

**Council Meeting: July 15, 2008**

**SUBJECT: Award of Request for Proposals No. F0706-98 for Engineering Services Related to the Wolfe Road Caltrain Overcrossing Rehabilitation Project**

**REPORT IN BRIEF**

Approval is requested for the award of a contract in the amount of \$281,750 to HNTB Corporation of San Jose for engineering services for the design and preparation of construction contract documents and construction phase services for the Wolfe Road Caltrain Overcrossing Rehabilitation Project as required by the Department of Public Works Engineering Division.

**BACKGROUND**

On April 23, 2008, Peninsula Corridor Joint Powers Board (PCJPB), which operates the Caltrain commuter rail service, notified City staff that chunks of concrete from the Wolfe Road overcrossing had fallen from the bridge onto the Caltrain railroad tracks below. The City immediately mobilized resources to inspect the bridge and take appropriate action. Upon review and inspection of the structure, it was found that there was no indication of overall bridge failure, but deteriorated concrete was observed at both the north and south hinge locations on the structure. The area of major concern was the northern hinge area, where loose concrete was falling directly on the Caltrain tracks. On April 26, Public Works Field Services crews removed the loose concrete material at the hinges (see RTC #08-149).

An emergency contract was issued to HNTB Corporation (the only local consultant who would commit to being on site in less than 24-hours) to prepare findings and recommendations for bridge repair strategies for the rehabilitation of the structure. Their findings concurred with a Caltrans bridge report dated 7/12/2004 that recommended deck repair with methacrylate resin, replacement of bridge bearing pads (which the hinges sit on) and the patching of spalling concrete in the superstructure.

**DISCUSSION**

In June 2008, Request for Proposals No. F0706-98 for professional services for this project was prepared by Public Works and Purchasing staff. The RFP proposal format was selected because it allows the consideration of consultant evaluation criteria (in this case expertise and experience in bridge design and to respond quickly) in addition to cost as opposed to an Invitation for Bids

which requires award of contract to the lowest responsive and responsible bidder. In order to accelerate the solicitation process, the RFP package was directly mailed to six local engineering firms specializing in structural work:

- Biggs Cardosa Associates, of San Jose
- Nolte Associates, of San Jose
- Sierra Engineering Group, of Union City
- Mark Thomas & Co., Inc., of San Jose
- HNTB Corporation, of San Jose
- TY Lin International, of San Ramon

Sealed proposals were publicly opened on June 18, 2008. One responsive proposal was received, from HNTB Corporation, in the amount of \$245,000. In a letter received by the City, Nolte Associates indicated that their structural engineering team was “currently committed to other assignments”.

Due to HNTB qualifications and experience and because of the need for expedited construction documents in order to bid construction services necessary for the rehabilitation of the structure, staff recommends the award of a contract to HNTB Corporation for engineering services as related to the Wolfe Road Caltrain Overcrossing Rehabilitation Project.

**FISCAL IMPACT**

Project costs are as follows:

Professional Design Services	\$245,000
Design Contingency (15%)	<u>\$36,750</u>
Total Cost	\$281,750

Total funds in the amount of \$2.1 million are available for design and construction services on the Wolfe Road Caltrain Overcrossing Project (Project 825621).

**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. Award a contract in substantially the same form as the attached draft and in an amount of \$245,000 to HNTB Corporation for engineering services as related to the Wolfe Road Caltrain Overcrossing Rehabilitation Project; and,
2. Approve a design contingency in the amount of \$36,750.

Reviewed by:

Mary J. Brady, Director of Finance  
Prepared by: David Gakle, Principal Buyer

Reviewed by:

Marvin Rose  
Director of Public Works

Approved by:

Amy Chan  
City Manager

**Attachments**

Draft Consultant Services Agreement  
Report to Council 08-149

## DRAFT

### CONSULTANT SERVICES AGREEMENT BETWEEN THE CITY OF SUNNYVALE AND HNTB CORPORATION FOR SERVICES RELATED TO THE WOLFE ROAD CALTRAIN OVERCROSSING REHABILITATION PROJECT

THIS AGREEMENT, dated \_\_\_\_\_, is by and between the CITY OF SUNNYVALE, a municipal corporation ("CITY"), and HNTB CORPORATION, a California corporation ("CONSULTANT").

WHEREAS, CITY is in need of consulting engineering services for design and preparation of construction contract documents and construction phase services for the Wolfe Road Caltrain Overcrossing Rehabilitation Project ; and,

WHEREAS, CONSULTANT possesses the skill and expertise to provide the required services;

NOW, THEREFORE, THE PARTIES ENTER INTO THIS AGREEMENT.

#### 1. Services by CONSULTANT

CONSULTANT shall provide services in accordance with Exhibit "A" attached and incorporated by reference. CONSULTANT shall determine the method, details and means of performing the services.

#### 2. Time for Performance

The term of this Agreement shall be from contraction execution to December 31, 2008, unless otherwise terminated. CONSULTANT shall deliver the agreed upon services to CITY as specified in Exhibit "A". Extensions of time may be granted by the City Manager upon a showing of good cause.

#### 3. Duties of CITY

CITY shall supply any documents or information available to City required by CONSULTANT for performance of its duties. Any materials provided shall be returned to CITY upon completion of the work.

#### 4. Compensation

CITY agrees to pay CONSULTANT at the hourly rates listed on Exhibit "B". Total compensation shall not exceed Two Hundred Forty Five Thousand and NO/100 Dollars (\$245,000.00). CONSULTANT shall submit invoices to CITY no more frequently than monthly for services provided to date. Payment shall be made within thirty (30) days upon receipt of an accurate, itemized invoice by CITY'S Accounts Payable Unit.

5. Ownership of Documents

CITY shall have full and complete access to CONSULTANT's working papers, drawings and other documents during progress of the work. All documents of any description prepared by CONSULTANT shall become the property of the CITY at the completion of the project and upon payment in full to the CONSULTANT. CONSULTANT may retain a copy of all materials produced pursuant to this Agreement.

6. Conflict of Interest

No officer or employee of CITY shall have any interest, direct or indirect, in this Agreement or in the proceeds thereof. During the term of this Agreement CONSULTANT shall not accept employment or an obligation which is inconsistent or incompatible with CONSULTANT's obligations under this Agreement.

7. Confidential Information

CONSULTANT shall maintain in confidence and at no time use, except to the extent required to perform its obligations hereunder, any and all proprietary or confidential information of CITY of which CONSULTANT may become aware in the performance of its services.

8. Compliance with Laws

- (a) CONSULTANT shall not discriminate against, or engage in the harassment of, any City employee or volunteer or any employee of CONSULTANT or applicant for employment because of an individual's race, religion, color, sex, gender identity, sexual orientation (including heterosexuality, homosexuality and bisexuality), ethnic or national origin, ancestry, citizenship status, uniformed service member status, marital status, family relationship, pregnancy, age, cancer or HIV/AIDS-related medical condition, genetic characteristics, and physical or mental disability (whether perceived or actual). This prohibition shall apply to all of CONSULTANT's employment practices and to all of CONSULTANT's activities as a provider of services to the City.
- (b) CONSULTANT shall comply with all federal, state and city laws, statutes, ordinances, rules and regulations and the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the performance of the Agreement.

9. Independent Contractor

CONSULTANT is acting as an independent contractor in furnishing the services or materials and performing the work required by this Agreement and is not an agent, servant or employee of CITY. Nothing in this Agreement shall be interpreted or construed as creating or establishing the relationship of employer and employee between CITY and CONSULTANT. CONSULTANT is responsible for paying all required state and federal taxes.

10. Indemnity

CONSULTANT shall indemnify and hold harmless CITY and its officers, officials, employees and volunteers against any and all suits, claims, damages, liabilities, costs and expenses, including attorney fees, arising out of the performance of the work described herein, caused by or related to the negligence, recklessness, or willful misconduct of CONSULTANT, its employees, subcontractors, or agents in the performance (or non-performance) of services under this Agreement.

11. Insurance

CONSULTANT shall take out and maintain during the life of this Agreement policies of insurance as specified in Exhibit "C" attached and incorporated by reference, and shall provide all certificates or endorsements as specified in Exhibit "C."

12. CITY Representative

Manny Kadkhadayan, Senior Engineer, as the City Manager's authorized representative, shall represent CITY in all matters pertaining to the services to be rendered under this Agreement. All requirements of CITY pertaining to the services and materials to be rendered under this Agreement shall be coordinated through the CITY representative.

13. CONSULTANT Representative

John Litzinger, Principal Principal-in-charge, shall represent CONSULTANT in all matters pertaining to the services and materials to be rendered under this Agreement; all requirements of CONSULTANT pertaining to the services or materials to be rendered under this Agreement shall be coordinated through the CONSULTANT representative.

14. Notices

All notices required by this Agreement shall be in writing, and shall be personally delivered, sent by first class with postage prepaid, or by sent by commercial courier, addressed as follows:

To CITY: Manny Kadkhadayan, Senior Engineer  
Public Works/Engineering Division}  
CITY OF SUNNYVALE  
P. O. Box 3707  
Sunnyvale, CA 94088-3707

To CONSULTANT: John Litzinger, Principal Principal-in-charge  
HNTB Corporation  
1735 Technology Drive, Suite 650  
San Jose, CA 95110

Nothing in this provision shall be construed to prohibit communication by more expedient means, such as by telephone or facsimile transmission, to accomplish timely communication. However, to constitute effective notice, written confirmation of a telephone conversation or an original of a facsimile transmission must be sent by first class mail or commercial carrier, or hand delivered. Each party may change the address by written notice in accordance with this paragraph. Notices delivered personally shall be deemed communicated as of actual receipt; mailed notices shall be deemed communicated as of two days after mailing, unless such date is a date on which there is no mail service. In that event communication is deemed to occur on the next mail service day.

15. Assignment

Neither party shall assign or sublet any portion of this Agreement without the prior written consent of the other party.

16. Termination

If CONSULTANT defaults in the performance of this Agreement, or materially breaches any of its provisions, CITY at its option may terminate this Agreement by giving written notice to CONSULTANT. If CITY fails to pay CONSULTANT, CONSULTANT at its option may terminate this Agreement if the failure is not remedied by CITY within thirty (30) days from the date payment is due.

Without limitation to such rights or remedies as CITY shall otherwise have by law, CITY also shall have the right to terminate this Agreement for any reason upon ten (10) days' written notice to CONSULTANT. In the event of such termination, CONSULTANT shall be compensated in proportion to the percentage of services performed or materials furnished (in relation to the total which would have been performed or furnished) through the date of receipt of notification from CITY to terminate. CONSULTANT shall present CITY with any work product completed at that point in time.

17. Entire Agreement; Amendment

This writing constitutes the entire agreement between the parties relating to the services to be performed or materials to be furnished hereunder. No modification of this Agreement shall be effective unless and until such modification is evidenced by writing signed by all parties.

18. Miscellaneous

Time shall be of the essence in this Agreement. Failure on the part of either party to enforce any provision of this Agreement shall not be construed as a waiver of the right to compel enforcement of such provision or any other provision. This Agreement shall be governed and construed in accordance with the laws of the State of California.

IN WITNESS WHEREOF, the parties have executed this Agreement.

ATTEST:

CITY OF SUNNYVALE ("CITY")

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

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

APPROVED AS TO FORM:

HNTB Corporation ("CONSULTANT")

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

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

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



### Section 3 Project Approach

The City of Sunnyvale is seeking an engineering consultant to provide professional services for the project management, design and preparation of construction contract documents, and construction phase services for the rehabilitation of the Wolfe Road Caltrain Overcrossing (Bridge No. 37C0776) in the City of Sunnyvale. To ensure the success of this project, HNTB will coordinate with the City of Sunnyvale staff, as well as with Caltrans, Caltrain and other regulatory agencies, fully utilizing existing secure relationships with federal, state and local agencies as well as private rail authorities and officials.

The HNTB Team has reviewed the requirements of the RFP, researched the project documents, visited the site, discussed the project with the City, and identified the key elements that are essential to successful project completion. Based on our intimate understanding of the project issues and our familiarity with the required processes through completion of several similar projects, we have identified three key issues that are briefly discussed below:

**Construction over Caltrain Railroad Corridor** – Since 2000, Kuan Go, PE and HNTB have completed over 15 infrastructure and bridge projects for the City of Sunnyvale including the Wolfe Road Bridge, Mathilda Avenue Overhead Bridge and Bernardo Avenue Pedestrian Undercrossing. This clearly results in an expert knowledge of the Caltrain railroad crossing structures such as the Wolfe Road Bridge and strong working experience of the Caltrans Local Assistance Program. This track record of working on Caltrain projects is paramount in identifying the key issues and coordination requirements of a typical project within Caltrain PCJPB right-of-way.

The HNTB team has performed a preliminary assessment of the bridge repair requirements for this project. We anticipate that the repair work will need to be performed during Caltrain's non revenue service time. In addition, the work needs to be coordinated with Caltrain provided flagmen and the required safety plans will need to be approved by PCJPB. The HNTB Team will coordinate with Steve Hill, Chief Engineer - Maintenance of Track and Structures of PCJPB during the final design phase of this project to identify opportunities to minimize the construction impact on the railroad operations. For example, repair work could coincide with scheduled maintenance of track requiring track closure to minimize impacts to Caltrain operations.

During the Wolfe Road Bridge Inspection and concrete removal work, Kuan's expert engineering and management skills were key to the successful concrete removal from the damaged hinge to Caltrain's approval. This work was completed expeditiously within 36 hours from mobilization.

We will bring the same HNTB core team and other necessary resources to ensure continuity and provide unrivaled knowledge on this project. The key staff as proposed herein to the City of Sunnyvale have recently completed Caltrain projects. This gives the HNTB Team an intimate knowledge of construction within the Caltrain Commuter train corridor.

**Wolfe Road Traffic Handling during Construction** – The Wolfe Road Bridge repair includes replacing the failed elastomeric bearing pads at the abutments and hinges over the railroad tracks. Since the span over the railroad tracks is constructed with precast girders with a composite deck slab, the span needs to be lifted to replace the bearing pads. This work will either be constructed in stages with lane closures or may require Wolfe Road to be shut down entirely for about two weeks. HNTB Team will identify all traffic handling issues associated with the bridge repair. These issues will include any specific requirements for temporary striping, traffic signals, pedestrian crossings, and street lighting. HNTB Team will work with the City to identify the construction solution that will cause the least disruption to the users of the Bridge.



In conjunction with the public outreach process, the HNTB Team will endeavor to address all construction related issues including the contractor staging area location, construction equipment, equipment routes, noise, and debris.

**Design in Accordance with Caltrans Local Assistance Program Guidelines (LAPG) and Local Assistance Procedures Manual (LAPM)**– Although the City allocated State Proposition 1B Infrastructure Bond Funds to design and construct the bridge repairs, it is the best interest of the City to pursue Bridge Preventive Maintenance Program (BPMP) funds under the Highway Bridge Program (HBP) through Caltrans so that matching funds of the City is only 11.47% and the remainder of the funds from State Proposition 1B can then be allocated for other infrastructure needs.

It is our understanding that the City has initiated funding application for this bridge under the BPMP funds. Once the program is approved, the funding under this program will follow the normal project development procedures in accordance with the Caltrans LAPM and LAPG. This requires the project to follow all the Federal-aid procedures such as:

- The project will have to be included and programmed in the FTIP
- Conduct Field Review
- Request and Authorize for PE
- Approval of Environmental Document
- Right of Way (R/W) & Utilities clearance
- PS&E package submitted to Caltrans

Kuan is intimately familiar with designing bridge projects in the City of Sunnyvale in accordance with the Caltrans LAPM and LAPG. His past efforts in assisting the City of Sunnyvale on projects such as Mathilda Avenue Overhead and Fair Oaks Overhead Bridges have resulted in the City receiving over \$10 Million in HBP funds. In addition, HNTB has personally worked with Roland Nimis, Caltrans Local Assistance Engineer on projects including the BART Earthquake Safety Program and Golden Gate Bridge Retrofit Program. The HNTB Team helps bring benefit to the City of Sunnyvale with this long working relationship with Roland Nimis as the City tries to obtain BPMP funds through the Caltrans Local Assistant Office.

With the understanding of the key issues listed above, it is important to conceive a project approach and work plan. The anticipated tasks are described below:

**1. Project Management and Agency Coordination**– The HNTB Team will manage the design contract and all Caltrans related documentation, submittals and reviews. This will include all environmental as well as design approvals of the project including coordination with Caltrans, Caltrain, and all other agencies having interest in the project.

**2. Data Collection and Field Review**– The HNTB Team will obtain and review available data and information necessary for designing the project. Data to be reviewed includes the following:

- Any previous report(s) or documents related to the proposed project area (City to provide)
- As-built plans (HNTB already obtained)
- Utility information (City to provide)
- Aerial photos and any available mapping, including digitized topography (City to provide)



- Preliminary Layout Plans
- Layout Line Alignment
- Right-of-way information (City to provide)

**3. Preliminary Environmental Study** – The HNTB Team will assist the City in preparing a Preliminary Environmental Study (PES) as part of the project funding request through the Highway Bridge Program (HBP). It is anticipated that the environmental document to be developed for the project is Programmatic Categorical Exclusion, without required technical studies. It is our understanding that the PES form may be modified during the field review with Caltrans.

**4. Caltrans Field Review** – The HNTB Team will attend the Caltrans Field Review as part of the project funding request through the HBP. During the field review, Caltrans will review the proposed scope of work and complete the PES form. The appropriate environmental document will also be identified during this meeting.

**5. Traffic Analysis** – HNTB Team subconsultant, Fehr and Peers, will perform traffic engineering services to produce traffic control plans to handle traffic through and around the project area through the duration of construction. A critical period will be the time during which the structure will be closed to all traffic. The HNTB Team will perform these traffic engineering services: Review Existing Information, Collect Additional Traffic Counts, and Prepare Circulation and Detour Plans.

**6. Plans, Specifications and Cost Estimate** – The HNTB Team will provide a complete set of plans, specifications, and cost estimate for the selected design with appropriate reviews by City staff at the 65%, 95%, and 100% stages of development.

The anticipated drawing is listed below:

		Number of Sheets
1	Title Sheet	1
2	General Plan	1
3	General Notes	1
4	Bridge Removal Plans	1
5	Stage Construction / Traffic Handling	4
6	Hinge Repair Details	2
7	Bearing Pad Replacement	2
8	Joint Seal Replacement	1
9	Miscellaneous Details	1
	<b>Total Sheets</b>	<b>14</b>

**7. Design Review** – HNTB will attend two (2) review meetings with the City, one each after the 65% and 95% reviews are completed. Additionally, the team will attend two (2) coordination meetings with the PCJPB to review the design and construction of the repair work. Although Caltrans review of the design is required, we anticipate that no review meetings with Caltrans will be necessary.

**8. Independent Structural Check** – Structure independent checking will follow Caltrans practice and will be performed by a registered professional engineer. The independent checking will include checking of structure designs, plan preparation and quantity estimates. Differences in the calculations will be reconciled first before 95% plans and estimates are submitted to the City and Caltrans for review and



approval. HNTB will respond to the checker's comments and provide a written memo outlining resolutions to all the check comments and design discrepancies.

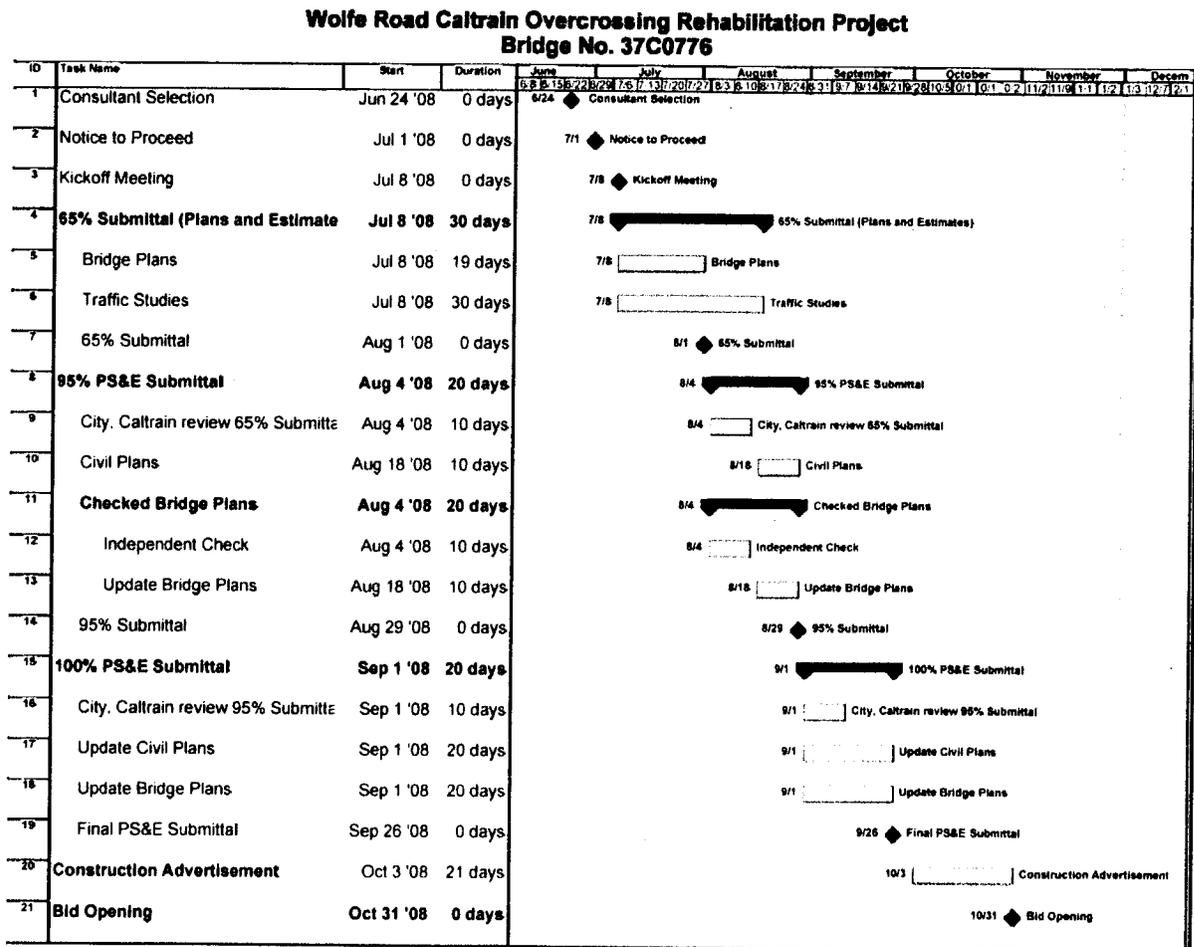
**9. Quality Assurance/Quality Control** – HNTB will provide an in-house Quality Assurance / Quality Control (QA/QC) program led by an experienced qualified professional engineer not directly involved with the project and independent of the design team.

**10. Bid Phase Support** – HNTB will provide support services during bidding as necessary, including preparation of addenda and response to contractor questions. Assist with bid evaluation and recommendation of construction contract approval.

**11. Construction Phase Support** – HNTB will provide construction phase support including submittal approval, Request For Information (RFI) review, change order review and resolution of design questions and issues. HNTB also proposes to provide a PCJPB Coordinator and Structures Inspector during construction over the railroad span.

**Project Schedule**

With our thorough understanding of the project requirements and our proven track record of staying within budgets and meeting deadlines, HNTB is committed to meeting the City's goals of schedule and budget on this project. The proposed schedule below demonstrates the key milestone dates which HNTB will endeavor to ensure a successful project.



**Wolfe Road Caltrain Overcrossing Rehabilitation Project**  
**RFP No. F0706-98**

**HNTB Corporation**  
**Scope of Work**

The following tasks are in support of the final design and Construction support of Wolfe Road Caltrain Overcrossing Rehabilitation Project.

**MS 01- Project Management / Data Collection**

Task 1.1. Project Management and Agency Coordination

HNTB Team will manage the design contract and all Caltrans related documentation, submittals and reviews. This will include all environmental as well as design approvals of the project including coordination with Caltrans, Caltrain, and all other agencies having interest in the project.

Assumptions:

6 total coordination meetings (1 Kickoff, 1 Caltrans Field Review, 2 Caltrain, 2 City review meetings)

Deliverables:

Monthly Invoices  
Monthly Progress Report

Tasks 1.2, 1.3, 1.4. Data Collection and Field Review

HNTB Team will obtain and review available data and information necessary for designing the project.

Data to be reviewed includes the following:

- Any previous report(s) or documents related to the proposed project area (City to provide)
- As-built plans (HNTB already obtained)
- Utility information (City to provide)
- Aerial photos and any available mapping, including digitized topography (City to provide)
- Preliminary Layout Plans
- Layout Line Alignment
- Right-of-way information (City to provide)

Tasks 1.2: Field Review

HNTB Team will attend the Caltrans Field Review as part of the project funding request through the Highway Bridge Program (HBP). During the field review, Caltrans will

review the proposed scope of work and fill in the PES form. The appropriate environmental document will also be identified during this meeting.

#### Preliminary Environmental Study

HNTB Team will assist the City in preparing a Preliminary Environmental Study (PES) as part of the project funding request through the Highway Bridge Program (HBP). It is anticipated that the environmental document to be developed for the project is Programmatic Categorical Exclusion, without required technical studies. It is our understanding that the PES form may be modified during the field review with Caltrans.

#### **MS 02- 65% Submittal (Unchecked)**

##### Traffic Analysis (Fehr & Peers)

HNTB Team subconsultant, Fehr and Peers will perform traffic engineering services to produce traffic control plans to handle traffic through and around the project area through the duration of construction. A critical period will be the time during which the structure will be closed to all traffic. HNTB Team will perform these traffic engineering services with the following tasks:

- Task 1-Review Existing Information:
  - review the existing data and information available such as traffic count data, road closure requirements and recommendations, construction regulations for the City, and other traffic characteristics;
  - coordinate with the City's staff to obtain available data relevant to the project, including traffic counts and agency concerns regarding traffic control;
  - perform detailed field reconnaissance of the project site and potential detour routes.
  
- Task 2-Collect Additional Traffic Counts:
  - coordinate collection of additional traffic counts along the proposed detour routes to supplement any existing counts collected in Task 5.1;
  - two 24-hour, 7-day counts and two peak hour turning movement counts will be collected.
  
- Task 3-Circulation and Detour Plan:
  - develop conceptual circulation and detour plans for two alternatives based upon the review and collection of traffic data that identify existing circulation routes, possible and probable detour routes, and critical detour intersections;
  - attend one meeting to present findings to City.

**MS 02- 65% Submittal (Unchecked),  
MS 03- 95% Submittal (Checked),  
MS 04- 100% Final Submittal**

Plans, Specifications, and Cost Estimate

HNTB Team will provide a complete set of plans, specifications, and cost estimate for the selected design with appropriate reviews by City staff at the 65%, 95%, and 100% stages of development.

Anticipated drawing list:

		Number of Sheets
1	Title Sheet	1
2	General Plan	1
3	General Notes	1
4	Bridge Removal Plans	1
5	Stage Construction / Traffic Handling	4
6	Hinge Repair Details	2
7	Bearing Pad Replacement	2
8	Joint Seal Replacement	1
9	Miscellaneous Details	1
	<b>Total Sheets</b>	<b>14</b>

**MS 03- 95% Submittal (Checked),  
MS 04- 100% Final Submittal**

Design Review

HNTB will attend two (2) review meetings with the City, one each after the 65% and 95% reviews are completed. We also assumed to attend two (2) coordination meetings with the PCJPB to review the design and construction of the repair work. Although Caltrans review of the design is required, we anticipate that no review meetings with Caltrans are necessary other than the Caltrans Field Review meeting.

**MS 03- 95% Submittal (Checked)**

Task 3.4. Independent Structural Check

Structure independent checking will follow Caltrans practice and will be performed by a registered professional engineer. The independent checking will include checking of structure designs, plan preparation, and quantity estimates. Differences in the calculations will be reconciled first before the 95% plans and estimates are submitted to City/ Caltrans for review and approval. HNTB will respond to the checker's comments, and will provide a written memo outlining resolutions to all the check comments and design discrepancies.

## **MS 05- SERVICES DURING CONSTRUCTION**

### **Task 5.1. Bid Phase Support**

HNTB will provide support services during bidding as necessary, including preparation of addenda and response to contractor questions. Assist with bid evaluation and recommendation of construction contract approval.

### **Task 5.2, 5.3, 5.4. Construction Phase Support**

HNTB will provide construction phase support including submittal approval, Request For Information (RFI) review, change order review, and resolution of design questions and issues. HNTB also recommends, as an optional service to provide a PCJPB Coordinator and Structures Inspector during construction over the railroad span. HNTB will also provide record drawings of the completed project from the contractor's marked-up drawings.

### **Specific Highlighted Exclusions from the Scope of Work:**

1. Design, plans, specifications, and review/checking for temporary structures including, but not limited to falsework, temporary shoring, temporary traffic decking, demolition, underpinning, and other excavation support systems
2. Shop drawing preparation, review, and checking
3. Geotechnical Investigations and Report
4. Surveying
5. Seismic Retrofit of Structures
6. Utilities modifications

## Wolfe Road Caltrain Overcrossing Rehabilitation Project Bridge No. 37C0776

ID	Task Name	Start	Duration	Gantt Chart											
				June	July	August	September	October	November	Decem					
1	Consultant Selection	Jun 24 '08	0 days	6/24	◆ Consultant Selection										
2	Notice to Proceed	Jul 1 '08	0 days	7/1	◆ Notice to Proceed										
3	Kickoff Meeting	Jul 8 '08	0 days	7/8	◆ Kickoff Meeting										
4	65% Submittal (Plans and Estimate	Jul 8 '08	30 days	7/8	65% Submittal (Plans and Estimates)										
5	Bridge Plans	Jul 8 '08	19 days	7/8	Bridge Plans										
6	Traffic Studies	Jul 8 '08	30 days	7/8	Traffic Studies										
7	65% Submittal	Aug 1 '08	0 days	8/1	◆ 65% Submittal										
8	95% PS&E Submittal	Aug 4 '08	20 days	8/4	95% PS&E Submittal										
9	City, Caltrain review 65% Submitta	Aug 4 '08	10 days	8/4	City, Caltrain review 65% Submittal										
10	Civil Plans	Aug 18 '08	10 days	8/18	Civil Plans										
11	Checked Bridge Plans	Aug 4 '08	20 days	8/4	Checked Bridge Plans										
12	Independent Check	Aug 4 '08	10 days	8/4	Independent Check										
13	Update Bridge Plans	Aug 18 '08	10 days	8/18	Update Bridge Plans										
14	95% Submittal	Aug 29 '08	0 days	8/29	◆ 95% Submittal										
15	100% PS&E Submittal	Sep 1 '08	20 days	9/1	100% PS&E Submittal										
16	City, Caltrain review 95% Submitta	Sep 1 '08	10 days	9/1	City, Caltrain review 95% Submittal										
17	Update Civil Plans	Sep 1 '08	20 days	9/1	Update Civil Plans										
18	Update Bridge Plans	Sep 1 '08	20 days	9/1	Update Bridge Plans										
19	Final PS&E Submittal	Sep 26 '08	0 days	9/26	◆ Final PS&E Submittal										
20	Construction Advertisement	Oct 3 '08	21 days	10/3	Construction Advertisement										
21	Bid Opening	Oct 31 '08	0 days	10/31	◆ Bid Opening										

**HNTB CORPORATION**  
**PROFESSIONAL FEE PROPOSAL**  
**FOR**

<b>PROJECT:</b>		Wolfe Road Caltrain Overcrossing Rehabilitation Final Engineering and Construction Support		CONTRACT NO.	
<b>CLIENT:</b>		City of Sunnyvale		<b>OWNER:</b> City of Sunnyvale	
Prep. by :		K. Go		Date: 6/18/2008	
RFP No :				Date: 6/18/2008	
<b>PROPOSED SERVICE:</b>					
<p>1 Project Management  2 Final PS&amp;E on Repair Work and associated traffic handling plans  3 Construction Support Services</p> <p>Assumptions:  A1. Limited traffic analysis is included. Assume to discuss with City on detailed traffic analysis upon consultant selection.  A2 Total of 6 project coordination meetings are assumed</p> <p>Notes: Hourly Rate are listed for all TIME AND MATERIAL (T&amp;M) types Contracts  Expenses will be billed at cost  Rates are subject to annual escalation beginning Jan 1, 2009</p>					
<b>MANHOUR SUMMARY:</b>					
		<b>Manhours</b>	<b>Billing Rate</b>	<b>Total Labor Cost</b>	
<b>No.</b>	<b>Classification</b>				
1	Project Manager	198	300.00	59,400	
2	Senior Engineer	138	220.00	30,360	
3	Project Engineer/Squad Leader	120	185.00	22,200	
4	Engineer III	344	160.00	55,040	
5	Engineer II	248	135.00	33,480	
6	CAD Tech III	268	90.00	24,120	
7	Admin Asst	68	105.00	7,140	
(1)		1,384		231,740	
<b>OTHER DIRECT COST SUMMARY <sup>(a)</sup></b>					
	01 Reproductions			1,073	
	02 Xerox			1,577	
	03 Computer			0	
	04 Travel/Transportation			100	
	05 SubConsultants (Traffic)			10,000	
	06 Special Deliveries			250	
(2)	<b>TOTAL ODC (Reimb)</b>			<b>\$ 13,000</b>	
(3)	<b>Subconsultant and ODC Markups (2%)</b>			<b>\$ 260</b>	
(4)	<b>TOTAL PROPOSED AMOUNT</b>			<b>\$ 245,000</b>	

(a) Other direct cost breakdowns are shown on Page 4.

**HNTB CORPORATION**  
**MANHOOR ESTIMATES BY**  
**CATEGORY**

PROJECT		Wolfe Road Caltrain Overcrossing Rehabilitation Final Engineering and Construction Support						CONTRACT NO.		
CLIENT:		City of Sunnyvale City of Sunnyvale								
		Project Manager	Senior Engineer	Project Engineer/Squad Leader	Engineer III	Engineer II	CAD Tech III	Admin	TOTAL MANHOURS	TOTAL PROPOSED FEE
<b>TOTAL MANHOOR SUM</b>		<b>198</b>	<b>138</b>	<b>120</b>	<b>344</b>	<b>248</b>	<b>268</b>	<b>68</b>	<b>1,384</b>	<b>231,740</b>
<b>TASK DESCRIPTION</b>										
<b>Task No.</b>										
<b>MS 01- Project Management / Data Collection</b>										
1.1	Project Management	40	-	-	20	-	-	40	100	19,400
1.2	Field Review	8	8	-	-	8	-	-	24	5,240
1.3	Data Collection and Review	8	-	-	8	-	-	-	16	3,680
1.4	Review Bridge Inspection Report	4	-	-	8	-	-	-	12	2,480
<b>Labor Subtotal</b>		<b>60</b>	<b>8</b>	<b>-</b>	<b>36</b>	<b>8</b>	<b>-</b>	<b>40</b>	<b>152</b>	<b>30,800</b>
<b>MS 02- 65% Submittal (Unchecked)</b>										
2.1	Structure and Civil Plans	28	77	72	86	53	151	-	467	73,056
2.2	Specifications	16	-	-	8	8	-	16	48	8,840
2.3	Quantity/ Estimates	-	-	-	-	16	-	-	16	2,160
<b>Labor Subtotal</b>		<b>44</b>	<b>77</b>	<b>72</b>	<b>94</b>	<b>77</b>	<b>151</b>	<b>16</b>	<b>531</b>	<b>84,056</b>
<b>MS 03- 95% Submittal (Checked)</b>										
3.1	Respond to Review Comments	16	-	-	16	8	-	-	40	8,440
3.2	Structure and Civil Plans	9	26	24	29	18	50	-	156	24,352
3.3	Specifications	8	-	-	8	8	-	8	32	5,600
3.4	Independent Check/ Reconcile	-	-	-	60	60	-	-	120	17,700
3.5	Quantity Check/Back-check	-	-	-	16	16	-	-	32	4,720
<b>Labor Subtotal</b>		<b>33</b>	<b>26</b>	<b>24</b>	<b>129</b>	<b>110</b>	<b>50</b>	<b>8</b>	<b>380</b>	<b>60,812</b>
<b>MS 04- 100% Final Submittal</b>										
4.1	Reconcile Final Review Comments	8	-	-	8	8	-	-	24	4,760
4.2	Structure and Civil Plans	9	26	24	29	18	50	-	156	24,352
4.3	Specifications	8	2	-	8	8	-	4	30	5,620
4.4	Estimates	-	-	-	4	4	-	-	8	1,180
<b>Labor Subtotal</b>		<b>25</b>	<b>28</b>	<b>24</b>	<b>49</b>	<b>38</b>	<b>50</b>	<b>4</b>	<b>218</b>	<b>35,912</b>
<b>MS 05- SERVICES DURING CONSTRUCTION</b>										
5.1	Pre-Bid Meeting / Bid Support	4	-	-	8	-	-	-	12	2,480
5.2	Respond to RFI	8	-	-	4	8	-	-	20	4,120
5.3	Construction Plan Review/Caltrain Coordination	16	-	-	16	8	-	-	40	8,440
5.4	As-Built Plans	8	-	-	8	-	16	-	32	5,120
<b>Labor Subtotal</b>		<b>36</b>	<b>-</b>	<b>-</b>	<b>36</b>	<b>16</b>	<b>16</b>	<b>-</b>	<b>104</b>	<b>20,160</b>

(1) See page 3 "Manhours by Sheet Count" for hours breakdown by Structural Plans

**HNTB CORPORATION**  
**MANHOOR ESTIMATES BY**  
**SHEET COUNT**

PROJECT		Wolfe Road Caltrain Overcrossing Rehabilitation Final Engineering and Construction Support						CONTRACT NO.	
CLIENT:		City of Sunnyvale City of Sunnyvale							
		Number of Plan Sheets	Project Manager	Senior Engineer	Project Engineer / Squad Leader	Engineer III	Engineer II	CAD Tech II	TOTAL MANHOURS
<b>TOTAL MANHOOR SUM</b>		14	46	128	120	144	88	252	778
TASK DESCRIPTION									
Sht No.									
MANHOOR BY SHEET COUNTS		Hours Per Sheet							
1	Title Sheet	1	-	-	-	8	-	4	12
2	General Plan	1	4	-	8	16	8	32	68
3	General Notes	1	2	-	-	8	-	8	18
4	Bridge Removal Details	1	-	-	-	16	-	16	32
5	Stage Construction	1	8	16	-	16	16	16	72
6	Hinge Repair	2	8	16	16	16		24	160
7	Bearing Pad Replacement	2	8	16	16	16		24	160
8	Joint Seal Replacement	1	-	-	-	8	8	16	32
9	Traffic Handling Plans	3	-	16	16		16	16	192
10	Miscellaneous Details	1	-	-	-	8	8	16	32

**HNTB CORPORATION**  
OTHER DIRECT COSTS

<b>PROJECT:</b> Wolfe Road Caltrain Overcrossing Rehabilitation Final Engineering and Construction Support					<b>CONTRACT NO.</b> 0	
<b>CLIENT:</b> City of Sunnyvale						
<b>ITEMS</b>	<b>BASIS</b>	<b>UNIT</b>	<b>AMNT.</b>	<b>COST</b>	<b>TOTAL</b>	
<b>(1) PRINTINGS/REPRODUCTIONS</b>						
Number of drawings			15 EA			
Size of Drawings			5.5 SF			
	<b>No. of Sets</b>					
Bluelines (24x36)=	100	SF	8250	0.13		1073
Sepia Transp=	0	SF	0	0.25		0
Mylars=	0	SF	0	4.50		0
Vellums=	0	SF	0	1.20		0
Photo development	0	Prints	0	0.35		0
<b>TOTAL (1)</b>						<b>1073</b>
<b>(2) COPYING/BINDING</b>						
Calculations	3000	Sht	3000	0.08		240
Reports	0	Sht	0	0.08		0
Color copy (letter size)	100	Shts	100	1.75		175
Xerox (letter size)=	0	Shts	0	0.09		0
Xerox (11X17)=	200	Shts	3000	0.35		1050
Specifications	1405	Sht	1405	0.08		112
<b>TOTAL (2)</b>						<b>1577</b>
<b>(3) COMPUTER/CADD</b>						
CAD Oper. @	0	Hrs.	0	0.00		0
CPU Time @	0	Min.	0.00	0.00		0
Plottings	0	EA	0.00	2.85		0
<b>TOTAL (3)</b>						<b>0</b>
<b>(4) TRAVEL/TRANSPORTATION</b>						
Total Trip Reimbursement	0	Per Trip	0	0		0
		Days	0			0
		Days	0			0
	200	Miles	200	0.500		100
<b>TOTAL (4)</b>						<b>100</b>
<b>(5) SUBCONSULTANTS</b>						
Fehr and Peers	1	LS	10000			10000
		LS				0
		LS				0
		LS				0
<b>TOTAL (5)</b>						<b>10000</b>
<b>(6) SPECIAL DELIVERIES</b>						
US Mails	0	EA	1.00	0.45		0
FedEx(or Eq)	10	EA	1.00	25		250
Special Del.	0	EA	1.00	40		0
<b>TOTAL (6)</b>						<b>250</b>

## EXHIBIT C

### INSURANCE REQUIREMENTS

CONSULTANT shall procure and maintain for the duration of the Agreement insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work by CONSULTANT, its agents, representatives, or employees.

#### **Minimum Scope and Limits of Insurance**

CONSULTANT shall maintain limits no less than:

1. **Commercial General Liability**: \$1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit. ISO Occurrence Form CG 0001 is required.
2. **Automobile Liability**: \$1,000,000 per accident for bodily injury and property damage. ISO Form CA 0001 is required.
3. **Workers' Compensation** and **Employer's Liability**: \$1,000,000 per accident for bodily injury or disease.
4. **Errors and Omissions** Liability Insurance appropriate to CONSULTANT's profession: \$1,000,000 per occurrence.

#### **Deductibles and Self-Insured Retentions**

Any deductibles or self-insured retentions must be declared and approved by CITY. CONSULTANT shall guarantee payment of any losses and related investigations, claim administration and defense expenses within the deductible or self-insured retention.

#### **Other Insurance Provisions**

The **general liability** and **automobile liability** policies are to contain, or be endorsed to contain, the following provisions:

1. CITY, its officials, employees, agents and volunteers are to be covered as additional insureds with respect to liability arising out of activities performed by or on behalf of CONSULTANT; products and completed operations of CONSULTANT; premises owned, occupied or used by CONSULTANT; or automobiles owned, leased, hired or borrowed by CONSULTANT. The coverage shall contain no special limitations on the

scope of protection afforded to CITY, its officers, employees, agents or volunteers, except as follows: Coverage shall not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under Subdivision (b) of section 2782 of the Civil Code.

2. For any claims related to this project, CONSULTANT's insurance shall be primary. Any insurance or self-insurance maintained by CITY, its officers, officials, employees, agents and volunteers shall be excess of CONSULTANT's insurance and shall not contribute with it.
3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to CITY, its officers, officials, employees, agents or volunteers.
4. CONSULTANT's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
5. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, cancelled by either party, reduced in coverage or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to CITY.

#### Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII, unless otherwise acceptable to CITY.

#### Verification of Coverage

CONSULTANT shall furnish to CITY original Certificate(s) of Insurance and endorsements effecting the coverage required. The Certificate(s) shall be signed by a person authorized by that insurer to bind coverage on its behalf. All certificates and endorsements are to be received and approved by CITY prior to commencement of work.



**Council Meeting: May 6, 2008**

**SUBJECT: Receive Staff Report on Recent Emergency Bridge Repairs, Revise the Budget and Schedule for Wolfe Road CalTrain Overcrossing, Project 825620, and Approve Budget Modification No. 53**

**REPORT IN BRIEF**

The Department of Public Works (DPW), requests the City Council revise the schedule and budget for the Wolfe Road CalTrain Overcrossing, Project 826620 to move it forward to the current fiscal year. The project was scheduled for design in FY 2010/11 with construction in FY 2011/12. Recent accelerated deterioration of the bridge bearing pads, and subsequent damage requires that the design and construction of bridge repairs occur sooner than FY 2010/11.

**BACKGROUND**

The Wolfe Road Bridge over CalTrain is one of several bridges owned by the City, and inspected biennially by Caltrans. The bridge was built in 1981, when there were only two sets of railroad tracks beneath. After the bridge was built, CalTrain added two sets of tracks, closer to the bridge supporting columns.

The July 12, 2004 Caltrans bridge report recommended deck repair, replacement of bridge bearing pads, and patching spalls in the superstructure. In response to the bridge report, staff prepared, and the City Council approved Capital Improvement Project 825620 *Wolfe Road CalTrain Overcrossing* for bridge rehabilitation as recommended in the report. The capital improvement project scheduled \$78,030 in FY 2010/11 and \$557,134 for FY 2011/12, from the Gas Tax Fund. This estimate was based on the information available at the time.

As one of several safety precautions, CalTrain inspects their railroad tracks about every 72 hours to make sure the tracks are free and clear. On Wednesday, April 23, 2008, CalTrain personnel notified the City that chunks of concrete had fallen from the bridge onto the railroad tracks below. CalTrain emphasized their safety concern, demanding immediate action.

The City immediately mobilized resources to inspect the bridge and take appropriate action. City staff reviewed the site and obtained photographs. Caltrans Bridge Inspector, Daniel Zuhlke was contacted in the field and reviewed the photos via the internet, in collaboration with other Caltrans

employees in their office with access to the bridge plans. Caltrans had recently completed the 2008 inspection of this bridge, with the report pending. Caltrans did not find potential for imminent risk of bridge failure, but agreed to visit the site the next day at the City's request.

City staff hired bridge structural consultant HNTB Corporation, on an emergency \$20,000 contract, to inspect, evaluate and advise the City on the bridge. The City Purchasing Division also released a check to CalTrain for \$10,760 to cover required: permit fees, CalTrain flagger costs, and railroad insurance.

The Caltrans Bridge Engineer, the HNTB Bridge Engineer, and the CalTrain Chief Engineer and CalTrain flaggers entered the CalTrain right-of-way and inspected the bridge together on Thursday, April 24, 2008. They found that the bridge bearing pads had deteriorated, allowing the central portion of the bridge to settle approximately one and one-half inches vertically. This settlement and possible stress from post-tensioning allowed portions of the decorative outer concrete skin of the structure to bear upon one another causing some concrete at the edge of two hinge joints to break away and fall off the bridge. One of these hinges is directly over a set of recently added railroad tracks. CalTrain ordered their trains to go slow in the area to reduce the risk of a falling piece causing damage.

Since they found no indication of overall bridge failure, the concern was focused on removing material subject to breaking off, to protect trains, rails, and personnel below. On the evening of Friday, April 25, at 11:30 p.m. the HNTB Bridge Engineer, CalTrain Chief Engineer, CalTrain right-of-way flaggers and City personnel assembled to check the bridge hinges, remove loose material, and more closely inspect the bridge. Near midnight (April 26) after receiving the all-clear from CalTrain to enter the right-of-way, the team removed loose material, and performed a closer inspection. HNTB has prepared a report with findings and recommendations (Attachment A).

### **EXISTING POLICY**

The following documents contain policy direction on this issue:

*Land Use and Transportation Element C3.4.* Maintain roadways and traffic control devices in good operating condition.

*Fiscal Sub-Element 7.1C.1.d.* High priority should be given to replacing capital improvements prior to the time that they have deteriorated to the point where they are hazardous, incur high maintenance costs, negatively affect property values, or no longer serve their intended purposes.

## **DISCUSSION**

Although the immediate concern was alleviated swiftly, the consultant and staff recommend moving the design and construction of the Wolfe Road CalTrain Overcrossing project up. HNTB states in the attached report that “There is currently no imminent danger of bridge collapse, but due to worsening condition of the hinges, and to reduce the hazard of falling concrete onto Caltrain tracks, HNTB recommends ... (the bridge repair) ... be completed within the next 6 months, before the next winter”. HNTB is revising the scope of work and cost estimate to reflect the latest information. The cost of repair is greater than initially anticipated due to several reasons, which include additional information allowing a more complete understanding of costs, recognition that the bearing pads from all four bridge hinges must be replaced, and the difficulty in raising the bridge over the CalTrain right-of-way, particularly when the hinge is directly over newer tracks.

Until the bridge can be fully refurbished, the consultant also recommends inspection, including sounding for other loose material, and removal of loose material on a monthly basis.

## **FISCAL IMPACT**

The preliminary estimate for this project is \$2 million. This includes design and preparation of bid documents, bidding, construction, project management, permit fees, special inspection, and contingency.

Staff will pursue use of Federal Highway and Bridge Rehabilitation and Reconstruction (RBRR) funds, or other possible grant funds. However, seeking outside funding within the quick schedule necessary for these repairs may not be fruitful. Therefore, staff recommends allocating State Proposition 1B Infrastructure Bond Funds for this project.

In November 2006, California voters approved Proposition 1B to authorize \$42.7 billion in statewide bonds to fund infrastructure projects. These State Infrastructure Bonds included \$2 billion statewide in funds for maintenance and improvement of local streets and roads. Sunnyvale’s allocation is estimated to be \$4.2 million. Eligible projects include repairs to pavement, bridges, non-driving facilities, traffic signals, and other facilities that reduce traffic congestion, reduce deterioration of facilities, or improve traffic flow and safety. One half of the total allocation to cities was made available in FY 2007/08; Sunnyvale is eligible to receive \$2.1 million after filing a project plan with the State’s Department of Finance. The funds were not programmed in last year’s Capital Improvement Program because the guidelines and requirements of the Bonds were not available at that time. Staff is recommending that these funds

be utilized to allow the Wolfe Road CalTrain Overcrossing project to proceed immediately. Appropriating the State Infrastructure Bond funds for the project will make \$635,164 in Gas Tax funds available for future projects in FY 2010/11 and FY 2011/12.

Projects as submitted for the State Infrastructure Bond funds are flexible, and substitutions are allowed. Should Bridge Rehabilitation funds become available, staff could amend the request to utilize the funds for other eligible projects.

The following table presents Budget Modification No. 53, which appropriates State Infrastructure Bond funds to the Wolfe Road CalTrain Overcrossing project:

**BUDGET MODIFICATION NO. 53  
FISCAL YEAR 2007/2008**

	<u>Current</u>	<u>Increase (Decrease)</u>	<u>Revised</u>
<b>Capital Projects Fund/General Sub-fund</b>			
<u>Revenues:</u>			
State Proposition 1B Infrastructure Bond Funds	\$0	\$2,100,000	\$2,100,000
<u>Expenditures:</u>			
Project 825620 — Wolfe Road CalTrain Overcrossing	\$0	\$2,100,000	\$2,100,000

Upon approval of this Budget Modification, staff will adjust the funding for the project to remove the FY 2010/11 and FY 2011/12 allocations of Gas Tax in the recommended FY 2008/2009 Budget.

**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.

**ALTERNATIVES**

1. Approve revising the schedule and budget for Wolfe Road CalTrain Overcrossing, project #825620, to begin in the current fiscal year and approve Budget Modification No. 53 to appropriate \$2.1 million in State Infrastructure bond proceeds to the project.
2. Direct staff to prepare a stop-gap measure project to minimize project costs until the existing project funding is available beginning in fiscal year 2010/11.
3. Cancel a current Capital Project and redirect funds and resources from it to the Wolfe Road CalTrain Overcrossing.

**RECOMMENDATION**

Staff recommends Alternative No. 1: Approve revising the schedule and budget for Wolfe Road CalTrain Overcrossing, project #825620, to begin in the current fiscal year, and approve Budget Modification No. 53 to appropriate \$2.1 million in State Infrastructure bond proceeds to the project. This alternative addresses the issue in the quickest most cost-effective manner.

Alternative No. 2., preparing a stop-gap measure project to minimize project costs until the existing project funding is available beginning in fiscal year 2010/11, will likely cost more money in the long run. It may place the City at higher risk due to the possibility of potential damage to CalTrain. Since the bearing pads appear to have failed, the unabated friction from expansion and contraction, and loss of damping of traffic loads will lead to further structural damage, and additional costs. Therefore, this alternative is not recommended.

Alternative No. 3., canceling a current Capital Project and redirecting funds and resources from it to the Wolfe Road CalTrain Overcrossing would result in deferring another needed high priority project with related consequences. Many current capital improvement projects, such as Mathilda Bridge, or Murphy Street Rehabilitation have grant funding that cannot be reallocated. Removing City required matching funds would jeopardize the grant funding. Therefore, this alternative is not recommended.

Reviewed by:



Marvin A. Rose, Director of Public Works

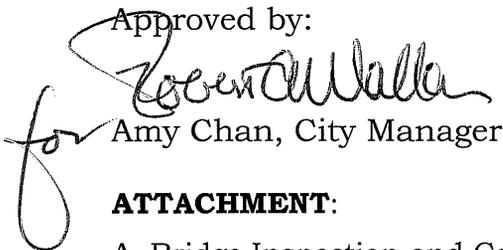
Prepared by: Mark Rogge, Assistant Director of Public Works

Reviewed by:



Mary J. Bradley, Director of Finance

Approved by:



for Amy Chan, City Manager

**ATTACHMENT:**

A. Bridge Inspection and Concrete Removal Report from HNTB

The HNTB Companies  
Engineers Architects Planners

1735 Technology Drive, Suite 650  
San Jose, CA 95110

Telephone (408) 451-7300  
Facsimile (408) 451-6942  
www.hntb.com

April 28, 2008



Mr. Manny Kadkhodayan, PE  
Senior Engineer  
City of Sunnyvale  
456 West Olive Avenue  
P.O. Box 3707  
Sunnyvale, CA 94088-3707

**RE: Bridge Inspection and Concrete Removal of Wolfe Road Overhead**

*Location: Wolfe Road over Caltrain tracks at MP 39.7*

*References: Caltrans Bridge Inspection Report, dated 04/14/04, Bridge No. 37C0776*

As a result of Caltrain routine track inspections, large pieces of concrete (approximately 12"x15" size, shown in Photo 1) fallen from Wolfe Road Overhead were discovered adjacent to Caltrain rails, and Caltrain notified the City of Sunnyvale (City) on 4/23/08. By request of the City, HNTB met with the City, Caltrans and Caltrain at the bridge location on 4/24/2008 to perform an evaluation of the site condition – spalling concrete on the bridge. According to Caltrain, spalling concrete currently poses a major safety hazard to Caltrain rail traffic below.

**Background**

In response to the 4/14/04 Caltrans Bridge Inspection Report for Wolfe Road OH Bridge, the City scheduled a Capital Improvement Project to repair minor spalling, deck rehabilitation, and the failing bearing pads.

See Photo 2 for an Aerial view of Wolfe Road Overhead, hinge and abutment locations.



Photo 1 – Large Pieces of Concrete Discovered by Caltrain and reported on 4/23/08

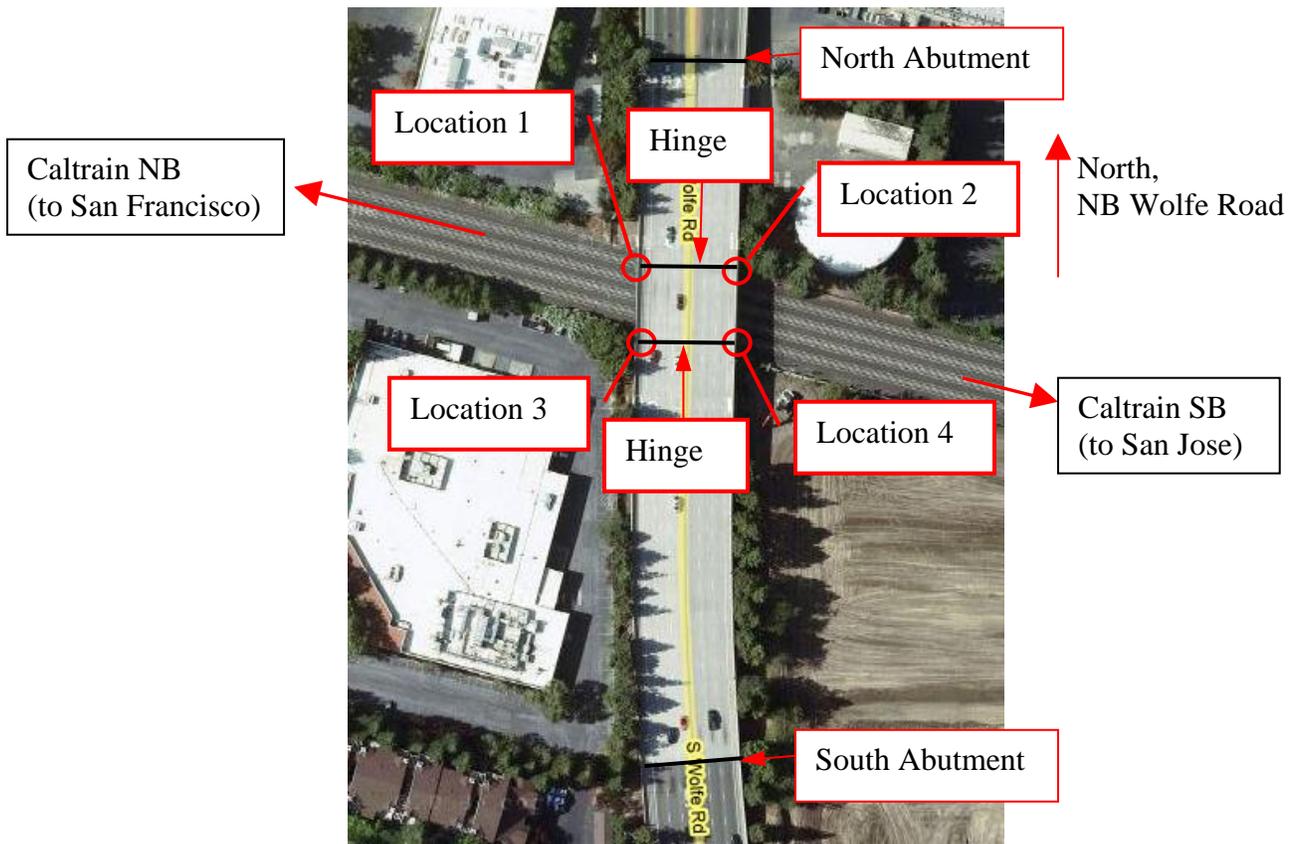


Photo 2 – Aerial View of Wolfe Road Overhead, Hinge and Abutment Locations.

**Site Observations on 4/24/08**

HNTB performed a visual inspection of the two abutments and two hinges of the railroad span on 4/24/08. Assessment of the hinge locations indicate there have been large chunks of concrete (up to 12"x15" in size), and reinforcement which have broken off from the superstructure and fallen on the Caltrain right-of-way. The spalling occurs at both north and south hinge locations on the west side of the bridge. The area of major concern is the northern hinge where spalled concrete falls directly onto a Caltrain track. There is an approximate 3' x 1.5' area of delaminated concrete in the soffit, adjacent to the spall at the north hinge above the Northbound Caltrain track (see Photos 3 and 4).



Photo 3 – Loose Pieces of Concrete Fallen from Bridge near Location 1



Photo 4 - Delaminated Concrete in Bridge Soffit at Location 1

Inspections at the deck surface indicate the elevation difference between railroad span and the adjacent spans at the hinges is approximately 1½" due to deteriorated bearing pads (see Photos 5 and 6).

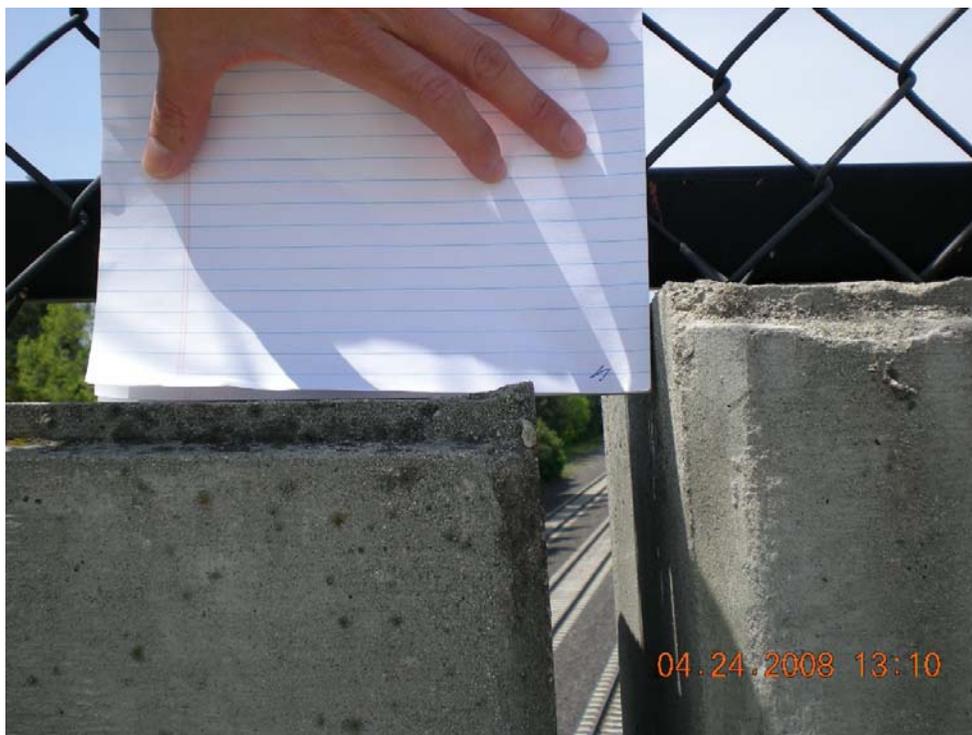


Photo 5 - View of 1½" differential at Barrier at North Hinge (west side)



Photo 6 - View of North Hinge Expansion Joint – Looking East.  
Span on right hand side (railroad span) about 1½” lower

#### **Concrete Removal Work on 4/25/08**

At the request of the City, HNTB was directed to serve as Engineer on site to direct concrete removal of unsound concrete which could potentially fall off the bridge and onto the tracks. The work was performed with the following individuals on site:

- Caltrain: Steve Hill, PE, Chief Engineer, Maintenance & Construction, 2 Caltrain flagmen
- City of Sunnyvale: Joe Gonsalves, James LeMasters, Justin Chapel
- HNTB: Kuan Go, PE

Sounding test of the concrete around the hinge was first performed, followed by removal of the unsound concrete pieces. Concrete removal was performed by hand tools. Overall, two large pieces of unsound concrete were removed from the hinge area: One 6"x4"x3" piece at the hinge seat level and the second piece measures approximately 24"x4"x2" at the bridge soffit (See photos 5 and 6).

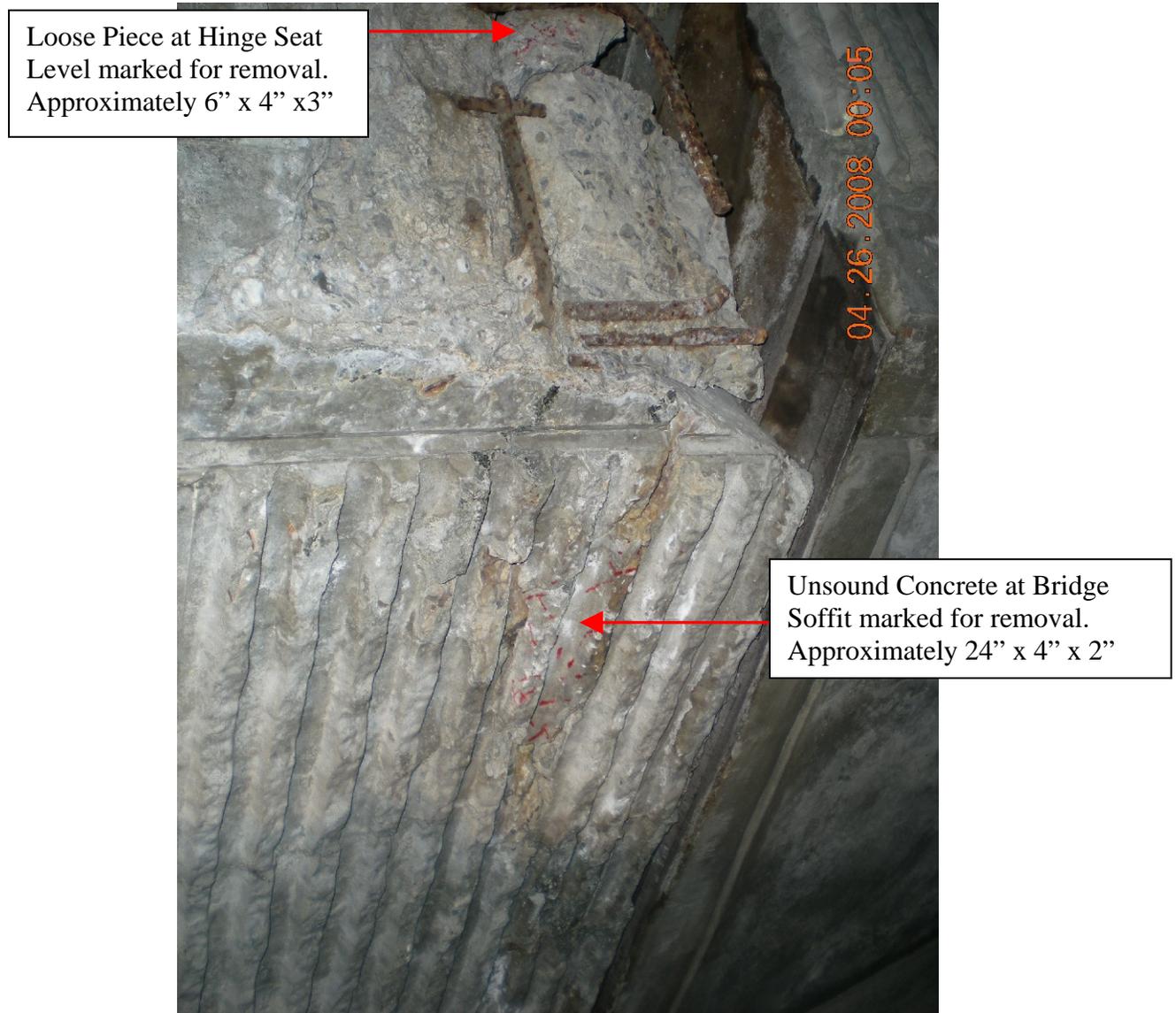


Photo 5 – “Before” Photo of Two Concrete Pieces Identified for Removal at Location 1

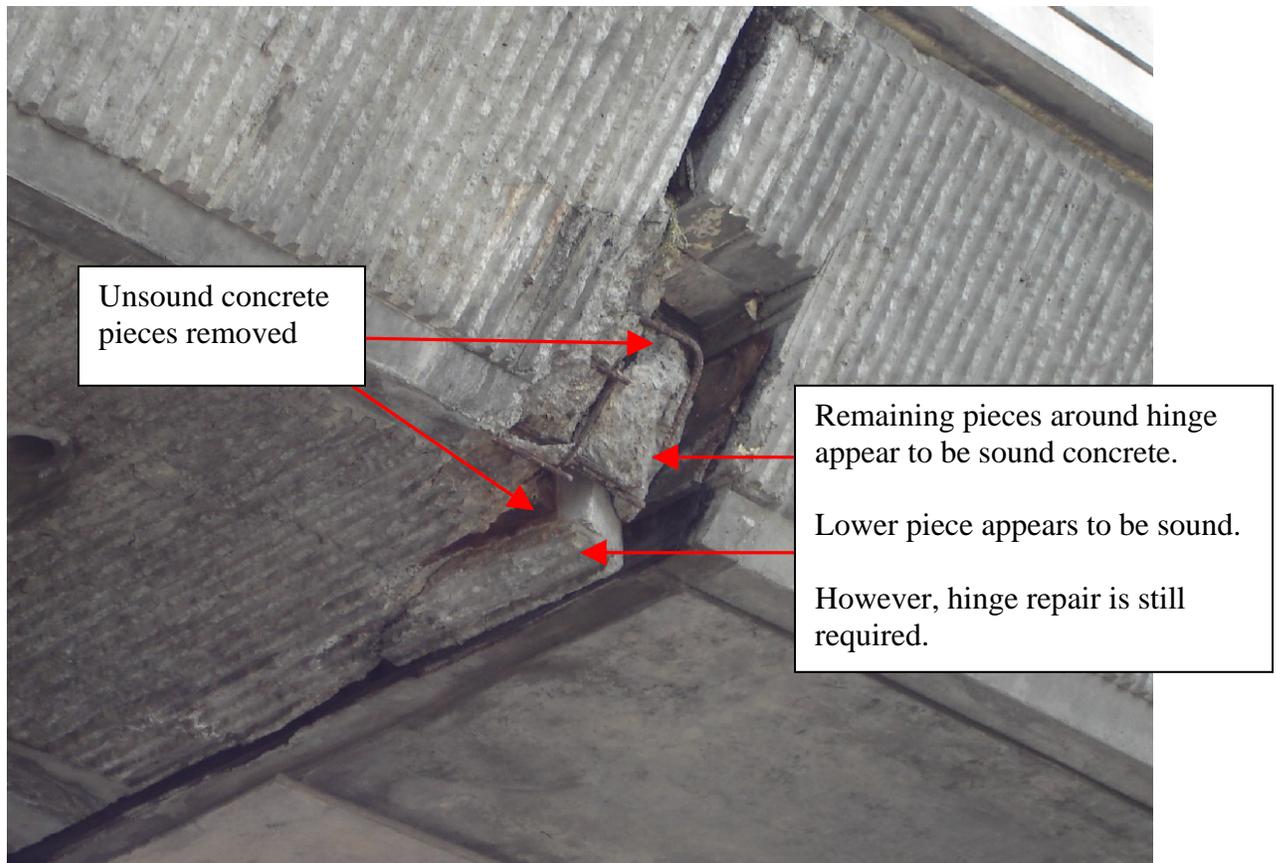


Photo 6 – “After” Photo of Two Unsound Concrete Pieces Removed at Location 1

## Conclusion

Based on HNTB’s review of the Bridge As-Built, Caltrans Bridge Inspection Report, visual inspections and concrete removal work, it is our opinion that the concrete cracking and spalling at the hinge could be due to several reasons. Some of the reasons are highlighted below:

- Concrete cracking at the hinge due to post-tensioning. This area of the hinge consists of two post-tensioned anchorages spaced about 3 feet apart laterally. The post-tensioned anchorages at this corner have a high concentration of stresses which may have caused minor cracking of concrete around the anchorage regions.
- Failed elastomeric bearing pads – Due to the failed elastomeric bearing pads, there is a loss of a damping mechanism for traffic impact loads, while the 1½” drop at the hinge significantly increases the impact loads. Therefore the hinge exhibits higher traffic impact loads than what it was designed for. This increased impact loads on the hinge may have caused the minor cracks to enlarge.
- Additional vibration from increased train traffic on the newer Northbound tracks, which were installed after the bridge was constructed.
- Water seepage into the cracks may have caused reinforcing and anchorage steel to corrode and expand, resulting in concrete spalling.

Based on our inspections and concrete removal work, it is our opinion that the remaining pieces around the hinge at Location 1 appear to be sound (see Photo 7). However, further repairs will be required as per the recommendations below.

At Location 2, the pieces at the east side of the north hinge may still fall within the immediate future. Since they are approximately 15' away from the edge of Caltrain tracks, they pose less of a safety concern (see Photo 8).

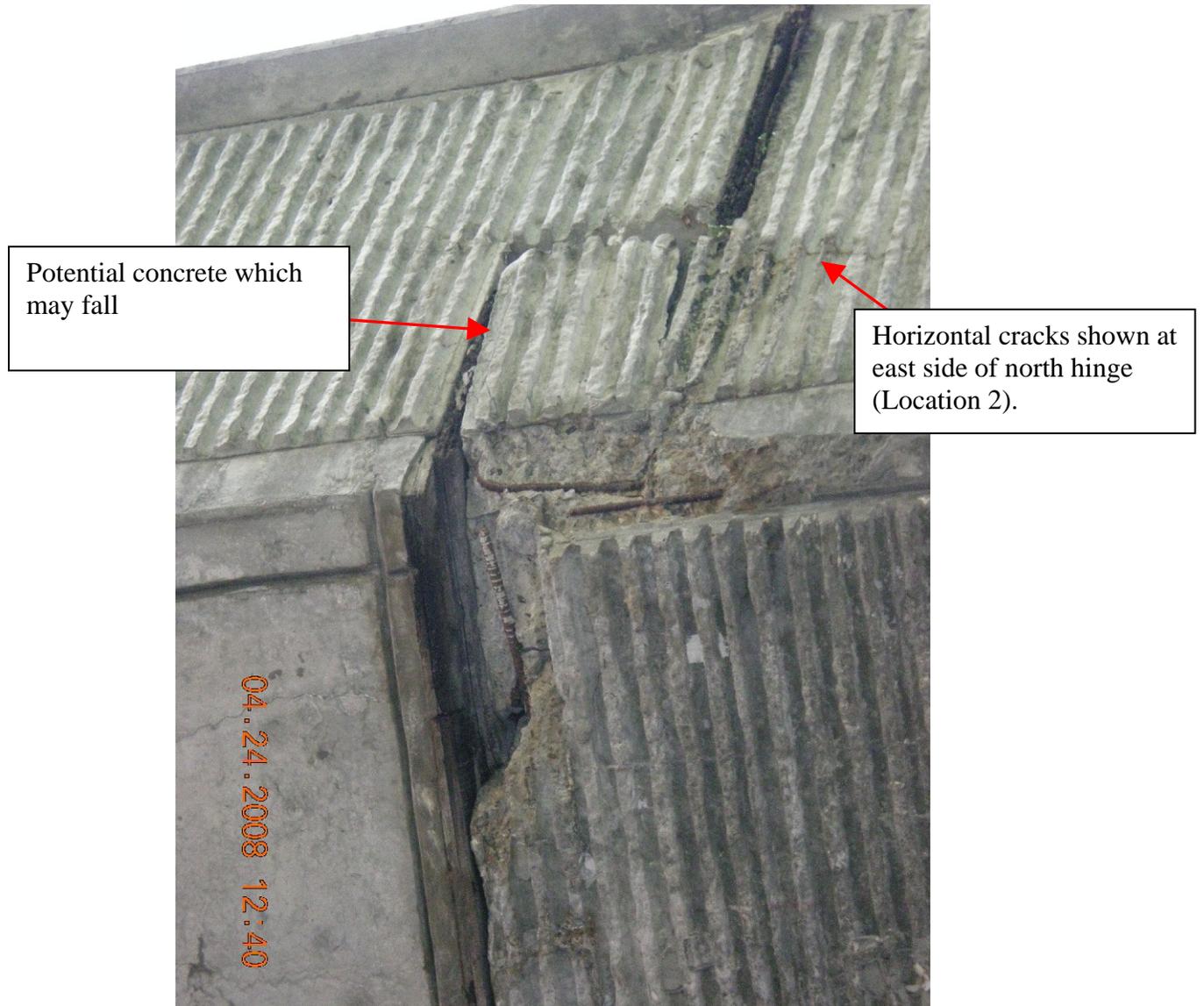


Photo 7 – Location 2 Hinge showing horizontal crack and potential concrete which may fall

At the south hinges (Locations 3 and 4), the hinges appear to be in fair condition, with minor horizontal crack. However, these hinges will likely deteriorate to conditions similar to the hinges at Locations 1 and 2 if repairs are not carried out.



Photo 8 – Typical Condition of South Hinge (Locations 3 and 4) showing minor horizontal crack

### **Recommendations**

There is currently no imminent danger of bridge collapse, but due to worsening condition of the hinges, and to reduce the hazard of falling concrete onto Caltrain tracks, HNTB recommends the following to be completed within the next 6 months, before the next winter:

- Repair spalled concrete at hinge joints
- Replace failed elastomeric bearing pads
- Treat deck with methacrylate resin

Before the start of the recommended construction above, HNTB also recommends the City and Caltrain perform the following work to reduce the likelihood of additional concrete falling onto the tracks:

- Caltrain track inspectors should monitor Wolfe Road OH at MP 39.7 for loose concrete pieces during their routine track inspections every 72 hours.
- Perform concrete sounding test of north hinge above northbound (NB) Caltrain track and remove loose concrete pieces every month during the dry season. This work shall be carried out under the direction of a Professional Engineer.
- If further concrete deteriorations are found over the inspections, more frequent monitoring and inspections may be warranted and repair work should be accelerated. The City should also consider limiting large trucks for using the Wolfe Road OH bridge if this situation arises.

Repairing the spalled concrete at the hinges and replacement of failed bearing pads will require further design and analysis work. In addition, temporary roadway closure and close coordination with Caltrain will be required to ensure the work can be completed within the roadway and track closure periods.

We appreciate the opportunity to service the City of Sunnyvale on this important assignment. If you have any questions or need any additional information please do not hesitate to contact me.

Very Truly Yours,  
HNTB Corporation



Kuan Go, PE  
Project Manager

cc: J. Litzinger, E. Okada, S. Lai - HNTB