# On The Right Track

CALTRAIN SAN FRANCISCO DOWNTOWN EXTENSION PROJECT

ISSUE 6 MARCH 1997


DEIS/DEIR REVIEW

## Let's Hear from You!

The DEIS/DEIR will be available for review at SamTrans Headquarters, public libraries, and the San Francisco Planning Department. There are several ways to comment on the document and assist with upcoming project decisions:

- **Send written comments to**
  JPB—San Francisco Extension
  P.O. Box 3006
  San Carlos, CA 94070-1306

- **Attend staff presentations to the following key policy boards**
  - JPB
  - San Francisco Planning Commission
  - San Francisco Redevelopment Commission
  - San Francisco Board of Supervisors
  - San Mateo County Transportation Authority
  - Santa Clara Valley Transportation Authority

(Call the project hotline, 1-800-818-TRAK, for meeting dates and locations.)

## Attend a Public Hearing!

**Wednesday, April 16th**
**San Francisco**
ANA Hotel
50 Third Street
5:30 p.m. open house & presentation
6:30 p.m. public hearing

**Thursday, April 17th**
**San Carlos**
SamTrans Headquarters,
2nd Floor
1250 San Carlos Avenue
5:30 p.m. open house & presentation
6:30 p.m. public hearing

# Key Decisions Draw Near for Downtown CalTrain Extension

London. Paris. Munich. Will San Francisco take its place among these international cities boasting world-class rail stations in the heart of downtown? Put simply: Is the time ripe for extending CalTrain to the financial district of San Francisco?

Over the past two years, the elusive goal of extending CalTrain to downtown San Francisco has been the subject of extensive study—and heated debate. In recent months, the debate has intensified: Can—and should—the project go forward? Is a downtown extension affordable? Would construction be too disruptive?

To answer these fundamental questions, the Peninsula Corridor Joint Powers Board, which owns and operates CalTrain, has completed a number of technical studies on the proposed extension. In March, the JPB will present its findings in a Draft Environmental Impact Statement/Draft Environmental Impact Report. The DEIS/DEIR will help guide the public and decision-makers through the next round of decisions (see "Selecting the Locally Preferred Alternative" inside).

The CalTrain extension has far-reaching potential for reducing traffic congestion, improving the environment, and serving as a catalyst for new economic development. Constructing an integrated train/bus project, would bring together CalTrain, BART, Muni, AC Transit, SamTrans, and Golden Gate Transit all at one location, making transit connections easier than ever before. Furthermore, the CalTrain terminal has been designed to accommodate high-speed rail service, which, once in place, would connect downtown San Francisco to the rest of California's planned high-speed network.

By moving forward with the project at this time, the JPB has the opportunity to keep the costs and impacts of the

*Continued on back page*

LOOKING BACK

# Public Plays Major Role in Shaping Project

Much of the progress made over the past two years would not have been possible without the active participation of the local community. Throughout the process, the JPB has worked with residents, business owners, community leaders and transit riders on improving and refining the proposed extension. The following decisions, for example, were the direct result of public input:

*Continued on inside*

# JPB Probes Deeper into Tunneling Techniques

One key technical issue addressed in the DEIS/DEIR is how the tunnel portion of the extension would be constructed. The proposed solution would use a combination of cut-and-cover construction—which involves digging a large trench and installing a concrete box—and mined tunnel construction. The method used would depend on the portion of the alignment:

- cut-and-cover from 4th/Townsend to 3rd/Townsend;
- mined tunnel from 3rd/Townsend to Folsom/Essex (South Beach); and
- cut-and-cover from Folsom/Essex to the Transbay Terminal site.

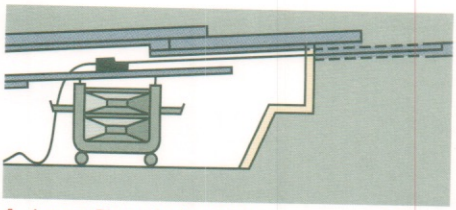
The proposed mining technique is a two-step process known as "spiling." In Kobe, Japan, a tunnel being constructed with this technique survived the 1995 earthquake without damage.

The first step (Figure A) consists of drilling a series of holes in a semicircular pattern through the rock, in the direction of the tunnel. Steel pipes, which have holes in them, are then inserted into the holes of the rock. Once these pipes are in place, grout (a cement mixture) is pumped into the pipes under very high pressure. The grout fills the pipes and exits the pipes' holes into the surrounding rock. When the grout hardens, it creates a strong arch that secures the rock above what will be the tunnel.

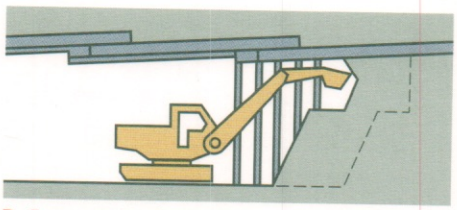
In the second step (Figure B), the rock underneath the arch is excavated in short, incremental steps. As the excavation proceeds deeper into the rock, a temporary construction lining is added to support the excavated portions of the tunnel.

The first step is then repeated; new holes are drilled and pipes are inserted and grouted. The result is a new arch that overlaps with a portion of the previously installed arch (Figure C). The amount of overlap between the two arches depends upon the quality of the rock; with poor rock, there must be more overlap.

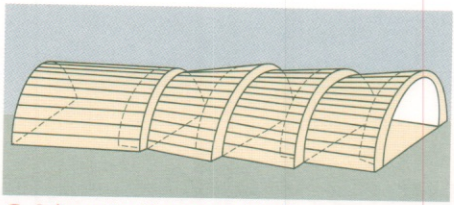
The JPB would monitor buildings in the project area to ensure that there is no undue settlement. In the case of settlement, the mining process would be adjusted to correct the problem, and the building would be immediately underpinned. This same process was used for the Muni Metro Turnback project in front of the Ferry Building, and for the earlier construction of Muni and BART systems along Market Street.



**A** Insert Pipes (side view)



**B** Excavate Under Archway



**C** Schematic Diagram of Arches

**LOOKING BACK**

# Public Plays Major Role in Project

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- Eliminating the Brannan Street and Embarcadero alignments;
- Eliminating cut-and-cover construction through the South Beach neighborhood; and
- Proposing a six-track terminal rather than a four-track design.

The JPB also asked the community to assist in selecting the design options for further study and inclusion in the DEIS/DEIR. Together, the public and key decision-makers gave unanimous support for proceeding with an underground CalTrain station at the Transbay Terminal site.

As a result, the JPB was able to concentrate its efforts on refining the Transbay Terminal Site Alternative for inclusion in the DEIS/DEIR. It also carefully examined the options in an effort to reduce project costs and to improve the potential benefits of the extension.

In addition, the JPB worked closely with representatives from the South Beach community to address concerns about the underground portion of the extension, which would run underneath their neighborhood. As a result of these discussions, the JPB eliminated several alignment options from consideration and agreed to use mined tunneling techniques (which, unlike cut-and-cover construction, would not disrupt the surface).

Members of the public also encouraged the JPB to study opportunities for creating an intermodal transit hub. This center could connect most of the Bay Area's major transit systems at one location in downtown San Francisco. Consequently, the JPB evaluated several transit hub concepts in the DEIS/DEIR and considered the impacts of joint development.

Because you shared your ideas, questioned our assumptions, and encouraged us to look at new techniques, the JPB has made significant headway over the past two years. But now it needs your help again—this time, with selecting the locally preferred alternative. As always, there are a variety of ways to get involved, including the public hearings scheduled for this spring (see front page).

THE $656 MILLION QUESTION

# Funding the Project

As with any large-scale capital project, funding looms as one of the major issues surrounding the proposed CalTrain extension. To address this critical issue, the DEIS/DEIR includes a financing plan and schedule for the project.

**Baseline Project**

The baseline project was developed for use in preparing a financial plan. It consists of the minimum set of improvements necessary to implement the extension. At a cost of $656 million in 1995 dollars, the baseline project includes the following:

- six-track underground terminal at the site of the existing Transbay Terminal;
- the Townsend Street South alignment;
- the Short Radius/Long Tunnel alignment beneath South Beach;
- a storage yard at the 16th/Owens site;
- dual-mode locomotive propulsion; and
- improved access, including parking at Peninsula stations.

The baseline project cost also includes the full cost of replacing CalTrain's fleet of diesel locomotives with new dual-mode locomotives, even though the diesel locomotives will need to be replaced (at a cost of $95 million) with or without the downtown extension project. Not included in this estimate is the cost for a new Transbay Terminal; the City of San Francisco is developing a financing plan for this bus terminal replacement.

**Financing Scenarios**

The finance study looked at three scenarios for financing the baseline project, and one scenario for implementing a series of improvements to CalTrain's existing right of way only:

Short-Term Scenario Construction would begin in 2000 (the earliest possible date) and end in 2004;

Long-Term Scenario Construction would begin in 2005 (when federal funds become available) and end in 2009; and

Transbay Terminal Site Alternative

Staged-Project Scenario Construction would begin on a terminal shell in the near term, and the extension would be completed in the long term.

CalTrain System Upgrades All scenarios would include completion of a series of planned upgrades to CalTrain's physical plant (new rail, signal system improvements, transit-oriented development and parking). However, these improvements could be completed as a stand-alone project.

**Funding Sources Considered**

The following funding sources are being considered for the project:

San Mateo County Sales Tax Approximately $145 million from San Mateo County's local transportation sales tax is available for CalTrain improvements. An additional $95 million available for CalTrain grade separations could be used for the project if approved by the SMCTA.

Santa Clara County Sales Tax In November 1996, Santa Clara County voters approved a half-cent sales tax measure. They also passed a companion measure that dedicates approximately $50 million for CalTrain improvements in Santa Clara County.

Regional Transportation Plan Funds These are federal and state funds allocated to transportation projects nominated by counties.

Federal Rail Modernization Funds As outlined in the Metropolitan Transportation Commission's Resolution 1876, about 25 percent of the project cost could be funded with federal rail modernization funds. Funds for diesel locomotive replacement ($95 million) would also be funded from this source. Unfortunately, this funding source is unavailable for the CalTrain project until 2005; until then, it will be used entirely for BART A/B car rehabilitation and Muni Metro vehicle replacement.

Regional Gas Tax A regional gas tax has been discussed by Bay Area transportation agencies to meet a shortfall in transportation improvement funds. State legislation and a public vote would be required to collect this fee. A share of San Francisco, San Mateo and Santa Clara counties' gas-tax revenues could be used for the project.

Joint Development Joint development funds would come from leasing space in the terminal and selling air rights over the terminal. The project would create an excellent opportunity for creative joint development, especially for funding terminal operating costs.

Land Sales Caltrans owns a significant amount of land in the project area. With the state legislature's consent, proceeds from sales of this land could be used to fund the CalTrain extension and Transbay Terminal replacement.

**Seismic Retrofit Funds** Because the existing Transbay Terminal is part of the Bay Bridge, funds from the Bay Bridge seismic retrofit program could be used to rehabilitate the existing terminal or replace its functions elsewhere.

### Evaluation of Financing Scenarios

**Short-Term Scenario** In the short-term scenario, the project would begin construction in 2000 and be complete by 2004. It would cost approximately $838 million in escalated dollars.

*The study looked at three scenarios for financing the project:*

- *short term,*
- *long term, and*
- *staged project.*

Approximately $396 million would be available from existing revenue sources (San Mateo County sales tax, $296 million; Santa Clara County sales tax, $30 million; and RTP funds, $70 million). Therefore, approximately $442 million would be needed from a new revenue source—in this case, the proposed regional gas tax.

At present, it is unlikely that a regional gas tax would be implemented in time to construct the downtown extension project under the short-term scenario.

**Long-Term Scenario** In the long-term scenario, the project would begin construction in 2005 and be complete by 2009. It would cost approximately $960 million in escalated dollars.

Approximately $772 million would be available from existing revenue sources (federal rail modernization funds, $332 million; San Mateo County sales tax, $340 million; Santa Clara County sales tax, $30 million; and RTP funds, $70 million). Therefore, approximately $188 million would be needed from the proposed regional gas tax.

In the long-term scenario, the likelihood of a regional gas tax is much higher than in the short-term scenario (alternatively, a different new source of transportation funding could be developed between now and 2005). Furthermore, the $188 million represents only about 14 percent of the gas-tax revenues generated from the three counties of the JPB. Therefore, the long-term scenario appears to be a realistic option for completing the project.

If the JPB chooses to pursue the long-term option, adequate provisions must be made to protect the downtown extension right of way and terminal site. This would be accomplished through appropriate changes to the San Francisco General Plan and zoning regulations.

**Staged-Project Scenario** The JPB developed the staged-project scenario to minimize the environmental impacts of the project. In this scenario, an underground shell would be built that could accommodate the CalTrain terminal (and high-speed intercity trains) at the same time the existing Transbay Terminal is demolished. Regional transit buses (or automobiles) could be parked in the shell until the CalTrain extension tunnel is completed.

The cost of the staged project will depend on exactly what improvements are included. This cost estimate and finance plan will be developed as part of the Final Environmental Impact Statement/Final EIS/EIR. Funding sources for the staged project could include Bay Bridge seismic retrofit funds, since the project would replace functions of the existing Transbay Terminal.

The key benefit of the staged project is that it would enable the City of San Francisco to build a terminal for future CalTrain and high-speed rail service, preserving future opportunities and minimizing construction impacts and costs.

**CalTrain System Upgrades** A series of CalTrain station access improvements, major track rehabilitation projects and signal system upgrades could be completed using funding that will be available to CalTrain during the short term.

**BASELINE PROJECT — CAPITAL COSTS**

*(millions of July 1995 dollars)*

| | |
|---|---|
| CONSTRUCTION/PROCUREMENT | |
| *Right of Way for Extension* | $ 9.2 |
| *Townsend Street Segment (3,935 feet)* | 39.3 |
| *Mined Tunnel Segment (3,900 feet)* | 86.5 |
| *Folsom-Transbay Terminal Segment (990 feet)* | 39.9 |
| *6-Track Underground Terminal (1,035 feet)* | 85.2 |
| *Traction Power, Signaling & Communications* | 19.9 |
| *New Dual-Mode Locomotives (23)* | 101.2 |
| *Additional Gallery Passenger Cars (15)* | 27.0 |
| *San Francisco Satellite Storage Yard* | 9.9 |
| Subtotal Construction/Procurement | 418.1 |
| ENGINEERING & CONSTRUCTION MANAGEMENT | 75.0 |
| CONTINGENCY | 87.6 |
| PROJECT RESERVE | 40.0 |
| Subtotal SF Downtown Extension Costs | 620.7 |
| PARK & RIDE LOT EXPANSION AT PENINSULA STATIONS | 35.5 |
| Total | $ 656.2 |

THE NEXT STEP

# JPB Focuses on Selecting Locally Preferred Alternative

With the release of the DEIS/DEIR, the next step in the environmental review process will be to select the locally preferred alternative for the proposed CalTrain extension.

The locally preferred alternative (LPA) will represent the proposed project in the Final EIS/EIR. The JPB has organized the process of selecting the LPA into five key decisions. Presented below, they are also summarized and illustrated on the back of this newsletter:

## Decision 1

**What alignment should be used between 7th and Berry streets and 3rd and Townsend streets?**

- **Townsend Street Median**
- **Townsend Street South**
- **Townsend Street South Subway**

Key Considerations

The Townsend Street Median alignment would have greater construction and long-term traffic impacts in the area. This alignment and the Townsend Street South alignment would include a Mission Bay/ Ballpark station. The Townsend Street South Subway alignment would cost approximately $110 million more to construct than the other two options and would not include a Mission Bay/ Ballpark station.

## Decision 2

**What mined tunnel alignment should be used between 3rd and Townsend streets and Folsom and Essex streets?**

- **Long Radius/Short Tunnel**
- **Medium Radius/Medium Tunnel**
- **Short Radius/Long Tunnel**

Key Considerations

The Short Radius/ Long Tunnel alignment would be the easiest to construct without impacting buildings above the tunnel. All three alignments would cost approximately the same amount to construct. In addition, travel times along the three alignments would be about the same.

## Decision 3

**How would the removal of the existing Transbay Terminal be mitigated?**

- **A Main/Beale Site Terminal**
- **B Transbay Terminal Site "Short" or "Medium" Terminal**
- **C Main/Beale Site Surface**
- **D Transbay Terminal Site Surface**

Key Considerations

Because the CalTrain extension would require the demolition of the existing Transbay Terminal, replacement of this bus facility has been included in the DEIS/DEIR as a mitigation measure.

San Francisco's preference is to rebuild the Transbay Terminal on the Main/Beale site. At this location, the new bus facility would be completed before the CalTrain extension; therefore, the two projects could proceed independently.

The major differences between the bus terminal mitigation options involve land-use impacts, transit connectivity and cost. In terms of land use, constructing both terminals on the Transbay Terminal site would reduce the amount of land devoted to transportation facilities, though development could take place above the CalTrain terminal. In terms of transit connectivity, having buses stop directly above the trains in a location closer to Market Street would improve connectivity. However, constructing a joint terminal would require bus operators to use a temporary surface terminal for several years, which could reduce service quality. As for cost, building the bus terminal above the train station would cost five to ten percent less than building the terminals on separate sites.

## Decision 4

**Where should the train storage yard be located?**

- **16th/Owens Site (partially under Interstate 280)**
- **Townsend Site (located between 5th, Townsend, 7th, and King streets)**

Key Considerations

The 16th/Owens site would impact plans for the Muni Metro East light-rail vehicle yard, though these impacts could be mitigated through careful redesign and by providing more land for the Muni facility. The Townsend site would be more efficient from an operational standpoint and would have lower operating and capital costs.

## Decision 5

**What form of locomotive propulsion should be selected?**

- **Dual Mode DC Locomotives**
- **Dual Mode AC Trailer Units**
- **Full AC Electrification**

Key Considerations

Dual-mode locomotives would have the lowest cost. Dual-mode trailer units—initially thought to be a low-cost option—were found to have a higher cost than expected. Full electrification, while desirable from an operational and environmental standpoint, would cost approximately $145 million more than dual-mode locomotives.

# Key Decisions Draw Near

*Continued from front page*

extension down to a minimum. Indeed, much of the land adjoining the proposed route is currently underdeveloped. Even if funding is not available to launch construction, key parcels and rights of way can be identified and protected in San Francisco's General Plan, which would ensure that future construction in the area would be compatible with the CalTrain extension.

Also, key pieces of the project, including a shell for the future downtown terminal, could be constructed soon, to reduce future impacts to the surrounding neighborhood.

As this project nears some critical decisions, the JPB—as it has throughout the process—will ask members of the community to share their thoughts and ideas. Extending passenger trains into downtown San Francisco has been under discussion for nearly a century. Now, the time has come to decide whether to make this long-time vision a reality.

**Mailing List** If you would like to be added to or removed from the project mailing list, please call our hotline at 1-800-818-TRAK.

**Special Needs** Please call the project hotline at 1-800-818-TRAK 72 hours prior to the public workshops if you need help with translation and/or accessible services. Hearing-impaired individuals may get meeting information by calling the California Relay Service for assistance. The meeting facilities are wheelchair accessible.



**Peninsula Corridor Joint Powers Board**

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Berkeley, CA 94710
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1-800-818-TRAK

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