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Subject

OCTA Express Lanes Network Study

HNTB Job Number

74087

Technical Memorandum

INTRODUCTION

Orange County Transportation Authority (OCTA) has engaged HNTB to prepare Express Lanes Network Study that will identify and prioritize potential express lane facilities and its potential implementation in Orange County. This study follows up on the previous Managed Lanes Sketch study (using the Managed Lanes Feasibility Tool) which analyzed the high-level financial feasibility of 10 potential express lanes corridors.

This technical memorandum documents the six (6) alternatives being analyzed for the Mobility Analysis and Traffic and Revenue (T&R) estimation. A subsequent memorandum will summarize the various assumptions and results of the T&R analysis conducted for the six alternatives.

PROJECT ALTERNATIVES

Based on the segmentation analysis presented during Workshop #2 (July 23rd, 2019), OCTA staff went through detailed internal discussions to come up with six (6) alternative network scenarios. Out of the six alternatives, five (5) alternative networks are envisioned for the year 2030 Tier 1 scenario. The segments included as part of these 5 alternative networks are a combination of various freeway segments catering to one common theme for the alternative. Alternative 6 is a year 2045 vision network which includes all freeway segments identified as part of the first 5 alternatives. Essentially, the freeway segments which were not part of a specific Tier 1 alternative network will now become part of Tier 2 network. The details of the six alternative networks identified for this study are discussed in this section. Tier 3 segments (beyond 2045) are highlighted in grey in the alternative figures.

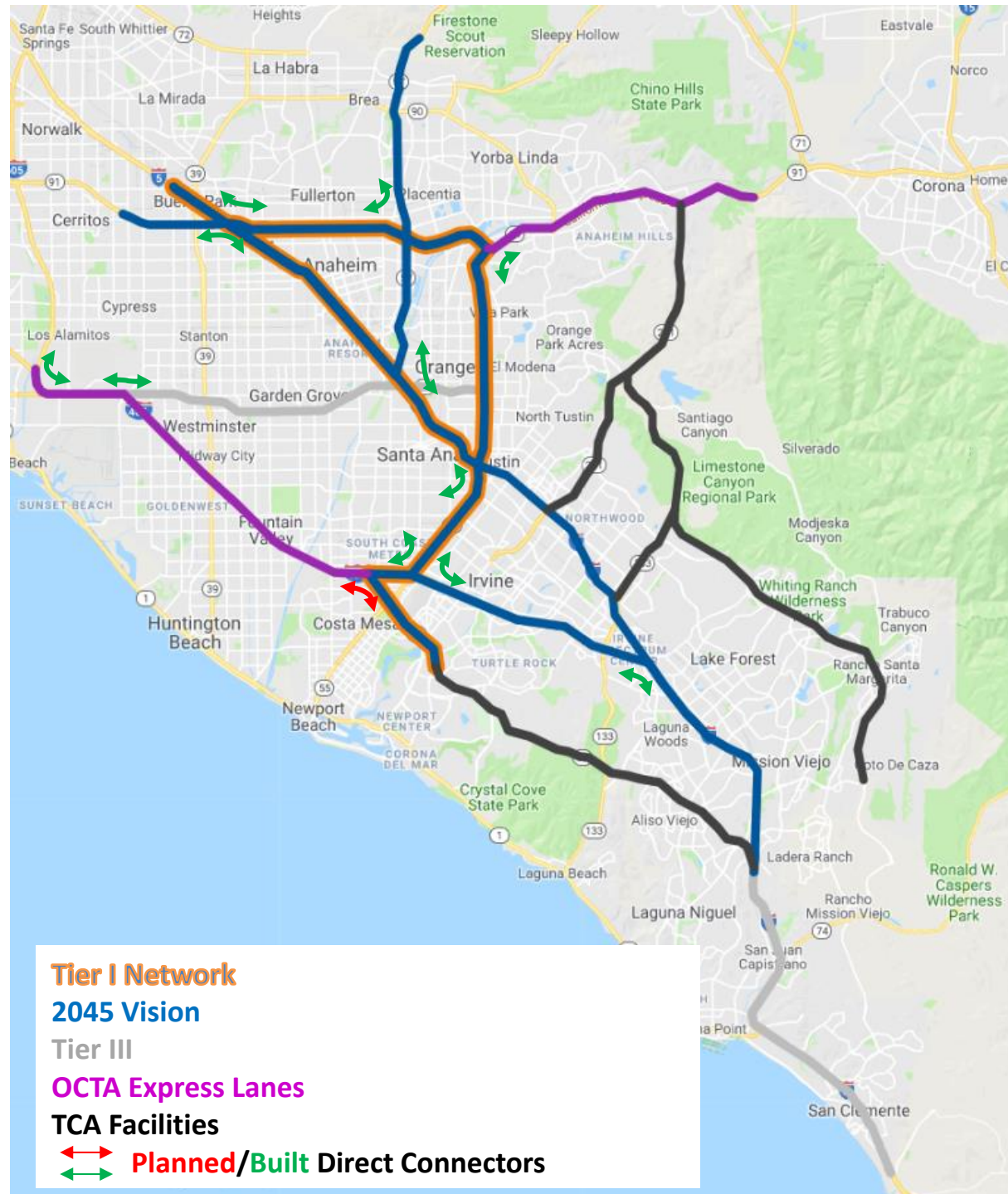
Alternative 1: Caltrans Phase I

The Tier 1 network is shown in orange and Tier 2 network is shown in blue in each of the figures. This alternative has the following features and the freeway segments are illustrated in **Figure 1**.

- This alternative is a modified version of Caltrans' Managed Lanes Feasibility Study's (2016) Phase 1 plan (built within 15 years). On I-5, at the western end, the EL is extended as one EL lane from SR-91 to the LA/OC county line

- Provides an opportunity to rank Caltrans' recommended near-term network in mobility, financial, and qualitative criteria compared to the other Tier I network alternatives developed
- No regional connections via SR-91 and SR-57
- Uses SR-91/SR-55, I-5/SR-91, I-405/SR-73, I-405/SR-55, and SR-55/I-5 direct connectors
- Includes express lanes on SR-73 (may be costly due to additional construction needs)
- Conflicts with OCTA's M2 HOV projects (may require differential toll policy)

Figure 1: Alternative 1: Modified Caltrans Phase 1

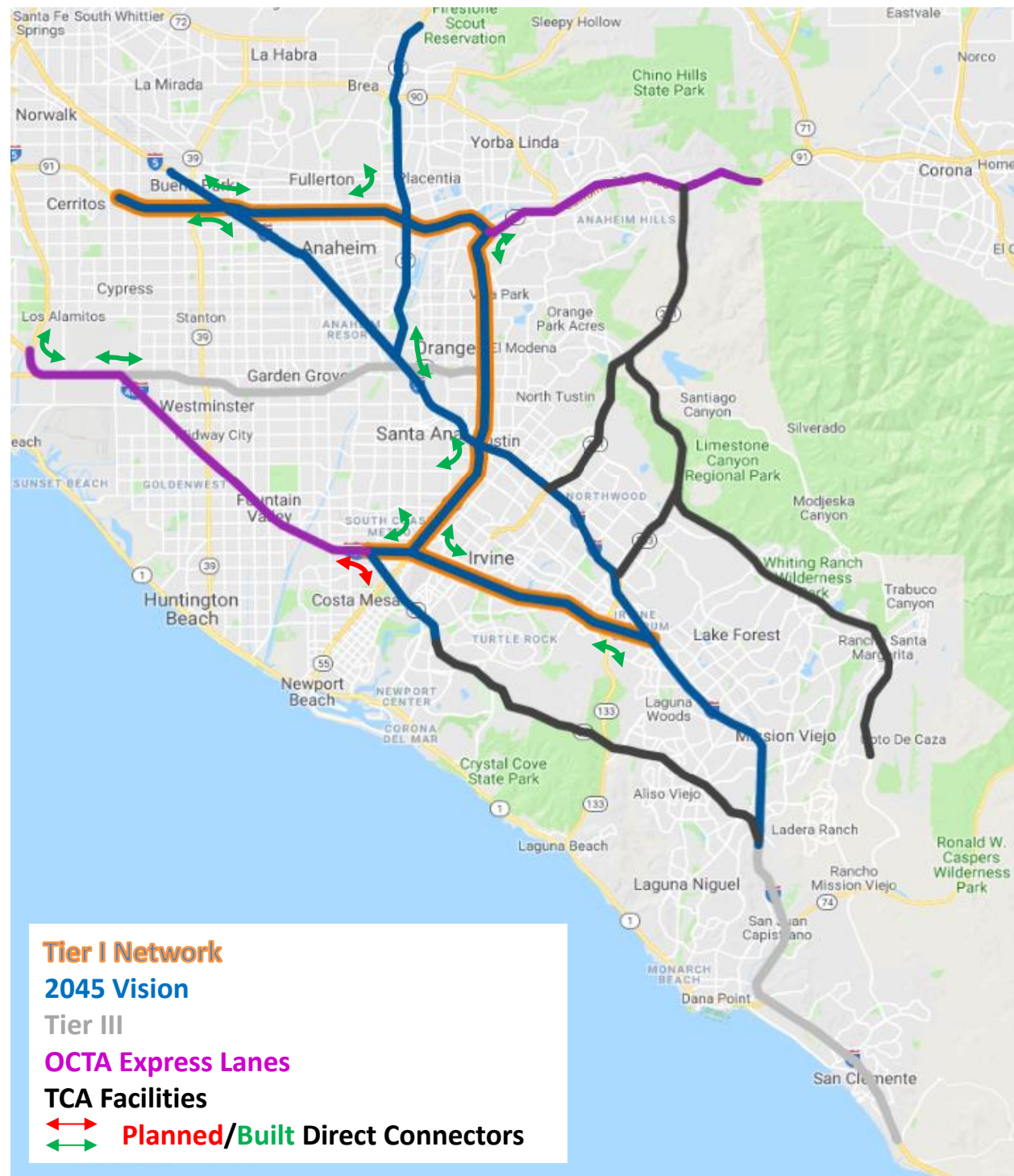


Alternative 2: Existing Express Lanes Extension

This alternative has the following features and the freeway segments are illustrated in **Figure 2**.

- This alternative is a logical extension of existing/planned express lanes
- It makes use of SR-55/SR-91 & SR-55/I-405 direct connectors
- Conflicts with OCTA's M2 HOV projects (may require differential toll policy)

Figure 2: Existing Express Lanes Extension

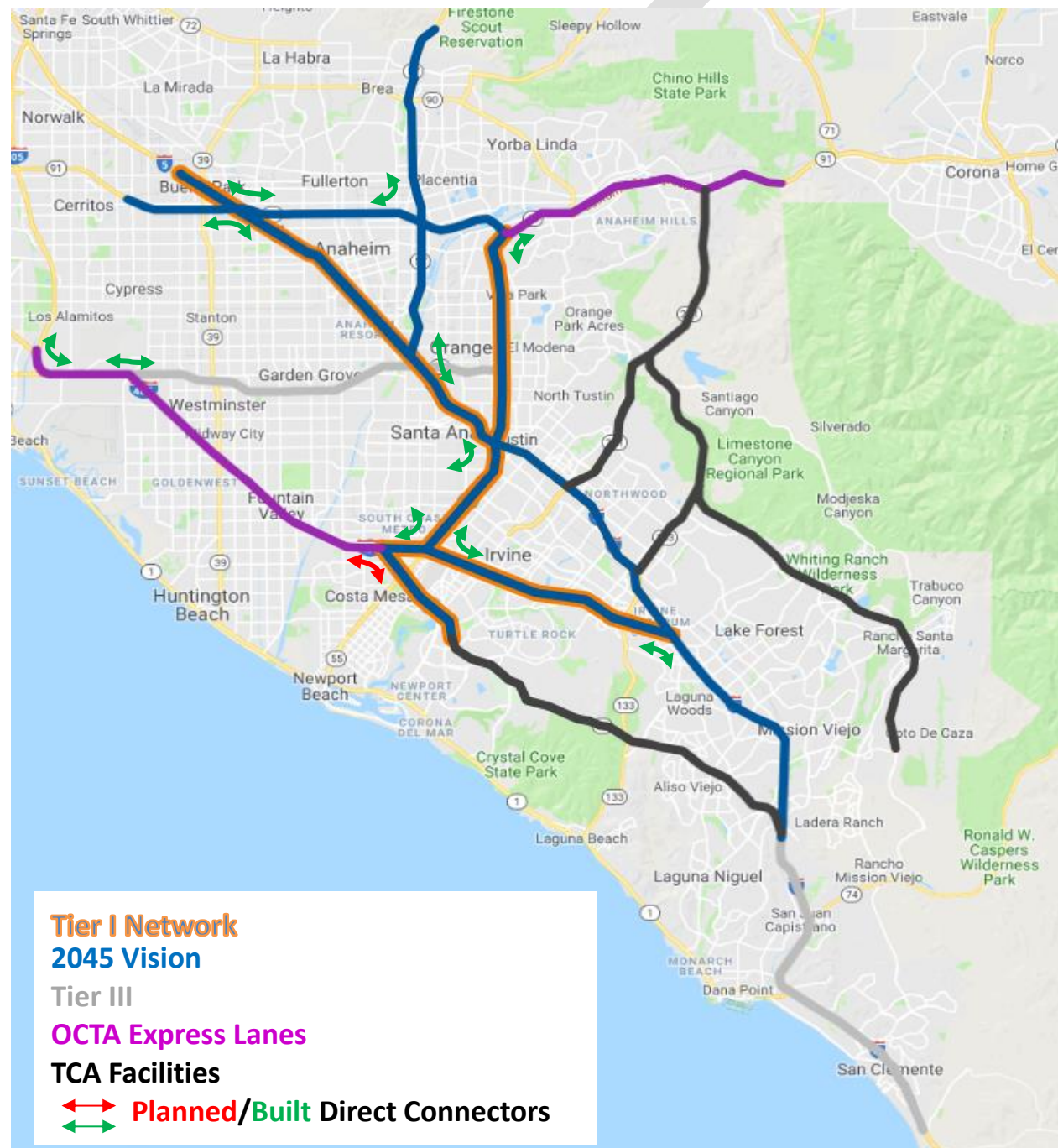


Alternative 3: Direct Connections

This alternative has the following features and the freeway segments are illustrated in **Figure 3**.

- This alternative was developed to minimize costs, moving forward with the existing HOV direct connectors. Utilizes I-405/SR-55, I-405/SR-73, SR-55/I-5, and SR-55/SR-91 direct connectors
- Provides intra-county connectivity
- Extends existing facilities on some freeways
- Includes express lanes on SR-73 (may be costly due to additional construction needs)
- Conflicts with OCTA's M2 HOV projects (may require differential toll policy)

Figure 3: Direct Connectors

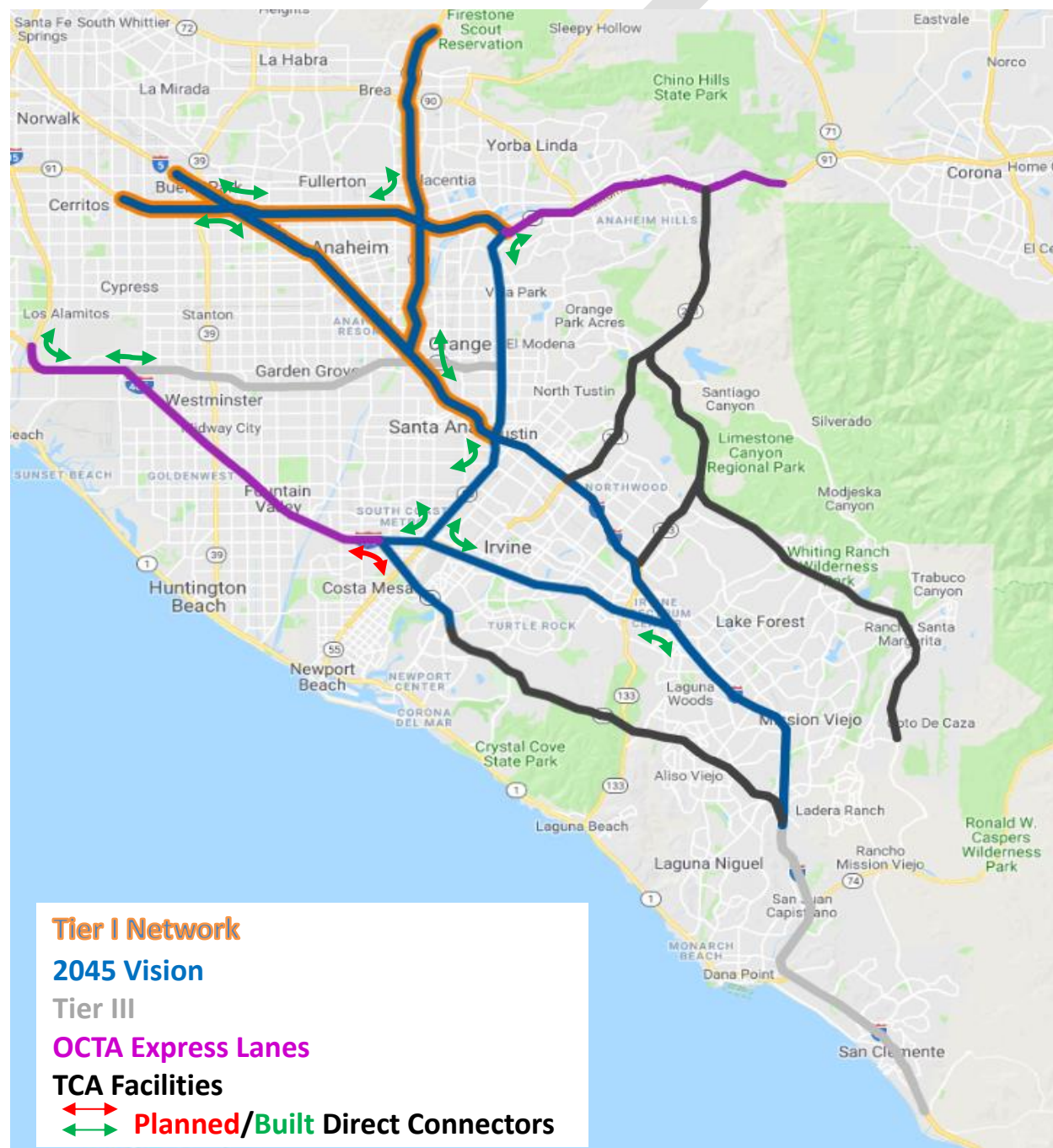


Alternative 4: Intercounty Connections

This alternative has the following features and the freeway segments are illustrated in **Figure 4**.

- This alternative focuses on creating a network that would serve intercounty movement, and is in line with Metro’s plans for I-5, SR-91, and SR-57 (planned to be converted within 15 years)
- Makes use of I-5/SR-57, I-5/SR-91, SR-57/SR-91 direct connectors
- Conflicts with OCTA’s M2 HOV projects (may require differential toll policy)
- Lacks connectivity with I-405 and does not have any express lanes on the freeway segments in the southern region in the near term.

Figure 4: Intercounty Connections

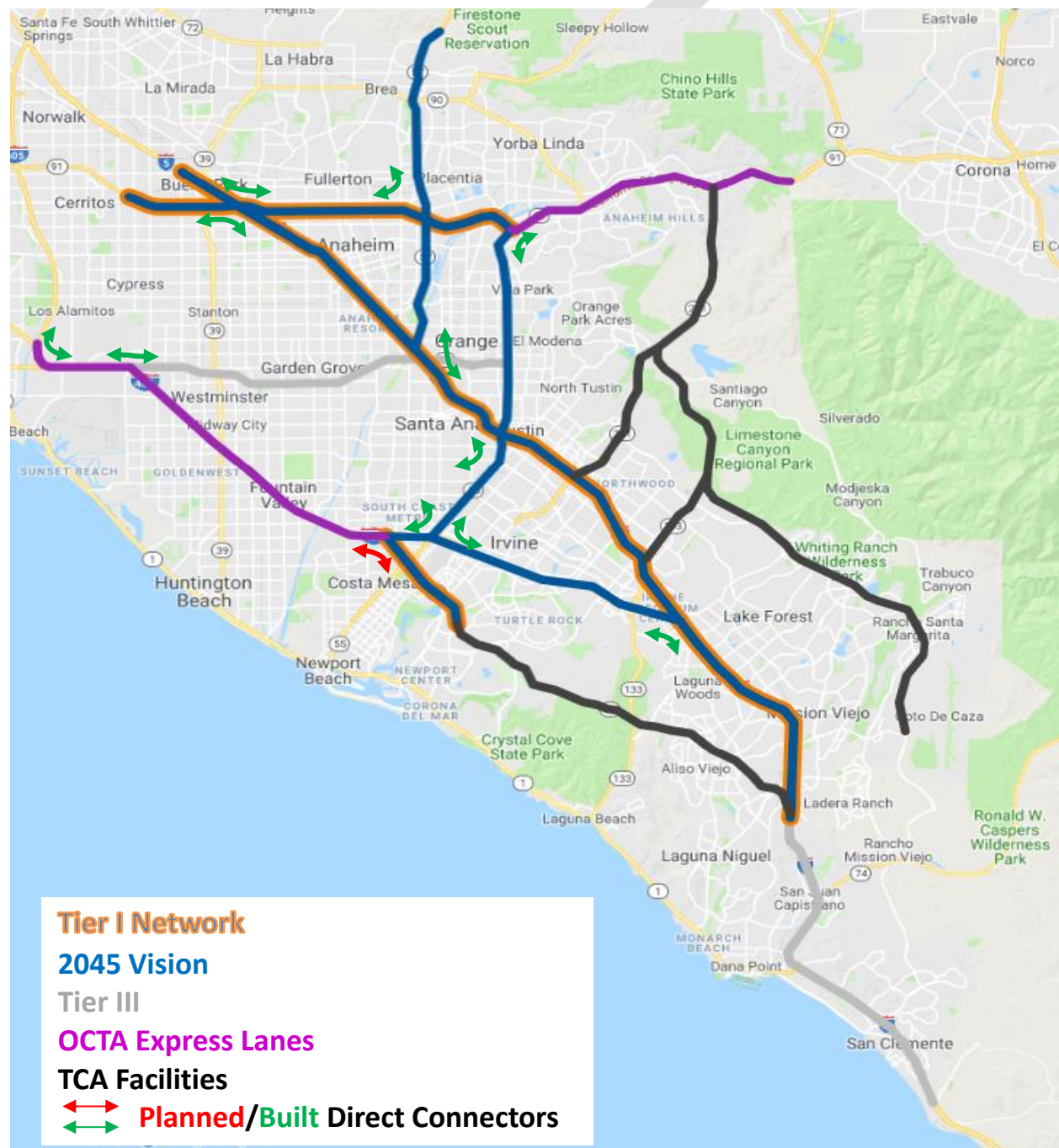


Alternative 5: Core Facilities

This alternative has the following features and the freeway segments are illustrated in **Figure 5**.

- This alternative extends the SR-91 express lanes, connects the I-405 to SR-73, and creates a core express lanes facility via the I-5.
- Provides long express lane segments, serving the commuters who may use the whole corridor
- Underutilizes direct connectors
- Includes express lanes on SR-73 (may be costly due to additional construction needs)
- Integrates multiple TCA facilities via the I-5.

Figure 5: Core Facilities



Alternative 6: 2045 Vision

This alternative includes all freeway segments (highlighted in blue) to be built by year 2045 and are illustrated in **Figure 6**.

Figure 6: 2045 Vision

