

**THIS STAFF REPORT COVERS CALENDAR ITEM NO.: 12  
FOR THE MEETING OF: April 9, 2009**

**TRANSBAY JOINT POWERS AUTHORITY**

**BRIEF DESCRIPTION:**

Approve the updated Initial Project Report dated April 9, 2009, and a Resolution of Project Compliance for the allocation of Regional Measure 2 Funds in the Amount of \$5,000,000.

**SUMMARY:**

On March 2, 2004, voters passed Regional Measure 2 (RM-2), raising the toll on the nine State-owned toll bridges in the San Francisco Bay Area by \$1.00. RM-2 establishes the Regional Traffic Relief Plan that identifies \$150,000,000 for the Transbay Transit Center / Downtown Extension Project. To date, MTC has allocated \$138,278,000 to the project.

In accordance with the Metropolitan Transportation Commission's (MTC) adopted Policies and Procedures for implementing RM-2, the TJPA is required to submit to MTC an Initial Project Report (IPR) and a Resolution of Project Compliance to request an allocation of RM-2 funds. The IPR must be approved by the TJPA Board to be eligible for an allocation.

TJPA staff and consultants have discussed the need for RM-2 funding with MTC staff regularly throughout the past year. Through an iterative process of reviewing anticipated expenditures for upcoming engineering and design needs with the availability of various funding sources, the attached funding request (Initial Project Report or "IPR") has been developed. Funding in the identified amounts would enable the TJPA to undertake Geotechnical Shoring Wall Testing. This testing will determine the technical feasibility and effectiveness of alternate construction processes prior to finalizing the design of the soil improvements and foundation systems for the Transit Center.

The attached IPR comprises the TJPA's allocation request for RM-2 funds in the amount of \$5,000,000.

The attached IPR provides additional details regarding the scope of the request. Attachment B includes an updated Cost Test Program and Cost Scope, reflecting further refinement of the scope of work to be performed and its cost.

**Initial Project Report**

MTC's policies and procedures require that the IPR and corresponding Resolution of Project Compliance adopted by the TJPA match the allocation action taken by MTC. The IPR for the current request is based upon the most up to date cost and funding information, and reflects recent TJPA activities, including the agreed-upon funding request.

## **Implementing Agency Resolution of Project Compliance**

The required Resolution of Project Compliance indicates the TJPA's agreement to comply with the MTC's RM-2 policy guidance, that the TJPA is an eligible project sponsor and is authorized to submit an application for RM-2 funds, that the Transbay project is consistent with the Regional Transportation Plan, and provides various additional certifications and assurances. The resolution indicates that the TJPA approves the IPR which must be attached to the resolution when submitted to MTC. The TJPA counsel has reviewed the resolution and has approved it as to form, including the indemnification clause.

## **Commitment of Complementary Funds**

MTC requires evidence of the commitment of complementary funds for the phase for which an allocation of RM-2 funds is sought. In the near term, grants from SAFETEA-LU earmarks and San Francisco County Proposition K funds will serve as complementary funds to the RM-2 funds for the environmental phase of the project.

## **ENCLOSURES:**

1. RM-2 Implementing Agency Resolution of Project Compliance
2. RM-2 Initial Project Report (IPR), April 9, 2009
3. Attachment B: Revised Cost Test Program and Cost Scope

## **RECOMMENDATION:**

Approve the updated Initial Project Report dated April 9, 2009, and a Resolution of Project Compliance for the allocation of Regional Measure 2 Funds in the amount of \$5,000,000.

**TRANSBAY JOINT POWERS AUTHORITY  
BOARD OF DIRECTORS**

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

WHEREAS, SB 916 (Chapter 715, Statutes 2004), commonly referred to as Regional Measure 2 (RM2), identified projects eligible to receive funding under the Regional Traffic Relief Plan; and

WHEREAS, The Metropolitan Transportation Commission (MTC) is responsible for funding projects eligible for RM2 funds, pursuant to Streets and Highways Code Section 30914(c) and (d); and

WHEREAS, MTC has established a process whereby eligible transportation project sponsors may submit allocation requests for RM2 funding; and

WHEREAS, Allocations to MTC must be submitted consistent with procedures and conditions as outlined in RM2 Policy and Procedures; and

WHEREAS, The Transbay Joint Powers Authority (TJPA) is an eligible sponsor of transportation project(s) in RM2, Regional Traffic Relief Plan funds; and

WHEREAS, The Transbay Terminal/Caltrain Downtown Extension project (Project) is eligible for consideration in the Regional Traffic Relief Plan of RM2, as identified in California Streets and Highways Code Section 30914(c) or (d); and

WHEREAS, The RM2 allocation request attached hereto in the Initial Project Report and incorporated herein as though set forth at length, lists the project purpose, schedule, budget, expenditure and cash flow plan for which TJPA is requesting that MTC allocate RM2 funds; now, therefore, be it

RESOLVED, That the TJPA and its agents shall comply with the provisions of MTC's RM2 Policy Guidance (MTC Resolution No. 3636); and be it further

RESOLVED, That the TJPA certifies that the Project is consistent with MTC's Regional Transportation Plan (RTP); and be it further

RESOLVED, That the proposal for the year of funding for any design, right-of-way and/or construction phases of the Project has taken into consideration the time necessary to obtain environmental clearance and permitting approval for the Project; and be it further

RESOLVED, That the RM2 phase or segment identified in Attachment A, with the assistance of RM2 funding, will be fully funded and will result in an operable and useable segment or the completion of a necessary phase of the Project; and be it further

RESOLVED, That the TJPA approves the updated Initial Project Report, as set forth in Attachment A; and be it further

RESOLVED, That the TJPA approves the updated cash flow plan as set forth in Attachment A; and be it further

RESOLVED, That the TJPA has reviewed the Project needs and has adequate staffing resources to deliver and complete the Project within the schedule set forth in Attachment A; and be it further

RESOLVED, That the TJPA is an eligible sponsor of projects in the RM2 Regional Traffic Relief Plan, Capital Program, in accordance with California Streets and Highways Code 30914(c); and be it further

RESOLVED, That the TJPA is authorized to submit an application for RM2 funds for the Project in accordance with California Streets and Highways Code 30914(c); and be it further

RESOLVED, That the TJPA certifies that the Project and purpose for which RM2 funds are being requested is in compliance with the requirements of the California Environmental Quality Act (Public Resources Code Section 21000 et. seq.), and with the State Environmental Impact Review Guidelines (14 California Code of Regulations Section 15000 et seq.) and the National Environmental Policy Act (NEPA), 42 USC Section 4-1 et. seq. and the applicable regulations thereunder; and be it further

RESOLVED, That there is no legal impediment to the TJPA making the allocation requests for RM2 funds identified in Attachment A; and be it further

RESOLVED, That there is no pending or threatened litigation which might in any way adversely affect the Project, or the ability of the TJPA to deliver such Project; and be it further

RESOLVED, That the TJPA shall indemnify and hold harmless MTC, its Commissioners, representatives, agents, and employees from and against all claims, injury, suits, demands, liability, losses, damages, and expenses, whether direct or indirect (including any and all costs and expenses in connection therewith), incurred by reason of any act or failure to act of the TJPA, its officers, employees or agents, or subcontractors or any of them in connection with its performance of services under this allocation of RM2 funds. In addition to any other remedy authorized by law, so much of the funding due under this allocation of RM2 funds as shall reasonably be considered necessary by MTC may be retained until disposition has been made of any claim for damages; and be it further

RESOLVED, That if the TJPA receives any revenues or profits from any non-governmental use of property (or project), then those revenues or profits shall be used exclusively for the public transportation services for which the project was initially approved, either for capital improvements or maintenance and operational costs, otherwise MTC is entitled to a proportionate share equal to MTC's percentage participation in the project(s); and be it further

RESOLVED, That assets purchased with RM2 funds including facilities and equipment shall be used to support the public transportation uses intended, and should said facilities and equipment cease to be operated or maintained for their intended public transportation purposes for its useful life, that the MTC shall be entitled to a present day value refund or credit (at MTC's option) based on MTC's share of the fair market value of the said facilities and equipment at the

time the public transportation uses ceased, which shall be paid back to MTC in the same proportion that RM2 funds were originally used; and be it further

RESOLVED, That the TJPA shall post on both ends of the construction site(s) at least two signs visible to the public stating that the Project is funded with RM2 Toll Revenues; and be it further

RESOLVED, That the TJPA authorizes its Executive Director, or her designee, to execute and submit an allocation request for a portion of the Geotechnical Shoring Wall Testing with MTC for RM2 funds in the amount of \$5,000,000, for the project, purposes and amounts included in the project application as identified in Attachment A; and be it further

RESOLVED, That the Executive Director is hereby delegated the authority to make non-substantive changes or minor amendments to the Initial Project Report as she deems appropriate; and be it further

RESOLVED, That a copy of this resolution shall be transmitted to MTC in conjunction with the filing of the Transbay Joint Powers Authority application referenced herein.

I hereby certify that the foregoing resolution was adopted by the Transbay Joint Powers Authority Board of Directors at its meeting of April 9, 2009.

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Secretary, Transbay Joint Powers Authority

**Regional Measure 2 – INITIAL PROJECT REPORT**

# Regional Measure 2 Initial Project Report (IPR)

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**Project Title:**

Transbay Transit Center / Downtown Caltrain Extension

**RM2 Project No.**

22

**Allocation History:**

	<b>MTC Approval Date</b>	<b>Amount</b>	<b>Phase</b>
<b>#1:</b>	Sep 2004	\$15,495,000	ENV
<b>#2</b>	Nov 2004	\$16,125,000	ROW
<b>#3</b>	Oct 2005	\$12,875,000	ROW
<b>#4</b>	May 2006	\$2,735,000	ENV
<b>#5</b>	Feb 2007	\$4,730,000	ENV
<b>#6</b>	Sept 2007	\$1,319,000	PS&E
<b>#7</b>	Jan 2008	\$4,554,000 \$23,745,000	ENV ROW
<b>#8</b>	March 2008	\$11,400,000	PS&E
<b>#9</b>	May 2008	\$21,800,000	ENV
<b>#10</b>	September 2009	\$23,500,000	CON

**Total: \$138,278,000**

**Current Allocation Request:**

<b>IPR Revision Date</b>	<b>Amount Being Requested</b>	<b>Phase Requested</b>
April 9, 2009	\$5,000,000	ENV

## **Regional Measure 2 – INITIAL PROJECT REPORT**

### **I. OVERALL PROJECT INFORMATION**

#### **A. Project Sponsor / Co-sponsor(s) / Implementing Agency**

Transbay Joint Powers Authority (TJPA), responsible for all phases of project

#### **B. Project Purpose**

The Transbay Transit Center in San Francisco will incorporate improved regional bus service, extend Caltrain to downtown, incorporate future high-speed rail, and link all corners of the Bay Area as well as major West Coast cities to downtown San Francisco. The principal goals of the Project are to provide a multi-modal transit facility that meets future transit needs and is compliant with the Americans with Disabilities Act (ADA) and seismic regulations, to improve public access to bus and rail services, to modernize the Transbay Terminal and improve service, to reduce non-transit vehicle usage, and to alleviate blight and revitalize the Transbay Terminal area. When the new Transit Center is complete, it will serve 8 northern California counties and accommodate San Francisco, East Bay, Marin and San Mateo County buses as well as Greyhound, Caltrain, and future high-speed rail.

The scope of the project is anticipated to generate at least 125,000 trips per day which will be supported by a dynamic mixed-use neighborhood. The development plan intends to provide a pedestrian environment with services, restaurants, entertainment and retail for use primarily by financial district workers, commuters, and local residents. In addition to the Transit Center, a landmark Transit Tower with a mix of uses is planned.

#### **C. Project Description (please provide details)**

##### **Project Graphics to be sent electronically with This Application**

The Transbay Transit Center / Downtown Caltrain Extension Project, or the "Project," consists of three major components: a new, multi-modal Transbay Transit Center on the site of the present Transbay Terminal; the extension of Caltrain commuter rail service from its current San Francisco terminus at Fourth and King Streets to a new underground terminus underneath a new Transbay Transit Center; and the establishment of a Redevelopment Area with related development projects, including transit-oriented development on publicly owned land in the vicinity of the new multi-modal Transbay Terminal.

Other components of the project include a temporary bus terminal facility to be used during construction of the new Transbay Transit Center; a new, permanent off-site bus storage/layover facility; reconstructed bus ramps leading to the new Transbay Transit Center; and a redesigned Caltrain storage yard.

The present Transbay Terminal, which was opened in 1939, does not meet current seismic safety, Americans with Disabilities Act, or building code or space utilization standards. In 1999, San Francisco voters resolved that Caltrain should be extended to the Transbay Terminal site. The need to modernize the Transbay Terminal and public desire to extend Caltrain to downtown San Francisco provide an opportunity to enhance regional transit connectivity, increase transit ridership, and revitalize the surrounding area.

The Project provides the following public benefits: improved access to rail and bus services; improved Caltrain service by providing direct access to downtown San Francisco; enhanced connectivity between Caltrain and other major transit providers; modernization of the Transbay Transit Center that meets future transit needs; reduced non-transit vehicle use; accommodation of projected growth in travel demand in the San Jose - San Francisco corridor; reduced traffic congestion on US Highway 101 and I-280 between San Jose and San Francisco and other routes; reduced vehicle hours of delay on major freeways in the

## **Regional Measure 2 – INITIAL PROJECT REPORT**

Peninsula corridor; improved regional air quality by reduced auto emissions; direct access to downtown San Francisco for future intercity and/or high-speed rail service; alleviation of blight and revitalization of the Transbay Terminal Area; construction of up to 4,700 new housing units (full build), one-third of which would be affordable; facilitation of transit use by developing housing next to a major transit hub; enhanced access to employment, retail, and entertainment opportunities; and support of local economic development goals.

The Project is included in MTC's Resolution 3434 (the Regional Transit Expansion Program), the RTP, MTC's 2000 Blueprint, the San Francisco Countywide Transportation Plan, the San Francisco Countywide Congestion Management Plan, the New Transportation Expenditure Plan for San Francisco, the Expenditure Plan for Regional Measure 2, the Transbay Redevelopment Project Area Design for Development, and ABAG's designated list of FOCUS Priority Development Areas (PDAs). All of these plans included extensive public outreach regarding the inclusion of and prioritization of projects.

Based upon the TJPA Board's adopted implementation plan, the Project is divided into two phases: the design and construction of the Transit Center Building and Rail Foundations as Phase 1; and the design and construction of the Caltrain Downtown Extension (DTX) as Phase 2. Phase 1 (Transbay Transit Center Building and Rail Foundations) is fully funded with committed revenues, and has completed major milestones. Phase 2 (DTX) final design and construction will commence when the required revenues and financing have been secured.

### **D. Impediments to Project Completion**

The program schedule will require coordination with the ongoing Caltrans West Approach (I-80) Retrofit project. Schedule coordination will focus on sequencing of construction activities and property transfer. Additionally, right of way activities need to be coordinated with the construction schedule to ensure timely availability of right of way.

A funding need for Phase 2 (DTX) of approximately \$2.0 billion in Year of Expenditure dollars exists. This is based upon a Baseline Budget for Phase 2 which was approved by the TJPA Board in March 2008. TJPA will continue working with its funding partners and member agencies to secure full funding for the project.

### **E. Operability**

The Project would result in two separate operations and maintenance components: the Transbay Transit Center Building and the Caltrain Downtown Extension. Both are independently self-sufficient.

*Phase 1: Transbay Transit Center Building and Rail Foundations:* The new Transbay Transit Center Building design includes features to reduce maintenance requirements and operating costs, including an open design to optimize natural ventilation by prevailing winds and maximize natural light, and a system to collect rainwater for maintenance and irrigation. In addition, the building plans include significant leaseable space in a prime real estate market. A preliminary analysis of the operating costs and revenues from the Transbay Transit Center Building has been completed. The analysis is the primary reference document for the operations and maintenance portion of the Lease and Use Agreement with AC Transit. The building foundation systems will be designed and constructed to allow for Caltrain and High Speed Rail operations.

*Phase 2: Caltrain Downtown Extension:* As noted in the Final EIS/EIR, moving the Caltrain San Francisco terminal 1.3 miles from Fourth and King to the Transbay Terminal would have a modest effect

## **Regional Measure 2 – INITIAL PROJECT REPORT**

on the total annual operating costs of Caltrain service. However, the extension would generate new ridership for Caltrain.

The downtown extension would increase annual Caltrain ridership by 13,500 riders in year 2020, as discussed in the Final EIS/EIR. By applying the current average Caltrain fare of \$2.76, the extension is projected to generate more than \$9 million (2003 dollars) in new fare revenue each year. The annual operating costs for the 1.3-mile extension would total approximately \$7.5 million in 2003 dollars, based on Caltrain's current hourly operating cost. The use of the excess revenues generated by the extension are to be determined by Caltrain.

### **II. PROJECT PHASE DESCRIPTION and STATUS**

#### **F. Environmental –**

Does NEPA Apply:  Yes  No

The San Francisco Planning Department, the Peninsula Corridor Joint Powers Board, and the San Francisco Redevelopment Agency certified the Transbay Terminal / Caltrain Downtown Extension / Redevelopment Project EIS/EIR under CEQA on April 22, 2004. The San Francisco Board of Supervisors unanimously upheld certification on June 16, 2004. FTA issued a Record of Decision to complete the NEPA process on February 8, 2005. The Transbay Joint Powers Authority is the Public Agency Project Sponsor and Responsible Agency under the California Environmental Quality Act, California Public Resources Code Sections 21000 et seq.

#### **G. Design –**

The design of the Program is currently in the Preliminary Engineering phase. However, the design of the Early Works components of the Program (including the Temporary Terminal, Bus Storage facility, and Utility Relocation) are in Final Design.

The TJPA has contracted with a Program Management / Program Controls team to provide assistance with the design and oversight of the Program. This work is ongoing.

Based on cost information updated from the environmental review process, the TJPA Board of Directors adopted an implementation strategy for the Refined LPA in June 2006, which includes two phases for the program: the Transit Center building and rail foundation as Phase 1, and the Downtown Extension as Phase 2.

Preliminary Engineering work for Phase 2 (DTX) is underway. The baseline budget was adopted in March 2008. A Notice to Proceed for the second part of preliminary engineering for Phase 2 was issued in June 2008.

On September 20, 2007, the TJPA Board selected Pelli Clarke Pelli Architects and Hines to design and develop the new landmark Transbay Transit Center and Transit Tower. The Board's unanimous vote culminated an eight-month international Design and Development Competition that was launched to select an outstanding, functional and economically viable design for a transportation centerpiece that will become the Grand Central of the West. The TJPA has entered into exclusive negotiations with Hines for development of the office tower. On May 15, 2008, the TJPA Board approved an agreement with Pelli Clarke Pelli Architects for professional design and construction administration services for the Transit Center Building and Related Structures.

## Regional Measure 2 – INITIAL PROJECT REPORT

### **H. Right-of-Way Activities / Acquisition –**

All private properties required for the temporary terminal have been acquired, as of June 4, 2008. All occupants will be moved out by October 31, 2008. Associated Caltrans parcels are scheduled to be transferred by November 1, 2008. Other Phase 1 Right of Way acquisitions are scheduled for completion in 2010.

In May 2003, the California Department of Transportation proposed to transfer approximately 20 acres of property, including the existing Transbay Terminal building, to the City & County of San Francisco and to the TJPA. The San Francisco Board of Supervisors, Mayor of San Francisco and the TJPA Board executed the Cooperative Agreement setting forth the terms for the transfer. In December 2007, the California Transportation Commission approved the transfer of the State land parcels to the TJPA, City of San Francisco, and San Francisco Redevelopment Agency.

### **I. Construction / Vehicle Acquisition -**

A NTP for Construction of Temporary Terminal was issued in November 2008. Construction of the Transit Center Building and Rail Foundations is anticipated to commence in Spring 2010. Construction of Phase 2 (DTX) will commence when full funding for Phase 2 has been identified.

The Authority currently anticipates that the Program will be divided and packaged as follows:

- The terminal building and associated bus viaducts will be designed by an Architectural/Engineering consultant and constructed under one or more competitively bid construction contracts.
- The two bus facilities (temporary and permanent) will be designed by separate engineering groups and constructed under separate competitively bid construction contracts.
- The rail tunnel and cut-and-cover section between the proposed Fourth Street Station and the Transbay Terminal will be carried through the preliminary engineering phase by a separate Engineering Consultant who will produce a set(s) of contract documents covering the remainder of the design work of the tunnel and cut-and-cover section as well as its construction, testing and startup.
- The proposed Fourth Street Station as well as the cut-and-cover and surface sections leading southwesterly from the Fourth Street Station to a proposed connection with existing trackage in the vicinity of 16<sup>th</sup> Street and major modifications to the existing surface station at Fourth and Townsend will be entirely designed by the Engineering Consultant and constructed under one or more competitively bid construction contracts.

## III. PROJECT BUDGET

### **J. Project Budget (Escalated to year of expenditure)**

<b>Phase</b>	<b>Total Amount - Escalated - (Thousands)</b>
Environmental Studies & Preliminary Eng (ENV / PE / PA&ED)	\$191,093
Design - Plans, Specifications and Estimates (PS&E)	\$214,374

**Regional Measure 2 – INITIAL PROJECT REPORT**

Right-of-Way Activities /Acquisition (R/W)	\$254,245
Construction / Rolling Stock Acquisition (CON)	\$3,525,288
Total Project Budget (in thousands)	\$4,185,000

**K. Project Budget** (De-escalated to current year)

<b>Phase</b>	<b>Total Amount - De-escalated - (Thousands, FY2006 \$s)</b>
Environmental Studies & Preliminary Eng (ENV / PE / PA&ED)	\$189,707
Design - Plans, Specifications and Estimates (PS&E)	\$196,442
Right-of-Way Activities /Acquisition (R/W)	\$241,770
Construction / Rolling Stock Acquisition (CON)	\$2,802,612
Total Project Budget (in thousands)	\$3,430,531

**IV. OVERALL PROJECT SCHEDULE**

<b>Phase-Milestone</b>	<b>Planned (Update as needed)</b>	
	Start Date	Completion Date
Environmental Document	August 2000	February 2005
Environmental Studies, Preliminary Eng. (ENV / PE / PA&ED)	August 2000	May 2009
Final Design - Plans, Specs. & Estimates (PS&E)	July 2007	June 2012
Right-of-Way Activities /Acquisition (R/W)	November 2005	March 2010
Construction (Begin – Open for Use) / Acquisition / Operating Service (CON)	November 2008	December 2019

**V. ALLOCATION REQUEST INFORMATION**

**L. Detailed Description of Allocation Request**

The allocation request for RM-2 funds includes:

- Geotechnical Shoring Wall Testing

The TJPA proposes to conduct a series of tests to determine the technical feasibility and effectiveness of alternate construction processes prior to finalizing the design of the soil improvements and foundation systems for the Transit Center. These tests will inform the design and specifications of the soil improvements to support adjacent properties and the shoring wall that will form the perimeter of the Transit Center foundation system. By testing the technology prior to bidding the work and making the results of those tests available to prospective bidders, the TJPA seeks to

- Mitigate the risks perceived by the bidders, resulting in lower bid prices and potentially inducing additional bidders to participate;
- Ensure that the technology employed protects adjoining properties; and
- Avoid delays, rework and claims that might arise from a low bidder who is employing an ineffective technology for the site.

## Regional Measure 2 – INITIAL PROJECT REPORT

Additional details regarding the scope of services to be provided under this allocation are included as an attachment.

Amount being requested (in escalated dollars)	\$5,000,000
Project Phase being requested	ENV
Are there other fund sources involved in this phase?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Date of anticipated Implementing Agency Board approval the RM2 IPR Resolution for the allocation being requested	April 9, 2009
Month/year being requested for MTC Commission approval of allocation	April 2009

### **M. Status of Previous Allocations (if any)**

Allocation 1: Preliminary Engineering work funded with this allocation is nearing completion.

Allocations 2& 3: Previous ROW allocations have been expended to preserve Right of Way for Transit Center Building and Downtown Extension.

Allocation 4: Preliminary Engineering work and Programwide tasks funded with this allocation are nearing completion.

Allocations 5 & 6: Preliminary Engineering and Final Design work funded with these allocations are underway.

Allocation 7: Preliminary Design and Program Management/Program Controls funded by this allocation is underway. Two ROW acquisitions funded with this allocation have closed, and others are planned throughout the year.

Allocation 8: Preliminary Engineering and Final Design work funded with this allocation are underway.

Allocation 9: Preliminary Engineering associated with this allocation is underway.

Allocation 10: Construction of Temporary Terminal commenced in November 2008 and is underway.

### **N. Workplan**

**Workplan in Alternate Format Enclosed**

### **O. Impediments to Allocation Implementation**

No impediments have been identified.

## **VI. RM-2 FUNDING INFORMATION**

### **P. RM-2 Funding Expenditures for funds being allocated**

**The companion Microsoft Excel Project Funding Spreadsheet to this IPR is included**

## Regional Measure 2 – INITIAL PROJECT REPORT

### **Next Anticipated RM-2 Funding Allocation Request**

- Premium payment for Performance and Payment Bond; Project Management/Program Consultant support for FY2010

### **VII. GOVERNING BOARD ACTION**

**Check the box that applies:**

**Governing Board Resolution attached**

**Governing Board Resolution to be provided on or before: April 9, 2009**

### **VIII. CONTACT / PREPARATION INFORMATION**

#### **Contact for Applicant's Agency**

Name: Maria Ayerdi-Kaplan  
Phone: (415) 597-4620  
Title: Executive Director  
E-mail: MAyerdi-Kaplan@TransbayCenter.org  
Address: 201 Mission Street, Suite 2100  
San Francisco, CA 94105

#### **Information on Person Preparing IPR**

Name: Nancy Whelan  
Phone: (415) 896-6945  
Title: Principal, Nancy Whelan Consulting  
E-mail: Nancy@nwc01.com  
Address: 221 Main Street, Suite 420  
San Francisco, CA 94105

#### **Applicant Agency's Accounting Contact**

Name: Sara Gigliotti  
Phone: (415) 597-4039  
Title: Contracts Compliance Manager/Finance Coordinator  
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Address: 201 Mission Street, Suite 2100  
San Francisco, CA 94105

Revised IPR 120905.doc

**RM-2 Initial Project Report**

**TOTAL PROJECT FUNDING PLAN**

DRAFT

(Amounts Escalated in Thousands)

Project Title: Transbay Transit Center / Caltrain Downtown Extension Program															Project ID: 22
Agency: Transbay Joint Powers Authority															Date: 4/3/2009
<b>TOTAL PROJECT: COMMITTED + UNCOMMITTED+ TO BE DETERMINED</b>															
Fund Source	Phase	Prior	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	Future	TOTAL
<b>COMMITTED FUNDING PLAN (PROGRAMMED, ALLOCATED, APPROVED FUNDING)</b>															
FTA Section 1601	ENV / PA&ED	681	4,366	2,495	1,254										8,796
RM-1	ENV / PA&ED	994	166	240											1,400
Other Local	ENV / PA&ED	799													799
RM-2	ENV / PA&ED		11,801	2,323	8,836	26,354	5,000								54,314
SF Prop K	ENV / PA&ED		4,242	2,374	11,938	5,104	32,126	8,374							64,158
San Mateo Sales Tax	ENV / PA&ED			125	7,155										7,280
SAFETEA-LU Earmark	ENV / PA&ED			6,650				208	1,723	416	237	687			9,921
RTIP	ENV / PA&ED					4,000									4,000
SF Prop K	PS&E								13,390						13,390
RM-2	PS&E					12,719									12,719
SAFETEA-LU Earmark	PS&E						7,505	19,906	15,627	842					43,880
RM-2	ROW			29,000		23,745			57						52,802
SF Prop K	ROW			29,000		23,771									52,771
San Mateo Sales Tax	ROW						22,385								22,385
RTIP	ROW				3,391										3,391
RM-1	CON						5,122	22,359	25,519						53,000
RM-2	CON						30,165								30,165
AB 1171	CON								4,265	87,770	35,356	22,609			150,000
AC Transit Capital Cont.	CON								16,119	8,676	8,472	5,279			38,546
SF Prop K	CON						12,300	5,526							17,826
Lease Proceeds, TDR	CON												6,778		6,778
TIFIA Loan Proceeds	CON										62,469	109,216			171,685
<b>UNCOMMITTED FUNDING PLAN (NON-PROGRAMMED/ALLOCATED, BUT PLANNED FUNDING)</b>															
RTIP	CON								15,990	4,960					20,950
Land Sales	CON							102,931	208,292	117,306			72,084	351,670	852,283
TIFIA Loan Proceeds	CON													445,000	445,000
<b>FUNDING SOURCE STILL TO BE DETERMINED (LIST POTENTIAL SOURCES THAT WILL LIKELY BE PURSUED)</b>															
TBD	PS&E								23,500	30,287	5,294				59,081
TBD	ROW						49,215	70,500	37,017						156,732
TBD	CON								61,696	264,706	640,000	583,916	280,577		1,830,895
<b>TOTAL PROJECT: COMMITTED + UNCOMMITTED + TBD FUNDING TOTAL</b>															
		Prior	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	Future	TOTAL
		2,474	20,575	65,317	39,464	95,693	114,603	208,519	394,982	348,970	376,534	784,569	656,000	1,077,247	4,184,947

Comments:

Costs based on draft Baseline Budget March 2008.  
Financial Plan based on commitment schedule.

Enter all funding for the project - both Committed and Uncommitted. Enter amounts in thousands and escalated to the year of funding.  
Eligible Phases: ENV (or PA&ED), PS&E, RW or CON. For planning activities use ENV. For Vehicles, Equipment or Operating use CON. OK to use CT R/W SUP or CT CON SUP for Caltrans support, but not necessary (optional).



**RM-2 Initial Project Report**

**EXPENDITURES TO-DATE BY PHASE AND FUND SOURCES**

Phase	Fund Source	Date of Last Expenditure	Amount Expended to date (Thousands)	Available Balance Remaining (Thousands)
ENV / PA&ED	RM-2	Feb-09	33,800	15,514
	SF Prop K Sales Tax	Apr-08	28,840	35,318
	San Mateo Meas. A Sales Tax	Feb-08	7,277	3
	Federal Earmarks	Jun-08	18,677	14,027
	RM-1 (Local Match)	Oct-06	1,400	0
	Lease Income, Other	Sep-07	1,121	4,504
	In Kind Contribution	FY 2005	799	(0)
PS&E	RM-2	Feb-09	1,606	11,113
	STIP	Feb-09	90	3,910
R/W	RM-2	Feb-09	43,187	9,558
	SF Prop K Sales Tax	Feb-09	39,186	13,585
	STIP	Jan-08	3,391	0
	Lease Income, Other	Feb-08	38	0
CON / Operating	RM-2	Feb-09	2,961	20,539
	SF Prop K Sales Tax			12,300
Total to date (in thousands)			182,374	140,369

Comments:

Lease Income, Other funds shown in Available Balance Remaining held in reserve funds based on TJPA Board policy. At this time, Programwide funding is considered part of PA&ED.

As required by RM-2 Legislation, provide funds expended to date for the total project. Provide both expenditure by Fund Source and Expenditure by Phase, with the date of the last expenditure, and any available balance remaining to be expended.

Project ID: 22  
Date: 4/3/2009

**RM-2 Initial Project Report**

**RM-2 FUNDING CASH FLOW PLAN For Allocation  
(RM-2 Allocation Funding Only)**

(Amounts Escalated in Thousands)

Project Title: Transbay Transit Center / Caltrain Downtown Extension Program											Project ID: <b>22</b>			
Agency: Transbay Joint Powers Authority											Plan Date: 04/03/09			
<b>RM-2 CASH FLOW PLAN</b>														
<b>RM-2 Expenditures</b>														
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	Future	TOTAL	
ENV/PA&ED	11,801	2,323	8,836	26,354	5,000								54,314	
PS&E				12,719									12,719	
R/W		29,000		23,745			57						52,802	
CON					30,165								30,165	
<b>RM-2 CASH FLOW PLAN TOTAL</b>														
	Prior	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	Future	TOTAL
		11,801	31,323	8,836	62,818	35,165		57						150,000

Comments:

Costs based on Draft Detailed Financial Plan Baseline Budget Phase 1, November 2007.  
Financial Plan based on commitment schedule.

Provide the expected RM-2 expenditures – by phase and year. (This is the amount of the allocation needed for that fiscal year to cover expenditures through June 30th of that fiscal year).

Enter RM-2 amounts in thousands and escalated to the year of funding. The total amount cannot exceed the amount identified in the RM-2 legislation.

Eligible Phases: ENV (or PA&ED), PS&E, R/W or CON. For planning activities use ENV. For Vehicles, Equipment or Operating use CON. OK to use CT R/W SUP or CT CON SUP for Caltrans support, but not necessary (optional).

# Transbay Transit Center Program

## Geotechnical Shoring Wall Testing Scope of Work

### Proposed Geotechnical Tests

The TJPA is proposing to conduct a series of tests to determine the technical feasibility and effectiveness of alternate construction processes prior to finalizing the design of the soil improvements and foundation systems for the Transit Center. The tests would be performed under the design contract with Pelli-Clarke-Pelli Architects (PCPA) and would be coordinated and supervised by the geotechnical sub-consultant ARUP.

Attached are excerpts from a more lengthy report prepared by the geotechnical sub-consultant that describe briefly the geological conditions and the types of tests being considered. The full report is available upon request. The preliminary cost estimate for the full scope of testing and associated analysis described in the report was in excess of \$10 million. After meeting with the geotechnical engineer and reviewing the entire testing scope, a reduced testing scope was developed and a detailed cost estimate for the revised scope is being prepared, but the final cost will be within \$5 million requested for this purpose. Also attached is a preliminary schedule for the installation of the tests from the proposal. With the reduced scope of testing, we will be able to complete the testing within the time allotted in the schedule.

These tests will inform the design and specifications of the soil improvements to support adjacent properties and the shoring wall that will form the perimeter of the Transit Center foundation system. Both of these scopes are included in the Transit Center's baseline budget of \$1.189 billion. Geotechnical and structural analysis during the design process has shown that the cost of the soil improvements will exceed the amount budgeted for that line item, and will need to be supplemented by funds from the program reserve and unallocated contingency, which are part of the \$1.189 billion baseline budget.

### Soil Improvements

The Transit Center site is closely bordered by several large buildings, most notably the recently constructed 60 story, 605 foot tall "Millennium Tower" at 301 Mission Street. The Millennium Tower, like most of the buildings in the vicinity is founded on a layer of Colma Sand that varies in thickness and elevation between the elevations of -25 and -75 across the Transit Center site. To avoid undermining the foundations of these buildings during the construction of the Transit Center, the TJPA will need to improve the soils beneath the Transit Center site.

The TJPA proposes to construct test shafts that have been identified as the preferred means of stabilizing the soil. The tests will assess the propensity of the shaft construction to destabilize the soil in the vicinity of construction and the ability of the shafts to resist the forces that might displace soils beneath adjoining properties during excavation and induce undesirable settlement. While shafts of the type proposed have been constructed to the depths proposed in various circumstances around the world, the geological conditions at the Transit Center site – particularly the great depth of clay without intervening layers of stabilizing materials – present unique challenges.

The results of the test shaft construction will determine whether the drilled shafts are ultimately used for the soil stabilization or whether the TJPA will need to switch to an alternate, more time consuming and potentially more expensive method. The tests may also allow the TJPA to reduce the scope and costs of the soil improvements.

The construction of the test shafts could be deferred until the construction phase, but, because the act of constructing the shafts has the potential to induce unacceptable settlement, we would construct test shafts as proposed in a location that would not affect adjoining properties if the levels of settlement prove to be unacceptable. The cost of constructing the test shafts is therefore not an avoidable cost.

If we deferred the construction of the test shafts until the construction phase, however, and they proved to induce unacceptable levels of settlement, it would require a redesign of the soil improvements at a significant additional cost and delay to the program. The construction of the test shafts at this time mitigates the risk of future change costs and delays and may reduce the extent and cost specified for construction.

### Shoring Walls

There are several technologies that may be employed to construct the shoring walls. All of these technologies would mix cement with the existing soils in situ to form the shoring wall. One of these technologies appears to have significant productivity, cost and performance advantages over the others. The potential obstacle to the implementation of each of these technologies is the clay material that underlies the soils at the Transit Center site. The shoring wall construction technologies perform well in most geological conditions, but penetrating the dense clay material and successfully mixing it with cement will be a challenge for all of the technologies, and appears to be most challenging for the technology that also has the greatest potential.

These tests will provide valuable information on the capabilities and productivity of the most promising technologies. By testing the technology prior to bidding the work and making the results of those tests available to prospective bidders, the TJPA hopes to:

- Mitigate the risk perceived by the bidders resulting in lower bid prices and potentially inducing additional bidders to participate who might otherwise choose to not bid on the construction because of the perceived risks;
- Ensure that the technology employed protects adjoining properties; and
- Avoid the delays, rework and claims that might arise from a low bidder who is employing an ineffective technology for this site.

### Risk Mitigation

Because many of these tests will be required in the construction phase if not conducted at this time, even a nominal reduction in the ultimate construction costs will make these tests cost neutral to the program, and the potential to achieve savings in the construction bid prices is significant. Although the tests have the potential to reduce the construction cost of the soil improvements and shoring walls, the

greatest advantage of conducting the tests at this time is to mitigate cost and schedule risks to the program. The changes, delays, and disputes that could arise if the contractor moves into construction employing inappropriate or ineffective means would result in program cost increases that could easily mount into the tens of millions of dollars and extend the duration of construction by 6-18 months. Because the soil improvements and foundation systems will be the first elements of construction, delays in completing that work will affect not only its cost, but could impact the cost of later construction trade packages.

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# WORK PLAN PROTOTYPE FIELD TEST SHORING AND BUTTRESS SYSTEM TRANSBAY TRANSIT CENTER

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## 1.0 INTRODUCTION

The Transbay Transit Center (TTC) involves construction of the above-grade terminal structure and a deep train box to serve as the High-Speed Rail (HSR) terminus. Initially, the project was anticipated to be constructed in two phases. The first phase would include the superstructure, the shoring walls for the subsequent construction of the train box during Phase II, and a buttress that would be constructed as a precautionary measure to protect the 301 Mission tower from the likely effects of excavation-induced ground movements during construction of the train box. There will be only a nominal excavation 10 feet or less in depth that would serve as a starting point for the Phase II excavations. Phase II would involve completion of the excavations and construction of the train box at a later time during construction of the DTX.

The excavations for the train box were expected to range between 50 feet at the east end and 60 feet at the west end. The differences in excavation depths at the two ends of the terminal arise because of differences in ground surface elevations, which vary between +13 feet (NAVD 88 Datum) at the east end and +22 feet at the west end. The below-grade structure includes a mezzanine level and the train level below. The anticipated excavation subgrade elevation was at -37 feet.

As part of the concept validation and schematic design studies, an alternative to the two-phase construction plan was evaluated that would involve construction of the train box as part of the construction of the terminal. This option would result in significant overall savings by eliminating the need for deep drilled pier foundations that would otherwise be necessary to support the terminal until construction of the train box was completed.

In addition, various alternative technologies were considered for the construction of the shoring walls and the buttress for protecting the 301 Mission Street building. Discussions with various contractors, who specialize in technologies for the construction of the shoring system and the buttress, identified a number of unique characteristics of the TTC site, including the following:

- 1) The shoring wall will have to be constructed through a very dense sand layer, known locally as Colma Sand, to extend into an underlying very stiff clay layer, known as Old Bay Clay, to create a cut-off against underseepage into the excavation. Advancing the shoring wall through the Colma Sand layer may present difficulties or might slow down the construction of the wall for some of the methods, which would result in higher cost and longer construction time.

- 2) The Old Bay Clay (OBC) layer is very thick, extending from the bottom of the Colma Sand to the top of the underlying Franciscan rock. The upper 5 to 10 feet of the OBC is harder than the rest of the layer because of desiccation. This upper portion of the OBC is referred to as the desiccated crust layer. Some of the specialized methods that are available for construction of the shoring wall may have difficulty penetrating even a nominal distance into this layer, which may impact schedule and costs.
- 3) Preliminary assessments based on the above considerations led to the conclusion that the buttress which is intended to protect the 301 Mission tower may have to extend through the OBC layer to be keyed into the underlying Franciscan rock, to depths of 200 feet or more. There is very little precedent for the use of the available specialized technologies for ground treatment to such great depths.

The discussions with the specialist contractors point out the risks associated with constructability, schedule, and cost. Even if all of the methods could achieve the intended results for constructing the shoring wall and the buttress, not all of them would be equally effective or efficient, or even economically feasible.

In order to evaluate the effectiveness and efficiency of the available specialized construction methods, it was concluded that a full-scale prototype test would provide useful information in terms of the quality of the shoring wall and buttress, and production rates that relate directly to schedule and costs for the construction of the shoring wall and buttress.

With the consent of the TJPA and the design team, Arup engaged in a series of discussions with specialist contractors with the intent of collecting information on construction processes, constructability issues, schedule, and costs for performing a full-scale test within the limits of the existing site of the TTC project. This work plan describes the methods being considered, the scope of the field testing program, and the estimated costs and schedule.

### 3.0 PURPOSE AND SCOPE OF THE TEST PROGRAM

The objective of the prototype field test is to evaluate the technical feasibility and effectiveness of three different technological processes that are being considered for the construction of continuous, relatively impervious, shoring walls, and for ground modification to construct one or more buttresses to protect adjacent buildings that could be impacted by the planned excavations for the construction of the underground train box for the Transbay Transit Center project. The objective is to obtain information from full-scale construction processes that are likely to be involved in the construction of the shoring wall and the buttress that is planned to be constructed to protect the existing 301 Mission Street 60-story tower. The information of interest includes:

- Quality of the shoring wall in terms of integrity, permeability, strength, and continuity;
- Maximum depth of penetration that each of the different processes can achieve;
- Production rates under prototype conditions at the TTC site;
- Likely construction costs; and
- Potential impacts of settlements and lateral deformations that could develop during application of these processes.

The scope of the program and the methods that are being proposed to be used to conduct the full-scale tests are discussed below.

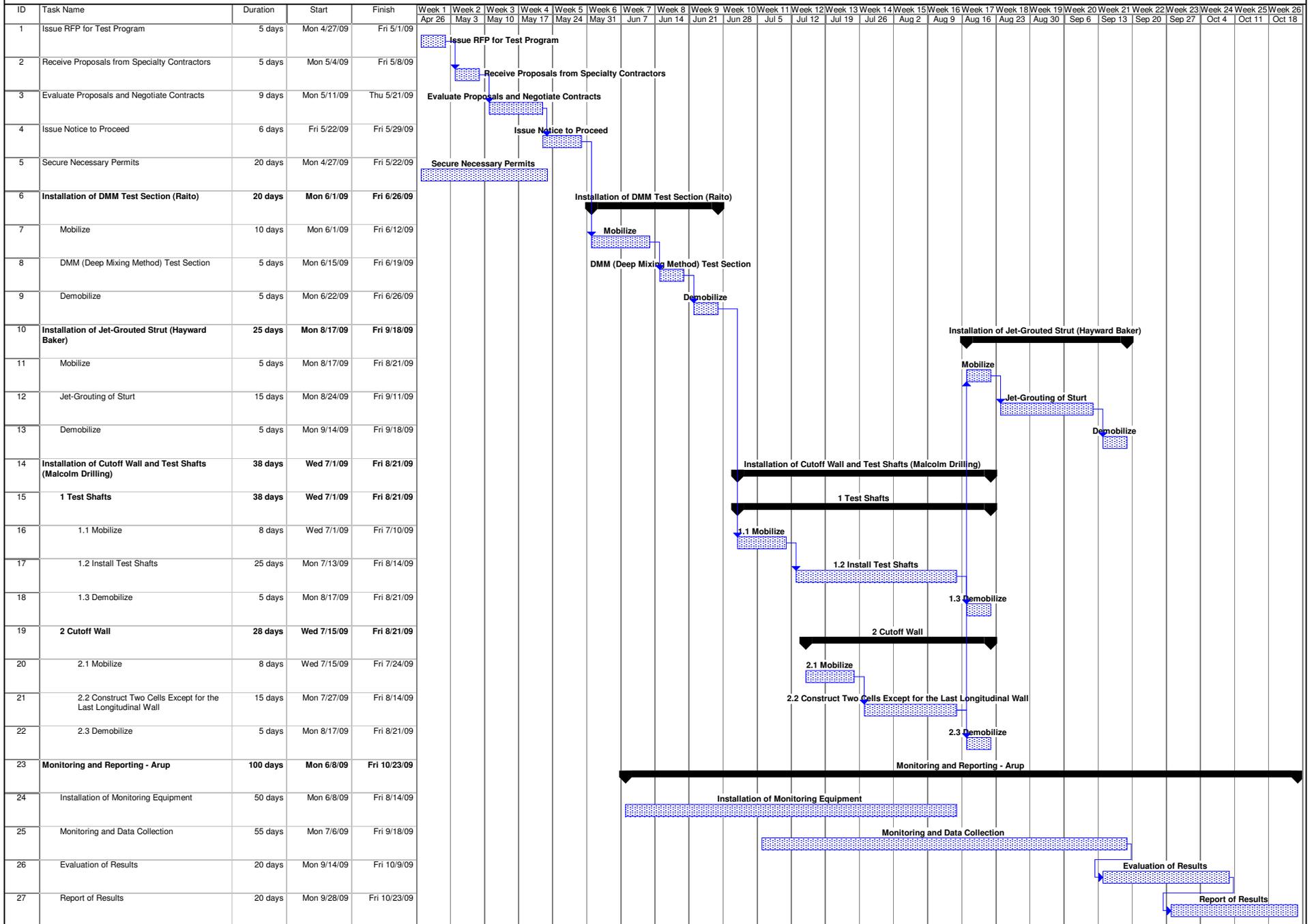
#### 3.1 TEST PROGRAM

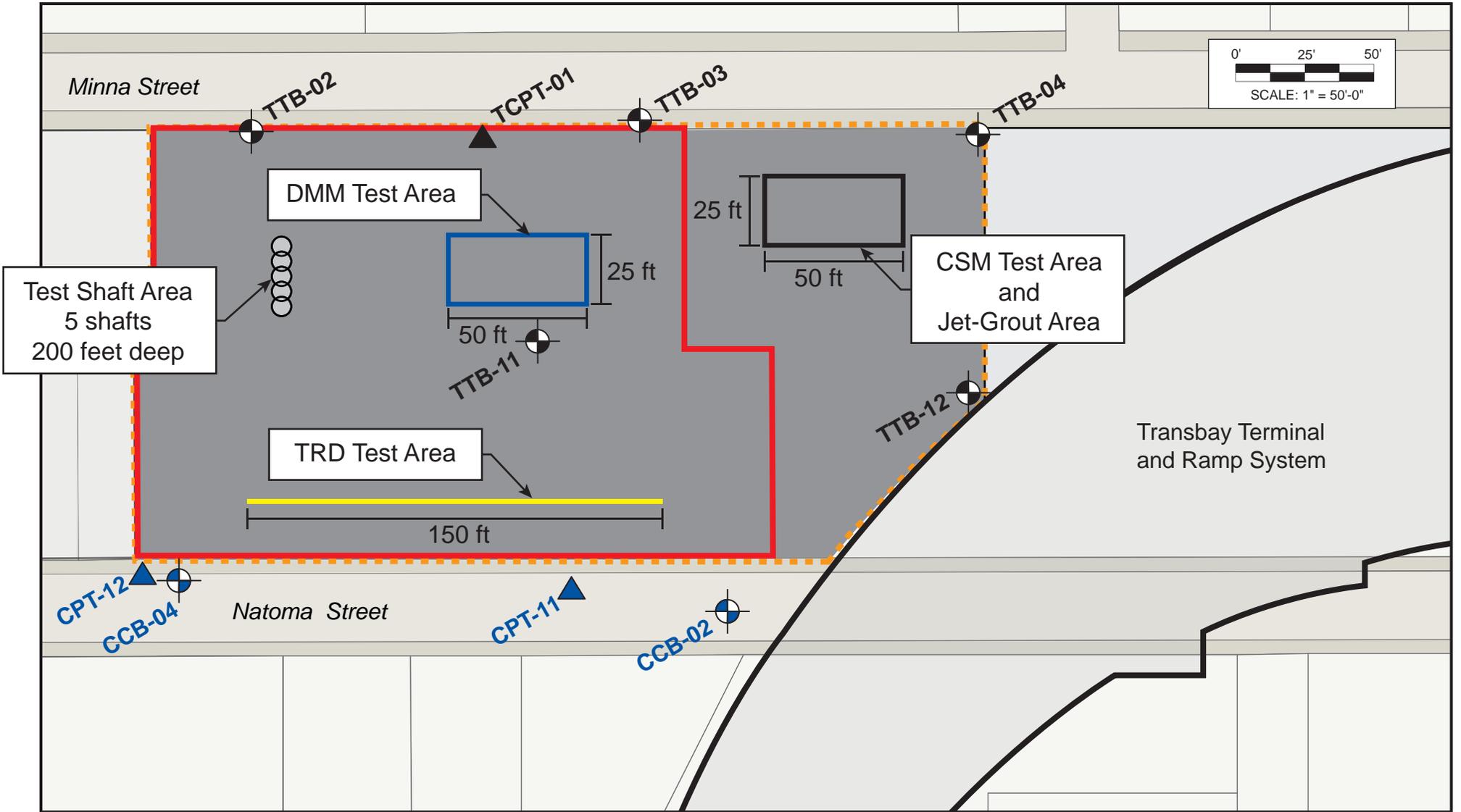
The test program will involve five different construction processes as follows:

- 1) Construction of a 3-cell cut-off/shoring wall using the Deep Mixing Method (DMM), also referred to as the Cement Deep Soil Mixing (CDSM) method, illustrated on Plate 5-1. A system of three overlapping augers is used to drill through a column of soil to the depth of interest while injecting and mixing cement-bentonite slurry with the in-situ soils to construct overlapping soil-cement panels that will form the shoring/cut-off walls to shore the excavation for the train box. The system has the capability of constructing walls that may be 36- to 48-inches-thick and up to 140 feet. This part of the test will be performed by Raito, Inc. (Raito), a specialist contractor headquartered in Tokyo, Japan, with offices in San Leandro, California, and elsewhere in the USA.

- 2) Construction of a 2-cell shoring/cut-off wall using the Cutter Soil Mixing (CSM) method (see Plate 5-2), which uses a system of steel blades to shear the soil as the equipment penetrates the ground, and to mix the soil with injected cement-bentonite slurry. The system has the capability to construct soil-cement panels 4 feet x 9 feet in plan and up to 200 feet deep. The strength of the panels can be varied by adjusting the amount of cement used to prepare the slurry. Consecutive overlapping panels are constructed to form the shoring/cut-off wall. The work for the CSM cells will be performed by Malcolm Drilling Company (Malcolm), a specialist contractor headquartered in San Francisco, California.
- 3) Construction of a single cell 20 feet x 100 feet in plan with wall penetrations ranging between 100 feet and 220 feet using the Trench Cutting Remixing Deep Wall (TRD) method. The equipment cuts a continuous trench of uniform depth while mixing the in-situ soil with injected cement-bentonite slurry. The TRD cell will be constructed by Hayward Baker, a specialist contractor with headquarters in Ventura, California.
- 4) Construction of a series of 5 overlapping drilled shafts, each 7 feet in diameter and 220 feet deep, to evaluate constructability issues and production rates for the construction of the buttress that is intended to protect the 301 Mission Street tower. The work for the drilled shaft will be performed also by Malcolm Drilling Company.
- 5) Construction of a cement-grout slab 20 feet thick within the walls of one of the CSM cells using the jet-grouting method, to act as a pre-installed strut for control of excavation-induced deformations. This technique is expected to have applications for an option that is currently being evaluated by the TJPA for constructing a double level train box which will require excavations 75 to 85 feet deep.

**SCHEDULE FOR TEST PROGRAM  
SHORING WALL AND BUTTRESS DESIGN**





**DETAILED LAYOUT OF PROPOSED TEST SECTIONS:  
DMM, CSM, TRD, AND DRILLED SHAFTS**

Transbay Transit Center  
Work Plan - Prototype Field Test  
Transbay Joint Powers Authority  
San Francisco, California

March 2009



Q:\132242\4 Internal Project Data\4-03 Drawings\Geotech\Test Section\Location Plan rev2.ai

## Attachment B

### Revised Cost Test Program and Cost Scope Geotechnical Testing for the Transbay Transit Center

The test program will involve 4 different construction processes as follows:

Scope	Cost
1. Construction of a 1-cell cut-off/shoring wall using the Deep Mixing Method (DMM), also referred to as the Cement Deep Soil Mixing (CDSM) method. A system of three overlapping augers is used to drill through a column of soil to the depth of interest while injecting and mixing cement-bentonite slurry with the in-situ soils to construct overlapping soil-cement panels that will form the shoring/cut-off walls to shore the excavation for the train box. Two walls will be 50 feet by 105 feet, 1 wall will be 25 feet by 120 feet, and a fourth wall will be 25 feet by 140 feet.	\$ 750,000
2. Construction of a 1-cell cut/shoring wall using the Cutter Soil Mixing (CSM) method, which uses a system of steel blades to shear the soil as the equipment penetrates the ground, and to mix the soil with injected cement-bentonite slurry. The system has the capability to construct soil-cement panels 4 feet x 9 feet in plan and up to 200 feet deep. The strength of the panels can be varied by adjusting the amount of cement used to prepare the slurry. Consecutive overlapping panels are constructed to form the shoring/cut-off wall. Constructed will be 2 longitudinal walls each 120 feet deep (100 feet by 120 feet), and two transverse walls each 140 feet deep (50 feet by 140 feet).	\$1,100,000
3. Construction of a series of 5 overlapping drilled shafts, each 7 feet in diameter and 220 feet deep, to evaluate constructability issues and production rates for the construction of the buttress that is intended to protect the 301 Mission Street tower.	\$1,560,000
4. Construction of a cement-grout slab 20 feet thick within the walls of the CSM cell using the jet-grouting method, to act as a pre-installed strut for control of excavation-induced deformations. The cell will be 25 feet by 50 feet.	\$ 900,000
<b>Subtotal</b>	\$4,310,000
ARUP Testing and Supervision	\$ 690,000
<b>Total Cost</b>	\$5,000,000