California High-Speed Train Project

TECHNICAL MEMORANDUM

Justification for Two-Track Station Configuration – Los Angeles to Anaheim
TM 4.1.1

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System Level Technical and Integration Reviews

The purpose of the review is to ensure:

- Technical consistency and appropriateness
- Check for integration issues and conflicts

System level reviews are required for all technical memoranda. Technical Leads for each subsystem are responsible for completing the reviews in a timely manner and identifying appropriate senior staff to perform the review. Exemption to the System Level technical and integration review by any Subsystem must be approved by the Engineering Manager.

System Level Technical Reviews by Subsystem:

Systems:	__Not required_____	_____
	Print Name:	Date
Infrastructure:	__Not required_____	_____
	Print Name:	Date
Operations:	__Not required_____	_____
	Print Name:	Date
Maintenance:	__Not required_____	_____
	Print Name:	Date
Rolling Stock:	__Not required_____	_____
	Print Name:	Date

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1.0 INTRODUCTION

In July 2008, a concept level operational feasibility analysis was completed on the proposed CHSTP segment between Los Angeles and Anaheim. Within this segment, one intermediate station was considered at a location either in proximity to the existing Norwalk/Santa Fe Springs commuter rail station or the Fullerton Transportation Center. For this analysis, a total of five alternative alignment configurations and operational scenarios were tested to identify the configuration required to feasibly operate the rail services, including "shared use" (HST and conventional passenger service), forecast for the corridor in 2020.

The recommendations of this analysis were subsequently modified based on updated ridership and service design data presented in the Phase 1 and Full Build-Out Service Plan reports that were provided in early 2009. In this subsequent analysis, it was recommended that a dedicated CHSTP alignment be selected for further examination, potentially as the preferred alternative, to accommodate the maximum frequency of six HST per hour/direction outlined between Los Angeles and Anaheim in the Full Build-Out Service Plan. This recommendation was documented in the screening analysis prepared in spring of 2009.

2.0 DEFINITION OF TECHNICAL TOPIC

The need to provide overtake tracks at the intermediate station(s) along this segment of the corridor has often been a topic of discussion. The basis for this need originated from the potential to operate the HST in a "shared-use" environment with conventional commuter rail (Metrolink) operations. With the recommendation to focus on moving forward with a dedicated HST alignment design concept, the need to accommodate "overtake" train movements on passenger station siding tracks inherent in the "shared use" scenario was no longer necessary. This technical memorandum is intended as a supplement to the previous analyses described above providing additional information related to the feasibility of a configuration for an intermediate station between Los Angeles and Anaheim with two-tracks served by a single platform to support the forecast HST service levels and trip time objectives.

3.0 ASSESSMENT / ANALYSIS

Typically, a four-track intermediate passenger station configuration is required in one or more of the following operational environments:

- A corridor with very high traffic volume with varying speeds and stopping patterns of individual trains that require overtakes at intermediate points - (Case A);
- A corridor with very high traffic volume and stations with very high passenger volume, where a four-track station is needed to allow for long station dwell times to accommodate the extremely high passenger volume - (Case B); or
- At a terminal station (where trains turnaround and require four or more tracks) - (Case C).

The operational requirements listed above are not specified in either the Service Plans or the Los Angeles to Anaheim Concept Level Operational Feasibility Study technical memorandums.

The signal system in the corridor is being designed to accommodate three-minute minimum headways between trains or 12 trains per hour/direction. The maximum number of trains projected to operate is six HST per hour/direction running from four-minute to ten minute headways during peak periods according to the Full Build-Out Service Plan. Assuming a one to two minute dwell time at the intermediate station(s) and all HST providing local stop service (at this station) along this segment of corridor, there is no need for a second track in each direction (total of four tracks; two mainline and two station siding tracks) at the station that would allow for overtakes because with this operating plan, there are no overtakes. The simulated travel time between Los Angeles and Anaheim is twenty three minutes and a "sample" timetable is attached as an illustration of schedules for either a Norwalk or Fullerton station stop service plan.

4.0 SUMMARY AND RECOMMENDATIONS

Based on the current service assumptions as described in the Full Build-Out Service plan, it is recommended that an intermediate station in this CHSTP segment be configured with a two-track layout (mainline) and "island" platform (between the two mainline tracks); a four-track configuration at this intermediate station(s) is not necessary. It should be noted however that the recommendation for a two track intermediate station concept is based on the service and operating assumptions as currently stated in the Full Build-Out Service Plan. Any changes to these operating assumptions could change the layout requirements for the intermediate station.