# APPENDIX N

## AUGUST 2015
## TRAFFIC IMPACT STUDY

FEHR PEERS

# MEMORANDUM

Date: August 28, 2015

To: Chad Kiltz, Lennar Corporation

From: Dan Hennessey, Fehr & Peers

**Subject: Lafayette Residential Development Transportation Impact Study Supplement**

*WC14-3117*

This memorandum is intended to supplement the study dated September 23, 2014 in order to update the quantitative analysis and figures to reflect the current circulation scenario, provide additional quantitative analysis regarding the surrounding driveways at 3686 Mount Diablo Boulevard, Desco Plaza, and Diamond K Supply, and provide conceptual drawings of the circulation scenario.

## PREVIOUS ANALYSES

Previous versions of this memorandum have studied several site plan alternatives in detail:

- April 28, 2014 memo detailed three access alternatives
  - Dolores Drive Only (full access)
  - Dolores Drive (full access) and Mount Diablo Boulevard mid-site (full access)
  - Dolores Drive (full access) and Mount Diablo Boulevard west-end (full access)
- July 28, 2014 memo detailed two additional access alternatives
  - Mount Diablo Boulevard Only mid-site (full access)
  - Mount Diablo Boulevard mid-site (full access) and Dolores Drive (full access)
- September 23, 2014 memo detailed two additional access alternatives
  - Dolores Drive (full access) and Mount Diablo Boulevard mid-site (right-in, right-out)
  - Dolores Drive Only (full access)

Other alternatives, such as a right-in, right-out driveway on Mount Diablo Boulevard only, have also been analyzed. The current circulation scenario now has a full access signalized driveway that is shared with 3686 Mount Diablo Boulevard. This removes all of the current driveways along the Project frontages on Mount Diablo Boulevard and Dolores Drive. Analysis of this scenario is shown in this document.

## ADDITIONAL DATA COLLECTION

Peak hour vehicle traffic counts were collected at the following locations on Wednesday, February 18, 2015 during the weekday morning (7-9 AM) and evening (4-6 PM) peak periods:

- 3686 Mount Diablo Boulevard driveway
- Desco Plaza driveway at 3675 Mount Diablo Boulevard
- Both Diamond K Supply driveways at 3671 Mount Diablo Boulevard

The driveways for 3686 Mount Diablo Boulevard and 3675 Mount Diablo Boulevard are directly across from one another. The 3686 Mount Diablo Boulevard driveway is used sparingly during the peak hours: nine vehicles and eight vehicles used the driveway to enter/exit during the AM and PM peak hours, respectively.

The driveway at 3675 Mount Diablo Boulevard provides access to City offices, the Lafayette Police Department, and other offices within the complex. Sixty-six vehicles entered and seventeen vehicles exited using the driveway in the AM peak hour. In the PM peak hour, eight vehicles entered and seventy-two vehicles exited using the driveway.

At the eastern Diamond K Supply driveway, ten vehicles entered the site in the AM peak hour and twelve exited. During the PM peak hour, no vehicles entered the site and four exited. Previous counts at this driveway in March 2014 showed similar usage patterns. One vehicle was observed pulling into the western Diamond K Supply driveway during the AM peak hour and no vehicles used the driveway during the PM peak hour. This driveway is mostly used for pickup and drop off of materials. Only one westbound vehicle was observed to U-turn from the two-way left-turn lane and continue eastbound; that vehicle accessed the Diamond K parking area in front of the building.

Additional data collection was conducted on August 25, 2015 to determine the peak hours of vehicle use at the Diamond K driveways. At the eastern Diamond K Supply driveway, fifteen vehicles entered the site and eleven exited during the hour from 10:00 AM to 11:00 AM. At the western Diamond K driveway, three vehicles were observed to both access and depart Diamond K during the hour of 2:00 PM to 3:00 PM. These volumes were also analyzed with respect to driveway operations, though they are within a typical day-to-day variation of the AM and PM peak hour volumes.

These driveways have been added to all Synchro traffic operations models and results are reported in the tables throughout the remainder of this report. The driveway locations are also depicted in **Figure 1**. Finally, signal timing adjustments have been made at the Mount Diablo Boulevard / Happy Valley Road intersection to reflect an updated signal timing plan. Signal timing adjustments are planned at all study intersections

for the near future; no updates were made to the existing signals, though the new signal was modeled to be in accordance with this future plan.

## TRAFFIC IMPACT ANALYSIS

### Existing and Existing Plus Project Traffic Conditions

Traffic operations throughout the study area are again analyzed using the Synchro 8.0 software program. Synchro calculations are based on the procedures outlined in the Highway Capacity Manual. **Table 1** shows the level of service (LOS) results for the existing weekday AM and PM peak hours, as well as with the Project during both peak hours. Figure 1 shows the existing peak hour traffic volumes, traffic control, and lane configurations. **Figure 2** shows the Project vehicle trips assigned to the intersection turning movements with the current circulation scenario. **Table 2** shows the 50th and 95th percentile queue results for both scenarios. The queue lengths reported are estimated from equations that approximate the length of the 50th and 95th longest queues from a sample of 100 observed maximum queues.

**TABLE 1: EXISTING PLUS PROJECT CONDITIONS INTERSECTION OPERATIONS SUMMARY**

| Intersection | Control[1] | Peak Hour | Existing Conditions | | Existing Plus Project Conditions | |
|---|---|---|---|---|---|---|
| | | | Delay[2] | LOS[2] | Delay[2] | LOS[2] |
| Mount Diablo Boulevard / Risa Road / Village Center | Signal | AM<br>PM | 8.8<br>10.5 | A<br>B | 8.8<br>10.7 | A<br>B |
| Mount Diablo Boulevard / Dolores Drive / Mountain View Drive | Signal | AM<br>PM | 21.2<br>26.4 | C<br>C | 21.4<br>27.7 | C<br>C |
| Mount Diablo Boulevard / Happy Valley Road | Signal | AM<br>PM | 23.9<br>36.4 | C<br>D | 24.2<br>37.3 | C<br>D |
| Mount Diablo Boulevard / Diamond K Driveway East | SSSC | AM<br>PM | 0.2 (11.7)<br>0.0 (15.2) | A (B)<br>A (C) | 0.1 (9.8)<br>0.0 (10.5) | A (A)<br>A (B) |
| Mount Diablo Boulevard / Diamond K Driveway West | SSSC | AM<br>PM | 0.0 (0.0)<br>0.0 (0.0) | A (A)<br>A (A) | 0.0 (0.0)<br>0.0 (0.0) | A (A)<br>A (A) |
| Mount Diablo Boulevard / Desco Plaza / 3686 Mount Diablo | SSSC / Signal[3] | AM<br>PM | 0.6 (12.7)<br>0.8 (14.2) | A (B)<br>A (B) | 9.9<br>11.9 | A<br>B |

Notes:
1. Signal = signalized intersection; SSSC = side-street stop controlled intersection.
2. Traffic operations results include LOS (level of service) and delay (seconds per vehicle). LOS is based on delay thresholds published in the Highway Capacity Manual (Transportation Research Board, 2000).
3. The intersection is currently two stop-controlled driveways with no control on Mount Diablo Boulevard. The Project is proposing to signalize this intersection.

Source: *Fehr & Peers, May 2015.*

**TABLE 2: EXISTING AND EXISTING PLUS PROJECT CONDITIONS QUEUE LENGTHS**

| Intersection | Movement | Storage Length | Existing Conditions[1] | | Existing Plus Project Conditions – Alternative 1[1] | |
|---|---|---|---|---|---|---|
| | | | 50th Percentile Queue | 95th Percentile Queue | 50th Percentile Queue | 95th Percentile Queue |
| Mount Diablo Boulevard / Risa Road / Village Center | EBL | 125 | * (*) | 30 (30) | * (*) | 30 (30) |
| | EBT-R | - | 30 (60) | 60 (120) | 30 (60) | 70 (130) |
| | WBL | 100 | * (*) | 40 (50) | * (*) | 40 (50) |
| | WBT-R | - | * (30) | 80 (100) | * (30) | 80 (110) |
| | NB | - | * (*) | 40 (40) | * (*) | 40 (40) |
| | SB | - | * (30) | 40 (90) | * (30) | 40 (90) |
| Mount Diablo Boulevard / Dolores Drive / Mountain View Drive | EBL | 75 | * (*) | 50 (50) | * (*) | 50 (60) |
| | EBT-R | 425 | 90 (270) | 180 **(470)** | 100 (280) | 190 **(490)** |
| | WBL | 100 | * (60) | 60 **(130)** | * (60) | 60 **(130)** |
| | WBT-R | 500 | 150 (130) | 280 (230) | 160 (140) | 290 (250) |
| | NB | - | 50 (120) | 120 (230) | 50 (130) | 130 (240) |
| | SB | - | 40 (50) | 120 (110) | 50 (50) | 120 (120) |
| Mount Diablo Boulevard / Happy Valley Road | EBL | 100 | **110 (280)** | **230 (570)** | **120 (290)** | **230 (590)** |
| | EBT-R | 500 | 40 (140) | 70 (220) | 40 (140) | 80 (230) |
| | WBL | 75 | * (60) | 70 **(130)** | * (60) | 70 **(130)** |
| | WBT-R | - | 80 (140) | 150 (200) | 80 (140) | 150 (210) |
| | NB | - | 40 (90) | 90 (170) | 40 (90) | 100 (170) |
| | SBL-T | - | 60 (140) | 130 (310) | 60 (140) | 140 (310) |
| | SBR | 125 | * (50) | 100 **(180)** | * (50) | 100 **(200)** |
| Mount Diablo Boulevard / Diamond K Driveway East | WBL | - | n/a | * (*) | n/a | * (*) |
| | NBL-R | - | | * (*) | | * (*) |
| Mount Diablo Boulevard / Diamond K Driveway West | WBL | - | n/a | * (*) | n/a | * (*) |
| | NBL-R | - | | * (*) | | * (*) |
| Mount Diablo Boulevard / Desco Plaza / 3686 Mount Diablo | EBL | 100 | n/a | * (*) | * (*) | * (40) |
| | EBT-R | - | | - | * (80) | 150 (270) |
| | WBL | 100 | | * (*) | * (*) | 60 (*) |
| | WBT-R | 425 | | - | 30 (60) | 220 (200) |
| | NBL-R | - | | * (*) | * (*) | * (*) |
| | SBL-R | - | | * (*) | * (*) | * (*) |

Notes:
* Asterisk indicates that the reported queue length is less than one vehicle length.
1. Reported queues are AM peak hour (PM peak hour).
2. All distances are measured in feet. For reference, the average vehicle occupies approximately 25 feet while in queue, including headway space in between adjacent vehicles.
3. Bold indicates queue length exceeds storage length.

Source: *Fehr & Peers, May 2015.*

The results shown in Tables 1 and 2 for existing conditions match observations conducted during the traffic counts. The results at the signalized intersections are consistent from previous reports, except at the intersection of Mount Diablo Boulevard / Happy Valley Road, which can be attributed to the updated signal timing.

No queue was longer than two vehicles at any of the existing driveways, except for one instance of a six-vehicle queue exiting the Desco Plaza driveway during the PM peak hour. The eastbound queue on Mount Diablo Boulevard from the Dolores Drive signal occasionally backed up to the this driveway during the PM peak hour, but that queue cleared each cycle and did not affect operations at the Desco Plaza driveway once it cleared. This observation matches the results of the intersection analysis model.

The current scenario improves operations at the Mount Diablo Boulevard / Dolores Drive / Mountain View Drive as compared to previous Project scenarios, as the current circulation plan minimizes the number of left-turns and U-turns at this intersection. LOS results at the Mount Diablo Boulevard / Risa Road / Village Center and Mount Diablo Boulevard / Happy Valley Road intersections have not changed, as the new circulation alternative does not affect the Project trips assigned to these intersections.

The following assumptions were made for the new signal at the 3686 Mount Diablo Boulevard / Desco Plaza / Project Access driveway:

- Actuated-uncoordinated with minimum recall for Mount Diablo Boulevard through phases
- 100-second cycle length (to match proposed signal timing plan intended for the near future)
- Protected, leading left-turns from Mount Diablo Boulevard to the driveways
- Split phasing for the 3686 Mount Diablo Boulevard / Desco Plaza / Project Access driveways with a pedestrian overlap between the two driveway phases
- Pedestrian phases at each crossing except east leg (10 pedestrian calls per hour per crossing)
- 5 seconds of walk time, with 12 seconds of flashing don't walk time across driveways and 22 seconds of flashing don't walk time across Mount Diablo Boulevard
- 3.5 of yellow time and 1.0 seconds of red time for all phases, except for Mount Diablo Boulevard through phases (4.0 seconds of yellow time)

The above parameters provided a minimum cycle time of 66.5 seconds, which operated at LOS A during the AM peak hour and LOS B during the PM peak hour, but led to significant queues along Mount Diablo Boulevard. Increasing the cycle time to 100 seconds and allocating all of that additional green time to the Mount Diablo Boulevard phases decreased Mount Diablo Boulevard queue lengths.

Without the pedestrian overlap for the side-street phases, the signal would increase queues for left-turn vehicles at the signal wishing to enter one of the project driveways, creating the need for 125-foot turn

pockets. The analysis suggests that 75- to 100-foot turn pockets should be sufficient to contain the left-turn queues.

The need for a 100-foot westbound left-turn pocket could affect the circulation of Diamond K Supply's western driveway. If the western Diamond K Supply driveway is converted to a right-in, right-out driveway, trucks accessing the site could potentially U-turn at the proposed signal or would need to use Acalanes Road interchange to head east on Mount Diablo Boulevard. Depending on the internal circulation of the Diamond K Supply site, they could potentially turn into the eastern driveway, which would maintain full access to and from Mount Diablo Boulevard.

Similarly, trucks departing the site would potentially U-turn at the Dolores Drive / Mountain View Drive signal or would use Oak Hill Road, Deer Hill Road, and potentially Happy Valley Road to head west on Mount Diablo Boulevard. Per traffic counts, this would not likely affect more than three vehicles per hour both into and out of Diamond K.

Additionally, Diamond K could potentially alter their internal circulation to allow all vehicles to make a left-turn from the eastern driveway. With the Diamond K driveway peak hour traffic volumes mentioned earlier (during the midday hours), the driveway would operate at LOS B during both peak hours (and throughout the day) if all vehicles entering/exiting Diamond K used the eastern driveway. The left-turn movement into the driveways from Mount Diablo Boulevard would degrade from LOS A to LOS B, adding approximately three seconds to the average delay of the movement.

The signal also provides an additional queue location on Mount Diablo Boulevard, but those queues do not spill back to or affect operations at upstream signals (e.g. Dolores Drive / Mountain View Drive). The eastbound queue from the Dolores Drive / Mountain View Drive signal would continue to back up to the driveways and through the signal during the PM peak hour. Lastly, one benefit of the signal is that it potentially provides larger gaps for vehicles to be able to leave the Diamond K Supply property, thus decreasing the delay at the driveway.

## CUMULATIVE AND CUMULATIVE PLUS PROJECT TRAFFIC CONDITIONS

The Project vehicle trip turning movements at the study intersections (Figure 2) are added to the Cumulative No Project traffic volumes (**Figure 3**) to obtain the Cumulative Plus Project traffic volumes. The Synchro models are used to evaluate the traffic forecasts (without and with Project) and the resulting LOS is shown in **Table 3**. As shown, the additional traffic due to the Project is not projected to impact the study intersections. **Table 4** shows the 50th and 95th percentile queue results for both scenarios.

**TABLE 3: CUMULATIVE PLUS PROJECT CONDITIONS INTERSECTION OPERATIONS SUMMARY**

| Intersection | Control[1] | Peak Hour | Cumulative Conditions | | Cumulative Plus Project Conditions | |
|---|---|---|---|---|---|---|
| | | | Delay[2] | LOS[2] | Delay[2] | LOS[2] |
| Mount Diablo Boulevard / Risa Road / Village Center | Signal | AM<br>PM | 11.2<br>13.2 | B<br>B | 12.0<br>13.5 | B<br>B |
| Mount Diablo Boulevard / Dolores Drive / Mountain View Drive | Signal | AM<br>PM | 25.8<br>42.3 | C<br>D | 26.0<br>43.8 | C<br>D |
| Mount Diablo Boulevard / Happy Valley Road | Signal | AM<br>PM | 27.3<br>49.5 | C<br>D | 27.5<br>51.7 | C<br>D |
| Mount Diablo Boulevard / Diamond K Driveway East | SSSC | AM<br>PM | 0.3 (14.6)<br>0.2 (25.1) | A (B)<br>A (D) | 0.2 (10.2)<br>0.1 (11.7) | A (B)<br>A (B) |
| Mount Diablo Boulevard / Diamond K Driveway West | SSSC | AM<br>PM | 0.1 (9.1)<br>0.0 (0.0) | A (A)<br>A (A) | 0.1 (0.0)<br>0.0 (0.0) | A (A)<br>A (A) |
| Mount Diablo Boulevard / Desco Plaza / 3686 Mount Diablo | SSSC / Signal[3] | AM<br>PM | 0.8 (12.5)<br>0.9 (17.0) | A (B)<br>A (C) | 10.8<br>11.4 | B<br>B |

Notes:
1. Signal = signalized intersection; SSSC = side-street stop controlled intersection.
2. Traffic operations results include LOS (level of service) and delay (seconds per vehicle). LOS is based on delay thresholds published in the Highway Capacity Manual (Transportation Research Board, 2000).
3. The intersection is currently two stop-controlled driveways with no control on Mount Diablo Boulevard. The Project is proposing to signalize this intersection.

Source: *Fehr & Peers, May 2015.*

**TABLE 4: CUMULATIVE AND CUMULATIVE PLUS PROJECT CONDITIONS QUEUE LENGTHS**

| Intersection | Movement | Storage Length | Cumulative Conditions[1] | | Cumulative Plus Project Conditions[1] | |
|---|---|---|---|---|---|---|
| | | | 50th Percentile Queue | 95th Percentile Queue | 50th Percentile Queue | 95th Percentile Queue |
| Mount Diablo Boulevard / Risa Road / Village Center | EBL | 125 | * (*) | 50 (50) | * (*) | 50 (50) |
| | EBT-R | - | 50 (90) | 100 (190) | 50 (100) | 100 (200) |
| | WBL | 100 | * (30) | 60 (80) | * (30) | 70 (90) |
| | WBT-R | - | 70 (80) | 150 (160) | 70 (80) | 150 (170) |
| | NB | - | * (*) | 70 (50) | * (*) | 70 (50) |
| | SB | - | 30 (50) | 90 (130) | 30 (50) | 100 (140) |
| Mount Diablo Boulevard / Dolores Drive / Mountain View Drive | EBL | 75 | * (40) | 60 **(90)** | * (40) | 70 **(90)** |
| | EBT-R | 425 | 160 **(440)** | 310 **(760)** | 170 **(460)** | 320 **(790)** |
| | WBL | 100 | 30 (80) | 90 **(170)** | 30 (90) | 90 **(170)** |
| | WBT-R | 500 | 210 (420) | 390 **(690)** | 220 (450) | 390 **(740)** |
| | NB | - | 70 (180) | 170 (310) | 70 (180) | 170 (320) |
| | SB | - | 70 (140) | 160 (250) | 70 (140) | 170 (250) |
| Mount Diablo Boulevard / Happy Valley Road | EBL | 100 | **160 (380)** | **300 (720)** | **170 (400)** | **310 (730)** |
| | EBT-R | 500 | 90 (230) | 140 (340) | 90 (240) | 140 (340) |
| | WBL | 75 | 50 **(150)** | **120 (250)** | 50 **(150)** | **120 (250)** |
| | WBT-R | - | 190 (230) | 290 (290) | 190 (230) | 290 (300) |
| | NB | - | 50 (110) | 120 (290) | 50 (120) | 120 (290) |
| | SBL-T | - | 130 (270) | 320 (540) | 140 (270) | 320 (540) |
| | SBR | 125 | 40 (80) | **210 (210)** | 50 (80) | **220 (220)** |
| Mount Diablo Boulevard / Diamond K Driveway East | WBL | - | n/a | * (*) | n/a | * (*) |
| | NBL-R | - | | * (*) | | * (*) |
| Mount Diablo Boulevard / Diamond K Driveway West | WBL | - | n/a | * (*) | n/a | * (*) |
| | NBL-R | - | | * (*) | | * (*) |
| Mount Diablo Boulevard / Desco Plaza / 3686 Mount Diablo | EBL | 100 | n/a | * (*) | * (*) | 30 (50) |
| | EBT-R | - | | - | 100 (100) | 210 (320) |
| | WBL | 100 | | * (*) | * (*) | 60 (30) |
| | WBT-R | 425 | | - | 70 (130) | 250 (400) |
| | NBL-R | - | | * (*) | * (*) | * (*) |
| | SBL-R | - | | * (*) | * (*) | * (*) |

Notes:
* Asterisk indicates that the reported queue length is less than one vehicle length.
1. Reported queues are AM peak hour (PM peak hour).
2. All distances are measured in feet. For reference, the average vehicle occupies approximately 25 feet while in queue, including headway space in between adjacent vehicles.
3. Bold indicates queue length exceeds storage length.

Source: *Fehr & Peers, May 2015.*

Results for the Cumulative Plus Project analysis were similar to the Existing Plus Project patterns. The analysis shows minimal Project impacts to the No Project queues on Mount Diablo Boulevard and the local streets it intersects.

It should be noted that in the Cumulative Plus Project scenario, the eastbound queue from the Dolores Drive / Mountain View Drive signal would continue to back up through the newly signalized intersection at the Project driveway during the PM peak hour (this queue would reach this location with or without the Project). Additionally, the westbound queue from the new signal would near the Mountain View Boulevard / Dolores Drive / Mountain View Drive intersection during the PM peak hour, but is not anticipated to affect vehicle operations.

A sensitivity analysis was completed with the proposed 100-second cycle lengths along the Mount Diablo Boulevard corridor. The intersection of Mountain View Boulevard / Dolores Drive / Mountain View Drive would operate at LOS D during the PM peak hour, and queues along Mount Diablo Boulevard are not projected to spill back to adjacent locations.

The signal aids drivers entering and exiting the side-street driveways and increases delay to through traffic on Mount Diablo Boulevard. Without a signal, there would be no additional delay to Mount Diablo Boulevard through traffic but vehicles may have trouble entering and exiting the side-street driveways.

## TRAFFIC IMPACT SIGNIFICANCE DETERMINATION

As stated earlier, the City of Lafayette's standard for the study intersections is LOS D (less than 55 seconds of average control delay per vehicle). As shown in the previous tables, all intersections are projected to meet this standard under the evaluated scenarios; therefore, the Project does not have a significant impact on the study intersections, and intersection mitigation is not needed. The Synchro worksheets used to complete this analysis are provided in **Attachment A**.

## SITE PLAN REVIEW

Moving the Project driveway to the west end of the Project will potentially allow for more of the proposed on-street angled parking along Mount Diablo Boulevard, and the parking area will be continuous with no vehicles entering or exiting, which will be a benefit to pedestrians and bicyclists.

The new driveway location will be a potentially busy pedestrian area, increasing the importance of appropriate sight distance at this location. There is currently a short, brick wall and foliage looking east from the driveway; these landscape elements should be shortened/trimmed to ensure that the maximum sight distance back toward Dolores Drive / Mountain View Drive can be obtained.

Both driveways will likely need to be re-designed for signalization and pedestrian passage. The southeast corner in particular will need to be re-worked, as there is currently no sidewalk along the Diamond K Supply frontage. Without a firm plan to improve this corner, we would recommend not including a crosswalk on the east side of the intersection. Though the driveways along the frontage are low use, there are no designated facilities for pedestrians to travel through the area.

As mentioned earlier, we have assumed split phasing for the 3686 Mount Diablo Boulevard / Desco Plaza / Project Access driveways. As shown in **Figure 4**, there are potential conflicts with left-turning vehicles exiting the project driveways at the same time. Though these estimates are conservative, the overlap is such that we have presumed split phasing will be necessary. Once a complete civil design plan has been completed, the need for split phasing can be re-evaluated.

Medians would help define the turn pockets along Mount Diablo Boulevard. Changes to this area of Mount Diablo Boulevard could also lead to changes in circulation to and from Diamond K Supply's two driveways. The western driveway would likely become a right-in, right-out driveway, but the eastern driveway is anticipated to continue to provide full access and operate acceptably. Construction of signal poles and curb ramps in this area may also lead to utility conflicts or the removal of landscape trees.

Figure 4 shows a conceptual design for the signalized intersection, complete with turn pockets, but without a crosswalk along the east side of the intersection. The proposed phasing plan is shown as well.

Attachments:

| | |
|---|---|
| Figure 1 | Existing Traffic Control, Lane Configurations, and Peak Hour Traffic Volumes |
| Figure 2 | Project Trip Turning Movements |
| Figure 3 | Cumulative Conditions Peak Hour Traffic Forecasts |
| Figure 4 | Mount Diablo Boulevard Driveway Design Alternative |
| Attachment A | Synchro Worksheets |

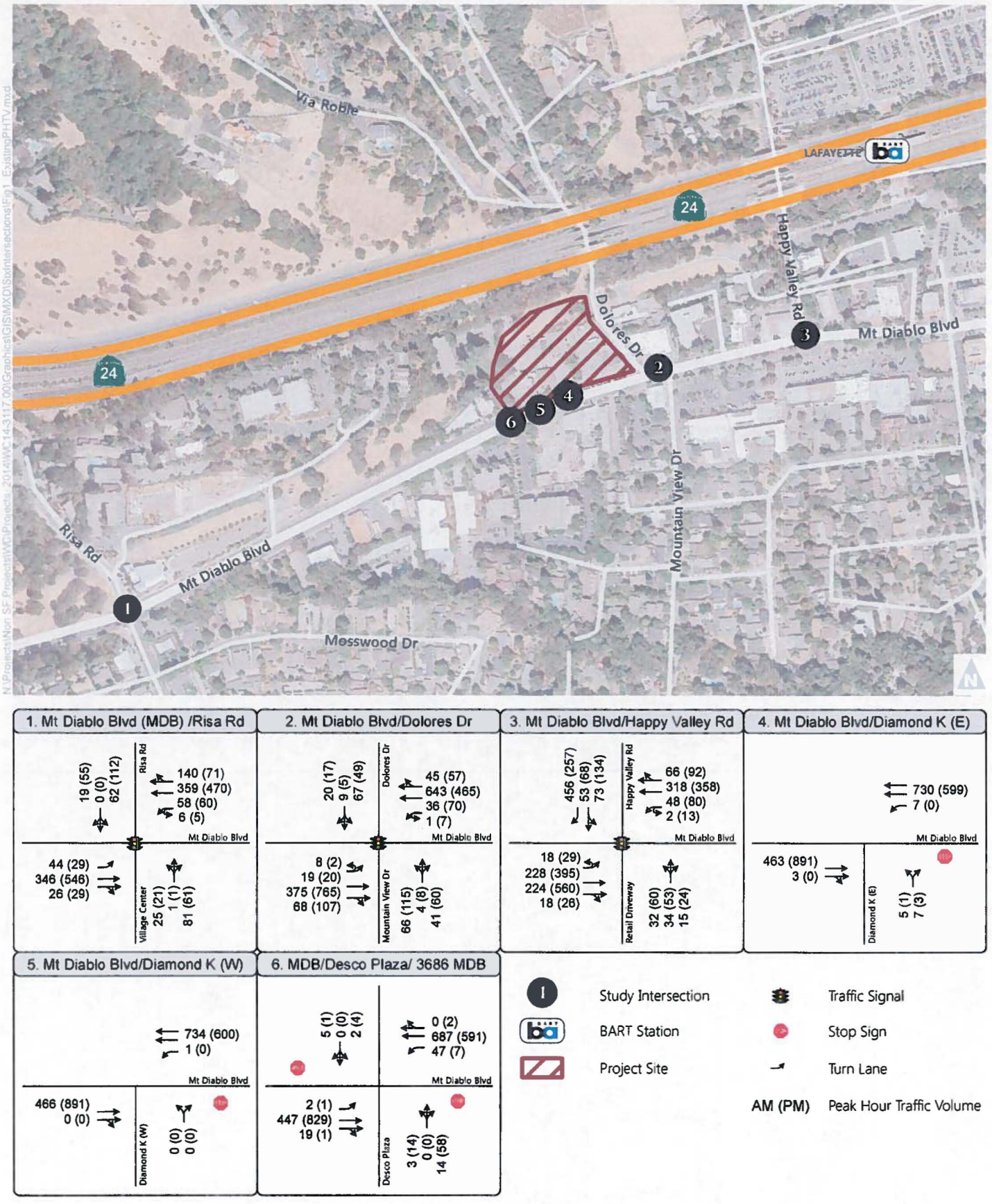


Figure 1

## Existing Traffic Control, Lane Configurations, and Peak Hour Traffic Volumes

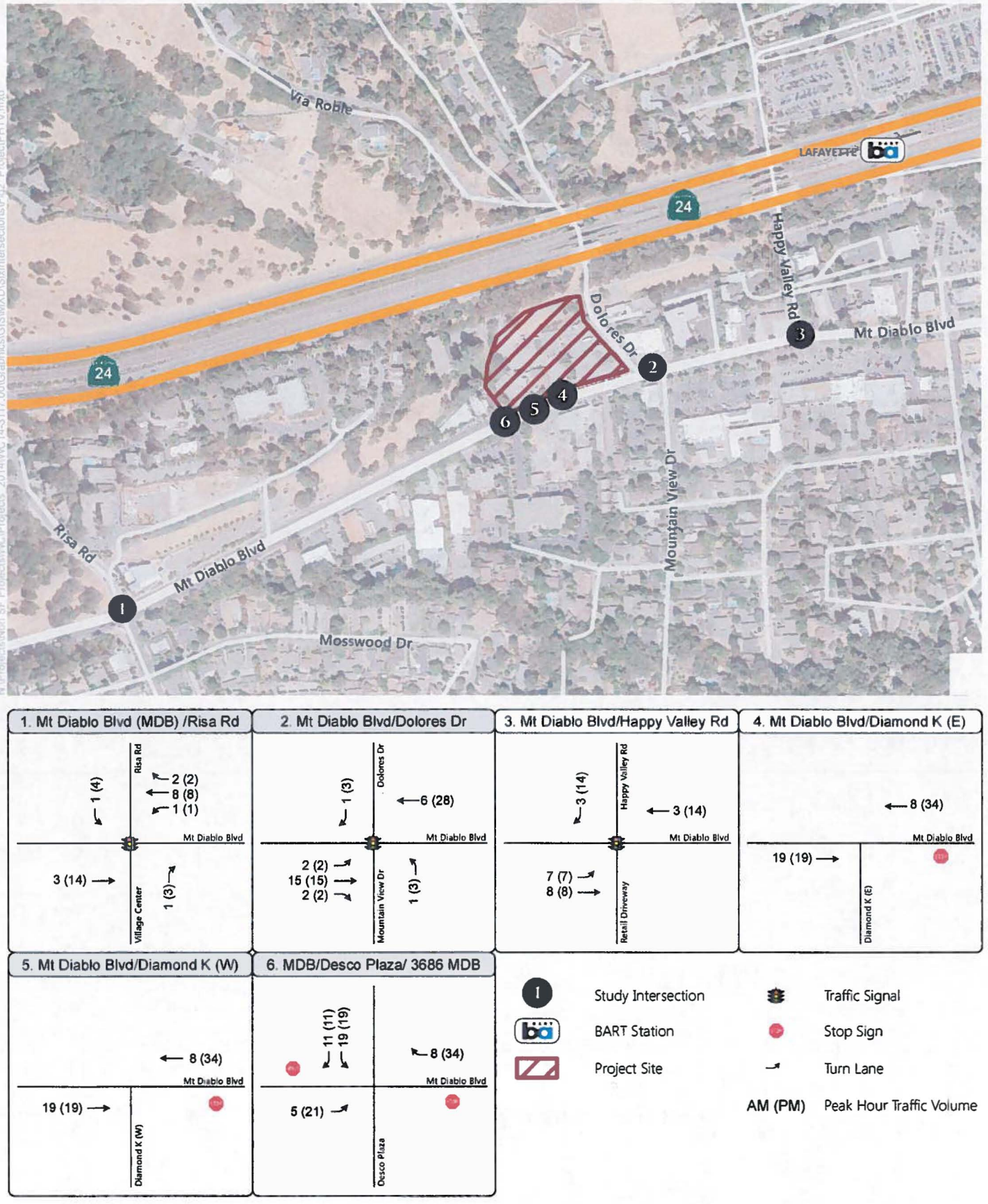


Figure 2

## Project Trip Turning Movements

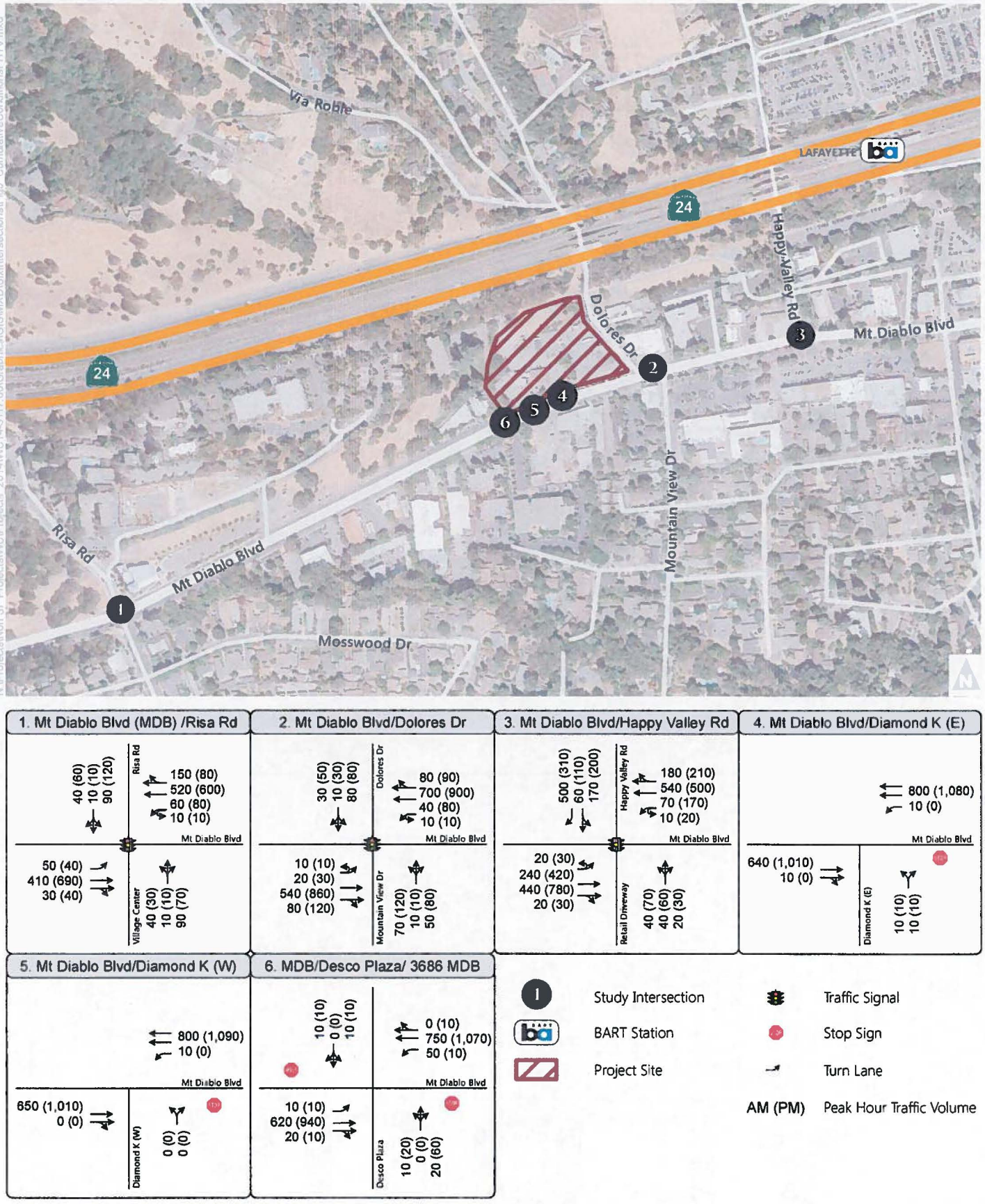


Figure 3

## Cumulative Conditions
## Peak Hour Traffic Forecasts

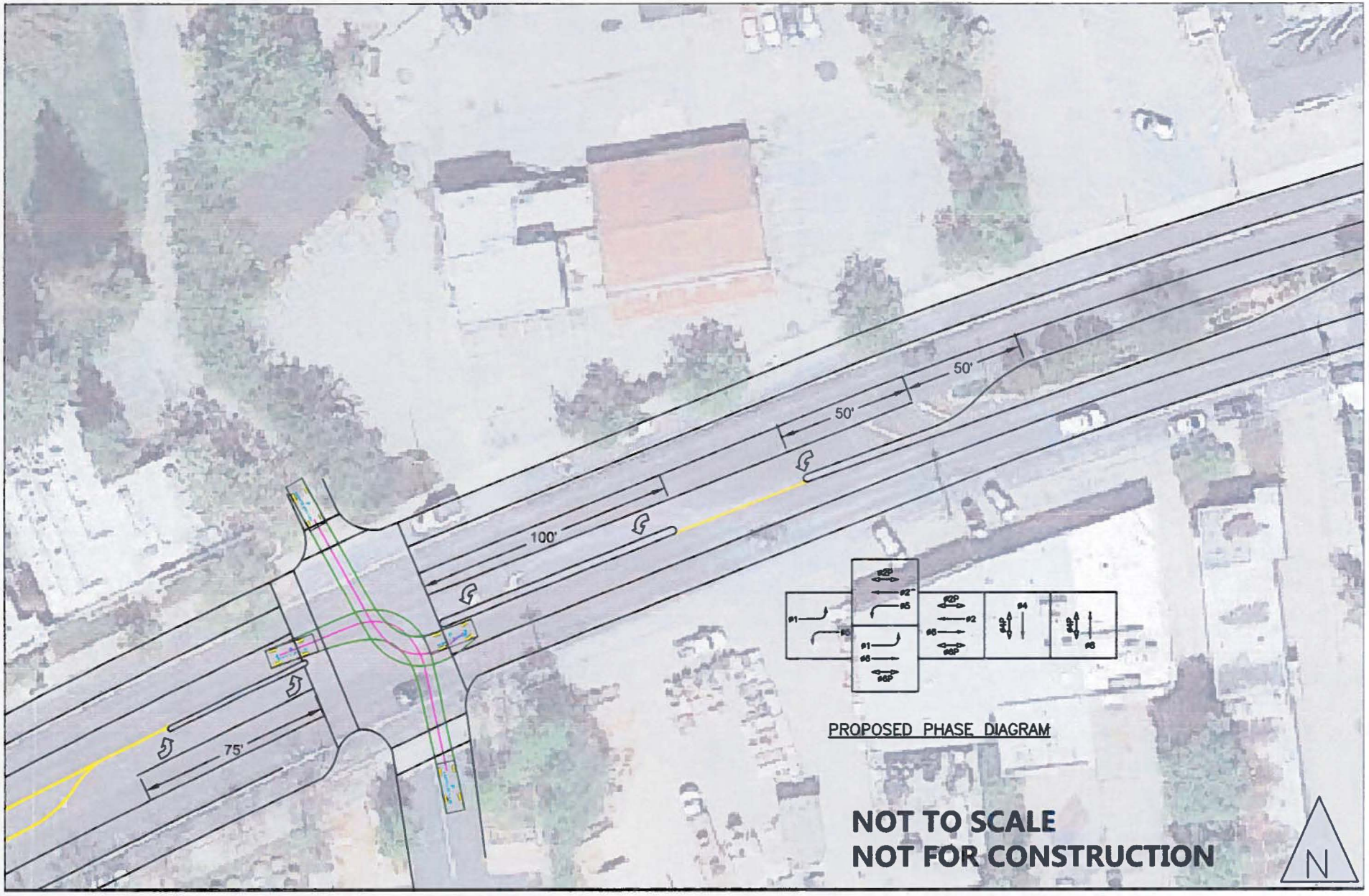


Figure 4

Proposed Design Alternative
Mount Diablo Boulevard Driveway