

EXECUTIVE SUMMARY

Beach Boulevard (State Route 39, or SR 39) is the longest continuous north-south arterial in Orange County. The corridor extends through nine cities (Huntington Beach, Westminster, Garden Grove, Stanton, Anaheim, Buena Park, Fullerton, La Mirada, and La Habra) as well as through unincorporated Orange County, and is primarily under the jurisdiction of the California Department of Transportation (Caltrans).

In October 2018, the Beach Boulevard Corridor Study (Project) was initiated to develop a comprehensive multimodal transportation vision for the corridor. This 14-month study identified constraints and opportunities to improve and enhance local and regional mobility. The study evaluates existing conditions, forecasts future growth, and develops solutions ranging from enhanced pedestrian, bicycle, and transit facilities to improved signal synchronization. Ultimately this study will provide local agencies along Beach Boulevard with transportation options to help guide and enhance local planning initiatives.

The Project Corridor is defined as Beach Boulevard from State Route 1 (SR 1, also known as Pacific Coast Highway or PCH) in Huntington Beach and continues for about 21 miles north to State Route 72 (SR 72, also known as Whittier Boulevard) in La Habra. Given the configuration of the roadway network and that modifications may affect parallel facilities, the Study Area has been defined as a 1.25-mile buffer around the Project Corridor.

To support the development of the Project, OCTA, Caltrans and the consultant team convened a Technical Working Group (TWG), comprised of representatives from each city and jurisdiction along the corridor.

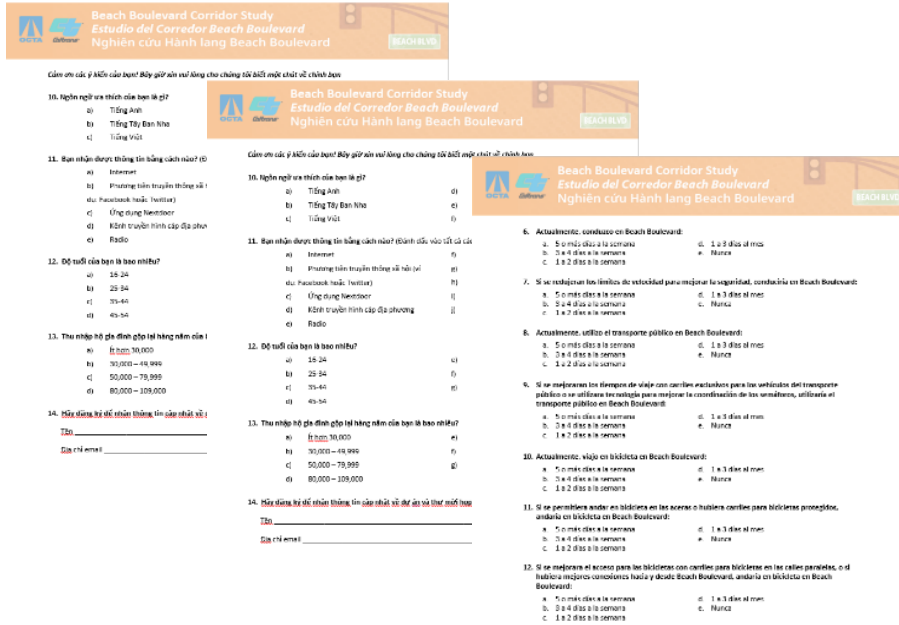
The following is an overview of key findings for the final report.

Baseline Conditions

This Baseline Conditions Report presents data and analysis for the current circulation, travel market, land use, and infrastructure conditions across the Project Corridor and Study Area. In addition, future (year 2040) developments, areawide growth and transportation network changes were identified. The data and analysis in this report were used to identify existing and future opportunities and constraints along the Project Corridor and support subsequent study recommendations. Key findings of the Baseline Conditions Report were as follows:

- **Demographics, Land Use, and Mode Split.** Generally, population and employment in the Study Area are projected to grow by 7 percent and 18 percent, respectively, between 2012 and 2040. In addition, the dominant mode of travel in the Study Area are trips by auto modes (drive alone plus rideshare).

- **Roadway Infrastructure.** Caltrans has jurisdiction over the Project Corridor except for portions of the roadway within the City of Buena Park. The Project Corridor has six or eight lanes (three to four lanes in each direction), plus left-turn pockets at intersections, with curb-to-curb widths from 110 feet to 125 feet. Traffic signal systems are also interconnected to the Caltrans District 12 Traffic Management Center (TMC) and have the latest controller types.
- **Vehicular Traffic Circulation.** Existing daily traffic volumes range from about 29,400 near SR 1 to nearly 83,600 at Interstate 405 (I-405) and are projected to grow by 6 percent on average. Generally, half of the trips along the Project Corridor originate or terminate in the Study Area (the remaining half effectively use the corridor as a pass through), with up to 14 percent of trips along the Project Corridor attributed to highway to highway connection. For certain segments, almost half of the trips travel 5 miles or less along the Project Corridor, and less than 10 percent of trips travel 15 miles along the Project Corridor. Less than 1 percent of trips travel the entire length of the Project Corridor. Peak period travel speeds along the Project Corridor do not show any significant sections operating at speeds classified as Level of Service (LOS) D or worse.
- **Transit Circulation.** The Orange County Transportation Authority (OCTA) is the primary transit provider in the Study Area, with transportation hubs at SR 1/First Street, Goldenwest Transportation Center, Fullerton Park-and-Ride, and the Buena Park Metrolink Station. OCTA Route 29 runs the entire extent of the Project Corridor, with headways of approximately 20 minutes during peak and off-peak periods. Bravo! 529 route runs between Edinger Avenue and Orangethorpe Avenue, with headways of 12 minutes during peak periods and 18 minutes during off-peak periods. Boardings at key Route 29 stops are generally above 100 riders per day.
- **Bicycle and Pedestrian Facilities.** No bicycle facilities are provided along the Project Corridor. The existing network of bicycle facilities within the Study Area is most comprehensive towards the southern end with many gaps in the northern end. Sidewalks are provided along much of the project corridor with a few noted gaps. The highest bicyclist volumes are in the City of Huntington Beach, and the highest volumes of pedestrians are in the cities of Huntington Beach and Buena Park.
- **Opportunity Areas.** Along the Project Corridor, there is a higher concentration of collisions for all collision types in the cities of Huntington Beach, Anaheim, and Buena Park, with a higher concentration of collisions for bicyclists in the cities of Huntington Beach and Westminster and for pedestrians in the cities of Huntington Beach, Westminster, Anaheim, and Buena Park.



Outreach

Public engagement has been a key component to the study and helps OCTA establish and maintain the trust, support and confidence of the public and other stakeholders. In addition, the information gained in the outreach activities provide a foundation for future stages of development. Three primary outreach activities were conducted throughout the duration of the study:

- Survey.** In order to gather public feedback, the primary outreach effort for both public engagement phases were the promotion and distribution of an online survey. Two surveys were conducted: the first to assess the corridor's existing conditions and the second to ascertain opinions of specific improvements. Combined, 2,303 surveys were collected over the course of the study. Both surveys were conducted in English, Spanish, and Vietnamese.
- Local Jurisdiction Interviews.** The Project team conducted individual interviews with jurisdictions along the Study Corridor to gain insight about the Project and to identify recommendations that may provide support for project implementation. Discussion topics included the balance between auto and non-auto modes, coordination with Caltrans, funding and implementation, and local versus regional needs.
- Other Outreach.** A variety of methods were employed to reach out to the public, stakeholders, local jurisdictions and elected officials. Survey participation was promoted via local events, briefings, presentations, print and electronic notices, and social media platforms. The team engaged a diverse mix of groups to ensure the improvements considered the various needs and concerns of the

greater corridor community. Briefings were provided to key stakeholder groups and elected officials to provide communication on the study goals and progress updates on the process and results. Corridor jurisdictions were represented on the technical working group and, along with OCTA and Caltrans, provided updates to local elected officials.

This information was used to help identify improvement needs and opportunities to coordinate project improvements with ongoing or proposed infrastructure activities.

Goals and Objectives

The goals and objectives of the Project are as follows:

- **Purpose and Need.** The purpose of the Beach Boulevard Corridor Study is to identify and recommend feasible multimodal transportation improvements to facilitate mobility and connectivity for travelers of all modes along the Project Corridor. The Project is needed to address existing and anticipated future demands for local and regional travel along the Project Corridor, including vehicular throughput, active transportation connectivity and transit operations, and to complement local land use types.
- **Goals and Objectives.** The following goals and objectives have been developed to address the purpose and need:
 - 1) Improve travel time, reliability and convenience of transit
 - 2) Reduce impediments to walking and biking along and across corridor
 - 3) Maintain vehicular throughput and access to and from regional freeways network
 - 4) Provide a safe and accessible environment for all user groups
 - 5) Support local land use planning with improved mobility options

Toolbox Development

To address the purpose and need for the study, a series of multimodal toolbox elements were identified, screened and refined. These elements represent potential improvements that could be implemented along segments of the Project Corridor.

The following describes the toolbox development process.

- **Initial Toolbox Elements.** An initial list of toolbox elements was prepared to address the goals and objectives of the Project. Elements were developed for each mode of travel and for each goal. Given that the improvements could benefit or negatively

affect one or more modes of travel, it was also noted if they would have secondary effects on other modes.

- **Toolbox Elements Screening.** Based on initial screening with Project stakeholders, several initial toolbox elements were eliminated or modified. Preliminary cost ranges, associated risk factors, and coordination needed to implement each element were developed. In addition, a tier system was developed to classify each element. This was based on ease of implementation, cost, and risk factors as well as whether the element would require local or regional implementation.
- **Refined Toolbox Elements.** Based on the data from the toolbox elements screening process, a final refined list of toolbox elements was developed for further evaluation:
 - **Transit Toolbox Elements**
 - Bus Stop and Station Amenities
 - First/Last Mile Improvements at Major Stops
 - Transit Signal Priority Treatments
 - Dedicated Transit Lanes [for Bus Rapid Transit (BRT)]
 - **Pedestrian Toolbox Elements**
 - Close Gaps in Sidewalk Network
 - High-Visibility Crosswalks
 - Realigned Crosswalks at Freeway Ramps
 - Pedestrian Countdown Signal Heads
 - Sidewalk Amenities
 - Remove Sidewalk Obstructions
 - Pedestrian Scrambles
 - Pedestrian Refuge Islands
 - Corner or Sidewalk Bulbs
 - Mid-block Signalized Pedestrian Crossing
 - On-Street Parking or Loading Zones
 - **Bicycle Toolbox Elements**
 - Bike on Sidewalk Treatments
 - Close Gaps in Bicycle Network (on parallel streets)
 - Bike Preferential Treatments
 - Protected Bike Lanes (on Beach Boulevard)

- **Vehicle Toolbox Elements**
 - On-Street Parking or Loading Zones Removal
 - Advanced Traffic Signal Timing or Intelligent Transportation Systems
 - Consolidate Mid-block Unsignalized Intersections
 - Access Management
 - Active Traffic Management
 - Pedestrian Bridges
 - Adjust Interchange Ramp Locations and/or Configurations
 - Alternative Intersection Configurations

Evaluation of Toolbox Elements

A detailed evaluation was conducted for the final list of potential improvements for consideration for the Project Corridor. Included in this evaluation was the research and guidelines for each toolbox element as well as the benefits and implementation concerns.

Toolbox

Reference sheets for each toolbox element were prepared to summarize the following information:

- The name of the toolbox element.
- Whether it would be a local/city-specific project or one that would need to be studied and implemented across multiple cities or along the entire corridor as a regional project.
- The mode of travel the toolbox element applies to.
- Photos or diagrams showing applications of the toolbox element.
- Description of the toolbox element and the potential strategies and benefits of applying the toolbox element.
- Location key map showing which of the six segments the toolbox element could be applied in.
- Discussion of how the toolbox element addresses each of the Project goals.
- Design considerations to document plans and guidelines and implementation issues to consider for the toolbox element.
- Information on where each toolbox element could be applied.
- Cost range to quality the typical cost for each toolbox element.

- Identification of coordination needed to implement each toolbox element.

The information in these summaries serve as a tool for agencies to help determine the types of improvements available for the Project Corridor.

Case Studies

Case studies were developed to illustrate how toolbox elements could be applied to locations throughout the Project Corridor. The case study location types were chosen to represent typical intersection and roadway segment characteristics found throughout the Project Corridor and present opportunities for implementation of different toolbox elements. Five case studies were prepared at the following types of location along the Project Corridor:

- A major intersection
- A minor intersection
- A freeway ramp intersection
- A 6-lane roadway segment
- An 8-lane roadway segment

Implementation Approach

Based on the findings of the baseline conditions analyses, the following are the next steps for the Project in developing improvements to be advanced for implementation:

- Coordination will be needed between Caltrans and local cities for the planning, design and implementation of toolbox elements. Depending on the type of project and the level of potential effects, additional regional support may be needed. In addition, projects should follow the Caltrans standard project development processes (PDPM).
- A review of potential funding sources should be undertaken to determine if the proposed toolbox elements would be eligible for various federal, state, regional, or local funding programs.
- Detailed cost estimates will be required for each toolbox element. Given that the majority of the Project Corridor is under Caltrans jurisdiction, it is recommended that the Caltrans standard cost estimation process be followed, and cost data be checked with information from local cities or recent projects within Orange County.
- To assist in the implementation of the toolbox elements, opportunities to include components should be explored through development projects and area/specific plans. In particular, the best practices as documented should be incorporated into the planning of these

projects. In addition, when transportation network projects are proposed along the Study Corridor, efforts should be made to incorporate low-cost toolbox elements.

To help guide the future of the Study Corridor, this Long-Term Vision should be further enhanced to address recent and upcoming trends in transportation planning and mobility services, including: mobility hubs, connected corridors, autonomous vehicles, microtransit, and micromobility.