



Transit and Intercity Rail Capital Program

Second Round Selected Projects – Project Detail Summary

August 16, 2016

Total Available Funding: \$390,893,000 from FY16-17 and FY17-18 funds

- 14 projects recommended for funding, with budgets totaling \$3,894,209,075
- Estimated 4,129,500 tons of CO2 reduced
- 13 of 14 projects contribute direct, meaningful and assured benefits to disadvantaged communities

1. **Agency: Antelope Valley Air Quality Management District (AVAQMD)** on behalf of the Southern California Regional Zero Emission Consortium (Antelope Valley Transit Authority (AVTA), SunLine Transit Agency (SunLine) and Kern Regional Transit (KRT))

Project: Zero Emission Bus and Vanpool Expansion in the Antelope Valley, Kern County and the Coachella Valley

Award: \$8,930,000
Total Budget: \$13,706,000
Estimated GHG Reductions 64,000 tons

GHG reductions have been prorated to attribute 2,000 tons of GHG reductions to the Air Resources Board's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Program (HVIP), which partially funds replacement buses. These GHG reductions are not included in the estimate above.

Increases ridership, reduces greenhouse gas emissions, increases integration between Metrolink rail and local bus networks, and improves services to disadvantaged communities through conversion of transit routes to zero emission operations and more frequent service on a number of routes across three different transit systems. Project achieves coordination across multiple transit providers resulting in increased adoption of zero emission technology by multiple transit agencies. Project also invests in transit projects in geographically diverse areas of the state, including rural areas and the Inland Empire, which have historically seen fewer transit capital investments from state sources.

This project has a number of key components:

- a.** Procures ten zero emission buses (5 for replacement, 5 for expanded service) for cleaner and more frequent service on AVTA routes 7 and 9, allowing service every 20-30 minutes throughout the day when current services are generally hourly. These routes are heavily traveled and connect high schools, shopping, veterans and senior centers, college campuses and the Lancaster and Palmdale Metrolink stations. Also improves access to and distribution from Metrolink and Amtrak bus bridge services and the future California High Speed Rail station in Palmdale.
- b.** Procures four zero emission buses (3 for replacement, 1 for expanded service) for cleaner and more frequent service on SunLine routes serving disadvantaged communities, accelerating SunLine’s efforts to transition to an all zero-emission fleet. Buses will be used to serve local routes in disadvantaged communities (routes 80,81, 90, 91 and 95) as well as intercity routes that provide access to key employment centers and to Metrolink rail services (route 111, 220). Service deployment will be tied to identifying the greatest needs for disadvantaged community members and the service strategy that maximizes these benefits.
- c.** Procures one zero emission, replacement bus for Kern Regional Transit to use on route 250, connecting California City and Lancaster, where connections to Metrolink and intercity bus services are available.
- d.** Provides initial funding to launch a zero-emission vanpool program at AVTA, procuring 10 vanpool vehicles that will be made available to AVTA service area residents who commute to jobs throughout the Antelope Valley and Los Angeles Basin. AVTA proposes to demonstrate a service model that utilizes the vehicles during a substantial portion of the non-commuting hours as a public car share vehicle or to replace existing employer fleet vehicles, further increasing the benefits of the project and providing a valuable demonstration of making vanpool programs more productive.

Key Project Ratings:

Reduced Greenhouse Gas (GHG) Emissions	Medium-High
Increased Ridership	Medium-High
Service Integration	Medium
Improve Safety	Medium
Disadvantaged Community Benefits	Medium-High
Multi-Agency Coordination	High
Project Readiness	Medium-High
Funding Leverage	Medium

2. Agency: Capitol Corridor Joint Powers Authority (CCJPA)

Project: Increased Rail Service to Roseville, Service Optimization, and Standby Power Investments

Award: \$8,999,000
Total Budget: \$79,300,000
Estimated GHG Reductions 2,500 tons

Additional GHG reductions, estimated at 142,000 tons of GHG reduction, will be reported following the implementation of the optimization plan required for this project, which will focus on delivering corridor-wide improvements in reliability, better schedules and service integration, and more efficient service delivery.

Increases ridership, reduces greenhouse gas emissions, increases integration with San Joaquin and future High Speed Rail service, improves rail corridor safety, and improves service to disadvantaged communities through a number of related project elements. Project achieves coordination across multiple transit providers through the development of the service optimization plan. Project also invests in intercity rail projects that expand service to geographic areas that have not seen increased rail service in many years, providing Placer County residents with multiple, congestion-free rail services to Sacramento and the Bay Area during peak travel periods. The majority of the capital investments in this project have a greater than 50-year useful life.

This project has a number of key components:

- a. Partners with Union Pacific Rail Road (UPRR) to extend two morning and two evening trains to Roseville, allowing travelers three morning trains from Placer County to Sacramento and the Bay Area and three evening trains back to Placer County. Project builds nearly 8 miles of third track and a new Dry Creek bridge near Roseville, improves track and signals in the corridor, and constructs a second platform and station improvements at the Roseville station. Also constructs a layover facility with capacity for three trains to be stored overnight near the Roseville station. Project is implemented in a manner consistent with achieving higher levels of service in the future. Improved service will benefit riders traveling to and from all stations on the corridor, including service at stations serving Disadvantaged Communities, and will be implemented to support corridor-wide ridership growth.
- b. Partners with Caltrans, Amtrak, San Joaquin Joint Powers Authority, the San Joaquin Regional Rail Commission and UPRR in conducting a service optimization plan designed to achieve increased ridership through improved reliability, better schedules and service integration, and more efficient service delivery. Benefits of this effort will be corridor-wide in nature and will aim to improve reliability at all stations. This effort will also improve reliability of the Altamont Corridor Express and Amtrak San Joaquin passenger rail services,

and reduce delays to freight trains operated by UPRR and BNSF Railway, upon implementation.

- c. Project partners with Caltrans and Amtrak to add 480v standby power to enable two more trains to utilize electricity from the local grid while being serviced at the Oakland Maintenance Facility rather than using power from the diesel head end power unit on the locomotive.

Key Project Ratings:

Reduced Greenhouse Gas (GHG) Emissions	High
Increased Ridership	Medium
Service Integration	Medium
Improve Safety	Medium
Disadvantaged Community Benefits	Medium-Low
Multi-Agency Coordination	High
Project Readiness	Medium-High
Funding Leverage	High

3. Agency: Foothill Transit

Project: Transforming California: Bus Electrification, Service Expansion and Rail Integration on an Improved and Extended Route 486 between the Pomona Metrolink Station and the El Monte Metrolink Station

Award:	\$5,000,000
Total Budget:	\$16,580,000
Estimated GHG Reductions	32,000 tons

Increases ridership through service frequency improvement and route extension, reduces greenhouse gas emissions through electrification and attracting more riders, increases integration with Metrolink and proposed Phase 2 High Speed Rail at two stations, improves transit operations safety, and improves service to disadvantaged communities through which the route operates. Project achieves coordination across multiple transit providers through providing improved service frequency connecting to Metro Express buses at El Monte and Metrolink at both El Monte and Pomona stations. This project makes a significant contribution to accelerating later phases of the project, as Foothill Transit pursues complete electrification of its transit system.

This project purchases 20 Proterra Catalyst XR battery electric buses, along with 2 related electric charging stations, and improves service frequency from every 30 min to every 20 min. Route 486 will be extended to a new eastern terminus at the Pomona Transit Center, creating a continuous transit corridor between two of the largest working-class cities in the San Gabriel

and Pomona Valleys, providing access to the state’s largest community college (Mount San Antonio College), and a public university (Cal Poly Pomona). Ridership is expected to increase by about 40% in the corridor, and travel times will decrease due to fewer transfers. Buses will feature improved operational safety through the use of the MobileEye collision-avoidance system, a camera-based system that helps operators prevent collisions.

Key Project Ratings:

Reduced Greenhouse Gas (GHG) Emissions	Medium-High
Increased Ridership	Medium-High
Service Integration	Medium-High
Improve Safety	High
Disadvantaged Community Benefits	Medium-High
Multi-Agency Coordination	Medium-Low
Project Readiness	Medium
Funding Leverage	High

4. Agency: City of Fresno

Project: Metropolitan Rapid Transit and Rail Connectivity Project – Bus Rapid Transit and High Frequency Corridor Investments

Award:	\$8,000,000
Total Budget:	\$61,515,400
Estimated GHG Reductions	27,000 tons

Increases ridership and reduces greenhouse gas emissions through investing in the highest priority improvements to Fresno’s Bus Rapid Transit and High Frequency Route system, which targets four routes with the greatest ridership and transit-oriented development potential, by making the services faster, safer and more convenient. The BRT elements of the system are being prepared for 2017 opening and provide the leverage for this investment. Major elements include modernized fare payment, significant upgrading of the highest use bus stops, and other customer-oriented improvements. In combination with the opening of the initial BRT service, which has received significant federal and state funding, these investments are expected to support additional improvements to the BRT corridor, as well as supporting near-BRT improvements to the Shaw and Cedar corridors. Overall ridership improvements are expected to exceed 50% 12 months after implementation, and 90% by the final year of the project.

This project also facilitates strong integration of local transit with the High Speed Rail system, expected to provide initial service to Fresno in 2025, based on the 2016 California High Speed Rail Authority Business Plan. Additional investments in Fresno’s transit system and in complementary land use adjacent to transit corridors between now and the opening of High

Speed Rail are expected to have a transformative impact and be strong candidates for funding from a variety of statewide and federal funding programs in the future. The project improves safety for customers of the system, and better connects Fresno’s disadvantaged communities to education, employment and cultural centers.

This project also invests in transit projects in geographically diverse areas of the state which have historically seen fewer transit capital investments from state sources, and serves a large number of Central Valley disadvantaged communities.

Key Project Ratings:

Reduced Greenhouse Gas (GHG) Emissions	Medium
Increased Ridership	Medium-High
Service Integration	Medium-High
Improve Safety	Medium-High
Disadvantaged Community Benefits	High
Multi-Agency Coordination/Integration	Medium-High
Project Readiness	Medium-High
Funding Leverage	High

5. Agency: Los Angeles County Metropolitan Transportation Authority

Project: Airport Metro Connector 96th Street Transit Station/Metro Green Line Extension to LAX Project

Award:	\$40,000,000
Total Budget:	\$206,149,224
Estimated GHG Reductions	641,000 tons

Increases ridership and reduces greenhouse gas emissions through significantly improving airport access for travelers and workers by connecting the Metro Rail system to the new automated people mover being planned for Los Angeles International Airport. This connection will be created through a new multimodal transit station on the Crenshaw/LAX Line and the extension of the Metro Green Line to this new station. The project supports the broader rail expansion under way through Measure R and proposed additional local funding proposals under consideration by local voters in 2016. It also supports both transportation needs of the 2024 Olympic bid and the ability to connect LAX efficiently via the proposed Green Line extension to the Norwalk/Santa Fe Springs station that is served by Metrolink, Amtrak and potentially High Speed Rail. The majority of the capital investments in this project have a greater than 50-year useful life.

The project enhances mobility and provides linkages to economic opportunity for the 4,700 residents who live in the disadvantaged community within ½ mile of this new station, the 24,200 residents who live in disadvantaged communities within ½ mile of LAX and the 4.35 million residents who live in disadvantaged communities in Los Angeles County. By 2035, more than 45,000 riders are expected to use the station daily.

This project also facilitates strong integration of local transit with other modes, including air travel and the regional and statewide rail system.

Key Project Ratings:

Reduced Greenhouse Gas (GHG) Emissions	High
Increased Ridership	Medium-High
Service Integration	Medium-High
Improve Safety	Medium
Disadvantaged Community Benefits	Medium-High
Multi-Agency Coordination/Integration	High
Project Readiness	Medium-High
Funding Leverage	High

6. Agency: Los Angeles County Metropolitan Transportation Authority

Project: Metro Red Line and Purple Line Core Capacity Improvements Project

Award:	\$69,209,000
Total Budget:	\$162,000,000
Estimated GHG Reductions	946,000 tons

Increases ridership and reduces greenhouse gas emissions through significantly improving frequency of rail services at Los Angeles Union Station, allowing 4-minute peak service frequency on each line (Red and Purple) by 2023, compared to the 10-min service offered today. Today’s service requires trains to change direction while stopped at the Union Station platforms, and this project will move that operation beyond the station to the Division 20 Maintenance Yard, increasing the hourly capacity of Union Station to 30 trains per hour in each direction. This increase in capacity is essential to serving the additional demand created by the expansion of the Metro Rail system (the Red and Purple Lines are expected to carry 262,000 riders daily by 2035), as well as the arrival of High Speed Rail and increased Metrolink and Amtrak service and ridership expected at Union Station upon the completion of the LINK US project (which invests heavily in the improvement and expansion of the station facilities as well as developing run-through tracks for trains serving the station). It is also being developed in a manner consistent with the future development of an Arts District passenger station, and consistent with LINK US

and High Speed Rail infrastructure requirements. This rail project increases frequencies and capacity to multiple stations located in disadvantaged communities.

This project supports the broader rail expansion under way through Measure R and proposed additional local funding proposals under consideration by local voters in 2016, and supports both transportation needs of the 2024 Olympic bid and the ability to connect LA County communities efficiently to the statewide rail system at Union Station. The majority of the capital investments in this project have a greater than 50-year useful life.

Key Project Ratings:

Reduced Greenhouse Gas (GHG) Emissions	High
Increased Ridership	High
Service Integration	Medium-High
Improve Safety	Medium
Disadvantaged Community Benefits	High
Multi-Agency Coordination/Integration	Medium
Project Readiness	Medium-Low
Funding Leverage	Medium-High

7. Agency: Los Angeles-San Diego-San Luis Obispo (LOSSAN) Rail Corridor Agency in partnership with the San Diego Association of Governments (SANDAG), North County Transit District (NCTD), and Orange County Transportation Authority (OCTA)

Project: All Aboard: Transforming Southern California Rail Travel

Award:	\$82,000,000
Total Budget:	\$350,322,000
Estimated GHG Reductions	606,000 tons

Increases ridership and reduces greenhouse gas emissions through corridor-wide infrastructure and rail equipment investments that will increase ridership and create the capacity used to run additional Amtrak Pacific Surfliner, Metrolink and Coaster rail services. The project takes advantage of additional Los Angeles to Fullerton corridor capacity created by the completion of the triple track that is made possible by the fully-funded Rosecrans-Marquardt grade separation. It is expected to deliver 20-minute frequency service during peak hours in the Coaster corridor, additional Metrolink service into Orange County, and additional frequencies of the Amtrak Pacific Surfliner between Los Angeles and San Diego. Amtrak travel times between Los Angeles and San Diego are expected to be about 10 minutes faster for the typical train. Two new Talgo trainsets will be leased for five years and utilized to deliver service between Los Angeles and San Luis Obispo that is about 25 minutes faster as well as more fuel efficient. Through higher

frequency service, the project also attracts new riders who will use connecting transit services throughout the corridor.

The project improves integration among freight and passenger rail operators in the corridor through robust timetabling and network integration efforts, and increases service in a manner that supports capacity needed for the planned 2029 arrival of High Speed Rail in Southern California, based on the 2016 California High Speed Rail Authority Business Plan, including through implementation of numerous projects listed in the Southern California Memorandum of Understanding guiding investments in projects supportive of High Speed Rail. Project improves service and increases ridership in a manner that provides benefits for disadvantaged communities located at or near many stations along the corridor. Project also increases rail corridor safety through investments in the Carlsbad Poinsettia station. The majority of the capital investments in this project have a greater than 50-year useful life.

This project has a number of key components:

- a. Provides \$66 million to partner with SANDAG and NCTD to construct double track, new bridges and numerous related infrastructure improvements between Elvira and Morena and over the San Diego River, creating a 15-mile, higher speed double track section between Miramar and Santa Fe Depot. Also invests in removing the one-train-at-a-time bottleneck at Carlsbad Poinsettia station through installing inter-track fencing, a new grade-separated pedestrian undercrossing, new station platforms and other related improvements that significantly improve railroad capacity and customer safety. These projects are built with significant funding leverage provided through the Federal Railroad Administration, the Federal Transit Administration, San Diego County's *TransNet* sales tax measure, the City of San Diego, and NCTD. Also offers funding source flexibility to allow OCTA to pursue the fully-funded Laguna Niguel/San Juan Capistrano Passing Siding Project in a manner consistent with delivering corridor wide reliability and capacity improvements in the most efficient manner possible.
- b. Provides \$1 million to the LOSSAN Rail Corridor Agency to complete LOSSAN North Robust Timetable and Corridor-Wide Network Integration & Strategic Investment Planning. These efforts will achieve increased ridership through improved reliability, better schedules and service integration, and more efficient service delivery. Benefits of this effort will be corridor-wide in nature and will aim to improve reliability at all stations. This effort will also improve reliability of Coaster, Metrolink and Amtrak passenger rail services, and reduce delays to freight trains operated by UPRR and BNSF Railway, upon implementation. Also helps identify and pinpoint critical capital investments that will have the greatest contribution to corridor capacity and reliability in the future.
- c. Provides \$15 million to the LOSSAN Rail Corridor Agency over 5 years, coupled with existing resources available through the LOSSAN annual operating budget, to deploy 31 Talgo rail cars on the Los Angeles-San Luis Obispo services. This equipment enables faster acceleration, lower fuel consumption, faster journey times (about 25 minutes faster) and

easier customer loading and unloading than the current Amfleet and Horizon fleet that it will replace (single-level, high boarding height equipment). The equipment will lead to at least one additional train consist in addition to the nine consists used today in daily operation, and ensure that all equipment in the corridor has low-level boarding. It also will improve the customer experience with fully automated doors, improved passenger communications, and easier to maneuver configurations, particularly for passengers with disabilities. The additional equipment will also provide equipment deployment flexibility that will allow for increased capacity on crowded Los Angeles-San Diego trains, and more schedule flexibility to enable better peak hour service to LOSSAN North stations, including Santa Barbara.

Key Project Ratings:

Reduced Greenhouse Gas (GHG) Emissions	Medium-High
Increased Ridership	High
Service Integration	Medium-High
Improve Safety	High
Disadvantaged Community Benefits	Medium
Multi-Agency Coordination	High
Project Readiness	High
Funding Leverage	High

8. Agency: Orange County Transportation Authority (OCTA)

Project: OC Streetcar and OCTA System-Wide Mobile Ticketing

Award:	\$28,000,000
	<i>\$25,518,000 contingent on receipt of Federal New Starts Full Funding Grant Agreement. The FFGA is anticipated by late 2016/early 2017.</i>
Total Budget:	\$292,735,000
Estimated GHG Reductions	539,000 tons

Increases ridership and reduces greenhouse gas emissions through constructing Orange County’s first streetcar line connecting the Santa Ana Regional Transit Center with a new multimodal hub at Harbor Boulevard and Westminster Avenue in Garden Grove, with 10-minute peak period headways on the 4.15-mile route. The project will provide meaningful access to jobs, job training, healthcare and education, using zero emissions streetcars and resulting in reduction in vehicle miles traveled.

The project also provides earlier benefits to the entire OCTA bus system through completing the funding for system-wide roll out of mobile ticketing, supporting system-wide ridership growth through more convenient payment and demonstrating the impact of such technology in a

manner that could inform statewide scalability. In a pilot of its mobile ticketing platform in 2014 and 2015, OC Fair Express seasonal bus service realized increased ridership of more than 31% compared with the previous year’s event. Rolling this out system wide on a permanent basis is expected to increase ridership and reduce vehicle boarding times related to cash payment.

The Streetcar project will travel through the densest and most disadvantaged portions of the City of Santa Ana to provide enhanced mobility and access to some of the State’s top Disadvantaged Community census tracts. A new transit zoning code will encourage new infill development and provide a transit-supportive development framework. Additional projects that will further improve ridership and reduce GHG emissions include the impact of \$8.9 million of Greenhouse Gas Reduction Fund proceeds previously awarded to OCTA and its partner agencies for projects including the Low-Carbon Transit Operations Program’s Fare and Transit Rider Promotion/Outreach and Fare Adjustment Strategies grants, TIRCP’s purchase of buses to launch the *Bravo!* 560 rapid bus route and its funding of the LOSSAN Rail Corridor Agency’s Transit Transfer Program, and an Affordable Housing and Sustainable Communities award to the Depot at Santiago, which is a 70-unit affordable housing development located directly across the street from the western terminus of the streetcar project.

The project improves integration with transit and intercity rail services in the corridor through connections with OCTA’s highest frequency *Bravo!* Rapid bus lines, as well as with Metrolink and Amtrak trains, and intercity and international buses, serving the Santa Ana station. The majority of the capital investments in this project have a greater than 50-year useful life.

Key Project Ratings:

Reduced Greenhouse Gas (GHG) Emissions	High
Increased Ridership	Medium-High
Service Integration	Medium-High
Improve Safety	Medium-High
Disadvantaged Community Benefits	High
Multi-Agency Coordination	Medium
Project Readiness	High
Funding Leverage	High

9. Agency: Peninsula Corridor Joint Powers Board

Project: Peninsula Corridor Electrification project

Award: **\$20,000,000**

Contingent on receipt of Federal Core Capacity Full Funding Grant Agreement. The FFGA is anticipated by late 2016/early 2017.

Total Budget: **\$1,980,400,000**

Estimated GHG Reductions 734,000 tons

GHG reductions have been prorated to attribute 4.5 million tons of project benefit, based on a maximum of \$122 million, to two other GGRF funding sources – High Speed Rail and Caltrans’ Low Carbon Transit Operations Program.

Increases ridership and reduces greenhouse gas emissions through more frequent service and faster trips made possible by electrification of the Caltrain corridor between San Jose and San Francisco, including the purchase of Electric Multiple Unit trainsets necessary to operate the new service. Stations along the line, including two serving disadvantaged communities at 4th and King and Santa Clara, will experience more frequent and faster journeys, and overall capacity on the congested corridor will increase to carry more riders during peak travel periods. In addition, corridor investments are being completed in a manner consistent with introducing High Speed Rail service in the corridor by 2025, according to the California High Speed Rail Authority’s 2016 Business Plan, including acquisition of rolling stock that can operate at speeds up to 110mph in blended service.

The project provides significant improvements in community impacts over the current service, replacing diesel emissions with zero emission electric service, and significantly reducing noise impacts from engine noise. The project also allows significant numbers of customers diverted from automobile travel to experience a much safer trip as they utilize rail services operating in a corridor that will be equipped with the corridor’s Positive Train Control system.

The project significantly improves integration with transit and intercity rail services at San Jose Diridon station, where the increased service will connect with High Speed Rail services expected to arrive in 2025, as well as to existing Altamont Corridor Express (ACE), Amtrak Capitol Corridor and Coast Starlight, local bus and longer-distance bus services. Additional improved connections are available to local transit, ACE and Capitol Corridor at Santa Clara; to High Speed Rail and Bay Area Rapid Transit at Milbrae; and to Muni and VTA light rail systems at various stations throughout the corridor. This project transforms the corridor, and lays the foundation for future improvements that will add more capacity in the future. The majority of the capital investments in this project have a greater than 50-year useful life.

Key Project Ratings:

Reduced Greenhouse Gas (GHG) Emissions	High
Increased Ridership	High
Service Integration	High
Improve Safety	High
Disadvantaged Community Benefits	Medium
Multi-Agency Coordination	Medium-High
Project Readiness	Medium
Funding Leverage	High

10. Agency: Sacramento Regional Transit District

Project: Downtown/Riverfront Sacramento-West Sacramento Streetcar

Award: **\$30,000,000**

Contingent on receipt of Federal Small Starts Full Funding Grant Agreement. The FFGA is anticipated by late 2016/early 2017.

Total Budget: **\$150,000,000**

Estimated GHG Reductions **75,000 tons**

Increases ridership and reduces greenhouse gas emissions through creating a new, zero-emission streetcar line between Downtown Sacramento and West Sacramento via the Sacramento Valley Station. The new line provides zero emission circulation in the urban core of the two sister cities, and provides important connections to regional transit services, Amtrak and proposed Phase 2 High Speed Rail services. The project encourages transit oriented development, and greatly improves connectivity to surrounding disadvantaged neighborhoods, colleges, and major employment centers. The new line will stop at 19 stations and includes the purchase of 6 streetcars. Both cities have active transportation investments underway that will link to the streetcar, encouraging bike and pedestrian access. The majority of the capital investments in this project have a greater than 50-year useful life.

This project is also very supportive of the Sacramento Area Council of Governments' Sustainable Communities Strategy, which plans for more people to live, work and play in the Downtown and Railyards areas. These areas already feature among the lowest per capita carbon footprints in the area, at less than 12 pounds per day, and low cost, convenient and frequent transit is a key component of bringing this vision to fruition. This project will also support the growth of employment and entertainment facilities near the rail line in the two cities. With more than 31,000 new dwelling units and 57,000 new jobs expected in the two downtowns by 2036, the need for improved transportation that operates frequently all day long is significant. Downtown residents drive approximately 55% less than the regional average, contributing significantly to lower GHG emissions.

The initial investment in this project is foundational to later phases of expanding the system to other nearby areas. This project also provides geographic diversity to the state's transit investment.

Key Project Ratings:

Reduced Greenhouse Gas (GHG) Emissions	Medium
Increased Ridership	Medium-High
Service Integration	Medium-High

Improve Safety	Medium
Disadvantaged Community Benefits	Medium-High
Multi-Agency Coordination	Medium
Project Readiness	Medium
Funding Leverage	High

11. Agency: *San Bernardino Associated Governments*

Project: Redlands Passenger Rail Project

Award:	\$9,204,000
Total Budget:	\$265,282,451
Estimated GHG Reductions	79,000 tons

Increases ridership and reduces greenhouse gas emissions through completion of the funding package for the Redlands Passenger Rail Project, a nine-mile rail corridor connecting the University of Redlands and Downtown San Bernardino with frequent service connecting residents, businesses and visitors to a variety of employment, education, healthcare and other destinations. This project is ready to start construction in 2017, and will allow frequent, all-day service with a less than 20-minute journey time in which current transit services take 45-60 minutes. This project is developed in partnership with OmniTrans, Metrolink, the Esri Corporation (which is making a privately-funded project contribution), the University of Redlands, the City of Redlands, the City of San Bernardino and BNSF Railway. Major activity centers are also served by the project, including the Veterans Affairs Ambulatory Care Center, Loma Linda University, Cal State San Bernardino, and University of Redlands, and serves new intermodal hubs and proposed transit villages on the corridor. The Esri corporation headquarters has 3000 employees, and the universities on the corridor over 26,000 students.

TIRCP funding also broadens the project scope to cover the construction of an additional siding to allow peak hour Metrolink service to start its trip to Los Angeles on the Redlands Passenger Rail Corridor, rather than requiring a transfer in San Bernardino, allowing additional riders to be attracted to the Metrolink service.

The project provides for significant integration with other transit services, including the sbX bus rapid transit service, Metrolink, and six fixed route bus transit services. It also connects to one of the proposed Phase 2 High Speed Rail stations. This project also increases safety through investments in Quiet Zones and Positive Train Control.

Low-income residents of communities along the corridor will be direct beneficiaries when they ride the service, experiencing much shorter and more reliable travel times, and expanded regional mobility to access jobs, educational and social activity centers. They also would benefit

from improved access to Metrolink services that take them to similar locations throughout Southern California.

Key Project Ratings:

Reduced Greenhouse Gas (GHG) Emissions	Medium-High
Increased Ridership	Medium-High
Service Integration	Medium-High
Improve Safety	Medium-High
Multi-Agency Coordination	Medium
Project Readiness	High
Funding Leverage	High

12. Agency: San Francisco Municipal Transportation Agency

Project: Light Rail Modernization and Expansion Program

Award:	\$45,092,000
Total Budget:	\$50,342,000
Estimated GHG Reductions	161,000 tons

Increases ridership and reduces greenhouse gas emissions by funding an additional 10 expansion vehicles for the Muni light rail system, bringing the total expansion fleet funded through the TIRCP and local fund sources to 38 vehicles out of the 60 vehicles planned, excluding vehicles purchased for the Central Subway extension. The total expansion program is expected to deliver in excess of 963,000 tons of GHG reductions over the useful life of the vehicles. The new vehicles feature significantly increased energy efficiency and have very low life cycle emissions while using zero emission electricity. Continued investment in capacity for high-frequency transit is a critical element in the City and County of San Francisco’s plans to provide low-carbon footprint jobs and housing.

Surging demand on the Muni system continues to cause congestion with existing service, and the new zero-emission vehicles will allow Muni to carry additional riders who would otherwise be crowded out of the system through providing for more frequent and longer trains, including riders from disadvantaged communities in San Francisco. When complete, the program will carry an additional 82,700 average weekday boardings, in addition to delivering many connecting riders to other transit providers, such as BART and Caltrain. The project also supports integration with High Speed Rail services, planned for arrival in San Francisco as early as 2025, based on the California High Speed Rail Authority 2016 Business Plan, as well as transit services at the Transbay Transit Terminal.

Operational safety is significantly improved with the new vehicles, which have better operator visibility to the front and sides of the vehicle, smoother acceleration and braking, and crash energy management features that protect both passengers and the operator in case of an impact.

This project is matched by significant investment in light rail modernization provided by an array of sales tax commitments, revenue bonds, and federal funding sources totaling \$1.37 billion. These projects deliver many additional benefits that will make the light rail system even more attractive to riders, including efforts to improve travel time and reliability throughout the system, and while not directly attributed to the current project budget, are reflected in the rating for funding leverage.

Key Project Ratings:

Reduced Greenhouse Gas (GHG) Emissions	Medium-High
Increased Ridership	Medium-High
Service Integration	Medium-High
Improve Safety	Medium-High
Disadvantaged Community Benefits	Medium-Low
Multi-Agency Coordination/Integration	Medium
Project Readiness	High
Funding Leverage	High

13. Agency: *San Joaquin Regional Rail Commission*

Project: ACE Near-Term Capacity Improvement Program

Award:	\$16,459,000
Total Budget:	\$18,959,000
Estimated GHG Reductions	65,000 tons

This project increases ridership and reduces greenhouse gas emissions by funding platform extensions at five stations and a new locomotive capable of pulling longer trains in order to run two additional railcars on the most crowded morning and evening train on the Altamont Corridor Express service, while also preparing the corridor for ridership growth and new service in the future. Project also includes the infrastructure access payments necessary for one longer train in the corridor. By lengthening existing platforms trains rather than adding new frequencies, the overall productivity of the service is increased and can be more efficiently expanded in the future. The busiest frequencies today can have average peak loads of more than 700 riders on the train at one time, and nearly 1000 average riders over the course of the trip from the Central Valley to San Jose Diridon. Platform extensions are planned for Lathrop,

Tracy, Vasco, Livermore and Pleasanton stations, and constructed in coordination with Union Pacific Rail Road and local communities.

Increasing the capacity of the services and investing in capital projects that support additional growth in the future is critical to increasing network integration and providing the seats for passengers desiring to transfer to other services, such as Caltrain (at Santa Clara or San Jose Diridon) and future High Speed Rail services at San Jose Diridon, scheduled to arrive in 2025 based on the California High Speed Rail Authority Business Plan. This project supports the broader goals of the *ACEforward* program, which is planning for increased frequency and route extensions to Modesto and Merced, by beginning capital investments that are of ongoing usefulness as service grows. This project also extends State transit investments into the Central Valley, providing geographic balance to state transit investments.

Key Project Ratings:

Reduced Greenhouse Gas (GHG) Emissions	Medium
Increased Ridership	Medium-High
Service Integration	Medium-Low
Improve Safety	Medium
Disadvantaged Community Benefits	Medium-Low
Multi-Agency Coordination/Integration	Medium-Low
Project Readiness	Medium
Funding Leverage	Medium-Low

14. Agency: Santa Clara Valley Transportation Authority

Project: BART Silicon Valley Phase II Extension

Award: \$20,000,000

Contingent on local funding measure passage in 2016

Total Budget: \$246,918,000

Estimated GHG Reductions 158,000 tons

This Silicon Valley Phase II extension increases ridership and reduces greenhouse gas emissions through extending frequent BART service from Berryessa to Alum Rock, Downtown San Jose, San Jose Diridon Station, and Santa Clara. In adding more than 52,000 riders to the BART system by 2035 (ten years after opening), it will enhance mobility both within Santa Clara County and throughout the East and South Bay, including mobility for many residents of Disadvantaged Communities (3 of the 4 new stations are within DAC census tracts). The project also provides significant integration benefits through its connectivity with Caltrain, Altamont Corridor Express Amtrak, and future High Speed Rail services at San Jose Diridon Station (scheduled to arrive in 2025 based on the California High Speed Rail Authority 2016 Business Plan), with capacity to

carry many arriving passengers to their final destinations. The overall project is expected to deliver in excess of 5.9 million tons of GHG reduction over the first 50 years of service. This project will have a transformative impact on Bay Area travel patterns, and will provide significant peak-hour capacity in a traffic-congested corridor. Pursuant to the provision of Senate Bill 9 (Senator Jim Beall, Statutes of 2015), this award leverages the ability to make funding available over multiple years and to focus funding on transformative projects.

Funding provided in the current TIRCP round is directed to railcars, and is expected to accelerate the procurement of the 48 rail vehicles needed for the project, which will require substantial procurement-related activity to begin in 2017 in conjunction with Bay Area Rapid Transit (SCVTA's procurement partner), as well as timely delivery to allow system integration and testing in advance of revenue service (planned for 2026). This element has independent utility as part of the broader project, and is one of the critical path items in terms of project delivery. As state and local funding accelerate early project elements, and with significant local funding proposed for a 2016 local sales tax measure, the project will be well positioned to pursue its Full Funding Grant Agreement from the Federal Transit Administration.

Key Project Ratings:

Reduced Greenhouse Gas (GHG) Emissions	Medium-High
Increased Ridership	High
Service Integration	High
Improve Safety	High
Disadvantaged Community Benefits	High
Multi-Agency Coordination/Integration	Medium-High
Project Readiness	Medium
Funding Leverage	High