

North Coast Corridor

PUBLIC WORKS PLAN/TRANSPORTATION AND RESOURCE ENHANCEMENT PROGRAM

Final June 2014

Appendix J

Alternatives Analysis

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1.0 PWP/TREP PROGRAM ALTERNATIVES

Current growth forecasts project that another 1.3 million people will live in the region by 2050, for a total of approximately 4.4 million people. The region is also projected to experience an increase of approximately 500,000 jobs over the next 40 years, resulting in a total of nearly 2 million jobs in 2050. This regional growth will have significant impacts to the regional demand for transportation. In the NCC, demand is expected to increase by more than 30% over that time frame.

A multitude of transportation alternatives have been analyzed over the past several decades to address the current and projected travel demand in the North Coast Corridor (NCC). These highway and transit alternatives were developed and evaluated through a variety of regional and corridor-specific planning processes which considered a range of modal and design concepts. This section identifies and describes the historical range of NCC transportation alternatives studied to address the growing regional and corridor demand. It also includes analyses of how well the alternatives address transportation project goals and potentially reduce project impacts from the proposed PWP/TREP improvements (through the Coastal Development Policy Consistency summary).

Corridor Goals and Objectives

The alternatives were evaluated and screened against the project objectives described in Table 1, and considered the characteristics and constraints of the NCC, including:

- Existing and Proposed Land Use & Population Densities
- Existing Infrastructure
- Environmental and Geographical Constraints
- Available Revenue (given other regional needs and priorities)
- Trip Characteristics (including trip purpose, trip length, and origin and destination)
- Coastal Act and LCP Coastal Development Policies

TABLE 1: TRANSPORTATION OBJECTIVES FOR THE NORTH COAST CORRIDOR

Goal	Definition
Coastal Access	The NCC's transportation system should provide improved access to coastal areas for all residents and visitors.
Congestion Reduction	The NCC's transportation facilities should be free of congestion to the greatest extent possible. This means not only accommodating the transportation needs of today's residents, but also planning for the transportation needs of future residents, who will be part of the projected 23% growth in population over the next three decades.
Transportation Flexibility	In addition to providing benefits in the near term, the NCC's transportation system should be able to adapt to future changes in demand, transit ridership, technology, land use, and other influential factors.
Value Maximization	The NCC's transportation investments should maximize value, providing the greatest possible mobility benefits per dollar spent, for both the NCC and the entire region.
Integration into Larger System	The NCC's transportation system should be maintained and enhanced as an important link in the regional, state, and national transportation system.
Movement of People Rather than Vehicles	The NCC's transportation system should prioritize the movement of people, rather than simply vehicles, to maximize efficiency and reduce per capita pollution, energy consumption, and vehicle miles traveled.
Environmental Protection and Enhancement	The NCC's transportation system should promote sustainability and quality of life for residents and visitors, and protect the human and natural environments, wherever possible.

2.0 NCC ALTERNATIVES STUDIED

SANDAG and Caltrans are continually studying alternative ways to meet the region’s transportation demands in an environmentally responsible manner. Both SANDAG and Caltrans have conducted a number of studies, at the regional and corridor levels to evaluate a reasonable range of alternatives to the proposed PWP/TREP project. At the regional level, SANDAG prepares an RTP every four years that evaluates regional transportation network alternatives, including, as a subset of the region, a system of transit, highway, and bicycle improvements in the NCC. These NCC improvements are further evaluated through corridor-level alternatives analyses to identify and define preferred projects for the corridor. The regional and corridor alternatives analysis process is iterative in that both RTP updates and refined corridor studies consider and incorporate the results of previous analyses.

Consideration and study of transportation alternatives in the NCC began as far back as 1982, with subsequent studies providing background and focus for the 1997 North Coast Transportation Study (FHWA Major Investment Analysis). That 1997 study looked at a wide variety of alternatives ranging from those that were traditional freeway-focused, to those that were transit-focused and those that were a blend of the two. Ultimately the study concluded that a multimodal program of improvements focusing on moving people should be pursued. This analysis has been revisited over the years in various subsequent studies including the planning process undertaken every four years for the RTP (2003 “Mobility 2030,” 2007 “2030 Pathways to the Future,” and 2011 “2050 Our Region, Our Future”), as well as in the 2010 North Coast Corridor System Management Plan. Although these studies recommended refinements to the original proposals to address new information and changing circumstances, the general broad based recommendation to improve all travel modes in the corridor has remained consistent.

The following list of alternatives—grouped into five themes and summarized in Table 2—documents the range of alternatives studied in the NCC over the years. The alternatives are analyzed further below relative to the project transportation goals and objectives as well as coastal development policy consistency.

TABLE 2: TRANSPORTATION ALTERNATIVES STUDIED IN THE NORTH COAST CORRIDOR

Alternatives		Alternatives Themes				
		Traditional Freeway	Carpool (HOV)	Transit Only/ Transit Emphasis	Express Lanes	No Project
1	NCC No Build			X		
2	Add 2 BRT Lanes (8+2)			X		
3	Add 2 HOV Lanes/3+ (8+2)		X			
4	Add 2 HOV Lanes/2+ (8+2)		X			
5	Add 2 GP Lanes (10+0)	X				
6	Add 2 GP Lanes+2 HOV Lanes (10+2)		X			
7	Add 4 GP Lanes+2 HOV Lanes (12+2)		X			
8	Add 4 Elevated GP Lanes+2 at-grade HOV Lanes (12+2)	X	X			
9	Add 8 GP Lanes (16+0)	X				
10	Add 3 or 4 Express Lanes w/Movable Barrier (8+3/4)				X	
11	Add 4 Express Lanes w/Non-Movable Barrier (8+4)				X	
12	Add 4 Express Lanes w/Buffer (8+4) (Locally Preferred Alternative)				X	
13	Add 4 Express Lanes+ 2 GP Lanes (10+4)				X	
14	Add New Light Rail Transit Line			X		
15	Build New East-West Connecting Highway	X				
16	Add Urban Area Transit Strategy			X		
17	No PWP/TREP Project (2050 RTP No Build Alternative)					X
18	PWP/TREP Alternative: LOSSAN Double Track/Enhanced Transit Service/Add 4 Express Lanes w/Buffer (8+4)	Preferred Multi-Modal Program of Projects				

2.1 DOUBLE TRACK LOSSAN CORRIDOR PLUS THE FOLLOWING I-5 HIGHWAY IMPROVEMENTS¹

1. No I-5 improvements – this is the NCC No Build Alternative (Source: *I-5 NCC Project Final EIR/EIS*)
2. Two I-5 BRT-Only Lanes (8+2)
3. Two I-5 HOV (3+) Lanes (8+2)
4. Two I-5 HOV (2+) Lanes (8+2) (Source: *North Coast Transportation Study and Caltrans Project Study Report*)
5. Two I-5 General Purpose Lanes (10+0) (Source: *North Coast Transportation Study and Caltrans Project Study Report*)
6. Two I-5 General Purpose Lanes and Two I-5 HOV Lanes (10+2) (Source: *North Coast Transportation Study and Caltrans Project Study Report*)
7. Four I-5 General Purpose Lanes and Two I-5 HOV Lanes (12+2) (Source: *North Coast Transportation Study and Caltrans Project Study Report*)
8. Four I-5 General Purpose Lanes (Elevated) and Two I-5 HOV Lanes (At Grade) (12+2) (Source: *North Coast Transportation Study and Caltrans Project Study Report*)
9. Eight I-5 General Purpose Lanes (16+0)
10. Three or Four I-5 Express Lanes With Moveable Barrier (8+4/3) (Source: *North Coast Transportation Study and Caltrans Project Study Report*)
11. Four I-5 Express Lanes With Non-Moveable Barrier (8+4) (Source: *I-5 EIR/EIS*)
12. Four I-5 Express Lanes With Striped Buffer (8+4) (Locally Preferred Alternative) (Source: *I-5 NCC Project Final EIR/EIS*)
13. Four I-5 Express Lanes and Two I-5 General Purpose Lanes (10+4) (Source: *I-5 EIR/EIS*)

2.2 NEW LIGHT RAIL TRANSIT LINE

14. New Passenger Light Rail Transit (LRT) Line Generally Parallel to the I-5 Corridor (Sources: *North Line Light Rail Transit Study, Phase I Report, Assessment of Feasible Corridors, December 1982; SANDAG Mid-Coast Light Rail Alignment Study, May 1986; SANDAG Regional Transportation Plan of 1986; Mid-Coast Corridor Alternatives Analysis/Draft Environmental Impact Statement /Draft Environmental Impact Report, 1995*)

2.3 NEW HIGHWAY ALTERNATIVE²

15. New East-West Highway Between I-5 and I-15

2.4 URBAN AREA TRANSIT STRATEGY (UATS) IMPROVEMENT SCENARIOS³

16. A variety of transit facilities and services focusing on three improvement scenarios for the region, as follows:
 - “Transit Propensity” improvements providing new transit services within the downtown and inner-ring suburbs of San Diego where higher-intensity, mixed land uses enhance access to transit and support transit use. The scenario also included localized services for the downtown areas of the

¹ Unless otherwise noted, all of the alternatives assume the LOSSAN corridor double track will result in 20-minute peak period frequency on the COASTER.

² Source: <http://www.cahighways.org/county0.html##680San~Diego>.

³ Source: *SANDAG 2050 RTP*, October 2011.

larger suburban communities to facilitate first-mile/last-mile connections to regional transit in these areas.

- “Transit Commuter Point-to-Point” improvements providing new transit services to major employment centers within the region, primarily in peak commute hours, using a variety of bus-based (primarily BRT) transit services.
- “Transit Many Centers” improvements creating a network of new transit services, linked by regional transit hubs, to connect designated Smart Growth areas, major activity centers, and major employment and residential areas.

In the NCC, the regional UATS improvement scenarios included various combinations of Commuter Rail, Light Rail, Streetcar, BRT, Rapid Bus, and local bus service and facility improvements including:

- New Streetcar line in Downtown Oceanside
- New Trolley lines:
 - o La Jolla/University City to Mira Mesa via Sorrento Mesa
 - o San Marcos to Carlsbad via Palomar Airport Road
- New COASTER stations at Camp Pendleton (Vandegrift), Balboa Avenue, UTC, and Lindbergh Field Intermodal Transportation Center (ITC)
- Improved 15 Minute COASTER Service
- Improved Bus Service to COASTER (Routes 302 and 309)
- New BRT route between Oceanside to Sorrento Mesa
- New Rapid Bus Routes/Shuttle Services:
 - o San Marcos to Poinsettia COASTER Station
 - o Palomar Airport Business Park Loop
 - o Solana Beach to Sabre Springs park-and-ride
 - o Solana Beach to University Towne Center
 - o Northern Sorrento Mesa Shuttle
 - o Southern Sorrento Mesa Shuttle
 - o Torrey Pines to University Towne Center
- New Bus Rapid Transit Routes
 - o Oceanside to Sorrento Mesa
 - o Mid-City to Sorrento Valley and UTC

2.5 No PWP/TREP PROJECT ALTERNATIVE⁴

17. No LOSSAN Improvements, No Bus Transit Enhancements and No Highway Projects in the NCC or Region Other than Those Already Funded in the 2050 RTP (this is the regional No Build Alternative in the 2050 RTP)

2.6 SELECTED PWP/TREP PROJECT MULTI-MODAL ALTERNATIVE

18. Double Track LOSSAN Corridor, Enhance Regional Transit Service and Add Four I-5 Express Lanes (8+4)

⁴ Source: SANDAG 2050 RTP, October 2011.

2.7 OTHER ALTERNATIVES CONSIDERED BUT NOT ANALYZED FURTHER

Additional alternatives for the NCC that have been evaluated over the years but are not documented and analyzed further below relative to transportation and coastal goals and objectives include the following:

Arterial Streets and Road Expansion. The north coastal area has relatively few north-south arterial streets and roads that parallel the freeway, Coast Highway being the longest of these arterials, is the only one which runs the length of the corridor. This situation, caused in part by the fact the corridor is separated by the lagoons and topography, forces even relatively short trips onto the freeway. In order to remove shorter trips from the freeway, this alternative would expand the local street system with improvements calling for the addition of new lanes on existing streets; interchange and intersection improvements; new streets to close gaps in the system, and technological improvements to the signal systems serving major streets. The environmental and community impacts of this alternative raised concerns from widening streets in existing communities and building new roads across dedicated parklands and natural habitat areas. Accordingly, no arterial street improvements or road expansions were recommended for further evaluation..

Freight Improvements. This alternative addressed whether increased freight traffic through the Port of San Diego, as well as other freight improvements, could reduce freight truck traffic on I-5 and the coastal rail line. It was determined that only a limited potential exists to reduce freight rail traffic or the number of trucks on the freeway through diverting goods movement through the Port as the railway currently excludes movement of containers, and it is unlikely that BNSF would initiate intermodal container movements outside of the Los Angeles Basin. Thus, this alternative was not explored further.

Several potential transportation alternatives were screened from further consideration based on feasibility, perceived community impacts, and cost-effectiveness conclusions of earlier studies, including an elevated monorail or “people-mover” system on the freeway or other existing transportation right-of-way, light rail or San Diego Trolley-type systems on the El Camino Real corridor, and ferry services for passengers along the coast. Additionally, because it lacked capacity to meet current traffic demands, the consideration of a single, reversible carpool lane on I-5 was screened from further evaluation under the Freeway Alternatives discussion.

3.0 NCC ALTERNATIVES ANALYSIS

The following discussion addresses the NCC alternatives by theme category, providing descriptions of the alternatives studied within each theme category and summarizing the analyses and conclusions within the context of the corridor constraints/characteristics relative to the project transportation goals and objectives as well as and coastal development policy consistency.

3.1 TRADITIONAL FREEWAY ALTERNATIVES (ALTERNATIVE 5, 8, 9 AND 15)

Several alternatives were analyzed that would add general purpose freeway lanes to I-5 or implement a new freeway in the corridor. Historically, freeways were sized primarily to accommodate future projected demand and these traditional freeway alternatives represent that approach.

Alternative 9 would have provided the biggest expansion, adding eight general purpose lanes (four in each direction) to I-5, expanding the freeway footprint along the entire corridor significantly. However, it was quickly recognized that adding eight additional lanes would have unacceptable levels of impacts to communities (such as required property relocations, noise impacts, and impacts to community character) and coastal resources (such as visual, sensitive upland and marine resources). Additionally, this

alternative would not further either the regional or coastal goals of providing new sustainable transportation options focusing on moving people.

A reduced general purpose lane alternative (Alternative 5) that would add one general purpose lane in each direction was also studied to minimize community and resource impacts. Like Alternative 9 it did not further either regional or coastal goals of providing new sustainable transportation. Additionally, while it did provide some congestion reduction initially, it would be significantly undersized for the future, inhibiting coastal access for motorists without providing any modal access alternatives. Lastly, because it did not provide any new tools to manage the resulting congestion, this alternative scored poorly in improved reliability, mobility, and air quality.

To minimize the impacts associated with the outside widening from Alternatives 9 and 5, an alternative was studied (Alternative 8) that would construct the new lanes in the center of the freeway on a bridge structure elevated over the existing freeway lanes. While reducing the direct property and resource impacts, noise and visual impacts would be significantly increased in this alternative, as would the construction cost. Given the coastal context of this corridor it was decided that the reduction in property and habitat impacts would not offset the additional noise and visual impacts. For these reasons Alternative 8 was screened from further study.

First planned in the 1960s and revived in the late 1980s and early 1990s, the region also considered an entirely new east-west freeway serving the NCC at its western end (Alternative 15). This new 22-mile freeway (planned as highway 680) would have extended from I-15 at Rancho Bernardo Road to I-5 at Rancho Santa Fe Road in Encinitas, through Olivenhain and across the San Dieguito River at Del Dios highway. Although not a parallel north-south freeway to I-5, it would have provided direct access to the central NCC corridor from the east, offering an alternative for trips destined for the NCC area that otherwise travel from SR56 (or SR52 in the early 1990s when SR56 did not exist) to I-5 northbound or SR78 to I-5 southbound to reach their destinations. The implementation of this alternative would eliminate many trips and vehicle miles traveled (VMT) from I-5 in the NCC. However, environmental impacts along the route and community opposition along the coast resulted in deletion of this new freeway from city general plans by 1993; the County Board of Supervisors abandoned pursuit of the highway in 1995. A subsequent plan to shift the abandoned highway to a north-south alignment was also shelved. Funds were later reallocated to SR56, an east-west freeway that opened in 1995 connecting to the south end of the NCC. In the central NCC area, the region elected to pursue enhancements to east-west arterials, including Camino del Norte and Rancho Santa Fe Road instead.

3.1.1 Addressing Transportation Project Goals Summary

These traditional freeway alternatives were deemed not meet the transportation project goals. While some would address congestion reduction and coastal access objectives, at least in the short term, those with the least environmental impacts (smallest footprints) would not maintain achievement of these objectives over the long term. As significant, these general purpose lane-only alternatives do nothing to provide for the transportation flexibility that would be needed to adapt to future changes in demand, travel behavior/characteristics (such as increases in carpooling), transit ridership, technology, land use, and other influential factors. The traditional freeway alternatives focus solely on the movement of vehicles, primarily single-occupant vehicles, and therefore, do not meet the NCC objective to prioritize the movement of people, rather than simply vehicles, to maximize efficiency and reduce per capita pollution, energy consumption, and vehicle miles traveled.

3.1.2 Coastal Development Policy Consistency Summary

Energy Conservation, Vehicles Miles Traveled & Air Quality. The Traditional Freeway Alternatives would accommodate transit improvements (LOSSAN rail, busses, carpools) by increasing transit service (double track LOSSAN corridor) and reducing I-5 congestion with additional general purpose (Alternatives 5 and 9) and general purpose/HOV lanes (Alternative 8), or by constructing a new highway facility to serve the NCC (Alternative 15), but the highway-focused alternatives would also incentivize SOV travel through provision of general purpose lanes and thereby would not minimize vehicle miles traveled, energy consumption and air emissions. Alternative 8 would include two at-grade HOV lane improvements to better incentive HOV travel and assist in curtailing increased VMT, energy consumption and air emissions; however, four new, elevated general purpose lanes could offset the benefits gained with HOV travel by incentivizing SOV travel. In addition, Alternative 8 with elevated infrastructure would result in an extended construction effort and timeframe with associated air emissions. Ultimate congestion on I-5 with the addition of only two general purpose lanes under Alternative 5 would adversely affect all travel modes due to current and future demand, including HOV and transit services (busses and carpools), which would significantly increase congestion and associated energy consumption and air emissions. Although Alternative 15 would eliminate many trips and VMT from I-5 in the NCC, it would potentially result in substantial increases in energy consumption, VMT and air emissions on a regional scale by introducing a new highway facility outside of the urban corridor, thereby potentially facilitating urban sprawl, more and longer vehicle trips throughout the region.

Promotion of Public Transit & Smart Growth. All of the Traditional Freeway Alternatives would include double tracking the LOSSAN corridor and would therefore promote public transit & Smart Growth; however, general purpose lane improvements could incentivize SOV travel and thereby de-incentivizing transit use. Because Alternative 8 would include HOV improvements, this alternative would further promote public transit & Smart Growth. Under Alternative 5, ultimate congestion on the highway due to future demand would impede bus, carpool and SOV travel, thereby affecting all vehicle travel modes to rail stations in the corridor and de-incentivizing rail travel. As a new highway facility, Alternative 15 would incentivize SOV travel and thereby de-incentivizing transit use, and would also potentially facilitating urban sprawl in lieu of supporting Smart Growth.

Public Access & Recreation. The Traditional Freeway Alternatives would result in increased rail and transit service with reduced congestion for rail and highway traffic and would thereby improve public access to and through the NCC. Rail & highway infrastructure improvements would also accommodate east-west bike and pedestrian access. However, the larger project footprint of Alternative 9 (16+0) would likely not be able to accommodate north-south NCC Bike route, whereas Alternatives 5 (10+0) and 8 (12+2 with 4 elevated) could accommodate the north-south NCC Bike route due to the reduced project footprint. However, under Alternative 5, ultimate congestion on the highway due to future demand would significantly impact all I-5 travel modes on the regions primary public access corridor, and would impede access to rail station parking and rail travel, further impacting coastal access opportunities. Construction of a new highway facility under Alternative 15 in place of widening I-5 would enhance east-west vehicular coastal access opportunities, but would eliminate the many north-south and east-west bike and pedestrian enhancement projects integral to the I-5 infrastructure improvements, thereby adversely impacting active recreation as means of achieving coastal access.

Marine Resources. None of the Traditional Freeway Alternatives would avoid all impacts to marine resources (wetlands) given that the LOSSAN and I-5 transportation corridors cross the NCC's lagoons and a number of coastal waterways. The greater project footprint required for Alternative 9 would not minimize impacts at lagoon and stream crossings as would the reduced project footprints for Alternatives 5 and 8, nor would it allow room for accommodating new water quality BMPs. In addition, increased

highway infrastructure costs associated with Alternatives 9 and 8 could eliminate/reduce capital funding opportunities for bridge optimization and/or improved construction phasing that would minimize impacts to and enhance marine resources. The extended construction effort/timeframe for constructing four elevated general purpose lanes for Alternative 8 would expand/extend significant infrastructure improvements within lagoons. The smaller project footprints associated with Alternatives 5 and 8 provide increased opportunities for bridge optimization and/or construction phasing and BMPs, which would reduce impacts at lagoon and stream crossings, enhance tidal circulation, and accommodate new water quality BMPs. Construction of a new highway facility under Alternative 15 in place of widening I-5 would minimize direct impacts to the NCC's lagoons but would likely impact other wetland and riparian resources from new facility construction, would eliminate bridge optimization opportunities necessary to enhance the NCC's lagoon systems along the I-5 corridor, and would likely substantially increase stormwater runoff from introducing significant impervious areas for the new highway thus adversely affecting water quality.

Environmentally Sensitive Habitat Areas (ESHA). None of the Traditional Freeway Alternatives would avoid all impacts to ESHA given that the LOSSAN and I-5 transportation corridors cross the NCC's lagoons and a number of coastal waterways, and are located directly adjacent to sensitive upland habitat areas. The larger project footprint of Alternative 9 would not minimize impacts to adjacent wetland and upland habitat resources. The smaller project footprint of Alternatives 5 and 8 would reduce direct impacts to adjacent wetland and upland resources. However, greater highway infrastructure requirements and costs for Alternative 8 could reduce capital funding opportunities for bridge optimization or improved construction phasing and new, elevated freeway lanes could increase noise impacts to wildlife. Construction of a new highway facility under Alternative 15 in place of widening I-5 would minimize direct impacts to the NCC's lagoons and adjacent upland habitat areas, but would likely impact other ESHA resources from new facility construction and would eliminate bridge optimization opportunities necessary to enhance the NCC's lagoon systems along the I-5 corridor.

Archaeological & Paleontological Resources. The larger project footprint of Alternative 9 would not minimize impacts to known/ unknown cultural resources as would the smaller project footprints of Alternatives 5 and 8. Impacts to known/ unknown cultural resources from construction of a new highway facility under Alternative 15 in place of widening I-5 are unknown.

Visual Resources. The larger project footprint of Alternative 9 would not minimize highway facility encroachment into adjacent open space areas, and would require increased grading, landform alteration, and the number/height of retaining & sound walls, and would likely result in removal of median landscaping to accommodate the greater project footprint, thereby adversely affecting coastal visual resources. The smaller general purpose lanes would impact onsite and offsite coastal views and would likely require significant grading/ landform alteration to accommodate taller infrastructure and supporting retaining walls. The smaller footprint of Alternative 5 would reduce impacts to adjacent open areas, and minimize impacts to onsite and offsite coastal views with less grading, landform alteration and addition of fewer retaining and sound walls. Construction of a new highway facility under Alternative 15 in place of widening I-5 would likely significantly impact visual resources as result of introducing a new highway facility outside of the urban corridor, potentially resulting in loss of open space and impacts to public viewsheds.

Safety & Stability. Impacts and mitigation measures associated with geology/soil hazards would generally be the same for all Traditional Freeway Alternatives, although increased grading/landform alteration of slopes to accommodate the larger and/or new project footprints of Alternatives 9 and 15, and elevated infrastructure improvements for Alternative 8, could require additional mitigation measures to address site stability. In addition, reduced opportunities for bridge optimization under Alternatives 9, 8 and 15 would not minimize/reduce hazards associated with potential sea level rise/flooding at replacement

bridges. Bridge optimization under Alternative 5 would better accommodate future sea level rise and flood events; however, ultimate highway congestion under this alternative could severely limit emergency access/ evacuation routes on a critical transportation facility.

Agricultural Resources. None of the Traditional Freeway Alternatives considered would avoid all impacts to agricultural resources given that the I-5 transportation corridor is located directly adjacent to lands used for agriculture. The larger project footprint of Alternative 9 would not minimize impacts to adjacent coastal agricultural resources as would the smaller project footprints required for Alternatives 5 and 8. As a new highway facility, Alternative 15 would potentially facilitate urban sprawl in lieu of supporting Smart Growth, and therefore could result in development pressure on agricultural lands outside of the urban corridor.

3.2 CAR POOL ALTERNATIVES (ALTERNATIVE 3, 4, 6, 7 AND 8)

Several alternatives were analyzed that emphasized adding high occupancy vehicle (HOV), or carpool lanes. Both Alternatives 3 and 4 would add two HOV lanes with the difference associated with eligibility requirements to use the lanes. Alternative 3 would require that carpools have 3 or more occupants while Alternative 4 would require 2 or more occupants. Both alternatives would expand the freeway by two lanes (retain 8 general purpose and add 2 HOV lanes or 8+2). Alternative 6 would also add two HOV lanes along with the addition of two general purpose lanes, expanding the freeway by four lanes (10+2). Alternative 7 would add the two HOV lanes and four general purpose lanes, expanding the freeway by six lanes (12+2). To minimize the impacts associated with the outside widening from Alternatives 6 and 7, Alternative 8 (also discussed above under Traditional Freeway Alternatives) would elevate four new general purpose lanes in the center of the freeway on a bridge structure over the existing freeway lanes and add two at-grade HOV lanes.

3.2.1 Addressing Transportation Project Goals Summary

While HOV lanes do a better job of moving people (versus vehicles) than the traditional freeway alternatives, they have limited flexibility for addressing growing and evolving travel demand. In general HOV lanes are difficult to manage as conditions change over time, and this is particularly true in the NCC where weekend and seasonal peaks associated with coastal access and tourism are significantly different in traveler composition than typical commuter related peak periods. Additionally, nationwide trends have been emerging that indicate that changes in lifestyle are resulting in lower carpooling rates, particularly for the work commute trip. The inability to manage a fluctuating and evolving demand for HOV lane travel results in HOV lanes being significantly underutilized sometimes and significantly congested during other times. Although superior to the general purpose lane alternatives, the HOV-based alternatives offer less long term flexibility and less congestion relief than express lanes.

3.2.2 Coastal Development Policy Consistency Summary

Energy Conservation, Vehicles Miles Traveled & Air Quality. The Carpool Alternatives, such as Alternatives 3 and 4 that would add two HOV lanes, would improve rail travel by double tracking the LOSSAN rail corridor and would improve bus and carpool travel by focusing I-5 improvements on HOV lanes only. The addition of HOV lanes would incentivize HOV over SOV travel and assist in curtailing increased VMT, energy consumption and air emissions. However, ultimate congestion for SOV travel on I-5 due to current and future demand and the inability to manage traditional HOV lanes for changing conditions would significantly increase energy consumption and air emissions. While Alternatives 6 and 7 would similarly accommodate transit improvements (rail, busses, carpools) and initially alleviate SOV

congestion with the additional of two-four general purposes lanes, these alternatives would incentivize SOV travel through provision of general purpose lanes, thereby resulting in increased VMT, energy consumption and air emissions.

Promotion of Public Transit & Smart Growth. Rail and HOV improvements would promote public transit & Smart Growth, but ultimate congestion on I-5 due to future demand and the inability to manage traditional HOV lanes for changing conditions would impede bus, carpool and SOV travel, thereby affecting all vehicle travel modes to rail stations in the corridor and de-incentivizing rail travel. While Alternatives 6 and 7 would initially alleviate SOV congestion with the additional of general purposes lanes, these alternatives could incentivize SOV travel over transit use.

Public Access & Recreation. The Carpool Alternatives considered would result in increased service and reduced congestion for rail and HOV highway traffic, which would improve public access opportunities for these modes of travel. However, ultimate congestion on I-5 due to future demand would significantly impact the region's primary public access corridor and would impede access to rail station parking and rail travel as a means of coastal access. Rail & highway infrastructure improvements under Alternatives 3 (8+2), 4 (8+2) and 6 (10+0) would likely accommodate east-west bike and pedestrian access and the north-south NCC Bike route; however, the larger footprint associated with Alternative 7 (12+2) would likely not be able to accommodate the north-south NCC Bike route.

Marine Resources. None of the Carpool Alternatives would avoid all impacts to marine resources (wetlands) given that the LOSSAN and I-5 transportation corridors cross the NCC's lagoons and a number of coastal waterways. The greater project footprint required for Alternative 7 would not minimize impacts at lagoon and stream crossings as would the reduced project footprints for Alternatives 3, 4 and 6, nor would it allow room for accommodating new water quality BMPs. In addition, increased highway infrastructure costs associated with Alternative 7 would eliminate/reduce capital funding opportunities for bridge optimization and/or improved construction phasing that would minimize impacts to and enhance marine resources. The smaller project footprints associated with Alternatives 3, 4 and 6 provide increased opportunities for bridge optimization and/or construction phasing, which would reduce impacts at lagoon and stream crossings, enhance tidal circulation, and accommodate new water quality BMPs.

Environmentally Sensitive Habitat Areas (ESHA). None of the Carpool Alternatives considered would avoid all impacts to ESHA given that the LOSSAN and I-5 transportation corridors cross the NCC's lagoons and a number of coastal waterways, and are located directly adjacent to sensitive upland habitat areas. The larger project footprint for Alternative 7 would not minimize impacts to adjacent wetland and upland habitat resources. The smaller project footprint of Alternatives 3, 4 and 6 would reduce direct impacts to adjacent wetland and upland resources.

Archaeological & Paleontological Resources. The larger project footprint for Alternative 7 would not minimize impacts to known/ unknown cultural resources as would the smaller project footprints of Alternatives 3, 4 and 6.

Visual Resources. The larger project footprint for Alternative 7 would not minimize highway facility encroachment into adjacent open space areas, and would require increased grading, landform alteration, and the number/height of retaining & sound walls, and would likely result in removal of median landscaping to accommodate the greater footprint, thereby adversely affecting coastal visual resources. The smaller footprint of Alternatives 3, 4 and 6 would reduce impacts to adjacent open areas, and minimize impacts to onsite and offsite coastal views with less grading, landform alteration and addition of fewer retaining and sound walls.

Safety & Stability. Impacts and mitigation measures associated with geology/soil hazards would generally be the same for all Carpool Freeway Alternatives, although increased grading/landform alteration of slopes to accommodate the larger project footprint for Alternative 7 could require additional mitigation measures to address site stability. In addition, reduced opportunities for bridge optimization under Alternative 7 would not minimize/reduce hazards associated with potential sea level rise/flooding at replacement bridges. Bridge optimization under Alternatives 3, 4 and 6 would better accommodate future sea level rise and flood events; however, ultimate highway congestion under these alternatives could severely limit emergency access/ evacuation routes on a critical transportation facility.

Agricultural Resources. None of the Carpool Alternatives considered would avoid all impacts to agricultural resources given that the I-5 transportation corridor is located directly adjacent to lands used for agriculture. The larger project footprint for Alternative 7 would not minimize impacts to adjacent coastal agricultural resources as would the smaller project footprints required for Alternatives 3, 4 and 6.

3.3 TRANSIT ONLY OR TRANSIT EMPHASIS ALTERNATIVES (ALTERNATIVE 1, 2, 14, AND 16)

In lieu of automobile focused improvements, the region also studied the feasibility of “transit only” or “transit emphasis” alternatives for the NCC. The earliest of these studies, which were conducted between 1982 and 1986, evaluated the feasibility of extending light rail transit (the San Diego Trolley) northward from the University Town Center (UTC) area into the NCC, with alignment alternatives considered along the existing railroad (now LOSSAN) right-of-way, parallel to I-5, along El Camino Real, and generally between I-5 and the railroad (Alternative 14). Most of these alternatives were deemed infeasible due to narrow right-of-way prohibiting the construction of new parallel light rail tracks within the existing railroad right-of-way, substantial visual and wetland impacts of new LRT tracks across the lagoons, steep grades exceeding LRT operating capabilities, and community impacts. Based on these earlier studies, the region determined that implementation of new commuter rail service on the existing railroad tracks was more feasible, and COASTER commuter rail service began in 1995. The following 1995 Mid-Coast Corridor Alternatives Analysis/Draft Environmental Impact Statement/Draft Environmental Impact Report (Mid-Coast AA/DEIS/DEIR) included the extension of LRT northward from UTC along the east side of I-5 to Del Mar Heights Road only. This segment was subsequently eliminated due to inadequate area for a terminal station at Del Mar Heights Road and high cost.

Another transit emphasis alternative considered implementing two BRT only lanes along I-5 (Alternative 2). Again, the series of studies conducted in the 1980s and 1990s led the region to pursue implementation of the COASTER and more flexible highway improvement alternatives as the best options to serve the growing multi-modal travel demand in the corridor.

The most recent and significant analysis of transit improvement alternatives for the NCC occurred through the Urban Area Transit Strategy (Alternative 16), conducted in 2009, which undertook an extensive evaluation of regional transit projects and services that ultimately led to the transit network and set of transit projects included in the 2050 RTP. The UATS planning process set out to determine the kind of transit future that the San Diego region needs to improve the transit mode share throughout the region and achieve GHG reduction targets. This process included strategic brainstorming sessions as well as public workshops, opinion surveys, and input questionnaires. The team reviewed previous market studies, conducted research on transit success stories from other cities to analyze applicability to the San Diego region and utilized industry experts to provide an independent “peer review” process. The process focused on region wide network scenarios that studied the benefits of increased transit service, including new Commuter Rail, LRT, Streetcar, BRT, and Rapid Bus services, improved local bus and shuttle services, and new rail and bus infrastructure, including new stations throughout the region.

The elements of these UATS scenarios that were located within the NCC are identified in Alternative 16 above. Given the initial capital costs, long term operational costs, and characteristics and constraints of the corridor, some of the improvements studied through the UATS process did not result in an appreciable and cost effective improvement in transit ridership. For example, adding a Bus Rapid Transit (BRT) service on I-5 similar to that operating on the I-15 corridor express lanes was ultimately determined to be too similar to (and to compete for transit riders with) the enhanced COASTER service already planned for the corridor to warrant inclusion in the NCC program. While not all of the NCC improvements analyzed in the UATS transit scenarios were incorporated into the 2050 RTP, the UATS planning process did result in the addition of a suite of transit projects and services to the NCC program that represent the best transit mix to effectively balance transit propensity (effectiveness) in the NCC with mode share goals and available funding. The following new NCC transit projects were included in the 2050 RTP:

- New Camp Pendleton COASTER Station
- Improved COASTER service frequency
- Mid-City to Palomar Airport Road via Kearny Mesa and I-805 reverse commute BRT (route 653)
- UTC to Mira Mesa LRT extension
- Enhancements to local bus service on Coast Highway between Oceanside and UTC in San Diego (Route 473)

The final transit-only alternative was studied in the I-5 EIR/EIS as the NCC No Build Alternative (Alternative 1). The No Build Alternative deleted all highway improvements in I-5 in the corridor, but retained all corridor transit improvements contained in the 2050 RTP. This No Build Alternative is the baseline against which the other I-5 EIR/EIS alternatives, including the Locally Preferred Alternative (8+4) were evaluated to assess the impacts and benefits of the build alternatives. The resulting analysis found that transportation project goals would be met only with a multi-modal (transit and highway) program of improvements in the corridor.

3.3.1 Addressing Transportation Project Goals Summary

As is true with all alternatives, the “transit only/transit emphasis” alternatives need to meet the mobility needs of the wide range of NCC users and a variety of trips that include local and interregional trips, commute trips, recreational, tourism and coastal access trips, and goods movement, and do so in a way that takes into account the unique characteristics of the corridor. NCC corridor characteristics include existing low density, mostly suburban land use, limited parallel arterials, varying topography, absence of concentrated employment centers, and long distances between residential centers and transit hubs. Many of the characteristics present in the NCC act to inhibit an efficient transit system and have resulted in historically limited viable or cost-effective transit alternatives in the corridor. By contrast, areas with higher densities and more urban, mixed-use land use patterns are more conducive to transit ridership and generate higher transit mode shares. Due to the inherent corridor characteristics, NCC transit usage is currently a small part of the transportation solution in the corridor. In fact, when looking at existing commute trips in the corridor (typically the trip type with the highest transit mode share), the existing transit mode share is approximately 2-3%. By comparison, Downtown San Diego has a 24% transit mode share. And despite a handful of transit-heavy urban areas across the country, 17 of the nation’s 30 largest cities have transit mode shares of 5% or less, with only a few having any significant commute trip transit mode shares (Los Angeles has 11%, Portland has 12%, Chicago has 26% and San Francisco has 32%). Still, as a part of the UATS, SANDAG set ambitious goals for transit peak-period commute mode share throughout region, including in the NCC where SANDAG’s transit mode share goal is set at 10-15% (a

400% increase from current levels. Achieving these regional and NCC transit mode share goals is a key component of the region's plans to achieve the GHG reduction targets.

The general conclusion of the various studies completed over the years was that while non-automobile based alternatives need to be expanded and done so in a way that will significantly increase the current transit mode share, “transit only/transit emphasis” alternatives would result in significantly increased levels and durations of congestion on I-5 and nearby local arterials as the region continues to grow, and would not significantly affect Vehicle Miles Traveled (VMT). In fact, traffic analyses developed for these studies concluded that if improvements on I-5 are not pursued, congestion duration and travel times are anticipated to double by 2040. The resulting congestion would not meet the regional goals and objectives for the project including improving coastal access, reducing emissions, sustainable economic vitality and reduced travel times. Significant investments in transit alone in the NCC would also not effectively maximize value (provide the greatest possible mobility benefits per dollar spent) from the region's limited transportation funding for both the NCC and the entire region. For these reasons the “transit only/transit emphasis” alternatives were rejected in favor of a balanced set of modal improvements.

3.3.2 Coastal Development Policy Consistency Summary

Energy Conservation, Vehicles Miles Traveled & Air Quality. The Transit Only or Transit Emphasis Alternatives would accommodate transit improvements including double tracking of the LOSSAN rail corridor (Alternative 1), adding two BRT lanes on I-5 (Alternative 2), providing a new passenger Transit Rail Line within existing I-5 right-of-way (Alternative 14), or providing a combination of new Commuter Rail, LRT, BRT, Rapid Bus services, improved local bus and shuttle services, and new rail and bus infrastructure (including new stations) throughout the NCC (Alternative 15). These alternatives would improve transit use by increasing service and reducing congestion for rail, bus and shuttle travel, but ultimate congestion for SOV and HOV travel due to future demand on I-5 would significantly increase energy consumption and air emissions.

Promotion of Public Transit & Smart Growth. The Transit Only or Transit Emphasis Alternatives would promote public transit & Smart Growth, but ultimate congestion on I-5 due to current and future demand would impede SOV and HOV travel to rail and bus station parking, thereby de-incentivizing use of these transit services.

Public Access & Recreation. The Transit Only or Transit Emphasis Alternatives would result in increased service and reduced congestion for a number of transit options, which would improve public access opportunities for these modes of travel. However, current and future congestion on I-5 would significantly impact all SOV and HOV travel on the region's primary public access corridor, and would impede access to rail and bus station parking, thereby de-incentivizing use of transit as a means of coastal access. LOSSAN rail infrastructure improvements would accommodate east-west bike and pedestrian access, but absent significant I-5 infrastructure improvements, east-west bike and pedestrian improvements across the I-5 corridor and the north-south NCC bike route improvements would not be accommodated.

Marine Resources. None of the Transit Only or Transit Emphasis Alternatives considered would avoid all impacts to marine resources (wetlands) given that the LOSSAN corridor crosses the NCC's lagoons and a number of coastal waterways. Rail infrastructure improvements could accommodate bridge optimization, but lack of significant I-5 infrastructure improvements would preclude concurrent transportation corridor bridge optimization opportunities to enhance tidal circulation/water quality in lagoon systems. In addition, absent I-5 infrastructure improvements, associated funding for the NCC's REMP would be reduced thus limiting resource enhancement opportunities in the corridor.

Environmentally Sensitive Habitat Areas (ESHA). None of the Transit Only or Transit Emphasis Alternatives considered would avoid all impacts to ESHA given that the LOSSAN corridor crosses the NCC's lagoons and a number of coastal waterways, and is located directly adjacent to sensitive upland habitat areas. Eliminating the I-5 right-of-way expansion would minimize impacts to adjacent wetland and upland habitats, but lack of significant I-5 infrastructure improvements would preclude concurrent transportation corridor bridge optimization opportunities to enhance tidal circulation/water quality in lagoon systems. In addition, absent I-5 infrastructure improvements, associated funding for the NCC's REMP would be reduced thus limiting resource enhancement opportunities in the corridor.

Archaeological & Paleontological Resources. Eliminating the I-5 right-of-way expansion would reduce impacts to known/ unknown cultural resources.

Visual Resources. Eliminating the I-5 right-of-way expansion would reduce impacts to adjacent open areas, and minimize impacts to onsite and offsite coastal views with less grading, landform alteration and addition of fewer retaining and sound walls.

Safety & Stability. Impacts and mitigation measures associated with geology/soil hazards would generally be the same for all Transit Only or Transit Emphasis Alternatives considered. Reduced opportunities for bridge optimization along the I-5 corridor would not minimize/reduce hazards associated with potential sea level rise/flooding at replacement bridges. Ultimate highway congestion under these alternatives would severely limit emergency access/ evacuation routes on a critical transportation facility.

Agricultural Resources. Eliminating the I-5 right-of-way expansion would reduce impacts to agricultural resources given that the I-5 transportation corridor is located directly adjacent to lands used for agriculture.

3.4 EXPRESS LANE ALTERNATIVES (ALTERNATIVES 10, 11, 12 AND 13)

These four alternatives all assumed the addition of express lanes, but differed in how the new express lanes should be separated from the general purpose lanes and whether general purpose lanes should be added with construction of the express lanes. Express lanes allow access to carpools and transit, and to single-occupant vehicles (SOV) for a fee. The express lanes are managed to ensure free-flow conditions by adjusting the fees and/or the number of occupants required in a carpool. Fees collected on the express lanes cover administration and operations costs for the lanes and are reinvested in the corridor transit services.

Alternative 10 would add 3 or 4 express lanes in the median of I-5, separated from general purpose lanes by concrete barriers and incorporating a movable barrier within the express lanes. The movable barrier would allow for directional shifts in the lanes during the day (i.e., two inbound and one outbound lane in the morning with the reverse configuration in the afternoon) to accommodate differences in peak travel demand. Given that traffic patterns in the corridor do not result in a significant northbound/southbound split, the concept of the moveable barrier (Alternative 10) was rejected. Alternative 11 would add 4 express lanes (two in each direction) separated from general purpose lanes by concrete barriers and with a non-movable barrier between the northbound and southbound express lanes. Due to the physical barrier separation from the general purpose lanes as well as the movable and non-movable express lane barrier, Alternatives 10 and 11 have the widest footprint for express lane additions to the freeway. To minimize the project footprint to reduce impacts to residents, communities and critical coastal resources, the Alternative 11 was also rejected in favor of a striped buffer facility with a smaller footprint. Alternative 12 would provide four new express lanes (two in each direction) separated from the general purpose lanes by a striped buffer. Caltrans and FHWA also considered and rejected the idea of expanding

Alternative 12 by adding one additional general purpose lane in each direction (Alternative 13), but concluded that the benefits associated with the incremental level of improved mobility did not outweigh the additional costs and impacts to residents, communities and critical coastal resources.

3.4.1 Addressing Transportation Project Goals Summary

The express lane alternatives directly address the transportation project goals. They focus on moving people and not just cars by providing new travel options for high occupancy vehicles, which will incentivize carpooling and transit use. They also provide the region with significant flexibility to manage its transportation investment over time. As travel demand and characteristics change, the region can set policies to promote changes in the composition of express lane users (more or larger carpools, more transit, higher fees, access for trucks, etc.) to achieve the most effective and efficient use of the facilities. The ability to manage the lanes also means that travelers will have the guaranteed option of uncongested travel through the corridor. As some travelers shift from the general purpose lanes to the express lanes, they free up capacity on the general purpose lanes. The ability to increase highway capacity, provide congestion free travel, move more people per vehicle, and ensure flexibility in the corridor and regional transit network, will lead to enhanced mobility in the NCC and improved access to coastal resources. While all the express lane alternatives address project transportation goals, the region selected the least environmentally impacting express lane alternative (Alternative 13) as the Locally Preferred Alternative for the NCC.

3.4.2 Coastal Development Policy Consistency Summary

Energy Conservation, Vehicles Miles Traveled & Air Quality. The Express Lanes Alternatives would improve rail travel by double tracking the LOSSAN rail corridor, and would incentivize other transit services by managing three-four new Express Lanes to accommodate and prioritize bus and carpool travel, therefore curtailing increased VMT, energy consumption and air emissions. In addition, Express Lanes may be managed to maintain free flow traffic for changing conditions to ensure congestion and associated air emissions for all vehicular travel modes are minimized to the maximum extent feasible. However, general purpose lane improvements proposed under Alternative 13 could offset benefits gained by incentivizing SOV travel. Enhanced regional bus service included under Alternative 16 would further help to minimize increased VMT, energy consumption and air emissions.

Promotion of Public Transit & Smart Growth. The Express Lanes Alternatives would accommodate transit improvements (rail, busses, carpools), thereby promoting public transit and Smart Growth. In addition, Express Lanes may be managed to maintain service for both SOV and HOV demand, thereby maintaining vehicular access to rail station parking and promoting rail travel. General purpose lane improvements proposed under Alternative 13 have the potential to incentivize SOV over HOV travel and thereby de-incentivizing transit use. Enhanced regional bus service included under Alternative 16 would further promote public transit & Smart Growth.

Public Access & Recreation. The Express Lane Alternatives considered would result in increased service and reduced congestion for rail and highway traffic, which would improve public access opportunities for these modes of travel. In addition, Express Lanes may be managed to accommodate and prioritize HOV travel under changing conditions, assuring this primary means of coastal access is sustained. Rail & highway infrastructure improvements would accommodate east-west bike and pedestrian and north-south NCC Bike route improvements, with the potential exception of the larger project footprint required for Alternatives 10 (8+4/3 with movable barrier), 11 (8+4 with non-movable barrier), and 13 (10+4). Enhanced regional bus service included under Alternative 16 would further improve public access opportunities for this travel mode.

Marine Resources. None of the Express Lane Alternatives would avoid all impacts to marine resources (wetlands) given that the LOSSAN and I-5 transportation corridors cross the NCC's lagoons and a number of coastal waterways. The greater project footprint required for Alternatives 10, 11 and 13 would not minimize impacts at lagoon and stream crossings as would the reduced project footprints for Alternatives 12 and 16, nor would they allow room for accommodating new water quality BMPs. In addition, increased highway infrastructure costs associated with Alternatives 10, 11 and 13 would eliminate/reduce capital funding opportunities for bridge optimization and/or improved construction phasing that would minimize impacts to and enhance marine resources. The smaller project footprints associated with Alternatives 12 and 16 provide increased opportunities for bridge optimization and/or construction phasing, which would reduce impacts at lagoon and stream crossings, enhance tidal circulation, and accommodate new water quality BMPs.

Environmentally Sensitive Habitat Areas (ESHA). None of the Express Lane Alternatives would avoid all impacts to ESHA given that the LOSSAN and I-5 transportation corridors cross the NCC's lagoons and a number of coastal waterways, and are located directly adjacent to sensitive upland habitat areas. The larger project footprint for Alternatives 10, 11 and 13 would not minimize impacts to adjacent wetland and upland habitat resources. The smaller project footprint of Alternatives 12 and 16 would reduce direct impacts to adjacent wetland and upland resources.

Archaeological & Paleontological Resources. The larger project footprint of Alternatives 10, 11 and 13 would not minimize impacts to known/ unknown cultural resources as would the smaller project footprints of Alternatives 12 and 16.

Visual Resources. The larger project footprint of Alternatives 10, 11 and 13 would not minimize highway facility encroachment into adjacent open space areas, and would require increased grading, landform alteration, and the number/height of retaining & sound walls, and would likely result in removal of median landscaping to accommodate the greater footprint, thereby adversely affecting coastal visual resources. The smaller footprint of Alternatives 12 and 16 would reduce impacts to adjacent open areas, and minimize impacts to onsite and offsite coastal views with less grading, landform alteration and addition of fewer retaining and sound walls.

Safety & Stability. Impacts and mitigation measures associated with geology/soil hazards would generally be the same for all Express Lane Alternatives considered, although increased grading/landform alteration of slopes to accommodate the larger project footprint for Alternatives 10, 11 and 13 could require additional mitigation measures to address site stability. Reduced opportunities for bridge optimization under Alternatives 10, 11 and 13 would not minimize/reduce hazards associated with potential sea level rise/flooding at replacement bridges. Bridge optimization under Alternatives 12 and 16 would better accommodate future sea level rise and flood events.

Agricultural Resources. None of the Express Lane Alternatives would avoid all impacts to agricultural resources given that the I-5 transportation corridor is located directly adjacent to lands used for agriculture. The larger project footprint for Alternatives 10, 11 and 13 would not minimize impacts to adjacent coastal agricultural resources as would the smaller project footprints required for Alternatives 12 and 16.

3.5 NO PWP/TREP PROJECT ALTERNATIVE (ALTERNATIVE 17)

Finally, as part of the preparation of the 2050 RTP, SANDAG analyzed a regional No Build alternative that contains no new transit, highway, or alternative transportation (bicycle and pedestrian) projects in the region other than those projects that were already under construction or development. For the NCC, this

RTP No Build Alternative constitutes a No PWP/TREP Project Alternative since only two peripheral projects – a widening of I-805 between Carroll Canyon Road and the I-5/I-805 merge, and a new rapid bus circulator in UTC (Super Loop) – would be implemented in the corridor. No other transit, highway, bicycle or pedestrian projects would be implemented in the NCC or region under this alternative, eliminating any enhancements or improvements to the regional or corridor multi-modal transportation system.

3.5.1 Addressing Transportation Project Goals Summary

According to the 2050 RTP Environmental Impact Report prepared by SANDAG, the RTP No Build/No PWP/TREP Project Alternative would not accommodate future population, employment or housing growth. It would significantly hinder the region's ability to manage transportation system demand and efficiency through innovative transportation improvements. The RTP No Build/No PWP/TREP Project Alternative would provide fewer travel choices, and result in longer and less reliable travel times throughout the region, and result in greater impacts to regional air quality than the adopted RTP program of projects. Because the NCC PWP/TREP includes a multi-modal program of transportation projects and associated environmental enhancements for the corridor, the RTP No Build/No PWP/TREP Project Alternative would not meet any of the NCC objectives.

3.5.2 Coastal Development Policy Consistency Summary

Energy Conservation, Vehicles Miles Traveled & Air Quality. As discussed in Section 5.10.1.2 above, the RTP No Build/No PWP/TREP Project Alternative would eliminate transportation improvements that are critical to protecting coastal resources by minimizing energy consumption and VMT. Travel demand in the corridor would continue to degrade the existing transportation infrastructure and services. Absent the proposed PWP/TREP improvements, existing and future deficiencies in the transportation facilities would result in reduced rail and auto reliability, increased travel time and corridor congestion, continued deficiencies in infrastructure for bicycle and pedestrian circulation, and increased energy consumption and corresponding air emissions associated with travel.

Promotion of Public Transit & Smart Growth. As discussed in Section 5.10.1.2 above, the RTP No Build/No PWP/TREP Project Alternative would eliminate transportation improvements necessary to address existing and future deficiencies in the transportation system which would otherwise discourage anticipated and planned growth from occurring in the urban corridor and designated Smart Growth areas. In addition, absent the proposed PWP/TREP improvements designed to enhance public transit on the LOSSAN rail and I-5 highway facility and provide for nonautomobile circulation throughout the corridor, coastal resources would continue to degrade, particularly as it relates to maintaining and enhancing mobility in the corridor to provide access to coastal communities, the corridor shoreline and upland recreational resources.

Public Access & Recreation. As discussed in Section 5.10.1.2 above, the RTP No Build/No PWP/TREP Project Alternative would eliminate PWP/TREP improvements, which would serve to affirmatively implement the coastal access and recreation policies of the Coastal Act. The RTP No Build/No PWP/TREP Project Alternative would result in continued, adverse impacts to public access and recreational resources. Absent the proposed PWP/TREP improvements, traffic congestion, travel delays, inadequate and infrequent transit facilities and services, and incomplete bike and pedestrian networks would continue to limit the ability for people to access the coast and coastal upland recreational areas.

Marine Resources. The RTP No Build/No PWP/TREP Project Alternative would eliminate direct impacts to marine resources and the NCC's lagoon systems. However, eliminating the PWP/TREP's proposed

infrastructure improvements would preclude concurrent transportation corridor bridge optimization opportunities to enhance tidal circulation/water quality in lagoon systems. In addition, absent the PWP/TREP infrastructure improvements, associated funding for the NCC's REMP would be eliminated thus limiting resource enhancement opportunities in the corridor.

Environmentally Sensitive Habitat Areas (ESHA). The RTP No Build/No PWP/TREP Project Alternative would eliminate direct impacts to marine resources and the NCC's lagoon systems. However, eliminating the PWP/TREP's proposed infrastructure improvements would preclude concurrent transportation corridor bridge optimization opportunities to enhance tidal circulation/water quality in lagoon systems. In addition, absent the PWP/TREP infrastructure improvements, associated funding for the NCC's REMP would be eliminated thus limiting resource enhancement opportunities in the corridor.

Archaeological & Paleontological Resources. Eliminating the transportation facility expansions would reduce impacts to known/ unknown cultural resources.

Visual Resources. Eliminating the transportation facility expansions would reduce impacts to adjacent open space areas, and minimize impacts to onsite and offsite coastal views by eliminating grading, landform alteration and addition of retaining and sound walls necessary for construction of infrastructure improvements. However, elimination of the various bike and pedestrian enhancements that are integral to the infrastructure improvements would reduce public viewing opportunities for the NCC's significant natural resource areas. In addition, acquisition and restoration of lands subject to the proposed REMP would not occur, thus reducing opportunities to restore and protect these open spaces from future development in perpetuity.

Safety & Stability. The 2050 RTP No Build/No PWP/TREP Project Alternative would eliminate potential impacts associated with safety and stability in terms of constructing infrastructure improvements. However, reduced opportunities for bridge optimization along the transportation corridors would not minimize/reduce hazards associated with potential sea level rise/flooding at replacement bridges. Absent the NCC infrastructure improvements, aging facilities could pose a risk to existing transportation operations. In addition, ultimate highway congestion under this alternative would severely limit emergency access/ evacuation routes on a critical transportation facility.

Agricultural Resources. Eliminating the I-5 right-of-way expansion would reduce impacts to agricultural resources given that the I-5 transportation corridor is located directly adjacent to lands used for agriculture. However, the proposed LOSSAN and I-5 improvements are critical to goods movement, which has a direct effect on the viability of agricultural operations in the region and the state. The majority of agricultural commodities in California are transported from farms to markets via ground transportation; thus, the ability to transport local agricultural commodities to large markets through vital arteries such as the I-5 is also critical to preservation and continued viability of agricultural operations in the NCC, throughout the region, and beyond. Moreover, close proximity of transportation corridors to agricultural areas reduces costs associated with transporting commodities, and the reliability of these arteries is necessary to ensure delivery and equitable distribution of commodities and commensurate compensation to producers. As such, the RTP No Build/No PWP/TREP Project Alternative would likely adversely impact agricultural viability and operations in the San Diego coastal zone area.

3.6 SELECTED PWP/TREP MULTI-MODAL PROJECT (ALTERNATIVE 18)

During the early planning studies, and more recent corridor planning and project development process, there was general consensus that transportation improvements are needed in the NCC to meet anticipated growth, improve mobility, and maintain a healthy economy and quality of life. However, there

was also considerable concern that the proposed NCC transportation improvements need to fit within the context of this very unique coastal corridor that in many ways defines the character of San Diego. Consequently, Caltrans and SANDAG recognized that the selected improvements must balance improved mobility, operational and construction costs, as well as community and environmental impacts and coastal development policies. Taking these factors into consideration, along with public and agency input, Caltrans, FHWA and SANDAG selected Alternative 18—Double Track LOSSAN, Enhanced Regional Transit Service, and Four Buffer-Separated Express Lanes—as the Preferred Alternative and PWP/TREP Project that best meets the objectives and goals of the corridor. The I-5 Locally Preferred Alternative (Four Buffer-Separated Express Lanes) was also directed by SB 468, which limits the alternatives that SANDAG can legally adopt for the highway component in the corridor. Specifically, SB 468 provides that SANDAG must select a preferred alternative that is no larger than the 8+4 buffer alternative, which is defined as follows:

"8+4 Buffer Alternative" means the addition of a multimodal managed lane facility consisting of two lanes on either side of State Highway Route 5 within the North Coast Corridor, separated from general purpose lanes by striping or other approved traffic control devices, and which, to the maximum extent feasible, is built within existing rights-of-way owned by the department. The managed lanes would give priority to high-occupancy vehicles, vanpools, and one or more bus rapid transit routes. Value pricing techniques would allow single-occupant vehicles to use the facility by paying a toll, as long as single-occupant vehicle use does not negatively impact the transit uses of the managed lanes. (Cal. Streets & Highways Code section 103)"