

**Council Meeting: December 2, 2008****SUBJECT: Authorization to Modify an Existing Contract for Design and Construction Support Services for the Mathilda Avenue Overhead Bridge Rehabilitation Project (F0811-30)****REPORT IN BRIEF**

Approval is requested to modify an existing contract with Mark Thomas & Company, of San Jose, for design and construction support services for the Mathilda Avenue Overhead Bridge Rehabilitation Project (Public Works Project No. TR-02/03-07). The contract modifications add Value Engineering related services and increase the contract value by \$323,292, as required by the Department of Public Works Engineering Division. These additional services are necessary to comply with Caltrans requirements.

**BACKGROUND**

The Mathilda Avenue Overhead Bridge (Bridge No. 37C0058) was constructed in 1965, and seismically retrofitted by the City in 1981 and 1993. It is a primary arterial that spans over two CalTrain tracks and Evelyn Avenue. There are two ramps connecting Mathilda with Evelyn; an on-ramp from westbound Evelyn Avenue to northbound Mathilda Avenue, and an off-ramp from southbound Mathilda Avenue to westbound Evelyn Avenue.

In 2002, Caltrans identified the bridge as “functionally obsolete” due to deficiencies in bridge pier clearances, deceleration lane design, shoulder width standards and bridge railing standards. Structural improvements then became eligible for federal funding, with bridge and roadway improvements originally funded under the FHWA Highway Bridge Rehabilitation and Replacement (HBRR) program with a mix of federal, state and local funds. The improvements include bridge widening, replacement of two pedestrian ramps, widening of a pedestrian overcrossing over CalTrain tracks, seismic analysis, realignment of Evelyn Avenue and reconfiguration of the Charles Street intersection at Evelyn. The project will require temporary construction easements along the west side of Mathilda, utility relocation, and roadway, sidewalk and other site improvements as related to the bridge widening.

Sunnyvale City Council awarded a contract in the amount of \$1,623,260 to Mark Thomas & Company of San Jose on July 15, 2003 (RTC No. 03-244) for design and construction support services for the Mathilda Avenue Overhead Bridge Rehabilitation Project, PW Project No. TR-02/03-07. Mark Thomas was selected as the best of the three proposals received by the City in response to Request for Proposals No. F0209-27.

City Council authorized a contract amendment in the amount of \$68,500 on July 19, 2005 (RTC No. 05-200) for additional services required to prepare an expanded Environmental Impact Report (EIR) as a result of litigation filed on the project.

City Council authorized a second amendment to the contract (and Budget Modification No. 51) in the amount of \$556,773 on June 19, 2007 (RTC No. 07-222) for schedule changes, changes in the work scope and additional design support costs due to project delays incurred by the preparation and adoption of the expanded EIR. The total not-to-exceed value of the contract up to and including the second amendment is \$2,408,533, which includes a design contingency of \$160,000. \$156,857 of the design contingency has been authorized for expenditure for additional CEQA-related and right-of-way work, and initial Value Engineering tasks.

Approval of the third amendment as recommended will add \$323,292 to the contract and increase the total not-to-exceed amount to \$2,731,825.

## **DISCUSSION**

At the time of the original contract award in 2003, initial project estimates for both design and construction were \$17,500,000. Since that time, the total estimated project costs have increased to approximately \$35,000,000. It is important to note that the total project cost is 88.53% reimbursable through federal grant funding administered by Caltrans.

The City has been reimbursed by Caltrans for 88.53% of design services invoiced to date. In September 2008 Caltrans notified the City that a qualified Value Engineering review would be required of the design, since the latest construction estimate exceeded \$25 million. Value Engineering is a systemic review by a multidisciplinary team to improve the total value of a project by looking for optimum returns on resources invested for the initial cost and long-term life of a construction project. Caltrans has agreed that the costs of the Value Engineering would be subject to the 88.53% reimbursement.

To respond to the Caltrans VE requirement, the City issued a Request for Proposals (RFP No. F0808-08) and selected the HNTB Corporation as the firm most qualified to perform the Value Engineering component. This contract, in

the amount of \$90,123, was awarded under the City Manager’s award authority. It is anticipated that additional design changes will result from the Value Engineering process. As the City’s project designer, Mark Thomas & Company is a participant in the VE process, but the cost of the majority of these services is not included in the existing contract (existing project contingencies will cover a portion). The additional costs are currently estimated to be \$263,292, to which staff is requesting addition of a \$60,000 contingency should additional design services be necessary as a result of the evaluation of the Value Engineering process.

It should be noted that the Request for Proposal process that selected HNTB Corporation for the Value Engineering study also included Construction Management of the project during the bidding and construction portion. HNTB and other firms were qualified for that portion of the RFP, and staff will make a final selection and be preparing a Report to Council for the award of the Construction Management contract after Caltrans issues a notice to proceed (formally called an E-76 notification). It is estimated that the Construction Management portion of the project will be approximately \$2.8 million, which would be subject to the 88.53% reimbursement under the construction phase. Caltrans will not commit funds for the construction phase until the plans are ready for bidding, after approval of the Value Engineering process, and identification of available funds by Caltrans.

**FISCAL IMPACT**

The fiscal impact of this recommendation is \$323,292, which includes \$263,292 for Value Engineering related design services and a design contingency of \$60,000. Funds are available in Public Works Capital Project No. 822710, Mathilda Avenue Railroad Overpass Improvements. This work is subject to the 88.53% reimbursement by Caltrans.

Total design and construction support services costs are as follows:

Original contract award	\$1,623,260
Additional services for detailed EIR	\$68,500
Initial design contingency already used	\$156,857
Initial design contingency balance	\$3,143
Additional design support	\$556,773
Design services related to Value Engineering	\$263,292
Additional design contingency	\$60,000
<b>Total Contract Cost</b>	<b>\$2,731,825</b>

Of the total contract cost, Caltrans will reimburse approximately \$2,418,485, and the City will cover the remaining balance of \$313,340.

**PUBLIC CONTACT**

Public contact was made by posting the Council agenda on the City's official-notice bulletin board outside City Hall, in the Council Chambers lobby, in the Office of the City Clerk, at the Library, Senior Center, Community Center and Department of Public Safety; posting the agenda and report on the City's Web site; and making the report available at the Library and the Office of the City Clerk.

**RECOMMENDATION**

It is recommended that Council:

1. Approve the attached Third Amendment to Consultant Services Agreement between the City of Sunnyvale and Mark Thomas & Company, Inc. in the amount of \$263,292 for additional services related to design and construction support services for the Mathilda Avenue Overhead Bridge Rehabilitation Project; and
2. Authorize a design contingency in the amount of \$60,000.

Reviewed by:

Mary J. Bradley, Director of Finance

Prepared by: Mark Rogge, Assistant Director, Public Works

Prepared by: Pete Gonda, Senior Management Analyst, Finance

Reviewed by:

Marvin Rose

Director of Public Works

Approved by:

Gary M. Luebbbers

City Manager

**Attachments**

- A. Third Amendment to Consultant Services Agreement Between the City of Sunnyvale and Mark Thomas & Co., Inc., for Design and Construction Support Services for the Mathilda Avenue Overhead Bridge Rehabilitation Project

**THIRD AMENDMENT TO CONSULTANT SERVICES AGREEMENT  
BETWEEN THE CITY OF SUNNYVALE AND MARK THOMAS & CO, INC.,  
FOR DESIGN AND CONSTRUCTION SUPPORT SERVICES  
FOR THE MATHILDA AVENUE OVERHEAD BRIDGE REHABILITATION  
PROJECT**

This Third Amendment to Service Agreement, dated \_\_\_\_\_, is by and between the CITY OF SUNNYVALE, a municipal corporation ("CITY") and MARK THOMAS & CO., INC, a California corporation ("CONSULTANT").

WHEREAS, on August 14, 2003, CITY and CONSULTANT entered into a Consultant Services Agreement whereby CONSULTANT would provide professional services necessary for investigation, environmental and right-of-way analysis, design, preparation of construction drawings and contract specifications, consultation services during construction and other services required to complete the project known as Mathilda Avenue Overhead Bridge Rehabilitation (Project No. TR-02/03-07), for a total contract not-to-exceed value of \$1,623,260.00; and

WHEREAS, an Amendment to the Consultant Services Agreement, dated August 3, 2005, added an Environmental Impact Report to the services to be performed by CONSULTANT and increased the value of the Agreement by \$68,500.00, for a total contract not-to-exceed value of \$1,691,760.00; and

WHEREAS, a Second Amendment to the Consultant Services Agreement dated July 5, 2007 added additional professional services for scope of service changes and project delay as a result of the environmental process on the project and increased the value of the contract by \$556,773.00 for a total contract not-to-exceed value of \$2,248,533.00; and

WHEREAS, the parties now agree that a Third Amendment to said Agreement is advisable;

NOW, THEREFORE, THE PARTIES ENTER INTO THIS THIRD AMENDMENT TO CONSULTANT SERVICES AGREEMENT:

1. Section 1 – Services by CONSULTANT – Scope of Work (Exhibit "A"):

Add additional professional services for PS&E revisions as required by a Value Engineering Study required by CalTrans per Task 3 on the attached Additional Budget Request document dated 10/29/2008 (File No. 22-53001, Letter No. 225).

2. Section 4 – Payment of Fees and Expenses – Compensation (Exhibit “B”)

Basic Compensation (Section 1.0) for Basic Services (1.1) add the following:

PS&E Revisions (Task 3) due to Value Engineering Study required  
by CalTrans - \$263,292.00

Basic Services total is increased to \$2,511,825.00

All other terms and conditions remain unchanged.

IN WITNESS WHEREOF, the parties have executed this Agreement Amendment.

ATTEST:

CITY OF SUNNYVALE ("CITY")

By \_\_\_\_\_  
City Clerk

By \_\_\_\_\_  
City Manager

APPROVED AS TO FORM:

MARK THOMAS & CO., INC  
("CONSULTANT")

By \_\_\_\_\_  
City Attorney

By \_\_\_\_\_

\_\_\_\_\_  
Name and Title



**MARK THOMAS & COMPANY, INC.**  
*Providing Engineering, Surveying and Planning Services*

October 29, 2008

File No. 22-53001  
Letter #225

Mr. Manny Kadkhodayan, P.E.  
**CITY OF SUNNYVALE**  
**PUBLIC WORKS DEPARTMENT**  
456 West Olive Avenue  
Sunnyvale, CA 94088-3707

**RE: MATHILDA AVENUE REHABILITATION PROJECT**  
**ADDITIONAL BUDGET REQUEST FOR VALUE ENGINEERING**

Dear Manny:

We are submitting this request for extra work authorization in response to Caltrans recent request to perform value engineering for the project as the estimated project cost exceeds \$25M. Below is our proposed scope and budget requested for participation in the VE study and potential subsequent design modification. We have divided our request into three tasks: VE Study Participation, VE Alternative Evaluation, and PS&E Revisions. Detailed budget is attached.

**Task 1: VE Study Participation**

MTCO Team will participate in the Value Engineering process by attending the pre-kickoff meeting, discussion meeting as requested, as well as the final presentation. In addition, we will evaluate the proposed project changes for conceptual validity of the proposals based on our project knowledge and cost estimates. In addition, MTCO Team will prepare materials for to be used for the VE meeting.

The budget requested for Task 1 is \$13,188.

**Task 2: VE Alternatives Evaluation**

For each of the proposed ideas the team would like to pursue, MTCO Team will analyze the engineering feasibility, including preliminary calculations and cost estimates.

2.1 AP-1 Reduce Pile Size

MTCO Team will review the original assumptions behind the pile size chosen. Based on stiffness input from the geotechnical engineer, MTCO Team will run a preliminary seismic model to determine the impacts to the design. A one page design memo will be provided indicating the feasibility of the proposal, and if determined to be possible we will list the changes required to implement the reduced pile size.

- 2.2 AP-2 Auger Cast Piles  
MTCO Team will review the literature on auger cast piles to determine the applicability in bridge design and whether they could be approved by Caltrans. A cost estimate of the pile type change will be prepared if applicable.
- 2.3 AP-3 Micro Piles  
MTCO Team will investigate the response of a battered pile foundation. We will then run a preliminary seismic model using these foundation behavior models to determine the impacts to the design. A one page design memo will be provided indicating the feasibility of the proposal, and if determined to be possible list the changes required to implement the reduced pile size.
- 2.4 AP-4 Re-use Existing Foundation at Bent 4W  
MTCO Team will prepare preliminary calculations on the revised Bent 4W location, including effect on seismic model, and determine the loading requirements on the existing Bent 4W. We will determine the new foundation layout to develop an order of magnitude cost estimate. We will determine utility impacts based on the new footing layout.
- 2.5 RC-1 Prefabricated Pedestrian Ramps  
MTCO Team will develop a concept sketch of the pedestrian ramp cross section and then develop an alternative layout where a precast ramp could work both horizontally and vertically. A one page design memo will be provided indicating the feasibility of the proposal, and if determined to be possible calculate the difference in cost.
- 2.6 RC-2 Reduce Traffic Lanes  
MTCO Team will evaluate the benefit of revising staging plans based on 2 thru lanes in each direction. A concept construction staging plans will be developed.
- 2.7 RC-3 Construct Median in Phase 1  
MTCO Team will evaluate moving median construction to Phase 1 so widening on both sides of the bridge can take place concurrently. We will review and compile a list of design requirements for the temporary support of the live traffic. We will develop the new loading requirements and compare to the existing bridge capacity at both the bent cap and superstructure to determine the extent to the temporary support required. A temporary lighting scheme will be developed. A one page design memo will be provided indicating the feasibility of the proposal, and if determined to be possible calculate the added construction cost.
- 2.8 RC-4 Demolish Off-Ramp in Phase 1  
MTCO Team will evaluate the benefit of moving the work for Evelyn Off-ramp demolition to Phase 1. A revised construction staging plans will be developed.
- 2.9 W-1 Eliminate Curtain Wall  
MTCO Team will develop a concept planting drawing the wall along Evelyn on-ramp. A total of 2 concept drawings will be prepared.
- 2.10 W-2 Colored Concrete  
MTCO Team will review the applicable highway design codes to determine whether colored barriers are acceptable. We will determine the cost impacts of the proposal.

The budget requested for Task 2 is \$72,924

### Task 3 PS&E Revisions

For each of the ideas the City chooses to incorporate, MTCO Team will perform the necessary calculations and modeling, revise the plans, specifications and estimates.

- 3.1 AP-1 to 3 Revise Foundation Plans  
 MTCO Team will revise the foundations plans to the new pile type. The revised piles are assumed to impact the seismic modeling and foundation designs only. Re-design of columns and/or the superstructure elements is out of scope.
- 3.2 AP-4 Re-use Existing Foundation at Bent 4W  
 MTCO Team will revise PS&E to re-use existing foundation. We assume that the existing column and bent cap at Pier 4W will not be re-used, only the footing will be kept. The design includes modification of the footing, re-design of the column and the affected superstructure of the off-ramp span 2L and main bridge span 4W only. Changes to the design of Bent 2L and/or bent 5 are considered out of scope
- 3.3 RC-1 Prefabricated Pedestrian Ramps  
 Changing the pedestrian ramp design to prefabricated slabs requires complete re-design of the ramps including geometry, foundations, columns and bent caps. MTCO Team will revise affected plan sheets to incorporate the pre-fabricated option.
- 3.4 RC-2 Reduce Traffic Lanes  
 MTCO Team will revise stage construction and traffic handling plans based on the new traffic design criteria.
- 3.5 RC-3 Construct Median in Phase 1  
 MTCO Team will revise stage construction plans to construct the median in Phase 1. A temporary support and lighting plans will be developed as well.
- 3.6 RC-4 Demolish Off-Ramp in Phase 1  
 MTCO Team will revise stage construction to allow demolition of Evelyn Avenue off-ramp to take place in Phase 1.
- 3.7 W-1 Eliminate Curtain Wall  
 MTCO Team will revise plans to delete wall aesthetics for the Evelyn on-ramp. We will prepare planting and irrigation plans for the area adjacent to the wall.
- 3.8 W-2 Colored Concrete  
 MTCO Team will revise plans, specifications, and estimates for colored concrete.

The budget requested for Task 3 is \$263,292

The time required to evaluate, analyze, design and update the plans are shown in the following table. Many of these can be completed concurrently. Of more than 3 ideas are pursued through PS&E, the overall time may need to be increased.

Idea	Evaluate	Revise Plans	Review Time
AP-1 to AP-3	2 weeks	4 weeks	3 weeks
AP-4	1 week	4 weeks	3 weeks
RC-1	2 weeks	5 weeks	3 weeks
RC-2	1 week	2 weeks	1 week
RC-3	1 week	2 weeks	1 week
RC-4	1 week	1 week	1 week
W-1	1 week	2 weeks	1 weeks
W-2	1 week	1 week	1 week

*Letter to Mr. Kadkhodayan,  
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The total additional budget requested for 3 tasks is \$349,404. Please review requested budget augmentation as provided above. We would need this authorization prior to commencing our extra work services. If you have any questions, please contact me.

Sincerely,

**MARK THOMAS & COMPANY, INC.**



Richard K. Tanaka, PE  
Project Manager

Attachment: Detailed Budget Breakdown

*cc: DWeddell, PBSJ  
RGrandy, SFA  
GParikh, PCA  
Accounting*

