

8.0 GROWTH INDUCEMENT AND CUMULATIVE IMPACTS

8.1 GROWTH INDUCEMENT

This section assesses the potential growth-inducing impacts of the proposed SR-22/West Orange County Connection project, based upon a comparison of the TSM/Expanded Bus Service, Full Build, and Reduced Build Alternatives to the No Build Alternative base condition.

Under both CEQA and NEPA, environmental documents must discuss the ways in which the proposed alternatives could foster economic or population growth, either directly (direct growth inducement) or indirectly (indirect growth inducement), in the area immediately adjacent to the project (local growth inducement) and in a larger area (regional growth inducement). FHWA and Caltrans define growth inducement as the relationship between the proposed transportation project and growth within the project area.

Growth inducement can take several forms. A project can remove barriers or constraints or provide new or improved access, encouraging growth in the area that has been already planned or approved through the general planning process. This planned growth is reflected in land use plans, approved with the underlying assumption that adequate transportation facilities would be constructed. This type of growth inducement is referred to as accommodating or facilitating growth. In addition, a project can remove barriers, provide new access, or otherwise encourage growth that is NOT assumed as planned growth in the general plans or growth projections. This could include areas that are currently designated for open space, agricultural uses, or other similar non-urban land uses, which, because of the improved access provided by the project, would experience pressure to develop into urban uses or to develop at a higher level of intensity than originally anticipated.

The role of transportation systems in fostering and affecting land use structure has been the subject of much study, especially recently with the increased interest in “smart growth” and “sustainable development.”

8.1.1 Direct Growth Inducement

In the short term, construction would require an approximate maximum of 2,947 employees for the TSM/Enhanced Bus Service Alternative, 21,528 employees for the Full Build Alternative, or 13,548 employees for the Reduced Build Alternative, based on the methodology outlined in FHWA's *Summary: Economic Impacts of Federal-Aid Highway Investment* (FHWA, 2000).¹ Not all of these employees would be working at the same time. The very large labor force available in the area would easily provide for this relatively small number of employees; therefore, minimal in-migration would occur and minimal short-term direct growth would be induced.

Following construction, the increase in lanes under the Full Build or Reduced Build Alternatives and new Pacific Electric Arterial (Full Build Alternative only) would require an incremental increase in labor to maintain the facility and for law enforcement. This small increase in labor would not lead to substantial increases in the necessary labor force. Additional labor would be required for a number of the TSM measures (included in each alternative except the No Build Alternative), but it is likely that the existing area labor force would be sufficient for these needs and in-migration would not occur.

8.1.2 Indirect Growth Inducement

A. REGIONAL GROWTH EFFECTS

¹ Available at Caltrans, District 12.

Orange County has been one of the fastest-growing areas in the state over the past 40 years. However, projected growth rates are expected to gradually slow from 1990 to 2020. The cities in the study area are largely built out, and most additional population and employment growth is expected to take place through redevelopment. Current projections indicate that population in the cities that make up the SR-22/West Orange County Connection study area will increase by approximately 32.7 percent between 1990 and 2020, or approximately an average of one percent per year (U.S. Department of Commerce Census 1980, 1990; Orange County, 1996). However, California State Census 2000 indicates an increase in population of 18.1% for Orange County (California Department of Finance, Demographic Research Unit, Census 2000).

Since the Full Build Alternative would provide regional connectivity of the HOV system in Orange County (and to adjacent counties), this alternative would make commuting through and into the SR-22/West Orange County Connection more convenient. This improvement could make undeveloped areas within the outskirts of the county more attractive to development. For areas where the local general plans anticipate such growth, the Full Build Alternative could slightly hasten, or at least would facilitate, such growth. There could also be a minor increase in pressure to develop areas that are not currently planned for development. Land use decisions rest with the local jurisdictions, however, and it is unlikely that improvements as proposed under the Full Build Alternative alone would result in enough political pressure to alter existing land use plans. In concert with other transportation system improvements, however, as well as other growth-inducing factors, the Full Build Alternative could contribute to increased pressure to revise land use plans to include more development.

The Reduced Build Alternative would be less likely to increase development pressures on outlying areas in Orange County because there would be no direct HOV connectors proposed in the eastern portion of the project (at I-5 and SR-55). Thus, connecting to the eastern and southern portions of the county, where the majority of undeveloped land still exists, would be less improved. The minor pressure to grow at a faster pace or in areas not currently planned for development would be less under the Reduced Build Alternative.

To an even lesser extent, the TSM/Expanded Bus Service Alternative would improve mobility throughout the corridor and could have a very minor impact on increasing development pressures.

B. LOCAL GROWTH EFFECTS

The SR-22/West Orange County Connection Full Build Alternative and Reduced Build Alternative are each consistent with planning documents throughout the region and study area cities.

Local jurisdictions (cities and counties) have sole jurisdiction over land use and zoning. They support regional transportation plans through local implementation programs. SCAG is responsible for assisting local governments to coordinate efforts to ensure that the region's transportation projects, programs, and plans conform to the AQMP. Local jurisdictions provide fair-share reduction of vehicle pollution through adoption of a series of optimal Transportation Control Measures (TCMs). TCMs include such capital-based actions as HOV lanes, transit improvements, and traffic flow improvements.

Local transportation-related planning decisions, as well as improvements outlined in the general plan circulation elements of local cities, generally recognize the related transportation needs and planning activities of the surrounding county, region, and state, and provide support to these plans through implementation of transportation improvement-based goals and policies.

With projected population and employment growth trends indicating increased transportation volumes, LOS is expected to worsen. The proposed SR-22/West Orange County Connection improvements are anticipated to provide a higher level of operation for existing and anticipated traffic volumes, which is consistent with local and regional planning documents.

Although the improvement of transportation within the SR-22/West Orange County Connection corridor would be consistent with the growth plans of the various cities within the corridor, none of the plans require that the elements of the proposed alternatives be completed in order to implement the plans. Therefore, the project would not be integral to this growth and would not facilitate planned growth.

The Reduced Build Alternative does not propose any new interchanges, but only improvements to existing interchanges. Thus, this alternative would not provide new access to previously inaccessible areas. Improvements to existing interchanges, especially when combined with on-going or planned improvements to the connecting surface streets, may make these areas more attractive and may increase the pressure to develop or redevelop these areas faster and/or at greater density. Areas where improved interchanges related to the Reduced Build Alternative would coincide with on-going or planned surface street improvements include:

- Seal Beach Boulevard
- Katella Avenue Super Street

The Full Build Alternative would have similar growth-inducing impacts at improved interchanges as listed above for the Reduced Build Alternative. In addition, the provision of an arterial directly connecting SR-22 with downtown Santa Ana, as proposed under the Full Build Alternative, would make this downtown area more attractive as a destination, especially for office and commercial uses. This increased access could encourage businesses and employers to locate in this area. This could lead to increased redevelopment pressures or pressure to increase density beyond what is currently planned. Such an impact would be growth-inducing. This arterial is not proposed under the Reduced Build Alternative.

8.2 CUMULATIVE IMPACTS

As stated in Section 15355 of the CEQA Guidelines (OPR, June 1986):

"Cumulative impacts" refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

(a) The individual effects may be changes resulting from a single project or a number of separate projects.

(b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

The Council on Environmental Quality's (CEQ's) regulations (40 CFR 1500 – 1508) implementing NEPA define cumulative effects as follows (CEQ, 1997):

The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.

Cumulative impacts take into account the residual impacts of the proposed SR-22 West Orange County project along with the other projects in Table 8.2-1. Analysis of cumulative impacts would consider the entire SR-22 proposed project site. To analyze cumulative impacts, it is important to first define the geographic or temporal boundaries. These boundaries vary depending on the issue being analyzed. For instance, the project's contribution to a cumulative impact to an endangered species must be considered for the habitat or range of that species, which may be very small or vary large. Noise impacts, however, are only cumulative as they affect individual receivers. Thus, for each of the topics below, the boundaries for analysis of cumulative impacts are separately defined. If the project alternatives would have no impacts or negligible impacts, and thus would not contribute to cumulative impacts, this is stated below.

Projects that are speculative in nature were not considered in this cumulative analysis. Where it is likely the scope of these projects may change during the planning phase, consequently, their environmental impacts may be altered. For example, the proposed CenterLine Project to construct a light rail system in Orange County, was not considered in this cumulative analysis due to the speculative nature of the project. Since the local agencies are in disagreement with the proposed CenterLine alignments, the project may be further delayed.

Cumulative impacts discussions on projects in Table 8.2-1 are based on their environmental documents, if such documents are available. The Table presents a list of projects included in the analysis below. Refer to Section 2.4 for descriptions of the projects. Not every project is included in each analysis, as discussed below.

8.2.1 Issues With No Contribution to Cumulative Impacts

There are several potential issue areas for which none of the SR-22/West Orange County Connection alternatives would contribute to cumulative impacts, either because they would not result in impacts or because impacts that would occur can be fully mitigated or prevented through mitigation. These issue areas, which are not further discussed in this section, are as follows:

- Topography (no impacts under any alternative)
- Liquefaction (impacts prevented by mitigation)
- Expansive soils (impacts prevented by mitigation)
- Erosion (impacts prevented by mitigation)
- Vegetation (no impacts under any alternative)
- Species of concern (no impacts under any alternative)
- Wetlands (impacts prevented by mitigation)

- Transportation/circulation (positive impacts and impacts prevented by mitigation)
- Utilities (impacts prevented by mitigation)
- Hazardous materials/wastes (impacts prevented by mitigation)
- Seismicity (impacts prevented by use of latest technology)
- Energy (no impacts under any alternatives)
- Biology (minor impacts prevented by mitigation)

**Table 8.2-1
PROJECTS INCLUDED IN CUMULATIVE ANALYSIS**

Lead Agency	(Project)	Project Location and Description
Los Alamitos	No developments approved in the vicinity of the proposed project	No projects
Orange County (Rossmoor)	Rossmoor Pump Station and Basin Modification	Location: Northwest of the I-405 and I-605 interchange Description: Construction of a pump station and reconfiguration of the existing basins. The proposed improvements intend to provide 100-year protection along the channel segments.
Seal Beach	Old Bixby Ranch Golf Course	Location: Old Ranch Towne Center-adjacent and immediately east of Seal Beach Blvd., between Saint Cloud Dr. and Rossmoor Center Way. Old Ranch Business Hotel/Restaurants/Senior Care Facilities-south of Lampson Ave. and east of Seal Beach Blvd. Description: Old Ranch Towne Center-a 10 hectare (25-acre) commercial center including retail, parking, community police center, service station/minimart, and restaurants. Old Ranch Business Hotel/Restaurants/Senior Care Facilities-a 5.5 hectare (13.57-acre) area designated for a hotel, parking, senior care facilities, and restaurants.
	Seal Beach Boulevard Overcrossing Widening	Location: Seal Beach Blvd. at the I-405 Interchange Description: Add a median, sidewalks, bike lanes, and one lane in each direction, to the existing overcrossing and roadway approaches from Beverly Manor at the I-405 southbound ramps to Old Ranch Parkway at the I-405 northbound ramps.
Westminster	No developments approved in the vicinity of the proposed project	No projects
Garden Grove	County Wide Automotive Dealership	Location: Southeast corner of Trask Ave. and Taft St. Description: Construction and operation of an automobile sales, repair and service facility on an approximately 1.3 hectare (3.2 acre) site.
Stanton	No developments approved in the vicinity of the proposed project	No projects
Santa Ana	Main Street Concourse	Location: Northeast corner of Main St. and Owens Dr. Description: Proposal to develop 18.9 acres of vacant land into residential and commercial (office, retail, restaurants, theater, hotel) land uses. The development would be constructed in two phases.
	Fashion Square Commercial Center (currently MainPlace Mall)	Location: West of Main St, south of SR-22, east of I-5, and north of Roe Dr. Description: The reconstruction of the Fashion Square into an enclosed shopping mall is complete. The EIR also studied impacts of a 0.28-million square meter (3.1-million square foot) office and retail space as well as 1,200 hotel rooms.
	Bristol Street Corridor Redevelopment Project	Location: Bristol St. from Memory Lane to Elm Street and Third Street to Pine Street. Description: Widen and reconstruct a 6.2-kilometer (3.9-mile) segment of Bristol St. from an undivided, four-lane arterial to a divided, six-lane major arterial.

**Table 8.2-1
PROJECTS INCLUDED IN CUMULATIVE ANALYSIS (continued)**

Lead Agency	(Project)	Project Location and Description
Orange	Main Street/La Veta Avenue/Chapman Avenue	<p>Location: Bound by SR-57 to the west, Orangewood Ave. to the north, Cambridge St. on the east and SR-22 to the south.</p> <p>Description: Main St.-ultimate right-of-way will range from 30 to 41 meters (100 to 135 feet.) La Veta Ave.-ultimate right-of-way 24 meters (80 feet), includes widening of Glassell St. from Culver Ave. to La Veta Ave. Chapman Ave.-ultimate right-of-way ranges between 33 to 34 meters (110 to 112 feet).</p>
Tustin	No developments approved in the vicinity of the proposed project	No projects
Regional Agencies	Katella Avenue Super Street	<p>Location: Katella Ave. from the San Gabriel Freeway (I-605) to 300 feet east of Tustin Ave. near State Route 55.</p> <p>Description: This 20-kilometer (14.3-mile) segment super street concept applies measures such as traffic signal coordination, roadway widening, intersection improvements, on-street parking modifications, restriping and bus turnouts to add capacity, improve traffic flow and safety along the roadway.</p>
	Santa Ana Freeway (I-5) Widening	<p>Location: I-5 between SR-22 and SR-91</p> <p>Description: Widen 13 kilometers (8.1 miles) of I-5 and reconstruct interchanges to increase capacity and reduce congestion and operational problems.</p>
	Santa Ana River Mainstem Project	<p>Location: Santa Ana River and Santiago Creek in the counties of Orange, Riverside, and San Bernardino</p> <p>Description: This project will provide various level of flood protection ranging from 100-year to 190-year in areas most susceptible to damages from floodflows. Planned improvements will also increase recreational opportunities and enhance wetlands habitat.</p>
	Harbor Boulevard Smart Street Feasibility Study	<p>Location: Harbor Boulevard from Orangewood Avenue to Gisler Avenue.</p> <p>Description: This project will include intersection widening, mid-block widening, lane restriping, addition of travel lanes, raised medians and/or median closures, on-street parking restrictions, and bus turnouts for 7.8 miles of urban arterial highway.</p>
	SR-22 West Orange County Connection Project	<p>Location: The proposed SR-22/West Orange County Connection project would involve the construction of improvements in the SR-22 study area, which includes connecting freeways and arterials (13 miles), extends from I-605 to SR-55.</p> <p>Description: The State Route 22 (SR-22)/West Orange County Connection project involves transportation improvements to the SR-22 transportation corridor, as well as portions of I-405 and I-605, in Orange County.</p>

8.2.2 Hydrology, Floodplain, and Water Quality

Approximately one-third of the SR-22 project is located above the Forebay groundwater recharge area of the Orange County groundwater basin. Although most groundwater recharge for the basin occurs as a result of water management in the Santa Ana River channel, mostly upstream from the project, some recharge occurs through rainwater and irrigation water percolating from upland areas into the underlying groundwater.

Individually, either of the build alternatives would have minimal impacts on surface water quality, quantity, beneficial uses, and little impact on groundwater quality, quantity, or beneficial uses. The SR-22 may have a slight contribution to the historic and on-going trends of increased surface water runoff. These are due to more paved surfaces, decreased surface water quality due to increased development, decreased groundwater recharge due to increased permeable surfaces, and decreased groundwater quality due to increased development above the groundwater basin.

The mitigation included for either the Full Build or Reduced Build Alternative restricts impacts to floodplain elevation to below the criteria of 0.3 meter (one foot). The potential floodplain impacts of the Corps' Santa Ana River Mainstem Project, which will make several improvements in the Santa Ana River to improve its flood-controlling abilities, was considered in the floodplain analysis because it will be an "existing" condition, scheduled for construction before the SR-22/West Orange County Connection project. Therefore, the SR-22/ West Orange County Connection project and the Santa Ana River Mainstem Project would not contribute to cumulative impacts to floodplain. There are no other projects in the vicinity that would affect floodplain.

8.2.3 Waters of the United States

Both the Full Build and the Reduced Build Alternatives would require improvements to structures in waters of the United States. Most of these waters are concrete-lined and do not contain sensitive biological resources. At the Santa Ana River crossings, there are potential, minor impacts from pier modifications. These impacts, however, would not affect habitats and are within the thresholds for nationwide permits. Thus, the SR-22 West Orange County Connection project and the projects listed in Table 8.2-1 would not contribute to a cumulative impact on waters of the United States. (See also, 8.2.3, above.)

With the exception of the Santa Ana River Mainstem Project initiated by the United States Army Corps, the projects listed in Table 8.2-1 (including SR-22 WOCC) would not affect waters of the United States. The Santa Ana River Mainstem Project will provide various level of flood protection ranging from 100-year to 190-year in areas most susceptible to damages from floodflows. These improvements will take place in the Santa Ana River, therefore, there would be some minor environmental impacts that would occur during construction.

8.2.4 Cultural Resources

Only the Full Build Alternative for the SR-22 West Orange County Connection project would affect a cultural resource, the Pacific Electric Santa Ana Bridge. This historic resource is located within the former right-of-way for the Pacific Electric Railroad, which operated in this corridor from 1904 to 1950. Thus, the removal of the bridge and the use of the vacant right-of-way for the Pacific Electric Arterial under the Full Build Alternative represent a substantial contribution to an historic cumulative impact. The only possible mitigation for this cumulative impact would be the elimination of the Pacific Electric Arterial from the Full Build Alternative. (See Section 9.0 for a discussion of why other avoidance of this impact is not prudent or feasible.) However, even if this mitigation were implemented, past cumulative impacts to historic resources in the former Pacific Electric right-of-way are still substantial.

It is important to note that a Reduced Build Alternative was added to the original proposed project then known as the Build Alternative. This alternative was included to minimize right-of-way and environmental impacts. The Reduced Build Alternative would not include the Pacific Electric Arterial, thus eliminating impacts to this resource.

The other projects listed in Table 8.2-1 would not contribute to cumulative impacts to cultural resources.

8.2.5 Communities

The Full Build Alternative for the SR-22 West Orange County Connection project would remove a small amount of farmland to construct the Pacific Electric Arterial. This farmland is an isolated parcel within an urban area, which is zoned for residential land uses and is not classified as prime farmland. Although not individually a substantial impact, this incremental loss of farmland would contribute to an historic and on-going loss of farmland within the county.

There would be some benefits derived from the SR-22 West Orange County Connect project and projects listed in Table 8.2-1. These include accessibility and safety. Improving mobility along the SR-22 corridor would improve accessibility for the businesses in the areas that are currently experiencing high traffic volumes. For instance, The City Drive, one of the business hubs along the SR-22 corridor that is experiencing higher traffic volumes and accidents, could benefit from mobility improvements along the SR-22. The other projects listed in Table 8.2-1 could also help improve mobility. These include the Seal Beach Boulevard Overcrossing Widening, Bristol Street Corridor Redevelopment Project, Harbor Boulevard Smart Street, and the Katella Avenue Super Street projects. These projects consist of signalization, and intersection and capacity improvements that would ease the traffic volume in the SR-22 project study area.

Several of the projects in Table 8.2-1 include residential and business displacements, including the Bristol Street Corridor Redevelopment Project, the Main Street/La Veta Avenue/Chapman Avenue project, Harbor Boulevard Smart Street, and the Santa Ana Freeway (I-5) Widening project. Most of these displacements have already occurred and the rest will occur before the displacements of the SR-22/West Orange County Connection project. Adequate relocation supplies exist within the corridor cities for the combined relocations of these previous projects and the SR-22/West Orange County Connection project. Therefore, displacements would result in minimal cumulative impacts. Although the SR-22 West Orange County Connection proposed project includes residential and business displacements, community cohesion would not be diminished. These displacements would not substantially affect minority block groups in the study area.

8.2.6 Air Quality

The TSM/Expanded Bus Service, Full Build, or Reduced Build Alternative for the SR-22 West Orange County Connection project would each contribute to the pollution burden for nitrogen oxides in excess of the SCAQMD thresholds.

All intersections studied for microscale impacts would be within the applicable state and federal thresholds for carbon monoxide impacts. For the project to contribute to a cumulative impact at the microscale level, the same location (often called a "hot spot") would have to be affected by more than one project. A review of projects listed in Table 8.2-1 did not identify any such locations. Therefore, none of the project alternatives would contribute to a cumulative microscale air quality impact.

8.2.7 Noise

Cumulative impacts to sensitive noise receptor sites relate only to multiple impacts to a single noise-sensitive receptor. Therefore, the boundaries for analysis of noise impacts are limited to the area immediately adjacent to sensitive sites and include other projects that may affect the same resource.

A total of 89 noise-sensitive receivers were analyzed for the SR-22/West Orange County Connection. Since traffic noise analyses utilize representative sites and do not analyze every site that would be affected by a given project, there is the possibility that two projects could contribute to a cumulative noise impact at the same location. This would tend to occur where two projects intersected, such as a street widening project and a freeway-improvement project.

8.2.8 Parks and Recreation

Unless a project would result in loss of parkland or additional demand for parkland, which can have a regional effect, cumulative impacts to parks relate only to multiple impacts to a single park or recreation resource. In other words, if more than one project would result in noise, visual, air quality, or similar impacts to the same park, these combined impacts would be cumulative on that resource. Therefore, the boundaries for analysis of cumulative impacts to parks and recreation facilities are limited to the area immediately adjacent to individual parks and recreation facilities and include other projects that may affect the same resource in the project study area.

The Full Build Alternative would preclude a new class I bicycle trail in the former Pacific Electric right-of-way, as proposed by the City of Santa Ana. In urban areas, the ability to provide a class I trail, which is by definition separated from vehicular traffic, is very difficult due to the past use of most of the available land for other uses in the past. Therefore, the removal of this option for development of this land as a class I trail would contribute to the historic cumulative impact of loss of opportunities to develop recreational facilities.

The other projects listed in Table 8.2-1 would not have an impact on parks and recreation. Therefore, the SR-22/West Orange County Connection alternatives and these projects would not result in a cumulative impact.

8.2.9 Visual Quality

The Full Build or Reduced Build Alternative for the SR-22 West Orange County Connection project would each have substantial impacts to the visual environment. The most wide-ranging effect would be the removal of the majority of the landscaping along SR-22. Over the past decades, freeway widening projects have resulted in the elimination of most or all of the landscaping along most freeways in Orange County until only a few areas have sufficient room for landscaping. The loss of this linear urban forest would not only be a substantial individual visual impact, but would contribute to a historic trend of eliminating trees on both highways and surface streets.

The Old Bixby Ranch Golf Course project includes development that would remove – and already has removed – a substantial number of large eucalyptus trees. The Katella Avenue Super Street project would also remove (and not replace) street trees. In this western portion of the SR-22/West Orange County Connection study area, these projects and the SR-22/West Orange County Connection would each contribute to a cumulative impact to visual quality.