



SUPPLEMENTAL

COUNCIL AGENDA: 11-20-07
ITEM: 6.2

Memorandum

TO: HONORABLE MAYOR AND
CITY COUNCIL

FROM: James R. Helmer

**SUBJECT: BART DESIGN ISSUE AT
COYOTE CREEK –
SUPPLEMENTAL MEMO**

DATE: 11-13-07

Approved

Date

11/13/07

COUNCIL DISTRICT: 3

REASON FOR SUPPLEMENTAL MEMO

This supplemental memorandum provides additional information in response to the City Council's deferral of the item from the October 16, 2007 Council meeting (Agenda Item 6.4b).

RECOMMENDATION

Approve preferred design recommendation to the Santa Clara Valley Transportation Authority (VTA) regarding the BART Extension to San Jose/Silicon Valley as follows:

- a. Select the "Southern Offset" for the BART tunnel alignment in the vicinity of Santa Clara Street and Coyote Creek, for the continuation of project design work, and with the condition that a subsequent environmental review process demonstrates the option to be preferred based on environmental and cost effectiveness issues.

OUTCOME

The desired outcome of this Council item is to support continued progress in the development of the BART extension to San Jose and Silicon Valley. The completed BART project aligns with the City's goals for transportation service, economic development and community livability.

BACKGROUND

On October 16, 2007, the City Council considered staff recommendations on two BART project design issues. On the first issue, the City Council approved the selection of the historic Bank of America building lobby as the preferred Downtown San Jose BART station portal in the Transit Mall area. On the second issue, the City Council deferred action on the selection of a preferred BART tunnel alignment at Coyote Creek in the vicinity of Santa Clara Street. Councilmember

Liccardo recommended deferral for one month in order to allow the VTA to address outstanding questions from the community. The following staff analysis reiterates information from the October 16th Council report and includes additional information on 1) further VTA community outreach and 2) environmental concerns related to replacement of the Coyote Creek bridge.

ANALYSIS

The current BART project plans include a subway tunnel along Santa Clara Street and under the bridge foundations for the Coyote Creek bridge. As part of developing more detailed geotechnical studies and 65% design completion plans for the project, the VTA and its consultants have concluded that the current plan creates an extraordinary risk to the project budget, the project schedule, the safety of construction workers, and the safety and livability of the adjacent community. For these reasons, the VTA is actively pursuing design options that offset the tunnel alignment to either the north or south of the Coyote Creek bridge. Attachment 1 illustrates the tunnel alignment options.

Issues with Santa Clara Street Alignment

The BART project includes constructing a five-mile long tunnel in the greater Downtown San Jose area and primarily under Santa Clara Street. The tunnel is proposed to be constructed using a tunnel boring machine at an elevation that is consistently 50 to 60 feet below the surface and below the groundwater table. This elevation corresponds with a cohesive clay soil layer that is ideal for tunneling in groundwater conditions.

However, the bridge foundation system for the Santa Clara Street bridge over Coyote Creek is an obstacle for the tunnel -- it extends more than 60 feet below the surface. The VTA's engineering consultants have advised that removing the bridge and its foundation is not a feasible option based on very significant issues related to environmental impacts, traffic management, cost and schedule. In summary, the bridge foundation includes over 300 timber piles located adjacent to and below the Coyote Creek channel. Removal of the foundation piles would require diversion of Coyote Creek and the detouring of Santa Clara Street. Removal and replacement of the Coyote Creek bridge would need to occur in advance of the BART tunneling and would significantly delay the planned BART implementation schedule.

An alternative to replacing the bridge is to lower the tunnel alignment beneath the bridge foundations to a depth of about 80 feet and into a non-cohesive layer of sandy soil. At this lower tunnel elevation the ground water pressure would be increased by 50%. Tunneling in sandy and wet soil conditions creates extraordinary risks that can have significant cost, schedule, and safety implications. These risks and other concerns are summarized below:

- Tunneling in sandy soil beneath the groundwater table creates risks for water infiltration into the tunnel during construction. This can be a safety issue for workers and could have an estimated project cost impact of up to \$38 million if ground freezing is needed to stabilize the soil and manage water flow.

- The Santa Clara Street bridge foundation depth is unknown. The current bridge was constructed in 1917 and is supported by approximately 340 timber piles. The design drawings for the bridge show a foundation depth of approximately 60 feet; however during actual construction (90 years ago) the timber piles could have been driven. If the tunnel boring machine were to hit a bridge pile, there could be potential project construction and contractor delay costs of up to \$9 million to repair bridge damage and/or up to \$60 million to repair tunnel boring machine damage, as estimated by VTA. Repairing the tunnel boring machine could have a project schedule delay of up to three months.
- To manage the issues noted above, another potential negative consequence is the closure of Santa Clara Street. To address water infiltration, bridge damage, and/or tunnel boring machine damage, Santa Clara Street may need to be temporarily closed. This would create the negative implications of detouring traffic through the adjoining neighborhoods and result in extended emergency response times. Fire Station No. 8 is located at the southwest corner of Santa Clara Street and Coyote Creek and it would have access impacts if Santa Clara Street is closed.

In summary, VTA staff and their consulting engineers strongly recommend against a tunnel alignment under the Coyote Creek bridge. As a result, BART tunnel alignment options that are offset to the north or south are proposed. These offset alignments would allow the BART tunnel to remain in cohesive clay soil layer (approximately 50 feet below the surface) and that is free from obstructions.

North or South Offset Options

As shown in Attachment 1, the BART tunnel is proposed to be offset either to the north or south of the Coyote Creek bridge. The offset tunnel would extend a maximum of 80 feet into the frontage of properties along Santa Clara Street. The limits of the Santa Clara Street offset would be between 14th Street and 22nd Street. The “North Offset” option would have a BART tunnel alignment generally under Roosevelt Park and the former San Jose Medical Center site. The “South Offset” option would have a BART tunnel alignment located beneath approximately 20 properties (including two apartment buildings). The BART tunnel would not have a physical or environmental impact to the existing buildings above the BART tunnel.

However, the BART tunnel would have an impact on the future development potential of the properties. In general, due to limits on foundation systems located above a BART tunnel, the properties would be limited to one level of basement parking and a maximum building height of approximately four stories. Because this is a significant constraint on the development potential for the three-block former San Jose Medical Center site, staff recommends against the “North Offset” option and supports the “South Offset” option. The properties along the “South Offset” are significantly less likely to be redeveloped as high-rise buildings due to the relatively small parcel size and proximity to residential development in the Naglee Park neighborhood.

Coyote Creek Bridge Replacement and Creosote Issues

Members of the community have suggested removing the existing timber pile foundation for the Santa Clara Street bridge at Coyote Creek. The timber piles are believed to contain creosote as a wood preservative. The intended goal is to remove creosote as a potential health concern from the soil and water table, and to remove the timber piles as an obstacle to the BART tunnel. Based on current research into the issue, it is not viewed as a practical direction based on the following:

1. There is no known determination that timber piles with a creosote preservative within the ground is a significant public health issue (the primary health concern with creosote relates to direct skin contact).
2. Creosote is currently in use as a wood preservative for timber piles, utility poles, and railroad ties. Creosote is the most widely used wood preservative in the United States.
3. Any significant leaching of creosote into the soil and water table from the timber piles would have occurred within the first month the piles were placed (nearly 90 years ago)
4. The use of groundwater for water supply is taken from wells extending more than 200 feet below the surface and out of the influence range of the timber piles. In addition, current water treatment processes are effective in removing creosote if it were to be present
5. Removal of the timber piles located beneath Coyote Creek is likely to create significant environmental issues regarding disturbance of the creek channel
6. The construction process for removal of the piles would likely require a complete closure of Santa Clara Street, and thereby create other significant issues related to transportation management
7. The expense of removing the piles would have a significant public cost.
8. Removal of the bridge foundation (and replacement of the Coyote Creek bridge) in advance of the BART tunnel construction is estimated to result in a significant delay to the planned BART construction schedule. The overall BART project completion schedule would likely need to shift from 2016 to 2018. This delay would also cause an estimated increase in project construction costs of over \$200 million due to escalation.

The City's Department of Environmental Services has conducted an independent evaluation of the creosote issue and provided the following recent statement as a summary of their finding:

"There is not any compelling environmental reason at this time to remove the 300+ creosote-treated pilings that were installed in 1917 to support the still functioning Coyote Creek Bridge near Santa Clara Street and 17th Street. Although creosote-treated wood does

in fact contain numerous chemicals determined to be harmful to human health and the environment, the percentage of those specific chemicals of concern in creosote are small and the release of those potentially harmful chemicals are slow and limited, therefore it presents only a low to moderate potential threat to the environment. Any limited real or perceived environmental benefit gained by the removal of the pilings would likely be outweighed by other impacts including special handling and waste management requirements for the removal of the pilings, traffic management (due to bridge reconstruction), and BART project cost and schedule.”

As a separate project, the Department of Transportation is pursuing a grant for replacement of the Coyote Creek bridge as part of the federal Highway Bridge Rehabilitation and Replacement (HBRR) program. The goals of the project are to improve the structural integrity of the bridge, widening the roadway for improved bicycle and pedestrian travel, and to lengthen and raise the bridge to accommodate flood control improvements and a planned creek trail. The planned project scope includes building a new bridge foundation and leaving the old timber piles in place below the ground and creek channel, as is typical practice.

Conclusions

Based on preliminary analysis conducted by VTA and their consultants, it appears conclusive that it is not prudent or feasible to maintain the BART tunnel alignment within Santa Clara Street. Also, the southern option appears to be the best alternative for the City based on future land use considerations. For the purposes of continuing progress on designing the BART project, staff recommends the selection of the “South Offset” alignment. It is emphasized that a formal environmental review process needs to be done for the “South Offset”, which will include further technical environmental analysis (for all options), cost analysis, and public outreach. This review process would then conclude with a formal policy selection of a preferred alternative that would be subject to advisory action by the City Council and formal action by the VTA Board. This process is proposed for completion in 2009.

Tunnel Ventilation Facility

Another unresolved BART design issue in the Coyote Creek area relates to selecting a location for a mid-tunnel ventilation structure. Based on the distance of the subway BART stations between Alum Rock and Downtown, a ventilation facility is required for the tunnel in the vicinity of 13th Street to 17th Street. A separate community outreach process is being facilitated to address this topic.

EVALUATION AND FOLLOW-UP

The BART alignment options at Coyote Creek will be formally evaluated in a supplemental Environmental Impact Report to be prepared by the VTA over the next 18 months.

POLICY ALTERNATIVES

Alternative 1 – Select North Offset for BART alignment at Coyote Creek

Pros: Avoids BART project risks associated with tunnel alignment within Santa Clara Street. Avoids tunneling beneath approximately 20 private properties related to “South Offset” option.

Cons: Impacts development potential of former San Jose Medical Center site

Reason for not recommending: Does not align with City goals for transit oriented development in the Santa Clara Street corridor.

Alternative 2– Select Santa Clara Street for BART alignment at Coyote Creek

Pros: Avoids impacting development potential of properties both north and south of Santa Clara Street.

Cons: Creates significant risks for delivery of the BART project relative to cost, schedule, safety, environmental protection and community livability.

Reason for not recommending: Does not align with City goals to support efficient and effective delivery of the BART project.

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)**

Public outreach for the subject report includes website posting as part of the Council Agenda process. The VTA held public meetings regarding the BART tunnel alignment at Coyote Creek were on July 25, 2007 and September 10, 2007. Councilmember Liccardo held a community meeting on the topic on October 15, 2007. The VTA provided answers to outstanding questions by e-mail to interested community members on October 29th, November 5th, and November 9th.

COORDINATION

The initial October 16, 2007 Council report was prepared in coordination with the Department of Planning, Building and Code Enforcement, the Office of Economic Development, the Redevelopment Agency, and the City Attorney’s Office. This Supplemental Council report

contains additional information obtained based on coordination with the Environmental Services Department.

FISCAL/POLICY ALIGNMENT

The recommended action that supports implementation of the BART extension to San Jose is consistent with the City's General Plan policy goals related to transportation service, economic development, and environmental sustainability.

COST SUMMARY/IMPLICATIONS

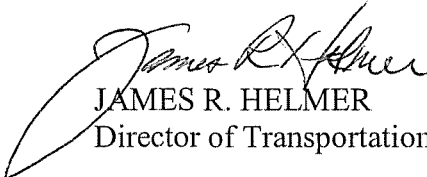
Not applicable.

BUDGET REFERENCE

Not applicable.

CEQA

The VTA Board of Directors approved a Final Environmental Impact Report (EIR) for the Silicon Valley Rapid Transit Project on December 9, 2004 (Agenda Item 10). A Supplemental EIR for the project was approved by the VTA Board on June 7, 2007 (Agenda Item 34). A proposed Second Supplemental EIR is being prepared by the VTA that would address the BART design issues related to the tunnel alignment at Coyote Creek. The Second Supplemental EIR is proposed for completion in 2009.


JAMES R. HELMER
Director of Transportation

For questions please contact Hans Larsen, Deputy Director, at 535-3835.

Attachment

BART Tunnel Alignment at Coyote Creek

