto:patricia.sergeson@dot.gov)

Sincerely,

John M. Cater  
Division Administrator

By: Tricia Sergeson  
Transportation Specialist

Cc: Lindsay Edgar, CDOT EPB  
Karen Schneiders, CDOT Region 4  
Kevin Maddoux, Felsburg Holt & Ul evig





U.S. Department  
of Transportation  
**Federal Highway  
Administration**

**Colorado Division**

September 22, 2020

12300 W. Dakota Ave., Suite 180  
Lakewood, Colorado 80228  
720-963-3000  
720-963-3001

Richard Zamora  
Regional Transportation Director  
CDOT Region 2  
5615 Wills Blvd.  
Pueblo, CO 81008

**Subject: Southern Mountain Loop Planning and Environmental Linkages Study (PEL)**

Dear Mr. Zamora:

This letter is to acknowledge the completion of the Planning and Environmental Linkages (PEL) study identified above, undertaken by CDOT in partnership with South Central Council of Governments. We appreciate and commend the efforts the team has undertaken to conduct this corridor planning study in a manner consistent with the Federal Highway Administration (FHWA) PEL guidance. The benefits of this streamlining effort will undoubtedly be realized in terms of time and cost savings on future National Environmental Policy Act (NEPA) studies conducted within the corridor planning study limits.

The completed PEL Questionnaire submitted to FHWA on September 10, 2020, as an attachment to the PEL Report, provides a good summary of the work completed in the PEL study and the information that will be needed once this project enters the NEPA process. As individual projects are initiated and funding becomes available, it will be necessary for FHWA to meet with CDOT and the Local Agencies to determine the scope of the NEPA study required, purpose and need, logical termini, and the extent to which the corridor study can be used to supplement or replace certain milestones in the NEPA process.

If you have any questions, please feel free to contact Armando Henriquez of this office at (720) 963-3031 or by email at [Armando.henriquez@dot.gov](mailto:Armando.henriquez@dot.gov).

Sincerely,

John M. Cater  
Division Administrator

Cc:

Ajin Hu, CDOT Region 2 South Program Engineer  
Walt Boulden, South Central Council of Governments Executive Director/PM  
Gabriel Cosyleon, CDOT Region 2 Environmental Manager  
Troy Halouska, CDOT PEL Program Manager



U.S. Department  
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**Colorado Division**

May 19, 2021

12300 W. Dakota Ave., Suite 180  
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Mr. Michael Goolsby  
Region 3 Transportation Director  
222 South 6th Street, Rm 317  
Grand Junction, CO 81501

**Subject: Approval of 29 Road Interchange at I-70 Planning and Environmental Linkages (PEL) Study**

Dear Mr. Goolsby:

This letter is to acknowledge the completion of the PEL study initiative undertaken by Mesa County and the City of Grand Junction, in cooperation with the Colorado Department of Transportation (CDOT), for the 29 Road interchange at I-70, including the study of the I-70 corridor from Horizon Drive to I-70B to develop a vision for improved local and regional connectivity and enhanced access to/from I-70 in the east-central area of Grand Junction. We appreciate and commend the efforts the team has undertaken to conduct this planning study in a manner consistent with the Federal Highway Administration (FHWA) PEL guidance. The benefits of this streamlining effort will undoubtedly be realized in terms of time and cost savings on future NEPA studies conducted within the area planning study limits.

The final PEL Questionnaire submitted to CDOT on January 22, 2021 provides a good summary of the work completed in the PEL study and the information that will be needed once the project begins the CDOT Policy Directive 1601 process and NEPA process. The strengths of the study include: focused coordination with state and federal environmental resource agencies, extensive public involvement through the process, and the development of a Purpose and Need statement following NEPA guidance. Areas the FHWA has identified as needing further analysis are: the functional reclassification of 29 Road, changes to residential character, noise analysis, air quality, changes to pedestrian mobility and any EJ impacts. As project funding becomes available, it will be necessary for FHWA to meet with the local agency sponsors and CDOT to determine the scope of the NEPA study, including level of study required, Purpose and Need, logical termini, and the extent to which the study can be used to supplement or replace certain milestones in the NEPA process.

If you have any questions, please feel free to contact Jeff Bellen, Area Engineer, at [jeff.bellen@dot.gov](mailto:jeff.bellen@dot.gov) or 720-963-3438.

Sincerely,

John M. Cater, P.E.  
Division Administrator

Copies:

David Cesark, CDOT Region 3 Planning and Environmental Manager

Jason Smith, CDOT Region 3 West Program Engineer

Trenton Prall, City of Grand Junction

Scott Mai, Mesa County

Tory Halouska, CDOT HQ PEL Program Manager



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

**Colorado Division**

January 9, 2014

12300 W. Dakota Ave., Ste. 180  
Lakewood, Colorado 80228  
720-963-3000

Bryan Weimer  
Arapahoe County  
Transportation Division Manager  
6924 South Lima Street  
Centennial, CO 80112

**Subject: SH 79 Planning and Environmental Linkage (PEL) Process**

Dear Mr. Weimer:

This letter is to acknowledge the completion of the Planning and Environmental Linkage study initiative undertaken by Arapahoe County, the Town of Bennett, the Colorado Department of Transportation (CDOT), and David Evans and Associates on the SH 79 study project. We appreciate and commend the efforts the team has undertaken to conduct this corridor planning study in a manner consistent with the Federal Highway Administration (FHWA) PEL guidance which outlines a process similar to that required by the National Environmental Policy Act (NEPA). The benefits of this streamlining effort will undoubtedly be realized in terms of time and cost savings on future NEPA studies conducted within the corridor planning study limits.

The completed PEL Questionnaire submitted to FHWA in December 2013 provides a good summary of the work completed in the PEL study and the information that will be needed once projects enter into the NEPA process. The strengths of the corridor study include focused coordination with resource agencies, meaningful public involvement through the process, and a detailed look at access management in the corridor. Cumulative effects were not addressed in the corridor study and will be required in subsequent NEPA studies. As individual projects are initiated and funding becomes available, it will be necessary for FHWA to meet with Arapahoe County, the Town of Bennett, and CDOT on a project by project basis to determine the scope of the NEPA study including level of study required, purpose and need, logical termini, and the extent to which the corridor study can be used to supplement or replace certain milestone in the NEPA process.

If you have any questions, please feel free to contact Melinda Urban at 720-963-3015.

Sincerely,

John M. Cater, P.E.  
Division Administrator

By: Melinda Urban, P.E.  
Operations Engineer

Cc: Chuck Attardo, CDOT Region 1  
Carrie DeJacomio, CDOT Region 1  
Dole Grebenik, CDOT Region 1  
Trish Stiles, Town of Bennett  
Stacy Tschuor, David Evans and Associates



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

**Colorado Division**

January 9, 2014

12300 W. Dakota Ave., Ste. 180  
Lakewood, Colorado 80228  
720-963-3000

Trish Stiles  
Town of Bennett  
Town Administrator  
355 Fourth Street  
Bennett, CO 80102

**Subject: SH 79 Planning and Environmental Linkage (PEL) Process**

Dear Ms. Stiles:

This letter is to acknowledge the completion of the Planning and Environmental Linkage study initiative undertaken by Arapahoe County, the Town of Bennett, the Colorado Department of Transportation (CDOT), and David Evans and Associates on the SH 79 study project. We appreciate and commend the efforts the team has undertaken to conduct this corridor planning study in a manner consistent with the Federal Highway Administration (FHWA) PEL guidance which outlines a process similar to that required by the National Environmental Policy Act (NEPA). The benefits of this streamlining effort will undoubtedly be realized in terms of time and cost savings on future NEPA studies conducted within the corridor planning study limits.

The completed PEL Questionnaire submitted to FHWA in December 2013 provides a good summary of the work completed in the PEL study and the information that will be needed once projects enter into the NEPA process. The strengths of the corridor study include focused coordination with resource agencies, meaningful public involvement through the process, and a detailed look at access management in the corridor. Cumulative effects were not addressed in the corridor study and will be required in subsequent NEPA studies. As individual projects are initiated and funding becomes available, it will be necessary for FHWA to meet with Arapahoe County, the Town of Bennett, and CDOT on a project by project basis to determine the scope of the NEPA study including level of study required, purpose and need, logical termini, and the extent to which the corridor study can be used to supplement or replace certain milestone in the NEPA process.

If you have any questions, please feel free to contact Melinda Urban at 720-963-3015.

Sincerely,

John M. Cater, P.E.  
Division Administrator

By: Melinda Urban, P.E.  
Operations Engineer

Cc: Chuck Attardo, CDOT Region 1  
Carrie DeJacomio, CDOT Region 1  
Dole Grebenik, CDOT Region 1  
Bryan Weimer, Arapahoe County  
Stacy Tschuor, David Evans and Associates





# CDOT PEL Handbook

June 2022, Version 3 | 5-1

## EXAMPLE CDOT PEL ACCEPTANCE LETTERS

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**COLORADO**  
Department of Transportation  
Division of Transportation Development

Environmental Programs Branch  
4201 E. Arkansas Ave., Shumate Building  
Denver, CO 8022-3400

April 5, 2018

Marc Ambrosi  
Long Range Transportation Planner  
Boulder County Transportation Department  
2525 13<sup>th</sup> St., Suite #203  
Boulder, CO 80304

Subject: State Highway 7 (75th Street to US 287) Planning and Environmental Linkages (PEL) Study


Dear Mr. Ambrosi:

This letter is in response to your request for Colorado Department of Transportation (CDOT) Environmental Programs Branch (EPB) acknowledgement of the State Highway 7 (75th Street to US 287) PEL Study undertaken by Boulder County. We have appreciated the opportunity to participate in this process as a member of the Technical Advisory Committee (TAC) and commend the efforts of everyone involved in conducting this study in a manner consistent with Federal Highway Administration (FHWA) and CDOT PEL guidance. The benefits of this streamlining effort will undoubtedly be realized in terms of time and cost savings on future National Environmental Policy Act (NEPA) studies conducted with the study limits.

The completed PEL Questionnaire submitted to CDOT in April 2018 provides a good summary of the work completed in the PEL study and the information that will be needed once projects enter into the NEPA process. As individual projects are initiated and funding becomes available, it will be necessary for CDOT to meet with Boulder County on a project-by-project basis to determine the scope of the NEPA study and the extent to which the PEL can be used to supplement the NEPA effort. Further coordination with FHWA and the Federal Transit Administration (FTA) may also be required.

These documents are in accordance with the 3<sup>rd</sup> and 4<sup>th</sup> FHWA Coordination Points as part of the PEL process. We look forward to future coordination associated with the State Highway 7 PEL Study. If you have any questions regarding this letter, please feel free to contact me at (303) 512-4157 or [lindsay.edgar@state.co.us](mailto:lindsay.edgar@state.co.us).

Sincerely,

  
Lindsay Edgar

CDOT Planning and Environmental Linkages Program Manager

Cc: Tricia Sergeson, FHWA  
Karen Schneiders, CDOT Region 4  
Kevin Maddoux, Felsburg Holt and Ullevig (FHU)





**COLORADO**  
Department of Transportation

Region 4

Regional Director's Office  
10601 W. 10th Street  
Greeley, CO 80634-9000

April 30, 2018

Marc Ambrosi  
Long Range Transportation Planner  
Boulder County Transportation Department  
2525 13<sup>th</sup> St., Suite #203  
Boulder, CO 80304

Dear Mr. Ambrosi,

RE: State Highway 7 (75th Street to US 287) Planning and Environmental Linkages (PEL) Study

This letter is in response to your request for Colorado Department of Transportation (CDOT) Region 4 acknowledgement of the State Highway 7 (75th Street to US 287) PEL Study undertaken by Boulder County. We have appreciated the opportunity to participate in this process as a member of the Technical Advisory Committee and commend the efforts of everyone involved in conducting this study in a manner consistent with Federal Highway Administration (FHWA) and CDOT PEL guidance. The benefits of this streamlining effort will undoubtedly be realized in terms of time and cost savings on future National Environmental Policy Act (NEPA) studies conducted with the study limits.

The completed PEL Questionnaire submitted to CDOT in April 2018 provides a good summary of the work completed in the PEL study and the information that will be needed once projects enter into the NEPA process. Some of the strengths of the PEL study include meaningful stakeholder engagement throughout the process and coordination with adjacent planning efforts. As individual projects are initiated and funding becomes available, it will be necessary for CDOT to meet with Boulder County on a project-by-project basis to determine the scope of the NEPA study and the extent to which the PEL can be used to supplement the NEPA effort.

These documents are in accordance with the 3<sup>rd</sup> and 4<sup>th</sup> FHWA Coordination Points as part of the PEL process. We look forward to future coordination associated with the State Highway 7 PEL Study. If you have questions regarding this letter, please feel free to contact me or Karen Schneiders, R4 Planning Manager.

Sincerely,

Johnny Olson, P.E.  
Region 4 Director

JWO:KM:mbc

cc: Tricia Sergeson, FHWA  
Kevin Maddoux, Felsburg Holt and Ullevig  
Lindsay Edgar, CDOT Environmental Programs Branch  
Keith Sheaffer, R4 South Program Engineer  
Dan Marcucci, R4 SPE Resident Engineer  
Karen.Schneiders@state.co.us  
File: J.Olson@state.co.us





**COLORADO**  
Department of Transportation

---

Troy Halouska  
Colorado Department of Transportation (CDOT)  
Environmental Programs Branch  
2829 W Howard Place  
Denver, CO 80204

Subject: State Highway (SH) 66 Planning and Environmental Linkages (PEL) Study

Dr. Mr. Halouska,

This letter is to acknowledge completion of the PEL study undertaken by CDOT Region 4, Felsburg Holt & Ullevig, and Atkins for the SH 66 PEL from McConnell Drive in Lyons to Weld County Road 19. This study was completed using Federal Highway Administration's (FHWA) framework for PEL and is consistent with the process outlined in CDOT's PEL Handbook.

CDOT Region 4 and local agencies in the region will use this document to inform funding decisions regarding future transportation improvements along SH 66 that affect safety, mobility, and access for vehicles, transit operations, bicycles, and pedestrians. CDOT Region 4 will maintain collaboration with CDOT's Environmental Programs Branch and, as needed, FHWA as future project delivery is anticipated and National Environmental Policy Act scoping is considered.

CDOT Region 4 appreciates your contributions to this PEL Study and the support of the Environmental Programs Branch. If you have any questions, please contact James Zufall, the SH 66 PEL Project Manager, at 303.546.5660 or [jamesd.zufall@state.co.us](mailto:jamesd.zufall@state.co.us).

Thank you,

Heather Paddock, PE  
Region 4 Transportation Director





February 1, 2021

Mr. Jeffrey Bellen  
Area Engineer, Region 3 Federal Highway  
Administration  
12300 W. Dakota Avenue, Suite 180  
Lakewood, CO 80228

RE: Support for the 29 Road Interchange at I-70 Planning and Environmental Linkages (PEL) Study Process

Dear Mr. Bellen:

As you know, CDOT was an active participant in the 29 Road Interchange at I-70 PEL Study. Our involvement in the study on the Technical Team, and through frequent coordination meetings, provided us the opportunity to discuss the significance of this project with fellow stakeholders. We are satisfied with the efforts of the Technical Team members and their respective agencies to develop a vision for improved local and regional connectivity and enhanced access to/from I-70 in the east-central area of Grand Junction.

It is the understanding of CDOT that the PEL study was completed in accordance with FHWA regulations and guidelines, and both CDOT and FHWA staff were included at key intervals where they provided comments and guidance that improved the study. Coordination with state and federal environmental resource agencies, consistent with PEL guidelines, also provided important information that helped in developing study recommendations.

The PEL study documentation fulfills the requirements set forth in 23 USC 168 for the adoption of planning products for future use in NEPA. As project funding becomes available, CDOT supports the continuation of study recommendations through CDOT's Policy Directive 1601 process, the NEPA process, and project implementation; and CDOT will continue to work with FHWA and the local agencies to facilitate transportation improvements in the study area. We encourage all of the agencies involved in the study to partner and work toward collaborative partnerships that will ultimately provide regional benefits.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Michael Goolsby', is written over a light blue horizontal line.

Michael Goolsby  
Region 3 Transportation Director

Copies: David Cesark; Jason Smith; Trenton Prall, City of Grand Junction; Scott Mai, Mesa County, file







# CDOT PEL Handbook

## EXAMPLE RESOURCE AGENCY PEL INITIATION LETTERS

---

# SH7 PEL PLANNING & LINKAGES STUDY (75th Street to US 287)

July 29, 2016

Mr. Kent Kuster  
Colorado Department of Public Health and Environment  
Water Quality/Water Quality Control Division  
4300 Cherry Creek Drive  
Denver, CO 80246

Re: State Highway 7 (SH 7) (75<sup>th</sup> Street to US 287) Planning and Environmental Linkages (PEL) Study

Dear Mr. Kuster:

Boulder County is in the early stages of preparing the State Highway 7 (SH 7) (75<sup>th</sup> Street to US 287) Planning and Environmental Linkages (PEL) Study, in coordination with the Colorado Department of Transportation (CDOT) and the Federal Highway Administration (FHWA). The SH 7 PEL (75th Street to US 287) is being conducted to identify existing conditions, to identify anticipated problem areas, and to develop/evaluate multimodal improvements that will reduce congestion, improve operations, and enhance the safety of the roadway within the study corridor.

The study area, shown on the attached map, contains primarily low density residential and agricultural land use. The study area extends approximately 4 miles along SH 7 from the SH 7/75th Street intersection to SH 7 (Arapahoe Road)/US 287 intersection (milepost [MP] 60.68).

Boulder County looks forward to working with you in preparing the PEL. The project team is currently preparing a Corridor Conditions Report. Your agency will be included in the distribution of the Corridor Conditions Report in the fall; however, if you have preliminary concerns or items you would like us to consider during the PEL process, please provide comments at your earliest convenience. If you have any general questions about this letter, please contact me at (720) 564-2751 or at [mambrosi@bouldercounty.org](mailto:mambrosi@bouldercounty.org). For more specific environmental questions, please contact Kevin Maddoux at (303) 721-1440.

Sincerely,



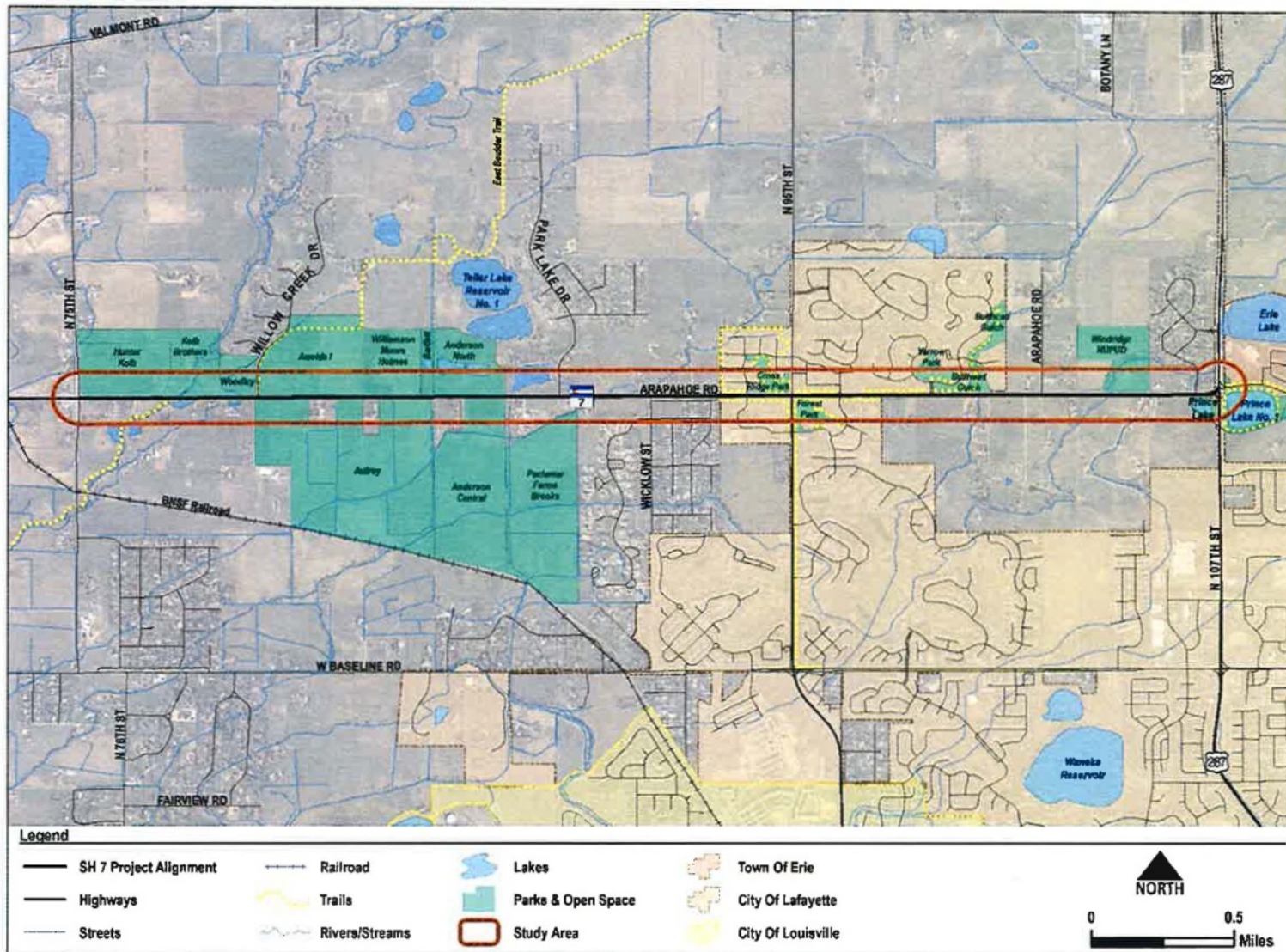
Marc Ambrosi  
Long Range Transportation Planner

cc: Ron Stewart, Boulder County Parks and Open Space  
Allison Deans Michael, US Fish and Wildlife Service  
Kiel Downing, USACE Omaha District

Mark Gershman, City of Boulder  
Mark Leslie, Colorado Parks and Wildlife  
Carol Anderson, US Environmental Protection Agency

# SH7 PEL PLANNING & LINKAGES STUDY (75th Street to US 287)

## Attachment A: Study Area Map







**COLORADO**  
Department of Transportation  
Region 1

2829 West Howard Place  
Denver, CO 80204

June 16, 2020

Philip Strobel  
U.S. Environmental Protection Agency

**RE: 23143 Santa Fe PEL (I-25 TO C-470) Planning and Environmental Linkages (PEL) Study**

Dear Philip:

The Colorado Department of Transportation Region 1 (CDOT), in consultation with the Federal Highway Administration (FHWA), Arapahoe County, the City and County of Denver, Douglas County, City of Englewood, City of Littleton and City of Sheridan, is informing you that the Santa Fe PEL Study (I-25 to C-470) (PEL study) is underway. The PEL study will be conducted in accordance with the Statewide and Metropolitan Planning Regulation 23 CFR 450, the provisions linking planning and National Environmental Policy Act (NEPA) presented in Section 450.318, and Appendix A of 23 CFR 450. We will be communicating with you in the coming months about your participation in the process.

Santa Fe Drive (US Highway 85) between C-470 and I-25 has high annual average daily traffic (AADT), which causes frequent congestion and costly travel delays. A vision and plan for future improvements is needed to address continued regional growth and travel demand in this corridor. The Environmental Study Area is 1,000 feet from the Santa Fe Drive centerline and is shown in the attached figure.

CDOT is leading the study on behalf of the funding partners listed and has retained HDR to facilitate the process and develop the PEL Study. The PEL study will examine both short-term and long-term alternatives to address overall congestion on this section of Santa Fe; serve existing and future needs; and improve traffic operations, travel time, multimodal person-trip capacity, and safety compared to a No Action Alternative. The PEL study will include development and evaluation of alternatives based on a consideration of Purpose and Need; geometric, access, traffic, planning, and environmental factors; the location of communities and other developed areas; and public and agency plans and input. Coordination has begun with local agencies and other stakeholders in the corridor to gather available data.

The HDR team has consulted CDOT during scoping to identify initial resource concerns. Your agency will be invited to review and comment on the existing conditions report, anticipated to be finished in late summer of 2020. Your involvement is valuable as we proceed through the PEL study process.



Please contact me at 303-757-9304 or Basil.Ryer@state.co.us with any questions or comments you have about the project. The latest information will be posted on the project's website: <https://www.codot.gov/projects/santafe-pel>.

Please forward this information to the appropriate individual if you feel you are not the correct recipient. I look forward to your participation, and thank you for your cooperation.

Sincerely,

*Basil Ryer*

Basil Ryer, MLA, MUD  
Region 1 Environmental Program Manager  
Colorado Department of Transportation

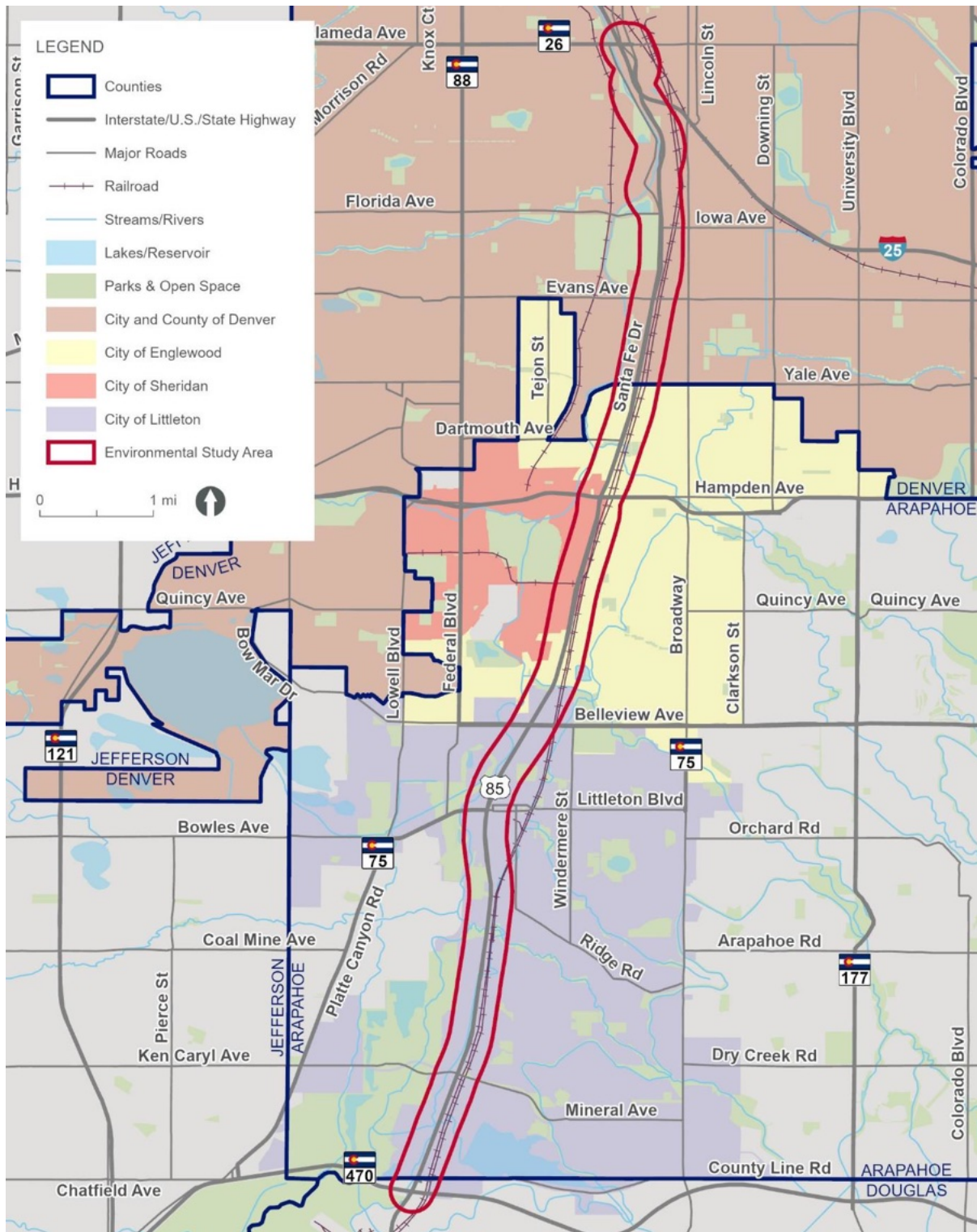
cc: File

Attachment: Santa Fe PEL Environmental Study Area Map





### Santa Fe PEL Environmental Study Area





# COLORADO

## Department of Transportation

Region 4  
10601 West 10th Street  
Greeley, CO 80634

June 15, 2020

Kristin Salamack  
U.S. Fish and Wildlife Service  
134 Union Blvd.  
Lakewood, CO 80228

**RE: 21656 CO 52 Planning and Environmental Linkages (PEL) Study and Access Control Plan (ACP)**

Dear Ms. Salamack:

The Colorado Department of Transportation Region 4 (CDOT), in coordination with the Federal Highway Administration (FHWA) and local stakeholders, is preparing the CO 52 Planning and Environmental Linkages (PEL) Study and Access Control Plan (ACP). The PEL study is being conducted in accordance with the Statewide and Metropolitan Planning Regulation 23 CFR 450, the provisions linking state planning and National Environmental Policy Act (NEPA) presented in Section 450.318, and Appendix A of 23 CFR 450. **The project limits extend 41.6 miles (mile post [MP] 0 to MP 42) along CO 52, from CO 119 in Boulder County to CO 79 east of Hudson in Weld County (Figure 1-1).**

*Figure 1-1 Project Limits*



CO 52 is a major east-west connection corridor for the region which is experiencing an increase in residential and commercial development. Due to increased travel demand along CO 52, the corridor is experiencing high congestion during peak periods causing concern for roadway safety; average daily traffic rates (ADT) counts now range from 8,800 to 15,000.



A long-term vision and plan for the corridor is needed to address continued regional growth and travel demand in this corridor. This PEL study will complete a high-level study of CO 52 to better understand transportation issues and environmental resources along the corridor. Through this study CDOT, the local agencies, stakeholders, and the public will be able to determine future improvements. Coordination has begun with local agencies and other stakeholders in the corridor to gather available data.

The Project recently completed identifying existing conditions within the corridor. The project team looked at existing planning documents in the corridor, roadway characteristics and environmental resources. The Existing Conditions Report will be available in August 2020 for your review.

Your agency's involvement is valuable as we proceed through the PEL study process. Please contact me at 970-350-2227 or at Chad.Hall@state.co.us with any questions or comments you have. Please forward this information to the appropriate individual if you feel you are not the correct recipient. If your agency is not interested or unable to participate in the project, please let me know if you would like materials or a briefing provided separately.

Thank you and I look forward to your participation in this study.

Sincerely,

Chad Hall  
Project Manager  
Colorado Department of Transportation, Region 4

cc: File





# CDOT PEL Handbook

## EXAMPLE RESOURCE AGENCY PEL EXISTING CONDITIONS AND ENVIRONMENTAL SCAN REPORT REVIEW REQUEST

---

**SH7 PEL** PLANNING and ENVIRONMENTAL LINKAGES STUDY  
(75th Street to US 287)

January 19, 2017

Ms. Carol Anderson  
United States Environmental Protection Agency  
Region 8  
1595 Wynkoop Street  
Denver, CO 80202

Re: State Highway 7 (SH 7) (75<sup>th</sup> Street to US 287) Planning and Environmental Linkages  
(PEL) Study Corridor Conditions Assessment Report

Dear Ms. Anderson:

The purpose of this letter is to provide the U.S. Environmental Protection Agency the opportunity to review the Corridor Conditions Assessment Report for the State Highway 7 Planning and Environmental Linkages (PEL) Study. The SH 7 PEL (75th Street to US 287) is being conducted to identify existing conditions, to identify anticipated problem areas, and to develop/evaluate multimodal improvements that will reduce congestion, improve operations, and enhance the safety of the roadway within the study corridor.

Your agency is invited to participate in this Study to provide valuable input as a Resource Agency, and to submit any comments you might have. We would specifically like for your agency to review the Corridor Conditions Assessment Report that has been prepared by the PEL project team and has been sent to you with this letter. The Corridor Conditions Assessment Report documents the types and conditions of resources identified within the project area, and lays the foundation for the development and screening of alternatives as we move forward.

If your agency would provide written feedback on the report, even just to confirm that you have reviewed the report and that it appears complete, it would be of great assistance to the project and our efforts moving towards implementation of a solution of this corridor, while minimizing and avoiding environmental impacts to sensitive resource.

If you have any comments or concerns about the PEL Study or the Corridor Conditions Report, feel free to contact me at [mambrosi@bouldercounty.org](mailto:mambrosi@bouldercounty.org). We look forward to your comments.

Sincerely,



Marc Ambrosi  
Allison Deans Michael, US Fish and Wildlife Service  
Long Range Transportation Planner  
Mark Gershman, City of Boulder

Mark Leslie, Colorado Parks and Wildlife  
Kent Kuster, CDPHE  
Carol Anderson, US Environmental Protection Agency





## Southern Mountain Loop

Highway 12 Planning and Environmental Linkages (PEL) Study



November 6, 2019

To: Study Technical Committee and Coordinating Resource Agencies

From: Walt Boulden, South Central Council of Government, Project Manager

**RE: Southern Mountain Loop Planning and Environmental Linkages Study - Study Technical Committee**

The South Central Council of Governments (SCCOG), along with the Colorado Department of Transportation (CDOT), is conducting a Planning and Environmental Linkages (PEL) Study of the Southern Mountain Loop (SML) of the Colorado Front Range Trail. The SML corridor is approximately 82 miles long and extends from Walsenburg to Trinidad, Colorado along U.S. Highway 160 and Colorado State Highway 12. This corridor is also designated as the Scenic Highway of Legends Byway. Information regarding the study can be found at:

- <https://www.codot.gov/library/studies/co-12-sml-pel>
- <https://www.colorado.gov/pacific/sccog/southern-mountain-loop-%E2%80%93-highway-12-planning-and-environmental-linkages-pel-study>

As a member of the Study Technical Committee and as a coordinating resource agency, we are requesting your review and comment of the attached draft Existing Corridor Conditions Report. This report documents the current transportation system conditions and environmental resources within the Study Area. This information provides the basis for developing and evaluating possible transportation improvements along and adjacent to the byway. Understanding your perspectives is critical to building supported decisions and solutions. Your review and comment will help us understand and confirm the scope of the environmental issues, the importance of the identified resources and need for impact avoidance and mitigation measures, and the identification of joint development opportunities.

We are requesting that review comments, or questions be provided by November 22, 2019 to the following:

Monica Ramey, Public Involvement Specialist  
Monica@Bachmanpr.com  
719-339-4109

Thank you for your participation with this study. Comments received will be incorporated into the final report and the study process. It is anticipated that the Study Technical Committee will reconvene in the spring of next year to review the alternatives analysis and draft recommendations. An invitation to the meeting will be provided in advance.

Sincerely,

Walt Boulden  
South Central Council of Government  
Project Manager

Attachment



**COLORADO**  
Department of Transportation  
Region 1

2829 West Howard Place  
Denver, CO 80204

September 30, 2020

Philip Strobel  
U.S. Environmental Protection Agency

**RE: 23143 Santa Fe PEL (I-25 TO C-470) Planning and Environmental Linkages (PEL)  
Study Corridor Conditions Report for Ready for Review**

Dear Philip:

The purpose of this letter is to inform you that the Colorado Department of Transportation (CDOT) Region 1, in consultation with the Federal Highway Administration (FHWA), Arapahoe County, the City and County of Denver, Douglas County, City of Englewood, City of Littleton and City of Sheridan, has completed the Corridor Conditions Report, which contains the documented environmental existing conditions for the Santa Fe PEL Study (I-25 to C-470) (PEL study). In a letter sent on June 17, 2020, CDOT introduced the PEL study and committed to an opportunity for your agency to review and comment on the Corridor Conditions Report.

The Corridor Conditions Report and appendices are available for your review at the following link: <https://drive.google.com/drive/folders/1HTEIAUIwGH87gHV2PGaXmO2q-3Pj30zJ?usp=sharing>

If your review of the Corridor Conditions Reports results in comments, please submit those comments using the comment matrix located at the same link above by close of business on Wednesday, October 14, 2020, and those comments will be considered and responded to ahead of the publication of the document. If you have no comments after the review, please let me know that as well.

Please forward this information to the appropriate individual if you feel you are not the correct recipient. I look forward to your review of the document, and thank you for your participation.

Sincerely,

*Basil Ryer*

Basil Ryer, MLA, MUD  
Region 1 Environmental Program Manager  
Colorado Department of Transportation





# CDOT PEL Handbook

## EXAMPLE RESOURCE AGENCY FINAL PEL STUDY NOTIFICATION OF COMPLETION

---

January 19, 2018

Mr. Mark Gershman  
City of Boulder Open Space Mountain Parks  
66 S Cherryvale Rd.  
Boulder, CO 80303

Re: State Highway 7 (SH 7) (75<sup>th</sup> Street to US 287) Planning and Environmental Linkages (PEL) Study

Enclosed for your review is one (1) copy of the State Highway 7 (75th Street to US 287) PEL study.

Boulder County, in cooperation with the Federal Highway Administration (FHWA) and CDOT Region 4, have prepared this PEL study to evaluate transportation improvements along State Highway 7 from 75th street to US 287 in Lafayette, Colorado. Since our initial Technical Advisory Committee (TAC) meeting on June 30, 2016, Boulder County has conducted periodic check-ins with CDOT and FHWA to review and provide input on the State Highway 7 (75th Street to US 287) PEL study. This report is an outcome of our collaborative efforts.

This State Highway 7 (75th Street to US 287) PEL study and associated technical reports will be published on our website. If you have any questions, please contact me at (720) 564-2751.

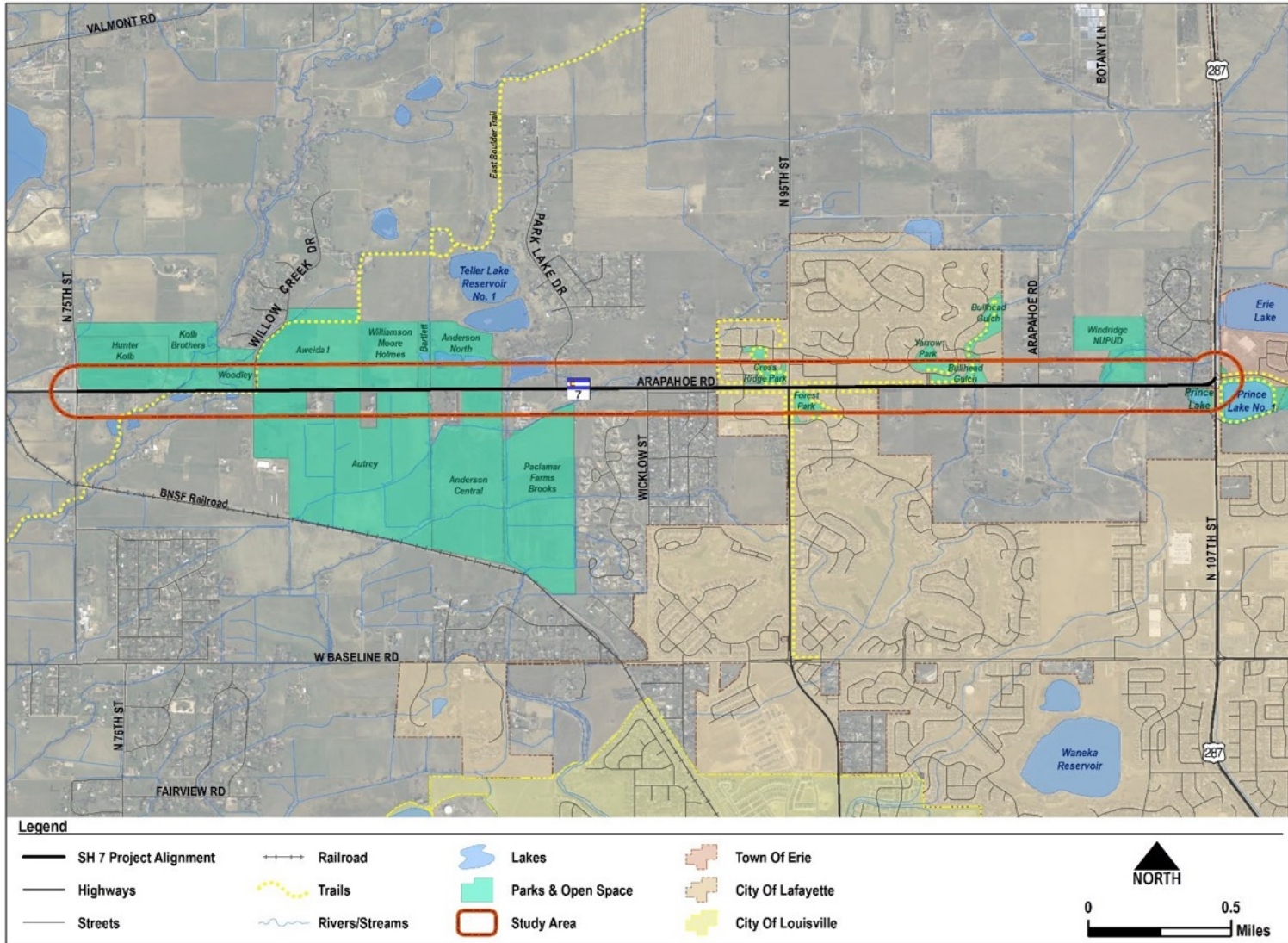
Sincerely,

Marc Ambrosi  
Long Range Transportation Planner

cc: Ron Stewart, Boulder County Parks and Open Space  
Allison Deans Michael, US Fish and Wildlife Service  
Kiel Downing, USACE Omaha District  
Mark Leslie, Colorado Parks and Wildlife  
Kent Kuster, CDPHE  
Carol Anderson, US Environmental Protection Agency

# SH7 PEL PLANNING & LINKAGES STUDY (75th Street to US 287)

## Attachment A: Study Area Map







# CDOT PEL Handbook

## APPENDIX B: SAMPLE FULL PEL STUDY TABLE OF CONTENTS



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**Department of Transportation**

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