

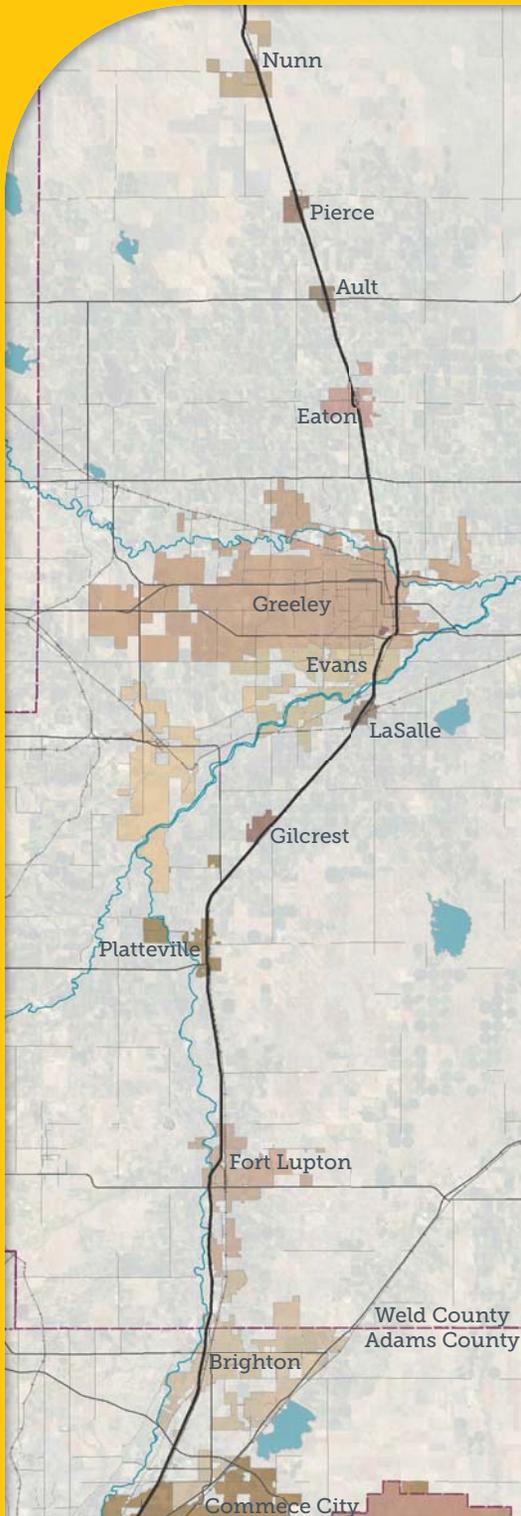


COLORADO
Department of
Transportation

Centennial Highway (US85) Betterments



FASTLANE 2016 APPLICATION



April 14, 2016



COLORADO
Department of Transportation
Office of the Executive Director

April 11, 2016

The Honorable Anthony Foxx Secretary
Office of the Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, D.C. 20590

Dear Secretary Foxx,

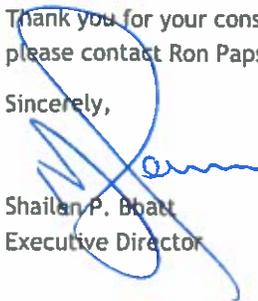
The Colorado Department of Transportation (CDOT) is pleased to submit this application for the Centennial Highway (US 85) Betterments for consideration for the Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies grant program. This highway and rail corridor improvement project is a significant investment in the Denver region's freight mobility, economic vitality, community livability, safety and travel reliability.

An over capacity rail line and a high volume, truck heavy state highway share the same right-of-way, serving as a regional backbone transporting material out of the South Platte River Valley north of Denver. Energy, agriculture, and supporting industries rely on this corridor to support national demand for these goods. Along US 85 corridor, the cross-street locations are major conflict points between commercial vehicles and rail freight, creating delays for each. The numerous conflict points also create dangerous rail-highway conflicts and reduce freight mobility along the corridor.

The corridor improvements will enhance rail and truck functions along the 50 miles of shared corridor through a series of rail siding additions, cross-street intersection improvements, and at-grade rail crossing enhancements, including new grade separations. These improvements will significantly enhance the corridor and improve region-wide movement of freight.

Thank you for your consideration of this application. If you have any questions about this application, please contact Ron Papsdorf at (303) 757-9105.

Sincerely,



Shailan P. Bhatt
Executive Director





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EXECUTIVE SUMMARY

The Centennial Highway (US 85) Betterments Project has been assembled to create a series of project components to help ensure that the freight backbone of northern Colorado continues to operate effectively and efficiently. For decades, US 85 has provided the ability to transport agricultural products (vegetables, dairy, beef), natural resources (oil and gas, sand and gravel), and has served as a National Security Route along SH 14. Over time, this vital connection between the source of these goods to the region and nation has become congested and overburdened, and the level of congestion is now primed to increase at an exponential rate.

While the Colorado Department of Transportation (CDOT) serves as the official applicant, the project spans approximately 75 miles of rail/highway corridor improving conditions in mostly rural areas. The 11 improvements identified have been studied and shared with the municipalities and other stakeholders within the corridor. The public has been included to aid in the problem descriptions and provided comments on proposed solutions. CDOT has utilized the Planning and Environmental Linkages (PEL) process to evaluate and reach consensus on these solutions. Now is the time to make these solutions a reality.

There are five roadway projects and six rail projects identified that, when implemented, will result in a highly efficient corridor that allows for increased freight movement along the highway, side roads, and railroad. Rarely does an opportunity come along that allows for such a holistic set of improvements to be implemented that benefits both freight movement and the traveling public.

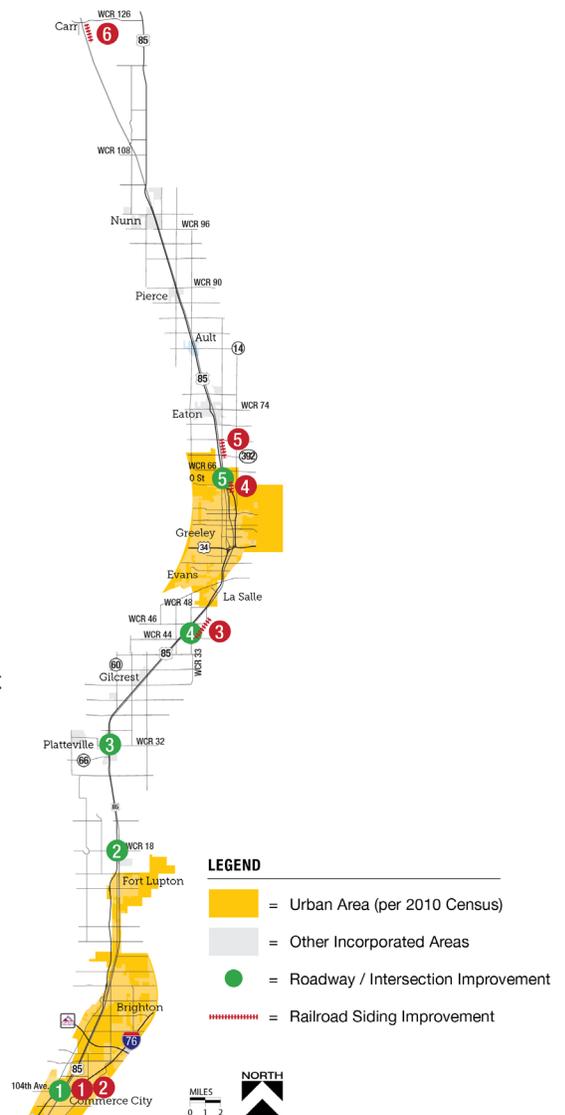
Improvement projects are proposed over the entire 75-mile length, aimed at addressing some of the more critical freight conflict points. From south to north, specific improvement locations include:

ROAD PROJECTS

- 1 Road Project 1: 104th Avenue/US 85 Interchange—Commerce City
- 2 Road Project 2: Weld County Road (WCR) 18/US 85 Interchange—Weld County
- 3 Road Project 3: WCR 32/Grand Avenue intersection—Platteville
- 4 Road Project 4: WCR 44/WCR 33/WCR 46 intersections in Peckham
- 5 Road Project 5: “O” Street closure—Greeley (including dramatic improvements to UPRR operations)

RAIL PROJECTS

- 1 Rail Project 1: Rolla Siding Extension
- 2 Rail Project 2: Rolla Connector/Runner
- 3 Rail Project 3: New Peckham Siding
- 4 Rail Project 4: Greeley Siding Extension
- 5 Rail Project 5: Lucerne Runner
- 6 Rail Project 6: Carr Siding Extension





COMMUNITY COST BENEFIT SUMMARY

COMMUNITY	ROAD/INTERSECTION PROJECT	RAIL PROJECT	COSTS (in thousands)	BENEFITS	
				MONETIZED (3% DISCOUNT)	QUALITATIVE
Commerce City	<i>Road Project 1</i> ▶ 104th Avenue Grade-Separated Interchange with US 85	<i>Rail Projects 1 & 2**</i> ▶ Siding Extension ▶ New Runner Connection	Road = \$56,800	\$185,340	<ul style="list-style-type: none"> ▶ Grade separation of railroad and 104th Avenue ▶ Eliminates corridor's most congested intersection ▶ Eliminates traffic backups onto I-76
Brighton	▶ None	▶ None	\$0	Portion of total corridor benefits	<ul style="list-style-type: none"> ▶ Less use of siding use across heavily used roadways ▶ Increases community connectivity ▶ Decreases east/west traffic delay
Fort Lupton	<i>Road Project 2</i> ▶ WCR 18 Grade-Separated Interchange ▶ Parallel Road between WCR 18 and WCR 22	▶ None	Road = \$34,900	\$76,750	<ul style="list-style-type: none"> ▶ Improves intersection operations at WCR 18 and WCR 22 ▶ Eliminates unsafe left turn movements to/from US 85 ▶ Consolidates two busy intersections to one dramatically improved interchange
Platteville	<i>Road Project 3</i> ▶ WCR 32 Intersection Improvements	▶ None	Road = \$400	\$72,660	<ul style="list-style-type: none"> ▶ Less siding use, means fewer parked trains in town ▶ Improves US 85/WCR 32 efficiency ▶ Removes two legs of six-legged intersection
Peckham	<i>Road Project 4*</i> ▶ Full closure of WCR 33 and east-side closure of WCR 46 ▶ Improve WCR 44	<i>Rail Project 3**</i> ▶ New Siding	Road = \$5,200	\$5,170	<ul style="list-style-type: none"> ▶ Removes road/rail conflicts ▶ Consolidates three access points into one improved access point ▶ Roadway project 4 is necessary to support the Peckham Rail siding
LaSalle	▶ None	▶ None	\$0	Portion of total corridor benefits	<ul style="list-style-type: none"> ▶ Less siding use, means fewer parked trains in town ▶ Community improvement by reducing community obstruction caused by trains



COMMUNITY	ROAD/INTERSECTION PROJECT	RAIL PROJECT	COSTS (in thousands)	BENEFITS	
				MONETIZED (3% DISCOUNT)	QUALITATIVE
Greeley	Road Project 5* ▶ 'O' Street Closure	Rail Project 4** ▶ Siding Extension	Road = \$200	-\$7,140	<ul style="list-style-type: none"> ▶ Removes road/rail conflict point ▶ Provides increased area for train meets and passes, thus increasing rail efficiency for entire corridor ▶ Roadway project 5 is necessary to ensure full efficiency of the Greeley rail siding (and planned extension[Rail Project 4])
Lucerne	▶ None	Rail Project 5** ▶ New Runner Connection	\$0	Portion of total corridor benefits	<ul style="list-style-type: none"> ▶ No impacts
Ault	▶ None	▶ None	\$0	Portion of total corridor benefits	<ul style="list-style-type: none"> ▶ Less siding use, means fewer parked trains within town ▶ Dramatic community improvement by reducing community obstruction caused by trains ▶ Less blocking of National Defense Route along SH 14
Carr	▶ None	Rail Project 6** ▶ Siding Extension	\$0	Portion of total corridor benefits	<ul style="list-style-type: none"> ▶ Provides increased siding length for trains for meets and passes, thus increasing rail efficiency ▶ Less blocking of WCR 126 ▶ Allows UPRR to operate longer trains to improve efficiency
Corridorwide			Rail Improvements = \$62,300 Road Improvements = \$97,500 Total \$159,800	Rail Benefits = \$102,060 Road Benefits = \$332,780 Total \$434,840	<ul style="list-style-type: none"> ▶ Higher average speed for trains ▶ Increased train length means more freight movements ▶ Increased traffic mobility through corridor means more efficient freight movement ▶ Increased community connectivity ▶ Increased traveling public mobility ▶ Safer corridor connections

Notes: * = Road projects are needed to realize the rail benefits

** = All rail projects must be completed to realize the full corridorwide benefits



FASTLANE 2016 APPLICATION

A net benefit-cost ratio of 1.66 is estimated using a seven percent discount rate; a 2.73 ratio can be achieved using a three percent annual discount. Plus with the aid of FASTLANES, northern Colorado, the western U.S., and the nation as a whole will achieve the following additional outcomes:

ECONOMIC OUTCOMES

The heart of any economic driver is to move products from their source to the ultimate consumers. The Centennial Highway corridor is that vital link to transporting important goods from the abundant northern Colorado to the rest of the nation.

- ▶ Reduction in freight transport delays along US 85 via intersection improvements (including interchanges)
- ▶ Fewer crashes, yielding the prevention of deaths, injuries, and the costs associated with these and all other crashes.
- ▶ Less traffic idling due to a 10 to 50 percent drop in railroad gate “down time” along the 95 crossroad at-grade railroad crossings (which serve a total of 200,000 vehicles per day) due to more efficient rail operations.
- ▶ Improved rail efficiencies with respect to fewer hours of operation.

MOBILITY OUTCOMES

The freight congestion along US 85 is an increasing challenge today, in large part due to the interaction between large trucks and the UPRR railroad. Every project component identified in this submittal is geared toward improving the freight mobility along the corridor by improving both of these transport modes.

- ▶ Improvement to the railroad operations allowing more rapid delivery and greater capacity, including a 15 percent increase in average train speed (entire length of corridor) and a 28 percent increase in train length.
- ▶ Significant decrease in truck traffic delay experienced at several of the corridor’s busy intersections.

SAFETY OUTCOMES

Any road and rail improvement must consider safety as a critical factor. The development of all the improvements considers safety as a focus. Each improvement will separate or manage traffic entering and exiting US 85 and how it interacts with the rail in a safer manner.

- ▶ Decrease in rail crashes with respect to train/ vehicle conflicts by virtue of eliminating four at-grade crossings and enhancing two others (via signal preemption).
- ▶ Decrease in highway improvement by virtue of converting two at-grade intersections to grade-separated interchanges and closing three others.

COMMUNITY AND ENVIRONMENTAL OUTCOMES

The benefits of the Centennial Highway (US 85) Betterments Project are not just for freight; the community and environment gain as well. Better and safer mobility for freight also means better and safer mobility for the traveling public. The delay savings resulting from these improvements translates directly into an enormous amount of emissions reduction. Creating appropriately spaced rail sidings, allows trains to dramatically reduce or eliminate the amount of time they are parked within towns (or proceeding very slowly to time a meet/pass), thus increasing community cohesion. By providing rail sidings outside of towns, the number of trains idling within communities reduces; thus moving particulate emissions away from more densely populated areas.

- ▶ The delay savings outlined in this document translates directly into an enormous amount of emissions reduction.
- ▶ A safe and efficient US 85 supports the movement of freight and the public at large, thereby enhancing the corridor’s ability to provide its expressway function for the region and connection between metropolitan areas.
- ▶ Creating appropriately spaced rail siding areas allows trains to dramatically reduce or eliminate the amount of time they park within towns, thus increasing community cohesion.
- ▶ Fewer numbers of trains means an increase in fuel savings and a reduction in emissions
- ▶ Providing rail sidings outside of towns lessens the number of trains idling within communities; thus moving particulate emissions away from more densely populated areas.



PARTNERSHIP AND INNOVATION

CDOT has taken full advantage of the PEL process and the establishment of the US 85 Coalition to develop a consensus-based set of solutions. Corridor communities have an established Intergovernmental Agreement that requires improvements on the corridor be collectively approved upon. This relationship has served as the basis for the PEL and continues today.

This corridor is UPRR’s primary access into a major metropolitan area (Denver), and the interaction between CDOT and the UPRR has allowed for an unprecedented set of improvements that equally benefits each. This combination of improvements creates a holistic corridor which allows for efficient freight movement for many years to come.

COST SHARE

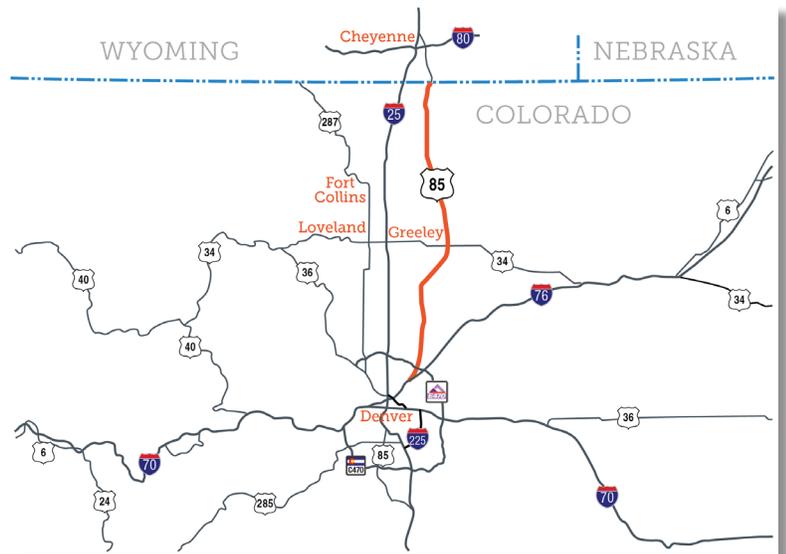
CDOT has been able to identify and secure matching funding for the projects identified in this application. A 59.9% request from the FASTLANE program is being sought. Through a number of funding sources, the ability to bring these important improvements to fruition has become a reality. The US 85 Coalition has previously contributed funding to conduct the PEL on this corridor. It is CDOT’s expectation that these communities will continue to provide financial support for these projects, as appropriate.

The 11 improvement projects outlined in this document present the Centennial Highway (US 85) Corridor with an opportunity to implement projects that have a substantive benefit to all types of land freight movement (rubber tire and rail) and the traveling public. The benefits of these improvement can be measured and monetized by looking at economic benefits (based on travel delay savings and increased freight efficiency), improved safety benefits, and sustainability benefits (emission and community considerations). The total cost of the 11 improvement projects is \$159,800,000; however, the long-term benefit of these projects will range from \$265,120,000 to \$434,840,000! These figures do not include the non-measurable benefits to the corridor. When considering the overall costs compared to the benefits, there is no doubt. The Centennial Highway (US 85) Betterments Project will benefit the corridor, Colorado, the western US, and the nation as a whole.

In summary, the Centennial Highway (US 85) Betterments Project establishes the groundwork for ensuring that this vital backbone of freight movement between northern Colorado and the rest of the nation continues into the future.

1.0 INTRODUCTION

The Centennial Highway (US 85) Betterments improvement project (between Commerce City, Colorado and Carr, Colorado) comes on the heels of a collaborative Planning and Environmental Linkage (PEL) effort which has entailed the active participation of numerous municipalities, counties, Metropolitan Planning Organizations (MPOs), Union Pacific Railroad (UPRR), and the Colorado Department of Transportation (CDOT). While CDOT serves as the official applicant, the project spans approximately 75 miles of rail/highway corridor improving conditions in mostly rural areas. The figure below shows the location of the corridor. These improvements will significantly improve the movement of freight along the UPRR and the Centennial Highway. The opportunity afforded with the Centennial Highway (US 85) Betterments project is truly an instance where the whole is greater than the sum of the parts.





The US 85 corridor is the freight transportation backbone serving numerous industries that rely on the highway and the rail line as its lifeblood to deliver goods and materials. Industries important to the nation and region rely on the corridors including:



Energy
(renewable energy and fossil fuel sources, including Niobrara Shale)



**United States
Department of Defense**



Agriculture



Sand and Gravel Operations



Food producers



**Overall Traveling Public Mobility
(including the connectivity
between urban areas)**

Overall corridor usage has doubled since the 1990s, causing a host of operational and safety issues that interfere with the movement of goods; another doubling in usage is projected by the 2035 timeframe. These increases will continue to exacerbate the challenging issues that the corridor faces today.

The heart of the Betterments project is aimed at alleviating significant railroad/highway conflicts. Crossroad locations along the US 85 corridor force these two transport modes to conflict; both truck traffic and rail traffic suffer as a result. Parked trains often cut-off large sectors of communities threatening emergency response, and preventing access to various uses such as schools, businesses, and civic activities. In addition, the highway and railroad share right-of-way along much of the corridor. Portions of US 85 are also used as a designated route for hauling important national defense needs, such as nuclear cargo.

The Centennial Highway (US 85) Betterment project is composed of a series of improvement projects that entail intersection improvements, rail crossing closures, rail crossing enhancements, and rail siding additions and extension thereby allowing trains to park at locations that will not impact the crossroads. The collective impact of the rail sidings will decrease the “down-gate” time at every railroad crossroad (approximately 95 crossings along the 75-mile corridor) due to improved efficiencies that will increase average train speeds; crossroad traffic totals more than 200,000 vehicles per day along the 75-mile segment. In addition, numerous crossroads’ rail crossings to the south (into Denver) will benefit as well.

THE OVERALL BENEFIT OF THESE IMPROVEMENTS...

...is greater than just increased freight mobility, increased traveler safety, or even traveler mobility, as they ensure that the Centennial Highway and the UPRR together continue to serve as the backbone of commerce and livability in northern Colorado in the face of increasing demands.

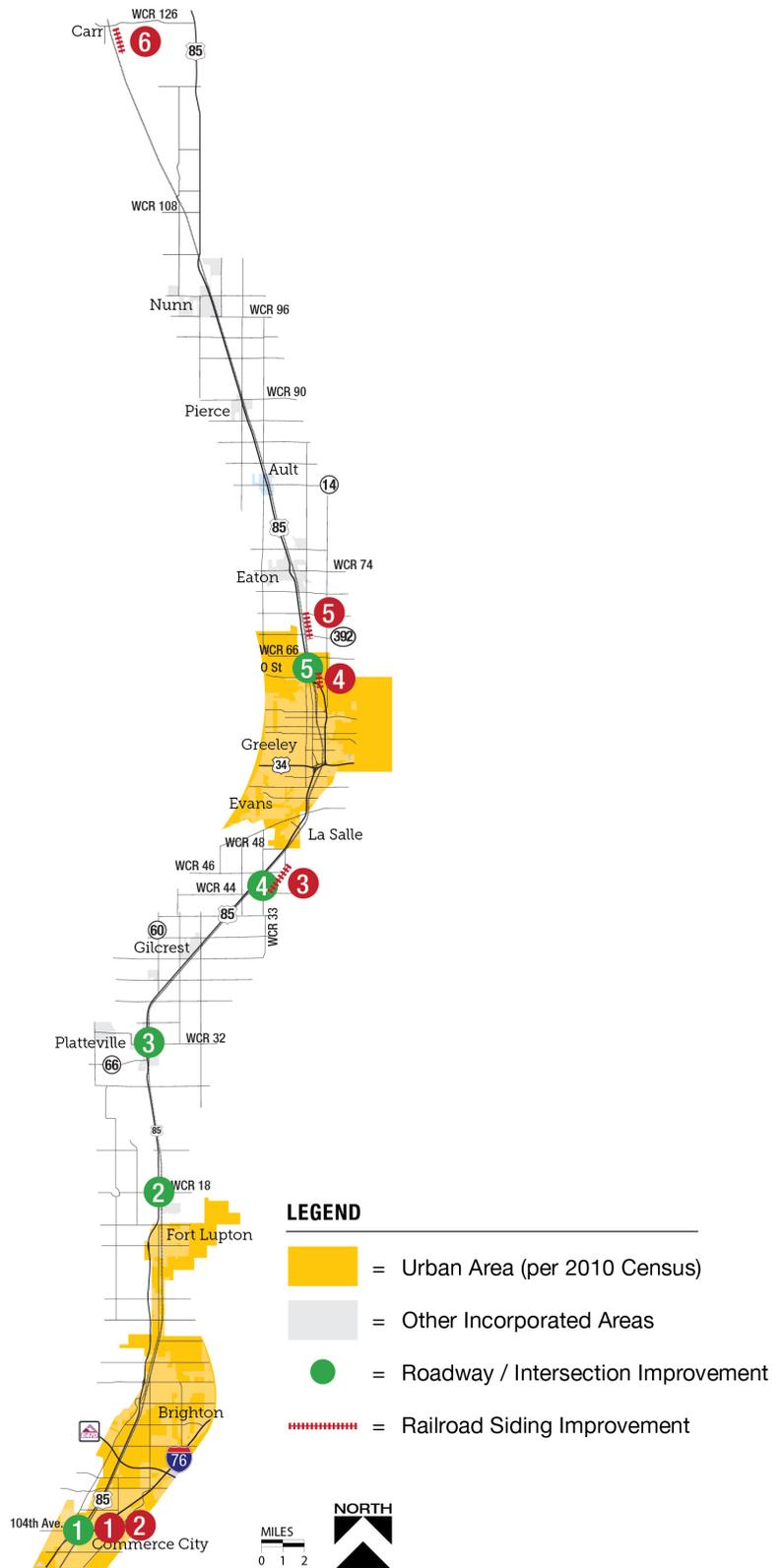


FASTLANE 2016 APPLICATION

Improvement projects are proposed over the entire 75-mile length, aimed at addressing some of the more critical freight conflict points. Specific improvement locations include from south to north:

- 1 104th Avenue / US 85 Interchange—Commerce City
- 1 UPRR Rail Connector Track at 96th Ave.
- 2 UPRR Siding Extension—104th Ave.
- 2 Weld County Road (WCR) 18 / US 85 Interchange—Weld County
- 3 WCR 32/Grand Avenue intersection—Platteville
- 3 New UPRR Siding—Peckham
- 4 WCR 44/WCR 33/WCR 46 intersections in Peckham
- 5 “O” Street closure—Greeley
- 4 (Greeley Siding Extension)
- 5 New UPRR Rail Runner—Lucerne
- 6 UPRR Rail Siding Extension—Carr

A map showing the listed locations is provided to the right. Each location is identified numerically to allow easy association with table entries and subsection narratives that explain the nature and benefits of each improvement. The map also illustrates urban designated areas along the US 85 corridor. Many of the roadway/intersection improvements are outside the urbanized areas along the corridor. The distinction between rural and urban projects are noted throughout the document since separate funding allocations have been identified for each within the FASTLANE program. Again, the benefits of these improvements extends well beyond just the local improvement areas enhancing the greater corridor through allowing the safe and efficient mobility of freight to support vibrancy in the urban and rural communities.





2.0 COVER PAGE CHART

As requested, this cover page chart illustrates key information concerning the application request:

PROJECT NAME	CENTENNIAL HIGHWAY (US 85) BETTERMENTS
Previously Incurred Project Cost	\$ 0
Future Eligible Project Cost	\$159,800,000
Total Project Cost	\$159,800,000
Nationally Significant Freight and Highway Projects (NSFHP) Request	\$95,660,000
Total Federal Funding (including NSFHP)	\$122,500,000
Are matching funds restricted to a specific project component? If so, which one?	Yes. Developer in-kind contribution funds have been apportioned to WCR 44 intersection. UPRR in-kind contribution has been apportioned to the rail sidings component.
Is the project or a portion of the project currently located on National Highway Freight Network?	No, but Colorado is in the process of adding the segment of US 85 north of Denver to this network.
Is the project or a portion of the project located on the National Highway System?	Yes, US 85 is designated as part of the National Highway System
<ul style="list-style-type: none"> ▶ Does the project add capacity to the Interstate system? ▶ Is the project in a national scenic area? 	<p>No, but US 85 parallels I-25. Improvements to US 85 could draw traffic from I-25, thereby benefitting the interstate system.</p> <p>No.</p>
Do the project components include a railway-highway grade crossing or grade separation project?	Yes. Numerous at-grade crossings will be eliminated or bettered via train operation adjustments afforded by the rail siding additions/extensions.
Do the project components include an intermodal or freight rail project, or freight project within the boundaries of a public or private freight rail, water (including ports), or intermodal facility?	Yes. Union Pacific Railroad and US 85 share the same right-of-way. The close proximity of these two facilities creates conflict issues at crossroads.
If answered yes to either of the two component questions above, how much of requested NSFHP funds will be spent on each of these project components?	\$124,500,000
State(s) in which project is located	Colorado
Small or large project	Large
Also submitting an application to TIGER for this project?	No
Urbanized Area in which project is located, if applicable	More than half of the project components are in rural areas. Urbanized Areas include Commerce City and Greeley, CO.
Population of Urbanized Area	Commerce City, population of approximate 50,000, is part of the Denver Metropolitan area. The Greeley metro area is home to approximately 97,000 people.
Is the project currently programmed in the: <ul style="list-style-type: none"> ▶ Transportation Improvement Program (TIP)? ▶ State Transportation Improvement Program (STIP)? 	<p>Not currently, but as new funds become available, long-range transportation plan amendments could be easily initiated. Inclusion in the TIP and STIP would come subsequently (six to nine months) subject to air quality conformity.</p>
<ul style="list-style-type: none"> ▶ MPO Long Range Transportation Plan? 	Elements of the US 85 corridor are included in the North Front Range Metropolitan Planning Organization Long Range Transportation Plan and the Upper Front Range Transportation Planning Region Long Range Transportation Plan. As new funds become available, plan amendments could be easily initiated.
<ul style="list-style-type: none"> ▶ State Long Range Transportation Plan? 	Not currently, but as new funds become available, plan amendments could be easily initiated.
<ul style="list-style-type: none"> ▶ State Freight Plan? 	US 85 is recognized in the Colorado 2015 Freight Plan with respect to needs concerning safety, bottlenecks, and speed drops.



3.0 PROJECT DESCRIPTION

The Centennial Highway (US 85) Betterments project improves a single corridor via a series of individual but linked components. These components were selectively chosen because of the benefits they provide, not just to the localized area around the individual improvements but to the entirety of the corridor, northern Colorado, and the entire western United States. The individual project components entail the construction of 11 improvement projects that include new interchanges, intersection improvements, rail crossing closures, and new rail sidings and extensions.

The Centennial Highway has been a focus for northern Colorado for years. In fact, local communities and counties have formed an active coalition aimed at improving the corridor’s safety and mobility. This coalition served as a starting point for the Planning and Environmental Linkage (PEL) recently undertaken by CDOT to address transportation needs throughout a 63-mile stretch of this vital highway. This 24-month effort has proved immensely beneficial to gain stakeholder consensus throughout the corridor for improvements that provide benefits to the entire corridor.

The US 85 corridor is characterized by heavy rail activity, significant truck traffic, and commuter traffic traveling between the rural communities and between the urban areas. Trucks comprise a large proportion of vehicles on US 85, typically making up between 15 and 20 percent of its traffic demand. Some of the busier crossroads experience a 20 to 30 percent truck composition. The nature of the hauled freight is critical to the nation and region as it pertains to:

REUSABLE ENERGY (windmill manufacturing). Vestas, a major manufacturing plant of windmills, is located near Fort Lupton, and the delivery of their major windmills would benefit significantly with improvements to the highway and enhancement to the rail service.



FOSSIL FUEL ENERGY (from the Niobrara Basin and Wattenburg Field). Weld County has seen a boon from oil and gas development in recent years, and the needed transportation infrastructure has not kept pace. While new well development has recently slowed, producers generally consider Weld County wells as having some of the best relative economics in the country (RBN Energy, July 2015). A rebound in energy prices (as has been occurring) will precipitate a significant spike in oil and gas activity necessitating adequate transport accommodations.



FOOD PROCESSING Several users including Leprino Dairy and JB Swift Meat Processing rely heavily on US 85. Leprino Dairy is the nation’s largest mozzarella cheese manufacturer and is headquartered in northern Colorado. A major production and distribution facility is located on US 85.



AGRICULTURE The heart of northern Colorado is based upon agriculture and this continues today. The production of crops and dairy cattle remain a vital component to this area. As such, large trucks are required for distribution of these essential commodities throughout the western U.S.



Essential to the nation, energy and food are primary commodity staples that the corridor delivers, much of it sent to the Denver area via highway and north to Wyoming via rail for distribution nationwide. The corridor also serves as an important National Defense route, as well as a designated route for nuclear materials.



BUT THERE ARE PROBLEMS.

The major transport challenges along the Centennial Highway primarily occur at the crossroads. The railroad and the highway share the same right of way (ROW) resulting in these two transport modes being extremely close. Crossroads cause a mixing and interfering of these modes as the operation of one often negatively affects the other. Further, the interference that occurs at the crossroad locations is a safety hazard based on the analysis of crash data (2008 to 2012). Some crossroad locations do not provide enough stacking distance between the highway and the rail line to accommodate a semi-tractor trailer. There are numerous intersections along US 85 that experience significant delay due to the railroad proximity and the challenge of turning onto an increasingly busy highway.

AND THE PROBLEM IS GETTING WORSE.

The volume of trucks along the highway and trains along the railway are significant and are expected to increase. Daily traffic along the four-lane highway ranges from 38,000 vehicles per day at the south end (near 104th Avenue) to 4,000 vehicles per day at the north end (near Nunn). Truck percentages along US 85 are generally in the 15 to 20 percent range. Nearly 5,000 trucks per day travel US 85 at 104th Avenue when the energy industry was peaking several years ago, a scenario that is likely to occur again soon. Future projections along US 85 suggest that it could serve 50,000 to 55,000 vehicles per day (by 2035) with truck volumes estimated to be between 7,000 and 8,000 per day based on the US 85 Planning and Environmental Linkages Study.

HAZARDS EXIST

Hazardous material placard-trucks routinely sit along a crossroad approach attempting to turn onto US 85 such that the truck's tail end hangs over the rail line. This is a significant hazard when a train approaches (which occurs 10 to 15 times a day).

Many of the intersections operate poorly today during peak hours, and operations will become exponentially worse as traffic demands continue to increase. The poor Levels of Service (LOS) directly translate into delays for freight movement, collectively adding valuable shipping time to trucks traveling the corridor.

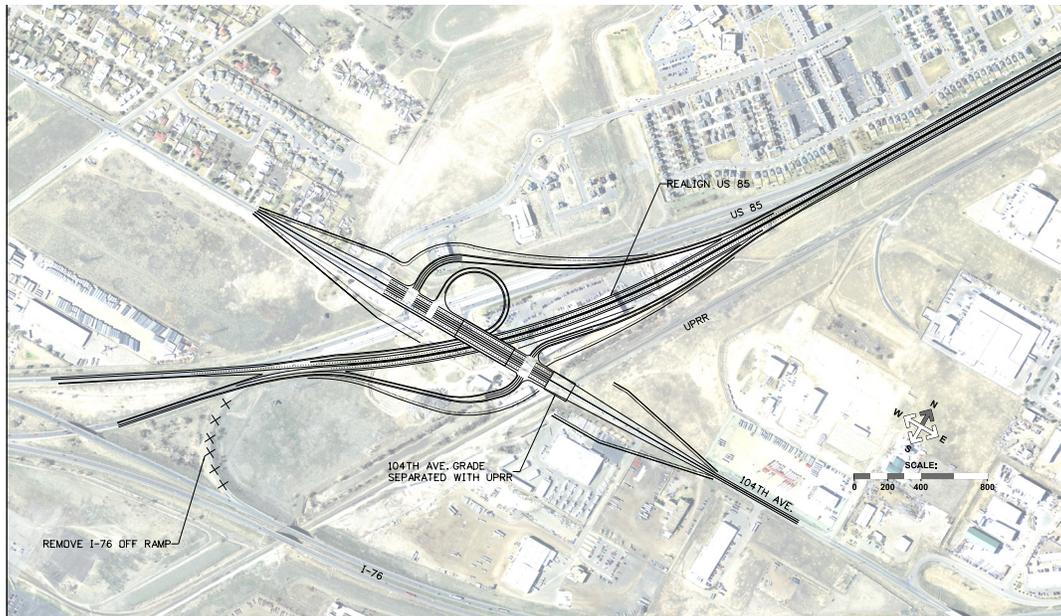
UPRR currently runs trains that are below their standard car length because the rail siding lengths throughout the corridor are too short (approximately 8,000 feet, while the standard is 10,000 feet) to allow opposing, larger trains to pass. This problem is exacerbated by the limited number of sidings in the corridor; in addition, most of the train sidings are within the smaller, rural towns which negatively impacts a community when the siding is holding a train. This railroad inefficiency leads to greater number of shorter trains carrying freight through the corridor translating into delays to regional and national transport.

Further, rail operations often require parking a train across the crossroad, sometimes for extended periods. This cuts off users from the highway necessitating a long wait or requiring significant out-of-direction travel to cross at another rail crossing; emergency response capabilities are severely crippled during these times. Additionally, the extended time of blockage has a negative impact on the community's livability as residents are cut off from businesses, schools, and civic functions.

The following presents information on each of the selected projects/components that comprise improvements that directly address the above issues. The highway/intersection projects each have independent utility, but when implemented together with the rail sidings projects, create a highly efficient corridor that improves the movement of freight across northern Colorado and the western US. The report includes conceptual layout of each option, and larger version of the layouts can be found at the CDOT website (<https://www.codot.gov/programs/planning/projects/fastlane>).

Roadway Project 1 – 104th Avenue / US 85 Interchange

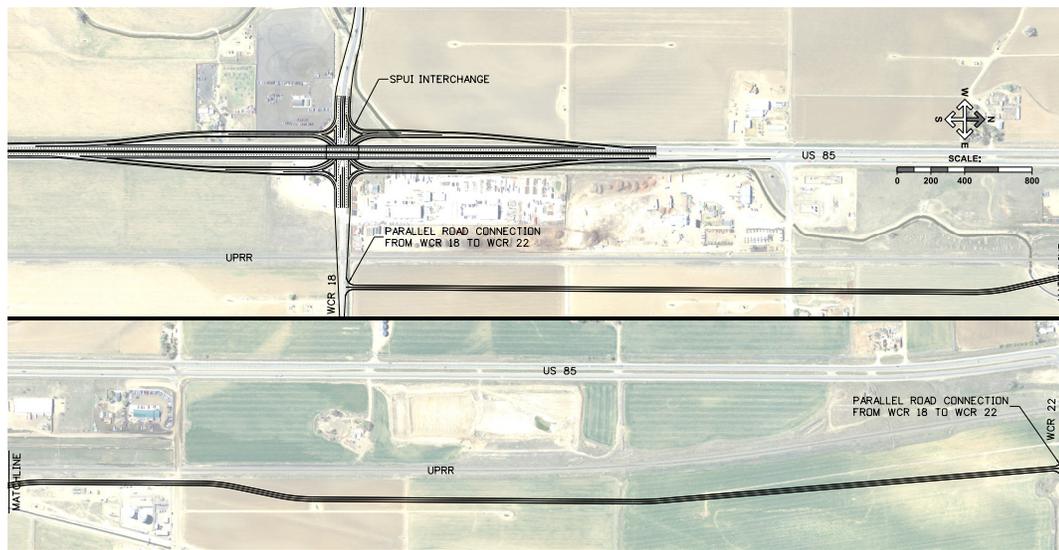
A new interchange (partial cloverleaf) will allow for a more efficient movement of trucks, trains, and the traveling public through the most congested portion of the US 85 corridor. The improvement proposal entails elevating 104th Avenue over a realigned UPRR line US 85/104th Avenue is the most congested and highest crash-prone intersection for cars and trucks in the corridor, often creating dangerous significant northbound queues that extend back into I-76. With the proposed interchange improvements, significant delay and queuing experienced by these trucks (and subsequently the traveling public) will be alleviated.



Setting	Urban (City of Commerce City)
Traffic	The 38,000 vehicles per day on US 85 include an extremely high percentage of trucks (14%). 104th Avenue is one of the busiest crossroads in the corridor, serving 11,000 vehicles per day.
Operations	This is among the worst-performing intersection in the corridor, operating at LOS E during peak hours (with some approaches operating at LOS F). Peak hour queues along the northbound approach often extend back into I-76, which is a half-mile away.
Crash Experience	104th Avenue has experienced the greatest number of crashes than any other crossroad along US 85. The primary pattern involves rear-end accidents, typical of a signalized intersection. Rear-end crash experience at this intersection is higher than expected, and this may be due in part to 104th Avenue being the first traffic signal drivers reach upon exiting the I-76 freeway (northbound).
Railroad Interaction	The UPRR is located approximately 770 feet east of US 85. The traffic loading along 104th Avenue often reaches the point in which the rail operations and US 85 operations impact each other.
Readiness	CDOT's innovative Template EA will be utilized to expedite NEPA clearance. Other strategies will be employed that leverage the recent PEL study as well as conducting pre-construction tasks simultaneously to ensure obligation; see Chapter 8 for more information.

Roadway Project 2 – WCR 18 - Rural Project

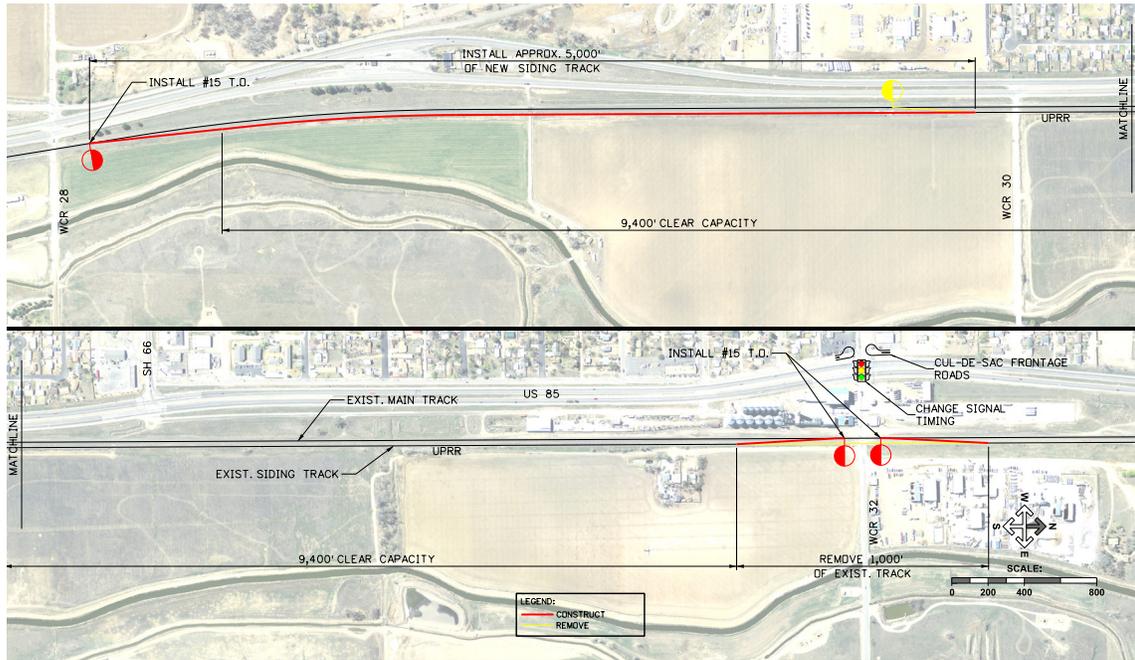
A new interchange (SPUI) will allow for a more efficient movement of trucks accessing US 85 at WCR 18. The significant delay experienced by these trucks (and subsequently the traveling public) will be mitigated. This will alleviate the delay that larger vehicles experience in accessing the highway. WCR 18 is the southern end of a planned parallel road system that would ultimately extend as far north as WCR 28 (five miles). The parallel road system would allow closures of other access points and intersections onto US 85 with ultimately WCR 18, WCR 22, and WCR 28 serving as the major full movement intersections (interchanges in the future). There are only side-road stop intersections between Fort Lupton and Platteville, and an outcome of this interchange, including the new connection to WCR 22, includes alleviating the two heaviest and problematic crossroad intersections north of Fort Lupton (WCR 18 and WCR 22).



Setting	Rural
Traffic	US 85 has an extremely high percentage of trucks (12%), as does WCR 18 west of US 85 (30%). WCR 22, whose traffic would have the option to route to the new WCR 18 interchange, is a busier roadway with truck percentages nearing 20 percent.
Operations	The side-roads are stop-sign control, and are challenges for large trucks attempting to turn left onto US 85. One interchange, with the connection, will benefit two challenging intersection locations.
Crash Experience	Most of the crashes (broadside and approach turn) that have occurred are correctable with the interchange and parallel road connection. This project would improve two troublesome intersections which are located within a segment that has experienced a disproportional number of fatal accidents (five between 2008 and 2012 according to CDOT crash data).
Railroad Interaction	The UPRR is located approximately 575 feet east of US 85.
Readiness	CDOT's innovative Template EA will be utilized to expedite NEPA clearance. County and municipal partners are in agreement with the configuration. See Chapter 8 for more information regarding the strategy for readiness.

Roadway Project 3 – WCR 32 - Rural Project

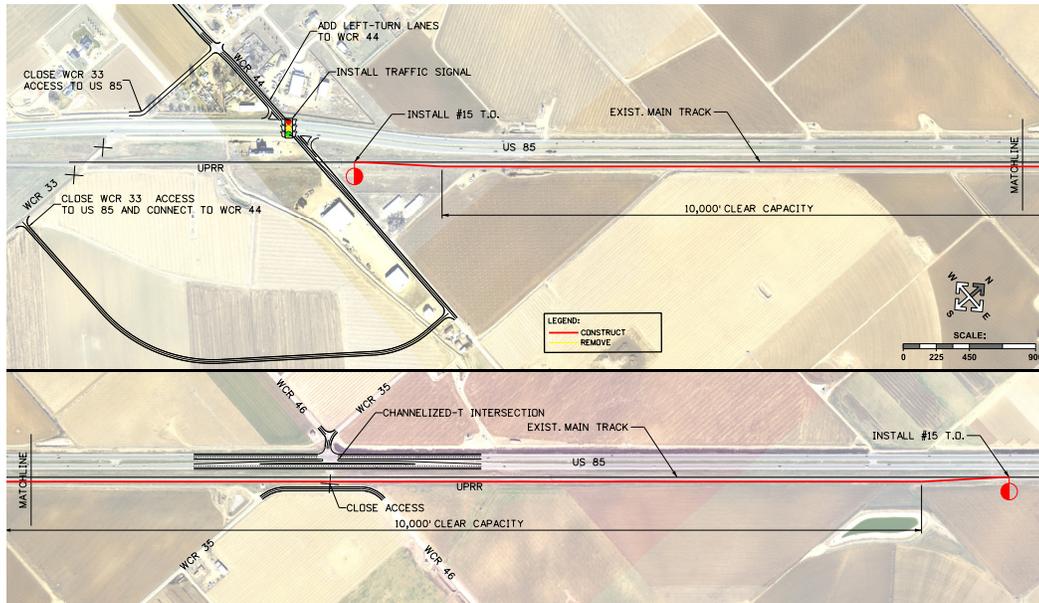
The project includes intersection improvements at WCR 32 including the closure of frontage roads and adding east/west lanes to accommodate the increased traffic.



Setting	Town of Platteville, a rural area.
Traffic	Approximately 25,000 vehicles per day travel US 85 traffic near WCR 32, and this is projected to increase to 37,000 vehicles per day by 2035. WCR 32 carries 2,500 vehicles per day.
Operations	As a six-legged signalized intersection, the signalization is extremely inefficient. The intersection’s current configuration requires a separate signal phase for the west-side frontage road, including exceptionally long clearance intervals.
Crash Experience	The intersection has experienced mostly rear end crashes, typical of a signalized intersection.
Railroad Interaction	Trains often park on this roadway, causing backups onto the highway and severing the community of Platteville. The rail is only 310 feet from the highway, and interaction between rail operations and US 85 operations is common. Further, WCR 32 provides significant continuity to the east compared to other nearby parallel county roads, and this continuity is severely hindered when parked trains prevent passage.
Other Considerations	Continuity and impact to US 85 drive the need to minimize parking trains along across WCR 32. As such, this specific project builds synergy when implemented in conjunction with the six rail siding projects.
Readiness	A categorical exclusion is most likely. Meeting the September 2019 obligation date is highly likely.

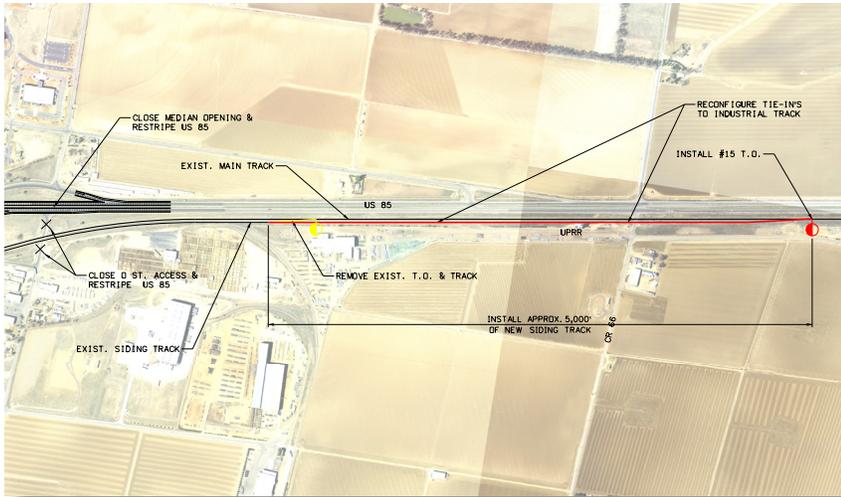
Roadway Project 4 – WCR 44/WCR 33/WCR 46 – Rural Project

Improvements include the closure of WCR 33 (both sides) as well as the east side of WCR 46. The US 85/WCR 44 intersection will be improved including signalization to accommodate traffic shifts from the said closures. The closures of WCR 46 removes an at-grade rail crossing and allows for the implementation of Rail Siding Project 3.



Setting	Peckham, a rural area.
Traffic	21,000 vehicles per day along US 85, 2,000 vehicles per day along WCR 44 to its east. Closures of WCR 33 and WCR 46, and the associated traffic shifts to WCR 44, would increase this to 2,700 vehicles per day.
Operations	Currently side-street stop controlled. The most problematic movement at the intersection is the westbound left turn movement from WCR 44. The skewed angle of the intersection contributes to this intersection operational struggles.
Crash Experience	Heavy broadside crash pattern has occurred involving numerous injuries, over half involving trucks and buses. The skewed angle requires side-street drivers to look beyond 90 degrees over their shoulder when entering US 85, an action that is difficult for many trucks.
Railroad Interaction	Improving and signalizing WCR 44 will require signal preemption as the rail is only 190 feet from highway. Currently WCR 46 has less than 50 feet of separation, an undesirable situation that would be closed as part of this project.
Schedule	A categorical exclusion is most likely. There are no issues in meeting the September 2019 obligation date.
Other Considerations	Closure of WCR 46 and WCR 33 will force traffic to WCR 44, which is to be signalized. Benefits of the improvements include the removal of two at-grade railroad crossings and the consolidation of three intersections to an improved intersection that can safely handle the traffic. This project is required to accommodate the Rail Siding Project 3.

Roadway Project 5 – “O” Street/WCR 66

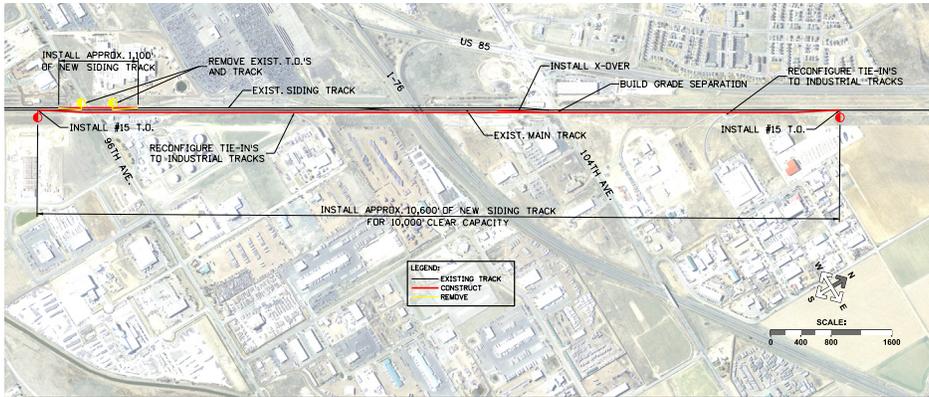


This project component entails the closure of “O” Street on the east side of US 85. This component is closely tied to rail siding project 4. In fact, the improvements on the east side of US 85 that make up this component are necessary to support rail siding project 4.

Setting	Northern Greeley - Urban Area
Traffic	US 85 carries approximately 14,000 vehicles per day at this location. “O” Street, providing only three-quarter movement onto US 85 to/from the east, serves approximately 1000 vehicles per day.
Operations	The intersection is unsignalized and does not provide for all movements. A high-speed traffic weave exists between the end of the US 85 bypass ramp and “O” Street in which US 85 through-traffic weaves with northbound 8th Avenue (also Business 85) traffic turning onto “O” Street.
Crash Experience	The US 85 PEL Safety Assessment identified only seven crashes at this location; no pattern was evident.
Railroad Interaction	The rail line is only 180 feet from US 85.
Other Considerations	This intersection is atypical. While only providing partial movements, its location at an interchange between the US 85 bypass and the US 85 business route creates a condition that is counter to driver expectation. The east side is plagued by the weave mentioned above.

A series of six rail siding and rail runner projects are a major aspect of the projects in this application. All six rail siding components are to be considered as a collective project to achieve the collective benefits that are shown later in this report. Removing one of the six components will have a significant and negative impact on the system. The additional side-rails, and extensions thereof, each plays a role in the 75-mile corridor with respect to train operations and allowing less parking time in accommodating opposing trains. The following describes each of the seven rail components.

Rail Siding Projects 1 & 2 – Rolla Rail Siding & Runner

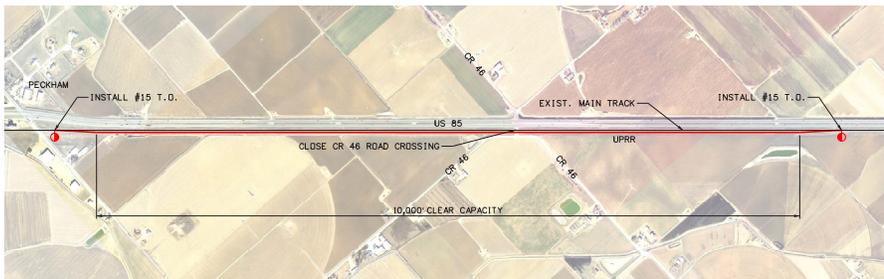


These projects includes the creation of new rail siding and runner between 96th Avenue north past 104th Avenue with Commerce City. This project is a critical element in improving the entire Centennial Highway Corridor. This siding is closely tied to Roadway Project 1. In combination, the project creates a new siding location to allow for more efficient train “meets” and best leverages the grade separation of 104th

Avenue and the rail road. This area is one of the most congested roadway sections, as well as one of the busiest sections of the rail corridor.

Setting	Commerce City, an Urban Area
Key Considerations	Closely tied to Road Project 1.
Schedule	A Template Environmental Assessment in conjunction with the interchange improvements is most likely. CDOT has identified these three projects (rail siding, rail runner, and the 104th Interchange) as an opportunity for innovative project delivery, such as Design/Build. There are no issues meeting the September 2019 obligation date. The rail siding and runner will remain within the existing UPRR ROW.

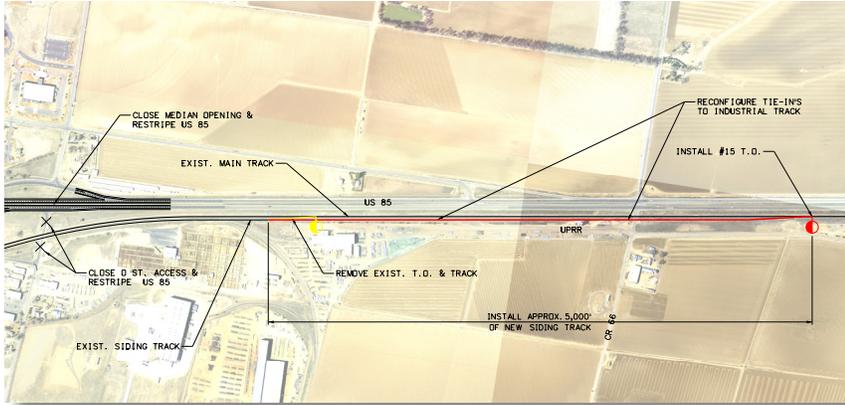
Rail Siding Project 3 – Peckham (WCR 46)



This entails building a new siding between WCR 48 and WCR 44 in light of WCR 46 being closed. This new siding will help reduce trains parking on 1st Avenue in LaSalle and on WCR 32 in Platteville. Benefits include increased community cohesion within LaSalle and Platteville as well as less negative impact between the railroad and US 85 within these towns.

Setting	Rural Weld County
Key Considerations	Within LaSalle and Platteville, trains sometimes park for extended periods. This siding will reduce the frequency and duration of parked trains.
Schedule	A categorical exclusion is most likely. There are no issues in meeting the September 2019 obligation date. This will remain within the existing UPRR ROW. Construction to be done by UPRR.

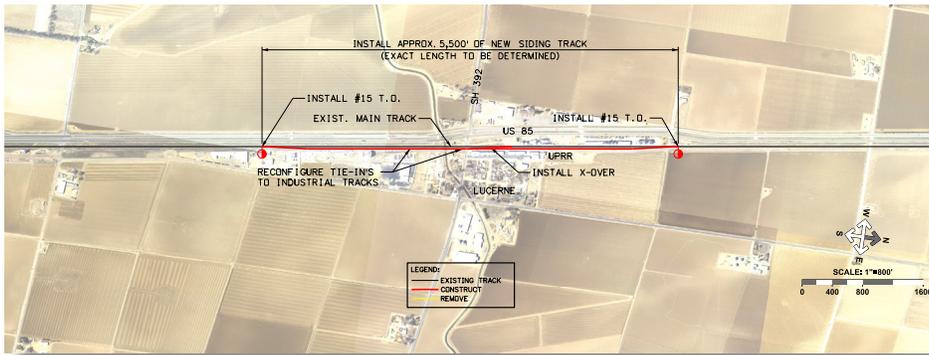
Rail Siding Project 4– “O” Street Closure and Greeley Siding Extension



This siding already exists. Closing “O” Street (Road Project 5) will allow non-impactful use. Trains could fully utilize the siding area, without interfering with “O” Street traffic, which would make use of WCR 66. This project also includes the extension of the siding north as a runner to better accommodate local trains.

Setting	Northern Greeley
Key Considerations	Impacted traffic has reasonable alternatives.
Schedule	A categorical exclusion is most likely. There are no issues in meeting the September 2019 obligation date. The remain within the existing UPRR ROW.

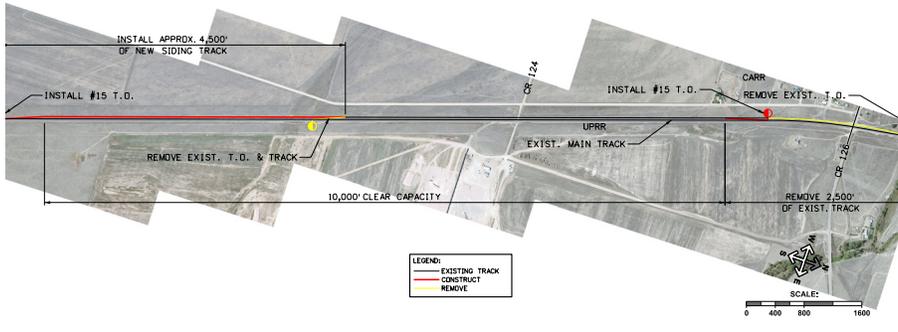
Rail Siding Project 5 – Lucerne Rail Runner



The project includes the creation of new rail runner through the community of Lucerne. The main crossroad is SH 392. This project is an important element in improving the entire Centennial Highway Corridor rail operations. This runner allows for serving local rail clients in the Lucerne, while still allowing through trains to use the mainline.

Setting	Community of Lucerne, a Rural Area
Key Considerations	The area already contains sidings and thus will not result in additional impacts to the Lucerne traffic impediments.
Schedule	A template Environmental Assessment or categorical exclusion is most likely. There are no issues in meeting the September 2019 obligation date. This will remain within the existing UPRR ROW.

Rail Siding Project 7 – Carr Siding



This project entails the extension of an existing rail siding in the Town of Carr. The current siding is only 7,700 feet long, which is the shortest siding within the corridor. This limitation restricts the number of train cars that can compose a single train. A significant number of trains that move through this area are hauling coal from Wyoming to Houston. Enhancing this siding, located equidistant

between Cheyenne, WY (UPRR's Continental line) and the siding at Ault, is key to relieving other sidings, like that at Ault. Avoidance of blocking SH 14 through Ault provides a national defense benefit as this is a key route. Extending the Carr siding would allow UPRR to run longer trains, thereby reducing the number of trains they need to run each day to serve the same customer base, and improving safety along the corridor and reducing train emissions.

Setting	East side of the Town of Carr
Key Considerations	This is among the most significant bottlenecks along the rail corridor, as this siding is heavily used due to its location, yet too short to accommodate needed train lengths.
Schedule	A categorical exclusion is most likely. There are no issues in meeting the September 2019 obligation date. This will remain within the existing UPRR ROW.

4.0 PROJECT LOCATION

The improvement locations are spread across 75 miles of the US 85 corridor. The southernmost improvement is the interchange of US 85 and 104th Avenue in Commerce City, Colorado and the northernmost improvement is within the Town of Carr, Colorado. A map of the corridor that highlights the intersection locations and the rail siding locations was shown previously. A total of 11 interconnected projects are proposed in this application.

The map on page 1 also shows the Urbanized Areas. Many of the improvement locations are within Rural Areas situated in unincorporated county settings and rural small towns. It is important to also realize that all proposed improvements (in rural and urban areas) will collectively benefit each of the rural towns located along the corridor. The improvements that are specifically within a rural area include:

- ▶ Roadway Project 2 - WCR 18
- ▶ Roadway Project 3 - WCR 32
- ▶ Roadway Project 4 - WCR 44/WCR 33/WCR 46
- ▶ Rail Siding Project 3 - WCR 46 (Peckham)
- ▶ Rail Siding Project 5 - Lucerne Runner
- ▶ Rail Siding Project 6 - Carr Siding



5.0 PROJECT PARTIES

CDOT is the sponsoring agency requesting the grant funding to improve US 85, and they will implement the highway and crossroad improvements associated with this grant. The local jurisdictions all support this request including Weld County, Platteville, Gilcrest, LaSalle, Greeley, Eaton, and Ault. These, along with other jurisdictions, comprise the US 85 Coalition Committee, a group dedicated to improving transportation conditions along the corridor. Further, the local MPOs support the project including the Denver Regional Council of Governments, the North Front Range MPO, and the Upper Front Range Transportation Planning Region (TPR). These jurisdictions were active participants in the corridor PEL study, and each played a role in crafting the PEL's recommendations. The PEL also included an extensive public engagement program, which allowed each jurisdictional participant exclusive meetings to discuss concerns and improvements.

UPRR is a private entity sharing the common interest of improving transportation along the corridor. Their rail line and the US 85 public highway share a common ROW for most of the corridor's length. Conflicts between trains and trucks impact their rail operations, and they share an interest to improve all modes of transport. While CDOT is requesting the grant funding, UPRR will be tasked with building each of the siding track additions/extensions/relocations as this assures that any new track will be constructed to their standards and be optimally sited. CDOT and the UPRR have recently fostered a strong working partnership that builds upon solving these common problems and the strong interest to resolve them.

6.0 GRANT FUNDS, SOURCES AND USES OF PROJECT FUNDS

The recipient match associated with the FASTLANE request is approximately \$64.14 million, making up 40.14 percent of the total. Sources to achieve the match include:

- ▶ Up to \$25 million from Colorado's allocation of National Highway Freight Program (NHFP) funds; committed by the Colorado Transportation Commission to the US 85 transportation corridor. (Federal)
- ▶ \$20 million from Colorado Senate Bill (SB) 228 funds plus other state sources; committed the Colorado Transportation Commission to the US 85 transportation corridor. (State)
- ▶ \$2.75 million from Colorado's Regional Priority Program (RPP) which were committed for corridor improvements as outlined in the US85 Planning and Environmental Linkages Study. This is a Federal source that was programmed specifically for PEL outcomes in cooperation with the Upper Front Range Transportation Planning Region. (Federal)
- ▶ Union Pacific Railroad is contributing land in-kind to CDOT related to the highway, valued at \$15 million.
- ▶ \$2.3 million in-kind contribution by a developer for the dedication and construction of the roadway addition needed as part of the WCR 44/33/46 project. (Local)

Federal resources (including FASTLANE) total \$122,500 million, making up 76.7 percent of the total project cost. The breakout is as follows:

Federal	\$122.5 million
Applicant	\$0
State	\$20 million
Local	\$0
Other: in-kind.....	\$17.3 million
Program Income ..	\$0
TOTAL.....	\$159.8 million



FASTLANE 2016 APPLICATION

Constructing these freight projects included in this specific application along with previously programmed safety and surface treatment work will provide opportunities for economies of scale along the corridor. In addition, thoughtful staging of the work will reduce negative impacts to the traveling public and freight flows. All of these sources have been committed through the actions of the Colorado Transportation Commission, the Colorado Department of Transportation and various local support groups.

The total project cost is \$159,800,000. NHFP funds is a federal source planned to supply up to \$25 million for the project. This freight investment, along with \$95,660,000 million FASTLANE request would constitute just under 59.86 percent of the total project cost. The FASTLANE dollars will not be used for any other matching requirement.

While this application is comprised of a collection of critical improvements along the US 85 transportation corridor, the US 85 PEL study includes numerous other improvements that are not included in this request. The effects of future projects along US 85 include increased safety; system reliability; and mobility for freight haulers, commuters and travelers. The projects specifically included in this application are considered more critical to better enable future highway and rail operations; the corridor is at a tipping point today, and slight increases in demand will translate into ongoing significant delays if improvements are not implemented. The US 85 PEL study will be published by July 2016, meaning that cost estimates included in this application and for future improvements are based on current costing principles.

Funding for future US 85 transportation corridor improvements is anticipated to occur over time through a combination of federal and state grant applications, funding through the Denver Regional Council of Governments and the North Front Range MPO TIP process, call for Congestion Mitigation Air Quality projects in the Upper Front Range Transportation Planning Region and any other emerging funding streams that are deemed appropriate. The PEL study sets the stage for the stakeholders to pursue funding to enhance the corridor for all users and modes.

The following table provides breakdown of fund expenditures broken out by NSFHP (per this application), NHFP (another Federal source), and Non-federal dollars (the true local match).

FUND EXPENDITURES

	Improvement Description	Roadway and Rail Total Cost (in \$1,000's)	NSFHP Funds	Other Federal Sources	Non-federal Funds	
1	104th Avenue	Roadway Project 1– Interchange	\$56,800	\$34,080	\$11,360	\$11,360
2	WCR 18	Roadway Project 2– Interchange	\$34,900	\$20,940	\$6,980	\$6,980
3	WCR 32/ Grand Avenue	Roadway Project 3– Intersection Improvement	\$400	\$240	\$80	\$80
4	WCR 44/33/46	Roadway Project 4– Closures & Intersection Improvements	\$5,200	\$2,900	\$0	\$2,300 (in-kind from developer for new roadway)
5	“O” Street	Roadway Project 5– Closure	\$200	\$120	\$40	\$40
1 thru 6	Rail Additions	Six Siding and Runner Additions	\$62,300	\$37,380	\$8,380	\$1,540 plus \$15,000 (in-kind from UPRR as ROW)
Application Totals			\$159,800	\$95,660 59.9%	\$26,840 16.8%	\$37,300 23.3%



7.0 COST-EFFECTIVENESS – BCA

The benefits of the intersection improvements and rail siding additions/extensions are summarized in this section, and details of their derivation including assumptions and parameters are presented in an appendix that is located at <https://www.codot.gov/programs/planning/projects/fastlane>. Monetized benefits are shown to capture economic savings, safety benefit, and sustainability value. Other benefits that are not easily monetized are listed qualitatively.

The following table shows the benefits and costs for the application projects assuming a 20-year return period. A 3 percent and 7 percent annual discount rate was calculated as required. Usage of the highway and the rail is assumed to gradually increase year-after-year in this analysis, per the guidance provided in completing this application. Benefits that have been specifically quantified for this analysis include reductions in delay (that encompasses all traffic), reductions in intersection crashes (and rail/roadway crashes), traffic emissions, and various savings and efficiencies that the UPRR will recognize by virtue of employing longer trains with higher average speeds.

Components with the most favorable benefit-cost ratio include WCR 32 in Platteville (approximately 180 to 1, due largely to the additional signal “green time” obtained by closing the frontage roads), 104th Avenue interchange (3.2 to 1), and the WCR 18 interchange with parallel road (2.2 to 1).

7% DISCOUNT RATE		3% DISCOUNT RATE	
BENEFITS	Thousands of 2016 Dollars	BENEFITS	Thousands of 2016 Dollars
Economic Benefit	\$193,820	Economic Benefit	\$306,900
Safety Benefit	\$67,830	Safety Benefit	\$123,100
Sustainability Benefit	\$4,340	Sustainability Benefit	\$6,250
State of Good Repair	-\$870	State of Good Repair	-\$1,410
Total Benefits	\$256,120	Total Benefits	\$434,840
COSTS		COSTS	
Capital Costs	\$159,800	Capital Costs	\$159,800
Total Costs	\$159,800	Total Costs	\$159,800
Benefit-Cost Ratio	1.66	Benefit-Cost Ratio	2.72

Long-Term Benefits

The long-term benefits of the Centennial Highway Betterments (US 85) reach across many categories, which have already been discussed. However, many quality of life benefits cannot be directly measured. The corridorwide benefits are presented below.

LONG TERM BENEFITS	TYPES OF SOCIETAL BENEFITS
Quality of Life	<ul style="list-style-type: none"> ▶ Higher average speed for trains, which reduce crossroad down-gate times ▶ Increased train lengths means more freight movement capacity ▶ Increased traffic mobility through corridor means more efficient freight movement ▶ Increased community connectivity ▶ Increased traveling public mobility ▶ Safer corridor connections
Economic*	\$306,900
Safety*	\$123,100
Sustainability*	\$6,250
State of Good Repair*	-\$1,410

*3% discount rate (In thousands)



QUALITATIVE BENEFITS SUMMARY

COMMUNITY	PROJECT(S)	QUALITATIVE BENEFITS
Commerce City	<i>Road Project 1</i> ▶ 104th Avenue Grade-Separated Interchange with US 85 <i>Rail Projects 1 & 2**</i> ▶ Siding Extension ▶ New Runner Connection	▶ Grade separation of railroad and 104th Avenue ▶ Eliminates corridor's most congested intersection ▶ Eliminates traffic backups onto I-76
Brighton	▶ None	▶ Less use of siding crossing city roadways ▶ Increased community connectivity ▶ Decreased east/west traffic delay
Fort Lupton	<i>Road Project 2</i> ▶ WCR 18 Grade-Separated Interchange ▶ Parallel Road between WCR 18 and WCR 22	▶ Improves operations at WCR 18 and WCR 22 ▶ Eliminates unsafe left turn movements to/from US 85 ▶ Consolidates two busy intersections to one dramatically improved interchange
Platteville	<i>Road Project 3</i> ▶ WCR 32 Intersection Improvements	▶ Less siding use, means fewer parked trains in town ▶ Improves US 85/WCR 32 efficiency ▶ Removes two legs of six-legged intersection
Peckham	<i>Road Project 4*</i> ▶ Full closure of WCR 33 and east-side closure of WCR 46 ▶ Improve WCR 44 intersection <i>Rail Project 3**</i> ▶ New Siding	▶ Removes road/rail conflicts ▶ Consolidates three access points into one improved access point ▶ Roadway project 4 is necessary to support the Peckham Rail siding
LaSalle	▶ None	▶ Less siding use, means fewer parked trains in town ▶ Community improvement by reducing community obstruction caused by trains
Greeley	<i>Road Project 5*</i> ▶ 'O' Street Closure <i>Rail Project 4**</i> ▶ Siding Extension	▶ Removes road/rail conflict point ▶ Provides increased area for trains meets and passes, thus increasing rail efficiency for entire corridor. ▶ Roadway project 5 is necessary to ensure full efficiency of the Greeley rail siding (and planned extension[Rail Project 4])
Lucerne	▶ None <i>Rail Project 5**</i> ▶ New Runner Connection	▶ No impacts



COMMUNITY	PROJECT(S)	QUALITATIVE BENEFITS
Ault	<ul style="list-style-type: none"> ▶ None 	<ul style="list-style-type: none"> ▶ Less siding use, means fewer parked trains within town ▶ Dramatic community improvement by reducing community obstruction caused by trains ▶ Less blocking of National Defense Route along SH 14
Carr	<p><i>Rail Project 6**</i></p> <ul style="list-style-type: none"> ▶ Siding Extension 	<ul style="list-style-type: none"> ▶ Provides increased siding length for trains for meets and passes, thus increasing rail efficiency ▶ Less blocking of WCR 126 ▶ Allows UPRR to operate longer trains to improve efficiency
Corridorwide		<ul style="list-style-type: none"> ▶ Higher average speed for trains ▶ Increased train length means more freight movements ▶ Increased traffic mobility through corridor means more efficient freight movement ▶ Increased community connectivity ▶ Increased traveling public mobility ▶ Safer corridor connections



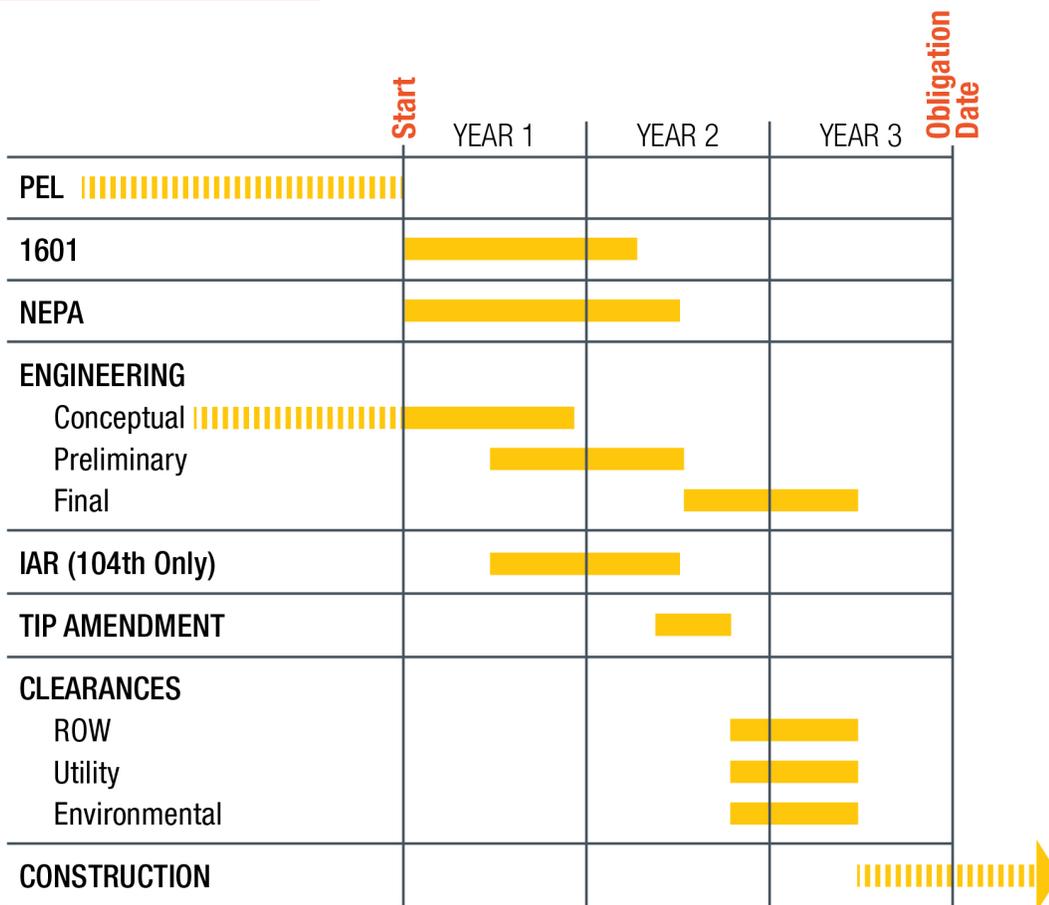
8.0 PROJECT READINESS

All project components have a committed obligation date of September 30, 2019, with construction to begin within 18 months thereafter. Actions needed to ready the roadway/intersection projects vary from those actions needed to ready the railroad siding projects, in part due to the roadway/intersection improvement project delivery being managed by CDOT. The rail sidings project delivery will be entirely managed by the Union Pacific Railroad.

Relative to the roadway/intersection improvements, the two most significant projects in this application include brand new interchanges (Road Project 1 - 104th Avenue and Road Project 2 - WCR 18). These will both require a series of tasks to reach the point of obligation. CDOT is planning to initiate innovative project delivery methods, such as design/build (D/B) or construction manager/general contractor (CM/GC), as part of the strategy to meet the three-year window. Many of these tasks can occur simultaneously to meet the three-year window. CDOT has had successes in both forms of these innovative project delivery methods.

The following chart (for the interchange projects) demonstrates our proposed process:

PROPOSED PROCESS



Reaching a point of readiness within the three years is made possible in part to a Planning and Environmental Linkages study for US 85 that is nearing its completion. The chart shows a process that could be completed in 2.5 years, leaving extra time to resolve unanticipated items. The PEL has established a firm foundation from which other key tasks can be launched. The study included the completion of an alternatives analysis, environmental review, conceptual design, and a robust public outreach program.



Additional strategies to meet the timeline for these bigger projects also include continuous agency coordination (many of which participated in the PEL and are common to more than one task), the inclusion of a contractor during the design to continually assess constructability as design evolves as mentioned, and appropriate robust staffing of each project to include seasoned leadership to coordinate the completion of each task. Colorado is deep with these resources to complete these tasks in a timely manner.

The remaining roadway/intersection improvements (Road Projects 3 through 5) are all much smaller in scale, since they do not involve grade-separated interchanges. Some of tasks shown above are not applicable including the 1601 process (CDOT's Interchange approval) and the Interstate Access Request (IAR) process. These projects too have been presented to the public, and they have also been specifically vetted with Weld County and the local municipalities. The PEL identifies these projects, and the fact that the PEL is very recent allows for a smooth transition into NEPA (most likely a categorical exclusion for non-interchange projects) and preliminary engineering. Right-of-way acquisition is needed for these other roadway projects, but no issues are foreseen in acquiring the needed right-of-way. There should be no major issue in meeting the obligation schedule for Projects 3 through 5.

The six railroad siding/runner projects will all be contained within the existing UPRR right-of-way. Categorical exclusions are anticipated for all six. The Union Pacific Railroad will oversee the design and construction of the rail siding projects, and they have indicated that they can easily meet an obligation deadline of September 2019 (see Union Pacific letter dated April 14, 2016 in appendix C).

9.0 SUMMARY

The 11 improvement projects outlined in this document present the Centennial Highway (US 85) Corridor with an opportunity to implement projects that have a substantive benefit to all types of land freight movement (rubber tire and rail) and the traveling public. The benefits of these improvements can be measured and monetized by looking at economic benefits (based on travel delay savings and increased freight efficiency), improved safety benefits, and sustainability benefits (emission and community considerations). The total cost of the 11 improvement projects is \$159,800,000; however, the long-term benefit of these projects will range from \$265,120,000 to \$434,840,000! These benefits do not include the non-measurable benefits to the corridor. When considering the overall costs compared to the benefits, there is no doubt. The Centennial Highway (US 85) Betterments Project will benefit the corridor, Colorado, the western US, and the nation, as a whole.

In summary, the Centennial Highway (US 85) Betterments Project establishes the groundwork for ensuring that this vital backbone of freight movement between northern Colorado and the rest of the nation continues into the future.



APPENDIX A— CONCEPT LAYOUTS AND COST ESTIMATES

See website: <https://www.codot.gov/programs/planning/projects/fastlane>



APPENDIX B— BENEFIT COSTS ANALYSIS

See website: <https://www.codot.gov/programs/planning/projects/fastlane>



APPENDIX C— LETTERS OF SUPPORT

See website: <https://www.codot.gov/programs/planning/projects/fastlane>



APPENDIX D— FEDERAL WAGE CERTIFICATION

See website: <https://www.codot.gov/programs/planning/projects/fastlane>



CDOT Region 4

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