OC LOOP
Bike. Walk. Connect.

Union Pacific ROW Trail
La Habra (Planned)
What is the OC Loop?

- 66 miles of seamless primarily off-street connections
- Bike, walk, and simply connect to some of California’s most scenic beaches, to Orange County’s inland reaches.
70% Built & Varied Users
Improved Quality of Life

- Opportunity for recreation & outdoor play
- Improved health
- Sense of place
- Access to businesses, parks and schools
Expanded Transportation Options

- Connect to some of the County’s most popular destinations
- Access to transit, including three Metrolink stations
- Low stress travel avoiding traffic and parking issues

“I commute by bike and don’t worry about freeway traffic or parking.”
- OC Loop Rider

Santa Ana River Trail
Huntington Beach
• People do not feel safe walking or biking on car-dominant streets

• A low-stress, off-street bike route is suitable for people of a wide range of ages
Stretching the Dollar

- Convert underutilized space along rivers and railroads into a community amenity
- Growth of property values
- Increased retail spending
- Improved tax bases
- New businesses
Stakeholders throughout Orange County have a role in completing the Loop

- County of Orange and local cities
- Orange County Transportation Authority
- Orange County Council of Governments
- Caltrans
- Bicycle advocates
- Community groups & residents
- Union Pacific Railroad
Stay in the “Loop”

Project Website
  – Sign-up for email updates
  – Interactive map
  – Brochure
  – Video

Public Meetings
  – August 26
  – August 27

octa.net/ocloop
Street Audit Tools

Review of Street Audits Tools:

- San Francisco BEQI
- San Francisco PEQI
- Santa Ana In Motion
- LA Metro Station Area Checklist
- OCTA Station Access Review
Bicycle Environmental Quality Index (BEQI)

* A tool to assess the bicycle environment on roadways and evaluate what streetscape improvements could be made to promote bicycling in the City.*

- Developed by San Francisco Department of Public Health
- 22 Evaluation Criteria – Conducted by Bike Coalition Members
- Goal: Establish baseline of bike accommodation and identify methods to improve conditions.
9. **Width of Bike Lane:**

Bicycle lane width is an important factor for bicycle safety. The appropriate bicycle lane width increases the level of service for bicyclist and provides space for bicyclist and motorists. In most cases, it is recommended that bicycle lane should be 5 feet, leaving room for a 1-2 foot gutter which would allow at least 3 feet for the bicycle lane. If there is parallel parking on the street, the optimal bicycle width is 5 feet. The width of the bicycle lane should be at least 12 feet in a situation where there is parallel parking with no marked parking stripes, and 13-14 feet if there is high parking volume and/or turnover.

For the survey, if there is a bicycle lane present, measure the distance between each marking/stripes or from the curb to the marked strip that separates the bicycle lane and vehicle lane. The measurement should be taken with a tape measure within the first few feet of where the bicycle lane starts on the intersection, in order to maintain consistency across collection. If applicable, the bicycle lane width on both sides of the street should be obtained using a tape measure. If there is not a bicycle lane present, mark *None*. The pictures below show examples of the types of bicycle lanes that need to be measured. Both sides of the street should be rated.

The indicator values are:

- <5 ft
- 5 - 6 ft
- >6 ft
- None
## Bicycle Environmental Quality Index (BEQI):

<table>
<thead>
<tr>
<th>Domain</th>
<th>Indicator</th>
<th>Indicator Values</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intersection Design</td>
<td>1. Left Turn Bicycle Lane</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Dashed Intersection Bicycle Lane</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. No Turn on Red Sign(s)</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

## STREETS

<table>
<thead>
<tr>
<th>Domain</th>
<th>Indicator</th>
<th>Indicator Values</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Traffic</td>
<td>4. Number of Lanes (not including turning only lanes)</td>
<td>4 + Lanes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 Lanes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Lanes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 Lane</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No Lanes</td>
<td></td>
</tr>
</tbody>
</table>

5. Vehicle Speed - Is there a posted speed limit?

<table>
<thead>
<tr>
<th>Speed Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 mph</td>
</tr>
<tr>
<td>15 mph</td>
</tr>
<tr>
<td>20 mph</td>
</tr>
<tr>
<td>25 mph</td>
</tr>
<tr>
<td>30 mph</td>
</tr>
<tr>
<td>35 mph</td>
</tr>
<tr>
<td>40 mph</td>
</tr>
<tr>
<td>45 mph</td>
</tr>
<tr>
<td>50 mph</td>
</tr>
<tr>
<td>55 mph</td>
</tr>
<tr>
<td>&gt;55 mph</td>
</tr>
</tbody>
</table>

Note: San Francisco default street speed limit is 25 mph.
BEQI Street & Intersection Scores

- **0 - 20**: Environment not suitable for bicycles
- **21 - 40**: Poor bicycle conditions exist
- **41 - 60**: Basic bicycle conditions exist
- **61 - 80**: Reasonable bicycle conditions exist
- **81 - 100**: Ideal bicycle conditions exist

---

Streets

Bay Bridge

Buildings
Pedestrian Environmental Quality Index (BEQI)

A quantitative observational instrument based on street and intersection environmental factors known to affect people’s travel behaviors.

- Developed by San Francisco Department of Public Health
- 31 Evaluation Criteria – Conducted by “Trained Observers”
  - Cheat Sheet Developed
- Goal: Assess ped safety and needs, as well as garner attention and demand for pedestrian planning.
Street Segment Form: Items 20-31

20. Sidewalk Impediments
How many bumps in the sidewalk would the stroller find?

21. Trees
Continuous (no gaps of 30 feet or more)
Sporadic (one or more gaps of 30 feet or more)
None (no trees, no shade)

22. Driveway Cuts
Use hash marks to keep track on the survey form.
This counts as two.
### PEQI – Form

Please indicate whether Side A and Side B are North, South, East, or West relative to the street centerline.

**SIDE A**  
N/S/E/W

**SIDE B**  
N/S/E/W

For questions 16-22 you will select one answer for each side of the street.

<table>
<thead>
<tr>
<th>Question</th>
<th>Side A Options</th>
<th>Side B Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Continuous sidewalk</td>
<td>No ☐ Yes ☐</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td>17. Width of sidewalk</td>
<td>Less than 5 ft ☐</td>
<td>Less than 5 ft ☐</td>
</tr>
<tr>
<td></td>
<td>5 ft to 8 ft ☐</td>
<td>5 ft to 8 ft ☐</td>
</tr>
<tr>
<td></td>
<td>8 ft to 12 ft ☐</td>
<td>8 ft to 12 ft ☐</td>
</tr>
<tr>
<td></td>
<td>12 ft or more ☐</td>
<td>12 ft or more ☐</td>
</tr>
<tr>
<td>(if no sidewalk, skip #17-20, this side)</td>
<td></td>
<td>(if no sidewalk, skip #17-20, this side)</td>
</tr>
<tr>
<td>18. Width of throughway</td>
<td>Less than 4 ft ☐</td>
<td>Less than 4 ft ☐</td>
</tr>
<tr>
<td></td>
<td>4 ft to 6 ft ☐</td>
<td>4 ft to 6 ft ☐</td>
</tr>
<tr>
<td></td>
<td>6 ft to 8 ft ☐</td>
<td>6 ft to 8 ft ☐</td>
</tr>
<tr>
<td></td>
<td>8 ft or more ☐</td>
<td>8 ft or more ☐</td>
</tr>
<tr>
<td>19. Large sidewalk obstructions:</td>
<td>None ☐ Temporary ☐ Permanent ☐</td>
<td>None ☐ Temporary ☐ Permanent ☐</td>
</tr>
<tr>
<td>An obstruction is any object in the throughway.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Sidewalk impediments:</td>
<td>None ☐ Minor ☐ Significant ☐</td>
<td>None ☐ Minor ☐ Significant ☐</td>
</tr>
<tr>
<td>Anything that poses a tripping hazard.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Trees</td>
<td>None ☐ Sporadically lined ☐ Continuously lined ☐</td>
<td>None ☐ Sporadically lined ☐ Continuously lined ☐</td>
</tr>
<tr>
<td>22. Driveway cuts</td>
<td>None ☐ 1-5 ☐ &gt; 5 ☐</td>
<td>None ☐ 1-5 ☐ &gt; 5 ☐</td>
</tr>
</tbody>
</table>
PEQI – Results

Pedestrian Environmental Quality Index - Excelsior District, San Francisco

PEQI
- 50 and below = poor quality, pedestrian conditions absent
- 65-51 = low quality, minimal pedestrian conditions
- 70-66 = average quality, pedestrian conditions present but room for improvement
- 85-71 = high quality, some important pedestrian conditions present
- 100-86 = highest quality, many important pedestrian conditions present
Complete Streets Evaluation

*Latino Health Access & Kidworks provided volunteers to prepare evaluations for Santa Ana Circulation Element Update.*

- Developed by City & Consultant Team
- 32 Evaluation Criteria – Conducted by “Trained Observers”
  - 3 Page Guidelines/Instruction Provided
- Goal: Evaluate Auto, Bicycle, Pedestrian, Transit Conditions for use in identification of areas for improvement and increase community awareness through volunteers/youth participation.
KidWorks and Latino Health Access (LHA) have volunteered to help collect data and evaluate complete streets in Santa Ana. A total of 60 volunteers from KidWorks and 115 volunteers from Latino Health Access have participated in this effort.

Training sessions on how to perform street evaluations were held by LHA. Following the training, community members came back to execute what they learned, taking to the streets and evaluating the City streets in pairs. Some of the streets that have been inventoried include:

- 3rd St (Ross to Lacy)
- 4th St (Ross to Lacy)
- Santa Ana Blvd (French to Garfield)
- McFadden Ave (Raitt and Townsend)
- Broadway (3rd to Santa Ana Blvd)
- Bush St (3rd to Santa Ana Blvd)
- Spurgeon St (3rd to Santa Ana Blvd)
- French St (3rd to Santa Ana Blvd)
- First St (Flower to Sycamore)
- Flower St (1st to Bishop)
- Mortimer St (3rd to Santa Ana Blvd)
- Minter (3rd to Santa Ana Blvd)
- Porter (3rd to Santa Ana Blvd)
- Lacy (3rd to Santa Ana Blvd)
Santa Ana – Guidelines

Pedestrian Conditions

Pedestrian conditions is a measure of traffic speed and separation between pedestrian walkways and auto traffic. Lower traffic speeds along with a greater separation between pedestrians and vehicle traffic result in better pedestrian conditions. High traffic speeds and no separation result in poorer pedestrian conditions.

GOOD
- Continuous barrier >75% 5
- Presence of on-street parking or striped parking lane 6 7
- Good pavement condition 8
- Streets with curbs >75% 9
- Sidewalks adjacent to windows, buildings, fences 13 14 15
  - If the adjacent windows, buildings, and fences are commercial buildings, creating an engaging environment for pedestrians
- Roadways with speed limit < 35 miles per hour 16

ADEQUATE
- Continuous barrier <75% and >25% 5
- Average pavement condition 8
- Streets with curbs <75% and >25% 9
- Sidewalks adjacent to windows, buildings, fences 13 14 15
  - If the adjacent windows, buildings, and fences are a mix of commercial and industrial
- Roadways with speed limit < 35 miles per hour 16

INSUFFICIENT
- Continuous barrier <25% 5
Santa Ana – Compiled Results

- 15 Streets Evaluated
- Results compiled into 4 modes
- Results presented during workshops
- Reinforce consultant recommendations

**Auto improvements**
- Signalize intersections
- Post speed limit

**Transit improvements**
- A bus route could be added here
- Along with a bus route, bus stops with benches, shelters, and trash receptacles
- Bus frequency should be at least every half hour

**Bicycle improvements**
- Add Class II bicycle lanes
- Add signage to create awareness and improve safety
- Add amenities like bike lockers/racks
- Access to a bike-sharing program

**Pedestrian improvements**
- Provide a buffer or continuous barrier
- Widening of the sidewalk to provide more space for pedestrians like families with strollers
- On-street parking
- Additional amenities like drinking fountains and sitting areas as well as access to public restrooms
Draft Station Area Checklist Included in First/Last Mile Strategic Plan

*Guide for case study station analysis, developed for use countywide at transit stations of varying scale and context.*

- Developed by Consultant Team for LA Metro First/Last Strategic Plan Evaluation
- 21 Evaluation Criteria – Conducted by “Trained Observers”
- Goal: Increasing transit ridership and user comfort.
Metro – GIS Review

- Advance GIS Evaluation
- 9 key topics
- Required existing mapping & ridership data
Metro – Station Checklist

- Advance GIS Evaluation
- 9 key topics
- Required existing mapping & ridership data
Metrolink Stations Access Review

To evaluate bicycle and pedestrian access at each station individually without comparison to other stations, providing a baseline to measure improvements over time.

• Developed by Consultant Team for OCTA Nonmotorized Metrolink Accessibility Strategy

• 10 Evaluation Criteria – Conducted by Planning/Engineer Staff

• Goal: Develop measure of current access accommodation to illustrate how station improvements increase score.
## 2 | Network Design

<table>
<thead>
<tr>
<th>What streets are adjacent to station?</th>
<th>Edinger Ave, Jamboree Rd, Dow Ave</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bicycle Environment</strong></td>
<td><strong>Notes:</strong></td>
</tr>
<tr>
<td>Class I, II, III Bike Facility?</td>
<td>Y/N Class II facility on Edinger Ave</td>
</tr>
<tr>
<td>Are adjacent streets Bike Friendly (shaded, buffer b/w cars, etc.)?</td>
<td>Y/N Yes, striped lane on Edinger Ave and Dow Ave is wide. No on-street parking on either street.</td>
</tr>
<tr>
<td><strong>Pedestrian Environment</strong></td>
<td><strong>Notes:</strong></td>
</tr>
<tr>
<td>Sidewalk, 5-feet wide or more</td>
<td>Y/N Yes, but sidewalks on Dow Ave are discontinuous</td>
</tr>
<tr>
<td>Do pedestrian Trails exist?</td>
<td>Y/N Yes, ped/bike trail from Dow Ave</td>
</tr>
<tr>
<td>Are adjacent streets Pedestrian Friendly (shaded, buffer b/w cars, etc.)?</td>
<td>Y/N No buffers between cars and peds, no on-street parking, and high speeds along Edinger Ave</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bicycle Friendliness</th>
<th>Pedestrian Friendliness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range: 0 - 2 - 4 - 6 - 8 - 10</td>
<td>Score: 8</td>
</tr>
<tr>
<td>Poor</td>
<td>Good</td>
</tr>
<tr>
<td>Range: 0 - 2 - 4 - 6 - 8 - 10</td>
<td>Score: 6</td>
</tr>
<tr>
<td>Poor</td>
<td>Good</td>
</tr>
</tbody>
</table>
### Summary of Results

<table>
<thead>
<tr>
<th></th>
<th>Bike</th>
<th>Ped</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Station Mode Split</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>2. Network Design</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>3. Catchment Area Effectiveness</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>4. Trip Demand</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>5. Route Directness</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>6. Safety</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>7. Security</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>8. Information / Wayfinding</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>9. Station Amenities</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>10. Bike Parking</td>
<td>8</td>
<td>--</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>69</strong></td>
<td><strong>49</strong></td>
</tr>
<tr>
<td>Maximum Value</td>
<td><strong>100</strong></td>
<td><strong>90</strong></td>
</tr>
</tbody>
</table>

**Note:** Results are intended to develop a baseline for bicycle and pedestrian accessibility at each station. Results are not intended for comparison of stations. Metrics may be used to evaluate value provided from potential access improvements.
• Audience for using audit forms:
  – Community volunteers, advocates, or planners/engineers
  – Language barriers & training
  – Criteria and level of difficulty to participate

• Purpose of audit
  – Community Awareness
  – Diverse Participation by Community
  – Inform Planning Study or Politicians
  – Methods to Present Results

• Do the Audits Serve a Benefit to Project or Community Goals
Questions?

Orange County Transportation Authority

Paul Martin
Active Transportation Coordinator
pmartin@octa.net
www.octa.net/ocloop
714.560.5386