ACTIVE TRANSPORTATION PROGRAM

CYCLE 1

APPLICATION

Project name:	Duarte Gold Line Station Pedestrian and Bicycle Improvements

For Caltrans use only: ____TAP _____STP_____RTP ____SRTS ____SRTS-NI ____SHA ____DAC ____Non-DAC ____Plan

Table of Contents

Section

Section I: General Information 1
Section II: Project Information 3
Section III: Screening Criteria 4
Section IV: Narrative Questions: Q1 – Q8....5
Section V: Project Programming Request (PPR) 22
Section VI: Additional Information 28
Section VII: Non-Infrastructure Schedule Information....29
Section VIII: Application Signatures....30
Section IX: Attachments 31

Attachments

Attachment 1: Project Vicinity Map....32
Attachment 2: Project Improvements Map....34
Attachment 3: Project Photos....36
Attachment 4: Major Activity Centers Map....43
Attachment 5: Existing and Planned Bicycle Connections....45
Attachment 6: Safety Calculator....47
Attachment 7: Bike and Pedestrian Crashes Map 50
Attachment 8: Duarte Comprehensive Plan Excerpts 52
Attachment 9A: Cost Effectiveness and Cost Benefit Methodology 65
Attachment 9B1: Cost Effectiveness and Calculator Tool, Total Cost 76
Attachment 9B2: Cost Effectiveness and Calculator Tool, ATP Cost 87
Attachment 9C: Pedestrian and Bike Forecasting Methodology....98
Attachment 10: Median Household Income Map 101
Attachment 11: California Enviro Screen Map 103
Attachment 12: Disadvantaged Communities Map....105
Attachment 13: Free School Lunches Map 107
Attachment 14: Communication Requesting CCC Participation....109
Attachment 15: Communication Requesting CALCC Participation....112
Attachment 16: Engineer's Budget Estimate....115
Attachment 17: Letters of Support....117

I. GENERAL INFORMATION

Project name: Duarte Gold Line Station Pedestrian and Bicycle Improvements

(fill out all of the fields below)

1. APPLICANT (Agency name, address and zip code) City of Duarte, 1600 E Huntington Dr, Duarte, CA 91010	2. PROJECT FUNDING ATP funds Requested $ 1,303,740.00 Matching Funds (If Applicable) $ 341,445.00 Other Project funds $ TOTAL PROJECT COST $ 1,645,185.00
3. APPLICANT CONTACT (Name, title, e-mail, phone #) Jason Golding, City Planner, goldingj@accessduarte.com	
4. APPLICANT CONTACT (Address & zip code) 600 E Huntington Dr, Duarte, CA 91010	5. PROJECT COUNTY(IES): Los Angeles County
6. CALTRANS DISTRICT #- Click Drop down menu below District 7	7. Application # ____ of ____ (in order of agency priority)

Area Description:

8. Large Metropolitan Planning Organization (MPO)- Select your" MPO" or "Other" from the drop down menu>	SCAG Southern California Association of Governr
9. If "Other" was selected for #8- select your MPO or RTPA from the drop down menu>	
10. Urbanized Area (UZA) population (pop.)- Select your UZA pop. from drop down menu>	Within a Large MPO (Pop > 200,000)

Master Agreements (MAs):

11. ☒ Yes, the applicant has a FEDERAL MA with Caltrans.
12. ☒ Yes, the applicant has a STATE MA with Caltrans.

13. If the applicant does not have an MA. Do you meet the Master Agreement requirements? Yes ☐ No ☐
The Applicant MUST be able to enter into MAs with Caltrans

Partner Information:

14. Partner Name*: San Gabriel Valley Council of Governments	15. Partner Type Governmental
16. Contact Information (Name, phone # & e-mail) Marisa Creter, (626)564-9702, mcreter@sgvcog.org	17. Contact Address & zip code 3452 E. Foothill Blvd., Ste. 910, Pasadena, CA 91107

☐ Click here if the project has more than one partner; attach the remaining partner information on a separate page

*If another entity agrees to assume responsibility for the ongoing operations and maintenance of the facility, documentation of the agreement must be submitted with the application, and a copy of the Memorandum of Understanding or Interagency Agreement between the parties must be submitted with the request for allocation.

Project Type: (Select only one)

18. Infrastructure (IF) ☒ 19. Non-Infrastructure (NI) ☐ 20. Combined (IF & NI) ☐

Project name: Duarte Gold Line Station Pedestrian and Bicycle Improvements

I. GENERAL INFORMATION-continued

Sub-Project Type (Select all that apply)

21. ☐ Develop a Plan in a Disadvantaged Community (select the type(s) of plan(s) to be developed)
    ☐ Bicycle Plan ☐ Safe Routes to School Plan ☐ Pedestrian Plan
    ☐ Active Transportation Plan

    (If applying for an Active Transportation Plan- check any of the following plans that your agency already has):
    ☐ Bike plan ☐ Pedestrian plan ☐ Safe Routes to School plan ☐ ATP plan

22. ☒ Bicycle and/or Pedestrian infrastructure
    Bicycle only: ☐ Class I ☒ Class II ☐ Class III
    Ped/Other: ☒ Sidewalk ☒ Crossing Improvement ☐ Multi-use facility

    Other: Lighting, wayfinding signs for bikes and pedestrians

23. ☐ Non-Infrastructure (Non SRTS)

24. ☐ Recreational Trails*- ☐ Trail ☐ Acquisition

    ***Please see additional Recreational Trails instructions before proceeding**

25. ☐ Safe routes to school- ☐ Infrastructure ☐ Non-Infrastructure

If SRTS is selected, provide the following information

26. SCHOOL NAME & ADDRESS:
27. SCHOOL DISTRICT NAME & ADDRESS:

28. County-District-School Code (CDS)	29. Total Student Enrollment	30. Percentage of students eligible for free or reduced meal programs **
31. Percentage of students that currently walk or bike to school	32. Approximate # of students living along school route proposed for improvement	33. Project distance from primary or middle school

**Refer to the California Department of Education website: http://www.cde.ca.gov/ds/sh/cw/filesafdc.asp

☐ Click here if the project involves more than one school; attach the remaining school information including school official signature and person to contact, if different, on a separate page

II. PROJECT INFORMATION

1. Project Location

The project improvements are in the City of Duarte along Duarte Rd. and Highland Ave. connecting the Duarte Gold Line Light Rail Transit (LRT) Station (under construction) with surrounding uses. The project is approximately 2 miles in length on Duarte Rd and Highland Ave. See Attachment 1: Vicinity Map.

2. Project Coordinates Latitude N 34.1325370519 (Decimal degrees) Longitude W 117.972473414 (Decimal degrees)

3. Project Description

Design and construction of pedestrian and bicycle improvements around the Duarte Gold Line Station connecting the station with surrounding uses including The City of Hope National Medical Center and Hospital, the civic center, a recently rezoned area for mixed-use TOD development; residential and retail areas to the west, south and northwest of the LRT station; the Class I Duarte Bike Trail and also the Lario-San Gabriel River Trail regional bikeway network; the planned Emerald Necklace regional bikeway network, and schools, shopping, and community facilities that on the north side of I-210 freeway that is currently a barrier to travel due to the lack of sidewalks. Improvements include sidewalks and bike paths on Duarte Rd. between Mountain Ave. and the new station improvements (at Highland), and bike paths on Highland Ave. between the station and Royal Oaks Dr. It also fills a block long gap with a new sidewalk on Highland and includes way finding signage and accesses to trails. The project also includes the purchase and installation of permanent pedestrian/bike counters. These counters will provide good data on these modes of travel without having to rely on manual counts to evaluate the success of project improvements. See Attachment 2 and Attachment 3.

Improved bikeways and sidewalks are needed to improve safety and mobility for non-motorized users and increase the number of bike and pedestrian trips. This is a disadvantaged community reliant on transit. Completion of these major corridor improvements are needed to complete connections to transit and other major activity centers, thus improving mobility within the local area and to the regions beyond, Increased bicycle and pedestrian

usage will promote physical activity and enhance public health. With an increase in pedestrian and bicycle trips, the number of single occupant vehicular trips will tend to decrease, thereby reducing greenhouse gas emissions. .

4. Project Status

The project is entirely within the existing right-of-way. Per the Code of Federal Regulations Title 40: Protection of Environment, §1508.4 Categorical Exclusions, and Title 23: Highways, Part 771-Environmental Impact and Related Procedures, §771.117 FHWA Categorical Exclusions, the proposed project is a Class II action which is Categorically Excluded. Per California Code of Regulations, Title 14 Natural Resources, Division 6 Resources Agency, Chapter 3 Guidelines for Implementation of the California Environmental Quality Act, Article 19 Categorical Exemptions, the proposed project is categorically exempt. The applicant agency will prepare preliminary plans and documentation of the National Environmental Policy Act Categorical Exclusion and California Environmental Quality Act Categorical Exemption and submit them to CalTrans.

III. SCREENING CRITERIA

1. Demonstrated Needs of the Applicant
Describe the need for the project and/or funding

The Duarte Gold Line LRT station is under construction, yet lacks the accessibility and connectivity to efficiently and safely provide passage to pedestrians and bicyclists to the Station. Without this funding, pedestrians will be left to choose unsafe, non-illuminated, unmarked and unpaved routes to the Station. Bicyclists that converge on Duarte through the Duarte Bike Trail (which connects to the regional Lario/San Gabriel River bike route system) and the LA County Emerald Necklace recreational system will be left with unidentified and unsafe alternatives to connect to the regional LRT systems. Pedestrians that live or shop to the west, south and northwest of the Duarte LRT Station will also be left without safe, illuminated and accessible sidewalks to allow connection to the regional transit network. Finally, way finding and bike route signage will help facilitate multi-modal connectivity between the 210 and 605 freeways, Huntington Dr., Mountain Ave, and other city streets and the Duarte Gold Line LRT Station.

2. Consistency with Regional Transportation Plan (100 words or less)
Explain how this project is consistent with your Regional Transportation Plan (if applicable). Include adoption date of the plan.

LA Metro's Long Range Transportation Plan, adopted in 2009, emphasizes mobility elements, including bicycle and pedestrian accessibility. The implementation strategy identified was the Call for Projects program, a competitive process that distributes discretionary capital transportation funds to regionally significant projects. The projects selected through this process are formally transmitted to the regional (SCAG) for inclusion in their Regional Transportation Plan. This project was selected through the Call for Projects process in 2011, and is therefore consistent with the SCAG Regional Transportation Plan. It's also consistent with the First/Last Mile Strategic Plan, adopted April 2014.

IV. NARRATIVE QUESTIONS

1. POTENTIAL FOR INCREASED WALKING AND BICYCLING, ESPECIALLY AMONG STUDENTS, INCLUDING THE IDENTIFICATION OF WALKING AND BICYCLING ROUTES TO AND FROM SCHOOLS, TRANSIT FACILITIES, COMMUNITY CENTERS, EMPLOYMENT CENTERS, AND OTHER DESTINATIONS; AND INCLUDING INCREASING AND IMPROVING CONNECTIVITY AND MOBILITY OF NON-MOTORIZED USERS. *(0-30 POINTS)*

A. Describe how your project encourages increased walking and bicycling, especially among students.

The future Duarte Gold Line Light Rail Station is under construction and will include a new signalized crossing of Duarte Rd. at City of Hope, bike parking, sidewalks, improved street crossings, and lighting, *but only within direct vicinity of the station*. The introduction of light rail will create multi-modal demands on public infrastructure in the Duarte Station area. This project will improve access to the station by filling the bicycle and pedestrian system gaps between the community and the station for a wide variety of users. This project will provide new ADA compliant sidewalks and amenities where there are none on the north side of Duarte Rd. between Highland Ave. and Mountain Ave. (just under one mile); and on Highland Ave. where there is no sidewalk for one block just north of the future Duarte Gold Line Light Rail Transit Station improvements. Wayfinding and bike route signage will also be requested City-wide to identify bike routes and guide bicyclists, pedestrians and motorists to the Duarte Gold Line Light Rail Station. The project will also add Class II or sharrow bike lanes on both sides of Duarte Rd. between Highland and Mountain (~ 1 mile), Class II or sharrow bike lanes on both sides of Highland Ave. from Duarte to Royal Oaks Dr. (~ 1 mile) as well as bike and pedestrian lighting and other security features, and drought resistant landscaping and irrigation to reduce heat island effect and prevent noxious and invasive species to take hold along

the rail/sidewalk. City-wide wayfinding signage will be installed to direct people to the new station. Convenient, safe, and accessible pedestrian and bicycle improvements will encourage use of these modes to access the major activity centers, 37 public schools with 20,040 students (including 17 low income schools) in the 3 mile project area. Students in the area will be encouraged to walk and bike by the improved facilities on Duarte Rd. and Highland Ave., the new sidewalk connection planned between Duarte High School and the Northview Intermediate School less than ¼ mile north of the project, and the proximity to of these improvements to major draws. City of Hope graduate students are also likely to use the new facilities with student housing located just off Duarte Rd.

The project area contains numerous activity centers that will benefit from the improvements as shown in Table 1 below and in Attachment 4: Major Activity Centers. According to the adopted travel demand model for the region, there are 135,494 residents and 65,757 jobs within the 3 mile project area that will benefit from better pedestrian, bicycle, and transit access.

This project will add safer access from the local school populations to the new Duarte Gold Line Station by filling sidewalk gaps and adding bike lanes along Duarte Rd. connecting to Buena Vista Ave. that leads to Duarte High School and part of Highland Ave. that leads to the Northview Intermediate School. There are over 3,500 students in the City of Duarte, and many more within 3 miles located in neighboring cities.

In addition, commuters, recreationalists, shoppers, and people seeking services can use the improved system to access the many local and regional destinations as shown in Table 1 below. Many of these activity centers will be able to access the new LRT station via the improvements via the improved Highland Ave.

Table 1: Major Activity Centers and Trip Generators on or within 1/2 mile of Corridor

Type	Name	Comments	School Enrollment
Schools within the City of Duarte (17 schools total low income schools within 3 mi.)	Duarte High School	Connects to Station via Highland Ave & Buena Vista Rd. High school students often bike/walk up to 3 mi. to school	1,228
	Northview Intermediate Middle School	Connects to project area via Highland	586
	Beardslee Elementary	Just south of Duarte Rd.	380
	Maxwell Elementary		359
	Mt. Olive Alternative Education		70

Type	Name	Comments	School Enrollment
	Royal Oaks Elementary		540
	Valley View Elementary		383
Government /Public Buildings	Duarte City Hall	Regional draw	NA
	School District Headquarters	Regional draw	NA
	Duarte Public Library	Regional draw	NA
	United States Post Office	Local Draw	NA
Community Centers and Parks and Recreational Facilities	Duarte Town Center (Community Center, Senior Center, and Fitness Center)	Regional Draw Offers fitness, meeting rooms, and other attractions on Huntington	NA
	Duarte Teen Center	Regional draw.	NA
	Duarte Park	Regional Park day care facility, picnic and barbecue, lighted basketball court, playground equipment, restrooms	NA
	Duarte Sports Park	Local park	NA
	Aloysia Moore Park	Local park	NA
	Northview Park	Local park adjacent to Middle School, sports fields	NA
	Birdslee Park	Regional draw, picnic area, barbecue pits, playground, soccer field, amphitheater	NA
	Lena Valenzuela Park	Local Park	NA
	Third Street Park	Accessible from via LRT from Duarte Station, then Santa Fe Dam to Emerald Necklace trail network	NA
	Santa Fe Dam Recreational Area (RC Airplane Airport)	Regional draw	NA
Medical	City of Hope Medical Center	Regional Draw. Medical Center and Teaching College. 4,300 employees, students, and patients. Immediately adjacent to Duarte Gold Line Station.	125
	Various clinics and dentist offices	local	NA
Retail and Offices	Lewis Business Park	Business park 1,000 to 1,500 employees	NA
	Cluster of large format retailers on Mountain Ave. (Walmart, Staples, Home Depot, Best Buy)	Cluster on Mountain Ave	NA
	Shopping centers	Retail, restaurants, etc..	NA
	Restaurants		NA
Senior Living	Andres Duarte Senior Apartments	Approximately 150 residents	NA
	Westminster Gardens Senior Living	Approximately 170 residents	NA
Other	Various apartments and multifamily living units		NA
	Planned major mixed-use development at Duarte Station		NA

B. Describe the number and type of possible users and their destinations, and the anticipated percentage increase in users upon completion of your project. Data collection methods should be described.

The project users will include people coming to and from the new Gold Line Station, commuters trying to access the numerous employment centers in the area, students, shoppers, and people visiting the regional medical facility (City of Hope). The project area consists of four areas of high employment and traffic generators – the regional medical facility (City of Hope); the cluster of schools, the civic center and related government offices area; residential clusters including apartments and senior living, large retailers and neighborhood shopping centers off of Mountain Ave., and light industrial buildings (Lewis Business Park). The proposed project will improve the approaches from these areas of concentration to the Duarte Gold Line LRT Station and between these activity centers. In addition, the proposed project will benefit residential areas within the project area by providing improved pedestrian and bicycle access to the regional light rail system which will connect Duarte to Sierra Madre, Arcadia, Monrovia, Irwindale, Azusa, Pasadena, and all the way south to downtown L.A. Nearby employment centers are the Walmart, Home Depot, and shopping centers at Mountain Ave. and Duarte Rd. (on the west side of the Project Area); a the downtown Duarte civic, commercial, and business corridor along Huntington Dr. (north of the improvements), the Lewis Business Park, and the City of Hope Medical Center.

The City of Hope National Medical Center is a major attractor including a clinical research center, a hospital, and a graduate medical school with 125 students and 150 interns directly south off Duarte Rd. on 110-acres. According to the City of Hope, there are approximately 4,300[1] employees at the location, and these employees are offered subsidized transit passes. The City of Hope estimates there receive **over 116,000 visits per year and approximately 9,715 visits per month** (based on Security Visitors Log and patient visitation records).[2]

Transportation mode share for transit, bike, and pedestrians for commute trips is low today with 89 percent of commuters driving to work, 0.5% riding a bike, and 2.5% walking (Source:. US Census, ACS 5 Year 2008-2012,

[1] Email communication 4/17/22 Kristen L. Pugh, MPA, Associate Vice President, Government and Community Relations, City of Hope Medical Center

[2] Email communication 4/22/14 to Jason Golding from Victor Benavides, External Relations Associate, City of Hope Medical Center

table B08301). However, the Gold Line LRT station is opening in Spring 2016 and will be a catalyst for pedestrian and bicycle activity projected to attract **1,231 boardings, or 2,461** there-and-back trips, each weekday. (Gold Line Foothill Extension- Pasadena to Montclair Final EIR, Feb 2007)

Without dedicated pedestrian facilities along the north side of Duarte Rd. and on sections of Highland Ave., it's estimated that current pedestrian use through the corridor is limited. The addition of dedicated pedestrian facilities, adds a critical link for residents and visitors, connecting them to the new Gold Line LRT Station. This new connection itself is expected to increase current pedestrian volumes by 20-30%, drawing pedestrian trips from parallel routes now that dedicated facilities are now provided directly on Duarte Rd. and Highland Ave.. In addition to the new pedestrian trips attracted to the new facilities, the new Gold Line LRT Station will increase total pedestrian volumes in the area significantly. (Attachment 8C explains in detail forecasting methodology.)
The improvements are also expected to increase bicycle mode share percentages substantially by 2035, to between 2-4% of mode share. This reflects the fact that new bike lanes, wayfinding signage, and safety improvements (such as lighting) will provide excellent new connections to local and regional trail systems and to major destinations, including the City of Hope Medical facility with 4,300 employees, 125 students, and numerous visitors, and the new Gold Line LRT Station expected to serve over 1,231 boardings per weekday.[3]

C. Describe how this project improves walking and bicycling routes to and from, connects to, or is part of a school or school facility, transit facility, community center, employment center, state or national trail system, points of interest, and/or park.

As shown in Table 1 and Attachments 4 and 5, the project connects multiple activity centers to the future Duarte Gold Line LRT including community centers, employment centers, schools, shopping, and the major trail networks discussed in D. below. The project will unify the area by creating excellent multimodal connections to the transit system (existing and planned). Pedestrians walk to and from the popular transit stops within the project which includes one Metro line, three Foothill Transit lines, and two Duarte Lines with average weekday ridership close to 11,000. The new Gold Line LRT, opening in 2015, is projected to serve 69,320 trips with 1,231 daily boardings (in 2025) at the Duarte Station connecting the community to Sierra Madre, Pasadena, and downtown Los

[3] Gold line Foothill Extension –Pasadena to Montclair Final EIR February 2007

Angeles, and students to Citrus College (2 yr JV), and Azusa Pacific Univ. at its eastern terminus. Table 2 shows the routes and the existing and proposed average weekday ridership per route.

Table 2: Transit Service, 2013 Bus Ridership, and Projected Light Rail Transit Ridership (2025)

Operator	**Line Number**	**Peak Headways**	**Average Weekday Ridership**
Metro	**Gold Line LRT**	**10 minutes**	**Projected Ridership 69,320 (2025) -**
Metro	264/267	60 minutes	3,941*
Foothill	187	20 minutes	5,424
Foothill	272	30 minutes	314
Foothill	494**	30 minutes	111
Duarte	Blue/Green	60 minutes	931
Duarte	Commuter**	25 minutes	22
			10,743 current riders

* Reported from MTA for route total route is combined with 267
** Runs at peak times only

Delineated bike lanes, sharrows and signage will help to guide and protect bicyclists as they head to the light rail station or connect from regional bike systems to local streets. Although the Gold Line Authority is constructing sidewalks within the immediate area adjacent to the Station, the proposed Project will provide gap-closure sidewalks and bike paths that allow access between the northerly half of the City, bike trails, and the Station area, while also installing sidewalks that connect neighborhoods and shopping centers in the western and southern portions of the City to the Duarte Station. Capital from both the Gold Line and ATP will provide safe, illuminated and accessible connections to residents and visitors alike, increasing transit ridership and reducing our reliance upon motor vehicles. Completion of ADA compliant curb ramps throughout the corridor will assist citizens with disabilities in fully accessing the new transit station.

D. Describe how this project increases and/or improves connectivity, removes a barrier to mobility and/or closes a gap in a non-motorized facility.

The sidewalks that are missing in the corridor on the north side Duarte St. and Highland Ave. will be added to ADA standards. These new sidewalks and ADA ramps will connect portions of our community to the Duarte Gold Line Station that would otherwise have to choose dangerous, less desirable or unimproved routes to the station. Pedestrian and bicycle level lighting is also proposed along Duarte Rd. to provide safe levels of illumination for these non-motorized modes of transportation. The facilities create a more unified Duarte linking the many

residences and activity centers in the area that are located both north and south of Duarte Ave. It will also help improve connections under the I-210 Freeway and that acts as a barrier in the community with new bike lanes a continuous sidewalk on the west side of Highland Ave. and a new sidewalk and bike lanes linking to the Emerald Necklace Trailhead and bike lanes to the Class I Duarte Bike Path.

Bicyclists that access Duarte through the Duarte Bike Trail (which connects to the regional Lario/San Gabriel River bike route system) and the LA County Emerald Necklace recreational system will now have way finding signage improved trailhead access and bike lanes connecting them to the regional LRT systems and a new sidewalk from the trailhead to the sidewalk in front of City of Hope on Duarte. In addition, lighting will improve safety and the new drought resistant landscaping reduce the heat island effect and will provide a more pedestrian-friendly environment.

The Emerald Necklace Region Park Network is partially developed and is planned to serve 62 cities in the San Gabriel and Gateway Cities region with over 68 miles of river trails, 50 miles of wash and creek trails, and 447 existing and 60 new potential parks. With the San Gabriel River running through Duarte, a completion of this Emerald Necklace will provide access to the entire network of trails and parks that connect to the San Gabriel River Trail. (http://www.amigosdelosrios.org/the-emerald-necklace-vision-plan/). See Attachment 5: Bicycle Connections. The project is a perfect example of the type of improvements called for in the recently approved First and Last Mile Strategic Plan (http://media.metro.net/docs/sustainability_path_design_guidelines.pdf). In 2012, the Metro Board adopted the Countywide Sustainability Planning Policy and Implementation Plan and the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Joint Work Program, both of which direct the development of a First Last Mile Strategic Plan. The goal of this plan is to better coordinate infrastructure investments in station areas to extend the reach of transit, with the ultimate goal of increasing ridership. This project is consistent with the plan because it breaks down barriers by adhering to the “Pathway-Guiding Principles” including improving safety (street crossings, protected sidewalk facilities, strategic lighting); being intuitive (wayfinding signage); being universally accessible (ADA compliant sidewalks and curb cuts); improving efficiency (filling in gaps for direct routes with paths that free of obstacles), and being fun (bike lanes, sidewalks, and connections to trails, parks and destinations).

2. POTENTIAL FOR REDUCING THE NUMBER AND/OR RATE OF PEDESTRIAN AND BICYCLIST FATALITIES AND INJURIES, INCLUDING THE IDENTIFICATION OF SAFETY HAZARDS FOR PEDESTRIANS AND BICYCLISTS. *(0-25 POINTS)*

A. Describe the potential of the project to reduce pedestrian and/or bicycle injuries or fatalities.

This Project includes pedestrian and bicycle improvements around the Duarte Gold Line Station that would benefit the safety of its users. Without this funding, pedestrians will be left to choose unsafe, non-illuminated, unmarked and unpaved routes to the Station. Bicyclists that converge on Duarte through the Duarte Bike Trail (which connects to the larger Lario/San Gabriel River bike route system) and the LA County Emerald Necklace recreational system will be left with unidentified and unsafe alternatives to connect to the regional LRT systems.

The Project will provide safe, illuminated, paved and marked routes for pedestrians, persons with disabilities and bicyclists. This is especially important as nearby Duarte High School, Northview Middle School and the City of Hope National Medical Center will see increased foot traffic from the Gold Line LRT station. Illumination will improve safety by making pedestrians and bicyclists more visible and improve security by making the area visible from a distance, thereby, deterring criminal behavior.

To determine the potential for reducing injuries or fatalities, crash reduction factors (CRF) were developed for each corridor utilizing the methodology as outlined in the *"Local Roadway Safety Manual for California Local Road Owner's",* and detailed in Attachment 6: Safety Calculator. Based on the analysis it is anticipated that an overall crash reduction of approximately 23% for bike and pedestrian crashes could be expected annually for study area.

By adding bike lanes, a distinct separated travel facility is created for bicyclists. This provides a visual cue for motorists to expect bicyclists, and provides a clear lane of travel for the bicyclists. Several of the bicycle crashes that occurred in this study area happened either because the bicycle was not traveling where it should have been, or because a motorist failed to yield right-of-way to the bicyclist or pedestrian.

B. Describe if/how your project will achieve any or all of the following:

- **Reduces speed or volume of motor vehicles**

The Project would provide improved connectivity for non-motorists and increase the number of people who elect to choose multi-modal transportation options. We anticipate an increase in Gold Line LRT ridership, an increase in use of non-motorized modes of travel and a decrease in VMT on both local and regional roadway networks. Striped bike lanes effectively narrow the roadway for motor vehicle travel which encourages lower motor vehicle speeds.

- **Improves sight distance and visibility**

By adding striped bike lanes, a distinct separated travel facility is created that provides a visual cue for motorists to expect bicyclists, and provides a clear lane of travel for the bicyclists to use. New illumination and streetscape improvements would enhance visibility of both bicyclists and pedestrians and improves pedestrian and bicyclists comfort and security.

- **Improves compliance with local traffic laws**

A defined lane for bicyclists creates more predictable bicyclist riding behavior – providing guidance as to what side of the road is appropriate for bicyclists.

- **Eliminates behaviors that lead to collisions**

The presence of the bike lane results in fewer erratic motor vehicle driver maneuvers and more predictable bicyclist riding behavior. Bike lanes provide separate operational space for safe motorist overtaking of bicyclists. Marked bike lanes benefit pedestrians in that motorists slowing to yield to bicyclists will also do so for pedestrians. The presence of marked routes for pedestrians provides space to travel within the public right-of-way that decreases conflict points with motorists and bicyclists.

- **Addresses inadequate traffic control devices**

Improvements proposed as part of this project do not affect inadequate traffic control. However the wayfinding signage will help guide bicyclists and pedestrians to the new signalized crossings that are being built near the Duarte Gold Line Station.

- **Addresses inadequate bicycle facilities, crosswalks or sidewalks**

This project would provide bicycle and pedestrian facilities were there currently are none.

C. Describe the location's history of events and the source(s) of data used (e.g. collision reports, community observation, surveys, audits) if data is not available include a description of safety hazard(s) and photos.

Crash data within 200-feet of each corridor was extracted from the UC Berkeley SafeTREC Transportation Injury Mapping System (TIMS). Based on this information, between the years of 2008 – 2012 there were three crashes involving pedestrians at intersections within the proposed project area. There were 6 crashes involving bicycles along the project corridor, where dedicated bicycle lanes do not currently exist. In addition, there were 3 pedestrian crashes (not including the fatality nearby on Huntington Ave.). Two of these crashes occurred at the intersection of Buena Vista and Duarte Rd. This intersection will experience increased pedestrian use once the Gold Line LRT station is constructed; the proposed project will benefit the safety of future bicyclists and pedestrians. In addition, a pedestrian crash occurred on Highland where the new intersection improvements related to the station will provide a protected crossing. A map of the crash locations along with crash summaries can be found in Attachment 7: Bike and Pedestrian Crashes Map and Attachments 8B1 and 8B2.

3. PUBLIC PARTICIPATION and PLANNING *(0-15 POINTS)*

A. Describe the community based public participation process that culminated in the project proposal or plan, such as noticed meetings/public hearings, consultation with stakeholders, etc.

Comprehensive regional and local planning efforts have been undertaken to implement Transit-Oriented Development (TOD) including improved bicycle and pedestrian circulation at this location. Outreach for this project has taken place as part of the Metro Gold Line Extension (EIR and Duarte Station Area Specific Plan) and the development of the City of Duarte's General Plan. In 2002, the Metro Gold Line Alternative Analysis Study engaged 13 cities (including Duarte) when considering where to extend light rail service. Station locations were chosen through discourse with each city, an analysis of all lands within 1,000 feet on either side of the rail were declared the study area, and an EIR was finalized and certified in 2007 for the preferred corridor. In August 2007, the Duarte City Council adopted a comprehensively updated General Plan that included the re-designation of the Gold Line station area to Transit-Oriented Development. The plan called for improved pedestrian and bicycle circulation and access to and from the station consistent with this application. In addition, the Duarte Station Area Development Specific Plan (adopted 12/13) outreach included visioning, a joint City Council and Planning Commission workshop

with over 150 residents in attendance, and a summary presentation before the City Council in April 2008. The plan elements were adopted into the City's General Plan along with provisions for bicycle and pedestrian improvements related to the new TOD and Gold Line LRT station.

B. Describe the local participation process that resulted in the identification and prioritization of the project: See responses to 3 A and B.

C. Is the project cost over $1 Million? Y

If Yes- is the project Prioritized in an adopted city or county bicycle transportation plan, pedestrian plan, safe routes to school plan, active transportation plan, trail plan, circulation element of a general plan, or other publicly approved plan that incorporated elements of an active transportation plan? Y

These improvements are called for in the Duarte Comprehensive Plan and are consistent with adopted plans. Attachment 8: City of Duarte Comprehensive Plan Excerpt shows these improvements incorporated into the plan (highlighted) to reflect the need for strong bike and pedestrian connections to the new Gold Line LRT Station. The First and Last Mile Strategic Plan (http://media.metro.net/docs/sustainability_path_design_guidelines.pdf) also calls for this type of improvement in a more general way as discussed in Question 1 above.

4. COST EFFECTIVENESS *(0-10 POINTS)*

A. Describe the alternatives that were considered. Discuss the relative costs and benefits of all the alternatives and explain why the nominated one was chosen.

The considered alternative was from the 2011 Call for Projects grant applied through METRO which was a compromise between providing the most critical needs near the LRT station and limiting the scope to better increase chances of grant approval. The alternative would only achieve limited improvements in pedestrian mobility with illuminated and landscaped sidewalk. It postponed bicyclist interests, eliminated pedestrian connections to the other supportive land uses and disadvantaged residential neighborhoods west of Buena Vista, and did not propose wayfinding signage to help promote the use of mass transit. Shortcomings of the 2011 Call grant reduced the positive potential benefits afforded by the new ATP scope such as: enhanced greenhouse gas reductions; mobility between neighborhoods/schools and the LRT station; connectivity for bicyclists between regional bikeways (Lario and/or Duarte Bike Trial), the Duarte LRT Station, and other regional recreational areas (Emerald Necklace);

enhanced public health afforded by new pedestrian and bike facilities; reduced VMT, and the promotion of mass transit.

B. Calculate the ratio of the benefits of the project relative to both the total project cost and funds requested (i.e., $\frac{\text{Benefit*}}{\text{Total Project Cost}}$ and $\frac{\text{Benefit*}}{\text{Program Funds Requested}}$).

A cost-benefit calculator was created for the ATP grant applications. (The report that explains the methodology in developing the calculator, as well as the calculator itself, are in Attachment 8A.)The Benefit-Cost ratio provides a quantitative value of the project as it relates to the Caltrans ATP goals. This ratio can be used to give monetary value to non-market goods (such as clean air and better health) that are often over looked when analyzing the financial impacts of transportation projects. Using the available data on project type, existing and forecasted demand, project length, pedestrian and bike crash history, and project costs, the Benefit-Cost ratio offers a monetization of congestion reduction and increased health and safety as compared to the capital and operating costs. The ratio is a sum of the estimated benefits from active transportation and potential crash reductions divided by the total project costs. A sum greater than one means that the benefits outweigh costs while a sum less than one indicates that the costs outweigh the benefits. The greater the number, the better. This project's Benefit-Cost ratio is equal to 10.01 when including the total project cost and 11.7 when including only the cost of the grant request which indicates that its positive impacts would significantly outweigh the project costs.

The average daily traffic count for Duarte Rd and Highland Ave is estimated at 8,000 (2012) and the pedestrian trips are estimated to be 410 in 2012. For the calculator, the pedestrian counts were estimated based on average daily traffic and commute mode split data. (Source: US Census, American Community Survey 5 Year 2008 - 2012, table B08301 (ModeShare_byProject.xlsx).

Travel characteristics. In the literature review, no standard was found for estimating the multiplier for the build condition. Therefore, a conservative 1.3 multiplier (i.e., a 30 percent increase in pedestrian demand) is used for the Build condition. For the Increased person miles to reduced vehicle miles (IPM : RVM) ratio, the literature discusses ranges from 1:1 to as high as 1:10. The ratio used is a conservative 1:3, because eliminating vehicle trips to school reduces trips by 2, since the parent must make a round-trip to and from the school. For existing year average daily

traffic (ADT), a combination of counts for Duarte Rd and Highland Aves was used to estimate the peak travel. In the peak hour (5:00-6:00 p.m.), the peak was calculated by 10 for average daily traffic with slightly more weight given to the heavier traffic street to reflect the new connections to the Gold Line LRT to arrive at 8,000 vehicles.

Bike/ped crash history. In crash data from 2008 to 2012, there were 6 bike and 3 pedestrian crashes in the project area. (See Attachment 8B1.) Although none of these were fatalities, they all resulted in injuries 4 of which were severe. For the crash countermeasures, three countermeasures were selected, in this case, sidewalk/pathway (to avoid walking along roadway), and pedestrian crossing (with enhances safety features) to reflect the improved intersection access and crossing for pedestrians at Buena Vista and Duarte Rd., and bike lanes.

Project costs. The project cost, construction year, and opening year are from the PPR. Even with the conservative assumptions, the calculator tool shows that an increase of 120 new pedestrians and of 330 new bicyclists per day along the length of the corridor (the increase does not need to be at a single intersection because the calculator calculates person-miles for the length of the project), the financial benefits outweigh the cost of the improvements over the 20-year project lifecycle.

5. IMPROVED PUBLIC HEALTH *(0-10 points)*

A. Describe how the project will improve public health, i.e. through the targeting of populations who have a high risk factor for obesity, physical inactivity, asthma, or other health issues.

To determine targeted populations that would most benefit from active transportation, data was compiled from the LA County Health Department's database that is broken into eight service planning areas (SPA). This project is located in the San Gabriel Region, SPA 3. According to the LA County Department of Public Health Key Indicators of Public Health by Service Planning Area (March 2013), for SPA 3:

- Thirteen percent of adults and 15 percent of children ages 6 to 17 are inactive.
- Approximately 35 percent of adults are overweight and 24 percent obese.
- Twenty one percent of children in grades 5, 7, and 9 are obese.
- Eight percent of adults have been diagnosed with diabetes and 25 percent with hypertension.

- Eight percent of children ages 0 to 17 have asthma.
- Approximately 11 percent of adults have ever diagnosed with depression is; those at risk for major depression is 9 percent.

According to the Center for Disease Control (CDC), physical inactivity is a high risk factor that can lead to obesity. Obesity is a major burden to the healthcare system and contributes to a number of chronic diseases, including type 2 diabetes, asthma, coronary heart disease, cancer, high blood pressure, high cholesterol, and stroke. It is also known to contribute to mental health issues such as depression, bipolar disorder and low self-esteem (CDC, 2009).

The promotion of physical activity is a major component of current public health campaigns to reduce the prevalence of obesity. One of the key actions outlined in The Surgeon General's Vision for a Healthy and Fit Nation, states that "Communities should consider…..building and enhancing infrastructures to support more walking and bicycling, and improving the safety of neighborhoods to facilitate outdoor physical activity. (U.S. Department of Health and Human Services, The Surgeon General's Vision for a Healthy and Fit Nation Fact Sheet http://www.surgeongeneral.gov/initiatives/healthy-fit nation/obesityvision_factsheet.html", Accessed April 24, 2014). The project improvements fulfill this by providing safer and improved pedestrian and bicycling facilities. Pedestrian and bicycle infrastructure provides no cost exercise opportunities in the immediate community.

Physical activity reduces BMI and decreases prevalence of obesity. Building efficient, safe, and enjoyable facilities on which to bike and walk is crucial to increasing rates of physical activity for fun, for exercise, and for transportation. In fact, a 5 percent increase in neighborhood walkability is associated with 32.1 percent more minutes devoted to physically active travel and about one-quarter point lower BMI (Frank, Lawrence E, James F. Sallis, Terry L. Conway, James E. Chapman, Brain E. Saelens, and William Bachman. (2006). *Many Pathways from Land Use to Health*. Journal of the American Planning Association. Vol. 72. N. 2. Accessed April 4, 2014). According to the Mayo Clinic, exercise is an important part of diabetes treatment plan; exercise can help improve blood sugar control (Mayo Clinic Staff, Diabetes and exercise: When to monitor your blood sugar,

http://www.mayoclinic.org/diseases-conditions/diabetes/in-depth/diabetes-and-exercise/ART-20045697, Accessed April 24, 2014).

6. **BENEFIT TO DISADVANTAGED COMMUNITIES** *(0-10 points)*

A. I. Is the project located in a disadvantaged community? Yes

II. Does the project significantly benefit a disadvantaged community? Yes

a. Which criteria does the project meet? (Answer all that apply)

- **Median household income for the community benefited by the project:**

Median household income for the project area is $70,136 within 3 miles and $58,624 within ½ mile. Within a 3 mile area 4 census tracts are less than 80% ($49,120) of the CA median household income for 2008-1012 ($61,400). Incomes range from $45,437 to $48,603 for these 4 tracts. (See Attachment 9: Median Household Income.)

- **California Communities Environmental Health Screen Tool (CalEnvironScreen) score for the community benefited by the project:**

There are three high CES areas within three miles of the project, Bradbury with a score of 42.17, Irwindale with a score of 55.25, and El Monte with a score of 42.71. (See Attachment 9: Median Household Income.)

- **For projects that benefit public school students, percentage of students eligible for the Free or Reduced Price Meals Programs: _____** %

Within ½ mile of the project area there are 17 qualifying schools with over 75% of students qualifying for free or reduced school lunches, with 75%-9%% qualifying. (See Attachment 11: Free School Lunches Map). Within 3 miles of the project, the 37% of students attend qualifying schools.

b. Should the community benefitting from the project be considered disadvantaged based on criteria not specified in the program guidelines? If so, provide data for all criteria above and a quantitative assessment of why the community should be considered disadvantaged. Y -See above.

B. Describe how the project demonstrates a clear benefit to a disadvantaged community and what percentage of the project funding will benefit that community, for projects using the school based criteria describe specifically the school students and community will benefit.

The project will benefit low income areas, CES communities, and low income students as demonstrated above. In addition, there will be direct benefits to the Northview Intermediate Middle School and Duarte High School which will have a new sidewalk connection between the schools, a new bike lane on the adjacent roadway, and a

pedestrian improvements within ¼ mile. In addition, there are 17 qualifying schools within the project boundaries. These schools are major destinations and the improvements to the sidewalks and crossings will benefit students walking and biking to and from school.

7. USE OF CALIFORNIA CONSERVATION CORPS (CCC) OR A CERTIFIED COMMUNITY CONSERVATION CORPS *(0 to -5 points)*

The applicant must send the following information to the CCC and CALCC prior to application submittal to Caltrans:

Project Description	Detailed Estimate	Project Schedule
Project Map	Preliminary Plan	

The corps agencies can be contacted at:
California Conservation Corps at: www.ccc.ca.gov
Community Conservation Corps at: http://calocalcorps.org

A. The applicant has coordinated with the CCC to identify how a state conservation corps can be a partner of the project. Y

a. Name, e-mail, and phone # of the person contacted and the date the information was submitted to them

B. The applicant has coordinated with a representative from the California Association of Local Conservation Corps (CALCC) to identify how a certified community conservation corps can be a partner of the project. Y

a. Name, e-mail, and phone # of the person contacted and the date the information was submitted to them

C. The applicant intends to utilize the CCC or a certified community conservation corps on all items where participation is indicated? Y

I have coordinated with a representative of the CCC; and the following are project items that they are qualified to partner on:

The California Conservation Corps is interested in participating in the project. They will coordinate with the project manager when project details are worked out to understand where they can assist. See Attachment 12: Communication Requesting CCC Participation.

I have coordinated with a representative of the CALCC; and the following are project items that they are qualified to partner on:

The Los Angeles Conservation Corps is interested in partnering on all landscape construction for this project. See Attachment 13: Communication Requesting LACC Participation.

8. **APPLICANT'S PERFORMANCE ON PAST GRANTS** *(0 to -10 points)*

Describe any of your agency's ATP type grant failures during the past 5 years, and what changes your agency will take in order to deliver this project.
There have been no grant failures.

The California Conservation Corps is interested in participating in the project. They will coordinate with the project manager when project details are worked out to understand where they can assist. See Attachment 14.

I have coordinated with a representative of the CALCC; and the following are project items that they are qualified to partner on:

The Los Angeles Conservation Corps is interested in partnering on all landscape construction for this project. See Attachment 15.

8. **APPLICANT'S PERFORMANCE ON PAST GRANTS** *(0 to -10 points)*

Describe any of your agency's ATP type grant failures during the past 5 years, and what changes your agency will take in order to deliver this project.

There have been no grant failures.

Project name:	Duarte Gold Line Station Pedestrian and Bicycle Improvements

V. PROJECT PROGRAMMING REQUEST

Applicant must complete a Project Programming Request (PPR) and attach it as part of this application. The PPR and can be found at http://www.dot.ca.gov/hq/transprog/allocation/ppr_new_projects_9-12-13.xls

PPR Instructions can be found at http://www.dot.ca.gov/hq/transprog/ocip/2012stip.htm

Notes:

- Fund No. 1 must represent ATP funding being requested for program years 2014/2015 and 2015/2016 only.
- Non-infrastructure project funding must be identified as Con and indicated as “Non-infrastructure” in the Notes box of the Proposed Cost and Proposed Funding tables.
- Match funds must be identified as such in the Proposed Funding tables.

STATE OF CALIFORNIA ● DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised July 2013)

General Instructions

☑ New Project					Date:	5/14/14
District	**EA**	**Project ID**	**PPNO**	**MPO ID**		**TCRP No.**
07						

County	Route/Corridor	PM Bk	PM Ahd	Project Sponsor/Lead Agency	
LA	Gold Line			METRO LA	
				MPO	**Element**
				SCAG	Rail

Project Manager/Contact	Phone	E-mail Address
Jason Golding	626-357-7931	goldingj@accessduarte.com

Project Title

Duarte Gold Line Station Pedestrian and Bicycle Improvements-First/Last Mile Connectivity

Location, Project Limits, Description, Scope of Work ☑ See page 2

The Duarte Gold Line Station Pedestrian and Bicycle Improvements Project (Project) is located entirely within the City of Duarte. The Project's bicycle component proposes a Class II (striping) bike route that connects the Duarte Bike Trail (Class I) at Royal Oaks and Highland Avenue in a north/south direction to the Gold Line Station and then continues the route in an east/west direction down Duarte Road to the City of Monrovia border. Bicycle and pedestrian connectivity (sidewalk and signage) between the Los Angeles County Parks and Recreation "Emerald Necklace" recreation system

☑ Includes ADA Improvements ☑ Includes Bike/Ped Improvements

Component	Implementing Agency
PA&ED	City of Duarte
PS&E	City of Duarte
Right of Way	City of Duarte
Construction	City of Duarte

Purpose and Need ☑ See page 2

Duarte is set to receive a Gold Line LRT station, yet lacks the accessibility & connectivity to efficently & safely provide passage to pedestrians and bicyclists to the Station. Without this funding, pedestrians will be left to choose unsafe, non-illuminated, unmarked & unpaved routes to the Station. Bicyclists that converge on Duarte through the Duarte Bike Trail (which connects to the larger Lario/San Gabriel River bike route system) & the LA County Emerald Necklace recreational system will be left with unidentified & unsafe alternatives to connect to the regional LRT systems. Finally, wayfinding & bike route signage will help facilitate mulit-modal connectivity between the 210 & 605 freeways, Huntington Drive, other City streets & the Gold Line Station.

Project Benefits ☐ See page 2

The Project will provide safe, illuminated, paved & marked routes for pedestrians, persons with disabilities & bicyclists & improved connectivity for motorists to elect to choose mulit-modal transportation options. We anticipate an increase in Gold Line LRT ridership, an increase in use of non-motorized modes of travel, a decrease in VMT on both local and regional roadway networks, which in turns leads to a reduction in GHG

☑ Supports Sustainable Communities Strategy (SCS) Goals ☑ Reduces Greenhouse Gas Emissions

Project Milestone			Proposed
Project Study Report Approved			
Begin Environmental (PA&ED) Phase			
Circulate Draft Environmental Document	**Document Type**		
Draft Project Report			
End Environmental Phase (PA&ED Milestone)			
Begin Design (PS&E) Phase			
End Design Phase (Ready to List for Advertisement Milestone)			
Begin Right of Way Phase			
End Right of Way Phase (Right of Way Certification Milestone)			
Begin Construction Phase (Contract Award Milestone)			
End Construction Phase (Construction Contract Acceptance Milestone)			
Begin Closeout Phase			
End Closeout Phase (Closeout Report)			

ADA Notice For individuals with sensory disabilities, this document is available in alternate formats. For information call (916) 654-6410 or TDD (916) 654-3880 or write Records and Forms Management, 1120 N Street, MS-89, Sacramento, CA 95814.

STATE OF CALIFORNIA ● DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised May 2013)

General Instructions

☑ New Project					Date:	5/14/14
District	**EA**	**Project ID**	**PPNO**	**MPO ID**	**TCRP No.**	
07						

Project Title

Duarte Gold Line Station Pedestrian and Bicycle Improvements-First/Last Mile Connectivity

Additional Information

LOCATION, LIMITS, DESCRIPTION, SCOPE: (located 1/8 mile from the LRT station) and the Duarte Gold Line Station is also proposed. The City will be working in conjunction with the Cities of Monrovia, Irwindale and Los Angeles County to coordinate efficent access between the bike routes and the Emrald Necklace parking lot and the Duarte Station area. Pedestrian improvements proposed include the installation of sidewalk, low-water use irrigation, and drought-tolerant landscaping (which will mitigate the spread of invasive and noxious plant species and reduce the heat island effect) along Duarte Road from City of Hope Drive to Mountain Avenue at the City of Monrovia boundary. Other small sidewalk segments are proposed to also connect Duarte's high and middle school (and the remainder of the northerly half of Duarte) to the LRT Station. These new sidewalks and ADA ramps will connect portions of our community to the Duarte Gold Line Station that would otherwise have to choose dangerous, less desirable or unimproved routes to the Station. Pedestrian and bicycle level lighting is also proposed along Duarte Road to provide safe levels of illumination for these alternative modes of transportation. Wayfinding and bike route signage will also be requested City-wide to identify bike routes and guide bicyclists, pedestrians and motorists to the Duarte Gold Line Station. The improvements listed above coincide with the massive capital investment in the Gold Line Foothill Extension Phase 2A project, scheduled to open in 2016. In addition to the construction of LRT and a station platform, the Metro Gold Line Construction Authority is also installing sidewalk, pedestrian improvements (lighting, landscaping, LRT signage), bus stops (shelters, benches, trash recepticles), parking lot (with bike racks, lockers and EV charging stations) and three signalized intersections in the general vicinity of our proposed ATP project. PURPOSE & NEED/PROJECT BENEFITS: The introduction of light rail will create multi-modal demands on public infrastructure in the Duarte Station area. Sidewalks will now need to be constructed or widened to carry the additional transit ridership to the Station area. Delineated bike lanes, sharrows and signage will help to guide and protect bicyclists as they head to the light rail station or connect from regional bike systems to local streets. Although the Gold Line Authority is constructing sidewalks within the immediate area adjacent to the Station, the proposed Project will provide gap-closure sidewalks that allow access between the northerly half of the City and the Station area, while also installing sidewalks that connect neighborhoods and shopping centers in the western and southern portions of the City to the Duarte Station. The proposed project aims to coordinate the level of public investment provided by the Gold Line and extend those features and amenities along the entire railroad corridor. For instance, pedestrian level lighting installed as part of the Gold Line project will also be sought as part of the ATP process; both designed to increase pedestrian and bicyclist safety, address security concerns and visually promote our commitment to transit, healthy communities and alternative form of transportation. Bike routes that are proposed as part of this ATP grant will further strengthen linkages between bicyclists and the Duarte Gold Line Station and, for the first time in the history of the City, create dedicated bike lanes or sharrows that promote ridership and create bike linkages to the greater metro area. Capital from both the Gold Line and ATP will provide safe, illuminated and accessible connections to residents and visitors alike, increasing transit ridership and reducing our reliance upon motor vehicles.

ADA Notice For individuals with sensory disabilities, this document is available in alternate formats. For information call (916) 654-6410 or TDD (916) 654-3880 or write Records and Forms Management, 1120 N Street, MS-89, Sacramento, CA 95814.

STATE OF CALIFORNIA ● DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised July 2013)

Date: 5/14/14

District	County	Route	EA	Project ID	PPNO	TCRP No.
07	LA	Gold Line				
Project Title:	Duarte Gold Line Station Pedestrian and Bicycle Improvements-First/Last Mile Connectivity					

Proposed Total Project Cost ($1,000s)									Notes
Component	Prior	14/15	15/16	16/17	17/18	18/19	19/20+	Total	
E&P (PA&ED)		45,000						45,000	
PS&E		141,000						141,000	
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON			1,459,192					1,459,192	
TOTAL		186,000	1,459,192					1,645,192	

Fund No. 1:	State Funds								Program Code
Proposed Funding ($1,000s)									
Component	Prior	14/15	15/16	16/17	17/18	18/19	19/20+	Total	Funding Agency
E&P (PA&ED)		35,662						35,662	CalTrans
PS&E		111,742						111,742	
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON			1,156,336					1,156,336	
TOTAL		147,404	1,156,336					1,303,740	

Fund No. 2:	Local Cash Match								Program Code
Proposed Funding ($1,000s)									
Component	Prior	14/15	15/16	16/17	17/18	18/19	19/20+	Total	Funding Agency
E&P (PA&ED)		9,338						9,338	LA METRO
PS&E		29,258						29,258	These will likely be LA County Prop C funds or LA County Measure R funds
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON			302,856					302,856	
TOTAL		38,596	302,856					341,452	

Fund No. 3:	City In-Kind contribution								Program Code
Proposed Funding ($1,000s)									
Component	Prior	14/15	15/16	16/17	17/18	18/19	19/20+	Total	Funding Agency
E&P (PA&ED)									City of Duarte
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

STATE OF CALIFORNIA ● DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised July 2013)

Date: 5/14/14

District	County	Route	EA	Project ID	PPNO	TCRP No.
07	LA	Gold Line				
Project Title:	Duarte Gold Line Station Pedestrian and Bicycle Improvements-First/Last Mile Connectivity					

Fund No. 4:									**Program Code**
Proposed Funding ($1,000s)									
Component	Prior	14/15	15/16	16/17	17/18	18/19	19/20+	Total	**Funding Agency**
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

Fund No. 5:									**Program Code**
Proposed Funding ($1,000s)									
Component	Prior	14/15	15/16	16/17	17/18	18/19	19/20+	Total	**Funding Agency**
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

Fund No. 6:									**Program Code**
Proposed Funding ($1,000s)									
Component	Prior	14/15	15/16	16/17	17/18	18/19	19/20+	Total	**Funding Agency**
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

Fund No. 7:									**Program Code**
Proposed Funding ($1,000s)									
Component	Prior	14/15	15/16	16/17	17/18	18/19	19/20+	Total	**Funding Agency**
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

STATE OF CALIFORNIA ● DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised July 2013)

Date: 5/14/14

District	County	Route	EA	Project ID	PPNO	TCRP No.
07	LA	Gold Line				
Project Title:	Duarte Gold Line Station Pedestrian and Bicycle Improvements-First/Last Mile Connectivity					

Fund No. 8:									**Program Code**
Proposed Funding ($1,000s)									
Component	Prior	14/15	15/16	16/17	17/18	18/19	19/20+	Total	**Funding Agency**
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

Fund No. 9:									**Program Code**
Proposed Funding ($1,000s)									
Component	Prior	14/15	15/16	16/17	17/18	18/19	19/20+	Total	**Funding Agency**
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

Fund No. 10:									**Program Code**
Proposed Funding ($1,000s)									
Component	Prior	14/15	15/16	16/17	17/18	18/19	19/20+	Total	**Funding Agency**
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

Project name:	Duarte Gold Line Station Pedestrian and Bicycle Improvements

VI. ADDITIONAL INFORMATION

Only fill in those fields that are applicable to your project

FUNDING SUMMARY

ATP Funds being requested by Phase (to the nearest $1000)	**Amount**
PE Phase (includes PA&ED and PS&E)	$ 186,000
Right-of-Way Phase	$
Construction Phase-Infrastructure	$ 1,459,192
Construction Phase-Non-infrastructure	$
Total for ALL Phases	**$** 1,645,192

All Non-ATP fund types on this project* (to the nearest $1000)	**Amount**
	$
	$
	$
	$
	$
	$

*Must indicate which funds are matching

Total Project Cost	$ 1,645,192
Project is Fully Funded	Yes

ATP Work Specific Funding Breakdown (to the nearest $1000)	**Amount**
Request for funding a Plan	$
Request for Safe Routes to Schools Infrastructure work	$
Request for Safe Routes to Schools Non-Infrastructure work	$
Request for other Non-Infrastructure work (non-SRTS)	$
Request for Recreational Trails work	$

ALLOCATION/AUTHORIZATION REQUESTS SCHEDULE

	Proposed Allocation Date	**Proposed Authorization (E-76) Date**
PA&ED or E&P		
PS&E		
Right-of-Way		
Construction		

All project costs MUST be accounted for on this form, including elements of the overall project that will be, or have been funded by other sources.

Project name: Duarte Gold Line Station Pedestrian and Bicycle Improvements

VII. NON-INFRASTRUCTURE SCHEDULE INFORMATION

Start Date	End Date	Task/Deliverables

Project name: Duarte Gold Line Station Pedestrian and Bicycle Improvements

VIII. APPLICATION SIGNATURES

Applicant: The undersigned affirms that the statements contained in the application package are true and complete to the best of their knowledge.

Signature: _____ Date: _____
Name: Jason Golding Phone: 626-357-7931
Title: Planner e-mail: goldingj@accessduarte.com

Local Agency Official (City Engineer or Public Works Director): The undersigned affirms that the statements contained in the application package are true and complete to the best of their knowledge.

Signature: _____ Date: _____
Name: Rafael Casillas Phone: 626-357-7931
Title: Public Works Manager e-mail: rcasillas@accessduarte.com

School Official: The undersigned affirms that the school(s) benefited by this application is not on a school closure list.

Signature: _____ Date: _____
Name: _____ Phone: _____
Title: _____ e-mail: _____

Person to contact for questions:

Name: Jason Golding Phone: 626-357-7931
Title: Senior Planner e-mail: goldingj@accessduarte.com

Caltrans District Traffic Operations Office Approval*
If the application's project proposes improvements on a freeway or state highway that affects the safety or operations of the facility, it is required that the proposed improvements be reviewed by the district traffic operations office and either a letter of support or acknowledgement from the traffic operations office be attached (_) or the signature of the traffic personnel be secured below.

Signature: _____ Date: _____
Name: _____ Phone: _____
Title: _____ e-mail: _____

*Contact the District Local Assistance Engineer (DLAE) for the project to get Caltrans Traffic Ops contact information. DLAE contact information can be found at http://www.dot.ca.gov/hq/LocalPrograms/dlae.htm

Project name:
Duarte Gold Line Station Pedestrian and Bicycle Improvements

VIII. ADDITIONAL APPLICATION ATTACHMENTS

Check all attachments included with this application.

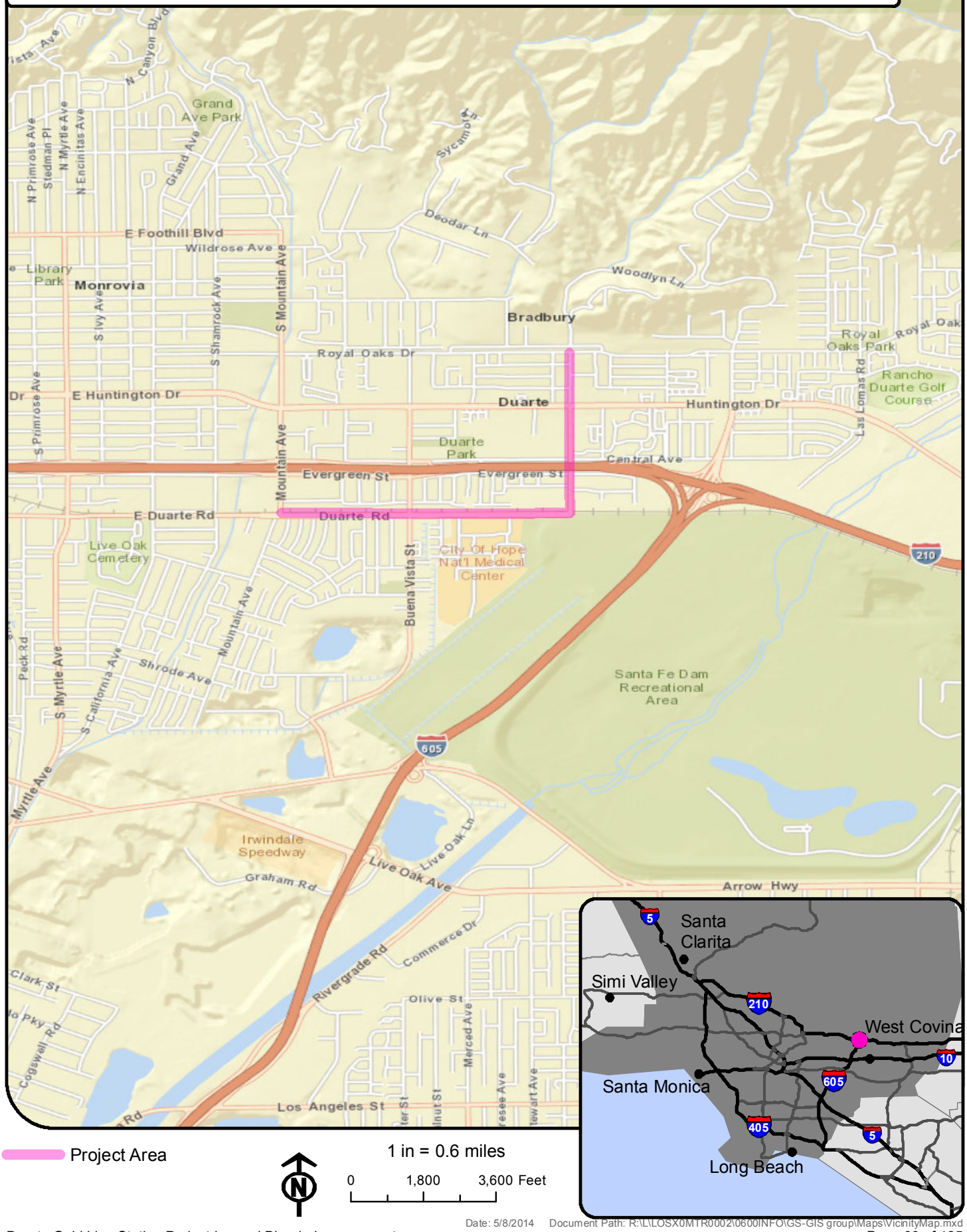
- ☒ Vicinity/Location Map- **REQUIRED for all IF Projects**
  - ☒ North Arrow
  - ☒ Label street names and highway route numbers
  - ☒ Scale
- ☒ Photos and/or Video of Existing Location- **REQUIRED for all IF Projects**
  - ☒ Minimum of one labeled color photo of the existing project location
  - ☒ Minimum photo size 3 x 5 inches
  - ☐ Optional video and/or time-lapse
- ☐ Preliminary Plans- **REQUIRED for Construction phase only**
  - ☐ Must include a north arrow
  - ☐ Label the scale of the drawing
  - ☐ Typical Cross sections where applicable with property or right-of-way lines
  - ☐ Label street names, highway route numbers and easements
- ☒ Detailed Engineer's Estimate- **REQUIRED for Construction phase only**
  - ☐ Estimate must be true and accurate. Applicant is responsible for verifying costs prior to submittal
  - ☐ Must show a breakdown of all bid items by unit and cost. Lump Sum may only be used per industry standards
  - ☐ Must identify all items that ATP will be funding
  - ☐ Contingency is limited to 10% of funds being requested
  - ☐ Evaluation required under the ATP guidelines is not a reimbursable item
- ☐ Documentation of the partnering maintenance agreement- Required with the application if an entity, other than the applicant, is going to assume responsibility for the operation and maintenance of the facility
- ☐ Documentation of the partnering implementation agreement-Required with the application if an entity, other than the applicant, is going to implement the project.
- ☐ Letters of Support from Caltrans (Required for projects on the State Highway System(SHS))
- ☐ Digital copy of or an online link to an approved plan (bicycle, pedestrian, safe routes to school, active transportation, general, recreation, trails, city/county or regional master plan(s), technical studies, and/or environmental studies (with environmental commitment record or list of mitigation measures), if applicable. Include/highlight portions that are applicable to the proposed project.
- ☐ Documentation of the public participation process (required)
- ☐ Letter of Support from impacted school- when the school isn't the applicant or partner on the application (required)
- ☐ Additional documentation, letters of support, etc (optional)

Attachment 1
Project Vicinity Map

Attachment 1 - Vicinity Map

Duarte Gold Line Station Pedestrian and Bicycle Improvements

Jurisdiction: DUARTE



Project Area

1 in = 0.6 miles

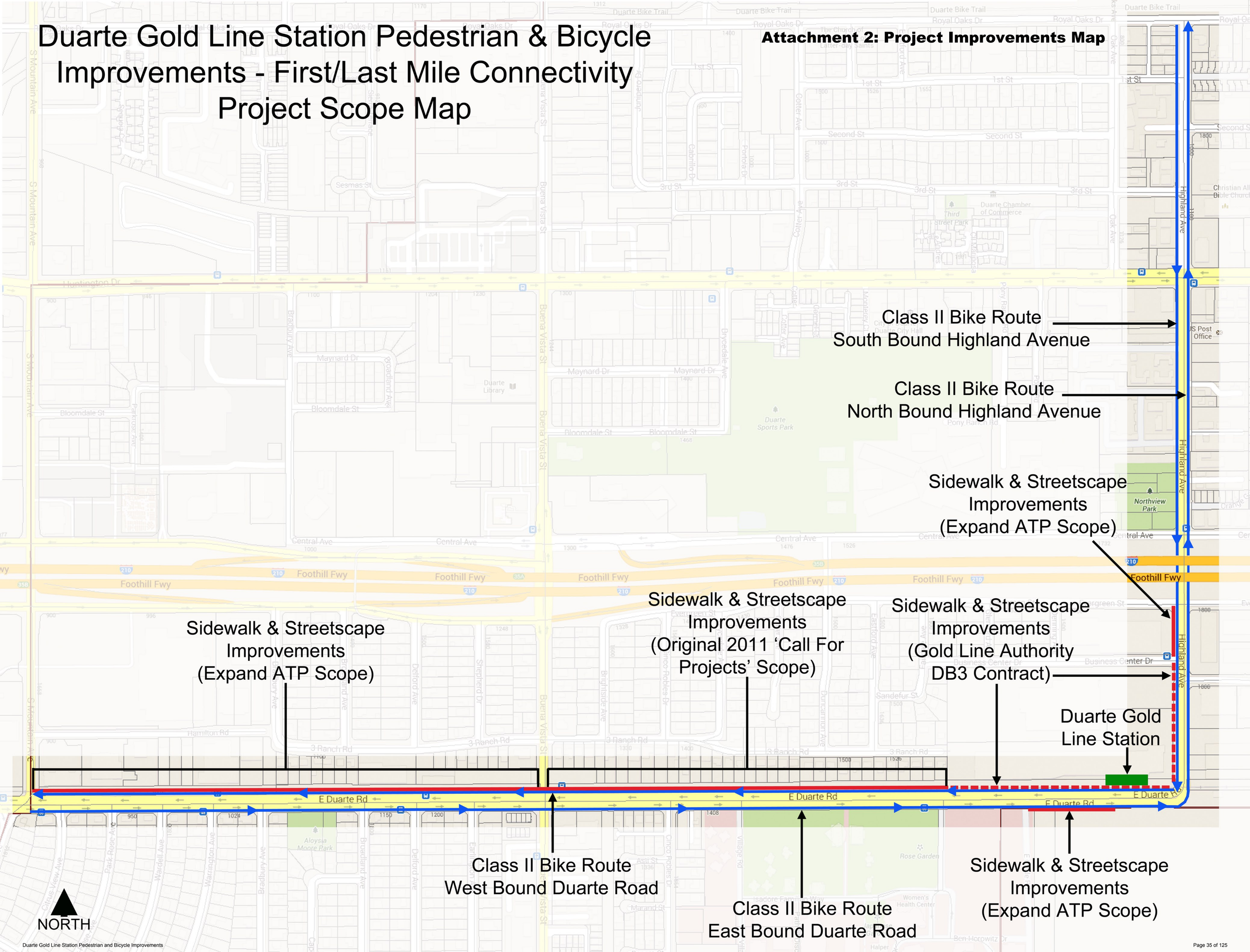
0 1,800 3,600 Feet

Date: 5/8/2014 Document Path: R:\L\LOSX0MTR0002\0600INFO\GS-GIS group\Maps\VicinityMap.mxd

Attachment 2
Project Improvements Map

Duarte Gold Line Station Pedestrian & Bicycle Improvements - First/Last Mile Connectivity Project Scope Map

Attachment 2: Project Improvements Map



Attachment 3
Project Photos

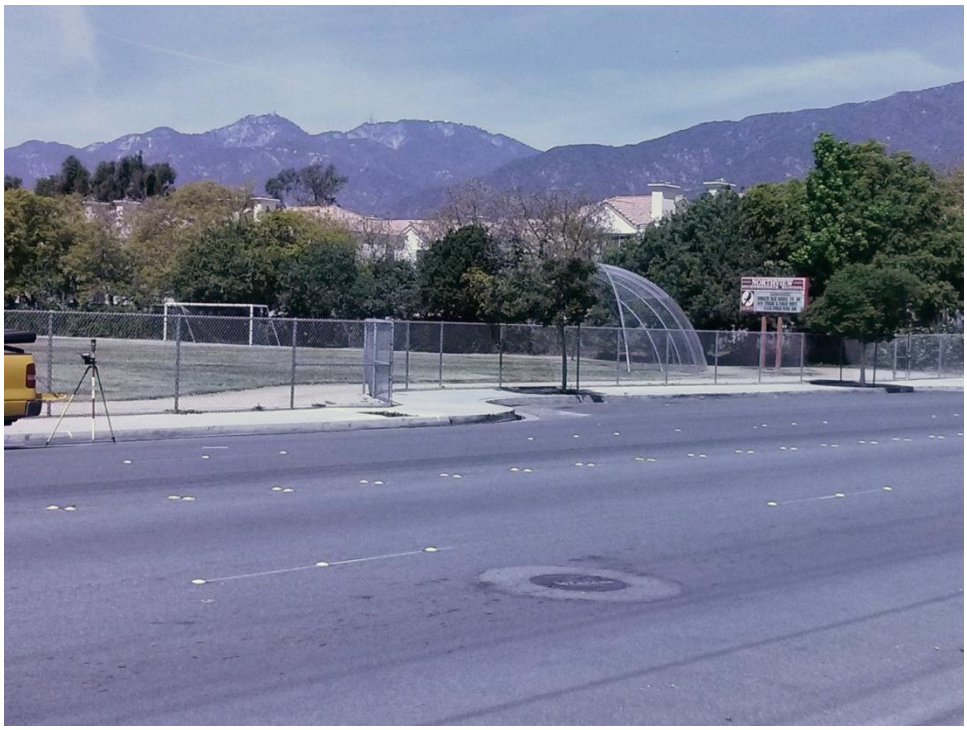
Attachment 3 – Project Photos

Connection to Duarte multi use trail at Royal Oaks Drive. Bike lanes on Highland will connect to this.

Existing multiuse trail at Royal Oaks and Highland Ave.

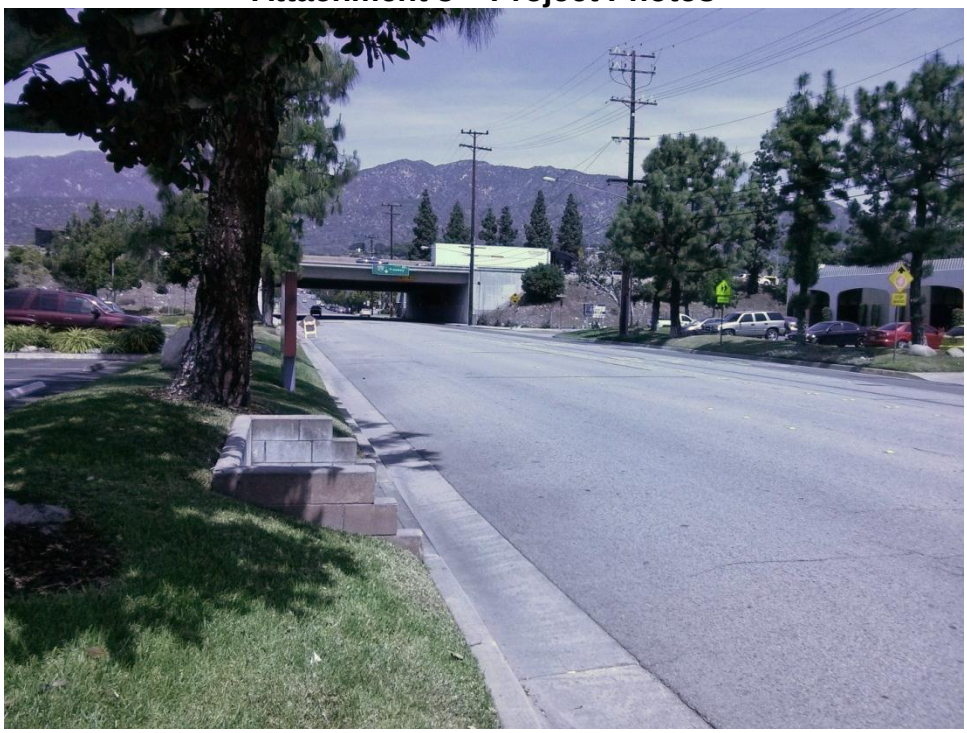
Attachment 3 – Project Photos

Highland Drive near the Northview Middle School and Northview Park. Highland Drive will have new bike lanes on both sides of the street.



Highland Drive near the Northview Middle School and Northview Park. Highland Drive will have new bike lanes on both sides of the street.

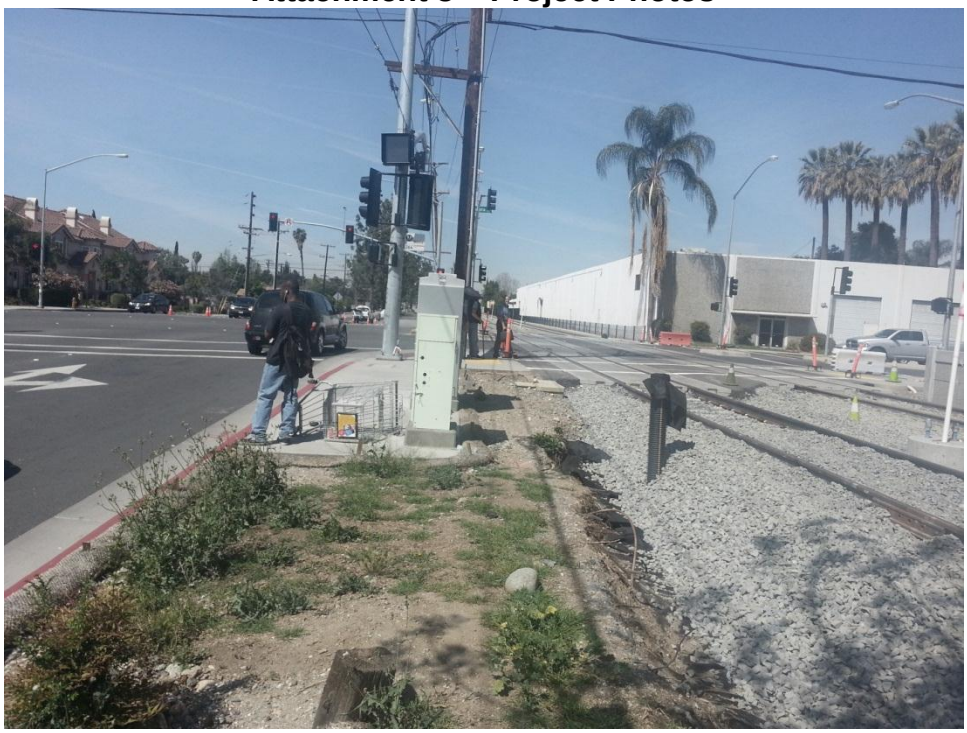
Attachment 3 – Project Photos



Highland Avenue showing where there is no sidewalk on the east side just north of the new Duarte Gold Line LRT Station. The project will add a sidewalk here. (Lewis Business Park is across the street.)

North side of Duarte Rd has no sidewalks today.

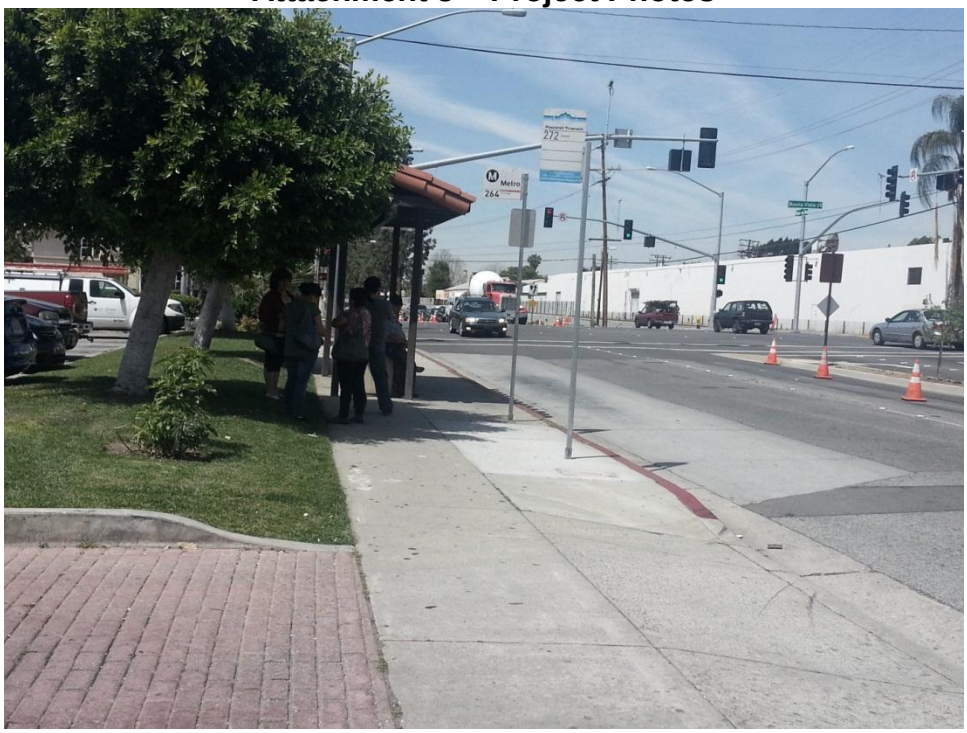
Attachment 3 – Project Photos



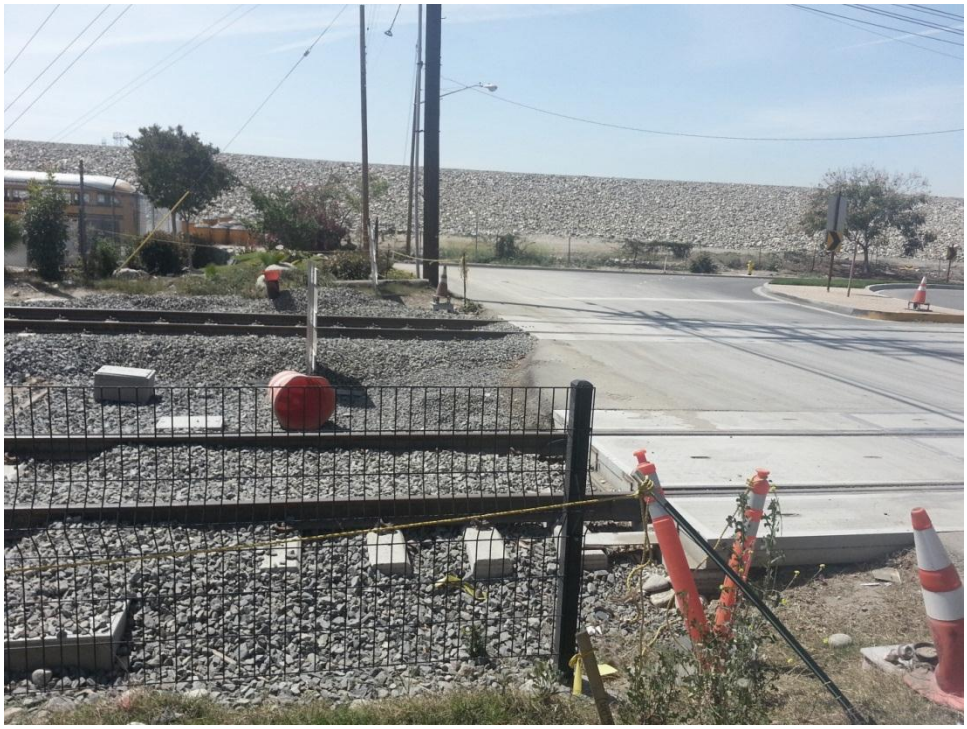
North side of Duarte Rd has no sidewalks today.

Duarte Rd at Buena Vista which leads to the library, teen center, and high school. New sidewalks will connect to this roadway.

Attachment 3 – Project Photos



South side on Duarte Rd at Buena Vista Dr.



The Emerald Necklace bike facility connection is located on the rock hill adjacent to Duarte Rd. connecting the area to regional destinations such as Long Beach, Whittier Narrosw, Azusa Canyon, Santa Fe Recreational Dam, and West Covina. This could become a major commute path for bicyclists to the major attractors and the new Duarte Gold Line Light Rail Station.

Attachment 3 – Project Photos

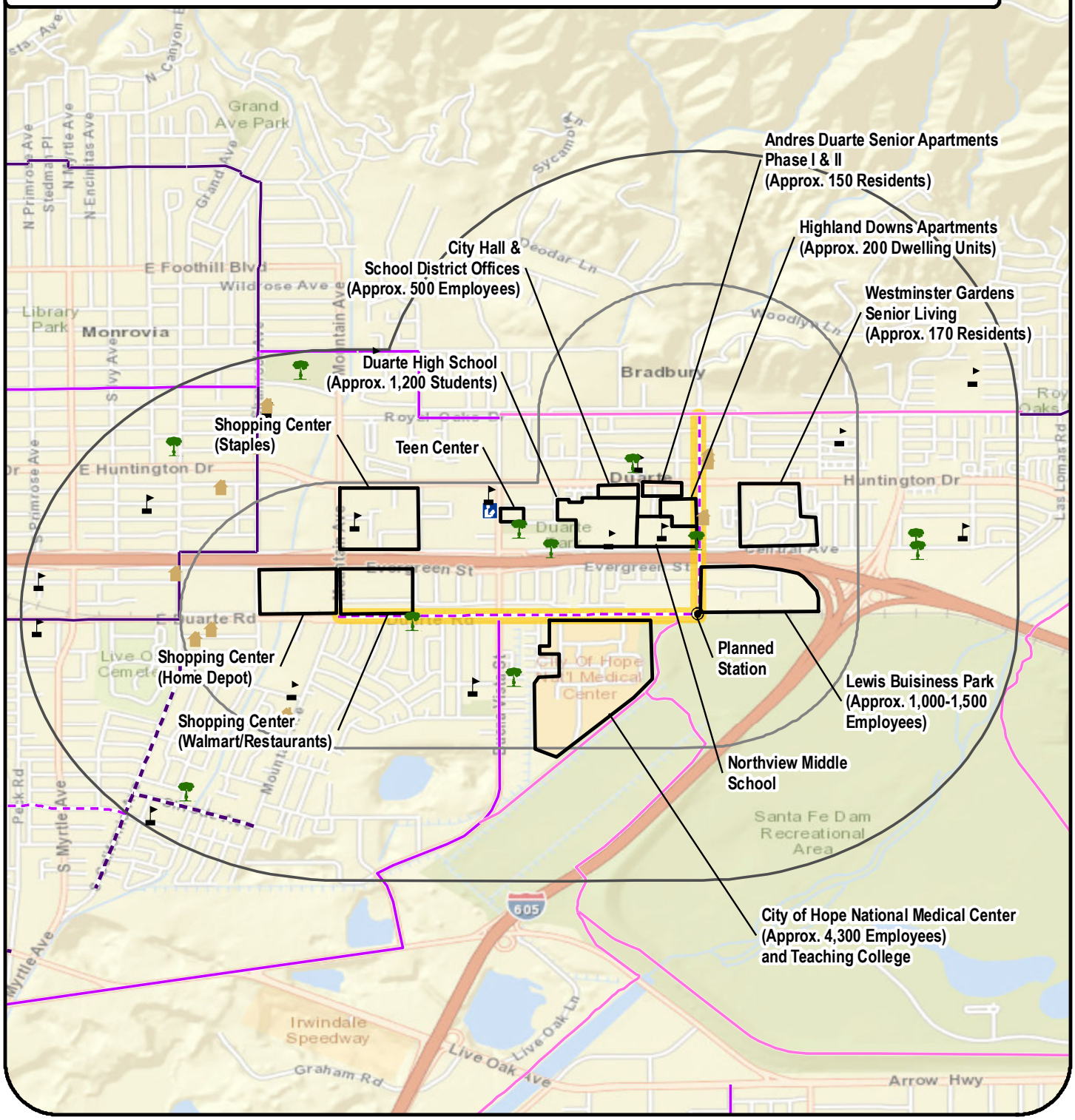
Entrance to City of Hope Medical Facility on Duarte Rd. showing existing sidewalks on south side of street. There are no sidewalks on the north side. The new Duarte Gold Line Station will add a protected crossing to the medical facility. This project will add sidewalks on the north side of Duarte Rd. and bike lanes on both sides of this street.

Attachment 4
Major Activity Centers Map

Attachment 4 - Major Activity Centers

Duarte Gold Line Station Pedestrian and Bicycle Improvements

Jurisdiction: DUARTE



Project Area

Distance from Project

- 0.5 Mile
- 1 Mile
- Major Activity Centers

Activity Centers

- Churches
- Libraries
- Parks and Gardens
- Schools

Existing Bikeways

- Bike Path
- Bike Lane
- Bike Route

Proposed Bikeways

- Bike Path
- Bike Lane
- Bike Route

1 in = 0.54 miles

0 1,000 2,000 Feet

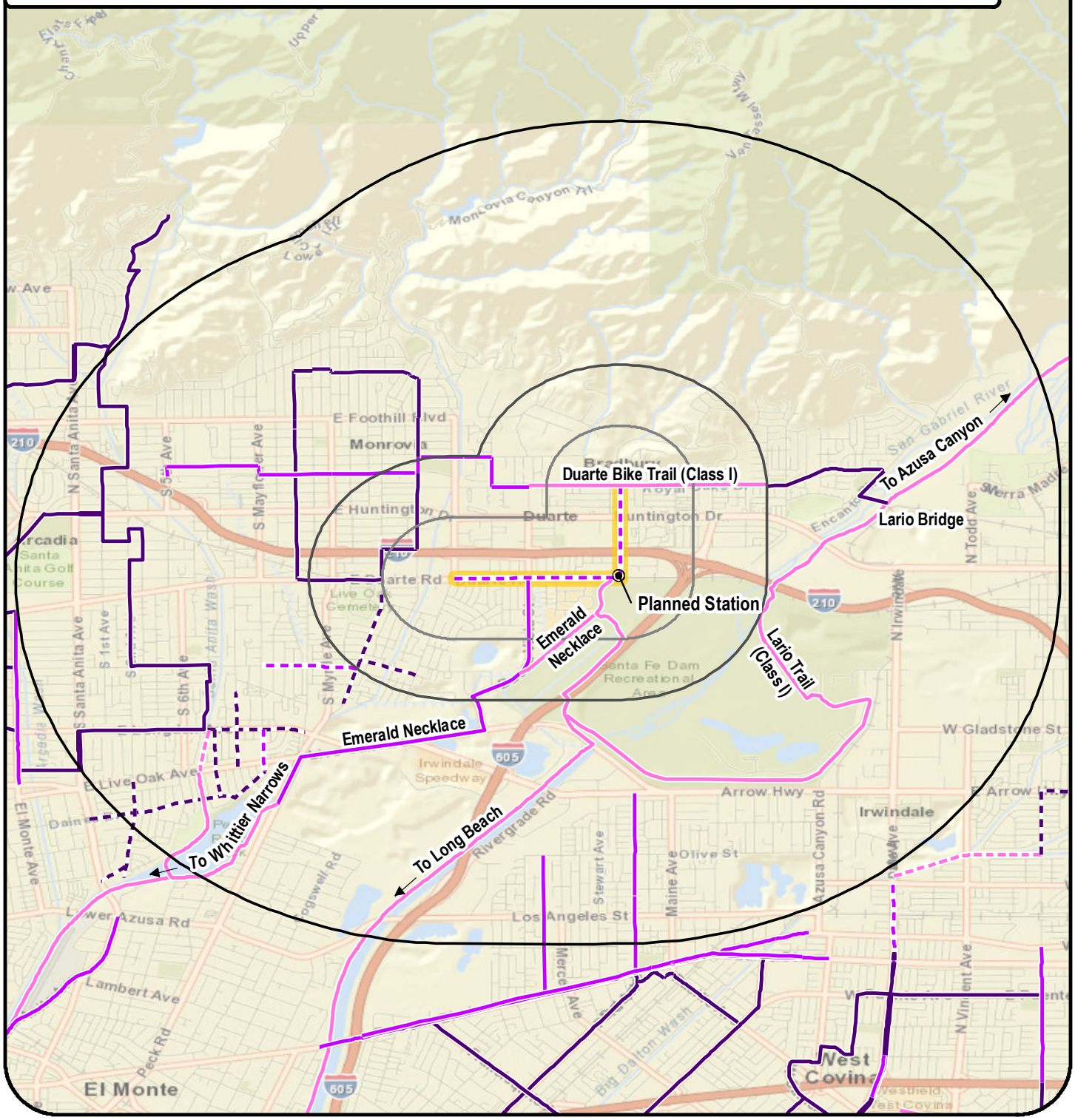
Date: 5/8/2014 Document Path: R:\L\LOSX0MTR0002\0600INFO\GS-GIS group\Maps\F5627_MajorAttractors.mxd

Attachment 5
Existing and Planned Bicycle Connections

Attachment 5 - Major Bike Connections (Existing and Planned)

Duarte Gold Line Station Pedestrian and Bicycle Improvements

Jurisdiction: DUARTE



Project Area

Distance from Project

- 0.5 Mile
- 1 Mile
- 3 Miles

Existing Bikeways

- Bike Path
- Bike Lane
- Bike Route

Proposed Bikeways

- Bike Path
- Bike Lane
- Bike Route

N

1 in = 1.2 miles

0 3,100 6,200 Feet

Date: 5/8/2014 Document Path: R:\L\LOSX0MTR0002\0600INFO\GS-GIS group\Maps\F5627_Bike Connections.mxd

Attachment 6
Safety Calculator

Attachment 6 - Safety Calculator

ATP - LA Metro Grants

ESTIMATED ANNUAL CRASH REDUCTION BY COUNTERMEASURE TYPE

		SIGNALIZED INTERSECTION COUNTERMEASURES				UNSIGNALIZED INTERSECTION COUNTERMEASURES				ROADWAY COUNTERMEASURES					
		Install pedestrian countdown signal heads	Install Pedestrian crossing	Install advance stop bar before crosswalk (Bicycle Box)	Install pedestrian overpass/ underpass	Install raised medians/ refuge islands	Install pedestrian crossing (new signs and markings only)	Install pedestrian crossing (with enhanced safety features/ curb extensions)	Install pedestrian signal	Install bike lanes	Install sidewalk/ pathway (to avoid walking along roadway)	Install pedestrian crossing (with enhanced safety features)	Install raised pedestrian crossing	Other	
Applicable Countermeasure?		N	N	N	N	N	N	N	N	Y	N	N	N	N	
CRF		25%	25%	15%	75%	45%	25%	35%	55%	35%	80%	30%	35%	0%	
Fatal Crashes	0									0					
Injury Crashes	9									6					
Years of Data	5									5					
Avg. Annual Total Fatal and Injury Crashes		0	0	0	0	0	0	0	0	1.2	0	0	0	0	
															TOTAL ANNUAL CRASH REDUCTION
Annual Crash Reduction		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.42**	**0**	**0**	**0**	**0**	**0.42**

Total Bike/Ped Crashes	Avg. Annual Bike/Ped Crashes	% Crash Reduction
9	1.8	23.3%
Total Bike Crashes	**Avg. Annual Bike Crashes**	**% Crash Reduction**
6	1.2	35.0%

NOTES

There were two crashes involved pedestrians crossing the intersection of Duarte at Buena Vista and one on Highland Ave at Business Center Dr

There were 5 bicycle crashes on Duarte Rd between Mountain Ave and Buena Vista St and 1 on Highland north of Central Ave

Attachment 6 - Safety Calculator

Countermeasures to Improve Bicycle and Pedestrian Safety

	Project Type	Countermeasure	Opportunity to Implement using a Systematic Approach	General Values for Agency's Internal Use		Values for Caltrans Statewide Programs		
				Primary Crash Types	Range of Crash Reduction Factors	Crash Type	CRF	Service Life
INTERSECTION COUNTERMEASURES								
SIGNALIZED								
S19	Ped and Bike	Install pedestrian countdown signal heads	Very High	Pedestrian, Bicycle	25%	P & B	25	20
S20	Ped and Bike	Install Pedestrian crossing (S.I.)	High	Pedestrian, Bicycle	25%	P & B	25	20
S21	Ped and Bike	Install advance stop bar before crosswalk (Bicycle Box)	Very High	Pedestrian, Bicycle	35%	P & B	15	10
S22	Ped and Bike	Install pedestrian overpass/underpass	Low	Pedestrian, Bicycle	5-100%	P & B	75	20
NON-SIGNALIZED								
NS16	Ped and Bike	Install raised medians/refuge islands (NS.I)	Medium	Pedestrian, Bicycle	30-56%	P & B	45	20
NS17	Ped and Bike	Install pedestrian crossing (new signs and markings only)	High	Pedestrian, Bicycle	0.25	P & B	25	10
NS18	Ped and Bike	Install pedestrian crossing (with enhanced safety features/curb extensions)	Medium	Pedestrian, Bicycle	37%	P & B	35	20
NS19	Ped and Bike	Install pedestrian signal	Low	Pedestrian, Bicycle	15-69%	P & B	55	20
ROADWAY COUNTERMEASURES								
R36	Ped and Bike	Install bike lanes	High	Pedestrian, Bicycle	0-53%	P & B	35	20
R37	Ped and Bike	Install sidewalk/pathway (to avoid walking along roadway)	Medium	Pedestrian, Bicycle	65-89%	P & B	80	20
R38	Ped and Bike	Install pedestrian crossing (with enhanced safety features)	Medium	Pedestrian, Bicycle	8-56%	P & B	30	10
R 39	Ped and Bike	Install raised pedestrian crossing	Medium	Pedestrian, Bicycle	30-46%	P & B	35	10

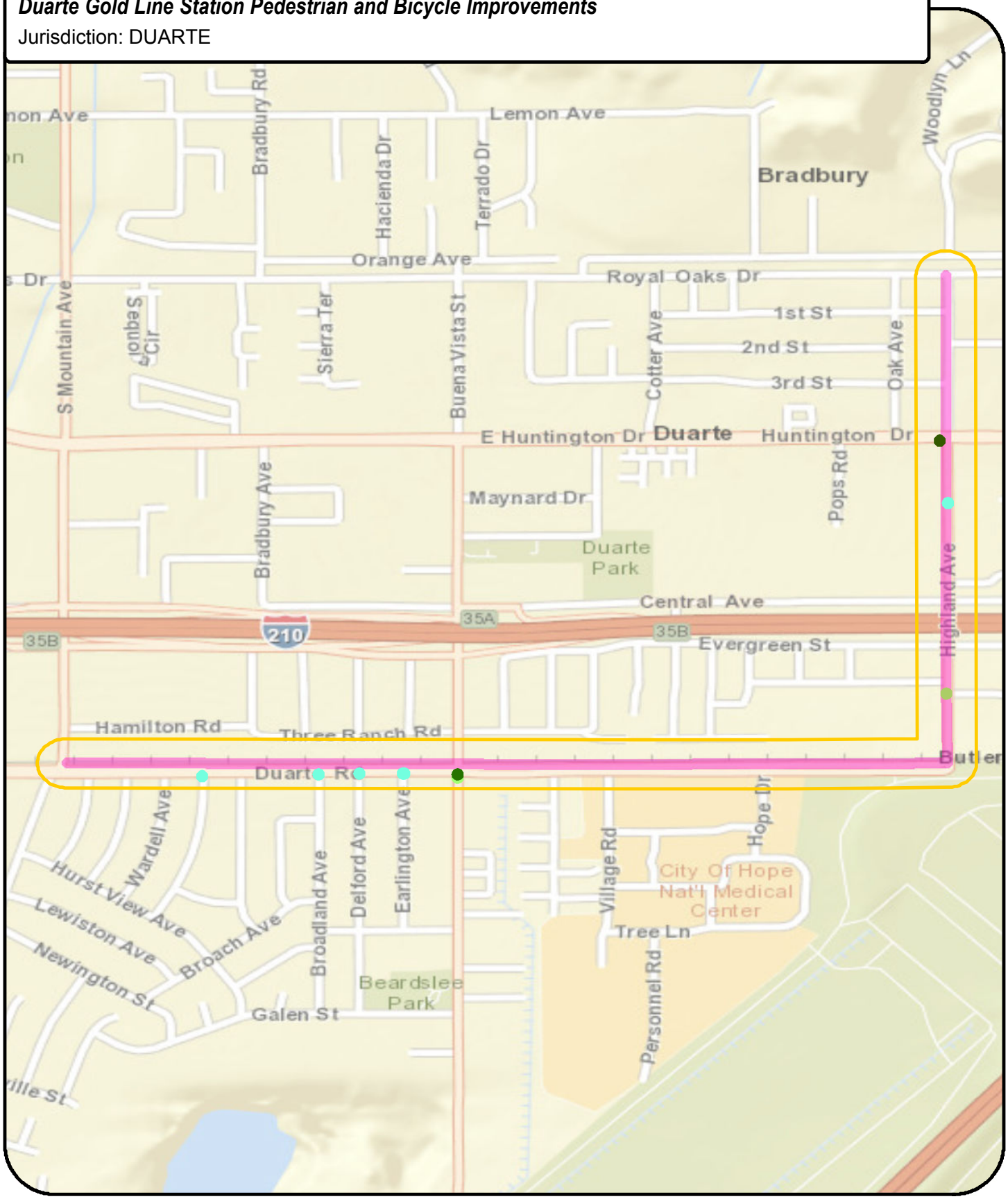
Source: "Local Roadway Safety, Version 1.1, April 2013" by Caltrans http://www.dot.ca.gov/hq/LocalPrograms/HSIP/Documents/hsip/CA_SM4LROv11.pdf

Attachment 7
Bike and Pedestrian Crashes Map

Attachment 7 - 2008-2012 Bike and Pedestrian Crash Data

Duarte Gold Line Station Pedestrian and Bicycle Improvements

Jurisdiction: DUARTE



Project Area

Distance from Project

200 Feet

Bicycle Collisions (by severity)

Injury (Complaint of Pain)

Pedestrian Collisions (by severity)

Fatal

Injury (Severe)

Injury (Other Visible)

Injury (Complaint of Pain)

N

1 in = 0.21 miles

0 610 1,220 Feet

Date: 5/8/2014 Document Path: R:\L\LOSX0MTR0002\0600INFO\GS-GIS group\Maps\Bike_Ped_Crashes.mxd

Attachment 8
Duarte Comprehensive Plan Excerpts

City of Duarte
Comprehensive General Plan
2005-2020

Please refer to :

http://www.accessduarte.com/index.php?option=com_content&view=article&id=48&Itemid=90

CHAPTER 5
LAND USE

LU 3.1.4 Create a flexible mixed use Transit Oriented Development Specific Plan for the current non-residential area north of the Gold Line Station.

LU 3.1.5 If the Duarte Gold Line Station becomes a reality before 2020, consider a thorough analysis of a potential amendment to the General Plan to provide expanded Transit Oriented Development for additional area north and west and east of the Gold Line Station.

LU 3.1.6 Promote the use of mixed land use techniques and construction methods to provide more housing and minimize housing costs without compromising basic health, safety and aesthetic qualities.

RELATED AGENCIES, LAWS AND PLANS

Duarte Zoning Ordinance

The Zoning Ordinance is the principal implementation tool for a General Plan. State law requires that Zoning Ordinances be consistent with the General Plan. The Duarte Zoning Ordinance can be found in Title 19 of the Duarte Municipal Code. The Zoning Ordinance establishes specific regulations for the use and development of land in zoning districts within the Duarte city limits. The Duarte Zoning Ordinance has not had a comprehensive update for many years. As a result, the city should amended selected sections of the Zoning Ordinance to reflect key issues brought forth by the 2005-2020 General Plan update.

Specific Plans

Duarte has adopted a variety of Specific Plans throughout the community. Government Code Section 65450 – 65457 provides for the adoption of Specific Plans. As with the Zoning Ordinance, a Specific Plan is required to be consistent with the General Plan. A Specific Plan provides flexibility from the Zoning Ordinance which can provide a unique character to a development.

Duarte Redevelopment Plan

As with the Zoning Ordinance and Specific Plans, Redevelopment Plans must also be consistent with the General Plan. Duarte has had a very active Redevelopment Agency in prior years. The Redevelopment Agency was established in 1974 and seven redevelopment projects areas have been developed resulting in many accomplishments and elimination of blighting

CHAPTER 5
LAND USE

The City Center Mixed Use Area is a new land use designation for the 2005 – 2020 General Plan. This mixed use is intended to create a unique area within the center of the community as a gathering spot where Duarte residents and business owners can come together to live, socialize and shop. An objective of the City Center area is to generate synergy and convenience to patrons and residents. The specific plan to implement this objective must provide flexibility in providing vertical and/or horizontal mixed high density and commercial uses. The high density residential component of the plan is not anticipated to exceed 165 dwelling units and 165,000 sq. ft. of commercial uses. The Specific Plan which will be the implementation tool for this area must also provide unique parking standards, sufficient residential densities, housing types and appropriate pedestrian friendly design to provide the needed synergy to make this project work economically and visually in the short and long term.

2. Gold Line Station Area Development Specific Plan:

The Metro Gold Line will eventually provide alternate mobility to residents and businesses in the San Gabriel Valley from Montclair to downtown Los Angeles. This light rail system currently runs from South Pasadena to Downtown Los Angeles with thirteen stations now open. The next phase of the system, known as Planned Segment 1, will continue form South Pasadena 11.4 miles to Azusa with six addition stations including one in Duarte. Five addition stations are planned in Planned Segment 2 from Azusa, 12.5 miles to Montclair. With congestion expected to double within thirty years, transit oriented development around the Gold Line stations will provide relief from current and future gridlock. While timing of the Duarte segment is not certain, it is anticipate this segment will be operating by 2010 at the earliest.

The Duarte Gold Line station will be located north of Duarte Road and about 400 feet west of Highland Avenue within the vicinity of City of Hope. The area to the north of the station includes about twenty acres of industrial buildings. For purposes of this Land Use Element, it is anticipated this area should be designated a specific plan area. This specific plan should provide for a mixed use transit oriented development. For planning purposes a maximum of 100,000 sq. ft. of retail and office could be accommodated within this area. In addition up to 120 multiple family residential units could be built within this area. Gold Line ridership estimates could eventually require up to 500 parking spaces in close proximity to the Duarte station. The concept is to work with existing property owners and businesses to formulate a specific plan that provides for the before mentioned uses, densities and intensities as well as development standards for a true transit oriented development.

The Gold Line Station Area Development Specific Plan is a new land use designation for the 2005 – 2020 General Plan. As with the City Center area, this

CHAPTER 5
LAND USE

area is intended to create a unique area oriented towards the future Gold Line station in Duarte. This flexible mixed use area will be located north of the Gold Line station in what is now part of the industrial park west of Highland Avenue. This mixed use area will also use a specific plan as an implementation tool to achieve the desired objective. The desired objective is to reduce vehicle miles traveled, provide transportation options for existing and future workforce and residents around the Gold Line station, provide location efficiency, expanded mobility, and provide public/private financial return and value recaptured. The specific plan to implement this objective must provide flexibility in providing vertical and/or horizontal mixed high density residential, commercial uses, office, R&D and industrial uses. As with the City Center plan the Gold Line station Specific Plan which will be the implementation tool for this area must also provide unique parking standards, sufficient residential densities, housing types and appropriate pedestrian friendly design to encourage usage of the Gold Line as a primary mode of travel. Because the timing of the Gold Line station opening is unknown, this Specific Plan must provide even more flexibility for future needs.

Zoning Consistency and Land Use Composition

State law requires the Zoning Ordinance and Zoning Map to be consistent with the General Plan. The Zoning Ordinance is the primary tool for implementing land use policy. Each General Plan land use designation must have one or more corresponding zone districts. In addition the land use regulations and development standards in the Zoning Ordinance must reflect the policy statements in the Land Use Element. While General Plan policies are general, Zoning Ordinance regulation and development standards are specific.

Table LU-3 identifies the relationship between land use designation and the zoning districts.

Table LU-3 also identifies the net acreage within each land use designation as shown on the Land Use Diagram LU-1. This diagram serves as the guide for future land use decisions made by City Staff, various City Commissions, and the City Council. Because Duarte is built out, most of the planned land uses shown on Diagram LU-1 correspond to existing development on the ground today. Table LU-3 lists acreage for each land use designation in accordance with the Land Use Diagram.

2020 GP Projections

CHAPTER 5
LAND USE

Table LU- 4
Density, Population Estimates and Intensity Potentials

LAND USE DESIGNATION	ANTICIPATED DEVELOPMENT		ACRES	ESTIMATED DWELLING UNITS	ESTIMATED POPULATION	ESTIMATED SQ. FT. NON-RES.*
	DU/ACRE	FAR/ACRE				
Residential Land Use Classification						
Very Low Density	2.5	N/A	120	300	990	N/A
Low Density	6	N/A	645	3,870	12,771	N/A
Medium Density	15	N/A	89	1,335	4,406	N/A
High Density	23	N/A	52	1,196	3,947	N/A
Commercial Land Use Classification						
Neighborhood	N/A	.25:1	3	NA	NA	32,670
General	N/A	.5:1	92	NA	NA	2,003,760
Administrative Professional	N/A	.5:1	4	NA	NA	87,120
Hospital Use Classification						
Hospital	N/A	1.5:1	78	NA	NA	5,096,520
R&D	N/A	1.5:1	15	NA	NA	980,100
Industrial Use Classification						
Industrial	N/A	.5:1	53	NA	NA	1,154,340
Public/Quasi Public Classification						
Public School	N/A	N/A	80	-	-	-
City owned facilities	N/A	N/A	12	-	-	-
County owned facilities	N/A	N/A	2	-	-	-
Utility easements	NA	N/A	95	-	-	-
Streets, Freeway	N/A	N/A	478	-	-	-
Open Space Classification						
Parks	N/A	N/A	39	-	-	-
Wilderness Area	N/A	N/A	422	-	-	-
National Forest	N/A	N/A	1,909	-	-	-
Specific Plan Areas Classification						
Planned community and areas **	N/A	N/A	131	716	2,363	333,561
City Center Mixed Use Area	varies	varies	11	165	545	165,000
Gold Line Station Area Development	varies	varies	20	120	396	100,000
Total			4,350	7,702	25,418	9,953,071

*Note: Estimated residential dwelling units use California Department of Finance population of 3.3 persons per household (June 2006). * Estimated sq. ft. non-residential is based on the FAR.*

CHAPTER 5
LAND USE

LU 2.1.6	Use the city's development review process to regulate hillside development.	CD	GF	On
LU 2.1.7	Designate these uses as nonconforming land uses and initiate abatement procedures which will allow for their removal.	CD	GF	MT
LU 3.1.1	Designate specific plan areas on the Land Use Diagram	CD	GF	MT
LU 3.1.2 LU 3.1.6	Provide for vertical and/or horizontal mixed use with unique parking and design standards. Encourage land use intensification of the proposed City Center area for mixed-use development with an emphasis on retail development on the ground floor and higher density residential on upper floors. Work to improve parking issues relative to overall numbers and proximity to businesses.	CD	GF	MT
LU 3.1.3	Continue to perform studies relative to land, relocation, demolition, remediation and construction cost. Identify potential businesses to locate in the City Center area.	CD	RA, GF	On
LU 3.1.4 LU 3.1.6	Work with existing property owners to develop a Specific and Strategic Plan for the area immediately after the General Plan is adopted.	CM, CD	RA, GF	ST
LU 3.1.5	Monitor the progress of the Duarte Gold Line station on a monthly bases.	CM, CD	GF	On

CHAPTER 9
CIRCULATION

Circ 1.1.6 Pursue and provide adequate right-of-way to accommodate future circulation system improvements.

Circulation Goal 2: To protect local residential neighborhoods from the impacts of through traffic and trucks.

Objective 2.1: Minimize the intrusion of through traffic, commuter traffic, and/or trucks on local streets in residential neighborhoods.

Policies

Circ 2.1.1 Discourage through traffic on local streets that are located in residential neighborhoods.

Circ 2.1.2 Restrict heavy duty truck traffic to arterial roadways.

Circ 2.1.3 Continue the practice of responding to resident complaints and requests regarding residential street traffic problems.

Circ 2.1.4 Discourage non-resident motorists from traveling through residential neighborhoods.

Circ 2.1.5 Appropriate mitigation measures should be implemented to ensure that the adverse impacts from trucks and employee traffic can be reduced.

Circulation Goal 3: To increase the use of alternative modes of transportation for traveling to, from, or through Duarte.

Objective 3.1: Encourage and promote the use of travel modes other than the single occupancy vehicle, such as bus transit, rail transit, carpools, vanpools, bicycling, and walking.

Policies

Circ 3.1.1 Continue to promote the development of the MTA Gold Line and a Duarte station.

Circ 3.1.2 Coordinate Duarte Transit System with MTA, Foothill Transit and to service major destinations within Duarte including City of Hope, Duarte Gold Line Station and proposed City Center area.

CHAPTER 9
CIRCULATION

Circ 3.1.3 Promote the linking of local public transit routes with that of adjacent jurisdictions and other transit agencies.

Circ 3.1.4 Ensure that new developments incorporate both local and regional transit measures into the project design that promote the use of alternate modes of transportation.

Circ 3.1.5 Provide incentives for appropriate pedestrian and bicycle facilities throughout Duarte, particularly for bike lanes to the Gold Line Station.

RELATED AGENCIES, LAWS AND PLANS

California Department of Transportation (Caltrans)

Caltrans is the state agency that has jurisdiction over the Foothill Freeway (Interstate 210) and the San Gabriel River Freeway (Interstate 605). The I-210 Freeway runs through Duarte in an east-west direction and has on/off ramps that link the freeway to Mountain Avenue, Buena Vista Street, and Mount Olive Drive. The I-605 Freeway runs north-south and has an interchange with the I-210 Freeway near the southeast corner of Duarte. The I-605/I-210 interchange includes ramps to the north that link with Mount Olive Drive and provide a direct connection to Huntington Drive. Caltrans has jurisdiction over the freeways, the freeway on/off ramps, and the intersections where the ramps meet with the Duarte street system.

Los Angeles County Metropolitan Transportation Authority (MTA)

The Los Angeles County Metropolitan Transportation Authority (MTA) is the agency that operates the MTA bus transit lines and the Metrorail facilities, including the proposed Gold Line through Duarte. MTA also administers the Los Angeles County Congestion Management Program (CMP) and prepares the Long Range Transportation Plan (LRTP).

Southern California Association of Governments (SCAG)

The Southern California Association of Governments (SCAG) is an agency that is responsible for transportation planning in Los Angeles County at the regional level. It is the designated Metropolitan Planning Organization (MPO) for a six-county region, which includes Los Angeles, Orange, Riverside, San Bernardino, Ventura, and Imperial Counties. SCAG is responsible for preparing a Regional Transportation Plan (RTP)

CHAPTER 9
CIRCULATION

Table CIRC – 4
Generated Traffic from Long-Range Development Projects

Project/Land Use	Quantity	Trip Generation Rate	Generated Daily Traffic Volume
City Center Mixed Use Development			
Residential – Apartments/Condos	165 units	6.72/unit	1,109
Retail	165,000 sf	42.94/ksf	7,085
Passby Reduction (20% of Retail)			(1,417)
Total			6,777
Gold Line Mixed Use Development			
Residential – Apartments/Condos	120 units	6.72/unit	806
Office	50,000 sf	11.01/ksf	551
Retail	50,000 sf	42.94/ksf	2,147
Passby Reduction (20% of Retail)			(429)
Total			3,075
Gold Line Metro Station	500 daily passengers	2 trips/passenger	1,000
City of Hope Science Park	360,000 sq. ft	8.11/ksf	2,920
TOTAL	-	-	13,772

Future Traffic Forecasts

The future traffic volume forecasts were projected by expanding the existing traffic volumes by the ambient growth factor discussed previously, then adding the traffic that would be generated by the short-range and long-range development projects presented above in Tables CIRC - 3 and CIRC - 4. The projected daily traffic volumes for the year 2020, the proposed number of lanes according to the current Circulation Element, the roadway capacity values, the volume/capacity ratios, and the levels of service for each roadway segment are shown in Table CIRC - 5. All of the roadway segments are projected to operate at acceptable levels of service (LOS A through D) except for Huntington Drive (all of the segments except one) and Mountain Avenue between the I-210 Freeway and Duarte Road.

CHAPTER 9
CIRCULATION

	reduction and/or traffic calming measures may be considered. Such measures may include but are not limited to lane narrowing, pedestrian crossing lights in the pavement, stop signs, specialized pavement design (color and texture), lane and/or crosswalk striping, and turn restrictions. Strictly enforce posted or prima facie speed limits in residential neighborhoods.			
Circ 2.1.2	Post signs to designate the arterial roadways that are legal truck routes and strictly enforce all truck route laws on city streets.	CD	GF	On
Circ 2.1.3 Circ 2.1.4	In response to resident complaints or requests, conduct neighborhood traffic studies to determine the nature and extent of actual and perceived traffic problems and consider implementing traffic control and/or traffic calming measures where appropriate.	CD	GF	On
Circ 2.1.5	As part of the environmental review process, project generated traffic must be reduced through appropriate mitigation measures	CD	GF	On
Circ 3.1.1	Actively participate as a prime advocate in the planning process undertaken by MTA to develop and implement the Gold Line rail transit facility with a station in Duarte.	CM	GF, G	ST
Con 3.1.2	Continue to assess transit dependent needs to better serve patrons wishing to travel between major destinations and adjust transit routes accordingly.	CD	FF	On
Con 3.1.3	Duarte will continue to cooperate with surrounding cities, MTA, and Foothill Transit in developing schedules and routes for the Duarte Transit System. If and when the MTA Gold Line station is developed in Duarte, the Duarte Transit System should modify the schedules and routes as needed to serve as a feeder to the rail transit station.	CM	FF, SF	On
Con 3.1.4	Major developments in Duarte should be required to provide bike racks, bus stops and shelters where appropriate, and information regarding the availability of transit systems and rideshare services. Incorporate local and regional transit measures into the design and implementation of development projects.	CD	DF, OF	On
Con 3.1.5	Include the installation of sidewalks in all future roadway widening and new construction projects to provide a continuous and convenient link for pedestrians. Require applicants to provide sidewalks adjacent to the project site along the frontage of all development projects and to provide pedestrian walkways to serve as links between the public sidewalks and the on-site	CD	GF, SF, FF, DF, OF	On

CHAPTER 9
CIRCULATION

	developments. Support programs and projects to provide convenient pedestrian linkages between adjacent properties, within individual developments, and from the public right-of-way to the private developments. Prepare a bicycle plan and implement it as availability arises in conjunction with private development, street improvement projects, and funding grants. Incorporate the construction of bicycle routes or bike lanes into future roadway improvement projects, where feasible. Incorporate measures into the public right-of-way and the private develop projects to ensure that the Duarte downtown area is pedestrian friendly.			

CITY OF DUARTE ☼ SIX-MONTH STRATEGIC OBJECTIVES

March 8, 2010 to September 1, 2010
Presented 9/28/10 & Revised 1/25/2011

THREE-YEAR GOAL: ***IMPROVE THE INFRASTRUCTURE AND FACILITIES***

WHEN	WHO	WHAT	STATUS			COMMENTS
			DONE	ON TARGET	REVISED	
1. April 30, 2010	Engineering Div. Mgr.	Present a list of Capital Improvement Projects to the City Council for its prioritization of projects for 2010-2011.	X			Presented at 4/27/10 council meeting.
2. December 1, 2010	Community Development Dir. and Recreation Supt.	Remove the City Hall clock tower.			X	Architect/Engineer have completed estimates, awaiting budget approval for work: Preliminary estimates: Reconstruction - $114,000; Rehab and reinforce: $75,000.
3. July 1, 2010	Community Development Dir.	Facilitate a joint meeting with Monrovia and the Gold Line Authority to finalize the Mountain Ave. Realignment Project.	X			Met with Gold Line and Monrovia. Conceptual plan agreed upon.
4. Sept. 1, 2010	Community Development Dir. and Field Services Mgr.	Present to the City Council for action a Community Wildfire Protection Plan.	X			City awarded California Fire Safe Grant in the amount of $75,500 and are now able to expend funds based upon receipt of sub-award letter.
5. June, 2011	Engineering Div. Mgr and Recreation Supt.	Develop and present to the City Manager a plan for Town Center siding repairs.			X	Staff scheduled to meet with contractor to fine-tune scope of work and cost.
FUTURE OBJECTIVE July 1, 2011	Engineering Division Mgr.	Apply for at least two grants to fund the Duarte Rd. pedestrian/bikeway improvements.				

A

Attachment 9A
Cost Effectiveness and Cost Benefit Methodology

Attachment 9a: Cost Effectiveness and Cost Benefit Methodology

When estimating cost effectiveness for infrastructure projects, the following are considered: Safety, improved air quality, and increased numbers of cyclists and pedestrians. Costs include the construction, operation, maintenance, and user costs associated with the project.

A **Benefit-Cost Calculator** was developed for this grant application. It uses the travel characteristics for an infrastructure project and provides an overall ratio of benefit-to-cost. The Benefit-Cost calculator expresses the project benefits in terms of the ATP goals such as:

- Increasing mode share for pedestrians and cyclists
- Congestion reduction, pollution reductions, and energy conservations
- Increasing safety
- Fitness and health
- Equity

The calculator inputs are:

- Project type (walking or cycling)
- Existing and forecasted demand (person daily trips)
- Project length (miles)
- Pedestrian and bike crash history (if available)
- Project costs (both capital and annual operations/maintenance costs)
- Beginning Construction year
- Opening year

In order to develop the calculator, information from five relevant reports regarding transportation benefits and costs was used:

- Litman, Todd. Victoria Transport Policy Institute. 2014 (April 2). Evaluating Active Transort Benefits and Costs.
- CalTrans .2013 (April). Local Roadway Safety: A Manual for alifornia's Local Road Owners. Version 1.1.
- U.S. Department of Transportation, Federal Highway Administration, Office of Asset Management. 2003 (August). Economic analysis Primer.
- Transportation Research Board of the National Academies. National Cooperative Highway Research Program. 2006. Report 552: Guidelines for Analysis of Investments in Bicycle Facilities.
- Bushell, Max A., Bryan W. Poole, Charles V. Zegeer, Daniel A. Rodriguez. UNC Highway Safety Research Center. 2013 (October). Costs for Pedestrian and Bicyclist Infrastructure Improvements: A Resource for Researchers, Engineers, Planners, and the General Public. Prepared for the Federal Highway Administration.

1. Evaluating Active Transport Benefits and Costs

Litman, Todd. Victoria Transport Policy Institute. 2014 (April 2). Evaluating Active Transort Benefits and Costs. Available: http://vtpi.org/nmt-tdm.pdf

This report describes the impacts of policies and projects that improve active transportation conditions to increase active mode use. The report discusses the factors that affect the benefits and costs of active

transportation and describing methods for quantifying/monetizing them. The report includes examples of performance indicators to evaluate the quality of walking and biking conditions, encouragement strategies, active planning resources, benefit and cost categories, monetization methods, user benefits, and more evaluation methods.

Because some impacts of active transportation are non-market goods, it's important to allocate a monetary value to safer pedestrian environments, cleaner air, and more active people. Monetization methods, as outlined in the file MonetizationMethods_LitmanReport.jpg[1], include the following:

- User savings—in this case, the most appropriate monetary measure of a project's benefit
- Social cost savings – that is, active improvements that reduce costs to government or businesses.
- Control costs - that is, the cost of prevention
- Contingent valuation surveys
- Revealed preference survey
- Hedonic pricing surveys
- Compensation rates

Benefits

The following table shows the various benefits and costs of active transportation.

Table ES-1 **Active Transportation Benefits and Costs**

	Improved Active Travel Conditions	Increased Active Transport Activity	Reduced Automobile Travel	More Compact Communities
Potential Benefits	• Improved user convenience and comfort • Improved accessibility for non-drivers, which supports equity objectives • Option value • Supports related industries (e.g., retail and tourism) • Increased security	• User enjoyment • Improved public fitness and health • Increased community cohesion (positive interactions among neighbors due to more people walking on local streets) which tends to increase local security	• Reduced traffic congestion • Road and parking facility cost savings • Consumer savings • Reduced chauffeuring burdens • Increased traffic safety • Energy conservation • Pollution reductions • Economic development	• Improved accessibility, particularly for non-drivers • Transport cost savings • Reduced sprawl costs • Openspace preservation • More livable communities • Higher property values • Improved security
Potential Costs	• Facility costs • Lower traffic speeds	• Equipment costs (shoes, bikes, etc.) • Increased crash risk	• Slower travel	• Increases in some development costs

Source: "Evaluating Active Transport Benefits and Costs" by Todd Litman http://vtpi.org/nmt-tdm.pdf

User Benefits

"Improving active mode conditions (better sidewalks, crosswalks, paths, bike parking, traffic speed reductions, etc.) directly benefits *existing users* (people who would walk or bicycle even without

improvements) and *new users* (people who increase walking or cycling in response to improvements)." The user benefits of improving active mode conditions, including a number of studies that find increased property values, can be evaluated based on avoided costs, contingent valuation (user surveys), and hedonic pricing.

Option Value

Option value refers to the value people may place on having an option available that they do not currently use and because walking and cycling can serve various roles in a transport system, including basic mobility for non-drivers, affordable transport, recreation and exercise, their potential option value is high.

Equity benefits

Equity benefits refer to the distribution of impacts and the degree that they are considered appropriate and fair. Equity includes horizontal equity (that is, people should bear similar costs and receive a similar share of public resources), vertical equality with regard to income, and vertical equity with regard to transportation ability and needs. Evaluating equity can be completed with an analysis of the amount spent of active transportation projects versus the percentage of users, cost allocation equity, impact compensation, and vertical equity.

Physical Fitness and Health

This robust section of the Litman report that includes a number of studies that show the health benefits of active transportation and the incremental benefits of improving existing active transportation facilities.

The report outlines other measures of impacts from active transportation, including reduced chauffeuring burdens, congestion reduction, barrier effects, roadway cost savings, parking cost savings, traffic safety impacts, security impacts, energy conservation, pollution reduction, land use impacts, and economic development.

Costs

The various costs associated with active transportation are outlined in the report.

- Facility costs
- Vehicle traffic impacts
- Equipment fuel costs
- User travel
- Time costs

The following table outlines the potential benefits and costs of active transportation.

Table 13 **Summary of Active Transport Benefits and Costs**

Impact Category	Description
Improve NMT Conditions	*Benefits from improved walking and cycling conditions.*
User benefits	Increased user convenience, comfort, safety, accessibility and enjoyment
Option value	Benefits of having mobility options available in case they are ever needed
Equity objectives	Benefits to economically, socially or physically disadvantaged people
Increase NMT Activity	*Benefits from increased walking and cycling activity*
Fitness and health	Improved public fitness and health
Reduced Vehicle Travel	*Benefits from reduced motor vehicle ownership and use*
Vehicle cost savings	Consumer savings from reduced vehicle ownership and use
Avoided chauffeuring	Reduced chauffeuring responsibilities due to improved travel options
Congestion reduction	Reduced traffic congestion from automobile travel on congested roadways
Reduced barrier effect	Improved active travel conditions due to reduced traffic speeds and volumes
Roadway cost savings	Reduced roadway construction, maintenance and operating costs
Parking cost savings	Reduced parking problems and facility cost savings
Energy conservation	Economic and environmental benefits from reduced energy consumption
Pollution reductions	Economic and environmental benefits from reduced air, noise and water pollution
Land Use Impacts	*Benefits from support for strategic land use objectives*
Pavement area	Can reduce road and parking facility land requirements
Development patterns	Helps create more accessible, compact, mixed, infill development (smart growth)
Economic Development	*Benefits from increased productivity and employment*
Increased productivity	Increased economic productivity by improving accessibility and reducing costs
Labor productivity	Improved access to education and employment, particularly by disadvantaged workers.
Shifts spending	Shifts spending from vehicles and fuel to goods with more regional economic value
Support specific industries	Support specific industries such as retail and tourism
Costs	*Costs of improving active mode conditions*
Facilities and programs	Costs of building non-motorized facilities and operating special programs
Vehicle traffic impacts	Incremental delays to motor vehicle traffic or parking
Equipment	Incremental costs to users of shoes and bicycles
Travel time	Incremental increases in travel time costs due to slower modes
Accident risk	Incremental increases in accident risk

Acronym: NMT = Non-Motorized Transportation

Source: "Evaluating Active Transport Benefits and Costs" by Todd Litman http://vtpi.org/nmt-tdm.pdf

Evaluation Matrix

Table 15 from the report outlines a matrix that can be used to begin summarizing the benefits and impacts of the project. "For example, to evaluate sidewalk improvements, indicate how much it improves walking and cycling conditions and who benefits; how much it will increase NMT activity; how much it reduces automobile travel; and how much it will change land use patterns."

Table 15 **Active Transportation Evaluation Framework**

	NMT Conditions	NMT Activity	Automobile Travel	Land Use
	Is walking and cycling easier or safer?	*Does walking or cycling activity increase?*	*Does automobile travel decline?*	*Does it strategic meet planning objectives?*
Describe impact				
How much				
Who is affected				

Acronym: NMT = Non-Motorized Transportation

Source: "Evaluating Active Transport Benefits and Costs" by Todd Litman http://vtpi.org/nmt-tdm.pdf

Quantifying Project Benefits and Costs

Another resource provided in the report is a series of tables that can be used to quantify benefits and costs. These tables have been combined into a single reference table below. Costs are presented in mils which are thousandths of a dollar.

Active Transportation – Benefits and Costs

Impact Category	Urban Peak	Urban Off-Peak	Rural	Overall Average	Comments
BENEFITS					
Improved Active Travel Conditions - Table 16 Improving Walking and Cycling Conditions (Per Person Mile)					
User benefits	$0.250	$0.250	$0.250	$0.250	The greater the improvement, the greater this value.
Option value	$.035	$.035	$.035	$.035	Half of diversity value*.
Equity objectives	$.035	$.035	$.035	$.035	Half of diversity value*. Higher if a project significantly benefits disadvantaged people.
Increased Active Travel Activity - Table 17 Improving Walking and Cycling Conditions (Per Person Mile)					
Fitness and health – walking	$0.500	$0.500	$0.500	$0.500	Benefits are larger if pedestrian facilities attract at-risk users.
Fitness and health – cycling	$0.200	$0.200	$0.200	$0.200	Benefits are larger if cycling facilities attract at-risk users.
Reduced Automobile Travel - Table 18 Typical Values – Reduced Motor Vehicle Travel (Per Reduced Vehicle Mile)					
Vehicle cost savings	$0.250	$0.225	$0.20	$0.225	This reflects vehicle operating cost savings. Larger savings result if some households can reduce vehicle ownership costs.
Avoided chauffeuring driver's time	$0.700	$0.600	$0.500	$0.580	Based on $9.00 per hour driver's time value.
Congestion reduction	$0.200	$0.050	$0.010	$0.060	
Reduced barrier effect	$0.010	$0.010	$0.010	$0.010	
Roadway cost savings	$0.050	$0.050	$0.030	$0.042	
Parking cost savings	$0.600	$0.400	$0.200	$0.360	Parking costs are particularly high for commuting and lower for errands which require less parking per trip.
Energy conservation	$0.030	$0.030	$0.030	$0.030	
Pollution reductions	$0.100	$0.050	$0.010	$0.044	

Active Transportation – Benefits and Costs

Impact Category	Urban Peak	Urban Off-Peak	Rural	Overall Average	Comments
Land Use Impacts - Table 19 More Walkable and Bikeable Community (Per Measure Unknown)					
Reduced pavement	$0.010	$0.005	$0.001	$0.002	Specific studies should be used when possible.
Increased accessibility	$0.080	$0.060	$0.030	$0.051	Specific studies should be used when possible.
COSTS					
Active Transport Costs - Table 20 Typical Values – Walking and Cycling Costs (Per Person Mile)					
Facilities and programs					Highly variable.
Vehicle traffic impacts					Highly variable.
Equipment	$0.080	$0.070	$0.060		Depends on assumption, such as whether food consumption is a benefit or cost.
Travel time					Highly variable depending on conditions and user preferences.
Accident risk					

* The "Transport Diversity Value" chapter of *Transportation Cost and Benefit Analysis* (Litman 2009) estimates that improvements in affordable alternative modes can be valued at 7¢ per passenger-mile, although this value can vary significantly depending on conditions and assumptions.

Source: "Evaluating Active Transport Benefits and Costs" by Todd Litman http://vtpi.org/nmt-tdm.pdf

2. Local Roadway Safety Manual for California Local Road Owners

CalTrans .2013 (April). Local Roadway Safety: A Manual for alifornia's Local Road Owners. Version 1.1. Available: http://www.dot.ca.gov/hq/LocalPrograms/HSIP/Documents/hsip/CA_SM4LROv11.pdf

This report provides a framework for identifying and analyzing locations with roadway safety issues. It encourages a routine and systematic assessment of the roadway safety to proactively identify areas with high crash risks and countermeasures that can address or improve the conditions leading to crashes.

The process is based on a quantitative analysis of available crash data but also encourages a qualitative assessment of conditions that might lead to crashes. The number of bicycle and pedestrian crashes for roadway system is relatively low, which can make quantitative assessments more difficult. Furthermore, the specific locations are somewhat random and do not necessarily indicate that these sites carry higher risk than other sites. A qualitative assessment of the facilities from the perspective of pedestrians and bicyclists can identify system characteristics that do not support safe travel for these vulnerable users.

The report lists countermeasures that can improve the safety of pedestrians and bicyclists on the roadway network. Appendix B of the report provides additional information about how the countermeasures are estimated. These measures are listed in the following table.

Countermeasures to Improve Bicycle and Pedestrian Safety

	Project Type	Countermeasure	Opportunity to Implement using a Systematic Approach	General Values for Agency's Internal Use		Values for Caltrans Statewide Programs		
				Primary Crash Types	Range of Crash Reduction Factors	Crash Type	CRF	Service Life
SIGNALIZED INTERSECTION COUNTERMEASURES								
S19	Ped and	Install pedestrian countdown signal	Very High	Pedestrian, Bicycle	25%	P & B	25	20

	Project Type	Countermeasure	Opportunity to Implement using a Systematic Approach	General Values for Agency's Internal Use		Values for Caltrans Statewide Programs		
				Primary Crash Types	Range of Crash Reduction Factors	Crash Type	CRF	Service Life
	Bike	heads						
S20	Ped and Bike	Install Pedestrian crossing (S.I.)	High	Pedestrian, Bicycle	25%	P & B	25	20
S21	Ped and Bike	Install advance stop bar before crosswalk (Bicycle Box)	Very High	Pedestrian, Bicycle	35%	P & B	15	10
S22	Ped and Bike	Install pedestrian overpass/underpass	Low	Pedestrian, Bicycle	5-100%	P & B	75	20
NON-SIGNALIZED INTERSECTION COUNTERMEASURES								
NS16	Ped and Bike	Install raised medians/refuge islands (NS.I)	Medium	Pedestrian, Bicycle	30-56%	P & B	45	20
NS17	Ped and Bike	Install pedestrian crossing (new signs and markings only)	High	Pedestrian, Bicycle	25%	P & B	25	10
NS18	Ped and Bike	Install pedestrian crossing (with enhanced safety features/curb extensions)	Medium	Pedestrian, Bicycle	37%	P & B	35	20
NS19	Ped and Bike	Install pedestrian signal	Low	Pedestrian, Bicycle	15-69%	P & B	55	20
ROADWAY COUNTERMEASURES								
R36	Ped and Bike	Install bike lanes	High	Pedestrian, Bicycle	0-53%	P & B	35	20
R37	Ped and Bike	Install sidewalk/pathway (to avoid walking along roadway)	Medium	Pedestrian, Bicycle	65-89%	P & B	80	20
R38	Ped and Bike	Install pedestrian crossing (with enhanced safety features)	Medium	Pedestrian, Bicycle	8-56%	P & B	30	10
R 39	Ped and Bike	Install raised pedestrian crossing	Medium	Pedestrian, Bicycle	30-46%	P & B	35	10

Source: "Local Roadway Safety, Version 1.1, April 2013" by Caltrans
http://www.dot.ca.gov/hq/LocalPrograms/HSIP/Documents/hsip/CA_SM4LROv11.pdf

If the project is consistent with any of these countermeasures, then it can be considered to improve safety.

The document provides a process for calculating a benefit/cost ratio for safety improvement investments. The method (formulas from Appendix D of the report) is shown below. Current crash costs to be used in the equation can be found on Caltrans website for Economic Parameters[2].

[2] http://www.dot.ca.gov/hq/tpp/offices/eab/benefit_cost/LCBCA-economic_parameters.html

Safety Index Calculation Method

1) $$Benefit\ (Annual) = \frac{CRF \times \sum_{S=0}^{4} (N_S \times CC_S)}{Y}$$

- CRF: Crash reduction factor in each countermeasure
- S: Severity (0:PDO, 1:Minor Injury, 2:Injury, 3:Severe Injury, 4:Fatal)
- N_S: Number of Crashes, in severity levels, related to selected countermeasure
- Y: Crash data time period (Year)
- CC_S: Crash costs in severity levels

Crash Severity **	Crash Cost *
Fatality (K)	$4,008,900
Severe/Disabling Injury (A)	$216,000
Evident Injury – Other Visible (B)	$79,000
Possible Injury – Complaint of Pain (C)	$44,900
Property Damage Only (O)	$7,400

* The letters in parenthesis (K, A, B, C and O) refer to the KABCO scale; it is commonly used by law enforcement agencies in their crash reporting efforts and is further documented in the HSM.

** Highway Safety Manual (HSM), First Edition, 2010.

2) *Benefit (Life) = Benefit (annual) x Years of service life*

3) Benefit/Cost Ratio (each countermeasure): $$Benefit\ \ Cost\ Ratio_{(CM)} = \frac{Benefit\ (Life)_{(CM)}}{Total\ \Pr oject\ Cost_{(CM)}}$$

4) Benefit/Cost Ratio (project): $$Benefit/Cost\ Ratio\ (\Pr oject) = \frac{\sum_{CM=1}^{3} Benefit\ (Life)_{(CM)}}{Total\ \Pr oject\ Cost}$$

As noted previously, the process is based on calculating the benefits based on a potential reduction in the number of crashes for a given facility. Because many facilities have few bicycle or pedestrian crashes, it may not be possible to calculate a ratio.

3. Economic Analysis Primer

U.S. Department of Transportation, Federal Highway Administration, Office of Asset Management. 2003 (August). Economic analysis Primer. Available: http://www.fhwa.dot.gov/infrastructure/asstmgmt/primer.pdf

This report is "intended to provide a foundation for understanding the role of economic analysis in highway decision making." Among the topics discussed is how to integrate the principles of economic analysis into the calculation of the life cycle benefits and costs of transportation infrastructure.

The document explains how important it is to calculate the net present value (NPV) of all benefits and costs over the life cycle of a project for use in calculating the benefit-cost ratio for a project. The key assumption in this calculation is the discount rate that is used to estimate the future value of a project feature in terms of present day value. The Caltrans website currently lists the discount rate at 4.0 percent (Economic Parameters[3]).

This paper also provides guidelines about what should be included as benefits (e.g. the numerator or top half of the B/C equation) and what should be included as costs (e.g. the denominator or bottom half of the B/C equation). "The Federal Highway Administration (FHWA) recommends that only the initial agency investment cost be included in the denominator of the ratio." All other costs should be treated as negative benefits (i.e., subtracted from the estimate of benefits). Following this guidance allows for consistent project comparisons.

4. Guidelines for Analysis of Investments in Bicycle Facilities

Transportation Research Board of the National Academies. National Cooperative Highway Research Program. 2006. Report 552: Guidelines for Analysis of Investments in Bicycle Facilities. Available: http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_552.pdf

The third chapter of this report, "Benefits Associated with the Use of Bicycle Facilities" is most salient to the cost effectiveness measurement. The purpose of this section of the report is twofold: The first is to review and interpret existing literature evaluating the economic benefits of bicycle facilities. The second is to suggest methods and strategies to create guidelines.

What is the geographic scale or type of facility?

"The first consideration pertains to the geographic scale of the inquiry or facility in question. Past work has analyzed the benefits of a specific greenway or active recreation trail, a specific trunk roadway, a region, an entire city, or an entire state. Some studies focus on a system of bicycle trails across the state. Others focus on the benefits of on-road versus off-road facilities. Different geographic scales demand different data requirements, ranging from individual counts of a facility to aggregated counts or numbers for a specific area extrapolated to an entire state."

Who benefits from the facility?

- One report identifies three user groups impacted by cycling facilities: road users, non-road users (e.g., occupants of adjacent properties), and planning/financing agencies.
- The first group of road users includes all users, cyclists, motorists, pedestrians, horse riders, and public transport.
- Alternatively, some studies divide the benefits of non-motorized travel into internal versus external benefits.
    - Internal benefits include the financial savings, health benefits, increased mobility, and overall enjoyment for cyclists.
    - External benefits include the benefits to others, such as reduced (a) congestion, (b) road and parking facility expenses, (c) motor vehicle crashes, (d) air and noise pollution, and (e) natural resource consumption.

[3] http://www.dot.ca.gov/hq/tpp/offices/eab/benefit_cost/LCBCA-economic_parameters.html

Which benefits apply to the facility?

- Which benefits are most important? Is it those that are accrued, those in which the sponsoring agency is primarily interested, or those for which there is available data?
- Reduced pollution, congestion, capital investments
- Increased livability, health, well-being, and quality of life?
- One study suggests seven benefits to consider when estimating the economic value of walking: livability, accessibility and transportation costs, health, external costs, efficient land use, economic development, and equity.
- Focusing just on greenways, there are six valued benefits: recreation, health/fitness, transportation, ecological biodiversity and services, amenity visual/aesthetic, and economic development

What units and methods are used?

Measuring benefits requires a unit by which each characteristic can be measured. "These range from simple counts (e.g., reduction of casualties) to decibels to monetary amounts (e.g., vehicle operating costs) to descriptive measures (e.g., overall convenience). More often, general measuring techniques are offered. For example, it is suggested that hedonic pricing could be used to measure livability or amenity visual/aesthetic values; economic input/output models could describe economic development; time could be used to measure transportation savings; and surveys of different kinds (e.g., contingent valuation) could be used to capture a host of values or benefits."

5. Costs for Bicycle and Pedestrian Infrastructure Improvements

Bushell, Max A., Bryan W. Poole, Charles V. Zegeer, Daniel A. Rodriguez. UNC Highway Safety Research Center. 2013 (October). Costs for Pedestrian and Bicyclist Infrastructure Improvements: A Resource for Researchers, Engineers, Planners, and the General Public. Prepared for the Federal Highway Administration. Available: http://katana.hsrc.unc.edu/cms/downloads/Countermeasure%20Costs_Report_Nov2013.pdf

This report provides estimated capital costs for various bicycle and pedestrian infrastructure improvements such as crosswalks, bike lanes, multi-use paths, etc. While these cost estimates should already be provided by each municipality, this report offers an easy way to verify or cross-check provided cost estimates.

Attachment 9B1
Cost Effectiveness and Calculator Tool, Total Cost

Attachment 9B1: Cost Effectiveness and Calculator Tool, Total Cost

PROJECT DESCRIPTION

Please note that only yellow cells should be modified

Name of Project	Duarte Gold Line Station Pedestrian and Bicycle Improvements
Project Location	Duarte, California
Type of Project	Cycling — *Enter Walking (for Sidewalks or Multi-Use Path) or Cycling*
Current Year	2014

TRAVEL CHARACTERISTICS

	No Build	Build			Annual Person Miles No Build	Annual Person Miles Build	Increased Person Miles	Reduced Vehicle Miles
Existing Demand (Daily Person Trips)	44	264	*Year*	2012	96,360	578,160	481,800	1,445,400
Forecast Demand (Daily Person Trips)	66	396	*Year*	2035	144,540	867,240	722,700	2,168,100
Length (miles)	6	Two-way trips 6 miles				IPM:RVM ratio	1	3

PED/BIKE CRASH HISTORY

Crash Severity	Number of B/P Crashes
Fatal Crashes	
Injury Crashes (Total)	6
Injury Type A (severe)	
Injury Type B (moderate)	
Injury C (minor)	6
Property Damage Only (PDO)	
Total	6

Can be left blank if unknown

Crash Analysis Period (Minimum 5 years) 5

Existing Year Vehicular ADT

ADT	8,000
Year	2012

Forcast Year Vehicular ADT

ADT	12,000
Year	2035

Crash Countermeasures (Safety Improvements)		Project Includes?
pedestrian countdown signal heads	*Signalized Intersection*	N
pedestrian crossing	*Signalized Intersection*	N
advance stop bar before crosswalk (bicycle box)	*Signalized Intersection*	N
pedestrian overpass/ underpass	*Signalized Intersection*	N
raised medians/ refuge islands	*Unsignalized Intersection*	N
pedestrian crossing (new signs and markings only)	*Unsignalized Intersection*	N
pedestrian crossing (enhanced safety features/ curb extensions)	*Unsignalized Intersection*	N
pedestrian signal	*Unsignalized Intersection*	N
bike lanes	*Roadway*	Y
sidewalk/ pathway (to avoid walking along roadway)	*Roadway*	N
pedestrian crossing (with enhanced safety features)	*Roadway*	N
raised pedestrian crossing	*Roadway*	N
OTHER REDUCTION FACTOR (MANUAL ENTRY)	10%	N

PROJECT COSTS

Capital Investment	$1,645,192.00	*Estimated Year Construction Begins*	2015	*Discount Rate Used to calculate Net Present Value*	4.0%
Annual Operations/ Maintenance Costs	$0.00	*Estimated Opening Year*	2016		

Attachment 9B1: Cost Effectiveness and Calculator Tool, Total Cost

PROJECT DESCRIPTION

Please note that only yellow cells should be modified

Name of Project	Duarte Gold Line Station Pedestrian and Bicycle Improvements
Project Location	Duarte, California
Type of Project	Walking — *Enter Walking (for Sidewalks or Multi-Use Path) or Cycling*
Current Year	2014

TRAVEL CHARACTERISTICS

	No Build	Build			Annual Person Miles No Build	Annual Person Miles Build	Increased Person Miles	Reduced Vehicle Miles
Existing Demand (Daily Person Trips)	410	510	*Year*	2012	74,825	93,075	18,250	54,750
Forecast Demand (Daily Person Trips)	610	730	*Year*	2035	111,325	133,225	21,900	65,700
Length (miles)	0.5	Two-way trips .5 mile				IPM:RVM ratio	1	3

PED/BIKE CRASH HISTORY

Crash Severity	Number of B/P Crashes
Fatal Crashes	0
Injury Crashes (Total)	3
Injury Type A (severe)	1
Injury Type B (moderate)	1
Injury C (minor)	1
Property Damage Only (PDO)	
Total	3
Crash Analysis Period (Minimum 5 years)	10

Can be left blank if unknown

Existing Year Vehicular ADT	
ADT	8,000
Year	2012

Forcast Year Vehicular ADT	
ADT	12,000
Year	2035

Crash Countermeasures (Safety Improvements)		Project Includes?
pedestrian countdown signal heads	*Signalized Intersection*	N
pedestrian crossing	*Signalized Intersection*	N
advance stop bar before crosswalk (bicycle box)	*Signalized Intersection*	N
pedestrian overpass/ underpass	*Signalized Intersection*	N
raised medians/ refuge islands	*Unsignalized Intersection*	N
pedestrian crossing (new signs and markings only)	*Unsignalized Intersection*	N
pedestrian crossing (enhanced safety features/ curb extensions)	*Unsignalized Intersection*	N
pedestrian signal	*Unsignalized Intersection*	N
bike lanes	*Roadway*	N
sidewalk/ pathway (to avoid walking along roadway)	*Roadway*	Y
pedestrian crossing (with enhanced safety features)	*Roadway*	Y
raised pedestrian crossing	*Roadway*	N
OTHER REDUCTION FACTOR (MANUAL ENTRY)	10%	N

PROJECT COSTS

Cost should be the same as those for the bike entry form

Capital Investment	$1,645,192.00	*Estimated Year Construction Begins*	2015	*Discount Rate Used to calculate Net Present Value*	4.0%
Annual Operations/ Maintenance Costs	$0.00	*Estimated Opening Year*	2016		

ESTIMATED BENEFITS FROM ACTIVE TRANSPORTATION - CYCLING

				Improved Active Travel Conditions			Increased Active Travel Activity		Land Use Impacts		Reduced Automobile Travel									
Year	Actual Year	Increased Person Miles (IPM)	Reduced Vehicle Miles (RVM)	User benefits	Option value	Equity objectives	Fitness and health – walking	Fitness and health – cycling	Reduced pavement	Increased accessibility	Vehicle cost savings	Avoided chauffeuring driver's time	Congestion reduction	Reduced barrier effect	Roadway cost savings	Parking cost savings	Energy conservation	Pollution reductions	Combined Benefits	Net Present Value
				0.000	0.000	0.000	0.500	0.200	0.002	0.000	0.225	0.000	0.060	0.010	0.042	0.360	0.030	0.044		
				IPM	IPM	IPM		IPM		IPM	RVM	RVM	RVM	RVM	RVM	RVM	RVM	RVM		
CONSTRUCTION																				
1	2015																			
2	0																			
3	0																			
4	0																			
5	0																			
OPENING YEAR																				
1	2016	523,700	1,571,100	$0	$0	$0	$0	$104,740		$47,133	$353,498	$0	$94,266	$15,711	$65,986	$565,596	$47,133	$69,128	$1,363,191	$1,260,347
2	2017	534,174	1,602,521	$0	$0	$0	$0	$106,835		$48,076	$360,567	$0	$96,151	$16,025	$67,306	$576,908	$48,076	$70,511	$1,390,454	$1,236,109
3	2018	544,647	1,633,942	$0	$0	$0	$0	$108,929		$49,018	$367,637	$0	$98,037	$16,339	$68,626	$588,219	$49,018	$71,893	$1,417,717	$1,211,871
4	2019	555,121	1,665,363	$0	$0	$0	$0	$111,024		$49,961	$374,707	$0	$99,922	$16,654	$69,945	$599,531	$49,961	$73,276	$1,444,980	$1,187,668
5	2020	565,595	1,696,784	$0	$0	$0	$0	$113,119		$50,904	$381,776	$0	$101,807	$16,968	$71,265	$610,842	$50,904	$74,659	$1,472,243	$1,163,535
6	2021	576,068	1,728,205	$0	$0	$0	$0	$115,214		$51,846	$388,846	$0	$103,692	$17,282	$72,585	$622,154	$51,846	$76,041	$1,499,506	$1,139,501
7	2022	586,542	1,759,626	$0	$0	$0	$0	$117,308		$52,789	$395,916	$0	$105,578	$17,596	$73,904	$633,465	$52,789	$77,424	$1,526,769	$1,115,595
8	2023	597,016	1,791,047	$0	$0	$0	$0	$119,403		$53,731	$402,986	$0	$107,463	$17,910	$75,224	$644,777	$53,731	$78,806	$1,554,032	$1,091,842
9	2024	607,489	1,822,468	$0	$0	$0	$0	$121,498		$54,674	$410,055	$0	$109,348	$18,225	$76,544	$656,089	$54,674	$80,189	$1,581,295	$1,068,266
10	2025	617,963	1,853,889	$0	$0	$0	$0	$123,593		$55,617	$417,125	$0	$111,233	$18,539	$77,863	$667,400	$55,617	$81,571	$1,608,558	$1,044,889
11	2026	628,437	1,885,311	$0	$0	$0	$0	$125,687		$56,559	$424,195	$0	$113,119	$18,853	$79,183	$678,712	$56,559	$82,954	$1,635,821	$1,021,729
12	2027	638,911	1,916,732	$0	$0	$0	$0	$127,782		$57,502	$431,265	$0	$115,004	$19,167	$80,503	$690,023	$57,502	$84,336	$1,663,084	$998,805
13	2028	649,384	1,948,153	$0	$0	$0	$0	$129,877		$58,445	$438,334	$0	$116,889	$19,482	$81,822	$701,335	$58,445	$85,719	$1,690,347	$976,133
14	2029	659,858	1,979,574	$0	$0	$0	$0	$131,972		$59,387	$445,404	$0	$118,774	$19,796	$83,142	$712,647	$59,387	$87,101	$1,717,610	$953,728
15	2030	670,332	2,010,995	$0	$0	$0	$0	$134,066		$60,330	$452,474	$0	$120,660	$20,110	$84,462	$723,958	$60,330	$88,484	$1,744,873	$931,602
16	2031	680,805	2,042,416	$0	$0	$0	$0	$136,161		$61,272	$459,544	$0	$122,545	$20,424	$85,781	$735,270	$61,272	$89,866	$1,772,136	$909,767
17	2032	691,279	2,073,837	$0	$0	$0	$0	$138,256		$62,215	$466,613	$0	$124,430	$20,738	$87,101	$746,581	$62,215	$91,249	$1,799,399	$888,234
18	2033	701,753	2,105,258	$0	$0	$0	$0	$140,351		$63,158	$473,683	$0	$126,315	$21,053	$88,421	$757,893	$63,158	$92,631	$1,826,662	$867,011
19	2034	712,226	2,136,679	$0	$0	$0	$0	$142,445		$64,100	$480,753	$0	$128,201	$21,367	$89,741	$769,204	$64,100	$94,014	$1,853,925	$846,107
20	2035	722,700	2,168,100	$0	$0	$0	$0	$144,540		$65,043	$487,823	$0	$130,086	$21,681	$91,060	$780,516	$65,043	$95,396	$1,881,188	$825,529

Source: "Evaluating Active Transport Benefits and Costs" by Todd Litman
http://vtpi.org/nmt-tdm.pdf

Discount Rate 4.0%

Present Value = Future Value (in Constant Dollars) / (1 + Real Discount Rate) ^ Year

ESTIMATED BENEFITS FROM ACTIVE TRANSPORTATION - WALKING

				Improved Active Travel Conditions			Increased Active Travel Activity		Land Use Impacts		Reduced Automobile Travel									
Year	Actual Year	Increased Person Miles (IPM)	Reduced Vehicle Miles (RVM)	User benefits	Option value	Equity objectives	Fitness and health – walking	Fitness and health – cycling	Reduced pavement	Increased accessibility	Vehicle cost savings	Avoided chauffeuring driver's time	Congestion reduction	Reduced barrier effect	Roadway cost savings	Parking cost savings	Energy conservation	Pollution reductions	Combined Benefits	Net Present Value
				0.000	0.000	0.000	0.500	0.200	0.002	0.000	0.225	0.000	0.060	0.010	0.042	0.360	0.030	0.044		
				IPM	IPM	IPM	IPM			IPM	RVM	RVM	RVM	RVM	RVM	RVM	RVM	RVM		
CONSTRUCTION																				
1	2015																			
2	0																			
3	0																			
4	0																			
5	0																			
OPENING YEAR																				
1	2016	18,880	56,640	$0	$0	$0	$9,440	$0		$1,699	$12,744	$0	$3,398	$566	$2,379	$20,390	$1,699	$2,492	$54,809	$50,674
2	2017	19,039	57,117	$0	$0	$0	$9,519	$0		$1,714	$12,851	$0	$3,427	$571	$2,399	$20,562	$1,714	$2,513	$55,270	$49,135
3	2018	19,198	57,594	$0	$0	$0	$9,599	$0		$1,728	$12,959	$0	$3,456	$576	$2,419	$20,734	$1,728	$2,534	$55,731	$47,640
4	2019	19,357	58,071	$0	$0	$0	$9,678	$0		$1,742	$13,066	$0	$3,484	$581	$2,439	$20,905	$1,742	$2,555	$56,193	$46,186
5	2020	19,516	58,547	$0	$0	$0	$9,758	$0		$1,756	$13,173	$0	$3,513	$585	$2,459	$21,077	$1,756	$2,576	$56,654	$44,775
6	2021	19,675	59,024	$0	$0	$0	$9,837	$0		$1,771	$13,280	$0	$3,541	$590	$2,479	$21,249	$1,771	$2,597	$57,116	$43,403
7	2022	19,834	59,501	$0	$0	$0	$9,917	$0		$1,785	$13,388	$0	$3,570	$595	$2,499	$21,420	$1,785	$2,618	$57,577	$42,071
8	2023	19,993	59,978	$0	$0	$0	$9,996	$0		$1,799	$13,495	$0	$3,599	$600	$2,519	$21,592	$1,799	$2,639	$58,039	$40,777
9	2024	20,152	60,455	$0	$0	$0	$10,076	$0		$1,814	$13,602	$0	$3,627	$605	$2,539	$21,764	$1,814	$2,660	$58,500	$39,521
10	2025	20,311	60,932	$0	$0	$0	$10,155	$0		$1,828	$13,710	$0	$3,656	$609	$2,559	$21,935	$1,828	$2,681	$58,961	$38,300
11	2026	20,469	61,408	$0	$0	$0	$10,235	$0		$1,842	$13,817	$0	$3,685	$614	$2,579	$22,107	$1,842	$2,702	$59,423	$37,115
12	2027	20,628	61,885	$0	$0	$0	$10,314	$0		$1,857	$13,924	$0	$3,713	$619	$2,599	$22,279	$1,857	$2,723	$59,884	$35,965
13	2028	20,787	62,362	$0	$0	$0	$10,394	$0		$1,871	$14,031	$0	$3,742	$624	$2,619	$22,450	$1,871	$2,744	$60,346	$34,848
14	2029	20,946	62,839	$0	$0	$0	$10,473	$0		$1,885	$14,139	$0	$3,770	$628	$2,639	$22,622	$1,885	$2,765	$60,807	$33,764
15	2030	21,105	63,316	$0	$0	$0	$10,553	$0		$1,899	$14,246	$0	$3,799	$633	$2,659	$22,794	$1,899	$2,786	$61,269	$32,712
16	2031	21,264	63,793	$0	$0	$0	$10,632	$0		$1,914	$14,353	$0	$3,828	$638	$2,679	$22,965	$1,914	$2,807	$61,730	$31,691
17	2032	21,423	64,269	$0	$0	$0	$10,712	$0		$1,928	$14,461	$0	$3,856	$643	$2,699	$23,137	$1,928	$2,828	$62,191	$30,699
18	2033	21,582	64,746	$0	$0	$0	$10,791	$0		$1,942	$14,568	$0	$3,885	$647	$2,719	$23,309	$1,942	$2,849	$62,653	$29,738
19	2034	21,741	65,223	$0	$0	$0	$10,871	$0		$1,957	$14,675	$0	$3,913	$652	$2,739	$23,480	$1,957	$2,870	$63,114	$28,805
20	2035	21,900	65,700	$0	$0	$0	$10,950	$0		$1,971	$14,783	$0	$3,942	$657	$2,759	$23,652	$1,971	$2,891	$63,576	$27,899

Source: "Evaluating Active Transport Benefits and Costs" by Todd Litman
http://vtpi.org/nmt-tdm.pdf

Discount Rate 4.0%

Present Value = Future Value (in Constant Dollars) / (1 + Real Discount Rate) ^ Year

ESTIMATED BENEFITS FROM POTENTIAL CRASH REDUCTION - CYCLING

			SIGNALIZED INTERSECTION COUNTERMEASURES				UNSIGNALIZED INTERSECTION COUNTERMEASURES				ROADWAY COUNTERMEASURES						
Year	Actual Year	ADT	Install pedestrian countdown signal heads	Install Pedestrian crossing	Install advance stop bar before crosswalk (Bicycle Box)	Install pedestrian overpass/ underpass	Install raised medians/ refuge islands	Install pedestrian crossing (new signs and markings only)	Install pedestrian crossing (with enhanced safety features/ curb extensions)	Install pedestrian signal	Install bike lanes	Install sidewalk/ pathway (to avoid walking along roadway)	Install pedestrian crossing (with enhanced safety features)	Install raised pedestrian crossing	OTHER REDUCTION FACTOR	Maximum Benefit from Single Counter-measure	Net Present Value
			25%	25%	15%	75%	45%	25%	35%	55%	35%	80%	30%	35%	10%		
			N	N	N	N	N	N	N	N	Y	N	N	N	N		
CONSTRUCTION																	
1	2015																
2	0																
3	0																
4	0																
5	0																
OPENING YEAR																	
1	2016	8,700	$0	$0	$0	$0	$0	$0	$0	$0	$18,858	$0	$0	$0	$0	$18,858	$17,435
2	2017	8,874	$0	$0	$0	$0	$0	$0	$0	$0	$19,234	$0	$0	$0	$0	$19,234	$17,099
3	2018	9,047	$0	$0	$0	$0	$0	$0	$0	$0	$19,611	$0	$0	$0	$0	$19,611	$16,764
4	2019	9,221	$0	$0	$0	$0	$0	$0	$0	$0	$19,987	$0	$0	$0	$0	$19,987	$16,428
5	2020	9,395	$0	$0	$0	$0	$0	$0	$0	$0	$20,364	$0	$0	$0	$0	$20,364	$16,094
6	2021	9,568	$0	$0	$0	$0	$0	$0	$0	$0	$20,740	$0	$0	$0	$0	$20,740	$15,761
7	2022	9,742	$0	$0	$0	$0	$0	$0	$0	$0	$21,117	$0	$0	$0	$0	$21,117	$15,430
8	2023	9,916	$0	$0	$0	$0	$0	$0	$0	$0	$21,493	$0	$0	$0	$0	$21,493	$15,101
9	2024	10,089	$0	$0	$0	$0	$0	$0	$0	$0	$21,870	$0	$0	$0	$0	$21,870	$14,774
10	2025	10,263	$0	$0	$0	$0	$0	$0	$0	$0	$22,246	$0	$0	$0	$0	$22,246	$14,451
11	2026	10,437	$0	$0	$0	$0	$0	$0	$0	$0	$22,623	$0	$0	$0	$0	$22,623	$14,130
12	2027	10,611	$0	$0	$0	$0	$0	$0	$0	$0	$22,999	$0	$0	$0	$0	$22,999	$13,813
13	2028	10,784	$0	$0	$0	$0	$0	$0	$0	$0	$23,376	$0	$0	$0	$0	$23,376	$13,499
14	2029	10,958	$0	$0	$0	$0	$0	$0	$0	$0	$23,752	$0	$0	$0	$0	$23,752	$13,189
15	2030	11,132	$0	$0	$0	$0	$0	$0	$0	$0	$24,129	$0	$0	$0	$0	$24,129	$12,882
16	2031	11,305	$0	$0	$0	$0	$0	$0	$0	$0	$24,505	$0	$0	$0	$0	$24,505	$12,580
17	2032	11,479	$0	$0	$0	$0	$0	$0	$0	$0	$24,882	$0	$0	$0	$0	$24,882	$12,282
18	2033	11,653	$0	$0	$0	$0	$0	$0	$0	$0	$25,258	$0	$0	$0	$0	$25,258	$11,989
19	2034	11,826	$0	$0	$0	$0	$0	$0	$0	$0	$25,635	$0	$0	$0	$0	$25,635	$11,699
20	2035	12,000	$0	$0	$0	$0	$0	$0	$0	$0	$26,011	$0	$0	$0	$0	$26,011	$11,415

	Fatal	Injury	Injury A	Injury B	Injury C	PDO	Total	Years
Frequency	0		0	0	6	0	6	5
Cost/Crash	$4,008,900	$80,000	$216,000	$79,000	$44,900	$7,400		
Annual Cost	$0		$0	$0	$53,880	$0	$53,880	

Discount Rate 4.0%

Source: "Local Roadway Safety, Version 1.1, April 2013" by Caltrans
http://www.dot.ca.gov/hq/LocalPrograms/HSIP/Documents/hsip/CA_SM4LROv11.pdf

ESTIMATED BENEFITS FROM POTENTIAL CRASH REDUCTION - WALKING

			SIGNALIZED INTERSECTION COUNTERMEASURES				UNSIGNALIZED INTERSECTION COUNTERMEASURES				ROADWAY COUNTERMEASURES						
Year	Actual Year	ADT	Install pedestrian countdown signal heads	Install Pedestrian crossing	Install advance stop bar before crosswalk (Bicycle Box)	Install pedestrian overpass/ underpass	Install raised medians/ refuge islands	Install pedestrian crossing (new signs and markings only)	Install pedestrian crossing (with enhanced safety features/ curb extensions)	Install pedestrian signal	Install bike lanes	Install sidewalk/ pathway (to avoid walking along roadway)	Install pedestrian crossing (with enhanced safety features)	Install raised pedestrian crossing	OTHER REDUCTION FACTOR	Maximum Benefit from Single Counter-measure	Net Present Value
			25%	25%	15%	75%	45%	25%	35%	55%	35%	80%	30%	35%	10%		
			N	N	N	N	N	N	N	N	N	Y	Y	N	N		
CONSTRUCTION																	
1	2015																
2	0																
3	0																
4	0																
5	0																
OPENING YEAR																	
1	2016	8,700	$0	$0	$0	$0	$0	$0	$0	$0	$0	$27,192	$10,197	$0	$0	$27,192	$25,141
2	2017	8,874	$0	$0	$0	$0	$0	$0	$0	$0	$0	$27,735	$10,401	$0	$0	$27,735	$24,656
3	2018	9,047	$0	$0	$0	$0	$0	$0	$0	$0	$0	$28,278	$10,604	$0	$0	$28,278	$24,172
4	2019	9,221	$0	$0	$0	$0	$0	$0	$0	$0	$0	$28,821	$10,808	$0	$0	$28,821	$23,688
5	2020	9,395	$0	$0	$0	$0	$0	$0	$0	$0	$0	$29,363	$11,011	$0	$0	$29,363	$23,206
6	2021	9,568	$0	$0	$0	$0	$0	$0	$0	$0	$0	$29,906	$11,215	$0	$0	$29,906	$22,726
7	2022	9,742	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30,449	$11,418	$0	$0	$30,449	$22,249
8	2023	9,916	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30,992	$11,622	$0	$0	$30,992	$21,775
9	2024	10,089	$0	$0	$0	$0	$0	$0	$0	$0	$0	$31,535	$11,826	$0	$0	$31,535	$21,304
10	2025	10,263	$0	$0	$0	$0	$0	$0	$0	$0	$0	$32,078	$12,029	$0	$0	$32,078	$20,837
11	2026	10,437	$0	$0	$0	$0	$0	$0	$0	$0	$0	$32,621	$12,233	$0	$0	$32,621	$20,375
12	2027	10,611	$0	$0	$0	$0	$0	$0	$0	$0	$0	$33,163	$12,436	$0	$0	$33,163	$19,917
13	2028	10,784	$0	$0	$0	$0	$0	$0	$0	$0	$0	$33,706	$12,640	$0	$0	$33,706	$19,465
14	2029	10,958	$0	$0	$0	$0	$0	$0	$0	$0	$0	$34,249	$12,843	$0	$0	$34,249	$19,017
15	2030	11,132	$0	$0	$0	$0	$0	$0	$0	$0	$0	$34,792	$13,047	$0	$0	$34,792	$18,576
16	2031	11,305	$0	$0	$0	$0	$0	$0	$0	$0	$0	$35,335	$13,251	$0	$0	$35,335	$18,140
17	2032	11,479	$0	$0	$0	$0	$0	$0	$0	$0	$0	$35,878	$13,454	$0	$0	$35,878	$17,710
18	2033	11,653	$0	$0	$0	$0	$0	$0	$0	$0	$0	$36,421	$13,658	$0	$0	$36,421	$17,287
19	2034	11,826	$0	$0	$0	$0	$0	$0	$0	$0	$0	$36,963	$13,861	$0	$0	$36,963	$16,870
20	2035	12,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$37,506	$14,065	$0	$0	$37,506	$16,459

	Fatal	Injury	Injury A	Injury B	Injury C	PDO	Total	Years
Frequency	0		1	1	1	0	3	10
Cost/Crash	$4,008,900	$80,000	$216,000	$79,000	$44,900	$7,400		
Annual Cost	$0		$21,600	$7,900	$4,490	$0	$33,990	

Discount Rate 4.0%

Source: "Local Roadway Safety, Version 1.1, April 2013" by Caltrans
http://www.dot.ca.gov/hq/LocalPrograms/HSIP/Documents/hsip/CA_SM4LROv11.pdf

Attachment 9B1: Cost Effectiveness and Calculator Tool, Total Cost

ESTIMATED COSTS FOR PROJECT

Year	Actual Year	Increased Person Miles (IPM)	Construction & OM Costs	User Costs 0.080 IPM	Combined Costs	Net Present Value
CONSTRUCTION						
1	2015		$1,645,192		$1,645,192	$1,581,915
2	0		$0		$0	$0
3	0		$0		$0	$0
4	0		$0		$0	$0
5	0		$0		$0	$0
OPENING YEAR						
1	2016	523,700	$0	$41,896	$41,896	$38,735
2	2017	534,174	$0	$42,734	$42,734	$37,990
3	2018	544,647	$0	$43,572	$43,572	$37,245
4	2019	555,121	$0	$44,410	$44,410	$36,502
5	2020	565,595	$0	$45,248	$45,248	$35,760
6	2021	576,068	$0	$46,085	$46,085	$35,021
7	2022	586,542	$0	$46,923	$46,923	$34,286
8	2023	597,016	$0	$47,761	$47,761	$33,556
9	2024	607,489	$0	$48,599	$48,599	$32,832
10	2025	617,963	$0	$49,437	$49,437	$32,113
11	2026	628,437	$0	$50,275	$50,275	$31,402
12	2027	638,911	$0	$51,113	$51,113	$30,697
13	2028	649,384	$0	$51,951	$51,951	$30,000
14	2029	659,858	$0	$52,789	$52,789	$29,312
15	2030	670,332	$0	$53,627	$53,627	$28,632
16	2031	680,805	$0	$54,464	$54,464	$27,961
17	2032	691,279	$0	$55,302	$55,302	$27,299
18	2033	701,753	$0	$56,140	$56,140	$26,647
19	2034	712,226	$0	$56,978	$56,978	$26,004
20	2035	722,700	$0	$57,816	$57,816	$25,372

Discount Rate 4.0%

Attachment 9B1: Cost Effectiveness and Calculator Tool, Total Cost

BENEFIT/COST SUMMARY

		NET PRESENT VALUE				
Year	Actual Year	ESTIMATED BENEFITS FROM ACTIVE TRANSPORTATION - CYCLING	ESTIMATED BENEFITS FROM POTENTIAL CRASH REDUCTION - CYCLING	ESTIMATED BENEFITS FROM ACTIVE TRANSPORTATION - WALKING	ESTIMATED BENEFITS FROM POTENTIAL CRASH REDUCTION - WALKING	ESTIMATED COSTS FOR PROJECT
CONSTRUCTION						
1	2015	$0	$0	$0	$0	$1,581,915
2	0	$0	$0	$0	$0	$0
3	0	$0	$0	$0	$0	$0
4	0	$0	$0	$0	$0	$0
5	0	$0	$0	$0	$0	$0
OPENING YEAR						
1	2016	$1,260,347	$17,435	$50,674	$25,141	$38,735
2	2017	$1,236,109	$17,099	$49,135	$24,656	$37,990
3	2018	$1,211,871	$16,764	$47,640	$24,172	$37,245
4	2019	$1,187,668	$16,428	$46,186	$23,688	$36,502
5	2020	$1,163,535	$16,094	$44,775	$23,206	$35,760
6	2021	$1,139,501	$15,761	$43,403	$22,726	$35,021
7	2022	$1,115,595	$15,430	$42,071	$22,249	$34,286
8	2023	$1,091,842	$15,101	$40,777	$21,775	$33,556
9	2024	$1,068,266	$14,774	$39,521	$21,304	$32,832
10	2025	$1,044,889	$14,451	$38,300	$20,837	$32,113
11	2026	$1,021,729	$14,130	$37,115	$20,375	$31,402
12	2027	$998,805	$13,813	$35,965	$19,917	$30,697
13	2028	$976,133	$13,499	$34,848	$19,465	$30,000
14	2029	$953,728	$13,189	$33,764	$19,017	$29,312
15	2030	$931,602	$12,882	$32,712	$18,576	$28,632
16	2031	$909,767	$12,580	$31,691	$18,140	$27,961
17	2032	$888,234	$12,282	$30,699	$17,710	$27,299
18	2033	$867,011	$11,989	$29,738	$17,287	$26,647
19	2034	$846,107	$11,699	$28,805	$16,870	$26,004
20	2035	$825,529	$11,415	$27,899	$16,459	$25,372
TOTAL		$20,738,269	$286,815	$765,717	$413,569	$2,219,281

B/C RATIO			**10.01**

Attachment 9B1: Cost Effectiveness and Calculator Tool, Total Cost

Active Tranportation – Benefits and Costs

Impact Category	Urban Peak	Urban Off-Peak	Rural	Overall Average	Comments
BENEFITS					
Improved Active Travel Conditions - Table 16 Improving Walking and Cycling Conditions (Per Person Mile)					
User benefits	$0.250	$0.250	$0.250	$0.250	The greater the improvement, the greater this value.
Option value	$0.035	$0.035	$0.035	$0.035	Half of diversity value*.
Equity objectives	$0.035	$0.035	$0.035	$0.035	Half of diversity value*. Higher if a project significantly benefits disadvantaged people.
Increased Active Travel Activity - Table 17 Improving Walking and Cycling Conditions (Per Person Mile)					
Fitness and health – walking	$0.500	$0.500	$0.500	$0.500	Benefits are larger if pedestrian facilities attract at-risk users.
Fitness and health – cycling	$0.200	$0.200	$0.200	$0.200	Benefits are larger if cycling facilities attract at-risk users.
Reduced Automobile Travel - Table 18 Typical Values – Reduced Motor Vehicle Travel (Per Reduced Vehicle Mile)					
Vehicle cost savings	$0.250	$0.225	$0.200	$0.225	This reflects vehicle operating cost savings. Larger savings result if some households can reduce vehicle ownership costs.
Avoided chauffeuring driver's time	$0.700	$0.600	$0.500	$0.580	Based on $9.00 per hour driver's time value.
Congestion reduction	$0.200	$0.050	$0.010	$0.060	
Reduced barrier effect	$0.010	$0.010	$0.010	$0.010	
Roadway cost savings	$0.050	$0.050	$0.030	$0.042	
Parking cost savings	$0.600	$0.400	$0.200	$0.360	Parking costs are particularly high for commuting and lower for errands which require less parking per trip.
Energy conservation	$0.030	$0.030	$0.030	$0.030	
Pollution reductions	$0.100	$0.050	$0.010	$0.044	
Land Use Impacts - Table 19 More Walkable and Bikeable Community (Measure Unknown)					
Reduced pavement	$0.010	$0.005	$0.001	$0.002	Specific studies should be used when possible.
Increased accessibility	$0.080	$0.060	$0.030	$0.051	Specific studies should be used when possible.
COSTS					
Active Transport Costs - Table 20 Typical Values – Walking and Cycling Costs (Per Person Mile)					
Facilities and programs					Highly variable.
Vehicle traffic impacts					Highly variable.
Equipment	$0.080	$0.070	$0.060		Depends on assumption, such as whether food consumption is a benefit or cost.
Travel time					Highly variable depending on conditions and user preferences.
Accident risk					

* The "Transport Diversity Value" chapter of *Transportation Cost and Benefit Analysis* (Litman 2009) estimates that improvements in affordable alternative modes can be

Source: "Evaluating Active Transport Benefits and Costs" by Todd Litman http://vtpi.org/nmt-tdm.pdf

Attachment 9B1: Cost Effectiveness and Calculator Tool, Total Cost

Countermeasures to Improve Bicycle and Pedestrian Safety

	Project Type	Countermeasure	Opportunity to Implement using a Systematic Approach	General Values for Agency's Internal Use		Values for Caltrans Statewide Programs		
				Primary Crash Types	Range of Crash Reduction Factors	Crash Type	CRF	Service Life
INTERSECTION COUNTERMEASURES								
SIGNALIZED								
S19	Ped and Bike	Install pedestrian countdown signal heads	Very High	Pedestrian, Bicycle	25%	P & B	25	20
S20	Ped and Bike	Install Pedestrian crossing (S.I.)	High	Pedestrian, Bicycle	25%	P & B	25	20
S21	Ped and Bike	Install advance stop bar before crosswalk (Bicycle Box)	Very High	Pedestrian, Bicycle	35%	P & B	15	10
S22	Ped and Bike	Install pedestrian overpass/underpass	Low	Pedestrian, Bicycle	5-100%	P & B	75	20
NON-SIGNALIZED								
NS16	Ped and Bike	Install raised medians/refuge islands (NS.I)	Medium	Pedestrian, Bicycle	30-56%	P & B	45	20
NS17	Ped and Bike	Install pedestrian crossing (new signs and markings only)	High	Pedestrian, Bicycle	0.25	P & B	25	10
NS18	Ped and Bike	Install pedestrian crossing (with enhanced safety features/curb extensions)	Medium	Pedestrian, Bicycle	37%	P & B	35	20
NS19	Ped and Bike	Install pedestrian signal	Low	Pedestrian, Bicycle	15-69%	P & B	55	20
ROADWAY COUNTERMEASURES								
R36	Ped and Bike	Install bike lanes	High	Pedestrian, Bicycle	0-53%	P & B	35	20
R37	Ped and Bike	Install sidewalk/pathway (to avoid walking along roadway)	Medium	Pedestrian, Bicycle	65-89%	P & B	80	20
R38	Ped and Bike	Install pedestrian crossing (with enhanced safety features)	Medium	Pedestrian, Bicycle	8-56%	P & B	30	10
R 39	Ped and Bike	Install raised pedestrian crossing	Medium	Pedestrian, Bicycle	30-46%	P & B	35	10

Source: "Local Roadway Safety, Version 1.1, April 2013" by Caltrans http://www.dot.ca.gov/hq/LocalPrograms/HSIP/Documents/hsip/CA_SM4LROv11.pdf

Attachment 9B2
Cost Effectiveness and Calculator Tool, ATP Cost

Attachment 9B2: Cost Effectiveness and Calculator Tool, ATP Cost

PROJECT DESCRIPTION

Please note that only yellow cells should be modified

Name of Project	Duarte Gold Line Station Pedestrian and Bicycle Improvements
Project Location	Duarte, California
Type of Project	Cycling — *Enter Walking (for Sidewalks or Multi-Use Path) or Cycling*
Current Year	2014

TRAVEL CHARACTERISTICS

	No Build	Build			Annual Person Miles No Build	Annual Person Miles Build	Increased Person Miles	Reduced Vehicle Miles
Existing Demand (Daily Person Trips)	44	264	*Year*	2012	96,360	578,160	481,800	1,445,400
Forecast Demand (Daily Person Trips)	66	396	*Year*	2035	144,540	867,240	722,700	2,168,100
Length (miles)	6					IPM:RVM ratio	1	3

PED/BIKE CRASH HISTORY

Crash Severity	Number of B/P Crashes
Fatal Crashes	
Injury Crashes (Total)	6
Injury Type A (severe)	
Injury Type B (moderate)	
Injury C (minor)	6
Property Damage Only (PDO)	
Total	6

Can be left blank if unknown

Crash Analysis Period (Minimum 5 years) 5

Existing Year Vehicular ADT	
ADT	8,000
Year	2011

Forcast Year Vehicular ADT	
ADT	12,000
Year	2035

Crash Countermeasures (Safety Improvements)		Project Includes?
pedestrian countdown signal heads	*Signalized Intersection*	N
pedestrian crossing	*Signalized Intersection*	N
advance stop bar before crosswalk (bicycle box)	*Signalized Intersection*	N
pedestrian overpass/ underpass	*Signalized Intersection*	N
raised medians/ refuge islands	*Unsignalized Intersection*	N
pedestrian crossing (new signs and markings only)	*Unsignalized Intersection*	N
pedestrian crossing (enhanced safety features/ curb extensions)	*Unsignalized Intersection*	N
pedestrian signal	*Unsignalized Intersection*	N
bike lanes	*Roadway*	Y
sidewalk/ pathway (to avoid walking along roadway)	*Roadway*	N
pedestrian crossing (with enhanced safety features)	*Roadway*	N
raised pedestrian crossing	*Roadway*	N
OTHER REDUCTION FACTOR (MANUAL ENTRY)	10%	N

PROJECT COSTS

Capital Investment	$1,303,740.00	*Estimated Year Construction Begins*	2015	*Discount Rate Used to calculate Net Present Value*	4.0%
Annual Operations/ Maintenance Costs	$0.00	*Estimated Opening Year*	2016		

Attachment 9B2: Cost Effectiveness and Calculator Tool, ATP Cost

PROJECT DESCRIPTION

Please note that only yellow cells should be modified

Name of Project	Multi-Use Path
Project Location	Somewhere
Type of Project	Walking — *Enter Walking (for Sidewalks or Multi-Use Path) or Cycling*
Current Year	2014

TRAVEL CHARACTERISTICS

	No Build	Build			Annual Person Miles No Build	Annual Person Miles Build	Increased Person Miles	Reduced Vehicle Miles
Existing Demand (Daily Person Trips)	410	510	*Year*	2012	74,825	93,075	18,250	54,750
Forecast Demand (Daily Person Trips)	610	730	*Year*	2035	111,325	133,225	21,900	65,700
Length (miles)	0.5					IPM:RVM ratio	1	3

PED/BIKE CRASH HISTORY

Crash Severity	Number of B/P Crashes
Fatal Crashes	0
Injury Crashes (Total)	3
Injury Type A (severe)	1
Injury Type B (moderate)	1
Injury C (minor)	1
Property Damage Only (PDO)	
Total	3

Can be left blank if unknown

Crash Analysis Period (Minimum 5 years) 10

Existing Year Vehicular ADT

ADT	4,000
Year	2010

Forcast Year Vehicular ADT

ADT	5,000
Year	2035

Crash Countermeasures (Safety Improvements)		Project Includes?
pedestrian countdown signal heads	*Signalized Intersection*	N
pedestrian crossing	*Signalized Intersection*	N
advance stop bar before crosswalk (bicycle box)	*Signalized Intersection*	N
pedestrian overpass/ underpass	*Signalized Intersection*	N
raised medians/ refuge islands	*Unsignalized Intersection*	N
pedestrian crossing (new signs and markings only)	*Unsignalized Intersection*	N
pedestrian crossing (enhanced safety features/ curb extensions)	*Unsignalized Intersection*	N
pedestrian signal	*Unsignalized Intersection*	N
bike lanes	*Roadway*	N
sidewalk/ pathway (to avoid walking along roadway)	*Roadway*	Y
pedestrian crossing (with enhanced safety features)	*Roadway*	Y
raised pedestrian crossing	*Roadway*	N
OTHER REDUCTION FACTOR (MANUAL ENTRY)	10%	N

PROJECT COSTS

Cost should be the same as those for the bike entry form

Capital Investment	$1,303,740.00	*Estimated Year Construction Begins*	2015	*Discount Rate Used to calculate Net Present Value*	4.0%
Annual Operations/ Maintenance Costs	$0.00	*Estimated Opening Year*	2016		

ESTIMATED BENEFITS FROM ACTIVE TRANSPORTATION - CYCLING

				Improved Active Travel Conditions			Increased Active Travel Activity		Land Use Impacts		Reduced Automobile Travel									
Year	Actual Year	Increased Person Miles (IPM)	Reduced Vehicle Miles (RVM)	User benefits	Option value	Equity objectives	Fitness and health – walking	Fitness and health – cycling	Reduced pavement	Increased accessibility	Vehicle cost savings	Avoided chauffeuring driver's time	Congestion reduction	Reduced barrier effect	Roadway cost savings	Parking cost savings	Energy conservation	Pollution reductions	Combined Benefits	Net Present Value
				0.000	0.000	0.000	0.500	0.200	0.002	0.000	0.225	0.000	0.060	0.010	0.042	0.360	0.030	0.044		
				IPM	IPM	IPM		IPM		IPM	RVM	RVM	RVM	RVM	RVM	RVM	RVM	RVM		
CONSTRUCTION																				
1	2015																			
2	0																			
3	0																			
4	0																			
5	0																			
OPENING YEAR																				
1	2016	523,700	1,571,100	$0	$0	$0	$0	$104,740		$47,133	$353,498	$0	$94,266	$15,711	$65,986	$565,596	$47,133	$69,128	$1,363,191	$1,260,347
2	2017	534,174	1,602,521	$0	$0	$0	$0	$106,835		$48,076	$360,567	$0	$96,151	$16,025	$67,306	$576,908	$48,076	$70,511	$1,390,454	$1,236,109
3	2018	544,647	1,633,942	$0	$0	$0	$0	$108,929		$49,018	$367,637	$0	$98,037	$16,339	$68,626	$588,219	$49,018	$71,893	$1,417,717	$1,211,871
4	2019	555,121	1,665,363	$0	$0	$0	$0	$111,024		$49,961	$374,707	$0	$99,922	$16,654	$69,945	$599,531	$49,961	$73,276	$1,444,980	$1,187,668
5	2020	565,595	1,696,784	$0	$0	$0	$0	$113,119		$50,904	$381,776	$0	$101,807	$16,968	$71,265	$610,842	$50,904	$74,659	$1,472,243	$1,163,535
6	2021	576,068	1,728,205	$0	$0	$0	$0	$115,214		$51,846	$388,846	$0	$103,692	$17,282	$72,585	$622,154	$51,846	$76,041	$1,499,506	$1,139,501
7	2022	586,542	1,759,626	$0	$0	$0	$0	$117,308		$52,789	$395,916	$0	$105,578	$17,596	$73,904	$633,465	$52,789	$77,424	$1,526,769	$1,115,595
8	2023	597,016	1,791,047	$0	$0	$0	$0	$119,403		$53,731	$402,986	$0	$107,463	$17,910	$75,224	$644,777	$53,731	$78,806	$1,554,032	$1,091,842
9	2024	607,489	1,822,468	$0	$0	$0	$0	$121,498		$54,674	$410,055	$0	$109,348	$18,225	$76,544	$656,089	$54,674	$80,189	$1,581,295	$1,068,266
10	2025	617,963	1,853,889	$0	$0	$0	$0	$123,593		$55,617	$417,125	$0	$111,233	$18,539	$77,863	$667,400	$55,617	$81,571	$1,608,558	$1,044,889
11	2026	628,437	1,885,311	$0	$0	$0	$0	$125,687		$56,559	$424,195	$0	$113,119	$18,853	$79,183	$678,712	$56,559	$82,954	$1,635,821	$1,021,729
12	2027	638,911	1,916,732	$0	$0	$0	$0	$127,782		$57,502	$431,265	$0	$115,004	$19,167	$80,503	$690,023	$57,502	$84,336	$1,663,084	$998,805
13	2028	649,384	1,948,153	$0	$0	$0	$0	$129,877		$58,445	$438,334	$0	$116,889	$19,482	$81,822	$701,335	$58,445	$85,719	$1,690,347	$976,133
14	2029	659,858	1,979,574	$0	$0	$0	$0	$131,972		$59,387	$445,404	$0	$118,774	$19,796	$83,142	$712,647	$59,387	$87,101	$1,717,610	$953,728
15	2030	670,332	2,010,995	$0	$0	$0	$0	$134,066		$60,330	$452,474	$0	$120,660	$20,110	$84,462	$723,958	$60,330	$88,484	$1,744,873	$931,602
16	2031	680,805	2,042,416	$0	$0	$0	$0	$136,161		$61,272	$459,544	$0	$122,545	$20,424	$85,781	$735,270	$61,272	$89,866	$1,772,136	$909,767
17	2032	691,279	2,073,837	$0	$0	$0	$0	$138,256		$62,215	$466,613	$0	$124,430	$20,738	$87,101	$746,581	$62,215	$91,249	$1,799,399	$888,234
18	2033	701,753	2,105,258	$0	$0	$0	$0	$140,351		$63,158	$473,683	$0	$126,315	$21,053	$88,421	$757,893	$63,158	$92,631	$1,826,662	$867,011
19	2034	712,226	2,136,679	$0	$0	$0	$0	$142,445		$64,100	$480,753	$0	$128,201	$21,367	$89,741	$769,204	$64,100	$94,014	$1,853,925	$846,107
20	2035	722,700	2,168,100	$0	$0	$0	$0	$144,540		$65,043	$487,823	$0	$130,086	$21,681	$91,060	$780,516	$65,043	$95,396	$1,881,188	$825,529

Source: "Evaluating Active Transport Benefits and Costs" by Todd Litman
http://vtpi.org/nmt-tdm.pdf

Discount Rate 4.0%

Present Value = Future Value (in Constant Dollars) / (1 + Real Discount Rate) ^ Year

ESTIMATED BENEFITS FROM ACTIVE TRANSPORTATION - WALKING

				Improved Active Travel Conditions			Increased Active Travel Activity		Land Use Impacts		Reduced Automobile Travel									
Year	Actual Year	Increased Person Miles (IPM)	Reduced Vehicle Miles (RVM)	User benefits	Option value	Equity objectives	Fitness and health – walking	Fitness and health – cycling	Reduced pavement	Increased accessibility	Vehicle cost savings	Avoided chauffeuring driver's time	Congestion reduction	Reduced barrier effect	Roadway cost savings	Parking cost savings	Energy conservation	Pollution reductions	Combined Benefits	Net Present Value
				0.000	0.000	0.000	0.500	0.200	0.002	0.000	0.225	0.000	0.060	0.010	0.042	0.360	0.030	0.044		
				IPM	IPM	IPM	IPM			IPM	RVM	RVM	RVM	RVM	RVM	RVM	RVM	RVM		
CONSTRUCTION																				
1	2015																			
2	0																			
3	0																			
4	0																			
5	0																			
OPENING YEAR																				
1	2016	18,880	56,640	$0	$0	$0	$9,440	$0		$1,699	$12,744	$0	$3,398	$566	$2,379	$20,390	$1,699	$2,492	$54,809	$50,674
2	2017	19,039	57,117	$0	$0	$0	$9,519	$0		$1,714	$12,851	$0	$3,427	$571	$2,399	$20,562	$1,714	$2,513	$55,270	$49,135
3	2018	19,198	57,594	$0	$0	$0	$9,599	$0		$1,728	$12,959	$0	$3,456	$576	$2,419	$20,734	$1,728	$2,534	$55,731	$47,640
4	2019	19,357	58,071	$0	$0	$0	$9,678	$0		$1,742	$13,066	$0	$3,484	$581	$2,439	$20,905	$1,742	$2,555	$56,193	$46,186
5	2020	19,516	58,547	$0	$0	$0	$9,758	$0		$1,756	$13,173	$0	$3,513	$585	$2,459	$21,077	$1,756	$2,576	$56,654	$44,775
6	2021	19,675	59,024	$0	$0	$0	$9,837	$0		$1,771	$13,280	$0	$3,541	$590	$2,479	$21,249	$1,771	$2,597	$57,116	$43,403
7	2022	19,834	59,501	$0	$0	$0	$9,917	$0		$1,785	$13,388	$0	$3,570	$595	$2,499	$21,420	$1,785	$2,618	$57,577	$42,071
8	2023	19,993	59,978	$0	$0	$0	$9,996	$0		$1,799	$13,495	$0	$3,599	$600	$2,519	$21,592	$1,799	$2,639	$58,039	$40,777
9	2024	20,152	60,455	$0	$0	$0	$10,076	$0		$1,814	$13,602	$0	$3,627	$605	$2,539	$21,764	$1,814	$2,660	$58,500	$39,521
10	2025	20,311	60,932	$0	$0	$0	$10,155	$0		$1,828	$13,710	$0	$3,656	$609	$2,559	$21,935	$1,828	$2,681	$58,961	$38,300
11	2026	20,469	61,408	$0	$0	$0	$10,235	$0		$1,842	$13,817	$0	$3,685	$614	$2,579	$22,107	$1,842	$2,702	$59,423	$37,115
12	2027	20,628	61,885	$0	$0	$0	$10,314	$0		$1,857	$13,924	$0	$3,713	$619	$2,599	$22,279	$1,857	$2,723	$59,884	$35,965
13	2028	20,787	62,362	$0	$0	$0	$10,394	$0		$1,871	$14,031	$0	$3,742	$624	$2,619	$22,450	$1,871	$2,744	$60,346	$34,848
14	2029	20,946	62,839	$0	$0	$0	$10,473	$0		$1,885	$14,139	$0	$3,770	$628	$2,639	$22,622	$1,885	$2,765	$60,807	$33,764
15	2030	21,105	63,316	$0	$0	$0	$10,553	$0		$1,899	$14,246	$0	$3,799	$633	$2,659	$22,794	$1,899	$2,786	$61,269	$32,712
16	2031	21,264	63,793	$0	$0	$0	$10,632	$0		$1,914	$14,353	$0	$3,828	$638	$2,679	$22,965	$1,914	$2,807	$61,730	$31,691
17	2032	21,423	64,269	$0	$0	$0	$10,712	$0		$1,928	$14,461	$0	$3,856	$643	$2,699	$23,137	$1,928	$2,828	$62,191	$30,699
18	2033	21,582	64,746	$0	$0	$0	$10,791	$0		$1,942	$14,568	$0	$3,885	$647	$2,719	$23,309	$1,942	$2,849	$62,653	$29,738
19	2034	21,741	65,223	$0	$0	$0	$10,871	$0		$1,957	$14,675	$0	$3,913	$652	$2,739	$23,480	$1,957	$2,870	$63,114	$28,805
20	2035	21,900	65,700	$0	$0	$0	$10,950	$0		$1,971	$14,783	$0	$3,942	$657	$2,759	$23,652	$1,971	$2,891	$63,576	$27,899

Source: "Evaluating Active Transport Benefits and Costs" by Todd Litman
http://vtpi.org/nmt-tdm.pdf

Discount Rate 4.0%

Present Value = Future Value (in Constant Dollars) / (1 + Real Discount Rate) ^ Year

ESTIMATED BENEFITS FROM POTENTIAL CRASH REDUCTION - CYCLING

			SIGNALIZED INTERSECTION COUNTERMEASURES				UNSIGNALIZED INTERSECTION COUNTERMEASURES				ROADWAY COUNTERMEASURES						
Year	Actual Year	ADT	Install pedestrian countdown signal heads	Install Pedestrian crossing	Install advance stop bar before crosswalk (Bicycle Box)	Install pedestrian overpass/ underpass	Install raised medians/ refuge islands	Install pedestrian crossing (new signs and markings only)	Install pedestrian crossing (with enhanced safety features/ curb extensions)	Install pedestrian signal	Install bike lanes	Install sidewalk/ pathway (to avoid walking along roadway)	Install pedestrian crossing (with enhanced safety features)	Install raised pedestrian crossing	OTHER REDUCTION FACTOR	Maximum Benefit from Single Counter-measure	Net Present Value
			25%	25%	15%	75%	45%	25%	35%	55%	35%	80%	30%	35%	10%		
			N	N	N	N	N	N	N	N	Y	N	N	N	N		
CONSTRUCTION																	
1	2015																
2	0																
3	0																
4	0																
5	0																
OPENING YEAR																	
1	2016	8,830	$0	$0	$0	$0	$0	$0	$0	$0	$18,858	$0	$0	$0	$0	$18,858	$17,435
2	2017	8,997	$0	$0	$0	$0	$0	$0	$0	$0	$19,214	$0	$0	$0	$0	$19,214	$17,081
3	2018	9,164	$0	$0	$0	$0	$0	$0	$0	$0	$19,571	$0	$0	$0	$0	$19,571	$16,729
4	2019	9,331	$0	$0	$0	$0	$0	$0	$0	$0	$19,927	$0	$0	$0	$0	$19,927	$16,379
5	2020	9,497	$0	$0	$0	$0	$0	$0	$0	$0	$20,283	$0	$0	$0	$0	$20,283	$16,030
6	2021	9,664	$0	$0	$0	$0	$0	$0	$0	$0	$20,640	$0	$0	$0	$0	$20,640	$15,684
7	2022	9,831	$0	$0	$0	$0	$0	$0	$0	$0	$20,996	$0	$0	$0	$0	$20,996	$15,342
8	2023	9,998	$0	$0	$0	$0	$0	$0	$0	$0	$21,352	$0	$0	$0	$0	$21,352	$15,002
9	2024	10,165	$0	$0	$0	$0	$0	$0	$0	$0	$21,709	$0	$0	$0	$0	$21,709	$14,666
10	2025	10,332	$0	$0	$0	$0	$0	$0	$0	$0	$22,065	$0	$0	$0	$0	$22,065	$14,333
11	2026	10,498	$0	$0	$0	$0	$0	$0	$0	$0	$22,421	$0	$0	$0	$0	$22,421	$14,004
12	2027	10,665	$0	$0	$0	$0	$0	$0	$0	$0	$22,778	$0	$0	$0	$0	$22,778	$13,680
13	2028	10,832	$0	$0	$0	$0	$0	$0	$0	$0	$23,134	$0	$0	$0	$0	$23,134	$13,359
14	2029	10,999	$0	$0	$0	$0	$0	$0	$0	$0	$23,490	$0	$0	$0	$0	$23,490	$13,043
15	2030	11,166	$0	$0	$0	$0	$0	$0	$0	$0	$23,846	$0	$0	$0	$0	$23,846	$12,732
16	2031	11,333	$0	$0	$0	$0	$0	$0	$0	$0	$24,203	$0	$0	$0	$0	$24,203	$12,425
17	2032	11,499	$0	$0	$0	$0	$0	$0	$0	$0	$24,559	$0	$0	$0	$0	$24,559	$12,123
18	2033	11,666	$0	$0	$0	$0	$0	$0	$0	$0	$24,915	$0	$0	$0	$0	$24,915	$11,826
19	2034	11,833	$0	$0	$0	$0	$0	$0	$0	$0	$25,272	$0	$0	$0	$0	$25,272	$11,534
20	2035	12,000	$0	$0	$0	$0	$0	$0	$0	$0	$25,628	$0	$0	$0	$0	$25,628	$11,246

	Fatal	Injury	Injury A	Injury B	Injury C	PDO	Total	Years
Frequency	0		0	0	6	0	6	5
Cost/Crash	$4,008,900	$80,000	$216,000	$79,000	$44,900	$7,400		
Annual Cost	$0		$0	$0	$53,880	$0	$53,880	

Discount Rate 4.0%

Source: "Local Roadway Safety, Version 1.1, April 2013" by Caltrans
http://www.dot.ca.gov/hq/LocalPrograms/HSIP/Documents/hsip/CA_SM4LROv11.pdf

ESTIMATED BENEFITS FROM POTENTIAL CRASH REDUCTION - WALKING

			SIGNALIZED INTERSECTION COUNTERMEASURES				UNSIGNALIZED INTERSECTION COUNTERMEASURES				ROADWAY COUNTERMEASURES						
Year	Actual Year	ADT	Install pedestrian countdown signal heads	Install Pedestrian crossing	Install advance stop bar before crosswalk (Bicycle Box)	Install pedestrian overpass/ underpass	Install raised medians/ refuge islands	Install pedestrian crossing (new signs and markings only)	Install pedestrian crossing (with enhanced safety features/ curb extensions)	Install pedestrian signal	Install bike lanes	Install sidewalk/ pathway (to avoid walking along roadway)	Install pedestrian crossing (with enhanced safety features)	Install raised pedestrian crossing	OTHER REDUCTION FACTOR	Maximum Benefit from Single Counter-measure	Net Present Value
			25%	25%	15%	75%	45%	25%	35%	55%	35%	80%	30%	35%	10%		
			N	N	N	N	N	N	N	N	N	Y	Y	N	N		
CONSTRUCTION																	
1	2015																
2	0																
3	0																
4	0																
5	0																
OPENING YEAR																	
1	2016	4,240	$0	$0	$0	$0	$0	$0	$0	$0	$0	$27,192	$10,197	$0	$0	$27,192	$25,141
2	2017	4,280	$0	$0	$0	$0	$0	$0	$0	$0	$0	$27,449	$10,293	$0	$0	$27,449	$24,402
3	2018	4,320	$0	$0	$0	$0	$0	$0	$0	$0	$0	$27,705	$10,389	$0	$0	$27,705	$23,682
4	2019	4,360	$0	$0	$0	$0	$0	$0	$0	$0	$0	$27,962	$10,486	$0	$0	$27,962	$22,982
5	2020	4,400	$0	$0	$0	$0	$0	$0	$0	$0	$0	$28,218	$10,582	$0	$0	$28,218	$22,301
6	2021	4,440	$0	$0	$0	$0	$0	$0	$0	$0	$0	$28,475	$10,678	$0	$0	$28,475	$21,638
7	2022	4,480	$0	$0	$0	$0	$0	$0	$0	$0	$0	$28,731	$10,774	$0	$0	$28,731	$20,994
8	2023	4,520	$0	$0	$0	$0	$0	$0	$0	$0	$0	$28,988	$10,870	$0	$0	$28,988	$20,366
9	2024	4,560	$0	$0	$0	$0	$0	$0	$0	$0	$0	$29,244	$10,967	$0	$0	$29,244	$19,756
10	2025	4,600	$0	$0	$0	$0	$0	$0	$0	$0	$0	$29,501	$11,063	$0	$0	$29,501	$19,163
11	2026	4,640	$0	$0	$0	$0	$0	$0	$0	$0	$0	$29,757	$11,159	$0	$0	$29,757	$18,586
12	2027	4,680	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30,014	$11,255	$0	$0	$30,014	$18,026
13	2028	4,720	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30,270	$11,351	$0	$0	$30,270	$17,480
14	2029	4,760	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30,527	$11,448	$0	$0	$30,527	$16,950
15	2030	4,800	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30,783	$11,544	$0	$0	$30,783	$16,436
16	2031	4,840	$0	$0	$0	$0	$0	$0	$0	$0	$0	$31,040	$11,640	$0	$0	$31,040	$15,935
17	2032	4,880	$0	$0	$0	$0	$0	$0	$0	$0	$0	$31,296	$11,736	$0	$0	$31,296	$15,449
18	2033	4,920	$0	$0	$0	$0	$0	$0	$0	$0	$0	$31,553	$11,832	$0	$0	$31,553	$14,976
19	2034	4,960	$0	$0	$0	$0	$0	$0	$0	$0	$0	$31,810	$11,929	$0	$0	$31,810	$14,517
20	2035	5,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$32,066	$12,025	$0	$0	$32,066	$14,072

	Fatal	Injury	Injury A	Injury B	Injury C	PDO	Total	Years
Frequency	0		1	1	1	0	3	10
Cost/Crash	$4,008,900	$80,000	$216,000	$79,000	$44,900	$7,400		
Annual Cost	$0		$21,600	$7,900	$4,490	$0	$33,990	

Discount Rate 4.0%

Source: "Local Roadway Safety, Version 1.1, April 2013" by Caltrans
http://www.dot.ca.gov/hq/LocalPrograms/HSIP/Documents/hsip/CA_SM4LROv11.pdf

ESTIMATED COSTS FOR PROJECT

Year	Actual Year	Increased Person Miles (IPM)	Construction & OM Costs	User Costs 0.080 IPM	Combined Costs	Net Present Value
CONSTRUCTION						
1	2015		$1,303,740		$1,303,740	$1,253,596
2	0		$0		$0	$0
3	0		$0		$0	$0
4	0		$0		$0	$0
5	0		$0		$0	$0
OPENING YEAR						
1	2016	523,700	$0	$41,896	$41,896	$38,735
2	2017	534,174	$0	$42,734	$42,734	$37,990
3	2018	544,647	$0	$43,572	$43,572	$37,245
4	2019	555,121	$0	$44,410	$44,410	$36,502
5	2020	565,595	$0	$45,248	$45,248	$35,760
6	2021	576,068	$0	$46,085	$46,085	$35,021
7	2022	586,542	$0	$46,923	$46,923	$34,286
8	2023	597,016	$0	$47,761	$47,761	$33,556
9	2024	607,489	$0	$48,599	$48,599	$32,832
10	2025	617,963	$0	$49,437	$49,437	$32,113
11	2026	628,437	$0	$50,275	$50,275	$31,402
12	2027	638,911	$0	$51,113	$51,113	$30,697
13	2028	649,384	$0	$51,951	$51,951	$30,000
14	2029	659,858	$0	$52,789	$52,789	$29,312
15	2030	670,332	$0	$53,627	$53,627	$28,632
16	2031	680,805	$0	$54,464	$54,464	$27,961
17	2032	691,279	$0	$55,302	$55,302	$27,299
18	2033	701,753	$0	$56,140	$56,140	$26,647
19	2034	712,226	$0	$56,978	$56,978	$26,004
20	2035	722,700	$0	$57,816	$57,816	$25,372

Discount Rate 4.0%

BENEFIT/COST SUMMARY

		NET PRESENT VALUE				
Year	Actual Year	ESTIMATED BENEFITS FROM ACTIVE TRANSPORTATION - CYCLING	ESTIMATED BENEFITS FROM POTENTIAL CRASH REDUCTION - CYCLING	ESTIMATED BENEFITS FROM ACTIVE TRANSPORTATION - WALKING	ESTIMATED BENEFITS FROM POTENTIAL CRASH REDUCTION - WALKING	ESTIMATED COSTS FOR PROJECT
CONSTRUCTION						
1	2015	$0	$0	$0	$0	$1,253,596
2	0	$0	$0	$0	$0	$0
3	0	$0	$0	$0	$0	$0
4	0	$0	$0	$0	$0	$0
5	0	$0	$0	$0	$0	$0
OPENING YEAR						
1	2016	$1,260,347	$17,435	$50,674	$25,141	$38,735
2	2017	$1,236,109	$17,081	$49,135	$24,402	$37,990
3	2018	$1,211,871	$16,729	$47,640	$23,682	$37,245
4	2019	$1,187,668	$16,379	$46,186	$22,982	$36,502
5	2020	$1,163,535	$16,030	$44,775	$22,301	$35,760
6	2021	$1,139,501	$15,684	$43,403	$21,638	$35,021
7	2022	$1,115,595	$15,342	$42,071	$20,994	$34,286
8	2023	$1,091,842	$15,002	$40,777	$20,366	$33,556
9	2024	$1,068,266	$14,666	$39,521	$19,756	$32,832
10	2025	$1,044,889	$14,333	$38,300	$19,163	$32,113
11	2026	$1,021,729	$14,004	$37,115	$18,586	$31,402
12	2027	$998,805	$13,680	$35,965	$18,026	$30,697
13	2028	$976,133	$13,359	$34,848	$17,480	$30,000
14	2029	$953,728	$13,043	$33,764	$16,950	$29,312
15	2030	$931,602	$12,732	$32,712	$16,436	$28,632
16	2031	$909,767	$12,425	$31,691	$15,935	$27,961
17	2032	$888,234	$12,123	$30,699	$15,449	$27,299
18	2033	$867,011	$11,826	$29,738	$14,976	$26,647
19	2034	$846,107	$11,534	$28,805	$14,517	$26,004
20	2035	$825,529	$11,246	$27,899	$14,072	$25,372
TOTAL		$20,738,269	$284,653	$765,717	$382,854	$1,890,961

B/C RATIO			**11.72**

Active Tranportation – Benefits and Costs

Impact Category	Urban Peak	Urban Off-Peak	Rural	Overall Average	Comments
BENEFITS					
Improved Active Travel Conditions - Table 16 Improving Walking and Cycling Conditions (Per Person Mile)					
User benefits	$0.250	$0.250	$0.250	$0.250	The greater the improvement, the greater this value.
Option value	$0.035	$0.035	$0.035	$0.035	Half of diversity value*.
Equity objectives	$0.035	$0.035	$0.035	$0.035	Half of diversity value*. Higher if a project significantly benefits disadvantaged people.
Increased Active Travel Activity - Table 17 Improving Walking and Cycling Conditions (Per Person Mile)					
Fitness and health – walking	$0.500	$0.500	$0.500	$0.500	Benefits are larger if pedestrian facilities attract at-risk users.
Fitness and health – cycling	$0.200	$0.200	$0.200	$0.200	Benefits are larger if cycling facilities attract at-risk users.
Reduced Automobile Travel - Table 18 Typical Values – Reduced Motor Vehicle Travel (Per Reduced Vehicle Mile)					
Vehicle cost savings	$0.250	$0.225	$0.200	$0.225	This reflects vehicle operating cost savings. Larger savings result if some households can reduce vehicle ownership costs.
Avoided chauffeuring driver's time	$0.700	$0.600	$0.500	$0.580	Based on $9.00 per hour driver's time value.
Congestion reduction	$0.200	$0.050	$0.010	$0.060	
Reduced barrier effect	$0.010	$0.010	$0.010	$0.010	
Roadway cost savings	$0.050	$0.050	$0.030	$0.042	
Parking cost savings	$0.600	$0.400	$0.200	$0.360	Parking costs are particularly high for commuting and lower for errands which require less parking per trip.
Energy conservation	$0.030	$0.030	$0.030	$0.030	
Pollution reductions	$0.100	$0.050	$0.010	$0.044	
Land Use Impacts - Table 19 More Walkable and Bikeable Community (Measure Unknown)					
Reduced pavement	$0.010	$0.005	$0.001	$0.002	Specific studies should be used when possible.
Increased accessibility	$0.080	$0.060	$0.030	$0.051	Specific studies should be used when possible.
COSTS					
Active Transport Costs - Table 20 Typical Values – Walking and Cycling Costs (Per Person Mile)					
Facilities and programs					Highly variable.
Vehicle traffic impacts					Highly variable.
Equipment	$0.080	$0.070	$0.060		Depends on assumption, such as whether food consumption is a benefit or cost.
Travel time					Highly variable depending on conditions and user preferences.
Accident risk					

* The "Transport Diversity Value" chapter of *Transportation Cost and Benefit Analysis* (Litman 2009) estimates that improvements in affordable alternative modes can be

Source: "Evaluating Active Transport Benefits and Costs" by Todd Litman http://vtpi.org/nmt-tdm.pdf

Countermeasures to Improve Bicycle and Pedestrian Safety

	Project Type	Countermeasure	Opportunity to Implement using a Systematic Approach	General Values for Agency's Internal Use		Values for Caltrans Statewide Programs		
				Primary Crash Types	Range of Crash Reduction Factors	Crash Type	CRF	Service Life
INTERSECTION COUNTERMEASURES								
SIGNALIZED								
S19	Ped and Bike	Install pedestrian countdown signal heads	Very High	Pedestrian, Bicycle	25%	P & B	25	20
S20	Ped and Bike	Install Pedestrian crossing (S.I.)	High	Pedestrian, Bicycle	25%	P & B	25	20
S21	Ped and Bike	Install advance stop bar before crosswalk (Bicycle Box)	Very High	Pedestrian, Bicycle	35%	P & B	15	10
S22	Ped and Bike	Install pedestrian overpass/underpass	Low	Pedestrian, Bicycle	5-100%	P & B	75	20
NON-SIGNALIZED								
NS16	Ped and Bike	Install raised medians/refuge islands (NS.I)	Medium	Pedestrian, Bicycle	30-56%	P & B	45	20
NS17	Ped and Bike	Install pedestrian crossing (new signs and markings only)	High	Pedestrian, Bicycle	0.25	P & B	25	10
NS18	Ped and Bike	Install pedestrian crossing (with enhanced safety features/curb extensions)	Medium	Pedestrian, Bicycle	37%	P & B	35	20
NS19	Ped and Bike	Install pedestrian signal	Low	Pedestrian, Bicycle	15-69%	P & B	55	20
ROADWAY COUNTERMEASURES								
R36	Ped and Bike	Install bike lanes	High	Pedestrian, Bicycle	0-53%	P & B	35	20
R37	Ped and Bike	Install sidewalk/pathway (to avoid walking along roadway)	Medium	Pedestrian, Bicycle	65-89%	P & B	80	20
R38	Ped and Bike	Install pedestrian crossing (with enhanced safety features)	Medium	Pedestrian, Bicycle	8-56%	P & B	30	10
R 39	Ped and Bike	Install raised pedestrian crossing	Medium	Pedestrian, Bicycle	30-46%	P & B	35	10

Source: "Local Roadway Safety, Version 1.1, April 2013" by Caltrans http://www.dot.ca.gov/hq/LocalPrograms/HSIP/Documents/hsip/CA_SM4LROv11.pdf

Attachment 9C
Pedestrian and Bike Forecasting Methodology

Attachment 9C: Pedestrian and Bike Forecasting Methodology

Commute Mode Share

Source: US Census, American Community Survey 5 Year 2008 - 2012, table B08301 (ModeShare_byProject.xlsx)

Row Labels	Sum of PublicTran	Sum of Bicycle	Sum of Walk
F5627	3.10%	0.50%	2.10%

Estimated Total Mode Share

From methodology cited in "Simple Techniques for Forecasting Bicycle and Pedestrian Demand" - Greg Griffin, AICP

Total pedestrian mode share = 2.2(pedestrian commute mode share)*
Total bicycle mode share = 0.3% + 1.5(bicycle commute share)*

	Est. total bike mode share (%)	Est. total ped. mode share (%)
F5627	1.05	4.62

Existing (2012) ADT from SCAG model output

Assume 4 hour PM peak is 33% (one-third) of ADT

PM Peak Vol (3-7pm) - weighted average by link distance

Link Volume	Link Distance (mi)	AAWT	
451	0.75	1039	Duarte
7132	0.5	10222	Duarte
3899	0.5	7333	Duarte
5213	0.32	9884	Duarte
2195	0.28	3634	Highland
Weighted Average	3,462	5,846	
Estimated 2012 ADT	**8,000**		
Person trips	8800	*Assume 1.1 persons per vehicle*	

Future (2035) ADT from SCAG model output

Assume 4 hour PM peak is 33% (one-third) of ADT

PM Peak Vol (3-7pm) - weighted average by link distance

Link Volume	Link Distance (mi)	AAWT	
611	0.75	1246	Duarte
6690	0.5	10379	Duarte
2793	0.91	8264	Duarte
11717	0.28	33160	Highland
Weighted Average	3,945	9,397	
Estimated 2035 ADT	**12,000**		
Person trips	13200	*Assume 1.1 persons per vehicle*	

Population, Households, Employment

From 04-TAZLandUsebyProject.xlsx

Buffer	Sum of POP2008	Sum of Hholds08	Sum of Emp08	Sum of Pop2020	Sum of HHLD2020	Sum of EMP2020	Sum of pop2035	Sum of Hhld2035	Sum of EMp2035
0.5 mile	6,070	1,800	4,889	6,338	1,919	5,040	7,723	2,370	5,295
1 mile	19,104	6,071	11,425	19,886	6,433	11,657	21,375	6,936	12,033
3 miles	121,567	37,712	59,608	126,893	39,701	59,764	135,268	42,305	62,348

Potential Pedestrian Trips based on influence area population (0.5 mile)	
2009 NHTS Percent of Person Trips by Mode	
Walk	*10.4*
Bike (Other)	*4.2*
Transit	*1.9*
Daily trips per person	*3.79*

Assume influence area of 0.5 mile for pedestrian trips, 3 miles for bike trips

Estimated Potential Daily Person Trips W/in Influence Area

	2008	2020	2035	% increase (2008-2035)
Pedestrian	2,393	2,498	3,044	27.2%
Bike	19,351	20,199	53,317	175.5%

No Build Bike Vol	Build Bike Vol	Year
44	264	2012
66	396	2035

No Build Bike volumes assume .05 % of ADT based on ACS Commute Mode Split of .5 % for bikes. The Build Bike assumes a a 2-4% (3%) mode split on the project streets based on the project's excellent new connections to local and regional trail systems, safety improvements, and access to major destinations, such as City of Hope Medical facility with 4,300 employees, 185 students, and numerous visitors, and the new Gold Line Station.

600

Attachment 9C: Pedestrian and Bike Forecasting Methodology

SUMMARY TABLE

Existing Year Vehicular ADT	
ADT	8,000
Year	2012

Forecast Year Vehicular ADT	
ADT	12,000
Year	2035

Existing Demand (Daily Person Trips)		YEAR	
No Build	410	2012	
Build	510	2012	Increase of 20-30% due to improvements
Forecast Demand (Daily Person Trips)		**YEAR**	
No Build	610	2035	
Build	730	2035	Increase of 20-30% due to improvements

Notes:
New pedestrian connections to the planned LRT station will increase pedestrian trips along the corridor by around 20-30% in addition to the new trips generated on the system by the new Gold Line LRT station. The new facility will connect pedestrians from the north along an improved sidewalk towards the LRT station. The LRT station will likely increase pedestrian volumes in the area signficantly.

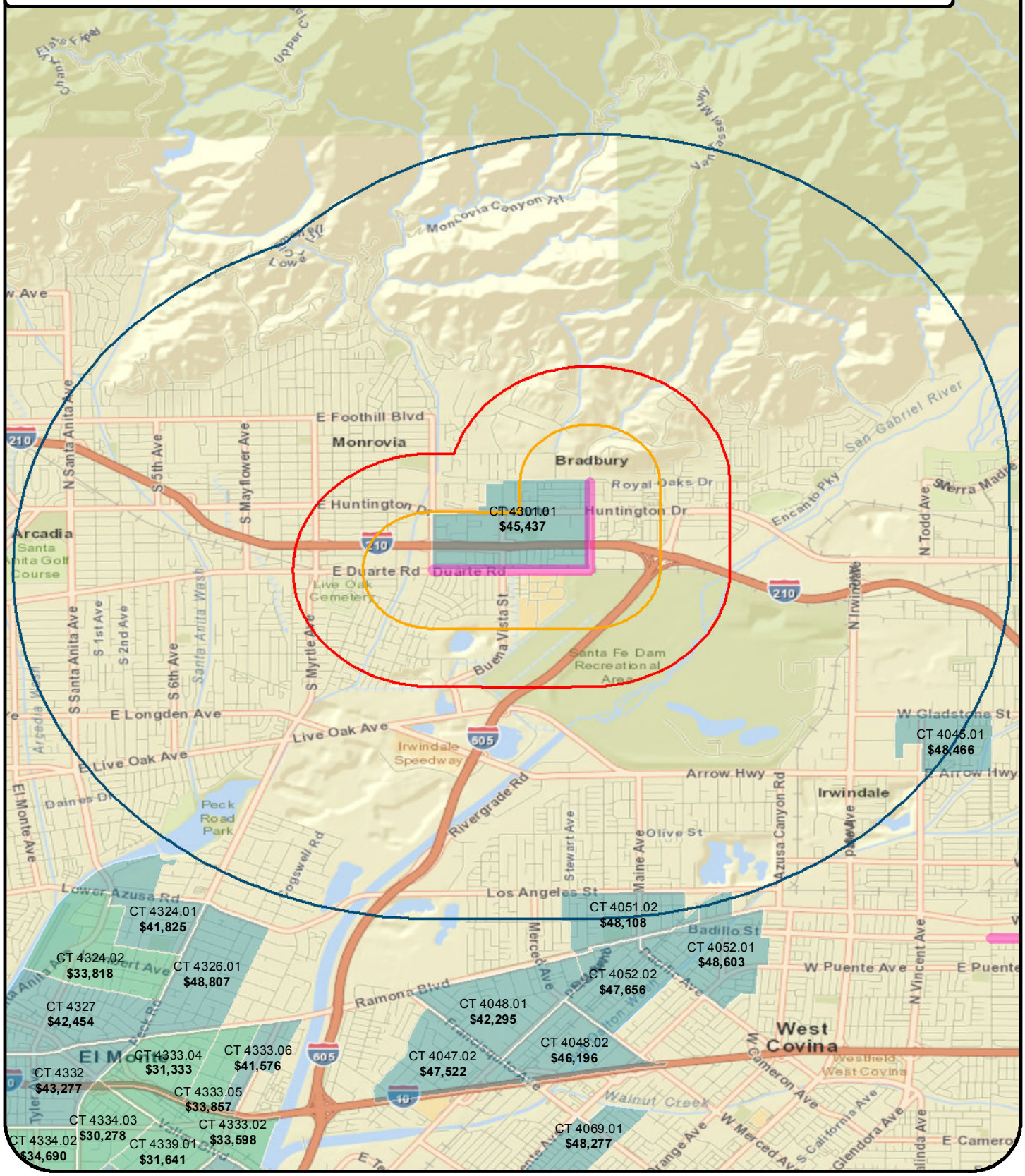
No Build Bike volumes assume .05 % of ADT based on ACS Commute Mode Split of .5 % for bikes. The Build Bike assumes a a 2-4% (3%) mode split on the project streets based on the project's excellent new connections to local and regional trail systems, safety improvements, and access to major destinations, such as City of Hope Medical facility with 4,300 employees, 185 students, and numerous visitors, and the new Gold Line Station.

Attachment 10
Median Household Income Map

Attachment 10 - Median Household Income ~ 80% or less of Statewide Median (2012)

Duarte Gold Line Station Pedestrian and Bicycle Improvements

Jurisdiction: DUARTE



Project Area

Distance from Project

- 0.5 Mile
- 1 Mile
- 3 Miles

Median Household Income

- < $10,000
- $10,001 to $20,000
- $20,001 to $30,000
- $30,001 to $40,000
- $40,001 to $49,120

1 in = 1.2 miles

0 1,800 3,600 Feet

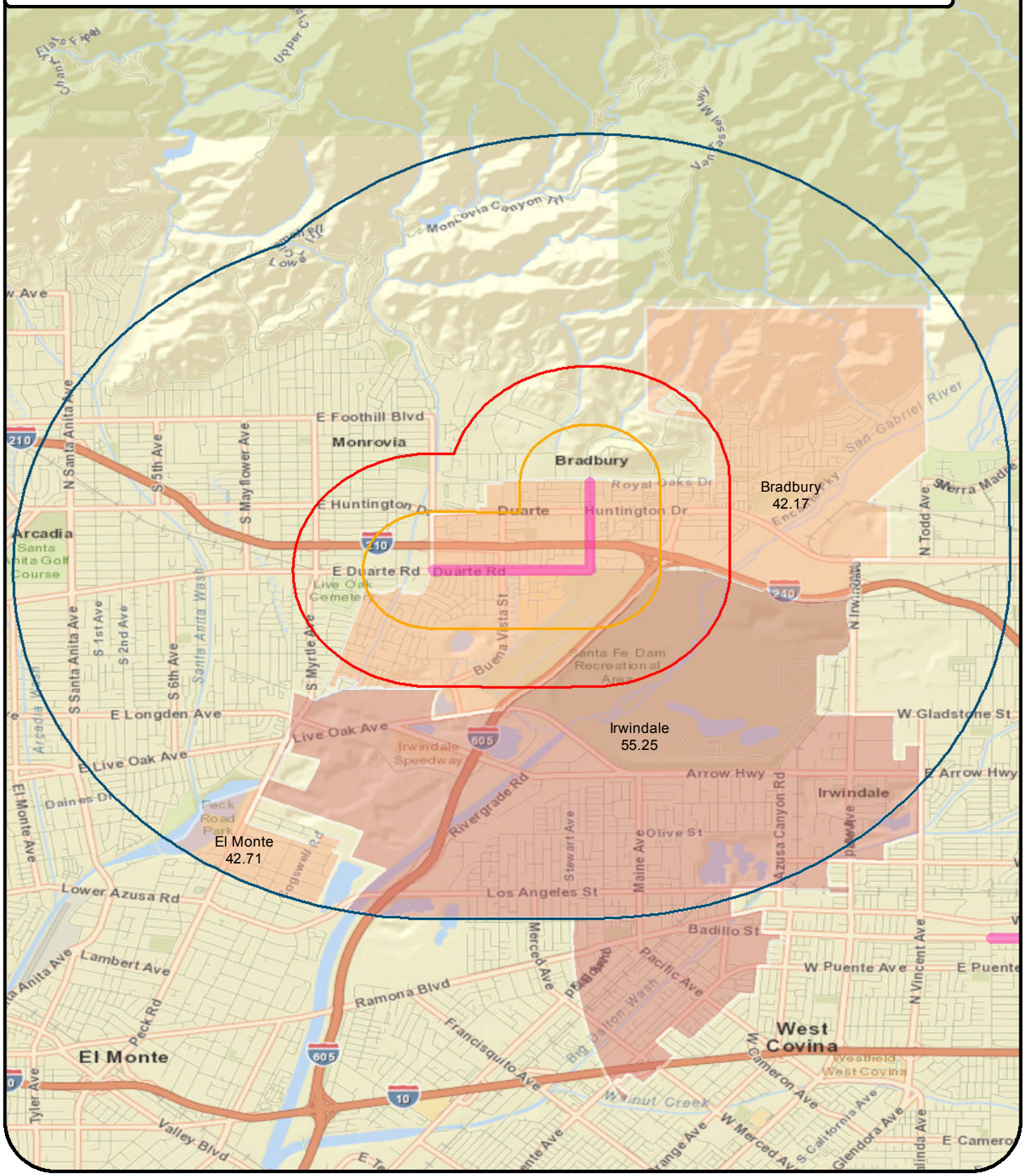
US Census ACS 2012 Data Date: 5/12/2014 Document Path: R:\L\LOSX0MTR0002\0600INFO\GS-GIS group\Maps\F5627_MedianHouseholdIncome.mxd

Attachment 11
California Enviro Screen Map

Attachment 11 - CalEnviroScreen (CES) Scores Map

Duarte Gold Line Station Pedestrian and Bicycle Improvements

Jurisdiction: DUARTE



Project Area

Distance from Project

- 0.5 Mile
- 1 Mile
- 3 Miles

CalEnviroScreen (CES) Scores

- 40 - 50
- Higher than 50

1 in = 1.2 miles

0 3,400 6,800 Feet

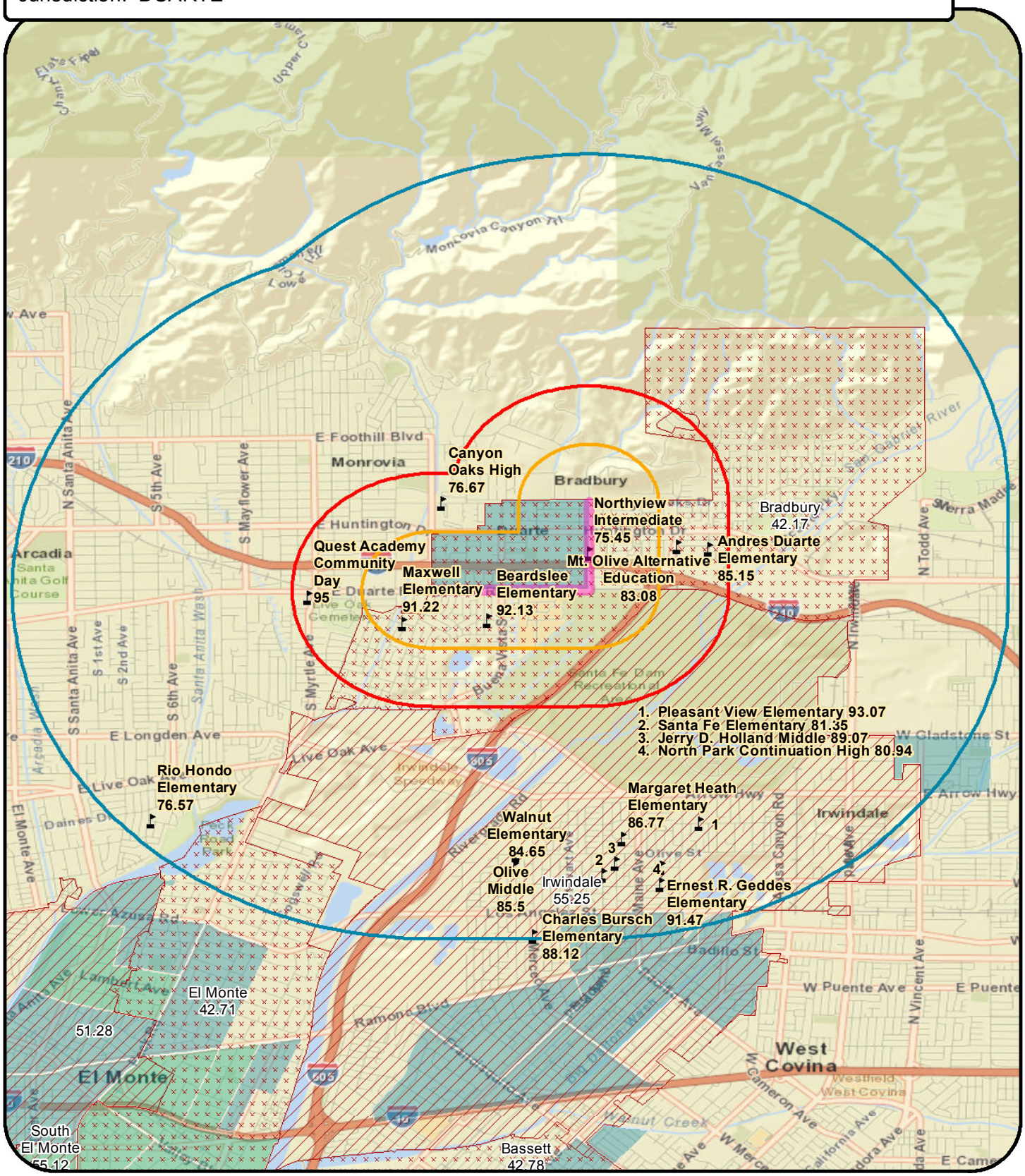
Date: 5/12/2014 Document Path: R:\L\LOSX0MTR0002\0600INFO\GS-GIS group\Maps\F5627_CES.mxd

Attachment 12
Disadvantaged Communities Map

Attachment 12 - Disadvantaged Community (Bike)

Duarte Gold Line Station Pedestrian and Bicycle Improvements

Jurisdiction: DUARTE



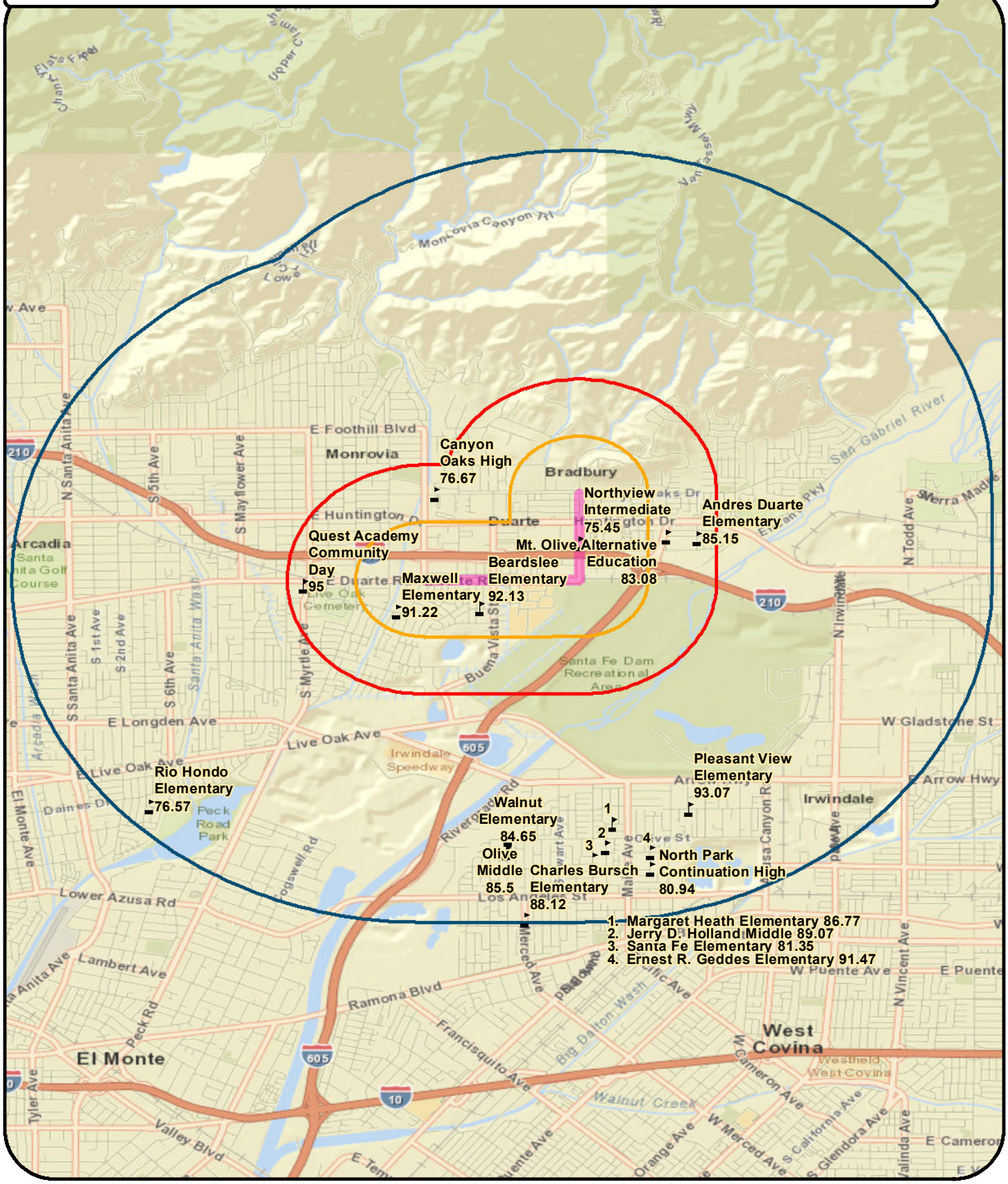
Date: 5/12/2014 Document Path: R:\L\LOSX0MTR0002\0600INFO\GS-GIS group\Maps\Disadvantaged_Community_Bike.mxd

Attachment 13
Free School Lunches Map

Attachment 13 - Free Lunch Schools Map (2012)

Duarte Gold Line Station Pedestrian and Bicycle Improvements

Jurisdiction: DUARTE



Attachment 14
Communication Requesting CCC Participation

Attachment 14: Communication Requesting CCC Participation

From: Clark, Virginia@CCC [mailto:Virginia.Clark@CCC.CA.GOV]
Sent: Friday, May 02, 2014 11:02 AM
To: 'Jason Golding'
Cc: Patricia Chen; Kim Rhodes; Lisa Key; Elizabeth Mros; Lino, Edgar@CCC; Rochte, Christie@CCC; Rankin, Michelle@CCC; Simpson, Trish@CCC; Cynthia Vitale
Subject: RE: ATP Grant - Duarte CA - CCC

Jason

The California Conservation Corps Los Angeles is interested in participating in this project with you. I am carbon copying the local project manager, Edgar Lino (213) 744-2254. Please contact him when time appropriate with project details.

Thank you

Virginia Clark
Region Deputy, Region 1

California Conservation Corps
(916) 341-3147
fx(877) 834-4177
virginia.clark@ccc.ca.gov

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL
Visit our web site at www.ccc.ca.gov for more information about the California Conservation Corps
Visit our web site at www.WatershedStewards.com for more information about the Watershed Stewards Program

You forwarded this message on 5/3/2014 1:03 PM.

From: Jason Golding <goldingj@accessduarte.com> Sent: Thu 5/1/2014 10:12 AM
To: calocalcorps@gmail.com
Cc: Patricia Chen; Lisa Key; Elizabeth Mros; Kim Rhodes
Subject: ATP Grant - Duarte CA

Message
Duarte ATP- Prj Schedule ESTIMATE for CALCC-CCC.xlsx (67 KB)
Duarte ATP-cost estimates for CALCC-CCC.xlsx (43 KB)
Duarte ATP-maps & plans for CALCC-CCC.pdf (3 MB)
ATT1176640.htm (2 KB)
ATT1176641.htm (2 KB)
ATT1176642.htm (2 KB)

From: Jason Golding [mailto:goldingj@accessduarte.com]
Sent: Thursday, May 01, 2014 10:15 AM
To: Clark, Virginia@CCC
Cc: Patricia Chen; Kim Rhodes <Ksr@deainc.com> (Ksr@deainc.com); Lisa Key; Elizabeth Mros
Subject: ATP Grant - Duarte CA - CCC

Virginia,

Attachment 14: Communication Requesting CCC Participation

My name is Jason Golding and I am the ATP project manager for the City of Duarte's Cycle 1 ATP Grant titled "Duarte Gold Line Station Pedestrian and Bicycle Improvements". We are submitting the following information to you in an effort to partner with your agency and provide CCC the opportunity to participate in the construction of our project. Included is a project description, project map and preliminary plans, detailed cost estimate and project schedule.

The City requests that you return email correspondence to my attention ASAP that our project has been considered by your agency and furthermore that we have met our obligation under the selection criterion for Cal Trans to contact CCC.

Please feel free to contact me if you have any further questions. We appreciate your consideration.

Jason Golding
Senior Planner
City of Duarte
1600 Huntington Drive
Duarte, CA 91010
(626) 357-7931 x231
goldingj@accessduarte.com

Attachment 15
Communication Requesting CALCC Participation

Attachment 15: Communication Requesting CALCC Participation

From: Calcc Calcc [mailto:calocalcorps@gmail.com]
Sent: Thursday, May 01, 2014 11:14 AM
To: Jason Golding
Cc: Patricia Chen; Lisa Key; Elizabeth Mros; Kim Rhodes; virginia.clark@ccc.ca.gov
Subject: Re: ATP Grant - Duarte CA

Hi Jason,

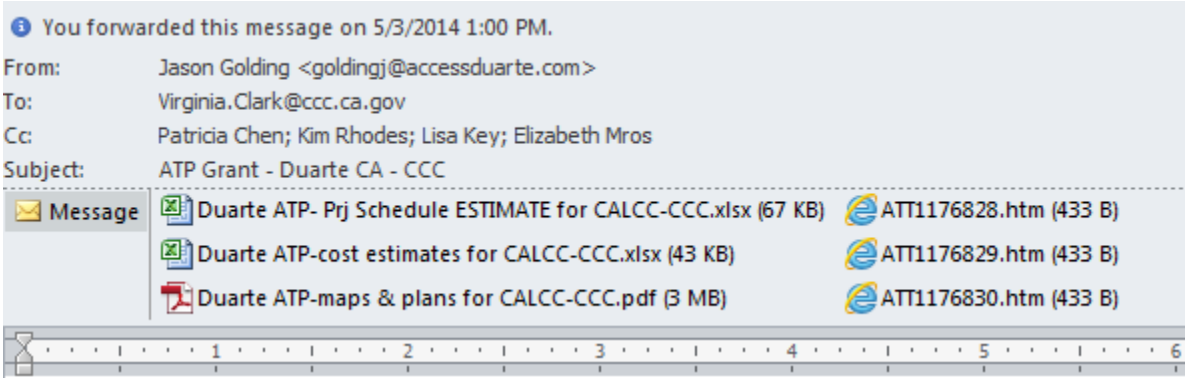
Thank you for your outreach to the local conservation corps. The Los Angeles Conservation Corps (the local conservation corps in your area) would be interested and capable of partnering on all landscape construction on the Duarte Gold Line Station Pedestrian and Bicycle Improvement project.

Please feel comfortable using that information and my contact info below to fill in sec. 7 of the narrative questions on the application.

Thank you,

Paige Brokaw
Conservation Strategy Group
Monday-Thursday:
(916) 669-4797 – direct
(916) 558-1516 – main
Friday:
(925) 699-0766 – cell
Paige@csgcalifornia.com

On Thu, May 1, 2014 at 10:12 AM, Jason Golding <goldingj@accessduarte.com> wrote:



Cynthia,

My name is Jason Golding and I am the ATP project manager for the City of Duarte's Cycle 1 ATP Grant titled "Duarte Gold Line Station Pedestrian and Bicycle Improvements". We are submitting the following information to you in an effort to partner with your agency and provide CALCC the opportunity to participate in the construction of our project. Included is a project description, project map and preliminary plans, detailed cost estimate and project schedule.

Attachment 15: Communication Requesting LACC Participation

The City requests that you return email correspondence to my attention ASAP that our project has been considered by your agency and furthermore that we have met our obligation under the selection criterion for Cal Trans to contact CALCC.

Please feel free to contact me if you have any further questions. We appreciate your consideration.

Jason Golding
Senior Planner
City of Duarte
1600 Huntington Drive
Duarte, CA 91010
(626) 357-7931 x231
goldingj@accessduarte.com

Attachment 16
Engineer’s Budget Estimate

Attachment 16 - Budget Estimate

CITY OF DUARTE — **4/10/2014**
PUBLIC WORKS

DUARTE - ATP CALL ESTIMATE - FIRST MILE/LAST MILE PILOT

		HIGHLAND - BUENA VISTA				NEW ATP APPLICATION								
						HIGHLAND - BUENA VISTA				BUENA VISTA - MOUNTAIN WITH BIKE ROUTES				
		PHASE I (ORIGINAL)				PHASE I (MODIFIED)				PHASE II				COMBINED I&II
	PS&E													
ITEM	**DESCRIPTION**	**EST.QTY.**	**UNIT**	**UNIT PRICE**	**COST**	**EST.QTY.**	**UNIT**	**UNIT PRICE**	**COST**	**EST.QTY.**	**UNIT**	**UNIT PRICE**	**COST**	**COST**
1	Environmental Docs. (CEQA)	0	LS	$ -	$ -	0	LS	$ 12,500.00	$ 12,500.00	0	LS	$ 12,500.00	$ 12,500.00	**$ 25,000.00**
2	Public Outreach	1	LS	$ 10,000.00	$ 10,000.00	1	LS	$ 10,000.00	$ 10,000.00	1	LS	$ 10,000.00	$ 10,000.00	**$ 20,000.00**
3	Preliminary Design	1	LS	$ 30,000.00	$ 30,000.00	1	LS	$ 30,000.00	$ 30,000.00	1	LS	$ 30,000.00	$ 30,000.00	**$ 60,000.00**
4	Final Design/Bid Package	1	LS	$ 28,000.00	$ 28,000.00	1	LS	$ 28,000.00	$ 28,000.00	1	LS	$ 28,000.00	$ 28,000.00	**$ 56,000.00**
5	Wayfinding Sign Design	1	LS	$ -	$ -	1	LS	$ -	$ -	1	LS	$ 25,000.00	$ 25,000.00	**$ 25,000.00**
					$ 68,000.00				**$ 80,500.00**				**$ 105,500.00**	**$ 186,000.00**
	RIGHT-OF-WAY ACQUISITION													
ITEM	**DESCRIPTION**	**EST.QTY.**	**UNIT**	**UNIT PRICE**	**COST**	**EST.QTY.**	**UNIT**	**UNIT PRICE**	**COST**	**EST.QTY.**	**UNIT**	**UNIT PRICE**	**COST**	
1	ACQUISITION	0	LS	$ -	$ -	0	LS	$ -	$ -	0	LS	$ -	$ -	**$ -**
2	UTILITY RELOCATION	0	LS	$ -	$ -	0	LS	$ -	$ -	0	LS	$ -	$ -	**$ -**
3	CLEARANCE/DEMOLITION	0	LS	$ -	$ -	0	LS	$ -	$ -	0	LS	$ -	$ -	**$ -**
					$ -				**$ -**				**$ -**	**$ -**
	CONSTRUCTION													
ITEM	**DESCRIPTION**	**EST.QTY.**	**UNIT**	**UNIT PRICE**	**COST**	**EST.QTY.**	**UNIT**	**UNIT PRICE**	**COST**	**EST.QTY.**	**UNIT**	**UNIT PRICE**	**COST**	
1	MOBILZATION	1	LS	$ 20,000.00	$ 20,000.00	1	LS	$ 20,000.00	$ 20,000.00	1	LS	$ 20,000.00	$ 20,000.00	**$ 40,000.00**
2	TRAFFIC CONTROL	1	LS	$ 15,000.00	$ 15,000.00	1	LS	$ 15,000.00	$ 15,000.00	1	LS	$ 15,000.00	$ 15,000.00	**$ 30,000.00**
3	EARTHWORK	1	LS	$ 70,000.00	$ 70,000.00	1	LS	$ 70,000.00	$ 70,000.00	1	LS	$ 70,000.00	$ 70,000.00	**$ 140,000.00**
4	GRADING (MINOR FILL)	0	YD	$ 20.00	$ -	0	YD	$ 20.00	$ -	0	YD	$ 20.00	$ -	**$ -**
5	SIDEWALK (5.5')	12420	SF	$ 6.50	$ 80,730.00	13300	SF	$ 6.50	$ 86,450.00	20350	SF	$ 6.50	$ 132,275.00	**$ 218,725.00**
6	3 FT. C.L. FENCING COATED	0	LF	$ 40.00	$ -	0	LF	$ 40.00	$ -	0	LF	$ 40.00	$ -	**$ -**
7	6 FT. C.L. FENCING COATED	0	LF	$ 70.00	$ -	0	LF	$ 70.00	$ -	0	LF	$ 70.00	$ -	**$ -**
8	LANDSCAPING TREES	54	EA	$ 340.00	$ 18,360.00	54	EA	$ 340.00	$ 18,360.00	64	EA	$ 340.00	$ 21,760.00	**$ 40,120.00**
9	TREE REMOVALS	0	EA	$ 600.00	$ -	0	EA	$ 600.00	$ -	7	EA	$ 600.00	$ 4,200.00	**$ 4,200.00**
10	LANDSCAPING GROUND COVER	0	SF	$ 6.00	$ -	2700	SF	$ 6.00	$ 16,200.00	3200	SF	$ 6.00	$ 19,200.00	**$ 35,400.00**
11	LANDSCAPE REPLACEMENT IN-KIND	0	SF	$ 6.00	$ -	0	SF	$ 6.00	$ -	0	SF	$ 6.00	$ -	**$ -**
12	IRRIGATION	2000	LF	$ 5.00	$ 10,000.00	2000	LF	$ 5.00	$ 10,000.00	2400	LF	$ 5.00	$ 12,000.00	**$ 22,000.00**
13	ELECTRICAL & WATER SERVICES	0	LS	$ 20,000.00	$ -	0	LS	$ 20,000.00	$ -	0	LS	$ 20,000.00	$ -	**$ -**
14	ADA RAMP UPGRADES	0	EA	$ 2,500.00	$ -	0	EA	$ 2,500.00	$ -	4	EA	$ 2,500.00	$ 10,000.00	**$ 10,000.00**
15	UTILITY RELOCATION	0	LS	$ 20,000.00	$ -	0	LS	$ 20,000.00	$ -	0	LS	$ 20,000.00	$ -	**$ -**
16	MISC. (5%)	0	LS	$ 28,350.00	$ -	0	LS	$ 28,350.00	$ -	0	LS	$ 28,350.00	$ -	**$ -**
17	PED/STREET LIGHTS	41	EA	$ 6,500.00	$ 266,500.00	29	EA	$ 7,000.00	$ 203,000.00	35	EA	$ 7,000.00	$ 245,000.00	**$ 448,000.00**
18	CONDUIT	6208	LF	$ 20.00	$ 124,160.00	2000	LF	$ 20.00	$ 40,000.00	2400	LF	$ 20.00	$ 48,000.00	**$ 88,000.00**
19	SIGNAGE	10	EA	$ 350.00	$ 3,500.00	10	EA	$ 350.00	$ 3,500.00	10	EA	$ 350.00	$ 3,500.00	**$ 7,000.00**
20	BENCHES	0	EA	$ 450.00	$ -	0	EA	$ 450.00	$ -	0	EA	$ 450.00	$ -	**$ -**
21	TRASH RECEPTACLES	0	EA	$ 300.00	$ -	0	EA	$ 300.00	$ -	0	EA	$ 300.00	$ -	**$ -**
22	WAY-FINDING SIGNS	0	EA	$ 500.00	$ -	0	EA	$ 500.00	$ -	41	EA	$ 500.00	$ 20,500.00	**$ 20,500.00**
23	BICYCLE PAVEMENT STRIPING	0	LF	$ 2.50	$ -	6600	LF	$ 2.50	$ 16,500.00	13600	LF	$ 2.50	$ 34,000.00	**$ 50,500.00**
24	BICYCLE PAVEMENT LEGENDS	0	EA	$ 125.00	$ -	8	EA	$ 125.00	$ 1,000.00	20	EA	$ 125.00	$ 2,500.00	**$ 3,500.00**
25	BICYCLE ROUTE SIGNS	0	EA	$ 200.00	$ -	8	EA	$ 200.00	$ 1,600.00	20	EA	$ 200.00	$ 4,000.00	**$ 5,600.00**
26	TRAFFIC LANE RE-CONFIGURATION (FOR BIKE)	0	LS	$ 45,000.00	$ -	1	LS	$ 15,000.00	$ 15,000.00	1	LS	$ 30,000.00	$ 30,000.00	**$ 45,000.00**
27	BICYCLE ROUTE TRAFFIC LOOPS	0	EA	$ 190.00	$ -	0	EA	$ 190.00	$ -	8	EA	$ 190.00	$ 1,520.00	**$ 1,520.00**
28	PED/BIKE COUNTERS	0	EA	$ 3,500.00	$ -	0	EA	$ 3,500.00	$ -	8	EA	$ 3,500.00	$ 28,000.00	**$ 28,000.00**
					$ 608,250.00				**$ 516,610.00**				**$ 721,455.00**	**$ 1,238,065.00**
				10% CONT.	**$ 60,825.00**			10% CONT.	**$ 51,661.00**			10% CONT.	**$ 72,145.50**	**$ 123,806.50**
	CONSTRUCTION MANAGEMENT & INSPECTION													
ITEM	**DESCRIPTION**	**EST.QTY.**	**UNIT**	**UNIT PRICE**	**COST**	**EST.QTY.**	**UNIT**	**UNIT PRICE**	**COST**	**EST.QTY.**	**UNIT**	**UNIT PRICE**	**COST**	
1	CM & INSP.	1	LS	$ 48,660.00	**$ 48,660.00**	1	LS	$ 48,660.00	**$ 48,660.00**	1	LS	$ 48,660.00	**$ 48,660.00**	**$ 97,320.00**
	ESTIMATED TOTAL PROJECT COST*				**$ 785,735.00**				**$ 697,431.00**				**$ 947,760.50**	**$ 1,645,191.50**
	CITY MATCH*				**$ 314,294.00**				**$ 314,294.00**				**$ -**	**$ 314,294.00**
	GRANT FUNDING REQUEST*				**$ 471,441.00**				**$ 383,137.00**				**$ 947,760.50**	**$ 1,330,897.50**

*=ALL ESTIMATED COSTS IN THE GRAY CELLS ARE EXTRACTED FROM COSTS DERVIVED AT TIME OF 2011 CALL FOR PROJECTS APPLICATION SUBMITTAL

2011 MTA BOARD APPROVAL - REVISED COSTS (INFLATED BY METRO)		
MTA APPROVED TOTAL PROJECT COST	**$ 890,950.00**	**$ 1,645,191.50**
CITY MATCH	**$ 355,679.00**	**$ 355,679.00**
CITY MATCH (%)	**39.92%**	**21.62%**
GRANT FUNDING REQUEST	**$ 533,519.00**	**$ 1,289,512.50**

2011 MTA BOARD APPROVAL - REVISED COSTS, MINUS INFLATION FOR ACCELERATION OF PROJECT BY TWO FISCAL YEARS, ENDING FY 15-16			INFLATION RATE (EST.) 2%		YEARS 2	
MTA APPROVED TOTAL PROJECT COST	**$ 855,312.00**	=	-$17,819.00	X	-$35,638.00	**$ 1,645,191.50**
CITY MATCH	**$ 341,451.84**	=	-$7,113.58	X	-$14,227.16	**$ 341,451.84**
CITY MATCH (%)	**39.92%**					**20.75%**
GRANT FUNDING REQUEST	**$ 512,178.24**	=	-$10,670.38	X	-$21,340.76	**$ 1,303,739.66**

Attachment 17
Letters of Support

BikeSGV's mission is to make the San Gabriel Valley a safer, healthier and more enjoyable place for cycling.

Board of Directors

Vincent Chang, Esq.
Board President

Efren Moreno
Vice-President

Melissa Preciado-Hernandez
Treasurer

Wes Reutimann
Secretary

Xilonin Cruz-Gonzalez
Board Member

Javier Hernandez
Program Director

May 5, 2014

CALTRANS
Division of Local Assistance
ATTN: Teresa McWilliam, ATP Program Manager
Office of Active Transportation and Special Programs
P.O. Box 942874, Sacramento, CA 94274

RE: 2014 ATP Grant, Cycle 1 - Support for Duarte Gold Line Station Pedestrian and Bicycle Improvements - First/Last Mile Connectivity Project

Dear Ms. McWilliam,

On behalf of the members of Bike San Gabriel Valley (BikeSGV), I am writing to underline our wholehearted support for the City of Duarte's 2014 ATP Grant (cycle 1) application to Caltrans for the Duarte Gold Line Station Pedestrian and Bicycle Improvements - First/Last Mile Connectivity Project.

Implementing Bicycle and Pedestrian safety improvements around the opening of the City's first light rail station is a proven, sustainable transportation model employed by cities around the world that will:

- Eliminate sidewalk gaps
- Provide wayfinding signage
- Develop a more robust, multi-modal local transportation network
- Provide new mobility options for those with disabilities
- Create new opportunities for physical activity and recreation
- Improve the health and well-being of local residents
- Reduce greenhouse gas emissions

Investments in clean, healthy, active transportation will pay long term dividends and help meet state mobility, public health and public safety policy objectives sought by legislation signed by Governor Brown on September 26, 2013, which created the Active Transportation Program (ATP). The proposed project is well aligned with the goals of this exciting new program and would take another step in reducing existing barriers to active transportation in the region.

BikeSGV sincerely hope you will support this application and accelerate Duarte's transition to a more sustainable bicycle, pedestrian and transit-friendly future.

Sincerely,

Vincent Chang
President
BikeSGV Board of Directors

Duarte Chamber OF COMMERCE

2013-2014
BOARD OF DIRECTORS

Executive Committee

RONA LUNDE
Chairman
Jan's Towing Co., Inc.

TINA CAREY
Vice Chairman / Fundraising
Duarte Kiwanis Club

BOB CRUZ
Vice Chairman / Legislative Action & Education
The Gas Company

SANDI MEJIA
Vice Chairman / Publicity & Marketing
Ranchero Mexican Restaurant & Cantina

PAT MILLER
Chairman-Elect
Vice Chairman / Finance & Administrative
New York Life Insurance Co.

Board Members

JOUMANA BARAKAT
Foothill Workforce Investment Board

BRIAN BARRETO
California American Water Co.

BERNADETTE CHANG
Westminster Gardens/Royal Oaks

HENRY CUSTODIA
Delafield Corporation

AJA M. ENRIQUEZ
Turner & Stevens Live Oak Cemetery

RAY FAHN
Advantage Ford Lincoln

DEBBIE GEWERTZ
Old Town Sign Company

DANIEL LIEN
Daniel J. Lien Professional Services

KAREN MACNAIR
Santa Anita Family YMCA

RANA MADAIN
Podley Realtors

JOANNE MONTGOMERY
Citrus Community College

STACEY PARK
Curves

AHMAD SOLOMON
Southern California Edison

CHAMBER STAFF

JIM KIRCHNER
President/CEO

DIANA BURCKHARD
Membership/Marketing Director

ADRIANA ARROYO
Intern

April 23, 2014

CALTRANS
Division of Local Assistance
ATTN: Teresa McWilliam, ATP Program Manager
Office of Active Transportation and Special Programs
P.O. Box 942874
Sacramento, CA 94274

RE: 2014 ATP Grant, Cycle 1 - Support for Duarte Gold Line Station Pedestrian and Bicycle Improvements - First/Last Mile Connectivity Project

Dear Ms. McWilliam:

It is with great pleasure that I write to express the Duarte Chamber of Commerce's support for the City of Duarte's 2014 ATP Grant (cycle 1) application to Caltrans for the Duarte Gold Line Station Pedestrian and Bicycle Improvements - First/Last Mile Connectivity Project.

The proposed project will increase pedestrian and bicycle safety, connect surrounding land uses with regional light rail, and provide improved accessibility to multi-modal transportation options, including the Duarte Gold Line Station, slated for opening in early 2016. The project will also serve to increase connectivity between regional bike routes and the Duarte Station; eliminate sidewalk gaps between the northerly portion of the City and the new Station; reduce greenhouse gases; provide mobility options for those with disabilities; encourage non-motorized transportation options therefore enhancing public health; and provide wayfinding signage to direct all modes of transportation to the Duarte Station and adjacent regional bikeways and bus stops.

We understand that the proposed improvements can help achieve the policy objectives sought by recent legislation signed by Governor Brown on September 26, 2013, which created the Active Transportation Program (ATP) (Senate Bill 99, Chapter 359 and Assembly Bill 101, Chapter 354). These objectives include: (1) increase the proportion of trips accomplished by biking and walking; (2) increase safety and mobility for non-motorized users; (3) advance the active transportation efforts of regional agencies to achieve greenhouse gas reduction goals; (4) enhance public health; (5) ensure that disadvantaged communities fully share in the benefits of the program; and (6) provide a broad spectrum of projects to benefit many types of active transportation users.

The Duarte Chamber of Commerce recognizes the importance of this potential advancement and enthusiastically supports the City of Duarte's ATP Grant application. We encourage State consideration and support for this beneficial project. I am happy to answer any questions and further discuss the benefits of this project to the region.

Sincerely,

Jim Kirchner
President/CEO
Duarte Chamber of Commerce
(626) 357-3333
www.DuarteChamber.com …*your link to the community*

City of Hope

1500 East Duarte Road
Duarte, CA 91010-3000
Phone 626-256-HOPE (4673)
www.cityofhope.org

April 22, 2014

CALTRANS
Division of Local Assistance
ATTN: Teresa McWilliam, ATP Program Manager
Office of Active Transportation and Special Programs
P.O. Box 942874
Sacramento, CA 94274

RE: 2014 ATP Grant, Cycle 1 - Support for Duarte Gold Line Station Pedestrian and Bicycle Improvements - First/Last Mile Connectivity Project

Dear Ms. McWilliam:

It is with great pleasure that I write to express my support for the City of Duarte's 2014 ATP Grant (cycle 1) application to Caltrans for the Duarte Gold Line Station Pedestrian and Bicycle Improvements - First/Last Mile Connectivity Project.

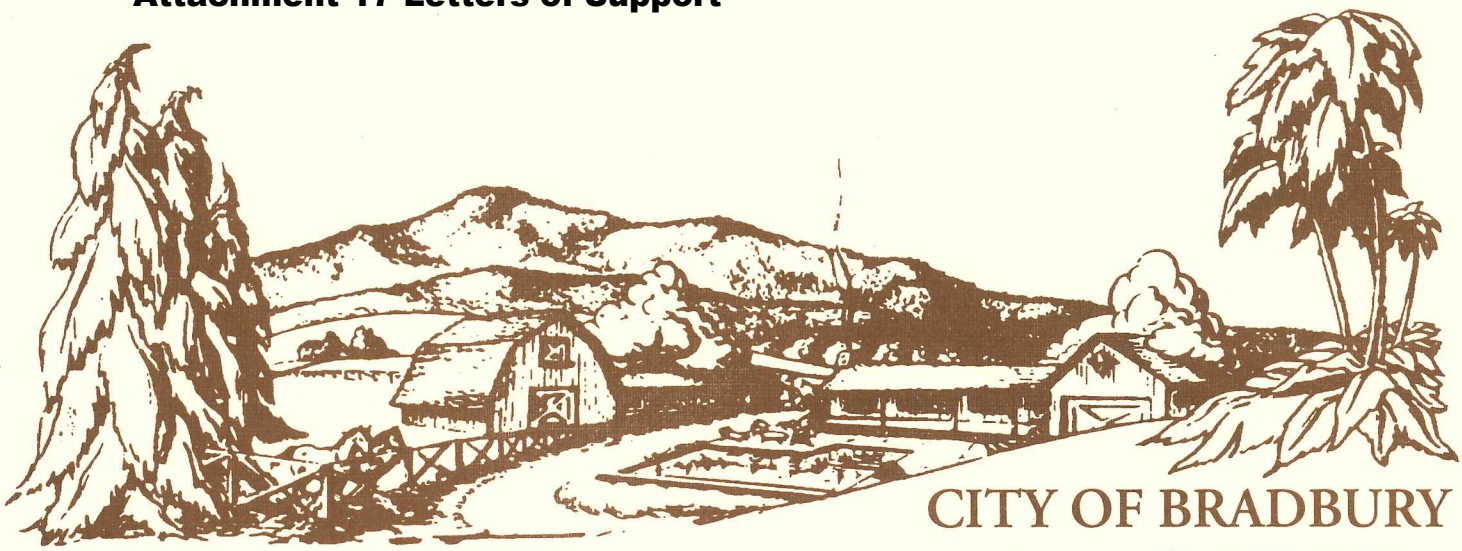
The proposed project will increase pedestrian and bicycle safety, connect surrounding land uses with regional light rail, and provide improved accessibility to multi-modal transportation options, including the Duarte Gold Line Station, slated for opening in early 2016. The project will also serve to increase connectivity between regional bike routes and the Duarte Station; eliminate sidewalk gaps between the northerly portion of the City and the new Station; reduce greenhouse gases, provide mobility options for those with disabilities, encourage non-motorized transportation options therefore enhancing public health; and provide way finding signage to direct all modes of transportation to the Duarte Station and adjacent regional bikeways and bus stops.

We understand that the proposed improvements can help achieve the policy objectives sought by recent legislation signed by Governor Brown on September 26, 2013, which created the Active Transportation Program (ATP) (Senate Bill 99, Chapter 359 and Assembly Bill 101, Chapter 354). These objectives include: (1) increase the proportion of trips accomplished by biking and walking; (2) increase safety and mobility for non-motorized users; (3) advance the active transportation efforts of regional agencies to achieve greenhouse gas reduction goals; (4) enhance public health; (5) ensure that disadvantaged communities fully share in the benefits of the program; and (6) provide a broad spectrum of projects to benefit many types of active transportation users.

I recognize the importance of this potential advancement and enthusiastically support the City of Duarte's ATP Grant application. We encourage State consideration and support for this beneficial project.

Sincerely,

Marty Sargeant
Chief Operating Officer
City of Hope



CITY OF BRADBURY

Incororated July 26, 1957

April 22, 2014

CALTRANS
Division of Local Assistance
ATTN: Teresa McWilliam, ATP Program Manager
Office of Active Transportation and Special Programs
P.O. Box 942874
Sacramento, CA 94274

RE: 2014 ATP Grant, Cycle 1 - Support for Duarte Gold Line Station Pedestrian and Bicycle Improvements - First/Last Mile Connectivity Project

Dear Ms. McWilliam:

It is with great pleasure that I write to express my support for the City of Duarte's 2014 ATP Grant (cycle 1) application to Caltrans for the Duarte Gold Line Station Pedestrian and Bicycle Improvements - First/Last Mile Connectivity Project.

The proposed project will increase pedestrian and bicycle safety, connect surrounding land uses with regional light rail, and provide improved accessibility to multi-modal transportation options, including the Duarte Gold Line Station, slated for opening in early 2016. The project will also serve to increase connectivity between regional bike routes and the Duarte Station; eliminate sidewalk gaps between the northerly portion of the City and the new Station; reduce greenhouse gases, provide mobility options for those with disabilities, encourage non-motorized transportation options therefore enhancing public health; and provide wayfinding signage to direct all modes of transportation to the Duarte Station and adjacent regional bikeways and bus stops.

We understand that the proposed improvements can help achieve the policy objectives sought by recent legislation signed by Governor Brown on September 26, 2013, which created the Active Transportation Program (ATP) (Senate Bill 99, Chapter 359 and Assembly Bill 101, Chapter 354). These objectives include: (1) increase the proportion of trips accomplished by biking and walking; (2) increase safety and mobility for non-motorized users; (3) advance the active transportation efforts of regional agencies to achieve greenhouse gas reduction goals; (4) enhance public health; (5) ensure that

600 Winston Avenue • Bradbury, California 91008 • (626) 358-3218 • (626) 303-5154

disadvantaged communities fully share in the benefits of the program; and (6) provide a broad spectrum of projects to benefit many types of active transportation users.

I recognize the importance of this potential advancement and enthusiastically support the City of Duarte's ATP Grant application. We encourage State consideration and support for this beneficial project. We would be happy to answer any questions and further discuss the benefits of this project to the region.

Sincerely,

Michelle Keith
City Manager

CAPITOL OFFICE
STATE CAPITOL, ROOM 5097
SACRAMENTO CA 95814
TEL (916) 651-4025
FAX (916) 324-7543

DISTRICT OFFICE
501 N. CENTRAL AVENUE
GLENDALE, CA 91203
TEL (818) 409-0400
FAX (818) 409-1256

California State Senate

SENATOR
CAROL LIU
TWENTY-FIFTH SENATE DISTRICT

COMMITTEES
EDUCATION
CHAIR
GOVERNANCE & FINANCE
HUMAN SERVICES
PUBLIC SAFETY
TRANSPORTATION & HOUSING

April 24, 2014

CALTRANS
Division of Local Assistance
ATTN: Teresa McWilliam, ATP Program Manager
Office of Active Transportation and Special Programs
P.O. Box 942874
Sacramento, CA 94274

RE: 2014 ATP Grant, Cycle 1 - Support for Duarte Gold Line Station Pedestrian and Bicycle Improvements - First/Last Mile Connectivity Project

Dear Ms. McWilliam:

It is with great pleasure that I write to express my support for the City of Duarte's 2014 ATP Grant (cycle 1) application to Caltrans for the Duarte Gold Line Station Pedestrian and Bicycle Improvements - First/Last Mile Connectivity Project.

The proposed project will increase pedestrian and bicycle safety, connect surrounding land uses with regional light rail, and provide improved accessibility to multi-modal transportation options, including the Duarte Gold Line Station, slated for opening in early 2016. The project will also serve to increase connectivity between regional bike routes and the Duarte Station; eliminate sidewalk gaps between the northerly portion of the City and the new Station; reduce greenhouse gases, provide mobility options for those with disabilities, encourage non-motorized transportation options therefore enhancing public health; and provide wayfinding signage to direct all modes of transportation to the Duarte Station and adjacent regional bikeways and bus stops.

The proposed improvements can help achieve the policy objectives sought by recent legislation signed by Governor Brown on September 26, 2013, which created the Active Transportation Program (ATP) (Senate Bill 99, Chapter 359 and Assembly Bill 101, Chapter 354). These objectives include: (1) increase the proportion of trips accomplished by biking and walking; (2) increase safety and mobility for non-motorized users; (3) advance the active transportation efforts of regional agencies to achieve greenhouse gas reduction goals; (4) enhance public health; (5) ensure that disadvantaged communities fully share in the benefits of the program; and (6) provide a broad spectrum of projects to benefit many types of active transportation users.

I recognize the importance of this potential advancement and enthusiastically support the City of Duarte's ATP Grant application. I encourage State consideration and support for this beneficial project. Please let me know if you have questions and thank you for your consideration.

Sincerely,

CAROL LIU
State Senator
25th District
Member, Senate Transportation and Housing Committee

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0057
(916) 319-2057
FAX (916) 319-2157

DISTRICT OFFICE
100 N. BARRANCA STREET
SUITE 895
WEST COVINA, CA 91791
(626) 960-4457
FAX (626) 960-1310

Assembly
California Legislature

ROGER HERNÁNDEZ
ASSEMBLYMEMBER, FOURTY EIGHTH DISTRICT

COMMITTEES
CHAIR: LABOR AND EMPLOYMENT
GOVERNMENTAL ORGANIZATION
UTILITIES AND COMMERCE
HEALTH

SELECT COMMITTEES
CHAIR: POST-SECONDARY ACCESSS AND MATRICULATION
WORKFORCE AND VOCATIONAL DEVELOPMENT IN CALIFORNIA

April 22, 2014

CALTRANS
Division of Local Assistance
ATTN: Teresa McWilliam, ATP Program Manager
Office of Active Transportation and Special Programs
P.O. Box 942874
Sacramento, CA 94274

RE: 2014 ATP Grant, Cycle 1 - Support for Duarte Gold Line Station Pedestrian and Bicycle Improvements - First/Last Mile Connectivity Project

Dear Ms. McWilliam:

It is with great pleasure that I write to express my support for the City of Duarte's 2014 ATP Grant (cycle 1) application to Caltrans for the Duarte Gold Line Station Pedestrian and Bicycle Improvements - First/Last Mile Connectivity Project.

The proposed project will increase pedestrian and bicycle safety, connect surrounding land uses with regional light rail, and provide improved accessibility to multi-modal transportation options, including the Duarte Gold Line Station, slated for opening in early 2016. The project will also serve to increase connectivity between regional bike routes and the Duarte Station, reduce greenhouse gases, provide mobility options for those with disabilities, and provide wayfinding signage to direct all modes of transportation to the Duarte Station and adjacent regional bikeways and bus stops.

We understand that the proposed improvements can help achieve the policy objectives sought by recent legislation signed by Governor Brown on September 26, 2013, which created the Active Transportation Program (ATP) (Senate Bill 99, Chapter 359 and Assembly Bill 101, Chapter 354). These objectives include: (1) increase the proportion of trips accomplished by biking and walking; (2) increase safety and mobility for non-motorized users; (3) advance the active transportation efforts of regional agencies to achieve greenhouse gas reduction goals; (4) enhance public health; (5) ensure that disadvantaged communities fully share in the benefits of the program; and (6) provide a broad spectrum of projects to benefit many types of active transportation users.

I recognize the importance of this potential advancement and enthusiastically support the City of Duarte's ATP Grant application. I encourage State consideration and support for this beneficial project.

Sincerely,

ROGER HERNÁNDEZ
Chair, Committee on Labor and Employment
Assemblymember, 48th District