Improving Multi-Modal Operating Efficiencies to Move Central Texas
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Submitted under the U.S. Department of Transportation TIGER Discretionary Grant Program by Capital Metropolitan Transportation Authority

**TYPE OF PROJECT:** Passenger and Freight Rail Improvements

**PROJECT LOCATION:**

*State:* Texas  
*Cities:* Austin, Burnet, Cedar Park, Elgin, Giddings, Leander, Llano, Marble Falls, Manor  
*Counties:* Bastrop, Burnet, Lee, Llano, Travis, Williamson  
*Congressional Districts:* 10, 11, 17, 21, 25, 27, 31 and 35

**GENERAL DESCRIPTION:**

Benefitting both urban and rural areas of Central Texas.

**GRANT FUNDS REQUESTED:** $20 million

**DUNS #:** 137596524

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EXECUTIVE SUMMARY

Capital Metropolitan Transportation Authority (Capital Metro) is seeking approximately $20 million in federal funding through the United States Department of Transportation’s Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants. We are pleased to submit this grant application, which proposes improvements to both passenger and freight rail and bus assets. We are confident that our proposed project meets or exceeds the objectives of the TIGER program. The improvement package submitted for your consideration features a modest investment that will generate significant economic benefits and improved service through increased passenger and freight mobility.

For the past 27 years, Capital Metro has been a leader in providing mobility solutions for the citizens of Austin and Central Texas. The agency offers commuter rail service in its Northwest Corridor from Leander to downtown Austin. The agency is also introducing two new Bus Rapid Transit (BRT) lines along the most populated and used corridors in Central Texas, and is partnering with the City of Austin to evaluate possible urban rail-type technologies for the central core. As one of the fastest-growing regions in the United States, sustainable mobility solutions are paramount. These identified projects will increase ridership capacity by 15 percent and reduce commute times by five to ten minutes.

Additional capacity on the existing freight and passenger lines will optimize the system to better meet a growing demand for service in the corridor. With its state-of-the-art vehicle design, Capital MetroRail provides an innovative transit option that incorporates a safe, fuel-efficient and attractive design that is compatible with adjacent neighborhoods and businesses. The MetroRail project has already generated private/public partnerships with developers and real estate investors that have resulted in new, mixed-use commercial centers and transit-oriented developments (TODs). With regard to bus operations, moving to compressed natural gas (CNG) technology, Capital Metro expects to improve air quality with a reduction in tailpipe emissions and significantly reduce operational costs of the fleet.

As a freight rail operator, Capital Metro is also uniquely positioned to enhance regional economic investments in commerce. Serving passenger and freight on the same tracks will provide financial and user economies and will contribute to Austin’s continued status as a federal attainment area for air quality.

The availability of TIGER funds will afford Capital Metro the opportunity to advance system enhancements for commuter and freight rail, including track upgrades, safety improvements, and additional sidings and double-tracking in the most critical areas, a full 13 years ahead of schedule. These system-wide enhancements will more than double freight rail capacity, reduce traffic congestion.
tion and enhance safety through the transfer of cargo from a potential 200,000 heavy trucks to rail.

Capital Metro has been a leader in technology innovation for years, investing in CNG buses in the early 1990s. However, when the industry failed to meet the needs of an urbanized bus program, the agency was forced to mothball it until now as technology has caught up. Capital Metro is ready to once again invest in the success that comes with cleaner and cheaper technology to provide comfortable and reliable service to transit-dependent and transit-choice riders.

Capital Metro’s system-wide enhancement package would provide the operational efficiencies the agency needs to meet the growing demand on its system. Each component, outlined below, would contribute to the overall system needs; allow for better customer service; reduce freight roadway traffic; and provide a new, clean alternative across the varying neighborhoods of Austin. These proposed project components include:

**Freight Rail Improvements** — Railroad Bridge Program; Rail Rehabilitation; Alternate Compliant Vehicles; Parmer/Lakeline Siding; Timber and Surface Tracks; Reconfigure Austin Junction (WYE)

**Commuter Rail Improvements** — Warning Systems; Wayside Signals; Double Track/Sidings at Multiple Stations; Super-Elevation in Curves

**Bus Operation Improvements** — Re-commission a Fueling CNG Station; Implement Safety Equipment and Training; Purchase CNG Buses

**PROJECT DESCRIPTION**

Capital Metro’s proposal incorporates improvements for both passenger and freight rail, in addition to CNG bus purchases with associated infrastructure and training. Project components will:

- Improve railways and signal timing to reduce vehicle delay, headways and rail traffic congestion;
- Upgrade passenger rail vehicles to comply with the Federal Railroad Administration and eliminate the need for temporal separation; and
- Purchase 45 CNG buses, which will reduce long-term fuel costs and improve air quality.

**Background**

Capital Metro is Austin’s regional public transportation provider. Since 1985, the agency has worked every day to offer residents, commuters and visitors the best transit experience possible. Our goal is to help people get where they want to go in a safe, reliable and efficient way. To do this, Capital Metro provides multiple transit options – 50 MetroBus routes, eight express routes, 19 University of Texas shuttle routes and a commuter rail service, MetroRail. As a result of these services, Capital Metro has the highest transit ridership per capita in the State of Texas.

Austin boasts an incredible quality of life – from Lady Bird Lake and our extensive hike and bike
trails to our music scene and delicious restaurants, people love our city for a wide variety of reasons. As the transportation provider, we have a significant role to play in protecting that quality of life; it is a job we take very seriously. We work daily to get commuters out of their cars and into more environmentally friendly transit alternatives – our work not only helps reduce congestion, it helps our region’s air quality and overall sustainability.

In fact, Kiplinger’s named Austin as the “Best City for the Next Decade” in 2010. Austin also tops Forbes’ 2013 list of America’s fastest-growing cities for the third year in a row. And the Fiscal Times ranked Austin No. 2 on its list of Top 10 Cities Where People are Moving.

With all of the growth the region has seen and with all that is anticipated, Central Texas must have sufficient transportation infrastructure to protect its much admired quality of life. According to Texas A&M’s Texas Transportation Institute (TTI), Austin ranked first in travel-time delay for medium-sized cities. Traffic congestion affects not only the quality of life of our residents, but also the local economy. The Institute estimates the cost of congestion in the Austin region increased from $264 million in 2000 to $691 million in 2009.

As shown in the accompanying table, the population of the five-county Capital Area Metropolitan Planning Organization (CAMPO) region in Texas more than tripled between 1980 and 2010, and is projected to almost double again by 2035 according to the 2035 CAMPO plan.

However, that growth has placed a tremendous burden on the local roadway network. While most rankings are positive, there are others that are not, and they must be addressed. According to TTI, Austin is the third-ranked city in the nation for traffic congestion with associated commuter stress and congestion costs. TTI has also determined that Austin drivers spend 44 hours annually stuck in peak-hour traffic.

Capital Metro recognizes its role moving forward to address these critical issues. The MetroRail Red Line is the backbone of the regional commuter system, serving inbound and outbound commuters in the Northwest sector, which is the fastest-growing area in the region. And, the agency’s buses are at the heart of service to the transit-dependent and help reduce cross-town traffic congestion.
The agency and the region want to be proactive in addressing these growing challenges. The requested TIGER funds will allow Capital Metro to move further in that direction. The agency is proposing a project that improves operational efficiency across the entire system. The funds would be put toward: increasing capacity and speed for train commuters; improving frequency and span for freight users; lowering the cost of operations; and reducing greenhouse gas emissions.

Addressing the Need
With all of this background in mind, there are a number of system deficiencies that are addressed by the project outlined in this grant application. Transportation needs include:

1. Capital Metro does not have the financial capacity in the near term to take on any major capital projects and must endeavor to do more within its current resources. The system is unable to respond to demand and has several deficiencies, especially related to rail infrastructure, that are currently being deferred into the future when there is more financial capacity.
2. There are extended segments of the rail line that can only accommodate 10 mph and single-track segments limit bidirectional movement for both passenger and freight services.
3. The freight service on the rail corridor currently has an operating deficit. Capital Metro must use resources that could be used for passenger service to cover the deficit.
4. Travel demand on the Red Line has increased to a point where there are several trips that exceed capacity on a daily basis.
5. Track configuration and speed limitations prohibit the system to operate at standard frequencies reliably and limit passenger throughput in the corridor.
6. It is very likely that latent passenger and freight demand exists within the corridor that will remain untapped unless deficiencies in infrastructure are addressed and capacity is increased.
7. Temporal separation between passenger and freight service is required because the passenger vehicles are not FRA compliant, which limits the window for freight movement on the corridor.
8. A key tenet of the TIGER Program is to decrease dependence on foreign oil and to reduce emissions, which Capital Metro can support by getting people out of their personal vehicles and on to rail and CNG buses.

The purpose of the project is to improve the efficiency of the overall transportation system in the Austin region and address each of the needs listed above.

A. The conversion of 45 buses to CNG will significantly reduce operating costs of the system because CNG costs less than equivalent amounts of diesel fuel. The reduction in operating costs creates new financial capacity for the system. CNG is produced domestically, so it decreases the dependence on foreign oil, and over the lifecycle of the bus, reduces overall emissions when compared to diesel. (Addresses need 1 and 8)

B. The addition of a CNG fueling facility avoids the cost of buying CNG from retail outlets and reduces deadhead mileage on the bus fleet by allowing for fueling to occur where the buses are maintained. (Addresses need 1)
C. Sidings, track upgrades and other track rehabilitation improve operational efficiency by accommodating higher train speeds, reducing idling time, and allow for more reliable bidirectional movement. Unit operating costs will decrease because trains will idle less and can move faster through the corridor. Overall emissions should improve with higher speeds. Additional passenger and freight service can be introduced to the corridor as a result. (Addresses needs 1, 2, 3, 4, 5 and 6)

D. Alternate compliance on the passenger rail vehicles will remove the need for temporal separation between freight and passenger movements, opening up more capacity to the freight system. (Addresses needs 3, 4, 6 and 7)

The following section outlines the specific project details included in this proposal.

**Project Details**

**Railroad Bridge Replacement Program** — As part of its State of Good Repair efforts, Capital Metro plans to upgrade several bridges along its rail line. Some have been identified as Condition 1 bridges (Critical), while others are classified as Condition 2 (Poor). The agency’s plans involve elevating these bridges to Condition 3 status (Fair or Better). By doing this, it will allow the agency to better maintain its assets and minimize lifecycle costs by avoiding a No Build Alternative (NBA) catastrophic failure of the bridge, which could result in a passenger and/or freight train loss of service, injury or death.

**90-Pound Rail Rehabilitation** — Capital Metro also has started to replace its 90-pound rail as part of its State of Good Repair efforts, and the grant will help Capital Metro continue this effort for other sections of the line. It is past its service life and replacing it will reduce service delays caused by rail breaks and associated derailments, which cause disruption of service. The agency should also see a reduction in maintenance costs as rail breaks result in emergency situations to repair.

**Upgrade East Corridor Tracks from FRA Class I to FRA Class II** — Capital Metro is currently in the process of replacing its 90-pound rail with 115-pound rail with limited tie replacements at rail joints in the east corridor between mileposts 40 and 56.5. This project will provide ties and labor to upgrade the track from FRA Class I (10 mph maximum speed) to FRA Class II (25 mph maximum speed), which will reduce the east corridor travel time from approximately 100 minutes to approximately 40 minutes.

**Upgrade West Corridor tracks from FRA Excepted Track to FRA Class III** — Capital Metro is currently in the process of replacing its 90-pound rail with 115-pound rail with limited tie replacements at rail joints in the west corridor. This project will provide ties and labor to upgrade the track from FRA Excepted Track (10 mph maximum speed) to FRA Class III (40 mph maximum speed). This upgrade, in conjunction with previous track upgrades in the area, will reduce the west corridor travel time between mileposts 116.4 and 121.0 from 28 minutes to seven minutes.
Modify Stadler Vehicles to Meet FRA Requirements for Alternate Compliance —
Capital Metro will modify its fleet of Stadler Diesel Multiple Unit passenger rail vehicles in order to meet the FRA’s requirements for alternate compliance. Once all of the existing rail vehicles are determined to meet the requirements, the need for a temporal separation between passenger and freight operations will be eliminated. This will allow Capital Metro to operate freight and passenger trains together in the commuter corridor subject to the physical constraints and/or operational characteristics of the railroad. In general, this will provide the agency’s freight customers with increased access to the Capital Metro / Union Pacific Railroad interchange at McNeil Junction during non-rush hours and evening hours. Under the current temporal separation agreement, all passenger trains must be cleared of the commuter corridor before any freight train is allowed to enter and/or operate through the commuter corridor.

Extend Siding at Parmer and Construct Sidings at Highland and Howard Stations —
The proposed siding improvements will provide Capital Metro with the ability to turn commuter trains at the station platform instead of holding them in the Parmer siding. The east end of the existing Lakeline station is approximately three miles from the Robinson Interlocking, which is also the location where offline freight (BNSF and UP) trains enter and exit the commuter corridor. By doing this, it will eliminate the existing operating restriction for commuter trains stopping and then leaving the station. It will allow eastbound commuter trains to immediately accelerate to maximum authorized track speed upon leaving the station instead of operating at restricted speed from the platform to the next signal located at milepost 76.45 feet. This will reduce runtime by approximately one minute.

Capital Metro would also like to provide commuter trains with the ability to wait at its Lakeline station platform instead of on a siding when a freight train needs to pass on the adjacent track. Lakeline is the first of the three stations (Lakeline, Howard and Highland) that need to be double-tracked in order to increase frequency of service between downtown and Lakeline.

With regard to the benefits for freight, lengthening the existing siding from milepost 76.37 to milepost 77.10 will increase the siding by approximately .73 miles or 3,854 feet for a total siding length of approximately 6,300 feet – this is enough room to accommodate a 5,280-foot freight train within three miles of the Abbott Yard freight interchange.
Reconfigure Austin Junction (Wye) — Capital Metro proposes the realignment of its Austin Junction (Wye). Implementing this change will support increased commuter and freight operating speeds and will provide rush-hour staging for trains entering or leaving downtown. As part of the process, it would change the existing Balcones lead to a signalized siding with power switches. This would restore 10-mph operation for freight trains (currently five mph) and would allow 20 mph for commuter trains.

This project will result in several positive outcomes, including: providing an alternative for commuter trains to bypass the Austin Wye; offering a controlled, signalized siding between the MLK and Downtown stations, thereby reducing the single track between those two stations; and reducing derailments caused by wheel climb.

Redesign Crossing Warning Systems — Capital Metro will redesign its crossing warning systems between the MLK and Kramer stations in order to support train operations at maximum track design speed. Current maximum speed between these two stations is limited to 40 to 45 mph due to the crossing warning approach lengths. This project will increase those lengths so the crossings will support 50 to 60 mph. As a result, this will reduce the commuter trip time between these two stations by approximately one-and-a-half minutes. It will increase overall efficiency and will result in a minimal increase in operating costs.

Modify the Wayside Signal System — Capital Metro would like to implement several improvements and modifications aimed at service efficiency. The following list represents some of the signal system modifications the agency would like to pursue.

- **Auto Routing:** Capital Metro will modify its wayside signal system so that commuter trains will automatically route themselves through the sidings. With auto routing, trains will be able to operate through interlockings under signal protection when there is a loss of communication between the control center and the wayside locations.

- **Following Moves:** Capital Metro will modify intermediate signals 62.21 and 68.21 to facilitate turn-back moves from the Howard and Crestview stations and add flashing red-signals to provide routing functions for following trains entering the MLK and Kramer stations and the Parmer siding.

Increase Actual Super-Elevation on the Curves between Lakeline and Plaza Saltillo — In order to reduce run time by more than five minutes, Capital Metro will increase the super-elevation – the difference between the left and right rail – allowing trains to move faster through the curves located along the line between the Lakeline and Plaza Saltillo stations.

Purchase CNG Buses
The average age of the agency’s bus fleet is between 8.7 and 9.4 years old. Capital Metro has been directed by its board to replace diesel with CNG technology with a goal of half the fleet being...
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diesel and half being CNG. Capital Metro is scheduled to make another purchase of twenty (20) 35-foot buses in 2015.

Re-commission the CNG Station
In order to purchase the new CNG buses and reduce Capital Metro’s fuel costs and greenhouse gas emissions, the agency must first rehabilitate an abandoned CNG station that was decommissioned after its useful service life. This component includes replacing tanks and purchasing and installing the distribution equipment.

CNG Safety Equipment and Training
When natural gas is compressed, it loses the odor used to indicate a leak. Capital Metro will install a methane detection system and other safety systems and equipment. In addition to the safety equipment, the agency will provide comprehensive training for its operators and mechanics about the safe use and maintenance of the vehicles.

PROJECT PARTIES
This project has been spearheaded by the Capital Metro, the public transportation provider located in Austin, Texas. The agency operates bus, paratransit services and a commuter rail system for Austin and suburban communities in Travis and Williamson counties.

Watco Transportation Services (Watco) is headquartered in Pittsburg, Kansas, and has four divisions: transportation, mechanical, terminal and port services, and compliance. It operates 30 shortline railroads with approximately 4,500 miles of track in 21 states, including Capital Metro’s freight rail operations.

Hanson Aggregates (Hanson) is a Halliburton subsidiary and mines rock for use in concrete on a
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Watco moved 1,145 car loads of aggregate for Hanson; the company expects to add 400 more cars with the proposed improvements.

The City of Austin (COA) is the capital of Texas and the county seat of Travis County. It provides municipal services to approximately 800,000 residents in the Capital Metro region.

The Capital Area Metropolitan Planning Organization (CAMPO) is the Metropolitan Planning Organization (MPO) for Bastrop, Burnet, Caldwell, Hays, Travis and Williamson counties in Central Texas. CAMPO coordinates regional transportation planning.

### GRANT FUNDS AND SOURCES/USES OF PROJECT FUNDS

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<th>Component</th>
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<th>Local Match (%)</th>
<th>Match Type/Partner</th>
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While Capital Metro will provide the majority of the local match, our private freight partners have agreed to assist with the associated costs as they recognize the value of the improvements. Watco, the freight operator, has committed $2.57 million as noted in its letter of support, and Hanson Aggregates has already given Capital Metro a check for $400,000 in support of the rail-rehabilitation efforts.
A detailed budget may be found attached to the SF-424 form.

**SELECTION CRITERIA**
The following section illustrates how Capital Metro’s project meets each of the primary and secondary selection criteria. Each project component will improve operational efficiency to help both customer and provider: rail passengers and freight customers, as well as Capital Metro’s bottom line will benefit from the operational improvements.

The rail improvements maintain the system and enhance economic competitiveness, livability, environmental sustainability and safety in the region. The bus components of the project decrease the average age of Capital Metro’s bus fleet and improve economic competitiveness by lowering overall fuel costs and using a local fuel source. Further, only two of the project’s components need design and environmental clearance. While the rest of the components are ready for construction, Capital Metro will need to complete the design and obtain environmental clearance for the reconfiguration of the Wye and Parmer/Lakeline siding.

**Long-Term Outcomes**

**State of Good Repair**

*Life Cycle Costs and Resiliency*
The bridge, rail and other infrastructure upgrades are part of Capital Metro’s State of Good Repair Program and tracked within the SPEAR software. The bus replacements are consistent with Capital Metro’s long-range fleet management plan and are included in the FY2013-2016 TIP/STIP.

With the grant, Capital Metro will have the funds to purchase the necessary components to complete the project and is in the process of developing an asset management plan that will optimize the long-term cost structure. Per MAP-21 requirements, Capital Metro is positioned to replace assets at the end of their useful life cycle. The proposed components include:

**Railroad Bridge Program** — As part of its State of Good Repair efforts, Capital Metro plans to upgrade several bridges along its line. Some have been identified as Condition 1 bridges (Critical), while others are classified as Condition 2 (Poor). The agency’s plans involve elevating these bridges to Condition 3 status (Fair or Better). By doing this, it will allow the agency to better maintain its assets and minimize lifecycle costs by avoiding a No Build Alternative (NBA) catastrophic failure of the bridge, which could result in a passenger and/or freight train loss of service, injury or death.

**Rail Rehabilitation** — Capital Metro also has started to replace its 90-pound rail as part of State of Good Repair efforts. It is past its service life and replacing it will reduce service delays caused by rail breaks and associated derailments, which cause disruption of service. The agency should also see a reduction in maintenance cost as rail breaks result in emergency situations to repair.
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**Parmer Siding and Double-Tracking Lakeline Station** — This improvement will provide a layover location for freight trains awaiting an open window on the commuter track, shortening the run-time and reducing costs. It also increases the efficiency of overall freight operations.

The Parmer siding extension will also provide a location to store freight trains in the commuter corridor for the existing or expanded midday freight window, which is approximately three miles from the Robinson Interlocking where trains enter the freight yard from western locations. The midday window allows freight trains to operate from Marble Falls to McNeil Junction (UP/BNSF interchange) by changing the temporal separation zone limits from one control point to another.

Finally, these improvements will also increase the efficiency of commuter rail operation due to the reduction in commuter rail headway from 34 minutes to 30 minutes.

**Timber and Surface Tracks to Class II Standards on the East Corridor and to Class III Standards on the West Corridor** — This project will replace sufficient ties, add ballast and surface the track so it meets FRA standards for class II and class III operation. These changes will save approximately 90 minutes of run-time for trains operating from Marble Falls to Manor and approximately 35 minutes of run-time for trains operating from Marble Falls to McNeil Junction.

**Reconfigure Austin Junction (Wye) and add Balcones Siding** — Capital Metro proposes the realignment of its Austin Junction (Wye). Implementing this change will support increased commuter and freight operating speeds and will provide rush-hour staging for trains entering or leaving downtown. The new signalized siding with power switches would restore 10-mph operation for freight trains (currently five mph) and would allow for 20 mph for commuter trains.

This project will result in a controlled, signalized siding between the MLK and Downtown stations, thereby reducing the single track between those two stations; and reducing derailments caused by wheel climb.

**Redesign Crossing Warning Systems at MLK and Kramer Stations** — This project component would reduce commuter trip time and increase throughput, increasing efficiency with a minimal increase in operating costs.

**Modify Wayside Signal System** — This improvement would allow trains to operate on signal indications when a failure in communication occurs between the dispatch center and the wayside control points. Currently, when this type of failure occurs, trains must obtain verbal authorization from the dispatcher to pass a red signal. All trains must operate at a restricted speed not to exceed 20 mph over the entire rail system; stop at each power switch machine location; and hand-operate every switch machine that is not set for the train’s route.
Double-Track Highland and Howard Stations — This project would allow for the use of five trains during peak periods and for a change in originating and terminating stations. This project component increases efficiency of the commuter system as it will allow for express trains and reduce headways overall and provide increased frequency between the downtown and Lakeline stations.

Increase Actual Super-Elevation on the Curves between Lakeline and Plaza Saltillo — In order to reduce run time by more than five minutes, Capital Metro will increase the super-elevation – the difference between the left and right rail – allowing trains to move faster through the curves located along the line between the Lakeline and Plaza Saltillo stations.

Purchase CNG Buses
New CNG buses will be one-for-one replacements of existing 35-foot diesel buses, improving NOx and PM emissions by 95 and 90 percent, respectively. Preventative maintenance costs for repair, parts and labor are expected to increase by approximately $1.82M without the purchase of new buses in 2015 and 2016. However, with the purchase, the reliability of the fleet will be improved, as they will replace buses that are more than 13 years old. The bus purchase is expected to decrease road calls and increase the miles between mechanical breakdowns from 5,200 to more than 6,000, a 15 percent improvement.

Re-commission CNG Station
Capital Metro had a CNG program in the early 1990s as the technology was emerging, but once the buses and fuel station completed their useful lifecycle, the station was decommissioned. The technology was not at the point it is today, and the program was too expensive to maintain. Retrofitting it with new technology will increase the lifecycle of the station and improve the efficiency of service compared to having to use an off-site station subject to state taxes.

CNG Safety Equipment and Training
Capital Metro’s previous CNG program struggled due to a lack of technology and training to support the operators and mechanics in using and maintaining the equipment as effectively as possible. Proper safety equipment and training will ensure the program’s success, making CNG a viable alternative to foreign-fueled diesel buses.

No-Build Alternative
While these components are in Capital Metro’s Asset Management Plan, some are longer-term improvements due to lack of funding. However, the need exists now, as deficiencies could result in catastrophic failure.

Railroad Bridge Program — The No-Build Alternative may cause a catastrophic failure of the bridge, which would result in a passenger and/or freight train loss of service, injury or possibly death.
90-pound to 115-pound Rail — The No-Build Alternative would involve increased maintenance costs, derailments and low track speed.

Modify Stadler vehicles — The No-Build Alternative threatens freight and passenger expansion; increases the cost of hauling freight; imposes restrictions on freight delivery times to customers; and adds to the cost of hauling freight by requiring more trains to achieve a service level 24-hour turn time to Manor and McNeil, which does not account for loading and unloading time.

Extend Parmer Siding and Double-Track Lakeline Station — With the No-Build Alternative, single-track sections limit the headway service Capital Metro can provide with the existing fleet. With the new track, service frequency can be increased and trains can be turned back at various locations to provide a service that more closely matches demand. With the No-Build Alternative, freight trains would not have an extra layover place in order to take advantage of the midday freight window.

Timber and Surface East and West Corridor Tracks — With the No-Build Alternative, the track would still be in a state of minimal maintenance with significant speed restrictions even with the new 115lb rail installed.

Reconfigure Austin Junction (Wye) and Add Balcones Siding — The No-Build Alternative would keep freight speeds at five mph, increase the chances for derailment and negatively impact commuter efficiency.

Redesign Crossing Warning Systems at MLK and Kramer Stations — The No-Build Alternative would keep trains at 40-45 mph, which is below the top speed for which the tracks were designed.

Modify Wayside Signal System — With the No-Build Alternative, when a failure of communication occurs, trains must obtain verbal authorization from the dispatcher to pass a red signal. All trains must operate at restricted speed not to exceed 20 mph over the entire rail system; stop at each power switch machine location; and hand-operate every switch machine which is not set for the train’s route.

Double-Track Highland and Howard Stations — The No-Build Alternative would allow for the continued use of only four trains during peak periods instead of five and the inability to respond flexibly to demand by changing train origins and destinations.

For all projects outlined above, the No-Build Alternative would render the Austin area unable to respond with transit/rail increases due to regional growth. This situation would also place a burden on all other modes, which are currently at or near capacity.
CNG — CNG produces less greenhouse gas (GHG) tailpipe emissions than the cleanest diesel, reducing GHG by 17 percent. While this is a benefit to a region teetering on non-attainment, the greatest benefit is the price of fuel. Natural gas is produced and refined in Texas and is abundantly available. Even while hedged on diesel at $3.15/gallon, the possibility for obtaining CNG at $1.07/dge would substantially reduce the cost of operating the buses. With the federal-imposed positive train control requirement ($33M) and a state-imposed reserve requirement ($40M), Capital Metro must reduce operations cost.

Economic Competitiveness
The Capital Metro project outlined in this application is a critical part of the agency’s strategy to improve the capacity and effectiveness of the system for moving people and goods within the Austin region. The elements of the project are small individually, but they are vital improvements to the core capacity of the system and will help to reduce costs to customers, while improving overall system productivity.

In the benefit cost analysis, an actual dis-benefit is shown on operating and maintenance costs because the cost of passenger service improvements on the rail line outweigh the cost savings attributable to the bus conversion to CNG. However, as more of the fleet is converted over time, a cost savings can be realized or additional bus service could also be implemented. The conversion to CNG will allow Capital Metro to provide more capacity in the system without increasing revenues. In addition, Capital Metro fully expects that the capacity improvements on the rail line will result in an increase in freight revenue that could also offset operating cost increases for the system. The 12 to 15 percent growth in rail freight business, assumed in the CBA, is a conservative estimate.

The project represents the first step toward conversion of the bus fleet to compressed natural gas. Through the reduced fuel cost of more than $1.15 per gallon, Capital Metro will realize substantial savings in operating costs. It also reduces the dependence on foreign oil by 20,000 barrels of crude oil (207,000 gallons of diesel), annually (http://www.eia.gov/tools/faqs/faq.cfm?id=327&t=9).

With the added capacity on the Capital Metro rail facility, it is expected that rail service will see 15-percent growth in the number of railcars on the corridor beginning in 2016. Shippers along the corridor will be able to convert the shipping of more than 923,000 tons of commodities from truck to rail as a result of the new capacity, annually. Shipping via rail is 11 cents per ton mile cheaper than truck and has the capacity to move four times the tonnage per car as compared to one truck. This represents a savings to shippers of more than $165M (undiscounted) over the 20-year BCA timeframe.

Based on DOT TIGER guidelines, the $53.7M in transportation investment will create 698
short-term jobs. The long term job creation was estimated because it primarily is based in the actual increase in freight business along the rail corridor. Capital Metro will be increasing passenger service and may need additional operators. However, a key part of the benefit of the project is that there is no anticipated increase in overhead for Capital Metro to produce the additional capacity in the system. This represents a significant increase in productivity per dollar spent on operations.

Livability
In this wildly popular and congested city, Capital Metro is the key to a livable community. The agency provides access to work, school and social destinations that is efficient enough to allow for extra time for a bike ride, a walk with the dog or more fun with the kids. Capital Metro is about protecting and enhancing the region’s quality of life.

LP1. Provide more transportation choices to decrease household transportation costs, reduce our dependence on oil, improve air quality and promote public health.

The project pinpoints the most needed infrastructure improvements in the region to better support commuting and local trips. Some of those include:

- Increased frequency will provide more opportunity and choice for drivers to leave their single-occupancy vehicles at home.
- Commuter rail is a congestion-proof option that allows people to work or relax while sailing through traffic; reduces the cost of vehicle maintenance and operation; shortens commute times; increases opportunities to bike and walk the last leg of the trip; and by default, improves health and reduces stress.
- CNG vehicles will provide a 17 percent reduction in GHG tailpipe emissions compared to diesel buses built in or before 2010.
- CNG vehicles will be used for local service, providing clean vehicle service in medium- and low-income households throughout Austin and the surrounding service area.
- Natural gas is produced in Texas and can be purchased through the State General Land Office, which further limits the dependence on foreign-based diesel.

LP2. Expand location- and energy-efficient housing choices for people of all ages, incomes, races and ethnicities to increase mobility and lower the combined cost of housing and transportation.

Capital Metro’s project would address this issue in a number of meaningful ways:

- Improved service offers more locations and provides more people with access to the energy and affordability benefits of public transit.
- Improving the efficiency of the MetroRail Red Line will provide complete, multimodal, cost-effective trip solutions for commuters into major downtown employment centers, including the two revitalization districts associated with this application.
- The mixed-income development, Saltillo Lofts in the Plaza Saltillo TOD District just east of
the Plaza Saltillo station, achieved 38 percent affordable housing. The buildings were designed for energy efficiency and durability with highly insulated, low-e windows and large window overhangs; light-colored roofs; fiber cement exterior walls with stucco finish; and low-maintenance, hard-surface floors.

- In February 2012, a new project was announced – the $35-million Corazon multi-use project north of and adjacent to the rail line in the Plaza Saltillo TOD District. Plans for Corazon call for 256 apartments, 16,294 square feet of ground-level commercial space, pedestrian-friendly landscaping, with 16 percent of the units being affordable.
- At the MLK Station, the stop north of Plaza Saltillo, a LEED-Platinum affordable housing development opened in 2011, providing 150 units with on-site child-care. Expanding service reduces the cost of transportation for these residents, allowing more of them to shift to transit for access to jobs and other basic needs.

LP3. Improve economic competitiveness of neighborhoods by giving people reliable access to employment centers, educational opportunities, services and other basic needs. Austin ranks high nationally in transit use per capita among cities of similar size. The axial configuration of the area’s development, which facilitates effective transit services, and the large number of people that work in the central business district and at the various universities, contribute to the area’s transit ridership. There is a need to consider transit improvements that can provide increased people-carrying capacity in the Red Line corridor. The implementation of the project is critical since traffic congestion in the corridor continues to increase and options for increasing roadway capacity is limited. Improving the transit system offers an alternative to single-occupancy-vehicle travel in the Capital Metro service area.

LP4. Target federal funding toward existing communities—through transit orientation and land recycling—to revitalize communities, reduce public works costs, and safeguard rural landscapes.

The Red Line stations south of Howard Station are redevelopment targets with most of the surrounding industrial properties expected to redevelop over time. Some progress has been seen at the MLK TOD and the Crestview TOD, both of which already have residents in these mixed-use walkable developments.

Both revitalization districts are partially, or wholly, in census blocks considered economically distressed as determined by the most recent census income data. These are existing communities primed for revitalization with the addition of much needed transportation infrastructure. Capital Metro is in the position to move many of these opportunities forward.

Austin has been selected as one of three showcase communities by the Region VI DOT/HUD/EPA Partnership for Sustainable Communities. Within Austin, the Plaza Saltillo TOD project has been identified as a prime example of the partnership.
Improving Multi-Modal Operating Efficiencies to Move Central Texas

LP5. Align federal policies and funding to remove barriers to collaboration, leverage funding, and increase the effectiveness of programs to plan for future growth. Capital Metro has combined a group of components that work together to leverage federal money so they can be implemented on an accelerated timeline and more cost effectively. This moves these critical projects forward, opening capacity to complete the Project Connect Vision priorities.

LP6. Enhance the unique characteristics of all communities by investing in healthy, safe and walkable neighborhoods, whether rural, urban or suburban. Low-density sprawl and car-dependent development can be linked to obesity, lack of access to healthcare, food deserts and an overall disconnection from society. Commuter lifestyles have increased the dependency on single-occupancy-vehicles, raising the cost of transportation and taking away time away with families.

Capital Metro has seen an increase in transit-oriented development around its rail line with $95M built and another $283M underway. Denser development offers access to more services and housing along connected routes save people time and money. This project will put more people on that system.

**Environmental Sustainability**
Implementing the proposed improvements to the regional system will promote more environmentally sustainable transportation through a number of avenues. The project is designed to make improvements to Capital Metro’s overall system, targeting efficiency and effectiveness.

The project represents the first step toward conversion of the bus fleet to compressed natural gas. Through the reduced fuel cost of more than $1.15 per gallon, Capital Metro will realize substantial savings in operating costs. It also will reduce the dependence on foreign oil by 20,000 barrels of crude oil (207,000 gallons of diesel), annually (http://www.eia.gov/tools/faqs/faq.cfm?id=327&t=9).

The rail components of the project eliminate the need for temporal separation on the Red Line, opening up significant capacity for freight movement through the corridor, as well as a needed increase in passenger service. More than 900,000 tons currently moved by truck will be converted to rail, potentially saving tons in truck emissions on an annual basis. According to the American Association of Railroads, railroads are four times more fuel efficient than trucks on average, and moving freight by rail instead of truck reduces GHG emissions by 75 percent.

The project also reduces vehicle miles (VMT) traveled by 985,000 miles annually based on the projected increase in ridership on the Red Line. A net decrease in overall pollutants (including GHG) is realized by the project through the reduction in VMT by Red Line passengers and the
conversion of buses to compressed natural gas. There is a small dis-benefit based on the emissions from additional train trips on the Red Line. The net savings is monetized at $9.2M over the 20-year BCA timeframe.

The rail improvements would all take place within existing rail ROW, which has been previously disturbed from the O&M activities of the existing freight rail operation and the construction of passenger rail on the MetroRail Red Line.

The Austin area represents a sensitive ecological community in which there are many known threatened and endangered species. The preservation of habitat is therefore vitally important in the region. The area also has sensitive aquifers on which a large population relies for consumptive use. All projects within the region need to carefully consider impacts on these important resources.

Preliminary findings indicate that the proposed rail improvements would not result in permanent adverse impacts to wetlands, endangered species or habitat. Best Management Practices (BMPs) would be used to ensure that any construction-related impacts to water quality are sufficiently mitigated. BMPs may include the use of stormwater management controls. Operational policies will also ensure that all freight activities are conducted in an environmentally responsible manner in order to ensure that no impacts to these resources result from freight or passenger rail operations.

Noise concerns are generally a localized phenomenon with the scale of the impacts depending on residential density patterns, the nature of the noise source and the existence of intervening barriers. Many of the rail improvements will occur along existing ROW along the MetroRail Red Line, and others are within or close to the Austin city limits. In these urban areas, densely developed residential neighborhoods fronting the existing rail line are shielded by intervening barriers or protected by quiet zones at established railroad crossings. Based on existing barriers and the use of welded track, it is not anticipated that the proposed improvements would result in any significant noise impacts.

The project would result in significant benefits to local air quality and energy consumption. Currently, the Austin-Round Rock MSA is classified as attainment for all National Ambient Air Quality Standards (NAAQS), including ground-level ozone. The Environmental Protection Agency (EPA) released a new PM2.5 standard in December 2012, for which reporting agencies are still gathering data. The Austin-Round Rock MSA will be able to report its attainment status for the new standard by mid-2014. Although the MSA is currently in attainment, given the region’s growth and associated rise in the number of trucks and automobiles, maintaining attainment status may become more difficult. There will be a net reduction in emissions as a result of this project.

All communities, including those with economically disadvantaged populations, would benefit
from the proposed project. These benefits, which add to the intrinsic value of the project, include improvements to economic competitiveness, the promotion of new business opportunities for both Capital Metro and the private sector, the potential development and improvement of local communities and neighborhoods, preservation of current habitat for recreation and wildlife uses, improvements in fuel economy and to local air quality. The new CNG buses will be placed into service equitably, and Red Line service was cleared environmentally through a Categorical Exclusion in 2012.

Prior to the availability of TIGER V funds, there was no reasonable expectation of receiving federal funding for these projects. Based on review of 23 CFR §771.117(d), it was determined that two Class II Categorical Exclusions (CEs) are appropriate. None of the project elements are anticipated to result in significant environmental impacts; however, Capital Metro is currently appropriately documenting the project to demonstrate that the specific conditions or criteria for the CEs are satisfied and that significant effects will not result pursuant to 23 CFR §771.117(d).

The CE-level NEPA documents will be coordinated with FTA and FRA. Capital Metro will submit the Final CEs to FRA and FTA by February 2014. Capital Metro anticipates NEPA clearance no later than June 2014. It is not anticipated that any federal approvals, such as USACE Section 404, would be required. Environmental professionals will be consulted throughout the final design of the proposed improvements to ensure compliance with all federal and state permitting requirements.

**Safety**

**Railroad Bridge Program** — As part of its State of Good Repair efforts, Capital Metro plans to upgrade several bridges along the line. Some have been identified as Condition 1 bridges (Critical), while others are classified as Condition 2 (Poor). The agency’s plans involve elevating these bridges to Condition 3 status (Fair or Better). By doing this, it will allow the agency to better maintain its assets and minimize lifecycle costs by avoiding a No Build Alternative (NBA) catastrophic failure of the bridge, which could result in a passenger and/or freight train loss of service, injury or death.

**90-pound to 115-pound Rail Replacement** — Capital Metro also has plans to replace its 90-pound rail as part of State of Good Repair efforts. It is past its service life and replacing it will reduce service delays caused by rail breaks and associated derailments, which cause disruption of service. The agency should also see a reduction in maintenance costs as rail breaks result in emergency situations to repair.

**Reconfigure Austin Junction (Wye) and Add Balcones Siding** — This project will result in several positive outcomes, including: providing an alternative for commuter trains to bypass the
Austin Wye; offering a controlled, signalized siding between the MLK and Downtown stations, thereby reducing the single track between those two stations; and reducing derailments caused by wheel climb.

**Siding and Double-Tracking** — This improvement will provide a layover location for freight trains awaiting an open window on the commuter track, shortening the run-time and reducing costs. It also increases the efficiency of overall freight operations, while preserving safety standards. The midday window allows freight trains to operate from Marble Falls to McNeil Junction (UP/BNSF interchange) by changing the temporal separation zone limits from one control point to another.

**Improved Warning System** — This project component would safely reduce commuter train run-time and increase throughput for both commuter and freight trains, increasing efficiency by extending the approaches.

**Modified Wayside Signal** — This improvement would allow trains to operate on signal indications when a failure in communications occurs between dispatch and the wayside control points, allowing for redundancy in the system.

**Project Readiness**

**Technical Feasibility**

The project is comprised of a package of system improvements that are eminently feasible. They consist of standard technologies, will not require lengthy environmental reviews and can be designed and implemented relatively quickly. Capital Metro has been planning for many of the improvements for a long time and the primary delay for implementation is finding capacity in the financial plan to accommodate them. With TIGER funding, Capital Metro will be able to leverage local dollars to accelerate implementation and achieve the associated operational benefits by early 2016. This 10 to 12 years sooner than currently scheduled.

1) **Preliminary Engineering/Conceptual Design** — Specifications for alternate compliance for rail vehicles, the CNG fueling station and the CNG-fueled buses have been developed and can be procured immediately after the grant is awarded. There is no additional design required, and once the components (fueling station/rail car parts) are delivered, assembly and commissioning can be completed in 60-90 days. It is assumed that delivery of the buses will take 18 months once they are ordered. Capital Metro will begin procurement in CY 2013 and will explore methods to minimize the time to place the bus order through a tag option. Attachment 03 includes a schedule that provides more detail on implementation timing and milestones for these improvements.

The track upgrades and bridge replacements in the project are part of an overall capital mainte-
nance program initiated by Capital Metro initiated in 2011. Many of the improvements involve bridge timber/rail tie replacements and upgrade of 90lb track to 110lb rail in order to accommodate higher speeds. They require very little design beyond a construction plan to maintain the integrity of the infrastructure while replacing deteriorated materials. Construction will be timed to minimize impact on existing operations.

The improvements to the Austin Wye and double tracking of stations will require design and environmental clearance (see NEPA section). Capital Metro currently has on-call contracts for both design services and environmental planning which will minimize the time necessary to complete these functions. The contracts are set up with enough resources to do a number of PE designs simultaneously, which can be completed prior to the end of CY 2013.

2) Environmental Reviews and Approvals — Prior to the availability of TIGER V funds, there was no reasonable expectation of receiving federal funding for these projects, therefore NEPA has not been initiated; however Capital Metro has staff and on-call consultants available to begin the documentation process. Additionally, the bus and rail improvements would take place within the existing facility and rail ROW. The ROW has been previously disturbed from the O&M activities of the existing freight rail operation and the construction of passenger rail on the MetroRail Red Line and daily maintenance facility operations. Based on the previously disturbed nature of the right-of-way and review of CEQ and DOT’s regulations 40 CFR §1508.4 and 23 CFR §771.117, which states that Class II (CEs) Actions that do not individually or cumulatively have a significant environmental effect, are excluded from the requirement to prepare an EA or EIS, it was determined that two Class II Categorical Exclusions (CEs) are appropriate, one for freight improvements and one for the passenger rail and bus improvements. None of the project elements are anticipated to result in significant environmental impacts; however, Capital Metro will be appropriately documenting the project to demonstrate that the specific conditions or criteria for the CEs are satisfied and that significant effects will not result. The NEPA determination for each project component is discussed below. The list of project components that meet the requirements for CEs normally not requiring NEPA documentation are included in the following table (see page 22).

The CE documents will be coordinated with FTA and FRA. Capital Metro will submit the Final CEs to FRA and FTA in September 2013. Capital Metro anticipates NEPA clearance no later than January 2014. The agency understands that DOT has a September 30, 2014 statutory deadline for obligating funds, and does not anticipate any delays that will put TIGER grant funds at risk of expiring before they can be obligated. All project components are within Capital Metro’s existing right-of-way which staff and consultants are very familiar. A preliminary environmental review has been performed and no significant impacts to the natural, social and/or economic environment are anticipated that would delay schedule.
### Freight Project Components - FRA Approval

<table>
<thead>
<tr>
<th>Regulatory Reference</th>
<th>Regulatory Language</th>
<th>Project Component</th>
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</table>
| FRA Procedures for Considering Environmental Impacts Section 4(c) CE | Maintenance of: existing railroad equipment; track and bridge structures; electrification, communication, signaling, or security facilities; stations; maintenance-of-way and maintenance-of-equipment bases; and other existing railroad-related facilities. (“Maintenance” means work, normally provided on a periodic basis, which does not change the existing character of the facility, and may include work characterized by other terms under specific FRA programs) | • Railroad Bridge Program  
• Freight Track Replacement |
|                      | Minor rail line additions including construction of side tracks, passing tracks, crossovers, short connections between existing rail lines, and new tracks within existing rail yards, provided that such additions are consistent with existing zoning, do not involve acquisition of a significant amount of right of way, and do not substantially alter the traffic density characteristics of the existing rail lines or rail facilities. | • Parmer Siding  
• Double-Tracking Lakeline Station  
• Reconfigure Austin Junction (Wye) |

### Passenger Rail & Bus Project Components - FTA Approval

<table>
<thead>
<tr>
<th>Regulatory Reference</th>
<th>Regulatory Language</th>
<th>Project Component</th>
</tr>
</thead>
</table>
| 23 771.117(c)(18) CE | Track and railbed maintenance and improvements when carried out within the existing right-of-way. | • Balcones Siding  
• Increase Actual Super-Elevation on the Curves between Lakeline and Plaza Saltillo  
• Double-Track Highland and Howard Stations |
| 23 771.117(c)(8) CE | Installation of fencing, signs, pavement markings, small passenger shelters, traffic signals, and railroad warning devices where no substantial land acquisition or traffic disruption will occur. | • Modify Wayside Signal System  
• Redesign Crossing Warning Systems at MLK and Kramer Stations |
| 23 771.117(c)(17) CE | The purchase of vehicles by the applicant where the use of these vehicles can be accommodated by existing facilities or by new facilities which themselves are within a CE. | • Purchase CNG Buses |
| 23 771.117(c)(19) CE | Purchase and installation of operating or maintenance equipment to be located within the transit facility and with no significant impacts off the site. | • CNG Safety Equipment and Training  
• Re-commission CNG Station |
It is not anticipated that any federal permit approvals would be required as described below:

- United States Army Corps of Engineers; Section 404 Nationwide Permit 14 - minor disturbance (less than 1/10 acre) of regulated waters anticipated, so no preconstruction notice required. No navigable waters crossed by project components, so no Section 10 approval required.
- United States Environmental Protection Agency; project components are not located in the vicinity of an EPA-designated sole source aquifer and are located in Central Texas not within a designated coastal zone management area. Water Quality Certification Clean Water Act Section 401 - No water features, natural and/or constructed, would be affected by the proposed project. Texas assumed the authority to administer the National Pollutant Discharge Elimination System program in Texas on Sept. 14, 1998.
- United States Fish and Wildlife Service; no species regulated under the Endangered Species Act or Essential Fish Habitat would be permanently impacted by the project components, so no impacts are anticipated.
- National Marine Fisheries Service; there are no coastal communities near Central Texas.
- Advisory Council on Historic Properties; will be consulted under National Historic Preservation Act - Section 106; however no direct adverse effects to historic resources are anticipated.
- United States Coast Guard; no navigable waters crossed by project components.

A discussion of the state permit approvals is described below:

- Texas Parks and Wildlife Department; no habitat for state listed species of concern would be permanently impacted by the project components, so no impacts are anticipated.
- Texas Historic Commission (State Historic Preservation Officer); will be consulted under National Historic Preservation Act - Section 106; however no direct adverse impacts to historic resources are anticipated. Additionally, all construction will take place in previously disturbed right-of-way, so no archaeological resources or surveys are anticipated.
- Texas Council on Environmental Quality; Water Quality Certification Clean Water Act Section 401 - No water features, natural and/or constructed, would be affected by the proposed project. Existing surface drainage patterns would be maintained. Best Management Practices according to the Texas Pollutant Discharge Elimination System would be used to ensure that any construction-related impacts to water quality are sufficiently mitigated. BMPs may include the use of storm water management controls.
- Environmental professionals will be consulted throughout the final design of the proposed improvements to ensure compliance with all federal and state permitting requirements. Local permit approvals (Flood Plain Development Permit, Site Development Permits, etc.) will be required for construction; however the City of Austin, the permit approval entity, is supportive of the project components and will assist with timely approvals.

3) Final Design/ Plans, Specifications & Estimates (PS&E) — As shown in the schedule included in Attachment 03, design is complete for all of the components of the project (that
require design) by October 2014. Alternate compliance, rail, timber and tie replacement and the CNG investments will be made by procuring “off the shelf” technology that has already been designed and has a track record of proven performance.

Design projects will be completed by Capital Metro’s General Engineering Consultant, which has already been procured. The process of design is one of successive or progressive refinement and detailing of the evolving designs and their representation in sets of bidding contract documents. All intended contracting will follow typical U.S. public works practices wherein fully engineered designs will be produced (except for systems equipment and rolling stock where specification of performance is the cost-effective and conventional approach). All design work is controlled by the adopted design criteria and standards, various established and pertinent codes and statutes, the project’s QA and design review procedures, the packaging of Capital Metro procurements, advice and feedback from peer group reviews and value engineering studies, and experience and overview of Capital Metro staff.

The project costs are outlined in Attachment 02 and include budgets for project mobilization (5 percent), design (10 percent) and contingency (varying) on the projects where preliminary engineering has not been completed.

4) Procurement/Construction — In conformance Capital Metro’s procurement policies, sets of bidding contract documents will be completed and accepted for advertisement as a call for competitive bids. Before readiness to contract will be declared, Capital Metro will conduct a review of the bid documents, review of the schedule and probability of site availability (e.g. ROW acquisition), and verify with management the availability of funds to cover the contract amount. Procured construction will bid such that it can be completed according to the schedule in Attachment 03.

Financial Feasibility
Capital Metro has a steady stream of revenue from sales tax, fares, third-party contracts, grants and other sources to fund existing and future commitments and operations.

The agency’s sales tax revenue has been steadily rising since the recession, and in 2012, we saw a full recovery to pre-recession levels. While Capital Metro’s CFO remains conservative in his revenue projections, it is expected to again jump in fiscal year 2013 by at least $10 million, indicating the strong and diverse economy in Austin and Central Texas.

Capital Metro is in the process of updating its fare policy having offered a significantly lower fare than its peers. The revenue from bus and rail passes, MetroAccess fares and RideShare fares
Improving Multi-Modal Operating Efficiencies to Move Central Texas

(number does not include third-party contracts with universities and colleges) has increased from $5.7M in 2007 to $11.3M in 2011, indicating a demand for service.

Freight revenue has remained steady at $7.5M since 2008 because Capital Metro has been unable to provide additional run-time on the commuter section of the track, limiting the amount of service Watco can provide to its customers.

Capital Metro currently has less than $40M in debt and is on track with its current structure to complete payments by 2022. Due to conservative financial practices that have kept debt and other expenses low, Capital Metro expects to end fiscal year 2013 with $27.8M in reserve.

The bottom line is that Capital Metro is committed to increasing overall system efficiency and has allocated $31M in capital budget to the implementation of the projects listed in this application.

A detailed budget is attached to the SF-424 form.

Project Schedule

Capital Metro can obligate funding on or before June 24, 2014. The design for rail construction elements will start in 2013 and be completed in early 2014, as will the bus procurement. Due to on-call contracts much of the work can be started upon funding availability. Please find the detailed project schedule attached to the SF-424 form.

Project Risk and Mitigation Strategy

Capital Metro has assessed project risks and formulated a mitigation strategy as described in the table below.

<table>
<thead>
<tr>
<th>RISKS</th>
<th>MITIGATION</th>
</tr>
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<tbody>
<tr>
<td>Environmental Approvals and Permits Delays</td>
<td>• As discussed in Technical Feasibility no significant impacts are anticipated for any of the project components and approvals required are limited.</td>
</tr>
<tr>
<td></td>
<td>• Have NEPA and permit approvals early in schedule to allow for unanticipated delays with the TIGER obligation deadline.</td>
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<tr>
<td></td>
<td>• The City of Austin will need to review any updates to the new CNG facility, which can take anywhere from two weeks to four months. The City has indicated an awareness of the need and a willingness to work through the process in an efficient and timely manner.</td>
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<tr>
<td></td>
<td>• Capital Metro currently has active state air permits and will update them with pertinent information as needed for the CNG fueling facility.</td>
</tr>
<tr>
<td>Procurement Delays</td>
<td>• Capital Metro has several on-call contracts to cover planning, environmental and engineering services required for completion.</td>
</tr>
<tr>
<td></td>
<td>• Capital Metro has a procurement department with experience procuring services for federally funded projects.</td>
</tr>
<tr>
<td></td>
<td>• Capital Metro will explore the possibility of making use of a tag option from another agency’s procurement.</td>
</tr>
</tbody>
</table>
**Construction and Implementation Delays**

- With the proposed technologies included in this project having already been tested and proven.
- Reduce service interruptions by working with contractors and clients to minimize.
- FRA Alternative Design Waiver Approval - Passenger Rail vehicle upgrades to FRA compliant vehicles on Stadler GTW vehicles has already been approved previously through FRA Waiver in Texas at Denton County Transportation Authority (DCTA). Capital Metro has the consultant involved in receiving the DCTA waiver already under contract through their on-call General Planning Consultant contract.

**Financial Risk - Local Match dependent on Sales Tax Revenue Estimates**

- Financial Plan assumes a conservative 3% increase in sales tax per year. The regions Sales Tax has upward in the recent past. See Sales tax receipts for the past 4 years above. Additionally, the long-term outlook for the region is favorable due to continued population growth and expanding commercial tax base within the service area.

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**Innovation**

Innovation is the key to improving operations efficiency, and Capital Metro is committed to using the latest technology and strategies to improve its customers’ experience and safety. The agency is working to implement several of these, which include:

- **Intelligent Transportation Systems**, which use automated vehicle-locating technology to provide real-time vehicle arrival information to customers.
- **Grade-Crossing Signalization System**, which responds to approaching trains and their travel patterns to reduce gate down-time at street crossings, provide an additional layer of safety, and better integrate the traffic signalization at crossings within the train system.

Incorporating these latest innovations will help Capital Metro monitor the needs of its passenger and freight customers to better determine their needs, improve the overall system efficiency and grow the system in a sustainable fashion.

**Partnership**

Project Connect is a partnership with Central Texas transportation agencies, the City of Austin, Capital Metro, the Lone Star Rail District and CAMPO. Its purpose is to implement the high-capacity transit components of the CAMPO 2035 Plan, which was adopted by regional government representatives in 2010 after a nine-month public outreach process involving policy makers and community stakeholders.

Capital Metro’s 2004 voter-approved plan, All Systems Go!, included the MetroRail Red Line as a starter line with the understanding that it would be fully built out later. The projects listed in this application are a step toward full build-out.

The bus replacements are consistent with Capital Metro’s long-range fleet management plans and are included in the FY 2013-2016 TIP/STIP. CAMPO has indicated its support of the CNG project.
Improving Multi-Modal Operating Efficiencies to Move Central Texas

High-capacity transit makes fewer stops, travels at higher speeds, has more frequent service and carries more people than standard buses. The Project Connect Vision is a plan for a Central Texas where all citizens are well-connected to the places we live, work, learn and play, via high-capacity transit. The vision is realistic - in fact, some of the projects are already funded and are underway.

Capital Metro has also partnered with Watco and its customers to increase freight rail service and provide increased access to rail, limiting the need for truck traffic on Central Texas’ congested roadways. Capital Metro’s Rail Division Director and Planning Director are working with Watco, Capital Aggregates and Hanson Aggregates to develop a long-range plan for the build-out of Capital Metro’s rail line that improves passenger and freight service.

A letter of support from the Lone Star Rail District may be found attached the SF-424 form.

Cost-Benefit Analysis

A 20-year cost benefit analysis (CBA) has been developed for this project and is outlined in the tables below. Calculations and back-up information are included in a spreadsheet that has been uploaded with the grant application. The following benefits have been monetized as part of the CBA.

1. Project Cost — The total cost of the project is $53.8M to be expended over the next three years with a residual value of $8.6M at the end of the 20-year timeframe. It is also assumed that a capital maintenance program for this project of one percent of the capital cost will be used to maintain the elements of the project. A total capital cost of $57.5M (undiscounted) was used to generate the benefit-cost ratio.

2. State of Good Repair (Escalation/Residual Value) — The different elements of the project are currently scheduled to be completed by the year 2028 (see schedule charts). If the TIGER grant is awarded, Capital Metro will be able to implement each of these improvements by early 2016. By virtue of constructing early, Capital Metro expects to realize a savings in cost escalation of $8.4M, which is a clear economic benefit to the system. However, constructing early also means these improvements will need to be replaced sooner than if they were constructed based on the current schedule. This represents a dis-benefit, or cost, associated with achieving the other benefits of the project and is represented by the differ-
ence in residual value of the project in 2035 (20-year timeframe) between the schedule of implementation without the grant versus with the grant. The difference in residual value is $15.0M, resulting in an overall dis-benefit of $6.6M.

3. Economic Competitiveness
   a. Net Savings for Freight Customers — With the added capacity on the Capital Metro rail facility, it is expected that rail service will see 15-percent growth in the number of railcars in the corridor beginning in 2016. Shippers along the corridor will be able to convert the shipping of more than 923,000 tons of commodities from truck to rail as a result of the new capacity, annually. Shipping via rail is 11 cents per-ton-mile cheaper than truck and has the capacity to move four times the tonnage per car as compared to one truck. This represents a savings to shippers of more than $165M (undiscounted) over the 20-year BCA timeframe.
   b. Operations and Maintenance Cost Savings — Conversion of 45 buses from diesel to compressed natural gas will reduce the operating costs of the bus system by more than $400,000 annually. Natural gas is produced domestically and is more than $1.15 per gallon (CNG equivalent) less expensive than diesel. The savings on bus service will help Capital Metro add additional service on the Red Line to accommodate demand. It represents an overall net cost (dis-benefit) in O&M and is estimated at $1.7M for the 20-year BCA timeframe.
   c. Increased Track-Usage Revenue for Capital Metro — The 15-percent increase in usage of the corridor will generate additional revenue for Capital Metro. Since there will be a higher volume of railcars, the agency will modestly reduce the usage fee and expects to realize a 12-percent increase in annual revenue. For the next 20 years, the total increase in revenue generated by the additional freight capacity will exceed $14.6M.

4. Livability
   a. Passenger Travel Time Savings — The project will reduce the rail running time by five to six minutes in each direction and will allow Capital Metro to provide more reliable 30-minute frequencies in the corridor. The induced travel time-savings for riders on the Red Line is estimated at $34.7M based on prevailing wages and the monetization procedure outline in the TIGER BCA guidelines.
   b. Cost of Driving — The increased ridership on the Red Line will reduce automobile vehicle miles traveled by 985,000 miles annually. Using the FAR accepted mileage rate of $0.55/mile, this represents a savings to Red Line users of $14.1M over the 20-year BCA timeframe. This assumes the survey-verified 64 percent of Red Line riders would have used a car, an average of 16 miles to make their commute if they did not use the train.

5. Sustainability – Emissions savings are realized by the project through the reduction in VMT by Red Line passengers and the conversion of buses to compressed natural gas. There is a small dis-benefit based on the emissions from additional train trips on the Red Line. The net savings is monetized at $9.2M over the 20-year BCA timeframe.

6. Safety – The TIGER Guidelines allow the monetization of a reduction in vehicular crashes based on the annual reduction of VMT resulting in a calculated benefit of $2.4M over the 20-year BCA timeframe.
Improving Multi-Modal Operating Efficiencies to Move Central Texas

A corresponding table may be found attached to SF-424. It outlines the monetized value of the benefits and associated costs of the project using undiscounted values, and discount values of 3 percent and 7 percent.

### CMTA Operational Improvements Benefit-Cost Analysis (in millions $)

<table>
<thead>
<tr>
<th>Year</th>
<th>COST (YOE)</th>
<th>Costs - 3% Discount</th>
<th>Costs - 7% Discount</th>
<th>Monetized Benefit (Future Yr $)</th>
<th>Monetized Benefit (3% Discount)</th>
<th>Monetized Benefit (7% Discount)</th>
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<td>$-</td>
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*RV = Remaining Value

Net Benefit: $185.24, $117.82, $65.69

B/C Ratio: 4.22, 3.19, 2.35

### PLANNING AND APPROVALS

#### Environmental Reviews/Approvals

**Legislative Approvals**

No legislative approvals are required. The Austin City Council’s and the Capital Metro Board of Directors’ approvals will be received prior to construction contract award; no delays are anticipated for these local approvals.
**State and Local Planning**

The project is consistent with local and regional planning efforts, as noted in the letter of support from CAMPO. Upon selection, CAMPO would make the necessary amendments to its Fiscal Year 2013-2016 Transportation Improvement Program. The City of Austin has also agreed to assist with the necessary permitting process associated with the project.

**Project Partnership Agreements**

While Capital Metro will provide the majority of the local match, our private freight partners have agreed to assist with the associated costs as they recognize the value of the improvements. Watco, the freight operator, has committed $2.57 million as noted in its letter of support, and Hanson Aggregates has already given Capital Metro a check for $400,000 in support of the rail-rehabilitation efforts.
FEDERAL WAGE RATE CERTIFICATION

FEDERAL WAGE RATE REQUIREMENT CERTIFICATION OF COMPLIANCE With Title 40 USC Chapter 31 Subchapter IV

The Capital Metropolitan Transportation Authority, acting through its President/CEO, certifies that it will comply with the requirements of subchapter IV of chapter 31 of title 40, United States Code (Federal wage rate requirements), as required by the FY2011 Continuing Appropriations Act.

[Signature]

Linda Watson
President/CEO

October 24, 2011