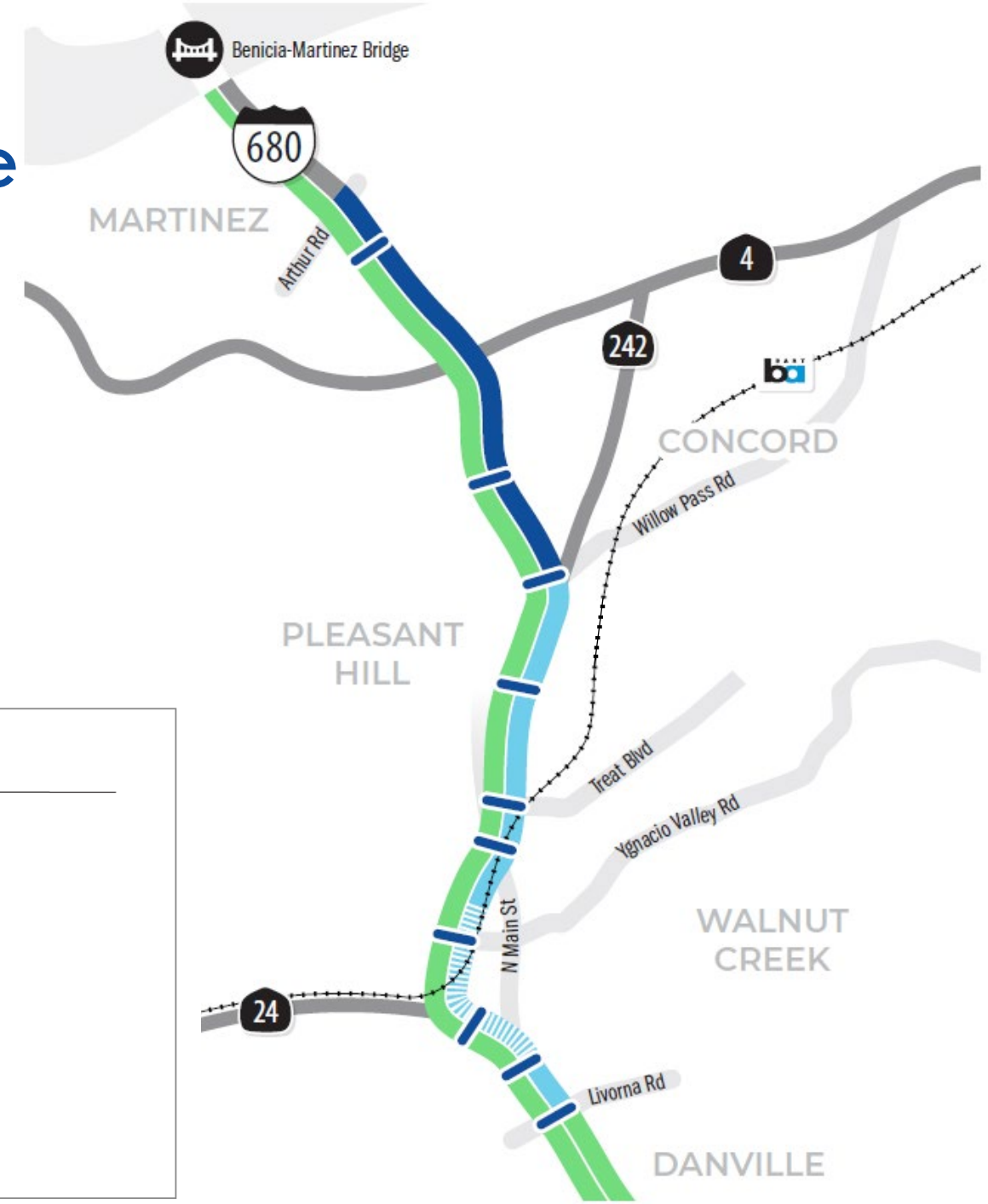
INNOVATE 680 Express Lane Completion (ELC) Project and Update

PROJECT OVERVIEW

NB I-680 Express Lane Completion

Description of Project:

- Close or reduce existing express lane gap on NB I-680 from Livorna Road in Walnut Creek to the Benicia-Martinez Bridge



LEGEND

- Existing express lane
- HOV to express lane conversion
- Lane addition or GP lane conversion
- Potential express lane gap
- Freeway exit
- BART

Purpose & Need

The purpose of this project is to:

- Reduce peak-period congestion and delay on northbound I-680
- Improve travel time reliability in corridor
- Encourage use of HOV and transit services
- Optimize use of existing HOV lane capacity in I-680 corridor
- Provide efficient travel options for all vehicles including non-carpool eligible drivers

Purpose & Need

Based on existing roadway conditions and the Traffic Engineering Performance Assessment, the Project Purpose & Need addresses the following priorities:

Congestion Relief

Smooth traffic throughout the corridor, where delays can reach 30 minutes when traveling from one end of the county to the other.

System Continuity

Address the lack of continuous express lanes within the county, which leads to increased travel times for users.

Operational Improvements

Reduce bottlenecks along the corridor by addressing weaving issues like those at the Lawrence Way on-ramp and the Treat Boulevard off-ramp, which regularly cause traffic to back up to the SR-24 interchange.

PROJECT ALTERNATIVES

Key Design Elements Under Consideration

REALIGN SOUTHBOUND I-680

Southbound I-680 shifted to the west to make room for a northbound express lane.

BRAIDED RAMPS

Braided Ramps between Lawrence Way on ramp and Treat Blvd off ramp to reduce weaving movements

LANE ADDITION

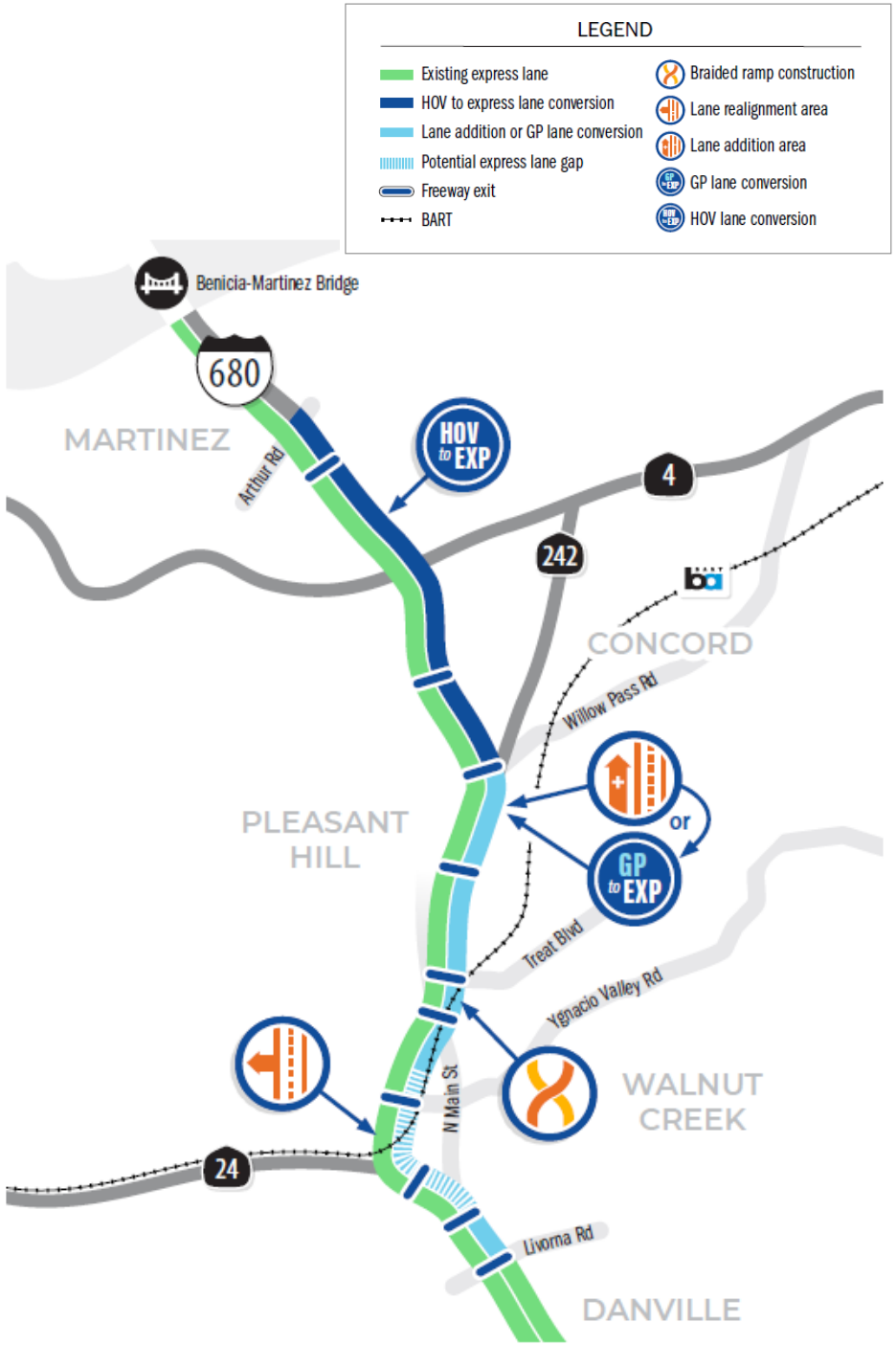
Northbound I-680 would be widening or re-striped to construct new express lane.

GENERAL PURPOSE (GP) LANE CONVERSION

Convert existing GP lane to an express lane

HIGH OCCUPANCY VEHICLE (HOV) LANE CONVERSION

Convert existing high occupancy vehicle (HOV) lane to an express lane.



Project Alternatives

Alternative 1C

- Close the Gap with SB 680 Realignment
- Capital Cost: $240M

Alternative 2

- Reduce the Gap plus Braided Ramps
- Capital Cost: $175M

Alternative 3

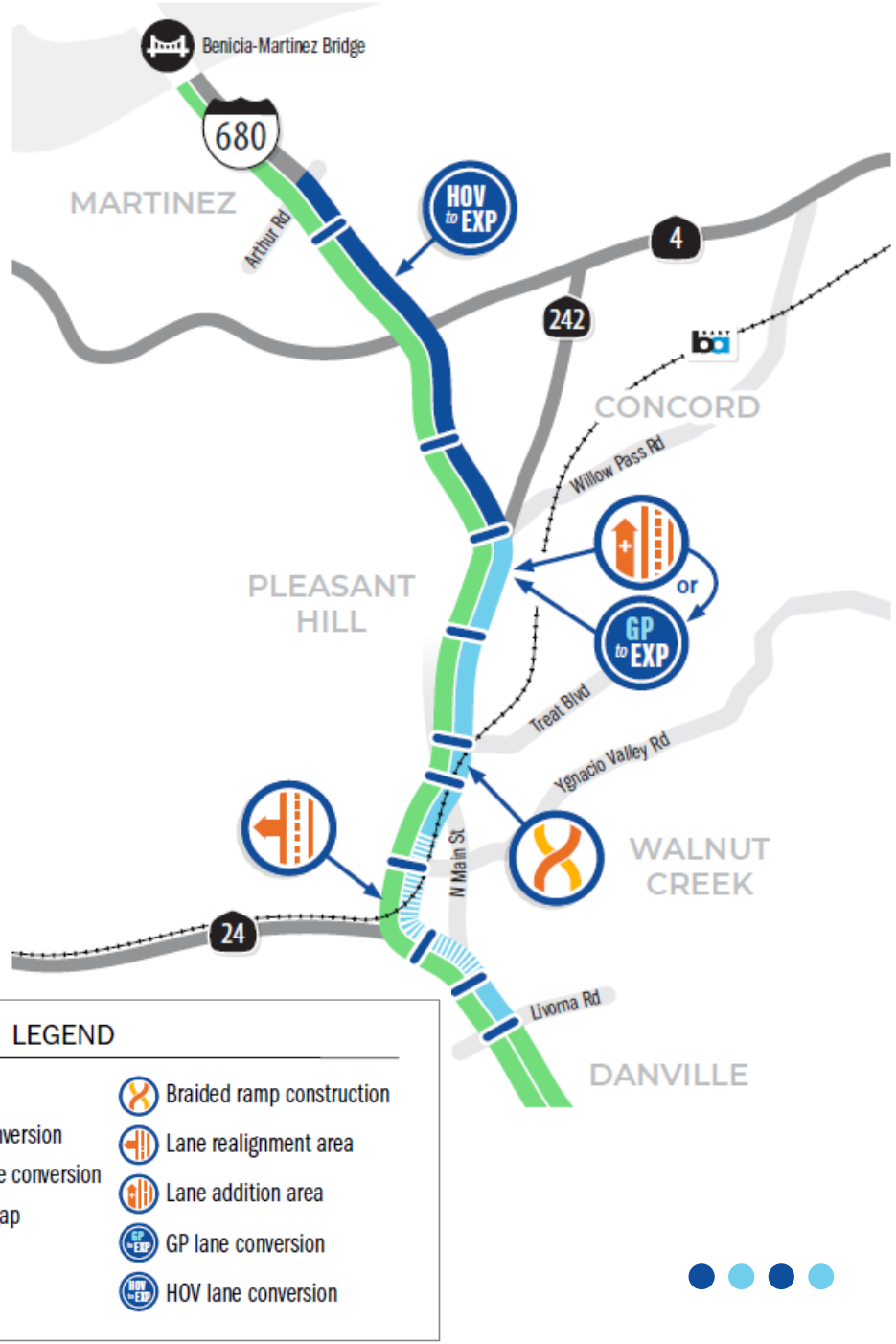
- Close the Gap with SB 680 Realignment plus Braided Ramps
- Capital Cost: $291M

Alternative 5

- Reduce the Gap by Converting General Purpose (GP) Lane to Express Lane plus Braided Ramps
- Capital Cost: $89M

No Build

- Maintain Existing Conditions

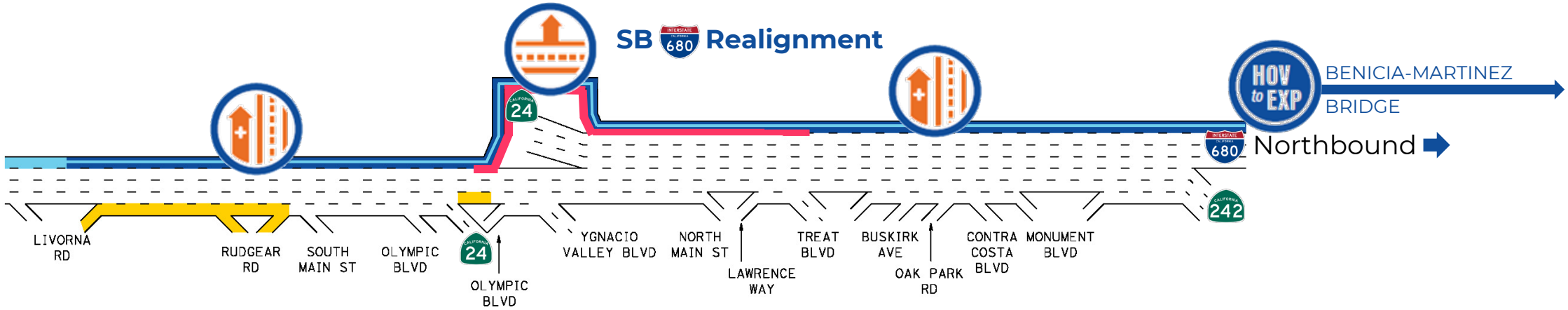


Alternative 1C

Close the Gap with SB Realignment

Design Elements

- Extend NB express lane from Livorna Rd to Olympic Blvd through widening
- Add separated NB express lane from Olympic Blvd to Treat Blvd
- Realign SB I-680 and SB I-680/WB SR-24 connector
- Add NB express lane from Treat Blvd to SR-242 through restriping
- Convert existing NB HOV lane to express lane north of SR-242

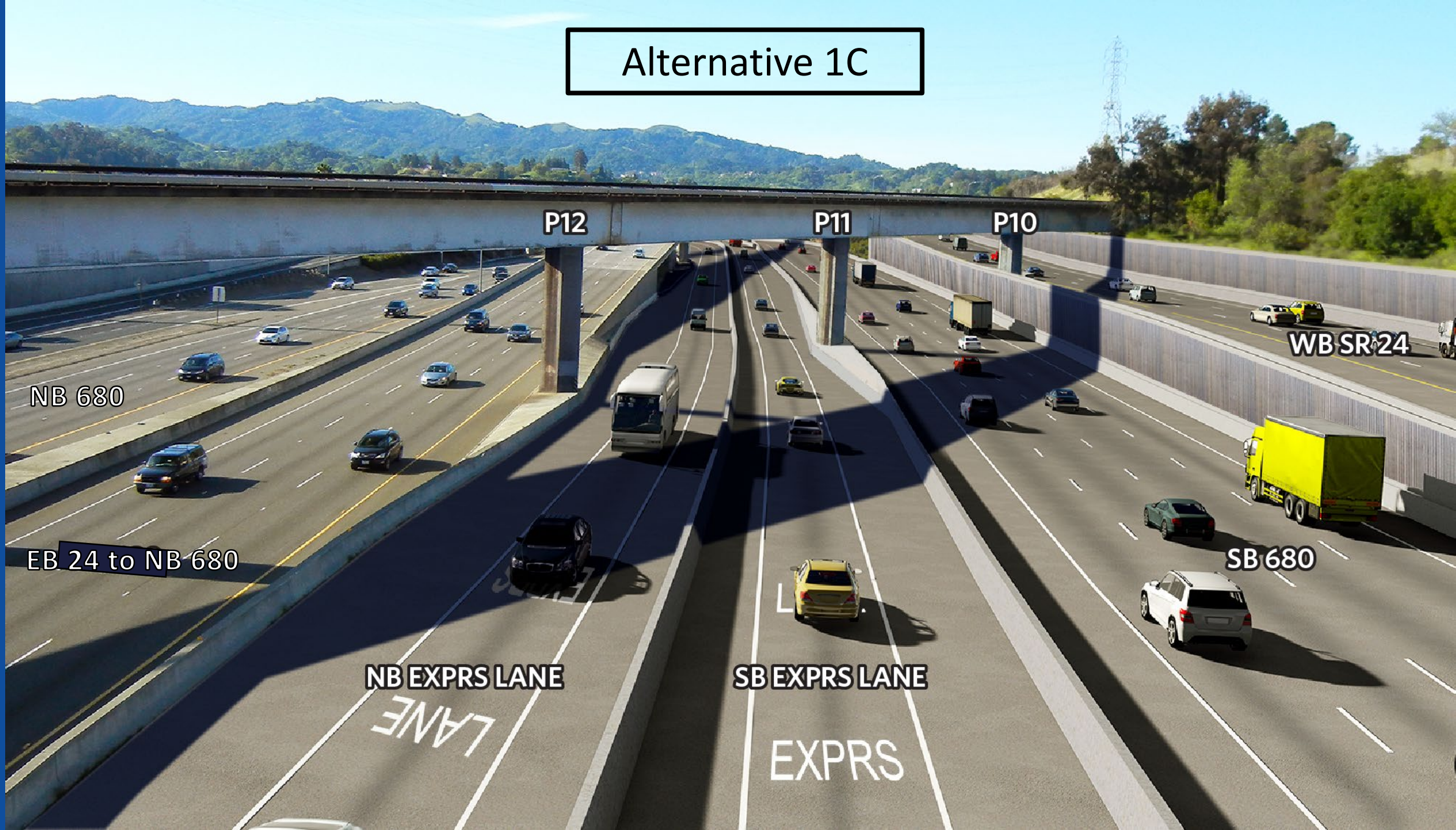


Legend

Prevent Access to/from Managed Lanes and General Purpose Lanes

Existing Condition

Alternative 1C



Simulation of Alternative 1C

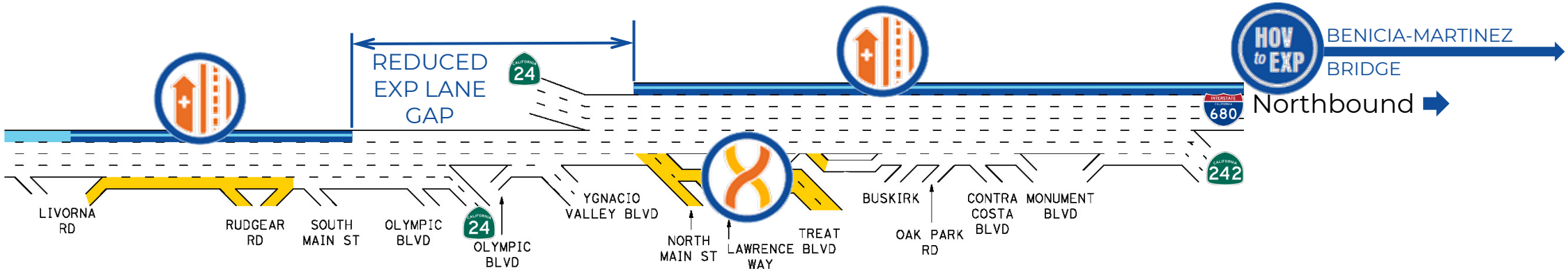

EASTBOUND
24
SOUTHBOUND
INTERSTATE
CALIFORNIA
680
NORTHBOUND
INTERSTATE
CALIFORNIA
680
WESTBOUND
CALIFORNIA
24
EXPRESS LANE
ONLY
TOLL
TO 4
$3.50
HOV 2+ NO TOLL W/FASTRAK FLEX
EXPRS
LANE

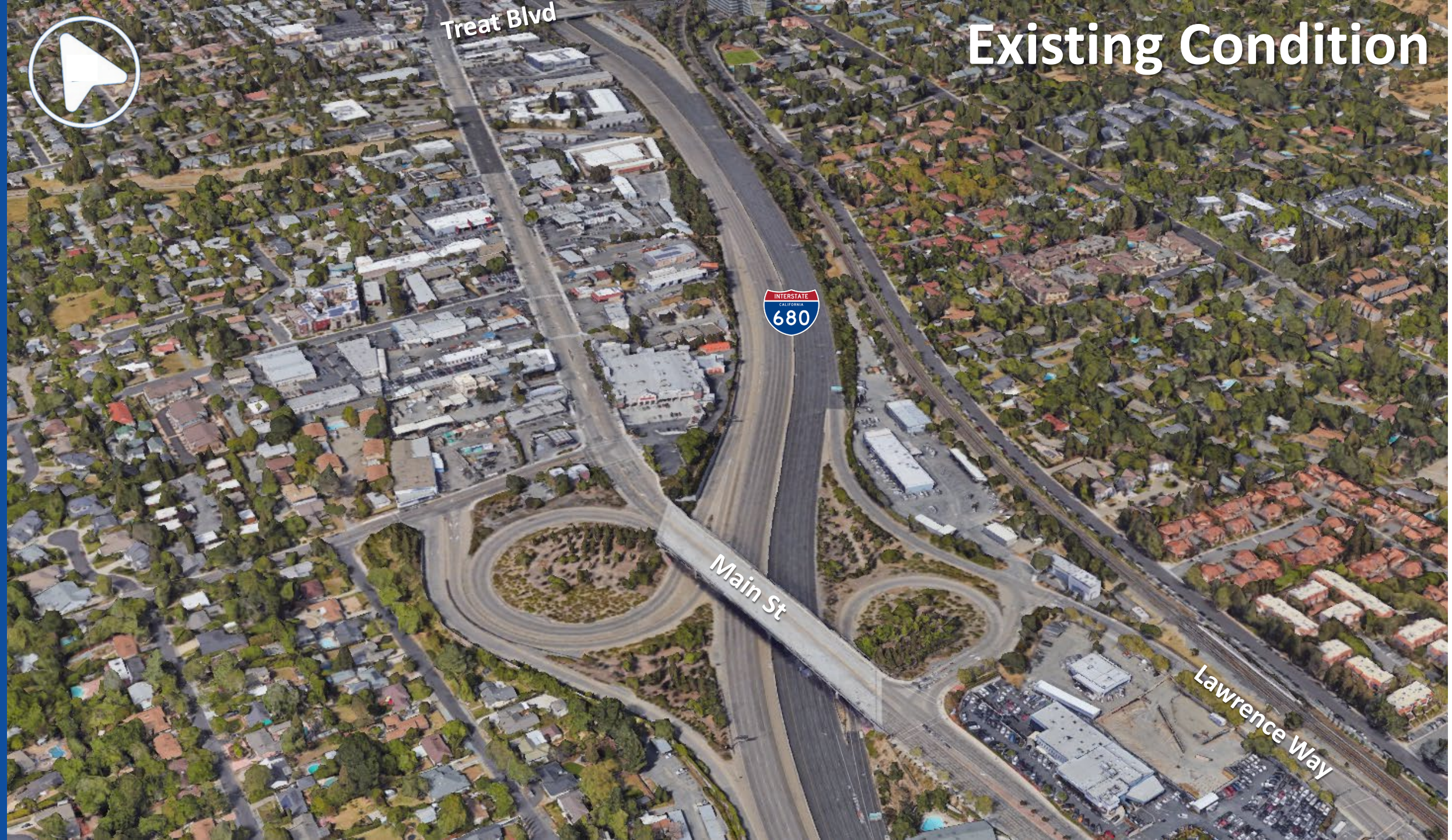
Alternative 2

Reduce the Gap plus Braided Ramps

Design Elements

- Extend NB express lane from Livorna Rd to South Main Street through widening
- Add braided ramps system between Lawrence Way on ramp and Treat Blvd off ramp
- Add NB express lane from Treat Blvd to SR-242 through restriping
- Convert existing NB HOV Lane to express lane north of SR-242





Existing Condition

Existing Condition

Simulation of Alternative 2


Treat Blvd
INTERSTATE
CALIFORNIA
680
Bridge
Main St.
Lawrence Way
North Main St
INTERSTATE
CALIFORNIA
680

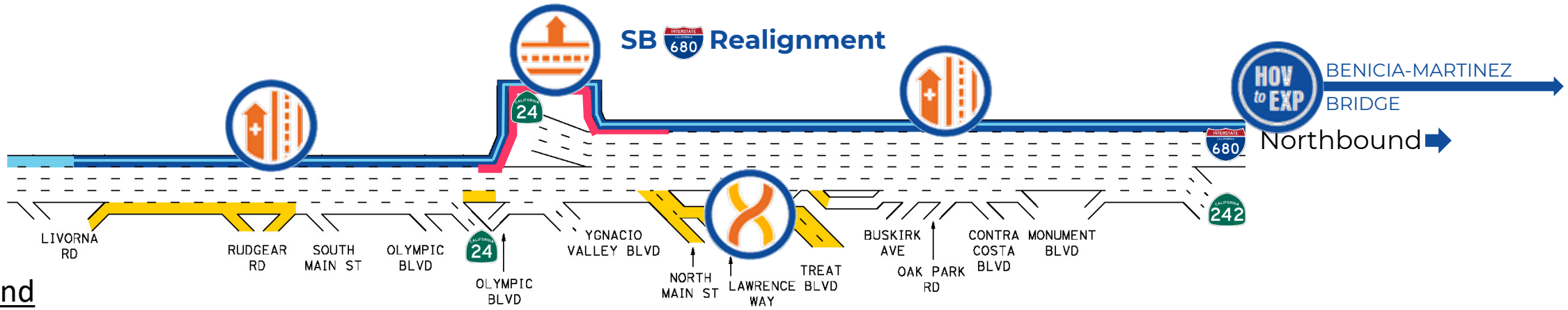

Main St.
Lawrence Way

Alternative 3

Close the Gap with SB Realignment plus Braided Ramps

Design Elements

- Extend NB express lane from Livorna Road to Olympic Blvd through widening
- Add separated NB express lane from Olympic Blvd to North Main Street
- Realign SB I-680 and SB I-680/WB SR-24 connector
- Add braided ramps system between Lawrence Way on ramp and Treat Blvd off ramp
- Add NB express lane from North Main Street to SR-242 through restriping
- Convert existing NB HOV lane to express lane north of SR-242



Legend

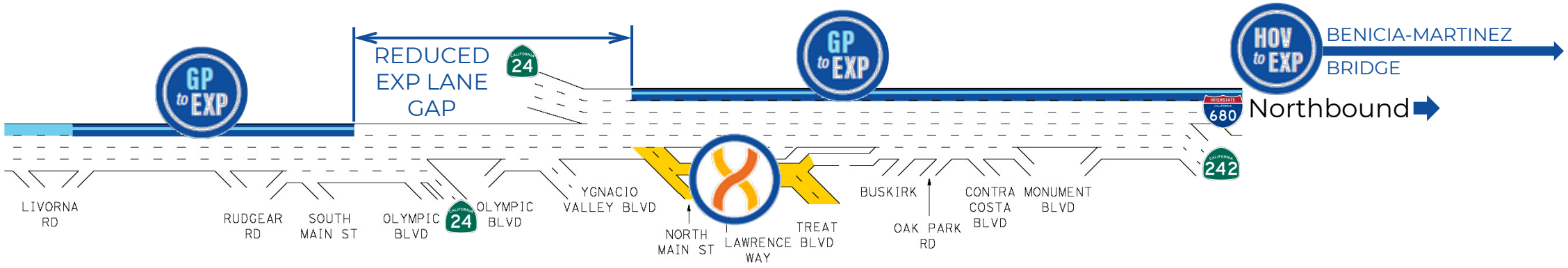
Prevent Access to/from Managed Lanes and General Purpose Lanes

Alternative 5

Reduce the Gap by General Purpose Lane Conversion to Express Lane plus Braided Ramps

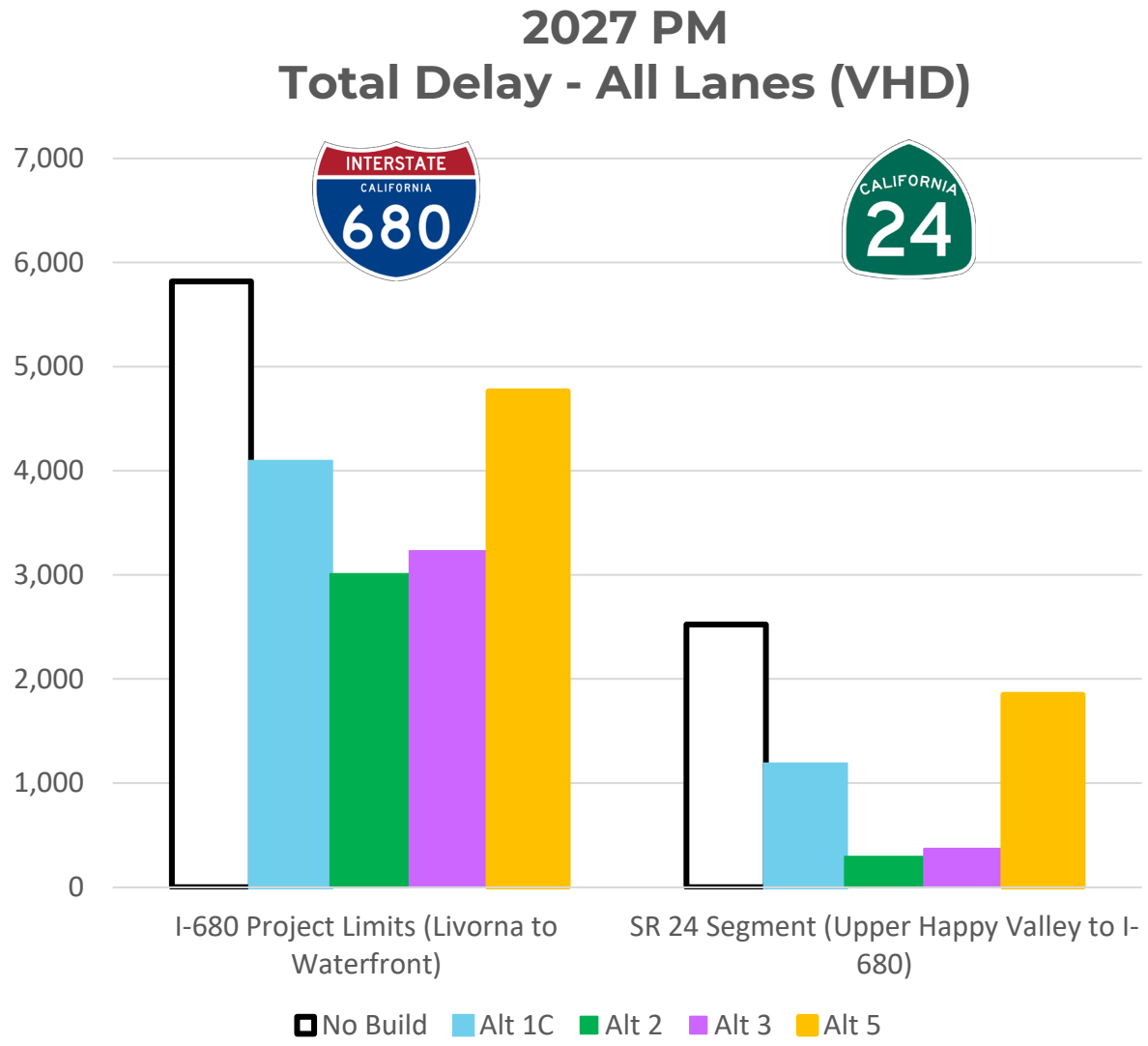
Design Elements

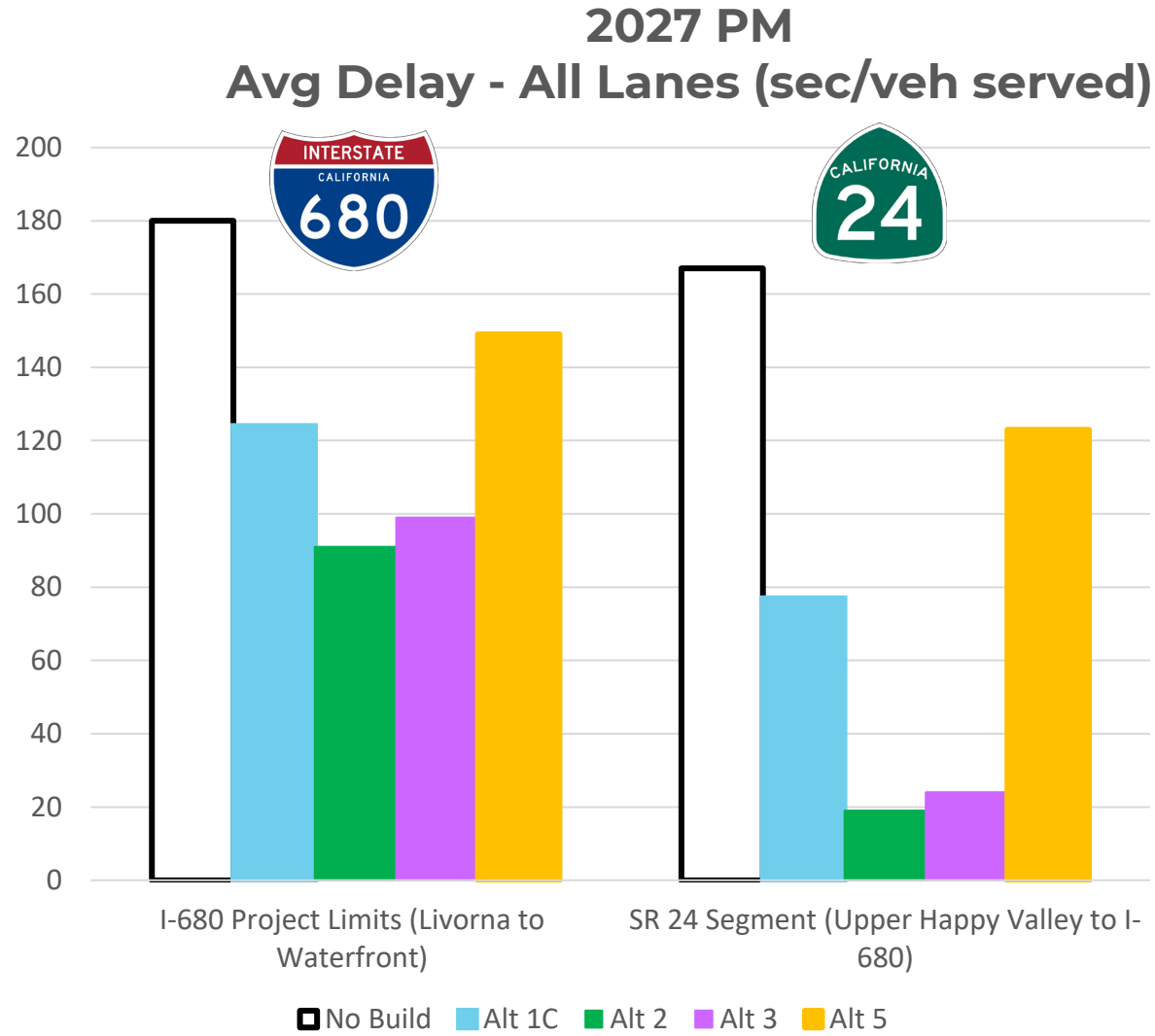
- Convert NB general purpose lane to express lane from Livorna Road to South Main Street
- Add braided ramps system between Lawrence Way on ramp and Treat Blvd off ramp
- Convert NB general purpose lane to express lane from Treat Blvd to SR-242
- Convert existing NB HOV lane to express lane north of SR-242



Traffic Analysis

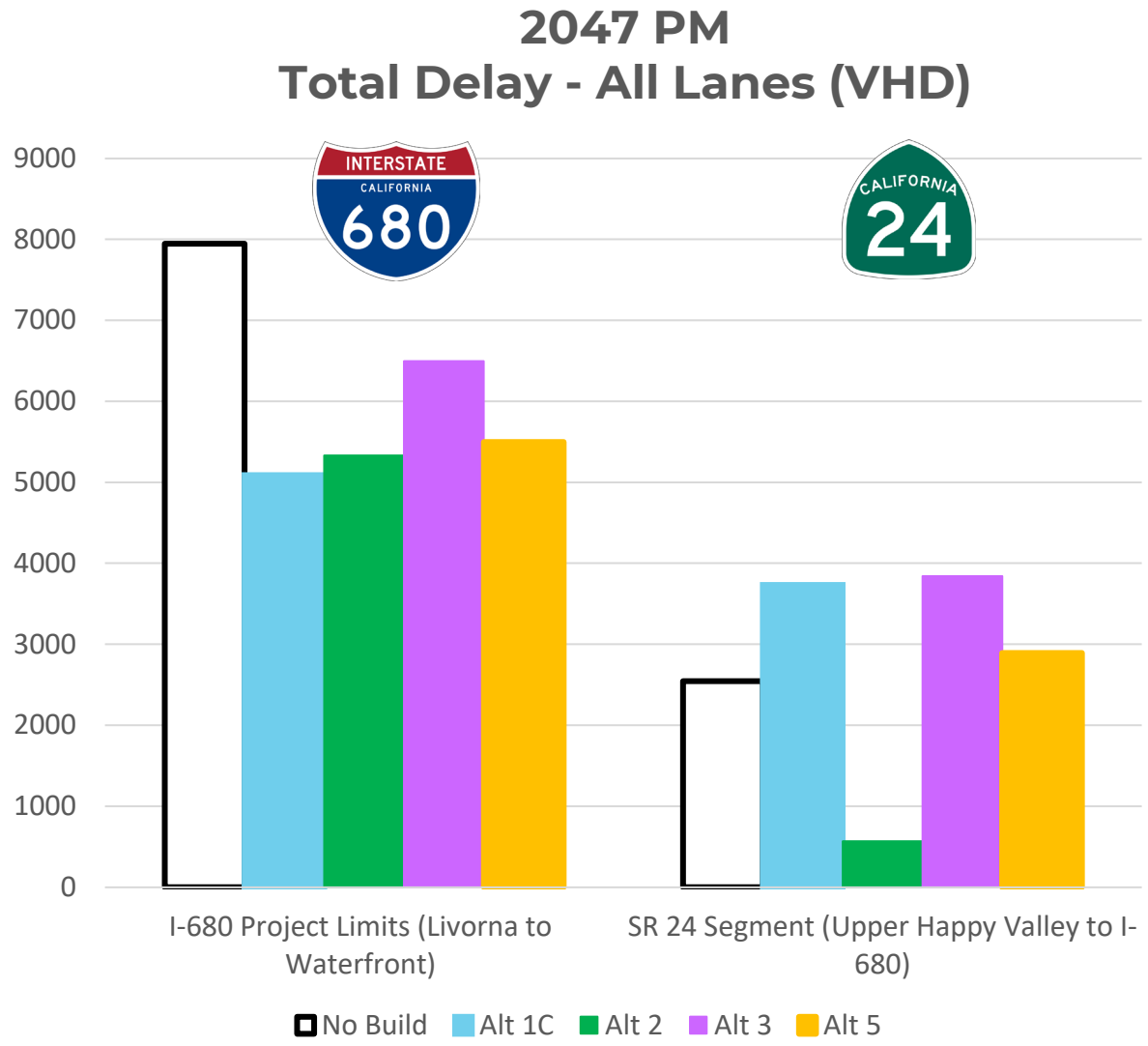
Delay (Opening Year 2027) – Project Limits

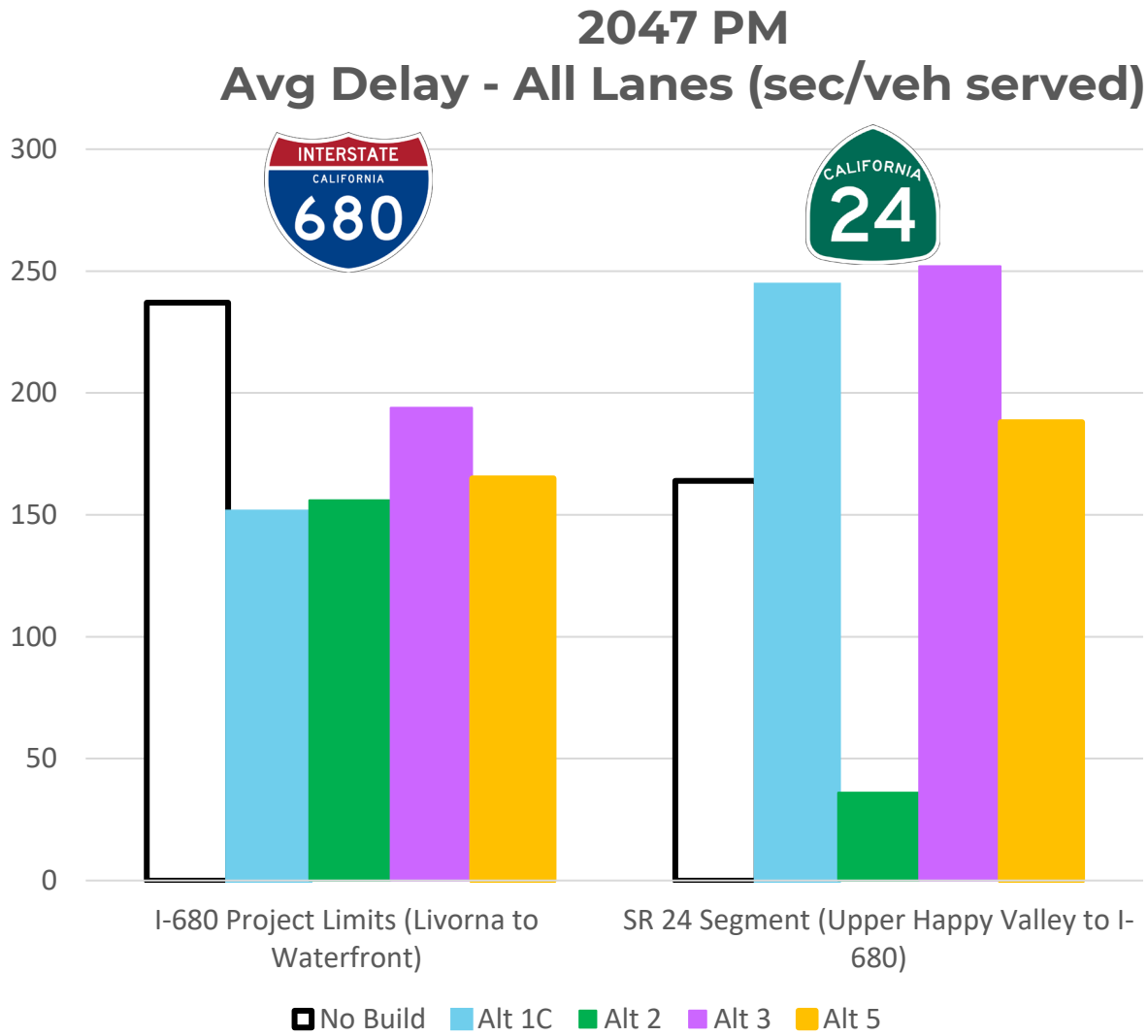




Note: Mainline start and on-ramp demand. 6 Hr. Period (2-8 PM).
Alt 5 uses No-Build demand.

Delay (Horizon Year 2047) – Project Limits





Note: Mainline start and on-ramp demand. 6 Hr. Period (2-8 PM).
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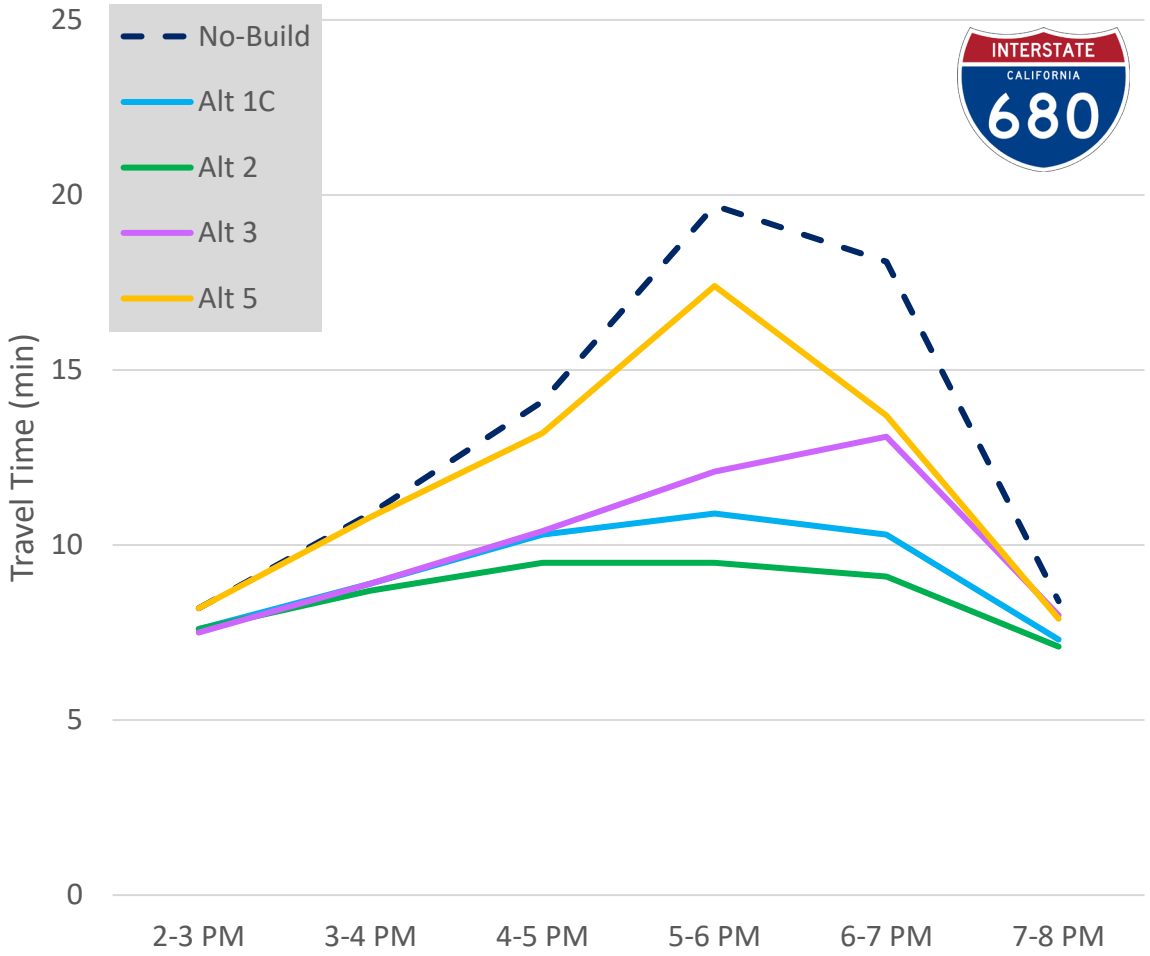
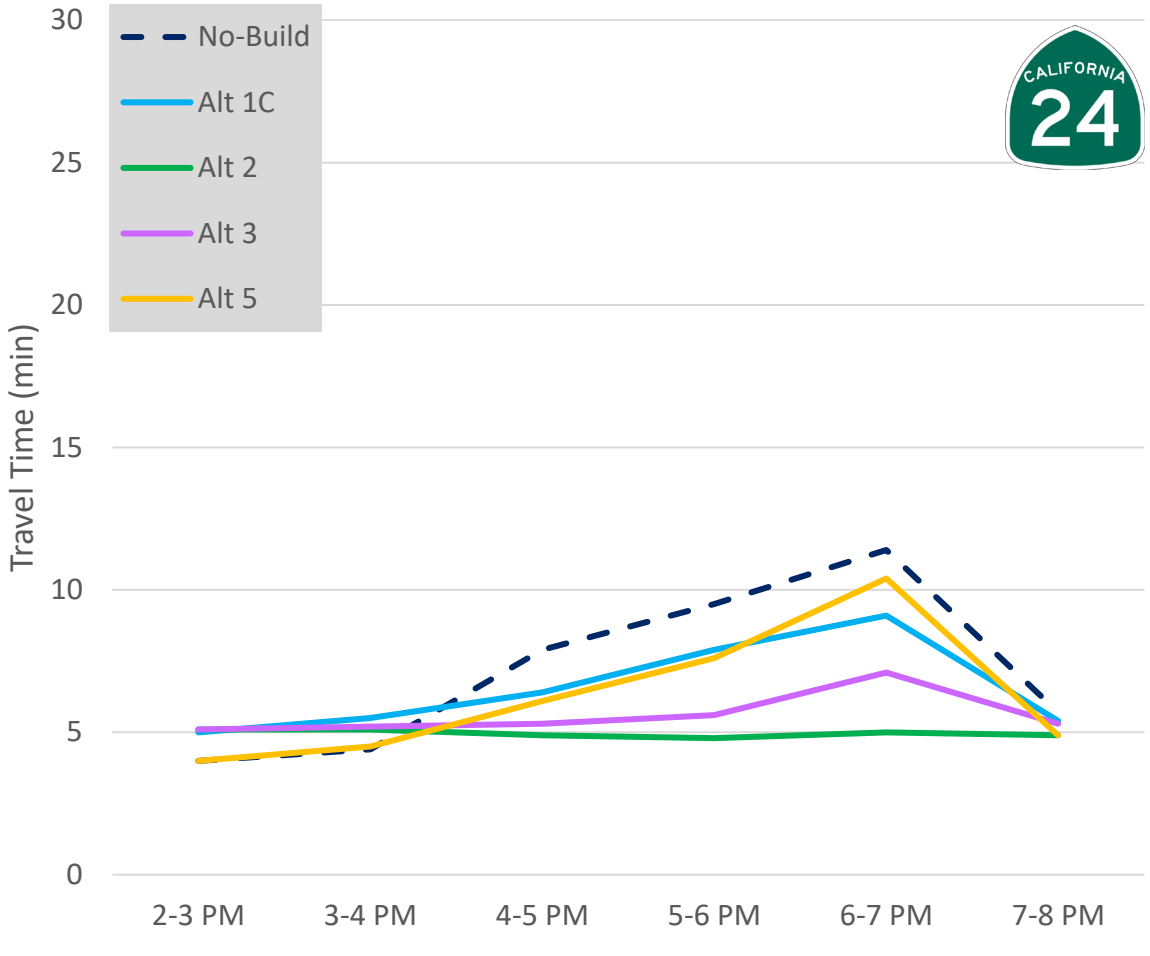
Travel Time (Opening Year - 2027)

2027 PM I-680 (Livorna to SR 242) Travel Time - All Lanes (minutes)

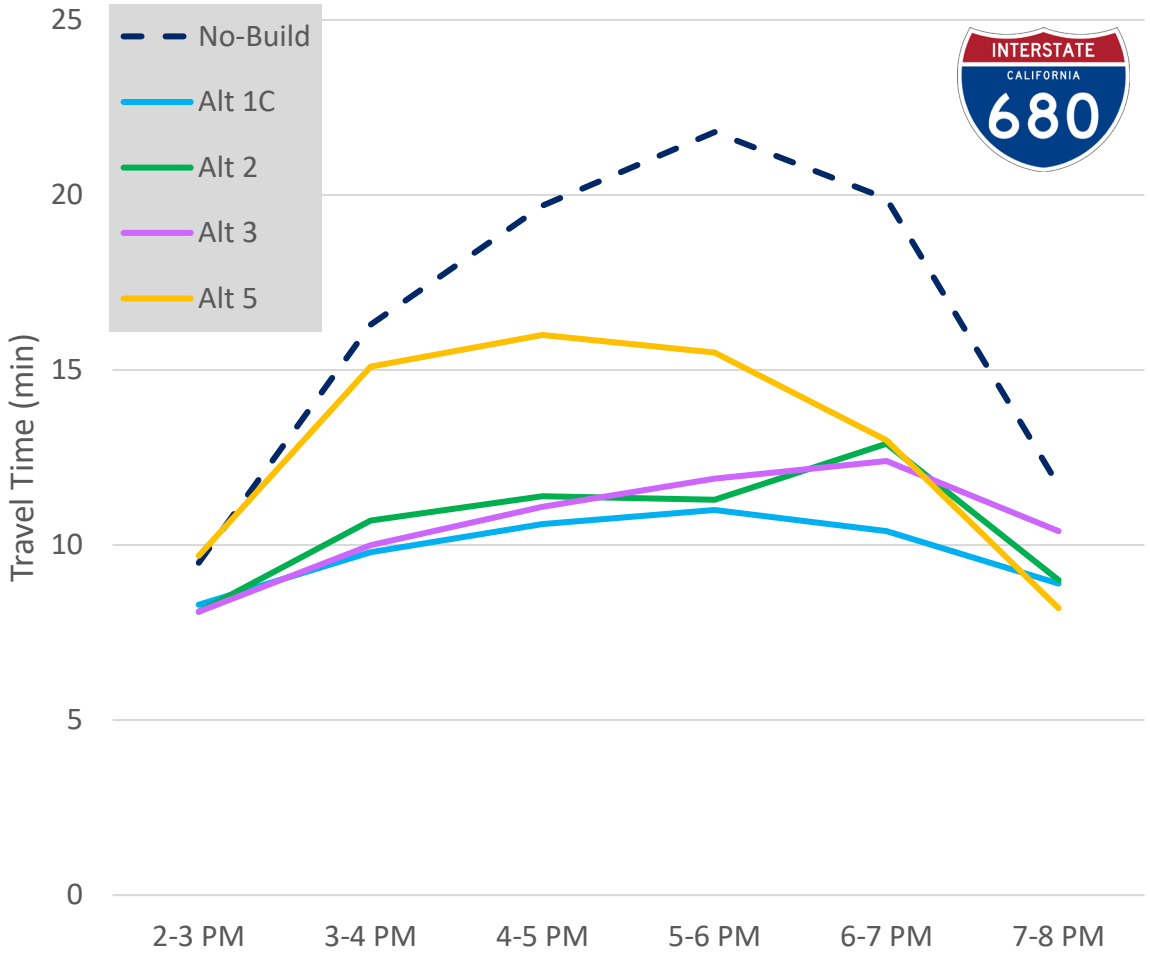


2027 PM SR-24 (Upper Happy Valley to I-680) Travel Time - All Lanes (minutes)

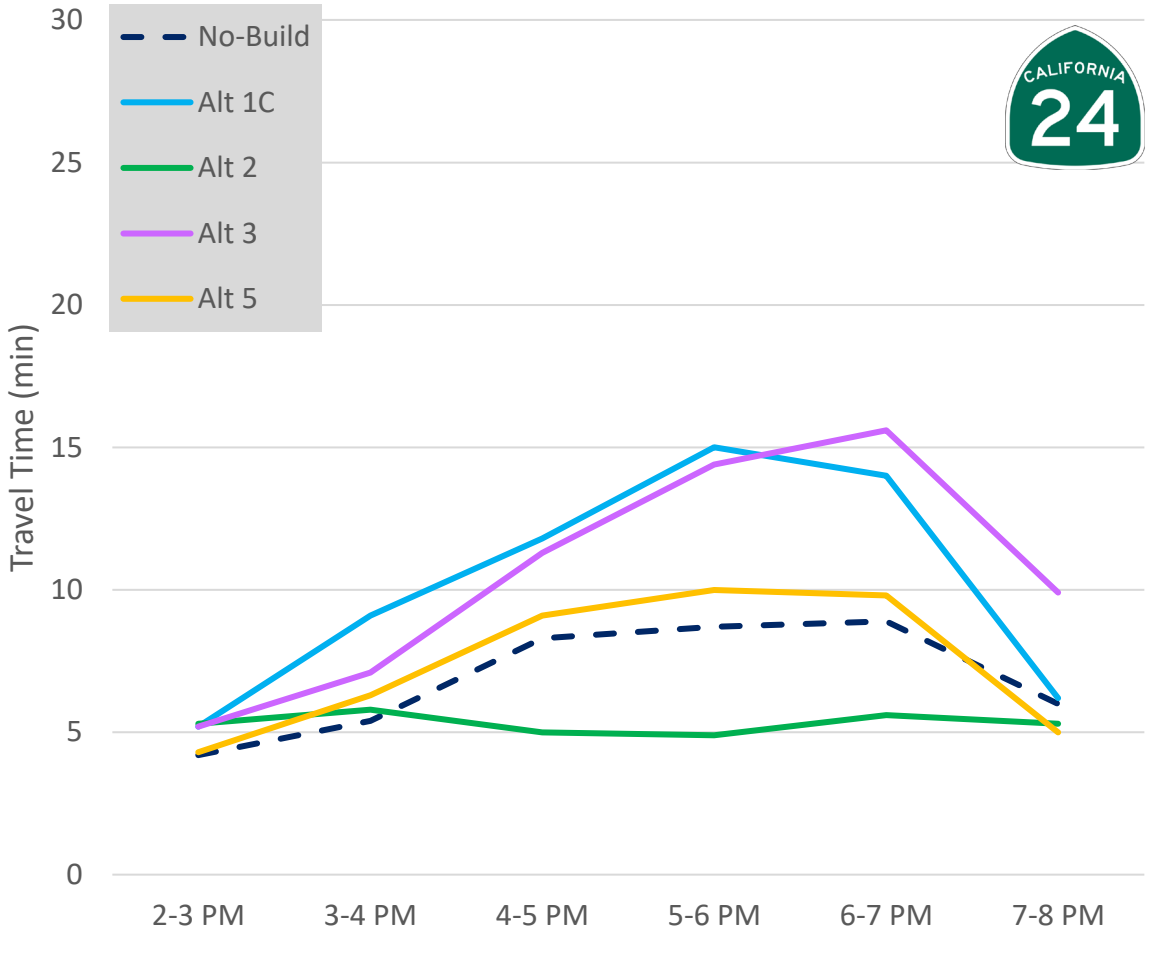


Travel Time (Horizon Year - 2047)

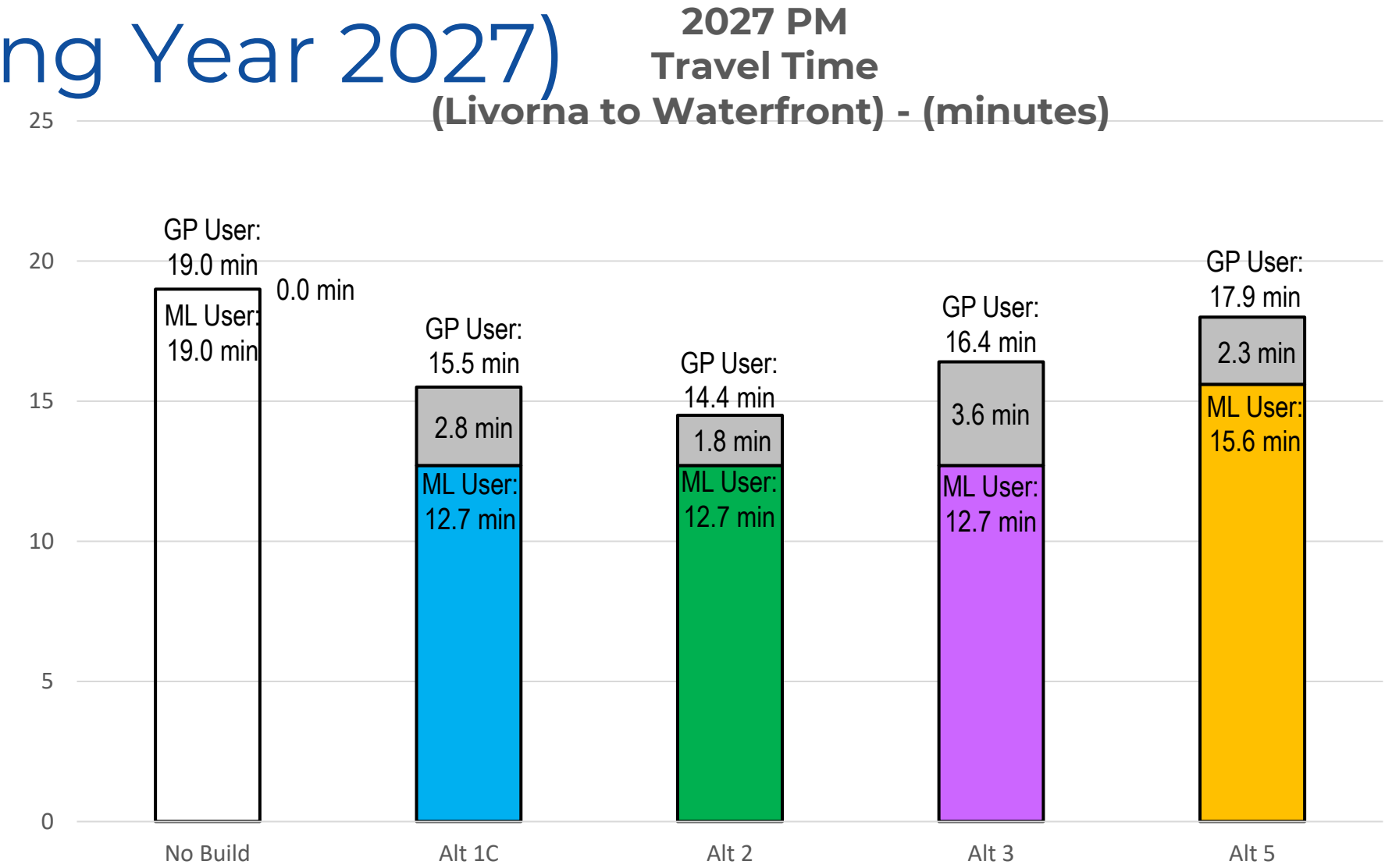
2047 PM I-680 (Livorna to SR 242) Travel Time - All Lanes (minutes)



2047 PM SR-24 (Upper Happy Valley to I-680) Travel Time - All Lanes (minutes)



Travel Time Savings for Managed Lane (Opening Year 2027)



Note: Mainline start and on-ramp demand. 6 Hr. Period (2-8 PM).
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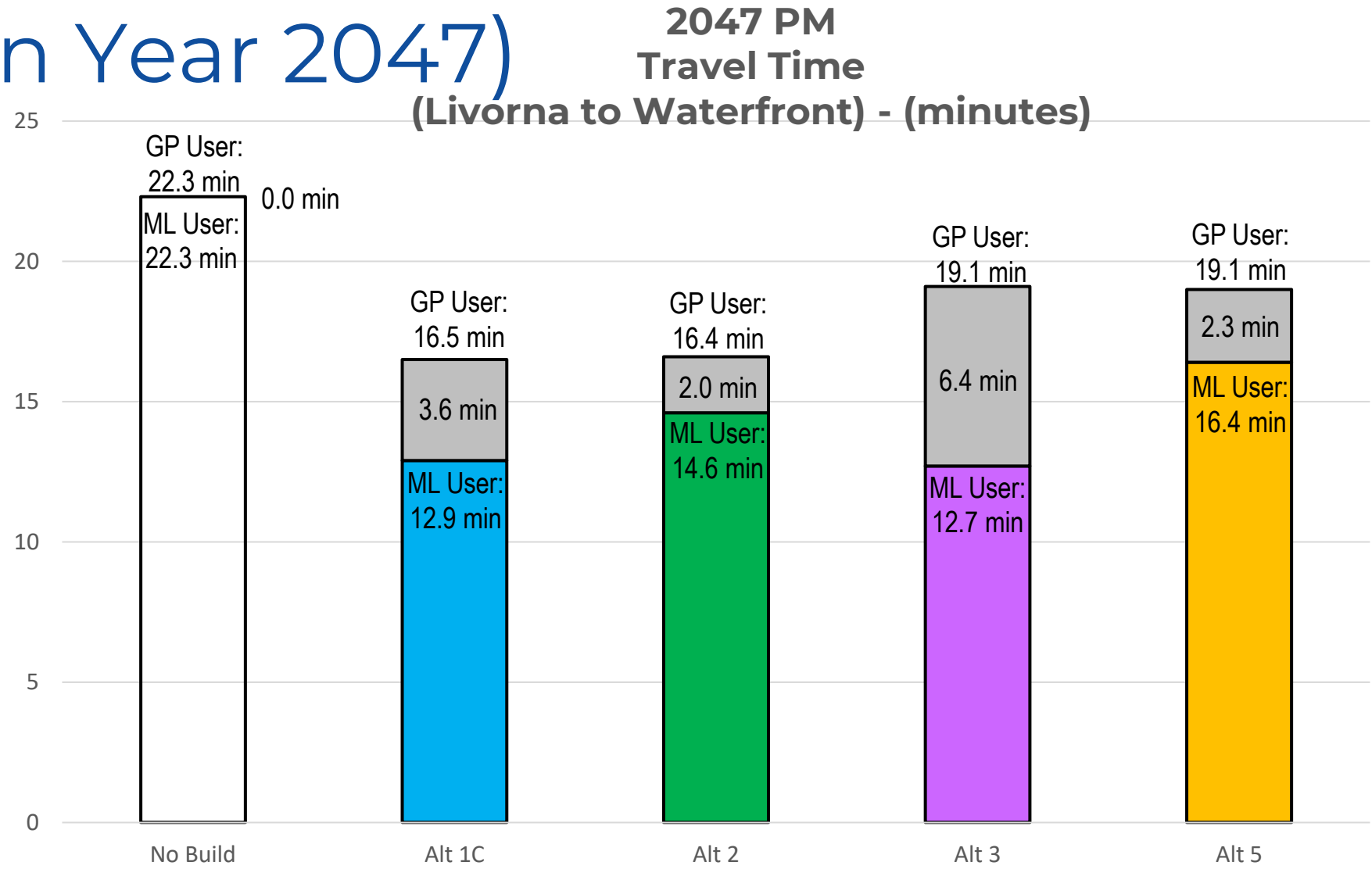
Travel Time Savings for Managed Lane (Horizon Year 2047)



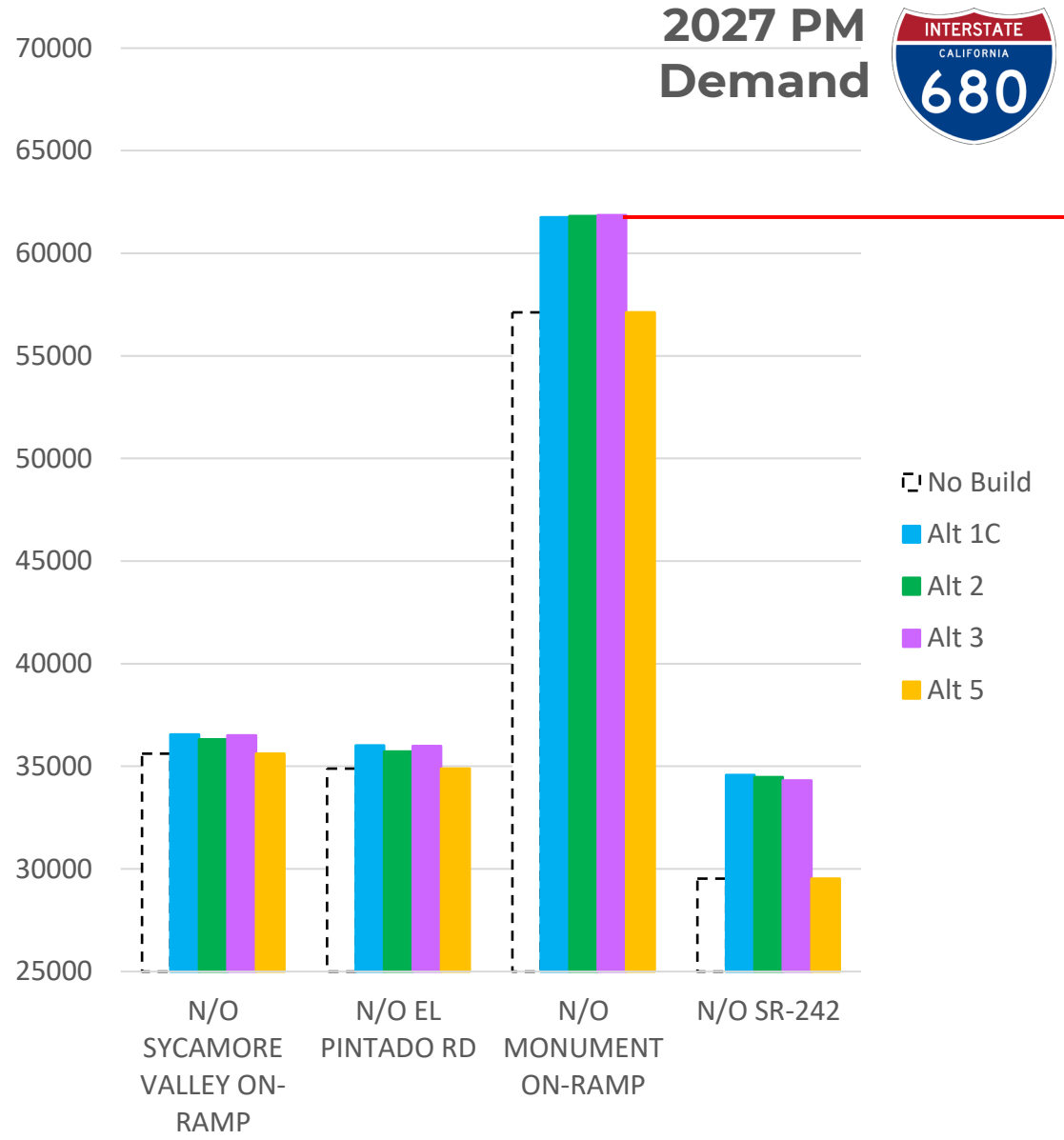
Note: Mainline start and on-ramp demand. 6 Hr. Period (2-8 PM).
Alt 5 uses No-Build demand.

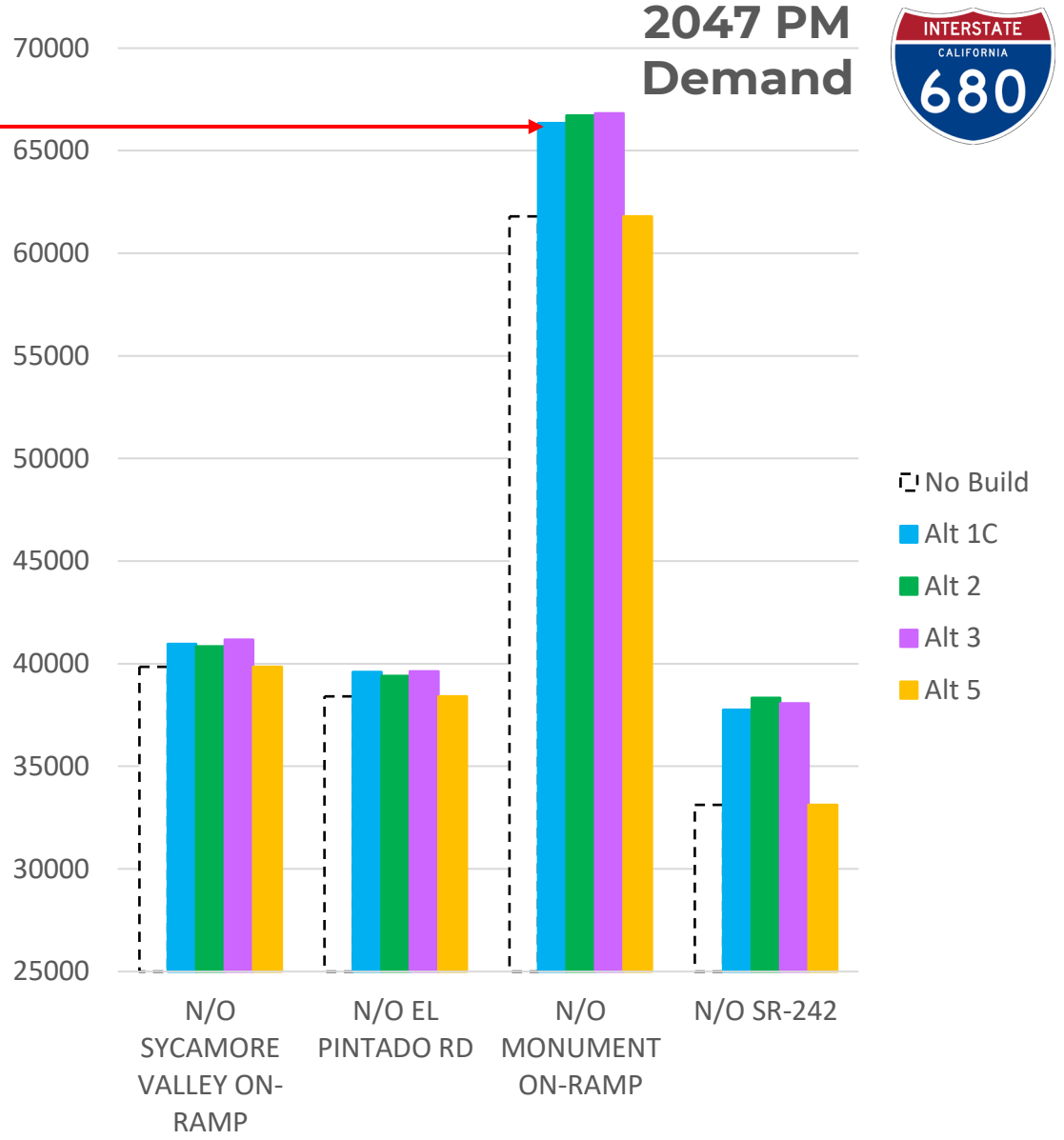
Summary of Traffic Operation Benefits

Traffic Operations Benefits 2027 – Opening Year	Alternative			
	1C	2	3	5
Delay on I-680 Operations 2027	Slightly Reduces	Reduces	Reduces	Slightly Reduces
Delay on SR-24 Operations 2027	Slightly Reduces	Reduces	Reduces	Slightly Reduces
Travel Time on I-680 Operations 2027	Reduces	Reduces	Reduces	Slightly Reduces
Travel Time on SR-24 Operations 2027	Slightly Reduces	Reduces	Reduces	Slightly Reduces
Travel Time Savings on Managed Lanes 2027	Increases	Increases	Increases	Increases

Traffic Operations Benefits 2047 – Horizon Year	Alternative			
	1C	2	3	5
Delay on I-680 Operations 2047	Reduces	Reduces	Slightly Reduces	Reduces
Delay on SR-24 Operations 2047	Increases	Reduces	Increases	Increases
Travel Time on I-680 Operations 2047	Reduces	Reduces	Reduces	Slightly Reduces
Travel Time on SR-24 Operations 2047	Increases	Reduces	Increases	Slightly Increases
Travel Time Savings on Managed Lanes 2047	Increases	Increases	Increases	Increases

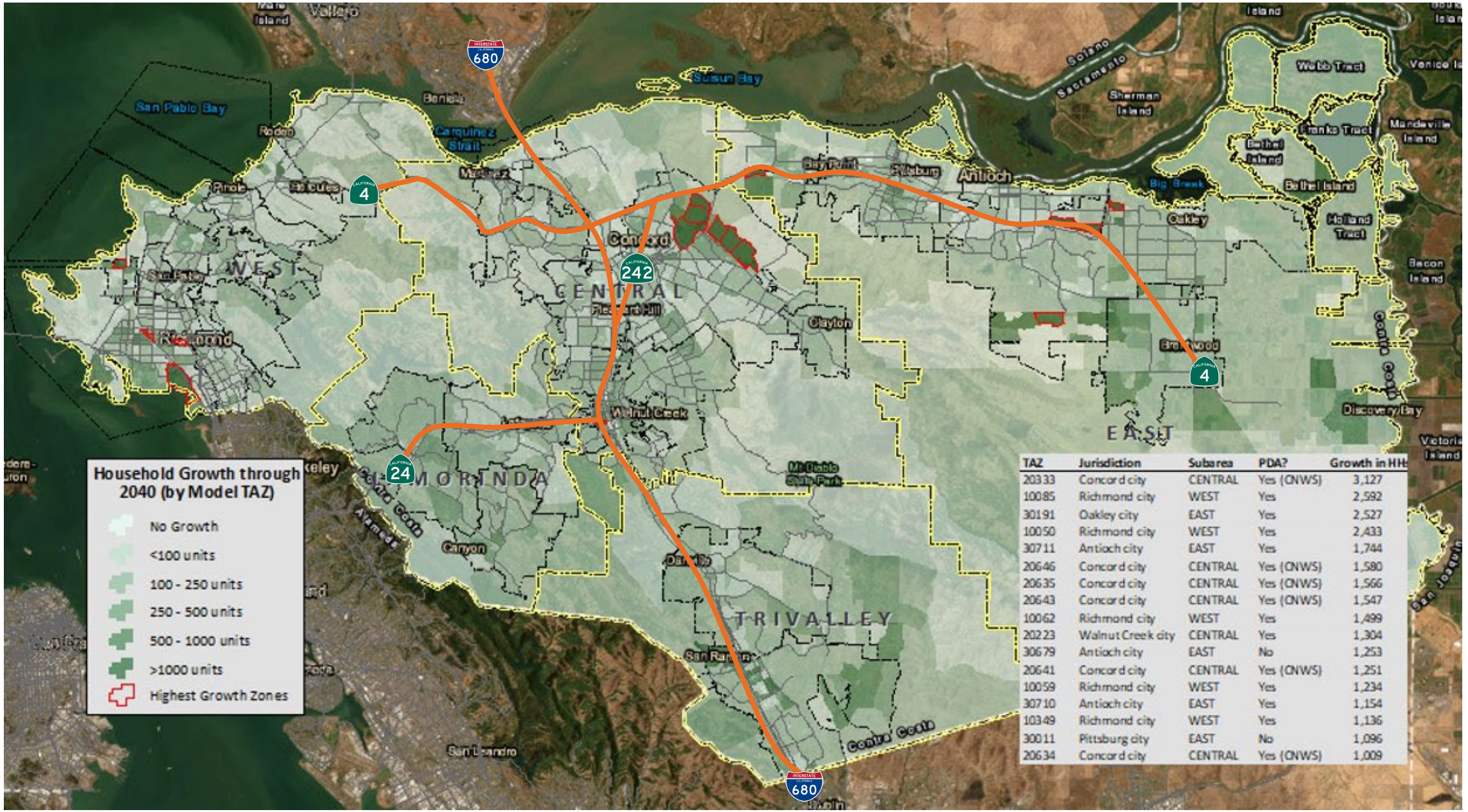
Demand





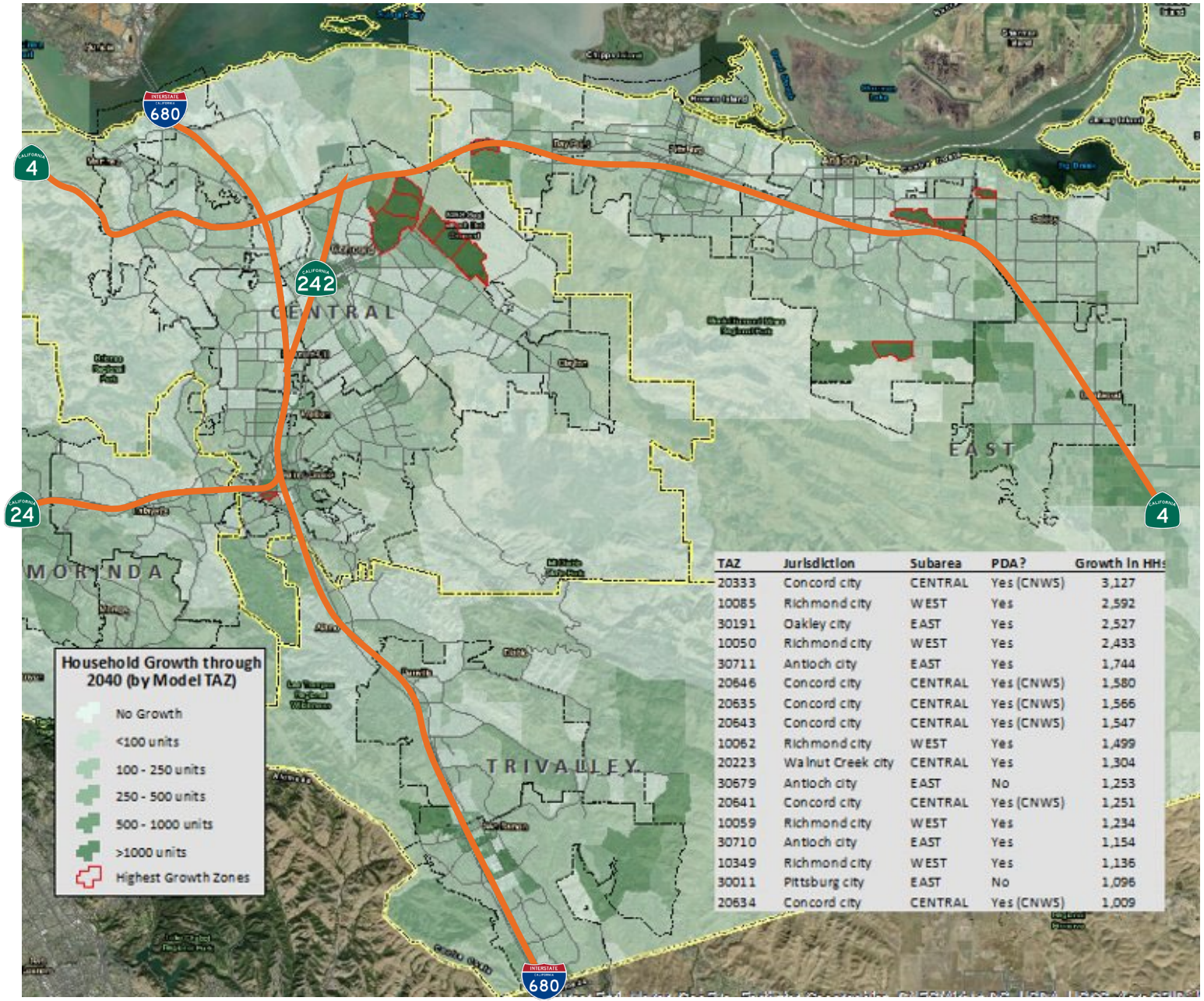
Note: Mainline start and on-ramp demand. 6 Hr. Period (2-8 PM).
Alt 5 uses No-Build demand.

Household Growth - Countywide



TAZ	Jurisdiction	Subarea	PDA?	Growth in HHs
20333	Concord city	CENTRAL	Yes (CNWS)	3,127
10085	Richmond city	WEST	Yes	2,592
30191	Oakley city	EAST	Yes	2,527
10050	Richmond city	WEST	Yes	2,433
30711	Antioch city	EAST	Yes	1,744
20646	Concord city	CENTRAL	Yes (CNWS)	1,580
20635	Concord city	CENTRAL	Yes (CNWS)	1,566
20643	Concord city	CENTRAL	Yes (CNWS)	1,547
10062	Richmond city	WEST	Yes	1,499
20223	Walnut Creek city	CENTRAL	Yes	1,304
30679	Antioch city	EAST	No	1,253
20641	Concord city	CENTRAL	Yes (CNWS)	1,251
10059	Richmond city	WEST	Yes	1,234
30710	Antioch city	EAST	Yes	1,154
10349	Richmond city	WEST	Yes	1,136
30011	Pittsburg city	EAST	No	1,096
20634	Concord city	CENTRAL	Yes (CNWS)	1,009

Household Growth – Central & East



TAZ	Jurisdiction	Subarea	PDA?	Growth in HHs
20333	Concord city	CENTRAL	Yes (CNW5)	3,127
10085	Richmond city	WEST	Yes	2,592
30191	Oakley city	EAST	Yes	2,527
10050	Richmond city	WEST	Yes	2,433
30711	Antioch city	EAST	Yes	1,744
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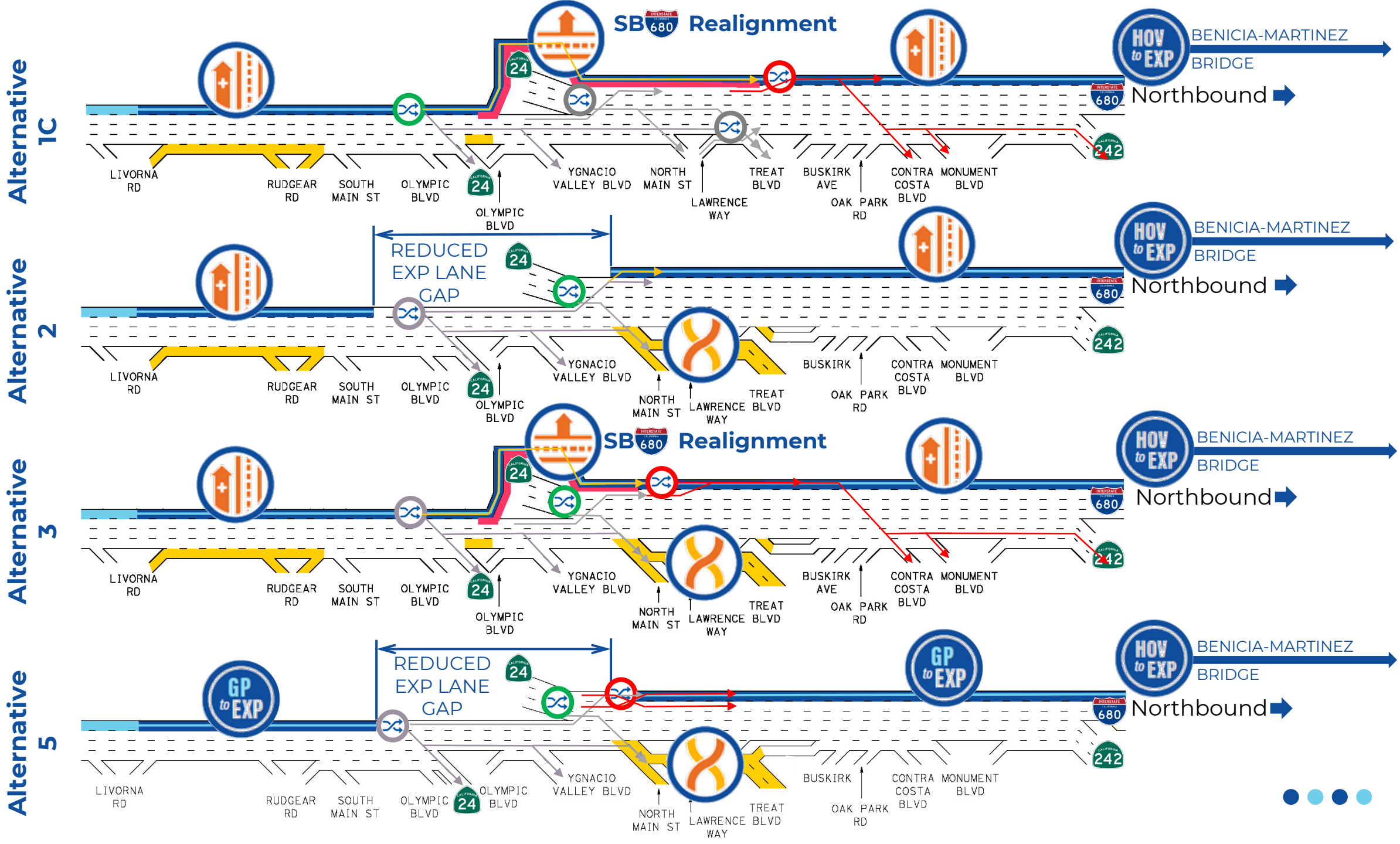
Alternative 1C
SB 680 Realignment
HOV to EXP
BENICIA-MARTINEZ BRIDGE
Northbound
LIVORNA RD
RUDGEAR RD
SOUTH MAIN ST
OLYMPIC BLVD
OLYMPIC BLVD
YGNACIO VALLEY BLVD
NORTH MAIN ST
LAWRENCE WAY
TREAT BLVD
BUSKIRK AVE
OAK PARK RD
CONTRA COSTA BLVD
MONUMENT BLVD
Alternative 2
REDUCED EXP LANE GAP
HOV to EXP
BENICIA-MARTINEZ BRIDGE
Northbound
LIVORNA RD
RUDGEAR RD
SOUTH MAIN ST
OLYMPIC BLVD
OLYMPIC BLVD
YGNACIO VALLEY BLVD
NORTH MAIN ST
LAWRENCE WAY
TREAT BLVD
BUSKIRK
OAK PARK RD
CONTRA COSTA BLVD
MONUMENT BLVD
Alternative 3
SB 680 Realignment
HOV to EXP
BENICIA-MARTINEZ BRIDGE
Northbound
LIVORNA RD
RUDGEAR RD
SOUTH MAIN ST
OLYMPIC BLVD
OLYMPIC BLVD
YGNACIO VALLEY BLVD
NORTH MAIN ST
LAWRENCE WAY
TREAT BLVD
BUSKIRK AVE
OAK PARK RD
CONTRA COSTA BLVD
MONUMENT BLVD
Alternative 5
REDUCED EXP LANE GAP
GP to EXP
GP to EXP
HOV to EXP
BENICIA-MARTINEZ BRIDGE
Northbound
LIVORNA RD
RUDGEAR RD
SOUTH MAIN ST
OLYMPIC BLVD
OLYMPIC BLVD
YGNACIO VALLEY BLVD
NORTH MAIN ST
LAWRENCE WAY
TREAT BLVD
BUSKIRK
OAK PARK RD
CONTRA COSTA BLVD
MONUMENT BLVD

Summary of Capital Costs

Alternative	Alternative 1C	Alternative 2	Alternative 3	Alternative 5
	Closes Gap	Reduce Gap w/ Braided Ramp	Closes Gap w/ Braided Ramp	Reduces Gap Through GP Conversion w/ Braided Ramp
Estimated Capital Cost	$240M	$175M	$291M	$89M

Summary of Induced VMT

Alternative	Alternative 1C	Alternative 2	Alternative 3	Alternative 5
	Closes Gap	Reduce Gap w/ Braided Ramp	Closes Gap w/ Braided Ramp	Reduces Gap Through GP Conversion w/ Braided Ramp
Estimated Capital Cost	$310M	$235M	$375M	$117M
Induced VMT	+102,583	+83,723	+100,981	NA
Requires VMT Mitigation	✓	✓	✓	*VMT Exempt*

Proposed Full VMT Mitigation Strategies

I-680 Shared Mobility Hubs

I-680 Express Bus Project

Travel Demand Management (TDM) Programs

VMT Mitigation	Estimated Capital Cost (M)	Estimated Annual O&M Cost (M)
I-680 Express Bus	$71.4	$6.8
I-680 Shared Mobility Hubs (3) • Bollinger Canyon Road • Walnut Creek BART Station • Martinez Amtrak Station	$46.5	TBD
TDM Program	$0.00	$1.4 to $2.5

Senate Bill 473 & VMT

Senate Bill 743 Background and Caltrans Implementation

- September 2020 - Caltrans released guidance for implementing SB 743
- Vehicle Miles Traveled (VMT) = new metric for evaluating transportation impacts
- NB 680 Express Lanes Completion Project is one of the first projects in the State to implement SB 743 and VMT compliance

SB 743 Implementation

- No significance threshold established in Caltrans guidance
- Induced VMT needs to be fully mitigated
- Modeling is required to quantify project induced VMT and VMT reductions from mitigation measures
- VMT model and mitigation strategies require Caltrans approval

Summary of Capital Costs with VMT Mitigation

Alternative	Alternative 1C	Alternative 2	Alternative 3	Alternative 5
	Closes Gap	Reduce Gap w/ Braided Ramp	Closes Gap w/ Braided Ramp	Reduces Gap Through GP Conversion w/ Braided Ramp
Estimated Capital Cost	$240M	$175M	$291M	$89M
Induced VMT	+102,583	+83,723	+100,981	NA – VMT Exempt
Mitigation Cost**	$143M	$136M	$142M	NA – VMT Exempt
Total Cost*	$383M	$311M	$433M	$89M

* Preliminary, subject to change
** Mitigation Cost shown assumes 20 years of mitigation

Environmental Considerations

- Caltrans is the NEPA/CEQA lead
- Considerations for identification of the preferred alternative
  - Environmental impacts and degrees of impacts
  - Traffic performance
  - Cost
  - Public input through the environmental review process

Environmental Clearance Timeline

Public Circulation – March 2024 – April 2024

Final Project Approval – May 2025

2024			
Jan	Feb	Mar	Apr
May	June	July	Aug
Sept	Oct	Nov	Dec

2025			
Jan	Feb	Mar	Apr
May	June	July	Aug
Sept	Oct	Nov	Dec

Questions and Comments