Project SHAPE

EL CENTRO DOWNTOWN PARKING AND TRAFFIC STRATEGY

SEPTEMBER 2008
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The Compass Blueprint Project aims to help communities in Southern California plan for future growth based on principles of mobility, livability, prosperity and sustainability. Project SHAPE has brought Compass Blueprint to El Centro.

A series of workshops in 2007 brought together citizens, businesspeople, elected officials and planners to create a new vision for the future embodied in the Downtown Master Plan. The Plan established goals that will enable Downtown to become a more complete community while growing as a regional center.

One of the principal components of the Plan was the development of the Downtown Development Scenario, a comprehensive, stakeholder-driven vision for local land use and transportation. Strategies to implement this scenario focus on attracting and targeting new investment while improving quality of life and creating a more walkable, people-oriented place.

This Parking and Traffic Study was intended to analyze the possible impacts of the Development Strategy on the downtown area’s parking and traffic capacity, identify needed investments, and devise a parking plan that will accommodate future growth.
Study Area: Downtown El Centro

Downtown El Centro is bordered by Adams Avenue to the north, Orange Avenue to the south, the railroad tracks to the east, and 10th Street to the west. However, the core area under consideration for the purposes of this study lies between Commercial Avenue to the north, State Street to the south, 4th Street to the east, and 8th Street to the west.

The Downtown Master Plan seeks to enhance and transform the area according to a set of goals:

- **Beautify Downtown**, making the most of its uniqueness and adding new elements.
- **Create a People-Oriented Place**, with more accessible public spaces and retail.
- **A Walkable Downtown**, with better parking, traffic management and pedestrian facilities.
- **Develop an Economy to Sustain and Serve Future Generations**
- **Historic Preservation**, preserving Downtown’s historic architectural character
- **Restore Prosperity and Vitality to the Downtown Area**
- **Identify Common Interests and Develop Positive Relationships**

A map of Downtown El Centro including possible opportunity sites for redevelopment.
The Downtown Development Scenario envisions a build-out of Downtown based on compatible redevelopment taking place on the inventory of underused sites on the adjacent map. It includes redevelopment of approximately 33 acres, resulting in an additional 800 dwelling units, 186,000 square feet (s.f.) of retail, and 543,000 s.f. of office/service space in the downtown core. It seeks to redefine Downtown El Centro as both the main regional center for the Imperial Valley and a mixed use neighborhood in its own right.

The visualizations below provide an idea of what redevelopment envisioned in the SHAPE scenario might look like. Maps on the following two pages show a more complete representation of the scenario concept.
Conceptual Map of the SHAPE Scenario

Legend:
- Main Shopping and Entertainment
- Critical Connections
- Streetscape Improvements
- Pedestrian Connections
- Critical Intersections

Land Uses:
- Mixed-Use
- Commercial
- Employment
- Residential
- Open Space & Parks
- Civic
- Publicly Owned Surplus Parking
- Parking Structure

Downtown El Centro
Project SHAPE
Conceptual Illustration

April 16th
Workshop Results

DRAFT - April 18th 2007
Downtown Parking Occupancy on April 7 and 8, 2008
Overview

A parking survey was administered in the morning and afternoon of April 7, 2008. Surveyors assessed the total number of parking spaces available downtown, and counted the number of vehicles parked in both on-street and off-street parking spaces on public and private lots. This process was repeated on April 8, and results were averaged between the two days.

PARKING DEMAND SURVEY

A parking survey was administered in the morning and afternoon of April 7, 2008. Surveyors counted the total number of parking spaces downtown as well as the number of vehicles parked in both on-street and off-street spaces on public and private lots. This process was repeated on April 8, and results were averaged between the two days.

The results of the survey appear in the maps to the left. Surveyors counted 1,900 public and private parking spaces in Downtown El Centro. Of these, 828 were public, including 436 on-street and 392 off-street spaces. 1072 spaces were located on private lots.

Overall, there appears to be sufficient parking capacity at all times of the day in the downtown. However, there are blocks where it may be difficult to find a spot at certain times of day. In the morning, 826 of 1900 spaces were occupied by vehicles. In the afternoon, 818 spaces were occupied, indicating a 43% occupancy rate throughout the day. The majority of total parking was vacant in both morning and afternoon. The occupancy rate for public parking, at 45.5%, was not significantly higher than for private parking. Public parking lots had unused capacity at all times of day.

In the morning, parked cars tended to concentrate in the northern and eastern parts of Downtown, and the highest occupancy rates were found on:

- **Main Street between Sixth and Eighth Streets**
- **Sixth Street between Main Street and Commercial Ave**
- **State Street between Fourth and Fifth Streets**

In the afternoon, there was less demand along Main Street and a general shift toward the southern and eastern parts of Downtown, with the busiest sections along:

- **State Street from Fourth to Seventh Streets**
- **Fifth Street between State Street and Commercial Ave.**
Nearly all private parking in Downtown El Centro is linked to a single business. All new developments are required to provide parking for potential shoppers, employees and residents. This has resulted in the current ample supply. More spaces may be required as Downtown redevelops and becomes more active. However, providing a large amount of off-street parking is difficult in an infill development situation. The SHAPE Plan documented several related problems, including diverting a large amount of capital to structured parking spaces, the difficulty of providing structured parking on lots under 25,000 square feet, and the near impossibility of providing surface parking on lots of less than 10,000 square feet if a multi-story building is desired.

However, combining public and private spaces for multiple uses has been shown to substantially reduce the number of new parking needed. In addition, real demand for parking may be lower than expected due to the potential for two other factors: internal trip capture, and the use of alternative travel modes.

**Shared Parking**

The Urban Land Institute (ULI) defines shared parking as “the use of a parking space to serve two or more individual land uses without conflict or encroachment.” This strategy is generally viable because parking demand for any land use varies throughout the day. For example, the demand for office parking falls in the middle of the day and in the evening, while demand for restaurant parking is typically highest at these times.

When an appropriate mix of uses is present, the shared parking concept can be used to make more efficient use of existing parking and to reduce the amount of parking required for new projects. This can have the effect of facilitating new development or redevelopment that would otherwise not occur.

These graphs illustrate the potential benefits of shared parking.
**Internal Trip Capture**

Internal capture refers to the fact that some drivers park to use multiple facilities in a proximate area. They may frequent shops and run multiple errands in a neighborhood while leaving their cars parked in a single space. This can be illustrated at shopping malls: customers park outside, and then shop at several stores. Complete downtowns combining residential, commercial, office and civic destinations have an even higher potential to benefit from this phenomenon, which reduces both parking demand and traffic congestion.

The traffic analysis by Kimley Horn Associates for this report found a 24% internal capture in downtown El Centro. This means nearly one-quarter of visitors to downtown do multiple errands while parked in a single spot. Accounting for internal trip capture reduces the predicted demand for additional parking in a walkable downtown.

**Mode Split and Alternative Travel Modes**

Alternative Modes refer to travel by means other than a single-occupant car. According to the 2000 Census, El Centro employees use a single-occupant auto for 74% of their trips to work. Other modes account for 26% of commute travel, the most common of which are carpooling and walking. Given that the downtown is near to many residential areas, Downtown can anticipate a modest amount of alternative travel mode usage by shoppers and workers alike.
FUTURE PARKING DEMAND

Using the shared parking and internal capture concepts, future parking demand under the Downtown Development Scenario was estimated using the ULI shared parking model. The ULI model uses an extensive database built from national studies, and considers time of day and seasonal parking demands for dozens of uses. The Downtown Development Scenario was entered in the model and was the driver for future parking demand.

Model Assumptions

In El Centro, only 74% of work trips are currently made by single-occupancy vehicles. The remaining commuters carpool, walk, work at home, or take transit. By accounting for this travel mode split, the ULI model projects a more appropriate future parking demand. When running the model, we assumed a conservative 80% mode split for single auto use for employees in the daytime, 85% single use at night, and a 95% drive alone rate for customers and residents of future developments. For internal capture, the assumption was 15% of trips, also conservative, based on the Kimley Horn traffic analysis (see Traffic Study).

Model Results

Several scenarios were run predicting the number of new parking spaces needed to accommodate development. These ranged from predicting needs with no demand management to likely real demand with all three factors applied. The results are shown in Table 1. In the absence of demand management strategies, estimated new parking demand was at 4,060 spaces. However, incorporating the potential for shared parking reduced predicted demand to 3,558 spaces. When travel mode split was taken into account, demand dropped to 3,238 new spaces, and with internal trip capture it went down to 2,794 spaces. By way of perspective, under the current parking code, 4,500 spaces would be required.

<table>
<thead>
<tr>
<th>Table 1. Required New Parking Spaces at Build-Out of the Downtown Development Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw Demand (no reductions)</td>
</tr>
<tr>
<td>With Shared Parking</td>
</tr>
<tr>
<td>With Shared Parking, Mode Split</td>
</tr>
<tr>
<td>With Shared Parking, Mode Split, Internal Capture</td>
</tr>
</tbody>
</table>
RECOMMENDED PARKING STRATEGY

General

Whereas approximately 4,500 new parking spaces would be required to accommodate redevelopment under current requirements, the model estimated that only 2,800 spaces would be necessary using a shared parking policy that takes into account the potential for internal trip capture and the mode split for trips entering downtown. This difference in spaces, 1,700, is very substantial. This amount of parking requires around 17 acres, would cost over $5,000,000 for surface spaces and $42,500,000 for structured parking.

As mentioned previously, requirements for off-street parking in Downtown make the development of new buildings and the redevelopment of older buildings into new occupancies very difficult. Most parcels are small, and developing multi-story buildings is expensive, because the number of parking spaces needed requires the use of structures.

Given that current parking regulations require more parking than is needed, and given the expense and impracticality of providing off-street parking on small redevelopment lots, a shared parking strategy would be sensible for Downtown El Centro, in addition to a reduction in the current off-street parking requirements of the Zoning Code.

Off-Street Parking Requirements

A reduced parking requirement of 1.5 spaces per residential unit, and 2 spaces per 1,000 square feet of office or retail use would provide 2,800 new spaces – enough to meet the forecast need of the SHAPE scenario. This would require a shared parking strategy, so some public parking would have to be added to this. Shared parking works because the same space is used by different uses at different times of day. Private off-street parking is rarely shared, but public spaces are by definition shared.

With this reduced parking requirement, the average demand could be accommodated off street, but peak demand could exceed that private parking supply. The overflow demand should be accommodated in a public supply in the downtown.

Public Parking Needs

Public parking currently provides about half of the parking supply downtown, with an unused capacity averaging 450 spaces. If the Downtown Development Scenario comes to fruition, the public to private ratio will change. Over time, some additional public parking would need to be added to ensure that there is a peak supply available at critical times.
Currently, 45% of downtown parking is public. We recommend that the area maintain about a 25% public parking supply to facilitate shared parking between uses. This would require adding 350 public spaces by 2020, and would allow for the exemption of small lots (less than 5,000 square feet) and redevelopment projects from parking requirements, as recommended in the SHAPE Plan.

The following table shows parking supply given a 2020 build-out of the Downtown Development Scenario using the above recommendations, and shows how parking supplies would be added in the Downtown.

As new public parking spaces would be required, it would behoove the City to consolidate public off-street parking into a few larger lots that can be used for structured parking when the time requires.

**In Lieu Parking Fees**

The City currently allows off street parking to be waived if the applicant pays an in lieu fee. This is a useful strategy when it is impractical to provide parking on a lot, and allows the city to provide a greater portion of shared parking, which is more valuable. However, the parking ratios used to calculate the in lieu fee should be the new reduced rates recommended. In addition, the Urban Renewal agency should consider paying the in lieu fees as an incentive to particular projects, as the investment may reimburse the agency many times over, and the in lieu fees may be a financial obstacle for otherwise desirable projects.
PARKING CONCLUSIONS

Main Conclusions

- There is currently a surplus of parking in Downtown, with only a few hotspots of demand exceeding supply;
- the current parking code would require 4,500 new private spaces to accommodate anticipated development;
- however, no more than 2,800 new private spaces will be needed to supply parking demand in the future;
- this can be provided with significantly reduced parking standards from the current code;
- using the current surplus of public parking, shared parking can be relied on to reduce parking requirements;
- it is advisable to keep a supply of public shared spaces, which would require the addition of 350 new public spaces over time; and,
- the in lieu parking fee should be calculated based on the new projected parking demand, and the Urban Renewal Agency should consider paying these on a case by case basis as an incentive to downtown investment.

Additional Recommendations

- Consider elimination of parking requirement for existing small parcels on Main Street. The increase in parking demand would be small but the increase in activity would bring significant economic benefits.
- Eliminate parking requirements for rehab or redevelopment of existing structures. Many structures downtown have vacant second stories that could be converted to use if parking requirements were waived.
- Use Tax Increment Financing (TIF) to build new parking structures or lots over time, as the need grows. Over time, as the downtown grows, the Urban Renewal Agency should develop capital plans for public parking facilities.
- Monitor parking demand at regular times and adjust the downtown parking strategy accordingly.
<table>
<thead>
<tr>
<th>LOS</th>
<th>Signalized</th>
<th>Unsignalized</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>≤10.0</td>
<td>≤10.0</td>
<td>Operations with very low delay and most vehicles do not stop.</td>
</tr>
<tr>
<td>B</td>
<td>&gt;10.0 and ≤20.0</td>
<td>&gt;10.0 and ≤15.0</td>
<td>Operations with good progression but with some restricted movement.</td>
</tr>
<tr>
<td>C</td>
<td>&gt;20.0 and ≤35.0</td>
<td>&gt;15.0 and ≤25.0</td>
<td>Operations where a significant number of vehicles are stopping with some backup and light congestion.</td>
</tr>
<tr>
<td>D</td>
<td>&gt;35.0 and ≤55.0</td>
<td>&gt;25.0 and ≤35.0</td>
<td>Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines.</td>
</tr>
<tr>
<td>E</td>
<td>&gt;55.0 and ≤80.0</td>
<td>&gt;35.0 and ≤50.0</td>
<td>Operations with significant delay, extensive queuing, and poor progression.</td>
</tr>
<tr>
<td>F</td>
<td>&gt;80.0</td>
<td>&gt;50.0</td>
<td>Operations unacceptable to most drivers, when vehicle arrival rates exceed intersection capacity.</td>
</tr>
</tbody>
</table>
OVERVIEW

The purpose of this section is to document the potential traffic-related impacts associated with the El Centro Downtown Development Scenario. This scenario consists of the redevelopment of approximately 33 acres, resulting in an additional 800 dwelling units (du), 186,000 sf of retail, and 543,000 sf of office/service space. For the traffic analysis, the six following Downtown intersections have been identified as critical intersections that could be affected by redevelopment and are contained within the focus area:

- 8th Street & Broadway Street
- 8th Street & Main Street
- 8th Street & State Street
- 4th Street & Broadway Street
- 4th Street & Main Street
- 4th Street & State Street

METHODOLOGY

The 2000 Highway Capacity Manual published by the Transportation Research Board establishes a system where transportation facilities are rated for their ability to process traffic volumes. The term “level of service” is used to provide a qualitative evaluation of traffic conditions based on quantitative calculations derived from empirical values.

Level of service (LOS) for intersections is defined in terms of delay, a measure of driver discomfort, fuel consumption, and loss of travel time. Specifically, LOS criteria are stated in terms of the average control delay per vehicle for the peak 15-minute period within the hour analyzed. The average control delay includes initial deceleration delay, queue move-up time, and final acceleration time as well as stop delay. Table 2 on the opposite page describes the different level of service designations at signalized and unsignalized intersections.
Table 3. Existing Conditions
Peak-hour Intersection LOS Summary

<table>
<thead>
<tr>
<th>INTERSECTION</th>
<th>TRAFFIC CONTROL</th>
<th>PEAK HOUR</th>
<th>EXISTING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AM</td>
<td>PM</td>
</tr>
<tr>
<td>Broadway St &amp; 4th St</td>
<td>Two-Way Stop</td>
<td>84</td>
<td>ECL</td>
</tr>
<tr>
<td>Main St &amp; 4th St</td>
<td>Signalized</td>
<td>38.7</td>
<td>31</td>
</tr>
<tr>
<td>State St &amp; 4th St</td>
<td>Two-Way Stop</td>
<td>23.3</td>
<td>28.9</td>
</tr>
<tr>
<td>Broadway St &amp; 8th St</td>
<td>Signalized</td>
<td>18.5</td>
<td>24</td>
</tr>
<tr>
<td>Main St &amp; 8th St</td>
<td>Signalized</td>
<td>16.8</td>
<td>20.7</td>
</tr>
<tr>
<td>State St &amp; 8th St</td>
<td>Signalized</td>
<td>23.4</td>
<td>22.4</td>
</tr>
</tbody>
</table>
EXISTING CONDITIONS

Roadway Conditions

Within the focus study area, 8th Street and 4th Street run in the north-south direction and provide two travel lanes in each direction. Parking is not allowed on either side of the roadway. Broadway Street, Main Street, and State Street run in the east-west direction and provide one travel lane in each direction. Parallel parking is provided on both sides of Broadway Street and State Street and diagonal parking is provided on both sides of Main Street.

Of the six study intersections, all are signalized except for the Broadway Street and State Street intersections along 4th Street, which are unsignalized with traffic stopping for the east-west approaches.

The existing intersection geometrics are shown on the adjacent graphic. It should be noted that the westbound approach at the Broadway Street and State Street intersections along 4th Street are wide and a de-facto right-turn lane has been assumed.

Traffic Volumes

The peak hour traffic volumes (between 7:00 and 9:00 for the AM peak and between 4:00 and 6:00 for the PM peak) at the study intersections were obtained in June 2008 by National Data & Surveying Services. The adjacent figure shows the existing turning movement volumes in the AM and PM peak hours at the study intersections.

Intersection Analysis

An analysis of existing conditions at each of the study intersections indicates that all signalized intersections and the 4th Street/State Street intersection currently operate at an acceptable LOS in both the AM and PM peak hours. However, at the 4th Street/Broadway Street intersection, this location operates at LOS F during both peak periods.

It should be noted that the low volumes on the stop-controlled approaches results in the large delays and poor LOS operations. However, based on our experience observing traffic at unsignalized intersections and on field observations, reported delays are typically much higher than what is observed in the field. The results of the intersection analysis are contained in the following table.
### Table 3. Year 2028 Trip Generation Summary

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Units</th>
<th>Trip Rate</th>
<th>Daily Trips</th>
<th>AM Peak-Hour</th>
<th>PM Peak-Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Apartment/Condo</td>
<td>800 du</td>
<td>6.72/du</td>
<td>5,376</td>
<td>408</td>
<td>496</td>
</tr>
<tr>
<td>- Retail</td>
<td>186,000 sf</td>
<td>44.3/k sf</td>
<td>8,244</td>
<td>0</td>
<td>322 in, 174 out</td>
</tr>
<tr>
<td>Office/Service</td>
<td>543,000 sf</td>
<td>11/k sf</td>
<td>5,978</td>
<td>842</td>
<td>138 in, 671 out</td>
</tr>
<tr>
<td><strong>Proposed Total</strong></td>
<td></td>
<td></td>
<td>1,250</td>
<td>1,809</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td><strong>19,598</strong></td>
<td><strong>823 in, 427 out</strong></td>
<td><strong>682 in, 1,127 out</strong></td>
</tr>
</tbody>
</table>

#### Internal Trip Capture Credit

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Units</th>
<th>Trip Rate</th>
<th>Daily Trips</th>
<th>AM Peak-Hour</th>
<th>PM Peak-Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Apartment/Condo</td>
<td>884</td>
<td></td>
<td>0</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>- Retail</td>
<td>469</td>
<td>2 in, 2 out</td>
<td>4</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Office/Service</td>
<td>3,421</td>
<td>0 in, 0 out</td>
<td>0</td>
<td>154</td>
<td></td>
</tr>
<tr>
<td><strong>Total Internal Capture Credit</strong></td>
<td></td>
<td></td>
<td>4</td>
<td>246</td>
<td></td>
</tr>
<tr>
<td><strong>Net Trip Generation</strong></td>
<td></td>
<td></td>
<td><strong>4,774</strong></td>
<td><strong>2 in, 2 out</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>1,246</strong></td>
<td><strong>1,563</strong></td>
</tr>
</tbody>
</table>
YEAR 2028 CONDITIONS

Trip Generation

To determine the potential impacts resulting from development in Downtown El Centro, future trip generation was calculated based on the number of new dwelling units and square feet of new retail and office/service space expected. Trip rates were referenced from the Institute of Transportation Engineers Trip Generation Manual, 7th Edition. Internal capture adjustments were then made because it is assumed that the mix of residential, retail, and office would reduce the number of external trips coming to the area. Table 3 summarizes the trip generation for the Downtown Development Scenario. As shown in the table, the scenario is forecast to generate a total of 14,824 new daily trips including 1,246 in the a.m. peak-hour (821 in, 425 out) and 1,563 in the p.m. peak-hour (559 in, 1,004 out).

Trip Distribution and Assignment

Projected trip distribution was based on existing travel patterns and freeway network access. The following list shows the general trip distribution through the study area for Downtown El Centro:

- 18 percent to/from the north
- 37 percent to/from the south
- 35 percent to/from the west
- 10 percent to/from the east

Based on this trip distribution and the trip generation described previously, trips were assigned to the different intersections in the focus area.
### Table 5. Year 2028 Conditions
Peak-hour Intersection LOS Summary

<table>
<thead>
<tr>
<th>INTERSECTION</th>
<th>TRAFFIC CONTROL</th>
<th>PEAK HOUR</th>
<th>2028 BASELINE PLUS PROJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DELAY</td>
<td>LOS</td>
</tr>
<tr>
<td>Broadway St &amp; 4th St</td>
<td>Two-Way Stop</td>
<td>AM ECL F</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM ECL F</td>
<td></td>
</tr>
<tr>
<td>Main St &amp; 4th St</td>
<td>Signalized</td>
<td>AM 42.9 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM 70 E</td>
<td></td>
</tr>
<tr>
<td>State St &amp; 4th St</td>
<td>Two-Way Stop</td>
<td>AM ECL F</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM ECL F</td>
<td></td>
</tr>
<tr>
<td>Broadway St &amp; 8th St</td>
<td>Signalized</td>
<td>AM 21.3 C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM 23.1 C</td>
<td></td>
</tr>
<tr>
<td>Main St &amp; 8th St</td>
<td>Signalized</td>
<td>AM 20.7 C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM 29.9 C</td>
<td></td>
</tr>
<tr>
<td>State St &amp; 8th St</td>
<td>Signalized</td>
<td>AM 24.9 C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM 27.2 C</td>
<td></td>
</tr>
</tbody>
</table>
2028 Traffic Volumes

In order to estimate traffic volumes for Year 2028, historical volumes from freeway ramps in the vicinity of the study area were obtained from Caltrans to determine average traffic increases over the past 10 years. On average, a two percent per year growth has occurred. Assuming that this pattern continues, there will be approximately 48 percent growth in traffic from current levels by 2028. The trips associated with the Downtown El Centro development project were added to these Year 2028 baseline volumes. The adjacent graphic shows the projected peak-hour turning movement volumes at the study intersections for Year 2028 with the Downtown El Centro development project.

2028 Intersection Analysis

An analysis of Year 2028 conditions at each of the study intersections without and with the addition of the project traffic indicates that three of the six study intersections would operate at an unacceptable LOS. Two of these intersections are unsignalized, and all three are located on 4th Street and fail in the projected Year 2028:

- Broadway Street/4th Street (LOS F – both peak hours)
- Main Street/4th Street (LOS E – AM Peak, LOS F – PM Peak)
- State Street/4th Street (LOS F – both peak hours)

The results of the intersection analysis are contained in Table 4. Of these three deficient intersections, two are unsignalized.
PROPOSED IMPROVEMENTS

To improve the unsignalized intersections of Broadway Street and State Street along 4th Street to a LOS D or better during both peak hours, the installation of a traffic signal is recommended. As part of the signal operations, it was assumed that the eastbound and westbound approaches at both intersections would be split-phased. In addition, a southbound left-turn lane would be added at the 4th Street/Broadway Street intersection.

An analysis was performed for the peak-hours at these intersections to determine whether a signal was needed. Based on the results of the analyses, the 4th Street/Broadway Street intersection met the peak-hour signal warrant analysis under Existing Conditions and Year 2028 without and with the project. At the 4th Street/State Street intersection, it did not meet the peak-hour signal warrants under Existing Conditions, but met the warrants under the Year 2028 without and with the project. This indicates that a red light will be needed at both intersections in the near future.

The intersection of Main Street at 4th Street is already signalized and would require additional physical improvements. The addition of a westbound left-turn lane, eastbound right-turn lane, and northbound right-turn lane would all be necessary to achieve LOS D or better for both peak periods. These improvements are in concurrence with the City of El Centro Circulation Element.

<table>
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<th>INTERSECTION</th>
<th>PEAK HOUR</th>
<th>BEFORE IMPROVEMENT</th>
<th>AFTER IMPROVEMENT</th>
<th>DESCRIPTION</th>
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<td>PM</td>
<td>ECL</td>
<td>F</td>
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<td>60.2</td>
<td>E</td>
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TRAFFIC STUDY

TRAFFIC CONCLUSIONS

General

- The Downtown Development Scenario is forecast to generate a total of 14,824 new daily trips including 1,246 in the AM peak (821 in, 425 out) and 1,563 in the PM peak (559 in, 1,004 out).
- Under Existing Conditions, all signalized intersections operate at an acceptable LOS, but the unsignalized intersection at 4th Street & Broadway Street operates at LOS F during both peak periods.
- Given anticipated development under the Scenario, in 2028 both unsignalized intersections are projected to operate at LOS F in both peak periods and the Main Street/4th Street intersection will operate at LOS E/F during both peak hours.
- A peak-hour signal warrant analysis shows that both Broadway Street/4th Street and State Street/4th Street will need a red light by 2028. In fact, the Broadway Street/4th Street intersection may already need a signal under existing conditions. It is recommended that further analysis be conducted to ensure other criteria for a traffic signal are met.

Recommendations

- Broadway Street/4th Street: Add a traffic signal and southbound left-turn lane.
- Main Street/4th Street: Add a westbound left-turn lane, eastbound right-turn lane, and northbound right-turn lane.
- State Street/4th Street: Add a traffic signal.
TRAFFIC CONCLUSIONS

- Parking in Downtown El Centro is well supplied compared to most downtown areas. El Centro shows a parking surplus at most times of the day with the exception of a few hot spots.
- Existing Zoning Code Parking requirements can be reduced significantly without adverse effect. Downtown’s estimated off street parking is well below what is required by the zoning code.
- In order to keep a proportion of parking spaces downtown in public ownership and shared among users, new public parking lots or structures of about 350 spaces are recommended by 2020 if the downtown grows as expected.
- Traffic currently flows within recommended levels at all intersections except for a capacity issue at Broadway Ave. and 4th, Street. Under the SHAPE Scenario three intersections become congested: Main St. and 4th Street, and State St. and 4th Street.
- Future improvements will be required to maintain acceptable traffic if downtown grows according to the SHAPE Scenario:
  - Signalize Broadway and 4th, and State and 4th;
  - Place turn lanes at Main and 4th.