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PLANNERS

# Transportation Demand Management (TDM) Plan 2075 Broadway, Redwood City, CA



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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 2075 Broadway. A vicinity map can be found on Figure 1.

The proposed project site includes a .58 Acre (25,500 Square Feet) lot with an existing building which includes: a gym, a travel agency, a hair salon, and a tanning salon. The proposed development will remove the existing building and consists of a new four story building purposed for general office space and specialty retail with 80,000 Gross Square Feet (GSF) and 11,345 GSF of floor area respectively. 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 project site's specific land use during a specified time period. The number of vehicle trips generated by the project site was estimated using trip generation rates for a general office use facility (ITE Land Use 710 – General Office) and a specialty retail (ITE Land Use 826 - Specialty Retail) 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 site is forecast to be 253 AM peak hour trips and 236 PM peak hour trips. The complete details of the trip generation 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 reduce the number of new net AM and PM peak hour single occupant vehicle (SOV) trips that are generated by the project site to be zero. This TDM plan is estimated to reduce the number of new net SOV trips to -1 AM and -56 PM peak hour trips.

**Table 1 - Trip Generation Table**

Use	Size/ Unit	AM Peak Hour			PM Peak Hour		
		Factor	Trips In/Out	Total Trips	Factor	Trips In/Out	Total Trips
<i>Proposed Project</i>							
General Office Building (710)	80 ksf	(1)	141/19	160	(1)	28/140	168
Specialty Retail Center (826)	13.515 ksf	(2)	45/48	93	(2)	34/34	68
Total			186/67	253		62/174	236
Internalization Credit		(3)	(21/10)	(31)	(3)	(15/30)	(45)
Transit Credit		(4)	(15/4)	(19)	(4)	(4/10)	(14)
Project Traffic			150/53	203		43/134	177
<i>Existing Conditions</i>							
Powerhouse Gym (492)	20.7 ksf	(5)	15/15	30	(5)	43/32	75
CEA Travel (826)	2 ksf	(2)	7/7	14	(2)	5/5	10
Salon (918)	1.2 ksf	(6)	2/0	2	(6)	1/1	2
Tanfastic	1.6 ksf	(6)	2/0	2	(6)	1/2	3
Total			26/22	48		50/40	90
Internalization Credit		(3)	(3/3)	(6)	(3)	(10/8)	(18)
Transit Credit		(4)	(2/2)	(4)	(4)	(3/2)	(5)
Existing Traffic			21/17	38		37/30	67
<b>Net Project Related Trip Generation</b>							
			<b>+129/+36</b>	<b>+165</b>		<b>+6/+104</b>	<b>+110</b>
TDM Plan Peak Hour Trip Reduction		(7)	(120/46)	(166)	(7)	(9/157)	(166)
<b>Anticipated Project Peak Hour Trips with TDM Plan</b>							
			<b>+9/-10</b>	<b>-1</b>		<b>-3/-53</b>	<b>-56</b>
<p>(1) Trip Generation, General Office Building (710), Institute of Transportation Engineers, 9<sup>th</sup> Edition AM: <math>Ln(t) = 0.8Ln(x) + 1.57 @ 88\%/12\%</math>, PM: <math>T = 1.12(X) + 78.45 @ 17\%/83\%</math></p> <p>(2) Trip Generation, Specialty Retail Center (826), Institute of Transportation Engineers, 9<sup>th</sup> Edition. AM: <math>T = 6.84(X) @ 48\%/52\%</math>, PM: <math>T = 5.02(X) @ 50\%/50\%</math></p> <p>(3) Internalization Rate, 12.3% AM/19.1% PM. Table 9.7; Downtown Precise Plan DEIR, August 2010</p> <p>(4) Transit Reduction Rate, 7.3% AM/6% PM. Table 9.7; Downtown Precise Plan DEIR, August 2010</p> <p>(5) Trip Generation, Health/Fitness Club (492), Institute of Transportation Engineers, 9<sup>th</sup> Edition. AM: 1.41 trips/ksf @ 50%/50%, PM: <math>Ln(T) = .95 Ln(X) + 1.43 @ 57\%/43\%</math></p> <p>(6) Trip Generation, Salon (918), Institute of Transportation Engineers, 9<sup>th</sup> Edition. AM: 1.21 trips/ksf @ 100%/0%, PM: 1.45 trips/ksf @ 17%/83%</p> <p>(7) Trip Reduction Credit Resulting from TDM Design Measures</p>							

Figure 1

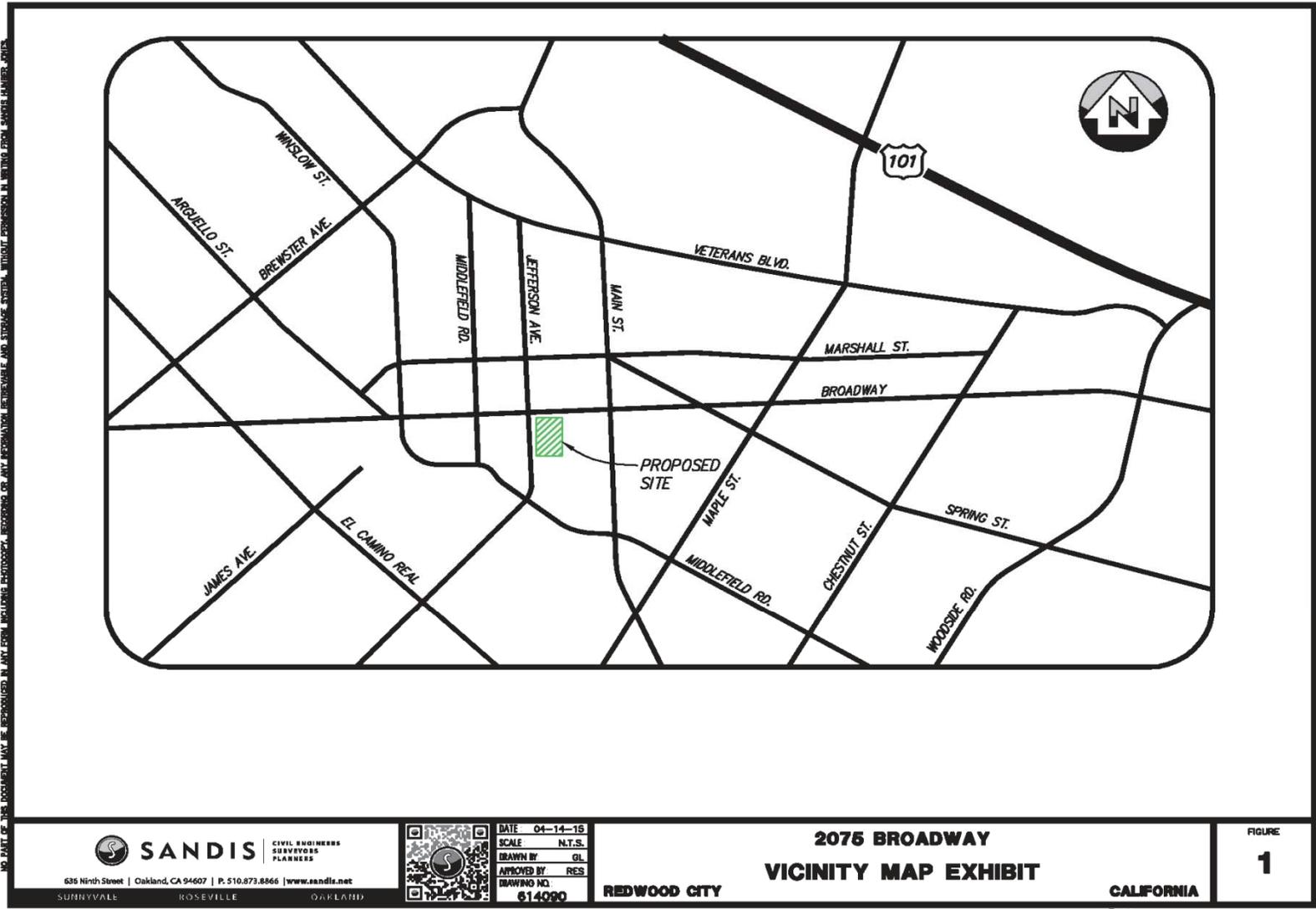
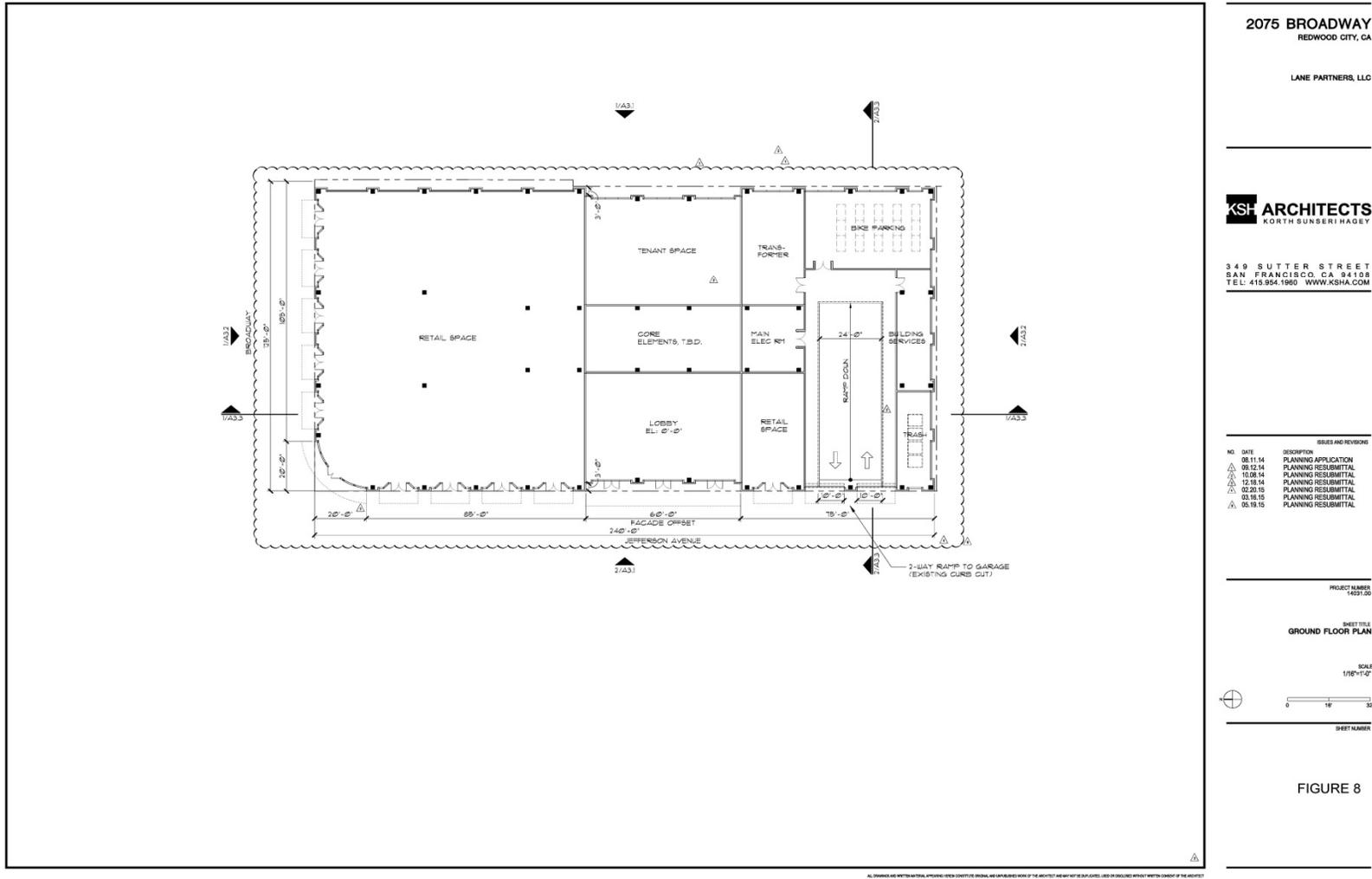


Figure 2



**2075 BROADWAY**  
REDWOOD CITY, CA

LANE PARTNERS, LLC

**KSH ARCHITECTS**  
KORTH SUNSERI HAGEY

349 SUTTER STREET  
SAN FRANCISCO, CA 94108  
TEL: 415.554.1950 WWW.KSHA.COM

ISSUES AND REVISIONS		
NO.	DATE	DESCRIPTION
1	08.11.14	PLANNING APPLICATION
2	09.12.14	PLANNING RESUBMITTAL
3	10.16.14	PLANNING RESUBMITTAL
4	12.18.14	PLANNING RESUBMITTAL
5	02.20.15	PLANNING RESUBMITTAL
6	03.16.15	PLANNING RESUBMITTAL
7	06.19.15	PLANNING RESUBMITTAL

PROJECT NUMBER  
14031.00

SHEET TITLE  
**GROUND FLOOR PLAN**

SCALE  
1/16"=1'-0"



SHEET NUMBER

FIGURE 8

ALL DIMENSIONS ARE PER THE ARCHITECT'S INTENT UNLESS OTHERWISE SPECIFIED. THE ARCHITECT'S INTENT SHALL BE THE GOVERNING AUTHORITY. THE ARCHITECT'S INTENT SHALL BE THE GOVERNING AUTHORITY. THE ARCHITECT'S INTENT SHALL BE THE GOVERNING AUTHORITY.

## Section 2 – Existing Transportation Facilities and Services

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

- Commuter Rail
- SamTrans
- Pedestrian Facilities

This section discusses the existing and planned facilities located in proximity to 2075 Broadway. Schedules for transit systems in the area are subject to change and can be found at: <http://www.samtrans.com/schedulesandmaps.html>

A local transit map and the surrounding networks can be found on Figure 3.

### Commuter Rail – CALTRAIN

Caltrain provides intercity commuter rail service between Santa Clara County, San Mateo County and San Francisco County. Currently, there is one Caltrain Stations located in proximity to 2075 Broadway — the Redwood City Station.

The Redwood City station is located approximately .23 miles from the project site. This close proximity provides convenient transit access to and from the project site for users. The station is also equipped with 18 bike racks and 50 bike lockers which are available through a rental agreement.

### Samtrans Bus Routes

The project site area is serviced by San Mateo County Transit District (SamTrans) with provides access through San Mateo County and to San Francisco County as well as Santa Clara county. Detailed information on services and routes can be found at: <http://www.samtrans.com/schedulesandmaps.html>

### Pedestrian Facilities

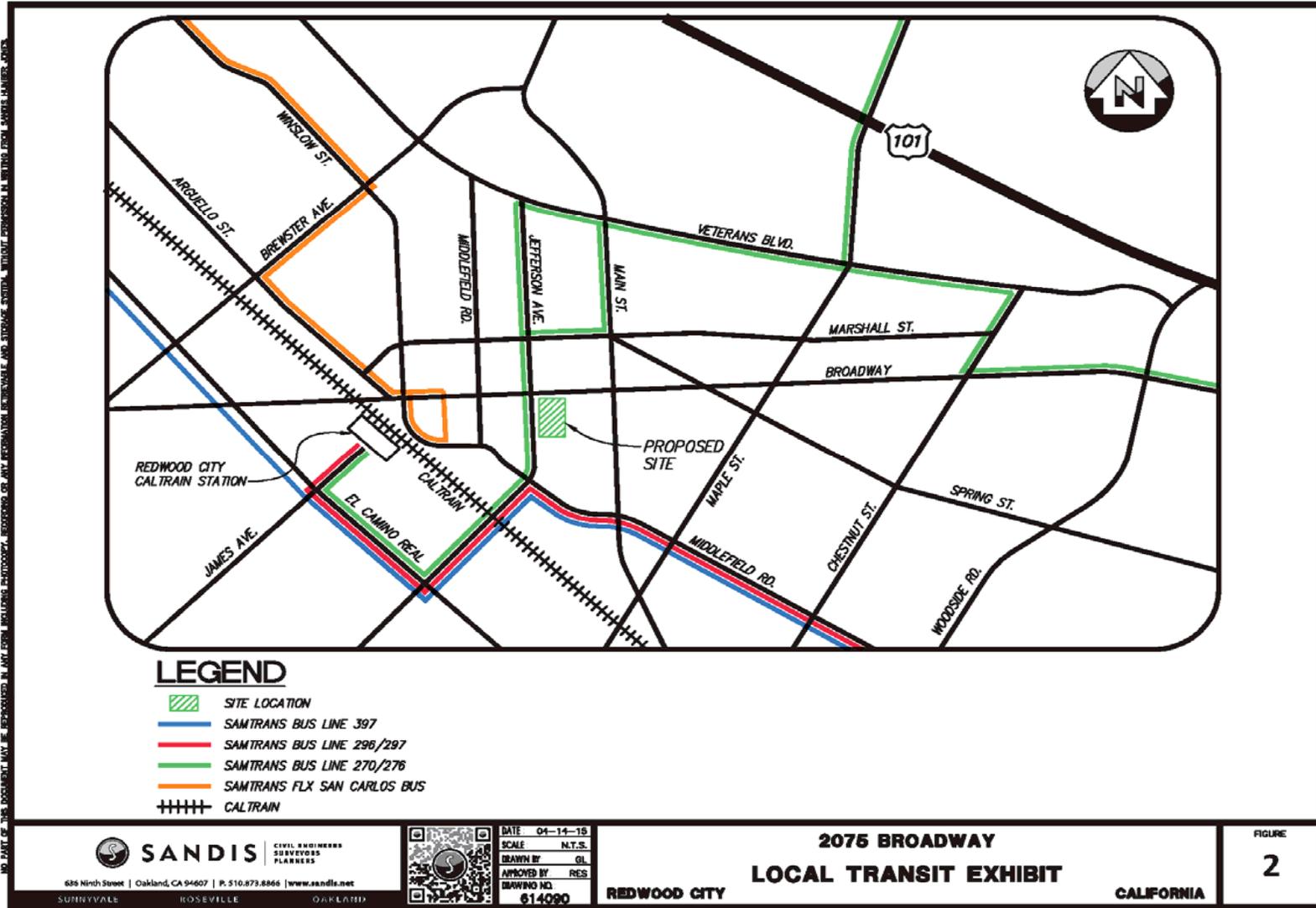
The nearby pedestrian facilities are comprised of sidewalks, warning devices and signals, crosswalks, and trails. Currently, there are extensive pedestrian facility networks located on Middlefield Road, Jefferson Avenue, and Broadway. These existing facilities provide access to local transit facilities as well as local commercial areas.

Redwood City Caltrain Station Schedule	
<b>Northbound Weekdays</b>	
5:09, 5:44, <b>6:30</b> , <b>6:45*</b> , <b>6:51*</b> , <b>7:30</b> , <b>7:45*</b> , <b>7:51*</b> , <b>8:33</b> , <b>8:45*</b> , <b>8:51*</b> , <b>9:23</b> , 9:54, <i>10:29</i> , <i>10:54</i> , <i>11:49</i> , <i>12:49</i> , 1:49, 2:54, <b>3:19</b> , <b>3:46</b> , <b>4:25*</b> , <b>4:31*</b> , <b>4:52</b> , <b>5:25*</b> , <b>5:33*</b> , <b>5:53</b> , <b>6:25*</b> , <b>6:31*</b> , <b>6:52</b> , <b>7:19</b> , 7:29, 8:09, 9:09, 10:09, 11:09	
<b>Southbound Weekdays</b>	
5:45, 6:15, <b>6:51</b> , <b>7:14*</b> , <b>7:20*</b> , <b>7:30</b> , <b>8:14</b> , <b>8:20</b> , <b>8:30</b> , <b>9:14</b> , <b>9:20</b> , <b>9:30</b> , 9:57, <i>10:19</i> , <i>10:57</i> , <i>11:57</i> , <i>12:57</i> , 1:57, 2:57, <b>3:19</b> , <b>3:57</b> , <b>4:19</b> , <b>5:08</b> , <b>5:24*</b> , <b>5:30*</b> , <b>6:08</b> , <b>6:24*</b> , <b>6:30*</b> , <b>7:08</b> , <b>7:24*</b> , <b>7:30*</b> , <b>8:20</b> , 9:30, 10:30, 11:30, 12:57 <i>am - italics</i>   <b>pm - bold</b> <b>yellow</b> - <b>limited-stop</b>   <b>red</b> - <b>baby bullet</b>	

## Bicycle Facilities

The nearby bicycle facilities are comprised of class I and class II bike lanes. Currently, there are bicycle facility networks located on Middlefield Road, Veterans Boulevard, and Broadway. These existing facilities provide access to local transit facilities as well as local commercial areas.

Figure 3



### Section 3 – Potential TDM Design Measures and Programs

The San Mateo County Association of Governments (C/CAG) has developed a list of TDM design measures that are defined in the "Guidelines for Implementing the Land Use Component of the Congestion Management Program". Table 2 provides a summary of potential measures as defined in the TDM Guidelines. The TDM plan for 2075 Broadway includes applicable measures from the above mentioned list, as well as other current state of the practice approaches. Section 4 of this TDM lists the specific measures that will be implemented at 2075 Broadway.

**Table 2 - TDM Measures**

C/CAG TDM Measures		
Measure Number	TDM Measure	Summary of Trip Credit
1	Dedicated shuttle service during the peak period to a rail station or an urban residential area.	One peak hour trip will be credited for each peak-hour round trip seat on the shuttle. Increases to two trips if a Guaranteed Ride Home Program is also in place.
2	Charging employees for parking.	One peak hour trip will be credited for each transit pass that is proved to employees.
3	Subsidizing transit tickets for employees.	One peak hour trip will be credited for each transit pass that is subsidized at least \$20 per month for one year.
4	Parking cash out program.	One peak hour trip will be credited for each parking spot where the employee is offered a cash payment in return for not using parking at the employment site.
5	Compressed workweek program.	One peak hour trip will be credited for every 5 employees that are offered the opportunity to work four compressed days per week.
6	Assistance to employees so they can live close to work.	If an employer develops and offers a program to help employees find acceptable residences within five miles of the employment site, a credit of one trip will be given for each slot in the program.
7	Alliance's guaranteed ride home program.	One peak hour trip will be credited for every 2 slots purchased in the program.
8	Work with the Alliance to develop/implement a Transportation Action Plan.	Five peak hour trips will be credited.
9	Infill development.	Two percent of all peak hour trips will be credited for each infill development.
10	Creation of preferential parking for carpoolers.	Two peak hour trips will be credited for each parking space reserved.
11	Bicycle lockers and racks.	Ten peak hour trips will be credited for each new combination shower and changing room installed. An additional 5 peak hour trips will be credited when installed in combination with at least 5 bike lockers.
12	Showers and changing rooms.	Two peak hour trips will be credited for each new combination shower and changing room installed.

C/CAG - TDM Design Measures		
Measure Number	TDM Measure	Summary of Trip Credit
13	Creation of preferential parking for vanpoolers.	Seven peak hour trips will be credit for each parking spot reserved.
14	Implementation of vanpool program.	Seven peak hour trips will be credited for each vanpool arranged by a specific program operated at the site of the development. Increases to ten if a Guaranteed Ride Home Program is also in place.
15	Operation of a commute assistance center, offering on site, one stop shopping for transit and commute alternatives information, preferable staffed with a live person to assist building tenants with trip planning.	One peak hour trip will be credited for each feature added to the information center; and an additional one peak hour trip will be credited for each hour the center is staffed with live person, up to 20 trips per each 200 tenants.
16	Transportation allowance program for bicyclists, walkers and carpoolers.	One peak hour trip will be credited for every employee that is offered a monthly transportation allowance for using an alternative mode of transportation.
17	The developer can provide a cash legacy after the development is completed and designate an entity to implement any of the previous measures before day one of occupancy.	Peak hour trip reduction credits will accrue as if the developer was directly implementing the items.
18	Installation of high-band width connections in employees homes to the internet to facilitate home telecommuting.	One peak hour trip will be credited for each connection installed.
19	Implementation of flexible work hours.	One peak hour trip will be credited for every employee that is offered the opportunity to work flexible hours.
20	Encourage shared parking.	Five peak hour trips will be credited for an agreement with an existing development (non-residential) to share existing parking.
21	Design streets/roads that encourage pedestrian and bicycle access and discourage automobile access.	Five trips will be credited for each design element.
22	Locate residential development within one-fourth mile of a fixed rail passenger station.	25% of trips from a residential development within one-fourth mile of a fixed rail passenger station will be considered credited due to the location of the development.
23	Provision of child care services as a part of the development.	One trip will be credited for every child care slot at the job site.
24	Combine any two of these elements.	Five peak hour trips will be credited.

## Section 4 – Designated TDM Measures and Programs

### TDM Measures

The following includes measures that are either incorporated into the project site design by the developer or will be implemented by the tenant(s), and required by the leasing agreement, following

occupancy of the new building. It is estimated that there we be a total of 285 employees when complete occupancy is reached.

TDM Measure	Trip Credit	Party Responsible for Implementation
Measure 5 - Compressed Work Week Program	It is estimated that 30% of employees will be offered and utilized a compressed work week. This results in a reduction of 17 peak hour trips.	Tenant
Measure 10 - Carpooling Program and Preferential Parking for Carpoolers	Five preferential parking spaces will be provided for carpoolers, providing a reduction of 10 peak hour trips.	Developer
Measure 11 - Bicycle Lockers and Racks	The project site will provide 56 bicycle stalls. This results in a reduction of 18 peak hour trips.	Developer
Measure 12 - Showers and Changing Rooms	The project site will provide a shower and changing room facility for commuters. This results in a reduction of 15 peak hour trips.	Developer
Measure 15 - Operation of a Commute Assistance Center	A centralized information center offering transit and commute alternatives for employees will be made available onsite to interested employees. This results in a reduction of 5 peak hour trips.	Tenant
Measure 19 - Implementation of Flexible Work Hours	Employees will be offered the opportunity to work flexible hours. It is estimated that 25% of employees will be offered and utilize flexible work hours. This results in an estimated reduction of 71 peak hour trips.	Tenant
Measure 21 - Design of streets/roads to Encourage Pedestrian and Bicycle Access	Due to the proximity of the Redwood City Caltrain Station, the project site will strongly encourage the use of transit, reducing the number of vehicle trips. In addition, the project proposes to construct a curb bulb-out at the eastern extents of the mid-block crosswalk, located immediately south of the project along Jefferson Ave. The Bulb out enhances the pedestrian path of travel to the project site that currently benefits from high visibility crosswalks, Accessible Pedestrian Signals (APS), wide/accessible sidewalks, safety lighting, and an in-road warning light system. These 6 features result in an estimated reduction of 30 peak hour trips.	Developer



The number of trip reductions resulting from the implemented measures above totals to 166 peak hour trips.

## **Section 5 – Evaluation**

The purpose of this TDM plan is to reduce the overall vehicle trips and decrease the traffic impact resulting from the proposed development. TDM measures shall be evaluated on an annual basis to determine the effectiveness of the implemented measures. This evaluation will document parking utilization rates, commuter's use of the available TDM measures, and overall awareness of the TDM programs. The results will be reported on an annual base to the City of Redwood City.

### **Modifications to the TDM Program**

The TDM plan should be considered a living document with the primary goal of reducing SOV 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 2075 Broadway. Multiple design and program measures were presented to facilitate the use of alternate modes of transportation, including transit, carpooling, bicycling, and walking.

This TDM plan is anticipated to achieve a reduction of 166 peak hour trips; however, actual trip volumes shall be monitored and TDM measures may be adjusted as a result.