

# STATE OF COLORADO

## DEPARTMENT OF TRANSPORTATION

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August 9, 2010

The Honorable Ray LaHood  
Secretary  
Office of the Secretary  
U.S. Department of Transportation  
1200 New Jersey Ave, SE  
Washington, DC 20590

RE: North Clear Creek Corridor for the Fiscal Year 2010 Appropriations Grant Program:  
Transportation Investment Generating Economic Recovery (TIGER II)

Dear Secretary LaHood,

The North Clear Creek project results from more than three years of collaborative partnership among multiple federal, state, and local agencies. The Colorado Department of Transportation is seeking \$55 million of TIGER II funds to supplement the \$27 million of improvements already underway along this corridor.

The North Clear Creek corridor is located in the north central Rocky Mountains of Colorado. The projects transportation corridors, U.S. 6 and S.H. 119, provide access to spectacular beauty, abundant wildlife, U.S. Forest Service lands, scenic trails and byways, recreation, cultural activities, and the Central City-Black Hawk National Historic District.

The narrow canyon, and proximity of water, constrains highway expansion of U.S. 6, creating a need for unique transportation access. The Clear Creek serves as a major source of water for more than a quarter million people in the Denver metropolitan area. Historical and geographic issues make transportation improvements challenging in this corridor. Because of historical mining activities, the project is within the Central City/Clear Creek Superfund site making improvements to the transportation corridor difficult and costly.

The project will greatly improve safety along two critical transportation corridors in Colorado which have experienced a 382 percent increase in traffic volume from 1991 to 2009. While transit providers have successfully moved employees and visitors to Central City and Black Hawk, traffic growth has resulted in a decrease in safety and unfortunately increased accidents and traffic fatalities.

Receipt of the TIGER II Grant funds will benefit CDOT and the North Clear Creek Mitigation Advisory Committee (NCCMAC) partnership. The NCCMAC partnership formed in January 2007 to facilitate the efforts of CDOT, Colorado Department of Public Health (CDPHE), and

U.S. Environmental Protection Agency (EPA) on the project corridor. The objective of NCCMAC is to coordinate efforts, share information, combine expertise and resources, and develop a program of mutual cost and labor savings. All parties benefit by jointly utilizing the limited space available in the North Clear Creek valley and integrating environmental mitigation with the highway design. Additionally, CDOT is working with Jefferson County Open Space, Clear Creek County, and Gilpin County on current and future trails to improve bicycle and pedestrian safety and access in the corridor.

As a part of this request, the State of Colorado (CDOT) is unable to participate in the TIFIA loan portion of the TIGER II program. Article X Section 20 of the Colorado Constitution prohibits governmental entities from incurring multiyear debt under most circumstances. Within the meaning of the Colorado constitution, a TIFIA loan constitutes debt. Accordingly, there are only two circumstances where a Colorado applicant can utilize a TIFIA loan. The first is the applicant has an enterprise based plan which includes a fee based repayment source. The second, if there is time between the TIFIA loan offer and subsequent regularly scheduled election prior to the September 30, 2012 obligation date the entity would have to place the question of accepting and repaying the TIFIA loan on the ballot.

We understand for the TIGER II Grant applications, the awarded projects will increase overall transportation funding coming to Colorado. If you need any further details regarding this project, please do not hesitate to contact Mickey Ferrell, Federal Liaison of Policy and Government Relations at 303-757-9755. We are happy to provide you any additional information you may have about this or any other project.

Sincerely,

A handwritten signature in cursive script that reads "Russell George".

Russell George  
CDOT Executive Director

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## Executive Summary

Traffic safety and improved livability are the top priorities for the rural North Clear Creek Corridor Project (the Project). Total construction cost of the project is \$82 million. This grant application requests \$55 million in funding to supplement \$27 million in obligated funds. This project results from more than three years of collaborative partnership among multiple federal, state and local agencies.

This Project achieves:

- An 8:1 benefit-cost ratio
- 323 total projected construction jobs
- 2,096 total projected long-term jobs

This partnership has created a multi-use, multi-benefit project in a part of rural Colorado that is located within 20 miles of Golden and the Denver metro area's 2.5 million citizens. The Project is along two highway sections of US Highway 6 (US 6) and State Highway 119 (SH 119). It is composed of three (3) components:

1. Highway widening and curve straightening (1 mile);
2. Installation of Intelligent Transportation Systems (ITS) (15.1 miles); and
3. Rockfall mitigation and monitoring (14.5 miles).

All three components of this project complement each other, provide cost savings, increase access to well-paid jobs, and improve an environment that has been degraded by historic mining.

**What is so special about this location?** This Project is in a rural area of Colorado (as defined by the 2000 U.S. Census Bureau). The Project highways carry travelers from the greater Denver metropolitan area to nearby mountains, fishing streams, and tourist destinations. It parallels part of I-70, but has gentler grades. When parts of I-70 are closed in the winter, these highways become alternative routes for motorists and commercial traffic. Bus and truck drivers prefer the lower grades, but rock fall hazards and narrow lanes are safety concerns. High volumes of commercial buses carry workers and visitors to gaming areas, and trucks carry rock from a major quarry to construction sites in nearby cities. The highways are squeezed between sharp curves, sheer rock walls on one side, and a mountain creek on the other side. There is little room for driver error.



*Clear Creek Canyon is a gateway to the Rockies and attracts millions of visitors each year.*

### Why is this project needed?

Although the highway sections are important thoroughfares, the narrow, winding roadways have safety problems that negatively impact both people and the economic health of this rural area. So far in 2010, the corridor has been the site of several major traffic accidents. In one accident, a car collided head-on with a bus on SH 119 resulting in life threatening injuries to both car passengers.



*Automobile and bus crash on SH 119, May 2010.*

Highway widening and curve straightening would improve that section of roadway, but there are currently insufficient funds to complete the project (Figure 1). Only a small portion of this project (0.4 miles) is funded, but that portion of roadway ends at an unsafe point with limited viewing range. With TIGER II funding for one (1) additional mile (Component 1), the roadway would be reconstructed to an end point with better views of the road (and safer conditions for drivers). The second component is to install a communications infrastructure within the canyons that the highways follow to improve radio communications in the area. Emergency services, in particular, are impacted. For example, the Colorado State Patrol and ambulance services may not be able to communicate when there is a rockfall or medical emergency. With the nearest hospital 30 miles away from Black Hawk and Central City, emergency services need to know road and traffic conditions when transporting patients. The third component of the project is to reduce rockfall hazards. Loose boulders and rockfall can crush vehicles and prevent travel for hours to weeks at a time.

FIG 1. Funded and unfunded project components

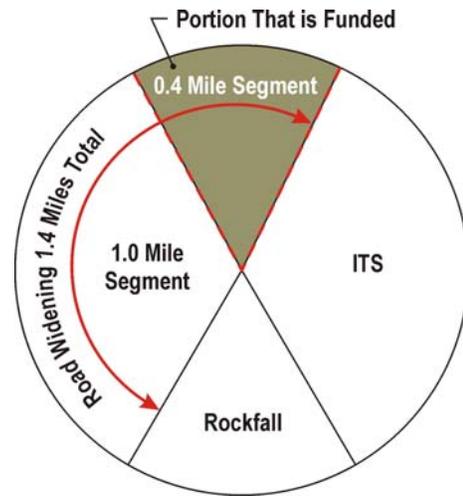


FIG 2. Benefit of each project component in satisfying the primary criteria

Approximate Value	Rockfall	Rockfall	Rockfall	Rockfall
	ITS	ITS	ITS	ITS
	1.0 Mile Segment		ITS	ITS
	0.4 Mile	1.0 Mile Segment of Main Street South	1.0 Mile Segment of Main Street South	1.0 Mile Segment of Main Street South
	Environ.	Liability	Safety	Economics
	Project Criteria			

**What is so special about this project?** This project meets all of the primary and secondary criteria for TIGER II proposals. Its strengths include safety, livability, and partnership. Each component addresses safety issues unique to heavily traveled roadways in narrow mountain canyons. Cooperation among a diverse group of agencies, organizations and NGOs (Non-Governmental Organizations) creates benefits that go beyond the edge of pavement (See 2(b) *Partnership* for details).

Achieving an extraordinary range of goals, the Project yields an impressive benefit cost ratio of 8:1. Figure 2 illustrates the benefits of the currently-funded 0.4 miles of the Project, and the additional benefits realized from constructing all three project components. Without completion of this Project, the Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) cannot construct a mine drainage treatment facility (at MP 6.2) or install pipelines

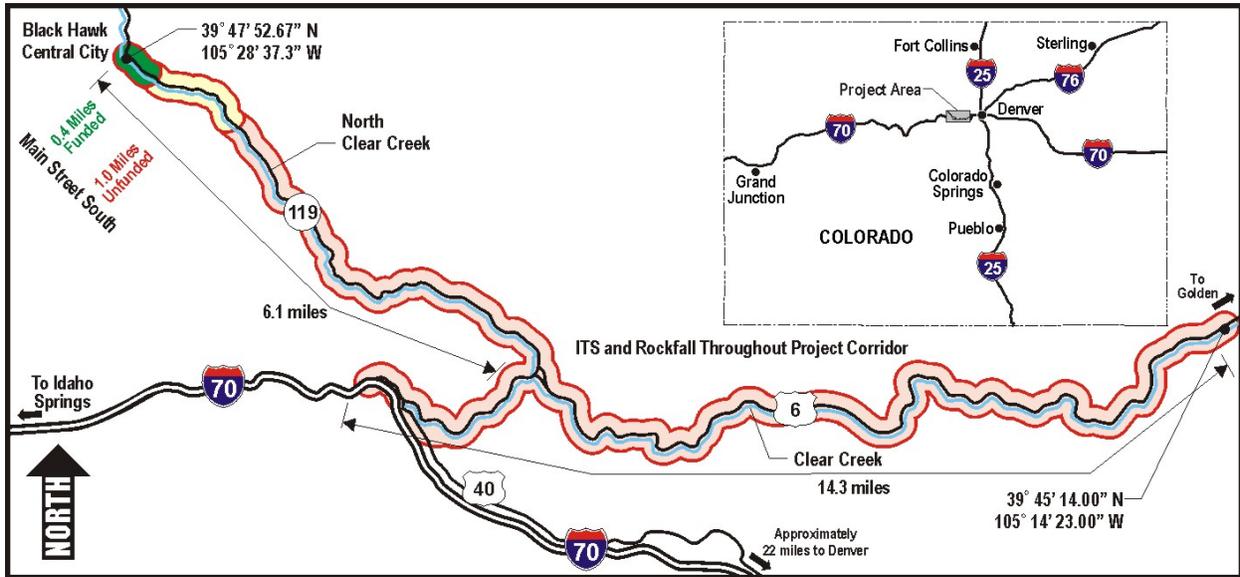
(MP 6.2-7.3) to convey polluted mine drainage to the proposed mine drainage treatment facility. The water quality problems are associated with two acid mine drainages (the Gregory Incline and National Tunnels) under the Superfund program.

## A. Project Description

The North Clear Creek Corridor Project (the Project) is located in a rural area of the north central Rocky Mountains, Colorado (see Figure 3). Within the Project area, Clear Creek serves as a major

source of water for more than a quarter million people in the Denver metropolitan area. Clear Creek drains through Clear Creek Canyon, flowing to the eastern plains and joining the South Platte River. The narrow canyon, and proximity of water, constrains highway expansion of US 6, creating a need for unique transportation access. Colorado’s first important gold discoveries were made 150 years ago in the Central City-Idaho Springs district, and the state’s first successful ore smelter was established in Black Hawk. As a result of this historical mining activity, the Project is now within the [Central City/Clear Creek Superfund](#) site, [Operable Unit 4](#).

FIG 3. Map showing the location of the North Clear Creek Corridor Project and highway connections



Today, the Project transportation corridors, US 6 and SH 119, provide access to spectacular beauty, abundant wildlife, U.S. Forest Service lands, scenic trails and byways (e.g. the Peak to Peak Scenic & Historic Byway, a part of SH 119), recreation, cultural activities (e.g. opera, museums, restaurants, and small business retail outlets) and the Central City-Black Hawk National Historic District. The Peak to Peak connects small towns and gives many people the options of things to do (including festivals and events). The area has water sports, mine tours, skiing, gaming, horseback riding, and hiking. The corridors are highly utilized for day trips and serve as a vital link to safely connect the jobs in the mountainous area to major Front Range urban areas (including Denver, Fort Collins, and Greeley) and intermountain residential communities. The US 6 highway provides access to the Frei Quarry, which is the principal aggregate supplier for the Front Range area and generates multiple jobs.

The highways within this corridor have experienced a three-fold (382 percent) increase in traffic volume from 1991 to 2009. Transit providers have successfully moved employees and visitors to the Central City and Black Hawk area. However, traffic growth has resulted in decreased safety, increased accidents and traffic fatalities, and traffic congestion. Due to new rules allowing 24-hour gaming and other increased recreational activities in the corridor, the Colorado Department of Transportation (CDOT) anticipates continued increases in traffic, and major problems with pavement, congestion, and safety.

Activities have been monitored by CDOT within the area for the past 10 years, and improvements must be made to accommodate the growing traffic volumes. Table 1 describes the Project components and costs (\$55 million of which is requested in TIGER II grant funding) that will improve the conditions in Clear Creek Canyon and support CDOT’s goal of environmental and economic recovery.

NORTH CLEAR CREEK CORRIDOR | CLEAR CREEK CANYON, COLORADO

Table 1. Project Details, Challenges, Solutions, and Relevant Data

Project Component and Description	Challenge	How Project Addresses Challenge	Relevant Data	Cost \$ million
SH 119 Main Street South - MP 4.9 to 6.3: Cooperative project between agencies with components listed below.	Agencies have limited budgets for high cost environmental/transportation work within a common area.	Agencies formed agreements and combined projects to achieve a common goal and reduce costs through economies of scale.	NCCMAC Partnership (see Section B, <i>Project Parties</i> )	
SH 119 MP 5.9 to 6.3 (0.4 miles): <ul style="list-style-type: none"> <li>▪ <b>Highway Widening</b>, - Widening from two to four lanes (0.4 miles of SH 119) to improve mobility and allow vehicles to safely pass slower vehicles.</li> <li>▪ <b>Multi-Use Recreation Path and Historic Signing.</b></li> <li>▪ <b>Stream Restoration</b> –Reconstruct North Clear Creek.</li> <li>▪ <b>Central City/Clear Creek Superfund Site</b> – Clean up mine wastes in North Clear Creek and/or construction areas.</li> </ul> SH 119 MP 0.1 to 4.9 <ul style="list-style-type: none"> <li>▪ <b>Surface Treatment and Safety</b> - Asphalt overlay and safety improvements.</li> </ul>	<p><b>Widening:</b> High accident rate on sharp curves through project and traffic congestion interferes with operation of passenger buses</p> <p><b>Path:</b> Lack of trail connectivity inhibiting bicycle and pedestrian mobility.</p> <p><b>Stream:</b> Degraded and polluted section of North Clear Creek dates back to 1850s mining activities, reduced fishery, visual blight.</p> <p><b>Superfund Site:</b> Mine waste materials contain acid-forming sulfide minerals and toxic metals that leach out resulting in damage to portions of the Clear Creek Watershed.</p> <p><b>Surface Treatment:</b> Asphalt surface has exceeded design life; continuous maintenance is required to sustain existing Poor condition.</p>	<p><b>Widens</b> highway; improves curve radius; providing safe shoulders; provides additional lane capacity.</p> <p><b>Path</b> allows user access to the restored creek; prevents vehicular and pedestrian conflicts; interpretive signing informs users about the area’s rich mining history.</p> <p><b>Restore stream habitat</b> to support aquatic life (including brown trout, <i>Salmo turtta</i>) and improve the water quality for the Clear Creek Watershed (a recreation and water resource for the Denver metro area).</p> <p><b>Superfund Site</b> mine tailings are removed and either encapsulated under the roadway or hauled offsite to a repository. Mine drainage treatment facility pad. This is a cooperative effort between CDOT, CDPHE, and the EPA.</p> <p><b>Surface Treatment:</b> Overlay will repair surface and upgrade guardrail to current standards, raising the rating to Good condition.</p>	Not applicable	27.0
<ul style="list-style-type: none"> <li>▪ SH 119 MP 4.9 to 5.9 (1.0 mile):</li> <li>▪ <b>Highway Widening</b> - Widening from two to four lanes to improve mobility and allow vehicles to safely pass slower vehicles. Mitigate disturbed mine waste piles</li> <li>▪ <b>Multi-Use Recreation Path and Historic Signing..</b></li> <li>▪ <b>Central City/Clear Creek Superfund Site</b> – Clean up mine wastes in North Clear Creek and/or construction areas.</li> </ul>	<p><b>Widening:</b> High accident rate on sharp curves through project and traffic congestion interferes with operation of passenger buses. Potential for mine tailings to be uncovered during highway construction</p> <p><b>Path:</b> Lack of trail connectivity inhibiting bicycle and pedestrian mobility.</p> <p><b>Superfund Site:</b> Mine waste materials contain acid-forming sulfide minerals and toxic metals that leach out resulting in damage to portions of the Clear Creek Watershed.</p>	<p><b>Widens</b> highway from 2 to 4 lanes while improving the curve radius, providing safe shoulders off the highway, and providing additional lane capacity.</p> <p><b>Path:</b> allows user access to the restored creek; prevents vehicular and pedestrian conflicts; interpretive signing informs users about the area’s rich mining history.</p> <p><b>Superfund Site</b> mine tailings are removed and either encapsulated under the roadway or hauled offsite to a repository. This is a cooperative effort between CDOT, CDPHE, and the EPA.</p>	<p><a href="#">Accident information</a> and <a href="#">traffic count data</a>, accident reduction analysis.</p> <p>Jefferson County Open Space trail plans for connectivity and economic opportunities.</p> <p>EPA and CDPHE reports.</p>	29.0
<b>Intelligent Transportation System</b> - Improvements for 0.6 miles of SH 119 (MP 0.0 to 0.6) and 14.5 miles of US 6 (MP 257.1 to 271.6).	The lack of communication systems in the canyon increase accident response time, increasing severity of injuries and the fatality rate. Lack of communication hinders development and growth.	Install variable message signs, emergency call boxes, fiber optic communication lines, video cameras, remote weather stations, and road closure gates.	<a href="#">CDOT Traffic studies</a> , <a href="#">traffic counts</a> , <a href="#">accident and response statistics</a> , <a href="#">heavy recreation usage</a> .	20.0

NORTH CLEAR CREEK CORRIDOR | CLEAR CREEK CANYON, COLORADO

Project Component and Description	Challenge	How Project Addresses Challenge	Relevant Data	Cost \$ million
<b>US 6 Rockfall Mitigation</b> -MP 257.1 to 271.6: Rockfall mitigation on 14.5 miles of US 6 includes rock scaling and installing rockfall mesh in six high hazard locations.	Steep 30% or greater grade rock slopes continuously release rocks onto highway, creating hazards to the road users and causing accidents.	Install rock mesh and fences to keep rocks on slope or catch rocks before they hit the highway	<a href="#">CDOT rockfall studies</a> , accident reports, maintenance concerns.	<b>4.7</b>
<b>US 6 and SH 119 Rockfall Monitoring</b> - MP 257.1 to 271.6: Installation of electronic rockfall monitoring equipment in select areas of US 6 and SH 119 for identification of future rockfalls and protection of travelers.	A few areas have potential for failure and the rock cannot be easily removed.	Install monitoring systems so stability of rock face can be determined.	<a href="#">CDOT rockfall studies</a> .	<b>1.3</b>
<b>TOTAL PROJECT</b>				<b>\$82.0</b>
<p><i><b>NCCMAC</b>=North Clear Creek Mitigation Advisory Committee, <b>CDPHE</b>=Colorado Department of Public Health and Environment, <b>EPA</b>=Environmental Protection Agency, <b>Red</b> = Unfunded Project and amount of request for TIGER II funding, Component <b>Green</b> = Funded Project Component</i></p>				

The website providing supporting documentation is available at [http://www.northclearcreekproject.org/tigerGrant\\_02.html](http://www.northclearcreekproject.org/tigerGrant_02.html).

## B. Project Parties

Receipt of the TIGER II Grant funds will benefit CDOT and the North Clear Creek Mitigation Advisory Committee (NCCMAC) partnership. The NCCMAC partnership formed in January 2007 ([see Memorandum of Understanding](#)) to facilitate the efforts of CDOT, CDPHE, and EPA on the Project corridor. The objective of NCCMAC is to coordinate efforts, share information, combine expertise and resources, and develop a program of mutual cost and labor savings. This project builds on the cooperation, planning, engineering, and development by the NCCMAC team (partners are listed in the yellow box). All parties benefit by jointly utilizing the limited space available in the North Clear Creek valley and integrating environmental mitigation with the highway design. Additionally, CDOT is working with Jefferson County Open Space, Clear Creek County, and Gilpin County on current and future trails to improve bicycle and pedestrian safety and access in the corridor.

<p><b>Active NCCMAC partners:</b></p> <ul style="list-style-type: none"> <li>• City of Black Hawk</li> <li>• Colorado Dept. of Public Health &amp; Environment (CDPHE)</li> <li>• Colorado Dept. of Transportation (CDOT)</li> <li>• Colorado Division of Reclamation Mining &amp; Safety</li> <li>• Colorado Division of Wildlife (CDOW)</li> <li>• Colorado School of Mines</li> <li>• Gilpin County</li> <li>• Silver Dollar Metro District (SDMD)</li> <li>• United States Army Corp of Engineers (the Corps)</li> <li>• United States Environmental Protection Agency (EPA)</li> <li>• United States Federal Highway Administration (FHWA)</li> <li>• University of Colorado Denver</li> </ul>
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## C. Grant Funds and Sources and Uses of Project Funds

The Project will be funded from multiple sources as shown in Table 2 below. The NCCMAC team is committed to keeping the project going but, due to decreases in transportation revenue, this project requires additional federal assistance. All design and right-of-way funds have already been obligated.

*Table 2. Sources and uses of Project and TIGER II grant funds*

Organization (source of funds)	Funding Amount	Activities	Percent Share (numbers are rounded)
CDPHE & EPA	\$4,950,000	Design work, treatment plant pad site, mine/mill waste cleanup, and stream restoration	6
SDMD	\$2,800,000	Right-of-way acquisition, website support, grant applications and construction	3
City of Black Hawk	\$30,000	Right-of-way donations	<1
FHWA	\$700,000	Multi-use trail construction and Historical Markers	1
CDOT	\$18,592,000	Design, right-of-way, and construction	23
<b>Total Obligated Funds</b>	<b>\$27,072,000</b>	Activities above are underway.	<b>33</b>
<b>TIGER II Grant Request</b>	<b>\$55,000,000</b>	Highway widening and curve straightening, rockfall mitigation, and installation of intelligent transportation system.	<b>67</b>
<b>Total Construction Cost</b>	<b>\$82,072,000</b>		<b>100</b>

*Article X Section 20 of the Colorado Constitution prohibits governmental entities from incurring multiyear debt under most circumstances. Within the meaning of the Colorado constitution, a TIFIA loan constitutes debt. Accordingly, there are only two circumstances where a Colorado applicant can*

utilize a TIFIA loan. The first is the applicant has an enterprise based plan which includes a fee based repayment source. The second, if there is time between the TIFIA loan offer and subsequent regularly scheduled election prior to the September 30, 2012 obligation date the entity would have to place the question of accepting and repaying the TIFIA loan on the ballot.

**D. Selection Criteria**

**1. Primary Selection Criteria**

**(a) Long-Term Outcomes**

**(i) State of Good Repair**

According to CDOT’s rating system, the existing road conditions on the relevant sections of SH 119 are considered “poor.” Issues of deterioration will be addressed by upgrading and reconstructing the roadways, bringing the relevant road sections to a “good” rating (Table 3). Life cycle costs for the Project are minimized by applying CDOT and FHWA Life-Cycle Cost Software, resulting in a projected roadway maintenance annual cost savings of \$38,500 per year. For example, using concrete paving on the Main Street South component will result in low maintenance costs until 2040. The Project is appropriately capitalized and uses asset management approaches that optimize long-term cost structure. Additional details of the financial feasibility of the Project are provided in Section (c)(vi).



SH 119 asphalt damage.

Table 3. Current and projected condition and performance in the Project area

	Pavement		Accident Rate		Operations***		Environment	
	Before	After	Before	After	Before	After	Before	After
<b>SH 119</b>	Poor	Good	Above Average	Reduced 84% for widened section	LOS E	LOS B**	Degraded Stream, sediment runoff, wildlife fatalities	Restored stream, improved water quality, reduced animal collisions

\* While accident rate is only improved, accident response and traffic management are greatly enhanced

\*\* Operations for widened portions are improved for widened portions only and signal operations at Main Street

\*\*\*Operations overall will benefit from traffic management

**Current Conditions:** The section of SH 119 to be widened includes five sharp curves that experience high accident rates, rockfall incidents, and congestion. This section does not meet American Association of State Highway and Transportation Officials (AASHTO) Design Standards. In addition, the [Colorado Rockfall Hazard Rating System ranks multiple locations on SH 119 and US 6 as high rockfall hazards](#). The Project includes a CDOT Traffic Safety Assessment to ensure best safety design approaches at the lowest cost.



*Some highway curves were not designed for today's traffic.*

The Gilpin County economy, including the areas of Black Hawk and Central City, relies on outdoor recreation and tourism. Black Hawk and Central City comprise the largest gaming center in Colorado. The negative effects of current road conditions (including crashes, traffic congestion and road closures), constrain and threaten the development of these important regional economic activities.

Most Gilpin County residents commute to other areas for work, shopping, and vital services. Additionally, gaming and tourism employees who work in Black Hawk and Central City commute daily from the Denver metro area, along with

visitors. The long-term impacts of poor access are detrimental to the economic growth and sustainability of Gilpin County.

**Environmental Rehabilitation.** The goal of EPA and CDPHE is to improve North Clear Creek so that the water can support a reintroduced brown trout population. Metals such as zinc, cadmium, and manganese must be reduced in order for fish to survive in North Clear Creek between Black Hawk and the confluence with Clear Creek. In addition, parts of the stream will be reconstructed in order to create the cool water temperatures and shaded areas required for fish habitat.

**Water Treatment.** Downstream municipal water providers rely on Clear Creek for all or part of their water supplies. The Mine Drainage Treatment Facility planned for North Clear Creek will stop polluted mine discharges from entering the creek but is dependent upon completion of this Project. The environmental restoration activities will result in less pollution and increased water quality in North Clear Creek, creating the potential for reduced operating costs for municipal utilities when the facility begins operations.<sup>1</sup>

**Long-term Operations and Maintenance.** Larger resurfacing projects are typically funded by CDOT resurfacing program (using FHWA funding) for projects identified with poor pavement condition. CDOT can request Colorado General Fund revenue to maintain the roadways in this corridor. A portion of tax revenue from limited stakes gaming has been used to prepare the Project designs. The CDOT maintenance budget for Project improvements is covered by the Colorado Highway Users Trust Fund.

The Mine Drainage Treatment Facility will be operated by CDPHE. All operations and maintenance costs will be paid for by EPA and CDPHE (as part of the Superfund sites clean-up agreement). The CDPHE portion of the continued operation expenses are paid from the Hazardous Substance Response Fund (a cash fund supplied by service fees at Colorado landfills).

### ***(ii) Economic Competitiveness***

Long-term economic benefits from the Project will result in increased economic competitiveness and revenues. Project construction will provide improved access to recreational activities; increased tourist visits and gaming activity; more efficient transportation of commercial goods; safer and more reliable movement of commuting workers; and generation of new, permanent employment opportunities.

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<sup>1</sup> Interview with Ann Beierle, Water Quality Coordinator, City of Golden, August 2009.

**Tourism.** The project area provides a unique experience for international visitors that benefits not only the regional economy, but enhances long-term economic competitiveness on behalf of the United States. While gaming experiences can be found in many locations world-wide, the combination of casinos, opera and theater, Old West historic locations, scenic highways, and a state and national forest, are available only in this area. A 2007 study for the Colorado Department of Tourism found that international tourists expressed an interest in visiting a casino, historic places, small towns, gold mining, and ghost town tours.<sup>2</sup> Black Hawk and Central City are well situated to take advantage of this tourist population, especially given the close proximity to the Denver International Airport.



*Downtown Central City offers visitors visible examples of gold mining and Rocky Mountain regional history.*

Research has shown that transportation impediments (including poor road conditions, congestion and delays) have a negative impact on tourism and that transportation investment can help to increase tourist volumes.<sup>3</sup> Tourism provides an excellent economic stimulus because it brings outside dollars into a region. In addition, easy access for tourists encourages bicycle rentals, purchase of fishing supplies and equipment, commercial white-water rafting and kayaking, dining, and community amenities such as bike and walking trails. The Project will enhance the experience of all visitors to Black Hawk and Central City, thus improving the economic competitiveness of not only the local area, but also of Colorado and the United States.

**Gaming Activity.** Casinos were ranked 6th in Colorado's 2005 travel market segments; the corridor accesses the largest casino district in the State.<sup>4</sup> Colorado's gaming laws changed in July 2009 to expand gaming hours, betting limits and available games. Future gaming demand, if unconstrained by road conditions, is projected to increase an estimated 20 percent shortly after this change and then grow 7 percent per year<sup>5</sup>. These increases will only be realized with the Project improvements.

The combination of increased gaming activity and the Project improvements will result in increased casino revenues. Tax revenues are allocated to the Colorado community college system, several state agencies, and the General Fund. Local agencies benefit from increasing tax revenues, which has already resulted in acquiring Open Space in Gilpin and Jefferson Counties.

The increased casino revenues will also result in new employment opportunities. The projected additional permanent gaming employment and wages resulting from Project improvements are shown in Table 4. These are direct, high quality jobs for the service industry: average pay is more than \$35,000 per year. Not included in the Table 4, the wages earned by these workers will be spent in their local communities, indirectly creating 1,250 additional jobs and \$57.6 million of additional earnings by 2030.

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<sup>2</sup> PhoCusWright Inc., International Leisure Visitors to Colorado, Final Report, Conducted for the Colorado Tourist Office and Recommendations, November 2007.

<sup>3</sup> Greenhome & O'Mara, Inc. and others, National Cooperative Highway Research Program (NCHRP) Report 419: Tourism Travel and Transportation System Development, Washington, D.C.: Transportation Research Board, National Research Council, 1998, 42.

<sup>4</sup> Longwoods International, Colorado Travel Year 2006, May 2007.

<sup>5</sup> Felsburg, Holt & Ullevig, SH 119 Traffic Evaluation, May 2004.

Table 4. Projected gaming industry taxes, employees and annual wages created by Project improvements 2012 to 2030

Year	Gaming Industry Taxes Paid (million \$)	Number of Employees	Annual Wages (million \$)
2012	\$6.2	401	\$14.1
2015	\$14.7	624	\$21.9
2020	\$33.1	1,043	\$36.7
2025	\$59.0	1,529	\$53.7
2030	\$95.3	2,092	\$73.5

Source: Colorado Division of Gaming; Bureau of Labor Statistics, 2008; Harvey Economics.

Note: Figures in table are related to a particular year and are not cumulative. Annual wages are expressed in 2008 dollars.

**Commercial Business Activity.** Commercial businesses depend on safe and convenient routes to transport goods. The average daily traffic on SH 119 includes 380 trucks, compared with 1,096 trucks on US 6. Interstate-70 contains 6 and 7 percent grades between MP 247 and 259 with high accident rates and frequent closures. US 6 may provide a superior alternative as it is less steep and provides easier transport. Businesses in the area include an aggregate quarry, a hot mix asphalt plant, and a concrete batch plant. The quarry is planning to expand, which will increase truck trips and congestion without this Project. Commercial recreational outfitters in Golden and Denver will also benefit from increased access to state forests, open space, and Clear Creek Canyon. Additionally, goods are transported from Denver area businesses to hotels and restaurants in Black Hawk and Central City. Accident and traffic delays increase delivery times; fuel and vehicle costs, which increases costs to these businesses. Increased traffic from the change in gaming rules may increase these impacts to commercial traffic. The Project improvements will reduce costs and improve efficiencies for commercial traffic in the Project area.

**Recreational Activity.** Fishing is a popular activity on Gilpin County’s streams. In 2007, Colorado residents and non-residents participated in over 10 million fishing activity-days in the state; 7,860 of those days were spent fishing in Gilpin County. In that year, the total economic impact of angler spending to Gilpin County was \$80,000. The improvement in the water quality of the North Fork of Clear Creek and in the vegetation adjacent to the Creek will provide suitable fish habitat for the brown trout in the North Fork and will improve habitat on the main stem of the Creek. Improvements to fishing on Clear Creek should provide modest, but positive economic benefits to the area.

**Long-term Water Treatment Plant Employment.** The planned Mine Drainage Treatment Facility (dependent upon completion of this Project) will likely employ one certified operator and three other support employees. The four full-time employees will earn total annual wages of about \$173,000.<sup>6</sup> Annual operating expenditures of the facility, in addition to wages, are expected to be about \$525,000.<sup>7</sup> These jobs and expenditures will induce an additional 6 permanent jobs. Total annual economic impact of the Mine Drainage Treatment Facility is expected to range from about \$1.4 million in 2010 to about \$2.4 million by 2030.

<sup>6</sup> Bureau of Labor Statistics, *Quarterly Census of Employment and Wages for Jefferson County*. Because of the small number of employees for Gilpin County, these data were not disclosed. Wages are reported in 2008 dollars.

<sup>7</sup> Annual operating expenditures are reported in 2008 dollars.

***(iii) Livability***

The Project will improve the living and working environments for Gilpin County and Clear Creek residents, commuters (from the Denver metro area), neighboring county residents, and visitors by providing improved transportation efficiency; access to jobs, services, and centers of trade (Denver); and safer driving conditions. The visual resources of the area are spectacular and valuable to residents and investors, as well as the tourists from around the world who travel through Clear Creek Canyon (Jefferson County Central Mountains Community Plan, 1994, p. 17). CDOT's commitment to Context Sensitive Solutions and Environmental Justice will be enhanced by CDOT minimizing visual disruption through sensitive site planning; improving water quality (including a Mine Drainage Treatment Facility); and ensuring equitable access to parks, recreation, and education.. The Project has lower total life cycle costs through partnering with state and local agencies and the private sector (NCCMAC).

"Residents of the mountainous area are concerned with balancing the preservation of their rural lifestyle with the development of their economic base. In addition, mountain towns wish to retain their historic nature and sense of community" (DRCOG, 2030 *Mountains and Plains Transportation Plan*).

According to the Denver Regional Council of Governments (DRCOG) data on workforce commuting patterns, about 73 percent of employed Black Hawk residents and 89 percent of employed Central City residents commute out of the area for work. Less than four percent of Gilpin County's 6,100 casino employees live in the two cities. The remaining workers commute from more than 20 communities in the Denver metro area, which creates a large influx of workers into Gilpin County each day. Although commercial development in Gilpin County has grown dramatically since the advent of gaming in 1991, there are few services available in the county and residents must leave the area for groceries, medical services, higher education, and other necessities. Additionally, a relatively high proportion of Gilpin County residents are elderly or disabled (compared to Denver area residents), making improved access important. Project area residents must use these roads in order to attend all school levels. College students also must travel by bus or car to outlying areas to obtain their education.

Providing timely and dependable access to emergency medical services is a major component of this project. Gilpin County has no hospitals. That means, depending upon the location in the county, emergency care is 25 to 50 miles away from the nearest metropolitan Denver hospital. Local ambulances average 2.5 trips per day, and twice as many on weekends. A lack of communication means that an ambulance can be delayed by accidents in Clear Creek Canyon on US 6 and SH 119. The rerouting can add as much as a half -hour delay. The proposed ITS system will not only expedite response to incidents in the canyon, but will assure timely detour routing of all emergency calls from Gilpin County to metropolitan Denver medical facilities.

Non-existent radio and poor phone communications within the corridor have been identified as the largest issue to be addressed in the Incident Management Plan for the traveling public, area residents, local businesses, transit companies and emergency responders.

CDOT is coordinating planning activities with other agencies and using Travel Demand Management (TDM) to improve livability, safety, access, mobility and recreational opportunities throughout the Corridor. Due to the size of the improvements that are planned, early action projects have been identified and are being constructed as funding becomes available. These include trail segments in Jefferson and Gilpin Counties, parking improvements and turn lanes, informational signing, and highway widening. An Incident Management Plan (IMP) is being developed specifically for the corridor with the aid of local, city, county, and state agencies. The

ITS component of the Project will improve communications, improve incident response time and help reduce traffic impacts.

**Recreation and Environment.** The Project will improve livability by reducing negative environmental impacts and bring recreational improvements to the whole region through the following:

- Improved access to the Peak to Peak Highway (designated as a Scenic Byway), which provides access to Rocky Mountain National Park, Golden Gate Canyon State Park, Centennial Cone and Clear Creek Canyon Open Spaces, Arapaho and Roosevelt National Forests, the Indian Peaks Wilderness Area, Eldora Ski Resort and ghost towns at Hesse and Apex. Anecdotal evidence indicates more residents of the Denver metro area (especially Hispanics and those economically disadvantaged) are utilizing parks and national forests for “staycations.” Clear Creek Canyon has always been popular for family picnics.



*Rock climbing is just one of the varied recreational resources available.*

- Improved water quality, wildlife habitat, and viewing opportunities resulting from water quality improvements to the North Fork of Clear Creek.
- Improved pedestrian and bicycle access by extending the existing multi-use trail in Black Hawk along SH 119 and Clear Creek. The extended trail is expected to eventually connect with existing and planned trails along US 6 in Jefferson and Clear Creek Counties, allowing Gilpin County trail users’ access to the entire Denver area trail system.

**Bus Service.** Two commercial bus services provide transportation to Black Hawk and Central City for tourists and casino employees. These bus services provide the highest transit usage in Colorado, carrying approximately 30 percent of the employees and tourists traveling to these towns. In 2008, more than 172,000 visitor trips and 213,000 employee trips were made on these buses. These buses face costs associated with traffic delays and potential safety issues from sub-standard road conditions.

These bus services provide access to economically disadvantaged populations, non-drivers, senior citizens, and persons with disabilities, who may not own personal vehicles. At least one bus stop is located in Commerce City, an economically disadvantaged area that has employees who work in both Black Hawk and Central City.

ITS will improve bus service by alerting drivers to traffic delays and road conditions; roadway improvements will decrease transit travel time and attract new riders.

**Public Participation.** Public participation is a key element in any transportation planning process. CDOT complies with all federal and state regulations regarding open and inclusive public participation. The transportation planning process for the Project involved local citizens, cities, towns, counties, elected officials, CDOT, and DRCOG. Through the Statewide Transportation Advisory Committee, members of each Transportation Planning Region (TPR) are provided an avenue by which to communicate on plan development to the Colorado Transportation Commission.

Since January 2008, CDOT has met with many local governmental and private groups as part of its efforts to coordinate with land use planners and public stakeholders. Between January 2007 and June 2010, NCCMAC and its subcommittees have met at least 30 times to coordinate the many aspects of this project. In addition to the NCCMAC participation, CDOT has made presentations to the following local planning and citizen groups: Gilpin County, Clear Creek County, Town of Black Hawk, Town of Central City, Upper Clear Creek Watershed Association, Jefferson County Open Space, State Historical Preservation Office, and Douglas Mountain Residents Association. These meetings have included field trips to review potential impacts to historical landmarks; coordinating biking, pedestrian and parking options with county Open Space officials; presentations to county commissioners, meeting with a local homeowners association regarding impacts to traffic patterns; and an open house to discuss traffic improvements and land ownership effects.

CDOT has responded to information provided by local entities. For example, the local homeowners association wanted easier access to and from SH 119. Turn lanes and acceleration/deceleration lanes have been designed to address their concerns. Aesthetic design of the corridor incorporated public input on the colors and textures of structural components. These details exemplify ongoing interactions with affected groups and communities.

**Economic impacts of traffic delays.** Crashes and delays have a relatively large impact due to single lane structure, tunnels and lack of shoulders in some locations. Between September 2008 and July 2009, there were 14 occasions when automobile crashes caused sections of SH 119 and US 6 to be closed. The closures averaged more than two hours per closure, with more than half of the closures affecting both directions of traffic. Commuting employees are consistently delayed during peak periods on weekends and holidays. Gaming industry revenues and associated tax benefits are reduced because customers either have less gaming time or divert altogether out of frustration with traffic. Project improvements would reduce delays and congestion, resulting in substantial time and cost savings for all drivers.

**\$3.5 million . . .**  
Is how much traffic delays in the Project area were conservatively estimated to cost in 2008.

***(iv) Sustainability***

The North Clear Creek Corridor project is a study in efficiency which benefits from the Context Sensitive Solution (CSS) approach with short term savings on construction (Table 5) and long term savings on operations (Table 6).

**\$9,409,000 - Total Long-Term Savings over 20 years**  
\$ 433,000 - Total fuel cost saved per year  
\$ 37,500 - Total value of CO<sub>2</sub> emissions saved per year

Table 6 shows that a reduction in fuel use yields a corresponding reduction in carbon dioxide (CO<sub>2</sub>) emissions. This, in turn, yields an economic and environmental benefit.

Table 5. Construction phase energy and emission savings

Activity	Project Green Alternative	Construction Savings	Fuel Savings (Gallons)	⇒ CO <sub>2</sub> Savings (Metric tons)	⇒ Benefits
Haul off excess excavation	Partner with CDPHE	\$1,500,000	83,334	831	\$1,804,925
Import fill and riprap for Superfund cleanup	Reuse excess from Main Street	\$2,230,000	100,000	1,010	\$2,596,330
Quarrying of import fill and riprap virgin source	Reuse excess from Main Street	n/a	4,131	41	\$ 15,118
Two resurfacing projects not needed in the next 20 years at Main Street South	Longer service life of concrete paving	\$ 760,000	15,837	158	\$817,951
<b>Totals</b>		<b>\$4,490,000</b>	<b>203,302 Gal</b>	<b>2,040 Mtons</b>	<b>\$5,234,324</b>

Table 6. Total long-term fuel and emission savings following Project completion (2010 - 2030)

Source	Action	Fuel Savings (gallons)	Value	CO <sub>2</sub> Savings (Mtons)	Value
Detours due to closures on US 6 and SH 119	ITS allows timely diversions; rockfall mitigation reduces annual closures	1,339,057	\$4,459,059	11,670	\$385,099
Crashes at Main Street South SH 119	New alignment nearly eliminates high crash rate	20,098	\$66,927	175	\$5,787
Crashes elsewhere in corridor	Quicker response time reduces delays; rockfall mitigation reduces accidents	166,528	\$554,539	1,453	\$47,951
Delays due to congestion	Eliminate bottleneck at Main Street South	1,074,969	3,579,646	9,380	\$309,530
<b>Totals</b>		<b>2,600,652</b>	<b>\$8,660,172</b>	<b>22,678</b>	<b>\$748,366</b>

Additional environmental benefits of the Project facilitate the clean-up of the Central City/Clear Creek Superfund site. This is accomplished concurrently with highway infrastructure improvements. Environmental impacts from historic gold mining has left behind a largely lifeless and disturbed North Clear Creek landscape scarred by numerous abandoned mining features.

Environmental benefits of the coordination with other entities include:

- Locating the Mine Drainage Treatment Facility on CDOT right of way to treat contaminated water prior to discharge to North Clear Creek. Design and construction of a pipeline that will convey contaminated water to the Mine Drainage Facility.
- Cleanup and closure of abandoned former mine sites and features from the project area that contribute to degraded surface and ground water quality due to heavy metals loading and acidic mine drainage.

- Improved stream morphology and water quality of North Clear Creek to restore aquatic habitat for brown trout and surface water bodies downstream (including Clear Creek and the South Platte River).
- Improved riparian environment of North Clear Creek, including the planting of willow and cottonwood trees.



*Project improvements will restore aquatic life in North Clear Creek.*

Environmental benefits of the Project include:

- Reduced vehicular accidents, reduced rate and severity of hazardous materials spills, reduced potential impacts to riparian habitat, recreational resources in Clear Creek Canyon, and drinking water supplies due to safety improvements.
- Decreased emergency response time in the event of hazardous materials spills and emergency response situations due to implementing ITS improvements.
- ITS improvements that provide real-time information to travelers. Less congestion is anticipated, which will result in improved vehicle efficiency and reduced greenhouse gas emissions.

**(v) Safety**

Safety is a primary concern driving completion of several of the Project highway components. Traffic volumes on these highways have risen substantially over the past several years as a result of the activities in Black Hawk. Currently, there are 1,764 crashes per year on SH 119 and US 6. The curve radius and sight distances on these old roads are well below today’s standards.

The economic **benefits** of crash reductions are **\$1.4 million** in 2012 and **\$2 million** per year by 2030 if this project is funded.

**Impacts of traffic crashes.** Traffic volumes on SH 119 and US 6 have increased dramatically since 1991 (Table 7).<sup>8</sup> These increases have resulted in deteriorating safety performance as well as serious or fatal injuries.

*Table 7. Average Annual Daily Traffic (AADT) by gaming area and statewide Vehicle Miles Traveled (VMT)*

Location	Measure	1991	2008	2009	Increase (from 1991 to 2009)
SH 119 & US 6	AADT (No. of vehicles)	3,050	13,485	14,704	382%*
Colorado State Highway System	VMT (No. of miles in billions)	18.2B	28.1B	Data not available	55%**

\*Increase from 1991 to 2009

\*\*Increase from 1991 to 2008

<sup>8</sup> State of Colorado FY 10-11 Budget Request Cycle: Transportation

Table 8 shows current numbers and costs of traffic crashes on SH 119 and US 6. This project will reduce the number of crashes and associated costs.

Table 8. Number and cost of vehicle crashes, SH 119 and US 6, 1995-2007

Type of Event	Location		Annual Average Cost (in Millions)
	SH 119	US 6	
Property Damage Only	558	854	\$0.50
Injury	327	508	\$4.20
Fatality	11	35	\$23.90
<b>Total</b>	<b>896</b>	<b>1,397</b>	<b>\$28.60</b>

Notes: In 2005 a rockfall closed US 6 for 3 months. Costs expressed in 2008 dollars. Source: National Highway Traffic Safety Administration. The Economic Impact of Motor Vehicle Crashes 2000, 2002; US Department of Transportation, Treatment of the Economic Value of a Statistical Life in Department Analyses – 2009 Annual Revision; Colorado Department of Transportation, and Harvey Economics 2010.

**The SH 119 widening component** will provide for four lanes of traffic separated by a raised median. The platform will be widened to include a minimum eight-foot shoulder. The curve radius will be increased to above current standards and will provide for adequate sight distances so users can avoid collisions. Turn lanes are added at intersections with high crash rates. Appropriate clear zone or guardrail will allow cars adequate room to recover should they leave the highway. An accident reduction analysis was completed for this section of roadway. The analysis shows an average of 13.7 crashes per year occur on the 1.4-mile section of SH 119. Given the roadway improvements to this section of roadway, 11.5 of these crashes would be prevented annually.

Project roadway improvements to the 1.4 mile section of SH 119, would reduce 84% of annual crashes.  
Project rockfall mitigation would reduce rockfall-related crashes on US 6 by 50% per year.

There has been a 382 percent increase in traffic volume on SH 119 since the start of gaming. Historical average annual growth rates were applied to the most recent traffic data to provide estimates of future traffic volume. Project improvements would allow for additional traffic volume on SH 119 and US 6. Between 1995 and 2006, there was an average of 4.65 crashes per 1,000 vehicles of traffic. As traffic volume increases, the number of crashes is likely to increase as well.

**The ITS component** will reduce accidents by providing travelers with improved communication, and real time information about roadway conditions and accidents. Emergency responders have no radio communications along much of the corridor. The steep canyon walls and twisting alignment reduce the range of new digital radio systems. The fiber optic backbone will allow the Colorado State Patrol (CSP), CDOT Maintenance Staff and other Emergency Responders to communicate throughout the corridor. Timely communication reduces response time and aids in clearing incidents faster. If an accident occurs, CDOT can quickly activate Variable Message Signing to notify motorists. CDOT will be able to monitor road conditions during inclement weather and improve emergency response to changing conditions. The ITS system will also include call boxes throughout



Emergency response radio communication is lacking in the steep canyons of the Project corridor.

the canyon, which currently does not have cell phone coverage. These boxes will allow people to call CDOT in emergency situations, which will decrease response time to incidents.

**The Rockfall mitigation component** also includes safety aspects. By installing rockfall mesh and fences at six high-hazard locations on US 6, rocks and boulders will be controlled from falling onto the roadway and passing cars. There are currently an average of 21 crashes per year due to falling rocks on US 6, resulting in property damage, injuries and fatalities. The rockfall mitigation measures will reduce crashes by 50 percent.



Table 9 illustrates traffic volume and crash projections on portions of SH 119 and US 6 affected by Project improvements, including annual cost savings associated with crash reductions.

Table 9. Projected Average Annual Daily Traffic (AADT) volume and crashes WITHOUT and WITH Project improvements on the affected portions of SH 119 and US 6

Year	Without Project Improvements					With Project Improvements					Total Cost Savings	
	AADT # of Vehicles	# of Crashes				AADT # of Vehicles	# of Crashes					
		PDO	Injury	Fatality	Total		PDO	Injury	Fatality	Total		
2012	16,290	22	17	0	40	21,180	11	8	1	0	19	\$1,413,000
2015	17,210	24	18	0	42	22,380	12	9	0	0	21	\$1,493,000
2020	18,870	26	19	0	46	24,530	13	9	0	0	23	\$1,637,000
2025	20,680	28	21	1	50	26,890	14	10	0	0	25	\$1,794,000
2030	22,670	31	23	1	55	29,480	15	11	0	0	27	\$1,967,000

Avg = average, PDO = Property Damage Only  
 Source: CDOT, Parsons; Harvey Economics, 2010.  
 SH 119 crashes include only those on portions affected by widening. US 6 crashes include those related to rockfalls only. PDO, injury and fatality crashes may not sum to totals due to rounding.

**(vi) Evaluation of Expected Costs and Benefits**

A summary of the benefit- cost analysis for the Project is in Tables 10A and 10B below. The summary includes quantifiable benefits and costs only. The full spectrum of benefits would include items that are not able to be quantified at this time (such as benefits related to environmental rehabilitation). These qualitative benefits are equally important to those included in the summary calculations. The benefit-cost analysis compares the benefits and costs of the Project with TIGER II funding to those of the Project without TIGER II funding. It is not a comparison of build and no-build scenarios. Net Project benefits, after accounting for costs, amount to over \$616 million through 2030. The Project will yield a benefit-cost ratio of 8:1 over the next 20 years, compared to the Project without TIGER II funding.

The full [benefit-cost analysis](#), including detailed calculations of annual benefits and costs for each of the three Project components (Highway Widening and Curve Straightening, ITS, and Rockfall Mitigation) is available on the Project website. The analysis includes benefit and cost calculations using the alternate 3 percent discount rate. Accompanying the detailed benefit-cost spreadsheet is a [text narrative](#) that provides explanation and support for the overall analysis and calculations.

Table 10A. Summary of Project benefit cost analysis (including three components), using a 7 percent discount rate, 2010 – 2030

Project Component	Benefits	Costs	Benefit Cost Ratio
SH 119 Widening	\$388,322,400	\$25,187,001	15.4:1

US 6 and SH 119 ITS	\$182,981,675	\$33,519,023	5.5:1
US 6 Rockfall Mitigation	\$62,243,654	\$17,111,850	4.1:1
Total North Clear Creek Corridor Project	\$633,547,729	\$75,817,875	8.4:1

Table 10B. Project benefit-cost analysis, broken down according to performance criteria, using a 7 percent discount rate, 2010-2030

Performance Criteria	Project Elements	Benefits	Costs
	Construction Costs		\$42,413,561
	Costs of Construction Period Driver Delays		\$32,775,885
	CDOT O&M Expenditures		\$628,429
State of Good Repair	CDOT O&M Cost Savings	\$248,338	
Economic Competiveness	Gaming Tax Revenue	\$257,331,704	
Economic Competiveness	Gaming Employee Personal Income	\$271,386,088	
Livability	Value of Travel Time Saved	\$85,663,177	
Sustainability	Value of Reduced Carbon Emissions	\$440,339	
Sustainability	Value of Reduced Fuel Consumption	\$3,388,129	
Safety	Accident Reduction Savings	\$15,089,955	
Discounted Totals	Benefit-Cost Ratio of 8.4:1	\$633,547,729	\$75,817,875

Notes: Costs and benefits have been discounted at 7% over a 20 year period. These values are the marginal costs and benefits of TIGER II Discretionary Grant funding. O&M=Operations and Maintenance.

## (b) Job Creation & Economic Stimulus

### Short-Term Opportunities and Construction Supported Stimulus.

CDOT expects to provide immediate employment over a two-year construction period. An estimated 323 construction workers will be hired for durations ranging from one month to 24 months. The majority of construction workers are likely to come from the Denver metropolitan area, Clear Creek County, and Gilpin County. A total of \$3.5 million of construction wages will be created by Project activities. Spending by the construction workforce will induce additional jobs and associated personal income in a variety of industries. The bulk of the materials and supplies for the Project will be purchased from local and regional vendors, providing additional stimulus to area businesses.

### Long-Term Opportunities

The Project will preserve existing jobs since road improvements will allow visitors improved access to activities and services. The Project will also create conditions for new job opportunities and will support employment in the gaming, recreation, and tourism industries. The increase in permanent employment will begin in these sectors immediately following Project completion. An estimated 2,092 new employees will be hired within the gaming industry by 2030 as a result of the Project. Additionally, the establishment of the Mine Drainage Treatment Facility by CDPHE and EPA will create 3 to 5 additional permanent employment opportunities.

A local business study showed 99 percent of workers commute into Black Hawk and 97 percent of workers commute into Central City. The Colorado Division of Gaming, *Gaming in Colorado Fact Book and 2008 Abstract*, states casinos underwrote \$4.8 million in 2008 to provide bus service for its

employees. There are additional opportunities to increase bus ridership if transportation services improve reliability. This Project would improve safety and access to the corridor, and thus help increase reliability.

The advent of casino gaming has improved the economic circumstances of Gilpin County residents, including small business owners and disadvantaged business owners, by increasing per capita income. The current strength of the gaming industry provides for a strong economy. However, competition is increasing with increased opportunities for gaming in surrounding states and on reservations. In order to maintain the gains obtained by county residents, steps need to be taken to insure that the industry remains strong and competitive.

The rapid growth of the gaming industry has been beneficial to Gilpin County by providing jobs, tax revenue, and visitors to the area. However, the growth in other businesses has not been commensurate, leaving residents desirous of more local services from an economic and social standpoint. The City of Black Hawk is working hard to develop a more diversified economy. Central City also recognizes the need to attract retail services. The Clear Creek County Master Plan 2030 established a goal of becoming a destination resort, bringing in more bed and breakfast establishments, hotels, and locally owned specialty retail shops. Because a significant portion of the Project is in improving access, the Project will encourage commercial and service investment. Increased visitation and employment will provide an increased opportunity for the varied businesses envisioned by Black Hawk and Central City.

### **Best Practices, Equal Opportunity Employment, and Disadvantaged Business Enterprises**

Colorado has programs to monitor the statewide economic impact of the *FY 2010 Appropriations Act* funding; successfully comply with equal opportunity in employment and subcontracting construction projects; and promote the participation of disadvantaged workers, small and disadvantaged business enterprises, to significant projects (which is crucial to the benefit of small communities). The following are some of CDOT's best hiring methods:

A *Circle of Partnerships* will be established for the Project.

Past partnerships have include local chambers of commerce, workforce centers, concerned citizens, economic development organizations, local government officials, area colleges, and local business owners. The partnership focuses on community involvement and outreach.

- CDOT has contract requirements to place employment opportunities on its Connecting Colorado website. Verification of compliance is required prior to initiation of work.
- Workforce transportation to the construction area is a need and opportunity. The SDMD has negotiated an agreement with a bus company to underwrite a special program. The program provides free transportation from key locations to construction sites. This will minimize traffic and parking in the construction area and assist disadvantaged workers employed with the Project.
- CDOT has established monthly reporting requirements on all *American Recovery and Reinvestment Act* funded projects. CDOT has found this reporting to be useful in tracking economic opportunities and has implemented sanctions when there is a failure to report. As part of its oversight, CDOT includes contract special provisions in all phases of construction.
- CDOT oversees and ensures labor practices and compliance with Federal laws so that American workers are safe and treated fairly.
- CDOT has apprenticeship and on the job training programs.

CDOT uses the following methods to maximize opportunities in its construction program:

- CDOT has contract special provisions for construction contracts to insure equal opportunity in employment, subcontracting, and material purchasing. The program requires a thorough audit of contractors’ internal records for compliance.
- The CDOT Business Programs unit manages Disadvantaged Business Enterprises (DBEs) and Small Business Enterprise programs to achieve race-conscious and race-neutral participation on construction projects. The DBE program is approved under U.S. Department of Transportation requirements. CDOT has an average seven percent small business participation in construction projects statewide.
- Mandatory networking events are required for large projects to increase the transparency of the bidding process for small businesses and DBEs. In an “open house” environment, small contractors are teamed up with a prime contractor to bid a project. If primes and major subcontractors do not participate, they are not able to bid. With the advanced identification of prime bidders, CDOT receives more competitive bids and a significant increase in cost savings.

**(c) Quick Start Activities**

***(i) Project Schedule***

In order to maintain the individual project partners’ schedules, CDOT will advertise a separate project for bid in August, 2010. CDOT has only enough funding to improve 0.4 miles of SH 119, but an additional one mile of work is designed. The one mile of construction can be added to the funded work if TIGER II funding is acquired. A feasible Project Milestone schedule is provided in Table 11. The [Project schedule](#) demonstrating that TIGER II Grant funds can be spent expeditiously is provided in Appendix B.

*Table 11. Milestone dates for feasibility of Project*

PROJECT MILESTONES	
<b>SH 119 Widening of 0.4 Miles</b>	
MILESTONE	COMPLETION DATE
Project Advertisement	August 2010
Construction Completion	Fall 2012
<b>Tiger II Project</b>	
MILESTONE	COMPLETION DATE
Design	95% complete
Construction Start	By September 2012
Construction Completion	By Fall 2014

***(ii) Environmental Approvals***

All environmental approvals have been completed and the project is ready to be advertised for bids. A detailed explanation is provided in Section H *National Environmental Policy Act Requirement and Approvals*.

***(iii) Legislative Approvals***

The Project has obtained all required legislative approvals. Letters of support have been obtained from the appropriate agencies and are available in Appendix C. Additional [letters of support](#) will be posted at the website as they are received.

***(iv) State and Local Planning***

A certification, signed by the applicant, that the project will be included in the relevant planning documents (including the State Transportation Improvement Program or STIP ) prior to award is included in Appendix D.

The [DRCOG 2035 Metro Vision Regional Transportation Plan](#), 2007, and the [2030 DRCOG Mountains & Plains Transportation Plan](#) , 2005, reference US 6, US 40, and SH 119 improvements for Clear Creek and Gilpin Counties.

The [2035 Statewide Transportation Plan](#) identifies SH 119 and US 6.

The [Gilpin County Master Plan](#) encourages CDOT to accommodate traffic and service commercial development to SH 119.

The [Clear Creek County Master Plan 2030](#) identifies a vision to establish a year-round economy and revenue base to enable public and private sectors to provide services and preserve and restore its nationally significant historic resources.

***(v) Technical Feasibility***

All of the components described within the Project are technically feasible. The three components of the project (roadway widening, ITS, and rockfall) are currently designed and waiting for funding to be packaged and advertised. CDOT is confident that the proposed project components can be advertised and awarded for construction before the obligation deadline of September 30, 2012.

***(vi) Financial Feasibility***

The Project is financially viable. Because the final design is complete, CDOT has compiled an Engineer’s Estimate that has been fully evaluated by CDOT’s cost estimating group. The partners on the project have all executed Memorandums of Understanding and/or Interagency Agreements with CDOT, guaranteeing their participation.

**2. Secondary Selection Criteria**

Since NCCMAC’s first meeting over three years ago, the partners’ overriding interest has been innovative collaboration and disciplinary integration. By combining the diverse interests and expertise of all the disciplines involved in the Project area, a comprehensive plan quickly unfolded. The result is a Project with a minimum of regulatory encumbrance, and that addresses concerns at considerable savings to each of the collaborators and to taxpayers.

**(a) Innovation**

This Project uses innovative technology/planning to achieve several long term goals while enhancing operational performance of the transportation system.

- Context Sensitive Solutions represent a new way of thinking and doing business. An immediate benefit of the Context Sensitive Solutions approach in the planning of this project is the cost savings and efficiency of using excess excavation from CDOT work at Main Street South on the adjacent CDHPE Superfund site cleanup work. The savings to CDOT is anticipated to be \$1.5

million in haul costs. The savings in imported material required for CDHPE's work is anticipated to be \$2.9 million.

- The Intelligent Transportation System (ITS) installed in the canyon will allow for real time information on traffic conditions in a communication dead zone. Most of the canyon has no phone service or cell coverage, poor coverage of two-way radios used by emergency responders, and in some locations, no GPS signal. By constructing the ITS, the traveling public will be able to make more informed decisions regarding road closures due to construction activities, rockfall incidents, accidents, and winter closures.
- The selection of concrete pavement for the reconstructed section of SH 119 at South Main Street will reduce future delays for construction because of the longevity of the pavement in the harsh mountain environment.
- Some of existing native vegetation removed from construction sites will be transplanted to elsewhere within this Project. Plants growing along the stream have acclimated to existing, harsh conditions and are more likely to survive. Other plants within this basin will be transplanted to the streamside. This process saves money and improves long-term survivability of plantings.

## **(b) Partnership**

### ***(i) Jurisdictional & Stakeholder Collaboration***

The Project has a unique partnership with Federal, State and local governments. This partnership dates back before the current economic crisis. The EPA, CDPHE, CDOT, City of Black Hawk, and SDMD have made financial commitments (see Table 2). Numerous agencies have contributed their expertise (at no cost to the Project) by working through the North Clear Creek Mitigation Advisory Committee (NCCMAC).

Without the TIGER II grant, the Project cannot be completed in the foreseeable future. Traditionally, CDOT funding for the corridors has come from gaming tax revenues. As this Project has been developed, funding has been diverted due to economic factors throughout the state. The Project achieves economy of scale that is not obtainable without the combined efforts of the NCCMAC partnership. For example, excess rock from the highway excavation is being used to cover historic mine tailing piles. This type of innovation provides the "biggest bang for the buck" in highway safety, livability, and environmental sustainability. The use of the TIGER II grant money will leverage the funds agencies have already budgeted; allowing the proposed Project improvements to be completed. Solving these problems with NCCMAC support will help the rural Clear Creek Corridor develop into a safe highway system for generations to come.

In June 2009, CDOT, FHWA, and 14 other agencies signed the [Planning and Environmental Linkages \(PEL\) Partnering Agreement](#); encouraging collaboration that meets the requirements of each organization and helps complete transportation projects sooner. PEL leads to better informed and strategic transportation decisions; options that include multi-modal components, when feasible; and efficient/cost-effective solutions.

CDOT utilizes Context Sensitive Solutions as a collaborative, interdisciplinary approach that involves all stakeholders in developing a transportation facility that complements its physical setting and preserves scenic, aesthetic, and historic and environmental resources while maintaining safety and mobility. A summary of the process and its benefits is available at the [FHWA website](#).

***(ii) Disciplinary Integration***

The unique project team formed by the NCCMAC partnership has allowed and promoted multiple environmental and transportation benefits beyond anything that was originally anticipated. Examples of this partnership include:

- The multi-use trail was designed by a Senior Design Class from the University of Colorado at Denver.
- Colorado School of Mines was hired by the EPA to study and report on the condition of Clear Creek and to conduct research on a possible bioreactor for the mine drainage water treatment.
- CDOW guiding CDOT designers, EPA, and CDPHE in stream restoration plans.
- EPA and CDPHE advising CDOT in mine waste capping and removal.
- CDOT sharing right of way for the mine treatment plant and associated pipelines to get the polluted water to the Mine Drainage Treatment Facility.
- SDMD sharing right of way, construction and preliminary engineering costs with CDOT, allowing the Project to advance before other funding was available.
- Jefferson, Clear Creek, and Gilpin Counties; the City of Black Hawk; linking the future trail systems to promote a regional benefit.
- Combining all activities within the roadway template into one contract reduces the impacts to the traveling public for both individual vehicles and transit companies, reduces construction costs, and helps maintain the roadway in a state of good repair.
- CDOT implements the Context Sensitive Solutions and PEL approaches to transportation decision making. The integrated approach takes into account environmental, community, and economic goals throughout the life of a project; from planning to construction to maintenance.

**E. Federal Wage Rate Requirement**

*A Certificate of Compliance with Federal Wage Requirement and a Certificate of Compliance with State and Local Planning Requirement* are signed by the applicant, and are attached in [Appendix D](#).

**F. National Environmental Policy Act Requirement and Approvals**

No significant environmental, social, or economic impacts are anticipated for the Project under NEPA. The Project will not individually, cumulatively, or indirectly lead to significant environmental effects or public controversy.

CDOT anticipates all project components listed on Table 1 to be Categorical Excluded from further NEPA actions (23 CFR 771.117) by August 15, 2010. No additional capacity will be constructed as part of the Project, except for SH 119 Main Street South (the most complex component of the Project). CDOT received written confirmation from FHWA (September 14, 2007) for SH 119 Main Street South as a [Categorical Exclusion](#) and CDOT completed the environmental clearances January 11, 2010.

Resource-specific evaluations are documented via CDOT's 128 Form in compliance with the [CDOT NEPA Manual](#).

## **G. Environmentally Related Federal, State, and Local Actions**

CDOT is engaged with all federal, state, and local entities that have an interest in the Project, or that may require review of a project-related document or submittal, or from which an environmentally-related approval or permit may be required. CDOT does not anticipate any problems and expects to obtain any required permits by July, 2011, although one identified permit will not be completed until after contractor Notice to Proceed, as it will be the contractor's responsibility to obtain the dewatering permit from CDPHE. Due to collaboration with EPA and CDPHE on the SH 119 Main Street South component, the Corps does not require a 404 permit (Letter of Concurrence signed 8/17/07).

In regards to the Clean Air Act, Clear Creek and Gilpin Counties are in the non-MPO area of DRCOG and are outside the air quality non-attainment/maintenance areas of the Denver region. Projects in Jefferson County are part of the MPO-and DRCOG areas and listed within an air quality conformity area. However, a Project-level hotspot analysis is not required and Project is exempt from the conformity determination requirements of the Clean Air Act Amendments of 1990.

## **H. Protection of Confidential Business Information**

The Engineer's Estimate is not available for public disclosure and must remain confidential until bid award.

All other information submitted as part of this application is publicly available data or data that can be made public and all other methodologies that are accepted by industry practices and standards, to the extent possible.

## **I. Changes from the Pre-Application Information**

The TIGER II pre-application states the total project cost is estimated \$81 million (item number 26). The final estimate was \$1 million higher.

Please note the appendices are contained in two separate pdf files. Appendices A, B, D, and E are in file "*NClearCreekAppendices\_A\_to\_E.pdf*". Appendix C is in file "*NClearCreekLettersofSupport\_Appendix\_C.pdf*". There are also hyperlinks within the document narrative for the specified information and the complete application is available online at [http://www.northclearcreekproject.org/tigerGrant\\_02.html](http://www.northclearcreekproject.org/tigerGrant_02.html).