**Presentation to TJPA Board
Caltrain Downtown Extension
Overview and Update**

March 12, 2009

Transbay Transit Center

TJPA

**Caltrain Downtown
Extension Project**

Transbay Transit Center

Agenda:

- Preliminary Engineering (PE) Term 2 Update
    - Design Contract Task Progress
    - TTC / DTX Coordination and Interfaces
    - DTX Design Criteria
    - DTX Contract Packaging Strategy
    - Operator/Stakeholder Coordination
    - Progress Summary
    - Next Steps
- Program Development Summary

Preliminary Engineering
Term 2 Update

Preliminary Engineering
Term 2 Update

- Preliminary Engineering design ~ 40% complete
- Preliminary Engineering establishes and sets:
    - Alignment plan & profile
    - Structure size and location
    - Functionality
- Significant amount of work in progress – 30 subtasks
- Substantial Preliminary Engineering completion planned for Apr. 2010

Preliminary Engineering Term 2 Update (cont.)

- Design Contract Task Progress:
  - Task 5.3 – Precise Alignment
  - Task 5.5 – Traction Power Load Flow
  - Task 5.12 – 4th/Townsend Underground Caltrain Station
  - Task 6 – Geotechnical
  - Task 9.4 – Traffic Management Planning
  - Task 9.6 – Hazmat Studies

Task 5.5 Traction Power Load Flow

- Performed Simulations
  - Determines need for additional infrastructure (substation/paralleling station)
- Initial Simulations
  - Software calibration
- Caltrain Accepts Calibration
- Caltrain Agreed Input Parameters
- Final Simulations in Progress

Task 9.4 Traffic Management Planning

Transbay Transit Center

- Construction Traffic Management Report prepared and proposed:
    - Required traffic/lane closures and detours
    - Changes to on-street parking layout
    - Changes to Muni bus routes and stops
- Report findings presented to SFDPT and SFMTA

- Solutions for re-routing of Muni agreed in principle and being developed

---

Preliminary Engineering Term 2 Update (cont.)

Transbay Transit Center

- Design Reports & Coordination
    - TTC / DTX Coordination and Interfaces
    - DTX Design Criteria/Contract Package Strategy
    - Operator/Stakeholder Coordination:
        Caltrain, CHSRA, SFFD, Caltrans, SFMTA

TTC/DTX Coordination & Interfaces

- Coordination meetings established between design teams

- TTC/DTX design interface
  - Top of rail elevation
  - Seismic compatibility
  - Integrated ventilation design

DTX Design Criteria

- Draft Criteria issued Aug. 2008
  - DTX design team, Caltrain, CHSRA and stakeholders

- Review comments resolved and incorporated as necessary
  - DTX Design Criteria Rev. A controlled copy Jan. 2009

- Additional comments to be addressed through errata/ addenda/revision process

DTX Contract Packaging Strategy

- Updated strategy report – Feb. 2009
- Reflects TJPA/PMPC/DTX design team/Caltrain agreement reached - Sept. 2008
- Identifies individual construction contracts
- Identifies how DTX contracts will be:
  - Sequenced
  - Procured
  - Managed during construction

DTX Contract Packaging Strategy (cont.)

- Provides assessment of market conditions
  - Potential bidders
  - Climate – competing projects
- Provides strategy for maximizing bid competition
  - Contractor awareness through promotion of project
  - Contractor outreach
  - Presentations, workshops, round table discussions

Operators & Stakeholders

- CHSRA
    - MOU prepared and adopted by CHSRA Mar. 2009
    - Facilitates communications and collaboration
- Caltrans
    - Advance Planning Study submitted
    - Construction interfaces at I-80 and I-280
- SFFD
    - Prepared code analysis
    - Details DTX approach to Fire-Life Safety issues
    - Reflects status of agreement with SFFD

Progress Summary

- Preliminary Engineering design ~ 40% complete

- Completion of PE on schedule for Q2 2010

- Significant coordination with operators and stakeholders

- Continuing coordination with TTC design team
    - TTC design requires finalizing DTX design elements for 2010 TTC construction

Next Steps

- Continue task progress
  - Cut and Cover Structures
  - Mined Tunnel
  - Existing Structures
- Development of detailed construction schedule
- Begin Preliminary Hazard Assessment
- Continue coordination with operators/stakeholders
- Coordination w/ FRA, FTA, CPUC

Program Development Summary

Program Recap

- 2001-2003 Caltrain/TJPA EIR/EIS developed
- 2004 Transbay FEIR/EIS certified
- 2005 Federal ROD and DTX PE contract awarded
- 2005/2006 Conceptual design developed
  - Value Management executed (saves approx. $600M)
- 2007 Defined RLPA and Assured HSR Capability
- 2008 Concept Design/Phase 2 Budget established
- 2008 Commence PE (30%) design

TJPA Mandates

- <u>Regional Measure 2 - Senate Bill 916 : Oct. 03</u>
  - Regional, Local & Intercity Bus
  - Caltrain Downtown Extension
  - Accommodate Future HSR
  - Accommodate Eventual East Bay Extension
- <u>Assembly Bill 812: July 03</u>
  (Public Resources Code – Addresses National Register of Historic Places)
  - Allows Demolition of Transbay Terminal for construction of TTC to serve Caltrain & HSR

TJPA Mandates (cont.)

- <u>Proposition K : Nov. 03</u>
  - Construction for Caltrain Extension to Transbay Terminal
- <u>Senate Bill 1856 : Sep. 02 (Foundation of Prop 1A)</u>
  - HSR connect SF Transbay Terminal to LA Union Station
- <u>Proposition H : Nov. 99</u>
  - City to Extend Caltrain to Downtown SF (TTC)
  - Caltrain Extension ROW: No Conflicting Use/Development

Program/Design Process

- Understand owner's/operators' requirements
- Establish/evaluate parameters for engineering
- Coordinate w/ agency stakeholders (Caltrain/CHSRA) – validate assumptions
- Perform analysis/design
- Conduct submission reviews & comments
- Address agency and stakeholder comments
- Finalize design phase/cost estimate

Conclusion: Process met all known Operator requirements of Conceptual Design in 2008.

Current Rail Design (RLPA Configuration)

In April 2007, the TJPA Board approved the Refined Locally Preferred Alternative (RLPA) Configuration, comprising the following:

- 2-track lead to DTX tunnel system
- Fourth and Townsend underground station
- 3-track tunnel on Townsend and Second streets
- Transit Center with 3 platforms and 6 tracks
- At-grade rail car storage within Caltrain Yard
- Tail Tracks deferred until operationally required

RLPA Configuration

DTX/TTC
Operating Capacity

	Caltrain	CHSRA
No. Tracks	2	4
Trains/Hr	6*	6
Seats/Hr	6,720	6,000
Dwell Time (sch/min)	20/18	30/20
Train Length (ft)	750	1,312
Cars / Train	8	16
Seats / Train	1,120	1,000

* w/Tail Tracks

Conclusion: Available capacity exceeds ridership projections

Design Concept
Validation for HSR

- June 2007, Assess Current Design (Internally/Externally)
  - Design concepts consistent w/ project objectives
  - Engineering compatible w/operator requirements

- Provide Assurance for Rail Operations
  - DTX minimum radius of curvature
  - Platform curvature and resultant platform gap
  - Availability of HSR rolling stock w/o modification
  - Track geometry result in reasonable travel times

Design Concept Validation for HSR (cont.)

- CHSRA Station Location Selection

- Objectives
  - Maximize Ridership/Revenue Potential
  - Maximize Connectivity and Accessibility
  - Maximize Compatibility w/existing and Planned Development

- Evaluation Criteria
  - Travel Time, Population/Employment Catchment Area, Ridership & Revenue Forecasts
  - Intermodal Connections
  - Land Use Compatibility & Conflicts, Visual Quality Impacts, Transit-Oriented Development Potential

Current Transit Center design is consistent w/CHSRA objectives & criteria.

Design Concept Validation for HSR (cont.)

- DB International GmbH - Operator & Engineer

- Review Concept Design:
  - Feasibility and international best practice

- Provide Examples of Precedent

- Provide Professional Opinion:
  - Operational concepts
  - Alignment geometry
  - Trackwork
  - Platform geometry
  - HSR vehicles

- Provide Recommendations

Design Concept Validation for HSR (cont.)

- TTC San Francisco –
  Preferred HSR Train Destination

- DTX Design Suitable for –
  Operation of HSR Rolling Stock

- Proven Solutions to –
  Accommodate Curved Platforms

- Proven Measures to –
  Enhance Track Performance

Program/Design Summary

✓ Concept design consistent with 2008 Caltrain and CHSRA requirements

✓ Rail & Transit Center designs consistent with CHSRA FEIS/FEIR, certified July 2008

✓ Rail design fulfills legislated mandates

✓ Rail design consistent with international practice for high-speed systems

✓ Transit Center fulfills all CHSRA station selection criteria and objectives