



Memorandum

TO: HONORABLE MAYOR
AND CITY COUNCIL

FROM: Scott P. Johnson

**SUBJECT: REPORT ON RFP FOR TRAFFIC
SIGNAL CONTROLLER FIRMWARE**

DATE: September 24, 2007

Approved

Date

9/27/07

COUNCIL DISTRICT: Citywide

RECOMMENDATION

Report on Request for Proposals (RFP) for the purchase of Traffic Signal Controller Firmware and authorize the Director of Finance to:

1. Execute an agreement with Fourth Dimension Traffic ("Fourth Dimension") of San Francisco, CA, for the purchase of transit signal priority firmware for standard, bus and light rail signal synchronization, including site licenses, related professional services, five years of warranty/maintenance, for a total amount not to exceed \$744,813 including sales tax; and
2. Execute change orders not to exceed a 10% contingency in the amount of \$74,500 to cover supplemental services and any unanticipated changes or requirements.

OUTCOME

Provide more efficient intersection control along heavily traveled transit corridors such as Route 82, Capitol Expressway and First Street.

BACKGROUND

On June 27, 2006, the City Council approved the upgrade of the City's Central Traffic Signal Management System to support the future deployment of new traffic controller hardware and firmware¹ ("Firmware"). The upgrade to the Central Traffic Signal Management System is now complete, and the new traffic controller hardware is being procured under a separate purchase contract. This memo focuses on the procurement of new Firmware to 1) replace the current traffic signal controllers that have been in place for 20 years and are no longer supported by the manufacturer; and 2) provide more efficient traffic flow along transit corridors.

¹ Firmware is a form of software that is embedded in a machine with specialized programming functions through microcode in a memory chip. This specialized firmware will be used to manage vehicle flows, transit priority, and pedestrian safety at signalized intersections.



In order to address these conditions, the City has partnered with the California Department of Transportation (Caltrans) and VTA to implement the two required Firmware solutions as specified below:

1. **Standard and Transit Signal Priority for BUS (Std/TSP for Bus):** The initial procurement of this Firmware type will support Valley Transportation Authority (VTA) Rapid 522 Bus Signal Priority Upgrades project that runs along Rte. 82 (32 intersections along The Alameda and Santa Clara Street).
2. **Transit Signal Priority for Light Rail Transit (TSP for LRT):** The initial procurement of this Firmware type will be for 41 LRT signalized intersections along Capitol Avenue, First Street, and major LRT intersections.

On November 1, 2006 an RFP was released for the two firmware proposal types. All proposals received were deemed non-responsive because they either did not meet the minimum experience qualifications or did not meet the mandatory technical requirements. On February 27, 2007, Council approved staff's recommendation to reject all proposals, revise the requirements, and issue a new RFP in effort to increase probability of receiving responsive proposals (Council agenda item 2.8).

ANALYSIS

On March 15, 2007, the second RFP with revised specifications was released and advertised on City's BidLine and the DemandStar bid notification system. The RFP requested proposals for the two Firmware types: 1) Standard/TSP for Bus and 2) TSP for LRT. A total of thirteen companies requested the RFP and nine proposals were received by the May 3, 2007 deadline and are shown below in Table 1 by proposal type.

TABLE 1 - Proposals received from Suppliers

<i>Proposer Name</i>	<i>Proposal Type</i>	
	<i>STD/TSP for Bus</i>	<i>TSP for LRT</i>
1. Northwest Signal (Tualatin, OR)	√	√
2. Fourth Dimension Traffic (San Francisco, CA)	√	√
3. Siemens ITS (Berkeley, CA)*	√√	√√
4. Econolite (Anaheim, CA)	√	

*Siemens submitted four proposals for two separate products

The initial evaluation was a pass/fail assessment of each proposal to ensure that all proposals were responsive to the requirements of the RFP. Of the four proposals submitted by Siemens, a Std/TSP for Bus and a TSP for LRT proposal were deemed non-responsive because the required firmware was not submitted as required by RFP. The responsive proposals were then evaluated by a cross-functional team of representatives from Caltrans, VTA, City of Sunnyvale, and the City's Department of Transportation as follows:



Evaluation Phase 1 - Written Proposal: The written proposals were evaluated against criteria and weights as specified in the RFP and as shown in Table 2 and 3 below.

Evaluation Phase 2 - Reference Checks: Submission requirements for the LRT Firmware proposals required references which demonstrated that the proposed LRT solution was installed, implemented, and accepted. Reference checks were conducted to verify that this requirement was met. Based on the reference checks, staff determined that the remaining Siemens LRT proposal did not meet the reference requirement because installation had not yet been completed or accepted.

Evaluation Phase 3 - Oral Presentation/Product Demonstration: Oral presentations with the remaining four Proposers were conducted on July 13, 2007. Each Proposer was requested to address a set of pre-defined technical questions and to demonstrate their proposed solution. At the conclusion of the Oral Presentation/Product Demonstrations, the technical scores from the written proposals and oral presentations were finalized.

The RFP evaluation criteria required a minimum score of 50% of the available points for each evaluation category in order to be considered as a finalist. At this stage of the evaluation process, Econolite was eliminated from further consideration for failing to meet this requirement. Econolite was notified in writing on August 2, 2007 of this decision, and was subsequently debriefed on August 23, 2007 of the RFP evaluation process and scoring.

Evaluation Phase 4 - Cost: At the conclusion of the technical review of the written proposals, cost proposals were opened, tabulated, scored and disclosed to the evaluation team.

Evaluation Phase 5 – Best and Final Offer (BAFO): A BAFO was conducted in order to give finalists an opportunity to make adjustments to their cost proposals following refinement and clarification of technical requirements and professional services requirements. Three BAFO proposals were received by the August 31, 2007 deadline. After receipt of the BAFO responses, the scores were finalized as shown in Tables 2 and 3 for Standard & TSP for Buses and TSP for LRT, respectively.

TABLE 2 – Summary of Final Scores for Standard & TSP for Bus

<i>Evaluation Criteria (weight)</i>	<i>Fourth Dimension (San Francisco, CA)</i>	<i>Siemens ITS (Berkeley, CA)</i>	<i>Northwest (Tualatin, OR)</i>
Experience (10%)	6.3	6.3	5.7
Firmware Requirements/ Interface (45%)	42.2	33.1	35.0
Project Approach (15%)	11.6	9.1	10.4
Cost (20%)	10.9	20.0	15.5
Local Business Preference (5%)	0.0	0.0	0.0
Small Business Preference (5%)	0.0	0.0	0.0
Overall Score	71.0	68.5	66.6
% of High Score	100.0%	96.5%	93.8%



TABLE 3 – Summary of final scores for TSP for LRT ²

<i>Evaluation Criteria (weight)</i>	<i>Fourth Dimension (San Francisco, CA)</i>	<i>Northwest (Tualatin, OR)</i>
Experience (25%)	17.9	14.3
Firmware Requirements/ Interface (20%)	18.9	15.0
Project Approach (30%)	24.3	19.0
Cost (15%)	15.0	7.2
Local Business Preference (5%)	0.0	0.0
Small Business Preference (5%)	0.0	0.0
Overall Score	76.1	55.5
% of High Score	100.0%	72.9%

None of the responsive Proposers requested consideration for the City’s local and Small Business preference. Therefore, the preference was not a factor in the final scoring/ranking of the proposals. Comparing the total pre-tax cost of this acquisition between Fourth Dimension and Northwest, the two proposers who submitted proposals for Standard/TSP for Bus and the TSP for LRT, the City saves approximately \$160,000. Further, comparing the site license with the contract between Fourth Dimension and the City/County of San Francisco, the City of San José contract is \$35,000 less expensive.

The RFP included a process for Proposers to object to specifications and requirements of the RFP. Staff did not receive any objections. In addition, the RFP also provided for a protest process for unsuccessful Proposer’s to protest staff’s award recommendation. No protests were received.

Recommendation Summary: Based on the above evaluation, staff recommends Fourth Dimension for both Standard/TSP for Bus and TSP for LRT because their proposed solutions met or exceeded all of the RFP specifications, provided the most detailed and comprehensive proposal, and demonstrated a superior understanding of the City’s requirements throughout the proposal and presentation process. Fourth Dimension received the highest overall scores for both Standard/BUS and LRT proposals by the evaluation team for the following reasons:

- Extensive experience in both Std/Bus and TSP for LRT traffic signal systems including: traffic and transit simulation software; running firmware on the new traffic signal controller platform being used by the City; developing firmware applications compliant to regional, state and national Intelligent Transportation Systems; and developing and implementing LRT operation strategies and signal timing plans.
- Proven performance and reliability of installed systems, implementation of both Std/TSP for Bus and TSP for LRT within the same controller firmware with interchangeability of priorities.
- Ease of learning and use to create and edit timing plans quickly.
- Detailed operation scenario for implementation of Std/TSP for Bus and control strategies to minimize delays to vehicle traffic during LRT priority.

² Siemens was eliminated after Evaluation Phase 2 due to insufficiency of their references.



integration, TSP for LRT verification testing, TSP for LRT validation testing, and training. The agreement will include detailed description of system, scope of work and task deliverables.

EVALUATION AND FOLLOW-UP

The project is currently within budget and on schedule with a projected completion in October 2012 (includes 5 year maintenance term). No additional follow up actions with the Council are expected at this time.

POLICY ALTERNATIVES

Not applicable.

PUBLIC OUTREACH/INTEREST



Criterion 1: Requires Council action on the use of public funds equal to \$1 million or greater; **(Required: Website Posting)**



Criterion 2: Adoption of a new or revised policy that may have implications for public health, safety, quality of life, or financial/economic vitality of the City. **(Required: E-mail and Website Posting)**



Criterion 3: Consideration of proposed changes to service delivery, programs, staffing that may have impacts to community services and have been identified by staff, Council or a Community group that requires special outreach. **(Required: E-mail, Website Posting, Community Meetings, Notice in appropriate newspapers)**

While this item does not meet any of the criteria above, this memorandum will be posted on the City's website for the October 16, 2007 Council Agenda.

COORDINATION

This memorandum has been coordinated with the Department of Transportation, Information Technology Department, the City Manager's Budget Office, and the City Attorney's Office.

FISCAL/POLICY ALIGNMENT

This action is consistent with the following General Budget Principles "We must focus on protecting our vital core city services for both the short- and long-term" and "We must continue to streamline, innovate, and simplify our operations so that we can deliver services at a higher quality



level, with better flexibility, at a lower cost” and the Strategic Initiative “Make San Jose a Tech-Savvy City; lead the way in using technology to improve daily life.”

COST SUMMARY/IMPLICATIONS

The total cost of the project is \$819,500, which includes \$745,000 for the agreement with Fourth Dimension and \$74,500 for contingency costs. The total cost of the project will be funded by the Building and Structure Construction Tax Fund and has been approved by City Council as part of the 2007-2008 Proposed Capital Budget as shown in the table below.

BUDGET REFERENCE

The table below identifies the fund and appropriations proposed to fund the agreement recommended as part of this memo.

Fund #	Appn #	Appn. Name	Total Appn	Amt. of Agreement	2007-2008 Proposed Capital Budget Page	Last Budget Action (Date, Ord. No.)
Total Project Costs			\$819,500	\$819,500		
429	5054	ITS: Capitol LRT Signal Upgrade	\$340,000	245,000	V - 843	6/19/2007 Ord. 28071
429	5062	Traffic Signals - Rehabilitation	\$2,200,000	484,500	V - 885	6/19/2007 Ord. 28071
429	6137	ITS: VTA Rapid 522 Bus Signal Priority Upgrades	\$425,000	90,000	NA	6/26/2007 Ord. 28084
Total Current Funding Available			\$2,965,000	\$819,500		

CEQA

Not a project.


 SCOTT P. JOHNSON
 Director, Finance

For questions please contact Walter C. Rossmann, Chief Purchasing Officer, at (408) 535-7051.

