4.12 Transportation and Parking

The information and analysis presented in this section are based on the Traffic Impact Analysis prepared for the proposed project by Kimley-Horn and Associates, Inc. (June 2009). The traffic study document has been relied upon for preparation of this section and is included in Volume II (Appendix F) of this EIR, which is herein incorporated by reference.

The purpose of the Traffic Impact Study is to review existing, cumulative conditions in Year 2020, and future build-out (Year 2030) conditions with and without the proposed future development. The Huntington Beach Traffic Model (HBTM) was utilized to provide detailed traffic forecast information. The traffic impact analysis has been prepared in accordance with the requirements of the City and Caltrans, and also satisfies the traffic impact analysis requirements of the County of Orange Congestion Management Program (CMP). Additional transportation-related topics addressed in this section include public transportation, parking, proposed streetscape improvements, and bicycle facilities.

The DTSP Update describes improvements that would result in changes to the circulation network in the downtown area. The changes include realignment of roadways to better serve the adjacent land uses and some new roadway cross-sections to provide additional bicycle and pedestrian access. The DTSP Update also provides recommendations for public transportation including a bus layover zone and trolley system which are described later in this section. The new street cross-sections would change the roadway classifications as they are currently defined by the General Plan Circulation Element and Master Plan of Arterials Highways (MPAH) because the defined functions of the roadways would change – from primarily vehicular-serving to multi-modal facilities. There would be no four-lane roadways in the downtown area, and none are needed based upon the traffic forecasts and the DTSP Update objectives. The project is described in Section 3, Project Description earlier in this EIR and within the proposed DTSP Update. Network changes are illustrated on Exhibit 4.12-1. Proposed key improvements to the transportation network are described below.

1. Walnut Avenue Realignment

Existing City plans indicate that Walnut Avenue will be realigned to intersect with 1st Street at a right angle to align with the extension of Pacific View Avenue. This realignment is consistent with current City plans. The existing diagonal portion of Walnut Avenue between 1st Street and 2nd Street would be vacated by the City. The City will need to acquire the land for the public right-of-way between 1st Street and 2nd Street.

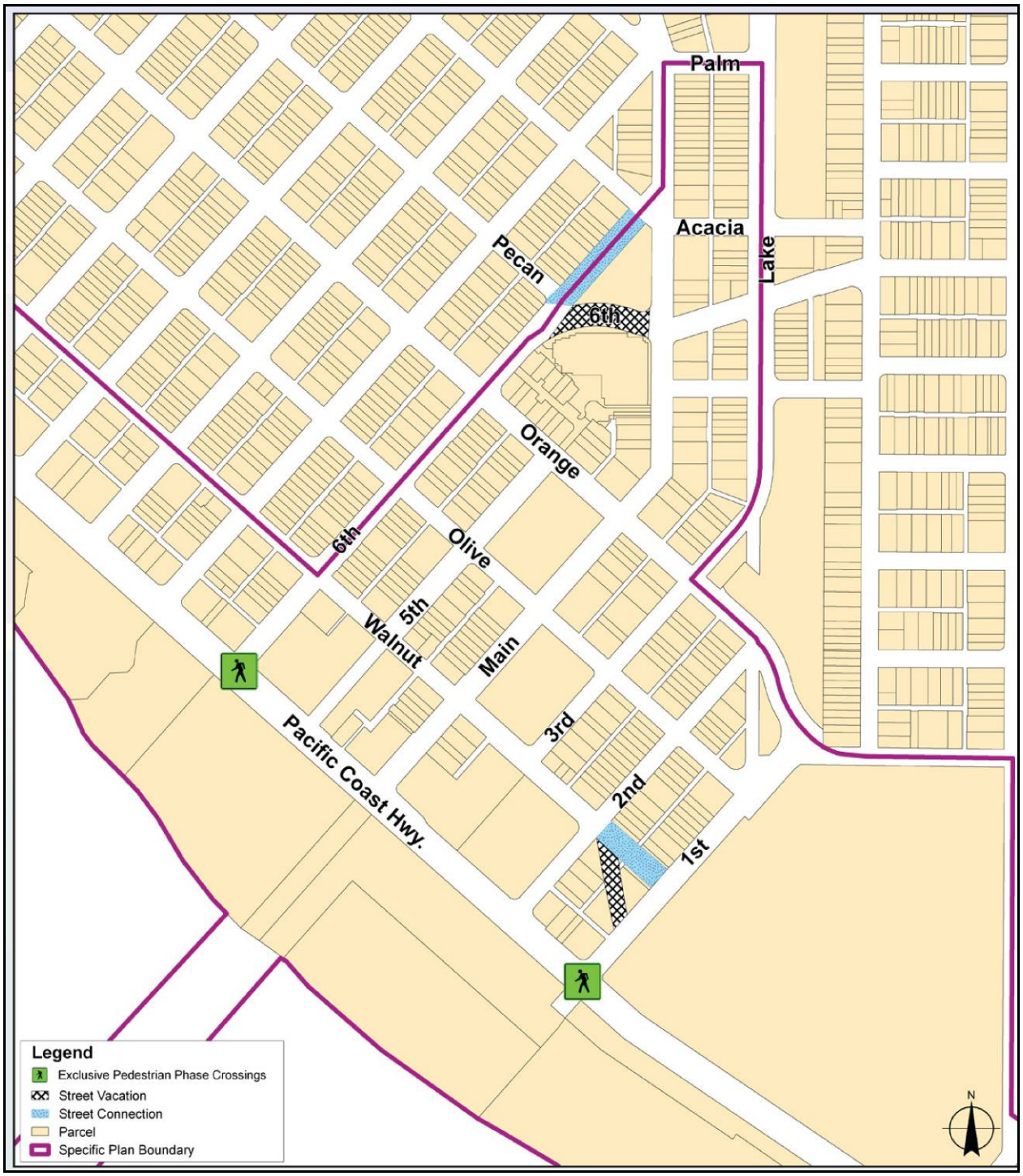

Exhibit 4.12-1 – Conceptual Street Network Changes

2. Exclusive Pedestrian Phase Signals (Option)

Exclusive pedestrian phase signals may be installed at the intersections of Pacific Coast Highway and 1st Street and Pacific Coast Highway and 6th Street. An exclusive pedestrian phase signal would stop all traffic on all approaches to the intersection and allow for pedestrians to cross the street in all directions at once. This type of signal can provide a safer crossing zone for pedestrians, as no traffic would be entering into the intersection while pedestrian movement is occurring. At the same time, the pedestrian-only phase would also result in additional delay for vehicular traffic, since the capacity for vehicular movement is reduced. An exclusive pedestrian phase currently exists at the intersection of Pacific Coast Highway and Main Street. Implementation of the pedestrian-only phases at the 1st and 6th Street intersections would require coordination with Caltrans and may be implemented only during peak pedestrian times. The signal timing and phasing would need to be modified.

3. 6th Street Realignment (Option)

As an alternative being considered in the DTSP Update, 6th Street may be realigned north of Orange Avenue to connect with Pecan Avenue to support implementation of the Cultural Arts Overlay. The existing curved segment of 6th Street between Orange Avenue and Main Street would be vacated. The portion of Pecan Avenue between 6th Street and Acacia Avenue would be reopened to traffic to connect with 6th Street and would be renamed 6th Street. The intersection of Acacia Avenue, 6th Street, and Main Street would be reconfigured so that 6th Street intersects Main Street at a perpendicular angle directly across from Acacia Avenue. The area north of the intersection would be redeveloped as green space. Across Main Street, the portion of the roadway between Main Street and Lake Street would remain as Frankfort Avenue. Although additional analysis would be required to further decongest the reconfigured intersection, the portion of Acacia Avenue between 6th Street and 7th Street could be closed to vehicles and open only to pedestrian and bicycle traffic at this location.

Descriptions of additional DTSP Update improvements and changes relating to street improvements, public transportation, parking, bicycle facilities, pedestrian facilities are provided in subsequent relevant sections.

4.12.1 Environmental Setting

1. Existing Transportation Systems

Regional access to the Downtown area is provided by the San Diego (I-405) Freeway and Pacific Coast Highway (State Route 1) (also known as PCH or SR-1), both of which run in a northwest-to-southeast orientation in the general vicinity of the project area. The San Diego Freeway is located approximately 5.5 miles to the north, and can be accessed from the downtown area via Main Street to Beach Boulevard, or via Goldenwest Street. Pacific Coast Highway runs along the south side of the downtown area, and is an interstate highway that traverses through and beyond the City to the north and the south.

Local access to the project area is provided by a number of local major and minor roadways leading to and from the project area. The following discussion provides a description of the existing roadway characteristics in the vicinity of the proposed project area.

a. Existing Roadways

Pacific Coast Highway (SR-1) is a State Highway, oriented in a northwest-southeast direction. Pacific Coast Highway extends throughout the State of California and provides regional access to the project site. In the vicinity of the downtown core, Pacific Coast Highway provides six travel lanes divided by a raised median between 6th Street and 1st Street. North of 6th Street, Pacific Coast Highway becomes a four-lane divided facility with metered parallel parking. Pacific Coast Highway is a Caltrans facility, and all study intersections along Pacific Coast Highway are Caltrans-controlled intersections.

Beach Boulevard (State Route 39) is designated as a Smart Street on the County of Orange Master Plan of Arterial Highways (MPAH) through the City of Huntington Beach. Beach Boulevard is also a Caltrans facility. All study intersections along Beach Boulevard are Caltrans-controlled intersections. Beach Boulevard currently provides eight lanes north of Ellis Avenue/Main Street and six lanes between Ellis Avenue/Main Street and Pacific Coast Highway.

Goldenwest Street is a six-lane road divided by a raised median. Goldenwest Street is oriented in a northeast-southwest direction, starting at Pacific Coast Highway and extending through the City of Huntington Beach, continuing into the City of Westminster. Parking is prohibited on both sides of the road. Goldenwest Street is classified as a six-lane Major Roadway on the City's Circulation Plan.

17th Street is a two-lane divided roadway oriented in a northeast-southwest direction, starting at Pacific Coast Highway and ending at Main Street. Non-metered parallel parking is allowed on both sides of the road. 17th Street is classified as a four-lane Primary Roadway on the City's Circulation Plan.

9th Street is a two-lane undivided road oriented in a northeast-southwest direction, starting at Pacific Coast Highway and ending at Palm Avenue. Parking is allowed on both sides of the street along the entire length of 9th Street.

6th Street is a two-lane road with two undivided lanes and street parking between Pacific Coast Highway and Orange, widening to provide a painted center median between Main and Orange. Parking is allowed on both sides of the street. 6th Street is classified as a four-lane Primary from Pacific Coast Highway to Orange Avenue, and as a four-lane Secondary between Orange Avenue and Main Street on the City's Circulation Plan and on the Orange County Master Plan of Arterial Highways (MPAH).

Main Street extends through and beyond the downtown area, starting at Pacific Coast Highway and ending at Beach Boulevard. Main Street is currently a two-lane undivided road through the downtown area with a combination of diagonal and parallel metered street parking throughout the downtown, and unmetered street parking north of downtown. The posted speed limit on Main Street is 25 to 35 mph.

Lake Street/3rd Street is a northeast-southwest roadway starting as Lake Street at Yorktown Avenue, changing to 3rd Street at Orange Avenue, and ending at Walnut Street. Lake Street is a two-lane roadway with a painted median and parking and bike lanes on both sides of the street between Yorktown Avenue and 6th Street. Lake Street narrows north of Orange Avenue and the bike lane becomes a signed bike route. South of Orange Avenue, 3rd Street provides one lane in each direction with metered parking on both sides of the street. The speed limit on Lake Street is 30 to 35 mph. Lake Street is classified as a four-lane Primary Roadway north of Orange Avenue on the City's Circulation Plan and on the County of Orange MPAH.

1st Street extends from Pacific Coast Highway to Atlanta Avenue/Orange Avenue and currently provides two travel lanes and a center median. Metered on-street parking is provided on the west side of the street. 1st Street is designated as a four-lane Primary Arterial on the City's Circulation Plan and on the County of Orange MPAH.

Walnut Avenue is a two-lane undivided road oriented in a northwest-southeast direction paralleling Pacific Coast Highway, starting at Goldenwest Street and ending at 1st Street. Parking is allowed on both sides of the street, with metered parking through Downtown. Walnut Avenue is classified as a Secondary Roadway between 6th Street and 1st Street on the City's Circulation Plan and on the County of Orange MPAH. Between 2nd Street and 1st Street, Walnut Avenue currently follows a diagonal northwest to southeast course, connecting with 1st Street approximately 200 feet south of its ultimate alignment, which is shown on the Circulation Plan to continue straight across 2nd Street and connect at 1st Street with the future Pacific View Avenue through the Pacific City development.

Pacific View Avenue is a four-lane roadway with a raised median between Huntington Street and Beach Boulevard. Parking is prohibited on both sides of the street. Pacific View Avenue is planned to extend from its current terminus at Huntington Street westward through the Pacific City development to connect with Walnut Avenue at 1st Street. Pacific View Avenue is classified as a Primary Roadway on the City's Circulation Plan and on the County of Orange MPAH. The development plans for Pacific City show Pacific View Avenue to be a two-lane divided roadway with angled parking along the south side of the street throughout the Pacific City development.

Olive Avenue is a two-lane undivided road oriented in a northwest-southeast direction, starting at Goldenwest Street and ending at 1st Street. Parking is allowed on both sides of the street, with metered parking through downtown.

Orange Avenue is a two-lane undivided road oriented in a northwest-southeast direction, from Goldenwest Street to 1st Street, and then becoming Atlanta Avenue east of 1st Street. Parking is allowed on both sides of the street. Through the downtown area, Orange Avenue is classified as a four-lane Primary Roadway on the City's Circulation Plan and on the County of Orange MPAH.

Atlanta Avenue extends from the intersection of Orange Avenue and 1st Street eastward through the City, terminating east of Brookhurst Street at the City boundary. Between 1st Street and Huntington Street, Atlanta Avenue is currently a two-lane undivided roadway. With the development of the Pacific City site, Atlanta Avenue will be widened to provide a four-lane divided roadway. Atlanta

Avenue is classified as a four-lane Primary Roadway on the City's Circulation Plan and on the County of Orange MPAH.

Additional local streets serving the DTSP area include Acacia Avenue, Frankfort Avenue, Pecan Avenue at the north end of downtown, and the "numbered streets" to the west of Main Street, including 5th Street, 7th Street, and 8th Street.

The existing transportation system operating characteristics, including lane configurations and traffic control at the study intersections are shown on Exhibit 4.12-2.

b. Public Transportation Service

The Orange County Transportation Authority (OCTA) provides local and regional bus service to the City.

Exhibit 4.12-3, - Existing Transit Service illustrates the bus routes operated by OCTA to the Huntington Beach Downtown Area. OCTA operates Routes 1, 25, 29, and 172 within the Huntington Beach Downtown area. The locations of bus stops in the downtown area are also shown on Exhibit 4.12-3. A bus layover zone for all four routes is located on the ocean side of Pacific Coast Highway between Main Street and 1st Street. Enhancements to the layover area are planned to provide passenger amenities, such as bus benches and shelters.

OCTA Route 1 operates between the City of Long Beach and the City of San Clemente via Pacific Coast Highway, which runs along the edge of downtown Huntington Beach. Route 1 starts in San Clemente at El Camino Real and Avenida Santa Margarita and continues north through the cities of Dana Point, Laguna Beach, Newport Beach, Huntington Beach, Seal Beach and Long Beach; where it eventually turns around at 7th Street and Channel. Route 1 passes through downtown Huntington Beach on Pacific Coast Highway, and operates seven days a week, from 4:30 a.m. to 11:00 p.m. on weekdays and 5:20 a.m. to 9:30 p.m. on weekends with 10- to 15-minute headways throughout the day.

OCTA Route 25 operates between the City of Fullerton and the City of Huntington Beach via Knott Avenue and Goldenwest Street in a northbound and southbound direction. Route 25 starts at the Fullerton Park-N-Ride lot at Magnolia and Orangethorpe, heads west through the City of Buena Park before it turns south on Knott Avenue through the cities of Cypress and Garden Grove; where it eventually turns into Goldenwest Street and continues south to Huntington Beach. In the Huntington Beach Downtown area, Route 25 turns around at Pacific Coast Highway and 1st Street. Route 25 operates seven days a week, from 4:50 a.m. to 11:00 p.m. on weekdays and 7:20 a.m. to 7:40 p.m. on weekends with 7- to 10-minute headways throughout the day.

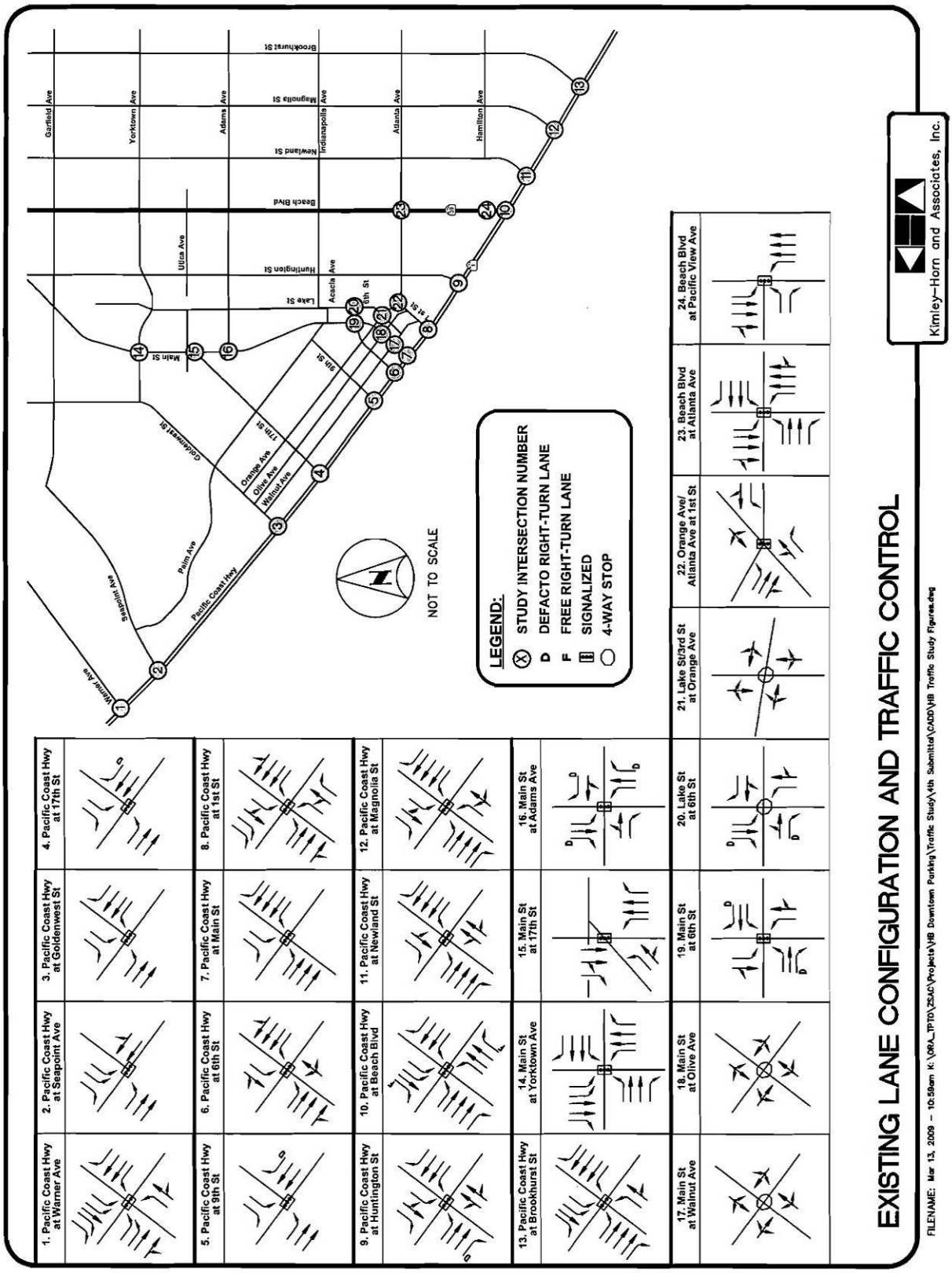

Exhibit 4.12-2 – Existing Lane Configuration and Traffic Control

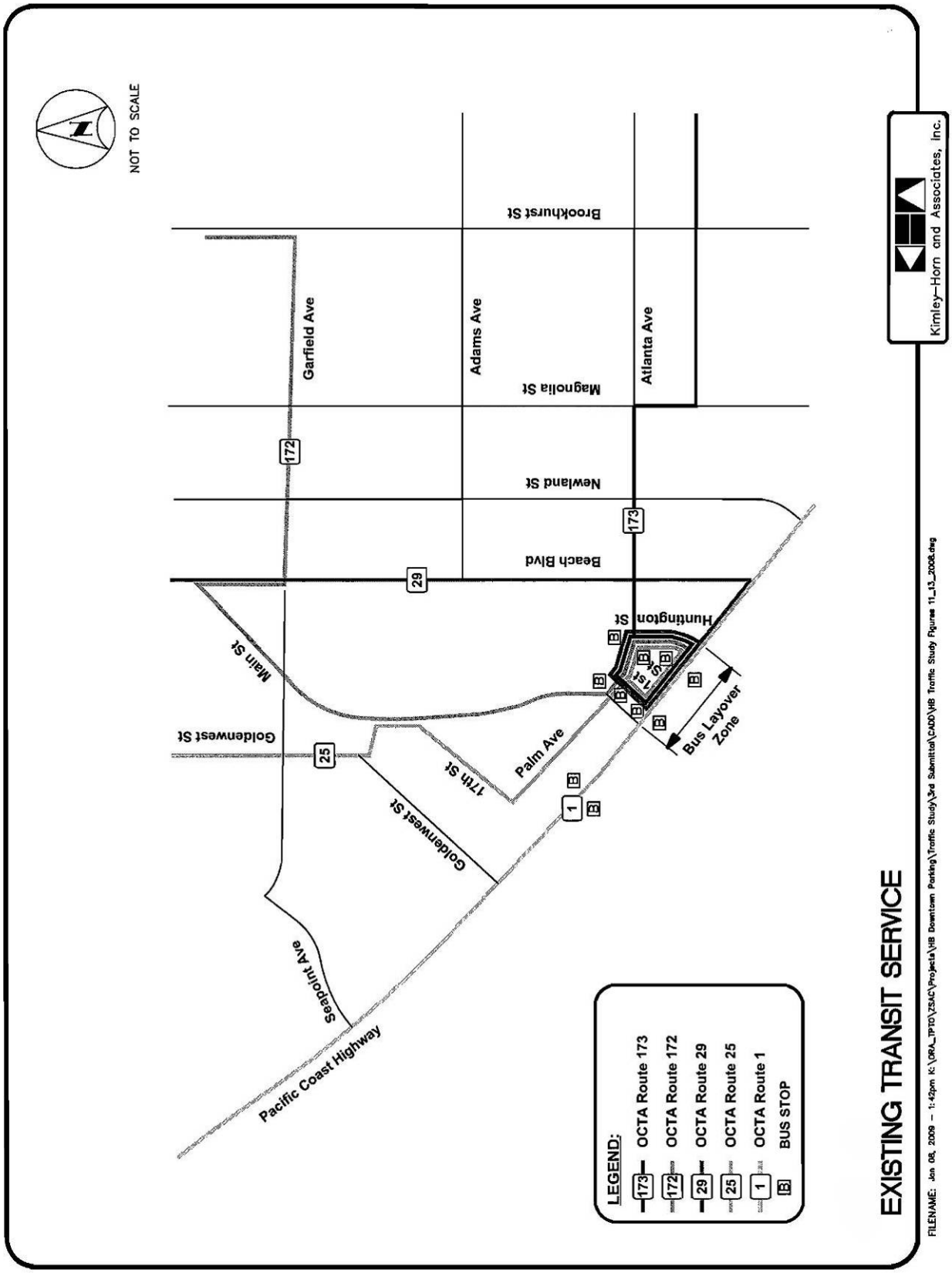

Exhibit 4.12-3 - Existing Transit Service

OCTA Route 29 operates between the City of Brea and the City of Huntington Beach via La Habra Boulevard and Beach Boulevard in a northbound and southbound direction. Route 29 starts near the Brea Mall and continues west on La Habra Boulevard through to the City of Brea before it heads south on Beach Boulevard through the cities of Buena Park, Anaheim, Stanton, Garden Grove and Westminster; where it eventually turns around at Pacific Coast Highway and 1st Street. Route 29 operates seven days a week, from 4:00 a.m. to 12:30 a.m. on weekdays and 4:30 a.m. to 11:40 p.m. on weekends with 10- to 15-minute headways throughout the day.

OCTA Route 172 operates between the City of Costa Mesa and the City of Huntington Beach via MacArthur Boulevard and Main Street in a northbound and southbound direction. Route 172 starts at Anton Avenue and Park Center in Costa Mesa and heads south through to the cities of Santa Ana and Fountain Valley. It makes a turn onto Main Street from Garfield Avenue in the City of Huntington Beach and heads southeast into downtown where it eventually turns around at Pacific Coast Highway and 1st Street. Route 172 operates seven days a week, from 6:10 a.m. to 8:50 p.m. on weekdays and 6:13 a.m. to 8:00 p.m. on weekends with 5- to 15-minute headways throughout the day.

c. Bicycle System

Existing and proposed bicycle facilities in the vicinity of the downtown are shown on Exhibit 4.12-4 – Bicycle System. A Class I trail (an off-road multi-purpose trail) runs along the ocean side of Pacific Coast Highway throughout and beyond the downtown area. On Lake Street, there is a Class II bike lane on both sides of the street from Yorktown Avenue to 6th Street. A Class II bike lane is a striped on-road bicycle lane. On Lake Street/3rd Street, from 6th Street to Walnut Avenue, the bike lane becomes a Class III bike route, which is an on-road signed-only facility. A Class II bike lane is also provided on 1st Street, between Pacific Coast Highway and Orange/Atlanta Avenue.

Outside the downtown area, Class II bike lanes also exist along Main Street, 17th Street, Adams Avenue, Yorktown Avenue, and Hamilton Avenue. The City's Bicycle Plan indicates that Class II bike lanes are planned for Atlanta Avenue, from where it meets with Orange Avenue to Newland Avenue, and for Goldenwest Street from Pacific Coast Highway to Warner Avenue.

There is substantial bicycle travel in the downtown, particularly for local residents. The existing bicycle facilities are well-used and connect residential areas with downtown. Bicyclists also frequently use the downtown streets without dedicated bicycle lanes, such as Main Street, 5th Street, and 6th Street, as well as the streets crossing Main Street; on these streets the bicyclists must share the road with vehicles.

Demand for bicycle parking downtown significantly exceeds the supply of bicycle rack parking. This shortage of formal bicycle parking does not stop people from riding their bicycles downtown. Bicyclists either do not park their bicycles, riding the bicycles throughout the downtown instead of walking, or the bicyclists park and lock their bicycles to fixed structures other than bicycle racks, including sign posts, parking meters, trees, fences, and gates.

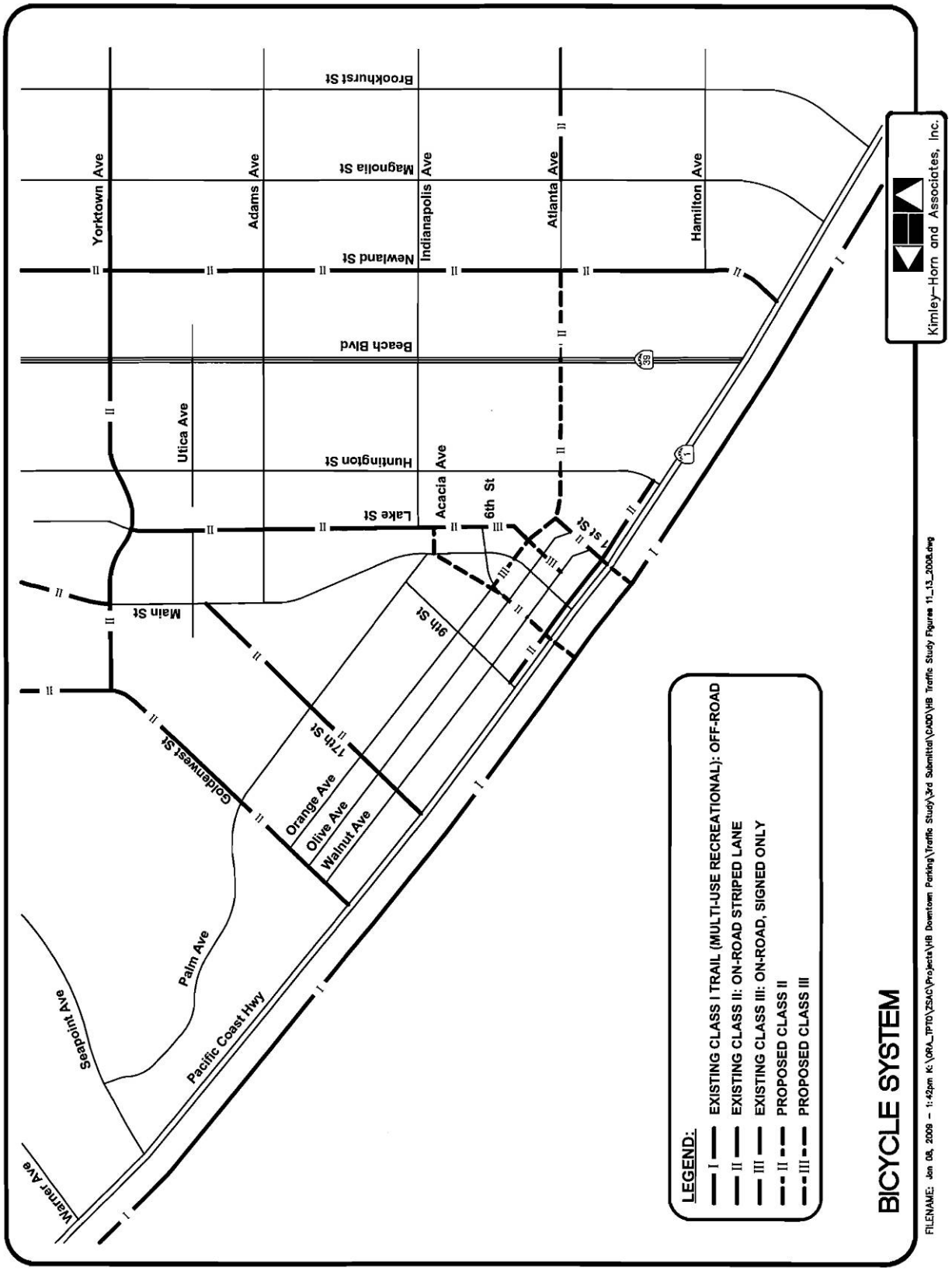

Exhibit 4.12-4 – Bicycle System

2. Existing Traffic Conditions

a. Existing Traffic Volumes

Morning and evening peak hourly traffic volume data was collected at the study intersections in August, 2008. Summer weekday peak hour traffic operating conditions have been analyzed to reflect typical commute conditions during the peak coastal activity season. Existing peak hour turning movement volumes at the study intersections are shown on Exhibit 4.12-5. Copies of the count data forms are provided in Appendix A of the Traffic Impact Analysis (refer to Volume II (Appendix F) of this Draft EIR).

b. Existing Operating Conditions

Existing operating conditions at the study intersection during the morning and evening peak hours are summarized on Table 4.12.1. The table shows that all study intersections are currently operating at an acceptable LOS D or better in both peak hours. The peak hour analysis for the intersection of Main Street at Pacific Coast Highway reflects the existing pedestrian-only phase, in which pedestrians are given a "walk" phase across all approaches to the intersection in each signal cycle.

It should be noted that although the traffic volume data was collected during a peak seasonal period, the Summer of 2008 was also an unusual time, in that gas prices had reached a high of over $4.00 a gallon, and unemployment rates in the County were also unusually high. As a result, the traffic volumes collected on some roadways and at some intersections are lower than some historical data in recent past years. As a result, the traffic Level of Service conditions reported for Existing Conditions in this report may reflect a better Level of Service than has been reported in recent past years.

The analysis for the intersection of Main Street at Pacific Coast Highway takes into account the pedestrian-only phase during each signal cycle, in which only pedestrian crossing movements are allowed on all four legs of the intersection. This pedestrian-only phase accounts for roughly 30% of each signal cycle, which reduces the intersection capacity for vehicular movement through the intersection.

3. Existing Parking Conditions

The public parking supply includes all on-street spaces, City-owned off-street parking facilities, privately owned off-street parking facilities that are available to the general public, and privately owned off-street parking lots that are available for use only by the employees and customers of some businesses. There are currently 1,875 parking spaces located within the DTSP area and 397 spaces downtown. Of the total, 760 spaces are located on streets and 1,512 are located in off-street facilities. Analysis of the current parking demand did not include off-street parking spaces reserved for residential uses.

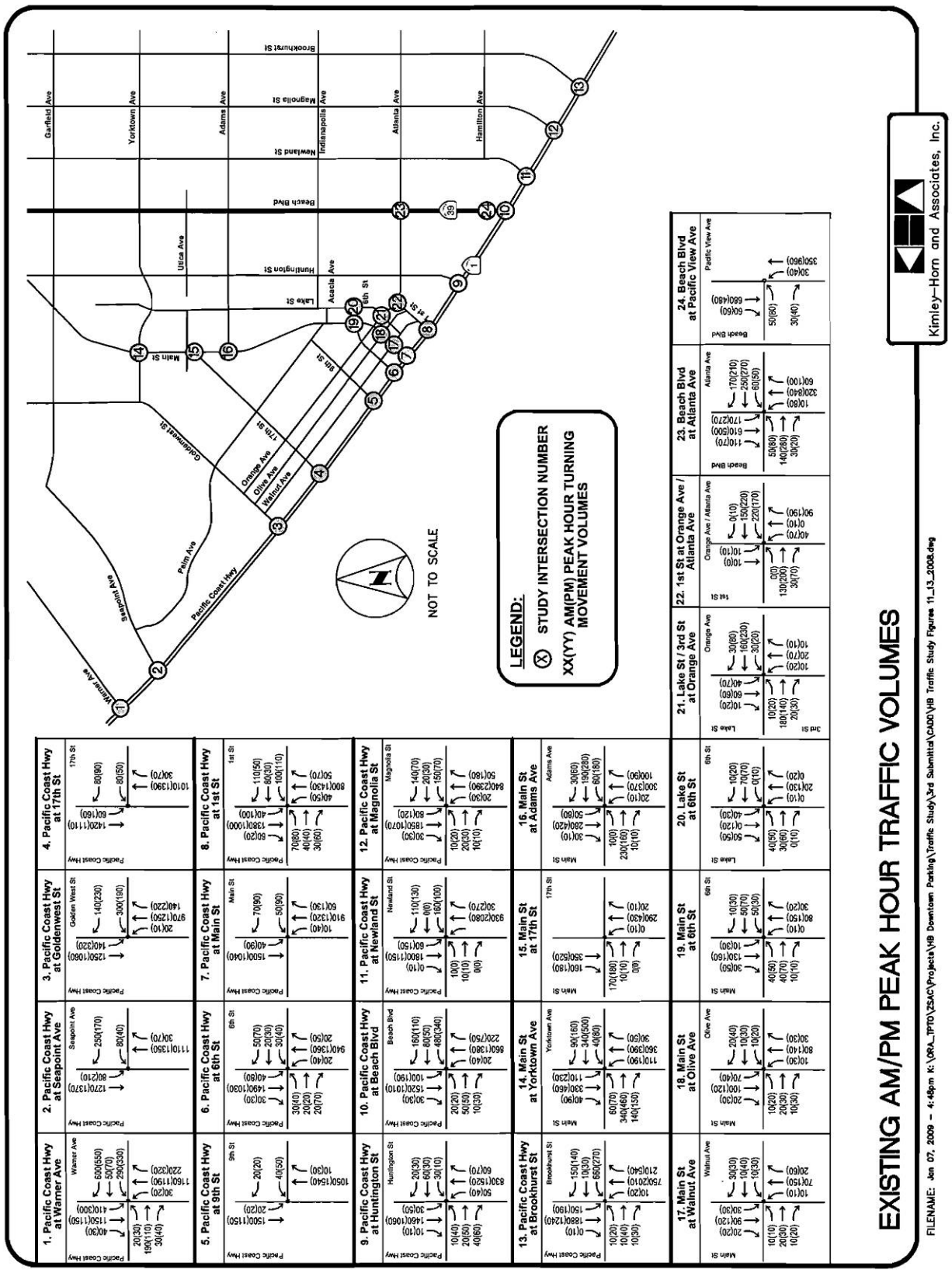

Exhibit 4.12-5 – Existing AM/PM Peak Hour Traffic Volumes

Table 4.12.1
Existing Traffic Conditions Summary of Intersection Operation

Int. #	Intersection	Control	AM Peak Hour			PM Peak Hour		
			Delay / ICU		LOS	Delay / ICU		LOS
Pacific Coast Highway at:								
1	Warner Avenue	S	26.4	sec/veh	C	23.8	sec/veh	C
		S	0.73	v/c	C	0.67	v/c	B
2	Seapoint Avenue	S	14.3	sec/veh	B	13.5	sec/veh	B
		S	0.58	v/c	A	0.69	v/c	B
3	Goldenwest Street	S	19.5	sec/veh	B	21.4	sec/veh	C
		S	0.61	v/c	A	0.74	v/c	C
4	17th Street	S	6.2	sec/veh	A	9.4	sec/veh	A
		S	0.52	v/c	A	0.61	v/c	A
5	9th Street	S	2.3	sec/veh	A	2.6	sec/veh	A
		S	0.52	v/c	A	0.54	v/c	A
6	6th Street	S	6.6	sec/veh	A	12.2	sec/veh	B
		S	0.42	v/c	A	0.47	v/c	A
7	Main Street	S	14.3	sec/veh	B	20.0	sec/veh	B
		S	0.64	v/c	B	0.67	v/c	B
8	1st Street	S	14.6	sec/veh	B	14.8	sec/veh	B
		S	0.44	v/c	A	0.48	v/c	A
9	Huntington Street	S	7.0	sec/veh	A	8.2	sec/veh	A
		S	0.55	v/c	A	0.58	v/c	A
10	Beach Boulevard	S	18.2	sec/veh	B	18.0	sec/veh	B
		S	0.67	v/c	B	0.72	v/c	C
11	Newland Street	S	10.4	sec/veh	B	10.8	sec/veh	B
		S	0.50	v/c	A	0.63	v/c	B
12	Magnolia Street	S	12.6	sec/veh	B	9.8	sec/veh	A
		S	0.53	v/c	A	0.65	v/c	B
13	Brookhurst Street	S	21.9	sec/veh	C	17.3	sec/veh	B
		S	0.63	v/c	B	0.68	v/c	B
Main Street at:								
14	Yorktown Avenue	S	0.35	v/c	A	0.48	v/c	A
15	17th Street	S	0.25	v/c	A	0.32	v/c	A
16	Adams Avenue	S	0.43	v/c	A	0.59	v/c	A
17	Walnut Avenue	U	7.7	sec/veh	A	8.6	sec/veh	A
18	Olive Avenue	U	8.1	sec/veh	A	8.7	sec/veh	A
19	6th Street	S	0.20	v/c	A	0.25	v/c	A
Lake Street at:								
20	6th Street	U	8.0	sec/veh	A	9.2	sec/veh	A
21	Orange Avenue	U	8.9	sec/veh	A	10.2	sec/veh	B
Orange Avenue/Atlanta Avenue at:								
22	1st Street	S	0.29	v/c	A	0.35	v/c	A
Beach Boulevard at:								
23	Atlanta Avenue	S	20.9	sec/veh	C	22.1	sec/veh	C
		S	0.34	v/c	A	0.53	v/c	A
24	Pacific View Avenue	S	7.3	sec/veh	A	8.3	sec/veh	A
		S	0.24	v/c	A	0.29	v/c	A

S = Signalized, U = Unsignalized
Intersection operation is expressed in average seconds of delay per vehicle during the peak hour for HCM 2000 Methodology and is expressed in volume-to-capacity (v/c) for ICU Methodology

Four existing parking structures are located downtown, and all are pay facilities available to the general public. All other off-street parking is privately-owned, with use generally restricted to the patrons of those businesses. A detailed analysis of existing parking conditions, as well as strategies and action items to address existing parking issues, is provided in Appendix D (Downtown Huntington Beach Parking Master Plan Study, dated March 2009) of the Specific Plan.

Parking in the downtown area is seasonal in nature, with significant fluctuations throughout the day, week, and year influenced heavily by beach-goers. The current parking supply generally accommodates the typical demand on weekdays and weekends during the non-peak seasons. The demand increases with at-capacity or over-capacity conditions occurring during peak summer days, particularly on weekends. The parking demand exceeds the supply on summer holidays and special event days.

4.12.2 Significance Criteria

1. Impact Criteria and Thresholds

Impacts resulting from implementation of the project would be considered significant if the project would:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (e.g., result in a substantial increase in the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections
- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated
- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways
- Result in inadequate parking capacity

The following CEQA significance criteria were concluded to have “no impact” or “less than significant impact” in the Notice of Preparation (NOP) and therefore required no further analysis in the EIR.

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses
- Result in inadequate emergency access
- Conflict with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks)

The relative impact of the added project traffic volumes generated by the proposed project was evaluated based on analysis of future operating conditions at the 24 key study intersections identified

for the proposed project. The capacity analysis procedures described in Section 4.12.3 (page 4-188 below) were utilized to investigate the future volume-to-capacity relationships and service level characteristics at each study intersection. The significance of the potential impacts of the project at each key intersection and roadway segments was then evaluated using City of Huntington Beach and Caltrans LOS standards and significant transportation impact criteria as described below. In addition, the project parking impacts were evaluated to determine if inadequate parking would result from project implementation.

2. Level of Service Standard

In accordance with the General Plan, LOS D is the acceptable Level of Service for peak hour operation at city intersections.

For intersections that are designated as part of the Congestion Management Program (CMP) Highway System, the acceptable Level of Service is LOS E. The designated CMP routes in the vicinity of the project are Warner Avenue, Pacific Coast Highway, Beach Boulevard, and Adams Avenue.

For state-controlled intersections, LOS standards and impact criteria specified by Caltrans will apply. The Caltrans Guide for the Preparation of Traffic Impact Studies states that "Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on state highway facilities; however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. In consultation with Caltrans, it was determined that the target Level of Service for Caltrans-controlled intersections will be an average delay of 55.0 seconds in the peak hours (LOS D).

3. Performance Criteria

Performance criteria are established in order to determine what mitigation measures would be required of the development based on its impacts. Project mitigation would be required in the following circumstances:

- Intersections: If the intersection in question exceeds the acceptable LOS and the impact of the development results in a v/c impact of 0.01 or more, the impact is considered to be significant. Project mitigation is typically required to achieve a v/c ratio of 0.90 or baseline, if baseline is greater than 0.90.
- CMP Intersections: According to the CMP, in order to be in compliance with congestion management guidelines, mitigation is required when the v/c ratio increases beyond 0.10 above the baseline condition, when the base condition is greater than LOS E.
- Caltrans Intersections: In consultation with Caltrans District 12 staff, it was determined that a significant traffic impact for Caltrans intersections is defined as a project-related delay value greater than or equal to LOS E (55.1 sec/veh) which

requires mitigation by reducing the intersection delay to LOS D (55.0 sec/veh) or baseline, if the baseline is LOS E or F (greater than or equal to 55.1 sec/veh). Baseline is defined as the pre-project condition.

4. Orange County Congestion Management Plan

The Orange County Congestion Management Program (CMP) was established in 1991 to reduce traffic congestion and to provide a mechanism for coordinating land use and development decisions. Compliance with the CMP requirements ensures a city's eligibility to compete for State gas tax funds for local transportation projects. Within the defined CMP highway network, intersections are not allowed to deteriorate to a condition which is worse than LOS E or the base year LOS, if worse than E, without mitigation being prescribed in an acceptable deficiency plan.

Within the City, the CMP Highway System includes portions of Pacific Coast Highway, Adams Avenue, Warner Avenue, Beach Boulevard, Bolsa Street, and Bolsa Chica Road. There are three CMP intersections within the study area:

- Pacific Coast Highway and Warner Avenue
- Pacific Coast Highway and Beach Boulevard
- Beach Boulevard and Adams Avenue

The Orange County CMP also states that "a TIA will be required for CMP purposes for all proposed developments generating 2,400 or more daily trips," and that "for developments which will directly access a CMP Highway System link, the threshold for requiring a TIA should be reduced to 1,600 or more trips per day." The project is estimated to generate approximately 13,397 daily trips. Given the number of daily trips forecasted to be generated by the project, a CMP level of analysis is also required for the project.

4.12.3 Impacts

1. Analysis Methodology

The traffic impact analysis for the project has been prepared in accordance with City and applicable agency requirements, as outlined below. Where appropriate and required, the analysis complies with the traffic impact analysis requirements of the State of California Department of Transportation (Caltrans), as outlined in the Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002). A description of the level of analysis methodology, Level of Service standards and significance criteria applied in this traffic impact analysis is provided below.

a. Intersection Capacity Utilization (ICU) Methodology

For this analysis, the peak hour Level of Service at all non-Caltrans controlled signalized intersections is evaluated using the Intersection Capacity Utilization (ICU) methodology. The ICU methodology provides a comparison of the theoretical hourly vehicular capacity of an intersection to the number of vehicles actually passing through that intersection during a given hour.

The ICU calculation assumes a per-lane capacity of 1,700 vehicles per hour (vph) for each travel lane (through or turning lane) through the intersection. Where there is no separately striped right-turn lane, if the width of the outside through lane is at least 19 feet, and parking is prohibited during the peak period, a separate *de-facto* right-turn lane is assumed. A clearance factor of 0.05 (5%) of the total intersection capacity is included in the ICU calculation.

The ICU calculation returns a volume-to-capacity (V/C) ratio, which translates into a corresponding LOS ranging from LOS A, representing uncongested, free-flowing conditions, to LOS F, representing severely congested, over-capacity conditions. A summary description of each Level of Service and the corresponding V/C ratio is described in Table 4.12.2.

Table 4.12.2
Level of Service Descriptions for Signalized Intersections

Level of Service	ICU Value	Description
A	0.00 - 0.60	At this LOS, traffic volumes are low and speed is not restricted by other vehicles. All signal cycles clear with no vehicles waiting through more than one original cycle.
B	0.61 - 0.70	At this LOS, traffic volumes begin to be affected by other traffic. Between 1% and 10% of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods.
C	0.71 - 0.80	At this LOS, operating speeds and maneuverability are closely controlled by other traffic. Between 11% and 30% of the cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods.
D	0.81 - 0.90	At this LOS, traffic will operate at tolerable operating speeds, although with restricted maneuverability.
E	0.91 - 1.00	Traffic will experience restricted speeds, vehicles will frequently have to wait through two or more cycles at signalized intersections, and any additional traffic will result in breakdown of the traffic carrying ability of the system.
F	> 1.00	Long queues at traffic signals, unstable flow, stoppages of long duration with traffic volumes, and traffic speed can drop to zero. Traffic volumes will be less than the volume which occurs at Level of Service E.

b. Highway Capacity Manual (HCM) Methodology

All Caltrans-controlled signalized intersections (intersections located on a State Highway, i.e., Pacific Coast Highway and Beach Boulevard) are analyzed in two ways. To meet the requirements of the City, all Caltrans-controlled intersections are analyzed using the Intersection Capacity Utilization (ICU) methodology described above. In addition, in accordance with Caltrans requirements, Caltrans-controlled intersections are also analyzed using the methodology contained in the Highway Capacity Manual, 2000 Edition. The 2000 HCM methodology measures average delay per vehicle based on a number of technical parameters, such as peak hourly traffic volumes, number of lanes, type of operation (signalized or unsignalized), and signal phasing in the calculations.

The qualitative A through F LOS scale is measured quantitatively using "measures of effectiveness." The measure used depends on the type of facility being assessed. A summary of each LOS and the corresponding control delay for signalized and unsignalized intersections are provided in Table 4.12.1.

Table 4.12.1
Level of Service Ranges

Level of Service	Signalized Intersections: Average Delay per Vehicle (sec)	Unsignalized Intersections: Average Delay per Vehicle (sec)
A	≤10	≤10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Source: Highway Capacity Manual, 2000

Unsignalized intersections are analyzed using the Highway Capacity Manual (HCM) analysis methodology for stop-controlled intersections.

This traffic study includes documentation of Existing Conditions, Cumulative Conditions (Year 2020) without and with the Project, and Forecast Year 2030 without and with the Project, and identification of project-related impacts and mitigation.

c. Study Area Determination

The study area was developed in consultation with the City of Huntington Beach Public Works Engineering and Caltrans District 12 Transportation staff. Traffic impact analyses were conducted for 24 key study area intersections shown in Exhibit 4.12-6.

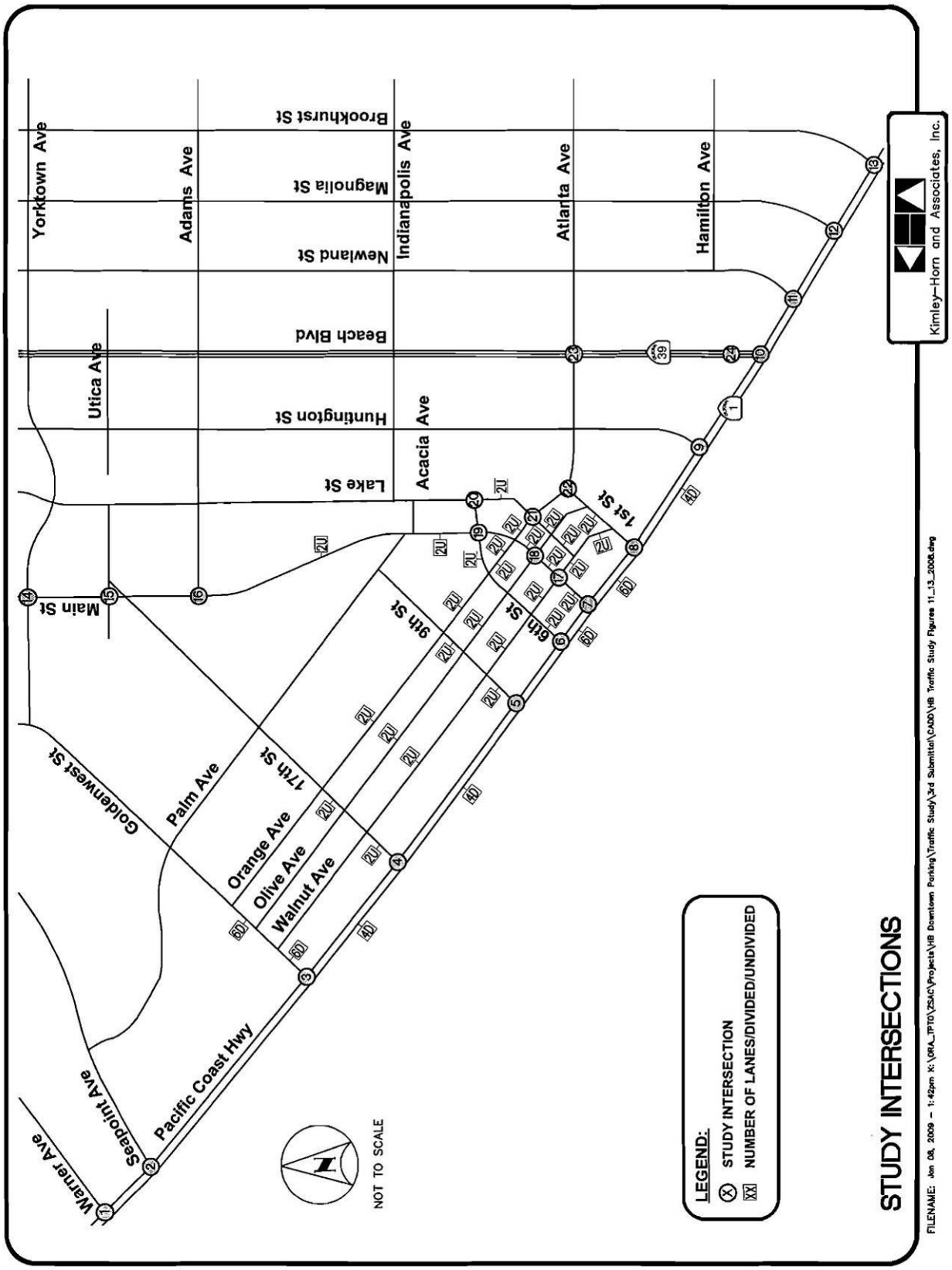

Exhibit 4.12-6 – Study Intersections

2. Significance Criteria

- *Would the project cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (e.g., result in a substantial increase in the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?*
- *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*
- *Would the project exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?*

a. Traffic Impact Analysis Scenarios

The traffic impact analysis evaluated morning and evening peak hour conditions at the study intersections for typical summer weekday conditions. Summer weekday conditions in downtown Huntington Beach represent a slightly higher condition than non-summer, due to its proximity to the beach and its visitor-serving draw. The following scenarios have been analyzed:

- Existing Conditions
- Cumulative Conditions Year 2020 without and with Project
- Forecast Year 2030 without and with Project.

In addition, a number of network alternatives were analyzed. The DTSP Update proposes as an option to realign 6th Street between Orange Avenue and Main Street. In addition to this proposed network change, three other network options have been evaluated. Each of the three additional options addresses varying degrees of closure of Main Street in the downtown core. While these Main Street closure options are not specifically proposed by in the DTSP Update, they are evaluated in the project traffic impact analysis to address alternative configurations for Main Street that have been discussed as potential options in the past. The four network alternatives analyzed include:

- Alternative 1 – Main Street Closure Pacific Coast Highway to Orange, with no cross traffic on Olive and Walnut
- Alternative 2 – Main Street Closure Pacific Coast Highway to Orange, with cross traffic on Olive and Walnut
- Alternative 3 – Main Street Closure from Walnut to Olive only
- Alternative 4 – 6th Street realignment between Orange Avenue and Main Street (proposed in the DTSP Update)

b. Project Traffic

Project Trip Generation

The DTSP Update project represents the potential for development of additional downtown resident- and visitor-serving uses throughout the downtown area and contemplates the following development thresholds:

- Retail – 213,467 square feet
- Restaurant – 92,332 square feet
- Office – 92,784 square feet
- Cultural facilities – 30,000 square feet
- Residential (condominium / townhome) – 648 units
- Hotel – 235 rooms

Although no actual development plans have yet been presented, the DTSP Update has identified key opportunity areas throughout the Downtown. Many of these key opportunity sites are currently developed with existing, occupied and operating uses. The development potential identified in the DTSP Update represents development increases over existing development levels in the downtown, and may, in some cases, represent new development that replaces a prior existing use. Trip generation for the development contemplated by the DTSP Update, therefore, also represents net new trip-making potential, over and above traffic currently being generated by existing uses in the downtown.

Trip generation estimates for the project were developed using the Institute of Transportation Engineers (ITE) publication "Trip Generation," 7th Edition. The trip generation rates and equations for each of the project components are summarized in the traffic impact analysis. The resulting project trip generation estimates are shown in the table below.

Table 4.12.2
Project Trip Generation

Land Use	Quantity	ADT	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
820 - Retail / Restaurant	305,799 sq.ft.	13,131	192	123	315	396	429	826
Internal Capture (20%/20%/19%)		(2,626)	(38)	(25)	(63)	(75)	(82)	(157)
Mode Shift (15%)		(1,970)	(29)	(18)	(47)	(59)	(64)	(124)
710 - General Office	92,784 sq.ft.	1,022	127	17	144	24	115	138
Internal Capture (15%/15%/13%)		(153)	(19)	(3)	(22)	(3)	(15)	(18)
Mode Shift (15%)		(153)	(19)	(3)	(22)	(4)	(17)	(21)
310 - Hotel	235 rooms	1,920	80	51	132	73	65	139
Internal Capture (28%/28%/42%)		(538)	(22)	(14)	(37)	(31)	(27)	(58)
Mode Shift (15%)		(288)	(12)	(8)	(20)	(11)	(10)	(21)
230 - Residential Condo/Townhome	648 dwelling units	3,797	48	237	285	226	111	337
Internal Capture (20%/20%/27%)		(759)	(10)	(47)	(57)	(61)	(30)	(91)
Mode Shift (15%)		(570)	(7)	(35)	(43)	(34)	(17)	(51)

Table 4.12.2
Project Trip Generation

Land Use	Quantity	ADT	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Cultural Arts Center: Live Theater	150 seats	264	0	0	0	2	2	3
Cultural Arts Center: Museum	30,000 sq.ft.	320	0	0	0	8	15	23
TOTAL TRIP GENERATION		20,454	447	428	876	729	737	1,465
NET TRAFFIC GENERATION		**13,397**	**291**	**275**	**566**	**451**	**475**	**925**

Source: Institute of Transportation Engineers (ITE) Trip Generation (7th Edition)
ADT = Average Daily Traffic
(xx%/yy%/zz%) = (Daily/AM Peak/PM Peak)

Internal Capture and Mode Shift

With regard to trip-generating potential, one characteristic of multi-use developments is the potential for a number of beneficial interactions among a variety of uses in terms of walk trips or shared vehicular trips between land uses. These interactions represent the potential for a reduction in the number of trips assumed for the new development. For example:

- Patrons of the proposed hotel or the workers in the proposed office space may also patronize the proposed new restaurants and shops on the same trip.
- There also exists the opportunity for patrons of each of the new businesses to interact on the same trip with the other already-existing downtown uses, including other retail, restaurant, and office uses, existing residential, and the beach and pier recreational uses.
- Moreover, people who are already patrons of the existing businesses in the downtown, or visitors to the beach and pier, may use the same trip to patronize the new development.
- In addition to the potential for shared trips between multiple existing and future uses, residents of both the new residential units and of the existing downtown and surrounding neighborhood will be able to walk or bicycle to the downtown, eliminating some vehicular trips altogether.
- The provision of a downtown trolley system and enhancement of the bicycle facilities in the downtown area will also enhance the potential for reducing or eliminating trips associated with the new development. A trolley system and additional bike lanes will allow downtown visitors to conveniently circulate between development areas within the downtown, and will also allow nearby residents to get to and from downtown without driving.

The resulting potential for reduction in vehicular trips is known as internal capture and mode shift. As a result of these factors, the total inbound and outbound vehicular trips for the project are likely to be reduced compared to a "stand alone" use. The ITE Trip Generation Handbook (Second Edition)

provides the methodology for estimating the percentage of internal capture for multi-use developments. Internal capture potential for the potential new DTSP development was calculated, and the calculation spreadsheets are provided in the appendices of the Traffic Impact Analysis contained in Volume II of this EIR.

The internal capture and mode shift percentages for each use and for each time period are shown on the Table 4.12.2 above. The project is forecasted to generate approximately 13,397 trips per day, with 291 inbound and 275 outbound trips in the morning peak hour, and 451 inbound and 475 outbound trips in the evening peak hour.

Project Trip Distribution and Assignment

Project traffic will approach and depart the development areas via the existing downtown grid street system, similar to current traffic patterns. Project trip distribution assumptions for the project area were developed based on select zone runs of the Huntington Beach Traffic Model (HBTM) and taking into account the proposed mix of uses and the location of area trip producers, such as residential population, tourist population, and employment areas. Trip assignment was conducted taking into account the multiple approach and departure opportunities provided by the downtown grid street system.

Cumulative Year 2020 Conditions

An interim year analysis has been conducted to evaluate cumulative traffic conditions in the short-term future (Year 2020). Although the DTSP has identified a 20-year build-out as the projected timing to achieve the full development potential, the entire project has been evaluated for the Cumulative Year 2020 short-term future analysis, for a conservative worst-case condition.

Cumulative traffic projections for the study intersections have been developed for the short-term future using the build-up method. Cumulative traffic forecasts consist of existing traffic levels with an annual compounded growth rate applied for each year between existing conditions and the Cumulative Year. In addition, traffic from any approved and pending projects (Cumulative Projects) in the vicinity of the project is also added to the existing volumes. Cumulative Projects consist of any project that has been approved and is not yet occupied, has been proposed and is currently being processed, or is otherwise a reasonably foreseeable project.

Ambient Growth

An ambient traffic growth rate was applied to the existing traffic volumes at each of the study area intersections. Based on build-out traffic forecasts and prior studies conducted in the downtown area, a conservative ambient traffic growth rate of 1% a year was applied to all peak hour traffic volumes.

Cumulative Projects

In addition, potential traffic from Cumulative Projects (projects that have already been approved, or are pending and likely to be approved) has been added to Existing plus Ambient Growth traffic volumes. Information regarding cumulative projects in the vicinity of the project was obtained from the planning staff of the City. In all, 12 cumulative projects were identified, including The Strand and the Pacific City projects, both of which are major projects located within the DTSP area. A list of the cumulative projects and their trip-generating potential is provided on Table 4.12.3.

Table 4.12.3
Summary of Cumulative Projects

Project Name	Location	Land Use	Quantity	ADT	AM Peak Hour		PM Peak Hour	
					In	Out	In	Out
1. The Strand	6th and Walnut	Retail / Restaurant Hotel	135,000 sq.ft. 149 rooms	7,106	220	163	324	293
2. Pacific City	PCH and 1st	Retail / Restaurant Hotel Residential	208,000 sq.ft. 250 rooms 514 dwelling units	12,002	345	283	505	546
3. Senior Center	SWC Goldenwest and Talbert	Senior Center	45,000 sq.ft.	3,395	60	274	40	110
4. Brightwater	Bolsa Chica, Co. of Orange	Single-Family Res.	346 dwelling units	3,258	63	189	206	121
5. Parkside Estates	Graham, S of Warner	Single-Family Res.	112 dwelling units	2,052	49	115	144	61
6. Ocean Breeze Plaza	Beach Blvd and Ronald Dr	General Office	9,500 sq.ft.	218	25	3	15	74
7. Harmony Cove	Warner and PCH	Single-Family Res.	15 dwelling units	182	5	15	12	7
8. Longs Drugs	NWC Beach Blvd and Newman	Drugstore	8,800 sq.ft.	794	17	11	37	37
9. Fein Medical	Liberty Ave, west of Beach Blvd.	Medical Office	6,500 sq.ft.	236	6	18	118	118
10. Waterfront – 3rd Hotel	PCH W of Beach Blvd	Hotel	250 rooms	2,043	85	55	78	70
11. Newland Residential	Newland and Hamilton	Single-Family Res.	201 dwelling units	1,976	38	113	127	74
12. Magnolia Pacific Specific Plan	Hamilton and Magnolia	Single-Family Res.	502 dwelling units	4,588	90	271	289	169
13. Mixed-Use Project	PCH and 7th	Retail Residential	4,260 sq.ft. 6 dwelling units	184 36	2 1	2 2	8 2	8 1
			Total	38,070	1,006	1,514	1,905	1,689

ADT = Average Daily Traffic

Cumulative Year 2020 Traffic Volumes Without Project

Ambient Growth and Cumulative Projects traffic were added to Existing traffic volumes, to develop Cumulative Conditions traffic volume forecasts without the proposed project. The resulting peak hour forecast volumes are provided in the project traffic impact analysis in Volume II of this EIR.

Each study intersection was analyzed with the Cumulative Conditions traffic volumes, and the results are shown on Table 4.12.4. With the addition of ambient growth and Cumulative Projects traffic, all study intersections will continue to operate at LOS D or better in both peak hours. Copies of the Traffix output intersection analysis worksheets for the Cumulative Conditions Without Project analysis are provided in the appendices of the traffic impact analysis contained in Volume II of this EIR.

Cumulative Year 2020 Plus Project Conditions

Project traffic was added to the Cumulative Conditions base traffic volumes. The resulting peak hour traffic volumes are provided in the project traffic impact analysis in Volume II of this EIR. The study intersections were analyzed for Cumulative Plus Project Conditions, and the results are summarized on Table 4.12.5. The "With Project" analysis assumes the implementation of a pedestrian-only phase at the intersections of Pacific Coast Highway at 6th Street and at 1st Street, as proposed by the DTSP Update.

With the addition of project traffic, all study intersections are forecasted to continue to operate at an acceptable LOS D or better, except the intersections of Pacific Coast Highway at 1st Street and at 6th Street. The proposed implementation of the pedestrian-only phases at these intersections reduces the capacity for the movement of vehicles by roughly 30%, and results in LOS E conditions at both intersections in the evening peak hour. The proposed pedestrian-only phase is the direct cause of the unacceptable Level of Service at these two intersections. Without the pedestrian-only phase, both intersections would operate at LOS D or better in both peak hours. Options to mitigate this impact are presented in Section 4.12.4, Mitigation Measures (page 4-229).

There are no other significant project-related impacts forecasted at the study intersections. Copies of the intersection analysis worksheets are provided in the appendices of the traffic impact analysis contained in Volume II (Appendix F) of this EIR.

Table 4.12.4
Year 2020 Cumulative Without Project Summary of Intersection Operation

Int. #	Intersection	Control	AM Peak Hour			PM Peak Hour		
			Delay / ICU		LOS	Delay / ICU		LOS
Pacific Coast Highway at:								
1	Warner Avenue	S	27.1	sec/veh	C	23.7	sec/veh	C
		S	0.83	v/c	D	0.78	v/c	C
2	Seapoint Avenue	S	14.8	sec/veh	B	15.2	sec/veh	B
		S	0.66	v/c	B	0.80	v/c	C
3	Goldenwest Street	S	20.6	sec/veh	C	24.4	sec/veh	C
		S	0.71	v/c	C	0.85	v/c	D
4	17th Street	S	6.7	sec/veh	A	10.2	sec/veh	B
		S	0.60	v/c	A	0.71	v/c	C
5	9th Street	S	2.9	sec/veh	A	3.5	sec/veh	A
		S	0.60	v/c	A	0.65	v/c	B
6	6th Street	S	11.5	sec/veh	B	18.7	sec/veh	B
		S	0.50	v/c	A	0.62	v/c	B
7	Main Street	S	15.2	sec/veh	B	20.2	sec/veh	C
		S	0.71	v/c	C	0.75	v/c	C
8	1st Street	S	16.4	sec/veh	B	18.2	sec/veh	B
		S	0.51	v/c	A	0.63	v/c	B
9	Huntington Street	S	10.0	sec/veh	A	13.2	sec/veh	B
		S	0.66	v/c	B	0.74	v/c	C
10	Beach Boulevard	S	19.5	sec/veh	B	23.0	sec/veh	C
		S	0.77	v/c	C	0.86	v/c	D
11	Newland Street	S	10.2	sec/veh	B	11.5	sec/veh	B
		S	0.58	v/c	A	0.73	v/c	C
12	Magnolia Street	S	12.2	sec/veh	B	11.0	sec/veh	B
		S	0.61	v/c	A	0.77	v/c	C
13	Brookhurst Street	S	21.2	sec/veh	C	17.9	sec/veh	B
		S	0.72	v/c	C	0.79	v/c	C
Main Street at:								
14	Yorktown Avenue	S	0.40	v/c	A	0.58	v/c	A
15	17th Street	S	0.30	v/c	A	0.38	v/c	A
16	Adams Avenue	S	0.52	v/c	A	0.71	v/c	B
17	Walnut Avenue	U	8.3	sec/veh	A	10.2	sec/veh	B
18	Olive Avenue	U	8.4	sec/veh	A	9.3	sec/veh	A
19	6th Street	S	0.29	v/c	A	0.39	v/c	A
Lake Street at:								
20	6th Street	U	8.1	sec/veh	A	9.9	sec/veh	A
21	Orange Avenue	U	9.9	sec/veh	A	13.4	sec/veh	B
Orange Avenue/Atlanta Avenue at:								
22	1st Street	S	0.34	v/c	A	0.43	v/c	A
Beach Boulevard at:								
23	Atlanta Avenue	S	28.2	sec/veh	C	32.7	sec/veh	C
		S	0.41	v/c	A	0.64	v/c	B
24	Pacific View Avenue	S	9.8	sec/veh	A	12.6	sec/veh	B
		S	0.33	v/c	A	0.39	v/c	A

S = Signalized, U = Unsignalized
Intersection operation is expressed in average seconds of delay per vehicle during the peak hour for HCM 2000 Methodology and is expressed in volume-to-capacity (v/c) for ICU Methodology

Table 4.12.5
Year 2020 Cumulative With Project Summary of Intersection Operation

Int. #	Intersection	Control	AM Peak Hour			PM Peak Hour		
			Delay / ICU		LOS	Delay / ICU		LOS
Pacific Coast Highway at:								
1	Warner Avenue	S	29.0	sec/veh	C	25.7	sec/veh	C
		S	0.84	v/c	D	0.80	v/c	C
2	Seapoint Avenue	S	15.0	sec/veh	B	15.1	sec/veh	B
		S	0.68	v/c	B	0.82	v/c	D
3	Goldenwest Street	S	22.0	sec/veh	C	25.3	sec/veh	C
		S	0.73	v/c	C	0.89	v/c	D
4	17th Street	S	6.3	sec/veh	A	9.8	sec/veh	A
		S	0.62	v/c	B	0.74	v/c	C
5	9th Street	S	2.4	sec/veh	A	2.9	sec/veh	A
		S	0.62	v/c	B	0.68	v/c	B
6	6th Street	S	19.8	sec/veh	B	27.4	sec/veh	C
		S	0.76	v/c	C	0.91	v/c	E
7	Main Street	S	18.8	sec/veh	B	26.4	sec/veh	C
		S	0.73	v/c	C	0.82	v/c	D
8	1st Street	S	29.3	sec/veh	C	35.4	sec/veh	D
		S	0.77	v/c	C	0.93	v/c	E
9	Huntington Street	S	8.3	sec/veh	A	9.8	sec/veh	A
		S	0.68	v/c	B	0.77	v/c	C
10	Beach Boulevard	S	20.8	sec/veh	C	24.9	sec/veh	C
		S	0.79	v/c	C	0.91	v/c	D
11	Newland Street	S	10.2	sec/veh	B	11.2	sec/veh	B
		S	0.59	v/c	A	0.75	v/c	C
12	Magnolia Street	S	12.4	sec/veh	B	10.4	sec/veh	B
		S	0.61	v/c	B	0.78	v/c	C
13	Brookhurst Street	S	22.6	sec/veh	C	18.1	sec/veh	B
		S	0.73	v/c	C	0.81	v/c	C
Main Street at:								
14	Yorktown Avenue	S	0.42	v/c	A	0.60	v/c	A
15	17th Street	S	0.31	v/c	A	0.40	v/c	A
16	Adams Avenue	S	0.55	v/c	A	0.77	v/c	C
17	Walnut Avenue	U	9.1	sec/veh	A	13.1	sec/veh	B
18	Olive Avenue	U	9.1	sec/veh	A	11.5	sec/veh	B
19	6th Street	S	0.34	v/c	A	0.48	v/c	A
Lake Street at:								
20	6th Street	U	8.3	sec/veh	A	10.9	sec/veh	B
21	Orange Avenue	U	11.5	sec/veh	B	23.2	sec/veh	C
Orange Avenue/Atlanta Avenue at:								
22	1st Street	S	0.36	v/c	A	0.47	v/c	A
Beach Boulevard at:								
23	Atlanta Avenue	S	22.8	sec/veh	C	24.8	sec/veh	C
		S	0.43	v/c	A	0.66	v/c	B
24	Pacific View Avenue	S	9.9	sec/veh	A	12.9	sec/veh	B
		S	0.33	v/c	A	0.40	v/c	A

S = Signalized, U = Unsignalized
Intersection operation is expressed in average seconds of delay per vehicle during the peak hour for HCM 2000 Methodology and is expressed in volume-to-capacity (v/c) for ICU Methodology

Cumulative Year 2020 Project Mitigation

The traffic impact analysis indicates that for Cumulative Year 2020 conditions, the proposed DTSP Update will result in significant impacts at two study intersections. The implementation of the proposed pedestrian-only phase would result in LOS E or F conditions at the intersections of:

- Pacific Coast Highway at 1st Street (PM peak - LOS E), and
- Pacific Coast Highway at 6th Street (PM peak - LOS E)

Mitigation options for this impact include:

- Implement time-of-day signal timing options that would implement the pedestrian-only phase during peak pedestrian flow periods, such as summer weekends and special event days, and eliminate the pedestrian-only phases during the morning and evening commute peak periods. (Note: While this option would have the benefit of facilitating peak pedestrian traffic flows during peak activity periods, it would also result in additional delay for vehicular traffic movements during these same peak activity periods.)
- If the proposed pedestrian-only phase were to be implemented, and operational at all times, including the AM and PM commute peak periods, in order to achieve an acceptable Level of Service, a second southbound left-turn lane from Pacific Coast Highway onto 1st Street and a second southbound left-turn lane from Pacific Coast Highway onto 6th Street would be needed to mitigate the impact of the proposed pedestrian-only phases. This improvement at either intersection would involve roadway widening and right-of-way acquisition on Pacific Coast Highway, and would require Caltrans coordination and approval, and may be found to not be feasible.
- Removal of the pedestrian-only phase altogether (which would mean not implementing the DTSP recommendations) would improve the Level of Service at both intersections to LOS D or better in both peak hours.

Cumulative Year 2030 Conditions

Year 2030 forecast peak hour volumes for the long-term future conditions were developed using the City of Huntington Beach Traffic Model (HBTM), which is currently maintained and operated by the General Plan Circulation Element Update traffic consultant, Austin Foust and Associates.

The Huntington Beach Traffic Model forecasts assume improvements to the City's transportation network that reflect committed (funded) network improvements and forecasted development levels for Year 2030. Within the study area, the network contained in the HBTM would include the following improvements or additions to the transportation network:

- Completion of Pacific View Avenue as a two-lane divided roadway between Huntington Street and 1st Street.

- Re-opening of 5th Street as a two-lane roadway between Walnut Avenue and Pacific Coast Highway through The Strand development.

Cumulative Year 2030 Traffic Without Project Conditions

A copy of the Huntington Beach Traffic Model output provided by the General Plan Circulation Element Update consultant is included in the appendices of the traffic impact analysis contained in Volume II of this EIR. Traffic forecasts for Year 2030 Base Case (without the DTSP Update development) assume the approved land uses and densities for the downtown area assumed in the existing General Plan. Year 2030 peak hour traffic volumes at the study intersections are provided in the project traffic impact analysis in Volume II of this EIR.

Intersection operations for Year 2030 without Project Conditions were evaluated and the results are summarized on Table 4.12.6. The results indicate that, under Year 2030 Without Project conditions, two intersections are forecasted to operate at an unacceptable Level of Service (LOS E or F):

- Goldenwest Street at Pacific Coast Highway (PM peak – LOS E)
- Orange Avenue at Lake Street (PM peak – LOS F)

All other study intersections are forecasted to operate at LOS D or better in both peak hours.

Cumulative Year 2030 With Project Conditions

Project traffic associated with the proposed DTSP Update was added to the Year 2030 traffic volumes, and the study intersections were re-analyzed. Year 2030 with Project peak hour traffic volumes are provided in the traffic impact analysis contained in Volume II of this EIR. The Year 2030 "With Project" analysis assumes the implementation of a pedestrian-only phase at the intersections of Pacific Coast Highway at 6th Street and Pacific Coast Highway at 1st Street, as proposed by the DTSP Update.

Intersection operations for Year 2030 with Project Conditions were evaluated and the results are summarized on Table 4.12.7. The results indicate that the intersection of Goldenwest Street at Pacific Coast Highway will continue to operate at LOS E in the evening peak hour, and the intersection of Orange Avenue at Pacific Coast Highway will worsen to LOS F levels of delay. At the intersection of Goldenwest Street and Pacific Coast Highway, the project will increase the ICU value by 0.02, to bring it to 0.94. At the intersection of Orange Avenue at Lake Street, the project traffic will cause the intersection to worsen from LOS E to LOS F in the evening peak hour.

Table 4.12.6
Year 2030 Without Project Summary of Intersection Operation

Int. #	Intersection	Control	AM Peak Hour Delay / ICU		AM Peak Hour LOS	PM Peak Hour Delay / ICU		PM Peak Hour LOS
Pacific Coast Highway at:								
1	Warner Avenue	S	38.1	sec/veh	D	39.2	sec/veh	D
		S	0.81	v/c	D	0.83	v/c	D
2	Seapoint Avenue	S	10.0	sec/veh	A	16.7	sec/veh	B
		S	0.64	v/c	B	0.83	v/c	D
3	Goldenwest Street	S	17.3	sec/veh	B	32.9	sec/veh	C
		S	0.61	v/c	B	0.92	v/c	**E**
4	17th Street	S	8.8	sec/veh	A	20.1	sec/veh	C
		S	0.56	v/c	A	0.79	v/c	C
5	9th Street	S	6.5	sec/veh	A	7.9	sec/veh	A
		S	0.53	v/c	A	0.59	v/c	A
6	6th Street	S	9.3	sec/veh	A	14.3	sec/veh	B
		S	0.46	v/c	A	0.63	v/c	B
7	Main Street	S	24.2	sec/veh	C	33.2	sec/veh	C
		S	0.68	v/c	B	0.79	v/c	C
8	1st Street	S	21.6	sec/veh	C	30.1	sec/veh	C
		S	0.60	v/c	A	0.66	v/c	B
9	Huntington Street	S	17.9	sec/veh	B	18.8	sec/veh	B
		S	0.62	v/c	B	0.51	v/c	A
10	Beach Boulevard	S	22.0	sec/veh	C	23.1	sec/veh	C
		S	0.54	v/c	A	0.68	v/c	B
11	Newland Street	S	11.0	sec/veh	B	14.3	sec/veh	B
		S	0.55	v/c	A	0.68	v/c	B
12	Magnolia Street	S	16.8	sec/veh	B	20.9	sec/veh	C
		S	0.50	v/c	A	0.71	v/c	C
13	Brookhurst Street	S	24.5	sec/veh	C	24.3	sec/veh	C
		S	0.66	v/c	B	0.66	v/c	B
Main Street at:								
14	Yorktown Avenue	S	0.48	v/c	A	0.54	v/c	A
15	17th Street	S	0.27	v/c	A	0.33	v/c	A
16	Adams Avenue	S	0.53	v/c	A	0.70	v/c	B
17	Walnut Avenue	U	8.0	sec/veh	A	9.5	sec/veh	A
18	Olive Avenue	U	8.6	sec/veh	A	9.8	sec/veh	A
19	6th Street	S	0.29	v/c	A	0.38	v/c	A
Lake Street at:								
20	6th Street	U	8.6	sec/veh	A	11.7	sec/veh	B
21	Orange Avenue	U	11.6	sec/veh	A	46.5	sec/veh	E
Orange Avenue/Atlanta Avenue at:								
22	1st Street	S	0.56	v/c	A	0.77	v/c	C
Beach Boulevard at:								
23	Atlanta Avenue	S	19.5	sec/veh	C	34.5	sec/veh	C
		S	0.45	v/c	A	0.69	v/c	B
24	Pacific View Avenue	S	6.4	sec/veh	A	9.1	sec/veh	A
		S	0.28	v/c	A	0.37	v/c	A

S = Signalized, U = Unsignalized
Intersection operation is expressed in average seconds of delay per vehicle during the peak hour for HCM 2000 Methodology and is expressed in volume-to-capacity (v/c) for ICU Methodology

Table 4.12.7
Year 2030 With Project Summary of Intersection Operation

Int. #	Intersection	Control	AM Peak Hour			PM Peak Hour		
			Delay / ICU		LOS	Delay / ICU		LOS
Pacific Coast Highway at:								
1	Warner Avenue	S	38.6	sec/veh	D	42.4	sec/veh	D
		S	0.82	v/c	D	0.84	v/c	D
2	Seapoint Avenue	S	10.3	sec/veh	B	17.7	sec/veh	B
		S	0.66	v/c	B	0.85	v/c	D
3	Goldenwest Street	S	18.1	sec/veh	B	36.1	sec/veh	D
		S	0.63	v/c	B	0.94	v/c	**E**
4	17th Street	S	8.9	sec/veh	A	21.2	sec/veh	C
		S	0.58	v/c	A	0.82	v/c	D
5	9th Street	S	6.6	sec/veh	A	8.0	sec/veh	A
		S	0.56	v/c	A	0.63	v/c	B
6	6th Street	S	22.5	sec/veh	C	50.5	sec/veh	D
		S	0.73	v/c	C	0.92	v/c	**E**
7	Main Street	S	21.7	sec/veh	C	38.1	sec/veh	D
		S	0.70	v/c	B	0.86	v/c	D
8	1st Street	S	37.6	sec/veh	D	156.1	sec/veh	**F**
		S	0.86	v/c	D	0.99	v/c	**E**
9	Huntington Street	S	17.3	sec/veh	B	19.3	sec/veh	B
		S	0.64	v/c	B	0.56	v/c	A
10	Beach Boulevard	S	22.4	sec/veh	C	24.1	sec/veh	C
		S	0.56	v/c	A	0.70	v/c	B
11	Newland Street	S	11.1	sec/veh	B	14.9	sec/veh	B
		S	0.56	v/c	A	0.69	v/c	B
12	Magnolia Street	S	16.8	sec/veh	B	21.3	sec/veh	C
		S	0.52	v/c	A	0.72	v/c	C
13	Brookhurst Street	S	24.7	sec/veh	C	24.6	sec/veh	C
		S	0.66	v/c	B	0.67	v/c	B
Main Street at:								
14	Yorktown Avenue	S	0.49	v/c	A	0.56	v/c	A
15	17th Street	S	0.32	v/c	A	0.41	v/c	A
16	Adams Avenue	S	0.55	v/c	A	0.75	v/c	C
17	Walnut Avenue	U	8.9	v/c	A	12.3	sec/veh	B
18	Olive Avenue	U	9.4	v/c	A	12.8	sec/veh	B
19	6th Street	S	0.36	v/c	A	0.48	v/c	A
Lake Street at:								
20	6th Street	U	9.2	v/c	A	13.9	sec/veh	B
21	Orange Avenue	U	13.4	v/c	B	148.4	sec/veh	**F**
Orange Avenue/Atlanta Avenue at:								
22	1st Street	S	0.66	v/c	B	0.76	v/c	C
Beach Boulevard at:								
23	Atlanta Avenue	S	21.0	sec/veh	C	36.9	sec/veh	D
		S	0.48	v/c	A	0.72	v/c	C
24	Pacific View Avenue	S	6.9	sec/veh	A	9.1	sec/veh	A
		S	0.29	v/c	A	0.38	v/c	A

S = Signalized, U = Unsignalized
Intersection operation is expressed in average seconds of delay per vehicle during the peak hour for HCM 2000 Methodology and is expressed in volume-to-capacity (v/c) for ICU Methodology

OCTA Route 29 operates between the City of Brea and the City of Huntington Beach via La Habra Boulevard and Beach Boulevard in a northbound and southbound direction. Route 29 starts near the Brea Mall and continues west on La Habra Boulevard through to the City of Brea before it heads south on Beach Boulevard through the cities of Buena Park, Anaheim, Stanton, Garden Grove and Westminster; where it eventually turns around at Pacific Coast Highway and 1st Street. Route 29 operates seven days a week, from 4:00 a.m. to 12:30 a.m. on weekdays and 4:30 a.m. to 11:40 p.m. on weekends with 10- to 15-minute headways throughout the day.

OCTA Route 172 operates between the City of Costa Mesa and the City of Huntington Beach via MacArthur Boulevard and Main Street in a northbound and southbound direction. Route 172 starts at Anton Avenue and Park Center in Costa Mesa and heads south through to the cities of Santa Ana and Fountain Valley. It makes a turn onto Main Street from Garfield Avenue in the City of Huntington Beach and heads southeast into downtown where it eventually turns around at Pacific Coast Highway and 1st Street. Route 172 operates seven days a week, from 6:10 a.m. to 8:50 p.m. on weekdays and 6:13 a.m. to 8:00 p.m. on weekends with 5- to 15-minute headways throughout the day.

Cumulative Year 2030 Project Mitigation

The traffic impact analysis indicates that for Cumulative Year 2030 conditions, the proposed implementation of the proposed pedestrian-only phase would result in LOS E at the intersections of:

- Pacific Coast Highway at 1st Street (PM peak - LOS E)
- Pacific Coast Highway at 6th Street (PM peak - LOS E)

The mitigation options for the impact of the pedestrian-only phase are the same as listed previously for Cumulative Year 2020 conditions.

The proposed project is forecasted to result in a significant impact at two additional study intersections under the Year 2030 conditions:

- Pacific Coast Highway at Goldenwest Street (PM peak - LOS E)
- Orange Avenue at Lake Street (PM peak – LOS F)

The Level of Service E PM peak hour condition at the intersection of Pacific Coast Highway and Goldenwest Street is caused in part by a heavy southbound right-turn movement from Goldenwest Street to westbound Pacific Coast Highway – approximately 500 peak hour vehicles. The following mitigation measure would achieve acceptable Level of Service at this intersection:

- Implement right-turn overlap signal phasing for southbound Goldenwest Street. This would bring the PM peak hour to LOS D. A right-turn overlap for southbound Goldenwest Street would require that u-turn movements on eastbound Pacific Coast Highway be prohibited.

The unsignalized intersection of Orange Avenue and Lake Street will worsen from LOS E to LOS F delays in the evening peak hour with the addition of project traffic. The following mitigation options would achieve acceptable Level of Service at this intersection:

- Provide two eastbound and westbound through lanes on Orange Avenue. This would achieve Level of Service D in the evening peak hour. This improvement would require the removal of street parking on both sides of Orange Avenue on either side of Lake Street.

  or

- Install a signal at this intersection, which would achieve acceptable Level of Service operation.

Master Plan of Arterial Highways (MPAH) Consistency

As identified earlier, a number of downtown roadways are shown on the Orange County Master Plan of Arterial Highways (MPAH). In order to remain eligible to receive both Measure M and Congestion Management Program (CMP) funds, the City is required to maintain consistency with the MPAH by including each of the MPAH roadway elements on the City's Circulation Plan, and by not taking actions that would preclude the ability to maintain or implement the classification designated on the MPAH in the future.

A summary of the downtown roadways that are included on the Orange County MPAH is provided on Table 4.12.8. As review of this table shows, these MPAH roadways are designated as either a four-lane Secondary roadway (four lanes undivided) or a four-lane Primary roadway (four lanes divided). The City's Circulation Plan also designates each roadway as a Primary or Secondary, consistent with the MPAH with standard or specified street widths identified through standard plans or precise plan of street alignments.

As Table 4.12.8 shows, each of these roadways is currently configured to provide one travel lane in each direction, with on-street parallel parking on both sides of the street. Under the current roadway classifications, when a property along any of these roadway segments redevelops in the future, in order to achieve the required right-of-way for the designated secondary or primary four-lane classification, a dedication of additional frontage from that property would be required to achieve the designated 80-foot or 100-foot cross-section.

Table 4.12.8
Downtown Roadway Consistency with MPAH

Roadway Segment	Roadway Classification			
	Orange County MPAH	Huntington Beach Circulation Plan	Existing Configuration	Recommended Configuration
6th Street - PCH to Orange Ave.	Primary (4D)	Primary (4D)	Two lanes, undivided with street parking on both sides of the street	Two lanes, undivided with parallel parking and bike lanes - both sides
- Orange Ave. to Main St.	Secondary (4U)	Secondary (4U)	Two lanes, with a wide painted divider, and street parking on both sides of the street	Two lanes, undivided with parallel parking and bike lanes - both sides
Lake Street - north of Orange	Primary (4D)	Primary (4D)	Two lanes, with a wide painted divider, and street parking on both sides of the street between Yorktown and n/o Orange, narrowing to two lanes undivided and street parking at Orange.	Two lanes, undivided with parallel parking and bike lanes - both sides
1st Street - Orange / Atlanta to PCH	Primary (4D)	Primary (4D)	Two lanes divided, street parking on one side of the street	Two lanes divided, street parking on the west side of the street, bike lanes, both sides
Walnut Avenue - 6th Street to 1st Street	Secondary (4U)	Secondary (4U)	Two lanes, undivided with street parking on both sides of the street	Two lanes, undivided with parallel parking - both sides
1st Street to Huntington/ Pacific View	Primary (4D)	Primary (4D)	Future roadway through Pacific City development.	Development plans reflect a 70-foot travelway, a 90-foot right-of-way, with 2 lanes divided and diagonal parking along the south side.
Orange Avenue - 6th Street to 1st Street	Primary (4D)	Primary (4D)	Two lanes undivided with street parking on both sides of the street, widening just before 1st Street.	Two lanes, undivided, with street parking and bike lanes, both sides of the street.

The daily traffic analyses for these roadway segments do not indicate the future need to configure or widen the roadways to provide four travel lanes, as designated on the MPAH. The daily roadway analysis results for Proposed Specific Plan Cumulative 2020 and Year 2030 conditions provided in Table 4.12.10 (Summary of Intersection Operation for Downtown Network Alternatives (Year 2030 with Project), page 4-218) indicate that, with one exception, the typical daily traffic volumes forecasted for each of the MPAH roadway segments in the downtown are within the LOS E capacity of a two-lane roadway (12,500 vehicles per day). The segment of 1st Street between Orange / Atlanta and Pacific Coast Highway is forecasted to just exceed the 12,500 daily capacity, with a volume of 12,860. The intersections at either end of this roadway segment are forecasted to operate at an acceptable LOS under future with project conditions (except that the proposed exclusive pedestrian phase would cause the intersection of Pacific Coast Highway and 1st Street to fall to an unacceptable LOS), indicating that for this roadway segment, as well as remaining two-lane roadways, a two-lane roadway would accommodate future traffic volumes, including the DTSP Update project traffic for Cumulative Year 2020 and Cumulative Year 2030 conditions.

Based on the results of the analysis, recommendations for reclassifying certain downtown roadway segments to provide two travel lanes and either bike and / or parking lanes are presented on Table

4.12.8 above. These changes in classifications will result in reduced ultimate roadway width compared with the current roadway classifications, which will mean less right-of-way impact on the properties along those roadways when they redevelop in the future.

If the City elects to change the designation of any one of these roadways to reclassify the roadway from a four-lane facility to a two-lane facility on the City's Circulation Plan, it will be necessary to process an amendment to the MPAH through the OCTA for consistency, in order to remain eligible for Measure M and CMP funding. The amendment of the MPAH through OCTA must precede any change in street classification by the City.

Congestion Management Program (CMP) Analysis

The project traffic impact analysis is consistent with the requirements and procedures outlined in the current Orange County Congestion Management Program (CMP). The CMP requires that a traffic impact analysis be conducted for any projects generating 2,400 or more daily trips, or 1,600 or more daily trips for projects that directly access the CMP Highway System (CMPHS). The proposed project is forecasted to generate approximately 13,400 daily trips, and therefore compliance with the CMP traffic impact analysis requirements is required.

The CMPHS includes specific roadways designated as CMP facilities. The CMP highway system arterial facilities and CMP arterials in the vicinity of the project area consists of Beach Boulevard, Pacific Coast Highway, and Warner Avenue. The CMP arterial monitoring locations/ intersections nearest to the project area consist of Warner Avenue at Pacific Coast Highway, Beach Boulevard at Pacific Coast Highway, and Beach Boulevard at Adams Avenue. Each of these intersections has been analyzed in this study for both Cumulative Year 2020 and Cumulative Year 2030 conditions with and without the Project. All three intersections are forecasted to operate at an acceptable Level of Service in all analysis scenarios. Based on the above analysis, the proposed project would not have any significant traffic impacts on the CMPHS.

Public Transportation Facilities

The DTSP Update does not propose changes to the public transit service offered by OCTA. The DTSP Update does propose a downtown trolley system to enhance transit service in the downtown area. The trolley would circulate between the Waterfront Development (along Pacific Coast Highway, west of Beach Boulevard), the future Pacific City development, the downtown core, and the surrounding residential neighborhoods. The trolley will be designed to allow downtown visitors to conveniently circulate between development areas within the downtown, without the need to drive from place to place, and to also allow nearby residents to get to and from downtown without driving.

Improvements to the transit system can provide additional incentive or motivation for people to choose transit to get to and from downtown, instead of driving and parking their vehicles. Additional or proposed changes to the transit system are not proposed as part of the DTSP Update. Additionally, some pedestrian improvements defined in this DTSP Update will provide for improved access to transit stops.

1. Pacific Coast Highway Bus Layover Zone

Facility improvements are planned for the bus layover zone on Pacific Coast Highway between 1st and Huntington Street. This zone accommodates stops for all five of the routes that serve the downtown. The improvements include street furniture amenities and trash cans.

2. Trolley System

A downtown trolley service may be provided to circulate between the hotel development closer to Beach Boulevard, the Pacific City development, the core downtown, and the residential neighborhoods surrounding downtown. The trolley is not required for implementation of the DTSP Update, nor is it proposed at this time. However, the trolley would be envisioned to be a bus-like vehicle with tires that would allow nearby residents who work in or visit downtown to do so without driving and parking. It would also allow visitors to move easily between the hotels, Pacific City, the Cultural Arts area, and the downtown core and the Strand, by allowing these visitors to park their vehicles once and access the other areas of the downtown through an interesting trolley system.

Trolley stops would be clearly marked and designed with a consistent theme, and the shuttle schedule should be posted and advertised. The frequency of shuttle arrivals and the duration of service, including starting and ending times, will be dependent on seasonal demand and ridership levels.

Implementation of a shuttle service would require additional analysis. The routes, headways, and costs would need to be defined. The service could be operated by the City or by a private provider. The costs could be based upon fares (user fees) or be paid for by the downtown businesses or the City. Similar services that exist in other southern California cities, such as free Manhattan Beach Ocean Express Trolley could be studied for implementation.

Proposed Downtown Circulation and Streetscape Changes

The DTSP Update proposes a number of circulation and streetscape changes to Main Street and other downtown streets, to implement streetscape improvements and circulation enhancements.

1. Streetscape Improvements

Recommendations for street cross sections proposed in the DTSP Update are provided on Exhibit 4.12-7 and Exhibit 4.12-8. The most significant changes will be on the first three blocks of Main Street. Main Street will be maintained as a two-lane roadway through the downtown. From Pacific Coast Highway to Orange Avenue, the DTSP Update proposes a 28-foot roadway with two 14-foot traffic lanes, and an additional 26 feet on both sides for sidewalk and outdoor dining, for a total of 80 feet of streetscape between building frontages. In order to achieve the additional width for wider sidewalks and to maintain the outdoor dining areas, the existing on-street parking along Main Street would be removed from Pacific Coast Highway to Orange, and additional sidewalk width would need to be constructed in its place.

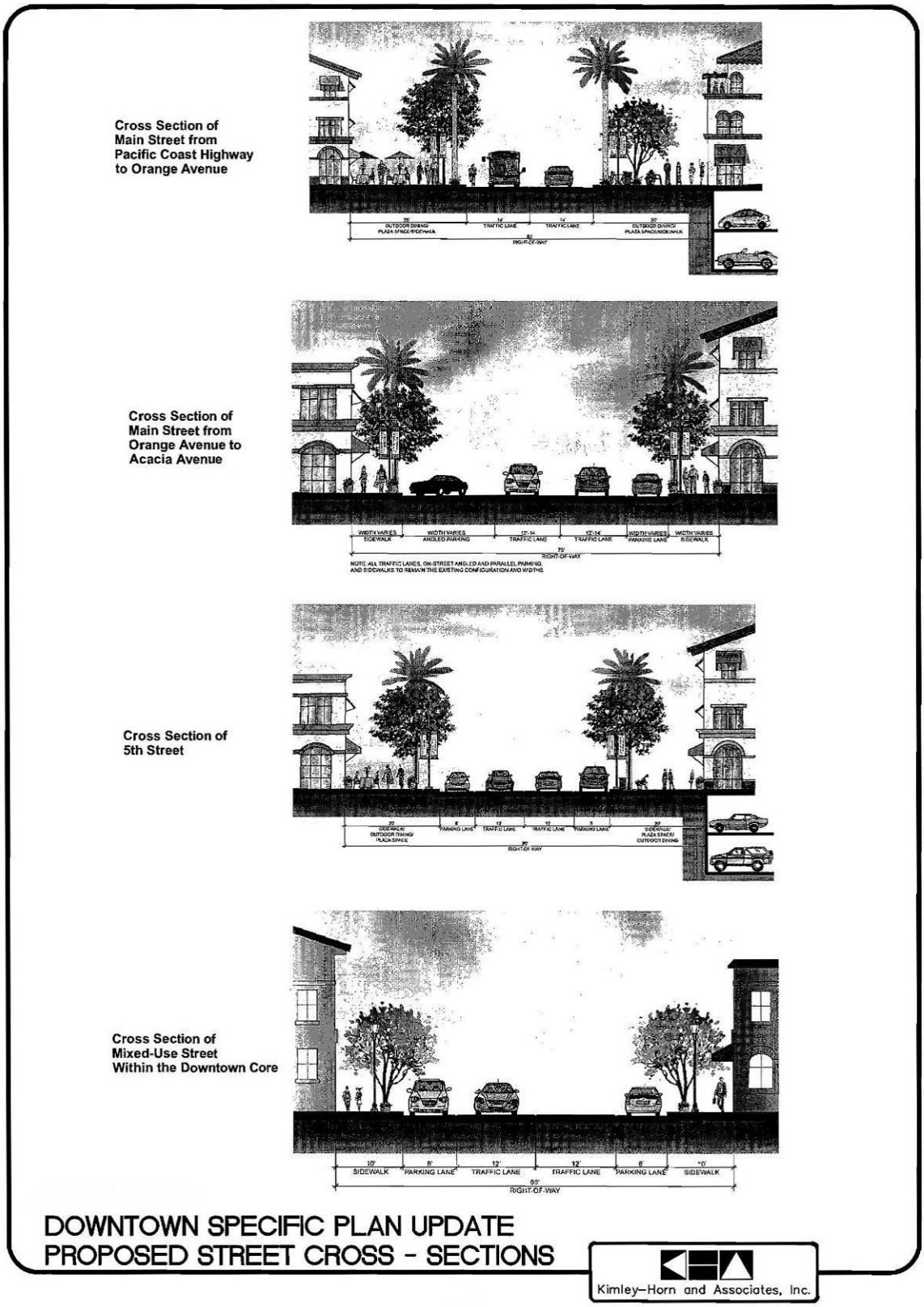

Exhibit 4.12-7 – Proposed Street Cross-Sections (1)

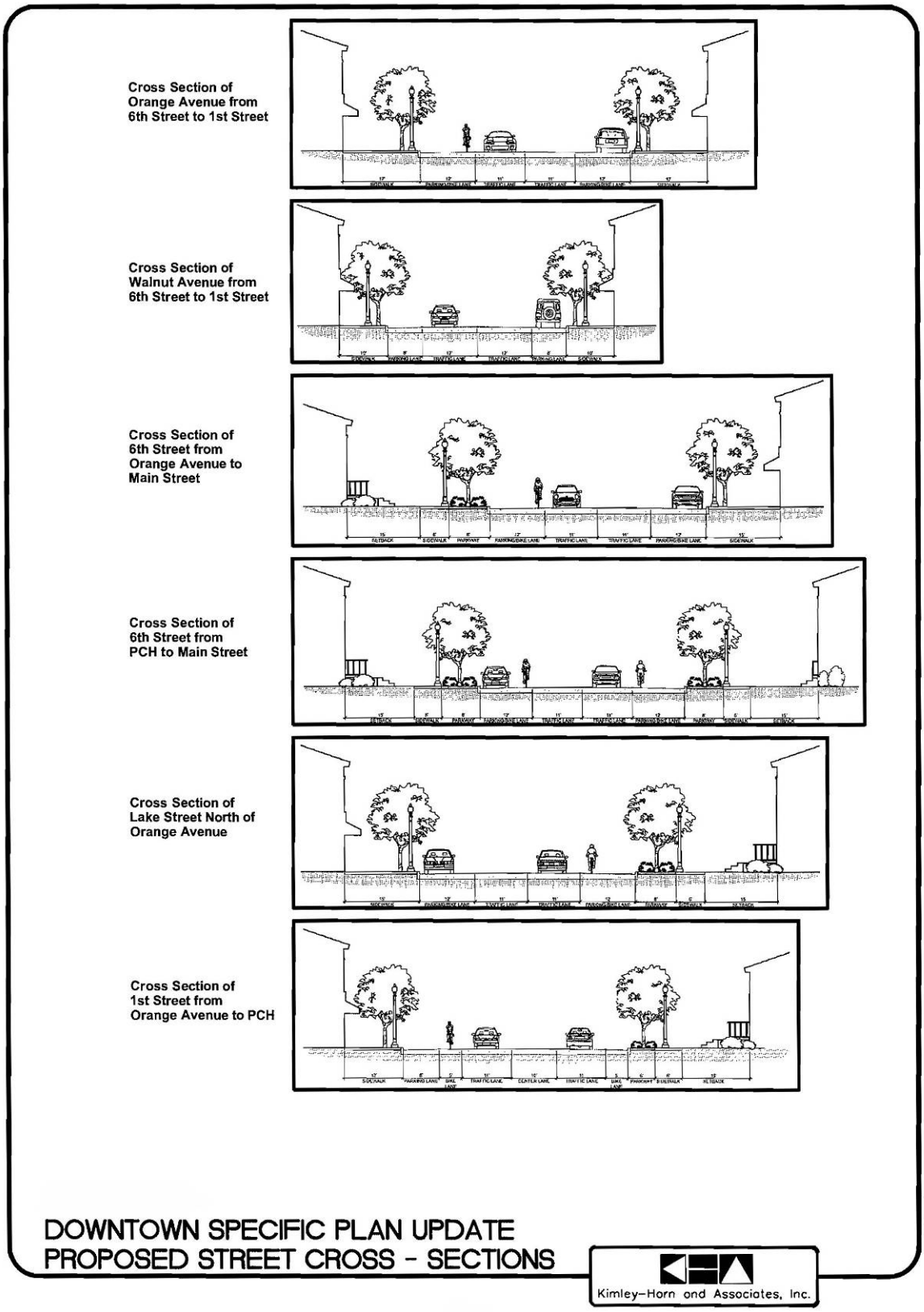

Exhibit 4.12-8 – Proposed Street Cross-Sections (2)

2. North of Orange Avenue, the DTSP Update proposes to retain the existing street width, parking, and sidewalk configuration on Main Street, with 12- to 14-foot travel lanes in each direction; on-street parking in the form of either parallel or angled parking on both sides of the street; and existing sidewalk widths, for a total of 75 feet of streetscape between building frontages.

The DTSP Update proposes to widen the sidewalks along 5th Street for the two blocks between Walnut Avenue and Orange Avenue. This will be accomplished by converting the current head-in parking, which requires 18 feet of street width, to parallel parking, which requires 8 feet, resulting in an additional 10 feet of sidewalk width on each side of the street.

For other streets within the downtown core which will serve a mix of existing and new uses, the DTSP indicates a 60-foot cross section, with two 12-foot travel lanes, an 8-foot parking lane on both sides of the street, and 10-foot sidewalks.

As discussed previously, recommendations for reclassifying certain roadway segments to provide two travel lanes and either bike and/or parking lanes are presented on Table 4.12.8 (page 4-206). Right-of-way widths will vary between different roadway segments, depending on the width of the travel lanes, whether or not the segment is to include bike lanes and parking lanes, and the width of the sidewalk and parkway. Adopting these revised classifications and accompanying cross-sections will establish the requirement for future right-of-way dedication and improvements that will be required of each property along that roadway when that property redevelops.

Bicycle Improvements

The DTSP Update proposes the addition of bicycle lanes and/or bicycle routes on some streets in the downtown. The DTSP Update proposes to add a Class II bicycle lane to 6th Street from Pacific Coast Highway to Main Street, connecting to the existing bicycle lane on Lake Street via Acacia Avenue. On-street parallel parking is provided along both sides of 6th Street from Pacific Coast Highway to Main Street, and along Acacia Avenue. A recommended cross-section for 6th Street is included in the proposed DTSP to accommodate both street parking and bike lanes.

The DTSP Update also proposes to extend the existing Class II bicycle lane on Lake Street from its current terminus near Pecan Avenue down to Orange Street, and then along Orange Avenue to connect with the Class II bike lane planned for Atlanta Avenue east of 1st Street. Lake Street narrows from an approximately 90-foot right-of-way to a 60-foot right-of-way between Pecan and Orange Avenues. The bicycle lane is dropped, and the on-street parking remains through the narrower section of the street. The same is true of Orange Avenue, between Lake/3rd Street and 2nd Street. East of 2nd Street, there is sufficient width on Orange Avenue to provide an on-street bicycle lane without impacting parking or requiring widening.

The DTSP Update recommends that additional bicycle racks will be dispersed throughout the downtown in areas where available space permits without impeding pedestrian movement or requiring the removal of parking. Bicycle rack space for approximately 550 additional bicycles has been identified in the DTSP and locations for potential new bicycle racks include:

- On the sidewalk, along red-striped curbs where parking is prohibited, or where an extended sidewalk area is provided.
- At the end of corner curb extensions.
- Adjacent to or near buildings, out of the walking path.

A bicycle station with organized storage facilities and attendants could be located within the downtown. Some City-owned paseos could be prime locations for new bicycle parking, such as the paseo extending west from Main Street on the block between Walnut Avenue and Olive Avenue. Additional bicycle parking could also be provided in some private developments, such as the plaza and breezeway areas of the Pierside Pavilion, in and around Plaza Almeria, and inside other parking structures.

In addition to these spaces within the downtown, there is opportunity for additional bicycle parking spaces on the beach side of Pacific Coast Highway. A high-capacity bicycle parking facility could be located in the Pier Plaza, under the Pier, and in and around the Pier Parking areas.

The location of public bicycle parking facilities that accommodate ten or more bicycles will be identified as part of the downtown sign program. Specific bicycle parking requirements are found in Section 3.2.26.4 of the DTSP.

Bicycle facilities and parking are proposed to be improved as part of the DTSP Update implementation. The proposed DTSP includes development standards and design guidelines for bicycle facilities. Therefore, with adherence to the City's General Plan, applicable City code requirements, and the proposed DTSP, no significant impacts are anticipated.

3. Pedestrian Improvements

The DTSP Update proposes the implementation of pedestrian-only phases for the signal operation at the intersections of Pacific Coast Highway at 1st Street and Pacific Coast Highway at 6th Street to facilitate the movement of pedestrians across Pacific Coast Highway to and from the beach. Pedestrian movements up and down and across Main Street throughout the downtown can also represent a significant impediment to the movement of vehicular traffic.

Main Street includes sidewalks on both sides of the street, as do the side streets that cross Main Street. At the intersections of Main Street with Walnut Avenue, Olive Avenue, and Orange Avenue, traffic is controlled with stop signs on all four approaches, and pedestrian crosswalks are provided on all four legs. A mid-block crosswalk is also provided between Olive Avenue and Walnut Avenue, from the Promenade parking structure to the shops and restaurants on the other side of the street.

It should be noted that the typical morning and evening peak hour Level of Service values reported at the stop-controlled intersections in the core of the downtown, such as along Main Street, indicate very good peak hour levels of service – LOS A or B. This does not fully reflect the delay to motorists caused by the influence of heavy pedestrian activity throughout the day, particularly during the midday and evening hours and on weekends, when vehicles on stop-controlled approaches must often wait for substantial volumes of pedestrians to cross the intersection. Although the volume of

vehicular traffic alone at these intersections may be accommodated through the intersection with an acceptable Level of Service, heavy pedestrian activity along and across Main Street during the seasonal peak periods can add several seconds of delay to each vehicle waiting to cross through the intersection, resulting in a degradation of one or more levels of service due to the added delay.

Motorists driving on and across Main Street through the stop-controlled intersections in the downtown core can find themselves delayed extensively while waiting for a break in the streams of pedestrians in all directions, particularly during the peak demand seasons, such as summer weekends and during special events. Pedestrians move independently, often in continuous streams of one and two people at a time across the intersections along Main Street. Pedestrians have and will usually take the right-of-way at stop-controlled intersections, even if a vehicle has been waiting for some time for a break in the pedestrian stream. As a result, the impact of pedestrian volumes on the movement of traffic through the stop-controlled intersections can result in extensive delay to the motorist, traffic congestion, and long queues.

Pedestrian activity through the downtown is not to be discouraged, however, since a person who moves throughout the downtown by walking represents less vehicular demand in the downtown.

The challenge is how to continue to encourage pedestrian activity while reducing the impact on the movement of vehicular traffic, particularly on and across Main Street.

The impact of heavy pedestrian activity on the movement of vehicles through the stop-controlled intersections in the downtown is an aspect of the downtown circulation that will not be completely eliminated. As mentioned above, pedestrian activity in the downtown is not to be discouraged. However, the DTSP Update proposes some measures to disperse pedestrian movement throughout the downtown by creating paseos through and between developments, enhancing and improving the walking environment along parallel side streets and alleys, encouraging pedestrian paths parallel to Main Street through development blocks (such as has been accomplished in the Pierside and Strand developments), and connecting Main Street and the parallel streets; and providing additional pedestrian access from new parking areas and developments.

Although the delay to motorists resulting from pedestrian traffic will not be eliminated completely, some measures that may be implemented at the downtown intersections to reduce delay to motorists due to pedestrian demand are:

- Limit the pedestrian and vehicular demand periods, limit pedestrian crossings of Main Street at Walnut Avenue to only one crosswalk on the leg of the intersection. Limiting Main Street crossing to one crosswalk at this intersection will reduce the number of pedestrian streams that a vehicle must cross from two to one for 50% of the traffic movements through the intersection.
- Eliminating both crosswalks across Main Street at Walnut Avenue would eliminate vehicle-pedestrian conflicts for two the two through movements on Main Street altogether, and reduce the number of pedestrian streams that a vehicle must cross from two to one for eight of the ten remaining traffic movements through the intersection.

- During peak pedestrian and vehicular demand periods (e.g., summer weekends and special events), channel and group pedestrian movements into pedestrian "platoons" across stop-controlled intersections through the use of traffic control personnel or pedestrian control signals.

Project Network Alternatives

The proposed DTSP Update includes development options that would result in circulation changes in the Downtown area, including modification of the roadway network. Three network options address varying degrees of closure of Main Street in the downtown core. While these Main Street closure options are not specifically proposed by the DTSP Update, they are evaluated in the Traffic Impact Analysis and included here to address alternative configurations for Main Street that have been discussed as potential options in the past. In addition, the DTSP Update presents an option that would realign 6th Street between Orange Avenue and Main Street, as described below. A conceptual depiction of each network alternative is provided on Exhibit 4.12-9 and a brief description of each is provided here.

- Alternative 1 – Main Street Closure – with no cross traffic on Olive or Walnut: Main Street would be closed to all traffic between Orange Avenue and Pacific Coast Highway, but would be retained as a circulation facility for the movement of pedestrians and bicycles. Olive Avenue and Walnut Avenue would be terminated on both sides of Main Street, with no traffic movements across Main Street. Walnut Street is shown on the Orange County MPAH as a Secondary Arterial between 6th Street and 1st Street; therefore, this network change would require an amendment to the MPAH.
- Alternative 2 – Main Street Closure – with cross traffic allowed on Olive and Walnut: Main Street would be closed to traffic between Orange Avenue and Pacific Coast Highway, but would be retained as a circulation facility for the movement of pedestrians and bicycles. Traffic on Olive Avenue and Walnut Avenue would continue to be allowed to cross Main Street, with traffic control to assign right-of-way to vehicles and pedestrians.
- Alternative 3 – Main Street Closure – Second Block Only: Main Street would be closed to traffic between Olive Avenue and Walnut Avenue, but this segment would be retained as a circulation facility for the movement of pedestrians and bicycles. The two segments of Main Street on either side of the closure would remain open to traffic, and the intersections of Main Street at Olive Avenue and Main Street at Walnut Avenue would operate as "T" intersections.
- Alternative 4 – 6th Street realignment: 6th Street would be realigned north of Orange Avenue to connect to Pecan Avenue. The existing curved segment of 6th Street between Orange Avenue and Main Street would be vacated.

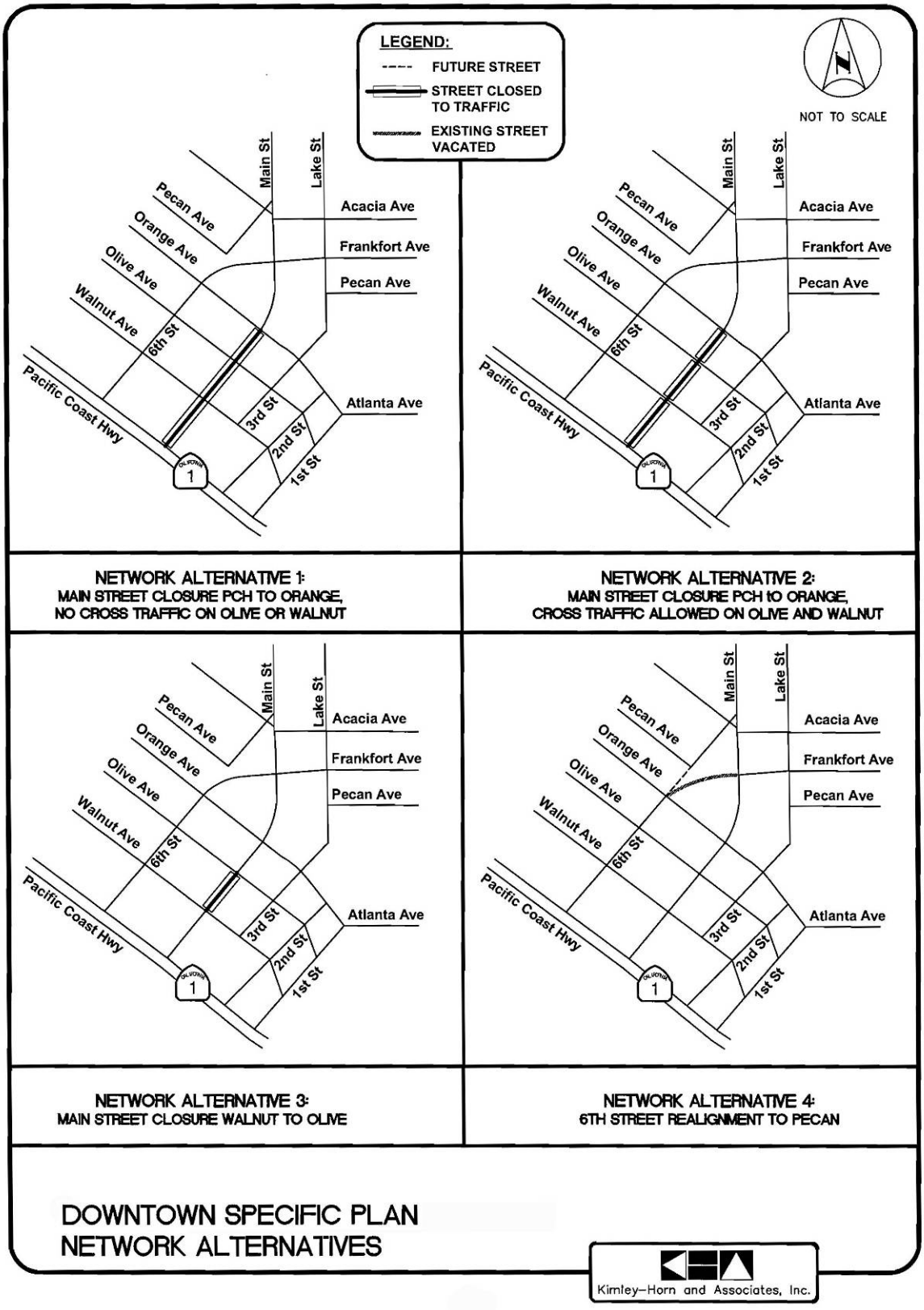

Exhibit 4.12-9 – Network Alternatives

Analysis of Network Alternatives

The effects of these network changes on traffic circulation and Level of Service are discussed here. Forecasted changes in traffic patterns in the downtown area that would occur as a result of these network alternatives were derived by conducting focused model runs with the Huntington Beach Traffic Model. The effects of these network changes on traffic circulation and Level of Service were evaluated for Cumulative Year 2020 and Forecast Year 2030 with Project Conditions. Evaluation of the effects of the changes in traffic volumes that would occur as a result of each network alternative was conducted for selected intersections and roadway segments in the immediate vicinity of the changes.

Peak Hour Intersection Analysis

The results of the peak hour intersection analysis for all four network alternatives are summarized in Table 4.12.10, Summary of Intersection Operation for Downtown Network Alternatives (Year 2030 with Project) and Table 4.12.10, Summary of Intersection Operation for Downtown Network Alternatives (Year 2030 with Project). With each alternative, the intersections of Pacific Coast Highway at 6th Street and at 1st Street will continue to operate at Level of Service E or F due to the proposed implementation of the pedestrian-only phases. The peak hour analysis of network alternatives will address any additional adverse impacts in Level of Service that will occur as a direct result of the proposed changes to the network.

Daily Roadway Analysis

Evaluation of the effects of the changes in traffic patterns due to the proposed network alternatives was conducted on downtown roadways, to determine whether the network alternatives would result in the need for improvement of any roadways in the downtown area beyond their current configuration. Under current conditions, the roadways throughout the downtown area are generally configured to provide one travel lane in each direction. While some roadways in the downtown are classified as four-lane secondary (undivided) or primary (divided) roadways, the downtown street system is currently configured to provide one travel lane in each direction and on-street parking. The purpose of this analysis is to determine whether or not any downtown roadways would be impacted by any of the Network Alternatives such that improvement to four-lane secondary or primary standards would be necessary.

A summary of the roadway analysis for each alternative for both Cumulative 2020 and Year 2030 conditions is provided on Table 4.12.11, Summary of Roadway Segment Analysis for Downtown Network Alternatives. As indicated in this table, when compared against the existing daily LOS E capacity of 12,500 vehicle trips for a typical two-lane roadway, a number of roadways in the downtown will experience moderate to high increases in traffic as a result of the potential changes in the downtown network.

Table 4.12.9
Summary of Intersection Operation for Downtown Network Alternatives (Year 2020 Cumulative with Project)

			Current Network				Network Alternative 1				Network Alternative 2				Network Alternative 3				Network Alternative 4			
		sec/veh	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Int. #	Intersection	v/c	Del/ICU	LOS	Del/ICU	LOS	Del/ICU	LOS	Del/ICU	LOS	Del/ICU	LOS	Del/ICU	LOS	Del/ICU	LOS	Del/ICU	LOS	Del/ICU	LOS	Del/ICU	LOS
Pacific Coast Highway at:																						
5	9th Street	sec/veh	2.4	A	2.9	A	2.9	A	3.6	A	2.9	A	3.6	A	2.9	A	3.7	A	2.4	A	2.9	A
		v/c	0.62	B	0.68	B	0.62	B	0.68	B	0.62	B	0.67	B	0.63	B	0.68	B	0.62	B	0.68	B
6	6th Street	sec/veh	19.8	B	27.4	C	25.7	C	45.3	D	26.0	C	45.1	D	19.8	B	26.0	C	19.8	B	27.4	C
		v/c	0.76	C	0.91	E	0.82	D	1.02	F	0.83	D	1.02	F	0.79	C	0.91	E	0.76	C	0.91	E
7	Main Street	sec/veh	18.8	B	26.4	C	7.7	A	8.9	A	7.7	A	8.9	A	18.0	B	32.3	C	18.8	B	26.4	C
		v/c	0.73	C	0.82	D	0.67	B	0.64	B	0.67	B	0.64	B	0.75	C	0.92	E	0.73	C	0.82	D
8	1st Street	sec/veh	29.3	C	35.4	D	64.6	E	106.1	F	64.6	E	135.0	F	57.5	E	86.2	F	29.3	C	35.4	D
		v/c	0.77	C	0.93	E	1.01	E	1.01	E	1.01	E	1.15	F	0.99	E	1.06	F	0.77	C	0.93	E
9	Huntington Street	sec/veh	8.3	A	9.8	A	8.2	A	10.0	A	8.2	A	10.0	A	8.8	A	9.9	A	8.3	A	9.8	A
		v/c	0.68	B	0.77	C	0.68	B	0.77	C	0.68	B	0.77	C	0.69	B	0.77	C	0.68	B	0.77	C
Main Street at:																						
16	Adams Avenue	v/c	0.55	A	0.77	C	0.55	A	0.76	C	0.55	A	0.76	C	0.57	A	0.78	C	0.55	A	0.77	C
17	Walnut Avenue	sec/veh	9.1	A	13.1	B	NA	NA	NA	NA	7.4	A	7.5	A	6.9	A	8.5	A	9.10	A	13.1	B
18	Olive Avenue	sec/veh	9.1	A	11.5	B	NA	NA	NA	NA	8.0	A	8.3	A	7.1	A	7.9	A	9.6	A	13.0	B
19	6th Street	v/c	0.34	A	0.48	A	0.34	A	0.50	A	0.35	A	0.47	A	0.33	A	0.47	A	0.23	A	0.32	A
Lake Street at:																						
20	6th Street	sec/veh	8.3	A	10.9	B	8.2	A	10.9	B	8.3	A	11.1	B	8.1	A	9.6	A	8.6	A	12.3	B
21	Orange Avenue	sec/veh	11.5	B	23.2	C	15.2	C	74.8	**F**	12.8	B	55.0	**F**	11.0	B	32.7	D	12.6	B	37.8	**E**
Orange Avenue/Atlanta Avenue at:																						
22	1st Street	v/c	0.36	A	0.47	A	0.35	A	0.50	A	0.36	A	0.50	A	0.35	A	0.50	A	0.36	A	0.47	A
Beach Boulevard at:																						
24	Pacific View Ave	sec/veh	9.9	A	12.9	B	9.5	A	12.2	B	9.4	A	12.2	B	8.0	A	9.2	A	9.9	A	12.9	B
		v/c	0.33	A	0.40	A	0.34	A	0.40	A	0.34	A	0.35	A	0.31	A	0.37	A	0.33	A	0.40	A

Description of Network Alternatives (see Figure 18)
Network Alternative 1 = Closure of Main Street from PCH to Orange, with no cross traffic on Walnut Avenue or Olive Avenue
Network Alternative 2 = Closure of Main Street from PCH to Orange, with cross traffic on Walnut Avenue or Olive Avenue
Network Alternative 3 = Closure of Main Street between Walnut Avenue and Olive Avenue Network Alternative 4 = Realign 6th Street between Orange Avenue and Pecan Avenue
Intersection operation is expressed in average seconds of delay per vehicle during the peak hour for HCM 2000 Methodology and is expressed in volume-to-capacity (v/c) for ICU Methodology

Table 4.12.10
Summary of Intersection Operation for Downtown Network Alternatives (Year 2030 with Project)

			Current Network				Network Alternative 1				Network Alternative 2				Network Alternative 3				Network Alternative 4			
		sec/veh	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Int. #	Intersection	v/c	Del/ICU	LOS	Del/ICU	LOS	Del/ICU	LOS	Del/ICU	LOS	Del/ICU	LOS	Del/ICU	LOS	Del/ICU	LOS	Del/ICU	LOS	Del/ICU	LOS	Del/ICU	LOS
Pacific Coast Highway at:																						
5	9th Street	sec/veh	6.6	A	8.0	A	6.9	A	8.0	A	6.6	A	8.1	A	6.7	A	8.1	A	6.6	A	8.0	A
		v/c	0.56	A	0.63	B	0.56	A	0.63	B	0.56	A	0.62	B	0.57	A	0.63	B	0.56	A	0.63	B
6	6th Street	sec/veh	22.5	C	50.5	D	31.2	C	60.2	**E**	31.6	C	59.8	**E**	28.6	C	40.5	D	22.5	C	50.5	D
		v/c	0.73	C	0.92	**E**	0.75	C	0.99	**E**	0.77	C	0.99	**E**	0.74	C	0.91	**E**	0.73	C	0.92	**E**
7	Main Street	sec/veh	21.7	C	38.1	D	20.3	C	20.8	C	20.3	C	20.8	C	26.2	C	39.5	D	21.7	C	38.1	D
		v/c	0.70	B	0.86	D	0.63	B	0.62	B	0.63	B	0.62	B	0.69	B	0.88	D	0.70	B	0.86	D
8	1st Street	sec/veh	37.6	D	156.1	**F**	49.3	D	194.9	**F**	49.3	D	209.2	**F**	46.1	D	165.9	**F**	37.6	D	156.1	**F**
		v/c	0.86	D	0.99	**E**	0.85	D	0.99	**E**	0.85	D	1.07	**F**	0.86	D	1.01	**F**	0.86	D	0.99	**E**
9	Huntington Street	sec/veh	17.3	B	19.3	B	17.4	B	19.3	B	17.4	B	19.3	B	18.0	B	19.4	B	17.3	B	19.3	B
		v/c	0.64	B	0.56	A	0.64	B	0.57	A	0.64	B	0.56	A	0.64	B	0.57	A	0.64	B	0.56	A
Main Street at:																						
16	Adams Avenue	v/c	0.55	A	0.75	C	0.54	A	0.75	C	0.55	A	0.75	C	0.57	A	0.77	C	0.55	A	0.75	C
17	Walnut Avenue	sec/veh	8.9	A	12.3	B	NA	NA	NA	NA	NA	NA	NA	NA	7.5	A	8.5	A	8.9	A	12.3	B
18	Olive Avenue	sec/veh	9.4	A	12.8	B	NA	NA	NA	NA	NA	NA	NA	NA	7.7	A	8.2	A	9.7	A	13.7	B
19	6th Street	v/c	0.36	A	0.48	A	0.29	A	0.47	A	0.33	A	0.45	A	0.27	A	0.41	A	0.24	A	0.32	A
Lake Street at:																						
20	6th Street	sec/veh	9.2	A	13.9	B	9.3	A	14.8	B	9.2	A	14.7	B	8.5	A	10.2	B	9.6	A	13.9	B
21	Orange Avenue	sec/veh	13.4	B	148.4	**F**	24.2	C	271.4	**F**	15.3	C	221.5	**F**	12.3	B	138.9	**F**	14.8	B	188.5	**F**
Orange Avenue/Atlanta Avenue at:																						
22	1st Street	v/c	0.66	B	0.76	C	0.66	B	0.76	C	0.67	B	0.76	C	0.64	B	0.80	C	0.66	B	0.76	C
Beach Boulevard at:																						
24	Pacific View Ave	sec/veh	6.9	A	9.1	A	6.9	A	9.1	A	6.8	A	9.1	A	6.4	A	7.3	A	6.9	A	9.1	A
		v/c	0.29	A	0.38	A	0.29	A	0.38	A	0.29	A	0.38	A	0.27	A	0.34	A	0.29	A	0.38	A

Description of Network Alternatives (see Figure 18)
Network Alternative 1 = Closure of Main Street from PCH to Orange, with no cross traffic on Walnut Avenue or Olive Avenue
Network Alternative 2 = Closure of Main Street from PCH to Orange, with cross traffic on Walnut Avenue or Olive Avenue
Network Alternative 3 = Closure of Main Street between Walnut Avenue and Olive Avenue Network Alternative 4 = Realign 6th Street between Orange Avenue and Pecan Avenue
Intersection operation is expressed in average seconds of delay per vehicle during the peak hour for HCM 2000 Methodology and is expressed in volume-to-capacity (v/c) for ICU Methodology

Table 4.12.11
Summary of Roadway Segment Analysis for Downtown Network Alternatives

Roadway Segment	No. of Lanes	LOS E Capacity	Year 2020 Cumulative with Project					Year 2030 with Project				
			Current Network	With Network Alternatives				Current Network	With Network Alternatives			
				Alt. 1	Alt. 2	Alt. 3	Alt. 4		Alt. 1	Alt. 2	Alt. 3	Alt. 4
6th Street between:												
Main Street and Olive Ave	Collector / 2	12,500	7,175	10,045	10,045	5,740	0	6,598	9,237	9,237	5,278	0
Olive Avenue and PCH	Collector / 2	12,500	7,494	11,241	11,241	9,992	7,494	7,014	10,521	10,521	9,352	7,014
Main Street between:												
6th Street and Orange Ave	Collector / 2	12,500	9,939	8,697	6,212	7,454	12,092	10,702	9,364	6,689	8,027	12,352
Orange Avenue and Olive Ave	Collector / 2	12,500	8,002	0	0	3,429	8,720	7,806	0	0	3,345	8,466
Olive Avenue and Walnut Ave	Collector / 2	12,500	7,513	0	0	0	7,513	7,176	0	0	0	7,176
Walnut Avenue and PCH	Collector / 2	12,500	8,852	0	0	11,802	8,852	6,932	0	0	9,243	6,932
Lake Street / 3rd Street between:												
Acacia Avenue and Orange Ave	Collector / 2	12,500	6,686	11,700	11,700	5,014	8,121	5,392	9,436	9,436	4,044	6,712
Orange Avenue and Olive Ave	Collector / 2	12,500	4,771	9,541	6,361	3,180	5,488	4,080	8,160	5,440	2,720	4,740
Olive Avenue and Walnut Ave	Collector / 2	12,500	5,006	10,012	10,012	3,754	5,006	4,704	9,408	9,408	3,528	4,704
1st Street between:												
Orange Avenue and PCH	Collector / 2	12,500	8,376	9,074	9,074	4,886	8,376	12,860	13,932	13,932	7,502	12,860
Orange Avenue between:												
6th Street and Main Street	Collector / 2	12,500	9,307	21,272	21,272	11,966	11,459	7,994	18,272	18,272	10,278	9,973
Main Street and 3rd Street	Collector / 2	12,500	9,943	23,614	19,886	12,428	10,660	10,912	25,916	21,824	13,640	11,572
3rd Street and 1st Street	Collector / 2	12,500	10,391	15,586	14,287	12,988	10,391	10,444	15,666	14,361	13,055	10,444
Walnut Avenue between:												
6th Street and Main Street	Collector / 2	12,500	5,392	5,392	7,189	7,189	5,392	6,334	6,334	8,445	8,445	6,334
Main Street and 3rd Street	Collector / 2	12,500	7,683	2,561	5,122	2,561	7,683	6,206	2,069	4,137	2,069	6,206
3rd Street and 1st Street	Collector / 2	12,500	4,505	2,252	4,505	2,252	4,505	3,416	1,708	3,416	1,708	3,416

Description of Network Alternatives (see Figure 18)
Network Alternative 1 = Closure of Main Street from PCH to Orange, with no cross traffic on Walnut Avenue or Olive Avenue
Network Alternative 2 = Closure of Main Street from PCH to Orange, with cross traffic on Walnut Avenue or Olive Avenue
Network Alternative 3 = Closure of Main Street between Walnut Avenue and Olive Avenue
Network Alternative 4 = Realign 6th Street between Orange Avenue and Pecan Avenue

A discussion of the results of the analysis for each alternative is presented below.

Alternative 1 – Main Street Closure Pacific Coast Highway to Orange, with no cross traffic on Olive and Walnut

- Peak Hour Intersection Analysis – The results of the intersection analysis indicate that in both Cumulative 2020 and Year 2030 Conditions, the study intersections would continue to operate as they would without the changes proposed by Network Alternative 1 – Closure of Main Street between Pacific Coast Highway and Orange Avenue with no cross traffic on Olive Avenue and Walnut Avenue.

  Mitigation options at these intersections are the same as presented above in Section 4.12.4, Mitigation Measures (beginning on page 4-229 below). The changes in traffic resulting from Alternative 1 would not cause any additional intersections to deteriorate to unacceptable conditions.

- Daily Roadway Analysis – Traffic diversions as a result of the Main Street closure Alternative 1 would result in daily traffic volumes on Orange Avenue approaching or exceeding 20,000 vehicle trips per day on either side of Main Street in both the Cumulative 2020 and the Year 2030 conditions. With this level of daily traffic, Orange Avenue would require, at a minimum, a secondary (four-lane undivided) configuration from 6th Street to 1st Street, which would require either removal of the existing on-street parking or street widening.

  Traffic on Lake Street north of Orange Avenue would increase to just under 12,000 vehicles trips per day under Alternative 1 conditions, which is still within the Level of Service E capacity of a standard two-lane collector roadway.

  Network Alternative 1 includes the closure of Walnut Avenue to through traffic across Main Street. Since Walnut Avenue is shown on the Orange County Master Plan of Arterial Highways (MPAH) as a Secondary arterial between 6th Street and 1st Street, this network alternative would require an amendment to the MPAH. This would involve submitting a proposal to amend the MPAH to the Orange County Transportation Authority (OCTA), and going through the MPAH Amendment Process as outlined in the "Guidance for Administration of the Orange County Master Plan of Arterial Highways," publication.

Alternative 2 – Main Street Closure Pacific Coast Highway to Orange, with cross traffic on Olive and Walnut

Peak Hour Intersection Analysis – Under Network Alternative 2 – Closure of Main Street between Pacific Coast Highway and Orange Avenue and maintaining cross traffic on Olive Avenue and Walnut Avenue – the study intersections would continue to operate as they would without the changes proposed by Network Alternative 2. Once again, the mitigation options for these intersections are the same as presented Section 4.12.4, Mitigation Measures

beginning on page 4-229 below). The changes in traffic resulting from Alternative 2 would not cause any additional intersections to deteriorate to unacceptable conditions.

- Daily Roadway Analysis – As with Alternative 1, traffic diversions as a result of the Main Street closure would result in increases in daily traffic volumes on Orange Avenue. While the increases would not be as great as with Alternative 1, attributable to the fact that cross traffic at Main Street would be maintained on Olive and Walnut Avenues, the daily volumes would still approach and exceed 20,000 vehicle trips per day on either side of Main Street in both the Cumulative 2020 and the Year 2030 conditions. Similarly to Alternative 1, with this level of daily traffic, Orange Avenue would require a secondary (four-lane undivided) configuration from 6th Street to 1st Street, which would require either the removal of the existing on-street parking, or street widening.

  Traffic on Lake Street north of Orange Avenue would increase to just under 12,000 vehicle trips per day under Alternative 2 conditions, which is still within the Level of Service E capacity of a standard two-lane collector roadway.

  Since Walnut Avenue would not be closed at Main Street in Alternative 2, this network alternative would not require an amendment to the MPAH.

Alternative 3 – Main Street Closure from Walnut Avenue to Olive Avenue only

- Peak Hour Intersection Analysis – Under Network Alternative 3 – Closure of Main Street between Walnut Avenue and Olive Avenue only (and with cross traffic on Olive and Walnut Avenues allowed), no additional study intersections would deteriorate to unacceptable conditions. The intersection of Lake Street / 3rd Street and Orange Avenue, which was forecasted to deteriorate to Level of Service F in the PM peak hour under Alternatives 1 and 2, is forecasted to operate at LOS D under Alternative 3.

- Daily Roadway Analysis – As with Alternative 1 and 2, traffic diversions as a result of the Main Street closure would result in increases in daily traffic volumes on Orange Avenue, although to a lesser extent. The daily traffic volumes would remain under 12,500 on the west and east side of Main Street in Year 2020, but would exceed 14,000 vehicle trips between 3rd Street and 1st Street in both Year 2020 and Year 2030.

  While this level of daily traffic would exceed the capacity of a two-lane roadway, the intersections on each end of the segment are forecasted to operate at an acceptable Level of Service; therefore, a four-lane configuration on Orange Avenue would not be required.

  Since Walnut Avenue would not be closed at Main Street in Alternative 3, this network alternative would not require an amendment to the MPAH.

Alternative 4 – 6th Street Realignment between Orange Avenue and Main Street

- Peak Hour Intersection Analysis – With Alternative 4 – 6th Street Realignment between Orange Avenue and Main Street – no additional study intersections would deteriorate to unacceptable conditions. Traffic diversion resulting from Alternative 4 will consist primarily of traffic that currently turns to or from 6th Street at Main Street. The traffic destined to the north on Main Street will likely use the new segment of 6th Street between Orange and Pecan. Traffic headed for destinations across Main Street will divert to other cross streets such as Orange Avenue and Olive Avenue, prior to getting to the deleted segment, depending on the driver's destination.

- Daily Roadway Analysis – Alternative 4 would cause a slight increase in traffic on Main Street between Orange Avenue and 6th Street / Frankfort Street, and on Orange and Olive Streets, due to drivers diverting to/staying on Main Street because of the deleted segment of 6th Street. All street segments will operate within the daily capacity of a standard two-lane Collector.

Parking Demand and Supply

The following section addresses the significance criteria below relative to parking capacity.

- *Would the project result in inadequate parking capacity?*

A detailed analysis of existing and future parking demand and strategies to address parking demand and supply has been prepared by Kimley-Horn and Associates. The Downtown Huntington Beach Parking Master Plan Study is dated March 2009 and included as Appendix D of the DTSP. The parking analysis indicates that the Downtown and beach parking is seasonal in nature, with significant fluctuations throughout the day, week and year. The current Downtown parking supply generally accommodates the typical parking demand for Downtown and the beach on weekdays and weekends on the non-peak seasons. The demand for parking increases during the peak summer seasons, with at-capacity conditions occurring during peak summer days, particularly on weekends. The existing parking demand greatly exceeds the parking capacity on summer holidays and special events. The chart below summarizes seasonal parking characteristics.

Table 4.12.12
Seasonal Parking Characteristics

Season	Winter Weekday/ School in Session	Winter Weekends / School Breaks	Typical Summer		Summer Special Events
			Weekday	Weekend	
# days per year / %	175 (48%)	85 (23%)	70 (19%)	20 (5%)	15 (4%)
The parking experience	Plenty of parking throughout down-town. Any parking encroachment in neighborhoods is to avoid paying for parking, and not due to lack of parking supply.	Adequate parking, no major facilities full, free street parking taken, increased parking occurs on neighborhood streets.	All street parking full, residents increasingly impacted.		Supplemental parking and transportation measures needed, residents severely impacted.
			Beach-goers parking in down-town structures. Some parking available through-out downtown.	Promenade structure full. Difficult to find parking.	

The recommended strategies in the Parking Master Plan Study provide a "toolbox" of measures that should be implemented based upon opportunity and ability. Some, such as implementing a valet program or adding more bicycle parking can be easily and quickly achieved. Others, such as constructing temporary lots and forming business-to-business agreements will take additional effort and time to achieve. Parking strategies are organized into:

- Strategies to support downtown today
- Strategies to support additional new development

As new development occurs over the life of the DTSP, it is anticipated that approximately 300 to 400 additional off-site parking spaces will be necessary to support the net new development expected within the downtown. All residential and hotel development will required to have all parking on-site. Non-residential and non-hotel development will be required to provide parking on-site. In some cases, the requirement may be satisfied by paying parking in-lieu fees, if applicable. All new development will be required to replace any parking lost due to construction and provide any net new parking required. Any loss of on-street parking spaces will be required to be replaced at a one-to-one ratio. Section 3.2.26 - Parking of the DTSP provides specific parking requirements for proposed developments.

The number of additional off-site parking spaces that will be required was calculated from the maximum development potential estimated for the DTSP area and the on-street spaces that will be lost due to the redesign of Main Street. Zones are identified in the DTSP Update where the additional off-street parking will be provided and are also shown in Exhibit 4.12-10. The downtown is divided into three zones, with 50% of the needed parking proposed in zone A and 25% of the needed parking proposed in zones B and C. Zone A includes the Cultural Arts Overlay area, which will provide additional public parking in an underground structure.

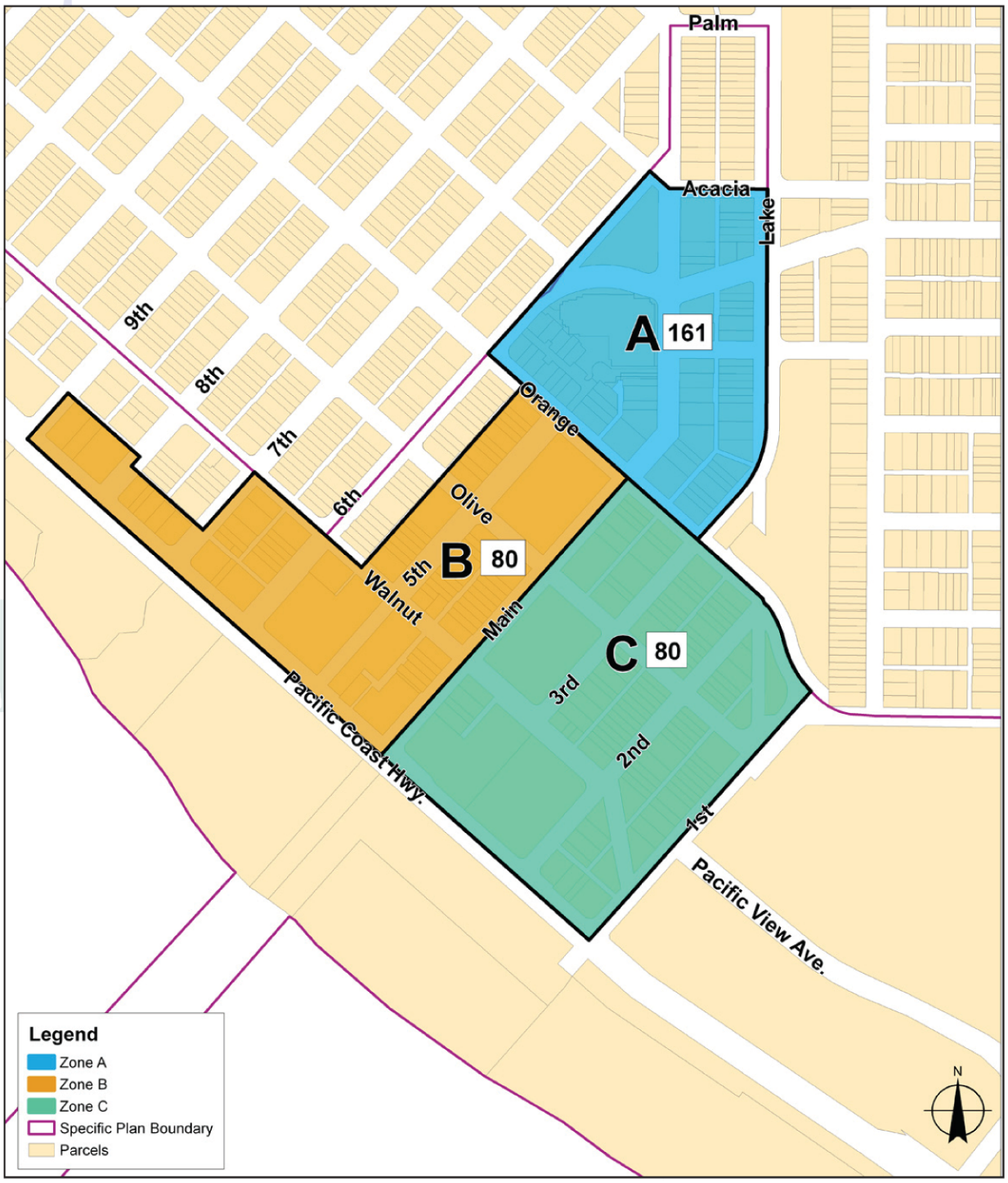

Exhibit 4.12-10 – Additional Off-Site Parking Spaces Needed Due to Net New Development

2. As all new DTSP development will be required to provide adequate parking and removal of any existing public parking will be required to be replaced at a one-to-one ratio, new development is not anticipated to result significant parking impacts. Strategies for addressing existing parking needs are described in the Parking Master Plan Update and are summarized below.

1. Parking Improvement Strategies

The parking improvement strategies described in the following sections will work in combination to manage the parking demand (who parks where, for how long and how much they pay) and increase the parking supply. These strategies were developed based upon the parking analysis, stakeholder input, and comments from residents at workshops to address future downtown needs and issues. The recommended improvements identified below are intended to represent a "toolbox" of strategies that can be implemented based upon opportunity. Some of the strategies, such implementing a valet program, could be easily and quickly achieved. Other strategies, such as constructing temporary lots and forming business-to-business agreements, will require additional effort and time to achieve. One of the most important aspects to consider is that most of the strategies are, and should be, interconnected. For example, parking in remote facilities with a shuttle service can be provided on the busiest event days, or serve as an option for employees in the future – which would reduce the demand for employee parking spaces downtown. As each improvement is implemented, the remaining strategies may need to be redefined.

Residential Parking

Visitors to the beach and Downtown and employees of downtown businesses often park on residential streets. On a typical day, this is an issue primarily on the streets closest to the downtown commercial businesses. On high demand days, such as summer weekends and downtown event days, parking encroachment into the neighborhoods extends further. Implementation of a parking meter/residential permit stem would preserve the spaces for residents as long as they have a permit. The boundary area recommended for this program is described in Chapter 5 – Circulation and Parking of the DTSP.

The cost to park on these streets should be comparable to the cost to park by the hour at the beach or downtown. The meters should have time limits and the permits should be restricted to specific streets.

3. Valet Parking Program

A valet parking program would increase the parking capacity by as much as 40%,, due to the ability of attendants to park more vehicles more efficiently. Valet parking could be useful in any new or existing parking structure and might be especially beneficial for hotel uses. The Pierside structure lower level is already striped for both regular and valet parking operations and the valet striping can accommodate approximately 60 more vehicles. The lower floor and the two upper floors of the Promenade structure could accommodate approximately 125 additional vehicles. The Strand parking structure is already configured for valet parking, but the Plaza Almeria structure would not yield as

many additional spaces due to of the configuration of the parking aisles and support columns. A valet parking program could be organized in many different ways, such as being led by businesses or the City, provided all or only part of the time, and/or with or without formal agreements. The project parking study report provides more detailed information regarding the options for how a valet program could be implemented.

4. Commercial Parking

Commercial parking is a pay lot operated by a private entity. This use is allowed in some parts of the DTSP area, including the core downtown area of District 1. To expedite this private sector investment, the City could either use its own land for a parking facility or the City could purchase land and actively recruit a parking developer to create a privately-operated parking venue. Depending upon the size of the property, the facility could be conventional surface parking, an automated parking structure, or a conventional parking structure.

5. Parking Fees

The rates (fees) currently charged to park downtown do not reflect the variable demand. Rate modification will help the City manage the demand by influencing where people park and for how long and improve parking conditions for all users. Rate changes will likely also increase revenues, which will allow the City to better manage the parking assets by providing for long-term maintenance and increase parking supply. The rate study will compare rates charges in similar, nearby cities and will include analysis of all City parking programs; beach parking, validation, residential.

6. Shuttle Service

Access to parking spaces outside the downtown area could increase the available parking supply on the days that have been defined as the highest demand. There are approximately 1,300 existing parking spaces north of downtown that have been identified for potential use as remote parking sites. A shuttle or trolley service could be provided between these locations and the DTSP area. Agreements between the City and property owners may be required to use these parking facilities. The shuttle service would be needed to transport users and demand would increase as the demand downtown increases. Implementation of a shuttle service would require many defined actions and responsibilities, including who would fund, operate and manage the service – which would likely be the City, a private entity, or the Business Improvement District (BID). Advertisement and signs would be required. A pick-up/drop-off point for the shuttle should be located near the north end of downtown to allow the shuttle to complete its circuit between downtown and the remote lots more quickly. These remote public and private lots could be used for special events and/or could provide parking for employees; some spaces could be designated for employees only whenever the shuttle service is provided:

- Huntington Beach City Hall has approximately 450 spaces that are generally available during evenings and weekends.

- Seacliff Office Park has approximately 500 spaces that are generally available during evenings and weekend. These spaces are privately owned and may need an agreement with the City.
- The City of Huntington Beach Central Library and Sports Complex is located 2 miles away from the core downtown and has approximately 700 spaces. While the number of spaces available for downtown events would depend upon the schedule of events slated for this location, it is estimated that 300 spaces are available during most evenings and weekends. Since the location is 2 miles away, use of these spaces may be most feasible for the larger downtown events, such as 4th of July weekend.
- On a case-by-case basis, parking supplies in nearby school, park, and church parking lots may also be available for event parking, depending on the days, times, and whether or not the school or church has their own activities scheduled. The potential for another approximately 1,100 parking spaces is identified in a number of school and church parking lots within a 1.5-mile radius of downtown.

7. Public/Private Partnerships

The City/agency could partner with developers of larger parcels to provide additional public parking in excess of the needs for the subject project. The recently constructed Strand project is an example of how this system could work.

8. Employee-Only Parking

Designated employee-only parking spaces could be provided in the downtown area. Some employers currently provide parking validation for their employees, but those employees often utilize the most prime public parking spaces for long periods of time. The lowest levels of the Plaza Almeria and Pierside Pavilion structures and the upper level of the Promenade structure could be designated for employees only. Monthly permits or employer validations could compensate the garages. Reduced rates could be charged, even if only during non-peak demand times. Businesses could also enter into agreements with each other, with those with more spaces than needed being compensated in some way by businesses needing spaces for their employees. The new lots constructed on vacant parcels could also serve employees only.

9. Utilize Vacant Parcels

Small parking lots should be constructed on currently vacant parcels as an interim use until that property is developed. This could include both City-owned and private properties. Lots located on the downtown periphery could be designated for employee-only parking and employers could be required to purchase or provide validations. The lots shall be designed with lighting, paving, and marked spaces in accordance with Chapter 231 of the ZSO. Monitoring and enforcement would be required. Vacant parcels and the potential number of parking spaces that could be gained are identified in the DTSP. Up to 265 parking spaces could be provided if this strategy were

implemented. As each property is developed, these spaces would be eliminated and would likely need to be replaced either as part of the development or in another location.

10. Parking Structures

Additional new conventional or automated parking structures will be needed within the downtown to accommodate the future parking demand. An underground parking structure is proposed as part of the Cultural Arts Overlay area and other structures could be provided on City or privately owned lots. One optional solution would be to provide an automated structure on the site adjacent to the Huntington Beach Art Center, which would provide approximately 200 new parking spaces.

11. Tiered Beach Parking

Additional parking could be provided in an automated lot or as podium parking on the seaward side of Pacific Coast Highway in the existing beach parking lots. The area would need to be graded and retaining walls would need to be installed to retain views from town. All parking would be located below the adjacent height of Pacific Coast Highway.

12. Parking Wayfinding Signage

A series of static and electronic parking wayfinding signs should be installed throughout the downtown. The signs will indicate the location of parking facilities and the number of spaces available at each designated location. The signs will direct users to harder-to-find spaces, manage the parking supply more efficiently, and minimize vehicle circulation. These information and direction signs should be located on the approaches to Downtown to inform the driver of where parking spaces are available, so that drivers can make the appropriate driving decisions prior to reaching a parking structure that is already full. The signs should also be posted near the major parking facilities, indicating how much parking is available at that facility, and directing drivers to other locations where parking is available, if necessary. Sign locations and design should be coordinated with other direction and wayfinding signs within the DTSP area.

13. Parking Information and Guidance System

A system that provides real-time information regarding parking space availability should be developed and implemented for all of the existing and future large parking facilities. The benefits of real-time information are greater than what can be provided with static parking wayfinding signs. The system would help users identify spaces faster, spend less time driving to look for spaces and better understand the practical parking capacity – the perception as it relates to the operational efficiency and accessibility of a parking supply. Currently, only the Promenade parking structure provides real-time parking supply information in the form of a small digital sign over both entrances.

A parking information and guidance system should be provided for the parking structures, plus other select locations, in downtown to assist users in finding parking and maximizing the use of available

parking. This system is estimated to result in approximately 10% additional efficiency in the existing structures, or approximately 100 available parking spaces.

In summary, the parking study identified that it is difficult to find parking 35 days per year and that an actual parking deficiency exists 15 days per year, which would require implementation of supplemental parking measures. As new development is proposed, parking is required to be provided pursuant to the requirements of the DTSP. The DTSP indicates that all parking for residential and hotel development is required to be provided on-site. Parking for commercial (e.g., retail, restaurant) developments is also required to be provided on-site. However, project applicants could apply for a conditional use permit to satisfy the parking requirement via payment of in-lieu fees or shared parking agreements. In addition, the City could require projects to provide one or more of the following:

1. Implementation of a valet parking program.
2. Valet service during the peak season and special events.
3. Remote parking and shuttle service during the peak season and special events.
4. Implementation of additional directional signage to parking facilities.
5. For projects with more than 10,000 square feet of commercial area, submittal of a parking management plan.

Given that parking is required to meet the minimum code requirements, development from implementation of the proposed DTSP Update would not result in significant parking impacts.

4.12.4 Mitigation Measures

The following identifies the recommended mitigation measures:

For Cumulative Year 2020 conditions, the proposed Huntington Beach DTSP Update would result in a significant impact at two study intersections. The implementation of the proposed pedestrian-only phase would result in LOS E or F conditions at the intersections of:

- Pacific Coast Highway at 1st Street (PM peak - LOS E)
- Pacific Coast Highway at 6th Street (PM peak - LOS E)

MM 4.12-1 Prior to Year 2020, one of the following mitigation measure options shall be implemented:

- Implement time-of-day signal timing options that would implement the pedestrian-only phase during peak pedestrian flow periods, such as summer weekends and special event days, and eliminate the pedestrian-only phases during the morning and evening commute peak periods. (Note: While this option would have the benefit of facilitating peak pedestrian traffic flows

during peak activity periods, it would also result in additional delay for vehicular traffic movements during these same peak activity periods.)

- If the proposed pedestrian-only phase were to be implemented, and operational at all times, including the AM and PM commute peak periods, in order to achieve an acceptable Level of Service, a second southbound left-turn lane from Pacific Coast Highway onto 1st Street and a second southbound left-turn lane from Pacific Coast Highway onto 6th Street would be needed to mitigate the impact of the proposed pedestrian-only phases. This improvement at either intersection would involve roadway widening and right-of-way acquisition on Pacific Coast Highway, and would require Caltrans coordination and approval, and may be found to not be feasible.
- Removal of the pedestrian-only phase altogether (which would mean not implementing the DTSP recommendation) would improve the Level of Service at both intersections to LOS D or better in both peak hours.

For Cumulative Year 2030 conditions, the proposed project would result in a significant impact at two study intersections. The implementation of the proposed pedestrian-only phase would result in LOS E or F conditions in one or both peak hours at the intersections of:

- Pacific Coast Highway at 1st Street (PM peak - LOS E), and
- Pacific Coast Highway at 6th Street (PM peak - LOS E)

The mitigation options for the impact of the pedestrian-only phase are the same as listed above for Cumulative Year 2020 With Project conditions.

The proposed project is forecasted to result in a significant impact at two additional study intersection under the Year 2030 conditions:

- Pacific Coast Highway at Goldenwest Street (PM peak - LOS E)
- Orange Avenue at Lake Street (PM peak – LOS E)

MM 4.12-2 Prior to Year 2030, one of the following mitigation measure options shall be implemented:

- Implement right-turn overlap signal phasing for southbound Goldenwest Street. This would bring the PM peak hour to LOS D. A right-turn overlap for southbound Goldenwest Street would require that u-turn movements on eastbound Pacific Coast Highway be prohibited.
- Provide two eastbound and westbound through lanes on Orange Avenue. This would achieve Level of Service D in the evening peak hour. This improvement would require the removal of street parking on both sides of Orange Avenue on either side of Lake Street.
- Installation of a signal at this intersection would achieve acceptable Level of Service operation.

4.12.5 Level of Significance after Mitigation

With implementation of the recommended mitigation measures, the project will not result in unavoidable adverse significant impacts to transportation and parking.

4.12.6 Significant and Unavoidable Impacts

All impacts to transportation and parking associated with the proposed project would be less than significant or mitigated to less than significant levels. Therefore, no significant and unavoidable impacts related to land use and planning would occur.

4.12.7 Cumulative Impacts

Related development projects in the vicinity of the proposed project include projects that are already approved as identified in Table 4.12.3, Summary of Cumulative Projects (page 4-196) and that have been anticipated by the existing DTSP and the Huntington Beach General Plan. Project traffic associated with the proposed DTSP Update was added to the Year 2030 traffic volumes, and the study intersections were re-analyzed. The intersection of Goldenwest Street at Pacific Coast Highway will continue to operate at LOS E in the evening peak hour, and the intersection of Orange Avenue at 1st Street will worsen to LOS F levels of delay. At the intersection of Goldenwest Street and Pacific Coast Highway, the project will increase the ICU value by 0.02, to bring it to 0.94. At the intersection of Orange Avenue at 1st Street, the project traffic will cause the intersection to worsen from LOS E to LOS F in the evening peak hour.

In addition, as with Year 2020 conditions, the proposed implementation of the pedestrian-only phases at the intersections of Pacific Coast Highway at 6th Street and Pacific Coast Highway at 1st Street would reduce the capacity for the movement of vehicles by roughly 30%, and results in LOS E or F conditions in the evening peak hour. The proposed pedestrian-only phase is the direct cause of the unacceptable Level of Service at these two intersections. Without the pedestrian-only phases, both intersections would operate at LOS D or better in both peak hours.

Since parking is required to meet the minimum code requirements, development from implementation of the proposed DTSP Update would not result in significant cumulative parking impacts.