

Fiscal Year 2023-24 Capital Construction Request

Transportation

Vail Pass Supporting Structures for Avalanche Defense on I-70

PROGRAM PLAN STATUS

2024-016

Approved Program Plan

No

Date Approved:

PRIORITY NUMBERS

Prioritized By

Priority

CDOT

1 of 2

OSPB

13 of 21

Recommended for funding.

PRIOR APPROPRIATIONS AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2023-24</u>	<u>FY 2024-25</u>	<u>Future Requests</u>	<u>Total Costs</u>
CCF	\$0	\$2,398,650	\$0	\$0	\$2,398,650
Total	\$0	\$2,398,650	\$0	\$0	\$2,398,650

ITEMIZED COST INFORMATION

<u>Cost Item</u>	<u>Prior Approp.</u>	<u>FY 2023-24</u>	<u>FY 2024-25</u>	<u>Future Requests</u>	<u>Total Cost</u>
Land Acquisition	\$0	\$0	\$0	\$0	\$0
Professional Services	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$1,901,150	\$0	\$0	\$1,901,150
Equipment	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$75,000	\$0	\$0	\$75,000
Contingency	\$0	\$422,500	\$0	\$0	\$422,500
Total	\$0	\$2,398,650	\$0	\$0	\$2,398,650

PROJECT STATUS

This is a new, never-before-requested project.

Fiscal Year 2023-24 Capital Construction Request

Transportation

Vail Pass Supporting Structures for Avalanche Defense on I-70

PROJECT DESCRIPTION / SCOPE OF WORK

The Department of Transportation (CDOT) is requesting state funds to construct 1,300 linear feet of snow-supporting structures at an avalanche path known as "The Narrows" along Interstate 70 at Vail Pass. Snow-supporting structures hold snow in place at avalanche zones, thus eliminating avalanche hazards.

Construction of the structures will involve high-angle drilling and grouting of approximately 130 rock anchors to hold the structures in place, with the rock anchors being tested for strength. Once the anchors are in place, the structures are installed using a crane or helicopter. The project scope includes slope scaling to remove loose debris and traffic control.

Cost assumption. CDOT used a design from Interalpine Engineering, an avalanche, geotechnical, and structural engineering firm. The project is exempt from Art in Public Places and High Performance Certification Program requirements.

PROJECT JUSTIFICATION

The Vail Narrows avalanche zone has impacted Interstate 70 multiple times in the past five years, with debris extending completely across the roadway. CDOT says eliminating the avalanche hazard at this location would greatly improve the resiliency of the interstate and would substantially benefit public safety and commerce. The Narrows is the only avalanche path on Vail Pass requiring regular mitigation, and closures can be long. For instance, an avalanche closed I-70 at this point for more than 30 hours in March 2019, and CDOT estimates economic impacts of these closures at \$1 million an hour.

If the project is not funded, the department will continue its regular mitigation efforts, which it says is time consuming, dangerous, and labor intensive. CDOT notes that the use of snow-supporting structures instead of controlled-release measures such as using artillery or explosives is becoming increasingly common due to a number of factors, including the necessity of using winter maintenance personnel and road closures during controlled release.

PROGRAM INFORMATION

Every winter, CDOT and its sister agency, the Colorado Avalanche Information Center regularly monitor and control 278 of 522 known avalanche paths located above Colorado highways. To help predict avalanche conditions and the necessity for avalanche control, the two agencies study forecasts and current weather conditions.

PROJECT SCHEDULE

	Start Date	Completion Date
Design	Winter 2023	Winter 2023
Construction	Spring 2023	Summer 2024
Equipment		
Occupancy		

SOURCE OF CASH FUNDS

The project is not funded from cash sources.

OPERATING BUDGET

The department says avalanche defense structures are low maintenance with minimal annual operating costs, and any additional costs can be absorbed by its existing maintenance budget. CDOT will conduct annual inspections to monitor conditions. The asset life cycle is estimated at 30 years.

STAFF QUESTIONS AND ISSUES

None.

Fiscal Year 2023-24 Capital Construction Request

Transportation

EJMT West Portal Explosive System Upgrade and Remote Avalanche Control Asset Redeployment

PROGRAM PLAN STATUS

2024-025

Approved Program Plan

N/A

Date Approved:

PRIORITY NUMBERS

Prioritized By

Priority

CDOT

2 of 2

OSPB

14 of 21

Recommended for funding.

PRIOR APPROPRIATIONS AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2023-24</u>	<u>FY 2024-25</u>	<u>Future Requests</u>	<u>Total Costs</u>
CCF	\$0	\$1,565,000	\$0	\$0	\$1,565,000
Total	\$0	\$1,565,000	\$0	\$0	\$1,565,000

ITEMIZED COST INFORMATION

<u>Cost Item</u>	<u>Prior Approp.</u>	<u>FY 2023-24</u>	<u>FY 2024-25</u>	<u>Future Requests</u>	<u>Total Cost</u>
Land Acquisition	\$0	\$0	\$0	\$0	\$0
Professional Services	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$1,215,000	\$0	\$0	\$1,215,000
Equipment	\$0	\$350,000	\$0	\$0	\$350,000
Miscellaneous	\$0	\$0	\$0	\$0	\$0
Contingency	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$1,565,000	\$0	\$0	\$1,565,000

PROJECT STATUS

This is a new, never-before-requested project.

Fiscal Year 2023-24 Capital Construction Request

Transportation

EJMT West Portal Explosive System Upgrade and Remote Avalanche Control Asset Redeployment

PROJECT DESCRIPTION / SCOPE OF WORK

The Department of Transportation (CDOT) is requesting state funds to construct a remote avalanche control system above the west portal of the Eisenhower Johnson Memorial Tunnel (EJMT), and to redeploy existing avalanche control systems elsewhere in the state. The department says it has invested in remote avalanche control systems in recent years in response to an in-bore detonation of an avalanche projectile system that severely injured three maintenance staff in 2014.

The new system will consist of a motorized tramway that delivers ordnance to release avalanches on the West Loop Road at EJMT. A contractor will be hired to construct about 15 tower footings for the tramway, and tramway towers will be installed on the footings using a helicopter. Cable will spool through a drive station and the towers, forming a continuous loop. Power will be provided to the tramway from existing EJMT infrastructure. When complete, the system will be able to deploy up to 20 charges that can be detonated simultaneously. Existing, remotely operated gas exploders will be redeployed from the site to the southern mountains, where this type of technology is better suited.

Cost assumption. The project's costs are based on a preliminary quote received from a private contractor. The project is exempt from the High Performance Certification and Art in Public Places Programs.

PROJECT JUSTIFICATION

CDOT's Avalanche Safety Program has a goal of reducing the use of avalanche projectile launchers and surplus military artillery for avalanche control. The projectile launchers present safety hazards to maintenance staff, as evidenced by the 2014 accident, and the U.S. Army has instructed the department to begin phasing out the use of surplus artillery. Constructing the tramway at EJMT advances these goals, and allows the department to deploy existing avalanche systems at EJMT to areas of the state where the technology is more appropriate. Further, CDOT says the tramway system is more cost effective since it will use power infrastructure already in place at the tunnels.

PROGRAM INFORMATION

Every winter, CDOT and its sister agency, the Colorado Avalanche Information Center, regularly monitor and control 278 of 522 known avalanche paths located above Colorado highways. This helps prevent avalanches from impacting vehicles on the highways below. To help predict avalanche conditions and the necessity of avalanche control, the agencies study forecasts and weather conditions.

PROJECT SCHEDULE

	Start Date	Completion Date
Design	Fall 2022	Fall 2022
Construction	Spring 2023	Fall 2023
Equipment		
Occupancy		

SOURCE OF CASH FUNDS

The project is not funded from cash sources.

OPERATING BUDGET

Costs associated with operating the tramway system include explosives purchase, annual inspections, and annual maintenance. CDOT expects operating costs to be absorbed within the department's existing annual winter operations budget.

STAFF QUESTIONS AND ISSUES

None.

Prepared by Legislative Council Staff

Fiscal Year 2023-24 Capital Construction Request

Transportation

Highway Construction Projects

PROGRAM PLAN STATUS

1996-110

Approved Program Plan?

N/A

Date Approved:

PRIORITY NUMBERS

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2023-24</u>	<u>FY 2024-25</u>	<u>Future Requests</u>	<u>Total Cost</u>
CCF	\$15,500,000	\$500,000	\$0	\$0	\$16,000,000
CCFE	\$431,504,419	\$0	\$0	\$0	\$431,504,419
Total	\$447,004,419	\$500,000	\$0	\$0	\$447,504,419

ITEMIZED COST INFORMATION

<u>Cost Item</u>	<u>Prior Approp.</u>	<u>FY 2023-24</u>	<u>FY 2024-25</u>	<u>Future Requests</u>	<u>Total Cost</u>
Land Acquisition	\$0	\$0	\$0	\$0	\$0
Professional Services	\$0	\$0	\$0	\$0	\$0
Construction	\$445,004,419	\$500,000	\$0	\$0	\$445,504,419
Equipment	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0
Contingency	\$0	\$0	\$0	\$0	\$0
Software Acquisition	\$0	\$0	\$0	\$0	\$0
Total	\$445,004,419	\$500,000	\$0	\$0	\$445,504,419

PROJECT STATUS

This is an ongoing project.

PROJECT DESCRIPTION / SCOPE OF WORK

The project funds Department of Transportation (CDOT) highway construction, maintenance, and repair projects. State law requires the Transportation Commission to annually submit to the Capital Development Committee (CDC) a capital construction request for such projects. Since 2011, the JBC has included in the capital construction portion of the Long Bill \$500,000 in General Fund Exempt moneys for highway construction, maintenance, and repair projects, and the General Assembly has subsequently approved these appropriations. The CDC may recommend to the JBC that this funding be included in the 2023 Long Bill.

The General Fund Exempt Account was created through the passage of Referendum C in 2005 by the voters. The referendum authorizes the state to retain and expend state revenues in excess of the TABOR fiscal year spending limit, but less than the excess revenues cap. The General Fund Exempt Account consists of the amount of state revenues in excess of the TABOR state fiscal year spending limit that would have been refunded had Referendum C not passed. This money may only be appropriated for four purposes, including strategic transportation projects.

PROJECT JUSTIFICATION

See project description/scope of work.

Fiscal Year 2023-24 Capital Construction Request

Transportation

Highway Construction Projects

PROGRAM INFORMATION

See project description/scope of work.

PROJECT SCHEDULE

SOURCE OF CASH FUNDS

The project is not funded from cash sources.

OPERATING BUDGET

The project has no impact on state operating costs.

STAFF QUESTIONS AND ISSUES

None.