

TIGER III CDOT Pre-Application Form

- i. **Project Title:** I-25 Interim Managed Lanes: US36 to 120th Avenue – A High-Value, Low-Cost Investment for Sustainable Congestion Relief

- ii. **Short Project Description:** Provide one new managed toll lane in each direction on a six-mile stretch of Interstate 25 from US 36 north of Downtown Denver to 120th Avenue in Adams County. At the north end, the project will improve bus operations to the Wagon Road Park & ride – one of the north region’s busiest bus stations with over 1,500 parking spaces. The proposed improvements are a high-value/low-cost investment, making more efficient use of existing highway capacity. The project will put to use a technique called “shoulder running” recently endorsed for temporary or interim use by the Federal Highway Administration in an October 2010 report to Congress. The new lanes will be constructed in an interim configuration on right-of-way that currently serves as the inside shoulder. No additional right-of-way or additional paved surface is needed. The project provides sustainable congestion relief and improved express bus service at much lower cost and decades earlier than originally planned. Similar to the phased approach utilized on the US 36 managed lanes, this interim project is consistent with and does not preclude full build out of improvements identified in the North I-25 Final Environmental Impact Study, scheduled for Record of Decision (ROD) in October, 2011. Both public and private entities in Adams, Broomfield and Weld Counties along the North I-25 corridor (as represented by the North Area Transportation Alliance), the Denver Regional Council of Governments, CDOT and the Colorado High Performance Transportation Enterprise support this project as the first logical step toward much needed improvements along I-25, enhancing mobility, driving economic development and reducing traffic congestion in the north metro area. RTD, the region’s primary transit operator, also is interested in exploring these interim improvements in partnership with the above stakeholders.

- iii. **Project Application Selection Criteria (which Primary Selection Criteria will the application be written for?):**
 - a. Long Term Outcomes:
 - i. State of Good Repair
As part of this project, the entire stretch of I-25 in the project limits would be resurfaced.
 - ii. Economic Competitiveness
In 2006, the existing I-25 Express Lanes located just south of this proposed project opened to toll-paying customers, providing a congestion-free alternative between Downtown Denver and US 36. In the four-and-a-half years since opening, the I-25 Express Lanes have maintained free-flow travel speeds for customers while generating more than enough revenue to cover the initial capital costs and ongoing operations and maintenance. As identified in the I-25 North EIS, there is significant need for developing a similar facility in the I-25 corridor north of US 36. Currently this stretch of I-25 carries up to 175,000 vehicles per day, with peak hour traffic operating at less than half the posted speed (24 mph vs. 55 mph). By 2035, congestion on north I-25 is expected to be severe, with vehicle hours of delay increasing by 67%. 2035 projections show that building managed lanes on

this stretch of I-25 would shave nearly 30 minutes off the daily commute from 120th Avenue to Downtown Denver for those using the managed lanes. I-25 is a primary link to and through downtown Denver and is home to hundreds of businesses that rely on this facility for access. Reduced delay and predictability of travel time on I-25 would be a great benefit to businesses and residents alike. The new managed lanes will extend the existing network of tolled capacity in the Denver Metro Area, with connections to 7-miles of I-25 Express Toll Lanes to the south and 10 miles of US 36 Managed Lanes to the west, scheduled to be completed in 2015.

iii. Livability

This project will improve mobility and provide a sustainable alternative to congestion along North I-25. High Occupancy Vehicles (HOV) and public transit vehicles (buses, express bus) would use the managed lanes free of charge while Single Occupant Vehicles (SOV) would pay a toll to use these lanes. The mixture of SOV tolled and HOV/Transit non-tolled vehicles using the lanes would be managed through variable pricing to maintain free flow conditions within the managed lanes at all times. The improvement would expand choice for those who live and work along the corridor, providing a congestion free alternative at all times.

iv. Environmental Sustainability

Managed lanes on I-25 will provide travelers a congestion free alternative when they choose to carpool, take transit or pay a fee. Rather than simply building more lanes to meet traffic demand (not a sustainable way to relieve congestion) this project adds capacity and manages the new capacity in a way that encourages more environmentally responsible travel patterns. The project provides capacity in an environmentally sustainable way rather than continuing past efforts of trying to build our way out of congestion.

v. Safety

vi. Cost Benefit

The project will deliver much needed capacity improvements on I-25 in an interim configuration using existing pavement in the inside shoulder to create the new lanes. I-25 in this stretch is one of the most congested segments of freeway in the Denver Metro area. This innovative approach allows CDOT to complete the proposed improvements at ¼ of the cost and 10 to 20 years earlier than originally planned.

vii. Job Creation and Economic Stimulus

iv. **Total Project Cost:** approximately \$40 Million

v. **Project TIGER III Request Amount:** \$15 Million

vi. **Project TIGER III CDOT Match Amount (source):** The Colorado High Performance Tolling Enterprise is pursuing Public/Private Partnerships and/or public finance alternatives to leverage additional resources for this critical improvement to I-25 in the Denver area. In addition, contributions from the following sources are actively being pursued:

- a. Local agencies along the corridor
- b. RTD (Express Bus service would be operated in the new managed lanes)

- c. State FASTER Transit funds (HOT/ HOV lanes are eligible where bus service benefits)
 - d. STP-Metro -- DRCOG will receive additional funds from FHWA for FY 2011
 - e. Additional Federal funds that may be available from FHWA in FY 2011 for CDOT projects
 - f. Future toll revenue.
- vii. **Project type:**
- a. Highway:
 - b. Transit
 - c. Rail
 - d. Multimodal -- The managed lanes will provide one new tolled lane on I-25 in each direction, improving choices for drivers, and also improving transit service reliability.
- viii. **Whether the project is requesting a TIGER II TIFIA Payment:** No.
- ix. **Type of jurisdiction where the project is located (urban or rural):** Urban. Adams County, and the Cities of Thornton, Westminster and Northglenn in the Denver, Colorado metropolitan area.
- x. **NEPA Status of Project:** The I-25 EIS Record of Decision is scheduled for October 2011.

TIGER III CDOT Pre-Application Form

- i. **Project Title:** US36 Managed Lane/ BRT Project Segment III from Interlocken to Table Mesa in Boulder County.

- ii. **Short Project Description:**

Construct the final segment of the US36 Managed Lane/ BRT project; the first segment was a recipient of a TIGER TIFIA Challenge Grant, which was leveraged into a \$300M project. This project would extend the Managed Lane from Interlocken to Table Mesa, continued implementation of a BRT system, which will become part of the RTD FasTracks system as well as construction of portions of a commuter bikeway. Additionally, the project would include replacement of aging infrastructure, some of which has not been upgraded since the 1950's.

- i. **Project Application Selection Criteria (which Primary Selection Criteria will the application be written for?):**
 - a. Long Term Outcomes:
 - i. State of Good Repair

The Project will use construction, maintenance, and operation practices that encourage a more efficient and improved state of good repair for the U.S. 36 facility. This includes the use of sustainable materials. CDOT has developed new paving standards that allow up to 25 percent of asphalt materials to be comprised of recycled materials. These standards resulted in 80,000 tons of recycled asphalt pavement used on State highways in 2008. The Project will seek to implement this policy and other best practices to ensure a sustainable design and construction. Moreover, the Project will reconstruct and upgrade failing pavement and structurally deficient bridges, while addressing crippling congestion. Additionally, the Colorado Transportation Commission sets annual performance goals that optimize value, minimize long-term life cycle costs, and guide decisions on how to spend limited financial resources. The U.S. 36 tolling and roadway components will be consistent with CDOT's existing asset management programs, including computer driven models that determine the optimal times to repair/replace elements of the highway system. Additionally, BRT transit vehicles and equipment will be managed using RTD's fleet management plan which conforms to the FTA's guidance on life cycle costs and maintenance standards. The aim of RTD's system is to perform routine maintenance and fleet replacement at optimal times to minimize long-term costs.
 - ii. Economic Competitiveness

U.S. 36 is a technology corridor of emerging business clusters that align closely with national and regional goals and contribute to Colorado's support of the nation's new economy. While Colorado's gross state product accounts for only 1.6 percent of the U.S. gross domestic product,

Colorado accounts for six percent of the U.S. wind and photovoltaic markets and five percent of the U.S. bio-fuels market. Due to the proximity of a well-educated workforce, complimentary services, and a transportation network that provides easy access to Denver and to the global aviation network at Denver International Airport (Airport), many global companies such as, Level 3 Communications, Ball Corporation, Hunter Douglas, and Sun Microsystems, are headquartered along U.S. 36. The University of Colorado at Boulder is also located at the western end of the corridor. In Louisville, ConocoPhillips is building its new corporate learning center and a global renewable energy technology center that anticipates supporting several thousand new employees. U.S. 36 also is integral to connecting Colorado's bioscience and renewable energy triangle, with Fort Collins's northern federal labs, Colorado State University, the University of Colorado at Boulder and federal labs to the west, and the Fitzsimmons Medical Campus to the southeast.

Colorado has one of the highest concentrations of federally funded science and research laboratories in the nation – half of which are located along the U.S. 36 corridor. Employing more than 4,500 scientists and engineers, the laboratories generate an estimated \$720 million annual regional economic impact and contribute to the continued growth of metro Denver's high tech industries. The labs stimulate significant technical transfer opportunities among higher education and area companies in critical areas such as climate research, space science and renewable energy development. The prospect of 25 minute travel time savings and a reliable travel time between Denver and Boulder would generate significant economic benefits. Improved efficiency in getting workers to and from their jobs is critical to the State's economy. Connecting the rest of the metro area's workforce to these well-paying jobs and stimulating additional employment are key benefits of the Project. The estimated economic impact of the Project includes: 7,234 person years of employment in the short term; \$276 million in direct wages; \$52 million in annual travel time savings; \$90 million in long-term employment benefits and; \$30 million in savings from reduced vehicle operating costs.

iii. Livability

Communities along the corridor are investing in over 560 acres of city council-adopted Transit Oriented Development (TOD) plans. This will reduce overall driving for the more than 13,200 residents and over 18,800 employees in these TOD areas while generating substantial economic activity. A 2007 U.S. 36 TOD workshop found that BRT and rail investments will influence the market for new compact development by more fully connecting station areas. Given these new connections, unmet market demand for housing and

commercial development in proximity to one station may be accommodated at neighboring stations.

The completion of the Project also will improve connections to the entire regional transit system through Denver Union Station, which serves as a multimodal transportation hub, integrating light rail, commuter rail, and intercity rail (Amtrak), as well as regional, express, and local bus service; the 16th Street Mall shuttle; Downtown Circulator and intercity buses; and taxis, shuttles, vans, limousines, bicycles and pedestrians. BRT users will be able to travel from Boulder to downtown Denver, or continue on transit to the Denver International Airport or employment centers throughout the metro area. Conversely, metro area residents will be able to access destinations in Broomfield or Louisville through consistent transit service.

Additionally, SOV drivers will also have the option of paying to use the congestion-free lane, freeing valuable space on the highway. The Project also constructs portions of a commuter bike path, underpasses and sidewalks that already or will connect to regional transit stops, providing car-free connectivity to what was once a traditional highway corridor. Corridor travelers currently experience four hours of severe congestion each day, resulting in 2.4 million annual person hours lost valued at \$52 million. For the 14.6 percent of truck trips on U.S. 36, the yearly cost of congestion totals nearly \$16 million. Without this project, U.S. 36 will become even more congested, making continued development of the new energy economy in this area less attractive.

The Project will enhance user mobility and modal connectivity, reduce congestion and demonstrates the benefits of coordinated transportation and land use decisions.

iv. Environmental Sustainability

Colorado's gross greenhouse gas (GHG) emissions are rising faster than those of the nation as a whole. The State's gross GHG emissions increased 35 percent from 1990 to 2005, while the national emissions rose by only 16 percent during this same period. The principle sources of Colorado's GHG emissions are electricity use and transportation, accounting for about 37 percent and 23 percent, respectively. This trend is largely due to rapid population and production growth within the State. Although the Denver metropolitan area is in attainment for Particulate Matter and Carbon Monoxide, the area was designated as being in non-attainment for the eight-hour ozone standard in 2007. The area is currently in attainment for the remaining pollutants.

Numerous actions have been taken to address air quality, including the adoption of a State Climate Action Plan and calling for new GHG emission vehicle standards. In the first two to three years after construction has been completed, the Project will support these polices, as well as yield immediate and tangible environmental benefits. Estimated Project benefits include the annual reduction of 9.9 million vehicles miles traveled, 2 million hours, and 8,630 metric tons of vehicle emissions.

According to DRCOG, Project construction will increase transit ridership by 26 percent along U.S. 36 in the near-term and the total percentage of transit ridership could double over the next 20 years. Carpooling will increase by five percent following the construction of the managed lanes. Increased transit ridership and carpool usage is expected to decrease oil dependence, resulting in an estimated reduction of 1.1 million gallons of fuel per year. In conjunction with the Project, there are number of programs already in place that are designed to encourage the reduction of automobile usage and fuel consumption. Including commuter cash programs, Eco Pass (an unlimited transit pass), and managed parking.

i. Safety

Many areas of the U.S. 36 corridor still use structures and geometry from the original construction in the 1950s. Deficiencies include: three structurally deficient and two functionally obsolete bridge structures; 12-miles of poor pavement with a remaining service life of less than six years; sections have substandard vertical alignments with greater than five percent grades; several locations where stopping sight distance, decision sight distance, and highway cross-sections are not to standard, and; several instances of lane imbalances along the corridor, including through lanes and acceleration/deceleration lanes that disrupts traffic flow.

In 2005, TRIP's Heartburn Highways report identified and ranked 50 segments of roadway throughout Colorado that caused the greatest stress to motorists. The entire U.S. 36 corridor was ranked #1 on the list due to deteriorated pavement conditions, high rates of traffic congestion, and serious traffic accidents. Similarly, CDOT safety assessments conducted in 2004 and 2005 showed worse than expected safety performance along the Project corridor in comparison to similar urban four-lane highways. The assessments found patterns of rear-end accidents attributable to congestion and barrier collisions attributable to narrow shoulders, which suggest potential for improved safety through geometric improvements planned for this heavily travelled highway. The facility remains one of the most hazardous in the State.

From 2002 to 2004, there were 1,284 crashes (1 crash/0.80 million VMT), 673 injuries (1 injury/0.29 million VMT), and 4 fatalities (0.25 fatalities for every 100 million VMT). The Project will reduce the number and rate of crashes along the corridor. Reconstruction of the highway will allow the new facilities to be built to current design standards, improving safety and operations. Repairing 50 percent of the poor pavement along U.S. 36 will alleviate pavement roughness and rutting that leads to increased crash rates on urban highways. The current substandard shoulder widths on U.S. 36 will be upgraded and widened as part of the Project, providing a safe refuge for disabled vehicles. Additional accident reduction is a likely result from the addition of two new lanes, as research shows four to six lane roadway expansions typically reduces accidents from 20 to 25 percent.

- ii. Cost Benefit
- b. Job Creation and Economic Stimulus

- ii. **Total Project Cost:** \$150 Million

- iii. **Project TIGER III Request Amount:** \$150 Million

- iv. **Project TIGER III CDOT Match Amount (source):** A Phase III financial strategy is the early stages of development.

- v. **Project type:**
 - a. Highway:
 - b. Transit
 - c. Rail
 - a. Multimodal:

The Project will involve the construction of one managed lane in each direction along the U.S. 36 median, BRT service connecting to Denver Union Station and Boulder, enhancements to BRT stations, widening of the general purpose lanes and pavement replacement, bridge replacements, sound and retaining walls in selected areas, the construction of a bikeway, and Intelligent System Improvements (ITS).

- vi. **Whether the project is requesting a TIGER II TIFIA Payment:** Potentially

- vii. **Type of jurisdiction where the project is located (urban or rural):** Boulder County, Colorado. This area is urban in nature.

- viii. **NEPA Status of Project:** The US36 Environmental Impact Study is complete, including a Record of Decision that was signed in 2009.