Final Report
June 28, 2013

OCTA

Nonmotorized Metrolink Accessibility Strategy

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1. INTRODUCTION

Purpose and Objectives

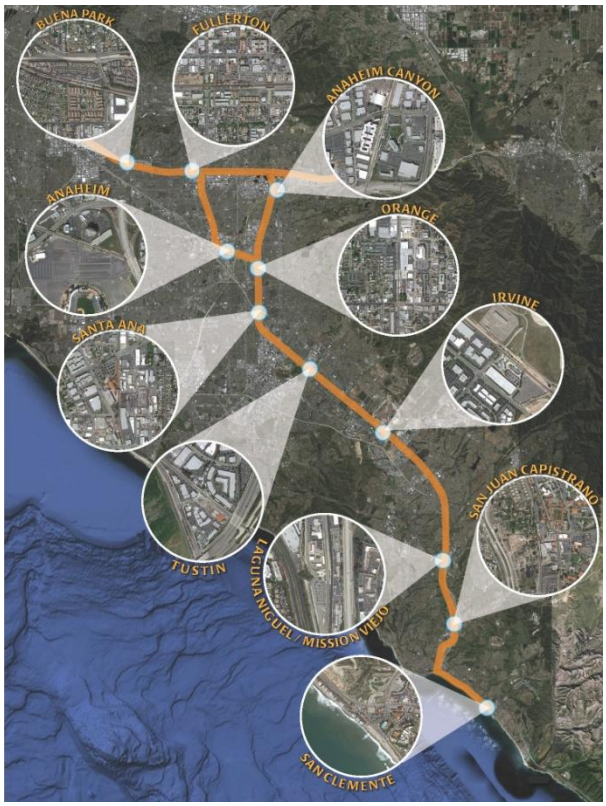
The Orange County Transportation Authority (OCTA) has developed the Metrolink Station Non-motorized Accessibility Strategy to identify needs and opportunities for improvements that enhance non-motorized transportation (pedestrian and bicyclist) access to and from Orange County's Metrolink stations. The Accessibility Strategy builds upon other efforts by OCTA and local cities to expand transportation choices. The Accessibility Strategy serves as a reference document for local cities to improve safety, address existing barriers and increase the number of Metrolink riders who walk or bicycle to/from the stations through changes to the physical environment. The project objectives are to:

- Evaluate current non-motorized accessibility at the Metrolink stations using a set of defined metrics and identify areas for improvement.
- Recommend improvements to facilitate, support and enhance pedestrian and bicyclist access to the Metrolink stations.
- Provide local agencies with guidance on implementing the recommendations and identify potential funding opportunities.

Study Area

The Accessibility Strategy includes recommendations for the following eleven Orange County Metrolink Stations:

- Anaheim
- Anaheim Canyon
- Buena Park Station
- Fullerton
- Irvine
- Laguna Niguel/Mission Viejo
- Orange
- San Clemente
- San Juan Capistrano
- Santa Ana
- Tustin



Collaboration

While OCTA initiated the Accessibility Strategy, the existing needs and opportunities for improvements were identified in collaboration with the local agencies, as well as through input from community members. The Southern California Association of Governments (SCAG) provided funding for the project.

Many of the specific improvements identified in the Accessibility Strategy will ultimately be implemented by local cities or the County of Orange. As Orange County's transportation planning body and transit provider, OCTA will continue to be a partner in implementing improvements that facilitate access to the Metrolink stations. OCTA's role may be to provide funding, coordinate improvements between agencies, or assist with future planning, depending on the project specifics.

Report Contents

The Accessibility Strategy contains seventeen chapters and two appendices with supporting data and information.

This **Introduction** briefly explains the project purpose, study area and collaboration efforts.

Chapter 2: Community Outreach describes the surveys and community engagement activities used to receive input from the general public.

Chapter 3: Methodology describes the process used to analyze existing conditions and provide recommendations.

Chapter 4: Accessibility Improvement Toolbox identifies treatments and technologies that support and encourage non-motorized transportation. This toolbox of measures was used to recommend improvements that address site-specific needs at each study station. Additionally, the toolbox can be referenced by OCTA, local cities and design consultants when considering future improvements at or adjacent to the Metrolink stations.

Chapter 5: Area-wide Recommendations describes recommended improvements applicable to all of the Metrolink stations in the study area.

Chapters 6 through 16 describe the existing conditions at each station, including existing plans, documents and projects, and identify recommended station-specific improvements.

Chapter 17: Funding Opportunities concludes the plan, presenting potential funding sources for implementing the improvements.

Appendix A: Public Participation Memorandum summarizes all of the community outreach events and community input received throughout the Strategy development.

Appendix B: Field Audit Worksheets contains the completed worksheets used to evaluate existing conditions at each station.

2. COMMUNITY OUTREACH

Introduction

During fall 2012, the project team conducted a series of outreach activities to engage and solicit input from the community. These activities consisted of:

- An online survey
- Intercept surveys at the Metrolink Stations
- Three community outreach booths or "workshops"

The following summarizes each component of the outreach and public participation program. A full summary of the community input received is provided in Appendix A. Public Participation Summary.

Online Survey

The online survey was available from August 20, 2012 to October 20, 2012. The survey was developed using MetroQuest and included questions regarding current usage of Metrolink and access to the stations, perception of adequacy of existing facilities, and preferences for additional facilities and amenities. The survey also allowed participants to provide comments with spatial references using an interactive mapping tool.

The survey was promoted through OCTA's website, Facebook, Twitter, websites of local cities, e-mail newsletters, newspaper articles, flyers at the Metrolink stations and local businesses, and business cards that were passed out at community events.

The survey was provided in English and Spanish. The promotional business cards included information about the survey website in both languages.

The survey website had over 1,200 visitors and 675 chose to participate by answering at least one question. In addition, hard copies of the survey were made available at the community outreach booths. Completed hard copy surveys were received via mail and entered into the MetroQuest survey system.

Intercept Surveys

From August 20th through August 22nd, 2012, project team staff conducted intercept surveys at each of the Metrolink stations during the morning and evening peak commute hours. Staff spent approximately one and a half hours at each station. During this time, they handed out approximately 750 cards with information and the URL for the online survey and approximately 20 hard copies of the

survey. In addition, staff conducted surveys using the MetroQuest website on iPads. Results from the intercept surveys area included in the Online Survey summary above.

Community Workshops

Three outreach booths or "workshops" were set up at larger community events to provide information about the project, solicit input on barriers to walking and bicycling to the Metrolink stations, and generate ideas for improvements. Generally, one workshop was held in each of the geographic areas within Orange County - north, central and south. The events were:

- Old Towne Orange Farmers and Artisans Market – September 22, 2012
- Orange County Great Park Farmers Market – September 30, 2012
- Art Fair in San Juan Capistrano – October 13, 2012

Aerial photos of each station area were available for participants to note specific challenges or barriers to walking and biking. In addition, participants were asked to write responses on Post-It Notes to the question: What would encourage you to walk or bike to the Metrolink stations?

Project team staff answered general questions about Metrolink, bikeways in Orange County, transit options, and services provided by OCTA. Cards with information about the online survey were distributed at the booth and to other Farmers Market visitors.

Approximately 1,000 people visited the Old Towne Orange Farmers and Artisans Market on the day we were there. Approximately 80 people visited the booth or were provided with survey information. Approximately 1,270 people visited the Great Park Farmers Market on the day we were there and an estimated 100 people visited the booth or were provided with survey cards. Approximately 60 people visited the booth at the Art Fair in San Juan Capistrano.

3. METHODOLOGY

Catchment Areas

In order to focus efforts in areas most likely to be used by Metrolink riders walking or bicycling to/from the stations, the Accessibility Strategy defines catchment areas for both. The catchment area for the bicycle network is 3 miles from the station platform, and one half mile from the station platform for the pedestrian network. The bicycle and pedestrian catchment areas are consistent with the catchment areas used by the United States Department of Transportation Federal Transit Administration (FTA) to determine eligibility for funding bicycle and pedestrian improvements near public transportation stops and stations (Docket No: FTA–2009–0052). Similarly, OCTA also defines the walkable service area for bus routes as one half mile.

Maps showing the pedestrian and bicycle catchment areas are provided the chapters corresponding to each individual Metrolink station. The catchment area maps also show existing bikeways, proposed bikeways included in locally adopted plans, and proposed bikeways identified in the Fourth District Bikeways Strategy prepared by OCTA.

Metrics for Evaluating Existing Conditions

The Project Team reviewed the accessibility tool provided in the Transit Cooperative Research Program (TCRP) Report 153 (Guidelines for Providing Access to Public Transportation Stations) along with a number of other nationally and locally recognized bicycle and pedestrian environment evaluation methods to determine applicability for this project. Based on testing of the available evaluation tools, the Project Team determined a hybrid set of metrics would be most appropriate for evaluating non-motorized accessibility at the Metrolink train stations in Orange County.

Since the TCRP 153 accessibility tool recommendations are limited to evaluation of three criteria, this study uses a combination of metrics from TCRP 153, the OCTA GIS database, the Bicycle Environment Quality Index and the Pedestrian Environment Quality Index. The metrics also consider data from the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS), previous studies by OCTA and Metrolink, information included OCTA's Capital Improvement Program (CIP), and an online community survey using the MetroQuest platform conducted for this project. A total of nine metrics were identified for evaluating pedestrian access and ten metrics for bicycle access at the Metrolink stations. Where available, each metric includes quantitative data; and the final ranking is consolidated into a quantitative ranking with zero as the lowest score and ten as the highest score. The maximum score for each station is 100 for bicycle access and 90 for pedestrian access. Due to the complexity and scope needed for a comprehensive analysis of ADA compliance, this was not assessed as part of this project, but is recommended for future study by local jurisidictions.

The intent of the bicycle and pedestrian access rankings is to evaluate each station individually, without comparison to other Metrolink Stations. Since each station is generally located within a separate local jurisdiction, the comparison of non-motorized access with other Metrolink stations is not needed to prioritize improvements. Instead, the evaluation of bicycle and pedestrian access at each station provides a baseline condition that can be improved over time based on the interest and ability of the local jurisdiction to implement recommended station improvements. While most of the metrics address items approaching the station, one metric is specific to the provision of amenities at the

station which can better serve bicycles and pedestrians. Table 1 summarizes the accessibility metrics used for this project.

Table 1
Accessibility Metrics

#	Metric	Bike	Ped	Information Source	Scoring System
1	Station Mode Split	X	X	MSPMS, CSS, TCRP 153	0 (Poor), 2, 4, 6, 8, 10 (Good)
2	Network Design	X	X	Field Review	0, 2, 4, 6, 8, 10
3	Catchment Area Effectiveness	X	X	OCTA GIS, Field Review	0, 2, 4, 6, 8, 10
4	Trip Demand	X	X	OCTA GIS	0, 2, 4, 6, 8, 10
5	Route Directness	X	X	Field Review, MetroQuest Survey	0, 2, 4, 6, 8, 10
6	Safety	X	X	SWITRS, Field Review, MetroQuest Survey	0, 2, 4, 6, 8, 10
7	Security	X	X	Field Review, MetroQuest Survey	0, 2, 4, 6, 8, 10
8	Information/Wayfinding	X	X	Field Review, CIP MetroQuest Survey	0, 2, 4, 6, 8, 10
9	Station Amenities	X	X	Field Review, CIP, OCTA Staff, MetroQuest Survey	0, 2, 4, 6, 8, 10
10	Bike Parking	X		MSPMS, CIP, Field Review, MetroQuest Survey	0, 2, 4, 6, 8, 10

Notes:
Catchment Area for bicycling is defined as 3 miles from station platform and 0.5 mile from station platform for walking.
MSPMS = Metrolink Station Parking Management Study (June 2011) TCRP 153 = Transit Cooperative Research Program Report 153
CSS = Metrolink Customer Satisfaction Survey
SWITRS = Statewide Integrated Traffic Records System (California Highway Patrol)
CIP = Orange County Metrolink Station Capital Improvement Program Study (July 2012) OCTA GIS = OCTA Geographic Information Systems

Further discussion of each metric is provided below:

- **Station Mode Split:** Comparison of the bicycle and pedestrian mode split as documented in the MSPMS to the national averages provided for the appropriate station typology provided in TCRP 153 and shown in Figure 1. A mode split effectiveness ratio is calculated and scored accordingly. A list of the station typologies, typical characteristics, and applicability to each of the Metrolink stations in this study is provided in Appendix B.

Figure 1
Average Access Mode Percentage

Station Type	Average Access Mode Percentage				
	Walk (%)	Bicycle (%)	Feeder Bus (%)	Auto (Drop-off) (%)	Auto (Park-and-Ride) (%)
Urban Commercial	82	1	10	2	5
High-Density Urban Neighborhood	72	2	14	4	10
Medium-Density Urban Neighborhood	80	1	9	4	7
Urban Neighborhood with Parking	35	3	21	10	31
Historic Transit Village	25	1	3	17	53
Suburban TOD	32	2	13	14	39
Suburban Village Center	30	2	16	12	40
Suburban Neighborhood	29	1	11	13	46
Suburban Freeway	10	1	12	12	65
Suburban Employment Center	29	3	25	9	36
Suburban Retail Center	30	2	19	11	39
Intermodal Transit Center	27	1	36	6	30
Special Event/Campus	55	2	24	6	13
Satellite City	7	6	12	16	59

- **Network Design:** Evaluation of sidewalks and designated bike lanes (Class I, Class II, or Class III) directly adjacent to the Metrolink station. The provision of bike lanes is weighted since the context, speed of vehicles, and volume of motorist traffic of surrounding streets varies for each station. To account for context and physical differences of the circulation system at each location, this metric evaluates whether the area immediately adjacent the station is pedestrian-friendly or bicycle-friendly.
- **Catchment Area Effectiveness:** Evaluation of the effectiveness of the catchment area serving pedestrians and bicyclists. The maximum catchment area is based on a radial geometry in acreage, which will be compared to the actual catchment area based on field conditions, provision of roadway network, linkages, etc. The ratio is used to score the metric. The catchment area for the bicycle network is 3 miles from the station platform, and 1/2 mile from the station platform for the pedestrian network. The distance used to determine the pedestrian catchment area is defined by TCRP 153, and the distance used to determine the bicycle pedestrian catchment area is defined by the United States Department of Transportation Federal Transit Administration (FTA).
- **Trip Demand:** Evaluation of the trip demand based on origin and destination factors within the network catchment area obtained from OCTA GIS. The origin and destination factors obtained from OCTA GIS include population, employment, and university-level student enrollment.
- **Route Directness:** Pedestrians and bicyclists alike desire direct routes to access the station with minimal delays and obstructions such as crossing barriers like roadways, railways and

flood channels. Route directness is scored based on field reviews and input received through the MetroQuest survey.

- **Safety**: Consideration of safety in crossing roadways near station and avoiding conflicts with motorist traffic. For example, provision of multiple facilities with bike lanes would help increase the safety rating. Based on input from the public, the lack of sidewalks on roadways in the proximity of the station might decrease the safety rating. This metric includes perception of safety for bicyclists riding along adjacent roadways leading to the station, including the number of driveway cuts on nearby roadways with bike lanes. The metric score includes parallel or angle parking along bicycle routes leading to a station, high visibility crosswalks, width of sidewalks, impediments to sidewalk paths, bikeways leading to station, buffers between motorist traffic and bike lane, as well as landscaping between back of curb and sidewalks. Field review of existing streetscape design considers effect on bicyclists and pedestrians. The evaluation also includes a review of three years of collision data directly adjacent to the train station to identify frequent collision locations or trends in collision factors Safety is scored based on field reviews and input received through the MetroQuest survey.
- **Security:** Perception of pedestrians and bicyclists regarding the adequacy of lighting during night time walking and riding near the station. This metric also considers abandoned buildings, litter, and graffiti adjacent to the station. Security is scored based on field reviews and input received through the MetroQuest survey.
- **Information/Wayfinding:** Evaluation of the adequacy and clarity of informational signs directing patrons to facilities and amenities such as bikeways, walkways, stairs, elevators, ramps and bicycle parking. This metric also considers signs and striping indicating location of bike lanes. Information/wayfinding is scored based on field reviews and input received through the MetroQuest survey.
- **Station Amenities:** Evaluation of the amenities provided at the station such as bikeshare, bike tracks at stairs, bathrooms, showers, indoor waiting areas, benches/seating areas, and provision of retail opportunities. Station amenities are scored based on field reviews and input received through the MetroQuest survey.
- Bike Parking: Review of supply, demand, and percent utilization of bicycle racks and lockers provided at the station. The Project Team coordinated with each City to find out the utilization of bicycle lockers and racks. Additionally, field reviews identified whether bicycle parking is visible, secure and covered. The adequacy of bicycle parking is scored based on field reviews and input received through the MetroQuest survey.

Field visits to each of the 11 stations were conducted in November 2012 to document the levels of accessibility at each station. A standardized data collection format was developed based on the ten metrics described in the previous section. The data collection was used to evaluate existing access at the station and adjacent to the station. Bicycle and pedestrian catchment area graphics were created which show a half mile catchment for pedestrians and three mile catchment for bicyclists. Station access graphics are also provided to show the main points of access between the stations and adjacent streets. Photos were taken during field visits using cameras with geo-coding capabilities in order to document the location of each photograph.

The results of the field audits and summary of scoring in each metric are provided for each station in its respective individual station chapter. The field audit worksheets are provided in Appendix B.

4. ACCESSIBILITY IMPROVEMENT TOOLBOX

Introduction

This chapter presents a toolbox of accessibility improvement strategies for pedestrians and bicyclists. Identified tools can be used by OCTA and local cities to improve non-motorized transportation within, to and from the Metrolink stations. Implementation of these strategies will encourage transit use by enhancing the active transportation (pedestrians and cyclists) user experience to access transit stations. These strategies are focused on roadway and sidewalk capital infrastructure and operational improvements in the vicinity of transit stations. The strategies were compiled from ongoing or recent non-motorized station access studies across the country.

This toolbox is not intended to be a design manual, but a reference guide that presents potential strategies. The specific context should be considered when evaluating implementation of a potential strategy. In addition, implementation of the strategies will require site-specific design and detailing based on adopted standards. A list of resources, including those that provide design guidance, is provided at the end of this chapter.

Although not explicitly a part of this toolbox, it is important to recognize the Institute of Transportation Engineers (ITE) 2010 Recommended Practice ***Designing Walkable Urban Thoroughfares: A Context Sensitive Approach***. This ITE recommended practice is an encouragement to increase densities within convenient walking distances to stations. It notes that:

- Walkable communities are urban places that support walking as an important part of people's daily travel through a complementary relationship between transportation, land use and the urban design character of the place. In walkable communities, additional value and support are provided to make walking enjoyable.
- Principals for walkable communities include the provision of a compact and mixed-use environment of urban buildings, public spaces, and landscapes that support walking.

The recommended toolbox strategies are assembled into the following categories and are described below:

- Sidewalks;
- Intersections;
- Traffic Calming;
- Bicycle Facilities; and
- Transit Stations.

The potential benefits, potential disadvantages, and approximate cost category of each of the improvement strategies are provided in a matrix at the end of this section.

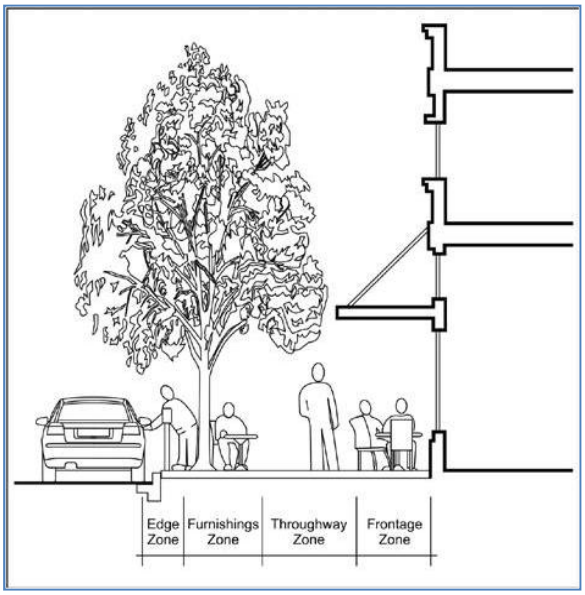
Sidewalk Improvements

This section presents sidewalk design improvements to better facilitate transit station pedestrian access. The 2012 book ***Walkable City*** states that the central question of walkability is "Will walkers

feel adequately protected, enough so that they make the choice to walk?" In this book about "place making" it is contended that what makes a sidewalk safe is less about its width and more about its protection from the roadway. Such pedestrian protection may be provided by on-street parked vehicles and/or street trees.

The ITE Recommended Practice ***Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*** offers design guidance of sidewalks and the buffers between sidewalks, moving traffic, parking, and/or other traveled-way elements. It defines the street side as consisting of the four distinct functional zones discussed below.

1. Edge zone—the area between the face of curb and the furnishing zone that provides the minimum necessary separation between objects and activities in the street side and vehicles in the traveled way;
2. Furnishings zone—the area of the street side that provides a buffer between pedestrians and vehicles, which contains landscaping, public street furniture, transit stops, public signage, utilities and so forth;
3. Throughway zone—the walking zone that must remain clear, both horizontally and vertically, for the movement of pedestrians. The Americans with Disabilities Act (ADA) establishes a minimum width for the throughway zone; and
4. Frontage zone—the distance between the throughway and the building front or private property line that is used to buffer pedestrians from window shoppers, appurtenances, and doorways. It contains private street furniture, private signage, merchandise displays and so forth and can also be used for street cafes.



Functional Street Side Zones

The ITE Recommended Practice generally recommends 12 foot shoulders along two-way streets with four or more lanes. Within this 12-foot shoulder, six feet would be allocated to tree wells abutting the travel way and six feet allocated to the pedestrian walkway. In more urban or pedestrian heavy areas a nine foot walkway is called for.

Sidewalk Landscaping

Sidewalk landscape trees are viewed as an essential element of pedestrian comfort in the place making book ***Walkable City.*** It suggests public investments in a "Continuous Canopy Campaign" (i.e., plant canopy trees, not palm trees) to provide a sense of enclosure by "necking down" the street space and providing shade to walkers. It is contended that street trees also slow cars by providing a more visible definition of the street edge. The USDAs Forest Service has created a software package called i-Tree Streets, which can be downloaded at:

www.itreetools.org/streets/index.php.

Continuous Sidewalks

A continuous sidewalk network is necessary to provide safe pedestrian flow in the vicinity of transit stations. In addition to programming sidewalk construction at any missing segments, cities may improve the perceived continuity of sidewalks with the following principals from the ITE Recommended Practice:

Chicago's State Street planter boxes supplement vehicle and tree barrier between travel way and sidewalk

- Appearance of the sidewalk (scoring pattern or special paving) should be maintained across driveway and alley access points to indicate that, although a vehicle may cross, the area traversed by a vehicle remains part of the pedestrian travel way.
- It is desirable to minimize, consolidate, or eliminate curb cuts and driveways in areas of highest pedestrian activity such as urban center and urban core commercial areas. In these areas, driveway and curb cut frequencies and spacing should be kept to a practical minimum, ideally not more than one curb cut per block.
- Consolidation of driveways is particularly important in areas with predominantly commercial ground floor uses in suburban and general urban context zones.
- Driveway crossings should maintain the elevation of the sidewalk.
- Driveway aprons (i.e., the transition area between a road and the primary driveway surface) should not extend into the clear pedestrian travel zone, where cross slopes are limited to a maximum of 2 percent; steeper driveway slopes are permitted in the furnishing and edge zones of the street side.
- Along boulevards and avenues, the elimination of driveways and conflict points may be aided by the presence of continuous medians that restrict left turns.

Street Furniture

Benches, trash receptacles, and pedestrian scale light poles are tools to enhance the walking experience. These should be considered for the furnishings zone of the shoulder, although they may occupy the frontage zone where no furnishing zone exists. Maintenance and operations of street furniture is as important as their installation. Operational efficiencies may be gained with selection of "big-belly" type trash receptacles that provide an electronic alert when it is approaching capacity, and LED/smart street lights.

Intersection Improvements

This section presents intersection design improvements to better facilitate transit station pedestrian and bicycle access.

Marked (Continental) Crosswalks

Continental crosswalks increase the visibility of pedestrian crosswalks and reinforce the pedestrian right-of-way through the intersection. They have been cited as being most visible to approaching motorists.

Continental Crosswalk

Leading Pedestrian Crossing Interval

Implementation of a leading pedestrian crossing interval would allow pedestrians to enter the crosswalk a few seconds (typically 4 to 7 seconds) before right-turning vehicles. This would result in greater visibility of pedestrians by motorists and, thus, increased safety.

Pedestrian Countdown Signals

Pedestrian countdown signals at crosswalks notify pedestrians of the time remaining to cross the street. Displaying the amount of seconds remaining to cross the street would result in fewer pedestrians entering the crosswalk during the tail end of the "Don't Walk" phase.

Pedestrian Countdown Signal

Right-turn On Red Prohibition

The prohibition of right-turns on red would reduce the potential conflicts between vehicles and pedestrians. Implementation can be achieved with either a static or electronic sign.

Flashing Beacons/HAWK

Flashing beacons or High Intensity Activated Crosswalks (HAWK) catch the attention of drivers and warn them that pedestrians are about to cross. Manual push-buttons or video detection are typically used to activate the beacon. This form of traffic control should be placed on longer stretches of roadways where pedestrian volume is high, yet traffic signals are limited.

Curb Extensions/Bulbouts

Curb Extensions at the corner of an intersection extend the sidewalk into the street, occupying the parking lane in most cases. This results in greater visibility of pedestrians by motorists as well as shorter crossing times for pedestrians, thus allowing more green time allocation for conflicting movements.

Curb Extension/Bulbout

Pedestrian Refuge and Triangular Median Islands

Construction of pedestrian refuge islands at large intersections would allow pedestrians to cross the street one direction at a time. Triangular median islands would allow pedestrians to cross a small portion of the roadway (the right-turn lane) on their own, and then wait on the island for the signal to allow them to cross the rest of the roadway. Both options would result in increased pedestrian safety. Refer to *Improved Right-Turn Slip-Lane Design* by the Pedestrian and Bicycle Information Center (http://www.walkinginfo.org/engineering/crossings-design.cfm) for more information about design for triangular median islands.

Pedestrian Refuge Island

Traffic Calming Improvements

This section presents traffic calming improvements to better facilitate transit station pedestrian and bicycle access. In general, the ITE Recommended Practice suggests that 35 mph streets provide more pleasurable walk and bicycle experiences, and also notes that this is facilitated with 11-foot travel lanes.

Landscaped Medians

The additional of landscaped medians can help reduce vehicle speeds by narrowing the width of the roadway and also creating a more visually desirable roadway. Considerations for bicycle and pedestrian travel should be balanced (e.g. narrowing the outside lane to reduce vehicle speeds may improve the pedestrian environment, but increase difficulty for bicyclists sharing the lane with vehicles).

Landscaped Median

Raised Crosswalks

Raised crosswalks act as a speed table to provide speed reducing traffic calming, in addition to elevating the pedestrian and improving pedestrian visibility.

Reduced Curb Radii

Reducing curb radii can slow down right-turning vehicles and result in greater visibility of pedestrians waiting to cross at the corner.

Speed Feedback Signs

The installation of speed feedback signs along roadways where vehicles typically travel at higher speeds result in drivers slowing down. By displaying both the posted speed limit and their actual traveling speed, motorists are reminded how far above the speed limit they are traveling. It is also possible

Speed Feedback Sign

to document locations and times of speeding, so that enforcement personnel may be efficiently deployed.

Traffic Circle/Roundabout

Traffic circles/roundabouts enhance the safety of cyclists and pedestrians by slowing vehicular traffic through an intersection. Implementation of new traffic circles in a community would require the governing agency provide some guidance on how to properly maneuver through the intersection since most drivers are not yet fully comfortable with this form of traffic control.

Reverse Angled Parking

Reverse angled parking provides the driver with better sight distances when exiting a parking space. This style of parking is based on the idea that it is safer to reverse into a space where there is only a fixed curb to potentially hit than it is to reverse into a street where pedestrians, cyclists, and other vehicles are moving through. In ***Walking City*** it is noted that street segments that currently have parallel parking may be candidates for reverse angled parking, as it is an easier maneuver than required for parallel parking. Reverse angled parking is recommended in-lieu of head-in angled parking in the ***Model Design Manual for Living Streets*** and ITE's ***Designing Walkable Urban Thoroughfares: A Context Sensitive Approach***. Amongst other considerations, reverse angled parking allows motorists better visibility of the active street, including bicyclists, when pulling out of a space. Signage

Reverse Angled Parking and Sign

Bicycle Facilities Improvements

This section presents bicycle facility design improvements to enhance bicycle safety and access to transit stations.

Bike Paths and Lanes

Class I Bikeway (Bike Path) – Provides for bicycle travel on a paved right-of-way completely separated from a street or highway. Bicycle paths are often planned along uninterrupted linear rights-of-way, such as rivers and rail rights-of-way.

Class II Bikeway (Bike Lane) – Provides a striped lane for one-way bike travel on a street or highway. A buffer can be provided to enhance separation between vehicular traffic and cyclists.

Bike Path

Class III Bikeway (Bike Route) – A preferred travel route for bicyclists, on which a separate lane or path is either not feasible or not desirable. The rightmost lane of a bicycle route is shared by bicyclists and cars. The lane is marked with signs and can also be marked with sharrows. Bike routes can become more useful when coupled with such techniques as the following:

- Route, directional, and distance signage
- Wide curb lanes
- Sharrow stencils painted in the traffic lane along the appropriate path of where a bicyclist would ride in the lane
- Traffic signals timed and coordinated for cyclists (where appropriate)
- Traffic calming measures

Shared Bike Markings

Also known as sharrows, shared bike markings are utilized where roadway widths aren't large enough to accommodate a bike lane. The pavement markings help to increase the drivers' awareness of cyclists. Sharrows are recommended for streets with speeds of 35 miles per hour or less, and streets with insufficient width to allow for bicycle lanes.

Sharrow

Type B sharrows is a term that used to describe bold sharrows, such as a 6'-wide green swath painted under their sharrows or large sharrows spaced close together. Type B sharrows are not yet standardized within the State of California, and currently can be utilized through a Federal Highway Administration pilot project.

Type B Sharrow

Bike Signage

The addition of bike signage helps to reinforce the presence of cyclists on the road, resulting in improved safety and comfort for bike riders.

Bike Route Maps

In order to promote bicycle usage, electronic route maps for smart phones that show the locations of retail and recreational amenities, as well transit stop locations, should be provided. Paper versions of the maps should be available at transit stations, major landmarks along the routes, and on the local jurisdiction's website.

Bike Storage/Lockers

The addition of long-term bike parking such as bike lockers or bicycle storage rooms would help encourage higher bike usage to and from transit stations by providing secure, easily accessible storage.

Bicycle lockers should be approximately 6 feet in length, 2 feet in width, and 4 feet in height. Bicycle lockers should consider the needs of folding and recumbent bicycles. Bicycle lockers may include

perforated metal screens for visibility and may be stacked to double capacity with the same footprint. Bicycle lockers should have informational signage, placards, or stickers identifying the procedure for how to use a locker, contact information to obtain a locker, cost (if any) for locker use, terms of use, and emergency contact information.

Attended bicycle parking may be provided in high traffic locations. These facilities typically provide bicycle parking in the form of two-tier/double decker or hanging bicycle racks which are often spaced 16 inches apart to maximize capacity. Two-tier/double decker racks allow bicycles to be loaded on the top or bottom with a lever that swings to the ground to allow for top rack loading. Access to parking areas is generally managed by an attendant and/or electronic coding, card, or key fob system. In addition to secured bicycle parking, attended bicycle parking facilities may also include services such as rentals, service and repairs, sales of accessories, showers and restrooms/changing rooms. These facilities are usually membership-based with day-use and monthly/yearly members.

Automated bicycle parking may be provided in high traffic. Automated bicycle parking facilities save space and do not require an attendant on-site. These facilities are usually membership-based with day-use and monthly/yearly members.

Refer to the Association of Pedestrian and Bicycle Professionals Bicycle Parking Guidelines (Second Edition) for more information on long-term bicycle parking. Some large manufacturers/retailers of bicycle lockers include:

- CycleSafe (http://cyclesafe.com)
- Creative Pipe Inc. (http://www.creativepipe.com/bicycle_storage_lockers.htm)
- American Bicycle Security Company (http://www.ameribike.com/catalog/bike/locker-intro.html)

Coordinated bicycle locker management would provide for consistent rental policies and fees and maintenance/upkeep of bicycle lockers throughout the County. This would assist locker users and potential users in understanding rental procedures. A number of agencies oversee locker rentals for large regions. Example programs include:

- San Diego Association of Governments (http://www.icommutesd.com/bike/bike-to-work http://www.icommutesd.com/documents/FINALBikeLockerParticipationAgreement_EnglishandSpanish.pdf)
- Los Angeles County METRO/ Los Angeles County Bicycle Coalition (http://www.metro.net/riding_metro/bikes/images/locker_rental_instructions.pdf)
- Santa Clara Valley Transportation Authority (http://www.vta.org/bike_information/bike_parking.html)

Bike Box

A bike box is a refuge area located in front of the stop line at an intersection approach. This area would allow cyclists to position themselves in front of vehicular traffic when waiting at a traffic

Bike Box

signal. This positioning would allow cyclists to start first and avoid any conflicts with right-turning vehicles.

Bicycle Signal Detection

An intersection configured with bicycle detection can effectively differentiate between bicycles and other vehicles, enabling more reliable bicycle detection and more efficient signalized intersections. Agencies using bicycle timing can benefit from bicycle-specific virtual detection zones that can be placed anywhere within the approaching traffic lanes.

Bicycle Signal Detection

Cycle Track

A cycle track is an exclusive bicycle facility that combines the bicycling experience of a separated path with the conventional on-street bike lane. Cycle tracks have different forms, but all provide space that is intended to be exclusively or primarily for bicycles, and are physically separated from vehicle travel lanes, parking lanes and sidewalks by bollards, or curbs/medians. Cycle tracks can be either one-way or two-way, on one or both sides of a street. They provide increased comfort for bicyclists and greater clarity about expected behavior on the part of both cyclists and motorists. Properly designed cycle tracks eliminate conflicts between bicycles and parking cars by placing the cycle track on the inside of the parking lane. They also provide adequate space to remove the danger of "car dooring." Research has shown that cycle tracks can increase bicycle ridership 18 to 20 percent, compared with the five to seven percent increase found resulting from bicycle lanes. Cycle tracks are recommended along higher speed roadways with fewer cross-streets and longer blocks. Caution needs to be taken at vehicle-bicycle crossings to ensure adequate visibility since bicycles would be partially obstructed by parallel-parked vehicles. Longer red curb distances from intersections may be required. Refer to the *NACTO Urban Bikeway Design Guide* for guidance on cycle track intersection approach design (http://nacto.org/cities-for-cycling/design-guide/intersection-treatments/cycle-track-intersection-approach).

Bike Boulevards

A bike boulevard is a street designed to provide mobile equity for bicyclists. Bike boulevards accommodate bicyclists and motorists in the same travel lanes to facilitate safe and convenient bicycle travel. This type of design is typically found on low-volume streets. Some bike boulevards include landscaped traffic circles and roundabouts for traffic calming purposes, thus enhancing safety for bicyclists and pedestrians.

Bike Boulevard

Buffered Bike Lanes

Buffered bike lanes typically are six--foot wide bike lanes that offer more protection for cyclists by providing clearly-marked, buffered zones on each side of the bike lane. One advantage that buffered bike lanes have over cycle tracks is the absence of barriers to sight lines, since buffered bike lanes travel to the left of parked cars. Therefore the view of cyclists by traveling vehicles would be unobstructed.

Buffered Bike Lane

Station Improvements

This section presents station design improvements to better facilitate transit station pedestrian and bicycle access.

Wayfinding Signage

The addition of way finding signage within the transit station area allows transit users to better find their way around the station, and locate key amenities such as bike parking.

Way finding Signage

Video Surveillance

The addition of video surveillance at the station platform area, as well as signage indicating that the station is monitored by video, would increase transit user safety and comfort.

Station Lighting

The presence of adequate lighting at transit stations improves transit user safety during nighttime conditions, thus encouraging transit use at night.

Station Furniture

Providing adequate station furniture, such as shelters, benches, and trash receptacles, where pedestrian activity is high not only improves the appearance of the station but also encourages users to stay around the area longer. In addition, shelters provide refuge from inclement weather conditions.

Station Furniture

Bike Channel/Bike Track

A bicycle channel or track is a channel alongside a staircase that facilitates walking a bicycle up or down the stairs. There is no standard in the dimensions, materials, or shape used in the channel, however, the channel is intended to be sufficient to guide a variety of bicycle tires without binding or causing damage. Cross-section shapes vary, but are usually either nearly rectangular or V- or U-shaped.

Refer to Active Living Resources for more information.
http://www.activelivingresources.org/assets/activelivingfactsheetstair.pdf

Restrooms

Providing restrooms at train stations allows pedestrians and bicyclists to be more comfortable traveling to the station knowing that there are facilities they can use to freshen up. Restrooms should be well maintained and accessible during peak commute hours.

Food Vendors/Kiosks/Retail

Having food vendors, kiosks, or other retail or services at transit stations enhances the experience of users. They provide opportunities to create vibrant places that are inviting.

Table 2 summarizes the benefits, potential considerations or disadvantages, and approximate cost category of each of the improvement strategies. Also shown in Table 2 are the individual scoring metrics that could be enhanced with implementation of each of these strategies, and the benefiting active transportation mode.

Table 2
Toolbox Improvement Strategies Matrix

Improvement Strategy	Benefits	Possible Disadvantages	Cost Range	Metric	Benefiting Mode (Ped, Bike)
Sidewalk Improvements					
Sidewalk Landscaping	Provides a buffer between pedestrians and vehicles	Potential reduction in sidewalk width	Varies based on treatment	Network Design, Safety	Ped
Continuous Sidewalks	Improved pedestrian safety	May require ROW acquisition	Approximately $90 per linear foot	Network Design, Safety	Ped
Street Furniture	Provides a buffer between pedestrians and vehicles	Potential reduction in sidewalk width	$500-$1,500 for benches; $500-$1,500 for trash receptacles	Network Design, Safety	Ped
Intersection Improvements					
Marked/Raised Crosswalks	Improved pedestrian safety	Requires accompanying pedestrian signage	Varies based on treatment; high visibility sidewalk-approximately $600 per crosswalk	Network Design, Safety	Ped & Bike
Leading Pedestrian Crossing Interval	Improved pedestrian safety by allowing pedestrians to become more visible to conflicting vehicles	Reduction in vehicular green time	Minimal staff time	Network Design, Safety	Ped & Bike
Pedestrian Countdown Signals	Reduced likelihood of pedestrians entering crosswalk at the end of “Don’t Walk” phase	Signal heads should be clearly visible to pedestrians	$10,000	Safety	Ped
Right-turn On Red Prohibition	Increased safety for pedestrians entering crosswalk	Increased delay for drivers	$300-$500 per sign; $1,000-$3,000 for electronic signs	Safety	Ped
Flashing Beacons	Increased safety for pedestrians by increasing driver yielding	Drivers’ lack of familiarity with flashing crosswalk	$10,000-$15,000 for both directions	Safety	Ped
Curb Extensions/Bulb-outs	Improved pedestrian safety and reduction in pedestrian crossing time	Eliminates potential de-facto right-turn movements	$5,000-$30,000 per curb	Network Design, Safety	Ped
Pedestrian Refuge Islands & Triangular Median Islands	Improved safety by allowing pedestrians to cross wide streets in multiple movements	Requires accompanying pedestrian signage	$20,000	Network Design, Safety	Ped
Traffic Calming Improvements					
Landscaped Medians	Reduction in vehicle speeds by narrowing the width of the roadway	Requires ongoing maintenance	Varies based on treatment	Safety	Ped & Bike
Reduced Curb Radii	Improved bicycle and pedestrian	Reduction in vehicle speeds	$5,000-$25,000 per	Safety	Ped & Bike

Improvement Strategy	Benefits	Possible Disadvantages	Cost Range	Metric	Benefiting Mode (Ped, Bike)
	safety by reducing vehicle right-turning speeds		curb		
Speed Feedback Signs	Improved bicycle and pedestrian safety by reducing vehicle speeds	Should be placed along roadways transitioning from high speed to lower speeds	$10,000	Safety	Ped & Bike
Traffic Circle/Roundabout	Improved bicycle and pedestrian safety by reducing vehicle speeds	Drivers' lack of familiarity in maneuvering through intersection	Varies by size and materials	Network Design	Ped & Bike
Reverse Angle Parking	Improved bicycle safety by increasing driver sight distance	Drivers' lack of familiarity reversing into parking space	$250	Safety	Bike
Bicycle Facilities Improvements					
Bike Paths	Separated paths reduce conflicts with vehicular traffic	Requires ROW acquisition	$500,000-$800,000 per mile	Network Design	Bike
Bike Lanes	Increased awareness of cyclists on the road	Reduces travel lane width	$26,000-$40,000 per mile	Network Design	Bike
Shared Bike Markings	Increased awareness of cyclists on the road	Markings should be spaced every 100 to 250 feet	$25,000 per mile	Network Design	Bike
Bike Signage	Increased awareness of cyclists on the road	None	$250 per sign	Safety	Bike
Bike Route Maps	Encourages bike use by informing public of amenities along routes	None	Varies	Trip Demand	Bike
Bike Storage Lockers	Encourages bike use	Requires placement in safe, well-lit location	$2,000-$4,00 each	Station Amenities, Bike Parking	Bike
Bike Box	Improved bike safety by reducing conflicts with right-turning vehicles	Reduces vehicular ROW in outside lane	$2 per linear foot	Network Design, Safety	Bike
Bike Signal Detection	Improved bike flow when conflicting vehicles are not present	Requires signal timing modifications	$3,000 each	Network Design, Safety	Bike
Cycle Track	Improved bike safety by providing buffer between bikes and vehicular traffic and on-street parking	Requires reduction of vehicle travel lanes/ widths or ROW acquisition, & partial obstruction of cyclists	$300.000 per mile	Network Design, Safety	Bike
Bike Boulevards	Encourages bike use without requiring new ROW	Reduction in vehicle speeds and travel time	$30,000 per mile; may vary based on traffic calming measures	Network Design, Safety	Ped & Bike
Buffered Bike Lanes	Improved bike safety by providing buffer between bikes and vehicular traffic	Requires reduction of vehicle travel lanes/ widths or ROW acquisition	$26,000-$40,000 per mile	Network Design, Safety	Bike
Transit Stop and Station Improvements					

Improvement Strategy	Benefits	Possible Disadvantages	Cost Range	Metric	Benefiting Mode (Ped, Bike)
Video Surveillance	Improved safety of transit patrons	Requires accompanying signage	Varies based on type and extent of system	Security	Ped & Bike
Way finding Signage	Improved transit user's experience	None	$250-$500 per sign	Information/ Wayfinding	Ped & Bike
Station Lighting	Improved safety of transit patrons at night	None	Varies based on type of lighting	Security	Ped & Bike
Station Furniture	Improved transit user's comfort and experience	Requires maintenance (emptying trash cans)	$500-$1,500 for benches; $500-$1,500 for trash receptacles	Station Amenities	Ped & Bike
Bike Channel	Facilitates bicycle access to platform	Potential design conflicts with accessibility requirements	Varies based on existing conditions	Station Amenities	Bike
Restrooms	Improved transit user's comfort and experience	Requires maintenance	Varies based on design and size	Station Amenities	Ped & Bike
Food Vendors/Kiosks/Retail	Improved transit user's comfort and experience	Requires maintenance and operational agreements	Varies based on design and size	Station Amenities	Ped & Bike

Resources

The following is a list of resources that provide information or guidance on improvements related to the pedestrian and bicyclist environment.

California Manual on Uniform Traffic Control Devices (MUTCD), California Department of Transportation

Available at https://bookstore.transportation.org/item_details.aspx?id=119

The California MUTCD provides uniform standards and specifications for all official traffic control devices in California. Part 9 of the MUTCD provides standards related to bicycle facilities. The MUTCD includes standards and specifications for signage, lane marking, traffic signals, amongst other items.

California Highway Design Manual, California Department of Transportation

Available at http://www.dot.ca.gov/hq/oppd/hdm/hdmtoc.htm

The Highway Design Manual (HDM) was prepared for the California Department of Transportation (Caltrans) for use on the California State highway system. This manual establishes uniform policies and procedures to be carried out the State highway design. Chapter 1000 covers Bicycle Transportation Design. The HDM applies only to State Highways and bikeways within local jurisdictions. The HDM does not establish legal standards for designing local streets. However, some cities apply HDM guidance to all streets.

Guide for the Planning, Design, and Operation of Pedestrian Facilities, 1st Ed., American Association of State Highway and Transportation Organizations (AASHTO)

Available for purchase at https://bookstore.transportation.org/item_details.aspx?id=119

This guide provides information on the planning, design, and operation of pedestrian facilities along streets and highways. Specifically, the guide focuses on identifying effective measures for accommodating pedestrians on public rights-of-way. Appropriate methods for accommodating pedestrians, which vary among roadway and facility types, are described in this guide.

Guide for the Development of Bicycle Facilities, 4th Ed., American Association of State Highway and Transportation Organizations (AASHTO)

Available for purchase at https://bookstore.transportation.org/Item_details.aspx?id=1943

This guide provides information on how to accommodate bicycle travel and operations in most riding environments. It is intended to present sound guidelines that result in facilities that meet the needs of bicyclists and other highway users. In some sections of this guide, suggested minimum dimensions are provided.

Urban Bikeway Design Guide, 2nd Ed., National Association of City Transportation Officials (NACTO)

Available at http://nacto.org/cities-for-cycling/design-guide/

The purpose of the NACTO Urban Bikeway Design Guide is to provide cities with state-of-the-practice solutions that can help create complete streets that are safe and enjoyable for bicyclists. Topics covered include bike lanes, cycle tracks, intersections, signals, signs and markings, and bicycle boulevards. Design guidance is provided on each topic. Most of the treatments are not directly referenced in the current version of the AASHTO *Guide for the Development of Bikeway Facilities*.

Model Design Manual for Living Streets, Ryan Snyder Associates and County of Los Angeles

Available for download at: http://www.modelstreetdesignmanual.com/

The *Model Design Manual for Living Streets* was developed by the County of Los Angeles as a model for adoption by local jurisdictions as well as use by planners and engineers to guide improvement selection and design. The manual provides guidance on accommodating all users including pedestrians, bicyclists and transit users within the public realm. Topics include intersection design, bikeway design, pedestrian access and crossings, transit accommodations, streetscape and placemaking. The manual provides principles of good design, as well as a number of concept drawings. In many instances, it provides the design concepts that can be used to create construction documents from.

Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, Institute for Transportation Engineers

Available for download from:
http://www.ite.org/emodules/scriptcontent/orders/ProductDetail.cfm?pc=RP-036A-E

Designing Walkable Urban Thoroughfares was developed by the Institute for Transportation Engineers (ITE), in cooperation with the Federal Highway Administration, the Environmental Protection Agency and in partnership with the Congress for the New Urbanism. The report focuses on applying the principles of context sensitive solutions in transportation planning and in the design of roadway improvement projects in places where community objectives support walkable communities-compact development, mixed land uses and support for pedestrians and bicyclists. The focus is on design of major urban roadways and providing physical components that improve the environment for pedestrians.

Steps to a Walkable Community: A Guide for Citizens, Planners, and Engineers, AmericaWalks and Sam Schwartz Engineering

Available for download at: http://americawalks.org/walksteps/

This report provides step-by-step guidance on how to assess and plan for a more walkable community. The report details ways to analyze the existing pedestrian environment, establishing policy direction, and identifying improvements. The guide also includes information on design of engineering improvements, and programs for education, encouragement and enforcement.

Bicycle Parking Guidelines, 2nd Ed., Association of Bicycle and Pedestrian Professionals

Available for purchase at https://apbp.site-ym.com/store/view_product.asp?id=502098

The *Bicycle Parking Guidelines* provide considerations for the selection and placement of short-term bicycle parking (bicycle racks), as well as long-term and sheltered parking, event parking, in-street bicycle parking, and bicycle transit centers. The guidelines include location and layout, material selection, and maintenance.

Pedestrian and Bicycle Information Center

www.walkinginfo.org and www.bicyclinginfo.org

The Pedestrian and Bicycle Information Center (PBIC) is a national clearinghouse for information about health and safety, engineering, advocacy, education, enforcement, access, and mobility for pedestrians (including transit users) and bicyclists. The PBIC websites provide information and guidance on physical and programmatic improvements that support walking and bicycling, case studies, and a library of published articles and other materials.

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5. AREA-WIDE RECOMMENDATIONS

The following recommendations are applicable to all stations within the study area.

Item #	Recommended Improvement	Pedestrian Related/ Bicycle Related	Metrics Affected	Included in Existing Plan/Document
1	Develop a consolidated bicycle locker rental program for all Orange County stations to provide consistent rental procedures and policies. Provide an online information and application center and signage at each station directing users to visit the website.	Bicycle Related	Bike Parking	
2	On an annual basis, evaluate bike locker and rack usage and consider increasing bicycle parking or implementing demand management techniques if the existing bicycle parking is consistently at capacity or a waitlist exists.	Bicycle Related	Bike Parking	
3	Add bike rack and locker locations to each station diagram map.	Bicycle Related	Information/Wayfinding, Bike Parking	
4	Encourage local agencies to upgrade bicycle and motorcycle detection at intersections within a half-mile radius of a station.	Bicycle Related	Network Design, Safety	
5	Conduct a lighting assessment at each station to identify and address areas with insufficient or inconsistent lighting.	Pedestrian & Bicycle Related	Security	
6	Provide video surveillance system at each station platform area, unless security guards are present. Provide signage indicating that the station is monitored by video.	Pedestrian & Bicycle Related	Security	
7	Ensure all improvements to stations and adjacent public areas are ADA compliant. Prioritize improvements identified in existing ADA transition plans that are adjacent to the station areas.	Pedestrian Related	Network Design, Route Directness, Safety	

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6. ANAHEIM METROLINK STATION

The Anaheim Metrolink Station is located at the north side of the Angel's Stadium parking lot at 2150 E. Katella Avenue in the City of Anaheim. The streets adjacent to the station include Katella Avenue and Howell Avenue. The station is surrounded by an office park and surface parking for the Angel's Stadium.

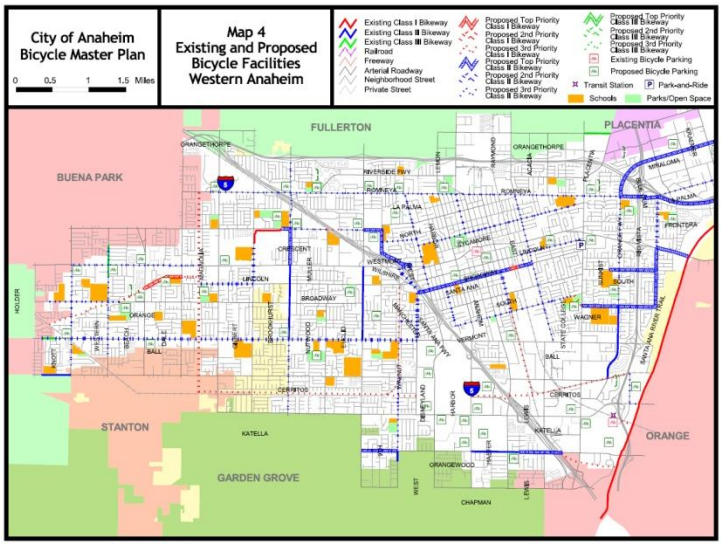
The Anaheim Regional Transportation Intermodal Center is currently under construction on the east side of the 57 freeway. The ARTIC project development will relocate the existing Metrolink station from its current location at Angel Stadium at Anaheim to the ARTIC site across from Honda Center.

Existing Plans, Programs and Projects

City of Anaheim Bicycle Master Plan (Alta Planning + Design, Feb 2004)

The City's Bicycle Master Plan serves as a policy document to guide the development and maintenance of a bicycle network, support facilities, and other programs for Anaheim over the next 20 years.

The following is a list of proposed bicycle facilities within a three mile radius of the Anaheim Metrolink Station:

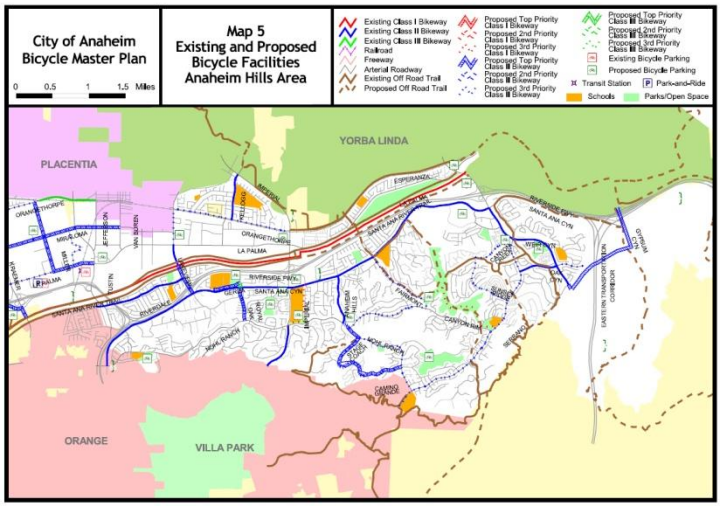


- Santa Ana Street between Kroeger Street and Vine Street (Class I bicycle path);
- Boysen Park path between Vermont Avenue and State College Boulevard (Class I bicycle path);
- Edison/Union Pacific Right of Way between Harbor Boulevard and Douglas Road (Class I bicycle path);
- Orangewood Avenue/Santa Ana River Link between I-5 Freeway and Santa Ana River Trail (Class I bicycle path);
- North-South Rail Corridor path between Vermont Avenue and East-West Edison Right of Way (Class I bicycle path);
- Union Pacific Rail Corridor between Brookhurst Street and Broadway (Class I bicycle path);
- Orangewood Avenue between Mountain View Avenue and Anaheim Boulevard (Class II bicycle lane);
- Douglas Road between Cerritos Avenue and Katella Avenue (Class II bicycle lane);

- Wagner Avenue between State College Boulevard and Rio Vista Street (Class II bicycle lane);
- Rio Vista Street between Lincoln Avenue and L Palma Avenue (Class II bike lane);
- South Street between Peregrine Street and Rio Vista Street (Class II bike lane);
- Sunkist Street north of Wagner Avenue (Class II bike lane);
- Lincoln Avenue between Rio Vista Street and Santa Ana River Trail (Class II bike lane);
- Vermont Avenue between Citron Street and State College Boulevard (Class II bike lane);
- Santa Ana Street between Walnut Street and East Street (Class II bike lane);
- Broadway between East Street and State College Boulevard (Class II bike lane);
- Sycamore Street between West Street and State College Boulevard (Class II bike lane);
- Citron Street between Water Street and Vermont Avenue (Class II bike lane);
- Olive Street between Santa Ana Street and Vermont Avenue (Class II bike lane); and
- East Street between La Palma Avenue and Ball Road (Class II bike lane);

The following is a list of proposed bicycle facilities within a three mile radius of the Anaheim Canyon Metrolink Station:

- Miraloma Avenue between La Palma Avenue and Jefferson Street (Class II bicycle lane);
- La Palma Avenue West of Tustin Avenue (Class II bicycle lane);
- Miller Street between Orangethorpe Avenue and La Palma Avenue (Class II bicycle lane);
- Lakeview Avenue between Orangethorpe Avenue and La Palma Avenue (Class II bicycle lane); and



- Lakeview Avenue between Santa Ana River Trail and Santa Ana Canyon Road (Class II bicycle lane).

Anaheim Regional Transportation Intermodal Center (ARTIC)

The Anaheim Regional Transportation Intermodal Center (ARTIC) is a collaborative effort between OCTA and the City of Anaheim to provide a regional transportation hub integrated with a dynamic mixed-use development on property owned by the City of Anaheim and OCTA. ARTIC will serve existing and expanded Metrolink and Amtrak passengers, OCTA local bus and Bus Rapid Transit (BRT) service, airport FlyAway bus service, Anaheim Transportation Network clean fuel circulator shuttles connecting to The Platinum Triangle and The Anaheim Resort, and private transportation providers. The first phase

is comprised of an iconic, sustainable 66,000 square foot transportation facility that includes 23,000 square feet of retail development and 30,000 square feet of civic space; trackwork and platforms; and, 1,255 parking spaces. Future phases of ARTIC could provide for a fixed-guideway system connecting to The Anaheim Resort, as well as the planned statewide California High-Speed Rail project and the planned California/Nevada Super Speed Train connecting to Ontario International Airport and points east terminating in Las Vegas, Nevada, as well as, commercial, office and residential development.

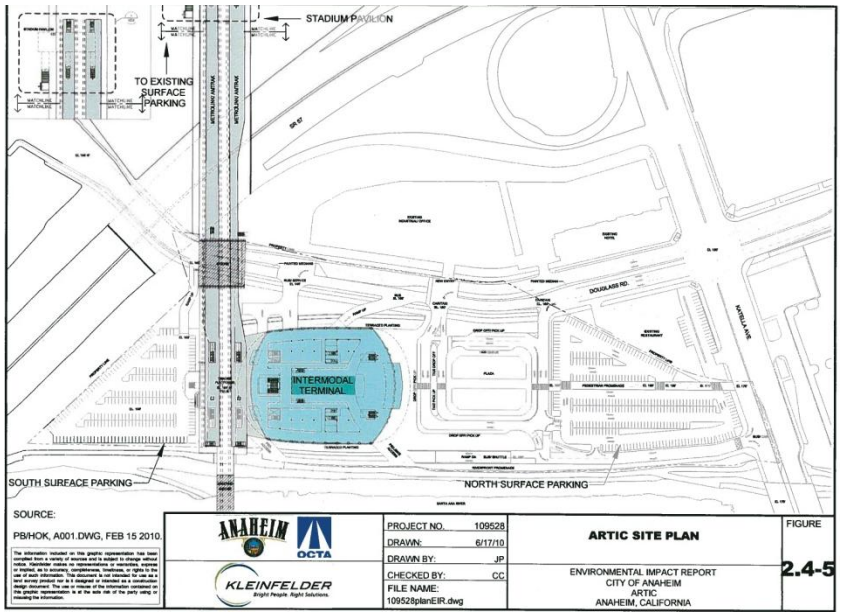
OCTA awarded funding to the City of Anaheim on August 2012 for the Anaheim Regional Transportation Intermodal Corridor to West Anaheim 4th District Bikeway. The project will involve construction of 3.77 miles of Class II bike lanes and 4.19 miles of Class III sharrows along a continuous corridor, totaling 7.96 miles. The bikeway begins at Ball Road and Magnolia Avenue and leads bicyclists east to Walnut Street, north to Santa Ana Street, east to Anaheim Boulevard, south to Cerritos Avenue, east to Douglass Road, south to Katella Avenue, and ending at the ARTIC hub and the Santa Ana River Trail.

The City of Anaheim was awarded a grant from the Transportation, Community and System Preservation Program fund for improvements along the Santa Ana River Trail adjacent to ARTIC. The proposed project will increase opportunities for bicycle commuting, reduce street congestion, improve safety, and increase usability through the following improvements to the Santa Ana River Trail (from south of Katella Avenue to the existing rail crossing):

- A new retaining wall and wider elevated area with separate, designated bikeway and pedestrian pathways;
- Additional lighting and fencing;
- Drainage improvements; and
- Provide easy and safe access from the Santa Ana River Trail to ARTIC.

The bikeway improvements will be constructed and operational when ARTIC opens in November 2014.

Construction has commenced for ARTIC. Pedestrians and cyclists will be able to access the station from Katella Avenue, Douglass Road, and the Santa Ana River Trail. The station will also have bike parking and bike lockers. Opportunities for a full service bicycle concessionaire are currently being pursued.



Access specifically to the future ARTIC station was not evaluated as part of this report. However, many of the recommendations identified in this report will be applicable to serving both the existing Metrolink station and the future ARTIC station.

Existing Conditions

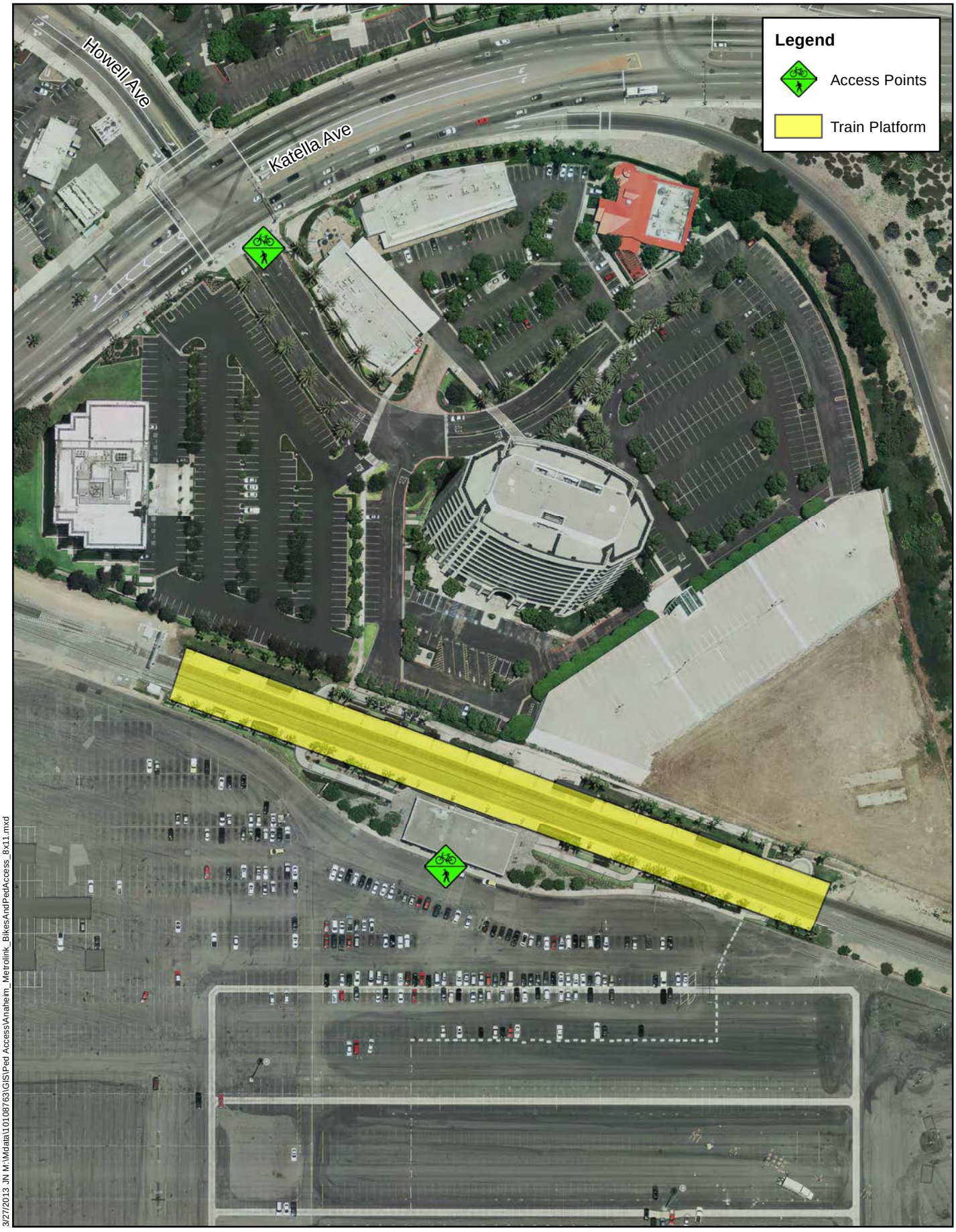
Based on field observations, Katella Avenue does not appear to be bike-friendly due to high traffic speeds with no buffer or bike lane to separate bicyclists from vehicles. A gated pedestrian access connects the station with adjacent office and commercial development to the north. However, pedestrian access is lacking between Katella Avenue and the station since no sidewalks are provided on Howell Street adjacent to the station. One notable amenity of the station is a bike share program. However, the bikes were not available when the field observations were conducted. Photos of existing conditions at the station area are provided on the following page.

Table 3 summarizes the field audit scores for each metric for the Anaheim Metrolink Station.

Table 3
Anaheim Metrolink Station Field Audit Scores

#	Metric	Bike	Ped	Scoring System
1	Station Mode Split*	8	2	0 (Poor), 2, 4, 6, 8, 10 (Good)
2	Network Design	4	6	0, 2, 4, 6, 8, 10
3	Catchment Area Effectiveness	6	8	0, 2, 4, 6, 8, 10
4	Trip Demand	7	5	0, 2, 4, 6, 8, 10
5	Route Directness	4	4	0, 2, 4, 6, 8, 10
6	Safety	4	6	0, 2, 4, 6, 8, 10
7	Security	6	6	0, 2, 4, 6, 8, 10
8	Information/Wayfinding	4	4	0, 2, 4, 6, 8, 10
9	Station Amenities	8	8	0, 2, 4, 6, 8, 10
10	Bike Parking	6	N/A	0, 2, 4, 6, 8, 10
	Total Score	57	49	
*Station Typology: Special Event/Campus; Current Mode Split: 2% Bike, 13% Ped				

As shown in Table 3, the Anaheim Metrolink Station scored 57 out of 100 for bikes and 49 out of 90 for pedestrians. Exhibit 1 shows the main access locations to the station for pedestrians and bicyclists. Exhibit 2 shows the pedestrian and bicycle catchment areas.



3/27/2013 JN M:\Mdata\10108763\GIS\Ped Access\Anaheim_Metrolink_BikesAndPedAccess_8x11.mxd

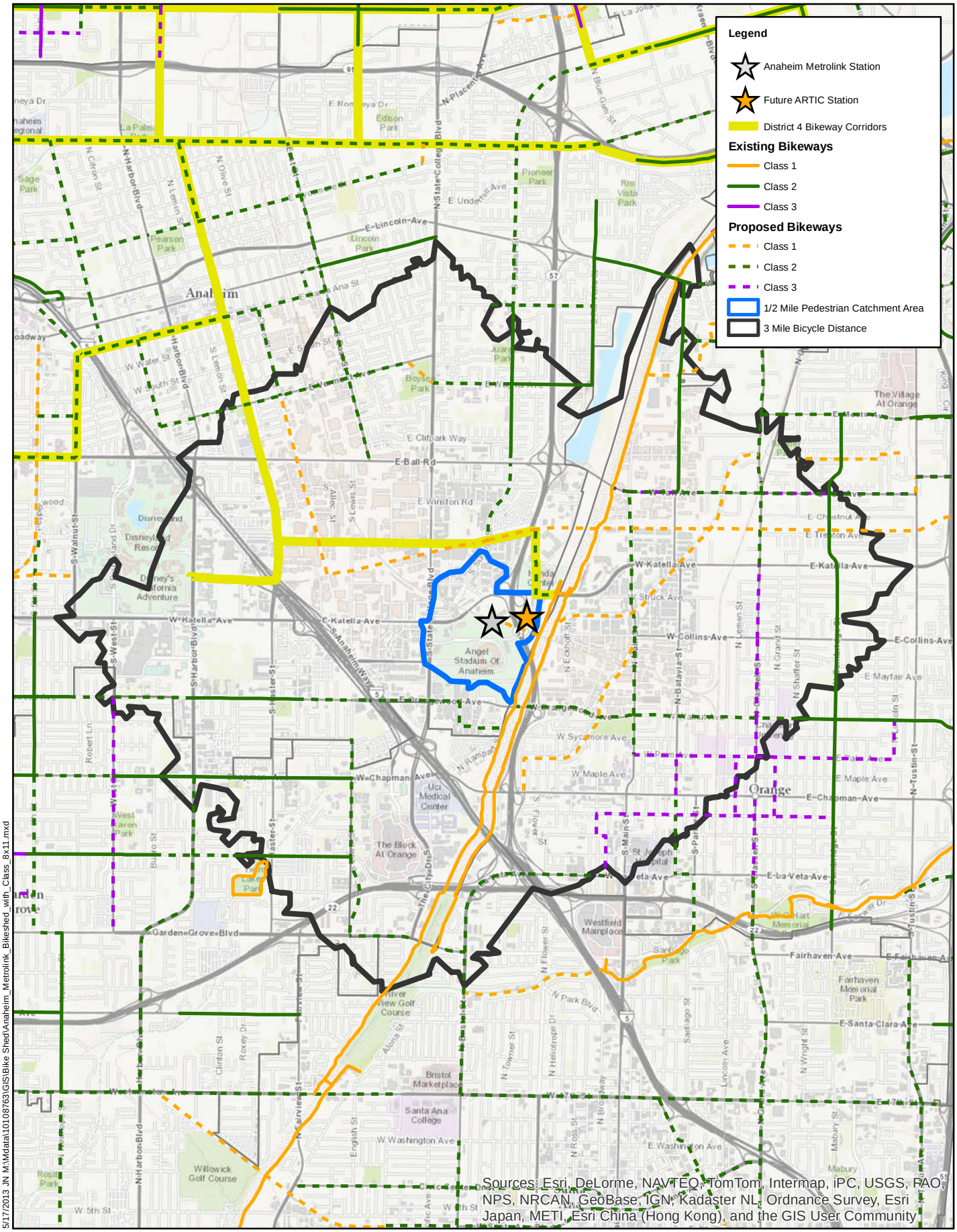
0 75 150 300 Feet

Source: OCTA, Eagle Aerial 2012

METROLINK STATION PEDESTRIAN & BICYCLE ACCESS

Anaheim Station

Exhibit 1



5/17/2013 JN M:\Mdata\10108763\GIS\Bike Shed\Anaheim_Metrolink_Bikeshed_with_Class_8x11.mxd

RBF CONSULTING A Baker Company GIS

0 0.25 0.5 1 Miles

Source: OCTA, Esri

METROLINK STATIONS

Catchment Area - Anaheim

Exhibit 2

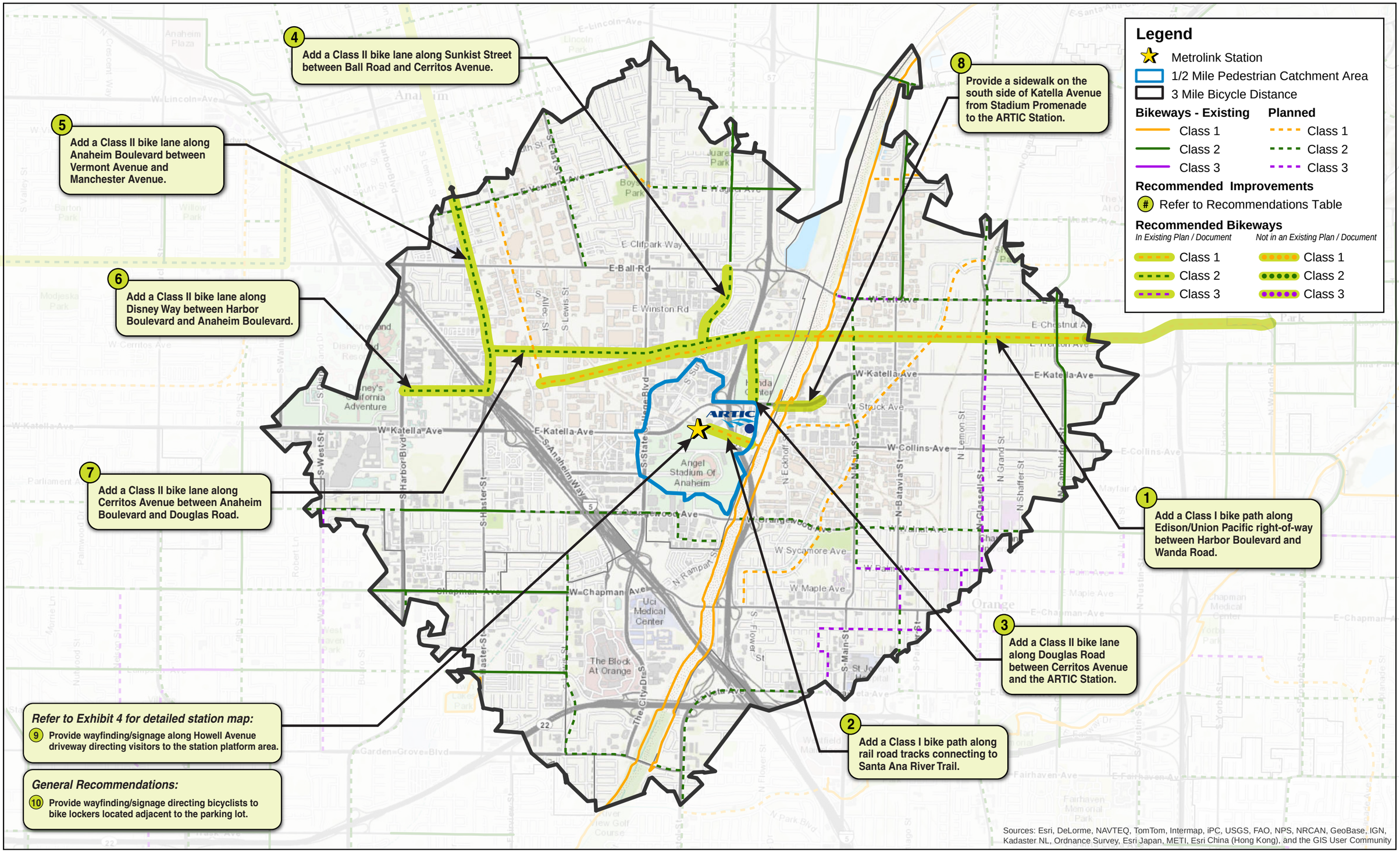
Howell Avenue between Katella Avenue and the station lacks sidewalks.

Bikeshare kiosk with bicycle lockers in background.

Recommendations

Exhibits 3 and 4 show the recommendations identified in the following matrix.

Item #	Recommended Improvement	Pedestrian Related/ Bicycle Related	Metrics Affected	Included in Existing Plan/Document
1	Add a Class I bike path along Edison/Union Pacific right-of-way between Harbor Boulevard and Wanda Road.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	City of Anaheim Bicycle Master Plan (Alta Planning + Design, February, 2004)
2	Add a Class I bike path along rail road tracks connecting to Santa Ana River Trail.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	City of Anaheim Bicycle Master Plan (Alta Planning + Design, February, 2004)
3	Add a Class II bike lane along Douglas Road between Cerritos Avenue and the ARTIC Station.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Fourth District Bikeways Collaborative
4	Add a Class II bike lane along Sunkist Street between Ball Road and Cerritos Avenue.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	
5	Add a Class II bike lane along Anaheim Boulevard between Vermont Avenue and Manchester Avenue.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Fourth District Bikeways Collaborative
6	Add a Class II bike lane along Disney Way between Harbor Boulevard and Anaheim Boulevard.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Fourth District Bikeways Collaborative
7	Add a Class II bike lane along Cerritos Avenue between Anaheim Boulevard and Douglas Road.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Fourth District Bikeways Collaborative
8	Provide a sidewalk on the south side of Katella Avenue from Stadium Promenade to the ARTIC station.	Pedestrian Related	Network Design, Safety	
9	Provide wayfinding/signage along Howell Avenue driveway directing visitors to the station platform area.	Pedestrian & Bicycle Related	Information/Wayfinding	
10	Provide wayfinding/signage directing bicyclists to bike lockers located adjacent to the parking lot.	Bicycle Related	Information/Wayfinding, Bike Parking	



Source: OCTA, Esri

RBF A Baker Company

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APPROXIMATE

05/13/13 130374-19110 MAS

METROLINK STATIONS

Anaheim Metrolink Station - Recommended Improvements

Exhibit 3

Source: OCTA, Eagle Aerial 2012

METROLINK STATIONS

Anaheim Metrolink Station Recommended Improvements

RBF A Baker Company

NOT TO SCALE

05/13/13 130374-19110 MAS

Exhibit 4

7. ANAHEIM CANYON METROLINK STATION

The Anaheim Canyon Metrolink Station is located at 1039 N. Pacificenter Drive in the City of Anaheim. The streets adjacent to the station include La Palma Avenue, Tustin Avenue, Grove Street, and Pacificenter Drive. The station is surrounded by an office park and small retail center east of the station and an apartment complex to the west of the station.

Existing Plans, Programs and Projects

Anaheim Canyon Station Master Site Plan (IBI Group, December 18, 2007)

The main objective of the ***Anaheim Canyon Station Master Site Plan*** is to define transit services to improve connectivity to the Metrolink stations at the future Anaheim Regional Transportation Intermodal Center (ARTIC). The plan identifies the following improvements needed at the Anaheim Canyon Station:

- Two side platforms which will be designed to the new Metrolink standard of 680 feet in length and also leave room for the possibility to expand to 850 feet in the future, should the need arise to accommodate longer trains;
- A pedestrian undercrossing that allows passengers to safely access both of the side platforms and additionally to provide improved pedestrian linkages in the transit oriented development opportunity area;
- Four bus bays in front of the station that provide for convenient transit pick-up and drop-off through direct access to the station plaza on the west side of the right-of-way;
- Four "kiss-and-ride" bays will allow for passenger pick-up and drop-off close to the pedestrian crossing;
- Approximately 100 parking spaces to be located in a shared parking structure close to the transit plaza;
- A pedestrian mall connecting the west side of the station pedestrian crossing to the Kaiser Permanente healing garden and emergency entrance; and
- Enhanced station shelters, benches, and other furniture.

The plan also identifies the following key principles of the vision for the station:

- An expanded Metrolink station with an additional platform to allow simultaneous bi-directional passenger loading;

- Improved passenger amenities on the station platform including canopies that provide protection from wind and rain;
- A high quality urban design that celebrates the station as an icon in the community;
- A new transit plaza and pedestrian plaza that links to transit-oriented developments on adjacent properties to both the east and west of the station to encourage walking and increased activity in the area, with a view to increasing Metrolink and other transit usage and improving security for passengers waiting on the platforms;
- Relocated bus and shuttle drop-off areas that provide immediate access to the station; and
- Shared parking in structures on the Pacificenter property that will reduce surface area dedicated to parking and promote infill development that is supportive of transit use.

The City is currently refining the conceptual design and securing funding. A Bikeway from the Santa Ana River Trail to Anaheim Canyon Station is identified on the Anaheim Outdoors Connectivity Plan; however, funding is not yet available for implementation.

Anaheim Canyon Specific Plan

The City is in the process of updating the Anaheim Canyon Specific Plan. Key components of the plan include pedestrian improvements and bicycle improvements. The City also has planned improvements at the Anaheim Canyon Metrolink Station to provide an underpass to the nearby apartment community, Kaiser Medical Center and adjacent businesses.

Sidewalk Improvement Program

The City is currently implementing a sidewalk improvement program on La Palma Avenue and other streets near Anaheim Canyon Station. The new sidewalks will improve pedestrian access to the station, nearby transit oriented development, Kaiser Medical Center, and employment centers. Funding is provided from the US Economic Development Administration. Sidewalk construction will be complete by summer 2014.

Existing Conditions

Based on field observations, La Palma Avenue and Tustin Avenue do not appear to be bike-friendly due to high traffic speeds with no buffer or bike lane to separate bicyclists from vehicles. Pedestrian access is affected by the discontinuous sidewalk on the north side of La Palma Avenue and no sidewalk on the west side of Pacificenter Drive adjacent to the station. Photos of existing conditions at the station area are provided on the following page.

Table 4 summarizes the field audit scores for each metric for the Anaheim Canyon Metrolink Station.

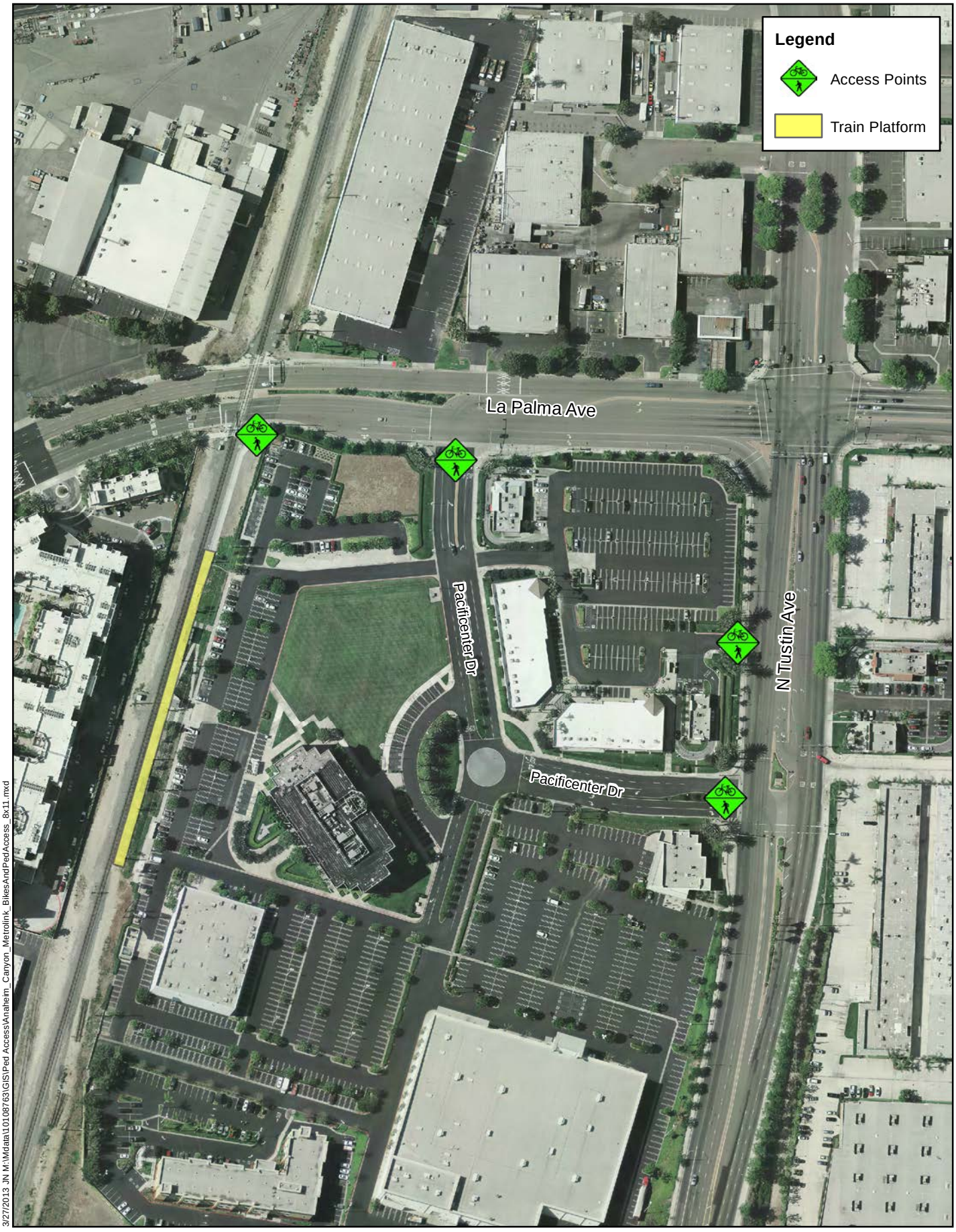
Table 4
Anaheim Canyon Metrolink Station Field Audit Scores

#	Metric	Bike	Ped	Scoring System
1	Station Mode Split*	10	2	0 (Poor), 2, 4, 6, 8, 10 (Good)
2	Network Design	4	4	0, 2, 4, 6, 8, 10
3	Catchment Area Effectiveness	6	4	0, 2, 4, 6, 8, 10
4	Trip Demand	7	5	0, 2, 4, 6, 8, 10
5	Route Directness	4	4	0, 2, 4, 6, 8, 10
6	Safety	4	4	0, 2, 4, 6, 8, 10
7	Security	6	6	0, 2, 4, 6, 8, 10
8	Information/Wayfinding	4	4	0, 2, 4, 6, 8, 10
9	Station Amenities	4	4	0, 2, 4, 6, 8, 10
10	Bike Parking	8	N/A	0, 2, 4, 6, 8, 10
	Total Score	57	37	
*Station Typology: Suburban Employment Center; Current Mode Split: 4% Bike, 6% Ped				

As shown in Table 4, the Anaheim Canyon Metrolink Station scored 57 out of 100 for bikes and 37 out of 90 for pedestrians. Exhibit 5 shows the main access locations to the station for pedestrians and bicyclists. Exhibit 6 shows the pedestrian and bicycle catchment areas.

View looking north on the platform.

View looking east on La Palma Avenue shows minimal right-of-way for bicyclists.



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RBF CONSULTING A Baker Company GIS

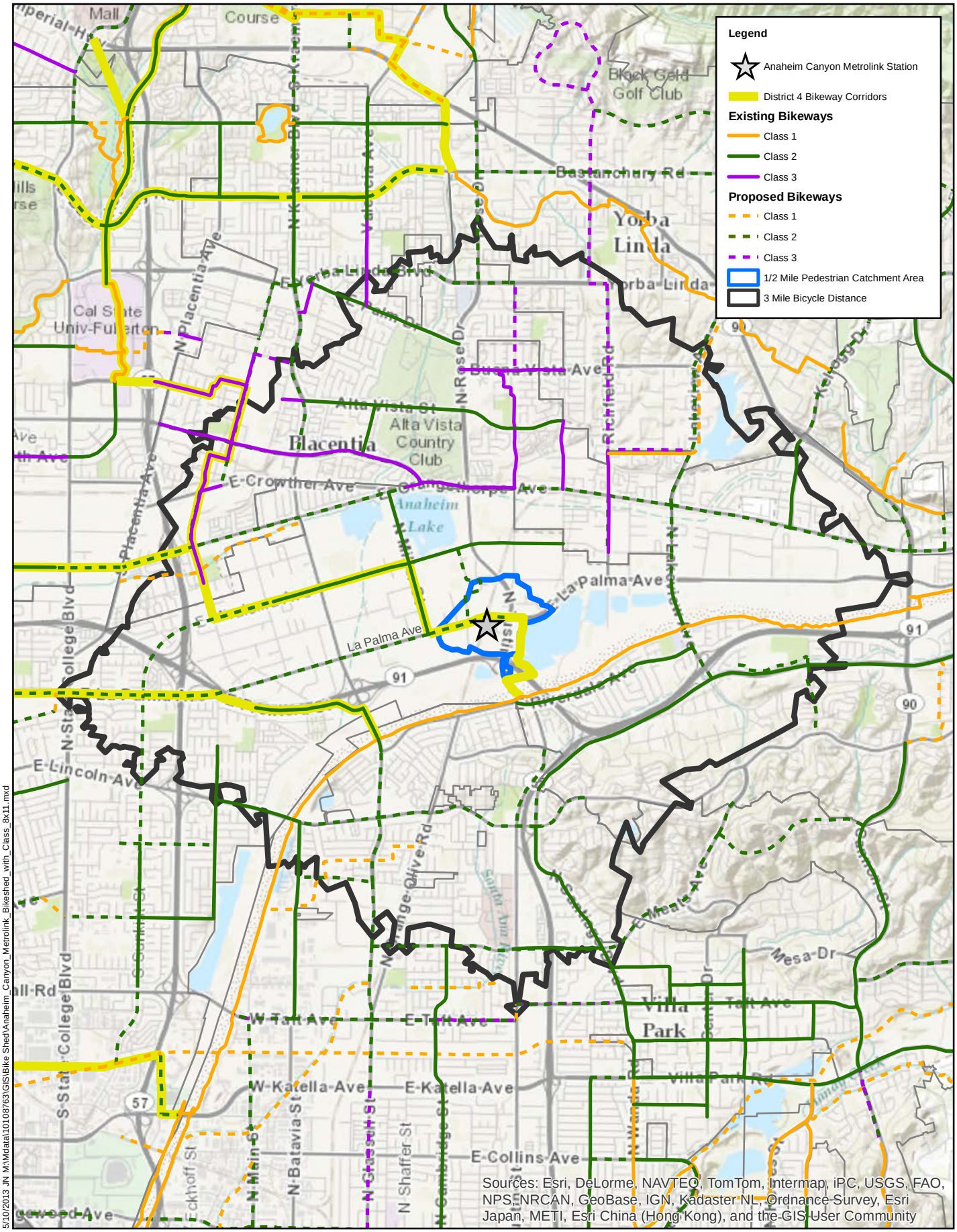
0 100 200 400 Feet

Source: OCTA, Eagle Aerial 2012

METROLINK STATION PEDESTRIAN & BICYCLE ACCESS

Anaheim Canyon Station

Exhibit 5



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RBF CONSULTING A Baker Company GIS

0 0.25 0.5 1 Miles

Source: OCTA, Esri

METROLINK STATIONS

Catchment Area - Anaheim Canyon

Exhibit 6

Recommendations

Exhibits 7 and 8 show the recommendations identified in the following matrix.

Item #	Recommended Improvement	Pedestrian Related/ Bicycle Related	Metrics Affected	Included in Existing Plan/Document
1	Add a Class II bike lane along La Palma Avenue west of Tustin Avenue.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	
2	Add a Class II bike lane along Grove Street.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	
3	Add a Class II bike lane along Miraloma Avenue/Sunkist Street between South Street and Rose Drive.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	
4	Add a Class III bike route along Tustin Avenue between La Palma Avenue and Santa Ana River Trail.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Fourth District Bikeways Collaborative
5	Add sidewalks on Grove Street.	Pedestrian & Bicycle Related	Network Design, Catchment Area Effectiveness Route Directness, Safety	
6	Add pedestrian undercrossing and provide access to platform expansion.	Pedestrian & Bicycle Related	Route Directness	Anaheim Canyon Station Master Site Plan (IBI Group, 2007)
7	Add sidewalks on the left side of Pacificenter Drive south of La Palma Avenue.	Pedestrian Related	Network Design, Catchment Area Effectiveness, Route Directness, Safety	
8	Provide wayfinding/signage along Pacificenter Drive driveways (at La Palma Avenue & Tustin Avenue) directing visitors to the station platform area.	Pedestrian & Bicycle Related	Information/Wayfinding	
9	Provide wayfinding/signage at the following intersections: Pacificenter Drive/La Palma Avenue, Tustin Avenue/La Palma Avenue, Tustin Avenue/Pacificenter Drive.	Pedestrian & Bicycle Related	Information/Wayfinding	
10	Provide wayfinding/signage directing pedestrians and bicyclists to the path connecting the platform to La Palma Avenue.	Pedestrian & Bicycle Related	Information/Wayfinding	
11	Add additional shaded seating areas at the station.	Pedestrian & Bicycle Related	Station Amenities	
12	Consider providing restrooms or formalizing arrangements with adjacent businesses.	Pedestrian & Bicycle Related	Station Amenities	

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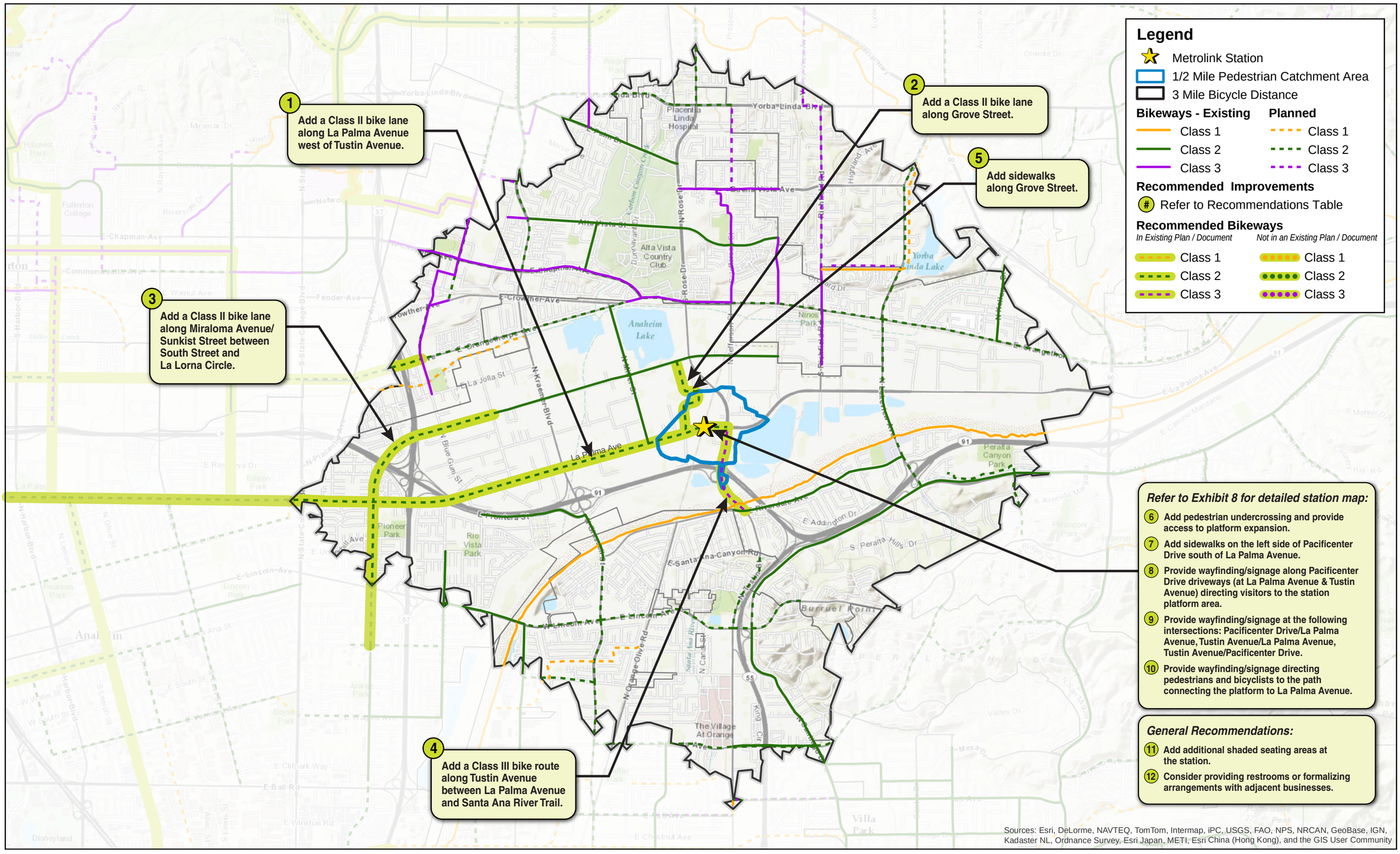


Source: OCTA, Esri

RBF A Baker Company

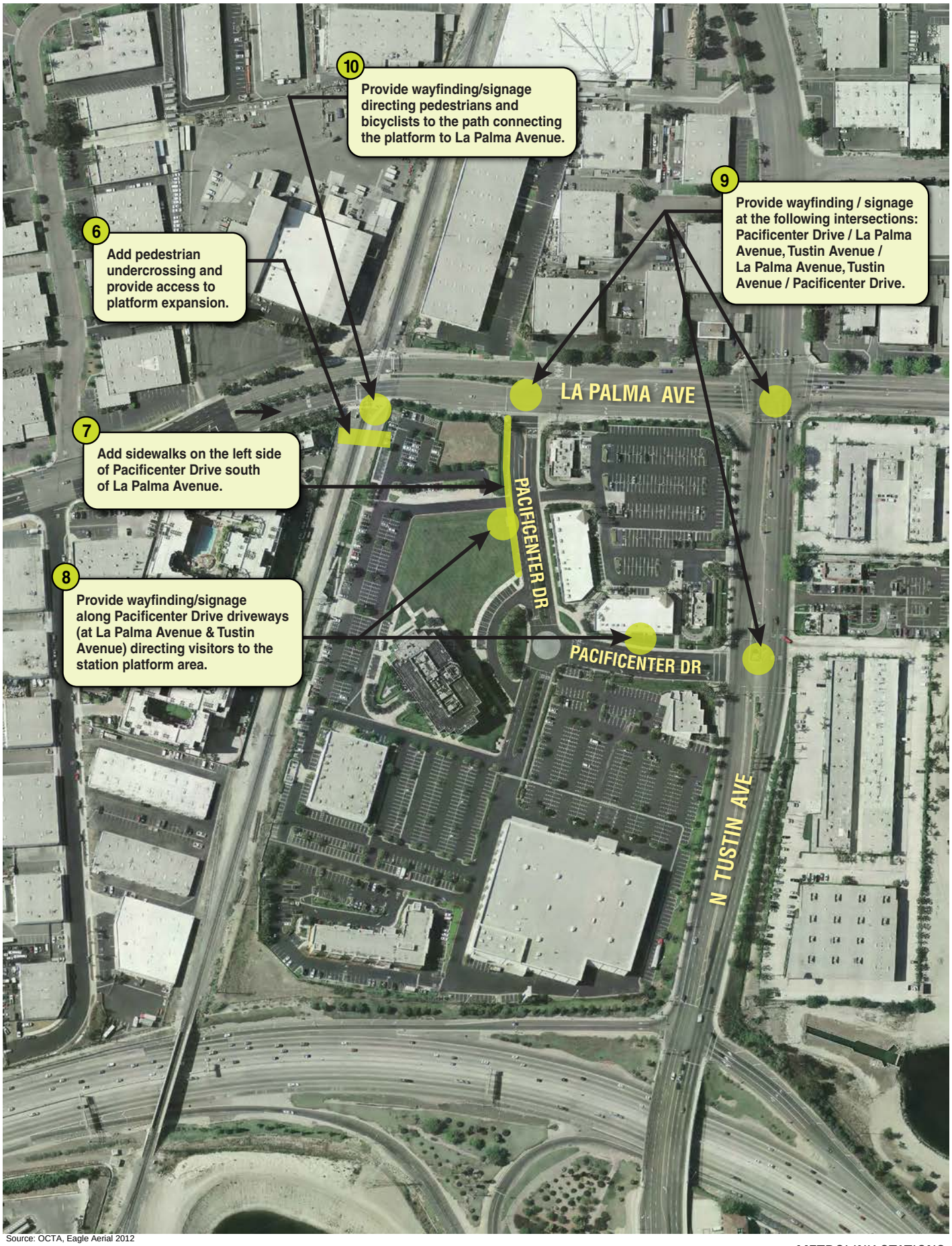
0 0.5 1 mile
APPROXIMATE

05/13/13 130374-19110 MAS

METROLINK STATIONS

Anaheim Canyon Metrolink Station - Recommended Improvements

Exhibit 7



Source: OCTA, Eagle Aerial 2012

METROLINK STATIONS

Anaheim Canyon Metrolink Station Recommended Improvements

RBF A Baker Company

NOT TO SCALE

05/13/13 130374-19110 MAS

Exhibit 8

8. BUENA PARK METROLINK STATION

The Buena Park Metrolink Station is located at 8400 Lakeknoll Drive in the City of Buena Park. The streets adjacent to the station include Dale Street, Malvern Avenue, Lakeknoll Drive, and Sycamore Lane. The station is surrounded by residential land use.

Existing Plans, Programs and Projects

The City of Buena Park participated in the 4th District Bikeways Collaborative that identified regional bikeway corridors that connect major activity areas such as employment centers, transit stations, colleges, and universities. The City has not adopted any plans for bikeways or pedestrian improvements.

Existing Conditions

Based on field observations, Dale Street and Malvern Avenue do not appear to be bike-friendly due to high traffic speeds with no buffer or bike lane to separate bicyclists from vehicles. Malvern Avenue also has some on-street parking which affects bicyclist comfort when riding between moving and parked cars. Lakeknoll Drive and Dale Street have landscaped sidewalks which provide a buffer between the sidewalk and street. Photos of existing conditions at the station area are provided on the following page.

Table 5 summarizes the field audit scores for each metric for the Buena Park Metrolink Station.

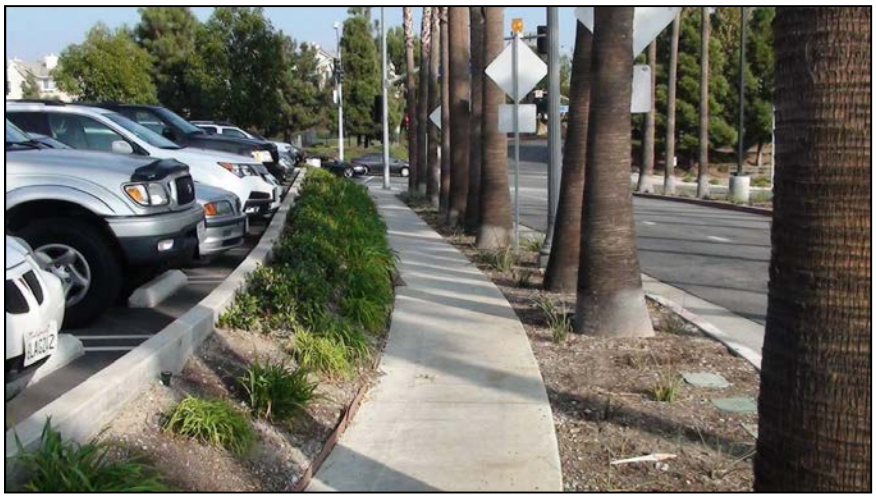
Table 5
Buena Park Metrolink Station Field Audit Scores

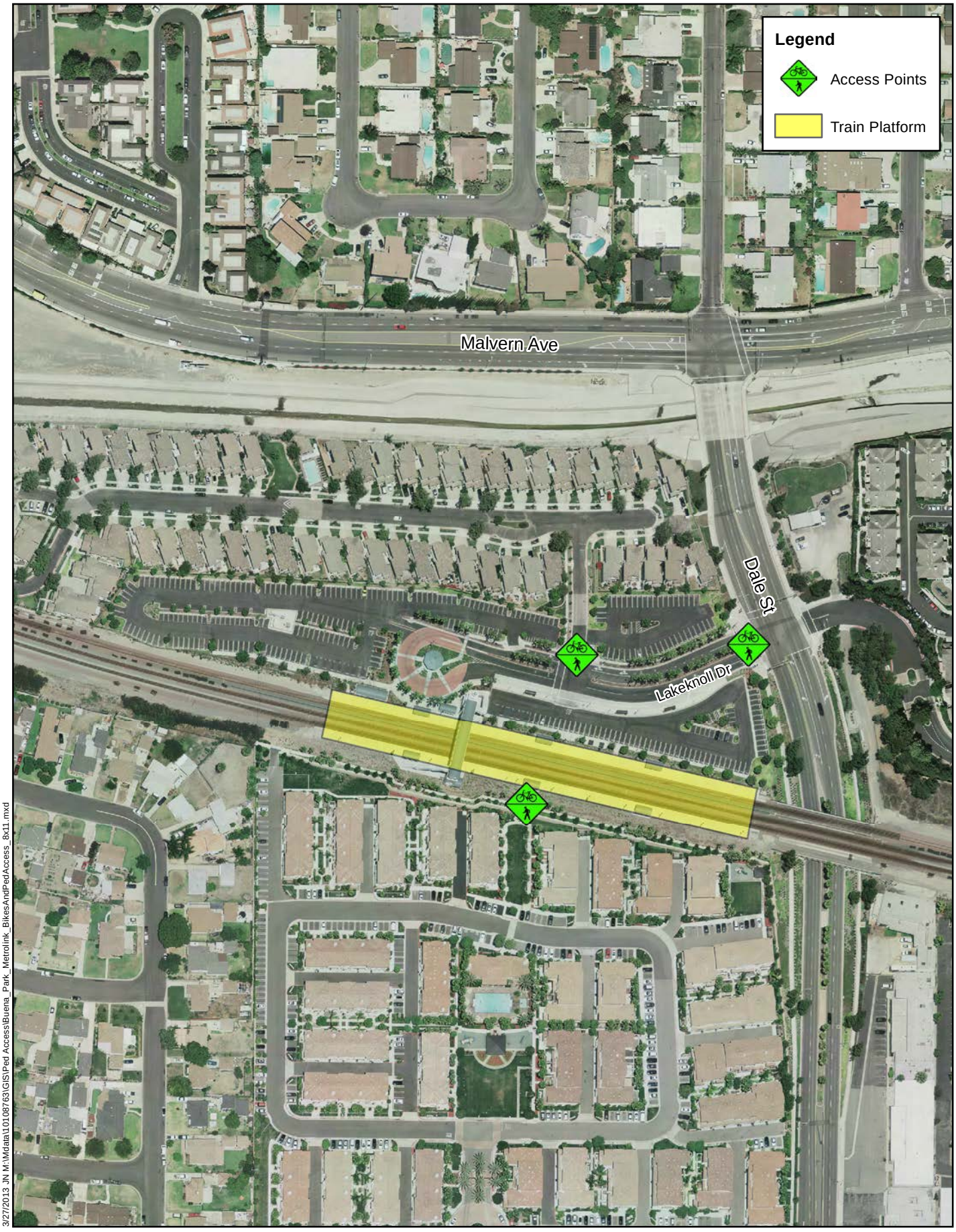
#	Metric	Bike	Ped	Scoring System
1	Station Mode Split*	0	4	0 (Poor), 2, 4, 6, 8, 10 (Good)
2	Network Design	4	6	0, 2, 4, 6, 8, 10
3	Catchment Area Effectiveness	6	6	0, 2, 4, 6, 8, 10
4	Trip Demand	3	2	0, 2, 4, 6, 8, 10
5	Route Directness	8	8	0, 2, 4, 6, 8, 10
6	Safety	4	6	0, 2, 4, 6, 8, 10
7	Security	6	6	0, 2, 4, 6, 8, 10
8	Information/Wayfinding	2	2	0, 2, 4, 6, 8, 10
9	Station Amenities	6	6	0, 2, 4, 6, 8, 10
10	Bike Parking	4	N/A	0, 2, 4, 6, 8, 10
	Total Score	43	46	
*Station Typology: Suburban Neighborhood; Current Mode Split: 0% Bike, 13% Ped				

As shown in Table 5, the Buena Park Metrolink Station scored 43 out of 100 for bikes and 46 out of 90 for pedestrians. Exhibit 9 shows the main access locations to the station for pedestrians and bicyclists. Exhibit 10 shows the pedestrian and bicycle catchment areas.

View of Lakeknoll Drive from pedestrian overcrossing.

Sidewalk along Lakeknoll Drive.





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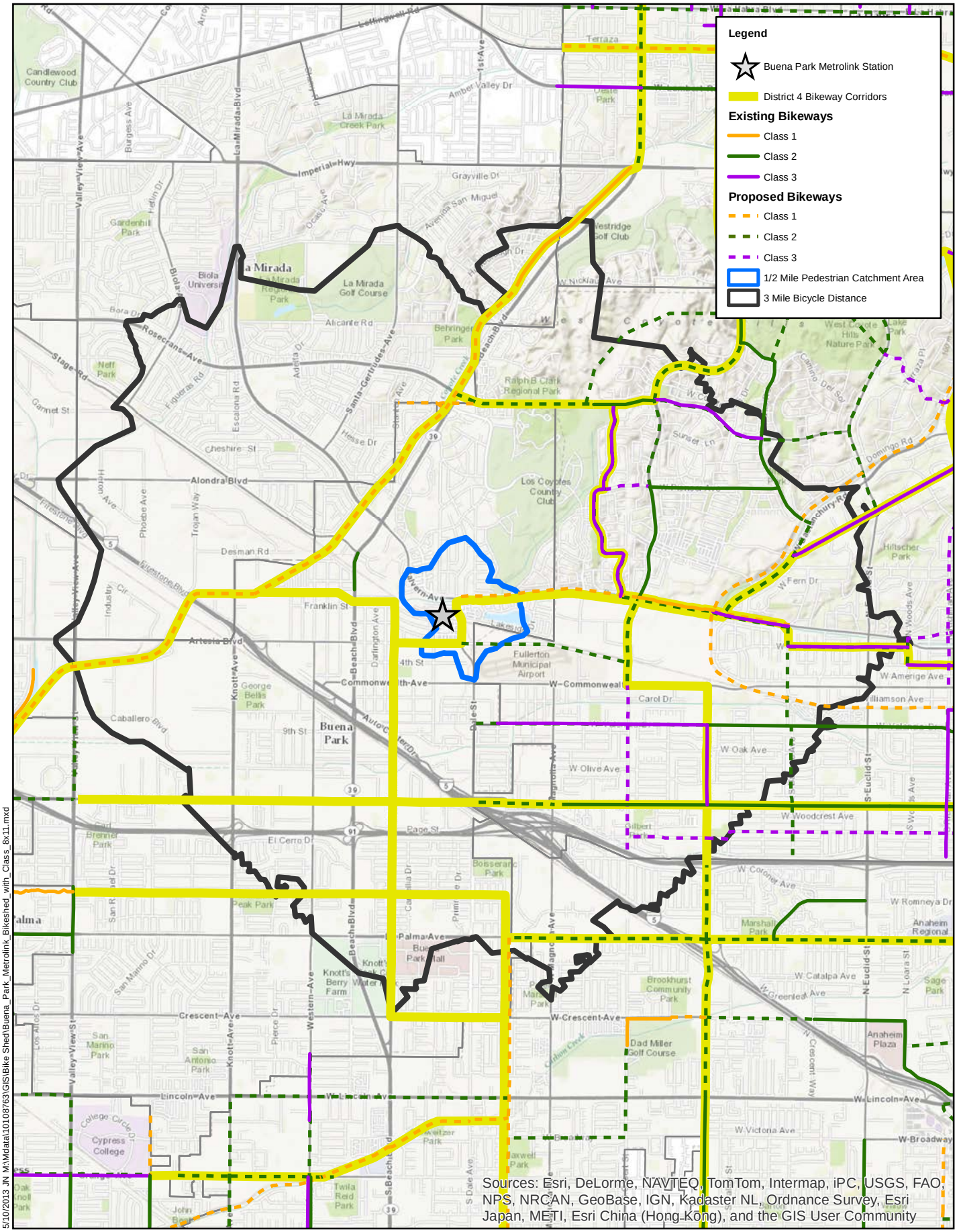
0 100 200 400 Feet

Source: OCTA, Eagle Aerial 2012

METROLINK STATION PEDESTRIAN & BICYCLE ACCESS

Buena Park Station

Exhibit 9



5/10/2013 JN M:\Mdata\10108763\GIS\Bike Shed\Buena_Park_Metrolink_Bikeshed_with_Class_8x11.mxd

0 0.25 0.5 1 Miles

Source: OCTA, Esri

METROLINK STATIONS

Catchment Area - Buena Park

Exhibit 10

Recommendations

Exhibits 11 and 12 show the recommendations identified in the following matrix.

Item #	Recommended Improvement	Pedestrian Related/ Bicycle Related	Metrics Affected	Included in Existing Plan/Document
1	Add a Class I bike path along flood control channel between Coyote Creek Trail and Basque Avenue.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	
2	Add a Class I bike path along flood control channel adjacent to Malvern Avenue between Dale Street and Basque Avenue.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	
3	Add a Class I bike path along the Coyote Creek Trail east of Walker Street.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	Fourth District Bikeways Collaborative
4	Add a Class II bike lane along Orangethorpe Avenue between Valley View Avenue and Magnolia Avenue.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	Fourth District Bikeways Collaborative
5	Add a Class II bike lane along Artesia Boulevard between Dale Street and Gilbert Street.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	
6	Add a Class II bike lane along Dale Street between Malvern Avenue and Auto Center Drive.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	
7	Add a Class III bike route along Stanton Avenue between Artesia Boulevard and Crescent Avenue.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Fourth District Bikeways Collaborative
8	Add a Class III bike route along Malvern Avenue between Alondra Boulevard and Dale Street.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	
9	Provide wayfinding/signage along Malvern Avenue and Dale Street directing visitors to the station.	Pedestrian & Bicycle Related	Information/Wayfinding	
10	Provide wayfinding/signage directing bicyclists to bike lockers located adjacent to the parking lot.	Pedestrian & Bicycle Related	Information/Wayfinding, Bike Parking	

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Refer to Exhibit 12 for detailed station map:

9 Provide wayfinding/signage along Malvern Avenue and Dale Street directing visitors to the station.

General Recommendations:

10 Provide wayfinding/signage directing bicyclists to bike lockers located adjacent to the parking lot.

8 Add a Class III bike route along Malvern Avenue between Alondra Boulevard and Dale Street.

2 Add a Class I bike path along flood control channel adjacent to Malvern Avenue between Dale Street and Basque Avenue.

3 Add a Class I bike path along the Coyote Creek Trail east of Walker Street.

5 Add a Class II bike lane along Artesia Boulevard between Dale Street and Gilbert Street.

4 Add a Class II bike lane along Orangethorpe Avenue between Valley View Avenue and Magnolia Avenue.

1 Add a Class I bike path along flood control channel between Coyote Creek Trail and Basque Avenue.

7 Add a Class III bike route along Stanton Avenue between Artesia Boulevard and Crescent Avenue.

6 Add a Class II bike lane along Dale Street between Malvern Avenue and Auto Center Drive.

Legend

- Metrolink Station
- 1/2 Mile Pedestrian Catchment Area
- 3 Mile Bicycle Distance

Bikeways - Existing

- Class 1
- Class 2
- Class 3

Planned

- Class 1
- Class 2
- Class 3

Recommended Improvements

(#) Refer to Recommendations Table

Recommended Bikeways

In Existing Plan / Document	*Not in an Existing Plan / Document*
Class 1	Class 1
Class 2	Class 2
Class 3	Class 3

Source: OCTA, Esri

0 0.5 1 mile

APPROXIMATE

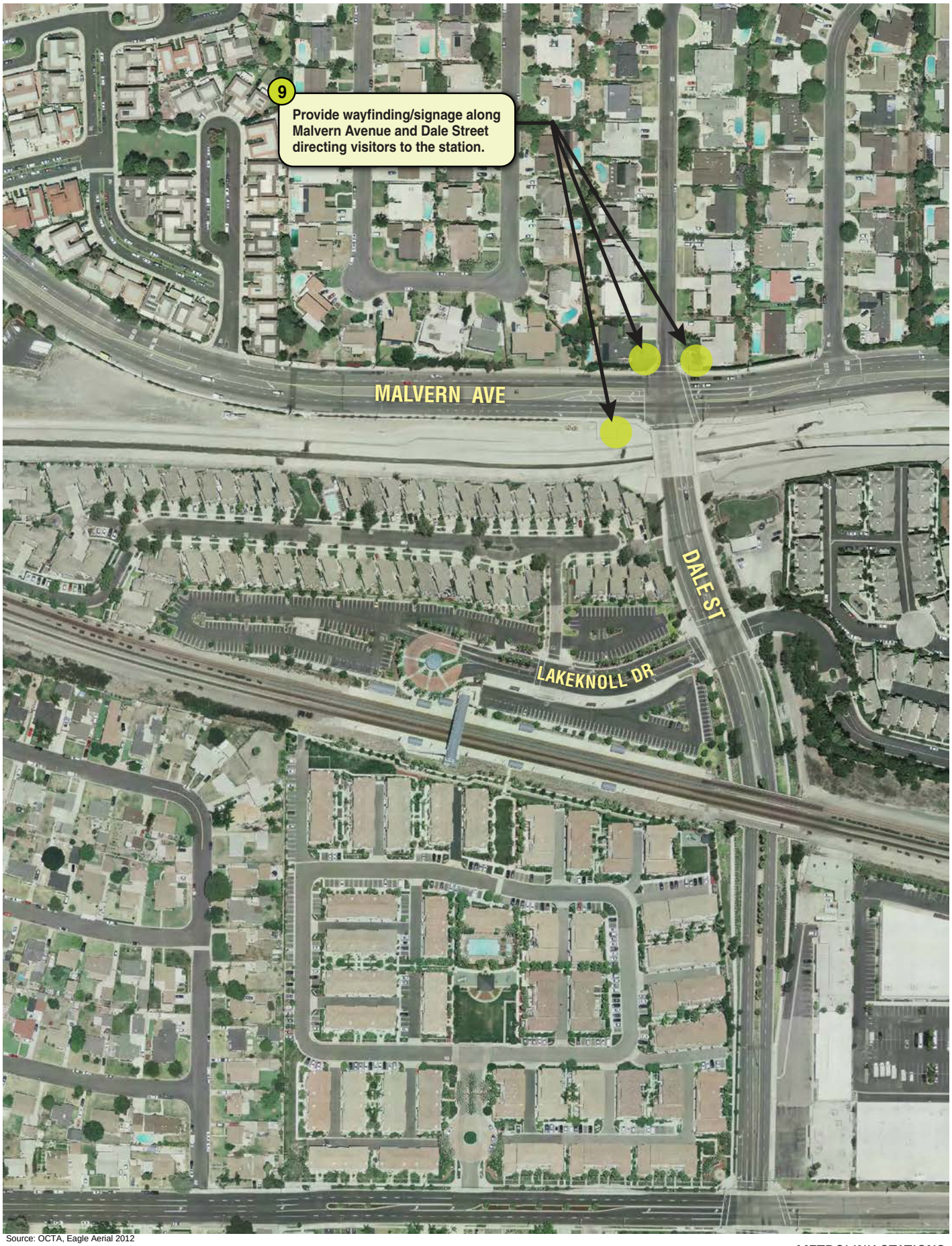
03/28/13 130374-19110 MAS

RBF A Baker Company

METROLINK STATIONS

Buena Park Metrolink Station - Recommended Improvements

Exhibit 11



Source: OCTA, Eagle Aerial 2012

METROLINK STATIONS

Buena Park Metrolink Station Recommended Improvements

RBF A Baker Company

NOT TO SCALE

03/28/13 130374-19110 MAS

Exhibit 12

9. FULLERTON METROLINK STATION

The Fullerton Metrolink Station is located at 120 E. Santa Fe Avenue in the City of Fullerton. The streets adjacent to the station include Harbor Boulevard, Commonwealth Avenue, Pomona Avenue, Santa Fe Avenue, and Walnut Avenue. The station is surrounded by downtown shops and restaurants to the north and residential land use to the south.

Existing Plans, Programs and Projects

Fullerton Bicycle Master Plan (RBF Consulting, Ryan Snyder Associates, 2012)

The City's Bicycle Master Plan serves as a policy document to guide the development and maintenance of a bicycle network, support facilities, and other programs for Fullerton over the next 20 years.

The following is a list of proposed bicycle facilities within a three mile radius of the Fullerton Metrolink Station:

- Brea Creek bike path between Buena Park City limits and Basque Avenue (Class I bicycle path);
- Union Pacific Rail Road right-of-way bike path between La Habra City limit and Pomona Avenue (Class I bicycle path);
- Gilbert Street between Malvern Avenue and Commonwealth Avenue (Class II bicycle lane);
- Valencia Drive between Gilbert Street and Brookhurst Street (Class II bicycle path);
- Hughes Drive between Gilbert Street and Bastanchury Road (Class II bicycle lane);
- Valencia Mesa Drive between Bastanchury Road and Harbor Boulevard (Class II bicycle lane);
- Warburton Way between Benchley Street and Bastanchury Road (Class II bicycle lane);
- Benchley Street between Pioneer Avenue and Hughes Drive (Class II bicycle lane);
- Orangethorpe Avenue between Basque Avenue and Euclid Street (Class II bicycle lane);
- Orangethorpe Avenue between Highland Avenue and Raymond Avenue (Class II bicycle lane);
- Orangethorpe Avenue between State College Boulevard and Placentia Avenue (Class II bicycle lane);
- Walnut Avenue between Richman Avenue and Lawrence Avenue (Class II bicycle lane);
- Longview Drive between Brea Boulevard and Dorothy Lane (Class II bicycle lane); and
- Placentia Avenue between Yorba Linda Boulevard and Orangethorpe Avenue (Class II bicycle lane).

It is important to note, several locations were identified as potential bike boulevard opportunities within the City of Fullerton. The most notable potential bike boulevard is located in the downtown

area along Wilshire Avenue between Highland Avenue and Acacia Avenue. Several Class III bicycle routes are also identified along Commonwealth Avenue, Brookhurst Road, Basque Avenue, Pomona Avenue, Lemon Street and Richman Avenue.

Fullerton Transportation Center (FTC) Specific Plan (RBF Consulting, 2010)

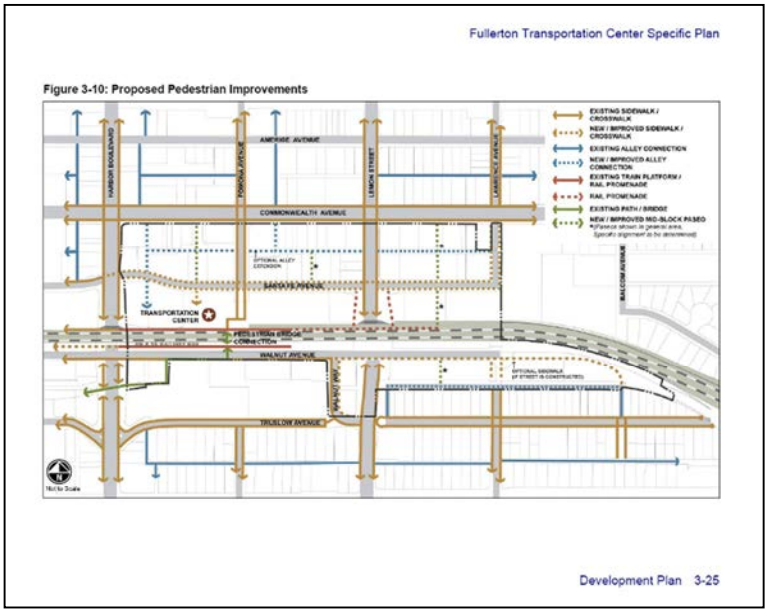
The overall purpose and intent of the FTC Specific Plan is to create a sustainable transit-oriented district at the Fullerton Transportation Center, which is located within Downtown Fullerton. One goal of the plan is to include pedestrian and bicycle connections as key elements in the project.

The existing streets and alleys within the Specific Plan Area (excluding Commonwealth Avenue, Harbor Boulevard, and Lemon Street) would be improved to better accommodate vehicle traffic, pedestrians, and bicyclists. Streets would be improved with widened sidewalks that are enhanced with street trees, pedestrian-scaled streetlights, and streetscape furniture. Santa Fe Avenue would be improved with on-street parking and dedicated turn lanes at intersections to accommodate additional traffic and turning movements. Santa Fe Avenue, Lemon Street, Lawrence Avenue, and Pomona Avenue would also be designated bicycle routes (Class III). Bicycle routes would be marked by "sharrow" pavement markings, which remind motorists to share the road with bicyclists. A new street connection would be constructed south of the railroad corridor and east of Lemon Street. This street improvement would extend Lawrence Avenue north to Walnut Avenue. Walnut Avenue could also be extended to the east to provide better access to the properties east of Lawrence Street. This connection is not required as part of the Specific Plan, but may be necessary based on the final development proposal for the property at the end of Walnut Avenue to create adequate access for emergency vehicles.

Alleys would be enhanced with pervious pavement to serve as secondary pedestrian and bicycle routes. Alleys would also be widened to 30 feet to provide adequate space for delivery vehicles, fire engines, trash collection vehicles, and designated loading zones.

The following intersections within the FTC Specific Plan Area would be improved with signals:

- Lemon Street and Santa Fe Avenue: The traffic signal will allow vehicles, pedestrians, and bicyclists to cross Lemon Street at Santa Fe Avenue, providing a more convenient and safe connection between the uses east of Lemon Street and the Fullerton Train Depot.
- Lemon Street and Walnut Way: The traffic signal would improve level of service operations at the intersection.

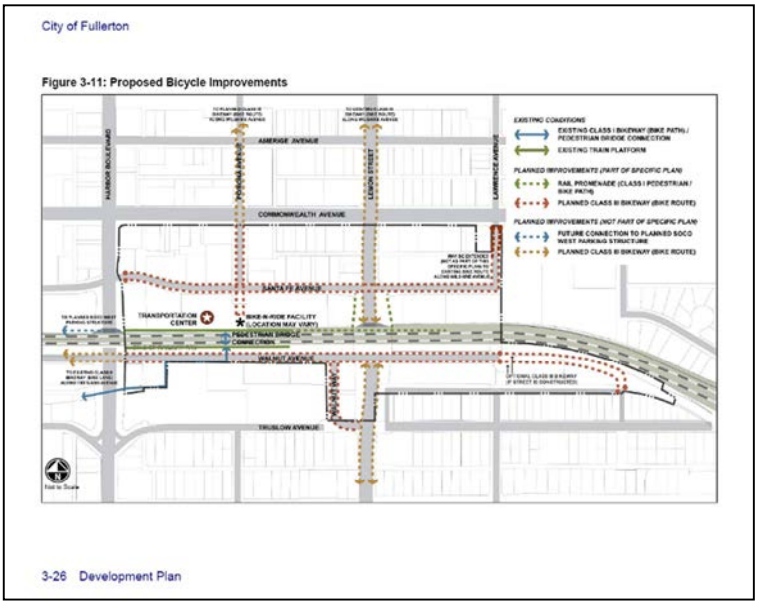


Several off-street circulation improvements would occur to enhance pedestrian and bicycle access and circulation. Proposed off-street pedestrian and bicycle improvements include

enhancements to the existing north-south paseos between Harbor Boulevard and Pomona Avenue, construction of new north-south paseos to improve connections, and construction of a Rail Promenade, a multi-purpose pedestrian and bicycle corridor along the north side of the railroad corridor extending from the existing train platform to the east side of Lemon Street.

The Rail Promenade would provide a direct pedestrian and bicycle route between the Train Depot and the properties north of the railroad corridor and east of Lemon Street. The Rail Promenade would include north-south pedestrian and bicycle connections to Santa Fe Avenue on both sides of Lemon Street.

The FTC Specific Plan includes a Bike-N-Ride facility. This facility would provide secure bicycle parking and related services to make the cycling commute more convenient. Related services that could be provided include repair services, monthly membership fees, 24-hour remote key access to stored bikes, commute information, restrooms, changing/shower facilities, and bicycle and equipment sales and/or rentals. Potential locations for this facility include, but are not limited to:



- The Fullerton Train Depot;
- The Fullerton Train Depot loading platform;
- The area between the Train Depot and the proposed FTC Parking Structure;
- A small storefront near the Transit Plaza or Transit Courtyard; or
- An area within the FTC Parking Structure.

CIP Projects Covered by Measure M

- Bastanchury Road/Valencia Mesa Bike Route
  - Fund Source: Unrestricted Capital Federal Grant

Existing Conditions

Based on field observations, Harbor Boulevard and Commonwealth Avenue do not appear to be bike-friendly due to high traffic speeds with no buffer or bike lane to separate bicyclists from vehicles. Commonwealth Avenue also has some on-street parking which affects bicyclist comfort when riding between moving and parked cars. The pedestrian environment is very walkable since nearby streets are on a grid system with shallow setbacks and retail/dining options. There are extensive wayfinding signs located within and around the station directing people to the station, nearby streets, tickets/boarding locations, dining locations, and parking locations. Photos of existing conditions at the station area are provided on the following page.

Table 6 summarizes the field audit scores for each metric for the Fullerton Metrolink Station.

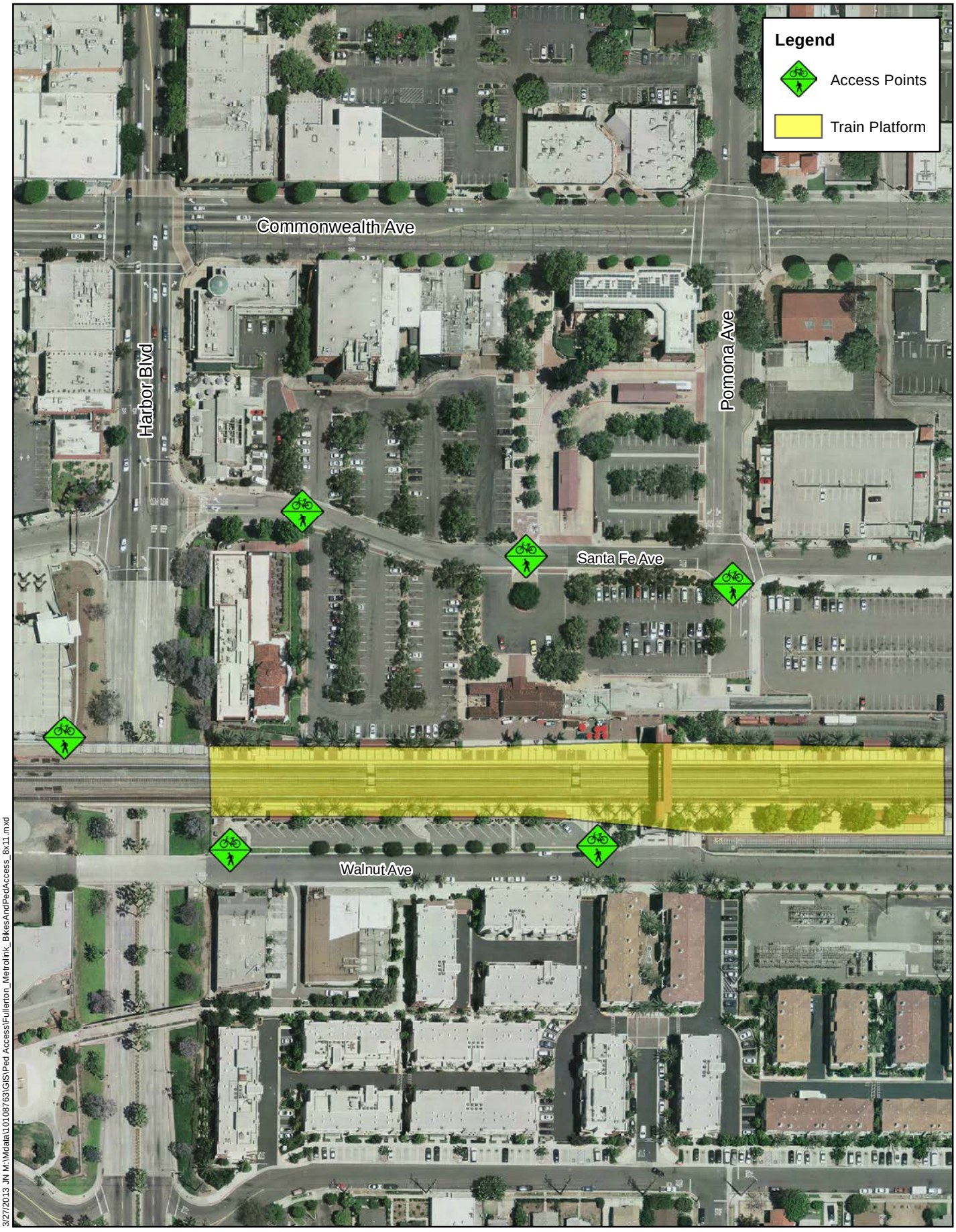
Table 6
Fullerton Metrolink Station Field Audit Scores

#	Metric	Bike	Ped	Scoring System
1	Station Mode Split*	8	0	0 (Poor), 2, 4, 6, 8, 10 (Good)
2	Network Design	4	8	0, 2, 4, 6, 8, 10
3	Catchment Area Effectiveness	8	8	0, 2, 4, 6, 8, 10
4	Trip Demand	10	10	0, 2, 4, 6, 8, 10
5	Route Directness	8	8	0, 2, 4, 6, 8, 10
6	Safety	4	8	0, 2, 4, 6, 8, 10
7	Security	8	8	0, 2, 4, 6, 8, 10
8	Information/Wayfinding	8	8	0, 2, 4, 6, 8, 10
9	Station Amenities	8	10	0, 2, 4, 6, 8, 10
10	Bike Parking	8	N/A	0, 2, 4, 6, 8, 10
	Total Score	74	68	
*Station Typology: Urban Neighborhood with Parking; Current Mode Split: 3% Bike, 7% Ped				

As shown in Table 6, the Fullerton Metrolink Station scored 74 out of 100 for bikes and 68 out of 90 for pedestrians. Exhibit 13 shows the main access locations to the station for pedestrians and bicyclists. Exhibit 14 shows the pedestrian and bicycle catchment areas.

Wayfinding and pedestrian crossing pavement treatment.

View looking west from pedestrian overcrossing at Fullerton Station.



3/27/2013 JN M:\Mdata\10108763\GIS\Ped Access\Fullerton_Metrolink_BikesAndPedAccess_8x11.mxd

RBF CONSULTING A Baker Company GIS

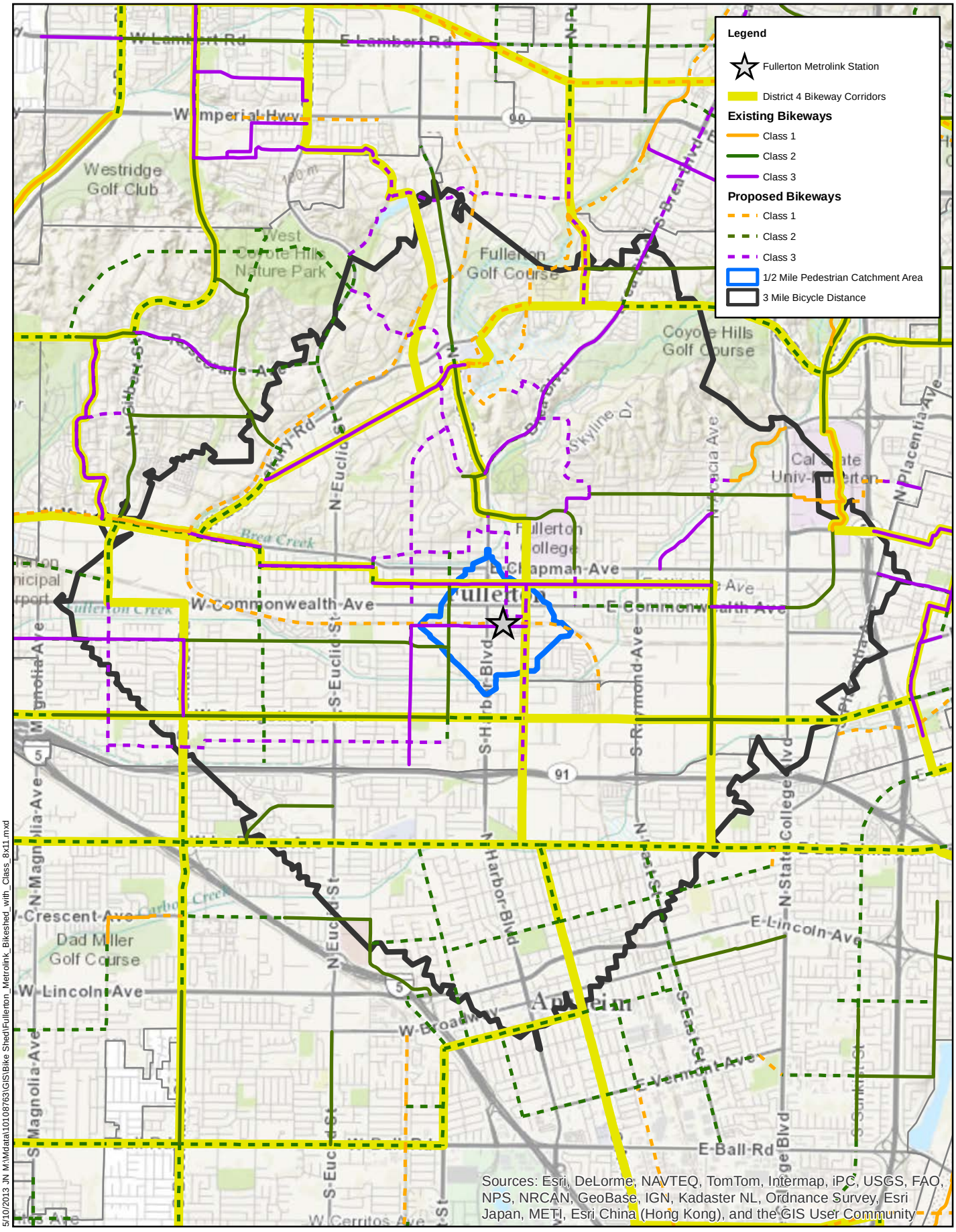
0 75 150 300 Feet

Source: OCTA, Eagle Aerial 2012

METROLINK STATION PEDESTRIAN & BICYCLE ACCESS

Fullerton Station

Exhibit 13



5/10/2013 JN M:\Mdata\10108763\GIS\Bike Shed\Fullerton_Metrolink_Bikeshed_with_Class_8x11.mxd

0 0.25 0.5 1 Miles

Source: OCTA, Esri

METROLINK STATIONS

Catchment Area - Fullerton

Exhibit 14

Recommendations

Exhibits 15 and 16 show the recommendations identified in the following matrix.

Item #	Recommended Improvement	Pedestrian Related/ Bicycle Related	Metrics Affected	Included in Existing Plan/Document
1	Add a Class I bike path along Union Pacific right-of-way between Lemon Street and northern City limits.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	Fullerton Bicycle Master Plan (RBF Consulting, May, 2012) - D4
2	Add a Class II bike lane along Walnut Avenue between Richman Avenue and Harbor Boulevard.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Fullerton Bicycle Master Plan (RBF Consulting, May, 2012); Fullerton Transportation Center Specific Plan (RBF Consulting)
3	Add a Class II bike lane along Orangethorpe Avenue between Highland Avenue and Raymond Avenue and between State College Boulevard and Placentia Avenue.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	Fourth District Bikeways Collaborative
4	Add a Class II bike lane along Anaheim Boulevard between La Palma Avenue and Santa Ana Street.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	Fourth District Bikeways Collaborative
5	Add a Class III bike route along Santa Fe Avenue between Harbor Boulevard and Lawrence Avenue.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Fullerton Bicycle Master Plan (RBF Consulting, May, 2012); Fullerton Transportation Center Specific Plan (RBF Consulting)
6	Add a Class III bike route along Pomona Avenue between Union Avenue and Santa Fe Avenue.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Fullerton Bicycle Master Plan (RBF Consulting, May, 2012); Fullerton Transportation Center Specific Plan (RBF Consulting)
7	Add a Class III bike route along Lemon Street between Berkeley Avenue and La Palma Avenue.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Fullerton Bicycle Master Plan (RBF Consulting, May, 2012); Fullerton Transportation Center Specific Plan (RBF Consulting) - D4

Item #	Recommended Improvement	Pedestrian Related/ Bicycle Related	Metrics Affected	Included in Existing Plan/Document
8	Add a Class III bike route along Commonwealth Avenue west of Acacia Avenue.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Fullerton Bicycle Master Plan (RBF Consulting, May, 2012)
9	Add a Class III bike route along Brookhurst Avenue between Commonwealth Avenue and Valencia Drive.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Fourth District Bikeways Collaborative
10	Add a Class III bike route along Walnut Avenue east of Harbor Boulevard.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Fullerton Bicycle Master Plan (RBF Consulting, May, 2012); Fullerton Transportation Center Specific Plan (RBF Consulting)
11	Provide a pedestrian crosswalk at west leg of the Pomona Avenue/Santa Fe Avenue intersection.	Pedestrian & Bicycle Related	Route Directness, Safety	
12	Add a traffic calming speed feedback sign along northbound Harbor Boulevard between the railroad bridge overpass and Santa Fe Avenue.	Bicycle Related	Safety	
13	Install curb extensions/bulbouts on Pomona Avenue at Commonwealth Avenue.	Pedestrian Related	Network Design, Safety	
14	Provide a pedestrian/bicyclist connection at the east end of Walnut Avenue with Lawrence Avenue.	Pedestrian & Bicycle Related	Catchment Area Effectiveness, Route Directness,	Fullerton Transportation Center Specific Plan (RBF Consulting)
15	Provide shade trees along the east side of Pomona Avenue south of Santa Fe Avenue.	Pedestrian Related	Station Amenities	
16	Provide a pedestrian crosswalk across Walnut Avenue adjacent to the station.	Pedestrian Related	Safety	

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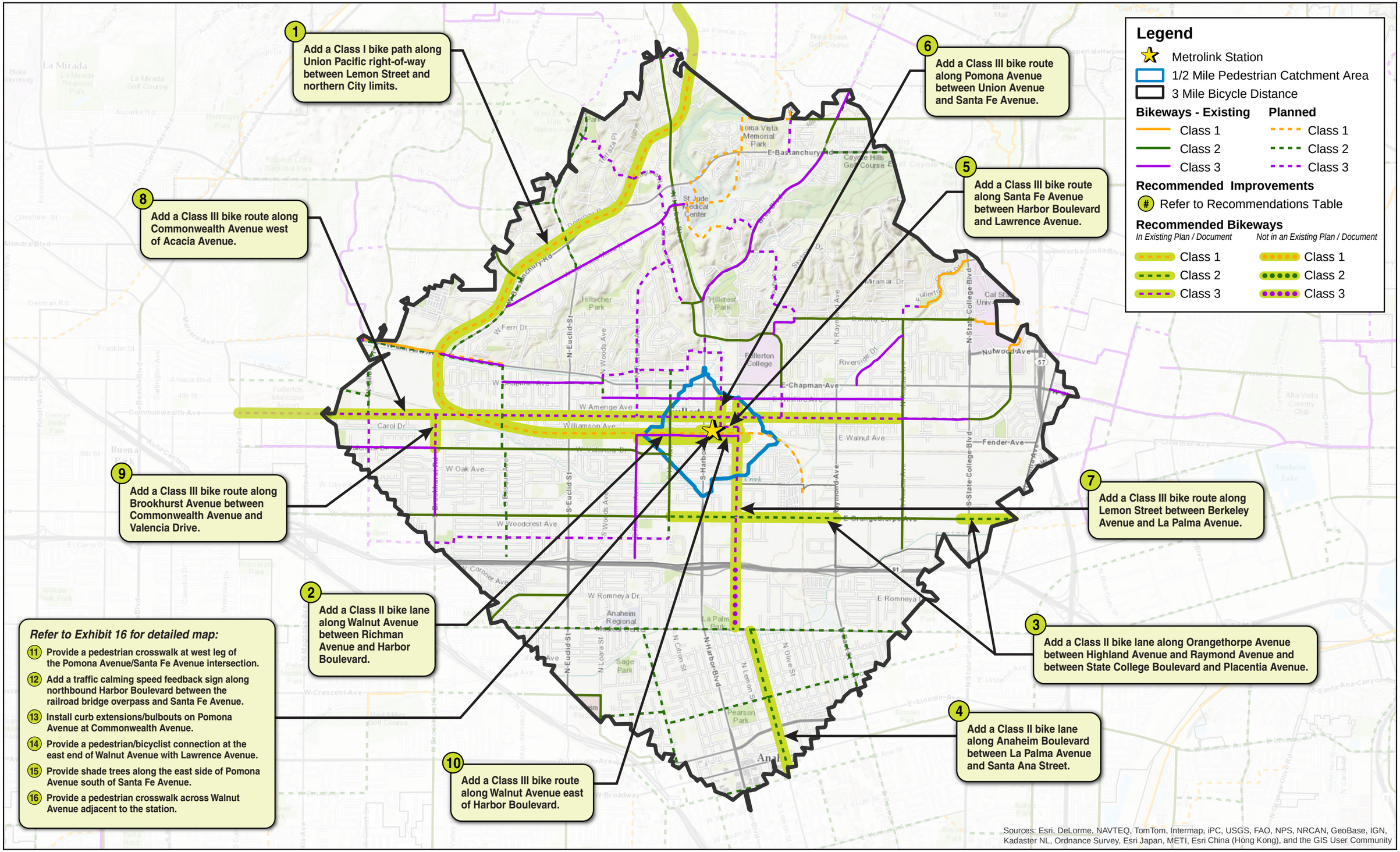


Source: OCTA, Esri

RBF A Baker Company

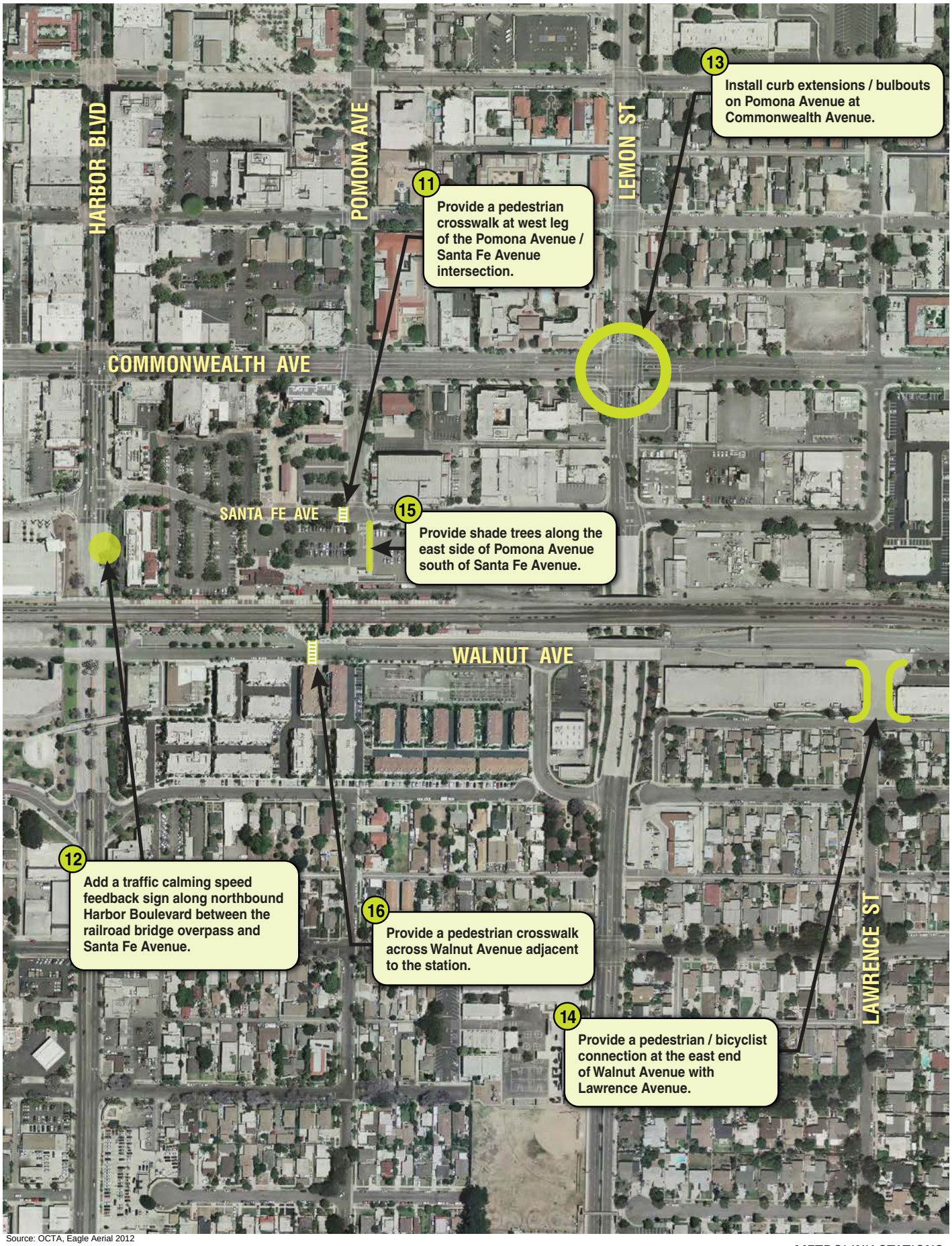
0 0.5 1 mile
APPROXIMATE

03/28/13 130374-19110 MAS

METROLINK STATIONS

Fullerton Metrolink Station - Recommended Improvements

Exhibit 15



Source: OCTA, Eagle Aerial 2012

METROLINK STATIONS

Fullerton Metrolink Station Recommended Improvements

RBF A Baker Company

NOT TO SCALE

03/28/13 130374-19110 MAS

Exhibit 16

10. IRVINE METROLINK STATION

The Irvine Metrolink Station is located at 15215 Barranca Parkway in the City of Irvine. The streets adjacent to the station include Barranca Parkway and Ada. The station is surrounded by the Orange County Great Park to the north, agriculture land use to the southeast also known as Great Park Neighborhoods/Heritage Fields (which is planned as a mixed-use residential land use in the future), and office park land use to the southwest.

Existing Plans, Programs and Projects

City of Irvine Bicycle Transportation Plan (2011)

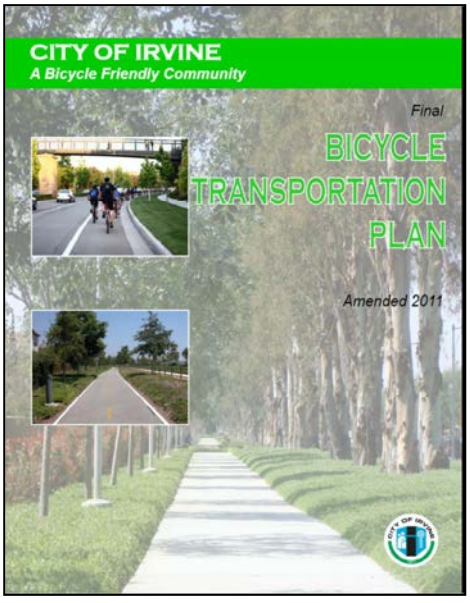
The City of Irvine Bicycle Transportation Plan (BTP), approved by the City Council in 2011, serves as a guiding document for the development and maintenance of a City bicycle infrastructure network.

According to a community survey, the Irvine Station is the third most popular destination to which respondents currently ride their bikes. The respondents also rated three proposed off-street bikeways. The following are the proposed segments listed in the priority order starting with the highest rating:

- New off-street bikeways connecting to and through the Orange County Great Park;
- New off-street bikeway connecting the Irvine Station to the employment and retail centers in the Irvine Spectrum located north/east of the I-5 freeway; and
- New off-Street bikeway through the Irvine Business Complex.

The following is a list of proposed Class I bicycle facilities within the vicinity of the Irvine Station:

- Class I bikeway through the Irvine Spectrum from the Irvine Station;
- Class I bikeway connecting to/through the Great Park, running north/south between Irvine Boulevard and the railway right-of-way (east side of the park);
- Class I bikeway connecting to/through the Great Park, running north/south between Irvine Boulevard and the railway right-of-way (west side of the park);
- Class I bikeways connecting to/through the Great Park, running east/west between SR-133 and the center of the Great Park; and
- Class I bikeway connecting to/through the Great Park running north/south between Irvine Boulevard and the new Class I bikeway located east side of the Great Park.



Existing Conditions

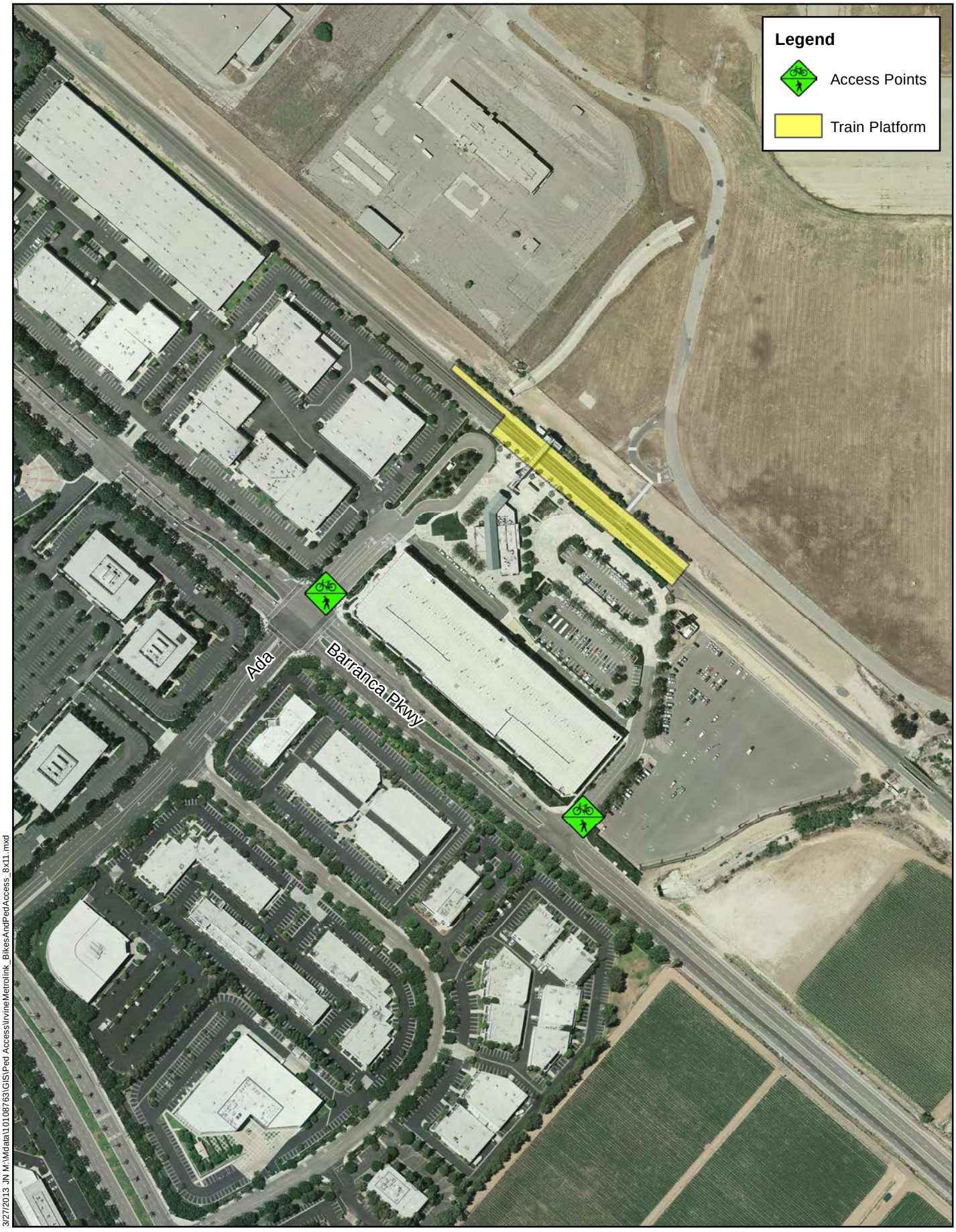
Based on field observations, it was noted that the surrounding streets have striped Class II bike lanes creating a designated space for bicyclists. While bike lanes exist on Barranca Parkway, a bicyclist might feel uncomfortable on Barranca Parkway given the high speed limit of 60 miles per hour adjacent to the station. The pedestrian environment is very comfortable and gives a higher level of comfort with regard to safety. However, it is anticipated that walking distances are long since the streets surrounding the station are superblocks, which is much larger than a traditional city block. It is important to note, Barranca Parkway does not have sidewalks between the station and Alton Parkway. The station includes a large amount of covered bike parking and bike lockers which are easily visible and shown on the station map. Photos of existing conditions at the station area are provided on the following page.

Table 7 summarizes the field audit scores for each metric for the Irvine Metrolink Station.

Table 7
Irvine Metrolink Station Field Audit Scores

#	Metric	Bike	Ped	Scoring System
1	Station Mode Split*	6	0	0 (Poor), 2, 4, 6, 8, 10 (Good)
2	Network Design	6	6	0, 2, 4, 6, 8, 10
3	Catchment Area Effectiveness	4	4	0, 2, 4, 6, 8, 10
4	Trip Demand	5	5	0, 2, 4, 6, 8, 10
5	Route Directness	8	8	0, 2, 4, 6, 8, 10
6	Safety	6	8	0, 2, 4, 6, 8, 10
7	Security	10	10	0, 2, 4, 6, 8, 10
8	Information/Wayfinding	8	10	0, 2, 4, 6, 8, 10
9	Station Amenities	6	8	0, 2, 4, 6, 8, 10
10	Bike Parking	8	N/A	0, 2, 4, 6, 8, 10
	Total Score	67	59	
*Station Typology: Suburban Employment Center; Current Mode Split: 2% Bike, 5% Ped				

As shown in Table 7, the Irvine Metrolink Station scored 67 out of 100 for bikes and 59 out of 90 for pedestrians. Exhibit 17 shows the main access locations to the station for pedestrians and bicyclists. Exhibit 18 shows the pedestrian and bicycle catchment areas.



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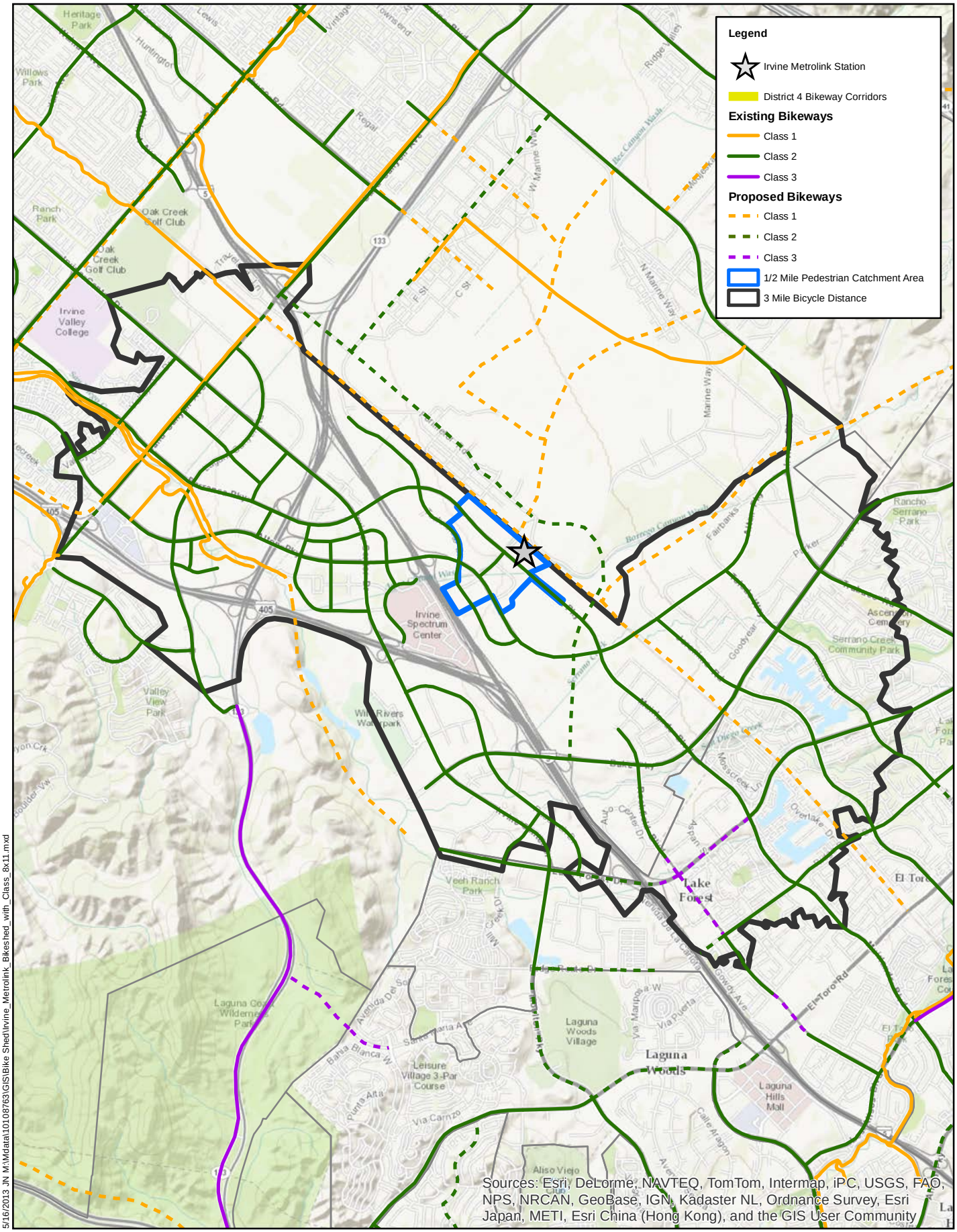
Feet

Source: OCTA, Eagle Aerial 2012

METROLINK STATION PEDESTRIAN & BICYCLE ACCESS

Irvine Station

Exhibit 17



5/16/2013 JN M:\Mdata\10108763\GIS\Bike Shed\Irvine_Metrolink_Bikeshed_with_Class_8x11.mxd

0 0.25 0.5 1 Miles

Source: OCTA, Esri

METROLINK STATIONS

Catchment Area - Irvine

Exhibit 18

Barranca Parkway cross-section which does not include sidewalks.

Bicycle lockers and covered bike racks.

Shaded seating areas.

Pedestrian ramps leading to Barranca Parkway.

Recommendations

Exhibits 19 and 20 show the recommendations identified in the following matrix.

Item #	Recommended Improvement	Pedestrian Related/ Bicycle Related	Metrics Affected	Included in Existing Plan/Document
1	Add a Class I bike path along railroad tracks between Sand Canyon and eastern City boundary.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	Bicycle Transportation Plan, 2011
2	Provide painted hatched buffers between the bike lanes and travel lanes on Barranca Parkway between the station and Alton Parkway.	Bicycle Related	Safety	
3	Provide wayfinding/signage at the following intersections: Technology Drive/Barranca Parkway, Ada/Barranca Parkway, Ada/Alton Parkway, and Alton/Barranca Parkway.	Pedestrian & Bicycle Related	Information/Wayfinding	
4	Add sidewalks along Barranca Parkway between the train station and Alton Parkway, as development occurs.	Pedestrian Related	Network Design, Catchment Area Effectiveness, Route Directness, Safety	
5	As pedestrian activity increase, provide direct pedestrian access to the development across Ada from the station.	Pedestrian Related	Route Directness, Safety	
6	Provide access to the Great Park as development occurs.	Pedestrian & Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness	Bicycle Transportation Plan, 2011
7	Install bike tracks at the stairs located in front of the main platform.	Bicycle Related	Station Amenities	
8	Provide wayfinding/signage directing pedestrians and bicyclists to and from the San Diego Creek Class I trail.	Pedestrian & Bicycle Related	Information/Wayfinding	
9	Evaluate adding more bike lockers at the station or making alternative improvements to address demand for bicycle parking.	Bicycle Related	Station Amenities, Bike Parking	
10	Consider implementing a bicycle transit center, including consolidated bicycle parking, support services, showers and changing facilities.	Bicycle Related	Station Amenities, Bike Parking	

1 Add a Class I bike path along railroad tracks between Sand Canyon and eastern City boundary.

3 Provide wayfinding/signage at the following intersections: Technology Drive/Barranca Parkway, Ada/Barranca Parkway, Ada/Alton Parkway, and Alton/Barranca Parkway.

Legend

- Metrolink Station
- 1/2 Mile Pedestrian Catchment Area
- 3 Mile Bicycle Distance

Bikeways - Existing / **Planned**

- Class 1 / Class 1
- Class 2 / Class 2
- Class 3 / Class 3

Recommended Improvements

- (#) Refer to Recommendations Table

Recommended Bikeways

In Existing Plan / Document	*Not in an Existing Plan / Document*
Class 1	Class 1
Class 2	Class 2
Class 3	Class 3

Refer to Exhibit 20 for detailed station map:

5. As pedestrian activity increases, provide direct pedestrian access to the development across Ada from the train station.
6. Provide access to the Great Park as development occurs.
7. Install bike tracks at the stairs located in front of the main platform.

General Recommendations:

8. Provide wayfinding / signage directing pedestrians and bicyclists to and from the San Diego Creek Class I trail.
9. Evaluate adding more bike lockers at the station, or making alternative improvements to address demand for bicycle parking.
10. Consider implementing a bicycle transit center, including consolidated bicycle parking, support services, showers and changing facilities.

4 Add sidewalks along Barranca Parkway between the train station and Alton Parkway, as development occurs.

2 Provide painted hatched buffers between the bike lanes and travel lanes on Barranca Parkway between the station and Alton Parkway

Source: OCTA, Esri

RBF A Baker Company

0 0.5 1 mile
APPROXIMATE

05/13/13 130374-19110 MAS

METROLINK STATIONS

Irvine Metrolink Station - Recommended Improvements

Exhibit 19

Source: OCTA, Eagle Aerial 2012

METROLINK STATIONS

Irvine Metrolink Station Recommended Improvements

RBF A Baker Company

NOT TO SCALE

05/13/13 130374-19110 MAS

Exhibit 20

11. LAGUNA NIGUEL/MISSION VIEJO METROLINK STATION

The Laguna Niguel/Mission Viejo Metrolink Station is located at 28200 Forbes Road in the City of Laguna Niguel. The streets adjacent to the station include Forbes Road and Camino Capistrano, and Crown Valley Parkway. The station is surrounded by the Interstate 5 Freeway and State Route 73; office/industrial land use is located east of the station along Camino Capistrano.

Existing Plans, Programs and Projects

Laguna Niguel Gateway Specific Plan (December 2011)

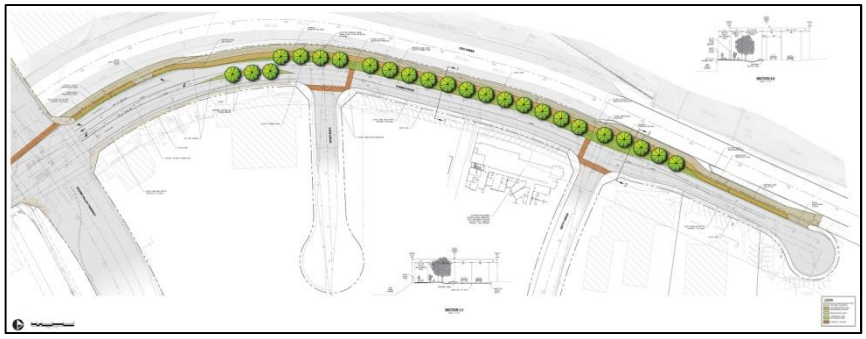
The Laguna Niguel/Mission Viejo Metrolink Station is located within the boundary of the Laguna Niguel Gateway Specific Plan (LNGSP). The vision of the Plan includes the transformation of a nondescript district bisected and highly constrained by freeway, rail, and utility infrastructure corridors into a vibrant high-intensity transit and pedestrian-oriented district.

Sidewalks, crosswalks, and pedestrian walk lights are provided through the Specific Plan area. The Oso Creek Bike Trail bisects the Specific Plan area from north to south and a multi-use trail is also planned along the north side of Crown Valley Parkway, providing a connection between the Oso Creek Trail on Forbes Road and the Niguel Trail at Greenfield Drive to the west. Pedestrians, equestrians, and bicyclists are permitted on the multi-use trail.

Bike lanes are provided along several of the major streets in the Specific Plan area. These include Crown Valley Parkway, Paseo De Colinas, Cabot Road, and portions for Camino Capistrano and Greenfield Drive. As development in the area intensifies, the completion of the Oso Creek Bike Trail should become a priority since the trail would provide opportunities to create trail linkages and improve bicycle and pedestrian circulation to and from the Specific Plan area.

Oso Creek Trails & Forbes Road Improvement Project (RBF Consulting, 2013)

The Oso Creek Trails and Forbes Road Improvement Project consists for adding a bicycle/maintenance access trail and an adjacent pedestrian/equestrian trail along the top of Oso Creek behind the Forbes Road curb in support of the Gateway Specific Plan. Access will be provided from the future planned developments on Forbes Road north and south of Crown Valley Parkway to the Metrolink Station south of Crown Valley Parkway. Additional improvements to North Forbes Road include a road diet and water quality treatment facilities.



Existing Conditions

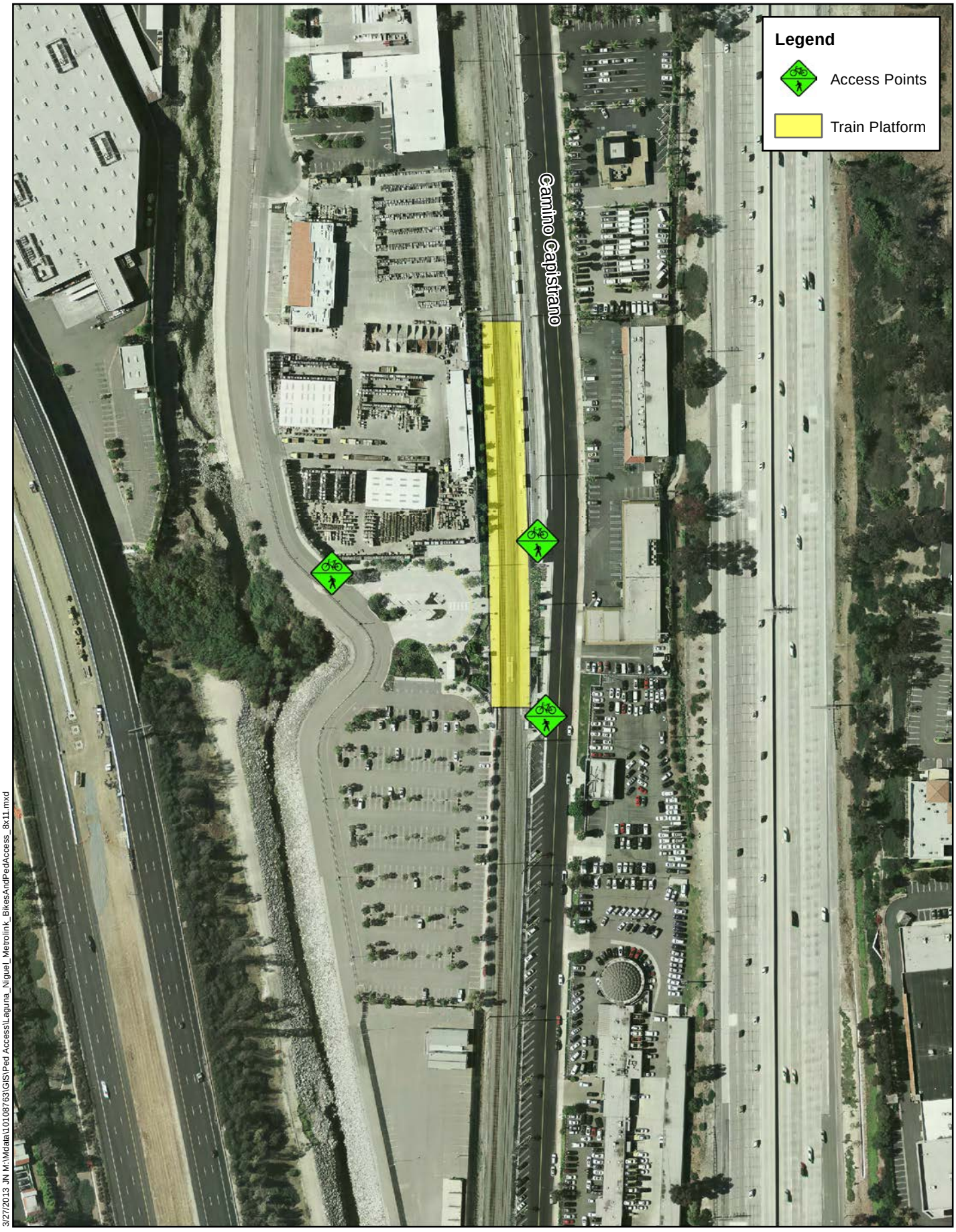
Based on field observations, adjacent streets do not appear to be bike-friendly. Forbes Road and Camino Capistrano have either parallel parking or angled parking with no buffer or bike lane to separate bicyclists from vehicles. A Class II bike trail is located on the north side of Crown Valley Parkway only. The pedestrian environment surrounding the station is uninviting since there is minimal landscaping and unbuffered industrial land use. The lack of night time activity deters pedestrians from walking on the streets surrounding the station. Photos of existing conditions at the station area are provided on the following page.

Table 8 summarizes the field audit scores for each metric for the Laguna Niguel/Mission Viejo Metrolink Station.

Table 8
Laguna Niguel/Mission Viejo Metrolink Station Field Audit Scores

#	Metric	Bike	Ped	Scoring System
1	Station Mode Split*	10	4	0 (Poor), 2, 4, 6, 8, 10 (Good)
2	Network Design	4	2	0, 2, 4, 6, 8, 10
3	Catchment Area Effectiveness	6	2	0, 2, 4, 6, 8, 10
4	Trip Demand	0	0	0, 2, 4, 6, 8, 10
5	Route Directness	6	6	0, 2, 4, 6, 8, 10
6	Safety	6	8	0, 2, 4, 6, 8, 10
7	Security	6	6	0, 2, 4, 6, 8, 10
8	Information/Wayfinding	4	6	0, 2, 4, 6, 8, 10
9	Station Amenities	6	6	0, 2, 4, 6, 8, 10
10	Bike Parking	6	N/A	0, 2, 4, 6, 8, 10
	Total Score	54	40	
*Station Typology: Suburban Freeway; Current Mode Split: 2% Bike, 5% Ped				

As shown in Table 8, the Laguna Niguel/Mission Viejo Metrolink Station scored 54 out of 100 for bikes and 40 out of 90 for pedestrians. Exhibit 21 shows the main access locations to the station for pedestrians and bicyclists. Exhibit 22 shows the pedestrian and bicycle catchment areas.



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RBF CONSULTING A Baker Company GIS

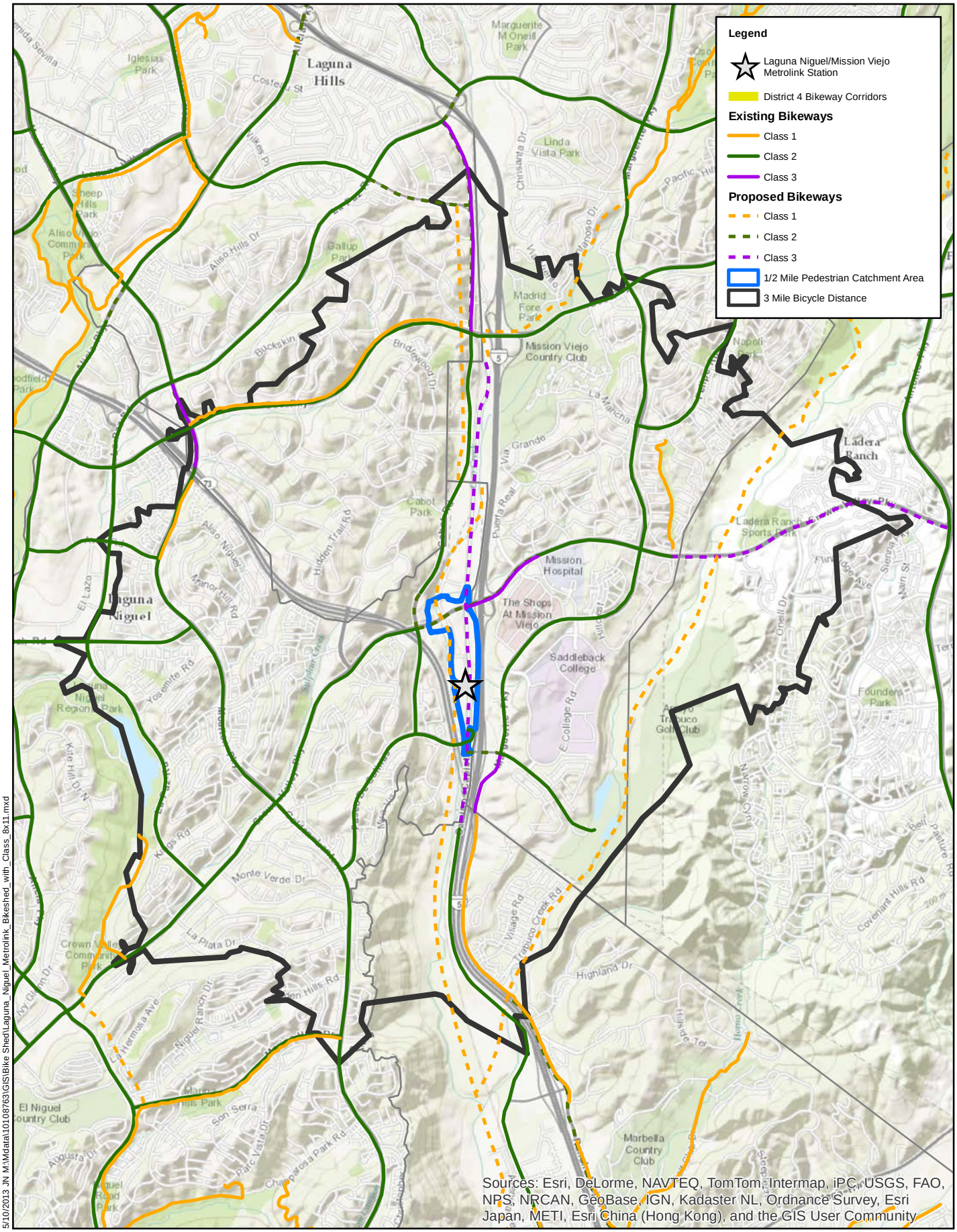
0 50 100 200 Feet

Source: OCTA, Eagle Aerial 2012

METROLINK STATION PEDESTRIAN & BICYCLE ACCESS

Laguna Niguel / Mission Viejo Station

Exhibit 21



5/10/2013 JN M:\Mdata\10108763\GIS\Bike Shed\Laguna_Niguel_Metrolink_Bikeshed_with_Class_8x11.mxd

0 0.25 0.5 1 Miles

Source: OCTA, Esri

METROLINK STATIONS

Catchment Area - Laguna Niguel/Mission Viejo

Exhibit 22

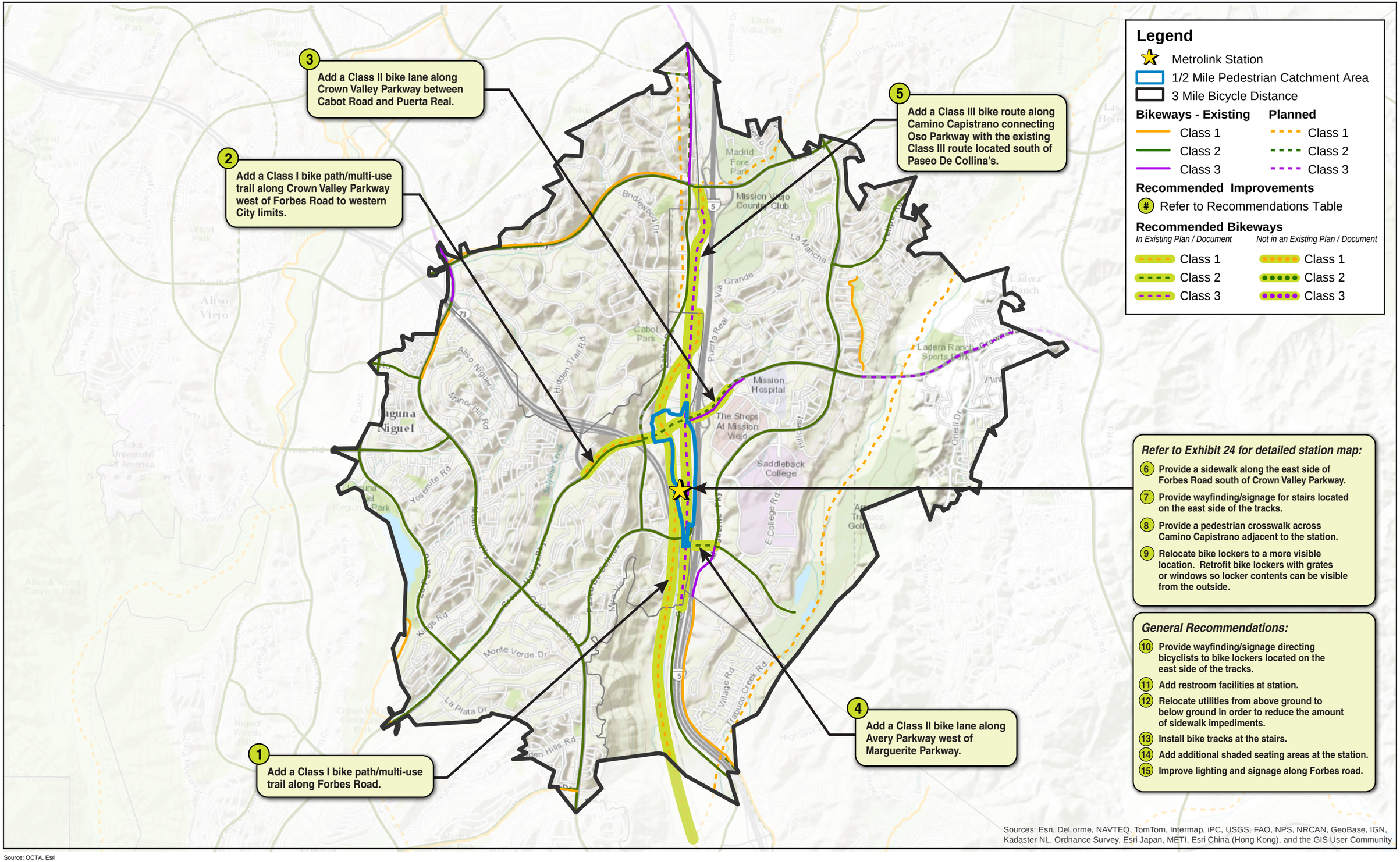
Camino Capistrano looking south at station parking and sidewalk.

Bike boxes located on northwest side of station.

Recommendations

Exhibits 23 and 24 show the recommendations identified in the following matrix.

Item #	Recommended Improvement	Pedestrian Related/ Bicycle Related	Metrics Affected	Included in Existing Plan/Document
1	Add a Class I bike path/multi-use trail along Forbes Road.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	Laguna Niguel Gateway Specific Plan, 2011
2	Add a Class I bike path/multi-use trail along Crown Valley Parkway west of Forbes Road to western City limits.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Laguna Niguel Gateway Specific Plan, 2011
3	Add a Class II bike lane along Crown Valley Parkway between Cabot Road and Puerta Real.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Laguna Niguel Gateway Specific Plan, 2011
4	Add a Class II bike lane along Avery Parkway west of Marguerite Parkway.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Laguna Niguel Gateway Specific Plan, 2011
5	Add a Class III bike route along Camino Capistrano connecting Oso Parkway with the existing Class III route located south of Paseo De Collina's.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	
6	Provide a sidewalk along the east side of Forbes Road south of Crown Valley Parkway.	Pedestrian Related	Network Design, Catchment Area Effectiveness, Route Directness, Safety	
7	Provide wayfinding/signage for stairs located on the east side of the tracks.	Pedestrian & Bicycle Related	Information/Wayfinding	
8	Provide a pedestrian crosswalk across Camino Capistrano adjacent to the station.	Pedestrian Related	Route Directness, Safety	
9	Relocate bike lockers to a more visible location. Retrofit bike lockers with grates or windows so locker contents can be visible from the outside.	Bicycle Related	Station Amenities, Bike Parking	
10	Provide wayfinding/signage directing bicyclists to bike lockers located on the east side of the tracks.	Bicycle Related	Information/Wayfinding, Bike Parking	
11	Add restroom facilities at station.	Pedestrian & Bicycle Related	Station Amenities	
12	Relocate utilities from above ground to below ground in order to reduce the amount of sidewalk impediments.	Pedestrian Related	Network Design, Safety	
13	Install bike tracks at the stairs.	Bicycle Related	Station Amenities	
14	Add additional shaded seating areas at the station.	Pedestrian & Bicycle Related	Station Amenities	
15	Improve lighting and signage along Forbes road.	Pedestrian & Bicycle Related	Safety, Security, Information/Wayfinding	



Source: OCTA, Esri

0 0.5 1 mile
APPROXIMATE

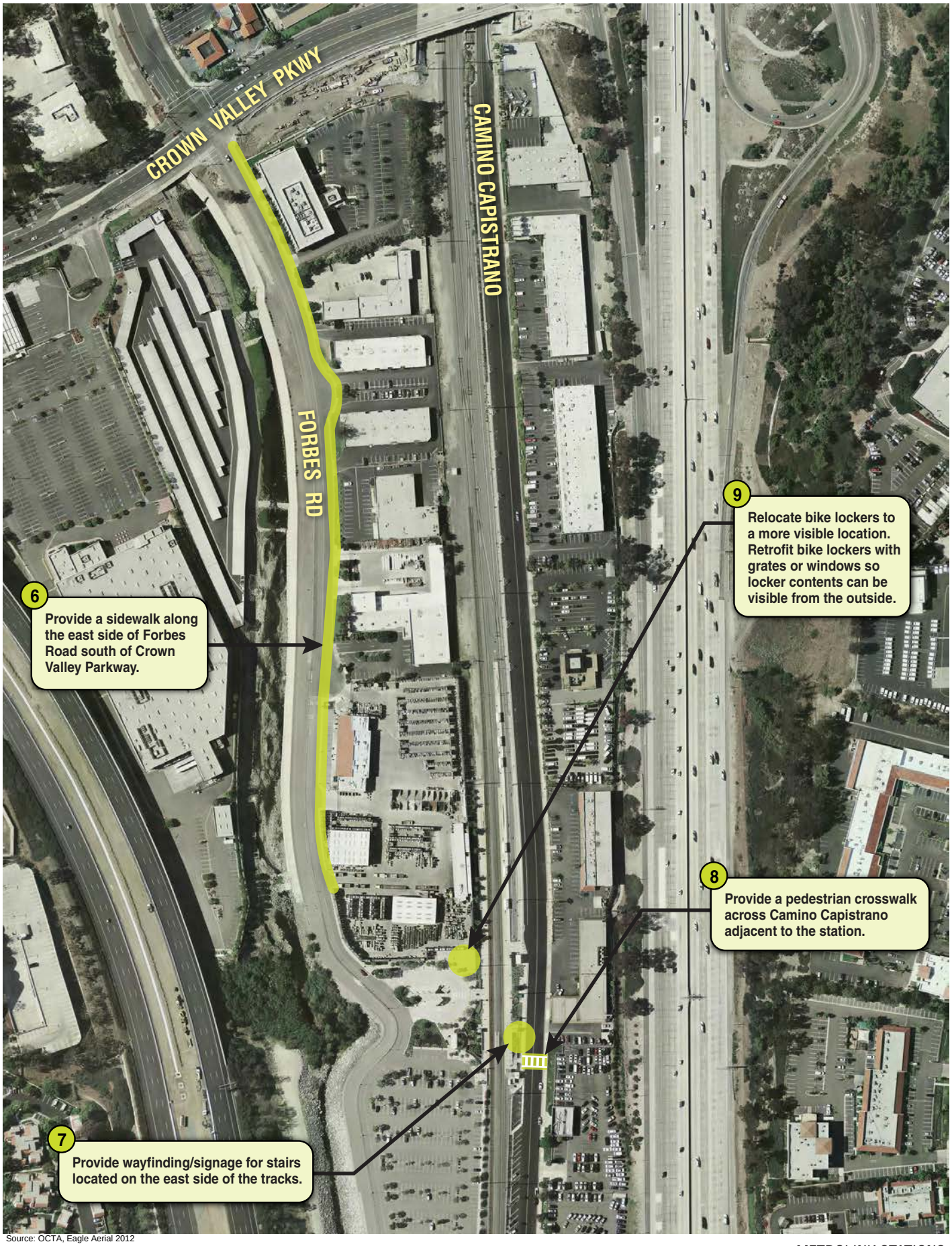
RBF A Baker Company

03/28/13 130374-19110 MAS

METROLINK STATIONS

Laguna Niguel / Mission Viejo Metrolink Station - Recommended Improvements

Exhibit 23



Source: OCTA, Eagle Aerial 2012

METROLINK STATIONS

Laguna Niguel / Mission Viejo Metrolink Station Recommended Improvements

RBF A Baker Company

NOT TO SCALE

03/28/13 130374-19110 MAS

Exhibit 24

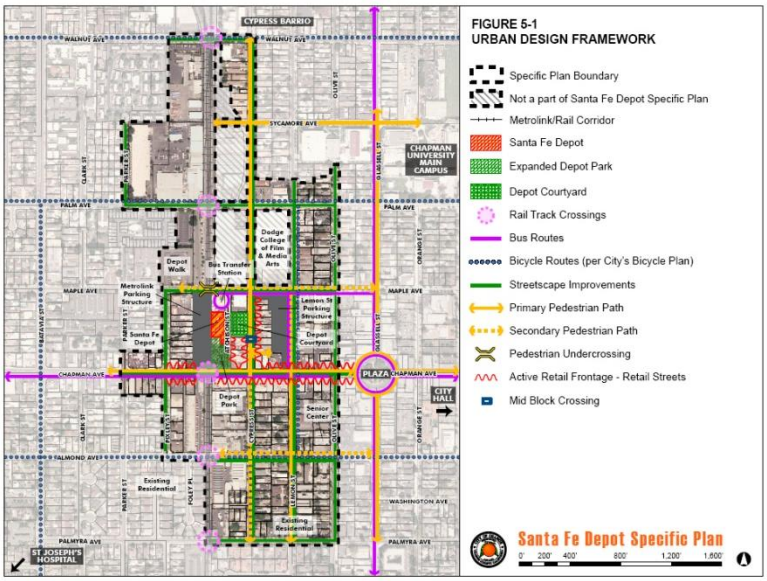
12. ORANGE METROLINK STATION

The Orange Metrolink Station is located at 194 N. Atchison Street in the City of Orange. The streets adjacent to the station include Chapman Avenue, Pixley Street, Maple Avenue, Atchison Street, and Cypress Street. The station is surrounded primarily by residential and commercial land uses. The City of Orange's downtown core is located east of the station at the intersection of Glassell Street and Chapman Avenue.

Existing Plans, Programs and Projects

Chapman Avenue Modifications

The City of Orange is currently studying the access along Chapman Avenue between the Metrolink Station and the Old Towne area to the east. There are plans to reduce lane widths along Chapman Avenue with the goal of widening the sidewalks along the north side of Chapman Avenue which will improve the pedestrian friendliness within the surrounding area.



Orange Santa Fe Depot (OSFD) Specific Plan (The Arroyo Group, April 2012)

The purpose of the Santa Fe Depot Specific Plan is to build an environment around the Santa Fe Depot that supports and facilitates transit use by capitalizing on pedestrian traffic and encouraging a mix of employment, shopping and residential uses within easy walking distance of the Orange Transportation Center. Development should be designed for pedestrians, with linkages to the transportation center and connections to the Plaza, Chapman University, residential neighborhoods, and other destinations in the area. The intent is to bring new vitality to the Santa Fe Depot area, making it a more vibrant part of Old Towne Orange.

The OSFD Specific Plan identifies the following as an objective:

> "Provide convenient access and circulation for all modes of transportation, enhance walkability, and provide an efficient parking strategy for the Santa Fe Depot area."

The following policies relevant to this station access study are identified by the OSFD Specific Plan to address the objective stated above:

- ***Maintain the existing street grid in the Specific Plan area, in both form and character.*** The historic street grid pattern is important to maintain an efficient circulation pattern for all transportation modes and to promote walkability. Maintain consistency with the

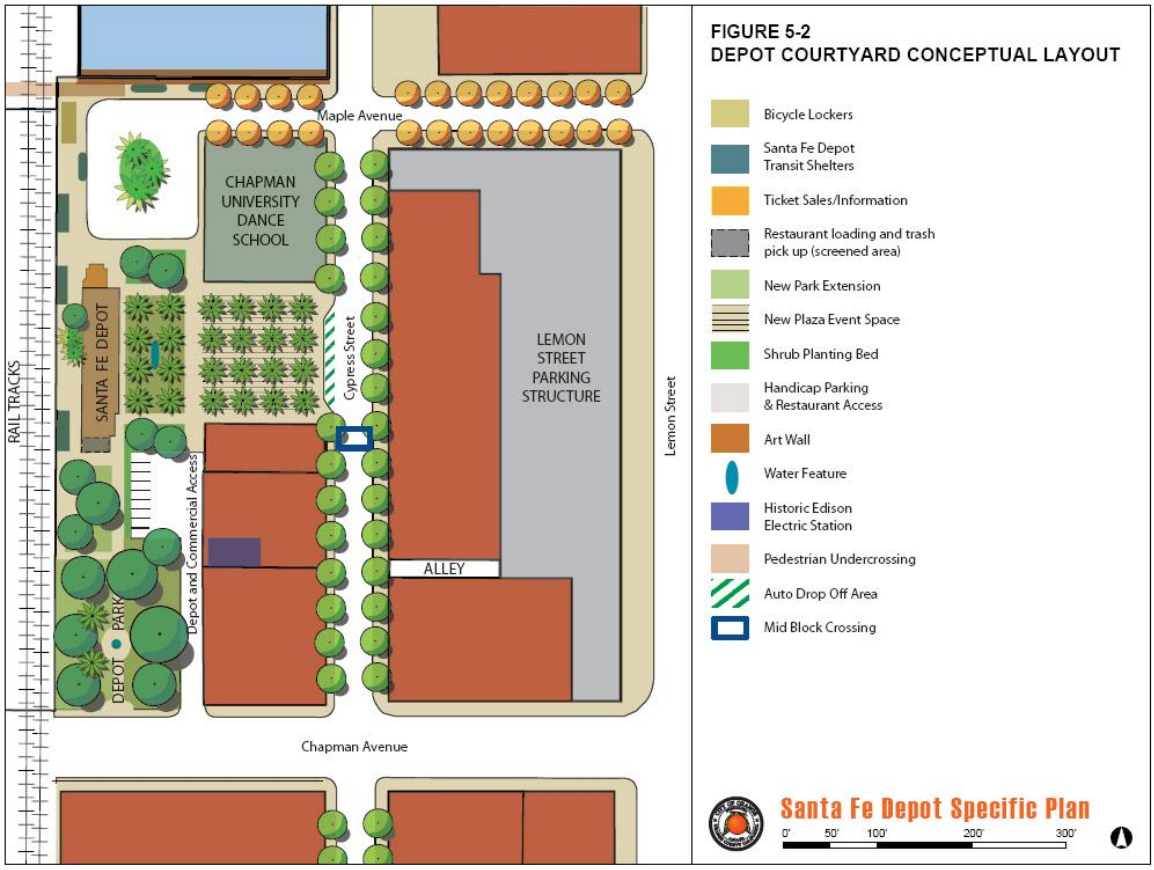
provisions of the Circulation and Mobility Element of the General Plan, and do not permanently close, vacate, or widen streets in the Specific Plan area. In addition, implement the General Plan Circulation and Mobility Element provisions for Class III bicycle routes along Palm Avenue, Lemon Street, and Almond Avenue.

- ***Enhance bicycle access and circulation in the Specific Plan area.*** Implement the General Plan Circulation and Mobility Element provisions for Class II bicycle lanes along Walnut Avenue and Class III bicycle routes along Palm Avenue, Lemon Street and Almond Avenue. These routes will connect to the citywide bicycle system and ensure convenient bicycle access to the Specific plan area. Bicycle parking and amenities should be provided where appropriate.

The following recommended improvements are also identified in the Specific Plan to address pedestrian and bicyclist circulation:

- Since the train station is located to the north side of Chapman Avenue, the Specific Plan recommends widening the sidewalk along the north side of Chapman Avenue between Atchison Street and Olive Street. This could be accommodated by one of the following:
  - Remove on-street parking between Lemon Street and the Plaza and widening the sidewalk while retaining the existing one westbound traffic lane; or
  - Reduce the number of westbound traffic lanes between Lemon Street and Atchison Street from two lanes to one lane, and widening the sidewalk.
- Pedestrian amenities may consist of shade trees, seating, wayfinding, directional signs, and wider crosswalks in certain places. Sidewalk bulb-outs may be added at certain intersections on a case-by-case basis where feasible.
- A mid-block pedestrian crossing should be located on Cypress Street between Maple Avenue and Chapman Avenue, which will facilitate pedestrian access to the train station from the Lemon Street Metrolink garage.
- A Class II bike lane should be installed on Walnut Avenue. Class III bike lanes should be installed on Palm Avenue, Lemon Street, and Almond Avenue.
- Bicycle amenities may consist of bike parking and storage at public parking facilities, expanded bike storage at the train station, and promotion of bicycling as an alternative to the automobile.

The OSFD Specific Plan also proposes a courtyard that connects the Depot to Cypress Street and opens up views to and from the Depot, which would allow the Depot to be better connected both physically and visually. Amenities may include street furniture, landscaped open space, public art, a water feature, programmed garden areas and concessions.



The Specific Plan explains the creation of the proposed Depot Courtyard would require the following:

- *Closure of a portion of Atchison Street.* Instead of continual vehicular access along Atchison Street, access would be limited from the north and the south to create a protected space in front of the Depot building.
- *Acquisition of a key Chapman University-owned property.* A portion of the Depot Courtyard falls on 158 North Cypress Street, a key property that faces the historic Depot building. Its acquisition or an agreement with the property owner to allow for its use for the Depot Courtyard would be required.
- *Cypress Street curbside drop-off zone.* A curbside drop-off zone would be created at the Depot Courtyard along the west side of Cypress Street.
- *Mid-block crossing on Cypress Street.* A mid-block crossing at the south end of the drop-off zone would allow pedestrians to cross Cypress Street safely and access the future Lemon Street parking structure through the alley north of Black's Furniture store, as well as to the Plaza area further to the east.

Existing Conditions

Based on field observations, Chapman Avenue does not appear to be bike friendly due to narrow lane widths with no designated bike lane. Bicyclists can avoid Chapman Avenue by using parallel routes

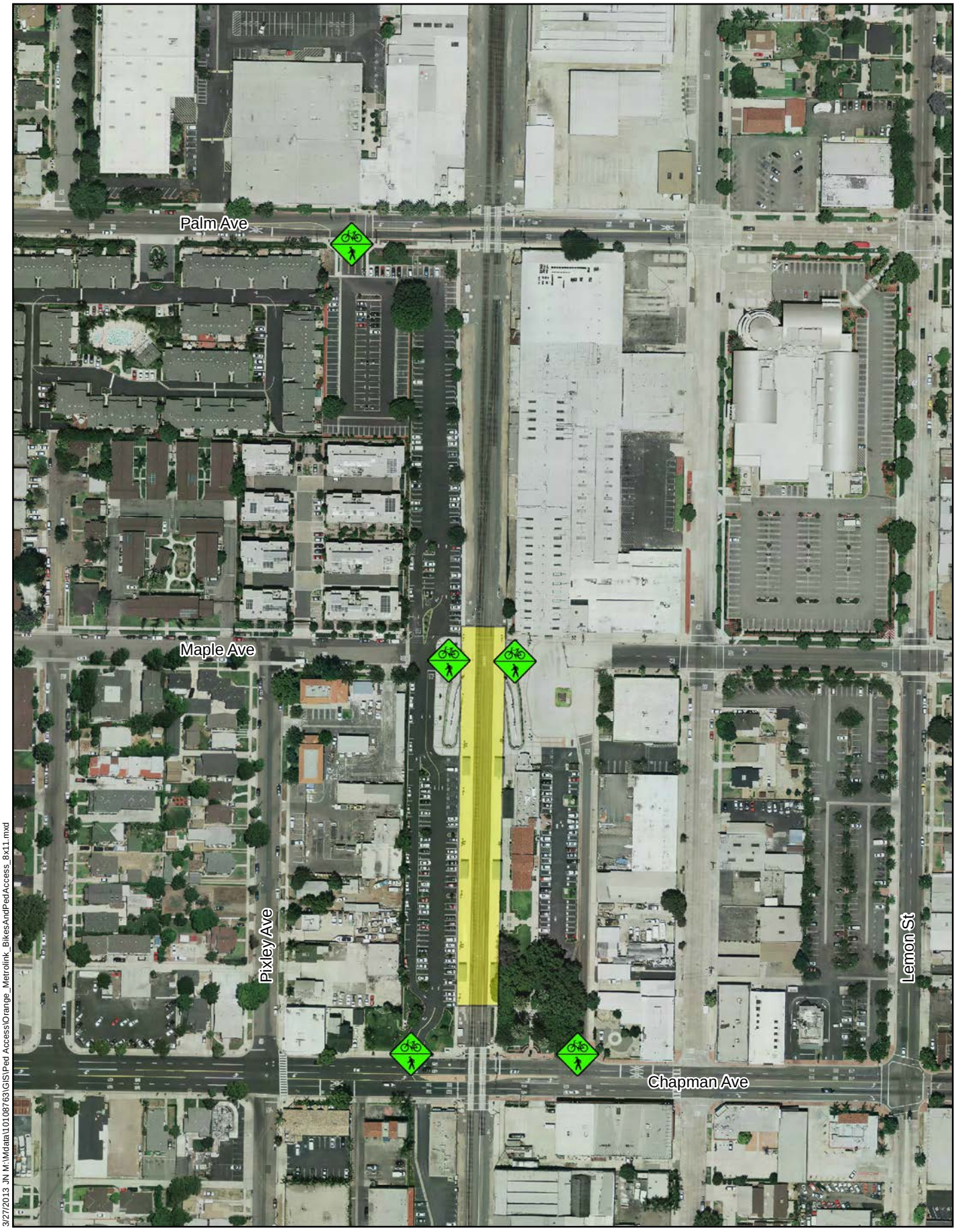
since nearby streets are on a grid system. The pedestrian environment is very walkable since the downtown has shallow setbacks with many shopping/dining options. The south side of the station has heavy landscaping while the north side of the station lacks landscaping and protection from sunlight or rain. Photos of existing conditions at the station area are provided on the following page.

Table 9 summarizes the field audit scores for each metric for the Orange Metrolink Station.

Table 9
Orange Metrolink Station Field Audit Scores

#	Metric	Bike	Ped	Scoring System
1	Station Mode Split*	10	6	0 (Poor), 2, 4, 6, 8, 10 (Good)
2	Network Design	4	8	0, 2, 4, 6, 8, 10
3	Catchment Area Effectiveness	6	8	0, 2, 4, 6, 8, 10
4	Trip Demand	9	10	0, 2, 4, 6, 8, 10
5	Route Directness	8	8	0, 2, 4, 6, 8, 10
6	Safety	4	8	0, 2, 4, 6, 8, 10
7	Security	8	8	0, 2, 4, 6, 8, 10
8	Information/Wayfinding	2	4	0, 2, 4, 6, 8, 10
9	Station Amenities	2	6	0, 2, 4, 6, 8, 10
10	Bike Parking	4	N/A	0, 2, 4, 6, 8, 10
	Total Score	57	66	
*Station Typology: Historic Transit Village; Current Mode Split: 3% Bike, 16% Ped				

As shown in Table 9, the Orange Metrolink Station scored 57 out of 100 for bikes and 66 out of 90 for pedestrians. Exhibit 25 shows the main access locations to the station for pedestrians and bicyclists. Exhibit 26 shows the pedestrian and bicycle catchment areas.



3/27/2013 JN M:\Mdata\10108763\GIS\Ped Access\Orange_Metrolink_BikesAndPedAccess_8x11.mxd

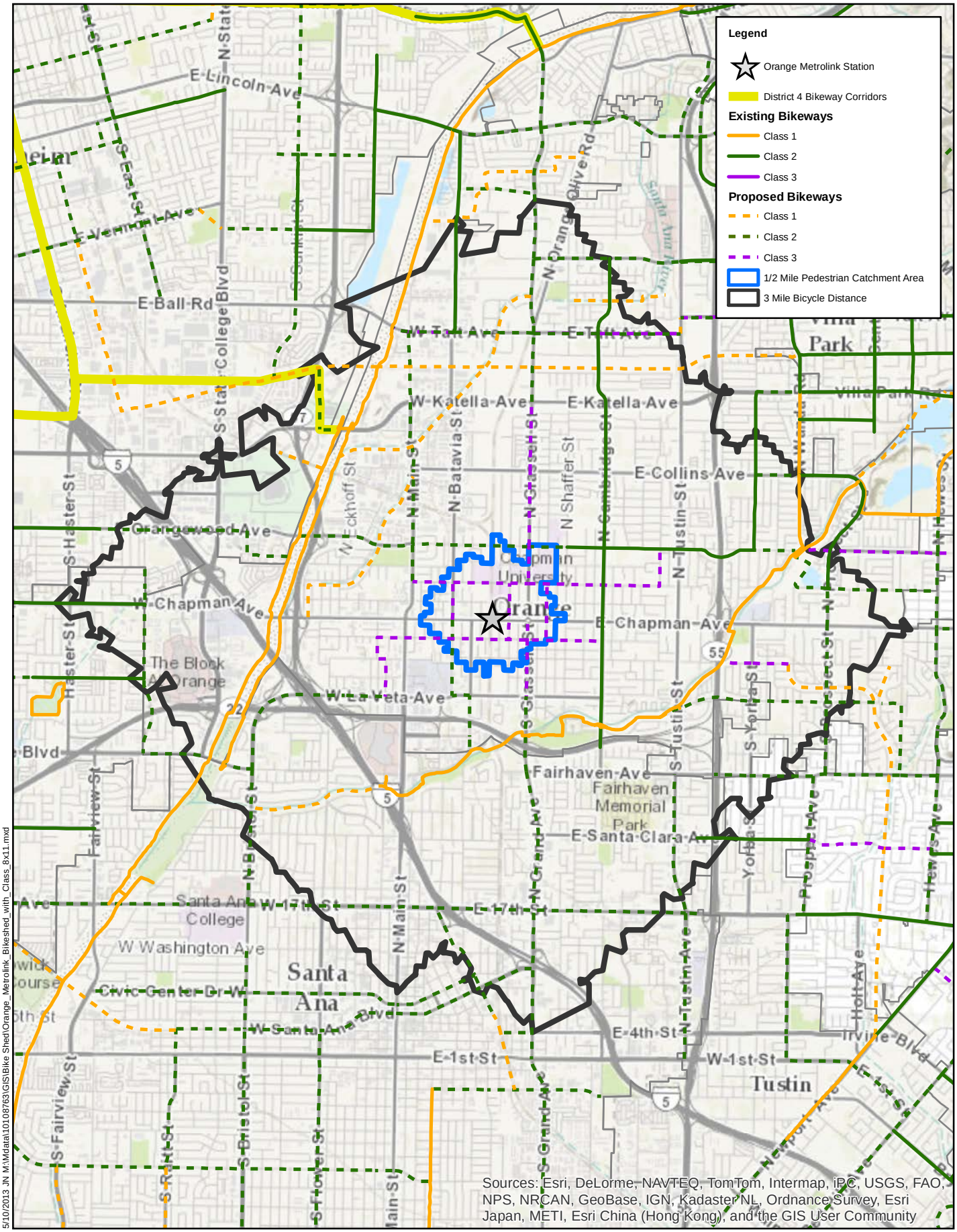
0 100 200 400 Feet

Source: OCTA, Eagle Aerial 2012

METROLINK STATION PEDESTRIAN & BICYCLE ACCESS

Orange Station

Exhibit 25



Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

5/10/2013 JN M:\Mdata\10108763\GIS\Bike Shed\Orange_Metrolink_Bikeshed_with_Class_8x11.mxd

RBF CONSULTING A Baker Company GIS

0 0.25 0.5 1 Miles

Source: OCTA, Esri

METROLINK STATIONS

Catchment Area - Orange

Exhibit 26

South side of the station.

North side of station.

Recommendations

Exhibits 27 and 28 show the recommendations identified in the following matrix.

Item #	Recommended Improvement	Pedestrian Related/ Bicycle Related	Metrics Affected	Included in Existing Plan/Document
1	Add a Class II bike lane along Walnut Avenue between Santa Ana River Trail and Shaffer Street.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Orange Santa Fe Depot Specific Plan, 2012
2	Add a Class III bike route along Palm Avenue between Main Street and Lincoln Street.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Orange Santa Fe Depot Specific Plan, 2012
3	Add a Class II bike lane along Batavia Street between Chapman Avenue and La Veta Avenue.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Orange Santa Fe Depot Specific Plan, 2012
4	Add a Class II bike lane along Glassell Street between La Veta Avenue and the Santiago Creek Trail.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Orange General Plan Update and City of Orange Bikeways Master Plan
5	Add a Class II bike lane along Parker Street between La Veta Avenue and the Santiago Creek Trail.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Orange General Plan Update and City of Orange Bikeways Master Plan
6	Add a Class III bike route along Lemon Street between Palm Avenue and Almond Avenue.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Orange Santa Fe Depot Specific Plan, 2012
7	Add a Class III bike route along Almond Avenue between Feldner Road and Cambridge Street.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Orange Santa Fe Depot Specific Plan, 2012
8	Add a Class III bike route along Batavia Street between Palm Avenue and Chapman Avenue.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Orange Santa Fe Depot Specific Plan, 2012 and City of Orange Bikeways Master Plan
9	Add a Class III bike lane along Glassell Street between Almond Avenue and La Veta Avenue.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Orange Santa Fe Depot Specific Plan, 2012 and City of Orange Bikeways Master Plan
10	Add a pedestrian plaza/courtyard as shown in the Orange Santa Fe Depot Specific Plan.	Pedestrian Related	Network Design, Route Directness, Station Amenities	Orange Santa Fe Depot Specific Plan, 2012

Item #	Recommended Improvement	Pedestrian Related/ Bicycle Related	Metrics Affected	Included in Existing Plan/Document
11	Reduce lane widths (where feasible) on Chapman Avenue between the station and Orange Circle in order to widen the sidewalk on the north side of Chapman Avenue.	Pedestrian Related	Network Design, Safety	City planned project.
12	Relocate bike lockers to a more visible location. Retrofit lockers with grates or windows so locker contents can be visible from the outside.	Bicycle Related	Bike Parking	
13	Provide shade trees along the north side of Maple Street between Atchison Street and Cypress Street, and along Chapman Avenue and Almond Avenue as space permits.	Pedestrian Related	Station Amenities	
14	Add additional shaded seating areas on the north side of the station.	Pedestrian & Bicycle Related	Station Amenities	
15	Refurbish property located on northeast corner of Atchison Street/Chapman Avenue intersection.	Pedestrian Related	Security	
16	Refurbish restrooms to include a door that can be locked (unlike the existing stall door) as well as elimination of graffiti.	Pedestrian & Bicycle Related	Station Amenities	
17	Provide wayfinding/signage directing bicyclists to bike lockers.		Information/Wayfinding, Bike Parking	
18	Consider implementing a Bike Station.	Bicycle Related	Station Amenities, Bike Parking	
19	Consider implementing a Bike Share Program since station is located within close proximity to Old Town Orange and Chapman University.	Bicycle Related	Station Amenities, Bike Parking	

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Refer to Exhibit 28 for detailed station map:

10. Add a pedestrian plaza/courtyard as shown in the Orange Santa Fe Depot Specific Plan.
11. Reduce lane widths (where feasible) on Chapman Avenue between the station and Orange Circle in order to widen the sidewalk on the north side of Chapman Avenue.
12. Relocate bike lockers to a more visible location. Retrofit lockers with grates or windows so locker contents can be visible from the outside.
13. Provide shade trees along the north side of Maple Street between Atchison Street and Cypress Street, and along Chapman Avenue and Almond Avenue where space permits.
14. Add additional shaded seating areas on the north side of the station.
15. Refurbish property located on northeast corner of Atchison Street/Chapman Avenue intersection.

General Recommendations:

16. Refurbish restrooms to include a door that can be locked (unlike the existing stall door) as well as elimination of graffiti.
17. Provide wayfinding/signage directing bicyclists to bike lockers.
18. Consider implementing a Bike Station.
19. Consider implementing a Bike Share Program since station is located within close proximity to Old Town Orange and Chapman University.

1. Add a Class II bike lane along Walnut Avenue between Santa Ana River Trail and Shaffer Street.
2. Add a Class III bike route along Palm Avenue between Main Street and Lincoln Street.
3. Add a Class II bike lane along Batavia Street between Chapman Avenue and La Veta Avenue.
4. Add a Class II bike lane along Glassell Street between La Veta Avenue and the Santiago Creek Trail.
5. Add a Class II bike lane along Parker Street between La Veta Avenue and the Santiago Creek Trail.
6. Add a Class III bike route along Lemon Street between Palm Avenue and Almond Avenue.
7. Add a Class III bike route along Almond Avenue between Feldner Road and Cambridge Street.
8. Add a Class III bike route along Batavia Street between Palm Avenue and Chapman Avenue.
9. Add a Class III bike route along Glassell Street between Almond Avenue and La Veta Avenue.

Legend

- Metrolink Station
- 1/2 Mile Pedestrian Catchment Area
- 3 Mile Bicycle Distance

Bikeways - Existing
- Class 1
- Class 2
- Class 3

Planned
- Class 1
- Class 2
- Class 3

Recommended Improvements
- (#) Refer to Recommendations Table

Recommended Bikeways

In Existing Plan / Document	*Not in an Existing Plan / Document*
Class 1	Class 1
Class 2	Class 2
Class 3	Class 3

Source: OCTA, Esri

RBF A Baker Company

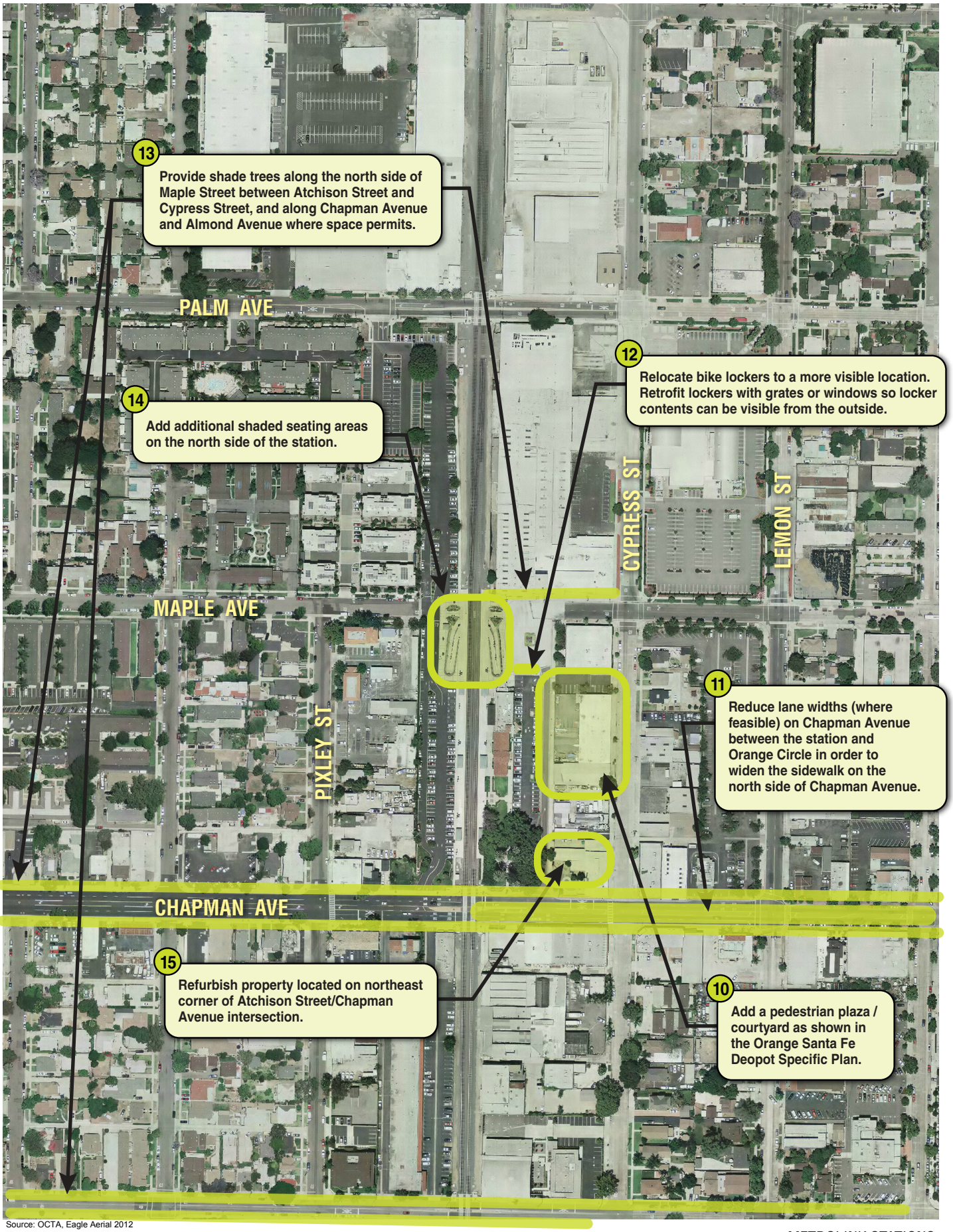
0 0.5 1 mile
APPROXIMATE

07/15/13 130374-19110 MAS

METROLINK STATIONS

Orange Metrolink Station - Recommended Improvements

Exhibit 27



Source: OCTA, Eagle Aerial 2012

METROLINK STATIONS

Orange Metrolink Station Recommended Improvements

RBF A Baker Company

NOT TO SCALE

07/15/13 130374-19110 MAS

Exhibit 28

13. SANTA ANA METROLINK STATION

The Santa Ana Metrolink Station is located at 1000 E. Santa Ana Boulevard in the City of Santa Ana. The streets adjacent to the station include Santa Ana Boulevard and Santiago Street. The station is surrounded by residential, office, and industrial/warehouse land uses. The downtown is located approximately a half mile west of the station.

Existing Plans, Programs and Projects

Santa Ana Regional Transportation Center Master Plan (IBI Group, June 2011)

The Santa Ana Regional Transportation Center (SARTC) Master Plan is a vision for how the Santa Ana Station can accommodate both future increases in transit use and new transit modes expected to be introduced over the next thirty years. The plan explains that bicycle facilities at the station will enhance ridership, increase the station's catchment area and help to integrate the station into the surrounding neighborhood. Bicycle facilities could consist of bike racks, lockers and a Bikestation or bike valet.

Existing Conditions

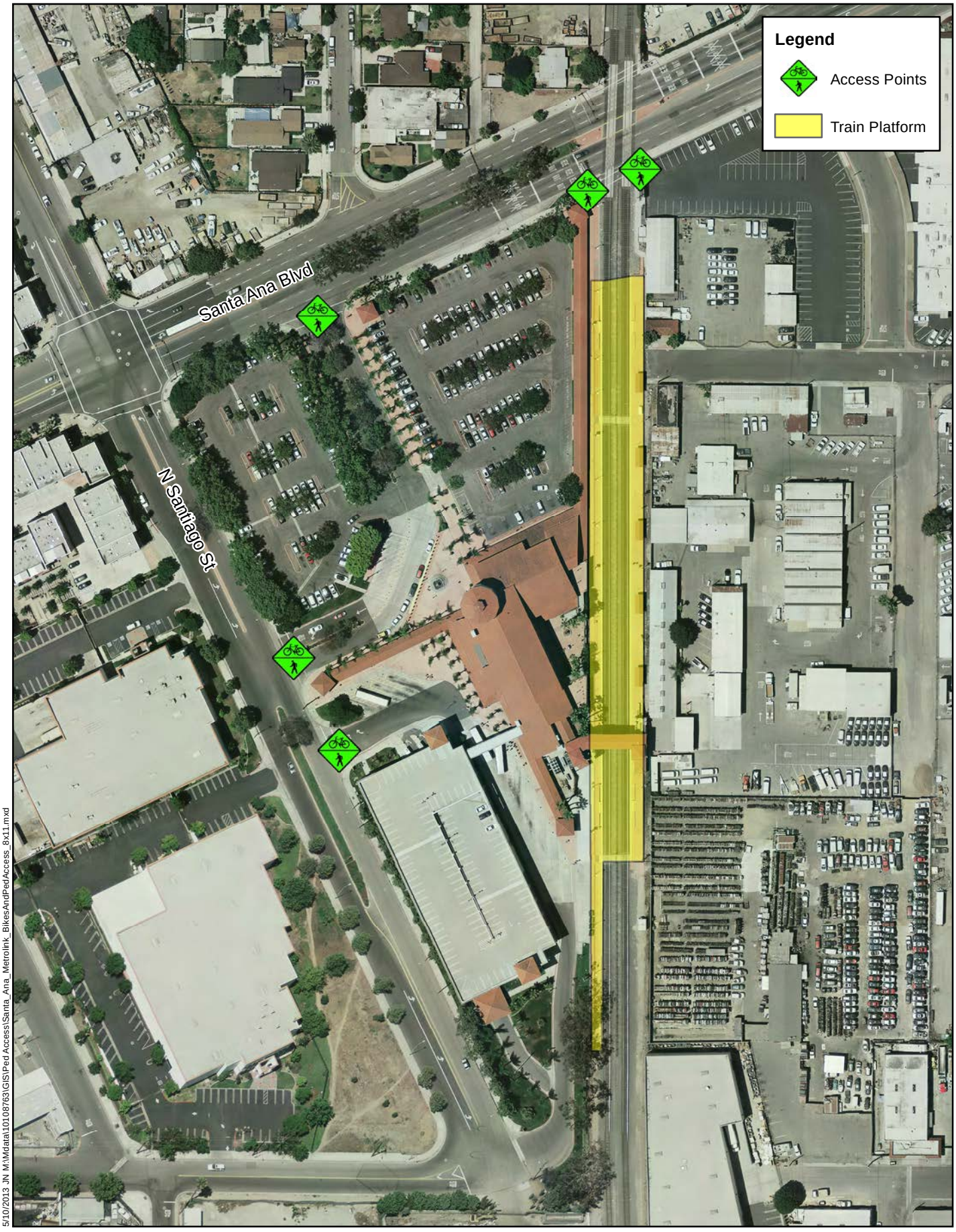
Based on field observations, Santa Ana Boulevard does not appear to be bike-friendly due to higher traffic speeds/volumes with no buffer or bike lane to separate bicyclists from vehicles. Bicyclists can avoid Santa Ana Boulevard by using alternative parallel routes since nearby streets are on a grid system. The pedestrian environment is walkable since nearby streets are on a grid system with many route options. There is nice wayfinding within and around the station directing people to the station, café, bus check-in, tickets/boarding locations, etc. Photos of existing conditions at the station area are provided on the following page.

Table 10 summarizes the field audit scores for each metric for the Santa Ana Metrolink Station.

Table 10
Santa Ana Metrolink Station Field Audit Scores

#	Metric	Bike	Ped	Scoring System
1	Station Mode Split*	10	2	0 (Poor), 2, 4, 6, 8, 10 (Good)
2	Network Design	4	8	0, 2, 4, 6, 8, 10
3	Catchment Area Effectiveness	8	6	0, 2, 4, 6, 8, 10
4	Trip Demand	10	10	0, 2, 4, 6, 8, 10
5	Route Directness	8	8	0, 2, 4, 6, 8, 10
6	Safety	6	6	0, 2, 4, 6, 8, 10
7	Security	8	8	0, 2, 4, 6, 8, 10
8	Information/Wayfinding	6	8	0, 2, 4, 6, 8, 10
9	Station Amenities	8	10	0, 2, 4, 6, 8, 10
10	Bike Parking	8	N/A	0, 2, 4, 6, 8, 10
	Total Score	76	66	
*Station Typology: Intermodal Transit Center; Current Mode Split: 3% Bike, 8% Ped				

As shown in Table 10, the Santa Ana Metrolink Station scored 76 out of 100 for bikes and 66 out of 90 for pedestrians. Exhibit 29 shows the main access locations to the station for pedestrians and bicyclists. Exhibit 30 shows the pedestrian and bicycle catchment areas.



5/10/2013 JN M:\Mdata\10108763\GIS\Ped Access\Santa_Ana_Metrolink_BikesAndPedAccess_8x11.mxd

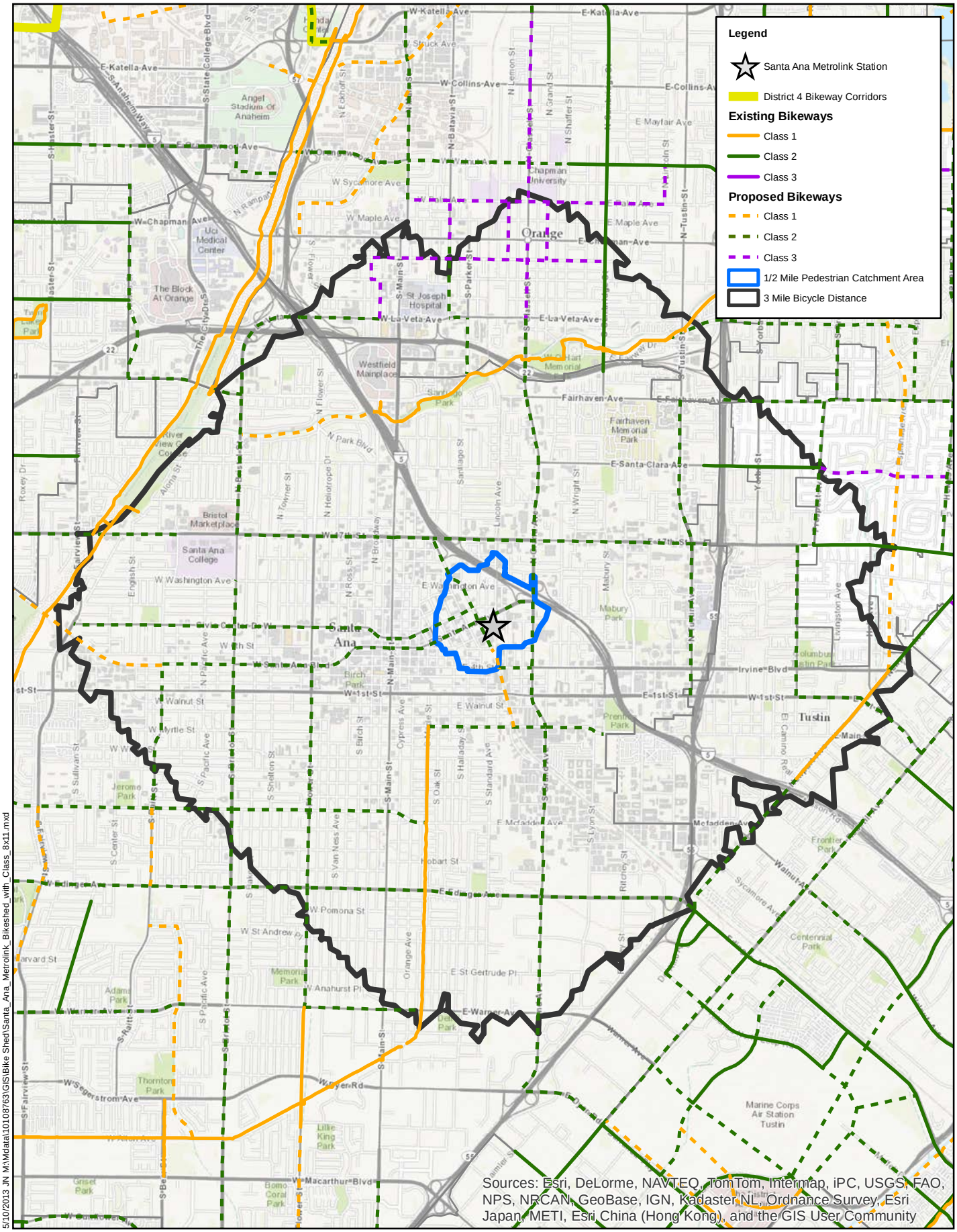
0 75 150 300 Feet

Source: OCTA, Eagle Aerial 2012

METROLINK STATION PEDESTRIAN & BICYCLE ACCESS

Santa Ana Station

Exhibit 29



5/10/2013 JN M:\Mdata\10108763\GIS\Bike Shed\Santa_Ana_Metrolink_Bikeshed_with_Class_8x11.mxd

0 0.25 0.5 1 Miles

Source: OCTA, Esri

METROLINK STATIONS

Catchment Area - Santa Ana

Exhibit 30

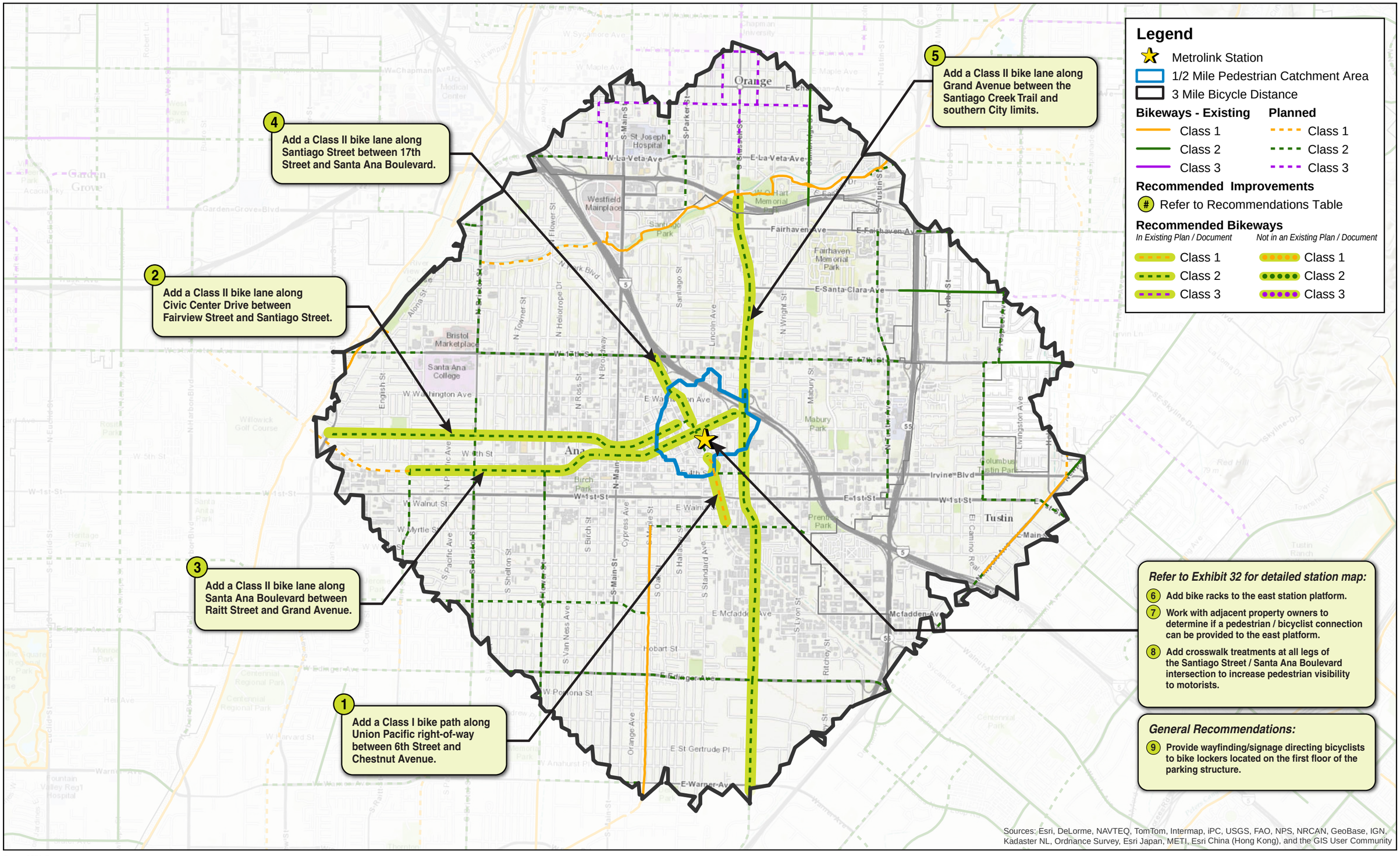
Station platform and pedestrian overcrossing.

Entrance to platform.

Recommendations

Exhibits 31 and 32 show the recommendations identified in the following matrix.

Item #	Recommended Improvement	Pedestrian Related/ Bicycle Related	Metrics Affected	Included in Existing Plan/Document
1	Add a Class I bike path along Union Pacific right-of-way between 6th Street and Chestnut Avenue.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	
2	Add a Class II bike lane along Civic Center Drive between Fairview Street and Santiago Street.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	
3	Add a Class II bike lane along Santa Ana Boulevard between Raitt Street and Grand Avenue.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	
4	Add a Class II bike lane along Santiago Street between 17th Street and Santa Ana Boulevard.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	
5	Add a Class II bike lane along Grand Avenue between the Santiago Creek Trail and southern City limits.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	
6	Add bike racks to the east station platform.	Bicycle Related	Bike Parking	
7	Work with adjacent property owners to determine if a pedestrian/bicyclist connection can be provided to the east platform.	Pedestrian & Bicycle Related	Catchment Area Effectiveness, Route Directness,	
8	Add crosswalk treatments at all legs of the Santiago Street/Santa Ana Boulevard intersection to increase pedestrian visibility to motorists.	Pedestrian & Bicycle Related	Network Design, Safety	
9	Provide wayfinding/signage directing bicyclists to bike lockers located on the first floor of the parking structure.	Pedestrian & Bicycle Related	Information/Wayfinding, Bike Parking	



Source: OCTA, Esri

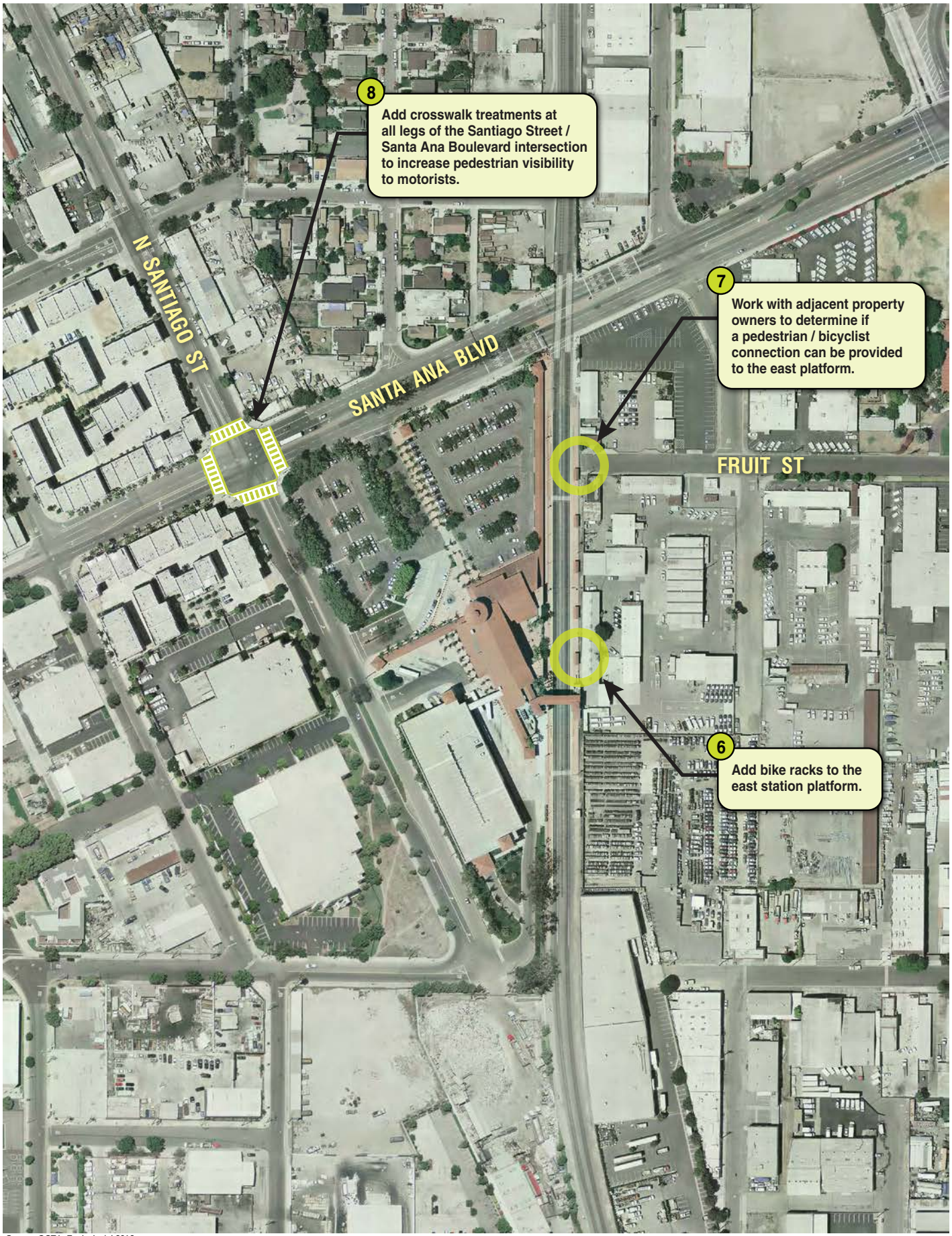
RBF A Baker Company

0 0.5 1 mile
APPROXIMATE

05/13/13 130374-19110 MAS

METROLINK STATIONS

Santa Ana Metrolink Station - Recommended Improvements



Source: OCTA, Eagle Aerial 2012

METROLINK STATIONS

Santa Ana Metrolink Station Recommended Improvements

RBF A Baker Company

NOT TO SCALE

05/13/13 130374-19110 MAS

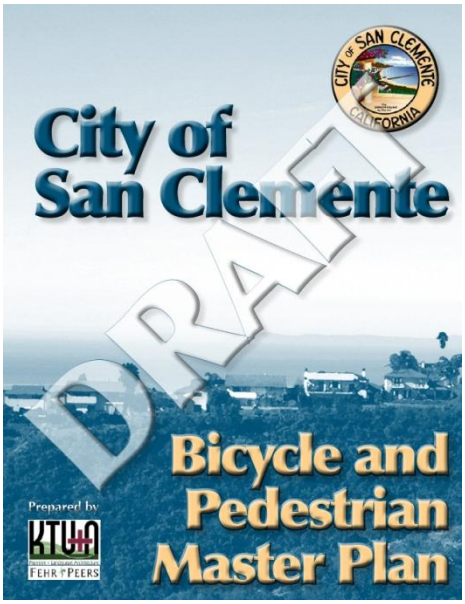
Exhibit 32

14. SAN CLEMENTE METROLINK STATION

The San Clemente Metrolink Station is located at 1850 Avenida Estacion in the City of San Clemente. The streets adjacent to the station include Avenue Estacion and El Camino Real. The station is surrounded by residential and commercial land uses to the east and the coastline to the west. The core of the downtown is located approximately one mile east of the station at the intersection along El Camino Real.

Existing Plans, Programs and Projects

Draft Bicycle and Pedestrian Master Plan (KTU+A)



The City of San Clemente's first Bicycle Master Plan is currently under preparation. It establishes the types of bikeway facilities that should be implemented within the City and identifies the need to integrate with the existing system of regional bikeways in the southern Orange County area, as well as provides broad recommendations to improve the overall walking environment.

Existing bicycle counts were conducted by PEDal members at over 20 locations throughout the City during 2011. Counts were collected at locations along five corridors, including Avenida Pico, Camino Capistrano, Camino De Los Mares, the Pacific Coast Bike Route and the Beach Trail. The bicycle volumes were generally high at all of the locations which helps justify the need for the Bicycle Master Plan.

The proposed system includes a total of approximately 40 miles of new bikeway facilities in addition to the 26 miles currently in place. A Safe Routes to School plan is also included to address infrastructure needs at schools as well as along a child's route to school.

Pacific Coast Highway/Ola Vista Bicycle Improvements

The City recently received OCTA grant funding for new bicycle amenities along the heavily used Pacific Coast Highway/Ola Vista route. The project include new bike route signage with QR coding and new bicycle parking.

Existing Conditions

Based on field observations, adjacent streets generally appears to be bike friendly since Class II and Class III bikeways provide a comfortable space for bicyclists to ride alongside vehicular traffic. The most heavily used bicycle route in the station area is on Pacific Coast Highway and Ola Vista. However, El Camino Real south of Avenida Pico is not a designated bike facility and has parallel parking with no buffer or bike lane to separate bicyclists from vehicles. The pedestrian environment is generally walkable with nice sidewalk pavement treatments. The lack of sidewalks on Calle Deshecha and orientation of the parking lot result in a circuitous route for pedestrians to walk northeast towards the

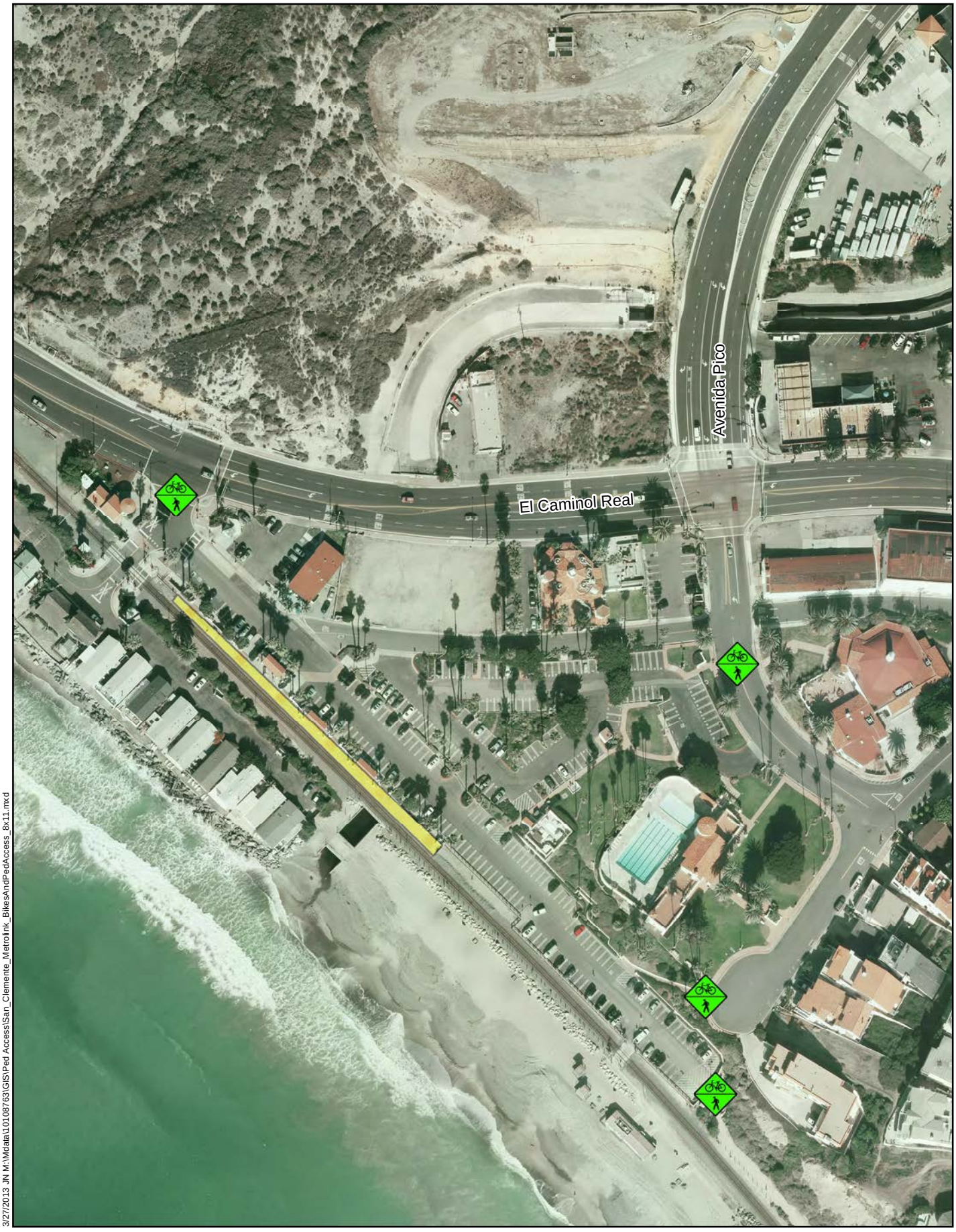
intersection of Avenida Pico and El Camino Real. Photos of existing conditions at the station area are provided on the following page.

Table 11 summarizes the field audit scores for each metric for the San Clemente Metrolink Station.

Table 11
San Clemente Metrolink Station Field Audit Scores

#	Metric	Bike	Ped	Scoring System
1	Station Mode Split*	10	2	0 (Poor), 2, 4, 6, 8, 10 (Good)
2	Network Design	8	6	0, 2, 4, 6, 8, 10
3	Catchment Area Effectiveness	4	4	0, 2, 4, 6, 8, 10
4	Trip Demand	0	0	0, 2, 4, 6, 8, 10
5	Route Directness	6	6	0, 2, 4, 6, 8, 10
6	Safety	6	4	0, 2, 4, 6, 8, 10
7	Security	6	6	0, 2, 4, 6, 8, 10
8	Information/Wayfinding	2	2	0, 2, 4, 6, 8, 10
9	Station Amenities	2	4	0, 2, 4, 6, 8, 10
10	Bike Parking	2	N/A	0, 2, 4, 6, 8, 10
	Total Score	46	32	
*Station Typology: Suburban Neighborhood; Current Mode Split: 7% Bike, 7% Ped				

As shown in Table 11, the San Clemente Metrolink Station scored 46 out of 100 for bikes and 36 out of 90 for pedestrians. Exhibit 33 shows the main access locations to the station for pedestrians and bicyclists. Exhibit 34 shows the pedestrian and bicycle catchment areas.



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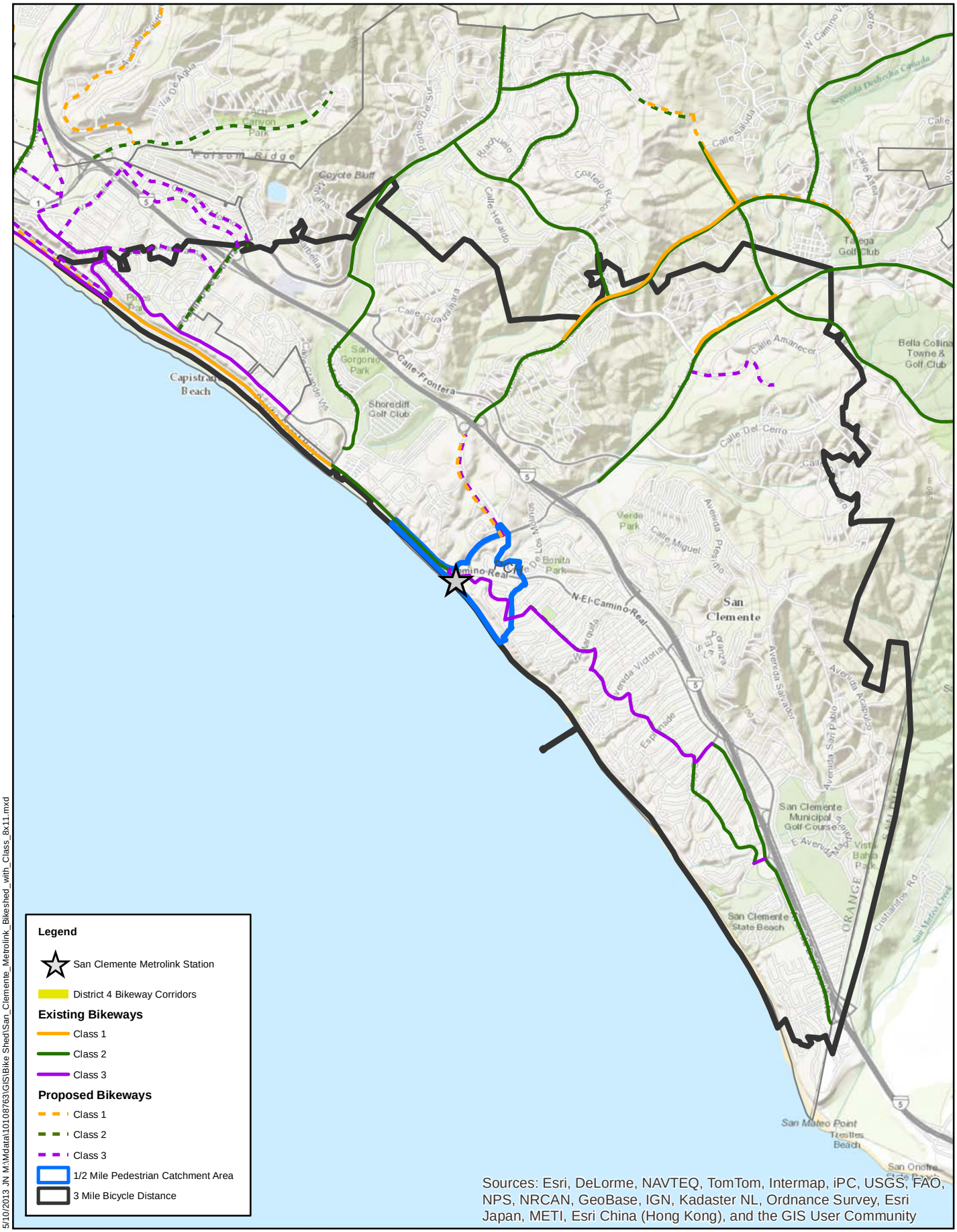
0 75 150 300 Feet

Source: OCTA, Eagle Aerial 2012

METROLINK STATION PEDESTRIAN & BICYCLE ACCESS

San Clemente Station

Exhibit 33



5/10/2013 JN M:\Mdata\10108763\GIS\Bike Shed\San_Clemente_Metrolink_Bikeshed_with_Class_8x11.mxd

0 0.25 0.5 1 Miles

Source: OCTA, Esri

METROLINK STATIONS

Catchment Area - San Clemente

Exhibit 34

Class III bike route and no sidewalks on Calle Deshecha.

Layout of station platform and parking lot.

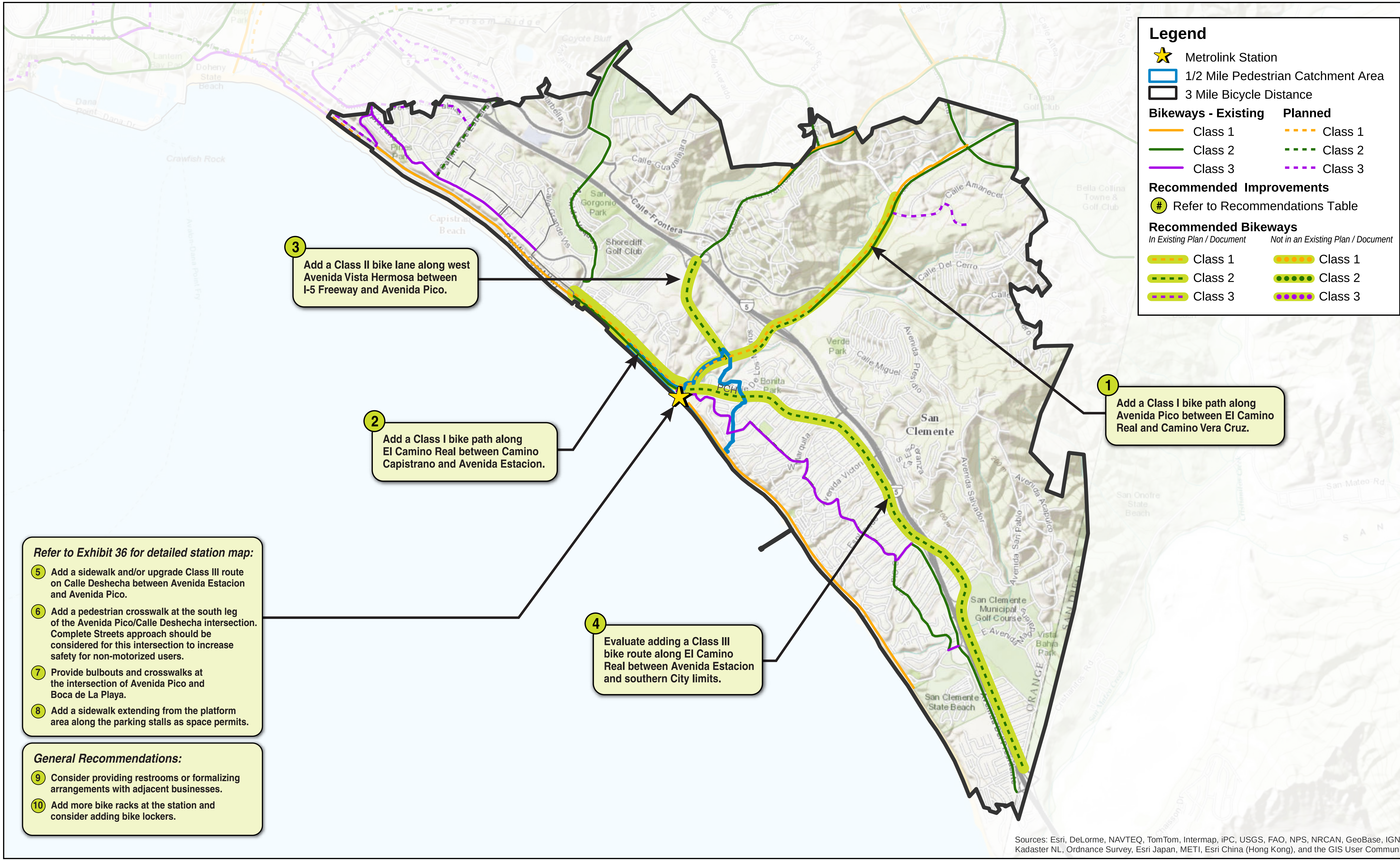
Platform area.

Parking lot with crosswalk pavers.

Recommendations

Exhibits 35 and 36 show the recommendations identified in the following matrix.

Item #	Recommended Improvement	Pedestrian Related/ Bicycle Related	Metrics Affected	Included in Existing Plan/Document
1	Add a Class I bike path along Avenida Pico between El Camino Real and Camino Vera Cruz.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	Bicycle & Pedestrian Master Plan, 2011
2	Add a Class I bike path along El Camino Real between Camino Capistrano and Avenida Estacion.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	Bicycle & Pedestrian Master Plan, 2011
3	Add a Class II bike lane along West Avenida Vista Hermosa between I-5 Freeway and Avenida Pico.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Bicycle & Pedestrian Master Plan, 2011
4	Evaluate adding a Class II bike lane along El Camino Real between Avenida Estacion and southern City limits.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	Bicycle & Pedestrian Master Plan, 2011
5	Add a sidewalk and/or upgrade Class III route on Calle Deshecha between Avenida Estacion and Avenida Pico.	Pedestrian & Bicycle Related	Network Design, Catchment Area Effectiveness, Route Directness, Safety	
6	Add a pedestrian crosswalk at the south leg of the Avenida Pico/Calle Deshecha intersection. Complete Streets approach should be considered for this intersection to increase safety for non-motorized users.	Pedestrian Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	
7	Provide bulbouts and crosswalks at the intersection of Avenida Pico and Boca de la Playa	Pedestrian Related	Safety	
8	Add a sidewalk extending from the platform area along the parking stalls as space permits.	Pedestrian Related	Network Design, Route Directness, Safety	
9	Consider providing restrooms or formalizing arrangements with adjacent businesses.	Pedestrian & Bicycle Related	Station Amenities	
10	Add more bike racks at the station and consider adding bike lockers.	Bicycle Related	Bike Parking	



Source: OCTA, Esri

RBF A Baker Company

0 0.5 1 mile
APPROXIMATE

05/13/13 130374-19110 MAS

METROLINK STATIONS

San Clemente Metrolink Station - Recommended Improvements

Exhibit 35

Source: OCTA, Eagle Aerial 2012

METROLINK STATIONS

San Clemente Metrolink Station Recommended Improvements

RBF A Baker Company

NOT TO SCALE

05/13/13 130374-19110 MAS

Exhibit 36

15. SAN JUAN CAPISTRANO METROLINK STATION

The San Juan Capistrano Metrolink Station is located at 26701 Verdugo Street in the City of San Juan Capistrano. The streets adjacent to the station include Verdugo Street, Camino Capistrano, Ortega Highway, and Los Rios Street. The station is surrounded primarily by residential land uses to the west and the downtown to the east.

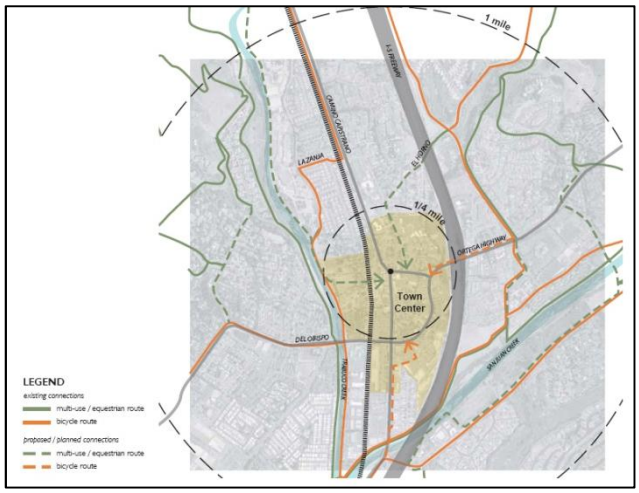
Existing Plans, Programs and Projects

Historic Town Center Master Plan (October 11, 2012)

The Historic Town Center (HTC) Master Plan presents the community's aspirations for the future of its Town Center District, and defines standards and an implementation strategy that will guide the District toward the preferred future vision over time. The intent is to ensure that the historic character and function of the Town Center as the civic and commercial heart of the City is preserved, enhanced, and expanded over time.

The goals related to bicycle and pedestrian environment include:

- Correct existing physical conditions that result in unsafe conditions for pedestrians and bicyclists.
- Improve connectivity between the Town Center and the City's extensive trail network.
- Improve connections between different Town Center destinations.
- Improve access to public transportation.
- Improve access for those that are not fully mobile including the youth, elderly, or disabled.
- Increase distance that Town Center visitors are likely to walk or bike in order to access multiple destinations.



Los Rios Specific Plan

The Los Rios Specific Plan District represents a unique, historically-rich neighborhood. Los Rios Street serves as the main artery of the Specific plan District, which includes residential and limited commercial/service establishments. The challenge for the residents and businesses of Los Rios Street is to allow the District to evolve and adapt to changing conditions and needs while preserving the essence of the area.

The following pedestrian and bicycle linkages are provided in the Specific Plan:

- **Pedestrian Linkages:** The Circulation Plan provides for a strong pedestrian link between the Los Rios area and the historic downtown and Mission. The linkage connects the Mission

to Los Rios Street via existing downtown sidewalks along Ortega Highway, Camino Capistrano and Verdugo Streets. From the Verdugo Street cul-de-sac, the pedestrian-way crosses the railroad tracks at the protected crossing and enters the planned pedestrian plaza at Los Rios Street and Verdugo Street.

- **Bicycle Linkages:** Primary bicycle access to the area is from the existing north-south Trabuco Creek levee trail. The bike route will be extended from this trail across Paseo Adelanto and through the new Central Park. In addition, the existing secondary bikeway connection from the alley in the condominium development (adjacent to the north) to Los Rios Street will be retained.

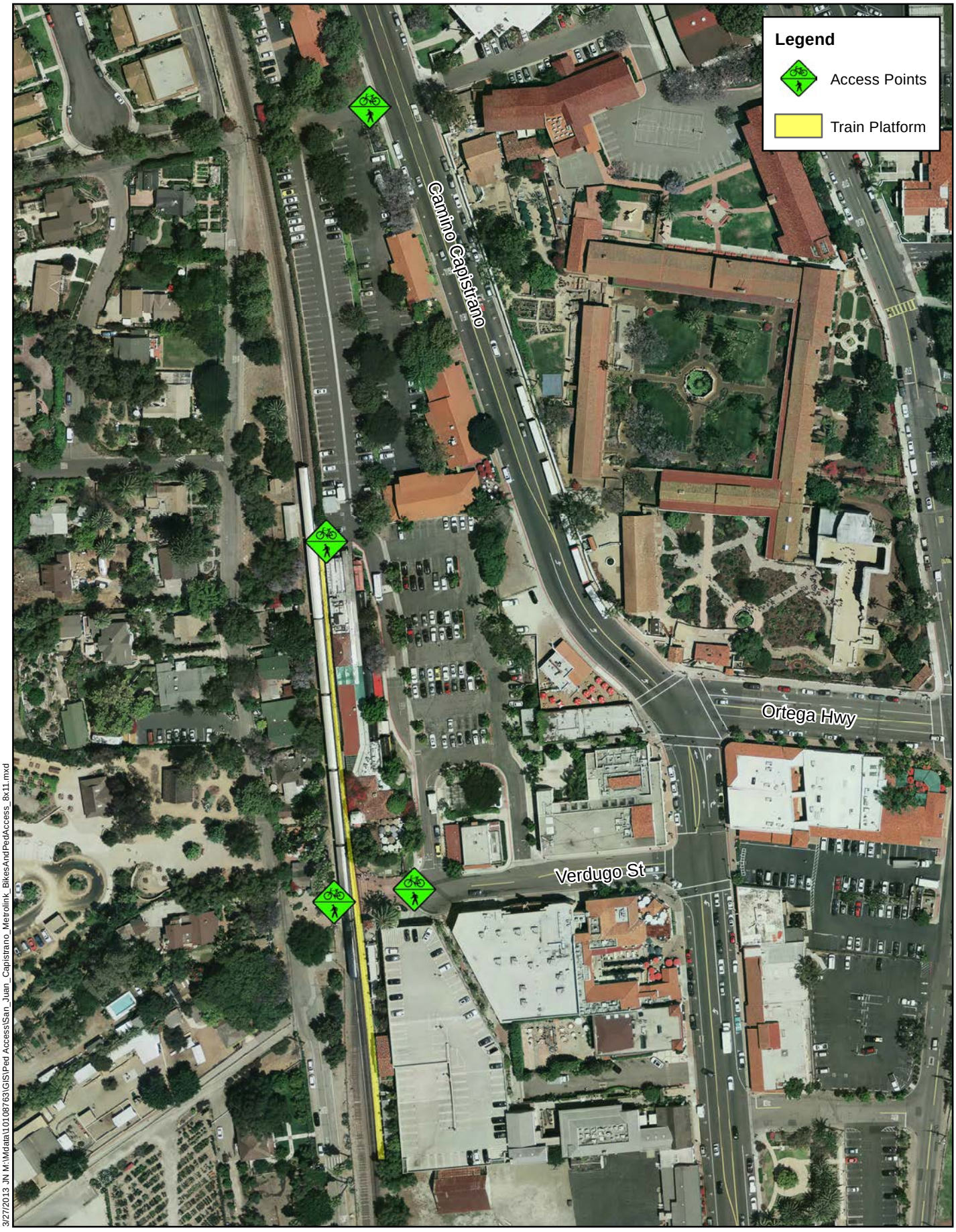
Existing Conditions

Based on field observations, Camino Capistrano and Ortega Highway do not appear to be bike friendly due to narrow lane widths with parallel parking. No buffer or bike lane exists to separate bicyclists from vehicles. Alternatives to Camino Capistrano and Ortega Highway include parallel routes such as Los Rios Street and the Trabuco Creek bike trail. The pedestrian environment is very walkable since the downtown has short setbacks with many shopping/dining options. The station is well integrated with the downtown creating an excellent pedestrian scale with relation to building size and roadway cross-sections. The streetscape design gives pedestrians a sense of comfort and safety when walking at or nearby the station. Photos of existing conditions at the station area are provided on the following page.

Table 12 summarizes the field audit scores for each metric for the San Juan Capistrano Metrolink Station.

Table 12
San Juan Capistrano Metrolink Station Field Audit Scores

#	Metric	Bike	Ped	Scoring System
1	Station Mode Split*	10	8	0 (Poor), 2, 4, 6, 8, 10 (Good)
2	Network Design	4	10	0, 2, 4, 6, 8, 10
3	Catchment Area Effectiveness	4	6	0, 2, 4, 6, 8, 10
4	Trip Demand	0	5	0, 2, 4, 6, 8, 10
5	Route Directness	8	8	0, 2, 4, 6, 8, 10
6	Safety	4	10	0, 2, 4, 6, 8, 10
7	Security	10	10	0, 2, 4, 6, 8, 10
8	Information/Wayfinding	8	8	0, 2, 4, 6, 8, 10
9	Station Amenities	4	10	0, 2, 4, 6, 8, 10
10	Bike Parking	2	N/A	0, 2, 4, 6, 8, 10
	Total Score	54	75	
*Station Typology: Historic Transit Village; Current Mode Split: 2% Bike, 24% Ped				



3/27/2013 JN M:\Mdata\10108763\GIS\Ped Access\San_Juan_Capistrano_Metrolink_BikesAndPedAccess_8x11.mxd

RBF CONSULTING A Baker Company GIS

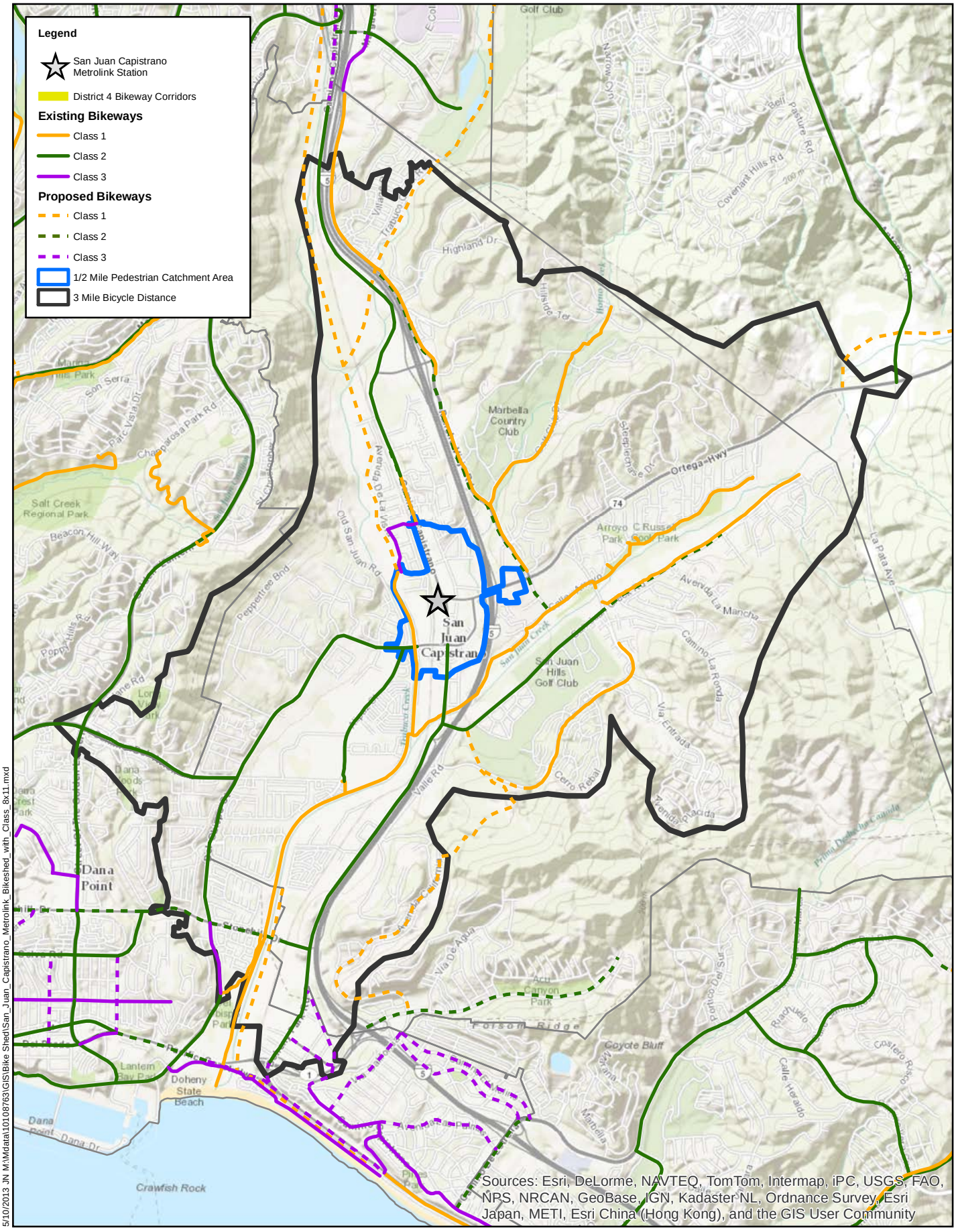
0 75 150 300 Feet

Source: OCTA, Eagle Aerial 2012

METROLINK STATION PEDESTRIAN & BICYCLE ACCESS

San Juan Capistrano Station

Exhibit 37



5/10/2013 JN M:\Mdata\10108763\GIS\Bike Shed\San_Juan_Capistrano_Metrolink_Bikeshed_with_Class_8x11.mxd

0 0.25 0.5 1 Miles

Source: OCTA, Esri

METROLINK STATIONS

Catchment Area - San Juan Capistrano

Exhibit 38

As shown in Table 12, the San Juan Capistrano Metrolink Station scored 54 out of 100 for bikes and 75 out of 90 for pedestrians. Exhibit 37 shows the main access locations to the station for pedestrians and bicyclists. Exhibit 38 shows the pedestrian and bicycle catchment areas.

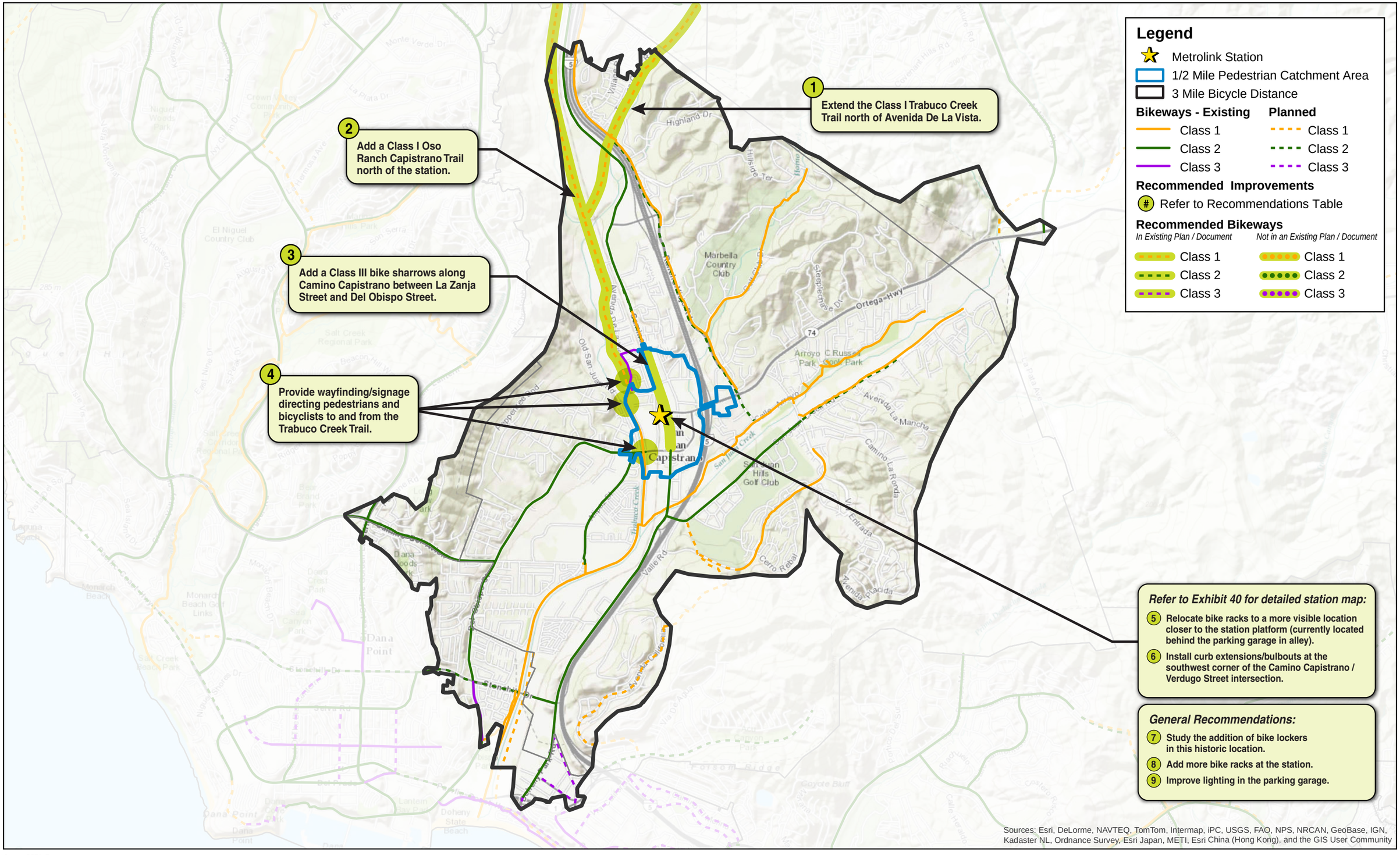
Station platform on east side of tracks.

Station exit on west side of tracks.

Recommendations

Exhibits 39 and 40 show the recommendations identified in the following matrix.

Item #	Recommended Improvement	Pedestrian Related/ Bicycle Related	Metrics Affected	Included in Existing Plan/Document
1	Extend the Class I Trabuco Creek Trail north of Avenida De La Vista.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	City of San Juan Capistrano Recreational Trail Map - Proposed and Existing
2	Add a Class I Oso Ranch Capistrano Trail north of the station.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	City of San Juan Capistrano Recreational Trail Map - Proposed and Existing
3	Add a Class III bike sharrows along Camino Capistrano between La Zanja Street and Del Obispo Street.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	
4	Provide wayfinding/signage directing pedestrians and bicyclists to and from the Trabuco Creek Trail.	Pedestrian & Bicycle Related	Information/Wayfinding	
5	Relocate bike racks to a more visible location closer to the station platform (currently located behind the parking garage in alley).	Bicycle Related	Bike Parking	
6	Install curb extensions/bulbouts at the southwest corner of the Camino Capistrano/Verdugo Street intersection.	Pedestrian Related	Network Design, Safety	
7	Study the addition of bike lockers to this historic location.	Bicycle Related	Bike Parking	
8	Add more bike racks at the station.	Bicycle Related	Bike Parking	
9	Improve lighting in the parking garage.	Pedestrian Related	Safety, Security	



Source: OCTA, Esri

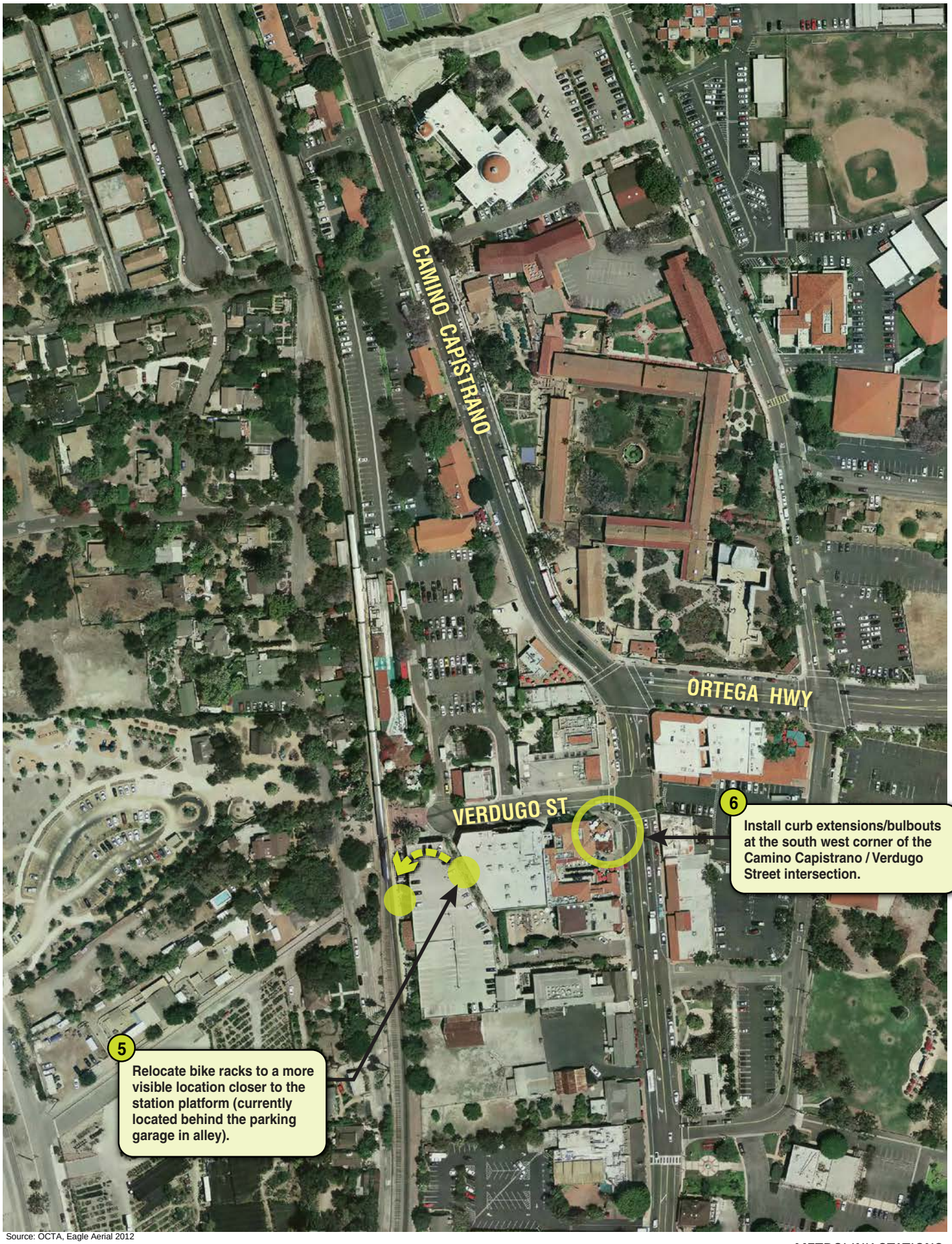
RBF A Baker Company

0 0.5 1 mile
APPROXIMATE

05/13/13 130374-19110 MAS

METROLINK STATIONS

San Juan Capistrano Metrolink Station - Recommended Improvements



Source: OCTA, Eagle Aerial 2012

METROLINK STATIONS

San Juan Capistrano Metrolink Station Recommended Improvements

RBF A Baker Company

NOT TO SCALE

03/28/13 130374-19110 MAS

Exhibit 40

16. TUSTIN METROLINK STATION

The Tustin Metrolink Station is located at 2975 Edinger Avenue in the City of Tustin. The streets adjacent to the station include Edinger Avenue, Jamboree Road, and Dow Avenue. The station is surrounded by the business parks to the north and residential land uses to the south.

Existing Plans, Programs and Projects

Peters Canyon Trail

The Peters Canyon Trail is a Class I facility that parallels Jamboree Road adjacent to the station. The trail begins to the north in the City of Orange and extends south through Tustin, Irvine, and Newport Beach and ends in the Upper Newport Bay. While a trail connection does not currently exist between the Peters Canyon Trail and the Tustin Metrolink Station, discussions have occurred between City of Tustin staff and OCTA staff about the feasibility of a connection.

Existing Conditions

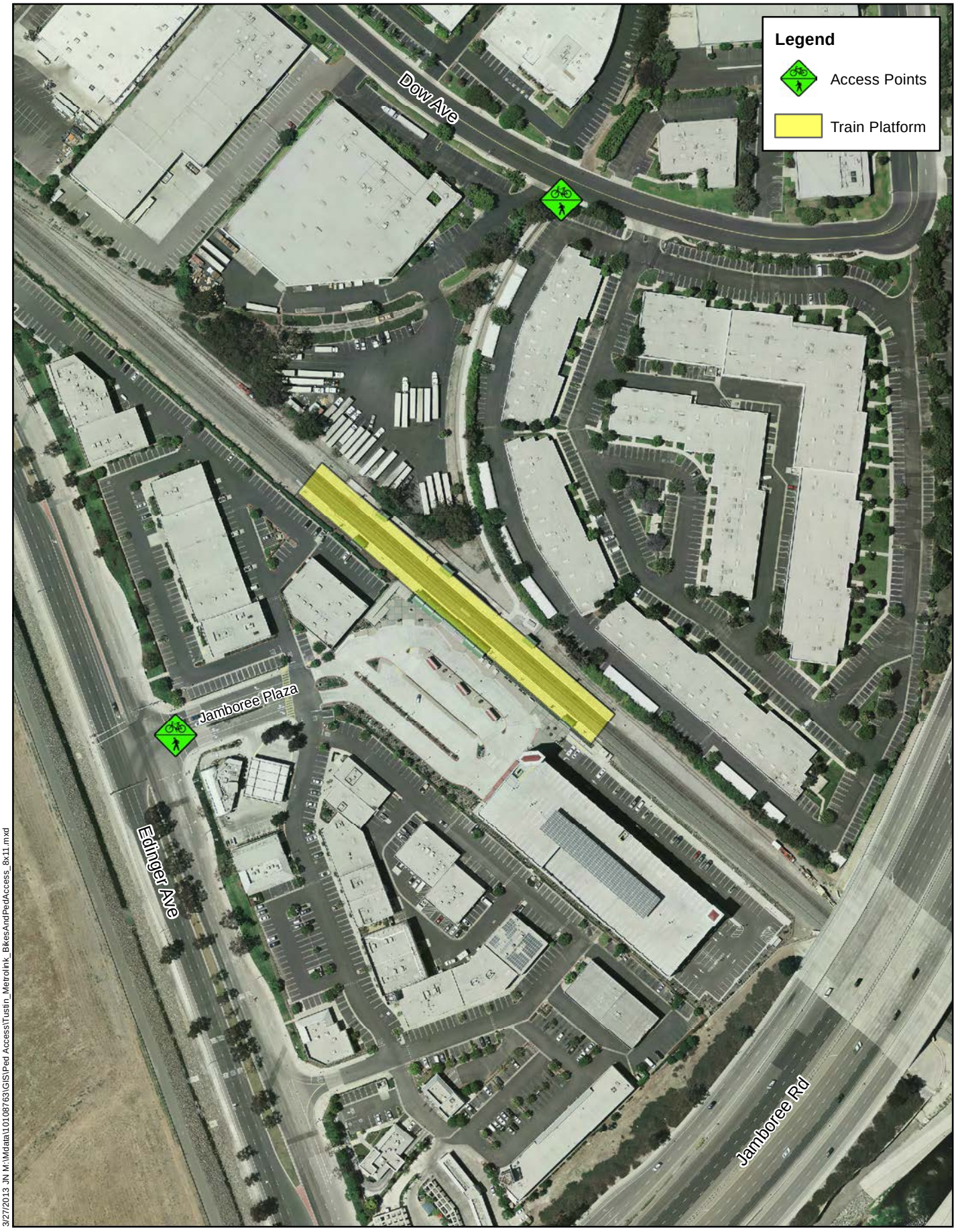
Based on field observations, adjacent streets generally appear to be bike-friendly. A Class II bike trail is located on Edinger Avenue. Dow Avenue has wide lanes with no on-street parking which provides adequate space for bicyclists to ride alongside vehicles. An excellent linkage is provided between the station and Dow Avenue by a pedestrian/bicyclist path. While station access is provided at Dow Avenue, discontinuous sidewalks require pedestrians to walk on the grass or in the street. Photos of existing conditions at the station area are provided on the following page.

Table 13 summarizes the field audit scores for each metric for the Tustin Metrolink Station.

Table 13
Tustin Metrolink Station Field Audit Scores

#	Metric	Bike	Ped	Scoring System
1	Station Mode Split*	10	4	0 (Poor), 2, 4, 6, 8, 10 (Good)
2	Network Design	8	6	0, 2, 4, 6, 8, 10
3	Catchment Area Effectiveness	6	4	0, 2, 4, 6, 8, 10
4	Trip Demand	5	5	0, 2, 4, 6, 8, 10
5	Route Directness	8	8	0, 2, 4, 6, 8, 10
6	Safety	8	6	0, 2, 4, 6, 8, 10
7	Security	6	6	0, 2, 4, 6, 8, 10
8	Information/Wayfinding	6	6	0, 2, 4, 6, 8, 10
9	Station Amenities	4	4	0, 2, 4, 6, 8, 10
10	Bike Parking	8	N/A	0, 2, 4, 6, 8, 10
	Total Score	69	49	
*Station Typology: Suburban Freeway; Current Mode Split: 3% Bike, 5% Ped				

As shown in Table 13, the Tustin Metrolink Station scored 69 out of 100 for bikes and 49 out of 90 for pedestrians. Exhibit 41 shows the main access locations to the station for pedestrians and bicyclists. Exhibit 42 shows the pedestrian and bicycle catchment areas.



3/27/2013 JN M:\Mdata\10108763\GIS\Ped Access\Tustin_Metrolink_BikesAndPedAccess_8x11.mxd

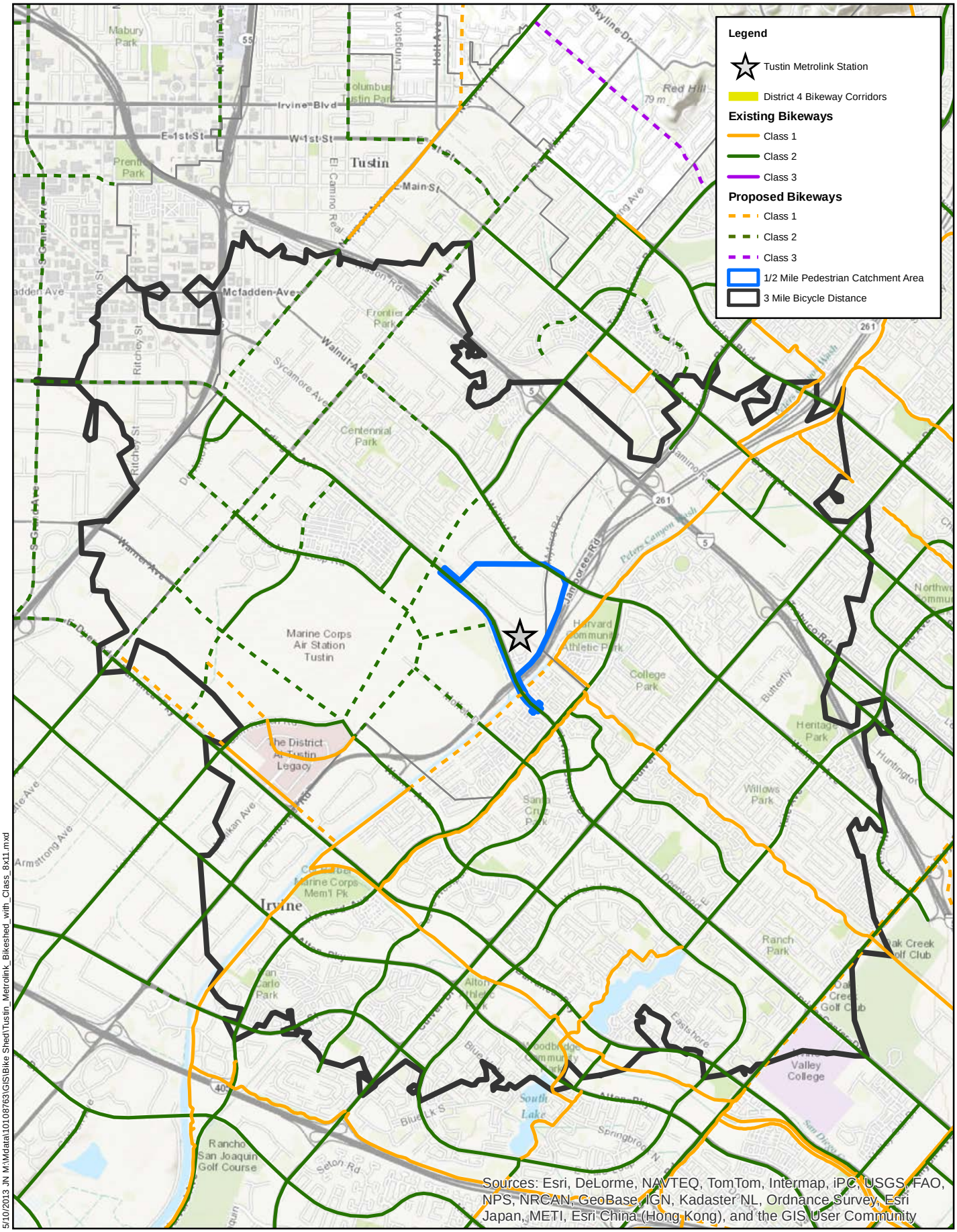
0 100 200 400 Feet

Source: OCTA, Eagle Aerial 2012

METROLINK STATION PEDESTRIAN & BICYCLE ACCESS

Tustin Station

Exhibit 41



5/10/2013 JN M:\Mdata\10108763\GIS\Bike Shed\Tustin_Metrolink_Bikeshed_with_Class_8x11.mxd

0 0.25 0.5 1 Miles

Source: OCTA, Esri

METROLINK STATIONS

Catchment Area - Tustin

Exhibit 42

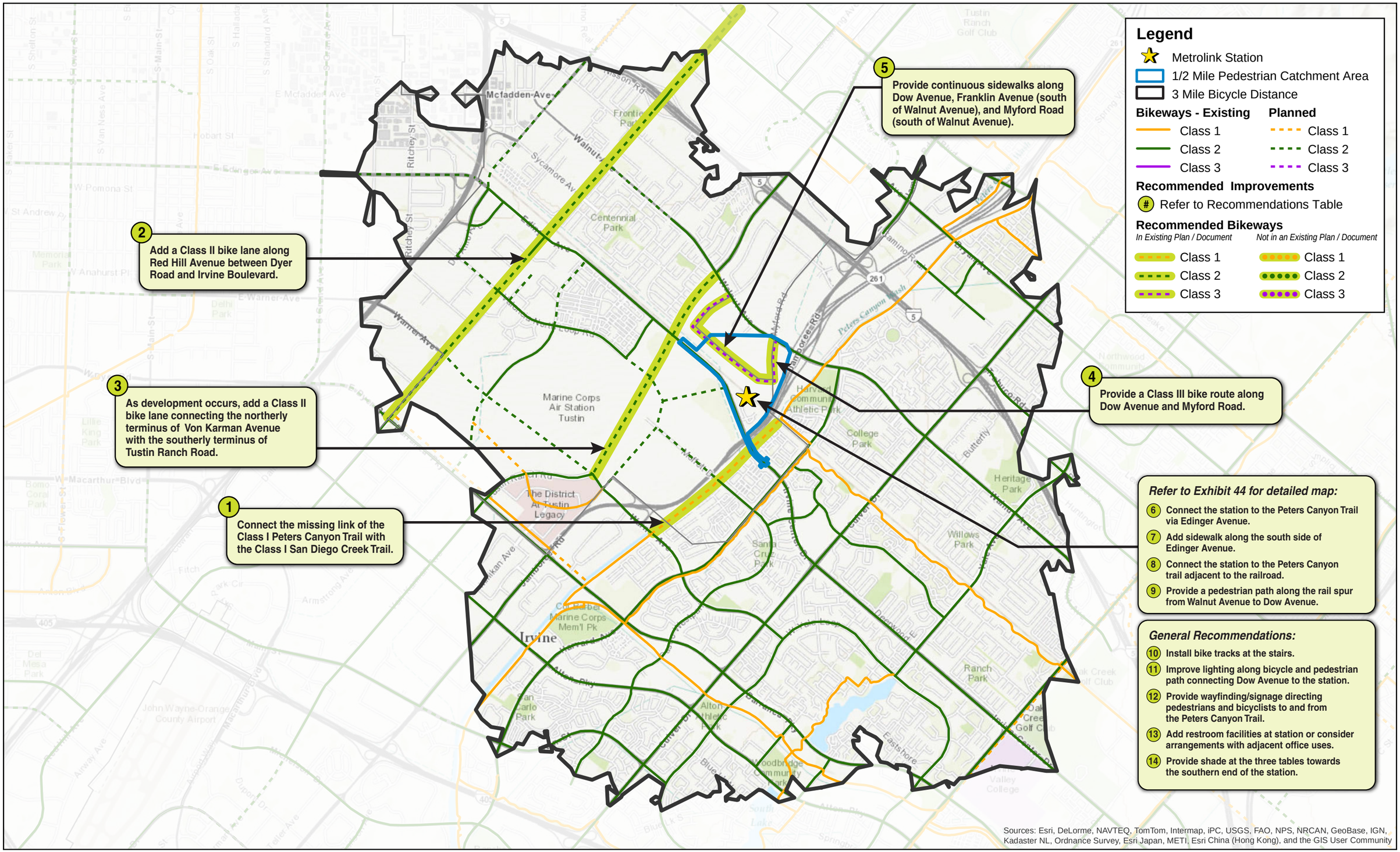
View of the station looking east.

Pedestrian connection between Dow Avenue and station.

Recommendations

Exhibits 43 and 44 show the recommendations identified in the following matrix.

Item #	Recommended Improvement	Pedestrian Related/ Bicycle Related	Metrics Affected	Included in Existing Plan/Document
1	Connect the missing link of the Class I Peters Canyon Trail with the Class I San Diego Creek Trail.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	
2	Add a Class II bike lane along Red Hill Avenue between Dyer Road and Irvine Boulevard.	Bicycle Related	Station Mode Split, Network Design, Trip Demand, Route Directness, Safety	
3	As development occurs, add a Class II bike lane connecting the northerly terminus of Von Karman Avenue with the southerly terminus of Tustin Ranch Road.	Bicycle Related	Station Mode Split, Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	
4	Provide a Class III bike route along Dow Avenue and Myford Road.	Bicycle Related	Network Design	
5	Provide a continuous sidewalks along Dow Avenue, Franklin Avenue (south of Walnut Avenue), and Myford Road (south of Walnut Avenue).	Pedestrian Related	Network Design, Catchment Area Effectiveness, Route Directness, Safety	
6	Connect the station to the Peters Canyon Trail via Edinger Avenue.	Bicycle Related	Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	
7	Add sidewalk along the south side of Edinger Avenue.	Pedestrian Related	Network Design, Catchment Area Effectiveness, Route Directness, Safety	
8	Connect the station to the Peters Canyon trail adjacent to the railroad.	Pedestrian and Bicycle Related	Network Design, Catchment Area Effectiveness, Trip Demand, Route Directness, Safety	
9	Provide a pedestrian path along the rail spur from Walnut Avenue to Dow Avenue.	Pedestrian Related	Network Design, Catchment Area Effectiveness	
8	Install bike tracks at the stairs.	Bicycle Related	Station Amenities	
9	Improve lighting along bicycle and pedestrian path connecting Dow Avenue to the station.	Pedestrian & Bicycle Related	Safety, Security	
10	Provide wayfinding/signage directing pedestrians and bicyclists to and from the Peters Canyon Trail.	Pedestrian & Bicycle Related	Information/Wayfinding	
11	Add restroom facilities at station or consider arrangements with adjacent office uses.	Pedestrian & Bicycle Related	Station Amenities	
12	Provide shade at the three tables towards the southern end of the station.	Pedestrian Related	Station Amenities	



Source: OCTA, Esri

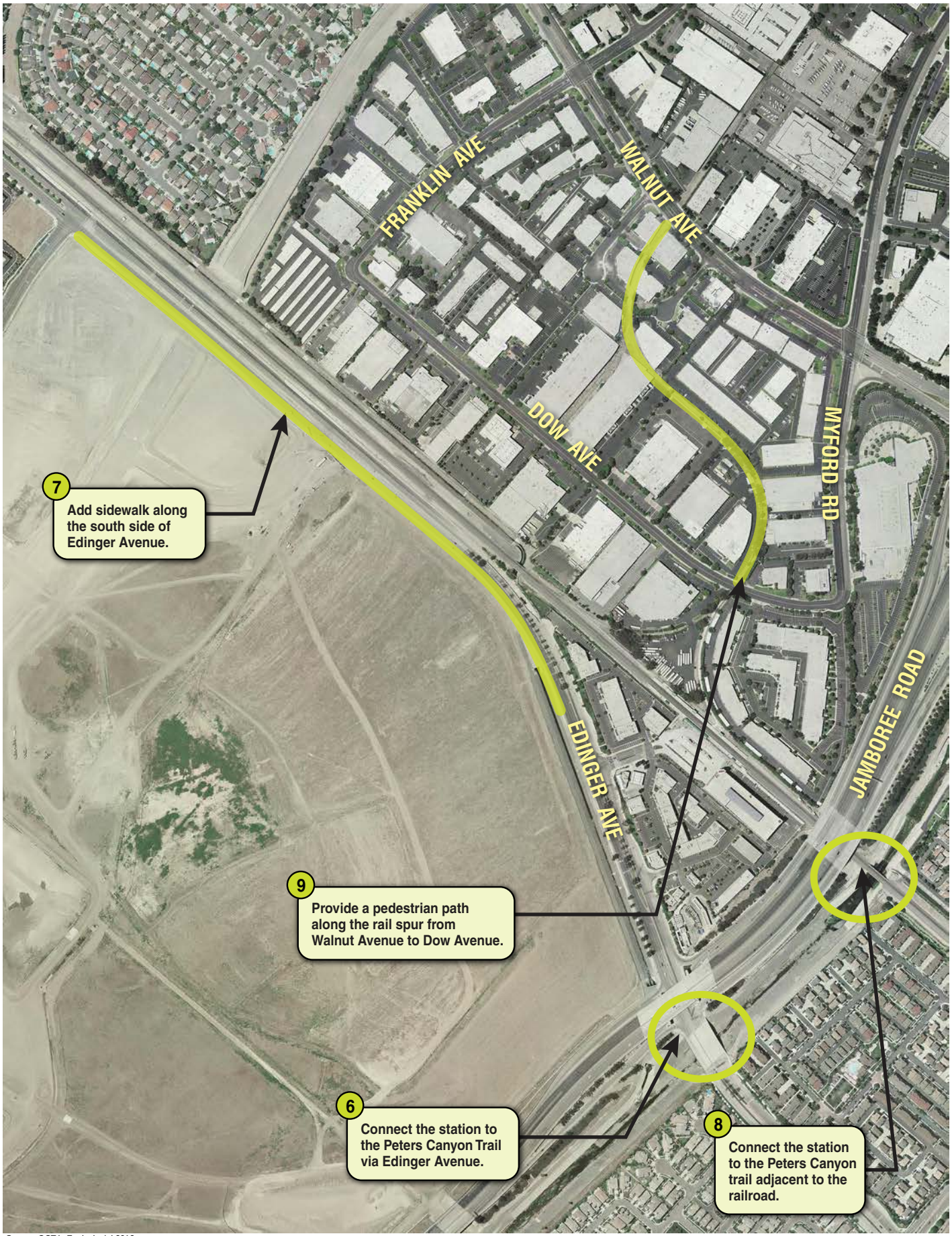
RBF A Baker Company

0 0.5 1 mile
APPROXIMATE

05/13/13 130374-19110 MAS

METROLINK STATIONS

Tustin Metrolink Station - Recommended Improvements



Source: OCTA, Eagle Aerial 2012

METROLINK STATIONS

Tustin Metrolink Station Recommended Improvements

RBF A Baker Company

NOT TO SCALE

05/13/13 130374-19110 MAS

Exhibit 44

17. IMPLEMENTATION AND FUNDING

Implementation

Many of the improvements identified in this report are recommendations for physical changes to station areas or roadways that are owned and/or maintained by local cities or the County of Orange. The intent of this report is to identify improvements that can be integrated into each City's local plans and projects.

A number of recommended improvements to the roadways and sidewalks can be incorporated into other local projects to reduce cost and construction timeframes. For example, a city is able to add crosswalks, bicycle lanes, improve bicycle lane and add sharrows upon resurfacing and repaving of streets. While other lanes are restriped, the crosswalks or bike facilities can be painted as well. Future road widening and construction projects are one means of providing bike lanes and enhancing sidewalks. Developers may also be required to dedicate land and constructed roadway widening to provide for enhanced pedestrian and bicycle mobility.

There are a variety of potential funding sources including local, state, regional, federal and private funding programs that can be used to develop or improve pedestrian and bicycle facilities and supportive amenities. The following sections summarize funding opportunities that may be used to implement the recommendations identified in the Accessibility Strategy. Specific available funding sources may vary by jurisdiction and some funding sources may be more applicable to specific improvements than others.

Local Funding Opportunities

General Fund

A city's General Fund is used to support ongoing City operations and services, including general government operations, development services, public safety and community services. Primary revenue sources for the General Fund include property taxes, sales taxes and intergovernmental revenues. Improvements and ongoing projects or programs should have general community-wide benefits.

General Obligation Bonds (G.O. Bonds)

General Obligation bonds may be used to acquire, construct and improve public capital facilities and real property. However, they may not be used to finance equipment purchases, or pay for operations and maintenance. G.O. Bonds must be approved by two-thirds of the voters throughout the Issuer's jurisdiction in advance of their issuance and typically require the issuing jurisdiction to levy a uniform ad valorem (property value) property tax on all taxable properties to repay the annual debt service.

Impact Fees and Developer Mitigation

Impact fees may be assessed on new development to pay for transportation projects, typically tied to vehicle trip generation rates and traffic impacts generated by a proposed project. A developer may reduce the number of trips (and hence impacts and cost) by paying for on- or off-site bikeway improvements that will encourage residents to bicycle rather than drive. Additional developer contributions to active transportation may be provision of amenities to facilitate walking or cycling such as bicycle parking, wayfinding signage, and shaded rest areas.

Business Improvement Districts (BIDs)

Business Improvement Districts (BIDs) are self-taxing business districts. Business and property owners pay for capital improvements, maintenance, marketing, parking, and other items as jointly agreed to through systematic, periodic self-assessment. These districts may include provisions for bicycle and pedestrian improvements such shaded rest areas, wayfinding signage, and shaded rest areas.

Landscape and Lighting Maintenance District (LMDs)

The Landscaping and Lighting Act of 1972 enables assessments to be imposed in order to finance the maintenance and servicing of landscaping, street lighting facilities, ornamental structures and park and recreational improvements. This could be used for bike path and sidewalks as well as lighting and amenities.

Special Benefit Assessment Districts

Special Benefit Assessment Districts (AD) are formed for the purpose of financing specific improvements for the benefit of a specific area by levying an annual assessment on all property owners in the district. Each parcel of property within an AD is assessed a portion of the costs of the public improvements to be financed by the AD, based on the proportion of benefit received by that parcel. The amount of the assessment is strictly limited to an amount that recovers the cost of the "special benefit" provided to the property. Traditionally, improvements to be financed using an AD include, but are not limited to, streets and roads, water, sewer, flood control facilities, utility lines and landscaping. A detailed report prepared by a qualified engineer is required and must demonstrate that the assessment amount is of special benefit to the parcel upon which the assessment is levied. Prior to creating an assessment district, the City, county or special district must hold a public hearing and receive approval from a majority of the affected property owners casting a ballot. Ballots are weighted according to the proportional financial obligation of the affected property. There are many assessment acts that govern the formation of assessment districts, such as the Improvement Act of 1911, Municipal Improvement Act of 1913, Improvement Bond Act of 1915 and the Benefit Assessment Act of 1982, as well as other specific facility improvement acts. Benefit assessment districts could be used to finance any of the capital improvements in this plan.

Parking Meter Revenues

Cities can fund various improvements through parking meter revenues. The ordinance that governs the use of the revenues would specify eligible uses. Cities have the option to pass ordinances that specify bicycle or pedestrian facilities as eligible expenditures.

State Funding Opportunities

Bicycle Transportation Account (BTA)

The State Bicycle Transportation Account (BTA) is an annual statewide discretionary program that is available through the Caltrans Bicycle Facilities Unit for funding bicycle projects. Available as grants to local jurisdictions, the BTA emphasizes projects that benefit bicycling for commuting purposes. Applicant cities and counties are required to have an approved bicycle plan that conforms to Streets and Highways Code 891.2 to qualify and compete for funding on a project-by-project basis. A local match of 10 percent is required for all awarded funds.

Safe Routes to School (SR2S)

The Safe Routes to School (SR2S) program is separate from the federal Safe Routes to School Program. This program is meant to improve school commute routes by improving safety to bicycle and pedestrian travel through bikeways, sidewalks, intersection improvements, traffic calming, and ongoing programs. A local match of 10 percent is required for this competitive program. Improvements adjacent to an elementary, middle or high school, or along a school route would be eligible for funds.

OCTA

OCTA is responsible for programming multiple local, state, and federal sources for eligible projects through multiple transportation modes, including bicycle and pedestrian. Through OCTA Call for Projects local agencies can receive allocation for projects that will improve infrastructure, transportation services and overall quality of life in Orange County that are consistent with the needs of the public and regulatory guidelines. Through various calls for projects, the OCTA makes state, federal and local funding available to the 34 incorporated cities and the county of Orange. OCTA's Call for Projects allocates available funds through a competitive process.

An example of funding for non-motorized transportation improvements was the 2012 Bicycle Corridor Improvement (BCI) Program Call for Projects, a $9 million bicycle program available to local Orange County agencies. The BCI Program is funded using federal Congestion Mitigation and Air Quality (CMAQ) funds. The CMAQ program provides funding through annual appropriations to Orange County to be used for transportation-related projects that reduce congestion and improve air quality. OCTA was responsible for selecting regionally significant projects for Orange County and working with Caltrans in administering selected projects. Projects eligible for CMAQ funding through this call included bicycle facilities and bicycle safety/outreach projects.

Environmental Enhancement and Mitigation Program (EEMP)

EEMP funds are allocated to projects that offset environmental impacts of modified or new public transportation facilities, including streets, mass transit guideways, park-n-ride facilities, transit stations, tree planting to mitigate the effects of vehicular emissions, off-road trails, and the acquisition or development of roadside recreational facilities. Every year $10 million dollars is available, with individual grants limited to $350,000. Cities, counties, councils of governments, state agencies, and non-profit organizations may apply. No match is required;

however, additional points will be given for matching funds. The State Resources Agency administers the funds.

AB 2766 Subvention Program

AB 2766 Clean Air Funds are generated by a surcharge on automobile registration. The South Coast Air Quality Management District (AQMD) allocates 40 percent of these funds to cities according to their proportion of the South Coast's population for projects that improve air quality. These funds may be used for bicycle or pedestrian projects that could encourage people to use non-motorized transportation in lieu of driving. The other 60 percent is allocated through a competitive grant program. A variety of bicycle and pedestrian projects are often eligible.

Per Capita Grant Program

The Per Capita Grant Program is intended to maintain a high quality of life for California's growing population by providing a continuing investment in parks and recreational facilities. Specifically, these funds are for the acquisition and development of neighborhood, community, and regional parks and recreation lands and facilities. Eligible projects include acquisition, development, improvement, rehabilitation, restoration, and enhancement projects, and the development of interpretive facilities for local parks and recreational lands and facilities. Per Capita grant funds can only be used for capital outlay. They may be used for bike paths and trails. This grant is given to local governments based on their population. The California State Parks Department administers the grant funds.

Roberti-Z'berg-Harris (RZH) Grant Program - Proposition 40

The Roberti-Z'berg-Harris Urban Open Space and Recreational Grant Program provides funds for acquisition of park and recreation lands and facilities; development/rehabilitation of park and recreation lands and facilities; major maintenance of park and recreation lands and facilities; and innovative recreation programs. The program aims to fulfill high priority projects that satisfy the most urgent park and recreation needs, with emphasis on unmet needs in the most heavily populated and most economically disadvantaged areas within each jurisdiction. The California State Parks Department administers these funds. Cities, counties, and recreation and parks districts may apply for them. The maximum grant request is $250,000 per project, and no match is required. Bike paths and recreational trails are eligible to receive these funds.

Proposition 84 – Statewide Park Program

The Statewide Park Act awards grants on a competitive basis to the most critically under-served communities across California for the creation of new parks and new recreational facilities. Bikeways and trails can be funded with this program, and they need not be in a park. Altogether, $368 million will be given in two funding cycles. The first funding cycle in 2009 awarded $184 million. Grants range from $100,000 to $5 million. No match is required. The California State Parks Department administers the Statewide Park Program funds.

California State Parks Land and Water Conservation Fund

This annual program provides funds for facilities that provide for public recreation. These are federal funds from the National Park Service that flow through California State Parks. Acquisition of land, construction and/or renovation of existing facilities and support facilities are all eligible for this grant. Projects that allow for biking on paved surfaces are a priority for this grant program. Generally, 60 percent of available funds will be allocated to Southern California.

Federal Funding Opportunities

MAP-21

The Moving Ahead for Progress in the 21st Century Act (MAP- 21) is the federal transportation spending bill passed in June 2012. Under MAP-21, bicycling and walking projects are eligible for the following core programs:

- National Highway Performance Program (NHPP)
- Surface Transportation Program (STP)
- Highway Safety Improvement Program (HSIP)
- Congestion Mitigation and Air Quality Improvement (CMAQ)
- Metropolitan Planning
- Transportation Alternatives.

The Cardin-Cochran amendment to MAP-21 requires 50 percent of all program funding to be distributed by population directly to local metropolitan planning organizations. The rest of the funding is administered by the States. Thus, MAP-21 funding is administered by the California Department of Transportation (Caltrans) and the local metropolitan planning organization (MPO).

The Highway Safety Improvement Program (HSIP) aims to achieve a significant reduction in traffic fatalities and serious accidents through the implementation of infrastructure-related highway safety improvements. These improvements may be on any public road or publicly owned bicycle and pedestrian pathway or trail, and can include the use of devices such as traffic signals, curb extensions, and crosswalks.

MAP-21's Transportation Alternatives combines the following SAFETEA-LU programs: Transportation Enhancements, Safe Routes to School, and Recreational Trails. Transportation Alternatives program funds are dedicated funds for bicycling, walking, and safety for all users. Biking, walking, and trails projects are also eligible for a handful of other programs such as Scenic Byways funds, Transportation, Community, and System Preservation Program (TCSP), and Tribal High Priority Projects.

The Transportation, Community, and System Preservation Program (TCSP) provides federal funding for projects that improve the efficiency of the transportation system, reduce the impact on the environment, and generally investigate the relationships between

transportation, community and system preservation. Eligible projects include improving conditions for bicycling and walking, better and safer operations of existing roads, new signals, and development of new programs. States, MPOs and local jurisdictions are eligible to apply for the discretionary grants. The Federal Highway Administration solicits a call for grant applications annually.

The Land and Water Conversation Fund provides States with funds based upon a national formula, with state population being the most influential factor. States initiate a statewide competition for the amount available annually. Bike paths and recreational trails are eligible uses of this money. Cities, counties, recreation and park districts, and any other entity that has the authority to develop or maintain a public park is eligible to apply. This program is a reimbursement program, and the applicant is expected to initially finance the entire project. A one for one match is required, and federal funds cannot be used as a match, except Community Development Block Grants.

Community Development Block Grants (CDBG)

The CDBG entitlement program allocates annual grants to larger cities and urban counties to develop viable communities by providing decent housing, a suitable living environment, and opportunities to expand economic opportunities, principally for low- and moderate-income persons. Local governments receive funds on a formal basis. Bicycle and pedestrian facilities are eligible uses of these funds. CDBG funds only pay for projects in areas of economic need. No match is required. Smaller cities in Orange County participate in a consortium with the County of Orange for CDBG funding. These cities receive funds through a competitive process from the County's overall CDBG allocation.

Rivers, Trails, and Conservation Assistance Program (RTCA)

The Rivers, Trails, and Conservation Assistance Program is the community assistance arm of the National Park Service. RTCA provides technical assistance to communities in order to preserve open space and develop trails. The assistance that RTCA provides is not for infrastructure, but rather building plans, engaging public participation, and identifying other sources of funding for conservation and outdoor recreation projects.

Private and Non-Profit Sources

Private Donations

Private donations for a variety of different types of projects are generally available from foundations, institutions, and corporations that have major interests in these areas.

Donor Programs

Some of the proposed improvements may lend themselves to a public campaign for donor gifts. Donor programs have been used very successfully in many cities for providing funds for streetscape and community design elements. Such programs can be tailored to solicit contributions from individuals, corporations, local businesses and community and business associations. Many improvements could be funded by donor gifts for items such as: benches,

trash receptacles, street trees, street tree grates, public art elements and information kiosks. Donors could be acknowledged with a plaque on the element itself or other prominent display, such as a "wall of fame" with donor names.

Grant Programs

Private and non-profit organizations provide grant funding based on their individual missions and funding sources. New grant opportunities are developing ongoing and agencies should keep abreast on potential grants. The following is a partial list of currently available grants.

Bikes Belong

The purpose of the Bikes Belong grant program is "To connect existing facilities or create new opportunities; leverage federal, state, and private funds; influence policy; and generate economic activity." Eligible facility projects include:

- Bike paths, lanes, trails, and bridges
- End-of-trip facilities such as bike racks, bike parking and bike storage
- Mountain bike facilities
- Bike parks
- BMX facilities

Generally, Bikes Belong will consider funding construction costs and matching funds for facilities projects. Bikes Belong is particularly interested in projects that serve a range of age and ability levels and that reach the "interested but concerned" riders - those who would bicycle more but don't because of safety issues.

Bikes Belong will NOT consider facility applications that request funding for:

- Feasibility studies, master plans, policy documents, or litigation
- Signs, maps, and travel
- Trailheads, information kiosks, benches, and restroom facilities
- Parking lots for bicycle facilities
- Bicycles, helmets, tools, and other accessories or equipment
- Events, races, clinics/classes, or bicycle rodeos
- Bike recycling, repair, or earn-a-bike programs
- Projects in which Bikes Belong is the sole or primary funder.

In 2013, Bikes Belong will accept Community Partnership Grant Applications only. These proposals must come from a partnership that is minimally comprised of one government agency or office, one non-profit organization, and one business. Proposals may be for facility or advocacy projects.

Evaluation

Increasing and enhancing pedestrian and bicycle access to transit stations has the ability to improve the experience of transit users, increase mobility options, and reduce reliance on auto access. Bicycling and walking also make it possible to increase transit ridership without a corresponding investment in additional automobile infrastructure. The environment at and around each station is different and there are a number of factors that influence mode split and transit ridership as a whole. Therefore, there is no one standard guideline for the potential impact that changes to the pedestrian and bicyclist environment will have on transit usage. In order to measure the impact of non-motorized access improvements on changes to transit ridership and user experience, agencies are encouraged to conduct an evaluation on a regular basis. This evaluation process may also help identify additional improvements as conditions change over time.

The evaluation process may include the following:

- Tracking changes to ridership after particular improvement is implemented.
- Surveying transit users to understand changes in their behavior and perceptions of the walking and bicycling environment.
- Bicycle and pedestrian counts.
- Follow up documentation of on-the-ground conditions.

APPENDIX A
Public Participation Summary

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Metrolink Non-Motorized Station Access Strategy

Public Participation Summary

January 2, 2013

Metrolink Non-Motorized Station Access Strategy Public Participation Summary

A. Introduction

During fall 2012, OCTA and RBF conducted a series of outreach activities to engage and solicit input from the community. These activities consisted of:

- An online survey
- Intercept surveys at the Metrolink Stations
- Three community outreach booths or "workshops"

The following summarizes each component of the outreach and public participation program.

B. Online Survey

The online survey was available from August 20, 2012 to October 20, 2012. The survey was developed using MetroQuest and included questions regarding current usage of Metrolink and access to the stations, perception of adequacy of existing facilities, and preferences for additional facilities and amenities. The survey also allowed participants to provide comments with spatial references using an interactive mapping tool.

The survey was promoted through OCTA's website, Facebook, Twitter, websites of local cities, e-mail newsletters, newspaper articles, flyers at the Metrolink stations and local businesses, and business cards that were passed out at community events.

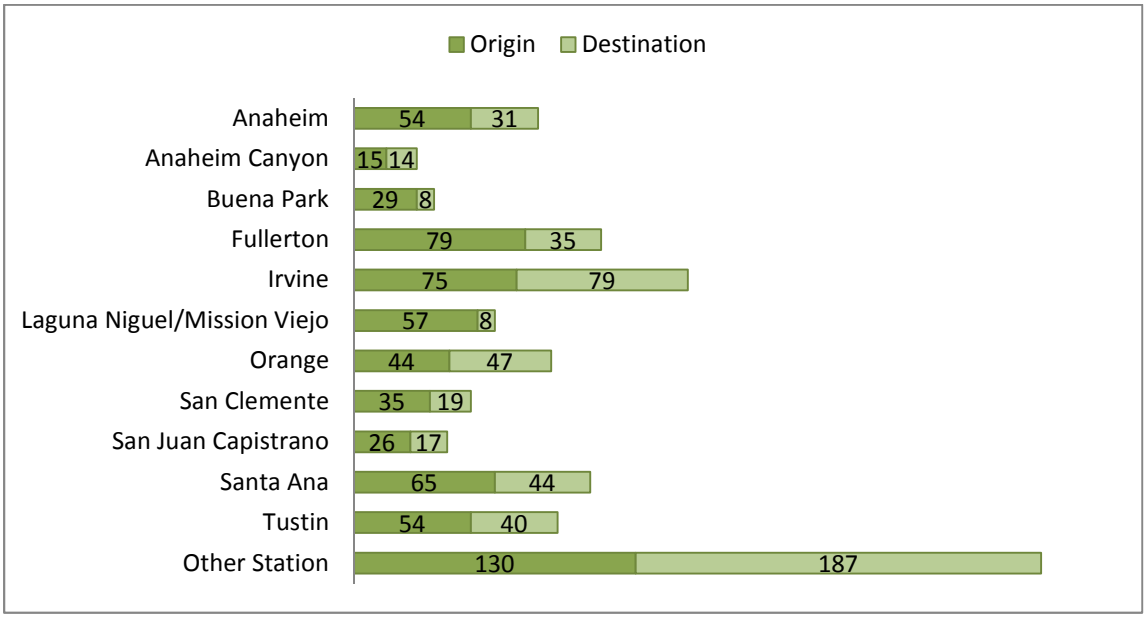
The survey was provided in English and Spanish. The promotional business cards included information about the survey website in both languages.

The survey website had over 1,200 visitors and 675 chose to participate by answering at least one question. In addition, hard copies of the survey were made available at the community outreach booths. Completed hard copy surveys were received via mail and entered into the MetroQuest survey system.

The following is a summary of the survey responses.

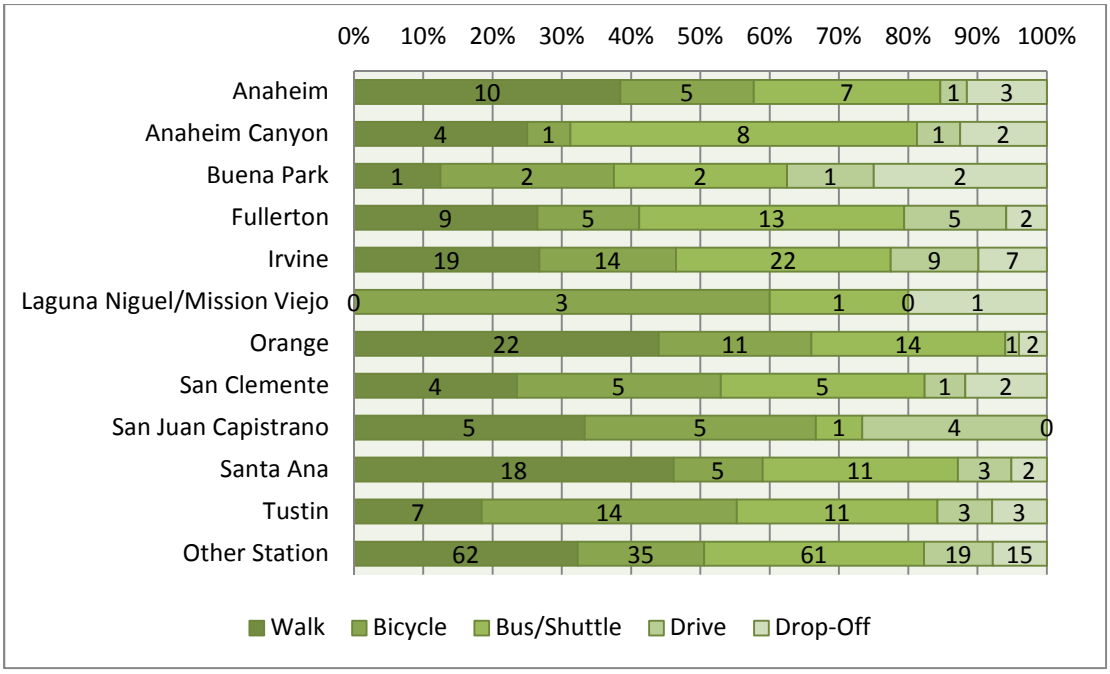
1. Origin Station and Destination Station

Please indicate your origin and destination stations. Origin Station refers to the first Metrolink station accessed (generally near one's home). Destination Station refers to the last Metrolink station accessed (generally near one's work or school).

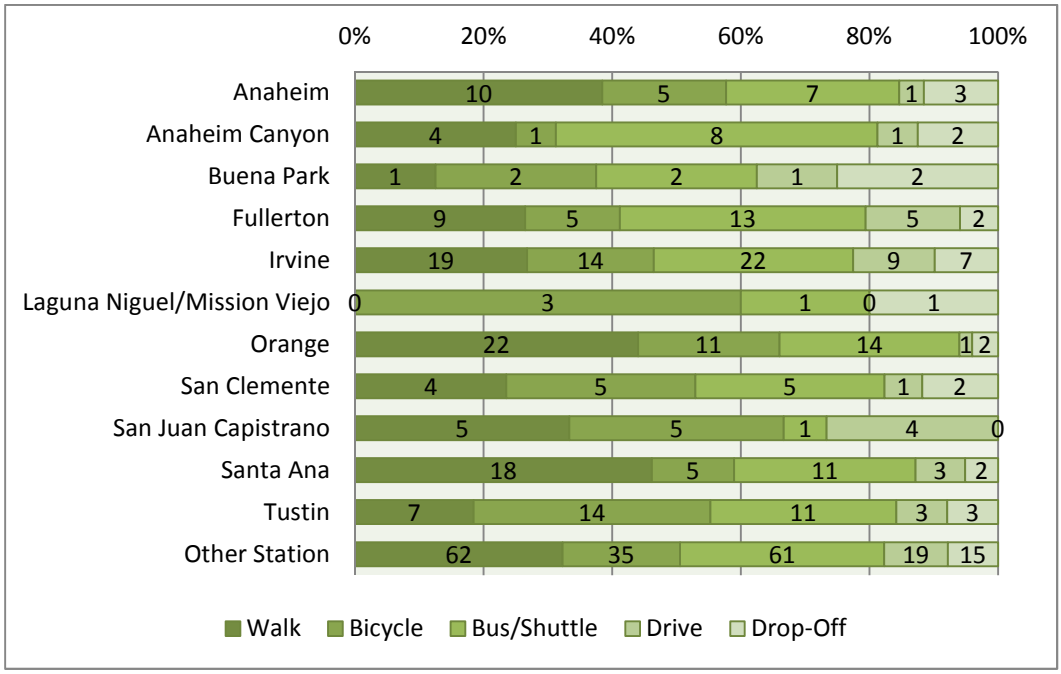


2. Station Access

How do you normally get to/from your Origin station? Select all that apply.

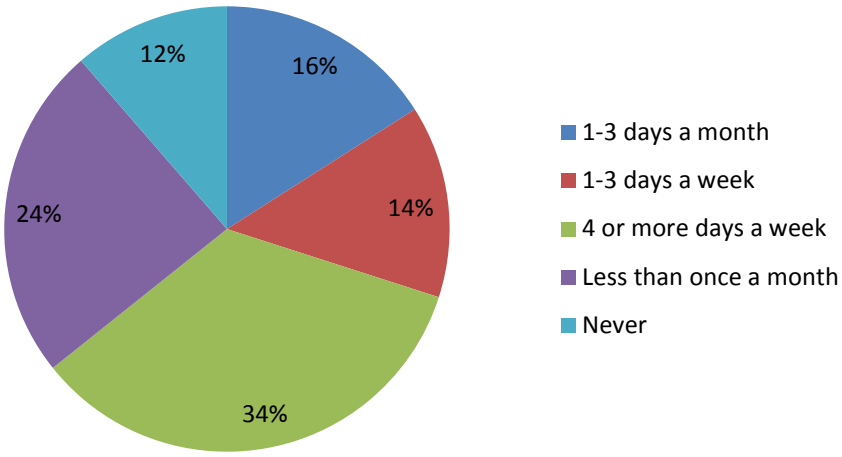


How do you normally get to/from your Destination station? Select all that apply.



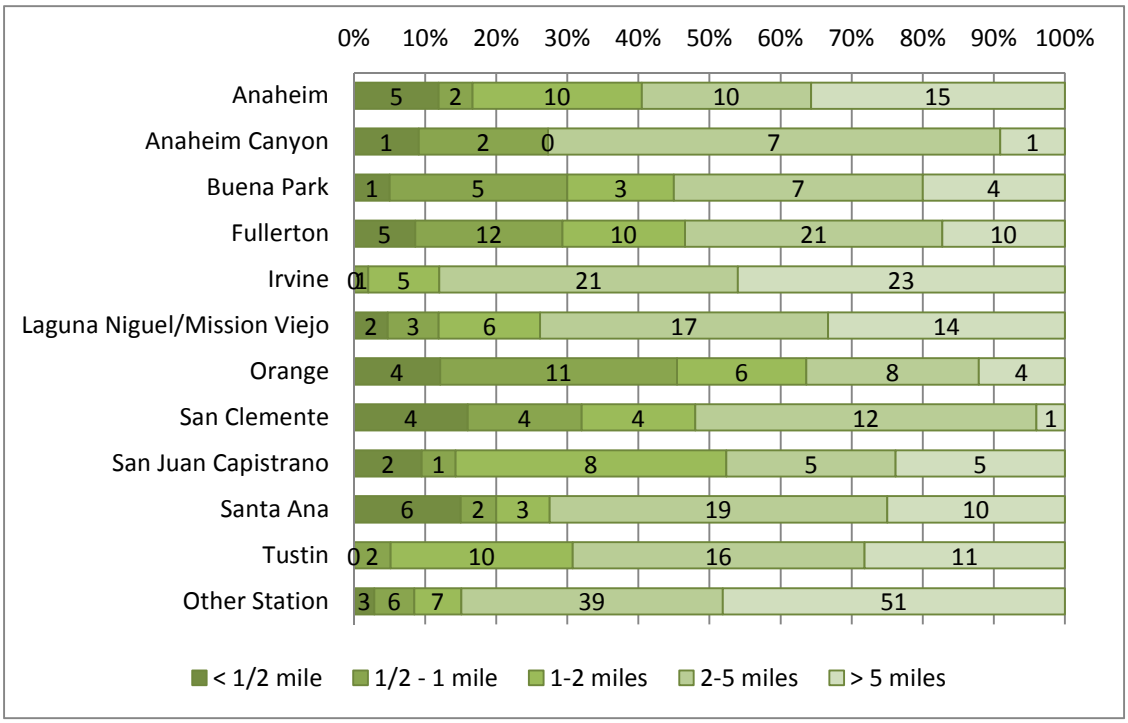
3. Travel Frequency

How often do you use Metrolink?

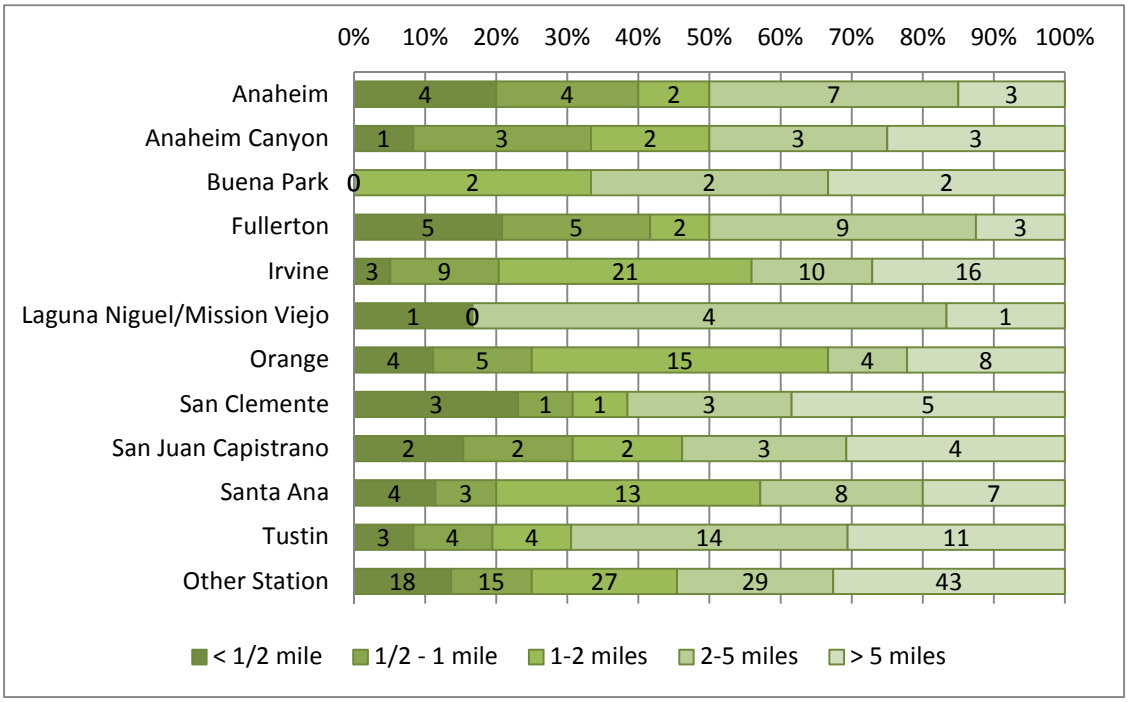


4. Proximity

How close do you live to your origin station?



How close do you work/go to school to your destination station?



5. Safety

Biking and walking are safe from car traffic at my origin/destination station.

Station	Average Rating (scale 1 to 5; 1=Disagree, 5=Agree)
Anaheim	3.36
Anaheim Canyon	2.71
Buena Park	3.64
Fullerton	3.24
Irvine	3.34
Laguna Niguel/Mission Viejo	2.60
Orange	3.63
San Clemente	3.17
San Juan Capistrano	3.71
Santa Ana	3.18
Tustin	3.24
Other Station	3.16

Security is adequate at my origin/destination station in the early morning and evening.

Station	Average Rating (scale 1 to 5; 1=Disagree, 5=Agree)
Anaheim	3.41
Anaheim Canyon	3.47
Buena Park	3.43
Fullerton	3.71
Irvine	4.08
Laguna Niguel/Mission Viejo	3.78
Orange	3.67
San Clemente	3.91
San Juan Capistrano	3.55
Santa Ana	3.37
Tustin	3.86
Other Station	3.60

Sidewalks and bike paths are provided to access my origin/destination station easily.

Station	**Average Rating (scale 1 to 5; 1=Disagree, 5=Agree)**
Anaheim	3.41
Anaheim Canyon	2.94
Buena Park	3.19
Fullerton	3.44
Irvine	3.57
Laguna Niguel/Mission Viejo	2.50
Orange	3.80
San Clemente	3.48
San Juan Capistrano	3.62
Santa Ana	3.38
Tustin	3.52
Other Station	3.33

Sidewalks and bike paths near my origin/destination station are wide enough.

Station	**Average Rating (scale 1 to 5; 1=Disagree, 5=Agree)**
Anaheim	3.23
Anaheim Canyon	3.13
Buena Park	3.10
Fullerton	3.57
Irvine	3.55
Laguna Niguel/Mission Viejo	2.67
Orange	3.75
San Clemente	3.64
San Juan Capistrano	3.69
Santa Ana	3.16
Tustin	3.43
Other Station	3.32

6. Route

The walking/bicycling route to/from my origin/destination station is direct.

Station	Average Rating (scale 1 to 5; 1=Disagree, 5=Agree)
Anaheim	3.56
Anaheim Canyon	3.40
Buena Park	3.55
Fullerton	3.64
Irvine	3.32
Laguna Niguel/Mission Viejo	2.71
Orange	3.70
San Clemente	3.56
San Juan Capistrano	3.71
Santa Ana	2.88
Tustin	3.50
Other Station	3.32

The route is comfortable for walking/bicycling to my origin/destination station.

Station	Average Rating (scale 1 to 5; 1=Disagree, 5=Agree)
Anaheim	3.23
Anaheim Canyon	3.20
Buena Park	3.62
Fullerton	3.41
Irvine	2.94
Laguna Niguel/Mission Viejo	2.38
Orange	3.67
San Clemente	3.39
San Juan Capistrano	3.30
Santa Ana	2.87
Tustin	3.25
Other Station	3.10

It is easy to cross the streets along the route I take to/from my origin/destination station.

Station	**Average Rating (scale 1 to 5; 1=Disagree, 5=Agree)**
Anaheim	3.48
Anaheim Canyon	3.25
Buena Park	3.20
Fullerton	3.51
Irvine	3.24
Laguna Niguel/Mission Viejo	2.52
Orange	3.65
San Clemente	3.44
San Juan Capistrano	3.71
Santa Ana	3.18
Tustin	3.05
Other Station	3.38

The route walking to/from my origin/destination station is shaded.

Station	**Average Rating (scale 1 to 5; 1=Disagree, 5=Agree)**
Anaheim	2.67
Anaheim Canyon	1.93
Buena Park	2.68
Fullerton	3.10
Irvine	2.26
Laguna Niguel/Mission Viejo	2.00
Orange	2.97
San Clemente	2.48
San Juan Capistrano	3.00
Santa Ana	2.72
Tustin	2.42
Other Station	2.67

7. Amenities

The origin/destination station I am likely to use is well-lit at night.

Station	Average Rating (scale 1 to 5; 1=Disagree, 5=Agree)
Anaheim	3.70
Anaheim Canyon	3.64
Buena Park	3.67
Fullerton	3.75
Irvine	4.14
Laguna Niguel/Mission Viejo	3.67
Orange	3.71
San Clemente	3.50
San Juan Capistrano	4.08
Santa Ana	3.60
Tustin	3.91
Other Station	3.68

Signs for biking and walking are adequate.

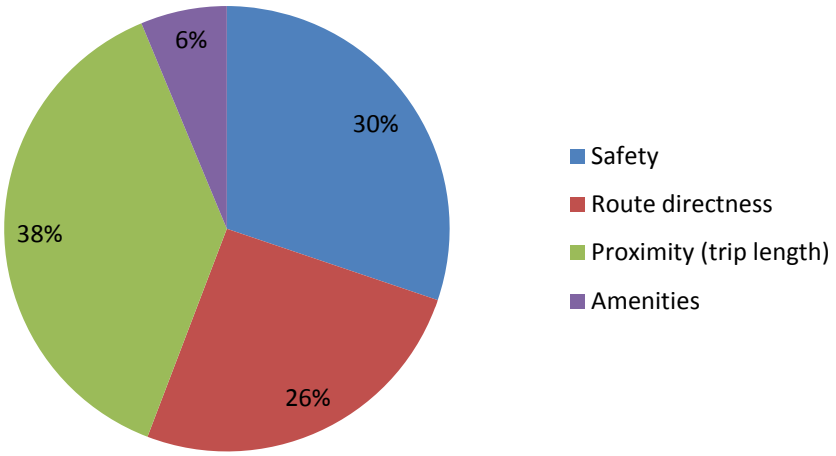
Station	Average Rating (scale 1 to 5; 1=Disagree, 5=Agree)
Anaheim	3.32
Anaheim Canyon	2.92
Buena Park	3.00
Fullerton	3.38
Irvine	3.49
Laguna Niguel/Mission Viejo	2.55
Orange	3.27
San Clemente	2.84
San Juan Capistrano	3.50
Santa Ana	2.97
Tustin	2.83
Other Station	3.16

Bike parking is adequate at the origin/destination station I am likely to use.

Station	Average Rating (scale 1 to 5; 1=Disagree, 5=Agree)
Anaheim	3.35
Anaheim Canyon	3.07
Buena Park	2.76
Fullerton	3.26
Irvine	3.51
Laguna Niguel/Mission Viejo	2.67
Orange	2.98
San Clemente	2.38
San Juan Capistrano	2.45
Santa Ana	2.84
Tustin	3.13
Other Station	2.92

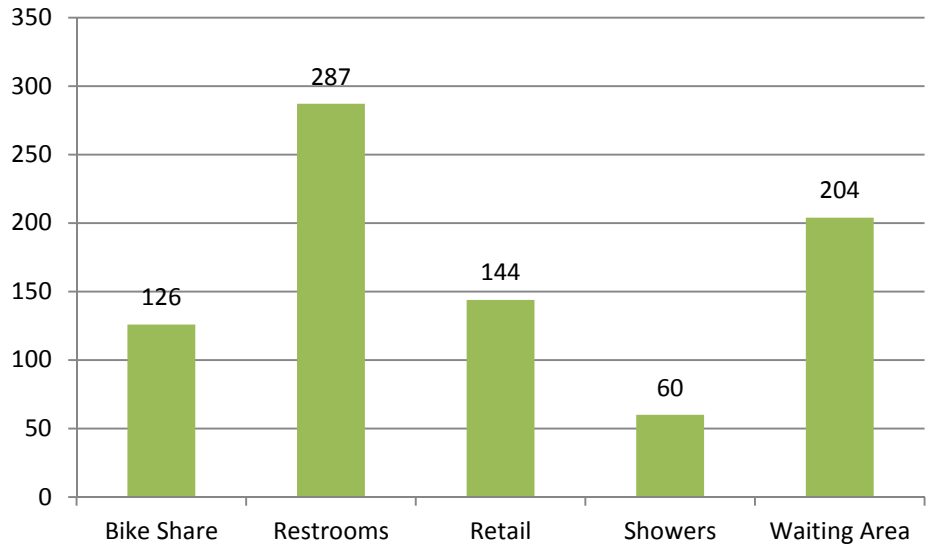
8. Priority

Which of the following is most important to you?



9. Other

The following amenities are important (select all that apply).



I would walk/bicycle more if:
(Comments are provided verbatim.)

- You had more bicycle sections on the trains and ALL trains should accept bicycles.
- You stop smoking at all metroling stations.
- Would prefer hanging style racks like on Amtrak.
- We primarilly use Metrolink to return from Oceanside to Irvine with our bikes. We used to use Amtrak from Solana Beach to Irvine, but they really do not like cyclists. Frankly we cyclists caused it with out thoughtless behavior.
- We need to be able to bring bikes on the train
- We have safety street, because in this moment it is dangerous.
- Walksides prohibit be used by bicycle users. They speed up and dont respect pedestrian. Police does not care about this situation in Santa Ana. Thank you
- walk, ciao!
- Union station had a place to store bicylces either during the day or overnight.
- Transportaion on the trains were cheaper Transportation on the trains were cheaper
- train service were more frequent
- Train 607 was not late everyday. 607 is late 2-5 min late everyday.
- This is really not an option- my final destination is 30 minutes away from the station and the walk from my origin station home is not long, but is in the sun and uphill. Biking is not important to me

- They had special parking for people who ride their bikes. When us the North Main Corona station I am unable to park on the train property. I mount my bike on top of my car and I am unable to park in the parking garage. The general parking is normally taken at ground level outside the parking structure. There are usually car pool spots that should be used for a reason like this.
- There were some kind of option when it rains.
- there were showers or changing stations.
- There were safer trails or painted sharrows on the road
- there were safer bike paths.
- there were more times offered for the route I use, I would use Metrolink more
- there were more routes from Riverside to Irvine
- there were more on-train bicycle slots. Usually in the morning people are seated in the fold-down seats in the bicycle area and I get the stinkeye when I board with my bike.
- there were more mid day trains running.
- there were more bus stops available
- there were more bike lockers. clamshells at North Main Corona do not prevent vandalism.
- there were more bike lockers at origin and destination stations. clamshells at NoMainCorona not sufficiently secure to prevent vandalism.
- There were MAPs with apx times and routes highlighting the different appoaches, and text messages to tell me when train is on time or late. There were printed MAPs with apx times and routes highlighting the different appoaches, and text messages to tell me when train is on time or late.
- there were lessons for adults who don't know how to ride a bike
- There were Class II bike lanes. Buena Park is almost void of any type of bike trails, paths, lanes, routes or Share-The-Road signs.
- There were bike sharing/rental facilities at Metrolink Stations
- there were bike racks that were sheltered from the rain. Also, metrolink needs Wifi.
- There were bike lockers at the Buena park station. My last bike was stolen at the station. Couple of people I spoke with also had their bikes stolen from the bike stands at the Buena Park station.
- there were better bike routes to and from the metrolink stations - problem is around the freways. we would benefit from bike routes that are adjacent to the railwaay line like other cities
- There were Arial bike paths
- There were a crosswalk on East Walnut Ave on the south side of the Fullerton Metrolink Station. This street is crossed by pedestrians and bicyclists looking to ride the metrolink as well as students coming from South Fullerton to reach Fullerton High School. Unfortunately, there is no signage to alert drivers to slow for pedestrians and no crosswalk either. Many motorists drive on this street at high

speeds because it appears to be in a vacant or industrial area. There has already been an instance of a bicycle/vehicle collision in this vicinity, which resulted in an injury to the bicyclist. A crosswalk or signage alerting motorists to slow their speed for is a needed improvement.

- There were a bike sharing program.
- There was more space on the train for bicycles
- there was more areas to go to by train and bus
- There was late night route access
- there was enough room in train for bikes.
- There was better transportation to my metrolink station
- There was an incentive for being more green.
- There was adequate cover while waiting for the trains. The routes were safer - especially for walking. There are two fairly direct paths to the station I most often leave from (Tustin) - but neither have sidewalks and where there are sidewalks -the require extra crossings of busy streets.
- there was a station closer to where I live.
- there was a safer route to the Fullerton station
- there was a safer path of travel along Grand Ave. Due to the amount of traffic it is very unsafe for bicycle use.
- there was a light or stop sign where a bike route is forced to cross a road that is a frwy on ramp. This is at Culver & 405 in Irvine. Cars don't stop,they are focused on getting to frwy. Need bike path to go under or over frwy entrances.
- There was a dedicated bike path that ran closer to my house (Bristol/Warner)
- There was a closer station.
- there was a bike sharing program
- there was a bike path from my destination station to my workplace.
- there are more bike lanes
- The were direct bike paths and bike routes connecting to and from the train stations to major attractions or common areas. I love the new bicycle cars, that has been a MAJOR help!
- The train stations were in residential neighborhoods instead of being in industrial open spaces with limited access to gain entrance.
- The train schedules were more regular and better operating hours. Every large Metro in the country has a train/light rail service. Metrolink should get smaller trains and run more often and hit every station at regular intervals. I don’t use Metrolink very often because the schedule is so spread out. There should be a train every 20min, in each direction hitting every station in the district not select stations. Also the cost of Metrolink in prohibitive, its normally cheaper to drive.
- The train schedule operated in more frequency in the evening time.
- Even if I purchased the pass where I could ride Amtrak as well, the trains don't line up to my scheduled release time at work and therefore would force me to wait 90+

minutes for the next train. This is inconvenient and makes driving much more accessible and easier despite rising gas prices. "

- the train frequency is more. At times, you tend to drive because the train timings do not suit. More frequency of trains will bring in more commuters.
- The tickets are cheaper.
- the station were closer to the businesses/airport area of Irvine/Santa Ana
- the station was closer to my house in Garden grove
- the station was closer to home and had a clearly defined back path for the full route.
- the station was close enough.
- The route were flatter. Also, had tire issues.
- the route from my home/work to the stations were easier/safer/shorter. A lot of hills and busy streets.
- The roadways incorporated cyclsits rather than exclude them by making lanes too narrow with no bicycle lanes at all.
- The path there were safer.
- The Orange station needs more seating, shaded areas and covered areas for rainy days.
- The number of stations was better, but I also understadn that woud mean longer transit times from start to finish
- the major street Camino Capistrano was more lit up at night on my way home then I would take the train more, that's the only downside to taking the train. Also, if you had more service on the OC Line.
- The Laguna Niguel station has construction on Crown Valley. I understand this but the road to that area is somewhat tight. I believe that after word is done this will improve. I do not come from the Camino Real side, but from Crown Valley
- The Irvine station had an underpass under the tracks instead of always waiting for the elevator which sometimes breaks down.
- The bike routes were to lead me directly into the station without having to take up a driving lane on the road.
- The bike routes to the stations were safer.
- The bike rack on the bus is filled up.
- The bicycle trails to and from the stations were better. For example, the Peter's Canyon bike trail gets about 300 yards from the Tustin train station, but to get to the station from the bike trail one must ride over a mile out of the way.
- Stations were more accessible or light rail was available from beach communities
- Sidewalk was there
- Showers were avaialbe to use and transit options were also avaiable that would accomidate bikes
- Separate Locker or secure storage area for reg bike or smaller folding bike on the train (so i can sit).

- Safe route
- Route was safer; bicycle parking was closer to platform.
- Roads were easier
- rather walk
- Ramp at mission viejo
- Please connect the Peters Canyon Trail from the Irvine City Hall to Tustin Metrolink Station.
- origin station was closer to my home.
- OCTA & Metrolink offered more safe and more secure bike racks for passengers to safely secure their bikes at stations.
- Not relevant as I have not owned a car in 34 years.
- not applicable as I have not owned a car in nearly 34 years
- no comment
- Need a sidewalk along Barranca between the station and Alton. Should be easier to carry bikes onto the train--the one time I tried it, I couldn't figure out how to secure my bike.
- Near work location
- my origin station had better sidewalks, and easier access to buses as well
- My job were closer to the train station.
- my first day job was very close
- My Destination station Norwalk. BTW, Norwalk needs drinking fountains!!!!!
- My destination station is LA Union station, and I work too far away to bike or walk safetly. My origin station is also too far to walk and I live on a hill so I wouldn't be likely to bike there either.
- My city is very hilly, so it limits my ability to get to the station. Can't get rid of the hills. Everything besides that is pretty good
- My bike wasn't stolen as often
- More shortcut bike paths are provided and special incentives given to bikers in metro pass or free community rides.
- More off road bike paths were available.
- More of a Direct Bike Path
- More frequent trains
- more frequent route times - faster to ride all the way than wait for next train
- More direct bus connecting routes.
- More direct access
- more cities had adequately shadded and safe bicycle lockers.
- more bike paths. less shared road routes
- More Bike Paths in Orange County
- More bike lanes to and from the Metrolink stations
- More bike lanes to and from each metrolink station please.

- It were safer at night from Santa Ana civic center to the station.
- It were safe. Streets in Anaheim are hellish for peds/bikers.
- it were easier to move over the pedestrian bridges or better places to park a bike.
- it were closer to home
- It wasn't so damn hot and if it weren't to far from home a night
- it was safe
- it was not so Far.
- it was more less time for me, but i'm on a time limit
- it was fesible and the stations are safe
- It was easier to determine which train had the bike rack available. Its seems only certain schedules have this available and at times it is not available for popular recreational routes such as Orange county ride to San Diego or San Diego to Orange County
- It was convenient
- it was cleaner
- It was cheaper to ride the metro than drive
- It needs to be safer to leave a bike at Fullerton. In a couple months, I knew of FOUR stolen bikes, including mine. The police won't even take a report so there may be many more.
- It fit my schedule or I made a personal commitment to do it.
- it does not take too long to get to destination
- It didn't cost me more to take the train and ride my bicycle to work than it does to drive.
- The only two advantages to taking the train on my daily commute would be
- I dont have to drive
- Makes my 40 mile round trip bicycle commute about 15.
- it did not rain.
- Irvine weren't so car-centric. Distances too far to walk, nothing in vicinity of Irvine station. Bicycling is an ok option but need change of clothes, and secure parking (absent a bike share program).
- if transit was more direct in my neighborhood
- if there were sighns posted
- If there were sidewalks or better bus connections provided to the Laguna Niguel/Mission Viejo station.
- If there were more trains available to take. There are only a handful in the morning and then large gaps toward the afternoon. Returning from Irvine to San Clemente is also limited. Biking/walking/amenities has nothing to do with me not taking the train!
- If there were more shade.
- If there were later (evening) trips as well as improved weekend hours (and better syncing with the SD Coaster).

- if there were a bike lane along Cerritos ave in Anaheim
- If there was an origin station in Diamond Bar area that goes to Orange County
- If there was always an extra car on the train just for that
- If the distance was shorter
- If station was closer to my home
- If my origin station was closer.
- if it wasn't so far and there was shade and benches along the way...I need a tricycle
- If IRV station had bike lockers available so I could keep my bike there.
- If I could find a good bike.....
- If facilities were more adequate to accomodate.
- If connectivity to train was safe.
- If class 1 bike trail is made available from mission Viejo to Laguna Niguel/ mission Viejo station
- If bike lanes were available and safe the entire route to the station
- I wouldn't use the bike sharing program, but I think its a great idea in the major city locations. Bike lanes should be installed near all metrolink stations. Indoor waiting and retail would be nice, but not necessary.
- I would walk to the station if it were closer.
- I would consider using the bike sharing if the program was available at the Orange Depot
- I would both walk and bicycle more if it were safer to do so. As it is now, only the bravest of people bicycle around the area I live in.
- I would bike more if there were more innovation in bicycling infrastructure such as protected bike lanes or buffered bike lanes especially on Campus Drive near University of California, Irvine when bicyclists are traveling next to automobiles moving 55-60 miles an hour.
- I won't bicycle; it is too dangerous. I won't bicycle; it is too dangerous. You people are kidding yourselves.
- I wish there were more connections by rail and bus between OC and LAC. They should never have abolished Pacific Electric.
- I wasn't afraid of being injured by negligent drivers of automobiles.
- I was closer to the stations
- I walk mostly already, I would just like to see a general improvement in facilities and amenities at the stations I frequent. Santa Ana is ok, but Fullerton could use restroom upgrades and additional covered/indoor waiting for inclement weather conditions
- I pretty much bicycle exclusively so I wouldn't do it more but it would be better if there were bike cars on EVERY metrolink train.
- I prefer to drive to the station.
- I personally don't have any concerns/ problems
- I NEEDED ONE

- I need to drop off my children on the way so I need my car. At my destination, I walk.
- I lived closer to the metrolink station or if there were a more direct and easy to travel route to the station, such as a bike trail.
- i lived closer to my origin station
- I lived closer to a station.
- I lived and worked close enough to both origin and destination
- I live to far from a station and in the hills. Walking or biking is not an option.
- I knew where I could leave my bike during the day while I was at work. I want it to be safe so I don't come back to a bike with one wheel missing.
- I had the time.
- I had secure bike parking and showers available for occasional/day use.
- I had access to store my bike and knew it would be safe.
- I had a new bike
- I had a indoor secure place for my bicycle.
- I had a bicycle.
- I got a tax break
- I felt safer walking
- I felt safe biking from home to Metrolink station
- I do walk to my destination in Orange, however, my origin is not very safe so I drive.
- I didn't live at the top of a really big hill.
- I didn't have to cross over the 405 freeway to get to the Irvine station. I don't feel safe crossing the off ramps. I didn't have to cross over the 405 freeway to get to the Irvine station. I don't feel safe crossing the ramps.
- I could somehow shower in the summer months before reaching my destination.
- I could get a bike locker at the Orange Station. I have been on the waiting list for at least a year and have had several things stolen off my bike while locked there.
- I could efficiently travel by bicycle to and from the station without having to deal with the heat or cold/rain/etc. I doubt if I would ever do either in my current situation simply becuase of the distance and time it would take to bike and walking is out of the question.
- i can bring my surf board or fishing pole,, i love the bike cars and believe there is room for poles and boards
- i can bring my surf board or fishing pole
- with the great bike cars i see this posable
- I can always have bike at the bus stop always
- I bike to the Metrolink station despite current conditions. I would like to see more Bike Cars and more bike lanes to/from the Buena Park station and surrounding Union Station
- I already do :)

- Hills are too steep, need more train service in the morning southbound Laguna Niguel to Oceanside
- Getting to the station was easier. Getting to the Laguna Niguel station is scary and makes me uncomfortable. It doesn't really even have a sidewalk.
- Also, it's very irritating when there are only two spots on the bus for a bike. I've had countless bikes stolen and vandalized because I've had to leave them at a bus stop.
- For the current iteration of my commute, it is not easy to bike or walk to my station as I am more than a 20-30 minute bike ride from the station.
- Enclosed bicycle lockers were provided. Uphill ride from my destination station makes the seven miles impractical for commuting. Need a shuttle.
- Crossing the 2 main streets were not so dangerous and if they had a bike car on all the times. Also if they were not late all the time.
- Cross over train tracks needs to be underpass rather relying on the elevator @Buena park stn
- covered, secure bike parking and/or lockers were available at all Metrolink Stations.
- commuter hours were later in the evening and often on the weekends as well. It's no fun waiting 50 minutes or getting stranded in another town in the middle of the night.
- Closer to work
- Bike lanes!
- bike lanes where marked more clearly or buffered. More shade trees along Edinger Rd in Tustin. More bike signage at Tustin station to let autos know that bikes can access the same roadways.
- Bike lanes were wider
- Bike lanes are necessary around stations.
- Number of bike racks are not enough, especially Amtrak.
- Direct Path from new parking structure in Fullerton to track 3 is strongly recommended.
- Station annoouncements for Metrolink is must be given!
- Announcemnts in LA Union Stations are not understandable. Please improve the sound system! "
- Better on-train bicycle transport. I want to ride my bicycle to Oceanside and return on the train with my bicycle. This is normally done in groups of 5-20 bicyclists. In general, I'm primarily interested in riding my bicycle to a destination, and returning on the train with my bicycle. This must be easy, without additional drama.
- better luzes
- Better bike routes in Anaheim
- Barranca had a sidewalk.. Its pretty dangerous
- Anaheim City sponsored from and to Anaheim Canyon station from City Hall
- Amtrak was not so expensive. Metrolink is priced more fairly
- a) my bike hadn't been stolen from Santa Ana station

- b) it wasn't such a hastle to bet the bike over to Track #1 at Santa Ana Station c) I didn't have a risk of NOT getting on train because there is no more bike space
- A bus route was closer to the origin station.
- A bikestation program were to be created along the OC/LA Metrolink line.
- a bike sharing program was avaiallbe for a small fee.
- A bike path was near the Orange Station
- A bike path connecting Tustin station to the canal path in Irvine that goes to back bay was built. This would allow off street access to a large portion of Irvine businesses.
- Also, providing free commuter parking at San Juan Cap station would allow me to decrease my drive distance from home. I drive an extra four miles to rake advantage of the free parking at LNMV station.
- I didn't have to go out of my way to get to work.
- Shuttles or buses were provided and run more frequently.
- More stations were available
- There were bicycle cars on most rush hour trains in both the AM and PM

10. Interactive Map

Survey participants had the opportunity to indicate places where they would like to see changes or improvements using an interactive mapping tool. Comments could be provided in the following categories using different markers:

- Bike Locker/Rack
- Bike Lanes/Path
- Conflict/Barrier
- Signage
- Lighting Improvements
- Other Improvements

After the survey was closed, comments in the “Other Improvements” category were separated into two new categories – Amenities and Safety.

A full list of the marker locations and associated comments are provided in Appendix A. An interactive map with the markers and comments can be found here: https://www.google.com/fusiontables/DataSource?docid=1ECMD5il693EpaGEP_ntByQl9NDbS9BIDcotbQZU

C. Intercept Surveys

From August 20th through August 22nd, 2012, RBF staff conducted intercept surveys at each of the Metrolink stations during the morning and evening peak commute hours. Staff spent approximately one and a half hours at each station. During this time, they handed out approximately 750 cards with information and the url for the online survey and approximately 20 hard copies of the survey. In addition, staff conducted surveys using the MetroQuest website on iPads. Results from the intercept surveys area included in the Online Survey summary above.

D. Community Outreach Booths

Three outreach booths or "workshops" were set up at larger community events to provide information about the project, solicit input on barriers to walking and bicycling to the Metrolink stations, and generate ideas for improvements. Generally, one workshop was held in each of the geographic areas within Orange County - north, central and south. The events were:

- Old Towne Orange Farmers and Artisans Market – September 22, 2012
- Orange County Great Park Farmers Market – September 30, 2012
- Art Fair in San Juan Capistrano – October 13, 2012

Aerial photos of each station area were available for participants to note specific challenges or barriers to walking and biking. In addition, participants were asked to write responses on Post-It Notes to the question: What would encourage you to walk or bike to the Metrolink stations?

RBF and OCTA staff answered general questions about Metrolink, bikeways in Orange County, transit options, and services provided by OCTA. Cards with information about the online survey were distributed at the booth and to other Farmers Market visitors. Giveaway materials were available for children and adults, such as coloring pages, pens, bikeways maps, OCTA blue "stress cubes", and candy.

Approximately 1,000 people visited the Old Towne Orange Farmers and Artisans Market on the day we were there. Approximately 80 people visited the booth or were provided with survey information. Approximately 1,270 people visited the Great Park Farmers Market on the day we were there and an estimated 100 people visited the booth or were provided with survey cards. Approximately 60 people visited the booth at the Art Fair in San Juan Capistrano.

1. What would encourage you to walk or bike to the Metrolink stations?

The following is a summary of community input received at the three outreach booths in response to the question: *What would encourage you to walk or bike to the Metrolink stations? (Comments are provided verbatim.)*

Additional Bikeways/Improved Bikeways

- Improve Orangewood undercrossing at 5 and 57 freeways
- Physically separated bike lanes
- Bike lanes on Chapman Street
- More bike trails – off street
- Chapman & Tustin – bike lanes!
- Extend bike path to Edinger from Tustin Station
- Bike and Ped safety – Need physical barriers to separate bikes from cars
- Open toll roads to cyclists

Station Amenities

- 24 hour access to restrooms and guard is important at Irvine station
- Bike lockers at Irvine stations
- Ticket terminal down too long @ Laguna Niguel
- Vending carts at stations (nice carts) so riders can grab water or coffee while waiting for the train
- Tustin station – needs restrooms
- Laguna Niguel – parking off Avery
- More information at electronic signs would be an improvement
- More bike racks at SJC station (and visible)
- Ticket turnstyles

Supportive Amenities

- Bike racks near shopping – visible, secure
- Bikeshare for recreation/tourists
- Add wifi to trains – could add nominal fee to ticket
- Higher frequency ticket checks by conductor and law enforcement
- Buy ticket on the train, not just at platform in case you are running late
- Metrolink card for payment would be more convenient
- Maintain clean restrooms on train
- Bike racks at shopping centers
- Bike storage reservations on board
- Bikes on iShuttle allowed?
- Bike storage on bus – allow bikes on bus if racks are full

Pedestrian Facilities

- I'd walk if the sidewalks were shadier! (and wider!)

Special Events

- Bring back the Holiday Train!!!
- The Christmas Train was a great community event

Improved Transit Connections and Frequency

- Understanding bus schedules = challenge
- Bus schedule not aligning with train schedule
- Feel uncomfortable taking the bus
- More frequent train service
- Shuttle to Irvine station from SNA
- More frequent mid-day weekday service to LA
- Shuttle to airport (LAX)
- Improve the Orange to Riverside train schedule. Who can start work in Riverside at 9:45 am each day? Train 850 is the earliest train. It's not based in reality of work schedules!
- Night owl train back from LA
- Connect transit to major destinations – stadium to Disneyland to Norwalk transit/Green Line to Fashion Island
- Late night service for travel back from LA nightlife
- bus line on Chapman
- Fast connections from other stations to places anyone actually goes.
- More train options – especially southbound in afternoon
- Coordinate schedules
- Connect to Coaster
- Frequent trains back from LA
- More bus access – especially from Newport
- More frequent service

Station Location

- San Clemente – North Beach not as easy to access as pier
- Location – Irvine station not near destinations

Other

- Improve Angels Stadium station – LIKE!
- More time!
- Time & safety
- Info sessions at schools for kids and parents
- Shared card between LA/OC/SD
- Company discounts
- Educate and excite kids so next generation will walk/bike/take transit
- Concerns with safety for children
- Ecololgy center – provide info
- Mobility from destination station (getting around once you get there)

2. Barriers and Challenges

The following barriers or challenges to pedestrian and bicycle access to the stations were noted on the aerial photos:

Anaheim Station

- Homeless – safety concerns along river at Katella
- Flying bugs/gnats along river affecting comfort while riding
- Ride on Katella from Santa Ana River to Metrolink station difficult

Fullerton Station

- Another ticket vending machine on south side.

Irvine Station

- Connect station to bike path to the north along railroad
- Shuttle from station to John Wayne Airport area
- Bike tunnel onto base and up perimeter road
- Shuttle to SNA from Irvine train station
- Shuttle for John Wayne airport to Irvine station
- Connect to JWA airport area from station?

Laguna Niguel/Mission Viejo Station

- Trail between Cabot and Forbes along easement per County plan
- Is there a bathroom at this station?

Orange Station

- Connect to Santiago Creek
- (mid-block) Crosswalk to parking lot on Cypress and Maple
- Wider sidewalk needed here please (Chapman Ave. adjacent to station and to the east)

San Clemente Station

- More frequent service needed from San Clemente
- Bike lanes on El Camino Real

San Juan Capistrano Station

- Need a place to keep my bike (bike lockers?)
- Need guard rail between cars and pedestrians on Del Obispo St. bridge
- High traffic right around station
- Narrow sidewalks by SJC mission
- Hard to bike on Los Rios and around SJC Station with competing cars and peds
- Connect Old Town with SJC North of freeway using bus when Ortega/I-5 interchange is under construction.
- Camino Capistrano is hard to bike

Santa Ana Station

- Connect to Santa Ana to the north (on Lincoln and connect to Santiago Creek)
- Grand Ave. – hard to bike
- Connect to Class I bike path to southeast
- Route along railroad from Santa Ana to Irvine
- People don't know train station is here – try signs in the area
- Gang activity at Lincoln and Washington – feel unsafe

Tustin Station

- Extend bike path to Edinger
- There's nothing here. Could use a place to get a drink
- Make connections to new neighborhoods when they're built
- Connect bike path past Harvard to station

Latitude	Longitude	Marker Type	Comment
33.78833	-117.85762	Amenities	add more ticket kiosks on both sides of tracks to avoid busy lines
33.65651	-117.73307	Amenities	It would be great to have safe, clean and secure places to stored clothes and take a shower at key stations.
33.50123	-117.66322	Amenities	Need coffee shop
33.75131	-117.85672	Amenities	Need more ticket vending machines
33.55368	-117.67437	Amenities	Electric vehicle charging stations needed!
33.55474	-117.67471	Amenities	Covered waiting areas
33.78854	-117.85766	Amenities	Covered waiting area
33.71	-117.80909	Amenities	More food options, besides gas station and Jack in the Box.
33.70812	-117.80652	Amenities	Coffe shop
33.87618	-117.98832	Amenities	Some kind of small snack or retail store.
33.75051	-117.85675	Amenities	More shade on the eastbound side of the tracks
33.86838	-117.92241	Amenities	Not enough coverings for rain and/heat. Also, platforms should be NON-SMOKING!
33.86855	-117.9222	Amenities	A bike car on EVERY Metrolink train.
33.55243	-117.67445	Amenities	2 vending ticket kiosks are not enough to handle the number of riders who are tryng to purchase tickets within minutes of the train's arrival. Also, a ticket vending machine on the Camino Capistrano side of the tracks would make it more efficient for northbound riders.
33.8536	-117.8405	Amenities	place awnings at the Anaheim Canyon station(some where to stand under when it rains or on hot days)
33.70735	-117.80731	Amenities	Bathroom for Tustin station
33.75215	-117.8559	Amenities	More benches?
33.69406	-117.88961	Amenities	There is no bench for your passengers to sit while waiting for the bus.
33.78877	-117.85755	Amenities	Shelters on the west side of the tracks do not provide shade early in the morning. It would be nice to be able to sit on the bench in the shade and not have to stand behind the rail to be in the shade.
33.70778	-117.80602	Amenities	Restrooms/change rooms at the station, so I can change out of my sweaty bike gear and make myself presentable before embarking, would be a huge help.
33.50095	-117.66394	Amenities	security during the early hours here seems like it could be improved. I have never seen a uniformed security guard here in the early am hours.
33.55342	-117.67485	Amenities	Put in a Starbucks or McDonalds or Donut store at station with wifi

33.55249	-117.67391	Amenities	put in shops/coffee/wifi in station
33.70718	-117.80693	Amenities	more transit-friendly retail (i.e. NOT a gas station)
33.80911	-117.91524	Amenities	bike sharing program should be here.
33.70669	-117.80671	Amenities	More shade. More seating. Restroom. Additional ticket machine for northbound area platform
33.43132	-117.63171	Amenities	Additional ticket machines
33.88201	-117.56318	Amenities	More covered benches
33.65732	-117.73306	Amenities	more covered areas to stand/sit under when raining
33.65696	-117.73328	Amenities	more covered areas to stand/sit under when raining
33.85401	-117.84027	Amenities	Need restrooms and water. Shade in late pm non-existent.
33.88191	-117.56203	Amenities	Need restrooms and access to food (i.e. food carts).
33.75479	-117.8585	Amenities	Comment...Not enough shaded areas on track 1. (the track furthes to the station.No vending machines. No restrooms.
33.65762	-117.73344	Amenities	shade
33.78551	-117.85896	Amenities	More seating,and covered areas for protection from sun and rain
33.88247	-117.61365	Amenities	More seating and covered areas for protection from weather
33.8543	-117.8405	Amenities	More shade structures / seating
33.79056	-117.85783	Amenities	More shade for waiting by the tracks
33.19251	-117.37984	Amenities	Need more metrolink ticket machines, the lines are long.
33.80344	-117.88224	Amenities	a third ticket machine would be nice
33.75226	-117.85664	Amenities	A farmer's market could do well here...or a food truck meet up :)
33.50985	-117.70669	Amenities	Kiosk ticket purchase machine and parking on East side (Camino Capistrano) Laguna Niguel/Mission Viejo metrolink station.
33.76539	-117.85638	Amenities	Add more Trees/Benches/Shade Areas at the Metrolink Orange station.
33.66192	-117.87313	Amenities	Add Seating and head covering for when it rains
33.79111	-117.85756	Amenities	Comment...Need more shade along Palm Ave
33.70806	-117.80636	Amenities	Station has no restroom.
33.70744	-117.806	Amenities	Need to add Shade for afternoon, evening sun while waiting for train 804 (currently no shade provided from existing canopies)
33.70872	-117.80632	Amenities	Please add restrooms

33.91381	-117.88677	Amenities	No shelter from rain or shade from the sun--almost always an uncomfortable waiting area, and only one direct bus (OCTA RT57) there--who represents Brea--the Mall area looks like a ghost town....
33.86867	-117.92299	Bike Lanes/Path	Need bike lanes on more streets
33.87036	-117.92101	Bike Lanes/Path	Bike lanes are non-existent
33.78043	-117.85956	Bike Lanes/Path	Comment...Bike lane from Saniago Park to Orange Station Metrolink
33.65286	-117.73008	Bike Lanes/Path	Install sidewalks and dedicated bike lanes to/from Irvine station to business parks located along Alton Parkway
33.70669	-117.8042	Bike Lanes/Path	Bike-ped connection from Peters Cyn. trail to Amtrak is inadequate, road not safe.
33.87981	-117.75464	Bike Lanes/Path	Improved bike lanes along Yorba Linda Blvd would be a real help.
33.87422	-117.67172	Bike Lanes/Path	Why can't the bike path along the Riverside Freeway (91) be extended to at least the West Corona MetroLink Station?
33.7646	-117.7151	Bike Lanes/Path	There are presently heavily used bike lanes along Santiago Canyon Road. It would be great to have a scenic off-the-road bikes-only path from the 241 to El Toro Road.
33.64979	-117.70452	Bike Lanes/Path	The dirt path along this creek should be paved as a commute route all the way to Foothill Ranch.
33.67104	-117.65508	Bike Lanes/Path	This dirt bicycle/pedestrian path should be paved all the way.
33.67104	-117.65508	Bike Lanes/Path	This dirt bicycle/pedestrian path should be paved all the way from Portola south.
33.50116	-117.66356	Bike Lanes/Path	Would use bike or moped parking but not free.
33.70411	-117.80595	Bike Lanes/Path	There is a desperate need for a safer bike connection between the Peter's Canyon Trail and the Tustin Metrolink Station. The Peter's Canyon trail is part of a bicycle superhighway coming from UC Irvine, but many are afraid to make that final connection to the train station because of the Jamboree/Edinger intersection.
33.69131	-117.8231	Bike Lanes/Path	Tustin really needs to finish the Peter's Canyon Trail. It's been pushed back way too much.
33.68577	-117.82833	Bike Lanes/Path	Use asphalt on the underpass instead of concrete. The concrete is brutal on bikes, butts, and hands.
33.67877	-117.83486	Bike Lanes/Path	Use asphalt on the underpass instead of concrete. The concrete is brutal on bikes, butts, and hands.

33.67367	-117.83567	Bike Lanes/Path	Use asphalt on the underpass instead of concrete. The concrete is brutal on bikes, butts, and hands.
33.65506	-117.8449	Bike Lanes/Path	Use asphalt on the underpass instead of concrete. The concrete is brutal on bikes, butts, and hands.
33.68809	-117.81883	Bike Lanes/Path	Use asphalt on the underpass instead of concrete. The concrete is brutal on bikes, butts, and hands.
33.68524	-117.81464	Bike Lanes/Path	Use asphalt on the underpass instead of concrete. The concrete is brutal on bikes, butts, and hands.
33.68217	-117.81018	Bike Lanes/Path	Use asphalt on the underpass instead of concrete. The concrete is brutal on bikes, butts, and hands.
33.68116	-117.80754	Bike Lanes/Path	Use asphalt on the underpass instead of concrete. The concrete is brutal on bikes, butts, and hands.
33.67722	-117.83532	Bike Lanes/Path	Use asphalt on the underpass instead of concrete. The concrete is brutal on bikes, butts, and hands.
33.69118	-117.81587	Bike Lanes/Path	Reclaim left 3-4 feet of Right Turn Only lane to create a through bike lane.
33.69553	-117.80805	Bike Lanes/Path	Reclaim left 3-4 feet of Right Turn Only lane to create a through bike lane.
33.69861	-117.80504	Bike Lanes/Path	Reclaim left 3-4 feet of Right Turn Only lane to create a through bike lane.
33.70051	-117.80287	Bike Lanes/Path	Reclaim left 3-4 feet of Right Turn Only lane to create a through bike lane.
33.70116	-117.80297	Bike Lanes/Path	Reclaim left 3-4 feet of Right Turn Only lane to create a through bike lane.
33.66663	-117.77452	Bike Lanes/Path	Use asphalt on the underpass instead of concrete. The concrete is brutal on bikes, butts, and hands.
33.66388	-117.77207	Bike Lanes/Path	Use asphalt on the underpass instead of concrete. The concrete is brutal on bikes, butts, and hands.
33.66094	-117.76745	Bike Lanes/Path	Use asphalt on the underpass instead of concrete. The concrete is brutal on bikes, butts, and hands.
33.65746	-117.76526	Bike Lanes/Path	Use asphalt on the underpass instead of concrete. The concrete is brutal on bikes, butts, and hands.
33.70626	-117.80388	Bike Lanes/Path	-----
33.70174	-117.8072	Bike Lanes/Path	-----
33.70414	-117.82291	Bike Lanes/Path	-----

33.78796	-117.85786	Bike Lanes/Path	Chapman is a major corridor that could be reconfigured to provide a bike lane
33.86555	-117.9198	Bike Lanes/Path	Bike lanes are needed on S. Lemon in Fullerton. This could connect to an existing bikeway on Anaheim blvd (where Lemon connects)in Anahim
33.55078	-117.67427	Bike Lanes/Path	Bike path should begin at the station and go south. The bike path doesn't start until further south right now.
33.53323	-117.6762	Bike Lanes/Path	An off road bike path that meets up with Oso Rancho trail will link the LN/MV station to points south.
33.53082	-117.67905	Bike Lanes/Path	Make this a bike path.
33.51087	-117.67207	Bike Lanes/Path	-----
33.50729	-117.67378	Bike Lanes/Path	-----
33.51534	-117.67288	Bike Lanes/Path	Tie the Oso Rancho Capistrano trail into Camino Cap here to link San Juan Metorlink station to trail system.
33.50373	-117.66739	Bike Lanes/Path	Connect this trail up to Camino Cap Bike lane or the Oso bike path to the north
33.55349	-117.67425	Bike Lanes/Path	Need a sidewalk and bike path on both sides of the street.
33.63221	-117.73107	Bike Lanes/Path	-----
33.61456	-117.73047	Bike Lanes/Path	-----
33.55361	-117.67469	Bike Lanes/Path	Ramp on stairs
33.54669	-117.67323	Bike Lanes/Path	Need bike lanes
33.70488	-117.8024	Bike Lanes/Path	Extend trail to Tustin station
33.65658	-117.73082	Bike Lanes/Path	Need bike access on north side
33.85111	-117.99371	Bike Lanes/Path	No current bike lanes south of Buena Park Metrolink Station
33.87434	-117.9865	Bike Lanes/Path	No current bike lanes south of Buena Park Metrolink Station
33.87164	-117.98479	Bike Lanes/Path	No current bike lanes south of Buena Park Metrolink Station
33.86565	-117.99388	Bike Lanes/Path	No current bike lanes south of Buena Park Metrolink Station
33.71485	-117.83377	Bike Lanes/Path	No Bike lanes are on Red Hill. It is dangerous for Bikes going to Tustin station
33.65765	-117.73326	Bike Lanes/Path	Irvine station needs an underpass for bikes and people. The elevator breaks down often and can not handle the volume of people or bikes
33.70357	-117.80544	Bike Lanes/Path	-----
33.43937	-117.62176	Bike Lanes/Path	Going under I5 on Avenida Pico is a little scary, especially westbound as there is no bike lane and the traffic lanes are narrow

33.43768	-117.6229	Bike Lanes/Path	Going under I5 on Pico eastbound. there is at least a sidewalk, but merging back into the traffic lanes is difficult, and bicycling on the sidewalk is probably as dangerous as riding in traffic
33.65772	-117.73208	Bike Lanes/Path	A bike lane from Sand Canyon Ave through OC Great Park to the Irvine Metrolink station would eliminate having to bike on Barranco and/or Irvine Center Drive to get to and from the Metrolink station. It could link to the Walnut trail when that is reopened.
33.77067	-117.87612	Bike Lanes/Path	Extend Santiago creek trail to river trail
33.8771	-117.99042	Bike Lanes/Path	Comment...See Emery Street note
33.87583	-117.98948	Bike Lanes/Path	Comment...Connect to other roads west of this location for bikes and pedestrians.
33.87755	-117.99448	Bike Lanes/Path	Comment...Connect these two roads with the West end of the South platform -- can have a barrier wall between the path edge and the railway, but currently the station seems to have been set up for the sole convenience of the houses right alongside it.
33.7	-117.80626	Bike Lanes/Path	Comment...Need a secure bike road between Tustin train staion to Irvine "off road path alone the creek" two blocks East of Tustin station.
33.65765	-117.73208	Bike Lanes/Path	Would like bike path from Great Park side to allow access from Irvine Blvd.
33.87766	-117.9871	Bike Lanes/Path	Need bike lane
33.87029	-117.92975	Bike Lanes/Path	Need bike lane
33.86609	-117.92754	Bike Lanes/Path	Road condition is poor
33.87064	-117.91097	Bike Lanes/Path	-----
33.87157	-117.92427	Bike Lanes/Path	Harbor blvd from Fullerton Station to Brea blvd
33.56079	-117.67047	Bike Lanes/Path	improve bike lane over 5fwy/Crown Valley overpass.
33.56079	-117.67047	Bike Lanes/Path	improve/extend bike lane over 5fwy/Crown Valley overpass. (existing bikelane ends 500ft before frwway, bike lane over fwy is is in disrepair)
33.54713	-117.67193	Bike Lanes/Path	improve bike access for Avery Pkwy/5 fwy underpass
33.54713	-117.67193	Bike Lanes/Path	improve bike access for Avery Pkwy/5 fwy underpass. (east bound bike traffic is difficult to access pedestrian ride of way. west bound bike traffic is unable to access pedestrian ride of way.)
33.54743	-117.67412	Bike Lanes/Path	extend bike lane on Camino Capistrano to and from Metrolink station.
33.91666	-118.05774	Bike Lanes/Path	-----
33.88575	-117.99766	Bike Lanes/Path	-----

33.88318	-117.99354	Bike Lanes/Path	-----
33.87734	-117.98822	Bike Lanes/Path	-----
33.89971	-118.03337	Bike Lanes/Path	-----
33.89145	-118.01774	Bike Lanes/Path	-----
33.88503	-118.00693	Bike Lanes/Path	-----
33.78807	-117.86222	Bike Lanes/Path	-----
33.83143	-117.91252	Bike Lanes/Path	-----
33.84797	-117.8399	Bike Lanes/Path	-----
33.55535	-117.67562	Bike Lanes/Path	No sidewalk provided.
33.55535	-117.67562	Bike Lanes/Path	No sidewalk provided.
33.66036	-117.84857	Bike Lanes/Path	good place for bike trail
33.67086	-117.75716	Bike Lanes/Path	would be nice to have bike trail here connecting to great park
33.67536	-117.75424	Bike Lanes/Path	bike lanes/trail to great park needed
33.64636	-117.72446	Bike Lanes/Path	-----
33.65693	-117.90368	Bike Lanes/Path	there needs to be bike lanes across the 55
33.61647	-117.90096	Bike Lanes/Path	there needs to be a bike button here for crossing PCH on Bayside Dr., which is a very popular bike route
33.78974	-117.85784	Bike Lanes/Path	Need bike path from station down Maple to BitterBush to Chapman to SART. There is not a real safe way to get to the bike path. Chapman is not safe to ride on at all.
33.87245	-117.98564	Bike Lanes/Path	-----
33.87291	-117.9861	Bike Lanes/Path	-----
33.87342	-117.98637	Bike Lanes/Path	-----
33.87642	-117.98661	Bike Lanes/Path	-----
33.87641	-117.98698	Bike Lanes/Path	No way to turn here into the station.
33.7514	-117.85595	Bike Lanes/Path	-----
33.55884	-117.67402	Bike Lanes/Path	Very difficult to bike over the Crown Valley Parkway I-5 Bridge
33.8692	-117.925	Bike Lanes/Path	-----
33.86914	-117.9279	Bike Lanes/Path	-----
33.87016	-117.93073	Bike Lanes/Path	-----
33.9084	-117.95492	Bike Lanes/Path	-----
33.87028	-117.92562	Bike Lanes/Path	-----
33.87031	-117.92336	Bike Lanes/Path	-----
33.57914	-117.6717	Bike Lanes/Path	Comment...There' s no class 1 bike lane along Oso to Cabot that where I m biking from, having exiting the bike trail at marguErite and estanciero
33.57366	-117.67253	Bike Lanes/Path	-----
33.56708	-117.67288	Bike Lanes/Path	-----
33.55993	-117.67373	Bike Lanes/Path	-----
33.55206	-117.67373	Bike Lanes/Path	-----
33.55306	-117.67404	Bike Lanes/Path	Need bridge or tunnel across freeway
33.5585	-117.67404	Bike Lanes/Path	Need bridge or tunnel across freeway

33.55829	-117.67566	Bike Lanes/Path	Bike Lane
33.56086	-117.67044	Bike Lanes/Path	-----
33.57724	-117.67013	Bike Lanes/Path	Comment...better way to cross freeway by bike
33.55664	-117.67253	Bike Lanes/Path	Comment...bike oute along railway to station
33.59468	-117.67682	Bike Lanes/Path	Comment...bike route along railway lines
33.75207	-117.85859	Bike Lanes/Path	Would be nice to have some facility on Brown, Santa Ana or Civic Center. Brown being the most appropriate...and maybe a road diet from the freeway to Santiago.
33.86643	-117.88975	Bike Lanes/Path	-----
33.78846	-117.85723	Bike Lanes/Path	Coming from Main
33.78605	-117.85964	Bike Lanes/Path	I usually ride down Almond because there is less traffic, but there are still no bike lanes traveling west-east.
33.78208	-117.86985	Bike Lanes/Path	I start my commute in this neighborhood and travel up to Almond or Chapman to the station.
33.70418	-117.80601	Bike Lanes/Path	This intersection feels dangerous to traverse by bike in either direction. I've been stuck "halfway through" before heading south where I couldn't see the light to proceed!
33.67048	-117.78768	Bike Lanes/Path	Sharing the sidewalk here as it crosses the entrance to the shopping center feels unsafe.
33.87944	-117.92622	Bike Lanes/Path	-----
33.88003	-117.92738	Bike Lanes/Path	-----
33.88124	-117.92881	Bike Lanes/Path	-----
33.8826	-117.92959	Bike Lanes/Path	-----
33.88378	-117.93003	Bike Lanes/Path	-----
33.8853	-117.93054	Bike Lanes/Path	-----
33.88732	-117.93119	Bike Lanes/Path	-----
33.88876	-117.93168	Bike Lanes/Path	-----
33.89007	-117.93212	Bike Lanes/Path	-----
33.89127	-117.93243	Bike Lanes/Path	-----
33.89273	-117.93293	Bike Lanes/Path	-----
33.89436	-117.9334	Bike Lanes/Path	-----
33.89576	-117.93327	Bike Lanes/Path	-----
33.89732	-117.93274	Bike Lanes/Path	-----
33.89891	-117.93201	Bike Lanes/Path	-----
33.90036	-117.93152	Bike Lanes/Path	-----
33.90187	-117.93142	Bike Lanes/Path	-----
33.90326	-117.93162	Bike Lanes/Path	-----
33.90492	-117.93218	Bike Lanes/Path	-----
33.90643	-117.93268	Bike Lanes/Path	-----
33.90778	-117.93324	Bike Lanes/Path	-----
33.90944	-117.93374	Bike Lanes/Path	-----
33.91079	-117.93426	Bike Lanes/Path	-----
33.91247	-117.93481	Bike Lanes/Path	-----
33.91417	-117.93537	Bike Lanes/Path	-----

33.91594	-117.93592	Bike Lanes/Path	-----
33.62275	-117.68983	Bike Lanes/Path	Connect of bike path from Irvine Metrolink station to Aliso Creek Bike Path
33.77381	-118.10066	Bike Lanes/Path	-----
33.78049	-117.84498	Bike Lanes/Path	Comment...add bike lane to this street both directions east/west it is plenty wide upto Shaffer St.
33.78064	-117.86118	Bike Lanes/Path	Comment...add bike lane
33.74548	-117.8678	Bike Lanes/Path	I would like to see more bike lanes along 1st street and main street in Santa Ana. i have neen an experience near coallitions with motorist who do not respect bicyclest. bike lanes will also encourage bicycles off the side walks.
33.86451	-117.98204	Bike Lanes/Path	-----
33.85239	-117.95852	Bike Lanes/Path	-----
33.87756	-117.98209	Bike Lanes/Path	Bike Trail poorly maintained
33.87551	-117.95923	Bike Lanes/Path	Convert to Bike Trail to Fullerton Station
33.80244	-117.88209	Bike Lanes/Path	Comment...add more
33.70769	-117.81344	Bike Lanes/Path	this open space is a dead zone and kills any walkability. sustainable developments please
33.78012	-117.86283	Bike Lanes/Path	Commethis bridge at night must be well lit..
33.78771	-117.8535	Bike Lanes/Path	Have felt unsafe biking here
33.78788	-117.86182	Bike Lanes/Path	-----
33.76905	-117.87956	Bike Lanes/Path	Comment...From Santiago Park to Fisher Park
33.87752	-117.96733	Bike Lanes/Path	Driving a bike here is very dangerous since the intersection is almost always busy and there are no visible bike lanes.
33.68986	-117.88196	Bike Lanes/Path	-----
33.71857	-117.8684	Bike Lanes/Path	-----
33.67111	-117.75433	Bike Lanes/Path	There's a dirt path at the end of Technology Drive that goes to San Danyon Ave. that I'd like to use to commute to/from work on my bicycle, but it needs to be improved and made safe. It would be a great route for commuters who work along Technology Drive.
33.67015	-117.75283	Bike Lanes/Path	Extension of the Walnut bike path would greatly improves access to the Irvine station. Although already on City of Irvine extension plan I believe it not currently listed as priority project.
33.78608	-117.85209	Bike Lanes/Path	-----
33.75214	-117.85781	Bike Lanes/Path	-----
33.75296	-117.85657	Bike Lanes/Path	-----
33.70157	-117.80694	Bike Lanes/Path	understand the construction, but is difficult to safely maneuver bike out of station
33.75076	-117.85597	Bike Lanes/Path	Improving a bike lane along grand ave. would increase the safety for bikers.

33.7538	-117.85455	Bike Lanes/Path	There is currently no easy way to ride you bike to the Santa Ana Station along Santa Ana Boulevard. There are no Bike Lanes and the Sidewalk is not that wide.
33.75651	-117.85203	Bike Lanes/Path	Grand is a difficult to use as a Bike Route to arrive at the Santa Ana Train Station. There are no Bike Lanes
33.87063	-117.92206	Bike Lanes/Path	A bike path heading north/south along Harbor, Promona, or Lemon would be great to safely get to and out of the fullerton train station.
33.85767	-117.79068	Bike Lanes/Path	Imperial should have a bike lane
33.85104	-117.80312	Bike Lanes/Path	-----
33.78793	-117.85273	Bike Lanes/Path	Chapman should have a bike lane
33.65247	-117.74146	Bike Lanes/Path	-----
33.74544	-117.85037	Bike Lanes/Path	-----
33.80698	-117.88825	Bike Lanes/Path	Howell would be a great place for a Class 3 bike route.
33.81029	-117.88314	Bike Lanes/Path	Extend the Class 2 bike lane south of Ball Road to dump people out onto Howell toward the stadium and station.
33.817	-117.88052	Bike Lanes/Path	Extend the Class 2 bike lane south of Ball Road to dump people out onto Howell toward the stadium and station.
33.74277	-117.86324	Bike Lanes/Path	The Pacific Electric Bike trail ends here causing me to use car lanes on roads.
33.74539	-117.8603	Bike Lanes/Path	Comment... Bike Lanes on 1st St would help connect the bike trail closer to the station
33.74869	-117.85912	Bike Lanes/Path	Comment... Bike lane on Garfield St is another piece of the puzzle to connect to the station.
33.75254	-117.85719	Bike Lanes/Path	Comment...Bike Lanes on Santa Ana BLVD to connect to the Garfield Lanes
33.75975	-117.83261	Bike Lanes/Path	Needs bike lane.
33.76004	-117.88466	Bike Lanes/Path	need bike lanes
33.75986	-117.89926	Bike Lanes/Path	needs bike lanes
33.76	-117.86509	Bike Lanes/Path	needs bike lanes
33.87534	-117.86222	Bike Lanes/Path	Comment...Need bike lanes on Kramer. new underpass at Orangethorpe should have bike lanes.
33.85895	-117.89449	Bike Lanes/Path	Orangethorpe should have bike lanes on it. Major through street that should support cyclists as well as autos.
33.86183	-117.92459	Bike Lanes/Path	need bike paths to station from all directions.
33.69829	-117.81072	Bike Lanes/Path	The trail along the river needs to be complete.
33.44384	-117.61503	Bike Lanes/Path	No reason not to have an off road walk/bike path from Telaga to the beach. It would free up parking and encourage people to exercise.

33.75319	-117.85176	Bike Lanes/Path	We call this spot the Register Sprint. No bike lanes and tons of cars stuck in traffic. Yet they still try to pass us and throw us into the curb
33.71872	-117.85056	Bike Lanes/Path	OCTA busses frequently pass unsafely and often honk and yell at cyclists riding legally
33.79807	-117.85301	Bike Lanes/Path	Cars buzz cyclists here everyday. Most cyclists in this area don't obey traffic laws and originate at Chapman University
33.77096	-117.8755	Bike Lanes/Path	Finish up this trail
33.7741	-117.85301	Bike Lanes/Path	Another spot motorists try to overtake cyclists in a dangerous manner.
33.79511	-117.86397	Bike Lanes/Path	Sprint of Death! Between Batavia and Main needs signage. Cars frequently run cyclists into parked cars for taking the lane here. Youtube has many clips of this segment of road and the problems that occur here.
33.84695	-117.83707	Bike Lanes/Path	Cars speeding around this curve frequently have to lock up their brakes when pedestrians and cars are coming off of Kodiak. Needs a stop sign.
33.58175	-117.67413	Bike Lanes/Path	not much of a bike lane on cabot north bound here.
33.5579	-117.67645	Bike Lanes/Path	Comment..bike path from metro link going under bridge to cabot/forbes bike path would be great.
33.70614	-117.80574	Bike Lanes/Path	-----
33.64872	-117.72495	Bike Lanes/Path	-----
33.64881	-117.85873	Bike Lanes/Path	-----
33.8022	-117.87784	Bike Lanes/Path	Connecting trail from SART to station; trail along tracks to get to station
33.8024	-117.8753	Bike Lanes/Path	Connect Collins to east bank SART - already our land
33.80402	-117.87498	Bike Lanes/Path	Keep east bank open after new station is completed
33.79381	-117.87947	Bike Lanes/Path	keep east bank os SART open
33.80244	-117.87213	Bike Lanes/Path	Make Collins 2 lane with complete streets access
33.80437	-117.87135	Bike Lanes/Path	Put Trail along channel from Taft, Katella/Batavia, Main to east bank of SART
33.77137	-117.87233	Bike Lanes/Path	Complete missing west end 1/4 mile to Santiago Creek so riders can get to SART to get to Anaheim depot
33.77208	-117.87603	Bike Lanes/Path	Designate route (Sharrows at least) from Fisher PArk . Santiago Creek Trail to SART via Memory Lane
33.77309	-117.88129	Bike Lanes/Path	Designate route (Sharrows at least) from SART to Flower to route Santiago Creek riders to Anaheim Depot
33.75282	-117.85592	Bike Lanes/Path	Connect Santa Ana Blvd to landing on east side of tracks at SA Depot

33.74942	-117.85601	Bike Lanes/Path	Add trail on track right of way between 4th
33.70497	-117.80378	Bike Lanes/Path	Complete trail from Como channel
33.70409	-117.80572	Bike Lanes/Path	Complete access road as trail
33.70604	-117.80351	Bike Lanes/Path	Trail along track right of way under toll road to Tustin Depot
33.70949	-117.80836	Bike Lanes/Path	Trail along track right of way from Redhill to Tustin Station
33.65911	-117.73302	Bike Lanes/Path	Future bike/ped connectivity to OC Great Park should be a priority.
33.70914	-117.8284	Bike Lanes/Path	-----
33.70558	-117.80248	Bike Lanes/Path	Not sure if there is a bike lane here, but the interaction under Jamboree is scary.
33.78786	-117.85856	Bike Lanes/Path	Bike lanes on Chapman or provide some semi-direct alternative.
33.78613	-117.86026	Bike Lanes/Path	Almond may be a great route
33.78492	-117.86725	Bike Lanes/Path	Bike lanes along main or some semi-direct alternative?
33.43133	-117.6331	Bike Lanes/Path	-----
33.43132	-117.63299	Bike Lanes/Path	Comment...widen beach trail so bikes can cummute and stay off of the dangerious streets
33.65036	-117.72296	Bike Lanes/Path	Safer bike lanes.
33.87513	-117.86235	Bike Lanes/Path	-----
33.87106	-117.86298	Bike Lanes/Path	Bike path down Chapman to Cal State Fullerton and on to Commonwealth....
33.87375	-117.88422	Bike Lanes/Path	Continue bike path here to Cal State Fullerton and to Fullerton train station....
33.86831	-117.87051	Bike Lanes/Path	Where ever the Placentia Station will go in, bike paths from Cal State Fullerton and other feeders around Placenia need to have bike paths to get to that station....
33.87042	-117.92014	Bike Lanes/Path	A walkers underpass or overpass might be good here.
33.86878	-117.86686	Bike Lanes/Path	a bike route from Rose Ave to new Placentia station along tracks will be good.
33.69486	-117.81415	Bike Lanes/Path	Comment...so can ride bikes
33.7074	-117.80728	Bike Lanes/Path	The entrance to the Tustin station feeds all traffic to the parking structure. I have to ride on the sidewalk to get my bike to the platform.
33.54731	-117.67403	Bike Lanes/Path	A bicycle is forced to ride in traffic lanes on Avery Pkwy to get under the freeway.
33.55868	-117.67448	Bike Lanes/Path	Trying to ride your bike across the freeway on Crown Valley is dangerous.
33.55795	-117.67637	Bike Lanes/Path	There is no good way for a bicycle to turn left from Crown Valley onto Forbes Road.
33.87417	-117.98652	Bike Lanes/Path	No current bike lanes, bike route or Share-The Road signs

33.86839	-117.99382	Bike Lanes/Path	No current bike lanes, bike routes or Share-The-Road signs.
33.80335	-117.88366	Bike Lanes/Path	-----
33.65596	-117.7304	Bike Lanes/Path	-----
33.18086	-117.36903	Bike Lanes/Path	-----
33.72378	-117.83059	Bike Lanes/Path	-----
33.75151	-117.85741	Bike Lanes/Path	Bike riders needs to be restricted to use sidewalks.
33.87562	-117.98658	Bike Lanes/Path	Create bike lanes that turn into the station entrance...
33.67301	-117.7565	Bike Lanes/Path	Bike path connection from Sand Canyon to Technology avenue to close the gap.
33.70464	-117.80199	Bike Lanes/Path	Bike path connection from Tustin Metrolink to Harvard.
33.79599	-117.88205	Bike Lanes/Path	-----
33.79927	-117.87827	Bike Lanes/Path	-----
33.78609	-117.85977	Bike Lanes/Path	-----
33.78602	-117.86471	Bike Lanes/Path	-----
33.79581	-117.87608	Bike Lanes/Path	-----
33.78786	-117.87827	Bike Lanes/Path	-----
33.78321	-117.8672	Bike Lanes/Path	-----
33.8752	-117.98719	Bike Lanes/Path	-----
33.85952	-117.9314	Bike Lanes/Path	bike lanes but bad roads
33.71171	-117.86806	Bike Lanes/Path	-----
33.46561	-117.67276	Bike Lanes/Path	add walking path east of the I 5.
33.69187	-117.82206	Bike Lanes/Path	Keep this open
33.70379	-117.80512	Bike Lanes/Path	Connect this off-road bike trail
33.70606	-117.80348	Bike Lanes/Path	Run a bike trail under Jamboree to Tustin Metrolink Station, connect to Peters Canyon

33.70676	-117.80444	Bike Lanes/Path	Bike path along rail ROW to Peters Canyon off-road trail
33.75262	-117.85729	Bike Lanes/Path	Santa Ana Blvd needs a bike lane.
33.75208	-117.85754	Bike Lanes/Path	-----
33.75046	-117.86264	Bike Lanes/Path	-----
33.84897	-118.01088	Bike Lanes/Path	-----
33.74298	-117.85072	Bike Lanes/Path	-----
33.84726	-117.6667	Bike Lanes/Path	-----
34.1253	-118.25652	Bike Lanes/Path	-----
34.12384	-118.25869	Bike Lanes/Path	-----
34.12679	-118.25779	Bike Lanes/Path	-----
34.13112	-118.25774	Bike Lanes/Path	-----
34.12758	-118.25491	Bike Lanes/Path	-----
34.13018	-118.25491	Bike Lanes/Path	-----
34.13216	-118.25485	Bike Lanes/Path	-----
34.12194	-118.25657	Bike Lanes/Path	-----
34.1238	-118.25514	Bike Lanes/Path	-----
34.12241	-118.25344	Bike Lanes/Path	-----
34.12371	-118.25947	Bike Lanes/Path	-----
33.71785	-117.80935	Bike Lanes/Path	Narrow to non-exisitent bikelanes on busy street.
33.71143	-117.80832	Bike Lanes/Path	-----
33.72028	-117.82445	Bike Lanes/Path	Bike lanes are available on most of Edinger, but dedicated bike line w/o sharing street -would feel much safter. Speeds on Edinger are 60 mps.
33.5014	-117.66378	Bike Lanes/Path	-----
33.5512	-117.67494	Bike Lanes/Path	-----

33.4994	-117.66378	Bike Lanes/Path	-----
33.41848	-117.61932	Bike Lanes/Path	-----
33.7317	-117.77742	Bike Lanes/Path	-----
33.69429	-117.77021	Bike Lanes/Path	-----
33.67302	-117.84814	Bike Lanes/Path	Very dangerous, need bike lane
33.6746	-117.85041	Bike Lanes/Path	Super Dangerous section of the roadway that needs some bike lanes! Please look into.
33.78868	-117.85734	Bike Lanes/Path	-----
33.77509	-117.85827	Bike Lanes/Path	Comment...Bike path to and from Santiago Park bike path
33.70654	-117.80295	Bike Lanes/Path	Provide direct connection from Peter's Canyon Wash Regional Bike Trail to cross the channel along the north side of the tracks to connect to the station, avoiding Edinger and a travel path.
33.55183	-117.67367	Bike Lanes/Path	Need Bike lanes on Camino Capistrano road
33.49112	-117.66281	Bike Lanes/Path	Where did the bike path go? It was removed two years ag; the roads are dangerous for riding, especially without lanes or room along the shoulder of the road.
33.55736	-117.67631	Bike Lanes/Path	-----
33.55701	-117.67585	Bike Lanes/Path	there isn't really a sidewalk here. It's more of a road, drive ways, and a dirt path.
33.41949	-117.6164	Bike Lanes/Path	Comment...deseca is dangerios and needs the parking deleted so there is room for peds and bikes
33.41505	-117.61125	Bike Lanes/Path	-----
33.41519	-117.60541	Bike Lanes/Path	-----
33.42536	-117.61451	Bike Lanes/Path	-----
33.73413	-117.85999	Bike Lanes/Path	Comment...there is not alot of bike paths in Santa Ana
33.72985	-117.83235	Bike Lanes/Path	-----
33.80517	-117.88767	Bike Lanes/Path	An off-road bike path would be swell (say, using unused rail / utility ROW).
33.80817	-117.89857	Bike Lanes/Path	An off-road bike path would be swell (say, using unused rail / utility ROW)

33.74726	-117.86342	Bike Lanes/Path	-----
33.43052	-117.63271	Bike Lanes/Path	-----
33.55914	-117.67298	Bike Lanes/Path	-----
33.55916	-117.67294	Bike Lanes/Path	Not so easy to get over frwy on Crown Valley.
33.55912	-117.6729	Bike Lanes/Path	Not so easy to cross frwy on crown valley.
33.70886	-117.80584	Bike Lanes/Path	-----
33.81061	-117.89563	Bike Lanes/Path	Cerritos has no bike lane, and no sidewalk in places, but leads to Honda center, the stadium, and Anaheim station (and my workplace. Lots of truck and UPS traffic, so is scary to ride along.
33.71971	-117.84007	Bike Lanes/Path	-----
33.71764	-117.8196	Bike Lanes/Path	-----
33.70463	-117.80662	Bike Lanes/Path	-----
33.75293	-117.85612	Bike Lanes/Path	-----
33.4346	-117.63676	Bike Lanes/Path	Comment...No non motorized connections for Dana Point and Capastrano Beach
33.43541	-117.62917	Bike Lanes/Path	Comment...No Bicycle Connection for San Clemente residetns who live east of Los Molinas
33.80305	-117.89123	Bike Lanes/Path	-----
33.55154	-117.67505	Bike Lanes/Path	-----
33.70585	-117.80306	Bike Lanes/Path	Add crossing to provide access to staton from Walnut and Como Channel trails.
33.69929	-117.81776	Bike Lanes/Path	Comment.would love to ride my bike there..
33.71289	-117.77947	Bike Lanes/Path	-----
33.75625	-117.99114	Bike Lanes/Path	-----
34.06183	-118.17279	Bike Lanes/Path	-----
33.71642	-117.88505	Bike Lanes/Path	-----
33.74241	-117.86192	Bike Lanes/Path	-----

33.74526	-117.86196	Bike Lanes/Path	From Pac Electric bike trail to staton.
33.78977	-117.85721	Bike Locker/Rack	I'm not sure the location of this bike locker is ADA compliant
33.8756	-117.9857	Bike Locker/Rack	Provide bike storage units in which passengers pay a small daily fee and/or monthly fee (via an access card of some sort) so that bikes can be securely place in cages of some sort, thereby increasinmg the reliability of the fact that the bikes will not become damaged and/or stolen...
33.65699	-117.73329	Bike Locker/Rack	Bike racks should be closer to trains, but more importantly, in plain view of foot traffic to discourage theft
33.6566	-117.7332	Bike Locker/Rack	There's no SECURE bike parking for day/occasional use - bike lockers designed for monthly plans only.
33.65677	-117.73322	Bike Locker/Rack	CalTrain in the Bay Area provides lockable, completely enclosed bicycle racks at many stations. We should consider doing the same.
33.80367	-117.88267	Bike Locker/Rack	Would like to see completely enclosed bicycle lockers available here (enough so I don't have to worry about having a place to store my bicycle, or a reservable system).
33.78922	-117.85733	Bike Locker/Rack	More bike racks (inverted U, post and ring, etc... not M-shaped stands)
33.70713	-117.80476	Bike Locker/Rack	Comment...New bike lockers for overnight storage along fence of rail line.
33.78893	-117.85734	Bike Locker/Rack	These need to be visible by patrons of the restaurant to decrease theft. NO WAVE RACKS! TWO CONTACTS!
33.86859	-117.92287	Bike Locker/Rack	Bike lockers are needed on the south side of the station. Currently, there are only lockers on the north side.
33.87569	-117.98664	Bike Locker/Rack	Leaving bikes here seems unsafe
33.80358	-117.88228	Bike Locker/Rack	Have seen seats stolen
33.78856	-117.85727	Bike Locker/Rack	This station needs bike lockers and more racks.
33.7065	-117.80639	Bike Locker/Rack	more bike racks
33.78907	-117.85861	Bike Locker/Rack	Downtown Orange
33.65669	-117.73332	Bike Locker/Rack	-----

33.86891	-117.92231	Bike Locker/Rack	I would like to see bike lockers so I know my bike will be safe and in one piece when I return from work.
33.87615	-117.98832	Bike Locker/Rack	We really need a bike locker at the Buena Park station.
33.87622	-117.98876	Bike Locker/Rack	-----
33.83215	-117.91337	Bike Locker/Rack	-----
33.8484	-117.83939	Bike Locker/Rack	-----
33.75151	-117.85591	Bike Locker/Rack	-----
33.86928	-117.92159	Bike Locker/Rack	-----
33.80391	-117.88196	Bike Locker/Rack	-----
33.55492	-117.6679	Bike Locker/Rack	Comment...bike racks at station
33.75184	-117.85662	Bike Locker/Rack	Better racks would be nice here.
33.65636	-117.73425	Bike Locker/Rack	bike lockers in a shaded and protected area
33.80353	-117.88228	Bike Locker/Rack	bike lockers in a shaded and safe area
33.71014	-117.82978	Bike Locker/Rack	-----
33.7889	-117.85734	Bike Locker/Rack	Add more bike lockers please, I have been on the waiting list for a year.
33.70782	-117.80646	Bike Locker/Rack	Covered bike parking in the garage would be hugely helpful. Parking at the station is adequate at low-traffic times (weekends, mostly) but I'd hesitate to commute through here on a weekday.
33.86878	-117.92274	Bike Locker/Rack	-----
33.81585	-117.83709	Bike Locker/Rack	Bike Locker or rack is needed in this area. I have seen many bikes locked over night at 3:00 am on my way to work. day laborers concentrate in this area and leave their bicycles locked to bus posts or trees, leaving them vulnerables to unscrupulous thieves. bike lockers will greatly improve the look of this area as well as adding safety and peace of mind to these workers.
33.87543	-117.98666	Bike Locker/Rack	Comment...add

33.86928	-117.92277	Bike Locker/Rack	Comment...add
33.78807	-117.8569	Bike Locker/Rack	to use more the bike need that...
33.78759	-117.85333	Bike Locker/Rack	-----
33.78945	-117.85844	Bike Locker/Rack	Comment...more access
33.78608	-117.85844	Bike Locker/Rack	-----
33.75173	-117.85633	Bike Locker/Rack	-----
33.50047	-117.66341	Bike Locker/Rack	Comment...inadequate
33.85386	-117.84065	Bike Locker/Rack	More lockers needed.
33.88194	-117.56282	Bike Locker/Rack	Replace clamshells with bike lockers
33.75161	-117.85649	Bike Locker/Rack	Bike lockers for those intereseted in overnight storage of bikes for those only using bikes from the destination point.
33.4149	-117.61949	Bike Locker/Rack	Comment...may need more bike racks and there are NO lockers
33.7865	-117.8593	Bike Locker/Rack	Comment...please add more bike lockers and racks
33.86881	-117.9225	Bike Locker/Rack	Bike rack is not big enough and can't accommodate oddly shaped bikes (tandem, recumbent, etc.)
33.78815	-117.85769	Bike Locker/Rack	-----
33.86861	-117.92312	Bike Locker/Rack	-----
33.87606	-117.98873	Bike Locker/Rack	this area is not the safest esp. for property. fully locked boxes are appropriate here not just bike racks
33.70529	-117.81232	Bike Locker/Rack	-----
33.65739	-117.88001	Bike Locker/Rack	-----
33.5023	-117.66475	Bike Locker/Rack	-----
33.50152	-117.66385	Bike Locker/Rack	-----
33.65615	-117.73364	Bike Locker/Rack	Comment..need more lockers here.

33.86862	-117.92226	Bike Locker/Rack	There aren't many bike racks at this station, since I'm assuming most people drive to the station and commute on the rails.
33.8337	-117.92485	Bike Locker/Rack	-----
33.83487	-117.924	Bike Locker/Rack	-----
33.83423	-117.92728	Bike Locker/Rack	-----
33.65643	-117.73279	Bike Locker/Rack	bike lockers would be nice
33.65635	-117.73264	Bike Locker/Rack	-----
33.1818	-117.36835	Bike Locker/Rack	-----
33.87562	-117.98746	Bike Locker/Rack	Provide more proficient and more secure bike racks...
33.5541	-117.67467	Bike Locker/Rack	Comment...lockers would be conveinent
33.86875	-117.92203	Bike Locker/Rack	Racks only in dark corners
33.68143	-117.79682	Bike Locker/Rack	-----
33.70764	-117.8056	Bike Locker/Rack	More casual bike parking
33.78916	-117.85728	Bike Locker/Rack	-----
33.75172	-117.85711	Bike Locker/Rack	-----
33.70529	-117.80591	Bike Locker/Rack	Lockers
33.65668	-117.73362	Bike Locker/Rack	-----
33.70743	-117.80609	Bike Locker/Rack	-----
33.65629	-117.73347	Bike Locker/Rack	-----
33.87577	-117.98702	Bike Locker/Rack	-----
33.75311	-117.85707	Bike Locker/Rack	-----
33.86877	-117.92283	Bike Locker/Rack	-----

34.05743	-118.22803	Bike Locker/Rack	add indoor bike racks at union station at the opposite end of the MTA building. only outdoor bike racks exist but it is sketchy and not protected from rain. indoor ones need at that end.
33.50126	-117.66292	Bike Locker/Rack	-----
33.70143	-117.84093	Bike Locker/Rack	-----
33.78856	-117.85725	Bike Locker/Rack	-----
33.78893	-117.85861	Bike Locker/Rack	Comment...Bike Lockers in safe area
33.70721	-117.806	Bike Locker/Rack	Bike lockers are always locked/used, need easier access
33.86851	-117.92271	Bike Locker/Rack	-----
33.74897	-117.85673	Bike Locker/Rack	-----
33.56047	-117.66646	Bike Locker/Rack	I would like to see more bike racks near Mission hospital.
33.56044	-117.66599	Bike Locker/Rack	Would like to see more bike racks near Mission Hospital.
33.56016	-117.66607	Bike Locker/Rack	Would like to see more bike racks near Mission Hospital.
33.70827	-117.80642	Bike Locker/Rack	-----
33.72014	-117.82274	Bike Locker/Rack	-----
33.70803	-117.80568	Bike Locker/Rack	The racks near the bike lockers here are getting full
33.80291	-117.88368	Bike Locker/Rack	-----
33.71194	-117.78044	Bike Locker/Rack	-----
33.79007	-117.85741	Bike Locker/Rack	not enough bike safes
33.78579	-117.85741	Bike Locker/Rack	Comment...need bike lockers
33.87757	-117.74919	Conflict/Barrier	We need a bridge from the north side of Esperanza over the RR tracks to the bike path along the Santa Ana River.
33.79614	-117.88028	Conflict/Barrier	Coming from the north, I must ride way down to the southeast corner of Anaheim Stadium to access the train station. Can't we put a link in between the Santa Ana River bikepath and the Anaheim MetroLink Station that's more direct?

33.85164	-117.83747	Conflict/Barrier	I would consider using the Anaheim Canyon station if there were a safer way to get from the Santa Ana River bikepath to the Station. Now you have to fight traffice using the Tustin Avenue bridge. Maybe an alternatate bikes-only route? Or at least barricades?
33.78893	-117.85852	Conflict/Barrier	Bike groove at stairs
33.55399	-117.67527	Conflict/Barrier	Bike grooves on stairs
33.55806	-117.67645	Conflict/Barrier	Crown Valley is too steep, not safe for biking.
33.70789	-117.80596	Conflict/Barrier	Bike gutters in steps to divert riders from going down ADA access ramp.
33.70797	-117.80575	Conflict/Barrier	Bike gutters in steps to divert riders from going down ADA access ramp.
33.78965	-117.8576	Conflict/Barrier	Bike Gutters on steps so bikes don't use ADA ramps
33.64807	-117.72447	Conflict/Barrier	Too steep for biking!
33.65636	-117.73477	Conflict/Barrier	Create a sidewalk on both sides of street leading to and from the station on ada
33.7	-117.80574	Conflict/Barrier	Comment...Off road bike path East of Jamboree do not open gate to Edinger to reach Tusting Station. Several of the train riders need to fight car traffic on Edinger and on Harvard all the way in the morning and in the afternoon traffic. Risky and waste lots of time
33.87775	-117.98911	Conflict/Barrier	Overflow parking here is dangerous with people doing U-turns and no crosswalk
33.654	-117.73185	Conflict/Barrier	Need street sweeping. Dangerous condition biking in lane to avoid
33.657	-117.73507	Conflict/Barrier	Had bike seat stolen and air let out of tires (may have been Santa Ana)
33.8685	-117.92076	Conflict/Barrier	side walk from street to station, not just lines on the asphalt
33.8687	-117.92496	Conflict/Barrier	new parking structure is really far away from the over crossing
33.8554	-117.84024	Conflict/Barrier	Comment...crosswalk next to train tracks
33.75235	-117.85348	Conflict/Barrier	Better triming of the hedges so its safe to walk to ride on the side walks without being in the road
33.78985	-117.86183	Conflict/Barrier	Crossing Maple is very dangerous on this street and I have had some close calls on my bike.
33.78971	-117.86651	Conflict/Barrier	This is the worst street to cross because the cars coming from Chapman are on a curve and don't see me crossing. I hate crossing this street on my bike. Very fast cars. Need a better route to SART
33.788	-117.88133	Conflict/Barrier	The concrete is cracked with voids at two locations on this corner and I have to ride over the large cracks on the way to work.
33.8296	-117.84013	Conflict/Barrier	Comment...sidewalk nees leveling

33.55515	-117.67538	Conflict/Barrier	sidewalk is needed on this street
33.78722	-117.8581	Conflict/Barrier	Comment...mobility kiosk would be helpful that identify modal links like bike trails, taxis, buses etc.
33.4149	-117.61915	Conflict/Barrier	Comment...Comment...mobility kiosk would be helpful that identify modal links like bike trails, taxis, buses etc.
33.64929	-117.72524	Conflict/Barrier	Comment..start walkway here.
33.66186	-117.75618	Conflict/Barrier	I work on the corner of sandcayon and irvin center dr. it would be nice to have a walk path to train station vian sand caynon to 5 fwy more direct. verses going down barranca
33.8022	-117.87722	Conflict/Barrier	When ARTIC is built, please provide access to/from Santa Ana River Trail.
33.65295	-117.73041	Conflict/Barrier	Sidewalk please i dont want to die
33.65179	-117.7283	Conflict/Barrier	Comment...Sidewal
33.70777	-117.80578	Conflict/Barrier	getting up and down the stairs is difficult with heavier bikes. bike ramps (narrow smooth paths) built in to the stairs would make it easier and discourage use of the ada ramps.
33.78777	-117.86176	Conflict/Barrier	consider bike loops...this is the first signalized intersection south west of the station.
33.87038	-117.91977	Conflict/Barrier	This intersection from the train station to Fullerton College is very dangerous. I almost got killed there. That Angels baseball player got killed around here. It gets a lot of walking traffic and cars speed here.
33.55503	-117.67546	Conflict/Barrier	Comment...actual sidewalks along forbes between crown valley and station
33.73499	-117.87149	Conflict/Barrier	bumpy road
33.97274	-117.37121	Conflict/Barrier	left arrow turn light to make u turn, access from eastboung 14th street to metro
33.71114	-117.80815	Conflict/Barrier	Sidewalks - commuters are either walking on grass or sidewalks. OCTA drop off near pass trough for metorlink.
33.71471	-117.81587	Conflict/Barrier	Sidewalks on track side of Edinger.
33.79068	-117.85718	Conflict/Barrier	Comment...North end of the parking lot and sidewalks aren't kept up well. Lots of debris from trees.
33.88565	-117.61334	Conflict/Barrier	Pedestrians crossing unmarked roadway. Need barriers to keep people out of path of vehicles.
33.71182	-117.8036	Conflict/Barrier	At the walnut crossing, bike crossing button requires riding on sidewalk
33.71253	-117.80261	Conflict/Barrier	Bike crossing length of light is quick. Always have yellow about 3/4 way throught intersection
33.70764	-117.80506	Conflict/Barrier	Provide bike rail for carrying bike up and down stairs.

33.78962	-117.85708	Conflict/Barrier	Crosswalk at bus turnaround. Much of the foot traffic crosses at the bus turnaround to access parking at the Lot on N. Cypress and W. Maple.
33.43116	-117.63282	Conflict/Barrier	Better access for pedestrians.
33.41777	-117.61571	Conflict/Barrier	Comment...side walks are missing up and down ajioning nieghborhoodsthe beach trail is to narrow and hard to use for bikes a favorat of commuters
33.80428	-117.88466	Conflict/Barrier	Direct access to Katella would be swell (instead of having to snake around the parking lot)
33.66815	-117.82385	Conflict/Barrier	Comment...How can bikes or pedestrians cross here when cars don't stop?
33.66883	-117.82381	Conflict/Barrier	Comment...Great crosswalk if you want to get hurt.
33.67095	-117.82161	Conflict/Barrier	Comment...The section from the bike path to the crosswalk is a steep slope, you can't stop look for traffic and then bike. You must get off and walk and time it so cars don't hit you. Then you reach a crosswalk light. I heard other bikers say this is the most dangerous spot in Irvine.
33.75207	-117.85544	Conflict/Barrier	We need direct access to the platform from Fruit street or more predictable bus service. Thank you.
33.42033	-117.61876	Conflict/Barrier	Comment...Poor and non existent sidewalks limit access to San Clemente Pier Station
33.65731	-117.73273	Conflict/Barrier	No bike-ped access to Great Park, a stone's throw but miles away by road.
33.6515	-117.74189	Conflict/Barrier	Spectrum Center is major destination, but can't get there from station - a stone's throw away - w/o car.
33.65086	-117.75468	Conflict/Barrier	Barranca trail needs better connection, signage to Spectrum and Metrolink station.
33.88023	-117.75467	Conflict/Barrier	Bike paths along Yorba Linda Blvd might benefit from barriers. Should be studied.
33.65523	-117.84476	Conflict/Barrier	Entrance to San Diego Creek Trail extremely narrow (barely enough for handlebars) due to placement of signal pole.
33.69001	-117.82296	Conflict/Barrier	Put a barrier here for now until the Peter's Canyon Trail is actually connected.
33.70172	-117.80403	Conflict/Barrier	Construction sign blocks bike lane
33.708	-117.80806	Conflict/Barrier	Construction sign blocks bike lane
33.86828	-117.92201	Conflict/Barrier	Cars drive down E Walnut at high speeds with very little consideration for pedestrians and bicyclists. Signage or a crosswalk is needed.
33.84883	-117.8399	Conflict/Barrier	-----
33.55873	-117.6743	Conflict/Barrier	Sidewalks over the bridge are very narrow

33.86863	-117.92271	Conflict/Barrier	Path to tracks are designed for walking. They are not safe for bikes.
33.87016	-117.92464	Conflict/Barrier	-----
33.57981	-117.67133	Conflict/Barrier	Oso is too conjested and unsafe for cyclists to ride on anytime of the day. A direct route needs to be found that can go under the 5 freeway to tie into Camino San Juan Capistrano.
33.70613	-117.80344	Conflict/Barrier	No connection to the directest way to station.
33.75101	-117.85733	Conflict/Barrier	Easiest, most comfortable connection from station to downtown area by bike has a big parkinglot in it.
33.65821	-117.80735	Conflict/Barrier	I use the Sand Canyon Wash trail to access the Irvine station. The intersections where the trail crosses streets along University feel unsafe; I do not think cars are looking for me in the crosswalks, and crossing is often slow.
33.65825	-117.80134	Conflict/Barrier	This intersection is not as bad as the Ridgeline intersection but it can also be difficult to cross.
33.66707	-117.79079	Conflict/Barrier	Similar to Ridgeline intersection; feels dangerous.
33.65496	-117.84471	Conflict/Barrier	I use the SD Creek trail to access the Tustin station. Access to the trail from Campus Drive is difficult and requires dismounting and walking the bike onto the sidewalk to avoid utility poles before reaching the trail.
33.85724	-117.98101	Conflict/Barrier	-----
33.84626	-117.93878	Conflict/Barrier	-----
33.70607	-117.80291	Conflict/Barrier	Need to extend bike path to Tustion Station from the south
33.67531	-117.75942	Conflict/Barrier	Need to extend bike path to Irvine station
33.74246	-117.86343	Conflict/Barrier	Comment...Bike Path ends.
33.68012	-117.87361	Conflict/Barrier	Between the 405 and 73. The road is so chopped up, cyclists must walk their bikes.
33.80192	-117.87659	Conflict/Barrier	-----
33.75309	-117.85609	Conflict/Barrier	Divider on Santa Ana - Bridge to connect Lincoln to SA Depot
33.75238	-117.85589	Conflict/Barrier	Can you get bike from Fruit to east landing?
33.70361	-117.79999	Conflict/Barrier	Island across the Walnut Trail at Harvard RR Xing needs pass through!
33.70578	-117.80311	Conflict/Barrier	Peters Canyon - need a bridge
33.78802	-117.85695	Conflict/Barrier	Crossing Chapman is rough
33.71806	-117.80888	Conflict/Barrier	Drivers turning right stack up in the bike lane during peak PM hours. Some bikes turning right are inclined to take the sidewalk rather than wait in the line of cars.
33.87387	-117.8789	Conflict/Barrier	This area is highly congested and unsafe to ride even motercycles let alone bikes...

33.7997	-117.87999	Conflict/Barrier	-----
33.8022	-117.88531	Conflict/Barrier	-----
33.78781	-117.85844	Conflict/Barrier	-----
33.65534	-117.7397	Conflict/Barrier	-----
33.65381	-117.74412	Conflict/Barrier	-----
33.69972	-117.80712	Conflict/Barrier	-----
33.75234	-117.85773	Conflict/Barrier	Need a walking ingress or egress into the station from here.
33.75218	-117.85692	Conflict/Barrier	-----
33.80321	-117.8843	Conflict/Barrier	Have to drive a maze to get to parking
33.86781	-117.91482	Conflict/Barrier	-----
33.50218	-117.65781	Conflict/Barrier	-----
33.71012	-117.80921	Conflict/Barrier	sidewalk ends...
33.7078	-117.80653	Conflict/Barrier	no sidewalk, so you have to walk in the street
33.69886	-117.82514	Conflict/Barrier	-----
33.5529	-117.67416	Conflict/Barrier	Stairs need rail for carrying bike up and down stairs
33.55757	-117.67652	Conflict/Barrier	-----
33.41562	-117.61417	Conflict/Barrier	-----
33.71714	-117.79184	Conflict/Barrier	Comment..lots of construction in theses areas
33.75215	-117.85575	Conflict/Barrier	We need a little door or gate in order to go to the platform from Fruit street. Thank you.
33.7165	-117.82317	Conflict/Barrier	-----
33.65232	-117.72847	Conflict/Barrier	Need sidewalk here
33.64801	-117.72584	Conflict/Barrier	There is no sidewalk or waiting area here. People stand on the roadway to wait for the bus because there is a hedge.
33.64784	-117.72448	Conflict/Barrier	Bike shelter was knocked over and needs to be replaced.
33.65632	-117.73338	Conflict/Barrier	Pedestrian route between parking structure and station is not straightforward because of awkwardly placed landscaping. Pathways need to be better designed.
33.65636	-117.73281	Conflict/Barrier	People always walk through the bushes here to get to/from the parking lot.
33.77152	-118.11576	Conflict/Barrier	not enough routes to service this area, could use a shuttle to the Long Beach Transit Gallery....
33.19188	-117.37874	Lighting Improvements	Comment...Better lighting needed on Metrolink side (ocean side) of the tracks in Oceanside. Light in area of platform leading into parking lot has been out for at least 1 year and a half making it a scary walk especially during Pacific Standard time. Maybe this is the City's jurisdiction?.
33.66101	-117.8743	Lighting Improvements	More lighting
33.86893	-117.92384	Lighting Improvements	Not well lit around station

33.8778	-117.88435	Lighting Improvements	Poor lighting at bus stop.
33.79173	-117.85487	Lighting Improvements	-----
33.68516	-117.82926	Lighting Improvements	Insert short bollard light.
33.68364	-117.83085	Lighting Improvements	Insert short bollard light.
33.68182	-117.83263	Lighting Improvements	Insert short bollard light.
33.67948	-117.83467	Lighting Improvements	Insert short bollard light.
33.67669	-117.83542	Lighting Improvements	Insert short bollard light.
33.67482	-117.83549	Lighting Improvements	Insert short bollard light.
33.67225	-117.83567	Lighting Improvements	Insert short bollard light.
33.66928	-117.83544	Lighting Improvements	Insert short bollard light.
33.6582	-117.841	Lighting Improvements	Insert short bollard light.
33.65777	-117.84202	Lighting Improvements	Insert short bollard light.
33.6585	-117.84125	Lighting Improvements	Insert short bollard light.
33.65089	-117.85904	Lighting Improvements	Insert short bollard light.
33.65092	-117.86172	Lighting Improvements	Insert short bollard light.
33.65073	-117.86479	Lighting Improvements	Insert short bollard light.
33.64891	-117.86683	Lighting Improvements	Insert short bollard light.
33.49826	-117.66807	Lighting Improvements	Comment...The Parking for Metro users in SJC (lowest level - dungeon) needs more lighting during winter especially.
33.71714	-117.79802	Lighting Improvements	-----
33.55334	-117.6755	Lighting Improvements	Comment...Early morning is quite dark now.
33.6856	-117.82011	Lighting Improvements	-----
33.55732	-117.67605	Lighting Improvements	improve lighting at this intersection and down Forbes Rd
33.82748	-117.83625	Lighting Improvements	-----

33.75113	-117.85599	Lighting Improvements	More lights to the station would be helpful for evening travel
33.75226	-117.8547	Lighting Improvements	More lighting for evening travel.
33.86809	-117.92316	Lighting Improvements	-----
33.86902	-117.92278	Lighting Improvements	-----
33.55078	-117.67356	Lighting Improvements	Comment...better street lighting to station
33.70733	-117.80751	Lighting Improvements	Lighting that is directed to crosswalks
33.65418	-117.70765	Lighting Improvements	A light on the bust to to signal bus driver during winter hours when it gets darker soon. Hard for bus drivers to see us.
33.50108	-117.66395	Lighting Improvements	The lighting is poor here, and in the winter months when I reach the station at 5am, many times there are people picking through the trash cans, and I would feel safer knowing whether it were a paerson/animal/etc.
33.55714	-117.67597	Lighting Improvements	Construction, road very dark
33.87784	-117.98016	Lighting Improvements	Add lighting
33.80915	-117.91524	Lighting Improvements	at night , the bus stop next to disneyland is so dark to see.
33.43167	-117.63263	Lighting Improvements	More night lighting
33.43212	-117.63301	Lighting Improvements	-----
33.88532	-117.6134	Lighting Improvements	-----
33.88197	-117.56369	Lighting Improvements	-----
33.75177	-117.85624	Lighting Improvements	-----
33.74974	-117.8517	Lighting Improvements	Increase lighting at bus stops along grand avenue for safety
33.7266	-117.84988	Lighting Improvements	improve lighting on Grand and Edinger
33.72285	-117.85005	Lighting Improvements	Install some type of security lighting at St. Andrew and Grand.
33.75211	-117.85823	Lighting Improvements	-----
33.75165	-117.85597	Lighting Improvements	-----

33.75145	-117.85992	Lighting Improvements	-----
33.75045	-117.86235	Lighting Improvements	-----
33.74539	-117.85866	Lighting Improvements	-----
33.74546	-117.862	Lighting Improvements	-----
33.73866	-117.8633	Lighting Improvements	Comment...Lighting needs to improve along the Pacific Electric Bike Path. It gets way to dark.
33.73267	-117.86332	Lighting Improvements	Comment... Lighting needs to improve along the Pacific Electric Bike Path. It gets way to dark.
33.72483	-117.86343	Lighting Improvements	Comment... This area needs much more lighting on the trail
33.19238	-117.37968	Lighting Improvements	Dark and creepy at night. Need good lighting in case I end up waiting there for a bit.
33.70714	-117.80626	Lighting Improvements	along the access from the north
33.80334	-117.88294	Lighting Improvements	-----
33.81792	-117.93721	Lighting Improvements	-----
33.86862	-117.9223	Lighting Improvements	More bright light to see in the dark.
33.87006	-117.92434	Lighting Improvements	-----
33.74274	-117.8692	Lighting Improvements	-----
33.72214	-117.80351	Lighting Improvements	-----
33.75275	-117.85625	Lighting Improvements	This area was dark the last time I was here at night.
33.70115	-117.80763	Lighting Improvements	Very Dark At Night...
33.86806	-117.92191	Lighting Improvements	-----
33.55206	-117.67433	Lighting Improvements	Very Dark at Night...
33.8207	-117.89728	Lighting Improvements	more lighting at night
33.87548	-117.98667	Lighting Improvements	-----
33.75112	-117.85673	Lighting Improvements	-----
33.80258	-117.88179	Lighting Improvements	Feel safer after game

33.66187	-117.87303	Lighting Improvements	more lighting
33.66099	-117.87416	Lighting Improvements	more lighting
33.84598	-117.76163	Lighting Improvements	-----
33.80769	-117.91513	Lighting Improvements	-----
33.87459	-117.91988	Lighting Improvements	-----
33.43164	-117.63321	Lighting Improvements	Comment...at5 AM it is too dark
33.86818	-117.92254	Lighting Improvements	-----
33.71642	-117.80815	Lighting Improvements	For pedestrian walkway from Dow to Station. Also at station from Edinger to Station.
33.50069	-117.66429	Lighting Improvements	-----
33.69957	-117.77879	Lighting Improvements	-----
33.80234	-117.73313	Lighting Improvements	-----
33.5025	-117.66361	Lighting Improvements	It's too dark for me to walk home from the station at night.
33.51353	-117.66049	Lighting Improvements	-----
33.50932	-117.66639	Lighting Improvements	Not well lit enough at night
33.65929	-117.84831	Lighting Improvements	-----
33.67929	-117.79355	Lighting Improvements	-----
33.55256	-117.67486	Lighting Improvements	It's really uncomfortable at night.
33.86648	-117.82348	Lighting Improvements	-----
33.708	-117.7987	Lighting Improvements	Comment...better lighting by railroad tracks
33.74897	-117.85621	Lighting Improvements	-----
33.70231	-117.93672	Lighting Improvements	need light for passengers on bus
33.71985	-117.81317	Lighting Improvements	-----
33.79906	-117.89947	Lighting Improvements	-----

33.71379	-117.77718	Lighting Improvements	-----
33.86865	-117.9223	Lighting Improvements	-----
34.06197	-118.17197	Lighting Improvements	-----
33.72199	-117.88492	Lighting Improvements	-----
33.70707	-117.89232	Lighting Improvements	el parque esta demasiado obscuro..
33.82748	-117.83621	Safety	Can be slightly dangerous at night, especially for female travelers.
33.19238	-117.37968	Safety	Improved security, I felt very vulnerable one night when I was at this transit station past sunset.
33.74897	-117.88007	Safety	safety is a big concern in santa ana
33.78938	-117.85547	Safety	Security cameras or other means of protection. My car was keyed while at work one day. I filed a police report and never received a follow-up from the Orange police. This is a high foot traffic area and vandals/criminals can easily access vehicles that are parked for an entire day.
33.6564	-117.73344	Signage	Need signage for bike parking - I poked around for at least 10 minutes before I found it, in the parking garage.
33.70562	-117.80297	Signage	Metrolink signage needed on bike trail.
33.70367	-117.79973	Signage	Should have Metrolink signage at Harvard, another main bike route, also, Peters Cyn. trail often closed.
33.50125	-117.66418	Signage	No train info available
33.6494	-117.86688	Signage	Give direction to UC Irvine, Costa Mesa, the "North Back Bay", Tustin Metrolink, etc.
33.65087	-117.8537	Signage	Signage to UC Irvine Business Park
33.65308	-117.84731	Signage	Signage to UC Irvine Bren Events Center, Mesa Court Housing
33.65409	-117.84589	Signage	Use signage to allow/disallow contraflow riding to intersection
33.65568	-117.84425	Signage	Signage showing exit option to UC Irvine
33.65813	-117.8416	Signage	Signage showing trail name and exit to Harvard/University.
33.65781	-117.83987	Signage	Signage suggesting southbound traffic use the sidewalk to reach Harvard/University.
33.6582	-117.84147	Signage	Yield signage for northbound
33.66131	-117.83817	Signage	Signage showing exit for Harvard/University. Also, showing path continues to UC Irvine etc. (south) and Tustin Metrolink etc. (north)
33.67037	-117.83527	Signage	Signage showing exit to eastbound Michelson.

33.67037	-117.83527	Signage	Signage showing exit to eastbound Michelson, Park West Apartments.
33.67109	-117.83529	Signage	Signage showing exit to westbound Michelson, Boomers, Irvine Lanes, etc.
33.67445	-117.83541	Signage	Show access to 405-Parallel "Greenbelt" to Harvard, Culver. Access to Old SD Creek and Main Street trails.
33.67693	-117.8352	Signage	Show exist to eastbound Coronado, shopping center
33.67793	-117.83512	Signage	Show exist to westbound Coronado, business park, hotel, etc.
33.67793	-117.83512	Signage	Show exit to westbound Coronado, business park, hotel, etc.
33.67811	-117.83505	Signage	Show exit to westbound Main St.
33.67811	-117.83505	Signage	Show exit to eastbound Main St.
33.67963	-117.83446	Signage	Show exit to westbound Main St.
33.68186	-117.83238	Signage	T-Stop signage showing access to Irvine Westpark, direction to UC Irvine, Boomers, Irvine Lanes, Tustin Metrolink, etc.
33.68533	-117.82901	Signage	Show exit to south/eastbound Alton Drive
33.68655	-117.82785	Signage	Show exit to north/westbound Alton Drive
33.68709	-117.82718	Signage	Exit to UCI Police Station, City Hall.
33.6879	-117.82643	Signage	Exit to UCI Police Station, City Hall.
33.68954	-117.82283	Signage	Exit to Bill Barber Park and Fields
33.68842	-117.81889	Signage	Give direction to use temporarily us Harvard to get to Edinger/Tustin Metrolink
33.68842	-117.81889	Signage	Give direction to use temporarily us Harvard to get to Edinger/Tustin Metrolink or continue on path to go to Irvine Transportation Center (Amtrack/Metrolink)
33.70579	-117.80662	Signage	Alt. Entrance to Tustin Metrolink
33.70721	-117.80735	Signage	Tustin Metrolink Main Entrance
33.70664	-117.80532	Signage	Left turn to Tustin Metrolink
33.6614	-117.76977	Signage	Directional signage to northbound Barranca or continue on to southbound Barranca after underpass
33.66015	-117.76695	Signage	Exit to Laguna Canyon Road, right turn to Irvine Transportation Center
33.66015	-117.76695	Signage	Exit to Laguna Canyon Road, right turn here and then Barranca to Irvine Transportation Center
33.68564	-117.81494	Signage	Exit to westbound Paseo Westpark
33.68564	-117.81494	Signage	Exit to westbound Paseo Westpark, shopping center
33.68564	-117.81494	Signage	Exit to southbound Paseo Westpark, shopping center
33.68474	-117.81368	Signage	Exit to northbound Paseo Westpark, shopping center

33.78791	-117.85375	Signage	Sharrow, Bike May Use Full Lane
33.78792	-117.85435	Signage	Sharrow
33.78789	-117.85501	Signage	Sharrow
33.7879	-117.85553	Signage	Sharrow
33.78789	-117.85615	Signage	Sharrow
33.78791	-117.85659	Signage	Sharrow
33.78793	-117.85762	Signage	Sharrow
33.78791	-117.85827	Signage	Sharrow
33.78791	-117.85877	Signage	Sharrow
33.78789	-117.85935	Signage	Sharrow
33.7879	-117.85987	Signage	Sharrow
33.78792	-117.86064	Signage	Sharrow
33.78791	-117.8614	Signage	Sharrow
33.78736	-117.86182	Signage	Sharrow
33.78653	-117.86185	Signage	Sharrow
33.78583	-117.86185	Signage	Sharrow
33.7848	-117.86183	Signage	Sharrow
33.78387	-117.86184	Signage	Sharrow
33.78312	-117.86182	Signage	Sharrow
33.7822	-117.86182	Signage	Sharrow
33.78113	-117.8618	Signage	Sharrow
33.71728	-117.80883	Signage	-----
33.78797	-117.85728	Signage	There should be signage indicating that there are bikers and the lane is to be shared under CA vehicle code
33.70029	-117.80231	Signage	Metrolink Station directions
33.70978	-117.80892	Signage	Larger signs indicating metrolink station.
33.86835	-117.92153	Signage	Signage or a crosswalk is needed on E. Walnut.
33.55215	-117.67453	Signage	Bike route maps so to eductae people on alternate ways to get to the station other than driving thier cars.
33.51963	-117.67576	Signage	Signs showing what this trail connects to.
33.51986	-117.67141	Signage	A sign with where this traill leads would be good here.
33.52642	-117.67012	Signage	-----
33.50128	-117.66322	Signage	Add bike route signage to educate people that there is a link to the Trabuco Creek Trail and other bike paths to encourage people to bike to the station.
33.5011	-117.66429	Signage	Direct people North on Los Rios and left on Ramos to get to Trabuco Creek trail.
33.65901	-117.7501	Signage	-----
33.91595	-118.0562	Signage	-----
33.86784	-117.9241	Signage	-----
33.81061	-117.94959	Signage	-----
33.59511	-117.67356	Signage	Comment...bike route

33.66085	-117.76717	Signage	Bike access to the Irvine station from the trail is good but signage indicating good exit points and a route to the station would be great.
33.78753	-117.85324	Signage	-----
33.78786	-117.85777	Signage	-----
33.75247	-117.85721	Signage	-----
33.7514	-117.85724	Signage	-----
33.86925	-117.91996	Signage	Signs to direct pedestrians and bikers to the southern platform for trains heading south via Walnut Ave.
33.75202	-117.85679	Signage	-----
33.80605	-117.87537	Signage	The best, most frequently used bike path in the county, and there's not a single sign to the almost-adjacent station.
33.80562	-117.88344	Signage	The most direct route from my home would bring me to Katella/Howell. Signs through that building's lot to the unlocked gate would be great.
33.8033	-117.88911	Signage	The
33.74537	-117.86315	Signage	Comment... Signage directing bikers/walkers toward the station
33.75133	-117.86021	Signage	Comment... Directing people to the station or to the Pacific Electric Bike Path
33.72669	-117.86345	Signage	Comment...Signage leading people towards the Station.
33.65704	-117.73331	Signage	-----
33.70947	-117.80508	Signage	I use this back ped/bike route, but I am not sure everyone knows about it. Signage is there, but maybe marketing?
33.71257	-117.82617	Signage	-----
33.7494	-117.8609	Signage	More signs needed
33.87359	-117.98655	Signage	-----
33.69486	-117.84316	Signage	-----
33.75167	-117.85928	Signage	People always ask me where the train station / amtrak is when I'm on this street.
33.75217	-117.85632	Signage	-----
33.6505	-117.74378	Signage	Directions to Spectrum
33.86808	-117.92226	Signage	Signs to LA
33.85838	-117.998	Signage	-----
33.75269	-117.85638	Signage	-----
34.12537	-118.25675	Signage	-----
34.12552	-118.25491	Signage	-----
34.12673	-118.25796	Signage	-----
34.12869	-118.25775	Signage	-----
34.12365	-118.25524	Signage	-----
34.12233	-118.25336	Signage	-----
34.12326	-118.26012	Signage	-----

33.78794	-117.85847	Signage	Markers of on the crosswalk, as traffic builds up and blocks the crosswalk
33.42307	-117.62172	Signage	-----
33.70788	-117.80596	Signage	The overall signage is way confusing for first time users, there is not indication for how to ride the train, where to buy the ticket or if you buy one on the train. The sign for what direction the train runs is hidden on a small sign on the otherside of the tunnel. Overall, there should be a obvious digital information hub centralized for new riders saying how to ride the train and the train schedule with what train is coming next, what side of the track it will be on, and have the ticket machine right next to it. It would be ideal to have one on both sides of the track so you can buy the tickets on the platform. Overall the whole process was very confusing signs were not obvious at all which caused a lot of confusion for me and my friends who are other riders. I hope to see improvements on this system because it it a great way to get from place to place.
33.692	-117.82033	Signage	-----
33.70686	-117.79476	Signage	-----
33.69529	-117.83664	Signage	I am not aware of the metro link station here as much as the one by the irvine spectrum. There should be more signs.
33.86701	-117.92084	Signage	-----
33.75202	-117.856	Signage	-----
33.55751	-117.6763	Signage	The first time I walked down this long stretch of drive ways I thought I was lost.
33.70329	-117.80076	Signage	better sinage Comment...
33.7115	-117.79978	Signage	-----
33.70614	-117.80403	Signage	-----
33.71226	-117.77609	Signage	-----
33.77124	-117.99354	Signage	We could improve with signs displaying the bus schedules-cheap and easy to do....
33.75235	-117.85184	Signage	Better signs for Pedestrian cross walks. I have almost been hit 3 times in the past month for people not watching

APPENDIX B
Field Audit Worksheets

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Accessibility Checklist

Station Name:	**Anaheim**	**City Name:**	**Anaheim**
Surveyed By:	**Deepak Kaushik**	**Survey Date:**	**11/28/2012**

1 | Station Mode Split

This Metric to be Completed in Office

Station Typology (Exh 4-4 from TCRP 153): Special Event/Campus
Metrolink 2010 Daily Boardings/Alightings (Table E-3 from MSPMS): 505

Bicycle Environment	**Bike:**	**Ped:**
Estimated Mode Split (derived from MSPMS+CSS):	2%	13%
Estimated Mode Split National Average (from TCRP 153):	2%	55%
Estimated Mode Split Effectiveness Ratio:	1.00	0.24

Mode Split	
Range	Score
0 - 0.2	0
0.21 - 0.40	2
0.41 - 0.60	4
0.61 - 0.80	6
0.81 - 1.0	8
>1.0	10

Bicycle Mode Split		**Pedestrian Mode Split**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 2**
Poor Good		*Poor Good*	

2 | Network Design

What streets are adjacent to station?	Katella Ave, Howell Ave

Bicycle Environment	**Notes:**	
Class I, II, III Bike Facility?	*Y/N*	None
Are adjacent streets Bike Friendly (shaded, buffer b/w cars, etc.)?	*Y/N*	No Buffers on any of the adjacent streets. Katella Ave isn't bike friendly (higher speeds)

Pedestrian Environment	**Notes:**	
Sidewalk, 5-feet wide or more	*Y/N*	Yes, all are 5ft or more
Do pedestrian Trails exist?	*Y/N*	Yes, ped/bike trail from Howell Ave office park
Are adjacent streets Pedestrian Friendly(shaded, buffer b/w cars, etc.)?	*Y/N*	No, no sidewalk along Howell at entrance to Katella. Station is located far from adjacent streets (within stadium parking lot).

Bicycle Friendliness		**Pedestrian Friendliness**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

3 | Catchment Area Effectiveness

This Metric to be Completed in Office

Bicycle Environment	**Notes:**	
Rational Catchment Area (from OCTA GIS)		14.2 sq mi (9,059 acres)
Optimal Catchment Area (∏*Radius^2)		28.3 sq mi
Catchment Area Effectiveness Ratio		*0.5*

Pedestrian Environment	**Notes:**	
Rational Catchment Area (from OCTA GIS)		0.5 sq mi (287 acres)
Optimal Catchment Area (∏*Radius^2)		0.8 sq mi
Catchment Area Effectiveness Ratio		*0.63*

Mode Split	
Range	Score
0 - 0.2	2
0.21 - 0.40	4
0.41 - 0.60	6
0.61 - 0.80	8
0.81 - 1.0	10

Bicycle Catchment		**Pedestrian Catchment**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

4 | Trip Demand

This Metric to be Completed in Office	Bike	Score	Ped	Score
Employment (Quantity from OCTA GIS)	106215	10	3431	10
Total Population (Quantity from OCTA GIS)	92518	4	61	0

	Bicycle		Pedestrian	
Score	Employment Total	Population Total	Employment Total	Population Total
10	> 62,000	> 130,500	> 1,700	> 3,600
8	54,401 - 62,000	114,501 - 130,500	1,501 - 1,700	3,201 - 3,600
6	46,801 - 54,400	98,501 - 114,500	1,301 - 1,500	2,801 - 3,200
4	39,201 - 46,800	82,501 - 98,500	1,101 - 1,300	2,401 - 2,800
2	31,601 - 39,200	66,501 - 82,500	901 - 1,100	2,001 - 2,400
0	0 - 31,600	0 - 66,500	0 - 900	0 - 2,000

Bicycle Trip Demand		**Pedestrian Trip Demand**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 7**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 5**
Poor Good		*Poor Good*	

5 | Route Directness

Bicycle Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Bike Parking?	*Y/N*	Yes, bike racks are within close vicinity to platform. Bike lockers are just outside the station within the parking lots.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	No, adjacent streets are located at a far distance from station entrance, must go around stadium parking lot.
General MetroQuest Survey Input		Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Platform?	*Y/N*	Yes, direct access provided via ramps and stairs.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	No, adjacent streets are located a far distance from station entrance, must go around stadium parking lot.
General MetroQuest Survey Input		Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Route Directness		Pedestrian Route Directness	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 4**
Poor Good		*Poor Good*	

6 | Safety

Bicycle Environment	Notes:	
Curb Cuts along Streets	*Y/N*	No on Katella Ave, Yes on Howell Ave
Bikeway Treatments at Intersections	*Y/N*	No bike signal
On-Street Parking adjacent to Bikeways	*Y/N*	No on-street parking provided
Buffer between Bikeway and Vehicles	*Y/N*	No
Does streetscape design affect bicyclist safety? How?	*Y/N*	Yes, higher vehicle speeds Katella Ave
Any bicycle-related collisions?	*Y/N*	No bicycle collisions directly adjacent to station within 3 year period.
General MetroQuest Survey Input	Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Pedestrian Environment	Notes:	
Crosswalks	*Y/N*	Yes, at Katella Ave entrance
Wide Sidewalks	*Y/N*	No
Impediments along Sidewalks	*Y/N*	No
Landscaping between Sidewalk / Curb	*Y/N*	No landscaping
Does streetscape design affect pedestrian safety? How?	*Y/N*	Yes, no on-street parking to provide a pedestrian buffer and higher vehicle speeds on Katella Ave
Any pedestrian-related collisions?	*Y/N*	No pedestrian collisions directly adjacent to station within 3 year period.
General MetroQuest Survey Input	Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Safety		Pedestrian Safety	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor *Good*		*Poor* *Good*	

7 | Security

Bicycle Environment	Notes:
Lighting	*Y/N* Yes, adequate
Litter along/near Bikeways	*Y/N* No
Abandoned Buildings	*Y/N* No abandoned buildings, adjacent to stadium & office parks
Graffiti	*Y/N* No
Would you feel safe biking near the station at night?	*Y/N* No, area is fairly isolated from any retail or street activity at night.
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment	Notes:
Lighting	*Y/N* Yes, adequate
Litter along/near Sidewalks	*Y/N* No
Abandoned Buildings	*Y/N* No abandoned buildings, adjacent to stadium & office parks
Graffiti	*Y/N* No
Would you feel safe walking near the station at night?	*Y/N* No, area is fairly isolated from any retail or street activity at night.
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Security		Pedestrian Security	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor *Good*		*Poor* *Good*	

8 | Information / Wayfinding

Bicycle Environment	Notes:	
Signage along Bikeways	*Y/N*	Yes, signage along Katella at station entrance. No signage at Howell.
Signage near Station	*Y/N*	Yes, signage along Katella at station entrance and some signage within stadium parking lot. No signage at Howell.
Striping along Bikeways or at Station	*Y/N*	No striping
Bicycle Parking at Station	*Y/N*	No signage to either bike racks or lockers, not on station map either.
Stairs at Station	*Y/N*	Yes,signage at stairs
Ramps for Bikes (and ADA Compliance)	*Y/N*	No signage directing to ramps
Elevators at Station	*Y/N*	No elevators at station
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Pedestrian Environment	Notes:	
Signage along Sidewalks	*Y/N*	Yes, signage along Katella at station entrance. No signage at Howell.
Signage near Station	*Y/N*	Yes, signage along Katella at station entrance and some signage within stadium parking lot. No signage at Howell. No signage at pedestrian path/gate on north side of the station.
Stairs	*Y/N*	Yes,signage at stairs
Ramps	*Y/N*	No signage directing to ramps
Elevators	*Y/N*	No elevators at station
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Informaton / Wayfinding		Pedestrian Information / Wayfinding	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 4**
Poor Good		*Poor Good*	

9 | Station Amenities

Bicycle Environment	Notes:	
Bike Sharing	*Y/N*	Yes, but no bikes available at the time
Bike Lockers	*Y/N*	Yes
Bike Track on Stairs	*Y/N*	No
Restrooms	*Y/N*	Yes
Showers	*Y/N*	No
Changing Facilities	*Y/N*	No, but restrooms are adequate to change in
Seating Areas	*Y/N*	Yes
Indoor Waiting Areas	*Y/N*	Yes
Retail	*Y/N*	No, but some vending machines provided
Covered Bicycle Parking	*Y/N*	No

Pedestrian Environment	Notes:	
Restrooms	*Y/N*	Yes
Seating Areas	*Y/N*	Yes
Indoor Waiting Areas	*Y/N*	Yes
Retail	*Y/N*	No, but some vending machines provided

Bicycle Amenities		Pedestrian Amenities	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

10 | Bike Parking

Bicycle Environment		Notes/Suggestions:
Occupied Bike Racks at time of visit	*Y/N*	4
Occupied Bike Lockers at time of visit	*Y/N*	N/A
Total Bike Racks	*Y/N*	7
Total Bike Lockers	*Y/N*	9
Bicycle Rack Percent Usage (data from City)		Not Available
Number of Bikes Locked against railing/trees/poles/etc?	*Y/N*	None
Are bicycle racks visible, secure, and covered?	*Y/N*	Yes, visible, secured, but not covered
General MetroQuest Survey Input	Average of survey results show 3.35 for "bike parking is adequate at station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Parking

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 6**

Poor *Good*

Summary of Results |

		Bike	Ped
1	Station Mode Split	8	2
2	Network Design	4	6
3	Catchment Area Effectiveness	6	8
4	Trip Demand	7	5
5	Route Directness	4	4
6	Safety	4	6
7	Security	6	6
8	Information / Wayfinding	4	4
9	Station Amenities	8	8
10	Bike Parking	6	--
	Total	**57**	**49**
	Maximum Value	100	90

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.

Accessibility Checklist

Station Name:	**Anaheim Canyon**	**City Name:**	**Anaheim**
Surveyed By:	**Deepak Kaushik**	**Survey Date:**	**11/28/2012**

1 | Station Mode Split

This Metric to be Completed in Office

Station Typology (Exh 4-4 from TCRP 153): Suburban Employment Center
Metrolink 2010 Daily Boardings/Alightings (Table E-3 from MSPMS): 312

Bicycle Environment	**Bike:**	**Ped:**
Estimated Mode Split (derived from MSPMS+CSS):	4%	6%
Estimated Mode Split National Average (from TCRP 153):	3%	29%
Estimated Mode Split Effectiveness Ratio:	1.33	0.21

Mode Split	
Range	Score
0 - 0.2	0
0.21 - 0.40	2
0.41 - 0.60	4
0.61 - 0.80	6
0.81 - 1.0	8
>1.0	10

Bicycle Mode Split	**Pedestrian Mode Split**
Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 10**	*Range: 0 - 2 - 4 - 6 - 8 - 10* **Score: 2**
Poor Good	*Poor Good*

2 | Network Design

What streets are adjacent to station?	La Palma Ave, Tustin Ave, Grove St, Pacificenter Dr

Bicycle Environment	**Notes:**	
Class I, II, III Bike Facility?	*Y/N*	None
Are adjacent streets Bike Friendly (shaded, buffer b/w cars, etc.)?	*Y/N*	No, no Buffers on any of the adjacent streets. La Palma & Tustin Ave have higher vehicle speeds

Pedestrian Environment	**Notes:**	
Sidewalk, 5-feet wide or more	*Y/N*	No, some sidewalks missing on Pacificenter & La Palma Ave
Do pedestrian Trails exist?	*Y/N*	No pedestrian trails
Are adjacent streets Pedestrian Friendly(shaded, buffer b/w cars, etc.)?	*Y/N*	No, no Buffers on any of the adjacent streets, nor any on-street parking La Palma & Tustin Ave have higher vehicle speeds

Bicycle Friendliness	**Pedestrian Friendliness**
Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10* **Score: 4**
Poor Good	*Poor Good*

3 | Catchment Area Effectiveness

This Metric to be Completed in Office

Bicycle Environment **Notes:**

Rational Catchment Area (from OCTA GIS)		16.5 sq mi (10,538 acres)
Optimal Catchment Area (∏*Radius^2)		28.3 sq mi
Catchment Area Effectiveness Ratio		*0.58*

Pedestrian Environment **Notes:**

Rational Catchment Area (from OCTA GIS)		0.26 sq mi (167 acres)
Optimal Catchment Area (∏*Radius^2)		0.8 sq mi
Catchment Area Effectiveness Ratio		*0.33*

Mode Split	
Range	Score
0 - 0.2	2
0.21 - 0.40	4
0.41 - 0.60	6
0.61 - 0.80	8
0.81 - 1.0	10

Bicycle Catchment

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 6**

Poor Good

Pedestrian Catchment

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 4**

Poor Good

4 | Trip Demand

This Metric to be Completed in Office	Bike	Score	Ped	Score
Employment (Quantity from OCTA GIS)	66796	10	3065	10
Total Population (Quantity from OCTA GIS)	84689	4	--	0

	Bicycle		Pedestrian	
Score	Employment Total	Population Total	Employment Total	Population Total
10	> 62,000	> 130,500	> 1,700	> 3,600
8	54,401 - 62,000	114,501 - 130,500	1,501 - 1,700	3,201 - 3,600
6	46,801 - 54,400	98,501 - 114,500	1,301 - 1,500	2,801 - 3,200
4	39,201 - 46,800	82,501 - 98,500	1,101 - 1,300	2,401 - 2,800
2	31,601 - 39,200	66,501 - 82,500	901 - 1,100	2,001 - 2,400
0	0 - 31,600	0 - 66,500	0 - 900	0 - 2,000

Bicycle Trip Demand		**Pedestrian Trip Demand**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 7**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 5**
Poor Good		*Poor Good*	

5 | Route Directness

Bicycle Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Bike Parking?	*Y/N*	Yes, bike racks are within close vicinity to platform. Bike lockers are just outside the station within the parking lots.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	No, Pacificenter Dr does not directly feed into station entrance.
General MetroQuest Survey Input		Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Platform?	*Y/N*	Yes, direct access provided via ramps and stairs.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	No, Pacificenter Dr does not directly feed into station entrance.
General MetroQuest Survey Input		Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Route Directness		Pedestrian Route Directness	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 4**
Poor Good		*Poor Good*	

6 | Safety

Bicycle Environment		Notes:
Curb Cuts along Streets	*Y/N*	No on Tustin Ave, No on La Palma Ave, Yes on Pacificenter Dr
Bikeway Treatments at Intersections	*Y/N*	No bike signal
On-Street Parking adjacent to Bikeways	*Y/N*	No on-street parking provided
Buffer between Bikeway and Vehicles	*Y/N*	No
Does streetscape design affect bicyclist safety? How?	*Y/N*	Yes, higher vehicle speeds Tustin Ave & La Palma Ave
Any bicycle-related collisions?	*Y/N*	Yes. One bicycle collision at the the La Palma Ave/Tustin Ave interseciton resulting in injury in 2008 .
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment		Notes:
Crosswalks	*Y/N*	No crosswalk provided at La Palma/Pacificenter intersection to cross La Palma
Wide Sidewalks	*Y/N*	No
Impediments along Sidewalks	*Y/N*	No
Landscaping between Sidewalk / Curb	*Y/N*	No landscaping
Does streetscape design affect pedestrian safety? How?	*Y/N*	Yes, no on-street parking to provide a pedestrian buffer, no crosswalk at La Palma/Pacificcenter, and no sidewalks along Pacificenter
Any pedestrian-related collisions?	*Y/N*	No pedestrian collisions directly adjacent to station within 3 year period.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Safety		Pedestrian Safety	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 4**
Poor Good		*Poor Good*	

7 | Security

Bicycle Environment	Notes:
Lighting	*Y/N* Yes, adequate
Litter along/near Bikeways	*Y/N* No
Abandoned Buildings	*Y/N* No abandoned buildings, adjacent to mostly office space
Graffiti	*Y/N* No
Would you feel safe biking near the station at night?	*Y/N* No, area is fairly isolated from any retail or street activity at night.
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment	Notes:
Lighting	*Y/N* Yes, adequate
Litter along/near Sidewalks	*Y/N* No
Abandoned Buildings	*Y/N* No abandoned buildings, adjacent to mostly office space
Graffiti	*Y/N* No
Would you feel safe walking near the station at night?	*Y/N* No, area is fairly isolated from any retail or street activity at night.
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Security		Pedestrian Security	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor *Good*		*Poor* *Good*	

8 | Information / Wayfinding

Bicycle Environment		Notes:
Signage along Bikeways	*Y/N*	Signage along La Palma & Tustin, but no signage along Pacificenter, could add some signage along EB La Palma directing peds & bikes to use path to station rather than using Pacificenter.
Signage near Station	*Y/N*	No, no signage along Pacificenter within the office park area
Striping along Bikeways or at Station	*Y/N*	No striping
Bicycle Parking at Station	*Y/N*	Signage provided at bike lockers.
Stairs at Station	*Y/N*	No signage at stairs
Ramps for Bikes (and ADA Compliance)	*Y/N*	No signage directing to ramps
Elevators at Station	*Y/N*	No elevators at station
General MetroQuest Survey Input		Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment		Notes:
Signage along Sidewalks	*Y/N*	Signage along La Palma & Tustin, but no signage along Pacificenter, could add some signage along EB La Palma directing peds & bikes to use path to station rather than using Pacificenter.
Signage near Station	*Y/N*	No signage along Pacificenter within the office park area
Stairs	*Y/N*	No signage at stairs
Ramps	*Y/N*	No signage directing to ramps
Elevators	*Y/N*	No elevators at station
General MetroQuest Survey Input		Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Informaton / Wayfinding		Pedestrian Information / Wayfinding	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 4**
Poor *Good*		*Poor* *Good*	

9 | Station Amenities

Bicycle Environment	Notes:	
Bike Sharing	*Y/N*	No
Bike Lockers	*Y/N*	Yes
Bike Track on Stairs	*Y/N*	No
Restrooms	*Y/N*	No
Showers	*Y/N*	No
Changing Facilities	*Y/N*	No
Seating Areas	*Y/N*	Yes
Indoor Waiting Areas	*Y/N*	No
Retail	*Y/N*	No
Covered Bicycle Parking	*Y/N*	No

Pedestrian Environment	Notes:	
Restrooms	*Y/N*	No
Seating Areas	*Y/N*	Yes
Indoor Waiting Areas	*Y/N*	No
Retail	*Y/N*	No

Bicycle Amenities		Pedestrian Amenities	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 4**
Poor *Good*		*Poor* *Good*	

10 | Bike Parking

Bicycle Environment		Notes/Suggestions:
Occupied Bike Racks at time of visit	*Y/N*	1
Occupied Bike Lockers at time of visit	*Y/N*	N/A
Total Bike Racks	*Y/N*	7
Total Bike Lockers	*Y/N*	16
Bicycle Rack Percent Usage (data from City)		Not Available
Number of Bikes Locked against railing/trees/poles/etc?	*Y/N*	None
Are bicycle racks visible, secure, and covered?	*Y/N*	Yes, visible, secured, but not covered
General MetroQuest Survey Input	Average of survey results show 3.35 for "bike parking is adequate at station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Parking

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 8**

Poor *Good*

Summary of Results |

		Bike	Ped
1	Station Mode Split	10	2
2	Network Design	4	4
3	Catchment Area Effectiveness	6	4
4	Trip Demand	7	5
5	Route Directness	4	4
6	Safety	4	4
7	Security	6	6
8	Information / Wayfinding	4	4
9	Station Amenities	4	4
10	Bike Parking	8	--
	Total	**57**	**37**
	Maximum Value	100	90

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.

Accessibility Checklist

Station Name:	**Buena Park**	**City Name:**	**Buena Park**
Surveyed By:	**Deepak Kaushik**	**Survey Date:**	**11/15/2012**

1 | Station Mode Split

This Metric to be Completed in Office

Station Typology (Exh 4-4 from TCRP 153): Suburban Neighborhood
Metrolink 2010 Daily Boardings/Alightings (Table E-3 from MSPMS): 537

Bicycle Environment	**Bike:**	**Ped:**
Estimated Mode Split (derived from MSPMS+CSS):	0%	13%
Estimated Mode Split National Average (from TCRP 153):	1%	29%
Estimated Mode Split Effectiveness Ratio:	0	0.45

Mode Split	
Range	Score
0 - 0.2	0
0.21 - 0.40	2
0.41 - 0.60	4
0.61 - 0.80	6
0.81 - 1.0	8
>1.0	10

Bicycle Mode Split		**Pedestrian Mode Split**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 0**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 4**
Poor Good		*Poor Good*	

2 | Network Design

What streets are adjacent to station?	Dale St, Malvern Ave, Lakeknoll Dr, Sycamore Ln

Bicycle Environment	**Notes:**	
Class I, II, III Bike Facility?	*Y/N*	No.
Are adjacent streets Bike Friendly (shaded, buffer b/w cars, etc.)?	*Y/N*	No, speeds are 40 mph or higher, no buffer except for portion of Malvern Ave

Pedestrian Environment	**Notes:**	
Sidewalk, 5-feet wide or more	*Y/N*	Yes, all are 5ft or more
Do pedestrian Trails exist?	*Y/N*	No pedestrian trails
Are adjacent streets Pedestrian Friendly(shaded, buffer b/w cars, etc.)?	*Y/N*	Yes, landscaped buffer along Dale St south of Lakeknoll Dr (both sides)

Bicycle Friendliness		**Pedestrian Friendliness**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

3 | Catchment Area Effectiveness

This Metric to be Completed in Office

Bicycle Environment **Notes:**

Rational Catchment Area (from OCTA GIS)		16.9 sq mi (10,783 acres)
Optimal Catchment Area (∏*Radius^2)		28.3 sq mi
Catchment Area Effectiveness Ratio		*0.6*

Pedestrian Environment **Notes:**

Rational Catchment Area (from OCTA GIS)		0.4 sq mi (248 acres)
Optimal Catchment Area (∏*Radius^2)		0.8 sq mi
Catchment Area Effectiveness Ratio		*0.5*

Mode Split	
Range	Score
0 - 0.2	2
0.21 - 0.40	4
0.41 - 0.60	6
0.61 - 0.80	8
0.81 - 1.0	10

Bicycle Catchment

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 6**

Poor Good

Pedestrian Catchment

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 6**

Poor Good

4 | Trip Demand

This Metric to be Completed in Office	Bike	Score	Ped	Score
Employment (Quantity from OCTA GIS)	35530	2	852	0
Total Population (Quantity from OCTA GIS)	93007	4	2551	4

	Bicycle		Pedestrian	
Score	Employment Total	Population Total	Employment Total	Population Total
10	> 62,000	> 130,500	> 1,700	> 3,600
8	54,401 - 62,000	114,501 - 130,500	1,501 - 1,700	3,201 - 3,600
6	46,801 - 54,400	98,501 - 114,500	1,301 - 1,500	2,801 - 3,200
4	39,201 - 46,800	82,501 - 98,500	1,101 - 1,300	2,401 - 2,800
2	31,601 - 39,200	66,501 - 82,500	901 - 1,100	2,001 - 2,400
0	0 - 31,600	0 - 66,500	0 - 900	0 - 2,000

Bicycle Trip Demand		**Pedestrian Trip Demand**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 3**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 2**
Poor Good		*Poor Good*	

5 | Route Directness

Bicycle Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Bike Parking?	*Y/N*	Yes, bike racks & lockers can be directly accessed from station entrance.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Yes, adjacent streets feed directly into station.
General MetroQuest Survey Input		Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Platform?	*Y/N*	Yes, direct access provided.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Yes, adjacent streets feed directly into station.
General MetroQuest Survey Input		Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Route Directness		Pedestrian Route Directness	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

6 | Safety

Bicycle Environment		Notes:
Curb Cuts along Streets	*Y/N*	No, no curb cuts or driveways since there are no adjacent land uses
Bikeway Treatments at Intersections	*Y/N*	No bike signal
On-Street Parking adjacent to Bikeways	*Y/N*	No on-street parking
Buffer between Bikeway and Vehicles	*Y/N*	No
Does streetscape design affect bicyclist safety? How?	*Y/N*	Yes, higher vehicle speeds along Dale St & Malvern Ave could make bike experience uncomfortable
Any bicycle-related collisions?	*Y/N*	No bicycle collisions directly adjacent to station within 3 year period.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment		Notes:
Crosswalks	*Y/N*	Yes, except for south leg of Dale St/Lakeknoll Dr intersection
Wide Sidewalks	*Y/N*	Yes, mostly. However the sidewalks on the north side of Lakeknoll Dr are under 5 ft wide.
Impediments along Sidewalks	*Y/N*	None
Landscaping between Sidewalk / Curb	*Y/N*	Yes, landscaping along Dale St south of Lakeknoll Dr (both sides)
Does streetscape design affect pedestrian safety? How?	*Y/N*	Yes, no on-street parking to provide a buffer between cars and peds. However, Dale St south of Lakeknoll does contain separated sidewalks.
Any pedestrian-related collisions?	*Y/N*	No pedestrian collisions directly adjacent to station within 3 year period.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Safety		Pedestrian Safety	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor *Good*		*Poor* *Good*	

7 | Security

Bicycle Environment	Notes:
Lighting	*Y/N* Yes, adequate
Litter along/near Bikeways	*Y/N* No
Abandoned Buildings	*Y/N* No, but no buildings in the area
Graffiti	*Y/N* No
Would you feel safe biking near the station at night?	*Y/N* No, while the general area seems safe, there are no adjacent land uses present.
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment	Notes:
Lighting	*Y/N* Yes, adequate
Litter along/near Sidewalks	*Y/N* No
Abandoned Buildings	*Y/N* No, but no buildings in the area
Graffiti	*Y/N* No
Would you feel safe walking near the station at night?	*Y/N* No, while the general area seems safe, there are no adjacent land uses present.
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Security		Pedestrian Security	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor *Good*		*Poor* *Good*	

8 | Information / Wayfinding

Bicycle Environment	Notes:
Signage along Bikeways	*Y/N* No signage along adjacent streets
Signage near Station	*Y/N* No signage
Striping along Bikeways or at Station	*Y/N* No signage
Bicycle Parking at Station	*Y/N* No signage
Stairs at Station	*Y/N* No signage directing to stairs, however, location is obvious.
Ramps for Bikes (and ADA Compliance)	*Y/N* No signage
Elevators at Station	*Y/N* No signage directing to elevators
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment	Notes:
Signage along Sidewalks	*Y/N* No signage along adjacent streets
Signage near Station	*Y/N* No signage
Stairs	*Y/N* No signage directing to stairs, however, location is obvious.
Ramps	*Y/N* No signage
Elevators	*Y/N* No signage directing to elevators
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Informaton / Wayfinding		Pedestrian Information / Wayfinding	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 2**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 2**
Poor *Good*		*Poor* *Good*	

9 | Station Amenities

Bicycle Environment	Notes:	
Bike Sharing	*Y/N*	No
Bike Lockers	*Y/N*	Yes
Bike Track on Stairs	*Y/N*	No
Restrooms	*Y/N*	Yes, but mirrors have tagging on them
Showers	*Y/N*	No
Changing Facilities	*Y/N*	No, but restrooms are adequate to change in
Seating Areas	*Y/N*	Yes
Indoor Waiting Areas	*Y/N*	No
Retail	*Y/N*	No
Covered Bicycle Parking	*Y/N*	No

Pedestrian Environment	Notes:	
Restrooms	*Y/N*	Yes
Seating Areas	*Y/N*	Yes
Indoor Waiting Areas	*Y/N*	No
Retail	*Y/N*	No

Bicycle Amenities		Pedestrian Amenities	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

10 | Bike Parking

Bicycle Environment		Notes/Suggestions:
Occupied Bike Racks at time of visit	*Y/N*	6
Occupied Bike Lockers at time of visit	*Y/N*	Not available, were not see through
Total Bike Racks	*Y/N*	14
Total Bike Lockers	*Y/N*	8
Bicycle Rack Percent Usage (data from City)		Approximately 50%
Number of Bikes Locked against railing/trees/poles/etc?	*Y/N*	None
Are bicycle racks visible, secure, and covered?	*Y/N*	Secured, but not covered, and could be located closer to platorm.
General MetroQuest Survey Input	Average of survey results show 3.35 for "bike parking is adequate at station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Parking

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 4**

Poor *Good*

Summary of Results |

		Bike	Ped
1	Station Mode Split	0	4
2	Network Design	4	6
3	Catchment Area Effectiveness	6	6
4	Trip Demand	3	2
5	Route Directness	8	8
6	Safety	4	6
7	Security	6	6
8	Information / Wayfinding	2	2
9	Station Amenities	6	6
10	Bike Parking	4	--
	Total	**43**	**46**
	Maximum Value	100	90

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.

Accessibility Checklist

Station Name:	**Fullerton**	**City Name:**	**Fullerton**
Surveyed By:	**Deepak Kaushik**	**Survey Date:**	**11/15/2012**

1 | Station Mode Split

This Metric to be Completed in Office

Station Typology (Exh 4-4 from TCRP 153): Urban Neighborhood w/ Parking
Metrolink 2010 Daily Boardings/Alightings (Table E-3 from MSPMS): 1,467

Bicycle Environment	**Bike:**	**Ped:**
Estimated Mode Split (derived from MSPMS+CSS):	3%	7%
Estimated Mode Split National Average (from TCRP 153):	3%	35%
Estimated Mode Split Effectiveness Ratio:	1.00	0.20

Mode Split	
Range	Score
0 - 0.2	0
0.21 - 0.40	2
0.41 - 0.60	4
0.61 - 0.80	6
0.81 - 1.0	8
>1.0	10

Bicycle Mode Split		**Pedestrian Mode Split**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 0**
Poor Good		*Poor Good*	

2 | Network Design

What streets are adjacent to station?	Harbor Blvd, Commonwealth Ave, Pomona Ave, Santa Fe Ave, Walnut Ave

Bicycle Environment	**Notes:**	
Class I, II, III Bike Facility?	*Y/N*	None
Are adjacent streets Bike Friendly (shaded, buffer b/w cars, etc.)?	*Y/N*	No Buffers on any of the adjacent streets. Harbor & Commonwealth are not bike friendly (higher speeds). On-street parking on Commonwealth. Pomona & Santa Fe are bike friendly (lower speeds)

Pedestrian Environment	**Notes:**	
Sidewalk, 5-feet wide or more	*Y/N*	Yes, all are 5ft or more
Do pedestrian Trails exist?	*Y/N*	No pedestrian trails
Are adjacent streets Pedestrian Friendly(shaded, buffer b/w cars, etc.)?	*Y/N*	Yes, but Pomona Ave sidewalks are discontinuous

Bicycle Friendliness		**Pedestrian Friendliness**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

3 | Catchment Area Effectiveness

This Metric to be Completed in Office

Bicycle Environment **Notes:**

Rational Catchment Area (from OCTA GIS)		17.9 sq mi (11,437 acres)
Optimal Catchment Area (∏*Radius^2)		28.3 sq mi
Catchment Area Effectiveness Ratio		*0.63*

Pedestrian Environment **Notes:**

Rational Catchment Area (from OCTA GIS)	0.5 sq mi (305 acres)
Optimal Catchment Area (∏*Radius^2)	0.8 sq mi
Catchment Area Effectiveness Ratio	*0.63*

Mode Split	
Range	Score
0 - 0.2	2
0.21 - 0.40	4
0.41 - 0.60	6
0.61 - 0.80	8
0.81 - 1.0	10

Bicycle Catchment

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 8**

Poor Good

Pedestrian Catchment

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 8**

Poor Good

4 | Trip Demand

This Metric to be Completed in Office	Bike	Score	Ped	Score
Employment (Quantity from OCTA GIS)	70639	10	3691	10
Total Population (Quantity from OCTA GIS)	133199	10	4019	10

	Bicycle		Pedestrian	
Score	Employment Total	Population Total	Employment Total	Population Total
10	> 62,000	> 130,500	> 1,700	> 3,600
8	54,401 - 62,000	114,501 - 130,500	1,501 - 1,700	3,201 - 3,600
6	46,801 - 54,400	98,501 - 114,500	1,301 - 1,500	2,801 - 3,200
4	39,201 - 46,800	82,501 - 98,500	1,101 - 1,300	2,401 - 2,800
2	31,601 - 39,200	66,501 - 82,500	901 - 1,100	2,001 - 2,400
0	0 - 31,600	0 - 66,500	0 - 900	0 - 2,000

Bicycle Trip Demand		**Pedestrian Trip Demand**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 10**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 10**
Poor Good		*Poor Good*	

5 | Route Directness

Bicycle Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Bike Parking?	*Y/N*	Yes, bike racks are within close vicinity to platform. Bike lockers are just outside the station within the parking lots.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Yes, access to Harbor Blvd provided along Santa Fe Ave & access to Commonwealth Ave provided along Pomona Ave.
General MetroQuest Survey Input		Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Platform?	*Y/N*	Yes, direct access provided.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Yes, except for discontinuous sidewalk along the southern end of the parking lot (west of Pomona Ave)
General MetroQuest Survey Input		Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Route Directness		Pedestrian Route Directness	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

6 | Safety

Bicycle Environment		Notes:
Curb Cuts along Streets	Y/N	Several curb cuts along Santa Fe, very few on Harbor, Commonwealth, Pomona
Bikeway Treatments at Intersections	Y/N	No bike signal
On-Street Parking adjacent to Bikeways	Y/N	Parking provided along Commonwealth & Santa Fe Ave, none on Harbor Blvd or Pomona Ave
Buffer between Bikeway and Vehicles	Y/N	No
Does streetscape design affect bicyclist safety? How?	Y/N	Yes, higher vehicle speeds along Commonwealth & Harbor
Any bicycle-related collisions?	Y/N	Yes. Total of 3 bicycle collisions resulting in injuries adjacent to station within 3 year period.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment		Notes:
Crosswalks	Y/N	Yes, except for missing crosswalk at west leg of Pomona Ave/Santa Fe Ave intersection
Wide Sidewalks	Y/N	Yes, 7-11 feet wide
Impediments along Sidewalks	Y/N	None
Landscaping between Sidewalk / Curb	Y/N	No landscaping
Does streetscape design affect pedestrian safety? How?	Y/N	Yes, parked cars provide buffer along Commonwealth Ave
Any pedestrian-related collisions?	Y/N	Yes. Total of six pedestrian collisions resulting in injuries adjacent to station within 3 year period.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Safety		Pedestrian Safety	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

7 | Security

Bicycle Environment	Notes:
Lighting	*Y/N* Yes, adequate
Litter along/near Bikeways	*Y/N* No
Abandoned Buildings	*Y/N* No abandoned buildings, mostly retail & restaurants in the vicinity
Graffiti	*Y/N* No
Would you feel safe biking near the station at night?	*Y/N* Yes, area is typically lively with nearby retail/restaurants open at night
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment	Notes:
Lighting	*Y/N* Yes, adequate
Litter along/near Sidewalks	*Y/N* No
Abandoned Buildings	*Y/N* No abandoned buildings, mostly retail & restaurants in the vicinity
Graffiti	*Y/N* No
Would you feel safe walking near the station at night?	*Y/N* Yes, area is typically lively with nearby retail/restaurants open at night
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Security		Pedestrian Security	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

8 | Information / Wayfinding

Bicycle Environment		Notes:
Signage along Bikeways	*Y/N*	Yes, good signage along Commonwealth Ave & Harbor Blvd
Signage near Station	*Y/N*	Yes, good signage along Commonwealth Ave & Harbor Blvd, but sign along EB Santa Fe is very low to the ground, tough visibility
Striping along Bikeways or at Station	*Y/N*	No striping
Bicycle Parking at Station	*Y/N*	No signage directing to bike parking
Stairs at Station	*Y/N*	No signage directing to stairs, however, location is obvious.
Ramps for Bikes (and ADA Compliance)	*Y/N*	No signage
Elevators at Station	*Y/N*	No signage directing to elevators
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Pedestrian Environment		Notes:
Signage along Sidewalks	*Y/N*	Yes, good signage along Commonwealth Ave & Harbor Blvd
Signage near Station	*Y/N*	Yes, but sign along EB Santa Fe is very low to the ground, tough visibility
Stairs	*Y/N*	No signage directing to stairs, however, location is obvious.
Ramps	*Y/N*	No signage
Elevators	*Y/N*	No signage directing to elevators
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Informaton / Wayfinding		Pedestrian Information / Wayfinding	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor *Good*		*Poor* *Good*	

9 | Station Amenities

Bicycle Environment	Notes:	
Bike Sharing	*Y/N*	No
Bike Lockers	*Y/N*	Yes
Bike Track on Stairs	*Y/N*	No
Restrooms	*Y/N*	Yes
Showers	*Y/N*	No
Changing Facilities	*Y/N*	No, but restrooms are adequate to change in
Seating Areas	*Y/N*	Yes
Indoor Waiting Areas	*Y/N*	Yes
Retail	*Y/N*	Yes, a café with indoor seating
Covered Bicycle Parking	*Y/N*	No

Pedestrian Environment	Notes:	
Restrooms	*Y/N*	Yes
Seating Areas	*Y/N*	Yes
Indoor Waiting Areas	*Y/N*	Yes
Retail	*Y/N*	Yes, a café with indoor seating

Bicycle Amenities		Pedestrian Amenities	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 10**
Poor Good		*Poor Good*	

10 | Bike Parking

Bicycle Environment		Notes/Suggestions:
Occupied Bike Racks at time of visit	*Y/N*	11
Occupied Bike Lockers at time of visit	*Y/N*	6
Total Bike Racks	*Y/N*	26
Total Bike Lockers	*Y/N*	48
Bicycle Rack Percent Usage (data from City)		Approximately 50%
Number of Bikes Locked against railing/trees/poles/etc?	*Y/N*	None
Are bicycle racks visible, secure, and covered?	*Y/N*	Yes, visible, secured, but not covered
General MetroQuest Survey Input	Average of survey results show 3.35 for "bike parking is adequate at station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Parking

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 8**

Poor *Good*

Summary of Results |

		Bike	Ped
1	Station Mode Split	8	0
2	Network Design	4	8
3	Catchment Area Effectiveness	8	8
4	Trip Demand	10	10
5	Route Directness	8	8
6	Safety	4	8
7	Security	8	8
8	Information / Wayfinding	8	8
9	Station Amenities	8	10
10	Bike Parking	8	--
	Total	**74**	**68**
	Maximum Value	100	90

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.

Accessibility Checklist

Station Name:	**Irvine Station**	**City Name:**	**Irvine, CA**
Surveyed By:	**Anthony Hernandez**	**Survey Date:**	**9/26/2012**

1 | Station Mode Split

This Metric to be Completed in Office

Station Typology (Exh 4-4 from TCRP 153): Suburban Employment Center
Metrolink 2010 Daily Boardings/Alightings (Table E-3 from MSPMS): 1,190

Bicycle Environment	**Bike:**	**Ped:**
Estimated Mode Split (derived from MSPMS+CSS):	2%	5%
Estimated Mode Split National Average (from TCRP 153):	3%	29%
Estimated Mode Split Effectiveness Ratio:	0.67	0.17

Mode Split	
Range	Score
0 - 0.2	0
0.21 - 0.40	2
0.41 - 0.60	4
0.61 - 0.80	6
0.81 - 1.0	8
>1.0	10

Bicycle Mode Split		**Pedestrian Mode Split**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 0**
Poor Good		*Poor Good*	

2 | Network Design

What streets are adjacent to station?	Barranca Parkway, Ada

Bicycle Environment	**Notes:**	
Class I, II, III Bike Facility?	*Y/N*	Class II on Barranca Pkwy and Ada.
Are adjacent streets Bike Friendly (shaded, buffer b/w cars, etc.)?	*Y/N*	They are bike friendly for experienced cyclists. Less experienced cyclists may not feel comfortable with the high traffic speed on Barranca.

Pedestrian Environment	**Notes:**	
Sidewalk, 5-feet wide or more	*Y/N*	Yes, approximately 5-feet wide.
Do pedestrian Trails exist?	*Y/N*	No.
Are adjacent streets Pedestrian Friendly(shaded, buffer b/w cars, etc.)?	*Y/N*	Yes. Nice sidewalk with landscaping. No landscape buffer between street and sidewalk.

Bicycle Friendliness		**Pedestrian Friendliness**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

3 | Catchment Area Effectiveness

This Metric to be Completed in Office

Bicycle Environment **Notes:**

Rational Catchment Area (from OCTA GIS)	9.7 sq mi	(6,234 acres)
Optimal Catchment Area (∏*Radius^2)	28.3 sq mi	
Catchment Area Effectiveness Ratio	*0.34*	

Pedestrian Environment **Notes:**

Rational Catchment Area (from OCTA GIS)	0.2 sq mi	(145 acres)
Optimal Catchment Area (∏*Radius^2)	0.8 sq mi	
Catchment Area Effectiveness Ratio	*0.25*	

Mode Split	
Range	Score
0 - 0.2	2
0.21 - 0.40	4
0.41 - 0.60	6
0.61 - 0.80	8
0.81 - 1.0	10

Bicycle Catchment

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 4**

Poor Good

Pedestrian Catchment

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 4**

Poor Good

4 | Trip Demand

This Metric to be Completed in Office	**Bike**	**Score**	**Ped**	**Score**
Employment (Quantity from OCTA GIS)	72682	10	2785	10
Total Population (Quantity from OCTA GIS)	24965	0	--	0

	Bicycle		Pedestrian	
Score	Employment Total	Population Total	Employment Total	Population Total
10	> 62,000	> 130,500	> 1,700	> 3,600
8	54,401 - 62,000	114,501 - 130,500	1,501 - 1,700	3,201 - 3,600
6	46,801 - 54,400	98,501 - 114,500	1,301 - 1,500	2,801 - 3,200
4	39,201 - 46,800	82,501 - 98,500	1,101 - 1,300	2,401 - 2,800
2	31,601 - 39,200	66,501 - 82,500	901 - 1,100	2,001 - 2,400
0	0 - 31,600	0 - 66,500	0 - 900	0 - 2,000

Bicycle Trip Demand

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 5**

Poor Good

Pedestrian Trip Demand

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 5**

Poor Good

5 | Route Directness

Bicycle Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Bike Parking?	*Y/N*	Yes. Bike parking is located in the parking structure. Fairly direct route.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Adjacent office parking lots create barriers accessing Technology Dr. b/w Alton Pkwy & Barranca Pkwy.
General MetroQuest Survey Input		Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Platform?	*Y/N*	Yes. Route lengths seem adequate.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Yes. Route lengths seem adequate. No direct connection between Station and Offices directly to west.
General MetroQuest Survey Input		Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Route Directness		Pedestrian Route Directness	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

6 | Safety

Bicycle Environment		Notes:
Curb Cuts along Streets	*Y/N*	Access to businesses are consolidated within the area. Cyclists can keep a fairly constant speed on Barranca & Ada.
Bikeway Treatments at Intersections	*Y/N*	Yes. Push buttons for cyclists at signals.
On-Street Parking adjacent to Bikeways	*Y/N*	No.
Buffer between Bikeway and Vehicles	*Y/N*	No.
Does streetscape design affect bicyclist safety? How?	*Y/N*	Yes. Speed limit of 55 mph on Barranca affects cyclist safety.
Any bicycle-related collisions?	*Y/N*	Two bicycle collisions adjacent to station on Barranca within 3 year period.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment		Notes:
Crosswalks	*Y/N*	Seem to be at adequate locations. May be helpful to have a crosswalk at NW corner of station connecting to offices.
Wide Sidewalks	*Y/N*	Wide at station. Narrow adjacent to station.
Impediments along Sidewalks	*Y/N*	No impediments.
Landscaping between Sidewalk / Curb	*Y/N*	No.
Does streetscape design affect pedestrian safety? How?	*Y/N*	Sidewalks seem adequate.
Any pedestrian-related collisions?	*Y/N*	No pedestrian collisions directly adjacent to station within 3 year period.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Safety		Pedestrian Safety	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

7 | Security

Bicycle Environment	Notes:
Lighting	*Y/N* Yes. Lighting seems adequate.
Litter along/near Bikeways	*Y/N* No. Clean
Abandoned Buildings	*Y/N* No.
Graffiti	*Y/N* No.
Would you feel safe biking near the station at night?	*Y/N* Yes.
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment	Notes:
Lighting	*Y/N* Yes. Lighting seems adequate.
Litter along/near Sidewalks	*Y/N* No.
Abandoned Buildings	*Y/N* No.
Graffiti	*Y/N* No.
Would you feel safe walking near the station at night?	*Y/N* Yes.
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Security		Pedestrian Security	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 10**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 10**
Poor Good		*Poor Good*	

8 | Information / Wayfinding

Bicycle Environment	Notes:
Signage along Bikeways	*Y/N* Yes.
Signage near Station	*Y/N* Yes.
Striping along Bikeways or at Station	*Y/N* No station related striping.
Bicycle Parking at Station	*Y/N* Yes. Provided at station directory map.
Stairs at Station	*Y/N* Yes. Provided at station directory map.
Ramps for Bikes (and ADA Compliance)	*Y/N* Yes. Provided at station directory map.
Elevators at Station	*Y/N* Yes. Provided at station directory map.
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment	Notes:
Signage along Sidewalks	*Y/N* Yes. Adequate signage provided.
Signage near Station	*Y/N* Yes. Adequate signage provided.
Stairs	*Y/N* Yes. Provided at station directory map.
Ramps	*Y/N* Yes. Provided at station directory map.
Elevators	*Y/N* Yes. Provided at station directory map.
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Informaton / Wayfinding		Pedestrian Information / Wayfinding	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 10**
Poor Good		*Poor Good*	

9 | Station Amenities

Bicycle Environment	Notes:	
Bike Sharing	*Y/N*	No.
Bike Lockers	*Y/N*	Yes. Outside (takes up parking spaces)
Bike Track on Stairs	*Y/N*	No.
Restrooms	*Y/N*	Yes.
Showers	*Y/N*	No.
Changing Facilities	*Y/N*	No, but bathroom stalls are clean enough to change in.
Seating Areas	*Y/N*	Yes. Tables, benches, and chairs outside; seating inside.
Indoor Waiting Areas	*Y/N*	Yes. Adequate seating inside.
Retail	*Y/N*	Yes. Two cafés: one at station, one at parking structure.
Covered Bicycle Parking	*Y/N*	Yes. Bike racks in parking structure; bike lockers available.

Pedestrian Environment	Notes:	
Restrooms	*Y/N*	Yes. In good condition, clean, large.
Seating Areas	*Y/N*	Yes. Tables, benches, and chairs outside; seating inside.
Indoor Waiting Areas	*Y/N*	Yes. Adequate seating inside.
Retail	*Y/N*	Yes. Two cafés: one at station, one at parking structure.

Bicycle Amenities		Pedestrian Amenities	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

10 | Bike Parking

Bicycle Environment		Notes/Suggestions:
Occupied Bike Racks at time of visit	*Y/N*	25
Occupied Bike Lockers at time of visit	*Y/N*	Not able to identify.
Total Bike Racks	*Y/N*	Approximate capacity is 55 bikes.
Total Bike Lockers	*Y/N*	54
Bicycle Rack Percent Usage (data from City)		Approximately 75%
Number of Bikes Locked against railing/trees/poles/etc?	*Y/N*	None.
Are bicycle racks visible, secure, and covered?	*Y/N*	Yes (to all). Might suggest locating the bike racks closer to the track.
General MetroQuest Survey Input	Average of survey results show 3.35 for "bike parking is adequate at station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Parking

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 8**

Poor *Good*

Summary of Results |

		Bike	Ped
1	Station Mode Split	6	0
2	Network Design	6	6
3	Catchment Area Effectiveness	4	4
4	Trip Demand	5	5
5	Route Directness	8	8
6	Safety	6	8
7	Security	10	10
8	Information / Wayfinding	8	10
9	Station Amenities	6	8
10	Bike Parking	8	--
	Total	**67**	**59**
	Maximum Value	100	90

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.

Accessibility Checklist

Station Name:	**Mission Viejo/Laguna Niguel**	**City Name:**	**Mission Viejo/Laguna Niguel**
Surveyed By:	**Anthony Hernandez**	**Survey Date:**	**11/15/2012**

1 | Station Mode Split

This Metric to be Completed in Office

Station Typology (Exh 4-4 from TCRP 153): Suburban Freeway
Metrolink 2010 Daily Boardings/Alightings (Table E-3 from MSPMS): 320

Bicycle Environment	**Bike:**	**Ped:**
Estimated Mode Split (derived from MSPMS+CSS):	2%	5%
Estimated Mode Split National Average (from TCRP 153):	1%	10%
Estimated Mode Split Effectiveness Ratio:	2.00	0.50

Mode Split	
Range	Score
0 - 0.2	0
0.21 - 0.40	2
0.41 - 0.60	4
0.61 - 0.80	6
0.81 - 1.0	8
>1.0	10

Bicycle Mode Split		**Pedestrian Mode Split**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 10**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 4**
Poor Good		*Poor Good*	

2 | Network Design

What streets are adjacent to station?	Camino Capistrano, Forbes Rd, Crown Valley Pkwy

Bicycle Environment	**Notes:**	
Class I, II, III Bike Facility?	*Y/N*	Yes. Class II on north side of Crown Valley Pkwy only
Are adjacent streets Bike Friendly (shaded, buffer b/w cars, etc.)?	*Y/N*	Cyclists ride between parked cars and street traffic on Forbes and Camino Capistrano. South section of Forbes approaching station is 25 mph which does create a more comfortable environment.

Pedestrian Environment	**Notes:**	
Sidewalk, 5-feet wide or more	*Y/N*	Adequate sidewalks mostly about 5 feet wide.
Do pedestrian Trails exist?	*Y/N*	Yes. One ped trail along Forbes w/o station.
Are adjacent streets Pedestrian Friendly(shaded, buffer b/w cars, etc.)?	*Y/N*	No. Feels like walking through a business park with minimal landscaping/shade. No points of interest nearby to walk to.

Bicycle Friendliness		**Pedestrian Friendliness**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 2**
Poor Good		*Poor Good*	

3 | Catchment Area Effectiveness

This Metric to be Completed in Office

Bicycle Environment	**Notes:**	
Rational Catchment Area (from OCTA GIS)		12 sq mi (7,688 acres)
Optimal Catchment Area (∏*Radius^2)		28.3 sq mi
Catchment Area Effectiveness Ratio		*0.42*

Pedestrian Environment	**Notes:**	
Rational Catchment Area (from OCTA GIS)		0.1 sq mi (71.8 acres)
Optimal Catchment Area (∏*Radius^2)		0.8 sq mi
Catchment Area Effectiveness Ratio		*0.13*

Mode Split	
Range	Score
0 - 0.2	2
0.21 - 0.40	4
0.41 - 0.60	6
0.61 - 0.80	8
0.81 - 1.0	10

Bicycle Catchment		**Pedestrian Catchment**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 2**
Poor Good		*Poor Good*	

4 | Trip Demand

This Metric to be Completed in Office	**Bike**	**Score**	**Ped**	**Score**
Employment (Quantity from OCTA GIS)	28632	0	749	0
Total Population (Quantity from OCTA GIS)	52843	0	--	0

	Bicycle		Pedestrian	
Score	Employment Total	Population Total	Employment Total	Population Total
10	> 62,000	> 130,500	> 1,700	> 3,600
8	54,401 - 62,000	114,501 - 130,500	1,501 - 1,700	3,201 - 3,600
6	46,801 - 54,400	98,501 - 114,500	1,301 - 1,500	2,801 - 3,200
4	39,201 - 46,800	82,501 - 98,500	1,101 - 1,300	2,401 - 2,800
2	31,601 - 39,200	66,501 - 82,500	901 - 1,100	2,001 - 2,400
0	0 - 31,600	0 - 66,500	0 - 900	0 - 2,000

Bicycle Trip Demand		**Pedestrian Trip Demand**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 0**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 0**
Poor Good		*Poor Good*	

5 | Route Directness

Bicycle Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Bike Parking?	*Y/N*	Fairly direct. Bike parking located on both sides of tracks. Recommend relocating bike racks & lockers on west side of tracks to better location (closer to tracks).
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Fairly direct.
General MetroQuest Survey Input	Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Pedestrian Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Platform?	*Y/N*	Fairly direct. Could have a long walk if parked on east side of station since only parallel parking is available.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Yes. Station is easily accessible. Integrates well with the downtown.
General MetroQuest Survey Input	Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Route Directness		Pedestrian Route Directness	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

6 | Safety

Bicycle Environment		Notes:
Curb Cuts along Streets	*Y/N*	Many curb cuts along streets due to business entrances.
Bikeway Treatments at Intersections	*Y/N*	No.
On-Street Parking adjacent to Bikeways	*Y/N*	Yes, on Camino Capistrano and Forbes Rd.
Buffer between Bikeway and Vehicles	*Y/N*	No.
Does streetscape design affect bicyclist safety? How?	*Y/N*	Riding along side parked cars without bike lane on Camino Capistrano and Forbes Rd can affect safety, especially for inexperienced cyclists.
Any bicycle-related collisions?	*Y/N*	No bicycle collisions directly adjacent to station within 3 year period.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment		Notes:
Crosswalks	*Y/N*	Yes. Adequate locations. May be helpful to have crosswalk across Camino Capistrano adjacent to station.
Wide Sidewalks	*Y/N*	Sidewalks seem adequate.
Impediments along Sidewalks	*Y/N*	Yes. Electrical poles, signs, and light poles are a slight impediment.
Landscaping between Sidewalk / Curb	*Y/N*	Minimal landscaping along street. Adequate landscaping at station.
Does streetscape design affect pedestrian safety? How?	*Y/N*	Streetscape design seems adequate given the location of the station (surrounded by industrial/business land uses).
Any pedestrian-related collisions?	*Y/N*	No pedestrian collisions directly adjacent to station within 3 year period.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Safety		Pedestrian Safety	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

7 | Security

Bicycle Environment		Notes:
Lighting	*Y/N*	Lighting at station seems adequate. Minimal lighting on Forbes Rd and east side of Camino Capistrano.
Litter along/near Bikeways	*Y/N*	No. Clean
Abandoned Buildings	*Y/N*	No.
Graffiti	*Y/N*	No.
Would you feel safe biking near the station at night?	*Y/N*	No. Very secluded environment. Minimal activity at night may deter people from riding by the station at night.
General MetroQuest Survey Input		Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment		Notes:
Lighting	*Y/N*	Yes. Lighting seems adequate.
Litter along/near Sidewalks	*Y/N*	No. Clean
Abandoned Buildings	*Y/N*	No.
Graffiti	*Y/N*	No.
Would you feel safe walking near the station at night?	*Y/N*	No. Very secluded environment. Minimal activity at night may deter people from riding by the station at night.
General MetroQuest Survey Input		Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Security		Pedestrian Security	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

8 | Information / Wayfinding

Bicycle Environment	Notes:
Signage along Bikeways	*Y/N* Yes.
Signage near Station	*Y/N* Yes.
Striping along Bikeways or at Station	*Y/N* No.
Bicycle Parking at Station	*Y/N* No signage.
Stairs at Station	*Y/N* Yes.
Ramps for Bikes (and ADA Compliance)	*Y/N* No signage.
Elevators at Station	*Y/N* No signage.
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment	Notes:
Signage along Sidewalks	*Y/N* Yes.
Signage near Station	*Y/N* Yes.
Stairs	*Y/N* Yes.
Ramps	*Y/N* No signage.
Elevators	*Y/N* No signage.
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Informaton / Wayfinding		Pedestrian Information / Wayfinding	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor *Good*		*Poor* *Good*	

9 | Station Amenities

Bicycle Environment	Notes:	
Bike Sharing	*Y/N*	No.
Bike Lockers	*Y/N*	Yes.
Bike Track on Stairs	*Y/N*	No.
Restrooms	*Y/N*	No.
Showers	*Y/N*	No.
Changing Facilities	*Y/N*	No.
Seating Areas	*Y/N*	Yes. Seating areas are covered.
Indoor Waiting Areas	*Y/N*	No.
Retail	*Y/N*	No.
Covered Bicycle Parking	*Y/N*	No.

Pedestrian Environment	Notes:	
Restrooms	*Y/N*	No.
Seating Areas	*Y/N*	Yes. Seating areas are covered.
Indoor Waiting Areas	*Y/N*	No.
Retail	*Y/N*	No.

Bicycle Amenities		Pedestrian Amenities	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

10 | Bike Parking

Bicycle Environment		**Notes/Suggestions:** Recommend relocating racks.
Occupied Bike Racks at time of visit	*Y/N*	1
Occupied Bike Lockers at time of visit	*Y/N*	Unknown.
Total Bike Racks	*Y/N*	Capacity is about 16 bikes.
Total Bike Lockers	*Y/N*	20
Bicycle Rack Percent Usage (data from City)		Not Available
Number of Bikes Locked against railing/trees/poles/etc?	*Y/N*	None.
Are bicycle racks visible, secure, and covered?	*Y/N*	Yes, visible & secure. Not covered. Recommend moving racks closer to track. Empty space available by turnaround zone.
General MetroQuest Survey Input	Average of survey results show 3.35 for "bike parking is adequate at station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Parking

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 6**

Poor *Good*

Summary of Results |

		Bike	Ped
1	Station Mode Split	10	4
2	Network Design	4	2
3	Catchment Area Effectiveness	6	2
4	Trip Demand	0	0
5	Route Directness	6	6
6	Safety	6	8
7	Security	6	6
8	Information / Wayfinding	4	6
9	Station Amenities	6	6
10	Bike Parking	6	--
	Total	**54**	**40**
	Maximum Value	100	90

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.

OCTA Station Access - Orange

Accessibility Checklist

Station Name:	**Orange Station**	**City Name:**	**Orange**
Surveyed By:	**Anthony Hernandez**	**Survey Date:**	**9/27/2012**

1 | Station Mode Split

This Metric to be Completed in Office

Station Typology (Exh 4-4 from TCRP 153): Historic Transit Village
Metrolink 2010 Daily Boardings/Alightings (Table E-3 from MSPMS): 718

Bicycle Environment	**Bike:**	**Ped:**
Estimated Mode Split (derived from MSPMS+CSS):	3%	16%
Estimated Mode Split National Average (from TCRP 153):	1%	25%
Estimated Mode Split Effectiveness Ratio:	3.00	0.64

Mode Split	
Range	Score
0 - 0.2	0
0.21 - 0.40	2
0.41 - 0.60	4
0.61 - 0.80	6
0.81 - 1.0	8
>1.0	10

Bicycle Mode Split		**Pedestrian Mode Split**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 10**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

2 | Network Design

What streets are adjacent to station?	Chapman Ave, Pixley St, Maple Ave, Atchison St, & Cypress St.

Bicycle Environment	**Notes:**	
Class I, II, III Bike Facility?	*Y/N*	No.
Are adjacent streets Bike Friendly (shaded, buffer b/w cars, etc.)?	*Y/N*	Adjacent residential streets are bike friendly (low speed). Chapman is not bike friendly (higher traffic volume & no bike lane).

Pedestrian Environment	**Notes:**	Generally less shade provided on north side of station.
Sidewalk, 5-feet wide or more	*Y/N*	Adequate sidewalks. Low tree canopy on east side of Atchison.
Do pedestrian Trails exist?	*Y/N*	No.
Are adjacent streets Pedestrian Friendly(shaded, buffer b/w cars, etc.)?	*Y/N*	Yes. Downtown atmosphere (landscaping, facades, short setbacks, parked cars).

Bicycle Friendliness		**Pedestrian Friendliness**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

3 | Catchment Area Effectiveness

This Metric to be Completed in Office

Bicycle Environment **Notes:**

Rational Catchment Area (from OCTA GIS)	16.8 sq mi	(10,754 acres)
Optimal Catchment Area (∏*Radius^2)	28.3 sq mi	
Catchment Area Effectiveness Ratio	*0.59*	

Pedestrian Environment **Notes:**

Rational Catchment Area (from OCTA GIS)	0.5 sq mi	(346 acres)
Optimal Catchment Area (∏*Radius^2)	0.8 sq mi	
Catchment Area Effectiveness Ratio	*0.63*	

Mode Split	
Range	Score
0 - 0.2	2
0.21 - 0.40	4
0.41 - 0.60	6
0.61 - 0.80	8
0.81 - 1.0	10

Bicycle Catchment

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 6**

Poor Good

Pedestrian Catchment

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 8**

Poor Good

4 | Trip Demand

This Metric to be Completed in Office	**Bike**	**Score**	**Ped**	**Score**
Employment (Quantity from OCTA GIS)	108759	10	5343	10
Total Population (Quantity from OCTA GIS)	125534	8	4849	10

	Bicycle		Pedestrian	
Score	Employment Total	Population Total	Employment Total	Population Total
10	> 62,000	> 130,500	> 1,700	> 3,600
8	54,401 - 62,000	114,501 - 130,500	1,501 - 1,700	3,201 - 3,600
6	46,801 - 54,400	98,501 - 114,500	1,301 - 1,500	2,801 - 3,200
4	39,201 - 46,800	82,501 - 98,500	1,101 - 1,300	2,401 - 2,800
2	31,601 - 39,200	66,501 - 82,500	901 - 1,100	2,001 - 2,400
0	0 - 31,600	0 - 66,500	0 - 900	0 - 2,000

Bicycle Trip Demand

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 9**

Poor Good

Pedestrian Trip Demand

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 10**

Poor Good

5 | Route Directness

Bicycle Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Bike Parking?	*Y/N*	Yes. Bike racks are located within 25 feet of tracks.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Yes. Grid system provides easy access to surrounding streets.
General MetroQuest Survey Input	Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Pedestrian Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Platform?	*Y/N*	Yes. Adequate route directness provided.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Yes. Grid system provides easy access to surrounding streets.
General MetroQuest Survey Input	Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Route Directness		Pedestrian Route Directness	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

6 | Safety

Bicycle Environment		Notes:
Curb Cuts along Streets	*Y/N*	Yes. Frequent driveway cuts on adjacent streets.
Bikeway Treatments at Intersections	*Y/N*	No.
On-Street Parking adjacent to Bikeways	*Y/N*	Yes. On-street parking on all streets except Chapman Ave.
Buffer between Bikeway and Vehicles	*Y/N*	No.
Does streetscape design affect bicyclist safety? How?	*Y/N*	Yes. Chapman Ave. may not feel safe to average cyclist. Residential streets feel safe (low speeds).
Any bicycle-related collisions?	*Y/N*	Yes. Two bike collisions on Chapman and two bike collisions on Lemon St adjacent to station within 3 year period.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment		Notes:
Crosswalks	*Y/N*	Yes. Adequate locations. Two crosswalks on Chapman (on each side of station). Crosswalks at Cypress St & Maple St intersection.
Wide Sidewalks	*Y/N*	No. 5-6 feet wide but still seem adequate given speed limit and building size.
Impediments along Sidewalks	*Y/N*	Yes. Light poles and signs adjacent to station. No impediments at station.
Landscaping between Sidewalk / Curb	*Y/N*	Yes. Small trees with planter boxes.
Does streetscape design affect pedestrian safety? How?	*Y/N*	Yes. Parked cars provide buffer on residential streets. May recommend flashing crosswalks on Chapman.
Any pedestrian-related collisions?	*Y/N*	Yes. One pedestrian collision on Cypress St. within 3 year period.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Safety		Pedestrian Safety	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

7 | Security

Bicycle Environment	Notes:
Lighting	*Y/N* Yes. Lighting seems adequate.
Litter along/near Bikeways	*Y/N* No. Clean
Abandoned Buildings	*Y/N* Some delapidated buildings on Atchison St.
Graffiti	*Y/N* Graffiti in bathrooms.
Would you feel safe biking near the station at night?	*Y/N* Yes.
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment	Notes:
Lighting	*Y/N* Yes. Lighting seems adequate.
Litter along/near Sidewalks	*Y/N* No. Clean
Abandoned Buildings	*Y/N* Some delapidated buildings on Atchison St.
Graffiti	*Y/N* Graffiti in bathrooms.
Would you feel safe walking near the station at night?	*Y/N* Yes.
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Security		Pedestrian Security	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

8 | Information / Wayfinding

Bicycle Environment	Notes:
Signage along Bikeways	*Y/N* No signage.
Signage near Station	*Y/N* No signage.
Striping along Bikeways or at Station	*Y/N* No station related striping.
Bicycle Parking at Station	*Y/N* No signage.
Stairs at Station	*Y/N* Yes. Provided at station directory map.
Ramps for Bikes (and ADA Compliance)	*Y/N* No signage.
Elevators at Station	*Y/N* N/A (station does not have elevators)
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment	Notes:
Signage along Sidewalks	*Y/N* Yes. Minimal signage provided.
Signage near Station	*Y/N* No signage.
Stairs	*Y/N* No signage.
Ramps	*Y/N* No signage.
Elevators	*Y/N* N/A (station does not have elevators)
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Informaton / Wayfinding		Pedestrian Information / Wayfinding	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 2**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 4**
Poor Good		*Poor Good*	

9 | Station Amenities

Bicycle Environment	Notes:	
Bike Sharing	*Y/N*	No.
Bike Lockers	*Y/N*	Yes. Outside (hard to find, no signage).
Bike Track on Stairs	*Y/N*	No.
Restrooms	*Y/N*	Yes. Small, 1 stall, grafitti, wet floor, old.
Showers	*Y/N*	No.
Changing Facilities	*Y/N*	No. Would not feel comfortable changing in bathroom stall.
Seating Areas	*Y/N*	Yes. Adequate seating areas.
Indoor Waiting Areas	*Y/N*	No. Only restaurants are indoors.
Retail	*Y/N*	Yes. 2 restaurants at station.
Covered Bicycle Parking	*Y/N*	No.

Pedestrian Environment	Notes:	
Restrooms	*Y/N*	Yes. Small, 1 stall, grafitti, wet floor, old.
Seating Areas	*Y/N*	Yes. Adequate seating areas.
Indoor Waiting Areas	*Y/N*	No. Only restaurants are indoors.
Retail	*Y/N*	Yes. 2 restaurants at station.

Bicycle Amenities		Pedestrian Amenities	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 2**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

10 | Bike Parking

Bicycle Environment		Notes/Suggestions:
Occupied Bike Racks at time of visit	*Y/N*	1
Occupied Bike Lockers at time of visit	*Y/N*	Not able to identify.
Total Bike Racks	*Y/N*	Capacity is 5 bikes.
Total Bike Lockers	*Y/N*	10
Bicycle Rack Percent Usage (data from City)		Approximately 50%
Number of Bikes Locked against railing/trees/poles/etc?	*Y/N*	None.
Are bicycle racks visible, secure, and covered?	*Y/N*	Yes, visible and secure. Not covered.
General MetroQuest Survey Input	Average of survey results show 3.35 for "bike parking is adequate at station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Parking

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 4**

Poor *Good*

Summary of Results |

		Bike	Ped
1	Station Mode Split	10	6
2	Network Design	4	8
3	Catchment Area Effectiveness	6	8
4	Trip Demand	9	10
5	Route Directness	8	8
6	Safety	4	8
7	Security	8	8
8	Information / Wayfinding	2	4
9	Station Amenities	2	6
10	Bike Parking	4	--
	Total	**57**	**66**
	Maximum Value	100	90

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.

Accessibility Checklist

Station Name:	**Santa Ana**	**City Name:**	**Santa Ana**
Surveyed By:	**Deepak Kaushik**	**Survey Date:**	**11/28/2012**

1 | Station Mode Split

This Metric to be Completed in Office

Station Typology (Exh 4-4 from TCRP 153): Intermodal Transit Center
Metrolink 2010 Daily Boardings/Alightings (Table E-3 from MSPMS): 769

Bicycle Environment	**Bike:**	**Ped:**
Estimated Mode Split (derived from MSPMS+CSS):	3%	8%
Estimated Mode Split National Average (from TCRP 153):	1%	27%
Estimated Mode Split Effectiveness Ratio:	3.00	0.30

Mode Split	
Range	Score
0 - 0.2	0
0.21 - 0.40	2
0.41 - 0.60	4
0.61 - 0.80	6
0.81 - 1.0	8
>1.0	10

Bicycle Mode Split	**Pedestrian Mode Split**
Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 10**	*Range: 0 - 2 - 4 - 6 - 8 - 10* **Score: 2**
Poor Good	*Poor Good*

2 | Network Design

What streets are adjacent to station?	Santa Ana Blvd, Santiago St

Bicycle Environment	**Notes:**	
Class I, II, III Bike Facility?	*Y/N*	None
Are adjacent streets Bike Friendly (shaded, buffer b/w cars, etc.)?	*Y/N*	No Buffers on any of the adjacent streets, but also no on-street parking on Santiago and Santa Ana Blvd.

Pedestrian Environment	**Notes:**	
Sidewalk, 5-feet wide or more	*Y/N*	Yes, all are 5ft or more
Do pedestrian Trails exist?	*Y/N*	No pedestrian trails
Are adjacent streets Pedestrian Friendly(shaded, buffer b/w cars, etc.)?	*Y/N*	Yes, sidewalks provided along adjacent streets, but no ped buffers.

Bicycle Friendliness	**Pedestrian Friendliness**
Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10* **Score: 8**
Poor Good	*Poor Good*

3 | Catchment Area Effectiveness

This Metric to be Completed in Office

Bicycle Environment **Notes:**

Rational Catchment Area (from OCTA GIS)		18 sq mi (11,499 acres)
Optimal Catchment Area (∏*Radius^2)		28.3 sq mi
Catchment Area Effectiveness Ratio		*0.64*

Pedestrian Environment **Notes:**

Rational Catchment Area (from OCTA GIS)		0.4 sq mi (224 acres)
Optimal Catchment Area (∏*Radius^2)		0.8 sq mi
Catchment Area Effectiveness Ratio		*0.5*

Mode Split	
Range	Score
0 - 0.2	2
0.21 - 0.40	4
0.41 - 0.60	6
0.61 - 0.80	8
0.81 - 1.0	10

Bicycle Catchment

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 8**

Poor Good

Pedestrian Catchment

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 6**

Poor Good

4 | Trip Demand

This Metric to be Completed in Office	Bike	Score	Ped	Score
Employment (Quantity from OCTA GIS)	128822	10	3106	10
Total Population (Quantity from OCTA GIS)	236169	10	4594	10

	Bicycle		Pedestrian	
Score	Employment Total	Population Total	Employment Total	Population Total
10	> 62,000	> 130,500	> 1,700	> 3,600
8	54,401 - 62,000	114,501 - 130,500	1,501 - 1,700	3,201 - 3,600
6	46,801 - 54,400	98,501 - 114,500	1,301 - 1,500	2,801 - 3,200
4	39,201 - 46,800	82,501 - 98,500	1,101 - 1,300	2,401 - 2,800
2	31,601 - 39,200	66,501 - 82,500	901 - 1,100	2,001 - 2,400
0	0 - 31,600	0 - 66,500	0 - 900	0 - 2,000

Bicycle Trip Demand

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 10**

Poor *Good*

Pedestrian Trip Demand

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 10**

Poor *Good*

5 | Route Directness

Bicycle Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Bike Parking?	*Y/N*	Bike racks are within close vicinity to platform, near station entrance. Bike lockers, though, are in the parking structure and are difficult to find.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Yes, direct access provided along driveways from Santa Ana Blvd & Santiago St
General MetroQuest Survey Input		Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Platform?	*Y/N*	Yes, direct access provided from entrance to platform through building or along walkway adjacent to building.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Yes, direct access provided along driveways from Santa Ana Blvd & Santiago St
General MetroQuest Survey Input		Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Route Directness		Pedestrian Route Directness	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

6 | Safety

Bicycle Environment		Notes:
Curb Cuts along Streets	*Y/N*	No
Bikeway Treatments at Intersections	*Y/N*	No bike signal
On-Street Parking adjacent to Bikeways	*Y/N*	No on-street parking provided
Buffer between Bikeway and Vehicles	*Y/N*	No
Does streetscape design affect bicyclist safety? How?	*Y/N*	Yes, potential higher vehicle speeds on Santa Ana Blvd
Any bicycle-related collisions?	*Y/N*	Yes. One bicycle collision resulting in injury at the Santa Ana Blvd/Santiago intersection in 2008.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment		Notes:
Crosswalks	*Y/N*	Yes, all four provided at Santa Ana Blvd/Santiago St intersection.
Wide Sidewalks	*Y/N*	No wide sidewalks on adjacent streets, but wide sidewalks along entrance driveway off Santa Ana Blvd
Impediments along Sidewalks	*Y/N*	No
Landscaping between Sidewalk / Curb	*Y/N*	No landscaping
Does streetscape design affect pedestrian safety? How?	*Y/N*	Yes, no on-street parking to provide a pedestrian buffer and potential higher vehicle speeds on Santa Ana Blvd
Any pedestrian-related collisions?	*Y/N*	No pedestrian collisions directly adjacent to station within 3 year period.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Safety		Pedestrian Safety	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

7 | Security

Bicycle Environment	Notes:	
Lighting	*Y/N*	Yes, adequate
Litter along/near Bikeways	*Y/N*	No
Abandoned Buildings	*Y/N*	No abandoned buildings
Graffiti	*Y/N*	No
Would you feel safe biking near the station at night?	*Y/N*	Yes, station is part of transportation depot and contains indoor seating and retail
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Pedestrian Environment	Notes:	
Lighting	*Y/N*	Yes, adequate
Litter along/near Sidewalks	*Y/N*	No
Abandoned Buildings	*Y/N*	No abandoned buildings
Graffiti	*Y/N*	No
Would you feel safe walking near the station at night?	*Y/N*	Yes, station is part of transportation depot and contains indoor seating and retail
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Security		Pedestrian Security	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

8 | Information / Wayfinding

Bicycle Environment	Notes:	
Signage along Bikeways	*Y/N*	Yes, signage along Santa Ana Blvd & Santiago St
Signage near Station	*Y/N*	Yes, signage along Santa Ana Blvd & Santiago St
Striping along Bikeways or at Station	*Y/N*	No striping
Bicycle Parking at Station	*Y/N*	No signage to either bike racks or lockers, not on station map either.
Stairs at Station	*Y/N*	Yes,signage at stairs
Ramps for Bikes (and ADA Compliance)	*Y/N*	No signage directing to ramps
Elevators at Station	*Y/N*	Yes, signage directing to elevators
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Pedestrian Environment	Notes:	
Signage along Sidewalks	*Y/N*	Yes, signage along Santa Ana Blvd & Santiago St
Signage near Station	*Y/N*	Yes, signage along Santa Ana Blvd & Santiago St
Stairs	*Y/N*	Yes,signage at stairs
Ramps	*Y/N*	No signage directing to ramps
Elevators	*Y/N*	Yes, signage directing to elevators
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Informaton / Wayfinding		Pedestrian Information / Wayfinding	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor *Good*		*Poor* *Good*	

9 | Station Amenities

Bicycle Environment	Notes:	
Bike Sharing	*Y/N*	No
Bike Lockers	*Y/N*	Yes
Bike Track on Stairs	*Y/N*	No
Restrooms	*Y/N*	Yes
Showers	*Y/N*	No
Changing Facilities	*Y/N*	No, but restrooms are adequate to change in
Seating Areas	*Y/N*	Yes
Indoor Waiting Areas	*Y/N*	Yes
Retail	*Y/N*	Yes, and indoor café and gift shop
Covered Bicycle Parking	*Y/N*	No

Pedestrian Environment	Notes:	
Restrooms	*Y/N*	Yes
Seating Areas	*Y/N*	Yes
Indoor Waiting Areas	*Y/N*	Yes
Retail	*Y/N*	Yes, and indoor café and gift shop

Bicycle Amenities		Pedestrian Amenities	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 10**
Poor Good		*Poor Good*	

10 | Bike Parking

Bicycle Environment		Notes/Suggestions:
Occupied Bike Racks at time of visit	*Y/N*	4
Occupied Bike Lockers at time of visit	*Y/N*	N/A
Total Bike Racks	*Y/N*	24
Total Bike Lockers	*Y/N*	15
Bicycle Locker Percent Usage (data from City)		Approximately 33% to 55%
Number of Bikes Locked against railing/trees/poles/etc?	*Y/N*	None
Are bicycle racks visible, secure, and covered?	*Y/N*	Yes, visible, secured, but not covered
General MetroQuest Survey Input	Average of survey results show 3.35 for "bike parking is adequate at station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Parking

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 8**

Poor *Good*

Summary of Results |

		Bike	Ped
1	Station Mode Split	10	2
2	Network Design	4	8
3	Catchment Area Effectiveness	8	6
4	Trip Demand	10	10
5	Route Directness	8	8
6	Safety	6	6
7	Security	8	8
8	Information / Wayfinding	6	8
9	Station Amenities	8	10
10	Bike Parking	8	--
	Total	**76**	**66**
	Maximum Value	100	90

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.

Accessibility Checklist

Station Name:	**San Clemente (North) Station**	**City Name:**	**San Clemente, CA**
Surveyed By:	**Anthony Hernandez**	**Survey Date:**	**11/15/2012**

1 | Station Mode Split

This Metric to be Completed in Office

Station Typology (Exh 4-4 from TCRP 153): Suburban Neighborhood
Metrolink 2010 Daily Boardings/Alightings (Table E-3 from MSPMS): 152

Bicycle Environment	**Bike:**	**Ped:**
Estimated Mode Split (derived from MSPMS+CSS):	7%	7%
Estimated Mode Split National Average (from TCRP 153):	1%	29%
Estimated Mode Split Effectiveness Ratio:	7.00	0.24

Mode Split	
Range	Score
0 - 0.2	0
0.21 - 0.40	2
0.41 - 0.60	4
0.61 - 0.80	6
0.81 - 1.0	8
>1.0	10

Bicycle Mode Split	**Pedestrian Mode Split**
Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 10**	*Range: 0 - 2 - 4 - 6 - 8 - 10* **Score: 2**
Poor Good	*Poor Good*

2 | Network Design

What streets are adjacent to station?	Avenue Estacion, El Camino Real, Calle Deshecha, Avenida Pico

Bicycle Environment		**Notes:** Recommend Class II on all of El Camino Real.
Class I, II, III Bike Facility?	*Y/N*	Calle Deshecha (Class III). El Camino Real (Class II n/o Ave Estacion, Class III s/o Ave Estacion). Avenida Pico (Class II).
Are adjacent streets Bike Friendly (shaded, buffer b/w cars, etc.)?	*Y/N*	Narrow lanes on El Camino Real s/o Ave Estacion.

Pedestrian Environment		**Notes:**
Sidewalk, 5-feet wide or more	*Y/N*	Adequate sidewalks.
Do pedestrian Trails exist?	*Y/N*	Yes. Pedestrian beach trail south of the station.
Are adjacent streets Pedestrian Friendly(shaded, buffer b/w cars, etc.)?	*Y/N*	Yes in general. Nice palm trees but not much shade. Nice pavers on sidewalk. Vacant dirt lot is not pleasant. No sidewalk on Calle Deshecha.

Bicycle Friendliness	**Pedestrian Friendliness**
Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10* **Score: 6**
Poor Good	*Poor Good*

3 | Catchment Area Effectiveness

This Metric to be Completed in Office

Bicycle Environment **Notes:**

Rational Catchment Area (from OCTA GIS)		10.3 sq mi (6,558 acres)
Optimal Catchment Area (∏*Radius^2)		28.3 sq mi
Catchment Area Effectiveness Ratio		*0.36*

Pedestrian Environment **Notes:**

Rational Catchment Area (from OCTA GIS)		0.2 sq mi (100 acres)
Optimal Catchment Area (∏*Radius^2)		0.8 sq mi
Catchment Area Effectiveness Ratio		*0.25*

Mode Split	
Range	Score
0 - 0.2	2
0.21 - 0.40	4
0.41 - 0.60	6
0.61 - 0.80	8
0.81 - 1.0	10

Bicycle Catchment

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 4**

Poor Good

Pedestrian Catchment

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 4**

Poor Good

4 | Trip Demand

This Metric to be Completed in Office	Bike	Score	Ped	Score
Employment (Quantity from OCTA GIS)	19713	0	658	0
Total Population (Quantity from OCTA GIS)	46735	0	1454	0

	Bicycle		Pedestrian	
Score	Employment Total	Population Total	Employment Total	Population Total
10	> 62,000	> 130,500	> 1,700	> 3,600
8	54,401 - 62,000	114,501 - 130,500	1,501 - 1,700	3,201 - 3,600
6	46,801 - 54,400	98,501 - 114,500	1,301 - 1,500	2,801 - 3,200
4	39,201 - 46,800	82,501 - 98,500	1,101 - 1,300	2,401 - 2,800
2	31,601 - 39,200	66,501 - 82,500	901 - 1,100	2,001 - 2,400
0	0 - 31,600	0 - 66,500	0 - 900	0 - 2,000

Bicycle Trip Demand

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 0**

Poor Good

Pedestrian Trip Demand

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 0**

Poor Good

5 | Route Directness

Bicycle Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Bike Parking?	*Y/N*	Yes. Bike racks are located within 25 feet of tracks.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Parking lot is a barrier. Not enough direct pedestrian paths to El Camino Real.
General MetroQuest Survey Input		Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Platform?	*Y/N*	Parking lot to platform is direct and convenient.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Parking lot is a barrier. Not enough pedestrian paths through the parking lot to/from El Camino Real.
General MetroQuest Survey Input		Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Route Directness		Pedestrian Route Directness	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

6 | Safety

Bicycle Environment	Notes:
Curb Cuts along Streets	*Y/N* Curb cuts are not excessive.
Bikeway Treatments at Intersections	*Y/N* No.
On-Street Parking adjacent to Bikeways	*Y/N* No.
Buffer between Bikeway and Vehicles	*Y/N* No.
Does streetscape design affect bicyclist safety? How?	*Y/N* Narrow lanes on El Camino Real s/o Ave Estacion can affect safety.
Any bicycle-related collisions?	*Y/N* Yes. Two bicycle collisions adjacent to station within 3 year period.
General MetroQuest Survey Input	Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment	Notes:
Crosswalks	*Y/N* Yes. Adequate locations. Crosswalks have nice pavers which stand out to motorists.
Wide Sidewalks	*Y/N* Narrow sidewalks. No sidewalk on sections of El Camino Real w/o Avenida Pico.
Impediments along Sidewalks	*Y/N* Yes. Light poles and signs adjacent to station are an impediment.
Landscaping between Sidewalk / Curb	*Y/N* No.
Does streetscape design affect pedestrian safety? How?	*Y/N* Parking lot is circuitous for pedestrians. Parking layout makes it difficult to walk between parked cars to get through the parking lot.
Any pedestrian-related collisions?	*Y/N* Yes. One pedestrian collision resulting in injury at the North Camino Real/Avenida Pico intersection in 2010
General MetroQuest Survey Input	Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Safety		Pedestrian Safety	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 4**
Poor Good		*Poor Good*	

7 | Security

Bicycle Environment	Notes:
Lighting	*Y/N* Yes. Lighting seems adequate.
Litter along/near Bikeways	*Y/N* No. Clean
Abandoned Buildings	*Y/N* Empty dirt lot located directly across from station on El Camino Real.
Graffiti	*Y/N* No.
Would you feel safe biking near the station at night?	*Y/N* Yes.
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment	Notes:
Lighting	*Y/N* Yes. Lighting seems adequate.
Litter along/near Sidewalks	*Y/N* Empty dirt lot located directly across from station on El Camino Real.
Abandoned Buildings	*Y/N* Some delapidated buildings on Atchison St.
Graffiti	*Y/N* No.
Would you feel safe walking near the station at night?	*Y/N* Yes.
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Security		Pedestrian Security	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

8 | Information / Wayfinding

Bicycle Environment	**Notes:**	Recommend improving signage adjacent to station.
Signage along Bikeways	*Y/N*	Yes.
Signage near Station	*Y/N*	No signage.
Striping along Bikeways or at Station	*Y/N*	No station related striping.
Bicycle Parking at Station	*Y/N*	No signage.
Stairs at Station	*Y/N*	No signage.
Ramps for Bikes (and ADA Compliance)	*Y/N*	No signage.
Elevators at Station	*Y/N*	N/A (station does not have elevators)
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Pedestrian Environment	**Notes:**	Recommend improving signage adjacent to station.
Signage along Sidewalks	*Y/N*	Yes. Adequate signage provided.
Signage near Station	*Y/N*	No signage.
Stairs	*Y/N*	No signage.
Ramps	*Y/N*	No signage.
Elevators	*Y/N*	N/A (station does not have elevators)
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Informaton / Wayfinding		**Pedestrian Information / Wayfinding**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 2**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 2**
Poor Good		*Poor Good*	

9 | Station Amenities

Bicycle Environment	Notes:	
Bike Sharing	*Y/N*	No.
Bike Lockers	*Y/N*	No.
Bike Track on Stairs	*Y/N*	No.
Restrooms	*Y/N*	No.
Showers	*Y/N*	No.
Changing Facilities	*Y/N*	No.
Seating Areas	*Y/N*	Yes. Seating areas are not covered.
Indoor Waiting Areas	*Y/N*	No.
Retail	*Y/N*	Coffee shop across the street.
Covered Bicycle Parking	*Y/N*	No.

Pedestrian Environment	Notes:	
Restrooms	*Y/N*	No.
Seating Areas	*Y/N*	Yes. Seating areas are not covered.
Indoor Waiting Areas	*Y/N*	No.
Retail	*Y/N*	No.

Bicycle Amenities		Pedestrian Amenities	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 2**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 4**
Poor Good		*Poor Good*	

10 | Bike Parking

Bicycle Environment		Notes/Suggestions:	
Occupied Bike Racks at time of visit		*Y/N*	3
Occupied Bike Lockers at time of visit		*Y/N*	N/A
Total Bike Racks		*Y/N*	Capacity is about 5 bikes.
Total Bike Lockers		*Y/N*	N/A
Bicycle Rack Percent Usage (data from City)			N/A
Number of Bikes Locked against railing/trees/poles/etc?		*Y/N*	None.
Are bicycle racks visible, secure, and covered?		*Y/N*	Yes, visible and secure. Not covered.
General MetroQuest Survey Input	Average of survey results show 3.35 for "bike parking is adequate at station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).		

Bicycle Parking

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 2**

Poor *Good*

Summary of Results |

		Bike	Ped
1	Station Mode Split	10	2
2	Network Design	8	6
3	Catchment Area Effectiveness	4	4
4	Trip Demand	0	0
5	Route Directness	6	6
6	Safety	6	4
7	Security	6	6
8	Information / Wayfinding	2	2
9	Station Amenities	2	4
10	Bike Parking	2	--
	Total	**46**	**34**
	Maximum Value	100	90

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.

Accessibility Checklist

Station Name:	**San Juan Capistrano Stn**	**City Name:**	**San Juan Capistrano**
Surveyed By:	**Anthony Hernandez**	**Survey Date:**	**11/15/2012**

1 | Station Mode Split

This Metric to be Completed in Office

Station Typology (Exh 4-4 from TCRP 153): Historic Transit Village
Metrolink 2010 Daily Boardings/Alightings (Table E-3 from MSPMS): 202

Bicycle Environment	**Bike:**	**Ped:**
Estimated Mode Split (derived from MSPMS+CSS):	2%	24%
Estimated Mode Split National Average (from TCRP 153):	1%	25%
Estimated Mode Split Effectiveness Ratio:	2.00	0.96

Mode Split	
Range	Score
0 - 0.2	0
0.21 - 0.40	2
0.41 - 0.60	4
0.61 - 0.80	6
0.81 - 1.0	8
>1.0	10

Bicycle Mode Split		**Pedestrian Mode Split**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 10**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

2 | Network Design

What streets are adjacent to station?	Verdugo St, Camino Capistrano, Ortega Hwy, Los Rios St

Bicycle Environment	**Notes:**	Recommend providing a sharrow on Camino Capistrano & Ortega Hwy
Class I, II, III Bike Facility?	*Y/N*	No.
Are adjacent streets Bike Friendly (shaded, buffer b/w cars, etc.)?	*Y/N*	Parked cars create minimal space for cyclists to use. Downtown atmoshpere is friendly but an average person wouldn't feel comfortable riding on streets adjacent to station.

Pedestrian Environment	**Notes:**	
Sidewalk, 5-feet wide or more	*Y/N*	Adequate sidewalks mostly about 5 feet wide.
Do pedestrian Trails exist?	*Y/N*	No.
Are adjacent streets Pedestrian Friendly(shaded, buffer b/w cars, etc.)?	*Y/N*	Very friendly. Good shade, nice conditions, and very eclectic.

Bicycle Friendliness		**Pedestrian Friendliness**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 10**
Poor Good		*Poor Good*	

3 | Catchment Area Effectiveness

This Metric to be Completed in Office

Bicycle Environment	**Notes:**	
Rational Catchment Area (from OCTA GIS)		11.2 sq mi (7,150 acres)
Optimal Catchment Area (∏*Radius^2)		28.3 sq mi
Catchment Area Effectiveness Ratio		*0.4*

Pedestrian Environment	**Notes:**	
Rational Catchment Area (from OCTA GIS)		0.4 sq mi (223 acres)
Optimal Catchment Area (∏*Radius^2)		0.8 sq mi
Catchment Area Effectiveness Ratio		*0.5*

Mode Split	
Range	Score
0 - 0.2	2
0.21 - 0.40	4
0.41 - 0.60	6
0.61 - 0.80	8
0.81 - 1.0	10

Bicycle Catchment		**Pedestrian Catchment**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

4 | Trip Demand

This Metric to be Completed in Office	**Bike**	**Score**	**Ped**	**Score**
Employment (Quantity from OCTA GIS)	14661	0	2326	10
Total Population (Quantity from OCTA GIS)	38473	0	1718	0

	Bicycle		Pedestrian	
Score	Employment Total	Population Total	Employment Total	Population Total
10	> 62,000	> 130,500	> 1,700	> 3,600
8	54,401 - 62,000	114,501 - 130,500	1,501 - 1,700	3,201 - 3,600
6	46,801 - 54,400	98,501 - 114,500	1,301 - 1,500	2,801 - 3,200
4	39,201 - 46,800	82,501 - 98,500	1,101 - 1,300	2,401 - 2,800
2	31,601 - 39,200	66,501 - 82,500	901 - 1,100	2,001 - 2,400
0	0 - 31,600	0 - 66,500	0 - 900	0 - 2,000

Bicycle Trip Demand		**Pedestrian Trip Demand**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 0**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 5**
Poor Good		*Poor Good*	

5 | Route Directness

Bicycle Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Bike Parking?	*Y/N*	Fairly direct (located behind parking structure). Recommend relocating bike racks closer to tracks (need more visibility).
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Yes.
General MetroQuest Survey Input	Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Pedestrian Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Platform?	*Y/N*	Fairly direct.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Yes. Station is easily accessible. Integrates well with the downtown.
General MetroQuest Survey Input	Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Route Directness		Pedestrian Route Directness	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

6 | Safety

Bicycle Environment		Notes:
Curb Cuts along Streets	*Y/N*	Curb cuts along Camino Capistrano s/o Ortega Hwy can cause some friction for cyclists.
Bikeway Treatments at Intersections	*Y/N*	No.
On-Street Parking adjacent to Bikeways	*Y/N*	Yes, on Camino Capistrano and Ortega Hwy.
Buffer between Bikeway and Vehicles	*Y/N*	No.
Does streetscape design affect bicyclist safety? How?	*Y/N*	Narrow lanes on Camino Capistrano and Ortega Hwy can affect safety, especially for inexperienced cyclists.
Any bicycle-related collisions?	*Y/N*	No bicycle collisions directly adjacent to station within 3 year period.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment		Notes:
Crosswalks	*Y/N*	Yes. Adequate locations.
Wide Sidewalks	*Y/N*	Sidewalks seem adequate.
Impediments along Sidewalks	*Y/N*	Yes. Light poles and signs adjacent to station are an impediment.
Landscaping between Sidewalk / Curb	*Y/N*	No.
Does streetscape design affect pedestrian safety? How?	*Y/N*	Streetscape is very pedestrian friendly. Good pedestrian scale.
Any pedestrian-related collisions?	*Y/N*	Yes. One pedestrian collision resulting in injusry at the Verdugo St/Camino intersection in 2009.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Safety		Pedestrian Safety	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 10**
Poor Good		*Poor Good*	

7 | Security

Bicycle Environment	Notes:
Lighting	*Y/N* Yes. Lighting seems adequate.
Litter along/near Bikeways	*Y/N* No. Clean
Abandoned Buildings	*Y/N* No.
Graffiti	*Y/N* No.
Would you feel safe biking near the station at night?	*Y/N* Yes. Downtown atmosphere enhances the pedestrian activity at night which relates to security.
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment	Notes:
Lighting	*Y/N* Yes. Lighting seems adequate.
Litter along/near Sidewalks	*Y/N* No. Clean
Abandoned Buildings	*Y/N* No.
Graffiti	*Y/N* No.
Would you feel safe walking near the station at night?	*Y/N* Yes. Downtown atmosphere enhances the pedestrian activity at night which relates to security.
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Security		Pedestrian Security	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 10**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 10**
Poor Good		*Poor Good*	

8 | Information / Wayfinding

Bicycle Environment	Notes:
Signage along Bikeways	*Y/N* Yes.
Signage near Station	*Y/N* Yes.
Striping along Bikeways or at Station	*Y/N* No.
Bicycle Parking at Station	*Y/N* No signage.
Stairs at Station	*Y/N* N/A (station does not have stairs)
Ramps for Bikes (and ADA Compliance)	*Y/N* No signage.
Elevators at Station	*Y/N* N/A (station does not have elevators)
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment	Notes:
Signage along Sidewalks	*Y/N* Yes. Adequate signage provided.
Signage near Station	*Y/N* Yes.
Stairs	*Y/N* N/A (station does not have stairs)
Ramps	*Y/N* N/A (station does not have ramps)
Elevators	*Y/N* N/A (station does not have elevators)
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Informaton / Wayfinding		Pedestrian Information / Wayfinding	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor *Good*		*Poor* *Good*	

9 | Station Amenities

Bicycle Environment		Notes:
Bike Sharing	*Y/N*	No.
Bike Lockers	*Y/N*	No.
Bike Track on Stairs	*Y/N*	N/A
Restrooms	*Y/N*	Yes. In great condition.
Showers	*Y/N*	No.
Changing Facilities	*Y/N*	No. However, bathrooms are clean enough to change in.
Seating Areas	*Y/N*	Yes. Seating areas are covered.
Indoor Waiting Areas	*Y/N*	No.
Retail	*Y/N*	Retail is all within close proximity.
Covered Bicycle Parking	*Y/N*	No.

Pedestrian Environment		Notes:
Restrooms	*Y/N*	Yes. In great condition.
Seating Areas	*Y/N*	Yes. Seating areas are covered.
Indoor Waiting Areas	*Y/N*	No.
Retail	*Y/N*	Retail is all within close proximity.

Bicycle Amenities		Pedestrian Amenities	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 10**
Poor Good		*Poor Good*	

10 | Bike Parking

Bicycle Environment		**Notes/Suggestions:** Recommend relocating racks.
Occupied Bike Racks at time of visit	*Y/N*	1
Occupied Bike Lockers at time of visit	*Y/N*	N/A
Total Bike Racks	*Y/N*	Capacity is about 8 bikes.
Total Bike Lockers	*Y/N*	N/A
Bicycle Rack Percent Usage (data from City)		N/A
Number of Bikes Locked against railing/trees/poles/etc?	*Y/N*	None.
Are bicycle racks visible, secure, and covered?	*Y/N*	Hard to find and not covered.
General MetroQuest Survey Input	Average of survey results show 3.35 for "bike parking is adequate at station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Parking

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 2**

Poor *Good*

Summary of Results |

		Bike	Ped
1	Station Mode Split	10	8
2	Network Design	4	10
3	Catchment Area Effectiveness	4	6
4	Trip Demand	0	5
5	Route Directness	8	8
6	Safety	4	10
7	Security	10	10
8	Information / Wayfinding	8	8
9	Station Amenities	4	10
10	Bike Parking	2	--
	Total	**54**	**75**
	Maximum Value	100	90

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.

OCTA Station Access - Tustin

Accessibility Checklist

Station Name:	**Tustin**	**City Name:**	**Tustin**
Surveyed By:	**Deepak Kaushik**	**Survey Date:**	**11/28/2012**

1 | Station Mode Split

This Metric to be Completed in Office

Station Typology (Exh 4-4 from TCRP 153): Suburban Freeway
Metrolink 2010 Daily Boardings/Alightings (Table E-3 from MSPMS): 868

Bicycle Environment	**Bike:**	**Ped:**
Estimated Mode Split (derived from MSPMS+CSS):	3%	5%
Estimated Mode Split National Average (from TCRP 153):	1%	10%
Estimated Mode Split Effectiveness Ratio:	3.00	0.50

Mode Split	
Range	Score
0 - 0.2	0
0.21 - 0.40	2
0.41 - 0.60	4
0.61 - 0.80	6
0.81 - 1.0	8
>1.0	10

Bicycle Mode Split		**Pedestrian Mode Split**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 10**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 4**
Poor Good		*Poor Good*	

2 | Network Design

What streets are adjacent to station?	Edinger Ave, Jamboree Rd, Dow Ave

Bicycle Environment	**Notes:**	
Class I, II, III Bike Facility?	*Y/N*	Class II facility on Edinger Ave
Are adjacent streets Bike Friendly (shaded, buffer b/w cars, etc.)?	*Y/N*	Yes, striped lane on Edinger Ave and Dow Ave is wide. No on-street parking on either street.

Pedestrian Environment	**Notes:**	
Sidewalk, 5-feet wide or more	*Y/N*	Yes, but sidewalks on Dow Ave are discontinuous
Do pedestrian Trails exist?	*Y/N*	Yes, ped/bike trail from Dow Ave
Are adjacent streets Pedestrian Friendly(shaded, buffer b/w cars, etc.)?	*Y/N*	No buffers between cars and peds, no on-street parking, and high speeds along Edinger Ave

Bicycle Friendliness		**Pedestrian Friendliness**	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

3 | Catchment Area Effectiveness

This Metric to be Completed in Office

Bicycle Environment **Notes:**

Rational Catchment Area (from OCTA GIS)		14 sq mi (8,946 acres)
Optimal Catchment Area (∏*Radius^2)		28.3 sq mi
Catchment Area Effectiveness Ratio		*0.49*

Pedestrian Environment **Notes:**

Rational Catchment Area (from OCTA GIS)		0.2 sq mi (132 acres)
Optimal Catchment Area (∏*Radius^2)		0.8 sq mi
Catchment Area Effectiveness Ratio		*0.25*

Mode Split	
Range	Score
0 - 0.2	2
0.21 - 0.40	4
0.41 - 0.60	6
0.61 - 0.80	8
0.81 - 1.0	10

Bicycle Catchment

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 6**

Poor Good

Pedestrian Catchment

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 4**

Poor Good

4 | Trip Demand

This Metric to be Completed in Office	Bike	Score	Ped	Score
Employment (Quantity from OCTA GIS)	50349	6	3050	10
Total Population (Quantity from OCTA GIS)	95091	4	14	0

	Bicycle		Pedestrian	
Score	Employment Total	Population Total	Employment Total	Population Total
10	> 62,000	> 130,500	> 1,700	> 3,600
8	54,401 - 62,000	114,501 - 130,500	1,501 - 1,700	3,201 - 3,600
6	46,801 - 54,400	98,501 - 114,500	1,301 - 1,500	2,801 - 3,200
4	39,201 - 46,800	82,501 - 98,500	1,101 - 1,300	2,401 - 2,800
2	31,601 - 39,200	66,501 - 82,500	901 - 1,100	2,001 - 2,400
0	0 - 31,600	0 - 66,500	0 - 900	0 - 2,000

Bicycle Trip Demand

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 5**

Poor *Good*

Pedestrian Trip Demand

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 5**

Poor *Good*

5 | Route Directness

Bicycle Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Bike Parking?	*Y/N*	Yes, bike racks and bike lockers are within close vicinity to platform
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Yes, direct route along Jamboree Plaza to Edinger Ave and along access path to Dow Ave
General MetroQuest Survey Input		Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Route Directness		Notes/Suggestions:
Direct & Shortest Length Routes from Station Entrance to Platform?	*Y/N*	Yes, direct access provided via ramps and stairs.
Direct & Shortest Length Routes from Station Entrance to Adjacent Streets?	*Y/N*	Yes, direct route along Jamboree Plaza to Edinger Ave and along access path to Dow Ave
General MetroQuest Survey Input		Average of survey results show 3.56 for "walking/biking route to/from station is direct." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Route Directness		Pedestrian Route Directness	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 8**
Poor Good		*Poor Good*	

6 | Safety

Bicycle Environment		Notes:
Curb Cuts along Streets	*Y/N*	Yes along Dow Ave, only 1 along Edinger in the vicinity of the station
Bikeway Treatments at Intersections	*Y/N*	No bike signal
On-Street Parking adjacent to Bikeways	*Y/N*	No on-street parking provided
Buffer between Bikeway and Vehicles	*Y/N*	Not on Edinger, but bike path provided off Dow Ave
Does streetscape design affect bicyclist safety? How?	*Y/N*	Yes, striped lane on Edinger Ave, and Dow Ave is wide.
Any bicycle-related collisions?	*Y/N*	No bicycle collisions directly adjacent to station within 3 year period.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment		Notes:
Crosswalks	*Y/N*	Yes
Wide Sidewalks	*Y/N*	No
Impediments along Sidewalks	*Y/N*	No
Landscaping between Sidewalk / Curb	*Y/N*	No landscaping
Does streetscape design affect pedestrian safety? How?	*Y/N*	No sidewalks on some portions of Dow Ave, and high speeds on Edinger with no on-street parking to act as a buffer.
Any pedestrian-related collisions?	*Y/N*	No pedestrian collisions directly adjacent to station within 3 year period.
General MetroQuest Survey Input		Average of survey results show 3.36 for "walking/biking are safe from car traffic at and near station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Safety		Pedestrian Safety	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 8**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

7 | Security

Bicycle Environment	Notes:
Lighting	*Y/N* Yes, adequate
Litter along/near Bikeways	*Y/N* No
Abandoned Buildings	*Y/N* No abandoned buildings, adjacent to mostly office use
Graffiti	*Y/N* No
Would you feel safe biking near the station at night?	*Y/N* No, area is fairly isolated from any retail or street activity at night.
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Pedestrian Environment	Notes:
Lighting	*Y/N* Yes, adequate
Litter along/near Sidewalks	*Y/N* No
Abandoned Buildings	*Y/N* No abandoned buildings, adjacent to mostly office use
Graffiti	*Y/N* No
Would you feel safe walking near the station at night?	*Y/N* No, area is fairly isolated from any retail or street activity at night.
General MetroQuest Survey Input	Average of survey results show 3.41 for "security is adequate at station in morning/evening." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).

Bicycle Security		Pedestrian Security	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

8 | Information / Wayfinding

Bicycle Environment		Notes:
Signage along Bikeways	*Y/N*	No signage along Edinger Ave, but signage provided along Dow Ave.
Signage near Station	*Y/N*	Yes, signage along Dow Ave
Striping along Bikeways or at Station	*Y/N*	No striping
Bicycle Parking at Station	*Y/N*	No signage to either bike racks or lockers
Stairs at Station	*Y/N*	Yes, signage directing to pedestrian tunnel
Ramps for Bikes (and ADA Compliance)	*Y/N*	No signage directing to ramps
Elevators at Station	*Y/N*	No elevators at station
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Pedestrian Environment		Notes:
Signage along Sidewalks	*Y/N*	No signage along Edinger Ave, but signage provided along Dow Ave.
Signage near Station	*Y/N*	Yes, signage along Dow Ave
Stairs	*Y/N*	Yes, signage directing to pedestrian tunnel
Ramps	*Y/N*	No signage directing to ramps
Elevators	*Y/N*	No elevators at station
General MetroQuest Survey Input	Average of survey results show 3.32 for "signs for biking and walking are adequate." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Informaton / Wayfinding		Pedestrian Information / Wayfinding	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 6**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 6**
Poor Good		*Poor Good*	

9 | Station Amenities

Bicycle Environment	Notes:	
Bike Sharing	*Y/N*	No
Bike Lockers	*Y/N*	Yes
Bike Track on Stairs	*Y/N*	No
Restrooms	*Y/N*	No
Showers	*Y/N*	No
Changing Facilities	*Y/N*	No
Seating Areas	*Y/N*	Yes
Indoor Waiting Areas	*Y/N*	No
Retail	*Y/N*	No
Covered Bicycle Parking	*Y/N*	No

Pedestrian Environment	Notes:	
Restrooms	*Y/N*	No
Seating Areas	*Y/N*	Yes
Indoor Waiting Areas	*Y/N*	No
Retail	*Y/N*	No

Bicycle Amenities		Pedestrian Amenities	
Range: 0 - 2 - 4 - 6 - 8 - 10	**Score: 4**	*Range: 0 - 2 - 4 - 6 - 8 - 10*	**Score: 4**
Poor Good		*Poor Good*	

10 | Bike Parking

Bicycle Environment		Notes/Suggestions:
Occupied Bike Racks at time of visit	*Y/N*	11
Occupied Bike Lockers at time of visit	*Y/N*	1
Total Bike Racks	*Y/N*	32
Total Bike Lockers	*Y/N*	20
Bicycle Rack Percent Usage (data from City)		Not Available
Number of Bikes Locked against railing/trees/poles/etc?	*Y/N*	None
Are bicycle racks visible, secure, and covered?	*Y/N*	Yes, visible, secured, but not covered
General MetroQuest Survey Input	Average of survey results show 3.35 for "bike parking is adequate at station." Response Range: 1-5 (1 = disagree, 3 = no opinion, 5 = agree).	

Bicycle Parking

Range: 0 - 2 - 4 - 6 - 8 - 10 **Score: 8**

Poor *Good*

Summary of Results |

		Bike	Ped
1	Station Mode Split	10	4
2	Network Design	8	6
3	Catchment Area Effectiveness	6	4
4	Trip Demand	5	5
5	Route Directness	8	8
6	Safety	8	6
7	Security	6	6
8	Information / Wayfinding	6	6
9	Station Amenities	4	4
10	Bike Parking	8	--
	Total	**69**	**49**
	Maximum Value	100	90

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.

Prepared by:

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