FEHR PEERS

MEMORANDUM

Date: June 19, 2013

To: Cheryl Fama, Peninsula Health Care District

Copy to: Joel Roos, Pacific Union Development Company
Gabriel Fonseca, SmithGroup

From: Jane Bierstedt
Meghan Weir

Subject: 1600 Trousdale Drive Trip Generation, Parking and Site Access

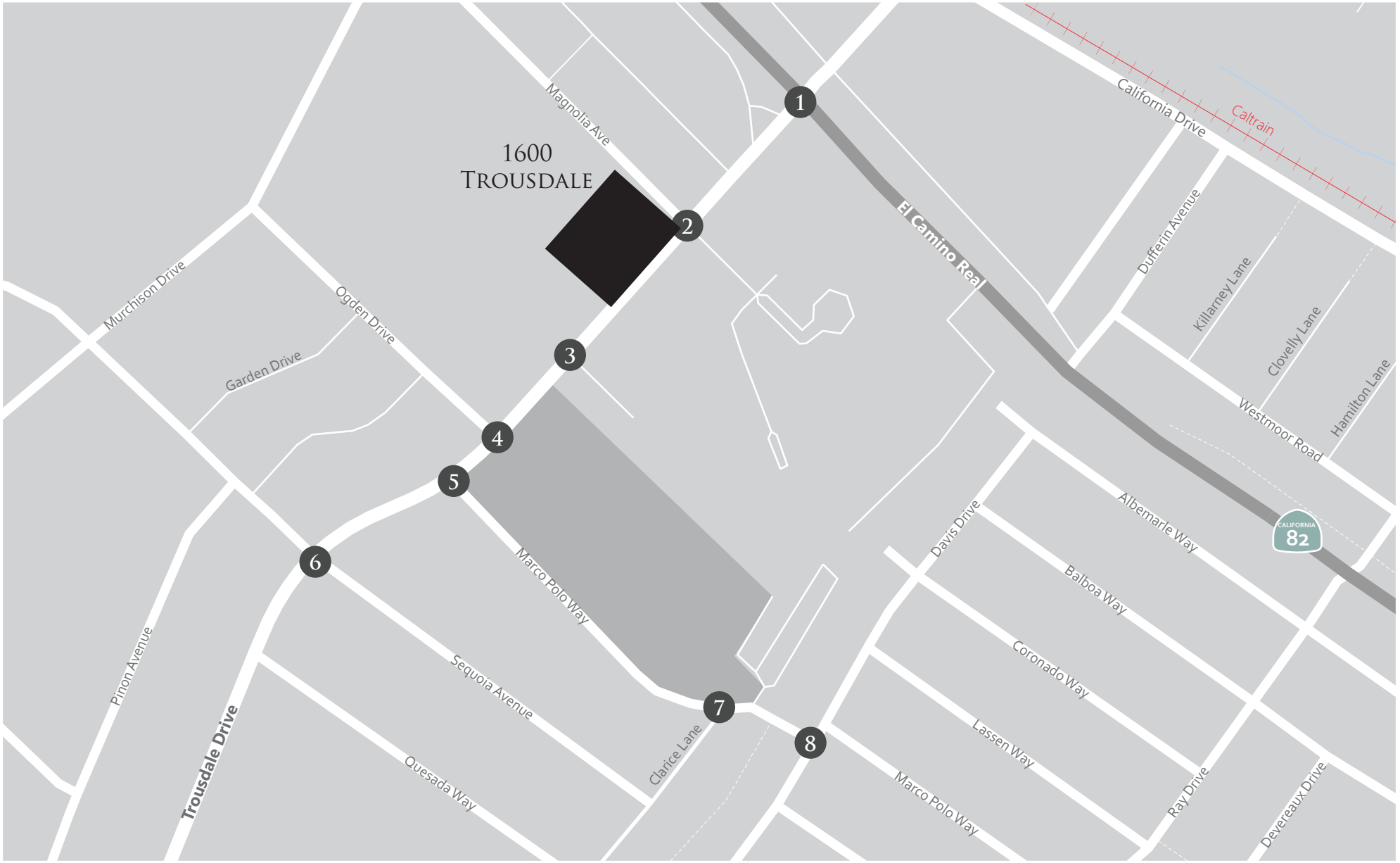
SF13-0675

This memorandum describes the transportation system serving the site and presents vehicle trip generation estimates for the proposed assisted living facility to be located at 1600 Trousdale Drive in Burlingame, California. It also addresses parking and site access.

PROJECT DESCRIPTION

The project site is located on the northwest corner of the intersection of Trousdale Drive and Magnolia Avenue in Burlingame, California. The site location is shown on **Figure 1**. The site currently contains a 140,000-square foot building that houses the Peninsula Health Care District. The proposed project will redevelop the site with an assisted living/memory care facility containing a total of 124 units, including four two-bedroom units (for a total of 128 beds). Vehicular site access will be provided by driveways located on Trousdale Drive. The proposed site plan is shown on **Figure 2**.

The site is located across Trousdale Drive from Mills-Peninsula Medical Center. There are retail uses between the site and El Camino Real, and primarily residential uses between the site and I-280 (with some office and medical office uses on portions of Trousdale Drive near the site).



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PROJECT SITE AND STUDY INTERSECTIONS

FIGURE 1

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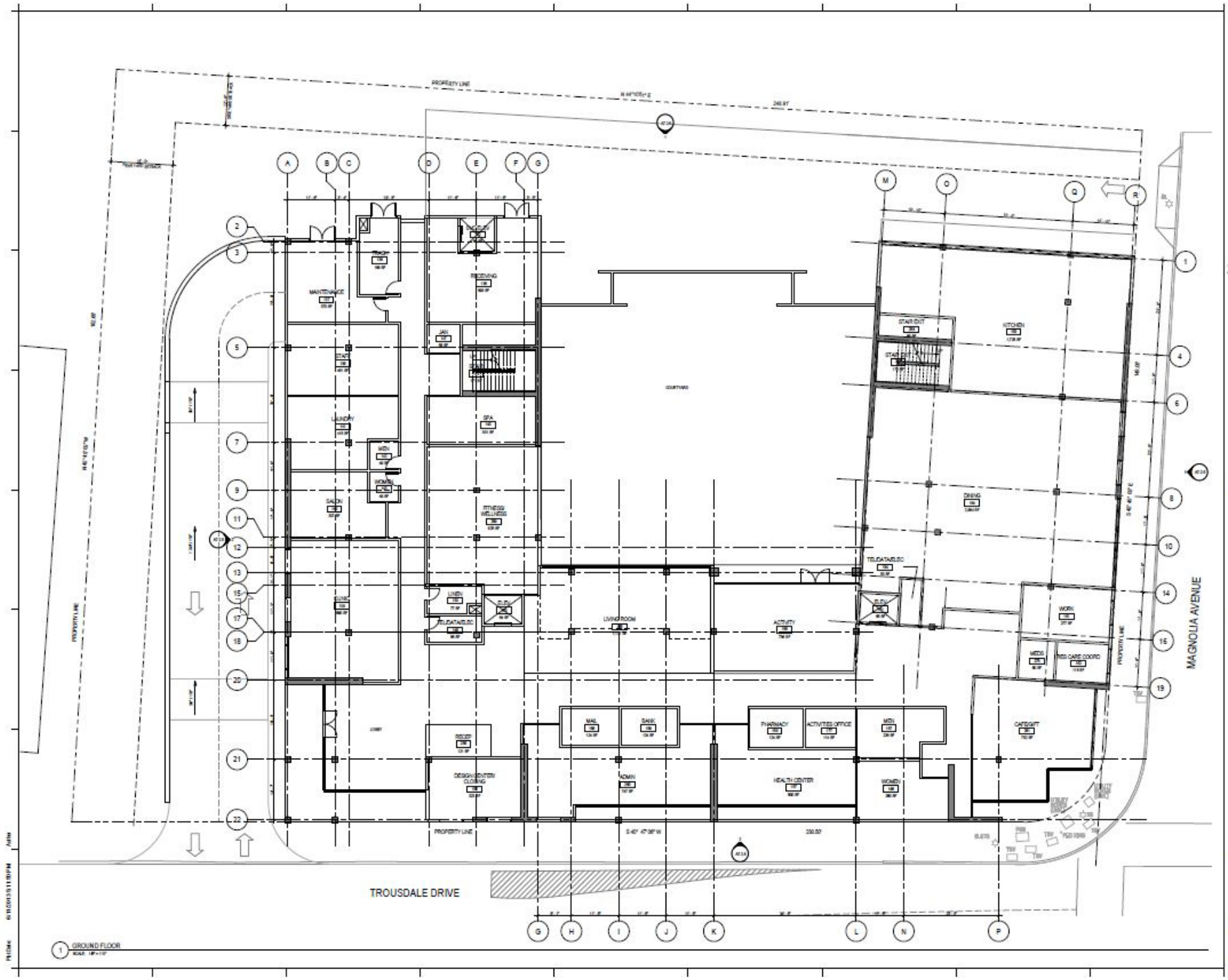

Project Site Plan

FIGURE 2

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TRANSPORTATION SYSTEM

The transportation system in the vicinity of the site includes roadways, rail and bus transit services, bicycle facilities, and pedestrian facilities. The site is located approximately 0.6 miles from the Millbrae Intermodal station, a station that serves Caltrain and BART, the two premier passenger rail lines in the Bay Area.

ROADWAY SYSTEM

Regional access to the site is provided by US 101, I-280, and El Camino Real. Local access is provided by Trousdale Drive and Magnolia Avenue.

US 101 is a north-south freeway that extends north through San Francisco and south through San Jose. Near the site is has five lanes in each direction and is located approximately 0.6 miles to the northeast of the site. Access is provided by its interchange with Millbrae Avenue, approximately 1 mile from the site.

I-280 is a north-south freeway that extends from San Francisco in the north to San Jose in the south. Near the site is has four lanes in each direction and is located approximately 1.5 miles to the southwest of the site. Access is provided by its interchange with Trousdale Drive.

El Camino Real is a north-south arterial roadway located to the northeast of the site. The number of travel lanes on El Camino Real varies from six near its intersection with Millbrae Avenue and four near its intersection with Ray Drive.

Trousdale Drive is a primarily east-west roadway that extends from I-280 to El Camino Real. It forms the southern boundary of the project site. It is four lanes wide and has a posted speed limit of 35 miles per hour.

Magnolia Avenue is a primarily north-south roadway that extends from the north through Millbrae to Mills Peninsula Medical Center immediately south of the project. It forms the eastern boundary of the project site. It is two lanes wide with a center turn lane at the Trousdale Drive intersection, and has a posted speed limit of 25 miles per hour.

RAIL AND BUS TRANSIT SERVICE

The site is served by a variety of transit services, including both rail and bus. It is located 0.6 miles from the Millbrae Intermodal Station, a major station for both BART and Caltrain and a transfer station for SamTrans bus routes. The Burlingame- North BART/Caltrain shuttle provides shuttle service between the Millbrae station and nearby employment areas including Mills-Peninsula Health Services, across the street from the site. SamTrans Bus Route 46 operates on Trousdale Drive near the site and connects the Burlingame Intermediate School with the Broadway and Burlingame Caltrain stations. The site, its location in relation to the Millbrae Intermodal Station and the Broadway and Burlingame Caltrain stations, plus the routes for Burlingame North shuttle and Route 46 are shown on **Figure 3**. These services are described in more detail in the following sections.

Bay Area Rapid Transit (BART)

BART provides passenger rail service between Millbrae, the San Francisco International Airport, downtown San Francisco, and points in the East Bay (Richmond, Berkeley, Oakland, Fremont, Concord, Dublin, Pleasanton, and Pittsburg/Bay Point). It operates between approximately 4:00 am and 12:00 am on weekdays and between 6:00 am and 12:00 am on weekends.

Caltrain

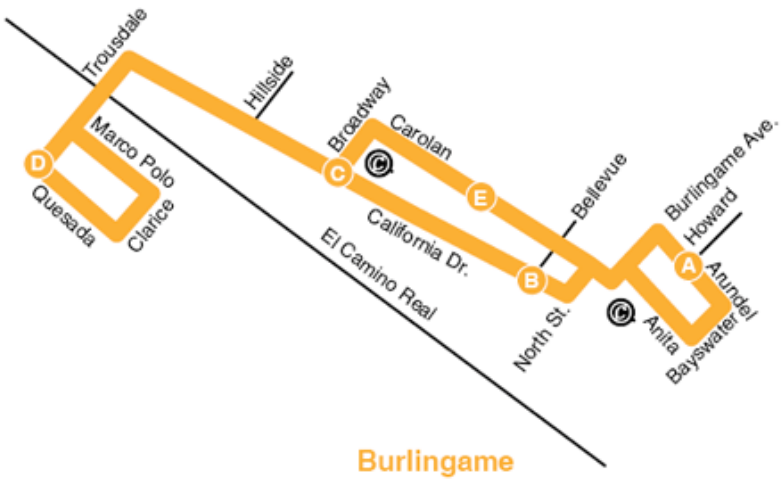
Caltrain provides passenger rail service between San Francisco and San Jose, with continuing service to Gilroy during weekday commute periods. The Millbrae Station is one of the baby bullet stations and has more frequent service. It would likely be used by people traveling on Caltrain between the site and points north (via the Burlingame North shuttle). The Broadway and Burlingame stations would likely be used by people traveling on Caltrain between the site and points south.

San Mateo Transit District (SamTrans)

SamTrans operates bus transit service throughout San Mateo County. It has several limited-stop express bus routes that operate on El Camino Real near the site: Routes 390, 391, 397, and ECR. Route 43 provides bus service between Burlingame Plaza and the San Bruno BART station. Route 46 provides bus service between the Burlingame Intermediate School and the Broadway and Burlingame Caltrain stations. It has limited service with two runs in the morning and six in the

afternoon. It is included in the description of transit services as it may potentially be expanded to serve employees, residents, and visitors of the site. A map of Route 46 is shown below.

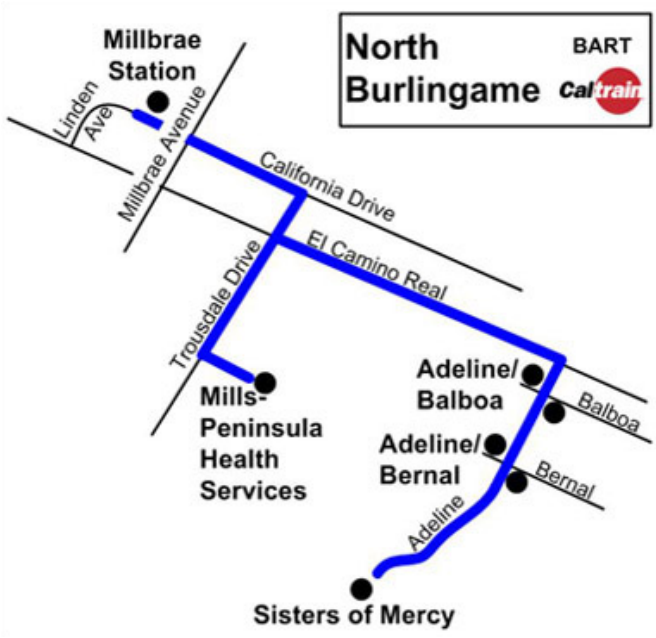
SamTrans Route 46



BART/Caltrain Shuttle

The Burlingame North BART/Caltrain Shuttle operates between the Millbrae Intermodal Station, Mills Peninsula Health Services, Sisters of Mercy, with intermediate stops at the intersections of Adeline/Balboa and Adeline/Bernal. It operates between 6:00am and 10:00 am in the morning and then again between 3:00 pm and 7:00 pm in the afternoon/evening. A map of the Burlingame North BART/Caltrain Shuttle route is shown below.

BART/Caltrain Shuttle



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EXISTING TRANSIT NETWORK

FIGURE 3

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PEDESTRIAN AND BICYCLE FACILITIES

Sidewalks are provided along both sides of Trousdale Drive and Magnolia Avenue providing pedestrian access to the site. Crosswalks are located at all four legs of the intersection of Trousdale Drive and Magnolia Avenue, and at the west, south and east legs of the intersection of Trousdale Drive and El Camino Real. All pedestrian signal heads include a walk symbol and a countdown timer during activated pedestrian phases.

Bicycle facilities near the site comprise designated bike routes on Magnolia Drive between Murchison Drive and Trousdale Drive, and on Trousdale Drive between Magnolia Drive and Ashton Avenue. These routes connect to California Drive and Quesada Way. California Drive is located immediately east of El Camino Real and provides the primary north/south bicycle route adjacent to the El Camino Real corridor in Burlingame. Quesada Way is located west of the project site and provides a bicycle route through the western neighborhoods of Burlingame, connecting south to Bernal Avenue, Cabrillo Avenue and Walnut Avenue. An off-street bicycle path is located along the shoreline of the bay, on the west edge of Bayshore Highway, along Airport Boulevard, and west of Airport Boulevard, connecting to Coyote Point at the south.

VEHICLE TRIP GENERATION

The amount of vehicle traffic generated by the site was estimated by applying trip generation rates for similar land uses from the Institute of Transportation Engineers (ITE), *Trip Generation*, 9th Edition. Traffic generated by assisted living units is primarily associated with employees and visitors, as residents have limited vehicle ownership. The trip generation results are presented in **Table 1**. The project is anticipated to generate 340 vehicle trips on an average weekday. Of these trips 18 (12 in and 6 out) are projected to occur during the AM peak hour, the one-hour period with the highest adjacent street traffic volume during the morning commute period. The PM peak hour trip estimate is 28 trips (12 in and 16 out). For the mid-afternoon peak hour, which is the one-hour period with the highest number of project trips, 45 trips (21 in and 24 out) are projected.

TABLE 1			
Period	**Total Trips**	**Trips In**	**Trips Out**
Daily Total	340	170	170
AM Peak (8-9 AM)	18	12	6
Mid-afternoon Peak (3-4 PM)	45	21	24
PM Peak (5-6 PM)	28	12	16

Note: ITE trip generation rates used to calculate above trip generation estimates; rates for adjacent streets used for AM and PM peak hours, rates for generator used for mid-afternoon peak hour.

The building is only partially occupied and the current uses generate some traffic. However no credits for these trips have been applied, creating conservative estimates.

PARKING

The project proposes to provide 42 parking spaces. The city's code requirement is one space for every three Assisted Living units, or 41 spaces. Therefore the project will provide one space more than required by the City of Burlingame code.

The projected demand for parking was assessed by applying parking demand rates from ITE's *Parking Generation*, 4th Edition. These rates are based on national surveys of similar uses. Parking demand is estimated as 0.41 parking spaces per unit for Assisted Living land use. Therefore, the proposed project could generate a demand for approximately 51 parking spaces during weekday peak demand periods (at other times of the day demand may be lower).

SITE ACCESS

Traffic conditions on the roadways near the site were evaluated to assess site access for vehicles associated with employees and residents, trucks and deliveries, and for passenger pick-up and drop-off activities. Traffic conditions were evaluated during the morning and evening commute periods. Traffic volumes on Trousdale Drive also reach a peak during the afternoon period due to traffic associated with nearby schools and the shift change time at Mills Peninsula Health Services. Therefore afternoon peak traffic conditions were evaluated as well.

INTERSECTION VOLUMES

Intersection turning movement counts were conducted at the following intersections during the morning (AM), afternoon (AFT), and evening (PM) peak periods:

1. Trousdale Drive and El Camino Real
2. Trousdale Drive and Magnolia Avenue
3. Trousdale Drive and Mill Peninsula Health Services Driveway
4. Trousdale Drive and Ogden Drive
5. Trousdale Drive and Marco Polo Way

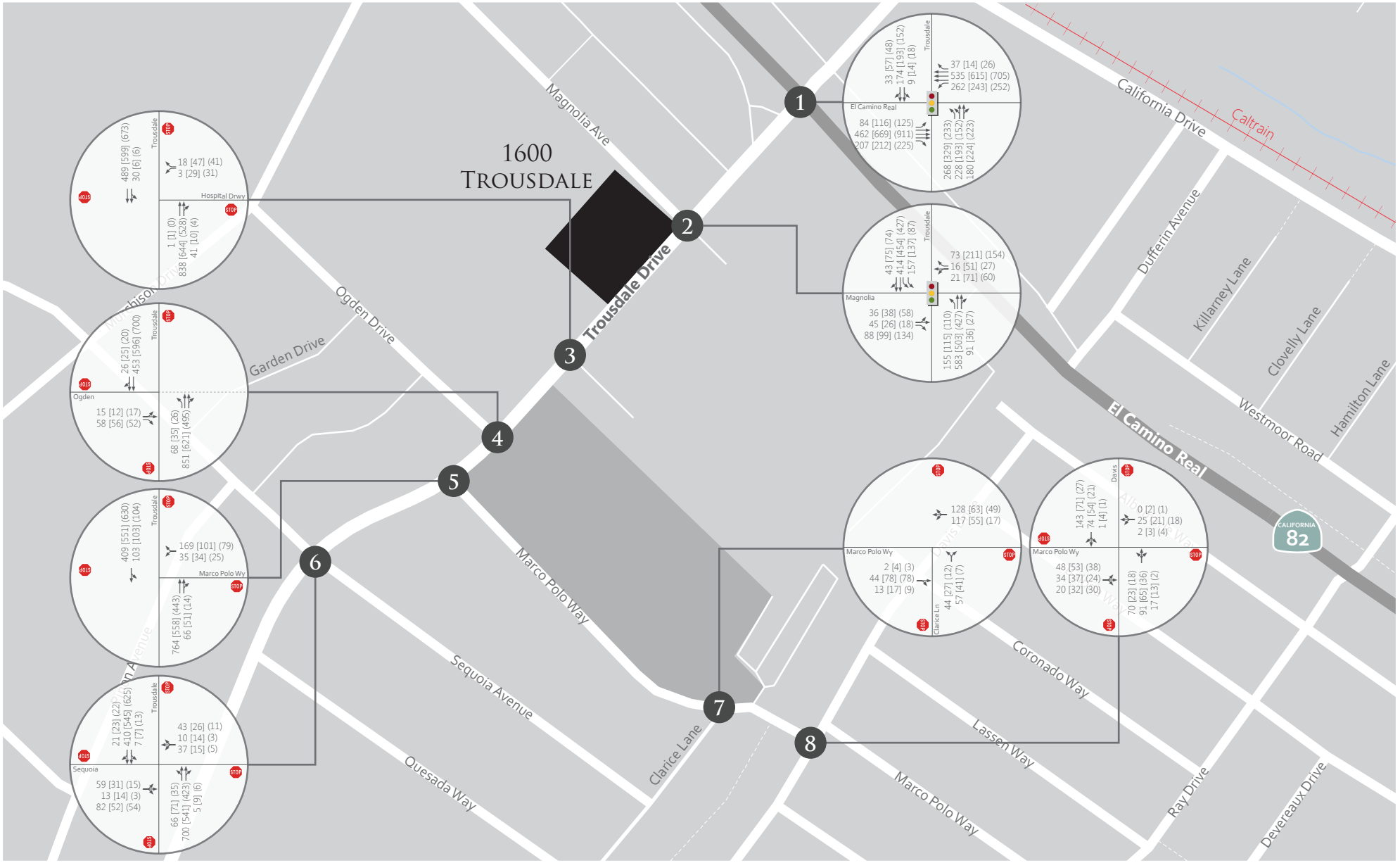
The AM, AFT, and PM peak hour volumes obtained from the counts are presented on **Figure 4**.

INTERSECTION OPERATIONS

Intersection volumes, lane configurations, and traffic control devices (traffic signal or stop signs) are used to evaluate intersection operations. This information was input into a software program called Synchro to estimate vehicle delays. A SimTraffic model was developed and used to assess vehicle queuing, especially queuing that could occur on Magnolia Avenue and Trousdale Drive that would interfere with driveway operations.

The results show that queuing does occur during the red signal phases, especially on the eastbound approaches of Trousdale Drive at Magnolia Avenue and El Camino Real. However, queues clear within each cycle, as long green phases allow significant volumes of traffic to flow through the intersections. The SimTraffic model shows maximum eastbound queues on Trousdale Drive at Magnolia Avenue extending to the far edge of the 1600 Trousdale property line, which is consistent with field observations during the mid-afternoon peak hour traffic (between 3 PM and 4 PM). There is minor queuing on the southbound approach of Magnolia Avenue at Trousdale Drive, which clears with every green phase.

Signalized Intersection XX [YY] (ZZ): Morning [Afternoon] (Evening)



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PROJECT SITE AND STUDY INTERSECTIONS

FIGURE 4

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Project #\Graphics

DRIVEWAYS

Project driveways and projected traffic volumes were added to the Synchro and SimTraffic models to simulate project conditions and assess how project trips would fit into the traffic flow along Trousdale Drive and Magnolia Avenue. The main driveway is located at the southwest corner of the property, on Trousdale Drive, based on current site plans. The analysis focused on the time periods with the highest traffic volumes on the surrounding streets and traffic generated by the site – the AM and mid-afternoon peak hours. The additional trips would have a minor impact on the operations of the adjacent roadways and intersections. The 18 project trips projected for AM peak hour represent only 1.3 percent of the total volume traveling on Trousdale Drive west of Magnolia Avenue during the morning peak hour. The 45 project trips projected for the mid-afternoon peak hour represent only 3.5 percent of the total volume traveling on Trousdale Drive west of Magnolia Avenue during the mid-afternoon peak hour.

Vehicles will be able to enter and exit the driveway easily during most times of the day. However, the queues on Trousdale Drive will likely motivate some drivers exiting the project site to turn right to avoid a delay while waiting for a left turn opportunity during the afternoon peak hour. Others may wait several minutes for a clear left turn opportunity, but will find opportunities during gaps in Trousdale Drive traffic regulated by the signals at Magnolia Avenue and El Camino Real.

PICK-UP AND DROP-OFF ACTIVITY

The project will include a loading zone at the main driveway, to be used for facility shuttle loading and resident pick-ups/drop-offs. Loading zone activity is likely to be consistent with other similar facilities.

A similar facility is located in San Mateo, also near shopping, medical and other downtown commercial uses. A site visit was made to observe pick-up and drop-off activity. The facility has a shuttle (equipped with a wheel chair lift) that provides residents with transportation service to medical and other appointments. Most of the shuttle trips are between 7 AM and 2 PM. (Residents are requested to make appointments during this period.) Shuttle schedules vary according to resident needs. The loading area is used primarily for shuttle passenger loading. Other visitors were observed entering the garage to meet and pick up residents inside the building. Staff onsite confirmed that this is typical. Therefore it is expected that the passenger

loading zone would primarily be used by shuttles at the 1600 Trousdale and space for two vehicles should be sufficient.