



U.S. Department
of Transportation
**Federal Transit
Administration**

Executive Director

1200 New Jersey Avenue, SE
Washington, DC 20590

MAY 23 2017

Mr. Jim Hartnett
Executive Director
Peninsula Corridor Joint Powers Board
1250 San Carlos Avenue
P.O. Box 3006
San Carlos, CA 94070

Dear Mr. Hartnett:

I am pleased to advise you that the Peninsula Corridor Joint Powers Board's (JPB) application for a Full Funding Grant Agreement (FFGA) for the Peninsula Corridor Electrification Project (the Project) has been approved. The total Project cost is \$1,930,670, 934 with \$647,000,000 in Section 5309 Capital Investment Grant program Core Capacity funds. The balance of funds totaling \$1,283,670,934 will come from the following sources: \$287,150,000 in FTA Section 5307 Formula Funds. \$600,000,000 in Proposition 1A High Speed Rail Bonds. \$6.610,000 Proposition 1B PTMISEA Bonds, \$9,000,000 in Low Carbon Transit Operations Cap and Trade Funds, \$113,001,000 in High Speed Rail Cap and Trade Funds, \$20,000,000 in Transit Intercity Rail Capital Program Funds, \$188,509,934 in JPB Member Agency Contributions, \$20,000,000 in Carl Moyer Program Funds, and \$39,400,000 in Metropolitan Transportation Commission Bridge Tolls.

The FFGA sets forth the scope of the undertaking that will be constructed using Federal and local funds and the mutual understandings, terms, and conditions that will govern the Project. Enclosed are copies of the Approved Project Budget and four counterparts of a Notification of Grant Approval executed on behalf of this Administration. Instructions that you should follow in executing these counterparts are included. The grant corresponding to this FFGA must be executed in the Federal Transit Administration's TrAMS system.

If you have any questions regarding the enclosed materials, please contact Mr. Leslie Rogers, Regional Administrator, at (415) 734 -9471.

Sincerely,

Matthew J. Welbes

Enclosures

**UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL TRANSIT ADMINISTRATION
WASHINGTON, D.C.**

FULL FUNDING GRANT AGREEMENT

**PENINSULA CORRIDOR JOINT POWERS BOARD (JPB)
SAN CARLOS, CA**

**CALTRAIN MODERNIZATION PROGRAM
PENINSULA CORRIDOR ELECTRIFICATION PROJECT (PCEP)**

CA-2017-014-00

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**UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL TRANSIT ADMINISTRATION**

**FULL FUNDING GRANT AGREEMENT
(FTA FFGA-23, October 1, 2016)**

On the date the authorized U.S. Department of Transportation, Federal Transit Administration (FTA) official signs this Full Funding Grant Agreement, the Government (FTA) has awarded Federal assistance in support of the Project described below. Upon Execution of this Full Funding Grant Agreement by the Grantee named below, the Grantee affirms this Award by the Government (FTA Award), and enters into this Full Funding Grant Agreement with FTA. The following documents are incorporated by reference and made part of this Full Funding Grant Agreement:

- (1) "Federal Transit Administration Master Agreement," FTA MA(23), October 1, 2016, [<http://www.fta.dot.gov/documents/23-Master.pdf>];
- (2) The Certifications and Assurances applicable to the Project that the Grantee has selected and provided to FTA; and
- (3) Any Award notification containing special conditions or requirements, if issued.

FTA AWARD

The Government (FTA) hereby awards a Full Funding Grant as follows:

Project Number(s): CA-2017-014-00

Grantee: Peninsula Corridor Joint Powers Board (JPB or Caltrain), San Carlos, CA

Citation of Statutes Authorizing the Project: 49 U.S.C. §§ 5309(b), 5309(e)

Estimated Net Project Cost: \$1,930,670,934

Maximum FTA Amount Awarded, Including This Amendment: \$72,956,593

Amount of This FTA Award: \$72,956,593

Maximum Federal Core Capacity Improvement Financial Contribution: \$647,000,000

Maximum Percentage of FTA Participation: 48.38 percent

Maximum Percentage of Core Capacity Improvement Participation: 33.51 percent

Dates of U. S. Department of Labor Certifications of Transit Employee Protective Arrangements:

Original Project or
Amendment Numbers:

Certification Dates:

CA-2017-014-00

February 9, 2017

Required Completion Date: August 22, 2022

Project Description:

The Peninsula Corridor Electrification Project (Project) will electrify and upgrade Caltrain's 51-mile double track commuter rail mainline owned and operated by JPB or Caltrain. The Project includes two components: rolling stock and infrastructure. The rolling stock component includes the design and purchase of 96 Electric Multiple Units (EMUs) to replace approximately 75 percent of the existing diesel rolling stock. EMUs have the capability of reaching higher operating speeds than diesel units, and they accelerate and decelerate more quickly. The infrastructure component is comprised of the installation of an Overhead Contact System (OCS) beginning at the 4th and King Caltrain Station in San Francisco and ending at the Tamien Station in San Jose. The OCS includes overhead catenary and power substations that will provide power to the EMUs.

For a more detailed description, see Attachments 1 and 2.

**UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL TRANSIT ADMINISTRATION**

FULL FUNDING GRANT AGREEMENT TERMS AND CONDITIONS

THIS FEDERAL TRANSIT ADMINISTRATION FULL FUNDING GRANT AGREEMENT (Agreement) is entered into by the Peninsula Corridor Joint Powers Board (JPB or Grantee) and the United States of America, acting through the United States Department of Transportation, Federal Transit Administration (FTA or Government).

WHEREAS, the Grantee has determined through the local planning process that construction of the Peninsula Corridor Electrification Project (PCEP or Project) will effectively and efficiently serve the transportation needs of the Peninsula Corridor running from the City of San Francisco to the City of San Jose.

WHEREAS, the Grantee has developed a Financial Plan, as herein defined, using a combination of local and Federal funds to finance the costs of the Project and, in accordance with its plan, has requested a Grant, as herein defined, of Federal financial assistance in the Project.

WHEREAS, the Government has determined to enter into this Agreement and to support final design and construction of the Project up to a Maximum Federal Core Capacity Improvement Financial Contribution of \$647,000,000 in capital Core Capacity Improvement funds subject to all the terms and conditions set forth in this Agreement.

WHEREAS, the Grantee has submitted its request for Federal assistance (the Application) and the Government has received and is relying upon the Grantee's assurances, certifications, and all other documents required as conditions precedent to a Grant of assistance by the Government for the Project; and, in its submissions, the Grantee has demonstrated justification for the Project, has demonstrated its financial, organizational, legal, and technical capacity as is necessary to Complete the Project within the maximum amount of Federal assistance set forth in this Agreement, and has demonstrated the capability to secure non-Federal funds as may be necessary for such completion.

WHEREAS, the Government has determined that the Project is justified based on a comprehensive review of its mobility improvements, environmental benefits, cost effectiveness, economic development effects, the capacity needs of the corridor, and congestion relief; and the Project is supported by an acceptable degree of local financial commitment, including evidence of stable and dependable financing sources to construct, maintain, and operate the Project.

WHEREAS, the Government and the Grantee have agreed that their respective duties and responsibilities as related to the completion of the Project shall be determined by and under the terms and conditions of this Agreement and have agreed that this Agreement shall be

recognized as the sole understandings between the Government and the Grantee in consideration of the mutual promises as set forth in this Agreement.

THEREFORE, in consideration of the above and the parties' mutual promises as set forth in this Federal Transit Administration Full Funding Grant Agreement, the Grantee and the Government agree to the specific terms, conditions and provisions set forth in this entire Agreement including, in particular, the specific terms of the following Sections and Attachments:

SECTION 1. DEFINITIONS

"Agreement" means this Federal Transit Administration Full Funding Grant Agreement (FFGA) and consists of all parts and documents listed in Section 20 of this Agreement, "Contents of Agreement," and will include all future addenda, substitutions, modifications and amendments as and when legally executed and effective. (This definition supersedes the definition of "Grant Agreement" set forth in Section 2.a of the Federal Transit Administration Master Agreement (Master Agreement), incorporated by reference and made part of this Agreement.)

"Application" means those documents and written submissions filed by or on behalf of the Grantee pursuant to its request for Federal financial assistance for support of the Project and relied upon by the Government as satisfaction of the legal and policy requirements of Grant award. The Application includes all explanatory, supporting, or supplementary documents related to the Project that the Government relied upon in its determination to obligate and award Federal funds for the Project. (This definition is intended to supplement the definition "Application" set forth in Section 2.a of the Master Agreement, incorporated by reference and made part of this Agreement.)

"Baseline Cost Estimate" means the Application document described in Section 13 of this Agreement and set forth in the Tables that comprise Attachment 3. The requirements of the Baseline Cost Estimate are set forth in FTA Circular 5200.1A, "Full Funding Grant Agreements Guidance," as may be revised from time to time. The Baseline Cost Estimate reflects the total anticipated cost of the Project as of the Date of this Agreement.

"Complete the Project" means to accomplish all of the scope and activities of the Project as described in Attachment 1, "Scope of the Project," and Attachment 2, "Project Description."

"Date of this Agreement" means the date the Government awards this Full Funding Grant Agreement.

"Estimated Net Project Cost" means the amount that is calculated by subtracting the cost that can reasonably be financed from the Grantee's revenue from the total anticipated cost of the Project as reflected in the "Baseline Cost Estimate," Attachment 3. The Estimated Net Project Cost is set forth in Section 7 of this Agreement.

"Financial Plan" means the plan accepted by the Government as part of the Application

process describing the Grantee's financial condition and capability to complete the Project and to maintain and operate the Project together with its existing transit system. It includes all explanatory, supporting and supplementary documents, commitments, and agreements accepted or approved by the Government.

"Government" means the United States of America, acting through the Federal Transit Administration of the United States Department of Transportation.

"Grantee" means the Peninsula Corridor Joint Powers Board (JPB or Caltrain).

"Grant(s)" means, in singular and plural forms, the obligation and award of Federal financial assistance by the Government pursuant to the laws codified at 49 U.S.C. Chapter 53.

"Increased Levels of Service" means the additional service to be provided upon completion of the project as set forth in Attachment 1, "Scope of the Project."

"Local Share" means that portion of the Grantee's local financial commitment that is the Grantee's legally required share of the Net Project Cost.

"Master Agreement" means the standard terms and conditions applicable to recipients of Federal financial assistance from the Government. It is updated and published annually. It is incorporated by reference and made part of this Agreement and identified in Federal Fiscal Year 2017 by FTA Form MA(23) (October 1, 2016).

"Maximum Federal Core Capacity Improvement Financial Contribution" means the limit of Federal capital Core Capacity Improvement financial participation in the Project. (The amount of the "Maximum Federal Core Capacity Improvement Financial Contribution" is set forth in Section 8 of this Agreement, "Limitations of the Federal Funding Commitment," and is only a portion of the total Federal financial contribution for the Project.)

"Maximum FTA Amount Awarded" means the total amount of Federal funds from all sources administered by FTA and awarded for the Project, regardless of source, and available to the Grantee. (This amount is set forth in the first page of this Agreement.)

"Net Project Cost" means the cost of the Project that cannot reasonably be financed from the Grantee's revenues.

"Project" means the transit/transportation improvements the Grantee has promised to implement as a condition of its Full Funding Grant. A description of the Project is set forth in Attachment 1, "Scope of the Project." Activities to carry out the project scope are set forth in Attachment 2, "Project Description."

"Project Costs" means all costs eligible for Federal financial participation under the terms of this Agreement and consistent with the cost principles set forth in Section 7 of the Master Agreement, "Payments to the Recipient."

"Recovery Plan" means a plan developed by the Grantee, and accepted by the Government, whereby the Grantee will take every reasonable measure to minimize any delay in achieving the baseline schedule set forth in Attachment 4 to this Agreement (the Baseline Schedule) and eliminate or otherwise mitigate [recover] any increase in the total Project cost as currently estimated, as compared to the total Project cost identified in Attachment 3 to this Agreement (the Baseline Cost Estimate).

"Required Completion Date" means the date certain upon which the Grantee agrees to accomplish the activities and tasks described in Attachments 1 and 2 to this Agreement and begin providing the additional service in the corridor as identified in the application submitted to FTA.

SECTION 2. PURPOSES OF AGREEMENT

Pursuant to 49 U.S.C. § 5309, the purposes of this Agreement are to:

- (a) provide Federal financial assistance to the Grantee in the form of this Full Funding Grant and possible future awards of financial assistance as contemplated under this Agreement, not to exceed the Maximum Federal Core Capacity Improvement Financial Contribution for the Project, as is and may be awarded under this Agreement and the laws codified at 49 U.S.C. Chapter 53 for purposes that are consistent with those statutes, implementing regulations, and other applicable laws and regulations;
- (b) describe the Project and set forth the mutual understandings, terms, conditions, rights and obligations of the parties related to implementing the Project, the future management and operation of the Project, and the manner in which Project real property and equipment will be used;
- (c) establish the Maximum Federal Core Capacity Improvement Financial Contribution for the Project, and the manner in which all future Federal funds for the Project, if any, will be awarded and released to the Grantee;
- (d) establish the Grantee's financial commitment to the Project including its obligation to fund the Local Share, its obligation to Complete the Project with a specified amount of Federal assistance, its obligation to achieve revenue operation of the Project by a specified date, its obligation to pay all costs necessary to Complete the Project that are in excess of the Estimated Net Project Cost and its obligation to finance the future maintenance and operational costs of the Project; and
- (e) facilitate timely and efficient management of the Project.

SECTION 3. PREVIOUS FEDERAL DOCUMENTS AND GRANTS

- (a) The Government's laws, policies and procedures require the completion of a project development process and environmental review prior to the Award and Execution of this Agreement. Prior Grants of Federal assistance awarded by the Government for this project

development process are described in Attachment 5 to this Agreement. These Grants (and any other documents that are described in Attachment 5, including Letters of No Prejudice) are incorporated by reference and made part of this Agreement, except for the terms and conditions thereof specifically superseded by this Agreement. Further, in executing this Agreement, the Grantee assures that the certifications and assurances (made by the Grantee or on behalf of the Grantee or by a third party) upon which the Government relied in these prior actions were made to the Government in good faith and to the best of the Grantee's knowledge and belief, and that the Grantee has no present knowledge of facts or circumstances substantially affecting the continued validity of these certifications and assurances that the Grantee has not formally conveyed to the Government prior to the Government's Award of funding set forth in this Agreement.

(b) This Agreement does not discharge or rescind any of the terms, conditions, or obligations established under the documents set forth in Attachment 5 unless specifically stated otherwise herein. Further, the terms, conditions and obligations of this Agreement take precedence over the provisions of all prior agreements related to the Project between the Grantee and the Government and will be controlling for all actions related to the Project taken after the Date of this Agreement, unless specifically stated otherwise herein.

(c) No amendments will be sought or approved to increase the amount of funds in the prior Grants listed in Attachment 5 beyond the amounts described in this Agreement as available to the Project.

SECTION 4. OBLIGATION TO COMPLETE THE PROJECT

(a) The Government has no obligation to provide any financial assistance for the Project beyond the Maximum Federal Core Capacity Improvement Financial Contribution. If the total Federal funding provided under Section 8 of this Agreement, "Limitations of the Federal Funding Commitment," is insufficient to undertake the activities necessary to Complete the Project and increase levels of service, the Grantee agrees to Complete the Project and accepts sole responsibility for the payment of any additional costs (overruns).

(b) If at any time during its efforts to Complete the Project the Grantee determines that the total Project cost will exceed the Baseline Cost Estimate, the Grantee must immediately notify the Government of the amount of the difference and the reasons for the difference. Further, the Grantee must provide the Government with a Recovery Plan that demonstrates the Grantee is taking and will take every reasonable measure to eliminate [recover] the difference between the total project cost and the Baseline Cost Estimate. Insofar as any difference between the total project cost and the Baseline Cost Estimate that cannot be eliminated [recovered], the Grantee must secure and provide such additional resources as are necessary to meet the additional costs and expeditiously Complete the Project without further financial assistance from the Federal capital Core Capacity Improvement program. Further, in its Recovery Plan, the Grantee must identify the sources of funds it will draw upon to meet the additional costs and cover the difference between the total Project cost and the Baseline Cost Estimate.

SECTION 5. REQUIRED COMPLETION DATE AND INCREASED LEVELS OF SERVICE

(a) The Grantee agrees and promises to Complete the Project on or before August 22, 2022, the Required Completion Date, in accordance with the terms and conditions of this Agreement.

(b) The Required Completion Date is a significant term of this Agreement. The Grantee's failure to complete the Project on or before the Required Completion Date will constitute a breach of this Agreement. Upon the Grantee's request, the Government may determine, at its sole discretion, to waive a breach or an anticipatory breach of this Agreement and to extend the Required Completion Date if there is an unavoidable delay resulting from an event or circumstance beyond the control of the Grantee, or if the Government determines that allowing the delay is in the best interest of the Government and the success of the Project. Requests by the Grantee for waiver of a breach or anticipatory breach of this Agreement and extension of the Required Completion Date for the reasons set forth herein shall be submitted promptly (with appropriate documentation) to the Government. In the exercise of its discretion to waive the breach and extend the Required Completion Date, the Government will take into consideration the actions and measures taken by the Grantee to ensure adherence to its promise to complete the Project on or before the scheduled Required Completion Date.

(c) Delays in appropriations of funds from Congress shall not constitute a basis for extension of the Required Completion Date.

(d) The Government's consent to extend the Required Completion Date pursuant to Paragraph (b) of this Section 5 does not constitute a basis for additional Federal financial assistance beyond the Maximum Federal Core Capacity Improvement Financial Contribution.

(e) Set forth in Attachment 1 to this Agreement, "Scope of Project," is the Increased Levels of Service the Grantee indicated would be provided in the peak-hour in the peak-direction in the Project corridor to qualify for Core Capacity funding. The Grantee will maintain these Increased Levels of Service once the Project is complete and for no less than five years thereafter. These specified Increased Levels of Service are a significant term of this Agreement. The Grantee's failure to achieve and maintain these Increased Levels of Service at the Required Completion Date and for five years thereafter will constitute a breach of this Agreement. Upon the Grantee's request, the Government may determine in its sole discretion to waive a breach of the Grantee's obligation to maintain these specified Increased Levels of Service for events or circumstances beyond the control of the Grantee, or if the Government determines that a waiver is in the interests of the United States. In the exercise of its discretion whether to waive a breach of the specified Increased Levels of Service, the Government will take into consideration the actions and measures taken by the Grantee to achieve and maintain the operational goals of the Project and the Grantee's entire public transportation system for at least five years beyond the completion of the Project.

SECTION 6. NET PROJECT COST

(a) This Grant is to assist in the payment of actual eligible costs within the scope of the Project

under this Agreement, minus any amount that can reasonably be financed from revenues of the Grantee. If the funds awarded under this Grant exceed the amount necessary to finance the Federal share, those excess funds are not available to the Grantee for payment of costs beyond the scope of this Project supported by this Grant.

(b) In accordance with the FTA Master Agreement, a refund or reduction of the Grantee's Local Share of the Net Project Cost requires a refund to the Government of a proportional amount of the Federal financial assistance provided under this Agreement.

(c) The portion of the Net Project Cost that may be financed by the Government with capital Core Capacity Improvement funds may not exceed the amount of the Maximum Federal Core Capacity Improvement Financial Contribution for this Project as stated in Section 8 of this Agreement, "Limitations of the Federal Funding Commitment."

(d) The Grantee acknowledges that Federal funds may be used only to reimburse eligible expenses for the Project. Should FTA determine that Federal funds have been used to reimburse any expenses that were ineligible for Federal reimbursement, FTA will direct the Grantee either to reimburse FTA with local funds not already committed to the Project or to reduce the total project costs by the amounts found to have been ineligible.

SECTION 7. ESTIMATED NET PROJECT COST

(a) The Government's determination to provide financial assistance for the Project is based, in significant part, upon the Grantee's estimated costs as set forth in the "Baseline Cost Estimate," Attachment 3 to this Agreement. The Estimated Net Project Cost reported in Attachment 3 is \$1,930,670,934.

(b) The Estimated Net Project Cost financed with the Execution of this Agreement is limited by the amount of the Maximum FTA Amount Awarded. The amount of the Estimated Net Project Cost and the amount of the Maximum FTA Amount Awarded are stated in the first page of this Agreement. The amount reimbursable by the Government is limited to the lesser of either the amount of the Maximum FTA Amount Awarded or the maximum percentage of FTA participation permitted by Federal law and regulations. Additional funds will not be provided until a Grant amendment awarding additional funds and amending this Full Funding Grant Agreement is executed.

SECTION 8. LIMITATIONS OF THE FEDERAL FUNDING COMMITMENT

(a) With its Award set forth in this Agreement, the Government obligates \$72,956,593 in Federal capital Core Capacity Improvement financial assistance for the Project. The sources of this Federal financial assistance are set forth in the "Project Budget," Attachment 3A. These funds are in addition to all previous Federal financial commitments to the development of the Project as set forth in the schedule of "Prior Grants and Related Documents," Attachment 5 of this Agreement.

(b)(1) With its Award set forth in this Agreement, the Government also acknowledges its intent to provide Federal capital Core Capacity Improvement financial assistance for the Project in

addition to the amount set forth in Paragraph (a) of this Section 8. The amount of additional capital Core Capacity Improvement funds the Government may provide will not exceed \$574,043,407. The anticipated sources of Federal financial assistance in this amount are listed in Attachment 6 to this Agreement, "Schedule of Federal Funds for the Project." Additional funds obligated pursuant to this Paragraph will be subject to all the terms, conditions and obligations established by this Agreement. Accordingly, it is expected that the award of funds will be processed through amendments to this Agreement.

(b)(2) The award by the Government of additional Federal capital Core Capacity Improvement financial assistance to the Project under Paragraph (b)(1) of this Section 8 is subject to the following limitations:

(A) the availability of appropriated funds, and

(B) the Grantee's continued performance under the terms and conditions of this Agreement.

(c) The Maximum Federal Core Capacity Improvement Financial Contribution for this Project under the capital Core Capacity Improvement category of funds is limited to \$647,000,000, which is the sum of the amounts set forth in Paragraphs (a) and (b)(1) of this Section.

SECTION 9. FEDERAL FUNDING—OTHER SOURCES

The Maximum Federal Core Capacity Improvement Financial Contribution specified in Section 8(c) of this Agreement does not include funds other than from the capital Core Capacity Improvement program under 49 U.S.C. Chapter 53. Should such other Federal funds be provided for the Project in addition to the Federal capital Core Capacity Improvement funds set forth in Attachment 6 of this Agreement, the limitation on the Federal funding commitment set forth in Section 8 of this Agreement shall not apply to those funds. Accordingly, such additional funds shall be excluded from the calculation of the Maximum Federal Core Capacity Improvement Financial Contribution. Funds awarded pursuant to this Section will be subject to all other terms, conditions and obligations set forth in the Agreement.

SECTION 10. LOCAL FINANCIAL COMMITMENT—CAPITAL COSTS

(a) As a condition of the Government's Award of this Full Funding Grant, the Grantee has developed and adopted a Financial Plan for financing all Project Costs necessary to complete the Project. In addition to the amount of Federal funds requested, the Financial Plan includes a statement identifying the local and private sources of funding and the amount of funds available for and committed to the Project from each such source. This Financial Plan, as accepted by the Government, with the supporting documentation (including formal funding agreements and commitments) is hereby incorporated by reference and made part of this Agreement.

(b) The Grantee hereby commits and certifies that it will provide funds in an amount sufficient, together with the Federal contribution (acknowledging the limitations as set forth in this Agreement), to assure timely and full payment of the Project Costs as necessary to Complete the Project.

(c) The Grantee hereby commits and certifies that the Local Share portion of its financial commitment will be provided from funding sources other than Federal funds, receipts from the use of Project facilities or equipment, or revenues of the public transportation system in which such facilities or equipment are used.

(d) Given the Estimated Net Project Cost, as set forth in Section 7 of this Agreement, the Grantee's financial commitment to the Net Project Cost is estimated to total \$1,283,670,934. This amount constitutes the Local Share needed to match the Maximum Federal Core Capacity Improvement Financial Contribution for the Project and Other Federal Sources. In the event that the actual Federal financial contribution for the Project is reduced or is increased or the funding percentage as set forth in this Agreement is changed, the portion of the Grantee's financial contribution for the Project that is identified as Local Share shall be adjusted accordingly.

(e) The Grantee agrees to notify the Government of any change in circumstances or commitments that adversely affect the Grantee's plan to fund the Project Costs necessary to Complete the Project as set forth in the Financial Plan. In its notification, the Grantee shall advise the Government of what actions it has taken or plans to take to ensure adequate funding resources and shall reaffirm its commitment to the Government as set forth in Paragraph (b) of this Section 10.

SECTION 11. AUTHORIZATION TO ADVANCE PROJECT WITHOUT PREJUDICE

The Grantee may incur costs or expend local funds for all phases of the Project as is reasonably necessary to advance the Project prior to an award of Federal funding assistance without prejudice to possible future Federal participation in or reimbursement of the Project Costs to the extent that such costs are incurred in accordance with all applicable Federal requirements and this Agreement. It is understood that the authority conferred on the Grantee to advance the Project without prejudice does not constitute a legal commitment by the Government to obligate and award Federal funds.

SECTION 12. LOCAL FINANCIAL COMMITMENT—OPERATING AND MAINTENANCE COSTS

(a) As a condition of the Government's Award of funding set forth in this Agreement, the Grantee has developed and adopted a Financial Plan to finance the future operation and maintenance of the Project that also takes into consideration the Grantee's continuing financial responsibilities to operate, maintain and reinvest in its existing transit system. This Financial Plan, as accepted by the Government, and the supporting documentation (including specific funding commitments) evidencing stable and dependable funding sources are an essential part of the Grantee's Application and are made part of this Agreement by incorporation of the Application.

(b) With the Execution of this Agreement, the Grantee assures that it has stable and

dependable funding sources, sufficient in amount and in degree of commitment, to operate and maintain its entire mass transportation system at an adequate and efficient level of service, including the future operation and maintenance of the Project without additional Federal assistance beyond the amounts set forth in the Financial Plan. The foregoing assurance does not preclude the Grantee from altering service through contracts with private providers of mass transportation services.

(c) The Grantee will notify the Government of any change in circumstances or commitments that adversely affects the Grantee's plan to fund the maintenance and operating costs of the Project as set forth in the Financial Plan. In its notification, the Grantee will advise the Government of actions it has taken or plans to take to ensure adequate funding resources and will reaffirm to the Government its assurance as set forth in Paragraph (b) of this Section.

SECTION 13. BASELINE COST ESTIMATE

(a) In its Application, the Grantee submitted to the Government a Baseline Cost Estimate for the activities constituting the Project. The Baseline Cost Estimate is accepted by the Government and is set forth in the Tables that comprise Attachment 3 of this Agreement. The Baseline Cost Estimate is derived from cost estimates of the individual third party contracts and force account work that, in sum, constitute the Project; it reflects appropriate escalation and Project schedule dates.

(b) The Government intends to use the Baseline Cost Estimate to monitor the Grantee's compliance with certain terms and conditions of this Agreement. The Baseline Cost Estimate established in Attachment 3 serves as the measure of cost estimates as of the Date of this Agreement, and should not be amended or modified during the implementation of the Project.

(c) The Grantee will submit cost reports on the implementation of the Project as required by this Agreement and in a format consistent with the units set forth in the Baseline Cost Estimate so that the Government can, with reasonable diligence, reconcile the Grantee's reports with the Baseline Cost Estimate.

SECTION 14. BASELINE SCHEDULE

(a) In its Application, as approved, the Grantee submitted a Baseline Schedule for the Project that demonstrates how the Grantee intends to implement the Project and meet the Required Completion Date. This Baseline Schedule has been accepted by the Government and is Attachment 4 of this Agreement.

(b) The schedule for the Project may be modified from time to time at the discretion of the Grantee. However, the Baseline Schedule is not to be modified because it is to be used as a basis for comparing planned to actual project implementation. The Grantee will notify the Government when a Project schedule modification has the potential to change the Required Completion Date and describe the actions planned to recover the schedule. The Government's acquiescence in such notice will not be deemed approval by the Government of an extension of a Required Completion Date unless the Government expressly grants an extension in writing.

SECTION 15. PROJECT MANAGEMENT OVERSIGHT

The Project is a "Major Capital Project" as defined in FTA's Project Management Oversight regulations at 49 C.F.R. § 633.5. Accordingly, the Grantee agrees that all requirements and conditions set forth in the rule at 49 C.F.R. Part 633 apply to the Project activities. Noncompliance with any regulatory requirements shall constitute a breach of this Agreement, unless the Government formally waives the regulatory requirement.

SECTION 16. ENVIRONMENTAL PROTECTION

(a) As a condition precedent to this Agreement, the environmental impacts of the Project have been assessed as required by law. The results of that assessment and the adopted mitigation measures are described in the environmental documents identified in Attachment 7 of this Agreement. These documents together with related agreements and supporting documentation are incorporated by reference and made part of this Agreement. To assist the Government in monitoring the implementation of the adopted mitigation measures, these measures are specifically referenced in Attachment 7 of this Agreement. It is understood and agreed that the description in Attachment 7 shall not supersede or in any way result in a circumvention of the requirements set forth in the Government's environmental record for the Project.

(b) Certain terms and conditions of this Agreement as related to the Grantee's responsibility to ensure protection of the environment are set forth in Section 26 of the Master Agreement, "Environmental Protections." Under Subsection 26.i, "Mitigation of Adverse Environmental Effects," the Grantee is required, among other actions, to undertake all environmental mitigation measures that are identified in environmental documents prepared for the Project. Accordingly, the Grantee understands that it shall not withdraw or substantially change any of the adopted mitigation measures as described in the Government's environmental record for the Project without the express written approval of the Government.

(c) This Section is intended only to supplement the provisions set forth in Section 26 of the Master Agreement, "Environmental Protections."

SECTION 17. LABOR PROTECTION

The Grantee will carry out the Project in conformance with the terms and conditions determined by the Secretary of Labor to be fair and equitable to protect the interests of employees affected by the Project and meet the requirements of 49 U.S.C. § 5333(b) and U.S. Department of Labor (USDOL) Guidelines at 29 C.F.R. Part 215. These terms and conditions are identified in the letters of certification from USDOL on the dates set forth on the first page of this Agreement. The Grantee will carry out the Project in compliance with the conditions stated in the USDOL certification letters. Those letters and any documents cited therein are incorporated by reference and made part of this Agreement.

SECTION 18. GOVERNMENT ACTIONS

(a) In all cases where the Government's review, approval or concurrence is required under the terms and conditions of this Agreement, the Government will provide its response within sixty (60) calendar days of receipt from the Grantee of all materials reasonably necessary for the formulation of the Government's response.

(b) If the Government determines that its position cannot be finalized within that sixty (60) day period, the Government will notify the Grantee, in writing, within thirty (30) days following receipt of the Grantee's submission that the Government's response will be delayed and advise the Grantee of the Government's anticipated time period for response.

(c) Whenever the Government's approval or concurrence is needed on any matter pertaining to or concerning this Agreement, the Government's approval or concurrence will not be unreasonably withheld.

SECTION 19. REMEDIES

(a) Substantial failure of the Grantee to Complete the Project in accordance with the Application and this Agreement will be a default of this Agreement. In the event of default, the Government will have all remedies at law and equity, including the right to specific performance without further Federal financial assistance, and the rights to termination or suspension as provided by Section 11 of the Master Agreement, "Right of the Federal Government to Terminate." The Grantee recognizes that in the event of default, the Government may demand all Federal funds provided to the Grantee for the Project be returned to the Government. Furthermore, a default of this Agreement will be a factor considered before a decision is made with respect to the approval of future Grants requested by the Grantee.

(b) Under the provisions of Section 15 of this Agreement, "Project Management Oversight," and under the terms and conditions of the Master Agreement, the Government will review performance by the Grantee to determine whether satisfactory progress is being made to complete the Project. In the event that the Government determines that the Grantee is in breach of this Agreement, the Government may withhold its approvals of further funding and suspend drawdown of funds, under the provisions of Section 11 of the Master Agreement, "Right of the Federal Government to Terminate," until any necessary corrective action, which may be required by the Government, is accomplished. Any breach of this Agreement that is not corrected within a reasonable period of time will be a default of this Agreement. The Government in its discretion may permit the cost of such corrective action to be deemed a Project Cost, provided that such cost is an allowable cost under the requirements of Section 7.b of the Master Agreement, "Eligible Costs," and so long as it remains within the limits of the Maximum Federal Core Capacity Improvement Financial Contribution set forth in Section 8 of this Agreement, "Limitations of the Federal Funding Commitment."

(c) In the event of a breach of this Agreement by the Grantee and before the Government takes action contemplated by this Section, the Government will provide the Grantee with ninety (90) days written notice that the Government considers that such a breach has occurred and will

provide the Grantee a reasonable period of time to respond and to take necessary corrective action.

SECTION 20. CONTENTS OF AGREEMENT

This Full Funding Grant Agreement consists of the text of this Agreement, which includes the first pages setting forth significant characteristics of the Agreement (such as the maximum Federal funds obligated and awarded for expenditure on the Project and the funding ratio of Federal and local funds to be expended for the Project, and such other data), followed by the Terms and Conditions and the Attachments to the Agreement. The Agreement also includes the following documents incorporated by reference and made part of this Agreement: the "Federal Transit Administration Master Agreement," FTA Form MA(23) (October 1, 2016) as may be revised from time to time, the Application, the Government's environmental record for the Project, related agreements, and prior Grant Agreements for the Project referenced in Attachment 5 of this Agreement. Should the Federal assistance award letter include special conditions for the Project, that letter is incorporated by reference and made part of this Agreement. Any inconsistency between the Application and the terms and conditions of this Full Funding Grant Agreement will be resolved according to the clear meaning of the provisions of this Agreement and Attachments hereto.

SECTION 21. SIMULTANEOUS CREATION OF AGREEMENT IN ELECTRONIC FORMAT

Simultaneous to the Award and Execution of this Agreement set forth in typewritten hard copy, the Agreement is being awarded and executed by electronic means through FTA's electronic award and management system. To the extent any discrepancy may arise between the typewritten version and the electronic version of this Agreement, the typewritten version will prevail. Should any special conditions or requirements for the Project be added separately in the electronic version, those conditions or requirements are incorporated by reference and made part of this Agreement.

SECTION 22. AMENDMENTS TO AGREEMENT

Amendments to any of the documents referenced in Section 20, "Contents of Agreement," will be made in accordance with the requirements and procedures set forth in FTA Circular 5010.1E, "Award Management Requirements" (March 21, 2017), as may be amended from time to time, and FTA Circular 5200.1A (December 5, 2002), "Full Funding Grant Agreements Guidance," as may be amended from time to time.

SECTION 23. ATTACHMENTS—INCORPORATION

Each and every Attachment to this Agreement is incorporated by reference and made part of this Agreement.

SECTION 24. NOTICES

Notices required by this Agreement will be addressed as follows:

As to the Government:

Mr. Leslie Rogers
Regional Administrator
Federal Transit Administration
90 Seventh Street
Suite 15-300
San Francisco, CA 94103

As to the Grantee:

Jim Hartnett
Executive Director
Peninsula Corridor Joint Powers Board
1250 San Carlos Ave.
San Carlos, CA 94070

SECTION 25. APPLICABLE LAW

If neither Federal statute nor Federal common law governs the interpretation of the provisions of this Agreement, the state law of the State of California will apply. This provision is intended only to supplement Section 3.g of the Master Agreement, "Application of Federal, State, and Local Laws, Regulations, Requirements, and Guidance."

SECTION 26. AWARD AND EXECUTION OF AGREEMENT

There are several identical counterparts of this Agreement in typewritten hard copy; each counterpart is to be fully signed in writing by the parties and each counterpart is deemed to be an original having identical legal effect. When signed and dated by the authorized official of the Government, this instrument will constitute an Award that should be executed by the Grantee within ninety (90) days of the date of the Government's Award (FTA Award). The Government may withdraw its Award of financial assistance and obligation of funds if this Agreement is not executed within the ninety (90) day period. Upon full Execution of this Agreement by the Grantee, the effective date will be the date the Government awarded funding under this Agreement as set forth below.

THE GOVERNMENT HEREBY AWARDS THIS FULL FUNDING GRANT AGREEMENT THIS

23 DAY OF May, 2017

Signature: Matthew J Welbes

Matthew Welbes
Executive Director
FEDERAL TRANSIT ADMINISTRATION

EXECUTION BY GRANTEE

The Grantee, by executing this Agreement, affirms this FTA Award; adopts and ratifies all statements, representations, warranties, covenants, and materials it has submitted to FTA; consents to this Award; and agrees to all terms and conditions set forth in this Agreement.

THE GRANTEE HEREBY EXECUTES THIS FULL FUNDING GRANT AGREEMENT THIS

24 DAY OF May, 2017

Signature: [Signature]

Jim Hartnett
Executive Director
Peninsula Corridor Joint Powers Board

ATTESTED BY:

Signature: Patrick Reilly


Patrick Reilly
Special Counsel
Peninsula Corridor Joint Powers Board

AFFIRMATION OF GRANTEE'S ATTORNEY

As the undersigned Attorney for the Grantee, I affirm to the Grantee that I have examined this Agreement and the proceedings taken by the Grantee relating to it. As a result of this examination I hereby affirm to the Grantee the Execution of the Agreement by the Grantee is duly authorized under state and local law. In addition, I find that in all respects the Execution of this Agreement is due and proper and in accordance with applicable State and local law. Further, in my opinion, this Agreement constitutes a legal and binding obligation of the Grantee in accordance with the terms of the Agreement. Finally, I affirm to the Grantee that, to the best of my knowledge, there is no legislation or litigation pending or imminent that might adversely affect the full implementation of the Project in accordance with the terms thereof.

DATED 22nd DAY OF May, 2017

AFFIRMED BY:

Signature: 
Joan Cassman
General Counsel
Peninsula Corridor Joint Powers Board

Attachment 1
Caltrain Modernization Program
Peninsula Corridor Electrification Project (PCEP)
San Carlos, CA

Scope of the Project

The Peninsula Corridor Electrification Project (Project) will electrify and upgrade Caltrain's 51-mile double track commuter rail mainline owned and operated by the Joint Powers Board (JPB or Caltrain). The Project includes two components: rolling stock and infrastructure. The rolling stock component includes the design and purchase of 96 Electric Multiple Units (EMUs) to replace approximately 75 percent of the existing diesel rolling stock. EMUs have the capability of reaching higher operating speeds than diesel units, and they accelerate and decelerate more quickly. The infrastructure component is comprised of the installation of an Overhead Contact System (OCS) beginning at the 4th and King Caltrain Station in San Francisco and ending at the Tamien Station in San Jose. The OCS includes overhead catenary and traction power substations (TPS) that will provide power to the EMUs.

The Project also includes modifications to four existing tunnels to accommodate the EMUs, train controls, signals, communications, traction power supply and distribution, acquisition of right-of-way, modifications to Caltrain's existing operations and maintenance facility to serve the EMUs, and utility relocations.

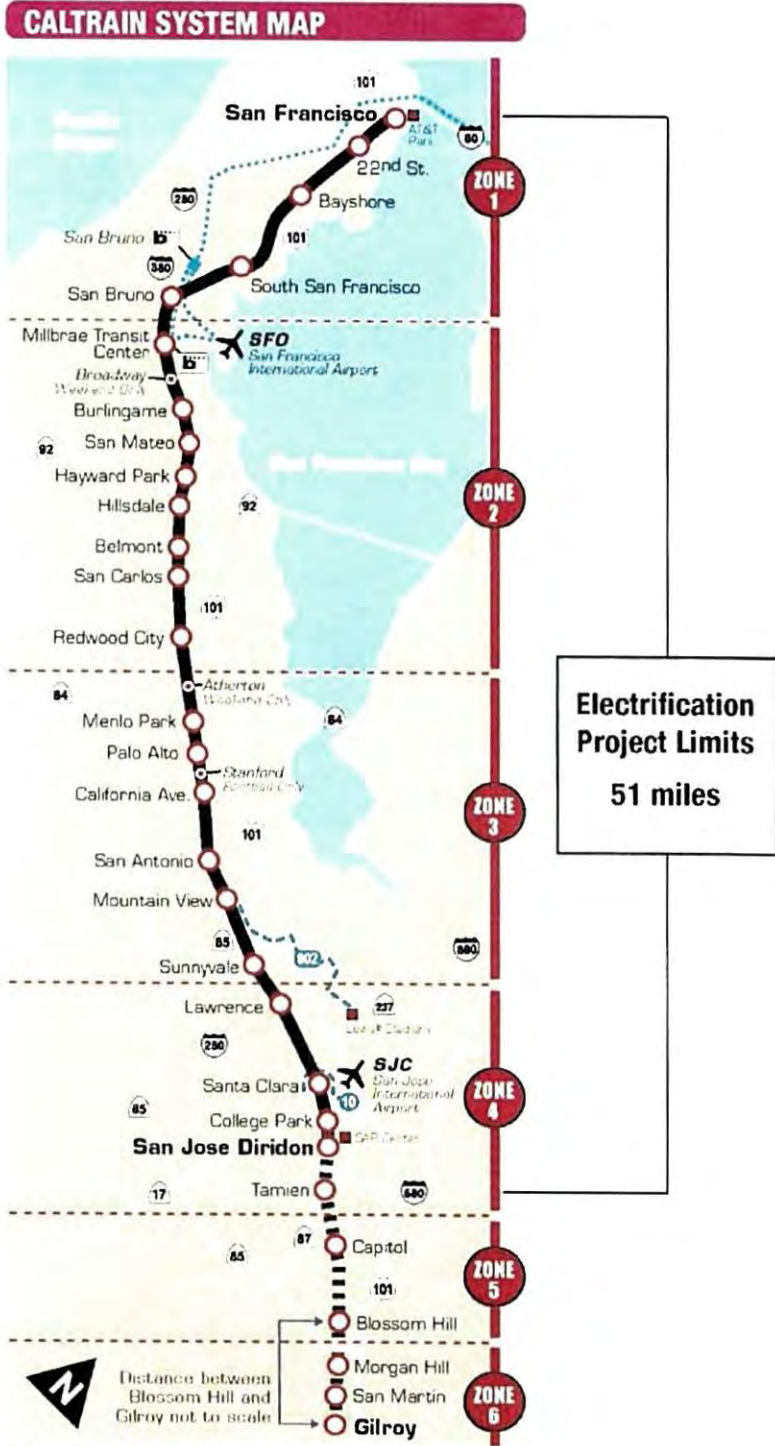
Caltrain currently provides weekday service from 4:30 AM to 1:30 AM with a mix of local, limited, and express trains for a total of 46 northbound and 46 southbound trains per weekday between San Jose and San Francisco. Five trains currently operate in the peak hour in the peak direction. Due to the faster acceleration of the EMUs, Caltrain will be able to operate 57 northbound and 57 southbound trains per weekday between San Jose and San Francisco, including six trains in the peak hour in the peak direction, after completion of the Project.

Based on existing service levels, the total available seats provided in the peak hour in the peak direction are 3,403, of which 96 percent are filled based on existing ridership levels. Upon completion of the Project in 2022, additional service will be provided resulting in total available seats in the peak hour in the peak direction of 3,768, an increase of eleven percent, thus meeting the statutory requirement that a Core Capacity project expand capacity by at least 10 percent.

The Required Completion Date for the Project is August 22, 2022.

Attachment 1A Caltrain Modernization Program Peninsula Corridor Electrification Project (PCEP) San Carlos, CA

Project Vicinity Map



Attachment 1B
Caltrain Modernization Program
Peninsula Corridor Electrification Project (PCEP)
San Carlos, CA

Project Location Map



**Attachment 2
Caltrain Modernization Program
Peninsula Corridor Electrification Project (PCEP)
San Carlos, CA**

Project Description

Narrative Description

The Peninsula Corridor Electrification Project (Project) will electrify and upgrade 51 miles of the Caltrain mainline commuter rail corridor from San Francisco to the Tamien Station in San Jose, California. The Project will also replace approximately 75 percent of the current Caltrain diesel-haul rolling stock with Electric Multiple Unit (EMU) trains. The project includes the installation of 138 single-track miles of overhead contact system (OCS) for the distribution of electrical power to the new electric rolling stock. The OCS would be powered from a 25 kiloVolt (kV), 60 Hertz (Hz), single-1 phase, alternating current (AC) traction power system consisting of two traction power substations (TPSSs), one switching station and seven paralleling stations. The rolling stock component includes the design and procurement of high-performance EMUs. The term "EMU" refers to the ability to couple multiple units into a train and have them controlled from a cab at each end of the train-consist. A fleet of 96 EMUs will be procured.

Project Description by Standard Cost Category (SCC)

The following provides a description of the Project by Standard Cost Category (SCC). These SCCs are the basis for the Baseline Cost Estimate and Baseline Schedule contained in Attachments 3 and 4, respectively.

SCC Code 10 – Guideway and Track Elements

This SCC includes guideway and track element upgrades in the following applicable subcategories:

10.02 - Guideway: At-grade semi-exclusive (allows cross-traffic): Modification to lower the track may be required at some locations to accommodate the new Overhead Catenary System. Final Design will determine the extent, if any, of track modifications.

10.07 - Guideway: Underground Tunnel: The existing 4 tunnel sections are to be modified to provide clearance for the new catenary system to accommodate the dynamic envelope of the new EMU's

SCC Code 30 – Support Facilities; Yards, Shops, Administration Building

This SCC includes the following modifications to an existing Maintenance Facility:

30.03 - Heavy Maintenance Facility: The existing Central Equipment Maintenance and Operations Facility is to be modified with the installation of new elevated platforms required for maintenance of the new EMU's.

30.05 - Yard and Yard Track: Improvements to accommodate test conditions and safety for the test track.

SCC Code 40 – Sitework and Special Conditions

This SCC includes all necessary site work and special work associated with utilities, hazardous materials, environmental mitigations, landscaping, street modifications, at-grade parking facilities (three stations), and temporary facilities for the construction of the Project.

40.01 - Demolition, Clearing, Earthwork: Sitework at two Traction Power Substations (TPS), one Switching Station (SWS) and seven Paralleling Stations (PS) including light clearing & grubbing; excavation & backfill; grading; chain-link fence; aggregate base; minor landscaping & retaining wall at four of the PSs.

40.02 - Site Utilities, Utility Relocation: 115 kV utility connections from Pacific Gas and Electric (PG&E) at TPS-1 and TPS-2 are required. Private utility relocations along the right-of-way (ROW) are also required.

40.03 - Hazardous Material, Contaminated Soil Removal/Mitigation, Ground Water Treatments: Disposal of hazardous materials encountered in the course of construction along the ROW.

40.04 - Environmental Mitigation, e.g. Wetlands, Historic/Archeologic, Parks: Tree trimming and tree removal is required along the ROW to accommodate required clearances for overhead catenary and feeder wire. Wetlands are to be protected, as are endangered species of frogs and snakes. A replacement program is in place for trees removed to accommodate installation of the OCS and establish an electrical safety zone.

40.05 - Site Structures including Retaining Walls, Sound walls: Retaining walls are required at TPS sites.

40.06 - Pedestrian / bike access and accommodation, landscaping: Landscaping is required at TPS, SWS and PS locations.

40.07 - Automobile, Bus and Van Accessways Including Roads and Parking Lots: New access roads and driveways are required at TPS sites.

40.08 - Temporary Facilities and other indirect costs during construction: Costs for contractors' mobilization, project management, insurance/bonding, mobilization, track safety, and incentives are collected in this line item.

SCC Code 50 – Systems

This SCC includes the purchase, installation, and construction of all train control, traction power supply and distribution, and communications equipment or facilities.

50.01 - Train Control and Signals

This subcategory includes the following:

- Fifty-one route-miles of the signal system are to be modified to be compatible with the electric traction power system
- Replacement of interlocking cable plants
- Installation of new signal cabinets and/or signal huts.

50.02 - Traffic Signals and Crossing Protection: This category includes 42 grade crossings designed to be compatible with the electric traction power system and the new EMUs, as well as designed to maintain compatibility with existing freight/diesel operated trains.

50.03 - Traction Power Supply: Substations

This subcategory includes the following:

- 25kV Single Phase AC Auto-Transformer Configuration
- Two Substations with interconnection to PG&E 115kV Supply
 - Located in South San Francisco (TPS-1)
 - Located in San Jose (TPS-2)

- Seven Paralleling Stations (PS-1 thru PS-7)
- One Switching Station
- Supervisory Control and Data Acquisition (SCADA) Master Power Control Equipment.

50.04 - Traction Power Distribution: Catenary and Third Rail

This subcategory includes the following:

- 138 miles of electrification over the 51 mile corridor
- 3,200 catenary poles (cantilever, portals and headspans)
- 4-wire system (messenger, contact, feeder & static)
- 30 to 40 ft high poles with 200' spacing
- Cantilever assemblies for two track territory
- Headspan and portal structures for 3+ track territory and yards
- Grounding and bonding of new system, existing station facilities, fencing
- Overhead bridge barriers.

50.05 - Communications

This subcategory includes the following:

- Network node splice cases, distribution panels and associated modifications to the communications infrastructure backbone system
- Interconnection to the existing fiber optic cable system
- Installation of underground duct banks between new substations and wayside control houses to the existing fiber optic cable (FOC) splice points.

50.07 - Central Control: This category includes the Master Power Control Center in the Operational Control Center (OCC) and the Backup Operational Control Center (BOCC).

SCC Code 60 – Right-of-Way, Land, Existing Improvements

This SCC includes the acquisition of right-of-way, including relocations, as well as permanent and temporary easements required for construction of the Project.

60.01 - Purchase or Lease of Real Estate: The project includes several types of right-of-way items, including acquisitions and permanent easements for TPS sites, one PS site, OCS poles, and electrical safety zones, as follows:

- TPS-1: A connection through City of South San Francisco dedicated public right of way from Pacific Gas & Electric (PG&E) Substation to PCEP TPS#1.
- TPS-2: ROW acquisition from private land owner. Connection from Pacific Gas & Electric (PG&E) Substation to TPS#2.
- OCS Poles: ROW acquisition for OCS pole installation outside the existing ROW.
- Electrical Safety Zones (ESZ) – Electrical safety easements from private landowners and public agencies to allow vegetation safety maintenance and to maintain minimum clearances from buildings to the OCS.

60.02 - Relocation of Existing Households and Businesses: Relocation of one commercial business will result from the purchase of TPS-2.

SCC Code 70 – Vehicles

This SCC provides for procurement of 96 commuter rail vehicles needed for the Project.

70.03 - Commuter Rail

This subcategory includes the following:

- Ninety-six (96) bi-level, Electric Multiple Units (EMUs) cars

- Two electric locomotives
- Communications Based Overlay Signal System/Positive Train Control (CBOSS/PTC) Equipped
- Spare Parts, Special Tools, Test Equipment
- Compliant with FTA Buy America requirements
- Vehicles conform to FRA alternative Tier 1 compliance
- JPB/Caltrain CalMod Staff
 - Program Management Directors
 - Planning/Outreach/Real Estate Support
 - JPB Engineering and Construction
 - JPB Functional Support
 - Operations, Legal
 - Other Direct Costs (ODCs)
- Program Management Service Consultants
- Owner's Representative, Vehicle Procurement Consultants.

70.06 - Non-revenue vehicles: Specialized track mounted equipment vehicles to maintain the overhead catenary system.

70.07 - Spare Parts: Spare parts for vehicles.

SCC Code 80 – Professional Services

This SCC includes all the costs of engineering, project management, construction administration and management, permits and fees, legal fees, training, start-up, testing, and other direct costs.

80.02 - Engineering

Preliminary design and final engineering for electrification, tunnel notching, Caltrain's Centralized Equipment Maintenance & Operations Facility (CEMOF) improvements by both JPB's design consultants and the Electrification contractor's design team.

80.03 - Project Management for Design and Construction

Electrification Professional Services

- JPB/Caltrain CalMod Staff
 - Program Management Directors
 - Planning/Outreach/Real Estate Support
 - JPB Engineering and Construction
 - JPB Functional Support
 - Operations, Legal
 - Other Direct Costs (ODCs)
- Program Management Service Consultants
- Owner's Representative, Electrification Consultants
- Owner's Representative Environmental Impact Report

80.04 - Construction Administration & Management

Electrification Professional Services

- JPB/Caltrain CalMod Staff
 - Program Management Directors
 - Planning/Outreach
 - JPB Engineering and Construction
 - JPB Functional Support
- Owner's Representative, Electrification CM Consultants.

80.05 – Professional Liability and other Non-Construction Insurance: This category provides for Railroad Protective Liability Insurance.

80.06 – Legal; Permits; Review Fees by other agencies, cities, etc.: This category includes the cost of legal and negotiation services for the project; the cost of applicable permits; and required reviews by government agencies.

80.07 – Surveys, Testing, Investigation, Inspection: This category includes the cost of survey and geological investigation and testing.

80.08 – Start up: This category includes the agency staff and professional service consultants providing support to begin revenue operations.

SCC 90 – Unallocated Contingency

This SCC includes unallocated contingency and project reserves for the Project. It provides for unknown additional costs and uncertainty due to risk factors such as third party approvals, market fluctuation, differing site conditions, change orders, and contract modifications.

SCC Code 100 - Finance Charges

This category includes finance charges expected to be paid prior to either completion of the Project or the receipt of all the Section 5309 Core Capacity funding, whichever occurs later in time.

Attachment 3
Caltrain Modernization Program
Peninsula Corridor Electrification Project (PCEP)
San Carlos, CA

Baseline Cost Estimate

Table 1 - BCE by Standard Cost Category

<i>Applicable Line Items Only</i>	YOE Dollars Total
10 GUIDEWAY & TRACK ELEMENTS (51 miles)	14,256,739
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	2,441,851
10.07 Guideway: Underground tunnel	11,814,888
20 Stations, Stops, Terminals, Intermodal	0
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	2,265,200
30.03 Heavy Maintenance Facility	1,762,394
30.05 Yard and Yard Track	502,806
40 SITEWORK & SPECIAL CONDITIONS	255,072,402
40.01 Demolition, Clearing, Earthwork	3,072,027
40.02 Site Utilities, Utility Relocation	88,580,482
40.03 Haz. mat'l, contam'd soil removal/mitigation, ground water treatments	2,250,426
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	32,238,441
40.05 Site structures including retaining walls, sound walls	567,143
40.06 Pedestrian / bike access and accommodation, landscaping	803,453
40.07 Automobile, bus, van accessways including roads, parking lots	283,572
40.08 Temporary Facilities and other indirect costs during construction	127,276,858
50 SYSTEMS	504,445,419
50.01 Train control and signals	99,350,583
50.02 Traffic signals and crossing protection	24,884,142
50.03 Traction power supply: substations	100,821,501
50.04 Traction power distribution: catenary and third rail	271,846,277
50.05 Communications	5,447,983
50.07 Central Control	2,094,933
Construction Subtotal (10 - 50)	776,039,760
60 ROW, LAND, EXISTING IMPROVEMENTS	35,675,084
60.01 Purchase or lease of real estate	34,625,000
60.02 Relocation of existing households and businesses	1,050,084
70 VEHICLES (96 EMU Vehicles)	625,544,147
70.03 Commuter Rail	598,765,391
70.06 Non-revenue vehicles	8,246,320
70.07 Spare parts	18,532,436

<i>Applicable Line Items Only</i>	YOE Dollars Total (X000)
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)	323,793,010
80.01 Project Development	136,491
80.02 Engineering	184,705,437
80.03 Project Management for Design and Construction	80,688,314
80.04 Construction Administration & Management	41,675,270
80.05 Professional Liability and other Non-Construction Insurance	3,491,837
80.06 Legal; Permits; Review Fees by other agencies, cities, etc.	7,769,176
80.07 Surveys, Testing, Investigation, Inspection	3,000,370
80.08 Start up	2,326,115
Subtotal (10 - 80)	1,761,052,001
90 UNALLOCATED CONTINGENCY	162,620,295
Subtotal (10 - 90)	1,923,672,296
100 FINANCE CHARGES	6,998,638
Total Project Cost (10 - 100)	1,930,670,934

Attachment 3
Caltrain Modernization Program
Peninsula Corridor Electrification Project (PCEP)
San Carlos, CA

Baseline Cost Estimate

Table 2 – Inflated Cost to Year of Expenditures

Standard Cost Category Description	Base Year Dollar w/o Contingency	Base Year Dollars Allocated Contingency	Base Year Dollars TOTAL	Inflation Factor	YOE Dollars TOTAL
10 GUIDEWAY & TRACK ELEMENTS (51 miles)	9,930,050	3,443,415	13,373,465	1.0660	14,256,739
20 STATIONS, STOPS, TERMINALS, INTERMODAL	0	0	0	0	0
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	1,727,666	396,732	2,124,398	1.0663	2,265,200
40 SITEWORK & SPECIAL CONDITIONS	197,354,697	42,465,878	239,820,575	1.0636	255,072,402
50 SYSTEMS	429,641,995	46,687,882	476,329,877	1.0590	504,445,419
60 ROW, LAND, EXISTING IMPROVEMENTS	26,526,146	8,447,380	34,973,526	1.0201	35,675,084
70 VEHICLES (96 EMU vehicles)	564,044,890	8,364,433	572,409,323	1.0928	625,544,147
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)	279,886,974	29,338,981	309,225,955	1.0471	323,793,010
90 UNALLOCATED CONTINGENCY			150,353,131	1.0816	162,620,295
100 FINANCE CHARGES			6,600,802	1.0603	6,998,638
Total Project Cost (10 - 100)			1,805,211,052	1.0695	1,930,670,934

Attachment 3
Caltrain Modernization Program
Peninsula Corridor Electrification Project (PCEP)
San Carlos, CA
Baseline Cost Estimate

Table 3 – BCE by Source of Funding

Standard Cost Category Description	YOE Dollars TOTAL	Federal 5309 Core Capacity	Federal Other	Local
10 GUIDEWAY & TRACK ELEMENTS (51 miles)	14,256,739	6,378,370	0	7,878,369
20 STATIONS, STOPS, TERMINALS, INTERMODAL	0	0	0	0
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	2,265,200	1,057,600	0	1,207,600
40 SITEWORK & SPECIAL CONDITIONS	255,072,402	111,126,354	0	143,946,048
50 SYSTEMS	504,445,419	156,992,056	0	347,453,363
60 ROW, LAND, EXISTING IMPROVEMENTS	35,675,084	0	0	35,675,084
70 VEHICLES (96 EMU vehicles)	625,544,147	160,000,245	283,280,441	182,263,461
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)	323,793,010	126,345,961	3,869,559	193,577,490
90 UNALLOCATED CONTINGENCY	162,620,295	85,099,414	0	77,520,881
100 FINANCE CHARGES	6,998,638	0	0	6,998,638
Total Project Cost (10 - 100)	1,930,670,934	647,000,000	287,150,000	996,520,934

Sources of Federal Funding and Matching Share Ratios				
	Costs Attributed to Source of Funds	Federal/Local Matching Ratio within Source	All Federal Funds	Local Funds
Federal 5309 Core Capacity	1,422,088,290	50/50	647,000,000	775,088,290
FTA Formula Funding (non 5337)	508,582,644	80/20	287,150,000	221,432,644
Total	1,930,670,934		934,150,000	996,520,934
Overall Federal Share of Total Project			48.38%	
Core Capacity Share of Total Project			33.51%	

Attachment 3A
Caltrain Modernization Program
Peninsula Corridor Electrification Project (PCEP)
San Carlos, CA
Project Budget

Scope Code	ALI Code	Scope and Activity Line Item Descriptions	Qty	Total Federal %	Federal 5309 Core Capacity			Other Federal			Total Project Cost in YOE Dollars		
					Federal	Local	Total	Federal	Local	Total	Federal	Local	Total
14010	140110	GUIDEWAY & TRACK ELEMENTS	51	44.74%	\$6,378,370	\$7,878,369	\$14,256,739	\$0	\$0	\$0	\$6,378,370	\$7,878,369	\$14,256,739
14020	140220	STATIONS, STOPS, TERMINALS, INTERMODAL		0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14030	140330	SUPPORT FACILITIES, YARDS, SHOPS, ADMIN BLDGS		46.69%	\$1,057,600	\$1,207,600	\$2,265,200	\$0	\$0	\$0	\$1,057,600	\$1,207,600	\$2,265,200
14040	140440	SITWORK & SPECIAL CONDITIONS		43.57%	\$111,126,354	\$143,946,048	\$255,072,402	\$0	\$0	\$0	\$111,126,354	\$143,946,048	\$255,072,402
14050	140550	SYSTEMS		31.12%	\$156,992,056	\$347,453,363	\$504,445,419	\$0	\$0	\$0	\$156,992,056	\$347,453,363	\$504,445,419
14060	140660	ROW, LAND, EXISTING IMPROVEMENTS		0.00%	\$0	\$35,675,084	\$35,675,084	\$0	\$0	\$0	\$0	\$35,675,084	\$35,675,084
14070	13 12 22	VEHICLES	96	70.86%	\$160,000,245	\$154,408,307	\$314,408,552	\$283,280,441	\$27,855,154	\$311,135,595	\$443,280,686	\$182,263,461	\$625,544,147
14080	140880	PROFESSIONAL SERVICES		39.98%	\$126,345,961	\$0	\$126,345,961	\$3,869,559	\$193,577,490	\$197,447,049	\$130,215,520	\$193,577,490	\$323,793,010
14090	140990	UNALLOCATED CONTINGENCY		52.33%	\$85,099,414	\$77,520,881	\$162,620,295	\$0	\$0	\$0	\$85,099,414	\$77,520,881	\$162,620,295
14100	141010	FINANCE CHARGES		0.00%	\$0	\$6,998,638	\$6,998,638	\$0	\$0	\$0	\$0	\$6,998,638	\$6,998,638
Total Project Cost (10 - 100)				48.38%	\$647,000,000	\$775,088,290	\$1,422,088,290	\$287,150,000	\$221,432,644	\$508,582,644	\$934,150,000	\$996,520,934	\$1,930,670,934

**Attachment 4
Caltrain Modernization Program
Peninsula Corridor Electrification Project (PCEP)
San Carlos, CA**

Baseline Schedule

SCHEDULE	Start Date	End Date	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
10 GUIDEWAY & TRACK ELEMENTS (route miles)	03/01/17	10/13/20											
20 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	03/01/17	10/13/20											
40 SITEWORK & SPECIAL CONDITIONS	03/01/17	10/13/20											
50 SYSTEMS	03/01/17	10/13/20											
60 ROY, LAND, EXISTING IMPROVEMENTS	05/01/15	11/26/17											
70 VEHICLES (96) through final warranty payment	02/24/15	12/30/21											
80 PROFESSIONAL SERVICES (applies to Cats 10-50)	02/24/15	12/30/21											
90 UNALLOCATED CONTINGENCY	09/05/16	08/22/22											
100 FINANCE CHARGES (CC Only)	09/05/16	08/22/22											
Design Build - Electrification	09/05/16	10/13/20											
EMU - Vehicle Manufacturing	09/05/16	08/22/22											
Tunnel Modifications - Tunnel	01/02/18	05/24/19											
CEMOP Modifications - Heavy Rail Facility	12/01/17	05/04/18											
Acquire and test vehicles	09/05/16	08/12/21											
Expanded Service	08/22/22	08/22/22											
Before and After Study: Two years post Rev Ops	08/22/24	11/02/24											
Fulfillment of the Core Capacity Funding Commitment		08/22/22											
Completion of project close-out, resolution of claims	08/22/22	11/22/24											

**Attachment 5
Caltrain Modernization Program
Peninsula Corridor Electrification Project (PCEP)
San Carlos, CA**

Prior Grants and Related Documents

I. Prior Grants (not included in the FFGA)

Project Number	Obligation Date	Federal Amount	Funding Source	Purpose
CA-03-0542	7/11/2000	\$2,700,511	Section 5309	Planning
CA-03-0565	12/12/2000	\$16,800,000	Section 5309	Planning
CA-03-0598	5/10/2002	\$960,000	Section 5309	Planning
CA-90-Y246	8/2/2004	\$12,000,000	Section 5307	Planning
CA-95-X074	2/23/2011	\$4,000,000	Section 5307	Planning

II. Related Documents

- | | |
|--|-------------------|
| 1. Notice of Intent and Scoping Notice for Preparation of an Alternatives Analysis/Draft Environmental Assessment (EA) / Environmental Impact Report (EIR) | August 22, 2000 |
| 2. Completion of Alternative Analysis and Draft EA/EIR | March 25, 2004 |
| 3. Final EA/EIR | July 7, 2009 |
| 4. Finding of No Significant Impact | December 17, 2009 |
| 5. Locally Preferred Alternative Adopted | July 17, 2013 |
| 6. JPB Approves Final EIR | January 8, 2015 |
| 8. Re-Evaluation of 2009 FONSI | February 11, 2016 |
| 9. Entry into Engineering | August 12, 2016 |

III. FFGA Grant History (Grants Under the FFGA)

Project No.	Obligation Date	Federal Amount	Funding Source	Purpose
None				

Attachment 6
Caltrain Modernization Program
Peninsula Corridor Electrification Project (PCEP)
San Carlos, CA

Schedule of Federal Funds

Section 3005 of the Fixing America's Surface Transportation ("FAST") Act (Pub. L. 114-94; Dec. 4, 2015) authorizes FTA to award discretionary Federal capital investment funds for design and construction of the Peninsula Corridor Electrification Project (the Project), which is a Core Capacity Improvement project. See, 49 U.S.C. § 5309(e). In accordance with Federal public transportation law at 49 U.S.C. Chapter 53 and FTA Circular 5200.1A, Full Funding Grant Agreements Guidance (December 5, 2002), by the execution of this Agreement the Government is limiting its commitment to provide Federal Core Capacity funds for the Project to those funds that have been or may be appropriated during the term of the FAST Act and subsequent authorizations. The Government and the Grantee recognize, however, that the period of time necessary to complete the Project will extend beyond the FAST Act, as evidenced by Attachment 4 to this Agreement (Baseline Schedule).

Currently, the Government and the Grantee anticipate that the Core Capacity funds will be provided for the Project as follows:

Proposed Schedule of Federal Funds
(Based on Year of Appropriation)
(Amounts in millions)

Fiscal Year	Section 5309 Core Capacity Funding	Section 5307 Formula Funding	Local/State	Total
2016 and prior	\$72,956,593	\$0	\$44,748,467	\$207,900,208
2017	\$100,000,000	\$0	\$198,403,545	\$298,403,545
2018	\$100,000,000	\$58,020,000	\$108,526,316	\$298,403,545
2019	\$100,000,000	\$71,465,000	\$80,526,316	\$298,403,545
2020	\$100,000,000	\$94,895,000	\$54,526,316	\$298,403,545
2021	\$100,000,000	\$62,770,000	\$66,526,316	\$298,403,545
2022	\$74,043,407	\$0	\$84,526,316	\$220,948,151
Total	\$647,000,000	\$287,150,000	\$996,520,934	\$1,930,670,934

Attachment 7
Caltrain Modernization Program
Peninsula Corridor Electrification Project (PCEP)
San Carlos, CA

Measures to Mitigate Environmental Impacts

The measures to mitigate the environmental impacts of the Peninsula Corridor Electrification Project are included in the environmental record and include the following documents which are incorporated herein:

1. Final Environmental Assessment (EA) - July 7, 2009
2. Finding of No Significant Impact (FONSI) – December 17, 2009
3. Environmental Re-Evaluation for Proposed Project Changes After Finding of No Significant Impact (December 2009) – February 11, 2016, (as noticed at 81 *Fed.Reg.* 10952, March 2, 2016)

The mitigation measures and other project features that reduce environmental and community impacts to which the Federal Transit Administration (FTA) and the Peninsula Corridor Joint Powers Board (JPB) committed in the environmental record may not be eliminated from the Project, except by FTA's written consent and in accordance with applicable laws and regulations. These mitigation measures include, but are not limited to: commitments to perform further consultation with any agency on environmental and related matters; and, the table of mitigation measures identified as "Table 1. Mitigation Monitoring and Reporting Program – Summary of Mitigation Measures" in the Mitigation Monitoring and Reporting Program (SCH# 2013012079), dated January 2015, adopted by the JPB on January 8, 2015, and attached to the February 11, 2016 FTA Environmental Reevaluation in its Appendix G.02. The table's purpose is to facilitate monitoring the implementation of the mitigation measures during final design and construction. Monitoring and mitigation compliance will be the responsibility of JPB's Environmental Manager assigned to the Project. That table and its periodic revisions to add the measures resulting from required consultations, permit approvals, and FTA-approved changes and to update the implementation status of the measures are incorporated herein by reference.

Attachment 8
Caltrain Modernization Program
Peninsula Corridor Electrification Project (PCEP)
San Carlos, CA

Implementation of a Before-and-After Study

The Peninsula Corridor Joint Powers Board (JPB) will assemble information and conduct analyses to identify the actual outcomes of the Peninsula Corridor Electrification Project (the Project) and evaluate the reliability of the predictions of those outcomes prepared during the planning and development of the Project. JPB will assemble the information and conduct the analyses in accordance with the Before-and-After Study Plan prepared by JPB and approved by the Federal Transit Administration (FTA). Specifically, the plan addresses the following requirements:

I. Required Information

The JPB will assemble information on five key characteristics of the Project and its associated transit services:

1. Project scope: The physical components of the Project, including environmental mitigation and other related elements;
2. Capital cost: The total Project capital costs in constant dollars, formatted in FTA's Standard Cost Categories, and annual expenditures in year-of-expenditure dollars;
3. Transit service levels: The service characteristics of the Project, feeder bus services, and other bus services in the corridor;
4. Operation and maintenance (O&M) costs: Estimates the incremental operating/maintenance (O&M) costs of the project and the transit system as a whole; and
5. Ridership: Describes peak-hour/peak-direction ridership and capacity on the project as well as overall ridership in the corridor.

II. Milestones

JPB will assemble predictions of Project outcomes at two milestones during development of the Project and will collect data at two milestones during its implementation. At each milestone, JPB will archive the assembled information, data, and documentation and provide to FTA a copy of the archive.

1. Entry into Engineering: Assembly, documentation, and archiving of the predicted outcomes on all five characteristics of the Project at the point when the JPB requested FTA approval for Entry into Engineering, plus an analysis of any significant differences in the predicted outcomes compared to the predictions at entry into Project Development;
2. Full Funding Grant Agreement: Assembly, documentation, and archiving of the predicted outcomes on all five characteristics of the Project at the signing of the FFGA,

plus an analysis of any significant differences in the predicted outcomes compared to the predictions at entry into Core Capacity Engineering;

3. Actual Conditions before Project Opening: Collection, documentation, and archiving of data on existing transit services, O&M costs, and transit ridership/revenues immediately prior to any significant changes in transit service levels caused by either the construction or the opening of the Project; and
4. Actual Conditions after Project Opening: Collection, documentation, and archiving of data on the actual outcomes of the Project on all five characteristics for two years after the start of service.

III. Final Report

Within 36 months after Project opening, JPB will complete a final report that for each project outcome: (1) documents the actual outcome of the Project, (2) evaluates the accuracy of the predicted outcomes that were prepared during planning and development of the project, and (3) identifies any lessons learned about the preparation of those predictions that may be useful for future projects. The body of the final report will be 15-20 pages that will highlight findings, conclusions, and lessons learned. Appendices to the final report will provide details supporting the findings and conclusions.

IV. Coordination with FTA

JPB will maintain communication with FTA and its contractors on progress in implementing the Before-and-After Study Plan and provide opportunities for early review and for commenting on draft products. JPB must obtain approval in advance of any changes in the scope or schedule for the Study as defined in the Study Plan approved by FTA.