


# City of Lafayette Staff Report

**For:** Circulation Commission  
**By:** Tony Coe, City Engineer   
**Meeting Date:** December 1, 2014  
**Subject:** Transportation Review of Proposed Development by Lennar Homes

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## Introduction

Lennar Homes has applied to redevelop three existing parcels at the northwest corner of the Mt. Diablo Boulevard and Dolores Drive intersection (Address numbers 3666, 3672, and 3682). The project proposes to construct three three-story mixed-use buildings to create 66 residential units and 5,400 square feet of restaurant/commercial retail space. This project will be subject to Lafayette's design review process. The Circulation Commission is being requested to provide advisory comments and recommendations on transportation issues and impacts. Separately, the Design Review Commission will review architecture and design-related aspects of the project. The Planning Commission is the project approval board, who will consider comments from both advisory bodies before taking action on a proposed Mitigated Negative Declaration and considering findings that are necessary to approve the project. This report provides staff analyses on relevant transportation policy questions and issues to facilitate the Circulation Commission's participation in the overall project review process.

## Project Documents Available for Review

Lennar Homes has submitted the following documents to support its project application:

1. Preliminary design drawings by Studio T Square, dated October 20, 2014 (Excerpt included in Attachment 1)
2. Transportation Impact Study Memorandum by Fehr & Peers, dated September 23, 2014 (Excerpt included in Attachment 2)
3. The Fehr & Peers memo has been separately peer-reviewed by TJKM Transportation Consultants. The peer review letter dated November 10, 2014 is included in Attachment 3.

Leading up to the formal application submittal, the project design, including elements that may have traffic impacts, has been evolving based on the applicant's outreach and consultation with Lafayette boards, area residents, homeowner association members, and staff at public meetings and informal sessions. As a result there have been prior versions of the Fehr & Peers memo. They are not included with this staff report because the variations in the project do not

materially change the conclusion of the analyses that are still relevant, and to also avoid creating confusion with obsolete analyses.

### **Analysis of Transportation Issues**

Staff has reviewed the project documents in coordination with Consultant Traffic Engineer Chuck DeLeuw. Most of our comments made on earlier versions of the documents have been addressed by the latest submittal. At this time, the following remaining major issues warrant discussion by the Commission so that you may formulate your comments to the Planning Commission for consideration.

#### **A. Overall Traffic Impacts**

The Fehr & Peers memorandum contains detailed background on existing traffic conditions, the forecast of additional traffic created by the project, and an analysis of the resulting impacts. The impacts are evaluated for both existing and cumulative built-out traffic scenarios. In summary, the project will generate in the order of 930 new total trips daily, roughly 40 during the morning peak hour and 85 during the evening peak hour. Note that the study assumes 5,900 square feet of commercial space, about 10% higher than the design as shown in the application drawing. As such the analyses slightly over-estimate the degree of project impacts and could be taken as “overly conservative.”

Consistent with common practice, impacts on the roadway network serving the project are evaluated based on traffic levels of service and the associated expected delay. Fehr & Peers analyzes traffic conditions at three intersections immediately adjacent to the project-

- Mt. Diablo Boulevard at Risa Road
- Mt. Diablo Boulevard at Dolores Drive
- Mt. Diablo Boulevard at Happy Valley Road

The project impacts are found to be less than significant. Under existing conditions, Fehr & Peers finds that the intersections operate generally at Level of Service (LOS) C or better during both peak hours. The highest impact resulting from the additional project traffic occurs at the intersection of MDB/Dolores Drive, where there would be four seconds of increase in average delay in the evening peak hour; but the overall level of service remains unchanged at LOS C. The impacts at the other two intersections are in the order of one additional second of delay. Under cumulative built-out conditions, the three study intersections still operate with acceptable delay at LOS D or better. The project traffic adds at worst six seconds of average delay at the MDB/Dolores Drive intersection in the evening peak hour, but the overall level of service again remains unchanged at D.

As part of the peer review, TJKM independently collects a new set of weekday traffic volumes in early June 2014 to compare with and verify the data supplied by the applicant. Fehr & Peers had previously collected data on two separate dates in March and May 2014. A comparison of the three sets of volumes yields a variation in the range between 1% and 7%. While nominally different, these are not uncommon variations found in data collected for the same area on different, random days. Fehr & Peers uses the March data in its analyses, likely because that

day records the highest traffic volumes in the evening peak, perceived to be the worst traffic time in the area. The morning peak volumes on that day fall between those collected on the other two days.

TJKM applies the same analyses to its own set of existing conditions (June) data as a comparative exercise. It generally confirms the LOS and delay calculations by Fehr & Peers at two of the study intersections. At MDB/HVR, TJKM finds slightly worse conditions than those reported by Fehr & Peers- This intersection operates at LOS D (as opposed to C) in the evening peak hour. Apparently this variation stems from different assumptions about signal phasing and allocation of green time.

To peer review the impacts analyses, TJKM takes into additional consideration the effect of new signal timings that will soon be put into trial along the MDB corridor. The Commission will recall these proposed changes as part of an effort to update traffic signal coordination throughout the downtown to relieve traffic congestion. (Recall also that the new timing will have minimal, if any, effect on traffic levels of service. The congestion "improvement" is expected to come in the form of improved coordinated progression of traffic movement through certain parts of the corridor with a fewer number of stops.) TJKM's work confirms the general finding of less-than-significant impacts by Fehr & Peers. The impact on existing traffic is slightly less than 3 seconds in the worst case (morning peak at MDB/Dolores), with no changes to the overall levels of service. In the cumulative condition, the highest impact is at MDB/HVR in the evening peak, where there are less than 5 seconds of additional average delay. Again the levels of service remain unchanged.

Given the lack of significant impacts to the overall traffic levels of service, staff is not recommending any mitigation measures on the public roadway network to address them. Impacts related to site circulation and operations, and their mitigation measures, are discussed separately below.

#### B. Site Circulation and Operations

The project proposes to have access to/from the adjacent public roadway network at two locations. The main project driveway on the Dolores Drive frontage allows turning movements to/from all directions of traffic. Additionally a loading dock is proposed adjacent to the project driveway, to mainly serve the commercial uses of the project. A secondary driveway is proposed on the MDB frontage, where turning movements are restricted to right in and out only.

Dolores Drive Driveway. The average daily traffic on Dolores Drive is around 1,800 vehicles per day. This is typical of a Lafayette residential collector street. The two peak traffic hours see about the same level of traffic of around 160 vehicles. Fehr & Peers forecasts that 24 of the project's 30 peak-hour (or 80% of) outbound trips (same for both peak periods) will exit via the Dolores Drive driveway, all but 2 making a right turn out. Peak inbound project traffic occurs in the evening peak. Of these 55 trips, 41 (or 75%) are expected to enter the Dolores Drive driveway, all but 3 making a northbound-to-westbound left turn into the project.

Traffic operation at the driveway could potentially be affected by queuing on Dolores Drive extending back from the signalized intersection at MDB, and vice versa. There is a prevailing

concern that extensive queuing from southbound Dolores Drive vehicles waiting at the intersection would extend past the project driveway and block a northbound vehicle waiting to turn left into the driveway. Such a scenario could have the secondary impact of creating queuing along northbound Dolores Drive extending back into the MDB intersection. Fehr and Peers analyzes this relationship in its study and concludes that the project driveway is sufficiently set back from the MDB intersection such that queuing on Dolores Drive would have minimal effect on the operations at the project driveway 95% of the time during peak hours. Minimal impacts are also noted for the operation of the driveways for the current buildings on the east side of Dolores Drive, opposite the project. TJKM's peer review reports the same conclusion, while its calculated queue lengths appear even more favorable. Staff's own observations of this area suggest that the consultants' findings are not unreasonable. Based on random field visits and video footage collected recently, the longest queue observed on the southbound Dolores Drive approach at the intersection is four vehicles long, during the morning commute when area residents are expected to leave home on their daily commute. (The queues in the evening are shorter, when the travel direction is reversed.) These queues typically clear within a single signal cycle. The additional queue length of one or even two additional vehicles resulting from the project would not materially change this condition. Admittedly this longer queue could result in a nominal incremental delay to driveway traffic in the immediate area trying to turn onto Dolores Drive. That delay should be in the order of seconds, and would therefore not constitute a significant impact.

Still, given the concerns from some about excessive queue lengths and delays, staff has asked the Fehr & Peers to analyze the feasibility of converting the MDB/Dolores Drive intersection into a roundabout configuration. The idea is that operational efficiency gained from replacing a signal would reduce or eliminate the queueing. Fehr & Peers determines that a two-lane roundabout would be necessary, but this type of facility has other trade-offs related to ped/bike mobility and additional right-of-way requirements would have significant secondary impacts in the area. A single-lane roundabout would not have sufficient capacity to handle peak-hour traffic.

Aside from capacity-related considerations, Fehr and Peers has also analyzed available sight distance at the project driveway and finds it to meet or exceed current standards; however, it does recommend specific design measures to ensure the adequate operation of the driveway and the frontage sidewalk. These recommendations are corroborated by TJKM, with the additional caveat that there continues to be no on-street parking along the project frontage on the west side of Dolores Drive. Staff intends to require the applicant to incorporate these measures into the project design.

*Dolores Drive Trash Dock.* The project proposes a dock for trash and waste pick-up service for the entire site. Other loading activities are intended to occur separately on the MDB frontage. An exhibit included in the attached project drawings illustrates the turning movements to access the trash dock. Fronting loading trucks would turn left into the dock from Dolores Drive, then back out to go back toward MDB. Currently waste service to the existing site generally occurs during early morning (7 a.m. to 9 a.m.) and midday (11:30 a.m. to 1 p.m.) on a weekday. Recycling pick-up tends to have a more open schedule (any time between 6 a.m. to 6 p.m.). Assuming that this level of service continues, there would be activity at the trash dock once a

day, four days a week. Given the service schedule times, there should be only momentary delay to prevailing traffic when the service vehicle exits the trash dock.

*Mt. Diablo Boulevard Driveway.* The project proposes a secondary access point on its MDB frontage, partly in response to feedback from design study sessions with city boards and staff early on in the design development process. The proposed location for the driveway, however, is at the center of the project main public frontage, where active pedestrian activity is highly desirable and should be encouraged. As proposed, staff believes that the driveway would present issues and challenges in traffic operation, pedestrian safety, and overall design, and would not be consistent with Lafayette's goals for this project.

As background, currently there are at least six driveways fronting onto this immediate area of MDB with the center two-way-left-turn lane between the Diamond K Building Supply storefront and the easterly driveway to Desco Plaza. There are inherent conflicts between many of the left turn movements into/out of these driveways. As an example, vehicles turning left out from two slightly staggered driveways on opposite sides of the boulevard would be vying to turn into the same physical space in the middle lane. Drivers of these vehicles would be mostly occupied with finding a gap in the through traffic on the boulevard and would pay little to no attention to the need for being aware of each other. Added to this mix would be vehicles on the boulevard moving into the same space in the middle lane to make left turns into other driveways. While there may be a lack of a history of collisions in the area, the potential for conflicts is real. In this setting, layering on additional traffic from the project will only exacerbate existing issues in this area.

To partly address staff's concerns, the project has proposed a triangular channelization island at the new driveway opening to restrict traffic to right in/out only. Still, the design interrupts the sidewalk with an unnecessary intersection at a critical point on the project frontage, subverting pedestrian right-of-way and mobility to vehicular movements across the pedestrian path of travel. This is highly inconsistent with the *Traffic Safety* and *Complete Streets* goals and policies in Lafayette's General Plan, which specifically emphasize the need to consolidate driveways and create shared access. Furthermore, this proposal has a corollary drawback in terms of architectural design. Lafayette Planning Director Niroop Srivatsa notes that the driveway location visually breaks up the project frontage and interrupts the landscape design, resulting in a less-than-pleasing visage from the boulevard.

While Fehr & Peers is optimistic in its analysis that the triangular channelization island will be effective in inhibiting left turns, TJKM is less so in its peer review. The latter notes that MDB is very wide, with a two-way left-turn lane in the middle that opportunistic drivers exiting the project could potentially use to make what would be an illegal left turn. TJKM recommends augmenting the design with strategically placed medians along MDB to physically deter these turns. This will essentially convert the existing center two-way-left-turn lane east of Desco Plaza into a westbound left-turn/merge lane. However, this option has potential adverse secondary impacts on the operation of existing driveways in the area, particularly those serving Diamond K Building Supply on the south side of the boulevard, and the existing complex of buildings on the north side, immediately west of the project. TJKM recommends that additional analyses should be done to understand the trade-offs.

Staff believes that strategically adding center median segments could be one solution. Properly designed medians could add the secondary benefit of transforming this part of the downtown to be consistent with the streetscape to the east and that envisioned in the Downtown Street Improvements Master Plan. However, this alone would not address the pedestrian and design concerns presented earlier. Staff believes that there is significant merit, especially from a site planning standpoint, in locating the project's secondary access point at the far western end of the project's MDB frontage, where it can be consolidated with an already-existing driveway serving the adjacent parcel to the west. (In staff's opinion, having two driveways immediately next to each other would not be a desirable arrangement under any circumstances.) This concept places the project driveway away from the pedestrian-active part of the frontage, thus reducing the potential for vehicle/pedestrian conflicts on the sidewalk. It also restores frontage continuity and delivers a superior aesthetic design. To implement this design option would require the applicant to coordinate with the adjacent property owner to consolidate the two driveways. The applicant would also need to submit a revised layout supported by additional traffic analysis to demonstrate the viability of this concept. The applicant indicates that it has attempted some negotiations to pursue this idea with the neighboring property owner. The initial feedback appears to be unfavorable and/or financially infeasible to the applicant, as explained in the applicant letter in Attachment 4.

Yet another option, especially if the idea of medians on MDB appears to the Commission to be premature, would be to eliminate the secondary access point and thereby directing all project traffic in and out of the Dolores Drive driveway. This would maintain existing conditions on MDB and avoid adding to the current conflicts between left turns going into and out of the middle two-way-left-turn lane from various directions. The Fehr & Peers study already assumes between 75% to 80% of project trips using the Dolores Drive access point, and doing away with the secondary MDB driveway would add about 20 additional trips in the evening peak hour there (14 in and 6 out). Fehr & Peers has previously analyzed this single-access scenario and found the relevant traffic impacts on Dolores Drive to be materially no different. Staff therefore believes that this is a reasonable alternative.

### C. Parking

Fehr & Peers estimates that the project must provide 155 parking spaces to satisfy Lafayette's code requirements, as follows-

Residential Use: 96 spaces (83 for residents, 13 for guests)

Commercial Use: 59 spaces for guests

The project proposes to create a combined total of 179 spaces (164 garage spaces and 15 on-street spaces). The 15 on-street spaces are located along the MDB frontage. There is precedence for allowing a project to create new on-street parking toward meeting its code requirement; however, only the net change is allowed as a credit. In this case, there are 5 existing on-street spaces along the project frontage. The project proposes to have 15 total spaces here by changing to an angled parking configuration. The net increase is therefore 10 spaces, bringing the project parking provision to 174 spaces, which would still satisfy the overall requirement by code. The more germane issue, however, is the fact that the project is

are generally available to the public, including future guests of the project, the project design should avoid assuming them as dedicated project parking. In this case, the project appears to have the ability to provide all of its guest parking in the garage. Staff sees no reason why this should not be done. Any on-street parking then simply becomes public parking that could be used by patrons of this or any other project in the area.

The project plans show the 15 on-street parking spaces to be the angled, back-in style. This has been done partly to respond to staff comments made during our preliminary review of layout drawings showing angled parking in this area. In suggesting the back-in parking, staff seeks to minimize impacts on the adjacent bike lane; however, Consultant Traffic Engineer Chuck DeLeuw has other concerns regarding any sort of angled parking configuration, especially if the center two-way-left-turn lane on MDB continues to exist as it does today. Drivers of vehicles parked in a back-in configuration (pointed west) would be greatly tempted to make a rapid (and illegal) U-turn maneuver across multiple lanes of traffic while exiting the parking spaces to go east toward downtown. Even if street medians were in place to discourage this maneuver, there is still the possibility of these same vehicles crossing two lanes of MDB in order to make a legal U-turn at a location further to the west. In its peer review, TJKM further points out that the bicycle safety justification for back-in angled parking here is weak when the start of the westbound bike lane begins at Dolores Drive, just east of the proposed angled parking. Further east, bicyclists have no dedicated lane and must share the auto lane. Finally, staff now notes that the prevailing westbound speeds in this area are likely higher than those in central business district areas where back-in parking is typically employed. All of the above taken together, back-in angled parking does not appear to have the same level of appeal that staff originally perceives.

In a conventional head-in angled configuration, Mr. DeLeuw recognizes the implications of an increased number of vehicles backing out to high-speed traffic on MDB. There is also the possibility, albeit a smaller one, for an exiting vehicle to merge across the two westbound MDB lanes into the middle lane to make a U-turn to go east. (If medians were constructed along the project frontage as a mitigation of other traffic impacts, they would have the secondary benefit of discouraging this possibility.) TJKM acknowledges the impacts on the bicycle lane associated with conventional angled parking, and suggests moving the start of the bike lane further to the west. Although Lafayette has a standing policy to create on-street parking, it also has a policy of facilitating non-auto mobility. Staff believes that the idea of moving the start of the bike lane could be construed as a trade-off favoring motor vehicles over bicycles. Yet another alternative would be to reconfigure the lane widths on MDB to create a buffer space between the bike lane and the back of the new angled parking spaces. While this does not wholly mitigate the concern for lack of visibility of bicyclists passing a vehicle backing out of an angled space, it would add to the bicyclist's ability to react, thus increasing the margin of safety.

One other option is to perpetuate the current parallel parking scheme along the project frontage. This would drastically reduce the number of on-street parking spaces from the proposed 15, probably by about half, but the concern would remain about vehicles slowing/stopping to access parking, thus disrupting through traffic.

None of the proposals under consideration presents a clear, perfect fit in the equation to balance Lafayette's dual goals of creating on-street parking and protecting bicycle mobility. The decision to favor any one of these options over another is strictly a policy one that hinges on each policy-maker's individual value judgment on the multiple competing issues at hand.

Regardless of the chosen configuration, the future spaces should be regulated to be consistent with adjacent parking zones in the area. All spaces fronting commercial/retail development in the immediate surrounding are metered. Further to the west, unmetered two-hour zones have been established. The proposed project is arguably more similar to the retail-style frontages to the east that currently have metered parking than those existing to the west; therefore, staff recommends that the project should be required to install meters along its frontage conforming to Lafayette standards.

Separate from the general parking spaces, a "drop-off" area is also proposed along the MDB frontage to serve both passenger and freight loading/unloading. The loading bay does not appear to be of sufficient length to accommodate the type of vehicles that are expected to service the various components of the project, such as delivery trucks for the commercial use, and large moving trucks for future residents. A redesign to adequate dimensions will likely reduce the number of regular parking spaces created on this frontage. To ensure that the loading bay is used as intended, staff recommends that it should be regulated to allow 30-minute active loading and unloading only between 9 a.m. and 6 p.m.

D. **Off-Site Improvements.** The project includes a series of enhancements consistent with adopted plans and policies, such as the frontage sidewalk, street trees and other streetscape elements, and a segment of the multi-purpose trail within the aqueduct right-of-way belonging to the East Bay Municipal Utility District (EBMUD). Staff will be reviewing the engineering design of these various components to ensure constructability and conformance with Lafayette's established standards and practices.

Some have raised concerns about the safety and viability of the mid-block pedestrian crossing on Dolores Drive to serve the aqueduct trail. The concern appears to be that the curvature in the road would cause approaching vehicles to be surprised by pedestrian crossing the street. Fehr & Peers points out that the sight distance between this crossing location and approaching traffic is in conformance with established standards. In staff's own observation of field conditions, we concur with this conclusion. TJKM suggests that a rapid-flash beacon system, similar to those currently operating at MDB/Golden Gate Way and MDB/El Nido Ranch Road, should be used to warn approaching motorists of pedestrian crossing activity. Staff believes that such a system could further be enhanced by including an advance unit to be located north of the crossing in the vicinity of the freeway overpass.

### **Summary of Recommendations**

Staff recommends that the following policy comments should be provided to the Planning Commission for consideration before it acts on the project:

1. Accept that project does not create a significant impact on overall traffic levels of service on the adjacent street network.



2. Regarding traffic operations on Dolores Drive-
  - a. Create a condition of approval stipulating that the trash dock be limited to access for waste and recycling service only. Passenger and freight loading shall occur along the MDB frontage.
  - b. Augment the trail crossing with a rapid-flash beacon system with advance warning devices.
3. Regarding traffic operations on Mt. Diablo Boulevard-
  - a. Indicate Commission preference for (1) requiring a revised site layout, with supporting traffic analyses, to locate the MDB access point as a shared driveway at the far western end of the project, or (2) eliminating the mid-block access on MDB altogether and direct all traffic through Dolores Drive.
  - b. Indicate Commission preference for on-street parking to be either angled back-in, angled head-in, or parallel configuration. Require the installation of meters conforming to Lafayette standards for on-street parking along the MDB project frontage.
  - c. Related to (b), require project to provide all required guest parking in the garage, thus allowing parking along the MDB frontage to be general public spaces.
  - d. Require a redesign of the loading bay to accommodate the maximum size vehicle expected to service the project. Regulate the loading bay to be 30-minute active loading only between 9 a.m. and 6 p.m.

#### **Attachments**

1. Excerpt of Preliminary Design Drawings by Studio T Square, dated October 20, 2014 (Full copy downloadable at- <https://www.dropbox.com/l/iDHVRrMqA0iSYBASuK6wUu>)
2. Excerpt of Transportation Impact Study by Fehr & Peers, dated September 23, 2014 (Full copy downloadable at- <https://www.dropbox.com/l/lmNvSfl6B4H8V3p3g364vu>)
3. Peer review Letter Report by TJKM Transportation Consultants, dated November 10, 2014
4. Applicant Letter
5. Written Public Comments Received as of November 19, 2014