

**THIS PRINT COVERS CALENDAR ITEM NO. : 10.6**

**SAN FRANCISCO  
MUNICIPAL TRANSPORTATION AGENCY**

**DIVISION:** Capital Programs and Construction

**BRIEF DESCRIPTION:**

Authorizing the Director of Transportation to execute Modification No. 3 to Contract No. 1270, Sunset Tunnel Trackway Improvement Project with ProVen Management Inc., to compensate the Contractor for the direct costs of necessary additional design-build work due to differing site conditions, increasing the contract amount by \$3,142,425 for a total amount not to exceed \$19,266,025, and with no extension to the term of the contract at this time.

**SUMMARY:**

- In 2014, the SFMTA Board of Directors awarded Contract No. 1270, Sunset Tunnel Trackway Improvement Project to ProVen Management Inc. (ProVen), in the amount of \$16,123,600, for a term of 390 days, to replace N-Line trackwork and overhead lines, and provide seismic upgrades and other infrastructure improvements to the tunnel and portals.
- The original contract required that the existing traction power cable conduits and raceways be reused. But in the course of the work, the raceways, conduits and supporting hardware were discovered to be badly corroded and could not be reused or repaired.
- Modification No. 3 adds the replacement of the cable conduits to the scope of work as design-build work, and increases the Contract amount by \$3,142,425 to compensate contractor for direct costs associated with that additional work.

**ENCLOSURES:**

1. SFMTAB Resolution
2. Contract Modification No. 3
3. Project Budget & Financial Plan

**APPROVALS:**

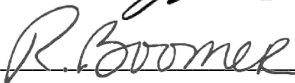
**DATE**

DIRECTOR

  
\_\_\_\_\_

9/15/16

SECRETARY

  
\_\_\_\_\_

9/15/16

**ASSIGNED SFMTAB CALENDAR DATE:** September 20, 2016

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### **PURPOSE**

The purpose of this calendar item is to authorize the Director of Transportation to execute Modification No. 3 to Contract No. 1270, Sunset Tunnel Trackway Improvement Project with Proven Management Inc., to compensate the Contractor for the direct costs of necessary additional design-build work due to differing site conditions, increasing the contract amount by \$3,142,425 for a total amount not to exceed \$19,266,025, and with no extension to the term of the Contract at this time.

### **GOAL**

The Work to be performed under Contract No. 1270 will assist in the implementation of the following goals, objectives and initiatives in the SFMTA Strategic Plan:

Goal 1: Create a safer transportation experience for everyone.

Objective 1.3 Improve the safety of the transportation system.

Goal 2: Make transit, walking, bicycling, taxi, ridesharing & carsharing the preferred means of travel

Objective 2.2 Improve transit performance

Goal 3: Improve the environment and quality of life in San Francisco

Objective 3.1 Reduce the Agency's and the transportation system's resource consumption, emissions, waste and noise

Objective 3.2 Increase the transportation system's positive impact to the economy

Objective 3.3 Allocate capital resources effectively

Objective 3.4 Deliver services efficiently

### **DESCRIPTION**

The Sunset Tunnel Trackway Improvement Project has three main objectives: 1) enhance system reliability and efficiency; 2) reduce infrastructure maintenance; and, 3) upgrade the seismic performance of the portal retaining walls.

The N-Line tracks in the Sunset Portals and Tunnel were installed around 1975. Replacement is required due to rail wear and settlement of the supporting substructure, as described in the Biennial Tunnel Inspection Report, issued by the Capital Programs and Construction Division in December 2011.

The Overhead Catenary System (OCS) provides power to electric transit vehicles. The existing Sunset Tunnel OCS, including poles, supports and special work, was originally installed in the late 1970's. Some of those OCS components, including supports and poles, have shown signs of severe

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rust and extensive water damage, and must be replaced. Existing trolley and messenger wires are also aged and due for replacement.

In February 2012, Anil Verma Associates, Inc., a consultant to the SFMTA, inspected the Sunset Tunnel (and other SFMTA tunnels) and described their findings in a report, "Tunnel Seismic Vulnerability Study Report." Anil Verma Associates recommended that the retaining walls at both portals to the Sunset Tunnel be evaluated for earthquake loading. Results of the subsequent analysis indicated that the portal walls needed to be upgraded and reinforced to meet California Building Code and BART Earthquake Safety Design standards.

Because the critical nature of the required upgrades, the project was expedited by SFMTA so that replacement of the failing systems could begin as soon as possible.

### **Scope of Contract:**

Work to be performed in the Sunset Tunnel and along the N-Line under the Contract included, but was not limited to, the following:

- Replace existing tie and ballast tracks
- Replace the existing OCS, including messenger wires, trolley wires and various components
- Seismic upgrades for the Sunset Tunnel portal retaining walls
- Upgrade the traction power cable infrastructure
- Improvements to transit vehicle signal priority systems at 9 intersections along the N-line route
- Other miscellaneous work, including upgrades to the curve signal system, fire standpipe valves, cleaning the drain lines and painting the portal walls

The SFMTA Board of Directors adopted Resolution No. 14-021 on January 21, 2014 which awarded Contract No. 1270, Sunset Tunnel Trackway Improvement Project to ProVen, in the amount of \$16,123,600 for a term of 390 days. The SFMTA issued Notice to Proceed with the work effective April 21, 2014.

In order to minimize the impacts to weekday commuter service, the work of the project was implemented over the course of numerous weekend shutdowns of the N-Line. Weekend shutdown work was scheduled from 8:00PM Friday evening to 3:30AM Monday morning, with the contractor working continuously through day and night hours. The tunnel portal areas at Duboce Park in the east and Richard Gamble Park in the west, became areas of intense and noisy construction activity.

During the course of construction, neighbors living next to the project sites expressed concern with the nighttime noise levels and submitted an appeal to the Board of Permit Appeals suspending

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ProVen's Night Noise permit. In order to avoid further delay to the project, SFMTA agreed to amend the specifications and permit requirements to include new Night Noise permit conditions including adjusting location and timing of track ballast delivery and installation, addition of mufflers and use of low-frequency back up beepers on all night time construction equipment.

Contract Modification No. 1 was authorized by the Director of Transportation on February 24, 2015 as a Unilateral Modification with no change to contract amount or duration.

This Contract Modification included revisions to the technical specifications for Construction Noise Control to include the following:

- Night Work hours were revised to extend from 10:00PM through 6:00AM.
- Contractor was to modify its procedures for removal and handling of gravel ballast by limiting ballast removal activities to the West Portal, adjust work schedule to have ballast installation work occur concurrently with East Portal activities to the extent feasible, and limit ballast delivery to day time hours between 6:00AM and 9:59PM
- Contractor to install mufflers on construction equipment used for Night Work
- Contractor shall install and utilize lower-frequency back-up beeper alarms that do not exceed 87decibels
- Contractor shall take continuous automatic noise monitoring and recordings of all night time work which shall be made available to the public upon request.
- All impact tools such as jackhammers shall be equipped with intake and exhaust mufflers and acoustically mitigating shields or shrouds.
- Contractor is to use electrical powered rather than diesel-powered construction equipment whenever possible.
- All revisions to Construction Noise specifications were also added as conditions to the Night Noise Permit issued under San Francisco Police Code Section 2908.

Contract Modification No. 2 was authorized by the Director of Transportation on May 4, 2015 as a Unilateral Modification with no change to contract amount or duration. It further revised the Contract specifications after additional negotiations with the community during the Board of Appeals process. Contract Modification No. 2 incorporated all the specification included as part of Contract Modification No.1 along with additional changes to the back-up beeper alarm specification at the request of the community. As a result, Contract Modification No.1 was voided and replaced by Contract Modification No.2.

### **Contract Modification No. 3 (Additional Work due to Unforeseen Site Conditions)**

The original scope of the contract was to remove and replace the existing traction power feeder cables and splices that were installed in existing conduits embedded within the tunnel walls. The traction power cables provide power to the Overhead Catenary system that powers Muni light rail vehicles.

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However upon field investigation prior to performing the contract work, the contractor and SFMTA construction management staff documented that the existing raceway had deteriorated to a point where at some locations, the concrete had fallen off the tunnel wall exposing the existing conduit and live feeder cables. Additionally it was evident that water intrusion into the existing raceway system had narrowed conduit openings and likely joined the existing feeder cables to the embedded conduits.

Pulling out the existing cables, and safely pulling in the new cables, would potentially damage the covering of the new cables, and it was unlikely that that the conduits and raceways would be usable after the existing cables were removed for replacement. The potential for disruption to Muni Operations, coupled with the high probability of hidden damages or unknown collapse of the existing conduits would prevent the installation of new cabling. This would then prevent SFMTA Capital Projects and Construction staff from returning the tunnel to revenue service.

Due to this differing site condition and risk to Muni operations, the SFMTA directed ProVen to perform a preliminary investigation along the tunnel radius to: (1) determine the best location for a new conduit; (2) design, furnish and install a feeder conduit system with structural supports; and (3) modify the contract fiberglass connector boxes to fit a new, ceiling mounted location.

The indirect costs and required time extension for this work are still being analyzed and will be addressed in a future Contract Modification subject to the SFMTA Board of Directors' approval.

## **STAKEHOLDER ENGAGEMENT**

Project team provided updates to SFMTA Transit Operations and Maintenance of Way staff regarding the alternate routing of the feeder cable.

### **Community Outreach:**

The urgent nature of the repairs needed in the Sunset Tunnel left little time to engage the community during the engineering design phase. However, prior to the start of the construction work, the SFMTA conducted two community meetings and made five presentations to various community groups to discuss impacts of construction and the benefits of the project. Information was shared via distribution of multilingual meeting and information notices, Customer Alerts, brochures, postings in transit vehicles, transit stations, bus shelters, and on the SFMTA website; direct mail to affected customers, residents and business owners; and emails to community based organizations (CBOs), stakeholders, advocacy groups, neighborhood groups and other interested individuals.

Based on public feedback and input, the project team worked collaboratively with the communities on making mitigation/concessions to address public concerns:

- Implemented a nighttime noise mitigation plan to address neighborhood concerns. This plan has become standard practice for the agency's track replacement projects. Noise mitigation measures included setting up a noise monitoring devices, installing mufflers on the construction equipment, using acoustically attenuating shields or shrouds on impact tools,

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using new backup alarms with lower noise levels, and using electric powered rather than diesel-powered equipment whenever possible.

- Rescheduled the construction and adjusted No-Parking restrictions to accommodate big public events, such as AIDS Walk, Dog Fest and Annual Tag Sale hosted by Friends of Duboce Park.
- In collaboration with the neighborhood group and local residents, the project extended work scope to include the lighting upgrades at Richard Gamble Memorial Park, attached to the west end of Sunset Tunnel. Understanding the need to balance the needs of people who use the park with the neighbors whose homes are close by, we chose the new lights equipped with dim pots and house-side shields which enabled us to adjust the brightness and direction of the lights, if necessary, to address any concerns raised by the neighbors.
- Conducted rodent abatements at the west end of the tunnel during weekend construction after receiving reports of sighting of rats in the neighborhood.

Through these varied and consistent outreach and public engagement methods, the project will continue to inform impacted communities of the project's long-term benefits and short-term impacts due to construction as we proceed with the contract modification scope of work.

## **ALTERNATIVES CONSIDERED**

Due to the unfeasibility of reusing the existing conduits and the potential risk to Muni operations if the existing cables remained in use, no alternative to replacing the traction power cable conduits and raceways was considered.

## **FUNDING IMPACT**

The total cost of this project is \$29,614,024. The Conceptual Engineering and Detailed Design Phase of the project were funded with Federal Transit Administration (FTA) funds, with SFMTA operating funds and SFMTA Series 2012B Revenue Bonds serving as local match. Funding for the Construction Phase are from FTA funds and SFMTA Series 2012B and Series 2013 Revenue Bonds.

Funding for this contract modification has been secured through use of existing contingency funds, with no change to overall project budget.

The budget and financial plan for this project is presented in Enclosure 3.

## **ENVIRONMENTAL REVIEW**

The Sunset Tunnel Trackway Improvement Project is subject to the California Environmental Quality Act (CEQA). CEQA provides a categorical exemption from environmental review for the restoration or rehabilitation of deteriorated or damaged structures, facilities, or mechanical equipment to meet

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current standards of public health and safety as defined in Title 14 of the California Code of Regulations Section 15301.

On October 30, 2013, the Planning Department determined (Case Number 2013.0612E) that the Sunset Tunnel Trackway Improvement Project is categorically exempt from CEQA as defined in Title 14 of the California Code of Regulations Section 15301.

A copy of the CEQA determination (Case Number 2013.0612E) is on file with the Secretary to the SFMTA Board of Directors and may be found in the records of the Planning Department at 1650 Mission Street in San Francisco, and is incorporated herein by reference.

**OTHER APPROVALS RECEIVED OR STILL REQUIRED**

The City Attorney's Office has reviewed this calendar item. No other approvals are required for this Contract Modification.

**RECOMMENDATION**

Staff recommends that the SFMTA Board of Directors authorize the Director of Transportation to execute Modification No. 3 to Contract No. 1270, Sunset Tunnel Trackway Improvement Project with ProVen Management Inc., to compensate the contractor for the direct costs of necessary additional design-build work due to differing site conditions, increasing the contract amount by \$3,142,425 for a total amount not to exceed \$19,266,025, and with no extension to the term of the contract at this time.

SAN FRANCISCO  
MUNICIPAL TRANSPORTATION AGENCY  
BOARD OF DIRECTORS

RESOLUTION No. \_\_\_\_\_

WHEREAS, On January 21, 2014, the San Francisco Municipal Transportation Agency Board of Directors adopted Resolution No. 14-021, awarding Contract No. 1270, Sunset Tunnel Trackway Improvement Project to Proven Management Inc., in the amount of \$16,123,600, for a term of 390 days, to replace N-Line trackwork and overhead lines, and provide seismic upgrades and other infrastructure improvements to the tunnel and portals; and

WHEREAS, On April 21, 2014 SFMTA issued a written notice to proceed for the work; and,

WHEREAS, The Sunset Tunnel Trackway Improvement Project is subject to the California Environmental Quality Act (CEQA); CEQA provides an exemption from environmental review for the restoration or rehabilitation of deteriorated or damaged structures, facilities, or mechanical equipment as defined in Title 14 of the California Code of Regulations Section 15301 and,

WHEREAS, On October 30, 2013, the Planning Department determined that the Sunset Tunnel Trackway Improvement Project is categorically exempt from CEQA, pursuant to Title 14 of the California Code of Regulations Section 15301; and

WHEREAS, A copy of the CEQA determination is on file with the Secretary to the SFMTA Board of Directors, and may be found in the records of the Planning Department, and are incorporated herein by reference; and,

WHEREAS, The contract required that existing traction power cable conduits and raceways be reused, but in the course of the work, the raceways, conduits and supporting hardware were discovered to be badly corroded and could not be reused or repaired; and

WHEREAS, The replacement of the traction power cable conduits and raceways is required to maintain Muni system safety and reliability; and

WHEREAS, The proposed Modification No. 3 will add the replacement of the cable conduits and supporting infrastructure to the contract scope of work as design-build work; now, therefore be it

RESOLVED, The SFMTA Board of Directors authorizes the Director of Transportation to execute Modification No. 3 to Contract No. 1270, Sunset Tunnel Trackway Improvement Project with ProVen Management Inc., to compensate the Contractor for the direct costs of necessary additional design-build work due to differing site conditions, increasing the contract amount by \$3,142,425 for a total amount not to exceed \$19,266,025, with no extension to the term of the contract at this time.

I certify that the foregoing resolution was adopted by the San Francisco Municipal Transportation



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Agency Board of Directors at its meeting of September 20, 2016.

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Secretary to the Board of Directors  
San Francisco Municipal Transportation Agency

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## CONTRACT MODIFICATION NO. 03

### San Francisco Municipal Transportation Agency Contract No. 1270 Sunset Tunnel Trackway Improvement Project

Contractor: ProVen Management  
2000 5<sup>th</sup> Street  
Berkeley, CA 94710

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The Contract is modified as follows:

1. Scope of Work:

CM-3A	<p>As Additional Work, provide labor, materials and equipment to install the feeder cable on the ceiling of the Sunset tunnel from Niche No. 002 to Niche No. 170 in lieu of installing the feeder cable through the existing conduits between the same Niches inside the sides of the tunnel, in accordance to attached conceptual drawings.</p> <p>The Additional Work includes the following:</p> <ol style="list-style-type: none"><li>1. Field investigate vertical locations along the tunnel wall for proper placement of connector boxes and conduit. Mount and measure mock up connector boxes and Review clearances with test trains and SFMTA.</li><li>2. Develop a conceptual design to provide an agreed to scope for pricing.</li><li>3. Provide preliminary structural calculations for the static and seismic loadings per the conceptual design as well as review the epoxy anchoring of new system in regards to integrity during fire.</li><li>4. Provide preliminary structural calculations, per the conceptual design to verify the raceway will withstand the downward forces encountered during cable installation.</li><li>5. Provide subsurface scanning for rebar at Unistrut and connector box anchor locations.</li><li>6. Anchor and Install stainless steel unistrut supports along the centerline of the ceiling for the feeder cable raceway conduits and connector boxes from Niche 170 to Niche 002.</li></ol>
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	<ol style="list-style-type: none"><li>7. Install 4 - 4" FRE conduits from Niche 170 to Niche 002 (approx. 17,000 LF) along the centerline of the ceiling. Three (3) are to be used for the new feeder cable and one will become a future spare.</li><li>8. Install 11 modified fiberglass connector boxes in the ceiling raceway, spaced to line up with original ground level location indicated in the contract documents</li><li>9. Design, furnish and install 2 additional feeder cable splice cabinets at niche 170 and 002 to connect the ceiling cable and raceway system to the existing manholes/cables outside of the tunnel.</li><li>10. Contractor shall perform the Additional Work during Non-Revenue hours Sunday – Tuesday for up to 21 weeks.</li><li>11. Provide Flagging/Traffic Control Support for Conduit Installation for up to 21 weeks of Non-Revenue and four full weekend shutdowns in the future prior to substantial completion of the contract when the feeder cable will pulled through the conduit and boxes</li></ol>
CM-3B	<p>Provide a credit for the deleted/modified portion of the Work as follows:</p> <ol style="list-style-type: none"><li>1. Abandon in place the existing feeder cable and splices from Niche No. 002 to Niche 170. Provide credit to offset the installation of modified work described above.</li><li>2. As the riser taps will be at the ceiling level, provide material credit for the 2" FRE conduit shown on EL-06, detail 5A. Typical of 11 locations. Material Credit to offset cost of new materials.</li></ol>

CM-3C	<p>Provide Engineering Design Services for the installation of the feeder cable system on the ceiling of the tunnel from Niche No. 002 to Niche No. 170. Develop final engineer sealed plans for the feeder conduit system to be incorporated as part of the final Contract As-Builds and as described in Biggs Associated Inc. Letter dated June 6, 2016.</p> <ol style="list-style-type: none"> <li>1) Review available record drawings of the existing tunnel structure including any test reports of the concrete material. Review design requirements including the overall project plans and specifications, conduit and junction enclosure submittals and the conceptual design.</li> <li>2) Prepare preliminary structural calculations and attachment details. Structural calculations will include the following:             <ul style="list-style-type: none"> <li>• Summary of design requirements, including summary of code requirements, strength of existing concrete, static and seismic loads, fire design and creep requirements.</li> <li>• Determine design loads and strength of anchors. This will include consideration of creep due to sustained tension loads and reduced strength due to fire.</li> <li>• Design of other “Uni-Strut” type components required for the attachment.</li> </ul> </li> <li>3) Prepare layout plans showing the extent of the conduits and attachments and locations of junction enclosures and conduit supports. These plans will be based on the contract drawings EL-02 through EL-13.</li> <li>4) Incorporate review comments and revise calculations and details.</li> <li>5) Prepare submittal package.</li> <li>6) Perform an independent in-house quality control check on the calculations and drawings.</li> <li>7) Incorporate QC check comments and SFMTA review comments. Issue a final submittal package.</li> </ol>
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2. The City will suspend revenue service in the tunnel and provide Contractor access to the tunnel to install the cables during four fifty-hour periods to be scheduled.

3. The following new Pay Items are added to the Contract:

Item	Description	Payment Type	Amount
CM-3A	Install Feeder Cable System on Ceiling of Tunnel	Lump Sum	\$3,287,271.00
CM-3B	Provide Credit For Deleted/Modified Contract Work	Lump Sum Credit	(\$163,142.00)
CM-3C	Provide Engineering Design Services	Lump Sum	\$18,296.00
Total Amount of this Contract Modification:		Increase	\$3,142,425.00
Previous Total of Contract:			\$16,123,600
New Revised Total of Contract:			\$19,266,025
Total Contract Time added by this Contract Modification:			deferred
Previous Contract Substantial Completion Date:			05/15/2015
Current Contract Substantial Completion Date:			05/15/2015

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- 4. This Modification is made in accordance with Article 6 of the Contract General Provisions.
- 5. This Modification to the Contract will be processed for direct cost only. The parties have not reached agreement as to the time impacts, if any, of the Additional Work.
- 6. Except as specifically provided herein all existing terms and conditions of the Contract remain unchanged.
- 7. Contractor acknowledges and agrees that the compensation stated herein for the Additional Work described above shall be full accord and satisfaction of all current and prospective direct costs incurred in connection with Contractor's performance of the Additional Work under this Contract Modification, without limitation, including any and all markups and overhead on the direct costs. Contractor releases the City from all claims, for which full accord and satisfaction is hereby made, as set forth above. This modification does not extend Contract Time. Contractor has not waived any claims for field and home office overhead costs associated with such extension of time. Field office overhead is defined to include: (1) the costs associated with maintaining a project office and yard; (2) the cost of the Project Manager, Superintendent, Quality Control Manager, Safety Officer, Project Engineer, Project Document Control, and Project Warehouse and Equipment Manager related to this Project; and (3) the cost associated for standby time of Specialty Equipment.

In Witness Whereof, the parties have executed this Modification in quadruplicate in San Francisco, California as of this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

**ProVen Management Inc.**

**CITY AND COUNTY OF SAN FRANCISCO  
MUNICIPAL TRANSPORTATION AGENCY**

By: \_\_\_\_\_

Dennis Huette  
Project Manager

By: \_\_\_\_\_

Edward D. Reiskin  
Director of Transportation

Authorized By:

MUNICIPAL TRANSPORTATION AGENCY  
BOARD OF DIRECTORS

Resolution No. \_\_\_\_\_

Adopted: \_\_\_\_\_

Attest:

By: \_\_\_\_\_

Secretary                      Date  
SFMTA Board of Directors

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**APPROVED AS TO FORM:**  
Dennis J. Herrera, City Attorney

By: \_\_\_\_\_  
Robert K. Stone  
Deputy City Attorney

ENCLOSURE 3  
SUNSET TUNNEL TRACKWAY IMPROVEMENT PROJECT

San Francisco Municipal Railway Contract No. 1270

## Project Budget and Financial Plan

<b>Cost</b>	<b>Amount</b>
Conceptual Engineering Phase Staff Support (SFMTA and Other Dept. Services)	\$275,544
Detail Design Phase Staff Support (SFMTA and Other Dept. Services)	1,628,480
Construction Phase Construction Contract, Contingency, and Staff Support	27,710,000
Other Agency Cost Share	0
<b>Total Cost</b>	<b>\$29,614,024</b>

<b>Funding</b>	<b>Amount</b>
FTA Fixed Guideway Formula Funds	\$19,823,550
SFMTA Series 2012B and Series 2013 Revenue Bonds	9,710,474
SFMTA Operating	80,000
<b>Total Funding</b>	<b>\$29,614,024</b>