

APPENDIX I

TRANSPORTATION – MONTE VISTA MEMORIAL GARDENS FOCUSED TRAFFIC STUDY

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Monte-Vista-Memorial-Gardens¶

Focused-Traffic-Study¶

Alameda-County¶

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Revised¶



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Project Description

PHA Transportation Consultants has prepared this focused traffic analysis to evaluate the potential traffic impact for the proposed Monte Vista Memorial Gardens Project "Project". The site of the Project is in the unincorporated Alameda County at 3656 Las Colinas Road, Livermore. The proposed Project is a multi-cultural cemetery in the Tri-Valley Area. The Project would consist of a funeral home, interment areas, and associated services, including a crematory and mortuary. The cemetery ground consists of approximately 47-acre of land, about 24 acres of which would be used for various memorial monuments and burial gardens.

According to the Project proponent, the Project will include two buildings A and B on the site. Building a (two stories) will house the morgue, crematorium, sales offices, staff offices, garage, a receiving area, reception area, guest lounge, and a chapel with a capacity for 120-140 guests. Building B (one story) would have kitchens, storages, sanitary facilities, and table seating for 120-130 guests. The project is expected to employ up to 10 professional staff members working on the site daily. The Project is scheduled to open between 9:00 a.m. and 4:00 p.m. Mondays through Fridays during the initial stage. Once fully operational, the Project will open 7 days a week. Weekend funerals and burials will be available upon request with special arrangements. The Project will provide 92 parking spaces on the site (75 at the main parking lot, 17 in the secondary lot by the Jewish cemetery interment area, and 3 hearse spaces at the garage at Building A). Figure 1 shows the location of the Project site and its environs.

Adjacent Area Land Use

The Project site is currently vacant. The land use in the adjacent area of the site is mostly grazing land to the north and west. There are several residences and barn structures to the east of the Project site. There are also several horse barns located further east near the terminus of Las Colinas Road. South of the Project site is the freeway Interstate 580.

According to the City of Livermore development data, a Catholic High School was once proposed to be built to the northeast of the Project site. Access to the school will be via Las Colinas Road in conjunction with Las Positas Road south of I-580. Las Colinas Road was planned to be widened and improved as part of the school project mitigation. The school project was approved in mid-2000 and later received a five-year extension to build in 2015. So far, there are no activities with the project. Figure 1 on page 2 shows the approximate location of the proposed high school and the proposed widening and extension of Las Colinas Road. Should the high school project eventually materialize, Las Colinas Road will be widened and extend further north and would likely improve the access for the area and would have a positive impact on the Monte Vista Memorial Gardens.



Figure 1 Proposed Monte Vista Memorial Gardens Site and Environs

Project Site Access and Area Traffic Circulation

Direct access to the Project site will be via an unnamed road off Las Colinas Road in conjunction with Las Positas Road. Regional access to the site is provided via I-580 in conjunction with North Livermore Avenue in the west and First Street in the east. The unnamed access road off Las Colinas Road is not paved and is currently blocked off.

Las Colinas Road is a two-way local street providing access to several residences and barns east of the project site and the horse stables at the eastern terminus of the road. The entire length of the road is about 1,500 feet long measuring from the eastern terminus to its connection at Las Positas Road over the freeway. The Road measures about 26 feet wide with one travel lane in each direction. The road is marked with solid double yellow lines indicating no passing. The Current (February 2021) daily traffic volume is 68 vehicles per day (VPD) on weekdays. The Peak-hour volumes are less than 15 VPD for both AM and PM. There are no posted speed limit signs observed.

Las Positas Road is a collector road with a varying width between two and four-lane connecting North Livermore Avenue in the west and Frist Street in the east. It has two travel lanes in each direction west of North Mines Road but transitions to a two-lane road with one lane in each direction in the east near the Las Colinas Road Bridge over I-580. It then transitions back to four-lane as it approaches the shopping area near Frist Street. The current daily traffic volume on a weekday is 12,899 vehicles per day east of North Livermore Avenue and 8,534 west of First Street. The peak-hour volume on Las Positas Road near Las Colinas Road was about 290 in morning and 520 in the afternoon. The posted speed limit on Las Positas Road is 40 mph based on the City of Livermore speed limit map.

North Livermore Avenue is a four-lane arterial road south of I-580. It runs in a north-south orientation providing access to and from the freeway. There are additional turn lanes provided at major intersections along its length. The daily traffic volume is about 30,975 vehicle trips per day south of the interchange based on a 2016 City of Livermore traffic count. The speed limit for North Livermore Avenue is 40 mph per the City of Livermore speed limit classification map.

First Street is a six-lane north-south arterial road south of I-580 near the Project site. It provides access to and from the freeway. There are also additional turn lanes provided at intersections along its length. The daily volume is about 36,590 vehicles daily south of the I-580 interchange. The speed limit for Frist Street is 40 mph based on the City's speed limit classification.

Interstate -580 is a freeway running in an east-west orientation. There are four travel lanes in each direction with additional HOV lanes in the vicinity of the proposed Project site. It has interchanges at N. Livermore Avenue and First Street. The segment near the project site vicinity carries about 193,000 vehicles per day near North First Street according to a 2019 traffic count conducted by Caltrans.

Study Area Traffic Safety Review

Traffic control devices on Las Colinas Road consist of a stop sign at the approach to Las Positas Road from Las Colinas Road, a speed advisory sign 15 mph near the curve, and a double yellow line marking at the center of the road. Traffic control devices on Las Positas Road consist of traffic signals at North Livermore Avenue, North Mines Road, and Frist Street. Traffic signals are also provided at major accesses to shopping areas along the road with turn lanes. The posted speed limit on Las Positas Road is 45 mph. Several segments of the Las Positas Road near North Livermore Avenue in the west and First Street in the east are divided with a raised landscaped median. There is a left-turn pocket at the eastbound Las Positas Road to northbound Las Colinas Road, accommodating left-turn traffic from Las Positas Road onto Las Colinas Road.

According to data obtained from Traffic Injuries and Mapping System (TIMS), a traffic collision records center located at UC Berkeley indicated there were 6 reported collisions along the segment of Las Positas Road between North Livermore Avenue and First Street between 2017 and 2019 (2000 data was not yet available). This represents an average of 2 collisions a year during the three years. There are no reported collisions on Las Colinas Road during the same three-year period. As such, Las Colinas Road and Las Positas Road do not appear to be collision hot spots. TIMS obtained traffic collision records from SWITRS, a Statewide Integrated Traffic Records System database that contains all collisions that were reported to CHP from local and government agencies.

Project Trip Generation Estimates

The Project has a burial ground about 24 acres and is expected to employ 10 professional staff members. Based on acreage -base trip generation rates published in the ITE Trip Generation Manual, the site is expected to generate 108 daily trips (one-way trips). ITE Trip Generation Manual is published by the Institute of Transportation Engineers and has a database containing trip generation rates and characteristics at various land-use categories and sites nationwide. Trip generation surveys were conducted frequently to update the manual's database.

As discussed previously, the Project will operate from 9 a.m. to 4 p.m. Mondays through Fridays during the initial stage but would open 7 days a week eventually. Since the facility operates between 9 a.m. and 4 p.m., the traffic related to the Project would mostly employee trips traveling to and from the site and is not expected to have significant impacts on peak hour traffic operations in the area.

Table 1 shows the summary of the trip generation estimates based on the number of employees and the size of the burial ground, plus estimated visitors and deliveries.

Table 1 “Project” Trip Generation Estimates Monte Vista Memorial Gardens – Alameda County										
Monte Vista Memorial Gardens	Units	AM Peak- Hour Trips (7-9 a.m.)			PM Peak-Hour Trips (4-6 p.m.)			Average Daily Trips (24- hour)		
		In	Out	Total	In	Out	Total	In	Out	Total
Acres (ITE 566)	24	3	1	4	7	14	21	54	54	108
Employees	10	10	0	10	0	10	10	10	10	20
Visitors	30	2	1	3	1	2	3	30	30	60
Deliveries	10	0	0	0	0	0	0	10	10	20
Total		12	1	13	1	12	13	50	50	100
<p><u>ITE Trip Generation Manual (9th Edition)</u> Rates for the cemetery (ITE land-use code 566):</p> <p>Employee Based (PHA Estimates) Daily Rate 2/employee, 50% in, 50% out, AM Peak Hour Rate 1/employee, 100% in, 0% out, PM Peak Hour Rate, 1/employee, 0% in, 100% out</p> <p>Acreage Based (ITE) Daily Rate 4.73/acre, 50% in, 50% out. AM Peak Hour Rate 0.17/acre, 70% in, 30% out. PM Peak Hour Rates 0.84/acre, 33% in, 67% out.</p> <p>Deliveries, Visitors (PHA Estimates) UPS, FedEx, Amazon, USPS, Newspaper, assumed each generates two one-way trips.</p>										

According to data provided by the Memorial Gardens official, when the cemetery is fully operational (by the 10th year), the cemetery will likely have 2.8 burials and memorial services per day. The average daily round trip is 44 or 88 one-way trips. This assumes the average of 2.8 burials per day attended by an average of 40 persons each at a 2.5 person vehicle occupancy rate. The trip estimates shown in Table 1 are based entirely on the number of employees, visitors, and deliveries. The ITE trip generation estimates are provided for comparison purposes.

Potential Project Traffic Impact

As indicated in the above trip generation analysis, the proposed Monte Vista Memorial Gardens will add about 100 one-way trips daily, including 4 a.m. peak and 21 p.m. peak hour trips respectively to the area. These are estimates were made based on the size (acreage) of the number of employees working at the site. Table 2 summarizes Project added traffic on the adjacent streets. The proposed project would not warrant signalization at the Las Colinas and Las Positas Road intersection based on the “Peak Hour Volume Signal Warrant” base on traffic volumes and intersection configuration. A graphic showing the “Peak Hour Volume” warrant analysis is attached.

Table 2 "Project" Traffic Impact						
Monte Vista Memorial Gardens						
	Las Colinas Rd		Las Positas Rd (West of Las Colinas Rd)		Las Positas Rd (East of Las Colinas Rd)	
	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
Current Daily Vol.	68	48	12,899	10,110	8534	6795
Project Added Trips	100	100.	60	60	40	40
Project Impact (%)	147%	208%.	0.47%	0.59%.	0.47%	0.59%.
Current Volumes represent traffic counts conducted in the field in early February 2021 amid COVID 19. Weekday volume represents the average of Thursday and Friday counts Weekend volume represents the average of Saturday and Sunday counts Site traffic directional distribution assumption: 60% travel to and from the west direction, 40% to and from the east. Burial and funeral services occur Mondays thru Fridays. Weekend services can be arranged upon request with added fees. For the purpose of the study. Weekend trips are assumed to be the same as weekday trips.						

Project Site Plan Review

The site currently is vacant and the access road to the site is blocked off at Las Colinas Road. The access road is not paved and is fenced on both sides of the road. According to the preliminary site plan, there will be two buildings A and B on the site. Building A (two-story) will house the morgue, crematorium, sales offices, staff offices, garage, a receiving area, reception area, guest lounge, and a chapel with a capacity for 120-140 guests. Building B (one-story) would have kitchens, storages, sanitary facilities, and table seating for 120-130 guests. The site plan also shows two parking lots, the main lot at the southeast corner of the site has 75 stalls, and a small lot at the northeastern corner of the site has 17 parking stalls. The project proponent also indicated there is a parking garage with 3 spaces for limos at building A.

The preliminary site plan does not show parking stall dimensions, the dedicated number of handicapped parking spaces, and the drive aisle widths. These dimensions should be labeled when finalizing the site plan following the design standards of the County. Figure 2 shows the preliminary project site plan.

Parking Requirements and Needs

The Alameda County Zoning Code does not have a specific parking requirement for cemeteries. However, it does have parking requirements (1 space for every 4 fixed seats) for the auditorium, church, mortuary, chapel, and theaters. Assuming a 140-seat chapel and a 130-seat table seating for guests at Building B the total parking required for the Project is 68+/- spaces (140 seats +130 seats/4). With a total of 75 spaces at the main lot and 72 spaces at the secondary lot, the Project would satisfy the County's parking requirement.

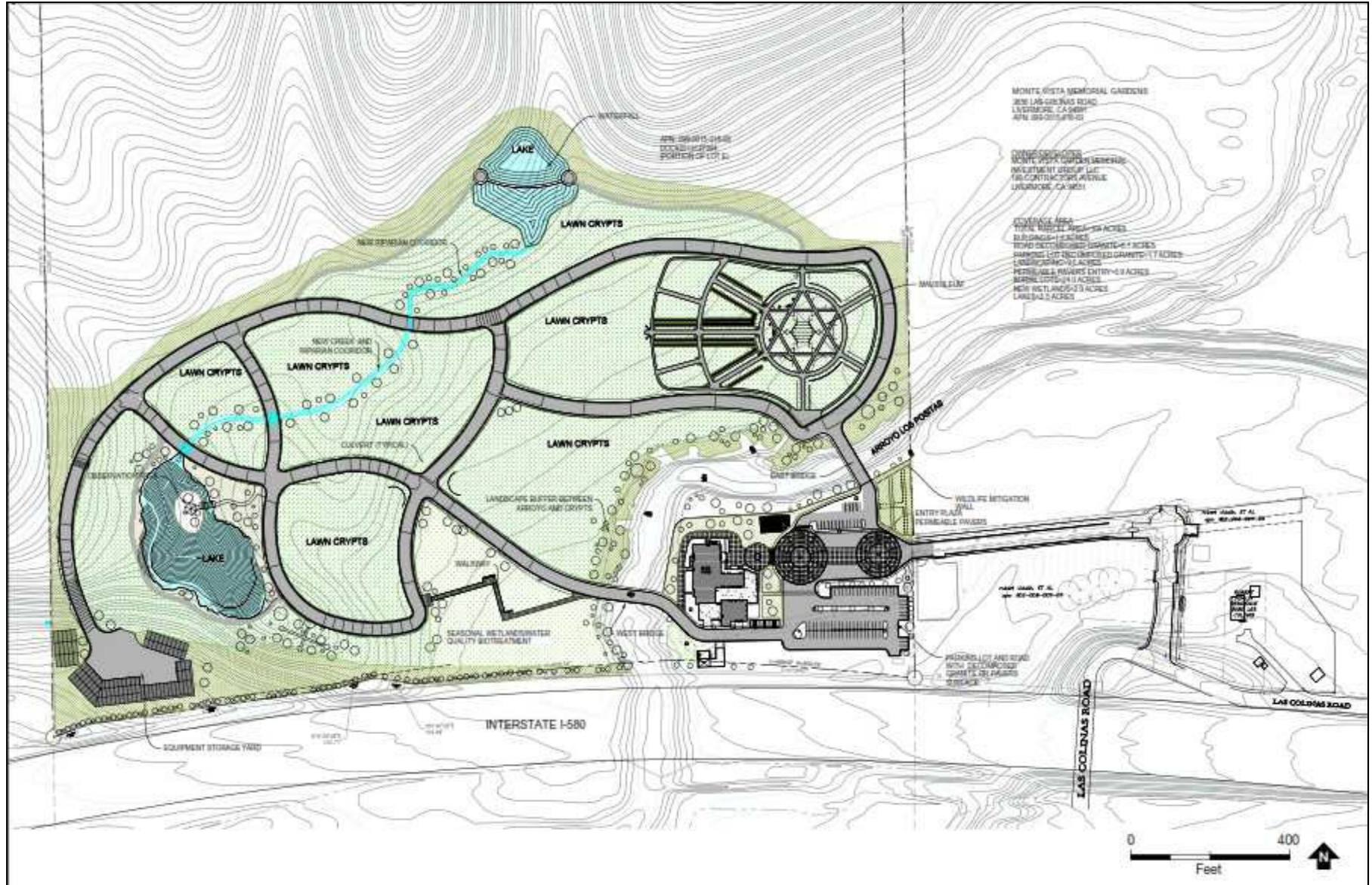


Figure 2 Preliminary Project Site Plan- Source: RCH Group (ENGE0 2020)

Internal Circulation

The preliminary site plan appears to provide adequate internal circulation. The access road to the Project site is not paved and is more than 30 feet wide based on measurements from aerials. Minimum width of 24 feet or wider should be considered to provide for two-way vehicle travel. The turning radius at the approach/departure at Las Colinas Road should be designed to accommodate hearses and other service and delivery trucks.

No dimensions are showing on the internal circulation roads that provided access to burial grounds. A 24-foot wide for the internal circulation roads is desired. These dimensions would provide for funeral possessions and visitors who drive and must park parallel along the roadside and at the same time accommodate other vehicles passing through.

The internal circulation road should be designed to provide one-way forward travel with directional signs and arrows to direct visitors.

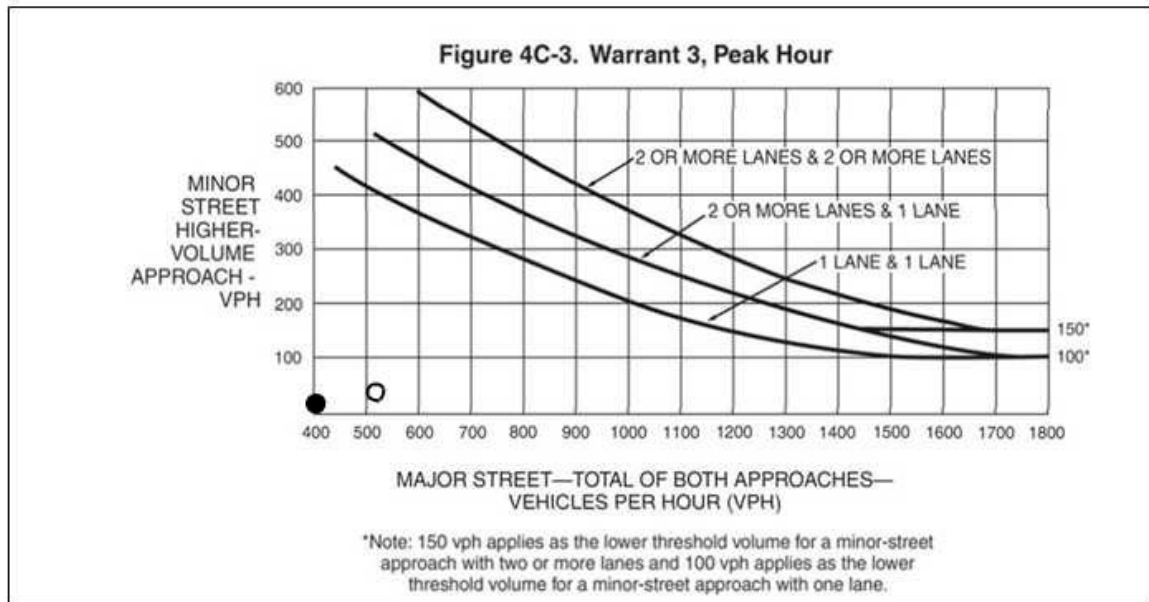
Access Driveway Sight Distance

The access driveway to the Project site is located along a curve at Las Colinas Road. Assuming a 25 mph speed limit for Las Colinas Road, the minimum sight distance requirement is 120 feet according to roadway design guidelines. Measurements conducted based on aerials indicated the stopping distance is 200 feet and 125 feet from the east and the south (from the bridge) respectively and would satisfy the minimum sight distance requirement. Sight distance (stopping sight distance) is the length of the roadway ahead that is visible to the driver. The available sight distance on a roadway should be sufficiently long to enable a vehicle traveling at or near the speed limit to stop before reaching a stationary object in its path.

Conclusion

The project is expected to generate 100 trips (Table 1) daily and is not expected to create significant impacts on the peak-hour traffic operation on adjacent streets since the Project would open between 9 a.m. and 4.p.m. The Project would provide 92 parking spaces on the site and will satisfy County parking requirements. The site access road at Las Colinas Road will have adequate stopping sight distances in both directions. Based on the review of the collision records, Las Positas Road and Las Colinas Road do not appear to be collision hot spots. The proposed project would not warrant signalization at the Las Colinas and Las Positas Road intersection based on the "Peak Hour Volume Signal Warrant" base on traffic volumes and intersection configuration. While there are no activities taking place currently with the approved high school project to the northeast of the Project site, it is worthwhile to monitor development activities in the vicinity since the area is mostly vacant and development may occur that could lead to realignment, widening, and extending of Las Colinas Road, and could have an impact on the proposed cemetery access and operation.

Peak Hour Volume Warrant Analysis



- AM volume Major Street 289 (Las Positas), Minor Street 20 (Las Colinas)
- PM volume Major Street 518 (Las Positas), Minor Street 20 (Las Colinas)