

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



TABLE OF CONTENTS

1.	EXECUTIVE SUMMARY	1
2.	PROJECT DESCRIPTION	5
	Need for Multimodal Improvements to Provide a Reliable Multimodal System.....	5
	Project Elements: Light Rail	6
	Project Elements: Highway	6
	Project Benefits	7
3.	TIGER II FUNDING REQUEST	8
4.	PRIMARY SELECTION CRITERIA.....	8
	(a) Long-Term Outcomes	8
	Livability	8
	Enhanced User Mobility through Creation of Transportation Options	8
	Enhanced Modal Connectivity & Reduced Congestion on Existing Transportation Systems.....	9
	Improved Accessibility for Senior Citizens, Economically Disadvantaged and the Disabled.....	10
	Coordinated Transportation and Land Use Decisions.....	10
	Sustainability	12
	Improve Energy Efficiency, Reduce Dependence on Oil and Reduce Greenhouse Gas Emissions	12
	Maintain, Protect or Enhance the Environment	13
	Economic Competitiveness	14
	Long-term Economic Benefits Provided by the Completed Project, Not the Near-term Economic Benefits of Construction.....	14
	Quality of Jobs Expected to Provide Employment in Economically Distressed Areas (EDAs).....	14
	Improve Long-term Efficiency, Reliability, or Cost-competitiveness in the Movement of Workers or Goods.....	15
	State of Good Repair	16
	Safety	17
	Cost Benefit Evaluation.....	18
	(b) Job Creation and Economic Stimulus.....	18
	Project Schedule	21
	Environmental Approvals.....	21
	State and Local Planning.....	21
	Technical Feasibility	21
	Financial Feasibility	21
5.	SECONDARY SELECTION CRITERIA	22
	Innovation.....	22
	Partnership.....	23
	Jurisdictional and Stakeholder Collaboration.....	23
	Disciplinary Integration.....	23
	Funding Partnerships	24

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



1. EXECUTIVE SUMMARY

The Transportation Expansion of I-225 (T-REX 225) multimodal project is a continuation of the successful partnership between the Regional Transportation District (RTD) and the Colorado Department of Transportation (CDOT) to transform the way people in the metro Denver area commute within the areas of Interstates 25 and 225. The original T-REX project widened I-25 and added 19 miles of double-track light rail throughout the metropolitan area. Because of the successful partnership between RTD and CDOT, the original T-REX project is considered to be one of the most successful transportation upgrade projects in the United States. The T-REX 225 Project will build on this success by expanding the I-225 highway and extending the existing light rail line into Aurora. The project will stimulate short and long-term benefits in the corridor and complete an essential missing link in an over congested highway system carrying as much as 125,000 vehicles per day.

The T-REX 225 Project is located in the City of Aurora, the second largest city in the Denver Metropolitan Region. The project is located in a highly diverse urban corridor with established neighborhoods adjacent to office and industrial complexes, institutional facilities (including the Anschutz/Fitzsimons Medical campus and the Aurora Medical Center), the Aurora Municipal Center, and retail centers. Many of these neighborhood and facilities have developed adjacent to I-225 which serves as the primary transportation connection through Aurora to the Denver Metropolitan Region.

With current and future increases in employment at the Anschutz/Fitzsimons Medical Campus, Colorado Bioscience + Technology Park, expansion of the University of Colorado Hospital and construction of the new Veterans Affairs Hospital, employment in the project area is expected to increase 90 percent by 2035. The result of such significant employment growth will lead to increased travel time and congestion exceeding 50 percent along I-225 with spill over into the arterial road network, hindering alternative roadway routes available for use. Even with planned roadway improvements traffic demand along the I-225 Corridor will exceed the planned capacity increase.

The T-REX 225 Project is requesting a TIGER II Discretionary Grant of \$123.3 million for the construction of a 1.5 mile extension of the current light rail system as a minimal operating segment and completion of highway improvements. This minimal operating segment along with the CDOT planned I-225 highway improvement would have a significant positive impact on the City of Aurora and the Denver Metropolitan Region. The T-REX 225 Project will provide a reliable and convenient multimodal solution for offsetting projected increases in highway travel time for Aurora residents, employees, and commuters traveling from the rest of the Denver Metropolitan Region.

An overall investment of \$700 million is needed to complete the I-225 highway expansion and the proposed RTD FasTracks I-225 Corridor Project which would provide a significant transportation solution for the Denver Metropolitan Region. This ultimate multimodal solution would include:

- A 10.5 mile extension of a reliable light rail line with eight stations serving essential employment centers and residential communities within the City of Aurora,
- A complete six-lane highway facility from I-25 to I-70 with auxiliary lanes between interchanges to improve intra-corridor mobility, and

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



- Completion of a vital regional connection to downtown Denver Central Business District (CBD), the Denver Technological Center (DTC) and Denver International Airport (DIA).

The Colorado Department of Transportation (CDOT) obtained approval of an Environmental Assessment (EA) in July, 2000 and a Finding of No Significant Impact (FONSI) on March 2001 from the Federal Highway Administration (FHWA) for the *I-225 Widening from North of Parker Road to North of 6th Avenue*. Over the past 10 years CDOT has constructed several key components of the highway and is currently constructing the segment of the I-225 highway from 2nd Avenue to just south of Mississippi Avenue and improving the interchange at I-225 and Colfax Avenue. The only remaining highway piece to be implemented, as proposed in the 2000 FONSI, is the segment identified in this TIGER II Grant application.

The transit portion of this multimodal project was originally expected to be locally funded through the RTD FasTracks 2004 voter approved initiative and therefore, not subject to the requirements of the National Environmental Policy Act (NEPA). However, an Environmental Evaluation (EE) has been prepared in accordance with the RTD guidelines, including the standards set in the RTD Environmental Methodology Manual (EMM), which provided a comparable level of analysis to an EA, but without the Federal oversight. Following an extensive public and local agency involvement and comment period the Preferred Alternative and the mitigation measures identified in the EE document was adopted by the

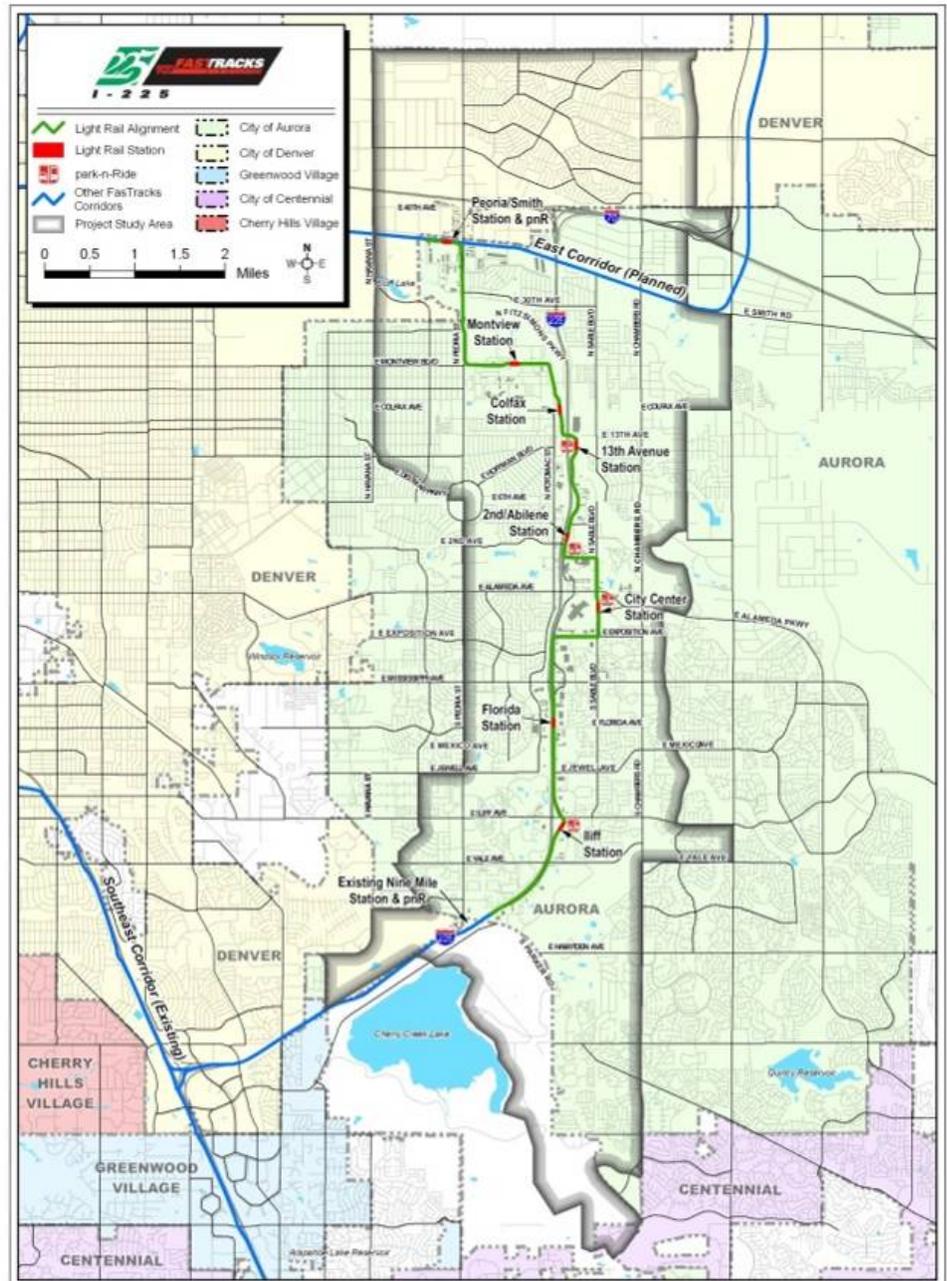


Figure 1: I-225 Transportation Corridor

the standards set in the RTD Environmental Methodology Manual (EMM), which provided a comparable level of analysis to an EA, but without the Federal oversight. Following an extensive public and local agency involvement and comment period the Preferred Alternative and the mitigation measures identified in the EE document was adopted by the

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



RTD Board of Directors on Sept. 3, 2009. The extensive analysis completed for the EE is consistent with FTA's requirements for an EA. Therefore, the NEPA process for the T-REX 225 project is substantially complete.

It has been determined that construction of a minimal operating segment of the FasTracks I-225 Corridor in partnership with CDOT planned I-225 highway improvement would have a significant positive impact on the City of Aurora and the Denver Metropolitan Region.

A TIGER II Discretionary Grant of \$123.3 million will authorize CDOT and RTD to contribute \$33.7 million in local matching funds to put into action components of this multimodal corridor project including:

- Extension of the existing light rail system 1.5 miles from the Nine Mile Station to the proposed Iliff Station and construction of a 600 space park-n-Ride.
- Construction of an additional lane in both the northbound and southbound directions with auxiliary lanes included between interchanges for 3.1 miles from Parker Road to Mississippi Avenue.
- Creating transit oriented development opportunities adjacent to the Iliff Station, resulting in over 350 new households in the station area.

Benefits of T-REX 225 light rail extension:

- 10 percent increase in ridership
- 36 percent travel time savings for transit commuters, and
- 21 percent reduction in parking demand at the Nine Mile park-n-Ride.

Benefits of T-REX 225 highway expansion:

- 8 percent travel time savings
- elimination of significant chokepoint
- six lane highway facility from I-25 to I-70
- Upgrade the storm water drainage system
- Improved highway safety

Jobs are created in direct proportion to the capital cost of transportation projects and being awarded a TIGER II Discretionary Grant for the T-REX 225 Project will make an immediate impact on job creation. As a result of the T-REX 225 Project over 1,800 direct, indirect and induced jobs will be created.

Combined, both RTD and CDOT are committing \$33.7 million or 21.5 percent of the total project costs of \$157 million to assure a construction start date of the T-REX 225 Project in 2012. With the potential for the project to be fully operational by 2013, short and long term economic benefits may be realized decades earlier than planned. Without TIGER II, these significant enhancements to the I-225 Corridor may not occur until 2042. Social costs will continue to escalate, reducing the benefits that can be deployed as early as 2013. The total accrued project benefits from 2013 to 2035 are over \$1.5 billion and the total cost for same time frame is \$245 million.

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi

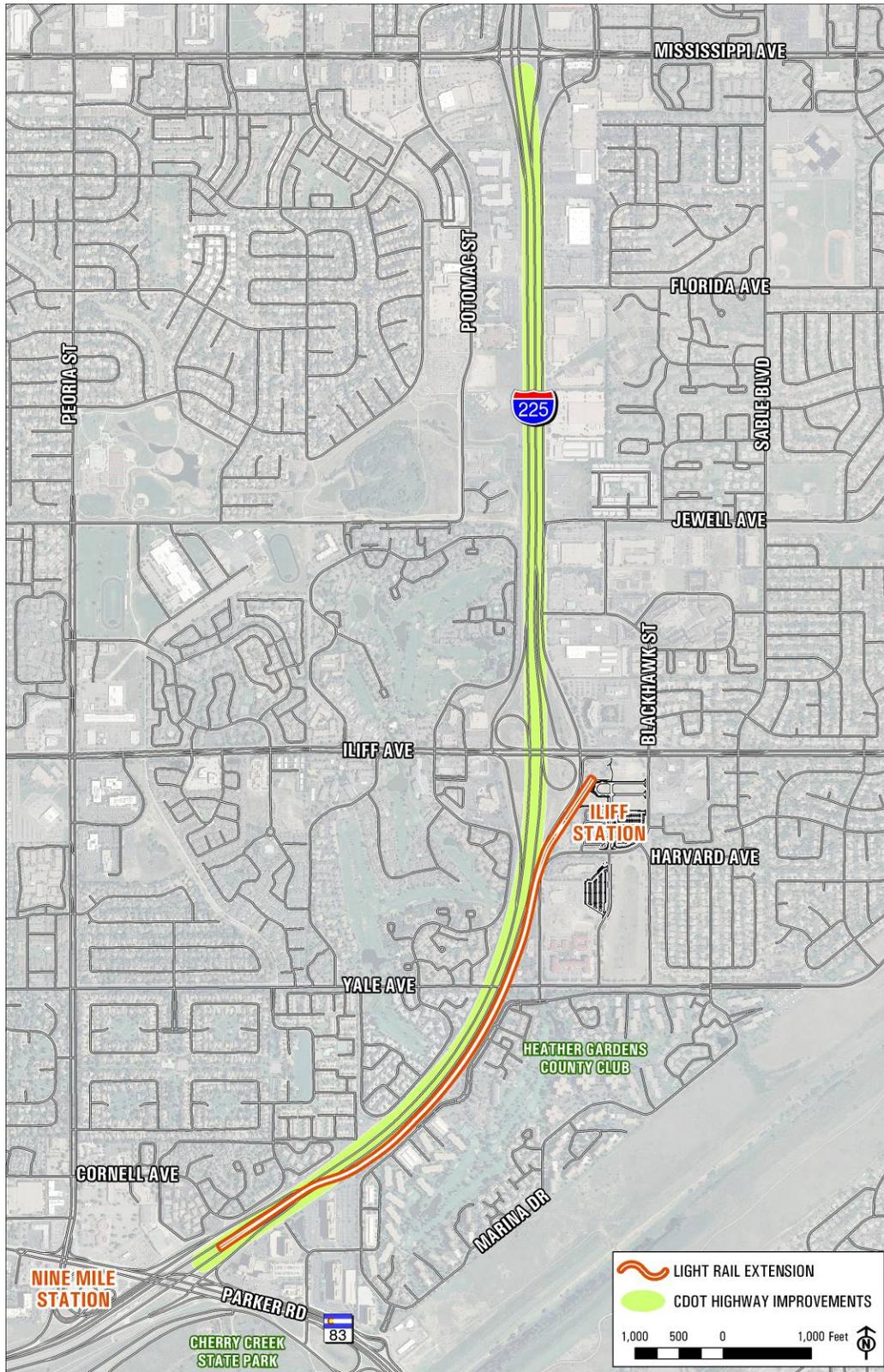


Figure 2: T-REX 225 Project Map

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



2. PROJECT DESCRIPTION

The T-REX 225 Project consists of transit and highway improvements that will combine to create more convenient transportation options by reducing congestion through provision of alternative travel modes, increased road capacity, and improved mobility and connections. Transit improvements include the extension of existing light rail northeast 1.5-miles from Nine Mile Station to a new station at Iliff. Highway improvements include reconstruction of travel lanes with additional lane capacity from Parker Road northeast to Mississippi Avenue. In addition, the Yale Avenue Bridge over I-225 will be reconstructed to facilitate both the light rail alignment and the highway widening.



Figure 3: Rendering of Future Light Rail and Highway Expansion

Need for Multimodal Improvements to Provide a Reliable Multimodal System

Travel demand along the I-225 Corridor is increasing due to growing population and employment. Future population and employment growth along the I-225 Corridor is expected to lead to increases in travel time, congestion, and delay for travelers. The T-REX 225 Project would help address this increased travel demand by providing light rail and bus service adjustments relative to future growth as well as increasing the capacity of the highway system.

According to the Denver Regional Council of Governments (DRCOG)'s *2035 Metro Vision Transportation Plan*, population and employment in the I-225 Corridor is forecast to increase by approximately 35,600 people and 68,500 jobs between the years 2005 and 2035.

Four-lane freeways are typically designed to accommodate 50,000 to 60,000 vehicles per day (vpd) with the maximum capacity designated at 80,000 to 90,000 vpd. Currently much of I-225 exceeds this designated capacity by carrying as many as 125,000 vpd, and with increased population and employment along the I-225 Corridor, the congestion will continue to spill onto the arterial road network, hindering alternative roadway routes available for use.

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



In June 2010 CDOT began a widening and roadway improvement project for the portion of I-225 between 2nd Avenue and just south of Mississippi Avenue. When complete in August 2011, the \$20.3 million project will provide three lanes in each direction between I-70 and Mississippi Avenue leaving only the portion of I-225 from Mississippi Avenue to Parker Road to complete. A federal investment of \$123.3 million in a multimodal solution to manage congestion will complete this final stretch of I-225 linking I-25 through to I-70 as well as provide a convenient travel option to the residents and employees along the I-225 Corridor.

Project Elements: Light Rail

The light rail portion of the T-REX 225 Project includes the extension of the existing light rail systems from its current terminus just north of the Nine Mile Station. The alignment will rise out from its current location in the I-225 median and cross over the northbound lanes on a bridge structure to the east side of the I-225 highway. The alignment will continue on the east side of I-225, passing under the Yale Avenue Bridge. The Yale Avenue Bridge will be reconstructed to accommodate the future expanded highway facilities and the light rail envelope. The alignment continues north between Harvard Avenue and I-225 into the Iliff Station. The Iliff Station site will also include bus loop road, pedestrian walkways, and provisions for a minimum of 600 surface parking spaces. Approximately 345 parking spaces will be designed adjacent to Harvard Avenue (Lot A) with a second lot (Lot B) designed on the West side of Anaheim, South of Harvard Avenue to accommodate approximately 260 additional parking spaces. These improvements are recognized in the City of Aurora Iliff Station Area Plan. In addition to the construction of the transit system, an additional six light rail vehicles will be purchased specifically for this segment of the FasTracks I-225 Corridor.



Figure 4: Current I-225 Highway Construction

Project Elements: Highway

The highway portion of the T-REX 225 Project includes capacity improvements to the I-225 highway facility by eliminating a significant chokepoint with the completion of an additional through lane in both the northbound and southbound directions. The main focus of the construction activities is to upgrade the highway elements to meet the current state standards for the final 3.1 miles from just south of the Mississippi Avenue interchange to just north of Parker Road. This includes replacing the existing roadway with six lanes of full depth concrete pavement with continuous auxiliary lanes between all interchanges and twelve foot full depth concrete shoulders. Drainage improvements that provide a system that adheres to the current standards and specifications will include upsizing all storm inlets and the drainage trunk line system to a new sediment retention and storm water detention pond providing the appropriate stormwater facility for both the highway and transit elements of the project which will improve water quality in the corridor. The highway improvements will also include a center concrete safety guardrail, improved ramp metering and highway lighting, and installation of other Intelligent Transportation Systems (ITS) features. The project also included the completion of mitigation sound walls as identified in the 2001 FONSI.

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



Project Benefits

In addition to providing a significant regional transportation solution to a community in need, an investment in the T-REX 225 Project demonstrates benefits in five categories: Travel Time Savings, Vehicle Cost Savings, Air Pollution Cost Savings, Low Income Household Wage Increase and Increase in Property Values.

In opening year 2013, the combined transit and auto travel time savings resulting from the T-REX 225 Project will amount to more than \$23 million.

- Increase mobility by reducing congestion nearly 13 percent for the I-225 Corridor from the interchange at I-25 to I-70,
- Cut commute times by nearly 8 percent and reduce the amount of time people spend in their vehicle,
- The income of low income household income along the corridor will increase up to \$4 million (net increase) by 2035 due to saving fuel and maintenance of vehicles,
- Strategically increasing the population by over 350 households through smart development opportunities,
- Increase employment by providing additional commuting options for households along the corridor,
- Increase transit corridor ridership by 10 percent with service to an additional neighborhood,
- Provide a one seat ride for commuters who are transit dependent from Iliff Station to downtown Denver
- Provide time saving of nearly 36 percent by eliminating transfers from bus to rail at Nine Mile or Colorado Station,
- Alleviate parking congestion by an estimated 21 percent at the Nine Mile Station with the creation of 600 parking spaces at the Iliff park-n-Ride,
- Improve the safety of the highway systems by replacing poor pavement with full depth concrete pavement,
- Provide immediate economic benefit through both short-term and long-term job creation.

A travel time improvement analysis was conducted to determine and compare travel time reduction between the existing four lane section and the six lanes proposed by the Project. Travel time reduction generated by this analysis is the benefit attributed to the monetary value of reducing a specific amount of travel time. This analysis used the US DOT recommended travel time per vehicle-hour of \$24 (2006 dollars). In addition to reducing user cost, the added lanes will also reduce greenhouse gas emissions and oil usage and dependence.

It is expected that approximately \$15.3 million of user-cost will be reduced annually as a result of the T-REX 225 Project.

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



3. TIGER II FUNDING REQUEST

Combined, both RTD and CDOT are committing over 20 percent local matching funds to the TIGER II Discretionary Grant proposal. RTD’s contribution includes the cost for the six vehicles required to operate the light rail portion and the additional design efforts of the T-REX 225 Project. CDOT has identified right-of-way and final design of the highway expansion for their share of the local match. This will account for a total local match equal to 21.5 percent of the total project costs. These matching funding will be available prior to a construction start date in 2012. With the commitment from both RTD and CDOT, additional assistance through a Transportation Infrastructure Finance and Innovation Act (TIFIA) federal financing assistance programs will not be requested for this application.

Local Match Break down

Vehicles allocation	\$9,000,000.00
LRT Design	\$2,000,000.00
CDOT ROW	\$9,000,000.00
CDOT Design	\$3,700,000.00
Total	\$33,700,000.00

Table 1: T-REX 225 Cost Break down

Description	Construction Cost
Light Rail Segment 1 (Nine Mile to Iliff)	\$ 87,000,000.00
Highway Widening (Nine Mile to Iliff)	\$33,000,000.00
Highway Widening (Iliff to Mississippi)	\$ 27,000,000.00
Yale Bridge Replacement	\$ 10,000,000.00
Total T-REX 225 Project Costs	\$157,000,000.00
Less Local Match Commitment	\$33,700,000.00
Total Requested TIGER II Funds	\$123,300,000.00

Even though securing the fully requested TIGER II Discretionary Grant funds would provide the most substantial benefits to the City of Aurora and the Denver Metropolitan Region, **Table 1** represents the cost breakdown of the light rail and highway portions of the TREX 225 Project and the potential to implement scalable projects with any TIGER II funds awarded. The Yale Bridge replacement represents the minimum amount needed to provide benefit for both RTD and CDOT.

4. PRIMARY SELECTION CRITERIA

(a) Long-Term Outcomes

Livability

The I-225 Corridor is an interstate highway linking major highways (I-70 and I-25) and connecting the City of Aurora, Colorado, population 319,127, with regional employment and commercial centers, downtown Denver to the north, and the Denver Technological Center (DTC) to the south. The T-REX 225 Project will provide enhanced bus connections; increased road capacity; and alternative travel modes (light rail), which will ultimately decrease congestion; improve mobility; and create opportunities for increased housing choices and economic development.

Enhanced User Mobility through Creation of Transportation Options

The T-REX 225 Project represents a collaborative effort of the RTD, CDOT, and the City of Aurora to provide improvements and infrastructure that will foster livable communities; support existing communities; and enhance traveler mobility.

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



Recent analysis of the park-n-Rides facilities within the RTD identified the Nine Mile park-n-Ride as being at 98 to 100 percent capacity, meaning that often potential riders are unable to utilize transit because parking is not available. This is further substantiated by the City of Aurora initiated parking study, which estimated an unmet demand for the number of parking spaces. The addition of a new park-n-Ride at Iliff will encourage transit use by supplementing the spaces at the existing Nine Mile Station, with an additional 600 spaces.

As a result of the light rail extension the average 2035 weekday ridership will increase by an additional 6,760 riders. Of these riders, more than 700 are new transit riders. This is the result of greater accessibility to the light rail transit, enhance bus options, and availability of service for the residents and users of facilities in the vicinity of the new station.

Within a half-mile buffer around the Iliff Station, population and land use for 2010 was compared with projections for 2035. These data indicate that households will increase approximately 29 percent and total household population will increase by 12 percent. As a result employment is also projected to increase 11 percent.

Enhanced Modal Connectivity & Reduced Congestion on Existing Transportation Systems

Implementing the T-REX 225 Project will significantly improve travel time for commuters and others going to and from downtown Denver, DTC, Anschutz/Fitzsimons Medical Campus and DIA by eliminating a significant chokepoint with the completion of an additional through lane in both the northbound and southbound directions. As a result, the improved highway system will increase capacity, decrease congestion, and provide safety and operational benefits. These improvements will complement the extended rail transit by providing travel mode alternatives and improved access to the transit facilities. By providing options and improving transfers between modes, such as bus and rail, or car and rail, and eliminating a significant chokepoint in the highway system, it is projected that the T-REX-225 Project will save transit riders 21 minutes and significantly improve travel time for highway commuters.

Table 2: Transit Travel Comparison - Iliff Station to Downtown Denver (18th & California Station)

Parameters (minutes)	2035 Model Scenarios (Travel Time, minutes)		Travel Time Difference Build and No Build (minutes)	Travel Time Difference Build and No Build (percent)
	No Build	Build		
Total Transit Travel Time	61	39	-22	35% Decrease

Table 3: Vehicle Travel Time Comparison - (Parker Road to Mississippi Avenue)

Parameters (Daily Vehicle Hours)	2035 Model Scenarios (Daily Vehicle Hours)		Daily Vehicle Hour Difference Build and No Build (minutes)	Travel Time Difference Build and No Build (percent)
	No Build	Build		
Daily Vehicle Hours	69,164	63,468	-5,696	8.23% Decrease

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



Improved Accessibility for Senior Citizens, Economically Disadvantaged and the Disabled

The T-REX 225 Project area is currently home to between 25 and 50 percent minority populations who would gain greater access to employment, retail, and services throughout the Denver Metropolitan Region (Appendix A). Likewise, south along the east side of the alignment, is the community of Heather Gardens, which is home to an elderly population who would be served by the Iliff Station. Further, the Heather Gardens community population is greater than 23 percent low-income (median household income at or below the HUD 30 percent Area Median Income). To the north and west of the station, between 15 and 23 percent of the population is considered low-income.

Capacity improvements between Parker Road and Mississippi Avenue will provide direct benefits to residents accessing medical facilities located at the Medical Center of Aurora South Campus, south of Mississippi and west of I-225, and further north past Colfax Avenue the Anschutz/Fitzsimons Medical Campus, which includes Children’s Hospital and the University of Colorado Health Sciences Center.

Both rail transit and roadway capacity improvements will provide greater accessibility to goods, services, and employment along the I-225 corridor. Because the T-REX 225 Project is home to disadvantaged populations including minority, elderly, and low-income along and peripheral to the I-225 Corridor, a multimodal solution will increase the mobility of residents and increase employment options and opportunities. As a result, the availability of transit is projected to increase the household annual income by 8 percent and, improve the quality of life for residents.

Table 4: Increase in Low Income Household (HH) Wages

2010 Wages* (2,110 HH)	2010 Wages* with Transit	Net Annual Benefit to Low Income HH	2035 Wages* (2,469 HH)	2035 Wages* with Transit	Net Annual Benefit to Low Income HH
\$43.2 million	\$46.6 million	\$3.5 million	\$50.7 million	\$54.7 million	\$4.1 million

**Based on Number of work hours in a year multiplied by the minimum wage.*

Coordinated Transportation and Land Use Decisions

Within the T-REX 225 Project area, various studies, each supporting the desirability of increased transit options and TOD, have been conducted. The City of Aurora has undertaken formal station area studies at the following stations: Nine Mile, Iliff, Florida, 2nd and Abilene, 13th Avenue, Colfax and Smith and Peoria. With each study, numerous community outreach efforts have been made and stakeholder input from a wide variety of sources was incorporated. A chronological listing of each study, with a summary of the outreach efforts and findings is located in Appendix B.

Transit Oriented Development (TOD) would offer opportunities for a range of housing types consistent with the Aurora Comprehensive Plan (June 2010), and similar to recent successful communities such as the redevelopment of South Lincoln Homes, located adjacent to an existing light rail station at 10th and Osage, Denver, CO. The South Lincoln Homes redevelopment was facilitated through an RTD joint effort with Federal Transit Administration (FTA), Housing and Urban Development (HUD), and Environmental Protection Agency (EPA). http://fta.dot.gov/documents/Denver_region_8_final.pdf

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



According to the 2008 American Community Survey, 12 percent of families in Aurora were living below the poverty level. This number is up from 6.8 percent in 2000. The Aurora Comprehensive Plan recognizes a need for housing among lower income households.

The Iliff Station is uniquely situated adjacent to 30 acres of undeveloped land. Higher density office and hotel uses currently exist at the Iliff Avenue and I-225 intersection, taking advantage of the prime intersection location. The location of this large, undeveloped parcel adjacent to the station is a unique opportunity to develop a mixed-use, high density transit-supportive neighborhood. The immediate station area is a prime opportunity to create higher density housing and commercial uses. The Iliff Station area has already attracted developer interest due to its unique attributes of undeveloped land and location. There are currently approximately 2,800 people working and 4,400 residents within the one-half mile of the Iliff Station.

In 2009, The City of Aurora prepared a Station Area Plan for the Iliff Station with input from the adjacent community, numerous stakeholders and RTD. Future land use described in the Iliff Station Area Plan for TOD identified a sustainable development form because it creates ready-access to transit, which encourages transit use; reduces vehicle miles travelled (VMT); and results in lowered use of fossil fuels and fewer greenhouse gas emissions. The prescribed land use for the Iliff Station area includes a medium to high-intensity Core Sub-District (up to 40 dwelling units/acre); surrounded by a general Sub-District (up to 30 dwelling units/acre).



Figure 5: Iliff Station Area Plan Land Use

Consistent with TOD, a combination of uses including residential, commercial, retail, office, and others, will be permitted, coupled with pedestrian-scale urban landscapes and streetscapes. Implementation of the Iliff Station Area Plan will occur through TOD rezoning (regulatory) and development plans submitted to the City of Aurora meeting current parking regulations and urban street standards that suggest mixed used development.

In particular, the extension of rail transit from the existing Nine Mile Station to the proposed Iliff Station is targeted not only because it is consistent with the Iliff Station Area Plan, but it is also the initial phase of the I-225 light rail line that will link the existing Southeast Light Rail (Downtown Denver with the southeast metropolitan area) with the under construction East Corridor commuter rail (Downtown Denver to DIA), and provide services and connections to major medical facilities. These include the Aurora Medical Center, Anschutz/Fitzsimons Medical campus, which is home the University of Colorado Health Sciences Center, Children’s Hospital, the VA Hospital, Colorado Bioscience + Technology Park, and government facilities around the Aurora City Center, and a wide variety of employment opportunities, goods, and services.

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



Sustainability

The T-REX 225 Project contains sustainable transportation solutions that will improve energy efficiency, reduce greenhouse gas emissions and oil dependence and benefit the environment. The T-REX 225 Project offers alternate travel mode choices other than the automobile within the I-225 Corridor.

Improve Energy Efficiency, Reduce Dependence on Oil and Reduce Greenhouse Gas Emissions

Increased energy efficiency and reduction in Single Occupancy Vehicle (SOV) usage are results of the T-REX 225 Project that will provide sustainable transportation solutions for the City of Aurora and the Denver Metropolitan Region. Also, the area is currently listed as a Maintenance Area for PM-10 and CO and is considered to be in non-attainment for Ozone. Without continued investments in the I-225 Corridor transportation system, long-term economic viability will diminish.

According to RTD projections, the extension of the light rail network from Nine Mile Station to Iliff Station will elevate ridership by 10 percent on the H-Line providing direct service to Downtown Denver. The light rail extension will also reduce the parking demand at Nine Mile Station park-n-Ride by 21 percent. Other sustainable benefits of the extension of light rail to the Iliff Station are shown in **Table 5**.

Table 5: Sustainable Benefits of the I-225 Project Compared to No-Build in 2035

2035 Estimates	No Build	Build	% change
VMT	21,660 Miles	28,160 Miles	30% increase
VHT	870 Hours	680 hours	22% decrease
Average Speed	25 MPH	42 MPH	68% increase
Vehicle Over Capacity (VOC)	1.04	0.91	13% decrease
Transit Travel Time to Downtown Denver	61 Minutes	39 Minutes	36% decrease
Auto Travel Time to Downtown Denver	69,164 Daily Vehicle Hrs.	63,468 Daily Vehicle Hrs.	8% decrease

Light rail provides opportunities for a shift in mode of transportation from auto to rail. By not traveling alone in SOV the number of vehicles on the road reduces motor vehicle air pollution and saving commuters nearly \$1 million on vehicle maintenance and user costs in 2013 alone. The benefit from the reduction in damages caused by vehicle air pollution, including human health, ecological and esthetic degradation accounts for savings of more than \$37,000 for the 2013 opening year alone. Agency and local stakeholder programs that promote sustainability include:

- Use of clean technology light rail vehicles that improve energy efficiency and reduce operating costs when replacing bus service,
- Carpooling, vanpooling, telecommuting, and bicycling programs coordinated through the Fitzsimons Transportation Management Association (TMA) will enhance access and mobility, reduce congestion and improve quality of life,

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



- Promotion of the RTD the Eco Pass Program, an unlimited transit pass, is proven to increase transit use and shift trips from driving,
- Development of concentrated mixed-use urban centers that promote active, transit and pedestrian friendly places with employment, housing and services nearby. These centers will help reduce SOV usage, oil dependence and greenhouse gas emissions,
- CDOT and RTD will continue to use sustainable materials such as Tire Derived Aggregate which is used for the reduction of vibration impacts of the light rail corridor and CDOT continues recycling of concrete and pavement on site for each construction project as well as innovated opportunities during construction. **Figure 6** shows a mobile concrete batch plant that is currently being used at a CDOT construction site, which allows the contractor to make and mix concrete on site without having to haul it in from a distant location.



Figure 6: CDOT Concrete Batch Plant along I-225

<http://www.thedenverchannel.com/traffic/24493745/detail.html>

Maintain, Protect or Enhance the Environment

The FasTracks I-225 Corridor EE identified a preferred alternative that provides light rail service along the I-225 between Nine Mile Station and the East Corridor Peoria Station. Environmental impacts for a minimum operable segment of the FasTracks I-225 Corridor between Nine Mile and Iliff Stations were included in the EE and are shown in **Table 6** below.

Table 6: Environment Impacts Associated with the I-225 Project

Number of Homes Displaced	0
Number of Businesses Displaced	0
Parks/Open Space Impacts	1 Trail
Threatened & Endangered Species Impacts	0
Farmland Impacts	0
Wetlands Impacts	0
Number of Section 4(f) Properties	0
Number of Historic Properties	0

Because the transit footprint of the T-REX 225 Project is primarily within the CODT ROW there are minimum environmental impacts. A regional trail that would be impacted will be relocated/reconstructed as part of the Yale Bridge reconstruction. There are no displacements of homes or businesses and there are no historic or archaeological resources that would be impacted in this project.

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



Economic Competitiveness

Long-term Economic Benefits Provided by the Completed Project, Not the Near-term Economic Benefits of Construction

Completion of the T-REX 225 Project will help alleviate a major chokepoint in metro Denver's highway system, thereby helping the rest of the I-225 corridor become more easily accessible to the entire region. The Aurora Economic Development Council sites major employers along the I-225 corridor in Aurora, as the Children's Hospital (4,100 employees), Raytheon Company (2,200 employees), Kaiser Permanente (1,690 employees), ADT Security Systems (1,600 employees), and HealthONE: The Medical Center at Aurora (1,480 employees).

Currently the Anschutz/Fitzsimons Medical Campus and the Colorado Bioscience + Technology Park employs 15,000 people and is expected to employ upwards of 43,000 employees when built out in 15-20 years. Home of the internationally-renowned Children's Hospital, University of Colorado Health Sciences Center, and the future site of the new Veterans Administration (VA) Hospital, the Anschutz Medical Campus and Colorado Bioscience + Technology Park will continue evolving as a major employment center for years to come.

According to the Denver Regional Council of Governments (DRCOG), Aurora's population is expected to increase 65 percent between 2005 and 2030, following a 94 percent increase from 1980 to 2005. However, employment is expected to increase over 131 percent between 2005 and 2030, following an increase of 136 percent from 1980 to 2005. Completing the T-REX 225 Project will ensure that despite Aurora's expected and past explosive growth, residents and businesses alike can continue to move about efficiently and effectively.

According to DRCOG estimates, nearly 66 percent of all Aurora residents commute outside of Aurora to get to their place of employment including the DTC – the metro area's largest employment area with over 120,000 employees.

A DRCOG model finds that the Iliff Station Area is expected to see a 29 percent increase in households, an increase from 3,800 to 4,890. Low income households will see the largest increase (49 percent), followed by high income (37 percent), and medium income (23 percent).

Transit service provides easier access to more employment opportunities for low income households in the area resulting in an increase in wages. Due to the Iliff Station's close proximity to low income households, the T-REX 225 Project will result in a total wage increase of approximately \$677,000 in 2013. Studies have shown that real estate near rail transit systems experience an actualized value benefit from the presence of transit. The T-REX 225 Project will result in an increase of nearly \$24 million in average property value and an overall combined household cost benefit of close to \$50 million in 2013.

Quality of Jobs Expected to Provide Employment in Economically Distressed Areas (EDAs)

While the I-225 Corridor is not considered an Economically Distressed Area (EDA), Aurora's median household income of \$46,684 is nearly \$14,000 less than the Denver metro area average of \$60,344 based on figures provided by the Aurora Economic Development Council. The presence of transit, while an extension of

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



light rail, will help alleviate a nearly eight minute commute by bus to the Nine Mile Station, thereby making jobs more easily accessible and easing commute times in an already taxed highway corridor.

According to estimates from DRCOG, over 116,000 people work within the City of Aurora, a number expected to rise to over 268,000 by 2035, a 131 percent increase. Within the Iliff Station Area, total employment is expected to increase nearly 11 percent, with the following increases by sector: service employment (13 percent), retail employment (10 percent), and production & distribution (3 percent).

Improve Long-term Efficiency, Reliability, or Cost-competitiveness in the Movement of Workers or Goods

The DRCOG Workforce Commuting Patterns report finds that the movement of people and freight around metro Denver generates over 6 million car and truck trips on any given day.

At some point before 2035, data indicates that I-225 will be past its saturation point, diverting traffic onto already congested arterial roadways, further reducing reliability. The economic benefits realized from improved mobility, decreased travel time, and implementation of planned TOD investments will occur, however; the success will be dictated based on the presence of transit.

According to the Iliff Station Area Plan, developed and approved by the City of Aurora, there are 30 acres of undeveloped land (under a single owner) within a half-mile walk of the station. This would lead to a more simplified development process with better opportunity for higher density development to be built close to the station. Currently, there are office and retail uses to the north of the station area, two motels to the south, and residential to the south, east and west with I-225 as a major barrier.



Figure 7: TOD Activity at Lincoln Station

Opened in 2006 as part of the T-REX Project, Lincoln Station has seen a large amount of private development within a half-mile of the station. The station area has seen over \$250 million in private development totaling 1,552 residential units (1,412 apartments and 140 condominiums), 279 hotel rooms, 36,275 square feet of retail space, and 741,940 square feet of office space. Numerous other projects, including nearly 200,000 square feet of medical space is proposed.

Like Iliff Station, Lincoln Station was largely an infill development site. Single family residential flanked its western edge, private office space and a master planned community is located to the south. I-25 serves as an eastern

boundary, with the Meridian Office Park accessible by way of a pedestrian bridge over the highway. To the north, private office space and the Park Meadows Shopping Center draw thousands every day. Iliff Station shares many of the same characteristics – both are/will be end-of-line stations, both have existing surrounding development, both are located near (but not adjacent to) destination retail centers, and both are located adjacent to major highways, providing desirable exposure and easy access.

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



The type of development, exposure, and easy highway accessibility similarities between Iliff Station and Lincoln Station paint a portrait as to the type and breadth of new development that can be anticipated at Iliff Station following completion of the light rail and highway expansion project. The Iliff Station Area Plan calls for “density sufficient to create an active center for an existing or new neighborhood, creates the potential for diversity of housing types, a range of land uses, and the possibility of neighborhood-serving retail.” Lincoln Station now serves as an anchor in an area that had no discernable center, other than a regional retail center to the north, very similar to the situation at Iliff Station.

The Iliff Station Area Plan calls for residential densities of 30-40 dwelling units per acre, similar to the densities seen at new condo and apartment projects near the Lincoln Station. The existing surrounding low-density residential development prevents the average density of the entire station area (half-mile radius) from achieving the 30-40 units per acre goal, but new development will reach that level.

State of Good Repair

The current pavement condition of I-225, from Mississippi Avenue to Parker Road consists of two inches of stone mastic asphalt (SMA) overlying eight inches of concrete. This concrete section, now 40 years old, was overlaid with SMA in 2002 as part of a pavement rehabilitation project also consisting of repairing damaged concrete panels and joint sealing. In addition a micro surfacing layer was placed between the concrete and SMA overlay to fill ruts on the concrete and provide resistance to reflective cracking.

This layer has performed well in general however transverse cracking and longitudinal cracking is now evident in the SMA layer. The value for the Remaining Service Life (RSL) of this pavement in 2009 was two years meaning it is in the **POOR** category. The T-REX 225 Project would improve the pavement of this section of I-225 to an acceptable and safe condition.

The T-REX 225 Project would also complete the construction of an upgraded highway drainage system that would meet current standards and specifications as well as meeting the proper size requirements for accommodating future traffic projections, as well as light rail and off-site needs. This new work would complement previous upgrades completed in prior phases of I-225 improvement projects. The completion of drainage upgrades and improvements will reduce the potential for accidents resulting from substandard and inadequate drainage appurtenances. The completion and upgrade of these drainage facilities will provide the necessary storm water treatment devices and facilities allowing for compliance with state and federal water quality regulations and requirements.

The T-REX 225 Project is a minimum operable segment of one of the nine corridors in the FasTracks voter-approved regional transit program to expand rail and bus service throughout the RTD service area. The light rail vehicles and equipment for the FasTracks I-225 Corridor will be managed with RTD’s light rail fleet management plan which conforms to FTA guidance on life cycle costs and maintenance standards. The aim of RTD’s management plan is to perform routine maintenance and fleet replacement at optimal times to minimize long-term costs.

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



Safety

As a four-lane urban freeway, I-225 is currently reaching, if not exceeding, its free-flow capacity during weekday peak hours. A safety performance function (SPF) for a four-lane urban freeway facility does not apply for average ADT's of more than 120,000 vehicles per day. An urban four-lane freeway with higher volumes than this is not expected to have the capacity for free flow traffic. In order to accommodate volumes expected in 2035 (approximately 165,000 vehicles per day between Parker Road and Iliff Avenue, 171,000 vehicles per day between Iliff Avenue and Mississippi Avenue), peak hour traffic volumes and peak hour accident rates would have to be extended for longer periods of the day. Within the study period from July 1, 2003 through June 30, 2006, the highest accident rates have occurred during the morning and afternoon peak hours. With this in mind, an adjustment factor has been applied to the frequency of accidents on a four-lane freeway before it is projected along a six-lane SPF model. Detailed information of the accident frequencies is shown in Appendix C.

The SPF analysis indicates that the four-lane option will yield 21.37 more total accidents per mile per year (APMPY) than the six-lane option for the section between Parker Road and Iliff Avenue in 2035. For the section between Iliff Avenue and Mississippi Avenue, the four-lane option will yield 26.47 APMPY than the six-lane option in 2035.

The SPF analysis indicates that the four-lane option will yield 5.83 more injury and fatal APMPY than the six-lane option for the section between Parker Road and Iliff Avenue in 2035. For the section between Iliff Avenue and Mississippi Avenue, the four-lane option will yield 6.97 more injury and fatal APMPY than the six-lane option in 2035. **Tables 7 and 8** summarize the number of accidents expected on mainline I-225 from Parker Road to Mississippi Avenue in 2035 for both four-lane and six-lane options.

Table 7: Summary of Mainline 2035 Accident Totals

I-225 Segment	Existing Total Accidents/Yr. July 1, 2003 – June 30, 2006	Expected 2035 Total Accidents/Yr. Build Option (6-Lane)	Expected 2035 Total Accidents/Yr. No Build Option (4-Lane)
Parker Rd. to Iliff Ave.	43	85	115
Iliff Ave. to Mississippi	54.33	104	143
Totals	97.33	189	258

Table 8: Summary of Mainline 2035 Accident Totals

I-225 Segment	Existing Injury + Fatal Accidents/Yr. July 1, 2003 – June 30, 2006	Expected 2035 Injury + Fatal Accidents/Yr. Build Option (6-Lane)	Expected 2035 Injury + Fatal Accidents/Yr. No Build Option (4-Lane)
Parker Rd. to Iliff Ave.	15	23	32
Iliff Ave. to Mississippi	16.67	26	36
Totals	31.67	49	68

The associated costs of these motor-vehicle crashes can be calculated using 2008 National Safety Council (NSC) average costs for property damage only (PDO), Injury and Fatal accidents:

- Fatal \$1,300,000
- Injury \$63,500
- PDO \$8,300

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



These averages combine wage and productivity losses, medical expenses, administrative expenses, motor vehicle damage and employer's uninsured costs. In 2035, a six-lane facility is projected to have 69 fewer accidents per year from Parker Road to Mississippi Avenue than would a four-lane facility. Of these 69 accidents, 19 are injury and fatal. This would equate to a base value of about \$20,900,000 in cost savings in terms of accident reduction over the course of 20 years leading up to 2035.

The \$21 million in cost savings represents the safety benefit of widening I-225 from Parker Road to Mississippi Avenue. There are additional savings associated with operational benefits of increasing capacity on a high volume interstate. As a four-lane freeway, 2035 volumes on I-225 will result in severe congestion and a poor level of service can result in increased delay which leads to longer travel times and higher vehicle operating costs (such as fuel consumption). Widening I-225 into a six-lane facility will limit these economic losses associated with congestion.

Cost Benefit Evaluation

An US DOT's investment in The T-REX 225 Project will yield tangible benefits an estimated 29 years earlier than planned. With award of the TIGER II Discretionary Grant it is expected that the T-REX 225 will be fully operational in 2013 and will start dispensing benefits. Without this grant, these benefits will not occur until as late as 2042. Social costs will continue to escalate, reducing the benefits that can be deployed as early as 2013.

The project demonstrates benefits in five categories: Travel Time Savings, Vehicle Cost Savings, Air Pollution Cost Savings, Low Income Household Wage Increase and Increase in Property Values.

Costs are broken down into four categories – Average Transit Fare, Annualized Operation and Maintenance (O & M), Annualized Vehicle Cost and Annualized Construction Cost. The average transit fare for commuters who switch from auto to transit with the extension of light rail to Iliff is approximately \$322,000 for the 2013 opening year. The extension of light rail to Iliff Station will also increase the costs of operating and maintaining the light rail system. In addition, the cost of purchasing additional vehicles and the construction costs of the extension of the light rail and highway improvements on I-225 are included in the overall project cost. The total O & M cost, annualized vehicle costs and construction costs of the project is approximately \$9 million in 2013 opening year. The overall project cost in 2013 opening year is approximately \$9.2 million.

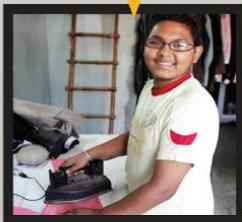
Table 1 in **Appendix D** provides a detailed cost and benefit breakdown from 2013 opening year to the 2035 horizon year. Table 1 illustrates that the total accrued project benefits from 2013 to 2035 are over \$1.5 billion and the total cost for same time frame is \$245 million. The project demonstrates more Benefits than Cost for every single year from 2013 to 2035.

(b) Job Creation and Economic Stimulus

Jobs are created in direct proportion to the capital cost of a transportation project. Given that there is an upper limit to the capital cost/grant that can be achieved in the TIGER II program, how a project makes a meaningful difference in job creation and in sustaining short and long term economic and employment goals must include innovative strategies above and beyond simply creating jobs by building infrastructure.

- T-REX 225 Construction (2012);**
 - **770 Total Jobs**
- T-REX 225 O & M Phase (2014+);**
 - **30 Total Permanent Jobs**

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



FasTracks will provide numerous long-term and short-term benefits to the metro area. By 2019, the program will have pumped \$10.1 billion into the local economy. More immediately, FasTracks will add thousands of jobs, and the impact on the local job market will reach far and wide, benefiting many industries and local communities.

THE JOB IMPACTS OF FASTTRACKS CAN BE GROUPED INTO THREE CATEGORIES:

DIRECT – FasTracks spending is used on capital investments such as purchasing trains, building stations, and constructing railways. The direct effect of this spending keeps construction workers employed here in Colorado.

INDIRECT – People who enable the direct spending on FasTracks are also employed because they supply goods and services such as train engines, steel for rails, and concrete for stations. These indirect effects are a result of the direct spending on capital projects like FasTracks.

INDUCED – A wider group of people are also employed as construction workers, engineers and other professionals working on FasTracks who spend their paychecks on consumer goods at local retailers, restaurants, movie theaters and coffee shops. These are known as induced effects.

Figure 8: Job Creation Resulting from FasTracks

The T-REX 225 Project, as part of the RTD-FasTracks program, will participate in the Regional Interagency Sustainable Communities (RISCO) Partnership that was recently convened by RTD. RISCO will coordinate the efforts of local, state, regional, and federal agencies to enhance and develop sustainable communities. RTD’s goal in developing RISCO is to implement a workforce development program for the RTD FasTracks construction program.

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



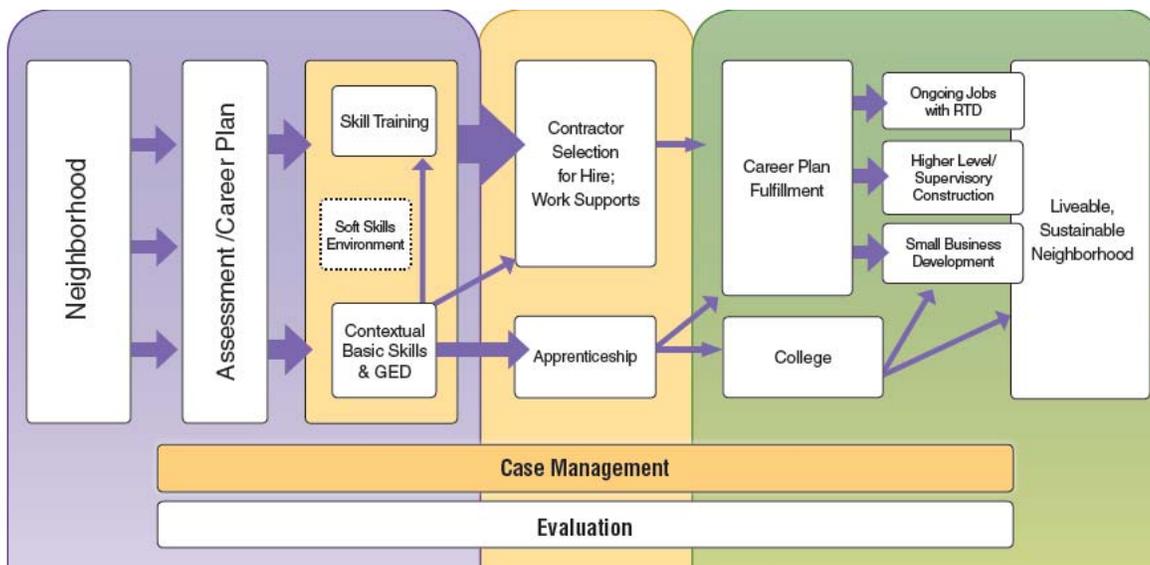
Agencies currently involved in RISCO

- The Regional Transportation District (RTD),
- The Department of Housing & Urban Development (HUD),
- Environmental Protection Agency (EPA),
- Denver & the City of Lakewood Public Housing Authorities,
- Colorado Department of Transportation (CDOT),
- Denver’s Office of Economic Development, and
- The State of Colorado Workforce Development Council.

Central to RTD’s workforce development initiative is a program that identifies, trains, and employs RTD’s infrastructure workforce. The Workforce Development Initiative uses “just-in-time” principles to provide a quality, job-ready workforce for RTD projects and contractors. The Initiative will build sustainable neighborhoods by training and supporting those who might not otherwise have the opportunity to benefit from and contribute to a healthy economy.

To accomplish this, RTD has partnered with the Community College of Denver to administer the RTD workforce initiative that includes 1) planning; 2) trainee/worker recruitment, assessment and advising; 3) basic, short- and long-term employability; and 4) apprenticeship, pre-collegiate and college-level skills training. This process is shown in **Figure 9** below.

Figure 9: Workforce Development Initiative



T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



Project Schedule

See **Appendix E** for a light rail and highway project schedule.

Environmental Approvals

The EA for I-225 Widening from North of Parker Road to North of 6th Avenue, was approved by FHWA in July, 2000 with the signing of the FONSI in March 2001.

The transit portion of T-REX 225 Project was originally expected to be locally funded through the RTD FasTracks 2004 voter-approved initiative and therefore, not subject to the requirements of NEPA. However, following an extensive public and local agency involvement and comment period, the Preferred Alternative and the mitigation measures identified in the FasTracks I-225 Corridor EE document was adopted by the RTD Board of Directors on September 3, 2009.

Efforts performed during and subsequent to the EE process confirmed that there are no permanent impacts to parks or trails (one trail impact during construction); jurisdictional wetlands; and historic resources. The 106 consultation process has been initiated with the State Historic Preservation Officer and final confirmation for the remaining tasks is anticipated to take minimal time. The 404 permit requirements, Section 4(f)/6(f) analysis, and Section 106 requirements necessary for the Federal Transit Administration (FTA) to approve an EA will be addressed in 2011 prior to the obligation of any TIGER II funds.

State and Local Planning

The T-REX 225 Project has been included in adopted state and local plans as follows:

- *DRCOG 2035 Fiscally Constrained Regional Transportation Plan*, amended in August 2009.
- *City of Aurora Iliff Station Area Plan, December 2008*
- *City of Aurora 2009 Comprehensive Plan*
- Grant award will also trigger inclusion of the T-REX 225 Project in the STIP planning processes consistent with state and federal laws.

Technical Feasibility

To ensure construction of the T-REX 225 Project can begin prior to September 2012, the design of the minimum operable segment of the light rail is scheduled to be completed at the end of 2010 and the highway design is schedule to be complete by the end of 2011. With both the designs completed and ready for bid on or before 2012, both RTD and CDOT are committed to deliver the T-REX 225 project in 2013.

Financial Feasibility

Even though securing the fully requested TIGER II Discretionary Grant funds would provide the most substantial benefits to the City of Aurora and the Denver Metropolitan Region, **Table 9** represents the cost breakdown of the light rail and highway portions of the TREX 225 Project and the potential to implement

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



scalable projects with any TIGER II funds awarded. The Yale Bridge replacement represents the minimum amount needed to provide benefit for both RTD and CDOT.

Table 9: T-REX 225 Cost Break down

Description	Construction Cost
Light Rail Segment 1 (Nine Mile to Iliff)	\$ 87,000,000.00
Highway Widening (Nine Mile to Iliff)	\$33,000,000.00
Highway Widening (Iliff to Mississippi)	\$ 27,000,000.00
Yale Bridge Replacement	\$ 10,000,000.00
Total T-REX 225 Project Costs	\$157,000,000.00
Less Local Match Commitment	\$33,700,000.00
Total Requested TIGER II Funds	\$123,300,000.00

RTD and CDOT have combined a total local match equal to \$33.7 million in order to make the total project costs of \$157 million financially feasible. This matching funding will be available prior to a construction start date in 2012.

Local Match Break down

Vehicles allocation	\$9,000,000.00
LRT Design	\$2,000,000.00
CDOT ROW	\$9,000,000.00
CDOT Design	\$3,700,000.00
Total	\$33,700,000.00

5. SECONDARY SELECTION CRITERIA

Innovation

The T-REX 225 Project is innovative in all aspects and represents the model for multimodal with the “One DOT” philosophy. With RTD and CDOT’s proven record of constructing multimodal projects on time and under budget, the T-REX 225 Project is a great investment. The multimodal philosophy provides a unique team building approach for cooperation between agencies to agree on goals for the project and reach those goals together. The multimodal nature of the T-REX 225 Project lends itself for innovations in traffic control, minimizing the impact to the traveling public and faster construction of bridges and highway system.

Two innovative technologies the RTD is implementing on this FasTracks project is the RTD’s Job Training Program and the Smart Card/Fare Program.

- The Job Training program is an initiative that focuses on low-income and minority citizens of the region as described in the Job Creation & Economic Stimulus section. This program will show the partnership between multiple agencies to develop trained employees for the Denver metro area.
- The new smart card system will be utilized on this project at the Iliff station and along the existing Southeast Light Rail stations. The initial phase of the smart card project will enable RTD to gather ridership data on three annual pass programs: Eco Pass, Neighborhood Pass and College Pass. Riders will tap a smart card reader when boarding a bus or at a light rail platform reader prior to boarding a train and the system will capture data on the trip taken. Data will then be accumulated by employer/school/neighborhood and will include information on the type of service utilized. Monthly passes may also be part of the initial roll-out. Ultimately, RTD anticipate using the smart cards for other purposes, including stored value cards that could be used for individual rides.

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



Partnership

The T-REX 225 demonstrates the benefits of partnerships, building on a decade-long regional effort to improve and enhance transportation within the I-225 Corridor.

Construction of the 12-mile I-225 was completed in 1976, creating an important connection between Colorado’s north/south and east/west interstates, I-25 and I-70. Reconstruction and widening of the interstate to three lanes in each direction from I-70 to 6th Avenue occurred in the mid-1990s. The City of Aurora’s growth and the rapid development of the DTC as one of the state’s major economic centers led to the need to reconstruct and widen I-225 from 6th Avenue to I-25.

The \$1.67 billion T-REX Project widened I-225 from I-25 to Parker Road opening for service in 2005 and built light rail from I-25 to the Nine Mile Station, opening to revenue service in 2006. The cost to implement the remaining highway widening was \$130 million, in 2010 dollars.

In November 2004, RTD voters overwhelmingly approved the FasTracks initiative to expand and improve public transit services within the Denver Metropolitan Region. The comprehensive FasTracks program includes construction and operation of 122 miles of new commuter rail and light rail, 18 miles of bus rapid transit, 21,000 new parking spaces and enhanced bus service across the eight county districts. As part of FasTracks, the 10.5-mile I-225 Light Rail extension begins at the Nine Mile Station and ends at the new I-70 East Corridor Peoria Street/Smith Road station. The cost to implement the extension is \$626 million at year of expenditure.

Since the completion of the I-225 EA and approval of RTD-FasTracks, both agencies have sought to expedite the project, completing environmental and regulatory approvals in a streamlined fashion. While separate projects, each agency has planned not to preclude the other’s project and worked collaboratively to ensure that both transportation modes can be effectively implemented within the I-225 corridor.

The City of Aurora also contributed to the construction of I-225 in late 1990s, with voter-approved funding of a new interchange at Alameda Avenue at I-225, which serves the government center and Aurora Town Center development. The City has led funding efforts for a new interchange at Colfax Avenue and I-225, replacing aging infrastructure to better serve Anschutz/Fitzsimons Medical Campus including the new VA Hospital at Fitzsimons that will be fully operational in 2014.

The partnerships between local, state and municipal government are evident in the continued pursuit of funds and activities to implement the multimodal vision for I-225.

Jurisdictional and Stakeholder Collaboration

Letters of support from various corridor partners can be found in Appendix G, which signifies the strength and breadth of support for the application.

Disciplinary Integration

The T-REX 225 Project offers a sustainable alternative to traditional surface transportation projects. When implemented, the T-REX 225 Project will support existing and new economic centers along the I-225 Corridor. As such, the project is supported by non-transportation public agencies, including the Aurora Economic

T-REX 225 Multimodal Corridor – Nine Mile to Mississippi



Development Council, Accelerate Colorado, Anschutz/Fitzsimons Medical Campus, Colorado Bioscience + Technology Park, VA Hospital at Fitzsimons, the Medical Center of Aurora and the City of Aurora Municipal Center. These entities are pursuing projects with similar economic and livability objectives along the corridor that will be further enhanced with the construction of this project.

Funding Partnerships

RTD and CDOT are requesting a TIGER II Discretionary Grant of \$123.3 million to support a multimodal project that would implement part of metro Denver’s RTD FasTracks program. When constructed, the project will connect disadvantaged people with economic opportunities, providing access to 122 miles of commuter and light rail network, 18 miles of bus rapid transit service, and three major employment centers.

RTD has committed \$21 million and CDOT has committed \$12.7 million to leverage TIGER II funds. Local and state funds represent approximately 21.5 percent of the total \$157 million project cost.

While local and state agencies are clearly committed to this corridor, they cannot complete this project alone. The Denver Metropolitan Region has experienced a 10-15 percent decrease in sale tax revenue over the past two years, which is the primary funding source for RTD’s FasTracks program and local contributions. CDOT also experienced a decrease in funding due to declining gas tax revenue and elimination of state general fund for transportation. From 2005 to 2009, CDOT’s budget has decreased by \$850 million, absent Recovery Act funds. This resulting budget is equivalent to the buying power the Department had in 1983.

In light of these economic realities, the opportunity of the TIGER II Discretionary Grant Program offered an avenue for the agencies to partner, sharing limited resources in hopes of leveraging significant federal funds to complete this project, which exemplifies the future of transportation in our region. Without federal assistance this project may not be completed until 2042. With the commitment of local funds from both RTD and CDOT, the T-REX 225 Project will not be requesting additional assistance through a Transportation Infrastructure Finance and Innovation Act (TIFIA) federal financing assistance programs for this application.