

## Transportation Demand Management (TDM) Plan 479 North Pastoria Avenue Sunnyvale, California



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## Section 1 – Introduction and Project Description

This report introduces the Transportation Demand Management (TDM) plan for the commercial development located at 479 North Pastoria Avenue.

The proposed project site consists of a 2.17 Acre (94,525 Square Feet) vacant lot. A site location map can be found on Figure 1. The proposed development will consist of a four story building purposed for research and development use with 52,394 Gross Square Feet (GSF) of floor area resulting in a FAR of 55 percent. A site plan can be found on Figure 2.

### Trip Generation Estimates

Vehicle trip generation estimates are calculated to provide the number of anticipated vehicle trips (employees, deliveries, visitors, etc.) that are produced by the specific land use during a specified time period. The number of vehicle trips generated by the proposed site was estimated using trip generation rates published in the Institute of Transportation Engineers' (ITE), *Trip Generation, 9<sup>th</sup> Edition (2012)*.

The estimated number of vehicle trips for the proposed project was found to be 588 total daily trips. The complete details of the trip generation comparison can be found in Table 1.

### Trip Reduction Goals

The goal of this TDM plan is to identify trip reduction methods to be implemented in order to achieve a reduction in the number of estimated trips. The City of Sunnyvale has communicated that the goal of this TDM plan is a 20 percent reduction in total daily vehicle trips and a 25 percent reduction in peak hour vehicle trips. The above goal results in a reduction of 118 daily vehicle trips and 20 peak hour vehicle trips.

Table 1

Trip Generation - 479 Pastoria Avenue												
Land Use	ITE Code	KSF	Daily		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	In	Out	Total	Rate	In	Out	Total
Proposed 55% FAR	760	52	11.33	588	1.46	63	12	76	1.46	12	66	78
<b>Vehicle Trips (A)</b>				<b>588</b>		<b>63</b>	<b>12</b>	<b>76</b>		<b>12</b>	<b>66</b>	<b>78</b>
TDM Reduction Goal (20% of Daily Trips; 25% of Peak Hour Trips)				470		47	9	57		9	49	58
<b>Vehicle Trips (B)</b>				<b>470</b>		<b>47</b>	<b>9</b>	<b>57</b>		<b>9</b>	<b>49</b>	<b>58</b>
<b>Target TDM Trip Reduction Goal C = A - B</b>				<b>118</b>		<b>16</b>	<b>3</b>	<b>19</b>		<b>3</b>	<b>17</b>	<b>20</b>

## Notes:

- KSF = 1000 square feet
- Rate per KSF
- From ITE trip generation equations (ITE Land Use 760 – Research and Development, 9<sup>th</sup> Edition):
  - AM:  $\ln(T) = .87 \ln(X) + .86$  (Entering = 83%, Exiting=17%)
  - PM:  $\ln(T) = .83 \ln(X) + 1.06$  (Entering = 15%, Exiting=85%)
  - Daily:  $\ln(T) = .83 \ln(X) + 3.09$  (Entering = 50%, Exiting=50%)

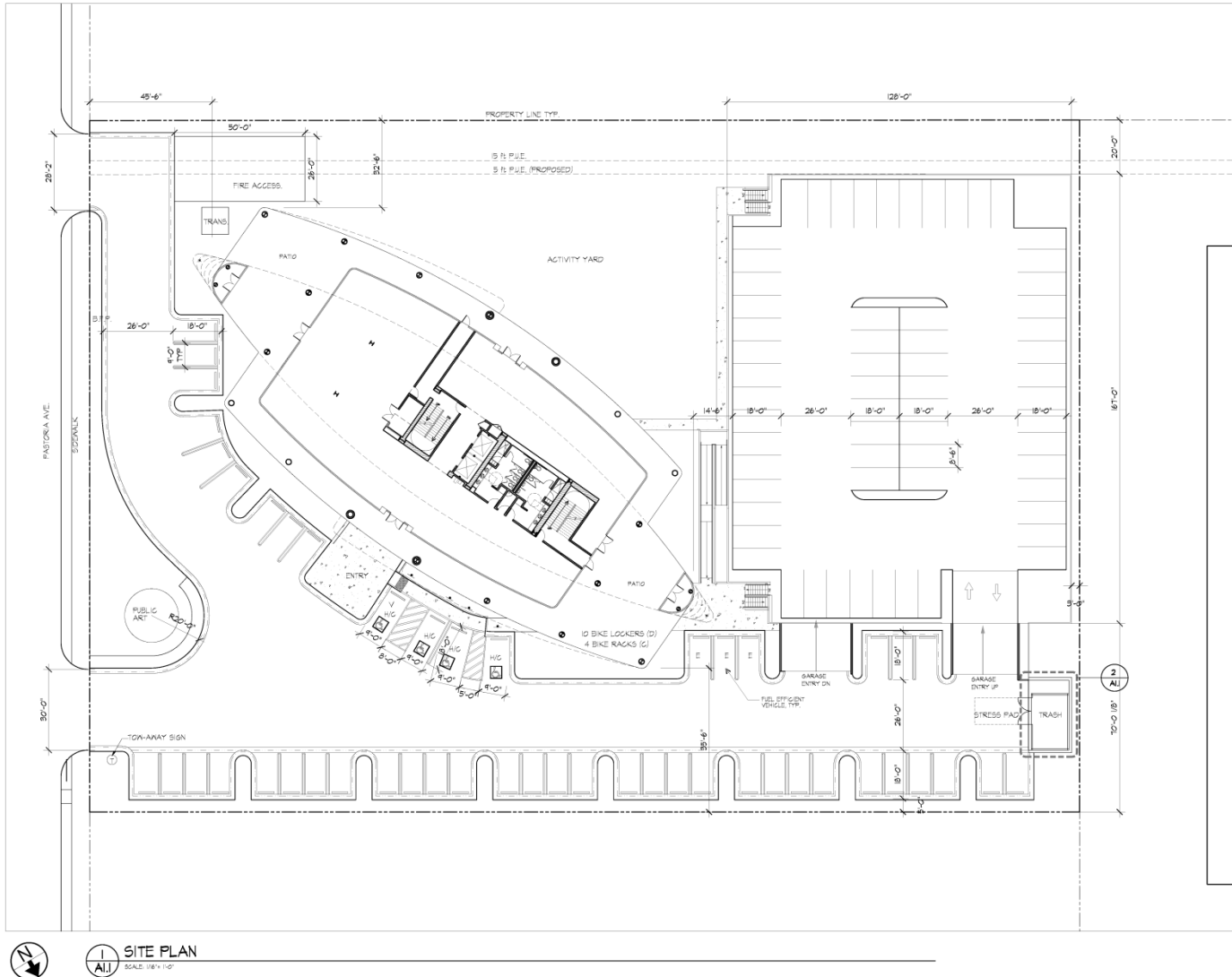
X = 1000 Gross Square Floor Area, T = Number of vehicles, Ln = Natural Log

Source: Trip generation Manual (9<sup>th</sup> Edition), ITE, 2012

Figure 1



Figure 2



**LEGEND:**

ACCESSIBLE PATH OF TRAVEL  
SHALL CONFORM TO CBC 2010  
PROPERTY LINE

**NOTES:**

1. SEE LANDSCAPE AND CIVIL DRAWINGS FOR NEW CURBS, CUPS, RAMPS, SLOPED WALKS, GRASS SLOPES, ETC. ALONG THE EXTERIOR ROUTE OF TRAVEL.
2. 9% OF PARKING RESERVED FOR FUEL EFFICIENT VEHICLES.
3. SITE LIGHTING DESIGN (SEE E1)

**SITE 4 PARKING STATISTICS**

APR	88-50-002
SITE STATISTICS	
LOT SIZE (ACRES)	2.11
LOT SIZE (SQ. FT.)	94,329
OFFICE BUILDING STATISTICS	
NUMBER OF BUILDINGS	1
STORIES OF BUILDINGS	4
BUILDING HEIGHT	91'-4" (ROOF)
FOOTPRINT PER BLDG. (SQ. FT.)	17,250
TOTAL FOOTPRINT (SQ. FT.)	52,344
FAR	0.55
(IN LEED GOLD BOND)	
PARKING STATISTICS	
PARKING PROVIDED	
TOTAL CARS	174 (3.51/1,000)
HIC STALLS	6
BIKE STALLS	14 (314 x 58 x 4)

**479 N. PASTORIA AVE**  
**NEW OFFICE BUILDING**

**SUNNYVALE, CA**

**Issues and Revisions**

No.	Date	Issues and Revisions	By

**SITE PLAN**

Project Number: 2013A120  
Date: 04/23/2014  
Scale: 1/16" = 1'-0"

**FIGURE 2**

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## Section 2 – Existing Transportation Facilities and Services

The following transportation facilities provide alternate modes of transportation than the conventional single-occupant vehicle (SOV):

- Commuter Rail
- Buses and Shuttle Buses
- High Occupancy Vehicle Lanes (HOV)
- Bicycle Facilities
- Pedestrian Facilities

This section discusses the existing and planned facilities located in proximity to 479 North Pastoria Avenue. Schedules shown are subject to change and can be found at:  
[http://www.vta.org/schedules/schedules\\_bynumber.html](http://www.vta.org/schedules/schedules_bynumber.html)

### Commuter Rail – CALTRAIN

Caltrain provides intercity commuter rail service between Santa Clara County and San Francisco County. Currently, there are two Caltrain Stations located in proximity to 479 North Pastoria Avenue, the Sunnyvale Station and Mountain View Station.

The Sunnyvale Caltrain Station is located 1.2 miles (a 25 minute walk) away from the project site. This distance is further than the typical distance a commuter is willing to walk (.25 miles). The 1.2 mile distance between the station and the project site is an acceptable distance for biking which allows biking to be a viable option for getting to and from the project site and station. The station is also equipped with 15 bike racks and 75 bike lockers. Additionally, commuters have the option to ride a bus directly to the station via the VTA Bus Route 54, which can be accessed at the intersection of Mathilda Avenue and Maude Avenue, less than .3 miles away from the project site. The Sunnyvale Station is serviced by three types of trains; local, limited stop, and baby bullet. A schedule of the trains can be seen to the right.

Northbound Weekdays	
4:44,	
5:19, <b>6:13</b> , <b>6:18</b> , <b>6:32</b> , <b>7:00</b> , <b>7:13</b> , <b>7:18</b> , <b>7:32</b> , <b>8:00</b> ,	
<b>8:13</b> , <b>8:32</b> , <b>8:54</b> , 9:24, <b>9:54</b> , 10:24, 11:24, <b>12:24</b> ,	
1:24, 2:24, <b>2:54</b> , 3:21, <b>3:58</b> , <b>4:58</b> , <b>5:58</b> , 7:04,	
7:44, 8:44, 9:44, 10:44	
Southbound Weekdays	
6:08, 6:38, <b>7:43</b> , <b>8:43</b> , <b>9:43</b> , 10:20, <b>10:42</b> ,	
11:20, <b>12:20</b> , 1:20, 2:20, 3:20, <b>3:42</b> ,	
4:20, <b>4:42</b> , <b>5:16</b> , <b>5:21</b> , <b>5:41</b> , <b>5:55</b> , <b>6:17</b> , <b>6:21</b> , <b>6:41</b>	
, <b>6:55</b> , <b>7:17</b> , <b>7:21</b> , <b>7:41</b> , <b>7:55</b> , 8:43, 9:53, 10:53,	
11:53, 1:14	
am - <i>italics</i>   pm - <b>bold</b>	
<b>yellow</b> - <u>limited-stop</u>   <b>red</b> - <u>baby bullet</u>	

The Mountain View Caltrain Station is located 2.9 miles away from the project site. This distance is much farther than the typical distance a commuter is willing to walk, but does fall into the acceptable range for biking. The Mountain View Station has 25 bike racks and 116 bike lockers which are available through reservation. Additionally, the Mountain View Station is serviced via the Mary Moffett Shuttle. The shuttle route is defined in the following section.

The Mountain View Caltrain Station is serviced by a higher number of trains compared to the Sunnyvale Station during both the AM and PM peak period. A schedule of the trains can be seen below:

#### Northbound Weekdays

4:49, 5:24, **5:57**, **6:23**, **6:37**, **6:57**, **7:05**, **7:23**, **7:37**, **7:57**, **8:05**, **8:23**, **8:37**, **8:59**, 9:29, **9:59**, 10:29, 11:29, **12:29**, **1:29**, **2:29**, **2:59**, 3:26, **4:03**, **4:35**, **4:46**, **4:58**, **5:03**, **5:35**, **5:46**, **5:58**, **6:03**, **6:35**, **6:46**, **7:00**, 7:09, 7:49, 8:49, 9:49, 10:49

#### Southbound Weekdays

6:03, 6:33, **7:07**, **7:38**, **7:44**, **7:58**, **8:09**, **8:38**, **8:44**, **8:58**, **9:09**, **9:38**, **9:44**, 10:15, **10:37**, 11:15, **12:15**, **1:15**, **2:15**, **3:15**, **3:37**, 4:15, **4:37**, **4:51**, **5:11**, **5:36**, **5:50**, **5:56**, **6:12**, **6:36**, **6:50**, **6:56**, **7:12**, **7:36**, **7:50**, 8:38, 9:48, 10:48, 11:48, 1:09

am - *italics* | pm - **bold**

**yellow** - limited-stop | **red** - baby bullet

## Caltrain Shuttle

The privately owned Mary Moffett Shuttle services various areas in Sunnyvale with multiple stops near the project site location. The closest stop is located at the intersection of Mary Avenue and Maude Avenue, .2 miles from the project site, which is in walking distance. Shuttles during both the AM and PM peaks are coordinated with the various Caltrain trains at the station.

The shuttle schedule can be seen to the right. A detailed route map can be found in Figure 3.

### PM Schedule

Mary & Maude	3:38	4:23	5:18	6:23
410 Mary	3:39	4:24	5:19	6:24
Middlefield/Whisman	3:44	4:29	5:24	6:29
<u>Mountain View Caltrain</u>	3:48	4:33	5:28	6:33
Northbound Train # Mountain View	<b>261</b> 4:03	<b>267</b> 4:46	<b>375/277</b> 5:35/5:46	<b>385/287</b> 6:35/6:46
Southbound Train # Mountain View	<b>156</b> 4:15	<b>258/260</b> 4:37/4:51	<b>264</b> 5:36	<b>274/278</b> 6:36/6:50

### AM Schedule

Northbound Train # Mountain View	<b>207</b> 6:23	<b>217/221</b> 7:23/7:37	<b>227/231</b> 8:23/8:37	<b>135</b> 9:29
Southbound Train # Mountain View	<b>104</b> 6:33	<b>210</b> 7:38	<b>220/322</b> 8:38/8:44	<b>230/322</b> 9:38/9:44
<u>Mountain View Caltrain</u>	6:35	7:39	8:45	9:45
Middlefield/Whisman	6:39	7:43	8:49	9:49
410 Mary	6:44	7:48	8:54	9:54
Mary & Maude	6:45	7:49	8:55	9:55



## VTA Bus Routes

The site is serviced by the Santa Clara Valley Transportation Authority's (VTA) Route 54 bus. The 54 bus services Mathilda Avenue and runs between the Lockheed Martin Transit Center and DE Anza College. The Northbound Route 54 bus stops at the Sunnyvale Caltrain Station starting at 6:15 AM with a 30-minute headway during the entire AM peak. During the PM peak, the Southbound Route 54 bus stops near the project site at 4:20 PM with a 30-minute headway during the entire PM peak. The Route 54 Bus provides service to and from the Sunnyvale Caltrain Station as well as the Lockheed Martin Transit Center for commuters.

Additionally, the Route 32 bus services sections of Mathilda Avenue. This route provides commuter service to the San Antonio and Santa Clara Transit Centers as well as the Sunnyvale Caltrain Station. A detailed Bus Route map can be found in Figure 3.

## VTA Light Rail

The Light Rail Transit (LRT) Line 902 provides service to two stations (Middlefield and Moffett Park Station), both located approximately 1 mile from the site. The Middlefield Station is further than an acceptable walking distance, but is practical for biking. The Moffett Park Station does not have a direct route for either pedestrian or bicycle access due to having to cross HWY 101 and SR 237. Bus Route 54 provides access for commuters from the project site to the Moffett Park Station with a travel time of 30 minutes.

The Line 902 runs between Mountain View to Winchester Avenue. The Line is in operation between 5:00 AM to 12:30 AM with 15 to 30 minute headways throughout the day. A detailed Rail Route can be found in Figure 3.

## HOV Lanes

High Occupancy Vehicles (HOV) Lanes, or Carpool Lanes, only allow vehicles with two or more passengers, such as carpools, vanpools, buses and single rider motorcycles, during operating hours (5:00 AM to 9:00 AM and 3:00 PM to 7:00 PM). Due to vehicle restriction, HOV lanes experience less traffic volume during peak commute times and are able to provide a higher level of service for commuters compared to General Public Lanes (GP) during the same times. Both HWY 101 and SR 237 include HOV lanes and provide regional access to the project site.

VTA is currently implementing the Silicon Valley Express Lanes Program. An Express or Toll Lane allows single occupancy vehicles (SOV) the ability to utilize the Express Lane by paying a toll. Pricing is controlled dynamically based on real time congestion levels with the objective to maintain free-flow conditions. Toll prices are displayed in real time on Variable Message Signs (VMS) above the toll lanes.

The FasTrak collection system, which is utilized throughout the region, will be used to collect tolls from commuters. All vehicles meeting the HOV Lane requirements will be able to access the express lane at no cost. Express Lanes have been shown to ease congestion in GP lane by selling underutilized capacity

in HOV/Express lane. Additionally, Express Lanes provide revenue to the facility owner that can be used to fund additionally transit projects and facility maintenance. Figure 4 shows VTA's Silicon Valley Express Lanes Program.

## Bicycle Facilities

Approximately 1-2% (Census 2000) of Sunnyvale commuters rides their bicycles to work. The City of Sunnyvale bikeway facilities are classified by three classes, Class I, Class II, and Class III. The following provides a description of each facility:

- (1) Class I Bikeway (Bike Path) - Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with cross flow by motorists minimized.
- (2) Class II Bikeway (Bike Lane) - Provides a striped lane for one-way bike travel on a street or highway.
- (3) Class III Bikeway (Bike Route) - Provides for shared use with pedestrian or motor vehicle traffic.

Figure 5 shows the existing facilities located near the project site. West Maude Avenue, North Mathilda Avenue and North Sunnyvale Avenue all have portions of Class II and Class III bikeways and provide direct access to the Sunnyvale Caltrain Station. The Moffett Park LRT Station does not have direct access via bicycle facility.

## Pedestrian Facilities

Pedestrian facilities are comprised of sidewalks, warning devices and signals, crosswalks, and trails. Currently, there are extensive pedestrian facility networks located on North Mathilda Avenue, West Maude Avenue, North Mary Avenue, and North Pastoria Avenue. These facilities provide safe access to VTA Bus Route 54 as well as local commercial areas. To the northwest, HWY 101 and SR 237 act as a barrier, not allowing pedestrian foot traffic as there is no crossing.

Figure 3

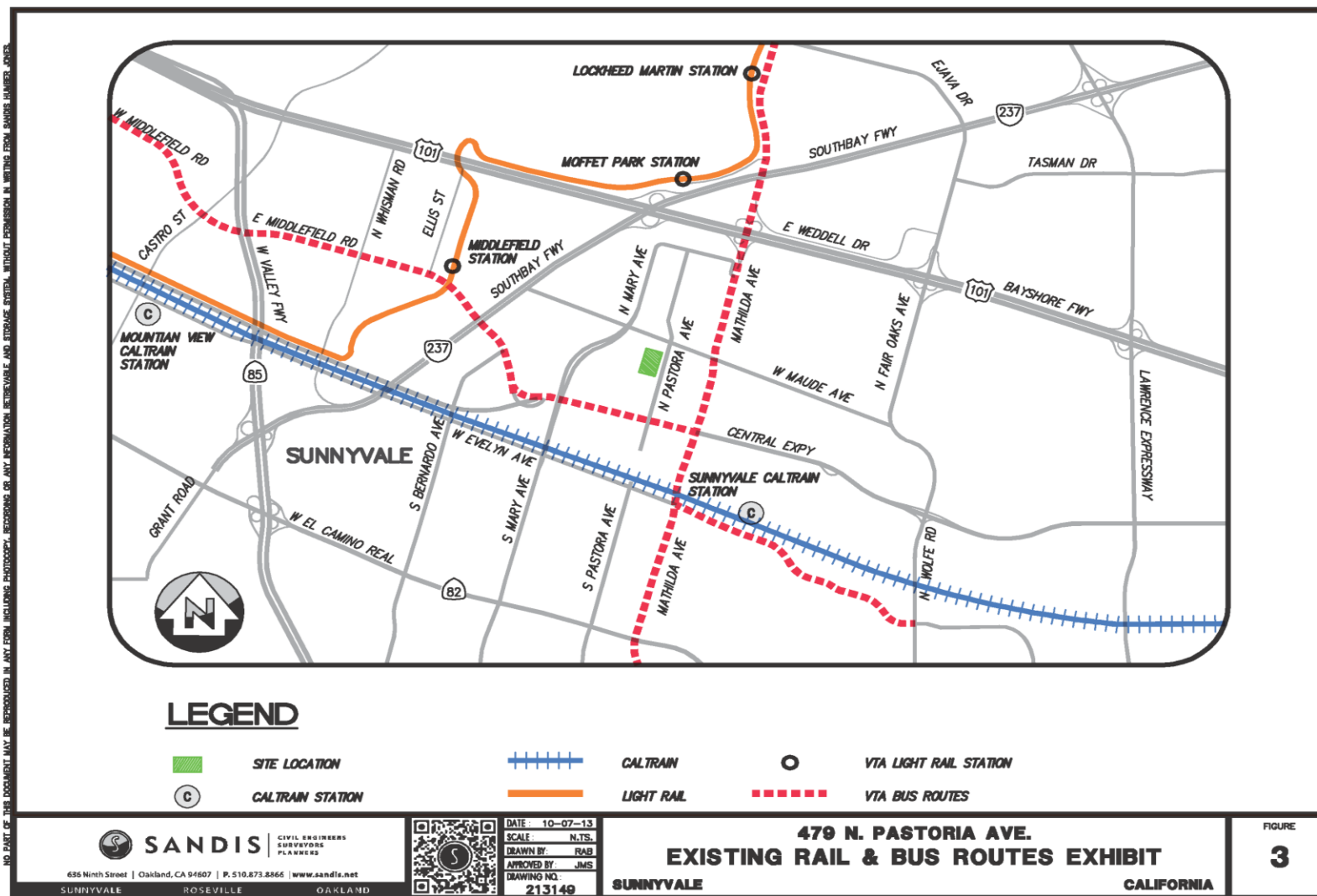


Figure 4

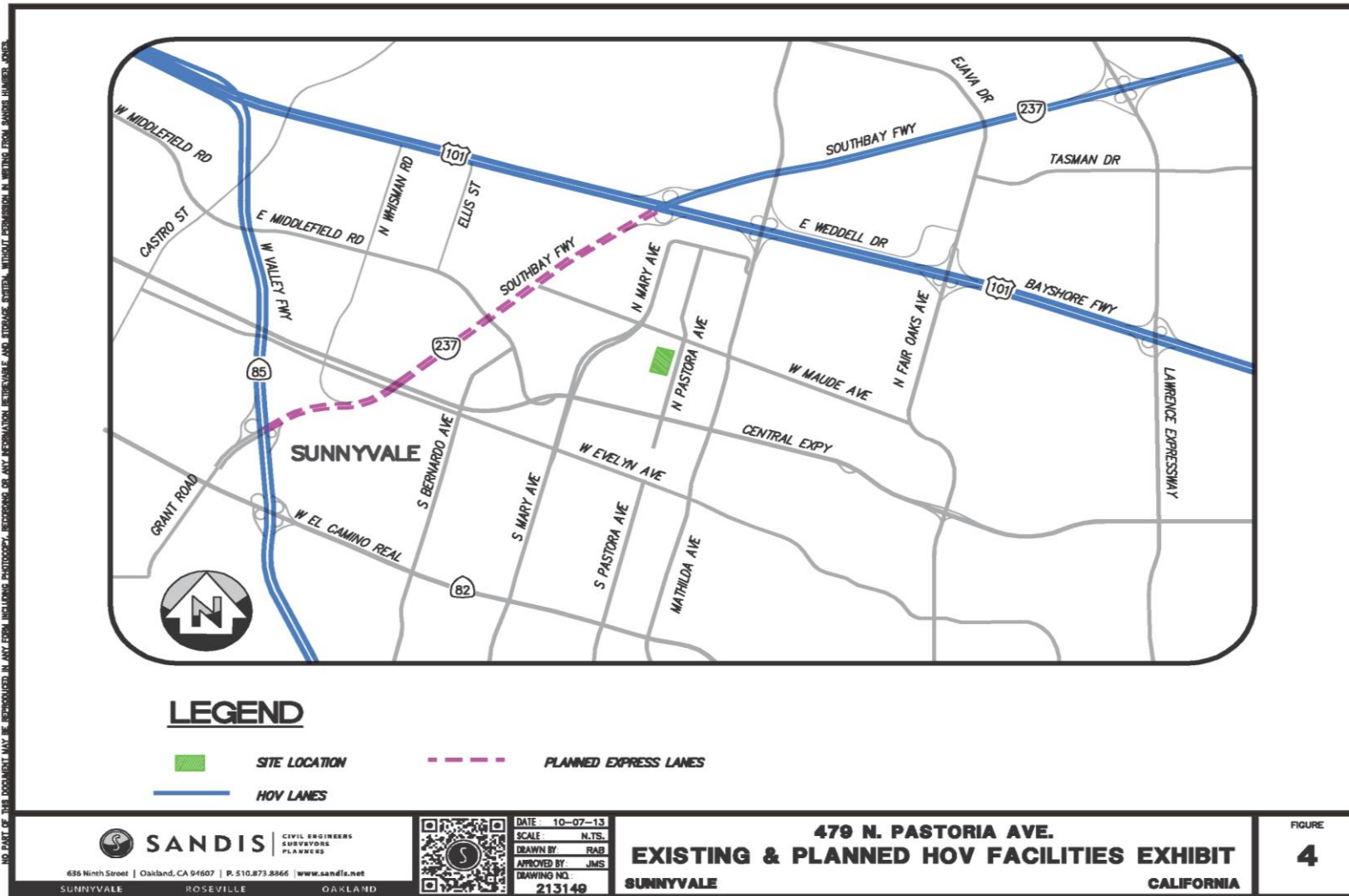
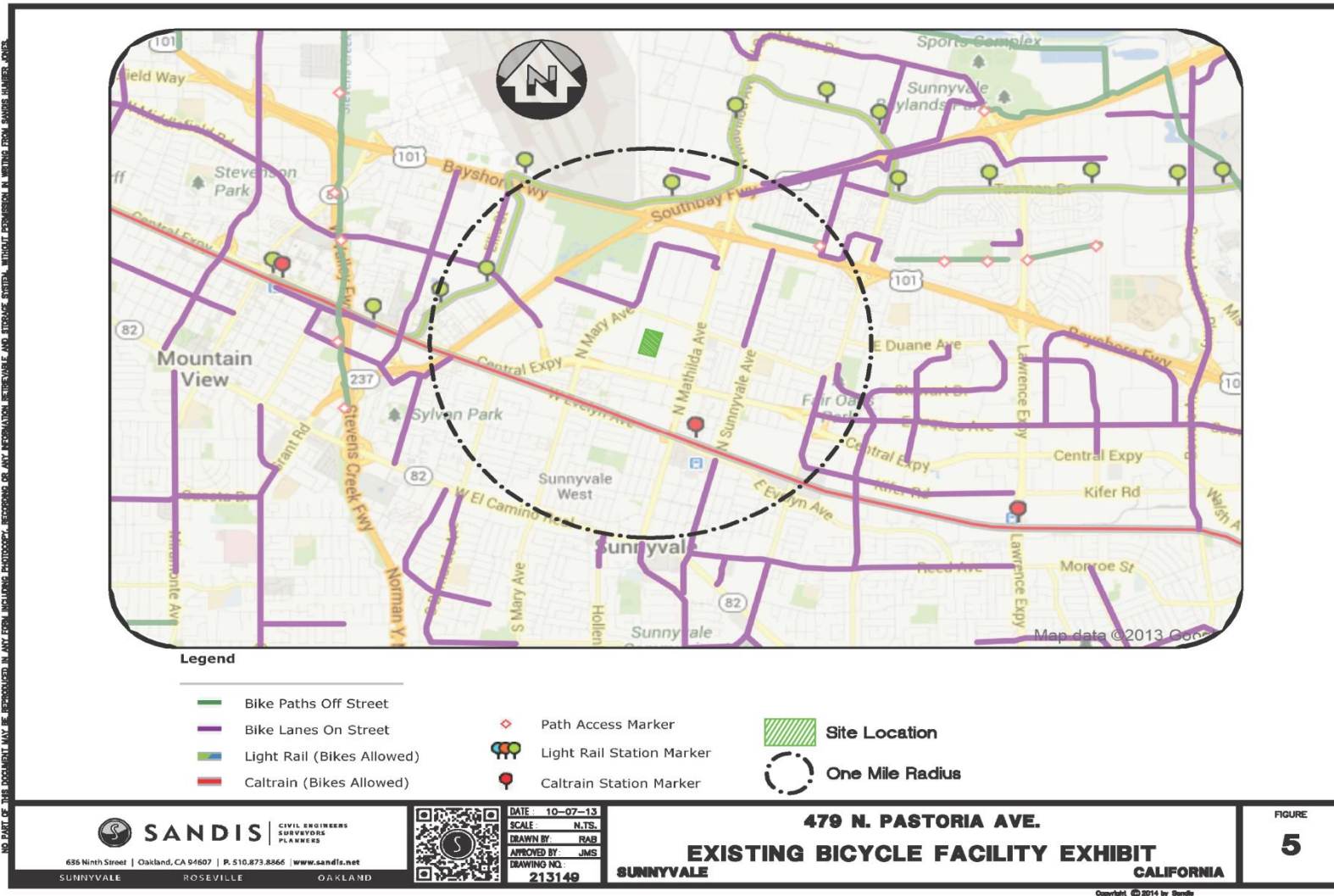




Figure 5





## Section 3 – Potential TDM Design Measures and Programs

The City of Sunnyvale has developed a list of TDM design measures that are defined in Transportation Demand Management (TDM) Tool Kit, created by The Hoyt Company in December 1999. Tables 2 and 3 provide a summary of potential design measures and programs as defined in the TDM toolkit. Table 2 includes measures that would be incorporated into the site design, whereas Table 3 includes measures that would be implemented by the building tenants. The TDM plan for North 479 Pastoria Avenue includes applicable measures from the above mentioned list, as well as other current state of the practice approaches.

<b>Sunnyvale TDM Tool Kit Design Measures – Table 2</b>	
<b>Planning and Design Measures</b>	
<b>TDM Design Measure</b>	<b>Summary</b>
<b>Building Design/Layout</b>	
Building Entries	Locate building entries towards pedestrian and transit facilities.
Building Setbacks	Reduce setback to allow for closer access to pedestrian and transit facilities.
Passenger Loading Zones	Passenger loading zones should be placed in convenient locations near building entrances to allow for easy pick up and drop off from carpool/vanpool/transit.
Building Wiring	Use Fiber Optic Wiring to facilitate telecommuting.
<b>Transit Design Elements</b>	
Intersection Geometrics	Design streets and intersections to accommodate transit vehicle turning movements.
Street Design	Design Street pavement to allow for transit vehicle weight
Land Dedication	Dedicate land for future rail and bus facilities.
Transit Passenger Shelters	Future transit facilities to be constructed on or near project site.
Bus/Rail Station Subsidy	Owner of project site to provide payment for additional transit facilities.
<b>Parking Design Measures</b>	
Off-Street Parking	Off street parking to be located on the side or rear of the building; not between building entrances so not to separate the entrance and transit facilities.
Parking Configuration	Parking lot layout should allow for pedestrian access and movement.
Preferential Parking	Designate parking spaces for carpool/vanpool/shuttles near building entrances.
Reduced Parking	Reduce total number of parking spaces, to at or below site required amount. This and a strong TDM will help shift commuters to other modes of transportation.
Reduced Parking Fees	Free or reduced parking fees for preferential spaces (applies only to sites that have paid parking).





<b>Sunnyvale TDM Tool Kit Design Measures - Table 2</b>	
<b>Planning and Design Measures</b>	
<b>TDM Design Measure</b>	<b>Summary</b>
<b>Pedestrian Design Measures</b>	
Minimize Walking Distances	Design pedestrian access with minimum walking distance and/or the most direct route to transit stops to promote usage.
Pedestrian Connections	Safe, convenient pedestrian connections between buildings and nearby streets.
Internal Pedestrian Access	Safe, convenient pedestrian connections between buildings and on the site.
<b>Bicycle Design Measures</b>	
Showers and Clothes Lockers	On site shower and locker facilities for bicycle users
Bicycle Parking	On site long and short term secure bicycle parking facilities
<b>On-Site Amenities</b>	
Cafeteria with hot food services, ATM, exercise facilities, convenience retail, childcare, valet services, post office/stamps, on-site transit pass sales	On-site amenities provide services that would otherwise generate a trip of site during, before or after, working hours.
Source: Transportation Demand Management (TDM) Tool Kit, Prepared for the City of Sunnyvale by The Hoyt company, December 1999.	

<b>Sunnyvale TDM Tool Kit Design Measures – Table 3</b>	
<b>Program and Service Measures</b>	
<b>TDM Design Measure</b>	<b>Summary</b>
<b>Information Board</b>	
Information Board	Permanent Display location for TDM information.
<b>Transportation Coordinator</b>	
Transportation Coordinator	The Transportation coordinator is responsible for developing, marketing, implementing, and evaluating TDM programs.
<b>Carpool Programs</b>	
Carpool Programs	Carpool programs help commuter carpools to form by matching drivers and passengers.

<b>Sunnyvale TDM Tool Kit Design Measures – Table 3</b>	
<b>Program and Service Measures</b>	
<b>TDM Design Measure</b>	<b>Summary</b>
<b>Vanpool Programs</b>	
Vanpool Programs	Vanpool programs facilitate vanpool formation by matching commuters and offering subsidies.
<b>Transit Programs</b>	
Transit Subsidies	Employers subsidize transit passes through programs such as Commuter check or by providing passes.
On-Site Pass Outlet	Provide transit passes for sale onsite as a convenience for employees.
Shuttle Programs	Operation of a shuttle service to nearby rail and transit stations and other local destinations.
<b>Parking Programs</b>	
Preferential Parking	Designate parking spaces for carpool/vanpool/shuttles near building entrances.
Paid Parking	Free or reduced parking fees for preferential spaces (applies only to sites that have paid parking).
Parking Cash out	Employees receive the cash equivalent of an employer-provided parking space if elected to forgo parking.
<b>Pedestrian Programs</b>	
Pedestrian Programs	Pedestrian programs encourage employees to walk to work and may include mapping walking routes, walking groups, and incentives.
<b>Bicycle Programs</b>	
Bicycle Programs	Bicycle programs encourage employees to walk to work and may include mapping walking routes, walking groups, and incentives.
<b>Promotional Programs</b>	
New Employee Orientation	Introduce new employees to the TDM program.
Flyers, Posters, Emails	Informs and reminds employees of TDM program.
Transportation Fairs	Provides alternative mode information in a fun package.
Newsletter articles	Information about the TDM plan in a company newsletter.
Commuter Information	An on-site information center for transit and commute alternatives to assist employees with trip planning.
Transit Field Trips	Provides an orientation for new transit riders by showing them local routes, and transit details.
Free Trial Rides	Free transit fares for employees interested in using transit.
Transit Riders Guide	A guide with local transit routes, stops and schedules.
Bike-to-work day	A regional event to promote biking.
Bicycle Riders Guide	A local guide with bike routes, lanes, and paths.



<b>Sunnyvale TDM Tool Kit Design Measures – Table 3</b>	
<b>Program and Service Measures</b>	
<b>TDM Design Measure</b>	<b>Summary</b>
Guaranteed Ride Home Program	Employees who use transit or other TDM programs are guaranteed a ride home in case of emergency or late working hours. The employer would provide either a taxi, rental car, or company car.
<b>Telecommuting</b>	
Telecommuting	Employees are able to work from home via telecommunication.
<b>Alternative Work Schedule</b>	
Flextime	Employees are able to modify their arrival and departure times.
Staggered Work Hours	Work groups work different hours, staggering arrival and departure times.
Compressed Work Week	Employees work more hours per day, but less day per week.
Source: Transportation Demand Management (TDM) Tool Kit, Prepared for the City of Sunnyvale by The Hoyt company, December 1999.	



## Section 4 – Designated TDM Measures and Programs

The following TDM measures for 479 North Pastoria Avenue were determined based on the proposed physical attributes of the site and building, as well as existing transportation facilities in proximity to the site.

### Site Design Measures

#### *Building Design Measures*

##### 1) Building Entries

The main building entrance will be located on North Pastoria Avenue and will provide access to new and existing pedestrian facilities. Locating the building entrance in such a manner will facilitate pedestrian movement and transit use.

##### 2) Building Setbacks

The building will be located with reduced setbacks, effectively reducing walking distance from vehicle drop off and parking locations.

##### 3) Building Wiring

The building will utilize high speed Ethernet cable to facilitate telecommuting.

#### *Parking Design Measures*

##### 4) Parking Configuration

The parking lot layout will be conducive for pedestrian circulation and access.

##### 5) Reduced Parking

A total of 174 parking spaces are proposed for the 479 North Pastoria Avenue site. This is below the City of Sunnyvale Municipal Code Section 19.46.100 which prescribes a maximum of 201 spaces (4 spaces per 1000 SF) for the project site. A reduction in total parking spaces coupled with a strong TDM helps to facilitate the use of other modes of transportation.

##### 6) Preferential Parking

Spaces located near the main entrance can be designated as carpool/vanpool spaces. These spaces would be convenient to carpool/vanpool passengers and drivers and would help to facilitate the use of carpools. If the spaces are underutilized, single occupant vehicles could park in the spaces as needed.



### *Pedestrian Design Measures*

#### 7) Minimize Walking Distances

As previously described, the building is designed and placed in such a way to minimize the walking distance between the site and pedestrian facilities.

#### 8) Pedestrian Connections

The layout of the parking lot is conducive to pedestrian circulation and access. The building entrances are in proximity to the clearly defined pedestrian facilities.

### *Bicycle Design Measures*

#### 9) Shower and Locker Facilities

The building will have shower and changing facilities to accommodate bicyclists. These facilities will help promote bicycling as an alternative commute option for interested employees.

#### 10) Bicycle Parking

The project site plans depicts a total of 10 bicycle lockers and four bicycle racks on the north side patio of the project site. The proposed bicycle facilities are adequate based on the City of Sunnyvale's Municipal Code 19.46.150(c) for bicycle parking.

### *Program and Service Measures*

The following measures are to be implemented by the building tenants and property manager to supplement the site and design measures previously described. These tenant-implemented programs and services will help ensure that the TDM goals are met by encouraging alternate modes of transportation to single occupant vehicle.

#### 11) Part Time Transportation Coordinator

The Part Time Transportation Coordinator oversees the entire tenant implemented Program and Service Measures. He or She will be responsible for disseminating information, overseeing promotional programs, and coordinating the annual reporting and monitoring for the City of Sunnyvale. The Transportation Coordinator will also provide information to employees, such as transit and bicycle facility maps, transit schedules, and overall TDM information that should be included in employee handbooks and made available to new employees.

The Part Time Transportation Coordinator will also provide information to employees on various carpool options and incentives such as the following:

- 511 Transit Trip Planner
- You Pool, We Pay

- Enterprise Ride Share Program

#### 12) Carpooling

Employee carpooling should be encouraged by providing preferential carpool parking, on-site carpool passenger and driver matching or a peer to peer application (ZimRide), and commute time flexibility.

#### 13) Commuter Checks

Any employee that elects to use public transit should be given access to Commuter Checks or similar program.

#### 14) Kick-Off Event

Providing an organized event displaying and promoting various types of commute options is an effective way to introduce new employees to non SOV commute options. When the building occupancy reaches fifty percent, the Transportation Coordinator will plan a kick-off event that will showcase the various commute options available to employees as well as highlight features available through the TDM. Local transit agencies such as VTA and Caltrain may be invited to display a booth and provide information to the employees of 479 North Pastoria Avenue.

### Additional Measures

If the TDM monitoring and review shows that the TDM plan goals are not being realized, additional measures may need to be implemented to ensure the original TDM plan goals are met. The following are additional tenant measures that could be implemented.

#### 15) Shuttle Bus Program

A tenant provided Shuttle Bus Program would transport commuters to transit facilities, residential areas, commercial areas, or pre-determined travel routes.

#### 16) Parking Cash-Out

Employers would offer payment to employees receiving a “free” parking space. This payment could be used to offset the costs of using transit or other modes of transportation and would offer incentive to employees to use alternative modes of transportation. The price of the payout would be determined based on tenant rent prices.

#### 17) Transit Subsidies

Employers would provide transit subsidies to employees to promote the use of public transit. Transit subsidies would be consistent with guidelines set by VTA for TDM trip reductions and would not exceed the maximum subsidy allowed by Federal Law. The number of employees receiving subsidies would be determined by the employer’s lease agreement and will vary.



## 18) Guaranteed Ride Home

Employees who elect to carpool or use other forms of transit will be eligible to use a tenant sponsored guaranteed ride home service. Tenants would agree to provide this service through their lease agreement, and the program will be managed and coordinated by the TDM Coordinator. Employers would provide a rental car or taxi service to eligible transit and carpool commuters when needed due to extended working hours or emergencies.

## Section 5 – Monitoring and Evaluation

The purpose of this TDM plan is to reduce the overall vehicle trips and decrease the traffic impact resulting from the proposed development. To ensure this, evaluation measures must be implemented to monitor and evaluate the success of the TDM plan, and report the results to the City of Sunnyvale. This monitoring program will quantify the effectiveness of the various measures in place and provide feedback and direction to better meet the goals of the TDM plan as needed.

This TDM plan's goal is to facilitate a 20 percent reduction in total daily vehicle trips and a 25 percent reduction in peak hour vehicle trips. The site owner will be responsible for an annual status report to the City of Sunnyvale. Monitoring and evaluation of the TDM programs and implementation of said programs will need to be incorporated into the status of the report. The City will base the TDM program compliance on counts collected during an Annual Driveway Count. Additionally, an Annual Commute Survey will be conducted to determine the mode splits that commuters are using as well as their overall opinion of the programs. Below are procedures to be used to monitor and evaluate the effectiveness of the TDM plan and programs.

### Annual Commute Survey

Surveys will be conducted by the developer and/or tenants to determine the various modes of transportation that commuters are using. The results should also include the employee's opinions of the programs available to them. The results of this survey will be used to evaluate the effectiveness of the TDM plan and to determine what areas can be supplemented.

The Annual Commute Survey must be conducted every year and compared to the data collected in the previous year's survey. Areas that need improvement shall be identified based on the compared data.

### Annual Driveway Counts

Annual vehicle driveway counts will be conducted to provide accurate count data for 479 North Pastoria Avenue. Mechanical vehicle counts will be conducted at the entry and exit driveways of the site over three day period. The resulting vehicle counts will then be compared to the estimated trip generation to determine if the required 20 percent reduction in total daily vehicle trips and 25 percent reduction in peak hour vehicle trips are met.



### Penalties for Non-Compliance

If it is found that 479 North Pastoria Avenue is not achieving the proposed trip reduction as identified in Table 1, the City of Sunnyvale may assess a monetary penalty per trip that exceeds the identified goal. The annual Driveway Counts will be used, as previously identified, to determine the number of excess trips.

The monetary penalty will be calculated based on the estimated cost per employee that would be required to successfully implement compliance of the TDM program. An estimation of this annual cost is \$1,500 per trip. This penalty of \$1,500 would be applied annually to each of the non-compliance trips and escalated at a factor of 1 percent each consecutive year that 479 North Pastoria Avenue is not in compliance.

### TDM Status Report to the City

An Annual TDM Status Report summarizing the Annual Commute Survey results will be submitted to the city for review. The report will identify the effectiveness and any progress of the current plan as well areas in need of improvement. Changes and improvements shall be proposed based on areas identified as needing improvement.

### Modifications to the TDM Program

As part of the annual status report, updates to the Sunnyvale *Transportation Demand Management (TMD) Tool Kit*, should be reviewed to identify any modifications to TDM programs that would result in a change of trip reduction.

The TDM plan should be considered a living document with the primary goal of reducing single occupant vehicle trips. As techniques and programs change and/or advance, the TDM plan should be revised accordingly.

## Section 6 – Summary

This TDM plan has been produced for the use at 479 North Pastoria Avenue. The goal of this plan is to reduce the average number of generated vehicle trips for the project site. Numerous design and program measures were presented that facilitate the use of alternate modes of transportation, including transit, carpooling, bicycling, and walking.

A goal of a 20 percent reduction in total daily vehicle trips and a 25 percent reduction in peak hour vehicle trips was identified for 479 North Pastoria Avenue. An Annual Commute Survey and Driveway Counts will be conducted to monitor and report the effectiveness of the TDM plan. If the report finds that the TDM plan is not meeting the target goal trip reduction, areas that need improvement will be identified and additional measures and penalties may be assessed.