OVERVIEW OF THE CA HIGH-SPEED TRAIN SYSTEM

CALIFORNIA’S HIGH-SPEED TRAIN SYSTEM
Largest public infrastructure project in U.S. history

- True High-Speed Trains, 220mph+
- 100% electric power, 25kv
- Sealed Corridor – completely grade-separated, fenced for access control
- Steel wheel on steel rail
- Double-tracked
- First phase of approximately 520 miles; 800+ miles when full system is realized
OVERVIEW OF THE CA HIGH-SPEED TRAIN SYSTEM
UPDATE ON THE PROCUREMENT PROCESS

• CP01 – Contract Award in July 2013, Limited NTP for design work in August 2013, full NTP in October 2013
  • Final Design and right-of-way acquisition have begun
  • Early activities include surveying, geo-tech investigation, and archeological investigation
  • Anticipated start of construction in Fresno – Spring 2014

• CP02-CP03 Fresno to Kern County Line: RFP expected Spring 2014
CP01 – CONSTRUCTION PACKAGE 01

CONSTRUCTION PACKAGE 1 LIMITS:
- **Northern End** - South of Avenue 17
- **Southern End** - End of transition structure on the south side of E. American Ave.

DATE: JULY 2012
FIRE AND LIFE-SAFETY

As it relates to the California High-Speed Train System

• Passenger safety in the system design
• Egress routes in the event of an emergency
• Emergency response planning, training, and operations
• Fire and smoke prevention and suppression

Principle Guidance:

NFPA 130 – 2014: Standard for Fixed Guideway and Passenger Rail Systems
OFFICE OF THE STATE FIRE MARSHAL

- Division of California Dept. of Forestry and Fire Protection, HQ in Sacramento
- Authority Having Jurisdiction for State properties, will issue Permit to Occupy facilities
- Will provide guidance to local authorities on FLS program of CHST System
- Initial outreach and plan review has begun
HAZARD MANAGEMENT PROGRAM

• Follows FRA-approved strategy of risk-based hazard management
• Conforms to European standard for railway safety known as Common Safety Method
• Workshops with discipline-specific technical experts to brainstorm hazards and develop mitigations
  • Hazard Identification
  • Hazard Analysis
  • Development of Mitigation Measures
  • Acceptance of Residual Risk
• Develop draft Certifiable Elements and Hazards Log (CEHL) to carry hazards and required mitigations through all Project phases
PASSENGER SAFETY AND SECURITY IN THE SYSTEM DESIGN

• Described in Technical Memorandum *TM 2.8.1 Safety and Security Design Requirements for Infrastructure Elements* for preliminary engineering

• Evolving into Design Criteria for the Design/Builders to follow in final design and construction

• Typical elements include walkways, stairways, access roads, lighting, tunnel ventilation, signage, access control

The key is *Prevention through Design*
PREVENTION THROUGH DESIGN
HIERARCHY OF CONTROLS

1. Avoidance
2. Elimination
3. Substitution
4. Engineering Controls
5. Warnings
6. Operational Controls
7. Personal Protective Equipment
PASSENGER SAFETY AND SECURITY

• Emergency management is critical whether an incident is safety or security related.

• Design elements must not only eliminate or minimize hazards but also support response for any anticipated emergency.

• Coordinated internal and external response training, drills, and exercises, are a significant element in keeping passengers, staff, emergency responders, and the public safe.
EGRESS ROUTES IN THE EVENT OF AN EMERGENCY

- Continuous walkway on both sides of the trackway
- Emergency vehicles access at nominal 2.5 mile intervals, more often if possible
- Access roads to all tunnel portals and major aerial structures
- Lighting, communications, water supply, and emergency vehicle staging at emergency access points
ACCESS/EGRESS ROADS

- Conforms to CFC 2010 as minimum requirements
- 22 feet wide inclusive of shoulders
- All-weather surface rated for 75,000# load
- Dead ends on roads in excess of 150 feet equipped with vehicle turning facility
- Minimum outside turning radius 45 feet
- Grade not to exceed 10%, except where approved by the local AHJ and OSFM
- Gate opening 20 ft min.
- Bridges designed for live load of fire apparatus
CHSRA SYSTEM SECURITY APPROACH

• Holistic approach for securing the rail system

• Major components include:
  • *Security awareness training* of employees, passengers and community (See Something/Say Something)
  • *Designing* for optimum security (clear sight lines, CPTED)
  • Utilizing *security technologies* (CCTV, barriers and fencing, appropriate glazing, access control)
  • *Security personnel* (sworn and unsworn police/security to monitor, patrol, respond) Discussions underway with CHP to determine their role
RAIL SYSTEM SECURITY

• **Goals**
  • Enhance system security
  • Minimal impact on passenger experience
  • Reduce fear of crime
  • *Perception* of a safe system
  • Minimal impact on operations

• **Approach**
  • Community-based
  • Passengers
    • Special community
    • Based on mode of transit rather than geographical boundary
  • Working closely with local law enforcement and first responders
THREAT AND VULNERABILITY ASSESSMENT

- Program-level assessment to develop mitigations for application system-wide, as in Design Criteria Manual Chapter 32 - *Safety and Security*
- Site-specific assessments performed where necessary to tailor the system-level mitigations to local conditions
FIRE AND SMOKE PREVENTION AND SUPPRESSION

- Key consideration of the tunnel design and operations
- Structures and trains constructed of non-flammable materials
- On-board fire suppression system
- Ventilation in longer tunnels to provide access to place of safe refuge
- Trains will continue to operate out of the tunnel where possible
EMERGENCY RESPONSE PLANNING, TRAINING, AND OPERATIONS

• Regulated by Federal Railroad Administration thru 49 CFR, Part 239
• Emergency Response Plan will be developed and implemented by Operations concessionaire prior to start of revenue service, but must be considered now so that required infrastructure is developed
• Training for HST operators and emergency responders prior to start of revenue service
• First Table-Top exercise tentatively scheduled for Fresno/Madera area in 2nd Qtr. 2014 to review access/egress strategies and local jurisdiction response capabilities
Two-tiered committee system: Regional and Statewide

Regional committees provide a forum for discussion of FLSS issues among local stakeholders, and elevation to the Authority for policy development where appropriate.

Not a forum for commenting on Environmental documents.

FLSS Committee in the Fresno/Madera Region has begun quarterly meetings, next meeting: April 9th, Fresno FD. Includes a table-top exercise.

Will start quarterly meetings in the Kings/Tulare/Kern Counties area in 2014.
FIRE AND LIFE-SAFETY AND SECURITY COMMITTEES - STATEWIDE

• Two-tiered committee system: Regional and Statewide
• Statewide committee provides a forum for discussion of FLSS issues among State-level stakeholders, and guidance to the Authority for policy development where appropriate
• One assigned representative from each Regional FLSS Committee (B.C. Ted Semonious of FFD for Fresno-Madera)
• Meets Quarterly, or as needed
• Potential topics for discussion at future meetings:
  • Access/egress strategies for mountains
  • FLS issues and long tunnels
  • Policing strategy
  • FLS strategy for rolling stock
QUESTIONS?

Victor Salazar, CAHSRA Safety/Security Manager
Victor.salazar@hsr.ca.gov
916-669-6568