

**Appendix E:  
Traffic Memorandum**

## MEMORANDUM

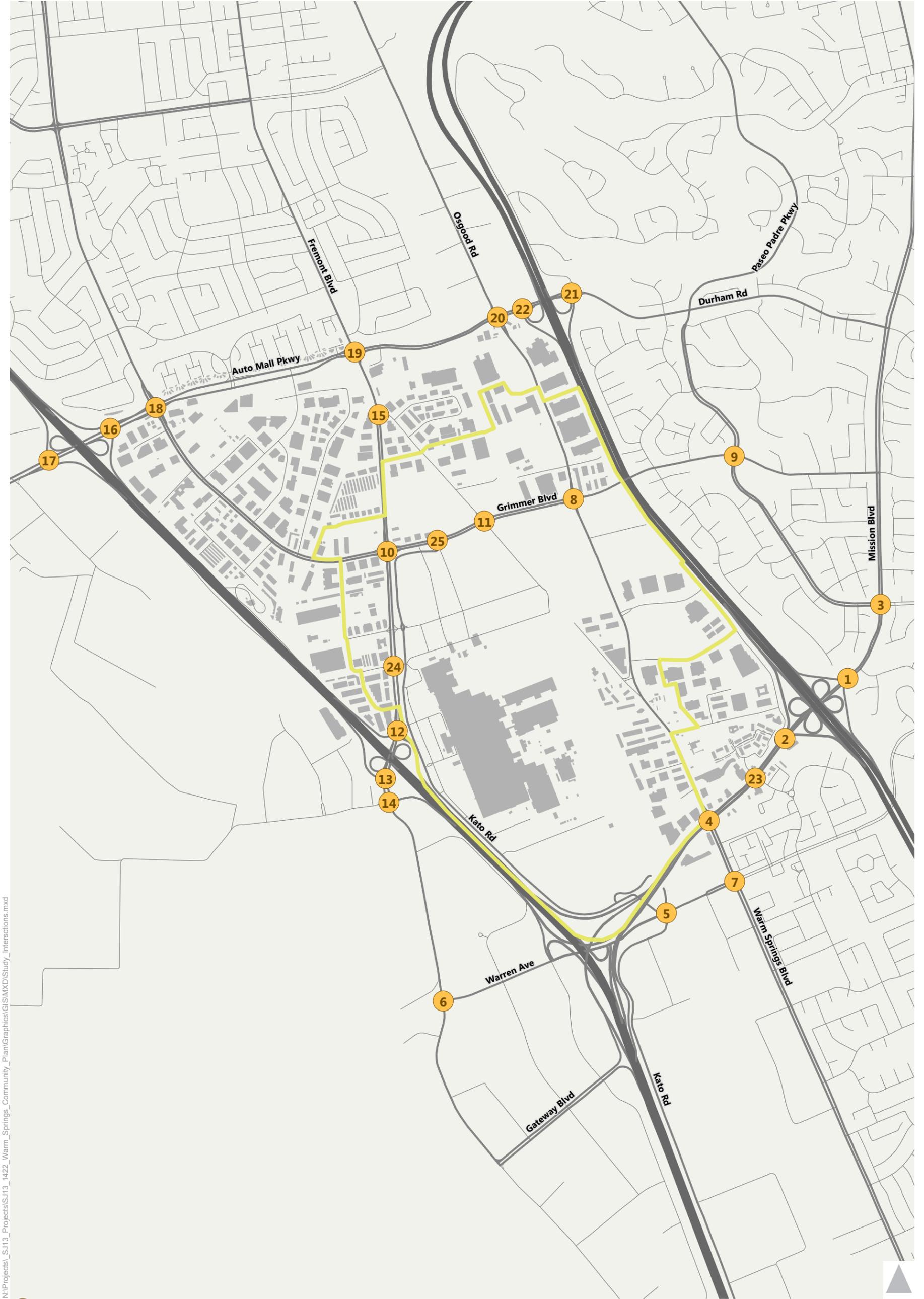
Date: February 13, 2015  
To: Chad Kiltz, Lennar  
From: Matt Haynes, Lindsey Hilde, and Katie Leung, Fehr & Peers  
Subject: **CEQA Consistency Analysis for Lennar TOD Development in Fremont, California**

*SJ14-1550*

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This memorandum documents the results of the CEQA consistency evaluation conducted for the proposed Lennar Warm Springs Transit Oriented Development (TOD) Project in Fremont, California. Pursuant to CEQA, the purpose of this analysis is to confirm that the proposed project (Lennar Master Plan site) would not result in significant new impacts related to traffic not previously identified in the Warm Springs/South Fremont Community Plan Environmental Impact Report (EIR).

In July 2014, the Fremont City Council adopted the Warm Springs/South Fremont Community Plan (Community Plan) and certified the associated EIR (State Clearinghouse No. 2013032062). The Community Plan contemplated the development of up to 4,000 dwelling units, 10 million square feet of non-residential uses, a school and park, and associated infrastructure on 879 acres across 10 Plan Areas, the boundaries of which are displayed in **Figure 1**. The Project is located within Planning Areas 4 and 5 of Community Plan Study Area slightly west of the Warm Springs BART station (currently under construction). It is comprised of residential, school/park, office, and retail/restaurant land uses consistent with the Community Plan's vision for Areas 4 and 5.



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- Study Intersections
- Study Area Boundary



Figure 1  
 Study Intersections  
 Warm Springs Community Plan



## SUMMARY OF FINDINGS

This section presents a brief summary of key findings, each of which is discussed in more detail in the main body of this memorandum.

- Consistent with Lennar's proposed Master Plan, the automobile trip generation analysis was updated to reflect the new land use mix.
- Results showed that net vehicle trips for the Community Plan Study Area would be similar to the previous number of trips studied in the Community Plan EIR. During the AM peak hour, 82 additional trips would be generated compared to the Community Plan EIR, and 91 fewer trips would be generated during the PM peak hour.
- The updated Cumulative trip generation results show a slight decrease in trips compared to the Community Plan EIR results.
- In order to determine if the updated trip generation numbers would result in any new intersection impacts, the previously-studied Background plus Project and Cumulative plus Project scenarios were amended to reflect the updated trip generation analysis.
- Intersection level of service (LOS) results show that in comparison to the results from the Community Plan EIR, there are no new intersection impacts under Background plus Project or Cumulative plus Project conditions.
- Refined geometry improvements are recommended at the intersection of Fremont Boulevard/Ingot-Innovation Way due to the current land use mix and street layout proposed as part of Lennar's Master Plan. The preferred geometric configuration for this intersection will be confirmed as part of the Master Plan development process.

## PROJECT DESCRIPTION

Lennar's proposed Master Plan site in Areas 4/5 would be comprised of the following land uses:

- Residential
  - Condominiums: 958 dwelling units
  - Apartments: 1,256 dwelling units
- Employment<sup>1</sup>
  - Research and Development (R&D): 2,058 employees
  - Office: 3,430 employees

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<sup>1</sup> Number of employees used in trip generation analysis. 2,058 R&D employees equates to 686 ksf at 3 employees per ksf. 3,430 Office employees equates to 656 ksf at 5 employees per ksf.



- Retail/Restaurant Uses
  - 28 ksf (thousand square feet)<sup>2</sup>
- School
  - 1,100 students

**Table 1** compares the assumed land uses for the Lennar Master Plan site to those assumed in the final Community Plan adopted in July 2014 and those evaluated in the transportation section of the EIR.<sup>3</sup> The land use assumptions for the Master Plan site are consistent with the Community Plan's vision for Areas 4 and 5. These assumptions form the basis for the trip generation and intersection analysis presented in this memorandum.

Within the Master Plan site, residential uses would be located in the western portion of the site around the perimeter of the northern, eastern, and southern portion of the site, the office and industrial R&D uses in the southern eastern portion of the site adjacent to the planned Warm Springs BART pedestrian bridge and plaza, and the school and park in the central and northern portions. Innovation Way, an east-west street that would connect to Fremont Boulevard, would be the primary internal roadway. Three north-south roadways would connect to Grimmer Boulevard. The location of these land uses was reflected in the trip distribution and assignment.

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<sup>2</sup> Rounded from 27.5 for analysis purposes.

<sup>3</sup> The EIR transportation impact analysis was based on the land uses in the Draft Community Plan. The land uses were modified in the final version of the Community Plan. An analysis presented in the memorandum from Fehr & Peers dated June 17, 2014 indicate that the land use changes would not materially affect the results of the impact analysis.



**TABLE 1: COMMUNITY PLAN PROJECT DESCRIPTION (AREAS 4/5)**

Land Use Type	Metric	Community Plan DEIR <sup>1</sup>	Community Plan FEIR	Lennar Master Plan Site	Difference <sup>2</sup>
Condominiums	dwelling units	250	450	958	508
Apartments	dwelling units	1,250	1,750	1,256	-494
R&D	employees	2,923	1,423	2,058	635 <sup>3</sup>
Office	employees	6,650	3,650	3,430	-220
Retail	ksf	31	31	28	-4
School	students	700	700	1,100	400

Source: Fehr & Peers, 2015.

Notes:

1. Community Plan DEIR published in January 2014, but analysis conducted in late 2013.
2. Difference between Lennar Master Plan and Community Plan FEIR (July 2014).
3. Employment uses includes an additional 415 jobs above Community Plan assumptions, which are not deducted from other Community Plan Areas (635 – 220 = 415)

## VEHICLE TRIP GENERATION

### Community Plan DEIR Trip Generation

Trip generation estimates for the Community Plan were originally developed in 2013 and included as part of the Draft EIR published in January 2014. The original trip generation results by Area are displayed in **Table 2**. Trip generation estimates for the Community Plan EIR were developed according to the following steps:

- First, base vehicle trip estimates were derived based on rates and equations in the Institute of Transportation Engineers' *Trip Generation Manual*, 9<sup>th</sup> Edition.
- Next, Fehr & Peers' MXD+ model was used to determine the amount of trip internalization due to the mix of uses and reductions to account for pedestrian, bicycle and bus transit/shuttle trips.
- Finally, BART trips, due to the close proximity of the Warm Springs/South Fremont BART station, were estimated based on surveys of BART transit oriented developments (TODs).



**TABLE 2: ORIGINAL COMMUNITY PLAN EIR TRIP GENERATION BY AREA SUMMARY**

Area	Daily			AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Area 1 Industrial	1,656	1,656	3,312	314	60	374	64	299	363
Area 2 Industrial	548	548	1,096	142	23	165	15	138	153
Area 3 Flex	2,302	2,302	4,604	154	272	426	232	208	440
Area 4 Mixed-Use & 5 Innovation & 6 Industrial (TESLA)	11,243	11,243	22,486	2,240	795	3,035	790	2,178	2,968
Area 7 Industrial	1,434	1,434	2,868	278	53	331	55	266	321
Area 8 Flex	3,874	3,874	7,748	568	203	771	257	553	810
Area 9 Mixed-Use	2,607	2,607	5,214	84	319	403	287	168	455
Area 10 Industrial	2,146	2,146	4,292	487	82	569	87	463	550
<b>Total Vehicle Trips Added*</b>	<b>25,810</b>	<b>25,810</b>	<b>51,620</b>	<b>4,267</b>	<b>1,807</b>	<b>6,074</b>	<b>1,787</b>	<b>4,273</b>	<b>6,060</b>

\*Sum of Area subtotals may differ slightly than the total shown due to rounding.

Source: Fehr & Peers, 2013.

Prior to adoption of the Community Plan EIR in June 2014, trip generation estimates were developed for the revised land use plan (**Figure 1**) using the same assumptions as the Draft EIR estimates. Areas 4 and 5 are combined in the revised plan and future Tesla Motors jobs (Area 6) were separated from the Area 4 and 5 job totals. The revised trip generation estimates were adopted along with the Final EIR in July 2014<sup>4</sup>.

### **Lennar Master Plan Project Trip Generation**

In order to be consistent with the Community Plan, trip generation for the Lennar Master Plan site was conducted according to the same methodology from the Community Plan EIR. **Table 3** presents the results of the updated trip generation analysis for Areas 4 and 5.

The updated trip generation results were compared to DEIR totals since the June 2014 land use revisions process did not actually involve updated intersection analysis results. Therefore, for purposes of evaluating if the proposed Master Plan would result in any new transportation impacts, a comparison to the Draft EIR trip generation results is appropriate.

**Table 4** presents the results of the updated trip generation analysis for all Community Plan Areas, inclusive of the refined Lennar Master Plan land uses in Areas 4 and 5. The new Master Plan site

<sup>4</sup> Results of this analysis are presented in the memorandum from Fehr & Peers dated June 17, 2014.



trip generation changes the area-wide trip generation by a small increment, as shown in **Table 5**. The updated trip generation results were compared to DEIR totals since the June 2014 land use revisions did not actually perform intersection analysis results. Therefore, for the purposes of evaluating if the proposed Master Plan would result in any new transportation impacts, a comparison to the Draft EIR trip generation results is appropriate.

Results indicate that area-wide, AM peak hour trips increase by 82 as compared to the DEIR. PM peak hour trips decrease by 91 as compared to the DEIR. As a result, while Area 4/5 net trips increase, trips in other Areas decrease slightly due to updated trip generation rates based on area-wide, rather than individual area, land use totals. Thus, the change in land use mix for Areas 4/5 benefits other parts of the Community Plan.

**TABLE 3: AREAS 4 + 5 UPDATED TRIP GENERATION COMPARED TO EIR TRIP GENERATION**

Area	Daily			AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Original EIR (2013)	11,243	11,243	22,486	2,240	795	3,035	790	2,178	2,968
Updated Project Trips (2015)	9,516	9,516	19,032	1,544	872	2,416	752	1,456	2,209
<b>Total Change in Vehicle Trips</b>	-1,727	-1,727	-3,454	-696	-77	-619	-38	-722	-759

Source: Fehr & Peers, 2015.



**TABLE 4: UPDATED TRIP GENERATION BY AREA SUMMARY  
 INCLUDING LENNAR MASTER PLAN**

Area	Daily			AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Area 1 Industrial	1,380	1,380	2,760	233	46	280	55	223	278
Area 2 Industrial	562	562	1,123	146	24	169	16	141	157
Area 3 Flex	2,189	2,189	4,378	217	231	448	194	256	450
Area 4 Mixed-Use + 5 + 6 Industrial (Tesla)	14,094	14,094	28,188	2,279	1,022	3,301	939	2,159	3,098
Area 7 Industrial	1,443	1,443	2,886	274	51	325	53	263	316
Area 8 Flex	3,695	3,695	7,389	581	171	752	229	541	770
Area 9 Mixed-Use	2,000	2,000	3,999	64	239	304	217	130	348
Area 10 Industrial	2,200	2,200	4,401	494	83	577	87	464	551
<b>Total Vehicle Trips Added*</b>	<b>27,562</b>	<b>27,562</b>	<b>55,124</b>	<b>4,288</b>	<b>1,868</b>	<b>6,156</b>	<b>1,790</b>	<b>4,179</b>	<b>5,969</b>

\*Sum of area subtotals may differ slightly than the total shown due to rounding.  
 Source: Fehr & Peers, 2015.

**TABLE 5: ADDITIONAL TRIPS BY AREA SUMMARY  
 (REVISED TRIP GENERATION – ORIGINAL EIR TRIP GENERATION)**

Area	Daily			AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Area 1 Industrial	0	0	0	-9	-2	-10	-1	-7	-8
Area 2 Industrial	14	14	27	4	1	4	1	3	4
Area 3 Flex	-389	-389	-778	-9	-53	-62	-46	-21	-67
Area 4 Mixed-Use + 5 + 6 Industrial (Tesla)	2,851	2,851	5,702	39	227	266	149	-19	130
Area 7 Industrial	9	9	18	-4	-2	-6	-2	-3	-5
Area 8 Flex	-179	-179	-359	13	-32	-19	-28	-12	-40
Area 9 Mixed-Use	-607	-607	-1,215	-20	-80	-99	-70	-38	-107
Area 10 Industrial	54	54	109	7	1	8	0	1	1
<b>Total Vehicle Trips Added*</b>	<b>1,752</b>	<b>1,752</b>	<b>3,504</b>	<b>21</b>	<b>61</b>	<b>82</b>	<b>3</b>	<b>-94</b>	<b>-91</b>

\*Sum of area subtotals may differ slightly than the total shown due to rounding.  
 Source: Fehr & Peers, 2015.



### Cumulative Trip Generation

The Community Plan EIR’s Cumulative analysis scenario compared the Community Plan to the City of Fremont’s General Plan, and identified impacts based on the incremental growth of the Community Plan over the General Plan. We updated the DEIR trip generation to reflect the refined land use assumptions for the Lennar Master Plan site. The results of this revised cumulative trip generation estimates in comparison to those from the DEIR are provided in **Table 6**. The revised trip generation results in a slight decrease in trips compared to the DEIR results.

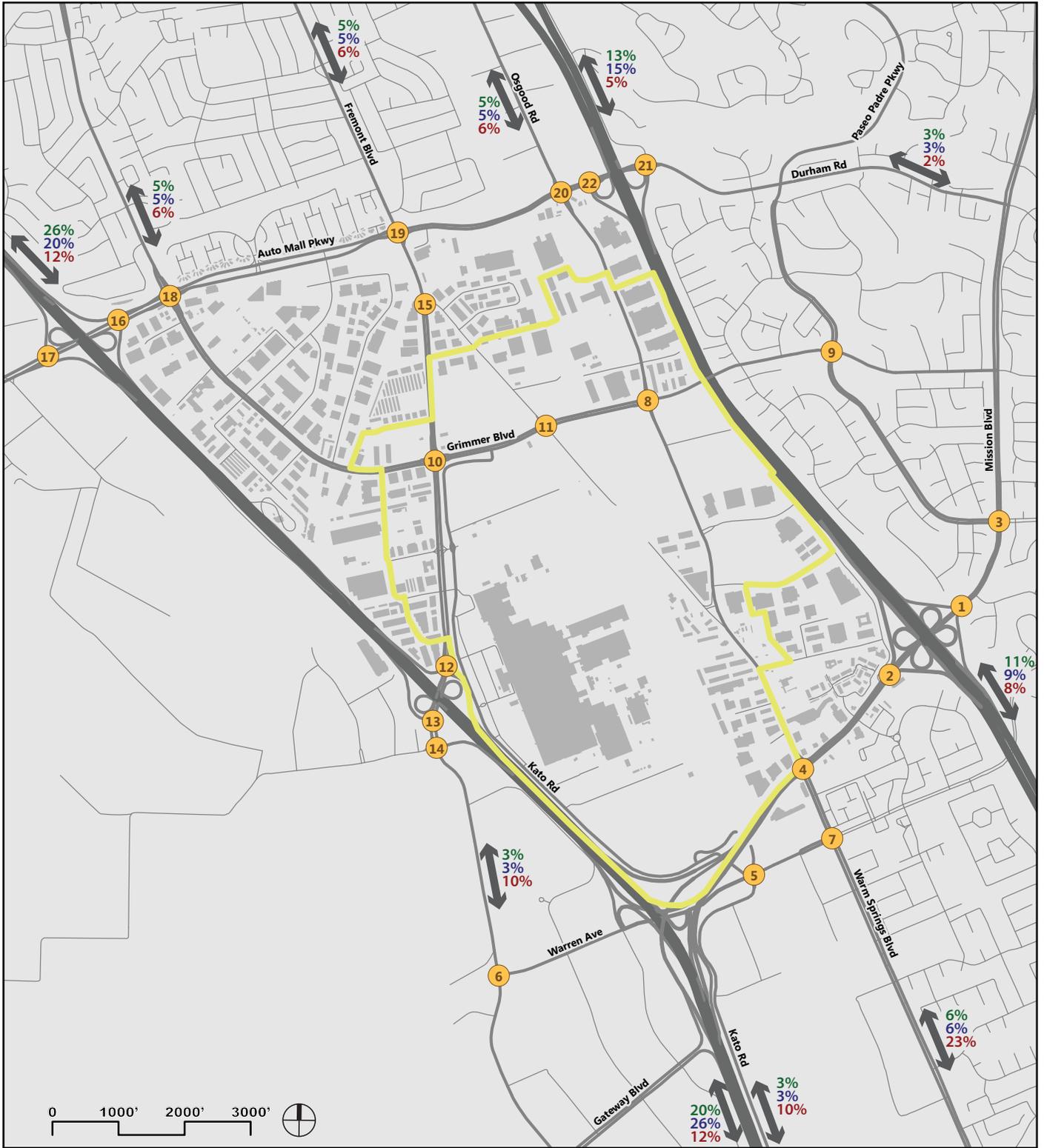
**TABLE 6: COMMUNITY PLAN CUMULATIVE TRIPS SUMMARY  
 (REVISED CUMULATIVE TRIP GENERATION – ORIGINAL EIR TRIP GENERATION)**

Area	Daily			AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Original EIR									
Cumulative Net Incremental Trips Over General Plan	15,569	15,569	31,139	2,401	1,153	3,554	1,109	2,438	3,547
Revised Project Net Incremental Trips Over General Plan	17,285	17,285	34,569	2,293	1,181	3,474	1,153	2,363	3,516
<b>Total Change in Vehicle Trips</b>	<b>1,715</b>	<b>1,715</b>	<b>3,431</b>	<b>-109</b>	<b>29</b>	<b>-80</b>	<b>44</b>	<b>-74</b>	<b>-31</b>

Source: Fehr & Peers, 2015.

### Trip Distribution and Assignment

The directions of approach and departure for Master Plan site were assigned according to the trip distribution from the Community Plan EIR (Community Plan, Figure 3.11-5), displayed in **Figure 2**. The site is situated between two freeways: I-880 and I-680. Access from I-880 is provided via the Auto Mall Parkway and Fremont Boulevard exits. Access from I-680 is provided via the Auto Mall Parkway and Mission Boulevard exits. Local access to the site from the North is provided via Grimmer Boulevard, Fremont Boulevard, and Osgood Road, and local access from the South is provided by Fremont Boulevard, Kato Road, and Old Warm Springs Boulevard. South Grimmer Boulevard is the predominant east-west access road to the site, carrying about 15 percent of trips to/from the site. Old Warm Springs Boulevard is a primary access route to the site from the south, carrying approximately 35 percent of trips to/from the site. Fremont Boulevard is another north-south access route carrying approximately 15 percent of trips to and from the site. Near the project site, Kato Road provides inbound only access between Industrial Drive and A Street.



-  Study Intersections
-  Study Area Boundary
-  XX% Employment Trip Distribution
-  XX% Hotel & Residential Trip Distribution
-  XX% Retail and School Trip Distribution

Figure 2  
 Trip Distribution  
 Warm Springs Community Plan





## INTERSECTION EVALUATION

The following scenarios were evaluated for this analysis:<sup>5</sup>

- **Background No Project:** Existing traffic conditions from counts plus traffic from approved but not yet constructed and unoccupied developments in the area for year 2015.
- **Background plus Project:** Background volumes plus traffic generated by the Community Plan at full build-out (only Areas 1-3 and 6-10) and project trips generated by the proposed Lennar Master Plan site in Areas 4 + 5 (**Table 5**).
- **Cumulative No Project:** Year 2035 traffic estimates based on the City's General Plan.
- **Cumulative plus Project:** Cumulative volumes plus traffic generated by the Community Plan at full build-out (only Areas 1-3 and 6-10) and project trips generated by the revised Areas 4 + 5 (**Table 8**).

All 25 study intersections studied under the Community Plan were evaluated for the four scenarios outlined above (**Table 7**). The Study intersections are also displayed in **Figure 3**.

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<sup>5</sup> Scenarios are same as those studied in the Community Plan EIR but include revisions to land uses in Areas 4/5.



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- Study Intersections
- Study Area Boundary



Figure 3  
 Study Intersections  
 Warm Springs Community Plan  
 With Lennar Master Plan Added



**TABLE 7: STUDY INTERSECTIONS**

ID	INTERSECTION TITLE
3	Mission Boulevard/Paseo Padre Parkway
4	Mission Boulevard/Warm Springs Boulevard
5	Warren Avenue/Kato Road
6	Fremont Boulevard/W. Warren Avenue
7	Warm Springs Boulevard/ Warren Avenue
8	Grimmer Boulevard/Warm Springs Boulevard/Osgood Road
10	Grimmer Boulevard/ Fremont Boulevard
11	Grimmer Boulevard/Old Warm Springs Boulevard/Lopes Court
12	Fremont Boulevard/I-880 Northbound Ramps
13	Fremont Boulevard/I-880 Southbound Ramps
14	Fremont Boulevard/Cushing Parkway
16	Auto Mall Parkway/I-880 Northbound Ramps
17	Auto Mall Parkway/ I-880 Southbound Ramps
18	Auto Mall Parkway/South Grimmer Boulevard
19	Auto Mall Parkway/Fremont Boulevard
20	Auto Mall Parkway/Osgood Road
21	Auto Mall Parkway/I-680 Northbound Ramps
22	Auto Mall Parkway/I-680 Southbound Ramps
23	Mission Boulevard/Mohave Drive
24	Fremont Boulevard/Ingot Street
25	Grimmer Boulevard/New Roadway/ Untitled N-S Street

Fehr & Peers, 2015

Note: Intersection 1 and 2 are I-680 on- and off-ramps, not intersections. Although traffic in the roadway network was assigned to these locations, they are not considered study intersections for purposes of this evaluation.

The following roadway improvements were reflected in the previously-studied Background No Project and Background plus Project scenarios for the Community Plan EIR and carried over for the updated analysis for consistency:

- Signalization of intersection #24 Fremont / Ingot – Innovation Way intersection (unsignalized under existing conditions)
- Addition of a westbound right turn lane Ingot Street/Innovation Way (with split signal phasing east – west)



The following additional roadway improvements were added to this analysis to reflect land use refinements in Area 4 and 5, per the latest version of the Master Plan Application provided by Lennar:

- Revised Industrial Drive to provide bi-directional access between A Street and Lopes Court and inbound only access between Kato Road and A Street.
- Changed the dual northbound left and dual westbound left turn lanes at Grimmer Boulevard/Untitled North-South roadway in Area 4/5 to single left turn lanes instead. Based on the Lennar Master Plan site plan and corresponding intersection volumes, we determined that dual left turns are not needed at this location.

### **Background Conditions**

Results of the LOS analysis are presented in Appendix A. In comparison to the results from the Community Plan FEIR, there are no new intersection impacts under Background plus Project or Cumulative plus Project. As a result, the Scenario 1 land use assumptions, when added to the roadway network, do not cause any new significant transportation impacts.

### **Cumulative Conditions**

Under Cumulative plus Project conditions, Fremont Boulevard/Innovation-Ingot intersection was previously considered a significant impact in the AM peak period with an approved and feasible mitigation in the FEIR (MM TRANS-2d) (Community Plan FEIR, p. 4-32). The mitigation at this intersection is to add a third southbound through lane. This mitigation further demonstrates the need to improve this intersection in order to handle new traffic associated with the Community Plan development. This impact remains with the addition of the Lennar project to the roadway network, thus it is not a new impact. Thus, no changes to the mitigation measure (MM TRANS-2d) are needed because the impact remains at Fremont Boulevard/Innovation-Ingot under Cumulative Conditions.

## **SITE ACCESS IMPROVEMENTS**

With the Lennar Master Plan site added into the roadway network, the Fremont Boulevard/Innovation-Ingot intersection will operate at LOS E under the Background plus Project Scenario during the PM peak hour under the lane configuration used in the Community Plan Draft EIR. The previously-assumed lane configuration was based on previous Area 4/5 land uses that were less refined than the Lennar Master Plan land uses. Because land uses in Area 4/5 have changed and are more refined, it follows that the previous lane configuration no longer fits well.



This intersection is currently unsignalized, and the Community Plan specifically identifies the necessity of signalizing and subsequently reconfiguring it as part of implementation of the Community Plan (Community Plan DEIR, p. 3.11-44).

As a result, the need to reconfigure this intersection is considered an improvement within the bounds of the Community Plan and associated EIR. In the Community Plan, this intersection is intended to become a major new gateway into Areas 4/5 (Community Plan, p. 26). Furthermore, with or without the addition Lennar project trips, this intersection is slated to be signalized and improved.

In the next phase of this analysis (Phase 2), Fehr & Peers will refine the appropriate geometry for this intersection to better accommodate expected traffic flows under Background plus Project Conditions. Possible solutions tested so far include:

- Addition of a third northbound through lane, which would improve intersection operations to LOS C in the PM peak hour.
- Addition of a second westbound left-turn lane with 1 westbound left-through and 1 westbound right-turn, which would improve intersection operations to LOS D in the PM peak hour.

More detailed analysis using the Synchro/SimTraffic software package will be completed in the next phase of work. We will add operations at the internal roadways in Areas 4/5 in order to provide confirm the recommended geometry changes at this intersection.

## MITIGATIONS REVIEW AND TRIGGERS ANALYSIS

This section summarizes the results of the triggers analysis conducted based on the updated intersection analysis summarized in the previous section. The purpose of this analysis is to identify the specific mitigations in the Community Plan FEIR associated with the project and the approximate phasing/timing of each. As part of this analysis, we determined the appropriate land use threshold, defined in roughly five year increments, for when each feasible mitigation would need to be implemented based on project growth in traffic volumes at the intersection. The five year increments used to define mitigation timing are as follows:

- 2015: Background No Project (Background volumes only)
- 2020: Background + Lennar's Project site (Areas 4/5 full build-out)
- 2025: 50 percent build-out of Community Plan Areas with Background volumes



- 2030 - 2035: 100 percent build-out of Community Plan (all 10 Areas) with Cumulative volumes

More detailed descriptions mitigations can be found in the Community Plan FEIR (City of Fremont, 2014). The results of the analysis are in **Table 8**.

Trigger timing is not provided for mitigations in which no feasible mitigation is possible. This approximate level triggers analysis is intended for guidance purposes only. A more detailed analysis may be completed as more detail about the timing and sale of Community Plan development proposals is known.



**TABLE 8: SUMMARY OF MITIGATIONS TRIGGERS ANALYSIS**

<b>Intersection</b>	<b>Background + Project</b>	<b>Background + Project Mitigation(s)<sup>1</sup></b>	<b>Cumulative + Project</b>	<b>Cumulative + Project Mitigation(s)</b>	<b>Approximate Trigger Timing</b>
4. Mission Boulevard/Warm Springs Boulevard	AM/PM	<ul style="list-style-type: none"> <li>Add Eastbound left turn lane and receiving lane (TRANS-1b)</li> </ul>	AM/PM	<ul style="list-style-type: none"> <li>Cumulative: No feasible mitigation</li> </ul>	2020
5. Warren Avenue/Kato Road	-	<ul style="list-style-type: none"> <li>N/A</li> </ul>	AM/PM	<ul style="list-style-type: none"> <li>Implement TDM Program for employment uses (TRANS-1a)</li> <li>Add a second northbound left-turn lane (TRANS 2a)</li> </ul>	2030 - 2035
7. Warm Springs Boulevard/Warren Avenue	-	<ul style="list-style-type: none"> <li>N/A</li> </ul>	AM/PM	<ul style="list-style-type: none"> <li>No feasible mitigation</li> </ul>	N/A
8. Grimmer Boulevard/Warm Springs Boulevard/Osgood Road	AM	<ul style="list-style-type: none"> <li>Implement TDS program for employment uses (TRANS-1a)</li> </ul>	AM/PM	<ul style="list-style-type: none"> <li>No feasible mitigation</li> </ul>	N/A
9. Grimmer Boulevard / Paseo Padre Parkway	-	<ul style="list-style-type: none"> <li>N/A</li> </ul>	AM/PM	<ul style="list-style-type: none"> <li>Signalize intersection, convert eastbound and westbound lanes to shared through/right-turn lane and add a left-turn lane in the eastbound and westbound directions (TRANS-2c)</li> </ul>	2030 - 2035
10. Grimmer Boulevard/Fremont Boulevard	-	<ul style="list-style-type: none"> <li>N/A</li> </ul>	AM	<ul style="list-style-type: none"> <li>No feasible mitigation</li> </ul>	N/A
11. Grimmer Boulevard/Old Warm Springs Boulevard/Lopes Court	-	<ul style="list-style-type: none"> <li>N/A</li> </ul>	AM/PM	<ul style="list-style-type: none"> <li>No feasible mitigation</li> </ul>	N/A
12. Fremont Boulevard/I-880 Northbound Ramps	-	<ul style="list-style-type: none"> <li>N/A</li> </ul>	AM	<ul style="list-style-type: none"> <li>No feasible mitigation</li> </ul>	N/A
13. Fremont Boulevard/I-880 Southbound Ramps	-	<ul style="list-style-type: none"> <li>N/A</li> </ul>	AM	<ul style="list-style-type: none"> <li>Construct fourth southbound through lane</li> </ul>	2030 - 2035



**TABLE 8: SUMMARY OF MITIGATIONS TRIGGERS ANALYSIS**

<b>Intersection</b>	<b>Background + Project</b>	<b>Background + Project Mitigation(s)<sup>1</sup></b>	<b>Cumulative + Project</b>	<b>Cumulative + Project Mitigation(s)</b>	<b>Approximate Trigger Timing</b>
15. Fremont/Old Warm Springs	AM /PM	<ul style="list-style-type: none"> <li>• Signalize intersection</li> <li>• Convert northbound shared through right-turn lane to right-turn lane</li> <li>• Add northbound through lanes</li> </ul>	AM/PM	<ul style="list-style-type: none"> <li>• Convert northbound shared through/right-turn lane to right-turn lane and add two northbound through lanes (TRANS-2b)</li> </ul>	2020
18. Auto Mall Parkway/South Grimmer Boulevard	-	<ul style="list-style-type: none"> <li>• N/A</li> </ul>	AM/PM	<ul style="list-style-type: none"> <li>• No feasible mitigation</li> </ul>	N/A
19. Auto Mall Parkway/Fremont Boulevard	AM/PM	<ul style="list-style-type: none"> <li>• Implement TDM Program for employment uses (TRANS-1a)</li> <li>• Convert the southbound shared through/right-lane to a right-turn lane, add a southbound through lane, convert westbound shared through/right-turn lane, add a westbound through lane, convert the northbound shared through/right-turn lane to a right-turn lane, add a northbound through and implement right-turn-on-red reduction to the westbound right-turn (TRANS 1-d)</li> </ul>	AM/PM	<ul style="list-style-type: none"> <li>• No feasible mitigation</li> </ul>	2020



**TABLE 8: SUMMARY OF MITIGATIONS TRIGGERS ANALYSIS**

Intersection	Background + Project	Background + Project Mitigation(s) <sup>1</sup>	Cumulative + Project	Cumulative + Project Mitigation(s)	Approximate Trigger Timing
20. Auto Mall Parkway/Osgood Road	AM/PM	<ul style="list-style-type: none"> <li>Background: Add a second westbound through lane and convert the westbound shared through/right-turn lane to a right-turn lane, convert the southbound shared through right-turn lane into a right-turn lane, and add as southbound through lane (TRANS-1e)</li> </ul>	AM/PM	<ul style="list-style-type: none"> <li>No feasible mitigation</li> </ul>	N/A
22. Auto Mall Parkway/I-680 Southbound Ramps	-	<ul style="list-style-type: none"> <li>N/A</li> </ul>	AM/PM	<ul style="list-style-type: none"> <li>No feasible mitigation</li> </ul>	N/A
23. Mission Boulevard/Mohave Drive	-	<ul style="list-style-type: none"> <li>N/A</li> </ul>	AM/PM	<ul style="list-style-type: none"> <li>No feasible mitigation</li> </ul>	N/A
24. Fremont Boulevard/Ingot Street <sup>2</sup>	TBD	<ul style="list-style-type: none"> <li>N/A</li> </ul>	AM	<ul style="list-style-type: none"> <li>Add a third southbound through lane (TRANS-2d)</li> </ul>	2030-2035

Source: Fehr & Peers, 2015.

Notes:

1. For full discussion of mitigation measures, see the Community Plan FEIR (City of Fremont, 2014).

2. Intersection #24 Fremont/ Boulevard/ Ingot Street: As per previous discussion, this intersection is assumed to be signalized and reconfigured under Background conditions, which would occur between 2015 – 2020 as more development is built-out in the Community Plan Area.



## **APPENDIX A: LOS RESULTS**



**TABLE A: BACKGROUND AND BACKGROUND PLUS PROJECT SIGNALIZED INTERSECTION LEVELS OF SERVICE (COMMUNITY PLAN EIR)**

Intersection	Peak Hour	Background (EIR)		Background + Project (EIR)			Updated Background		Updated Background + Project + Lennar Master Plan		
		Delay	LOS	Delay	LOS	Δ Crit. Delay	Delay	LOS	Delay	LOS	Δ Crit. Delay
3. Mission Boulevard/Paseo Padre Parkway	AM	31.9	C	31.8	C	0	C	31.9	C	0.001	0.0
	PM	27.3	C	27.3	C	0	C	27.3	C	0.001	0.0
4. Mission Boulevard/Warm Springs Boulevard	AM	50.8	D	<b>70.1</b>	<b>E</b>	<b>+27.5</b>	D	50.8	<b>E</b>	<b>0.196</b>	<b>30.2</b>
	PM	53.9	D	<b>64.5</b>	<b>E</b>	<b>+14.2</b>	D	53.9	<b>E</b>	<b>0.181</b>	<b>14.4</b>
5. Warren Avenue/Kato Road	AM	24.2	C	25.7	C	+3.2	C	24.2	C	0.179	3.6
	PM	27.3	C	30.2	C	+4.3	C	27.3	C	0.127	4.3
6. Fremont Boulevard/W. Warren Avenue	AM	22.6	C	23.9	C	+3.1	C	22.6	C	0.087	3.3
	PM	24.3	C	26.0	C	+2.9	C	24.3	C	0.083	3.1
7. Warm Springs Boulevard/ Warren Avenue	AM	39.3	D	40.3	D	+1.4	D	39.3	D	0.092	1.2
	PM	39.7	D	41.1	D	+4.0	D	39.7	D	0.090	4.2
8. Grimmer Boulevard/Warm Springs Boulevard/Osgood Road	AM	40.1	D	56.0	<b>E</b>	<b>+26.9</b>	D	40.4	<b>E</b>	<b>0.273</b>	<b>29.9</b>
	PM	34.8	C	45.2	D	+25.3	C	28.6	D	0.306	9.3
10. Grimmer Boulevard/ Fremont Boulevard	AM	40.4	D	49.0	D	+12.2	C	20.7	D	0.200	21.1
	PM	28.6	C	44.4	D	+29.5	B	12.8	D	0.209	12.9
11. Grimmer Boulevard/Old Warm Springs Boulevard/Lopes Court	AM	22.6	C	72.9	<b>E</b>	<b>+73.6</b>	B	13.9	C	0.343	14.6
	PM	15.4	B	53.7	D	+58.2	A	7.6	C	0.349	12.1
12. Fremont Boulevard/I-880 Northbound Ramps	AM	13.9	B	14.0	B	+0.9	B	10.9	B	0.092	0.9
	PM	7.6	A	6.5	A	-0.4	A	6.2	A	0.047	-0.5
13. Fremont Boulevard/I-880 Southbound Ramps	AM	10.9	B	13.3	B	+1.2	A	9.9	B	0.040	1.7
	PM	6.2	A	7.0	A	+0.1	B	12.2	A	0.018	0.1
14. Fremont Boulevard/Cushing Parkway	AM	15.3	B	15.2	B	0	B	11	B	0.019	0.0
	PM	13.4	B	13.9	B	+0.8	B	14.8	B	0.033	0.8



**TABLE A: BACKGROUND AND BACKGROUND PLUS PROJECT SIGNALIZED INTERSECTION LEVELS OF SERVICE (COMMUNITY PLAN EIR)**

Intersection	Peak Hour	Background (EIR)		Background + Project (EIR)			Updated Background		Updated Background + Project + Lennar Master Plan		
		Delay	LOS	Delay	LOS	Δ Crit. Delay	Delay	LOS	Delay	LOS	Δ Crit. Delay
16. Auto Mall Parkway/I-880 Northbound Ramps	AM	9.9	A	10.1	B	+0.3	C	33.8	B	0.019	0.3
	PM	12.2	B	13.5	B	+2.2	D	36	B	0.079	2.3
17. Auto Mall Parkway/ I-880 Southbound Ramps	AM	11.0	B	14.3	B	+4.9	D	48.6	B	0.270	5.0
	PM	14.8	B	18.6	B	+5.0	E	60.9	B	0.102	5.0
18. Auto Mall Parkway/South Grimmer Boulevard	AM	33.8	C	35.8	D	+4.2	D	46.7	D	0.113	4.4
	PM	36.0	D	38.7	D	+4.4	D	46.1	D	0.119	4.4
19. Auto Mall Parkway/Fremont Boulevard	AM	48.6	D	<b>73.8</b>	<b>E</b>	<b>+34.0</b>	C	22.7	<b>E</b>	<b>0.138</b>	<b>35.7</b>
	PM	60.9	E	<b>98.8</b>	<b>F</b>	<b>+42.5</b>	C	22.3	<b>F</b>	<b>0.148</b>	<b>42.8</b>
20. Auto Mall Parkway/Osgood Road	AM	46.7	D	<b>63.4</b>	<b>E</b>	<b>+23.8</b>	C	26.3	<b>E</b>	<b>0.104</b>	<b>24.3</b>
	PM	46.1	D	<b>59.8</b>	<b>E</b>	<b>+12.3</b>	B	16.7	<b>E</b>	<b>0.109</b>	<b>16.0</b>
21. Auto Mall Parkway/I-680 Northbound Ramps	AM	22.7	C	23.9	C	+1.5	B	19.1	C	0.055	1.5
	PM	22.3	C	22.9	C	+0.8	C	21.4	C	0.050	0.8
22. Auto Mall Parkway/I-680 Southbound Ramps	AM	26.3	C	34.0	C	+8.1	B	17.3	C	0.166	8.4
	PM	16.7	B	28.0	C	+13.8	B	18.1	C	0.200	13.7
23. Mission Boulevard/Mohave Drive	AM	19.1	B	23.1	C	+6.5	A	0.2	C	0.105	7.4
	PM	21.4	C	22.3	C	+1.1	A	0.2	C	0.099	1.2
24. Fremont Boulevard/Ingot Street	AM	--	--	22.5	C	--	C	31.9	C	0.168	13.0
	PM	--	--	54.7	D	--	C	27.3	E	<b>0.357</b>	<b>74.6</b>
25. Grimmer Boulevard/New Roadway	AM	--	--	14.3	B	--	D	50.8	C	0.446	31.8
	PM	--	--	19.6	B	--	D	53.9	C	0.374	27.4

Fehr & Peers, 2015.