

COVER PAGE
Colorado Department of Transportation

FY 2015-16 CAPITAL CONSTRUCTION REQUESTS

Not recommended for funding:

- Automated I-70 Avalanche Reduction System (*new*)
- I-70 Genesee Bike Path (*new*)

Total: FY 2015-16 Capital Construction State-Funded Request Amount = \$ 3,081,000

ISSUES RAISED DURING FALL 2014 JOINT BUDGET COMMITTEE BRIEFINGS

1. Senate Bill 09-228 transfer. Transfers to the Highway Users Tax Fund (HUTF) are projected to be \$101.6 million in FY 2015-16. The transfer is not projected to occur in FY 2016-17 due to an increased TABOR surplus. The department intends to use these transferred funds for the implementation of high priority highway and bridge projects, with a minimum of 10.0 percent of funds required to go to high priority transit projects.

HISTORY OF STATE FUNDING

- **\$2.5 million** has been appropriated on behalf of capital projects for the department since FY 2010-11. This represents **0.3 percent** of total amount appropriated on behalf of all capital construction and controlled maintenance projects during this period.
- **\$0.5 million** was appropriated in **FY 2014-15** for Highway Construction Projects. The department requested state funds to upgrade the lighting system in Hanging Lake Tunnel in Glenwood Canyon along Interstate 70.

Fiscal Year 2015-16 Capital Construction Request

Transportation

Automated I-70 Avalanche Reduction System

PROGRAM PLAN STATUS

2016-018

Approved Program Plan? Date Approved:

PRIORITY NUMBERS

Prioritized By	Priority	
Dept/Inst	1 of 2	
OSP/B	46 of 47	Prioritized by OSPB. Not recommended for funding.

PRIOR APPROPRIATION AND REQUEST INFORMATION

Fund Source	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
CCF	\$0	\$2,525,000	\$0	\$0	\$2,525,000
CF	\$0	\$300,000	\$0	\$0	\$300,000
Total	\$0	\$2,825,000	\$0	\$0	\$2,825,000

ITEMIZED COST INFORMATION

Cost Item	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
Land Acquisition	\$0	\$0	\$0	\$0	\$0
Professional Services	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$2,112,000	\$0	\$0	\$2,112,000
Equipment	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$185,000	\$0	\$0	\$185,000
Contingency	\$0	\$528,000	\$0	\$0	\$528,000
Software Acquisition	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$2,825,000	\$0	\$0	\$2,825,000

PROJECT STATUS

This is a new, never-before requested project.

PROJECT DESCRIPTION / SCOPE OF WORK

The Colorado Department of Transportation (CDOT) is requesting state funds to implement an automated avalanche reduction program in high-risk areas along the I-70 mountain corridor. Specifically, the avalanche reduction system installations will address high-risk areas near Loveland Pass, the Eisenhower/Johnson Memorial Tunnels, and Vail Pass. The project will result in a safe, more controlled method of avalanche reduction. This project will allow CDOT to minimize the use of dangerous manual explosives to manage avalanche danger and to improve the safety of CDOT employees and the general public.

CDOT desires to acquire, install, and implement Gazex, an automated method of reducing avalanche danger in certain high-risk corridors. Gazex explodes an oxygen/propane mix in special tubes located in high-risk avalanche zones. These controlled explosions create pressure waves that fracture the snow mantle and initiate an avalanche. This process is controlled remotely through a computer system using advanced monitoring software. The result is a safer, more controlled method of avalanche reduction.

Fiscal Year 2015-16 Capital Construction Request

Transportation

Automated I-70 Avalanche Reduction System

PROJECT JUSTIFICATION

CDOT says that while Colorado's avalanche mitigation program serves as a model throughout North America, there are dangers associated with the use of explosives to manage avalanche paths. Currently, when there is a high risk of avalanche danger, CDOT closes the appropriate highways in order to conduct avalanche mitigation. At times, highways may be closed for periods of seven hours or more while conditions persist. CDOT avalanche teams use one or more of the following methods to trigger slides:

- set five-pound charges by hand;
- lease a 105-millimeter Howitzer from the Army that can fire 40 pound missiles; and
- rent a helicopter that drops 30 to 50 pound bombs.

According to the department, all of these methods are expensive and pose safety risks to CDOT employees. Gazex technologies can help CDOT minimize risk by using a safer mixture of fuels, as well as more accurate detonation methods. CDOT states this will lead to improved levels of service to, mobility of, and safety of the traveling public. It will also improve avalanche operations along high-hazard areas of the I-70 mountain corridor. It could also potentially reduce road closure times typical during avalanche cleanup operations. Furthermore, CDOT says the project supports its overall mission to provide the best multi-modal transportation system for Colorado that most effectively and *safely* moves people, goods, and information.

Project alternatives. CDOT has numerous alternatives to Gazex that it can continue to use. These alternatives include the manual charges set by hand, pneumatic pressure rifles or Howitzers, and helicopters, as mentioned above. While CDOT currently uses all of these methods to control avalanche dangers along mountain corridors, CDOT says they are costly and dangerous. CDOT says the continued use of explosives poses a great risk to CDOT staff and possibly to hikers and the traveling public.

PROGRAM INFORMATION

Every winter, CDOT regularly monitors and controls 278 of the 522 known avalanche paths in Colorado to help prevent avalanches from impacting Colorado highways. To help predict avalanche conditions and the necessity for avalanche control, CDOT teams up with the Colorado Avalanche Information Center, which studies forecasts and current weather conditions. Some factors that increase the risk of avalanche danger are large quantities of new snow, high winds, and drastic changes in temperatures. When there is a high risk of avalanche danger, CDOT will close highways at the location of the avalanche path in order to conduct avalanche control. Once all unstable snow has been released and controlled, CDOT crews clear the snow and debris from the roadway before reopening it to traffic as soon as it is safe for the traveling public. Any time CDOT conducts avalanche control, messages are posted on electronic signs in order to inform motorists of road closures. In addition, motorists can visit CDOT's website or call 511 for updates on avalanche control work.

During the 2011-2012 winter season, CDOT triggered 516 avalanches with explosives and handled 83 natural occurrences, all of which impacted Colorado highways. CDOT experienced 332 hours of road closures due to avalanche control, resulting in a total of 13,221 feet of snow covering the centerline of the roadway. In addition, roads were closed a total of 370 hours for avalanche hazard mitigation. There were no injuries, fatalities, or equipment damage.

Fiscal Year 2015-16 Capital Construction Request

Transportation

Automated I-70 Avalanche Reduction System

PROJECT SCHEDULE

	Start Date	Completion Date
Design/Scoping	January 2015	April 2015
Advertise Date	April 2015	April 2015
Construction	July 2015	October 2015
Occupancy	October 2015	October 2015

HIGH PERFORMANCE CERTIFICATION PROGRAM

The project is not required to comply with the requirements of Senate Bill 07-051 regarding the High Performance Certification Program because state highways do not fall under the statutory definition of state-assisted facilities.

SOURCE OF CASH FUNDS

The source of cash funds for this project is the Highway Users Tax Fund (HUTF), pursuant to Section 43-4-201, C.R.S. CDOT has \$300,000 of existing HUTF funding already committed to the project. The HUTF is the primary source of highway funds in Colorado. Revenue from the HUTF comes from motor fuel taxes, registration fees, and other miscellaneous sources, including driver's license fees, court fines, and interest earnings. HUTF funds are allocated to CDOT, counties, and municipalities based on statutory formulas.

OPERATING BUDGET

If the project is completed, CDOT will provide funding for its ongoing maintenance and operations costs under the Department's Asset Management program. The Asset Management program aims to achieve an acceptable level of asset performance by minimizing its life cycle cost.

STAFF QUESTIONS AND ISSUES

1. Are Gazex systems currently installed in any other areas in Colorado? If not, have they had success in other states?

A Gazex system is currently being installed on Berthoud Pass in the Stanley slide. The use of this technology provides for the safety of the traveling public, and enhances the safety of our employees on the avalanche crews. Gazex systems have been in place throughout Europe, Canada, and other U.S. states such as Washington, Wyoming, California, and Nevada (areas that also must grapple with avalanche hazards in providing transportation services) for nearly two decades.

Fiscal Year 2015-16 Capital Construction Request

Transportation I-70 Genesee Bike Path

PROGRAM PLAN STATUS

2016-019

Approved Program Plan? Yes No Date Approved:

PRIORITY NUMBERS

Prioritized By	Priority	
Dept/Inst	2 of 2	
OSP/B	47 of 47	Prioritized by OSP/B. Not recommend for funding.

PRIOR APPROPRIATION AND REQUEST INFORMATION

Fund Source	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
CCF	\$0	\$556,000	\$0	\$0	\$556,000
CF	\$0	\$820,000	\$0	\$0	\$820,000
FF	\$0	\$680,000	\$0	\$0	\$680,000
Total	\$0	\$2,056,000	\$0	\$0	\$2,056,000

ITEMIZED COST INFORMATION

Cost Item	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
Land Acquisition	\$0	\$0	\$0	\$0	\$0
Professional Services	\$0	\$390,803	\$0	\$0	\$390,803
Construction	\$0	\$1,552,872	\$0	\$0	\$1,552,872
Equipment	\$0	\$52,325	\$0	\$0	\$52,325
Miscellaneous	\$0	\$60,000	\$0	\$0	\$60,000
Contingency	\$0	\$0	\$0	\$0	\$0
Software Acquisition	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$2,056,000	\$0	\$0	\$2,056,000

PROJECT STATUS

This is a new, never-before requested project. Project design is 95 percent complete. The department originally anticipated to advertise the project for bid in spring 2013. Due to funding shortfalls at CDOT, this project has not been completed.

PROJECT DESCRIPTION / SCOPE OF WORK

The Colorado Department of Transportation (CDOT) is requesting state funds to construct the Genesee Bike Path along Interstate 70 (I-70) and a pedestrian bridge over the buffalo herd culvert-crossing near Genesee. This path will allow cyclists and pedestrians to safely commute alongside a busy corridor without subjecting them to traffic accidents.

This project will construct a 10-foot wide concrete multi-use path on the north side of I-70 between the Genesee Exit and Evergreen Parkway Exit (exits 251 and 254), as well as a pedestrian bridge at approximately milepost 253.5. This project will use existing right-of-way that is already owned by CDOT and Denver Parks, so additional land acquisitions are not necessary.

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Transportation

I-70 Genesee Bike Path

PROJECT JUSTIFICATION

Currently, the cycling public is riding on the 10-foot outside shoulder of I-70 between the Evergreen Pkwy Exit and the Genesee Exit (approximately 2.3 miles) where the posted speed limit is 65 miles per hour. The average daily traffic on this segment of I-70 is approximately 60,000 vehicles. CDOT and Denver Parks have common concerns about the safety of the general public in CDOT's right-of-way in this location. In August 2009, a cyclist was seriously injured after being struck by a vehicle while riding her bike on I-70 in this location. CDOT says this project will eliminate the significant safety hazard of forcing cyclists to use the shoulder of I-70 as the only cyclist accessible route between Evergreen and Genesee. This path will be completely separated from Interstate traffic, and this segment is the final link to establish a completely off-highway bike path between Denver and Glenwood Springs. Other benefits include:

- expanding recreational opportunities and enhancing quality of life;
- creating access to public lands;
- providing multi-use pathways near populations;
- reducing carbon-based vehicle miles traveled through increased bicycling and walking;
- completing and connecting the state's bicycle network/system;
- enhancing multi-modal efficiency; and
- bolstering tourism.

CDOT says there are several beneficiaries of the project including:

- the general public, with significant safety benefits being realized for both motorists and cyclists traveling on I-70;
- CDOT, by having safety concerns addressed on its right-of-way;
- Jefferson County, whose residents benefit from enhanced bikeway continuity and community cohesiveness;
- Denver Parks, by encouraging tourism and providing better, safer access for viewing at the buffalo herd overlook at Exit 254; and
- members of Team Evergreen and Bike Jeffco, many of whom are frequent users of the bike path.

CDOT says this project will ensure that all improvements are constructed in a manner that assures the safety of the cycling public and the users of Denver mountain parks. In addition, the project will protect the natural character of the surrounding Denver Parks property, including the preservation of water quality, drainage flows, and natural water systems on or near the Denver Parks property. With this framework in place, the construction of this project supports all agencies' goals of ensuring the safety of the traveling public. CDOT also says the project helps accomplish its mission of providing the best multi-modal transportation system for Colorado that most effectively and safely moves people, goods, and information.

This project supports many of the goals of the CDOT Statewide Bicycle and Pedestrian Plan. This project also helps achieve the goal of Jefferson County's Countywide Transportation Plan to increase the use of alternate modes of transit and limit the use of single occupancy vehicles. Additionally, this project supports several of Denver's goals per their Bicycle Master Plan, including having a combined walk/bike mode share of 15 percent by 2020, closing the gaps of existing bicycle routes, and enhancing a system of off-street, multi-use bike trails.

Project alternatives. CDOT says that without additional state funds, this project will continue to be delayed until adequate funding is available from other sources and it can be reprioritized. Currently, CDOT's regular funding sources are committed to other projects for the next three to five years. In the meantime, pedestrians and cyclists will continue to use the shoulder of I-70 to commute along the highway, presenting a great safety risk.

PROGRAM INFORMATION

CDOT's Bicycle and Pedestrian Program encourages walking and bicycling as a form of transportation and as a fun and healthy way to enjoy the state. CDOT encourages residents to make bicycling and walking a part of their regular routine. Through programs such as Safe Routes to School and the Share the Road Campaign, CDOT provides information and resources to help Coloradans learn more about safe bicycling and walking. It also provides information about the various health and economic benefits of bicycling and walking and provides resources to make communities more bike- and pedestrian-friendly.

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Transportation

I-70 Genesee Bike Path

In October 2012, CDOT adopted its first-ever Statewide Bicycle and Pedestrian Plan. The plan provides a foundation for CDOT and its regional and local planning partners to prioritize bicycle and pedestrian projects and programs for funding and implementation. The vision of the plan is: "The Colorado Department of Transportation intends to increase bicycling and walking activity levels, for both transportation and recreational purposes, through both infrastructure projects and promotional programs, to help achieve the broadly established and supported economic, public health, environmental, and quality of life benefits."

CDOT is currently in the second phase of the statewide bicycle and pedestrian planning process. The primary objectives of Phase II are to:

- review and evaluate criteria and performance measures in the current plan;
- provide input on the Transportation Alternatives Program funding guidelines and application process to assure compatibility with the Statewide Bicycle and Pedestrian Plan;
- develop system-level performance measures related to the plan goals for statewide tracking purposes; and
- effectively integrate bicycle and pedestrian modes into the Statewide Transportation Plan.

PROJECT SCHEDULE

	Start Date	Completion Date
Design/Scoping		May 2012
Advertise Date	December 2014	January 2015
Construction/Implementation	January 2015	March 2015
Project Completion	August 2015	August 2015

HIGH PERFORMANCE CERTIFICATION PROGRAM

The project is not required to comply with the requirements of Senate Bill 07-051 regarding the High Performance Certification Program because state highways do not fall under the statutory definition of state-assisted facilities.

SOURCE OF CASH FUNDS

The source of cash funds for this project is \$680,000 in federal funds from the Federal Highway Administration, \$120,000 in matching funds from Jefferson County, and \$700,000 from the Highway Users Tax Fund (HUTF), pursuant to Section 43-4-201, C.R.S. The HUTF is the primary source of highway funds in Colorado. Revenue from the HUTF comes from motor fuel taxes, registration fees, and other miscellaneous sources, including driver's license fees, court fines, and interest earnings. HUTF funds are allocated to CDOT, counties, and municipalities based on statutory formulas.

OPERATING BUDGET

If the project is completed, CDOT will provide funding for its ongoing maintenance and operations costs under the Department's Asset Management program. The Asset Management program aims to achieve an acceptable level of asset performance by minimizing its life cycle cost.

STAFF QUESTIONS AND ISSUES

1. What are the requirements to qualify for federal reimbursement from the Federal Highway Administration (FHWA)?

- design in accordance with guidance issued by the U.S. Federal Highway Administration ("Guide for the

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Transportation

I-70 Genesee Bike Path

Planning, Design and Operation of Pedestrian Facilities");

- *provide facilities that are in accordance with Title II of the Americans with Disabilities Act (Title II) and the Americans with Disabilities Act Accessibility Guidelines;*
- *if right-of-way is needed, the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 must be followed;*
- *adhere to and monitor contractor compliance with Equal Employment Opportunity (EEO) and Disadvantaged Business Enterprise (DBE) statutes and regulations;*
- *adhere to and monitor labor compliance with respect to the Davis Bacon Act by verifying that mechanics and laborers working on the site of Federal-Aid construction projects are paid according to the wage decision that is part of the Standard Special Provisions for the project;*
- *set on-the-job training goals;*
- *require that no proprietary or sole source items are included in the project unless a Finding in the Public Interest (FIPI) has been approved for the project;*
- *project must be included in the Statewide Transportation Improvement Program (STIP);*
- *matching funds of 20%;*
- *perform all work in accordance with the requirements of the current federal environmental regulations including the National Environmental Policy Act of 1969 (NEPA), as applicable;*
- *Title VI assurances; and*
- *compliance with Buy America requirements.*

2. What are the sources of local government funds? Please provide a breakdown of funding from Jefferson County, Denver Parks, and any other agencies that are contributing funds.

- *Jefferson County - \$120,000; and*
- *City and County of Denver – right-of-way contribution for construction of the infrastructure.*