San Clemente Arterial and Mobility Study

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City of San Clemente

IBI Group

February 27, 2018

Project Overview

Transportation Corridor Agencies (TCA) are considering an extension of the SR-241 toll road from the existing southern terminus at Oso Parkway with a direct connection to I-5 (to any point from San Clemente south). This study aims to develop and evaluate alternative roadway improvements to the SR-241 extension project.

Project Goals

- Understand baseline conditions with and without 241 extension

- Identify and develop potential roadway alternative packages to improve mobility

- Analyze and compare the alternative packages to SR-241 extension

- Provide findings and conclusions

Scenario Development

- **Package 1**
  - 2040 No Project
    - MPAH/M2 buildout without SR-241 Extension
  - 2040 With Project
    - MPAH/M2 buildout with SR-241 Extension

- **Package 2**
  - 2040 Projections
  - MPAH/M2 buildout
  - No SR-241 extension
  - Los Patrones (F Street) extended from Oso to Ortega Hwy
  - La Pata extended to Cristianitos Rd as primary roadway (4 lanes)
  - La Pata widened to major roadway (6 lanes) b/w Ortega Hwy and Ave Pico

- **Package 3**
  - 2040 Projections
  - MPAH/M2 buildout
  - No SR-241
  - Los Patrones (F Street) extended from Oso to Ortega Hwy

- **Package 4**
  - 2040 Projections/Demographics
  - No MPAH/M2 buildout
  - "Do nothing" scenario
  - 2012 Network Configuration (baseline)

- *MPAH Highlights*
  - *Ortega Hwy widening*
  - *Rancho Mission Viejo (RMV) Roads*
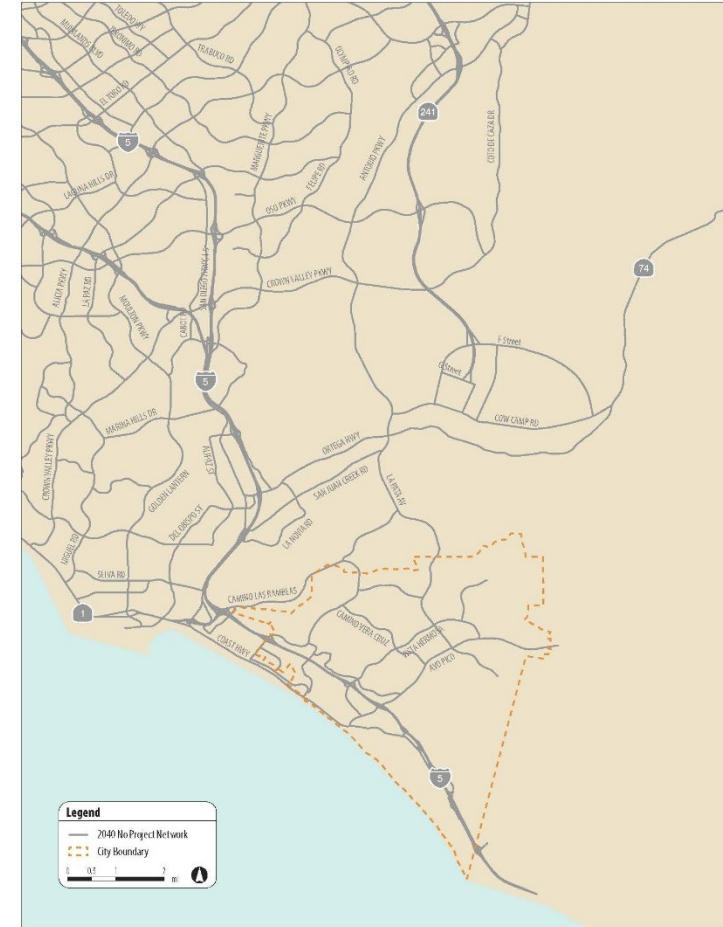 - *Crown Valley Parkway Extension*

- *M2 Highlights*
  - *I-5 HOV extension between San Juan Creek to Pico*
  - *Ortega Interchange Project*

Network Configurations

FIGURE 1: ROADWAY NETWORK EXISTING (2012)

FIGURE 2: ROADWAY NETWORK 2040 NO PROJECT

Source: OCTAM 4.0 TransCAD

Network Configurations

FIGURE 3: ROADWAY NETWORK 2040 WITH PROJECT

FIGURE 4: ROADWAY NETWORK 2040 PACKAGE 2

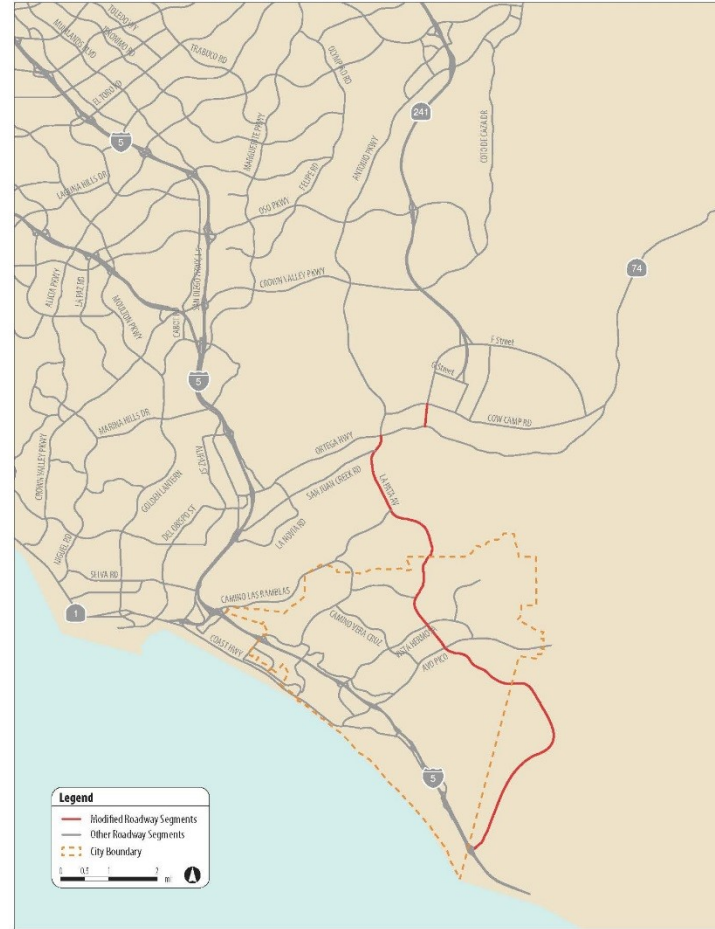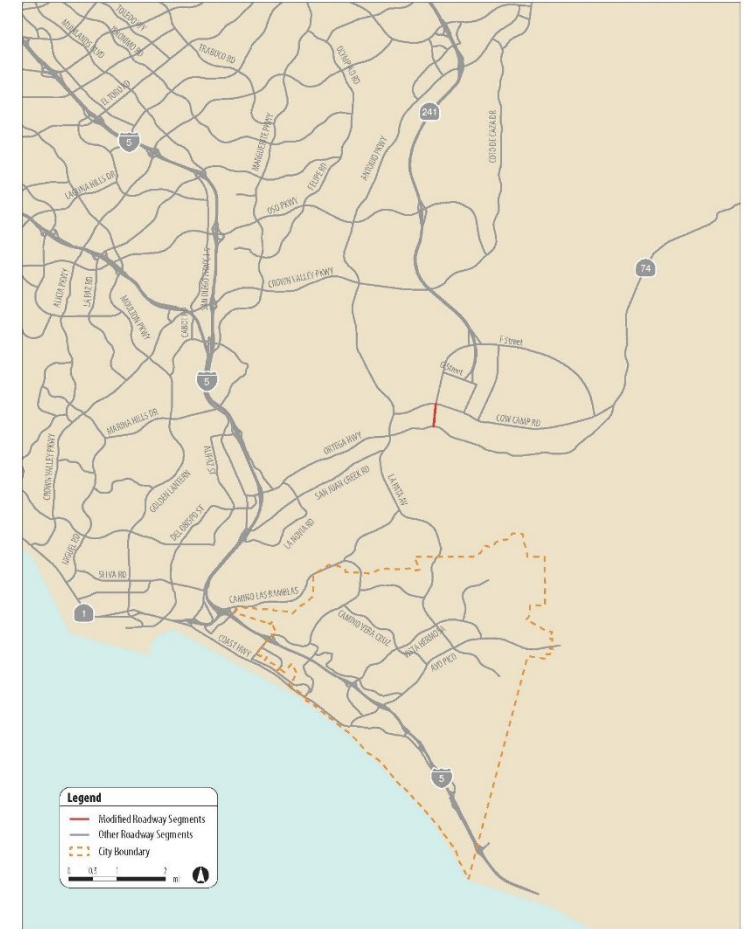FIGURE 5: ROADWAY NETWORK 2040 PACKAGE 3

Source: OCTAM 4.0 TransCAD

Methodology

OCTA Travel Demand Model*

(Regional Model)

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Run and Compare Scenario Results

(Study Area, City-Wide, Key Corridors)

_____

Key Metrics

(VMT, VHT, VHD)

*OCTAM 4.0 TransCAD

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Measures of Effectiveness

Vehicle Miles Traveled (VMT)

(Total Vehicles) x (Distance)

———————————————

Vehicle Hours Traveled (VHT)

(Total Vehicles) x (Total Travel Time)

———————————————

Vehicles Hours Delayed (VHD)

(Actual Travel Time) – (Free Flow Travel Time)
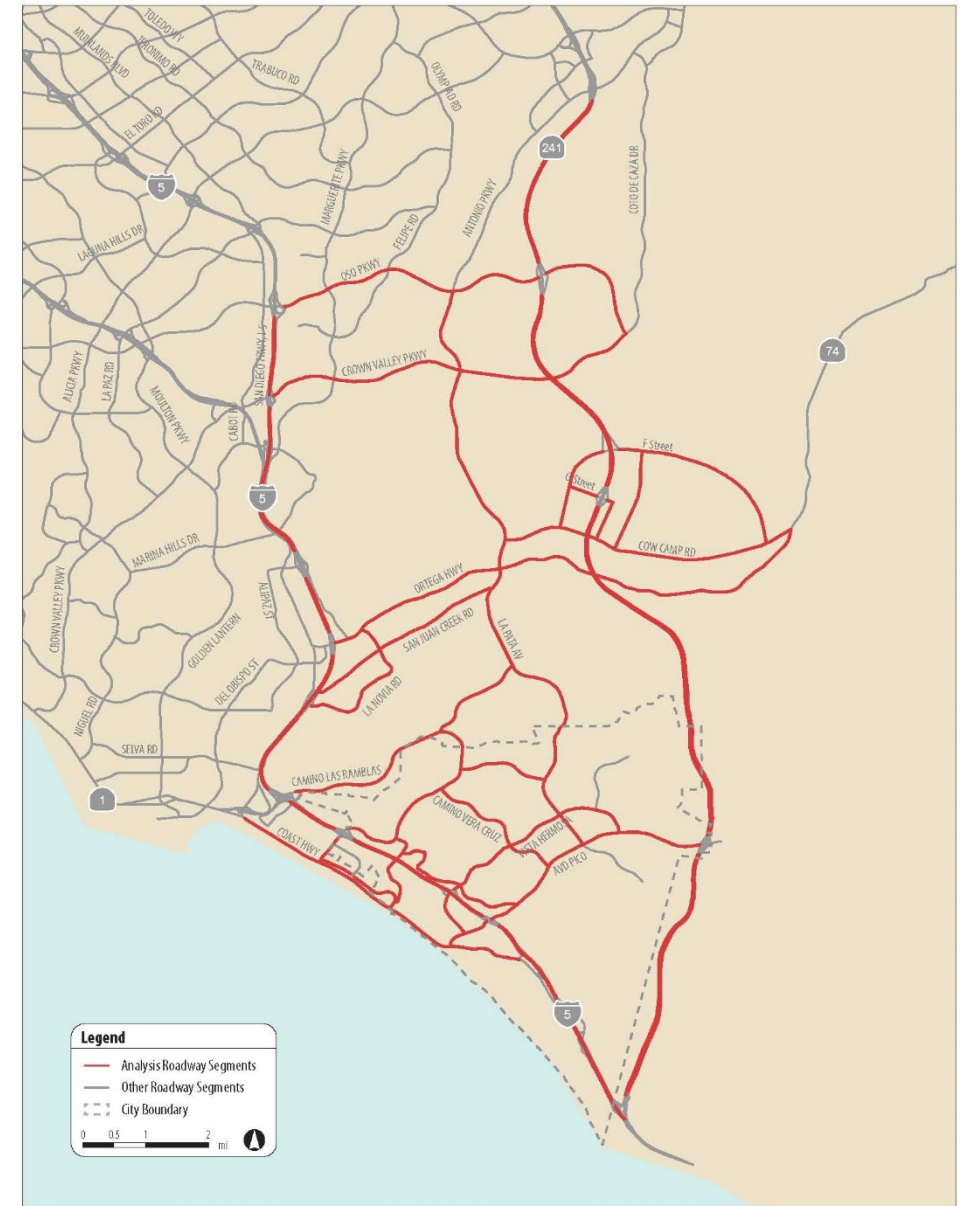
Overall Results (Daily)

Study Area

Scenario	VMT	VHT	VHD
(Do Nothing) Package 4	3,412,847	88,090	70,132
2040 NP	3,759,082	86,764	78,897
2040 WP	3,806,399	86,758	79,325
Package 2	3,738,331	86,248	78,620
Package 3	3,747,520	86,303	78,532
Delta (Pkg4/NP)	346,236 [10.1%]	(1,326) [-1.5%]	8,765 [12.5%]
Delta (NP/WP)	47,317 [1.3%]	(6) [-0.1%]	428 [0.5%]
Delta (NP/Pkg2)	(20,751) [-0.6%]	(516) [-0.6%]	(277) [-0.4%]
Delta (NP/Pkg3)	(11,563) [-0.3%]	(461) [-0.5%]	(365) [-0.5%]

Source: OCTA Traffic Model

VMT – Vehicle Miles Traveled   VHT – Vehicle Hours Traveled

VHD – Vehicle Hours Delay

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FIGURE 6: STUDY AREA

Legend
Analysis Roadway Segments
Other Roadway Segments
City Boundary

Overall Results (Daily)

City-Wide

Scenario	VMT	VHT	VHD
(Do Nothing) Package 4	1,428,751	38,874	8,242
2040 NP	1,440,220	38,472	8,957
2040 WP	1,409,726	37,443	8,470
Package 2	1,439,311	38,228	8,728
Package 3	1,438,696	38,444	8,958
Delta (Pkg4/NP)	**11,469 [0.8%]**	**(402) [-1.0%]**	**715 [8.7%]**
Delta (NP/WP)	**(30,494) [-2.1%]**	**(1,029) [-2.7%]**	**(487) [-5.4%]**
Delta (NP/Pkg2)	**(909) [-0.1%]**	**(244) [-0.6%]**	**(230) [-2.6%]**
Delta (NP/Pkg3)	**(1,524) [-0.1%]**	**(28) [-0.1%]**	**1 [0.0%]**

Source: OCTA Traffic Model

VMT – Vehicle Miles Traveled   VHT – Vehicle Hours Traveled

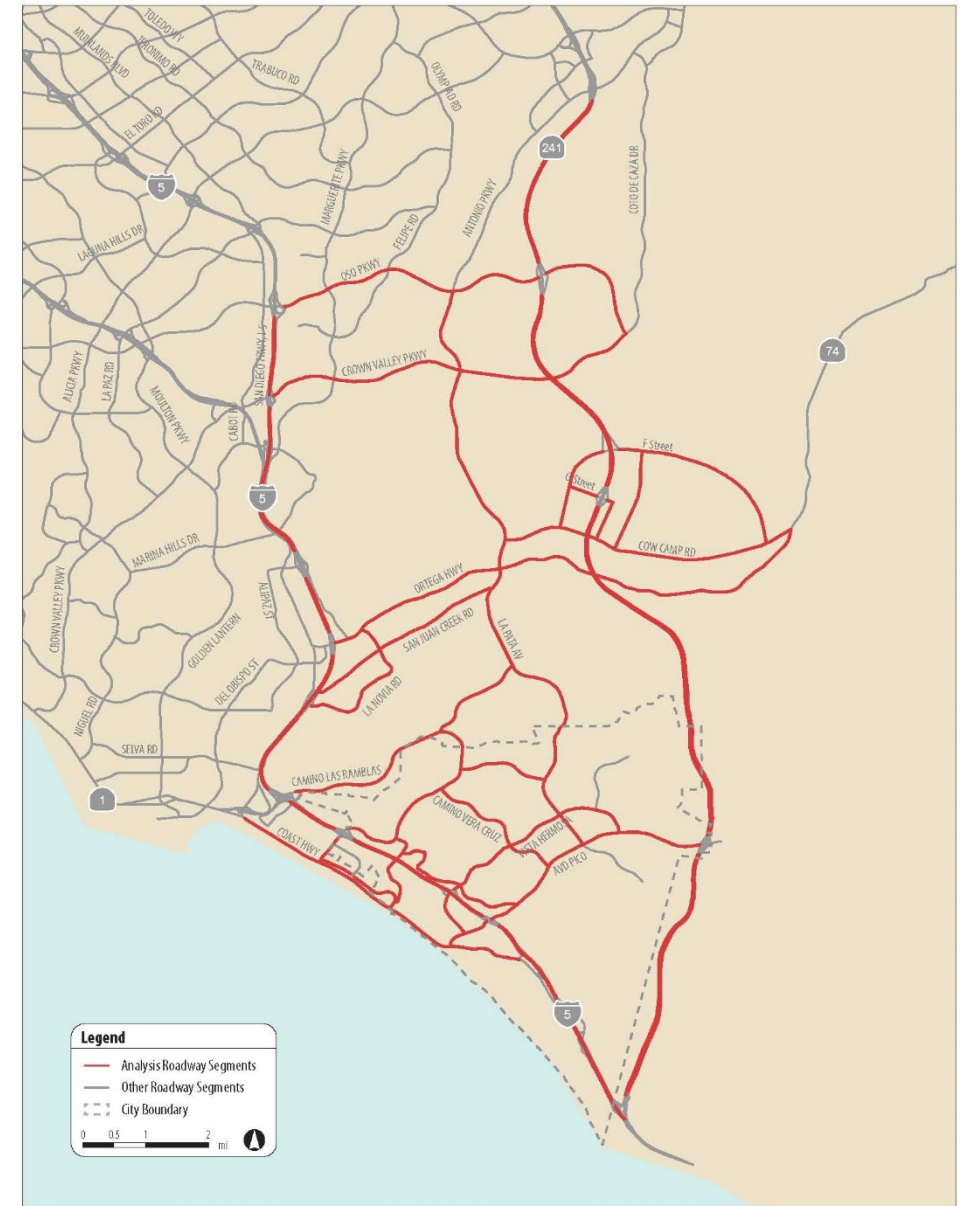VHD – Vehicle Hours Delay

FIGURE 6: STUDY AREA

Legend
- Analysis Roadway Segments
- Other Roadway Segments
- City Boundary

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Key Corridors

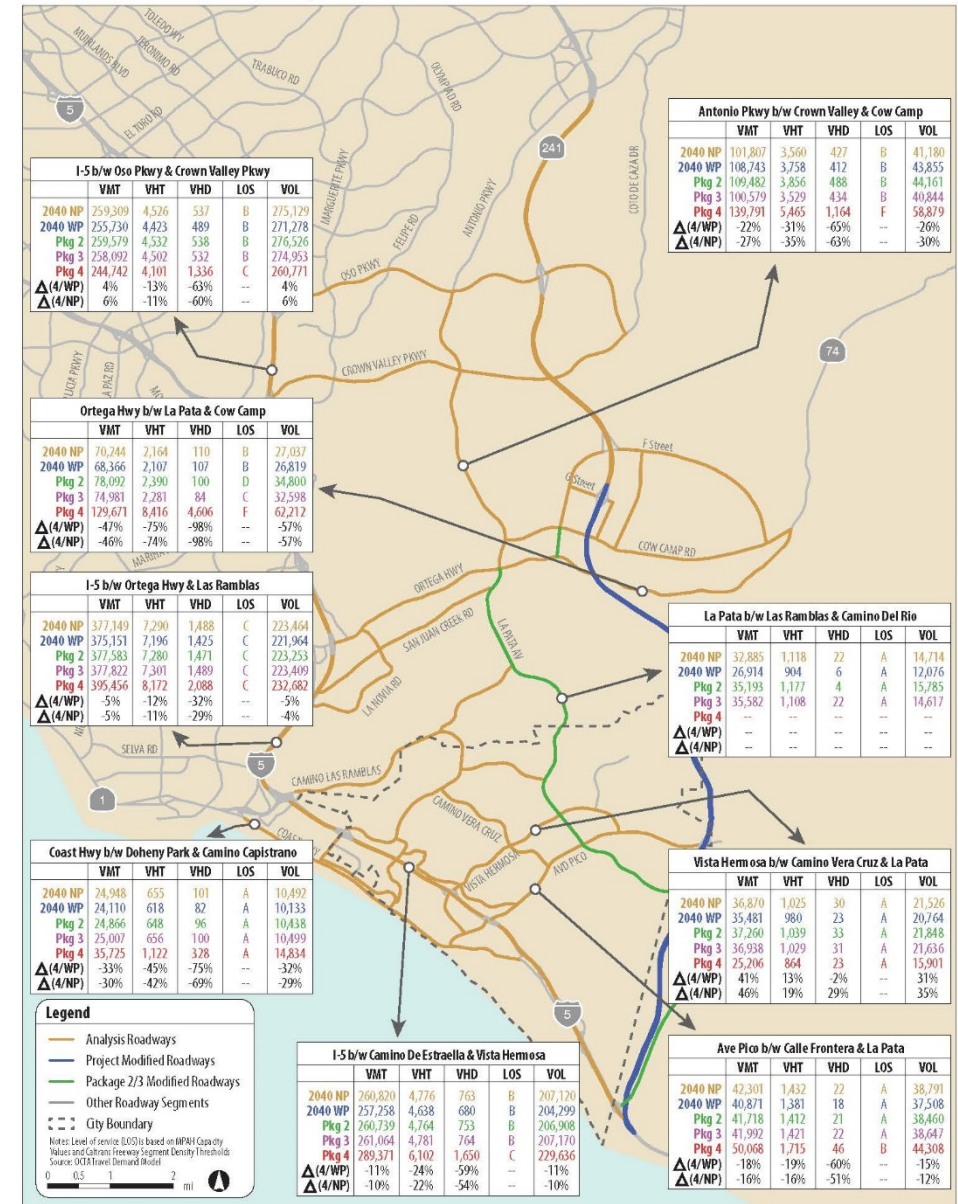- I-5 Segments
  - Oso and Crown Valley
  - Ortega and Las Ramblas
  - Camino De Estrella and Vista Hermosa
- Ortega Hwy
- Antonio Pkwy
- La Pata
- Ave Vista Hermosa
- Ave Pico
- Coast Hwy
- SR-241 Extension
  - 10-15,000 Daily Trips (2040 WP scenario)
    - OCTA Traffic Model
- La Pata Extension
  - <250 Daily Trips (Package 2 scenario)
    - OCTA Traffic Model

FIGURE 5: KEY CORRIDORS (DAILY)

Findings

- Overall Study Area findings similar between Project and Package 2 and 3 Scenarios

- SR-241 extension (Project) and La Pata extension (Package 2) volumes are relatively low

Alternative	Length (miles)	Daily Volume
241 Extension (2040 WP)	11.20	< 12,000
La Pata Extension (Package 2)	4.48	< 250
Los Patrones (F Street) connection between Cow Camp and Ortega (Packages 2 and 3)	0.47	< 21,000

Source: OCTA Traffic Model

- Other arterial alternatives that achieve similar mobility benefits to the SR-241 extension with significantly lower cost

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Conclusion

Project Overview

Transportation Corridor Agencies (TCA) are considering options to address mobility in South Orange County including an extension of the SR-241 toll road from its existing southern terminus at Oso Parkway with a direct connection to I-5 (to any point from San Clemente south). . This study aims to develop and evaluate alternative roadway improvements to the SR-241 extension project.

Conclusion

- Demand is present, but does not warrant SR-241 or La Pata extensions (i.e. Project/Package2)
  - E/W roadways are areas of concern

- More effective to build upon planned OCTA LRTP* improvements (I-5 HOV extension and MPAH build out)
  - Los Patrones (F Street) Extension to Ortega (Package 3)

*LRTP – Long Range Transportation Plan, updated every 4 years, provide basis for Southern California Association of Governments' Regional Transportation Plan (SCAG RTP)

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Summary/Takeaways

- Study Area metrics similar between Project and Package 2/3 Scenarios
- SR-241 extension (Project) and La Pata extension (Package 2) volumes are relatively low (represents less than half of 1% of the total trips within the study area)
  - SR-241 extension to serve less than 12,000 daily vehicles
  - La Pata extension with less than 250 daily vehicles
  - Los Patrones (F Street) extension from Oso to Ortega (Package 2 and 3) exhibits approximately 20,000 daily volume
- Data shows that the E/W roadways are the areas of concern as opposed to the need for providing direct I-5 connections at any point from San Clemente south
- More effective from both a cost and mobility benefit standpoint to build upon the LRTP and MPAH/M2 improvements, where the metrics are comparable to the SR-241 extension scenario

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