MEMORANDUM
DEPARTMENT OF PUBLIC WORKS AND FACILITIES
COUNTY OF PLACER

To: Honorable Board of Supervisors Date: January 5, 2016

From: Ken Grehm, Director of Public Works and Facilities
By: Richard Moorehead, Engineering Manager

Subject: **Transportation Planning / Locust Road Circulation Study**

ACTION REQUESTED

Conduct a Public Hearing and provide direction to County staff on pursuing a closure(s) of Locust Road in the Placer Vineyards Special Planning Area.

BACKGROUND

On July 16, 2007, the Placer Vineyards Specific Plan was heard and approved by the Board of Supervisors. At that time, there was an interest expressed by residents of the Special Planning Area (SPA) adjacent to the project along Locust Road to consider the future closure of Locust Road between the project boundary and the SPA area to the north. At the 2007 hearing, your Board requested further study of the impacts and feasibility of a closure of Locust Road. Since this time, the Board also heard and approved a Specific Plan Amendment on January 6, 2015. During this public process, there were additional requests to consider a closure of Locust Road to the south of the Placer Vineyards project boundary which connects to Elwyn Avenue in Sacramento County.

A Traffic Circulation Study has been prepared by Fehr and Peers which presents two alternative roadway closures of Locust Road. The first analysis includes a closure of Locust Road at the northern Placer Vineyards boundary, while the second analysis includes both the northern closure as well as a closure of Locust Road, just south of the Placer Vineyards boundary. A third alternative was investigated which included the northern closure, but provides for traffic calming features along the southern section of Locust Road in an effort to decrease future projects volumes and speeds, but maintain roadway connectivity into Sacramento County. The Fehr and Peers Traffic Circulation Study report is attached.

The Department of Public Works and Facilities staff presented the results of the study at the West Placer Municipal Advisory Committee (MAC) in May and October of 2015, and, facilitated a community meeting to solicit local input on the closure alternatives. The response from the adjacent property owners has consistently been in support of a northern and southern closure. The West Placer MAC voted unanimously at the October 14, 2015 meeting to recommend to the Board of Supervisors approval of further environmental processing of the two closure alternative. This alternative would slightly increase traffic volumes on alternative routes within the plan area. Mitigation for the increase has been identified and determined to be feasible. County staff supports this alternative, and recommends that the Board direct staff to conduct further engineering and environmental review on the two closure alternative of Locust Road.

ENVIRONMENTAL CLEARANCE

The proposed action is not a project as defined by Public Resources Code Section 21065 and is therefore exempt from environmental review under CEQA.

FISCAL IMPACT

This action has no net cost to the County.

Attachment 1 – Fehr & Peers Locust Road Circulation Study - Technical Memorandum 12-15-15
Attachment 2 – Location Map

FEHR & PEERS

TECHNICAL MEMORANDUM

Date:	December 15, 2015
To:	Stephanie Holloway – Senior Civil Engineer, Placer County Department of Public Works
From:	Alan Telford – Principal, Fehr & Peers
Subject:	**Locust Road Circulation Study**

RS14-3269

This memorandum documents the traffic impacts of the proposed one and two roadway closure scenarios on Locust Road.

The basis for the Locust Road analysis contained herein is the Placer Vineyards Specific Plan Revised Draft EIR, completed in June of 2006 by DKS Associates. The transportation study for that EIR assumed that Locust Road would exist as built today. The EIR analyzed intersections and roadway segments throughout the Specific Plan area and reported traffic impacts under Cumulative Plus Specific Plan Buildout conditions.

Locust Road currently extends through the Placer Vineyards Specific Plan from Placer County into Sacramento County. Per direction from County Staff, two proposed closure scenarios were analyzed. The one closure scenario would close Locust Road south of Newton Road (just south of the eastern Locust Road elbow), while the two closure scenario would close Locust Road south of Newton Road and at the Placer County line.

The proposed one closure scenario will result in decreased traffic volumes along Locust Road with increased traffic volumes along Dyer Lane. The two closure scenario will also result in decreased traffic volumes along Locust Road, but with greater increase in traffic along Dyer Lane, 16th Street, and Palladay Road. Therefore, the purpose of this traffic analysis is to determine the change in traffic volumes and traffic impacts due to the closures, and if additional mitigation measures are needed beyond those reported in the 2006 EIR.

This memorandum discusses the project's change in distribution and assignment of traffic onto local roadways and intersections, and the change in traffic impacts due to the proposed closure scenarios.

2990 Lava Ridge Court | Suite 200 | Roseville, CA 95661 | (916) 773-1900 | Fax (916) 773-2015
www.fehrandpeers.com

STUDY LOCATIONS

A list of study roadway segments and intersections was identified in collaboration with County staff to determine traffic impacts of the proposed closure(s).

The following eleven roadway segments were studied as part of the transportation analysis:

1. Locust Road – North of County Line
2. Locust Road – South of Baseline Road
3. Dyer Lane – South of Baseline Road
4. Dyer Lane – South of Town Center
5. Dyer Lane – Tanwood Avenue to 11th Street
6. Dyer Lane – 11th Street to Watt Avenue
7. Watt Avenue – South of Dyer Lane
8. PFE Road – East of Watt Avenue
9. 16th Street – South of Town Center
10. 16th Street – South of Dyer Lane
11. Palladay Road – North of County Line

The following five intersections were studied under the one closure scenario:

1. Baseline Road/Dyer Lane
2. W. Town Center/Dyer Lane
3. Dyer Lane/18th Street
4. Baseline Road/Locust Road
5. Dyer Lane/Watt Avenue

The following seven intersections were studied under the two closure scenario:

1. Baseline Road/Locust Road
2. Baseline Road/Dyer Lane
3. Dyer Lane/Palladay Road
4. Dyer Lane/16th Street
5. Dyer Lane/Watt Avenue
6. Watt Avenue/PFE Road
7. Pleasant Grove S./Riego Road

LOS EVALUATION CRITERIA

Traffic impacts of the proposed closure(s) were analyzed for study roadway segments and intersections using the following criteria:

Roadway Segments - Roadway operating conditions are described using the concept of Level of Service (LOS), which is a measure of the effects of a number of factors which include travel speed, traffic interruptions, freedom to maneuver, safety, and driving comfort and convenience. The circulation plan diagram in the Placer County General Plan depicts the circulation system by use of a set of roadway functional classifications. Roadways are classified based on the linkages they provide and their function, both of which reflect their relation to the land use patterns, traveler, and general welfare. Table 1 shows the roadway classifications for the roadway segments in this study. Traffic operations were analyzed by comparing the roadway volumes to the County roadway LOS thresholds shown in Table 2.

TABLE 1:
ROADWAY CLASSIFICATION FOR STUDY ROADWAY SEGMENTS

Roadway Segment	Roadway Classification
Locust Road – North of County Line	Arterial – Moderate Access Control
Locust Road – South of Baseline Road	Arterial – Moderate Access Control
Dyer Lane – South of Baseline Road	Arterial – Moderate Access Control
Dyer Lane – South of Town Center	Arterial – Moderate Access Control
Dyer Lane – Tanwood Avenue to 11th Street	Arterial – Moderate Access Control
Dyer Lane – 11th Street to Watt Avenue	Arterial – Moderate Access Control
Watt Avenue - South of Dyer Lane	Arterial – High Access Control
PFE Road – East of Watt Avenue	Arterial – Moderate Access Control
16th Street – South of Town Center	Arterial – Moderate Access Control
16th Street – South of Dyer Lane	Arterial – Moderate Access Control
Palladay Road – North of County Line	Arterial – Moderate Access Control

TABLE 2:
EVALUATION CRITERIA FOR ROADWAY LOS

Roadway Capacity Class	Maximum Daily Traffic Volume Per Lane				
	LOS A	LOS B	LOS C	LOS D	LOS E
Arterial – High Access Control	6,000	7,000	8,000	9,000	10,000
Arterial – Moderate Access Control	5,400	6,300	7,200	8,100	9,000
Arterial/Collector – Low Access Control	4,500	5,250	6,000	6,870	7,500
Rural 2-lane Highway – Level Terrain	1,500	2,950	4,800	7,750	12,500
Rural 2-lane Highway – Rolling Terrain	800	2,100	3,800	5,700	10,500

Notes:
LOS A – Free Flow/Insignificant Delay
LOS B – Stable Operation/Minimal Delay
LOS C – Stable Operation/Acceptable Delay
LOS D – Approaching Unstable /Tolerable Delay
LOS E – Unstable Operation/Significant Delay. Volumes at or near capacity.
LOS F – Forced Flow/Excessive Delay. Represents jammed conditions.
Source: *Placer County General Plan Final EIR (1994, pages 4 through 21)*

Intersections – For signalized intersections, the LOS was determined according to the Circular 212 methodology (Transportation Research Board, 1980). Table 3 shows the intersection LOS criteria.

Thresholds of Significance - Potential significant impacts of the closure(s) were evaluated using the following criteria based on the Placer Vineyards Specific Plan (2015) and Dry Creek/West Placer Community Plan Final Transportation and Circulation Element (2011)[1]:

TABLE 3:
EVALUATION CRITERIA FOR INTERSECTION LOS

LOS	Signal	Unsignalized
	Volume to Capacity Ratio	**Average Control Delay[1]**
A	≤ 0.6	≤ 10
B	> 0.6 to 0.7	> 10 to 15
C	> 0.7 to 0.8	> 15 to 25
D	> 0.8 to 0.9	> 25 to 35
E	> 0.9 to 1.0	> 35 to 50
F	> 1.0	> 50

Notes:
[1] Measure in seconds per vehicle
LOS A – Free Flow/Insignificant Delay
LOS B – Stable Operation/Minimal Delay
LOS C – Stable Operation/Acceptable Delay
LOS D – Approaching Unstable /Tolerable Delay
LOS E – Unstable Operation/Significant Delay. Volumes at or near capacity.
LOS F – Forced Flow/Excessive Delay. Represents jammed conditions.
Source: *Placer County General Plan Final EIR (1994, pages 4 through 21)*

[1] The Dry Creek/West Placer Community Plan Final Transportation and Circulation Element (2011) was adopted after the 2006 Placer Vineyards Specific Plan DEIR. The two documents contain level of service significance criteria that are different. Therefore, the Placer Vineyards Specific Plan thresholds of significance will be used for this analysis within the boundaries of the Specific Plan Area where conflicts occur, except on those roadway and segments identified with the 2011 Community Plan Circulation Element.

- Within the boundaries of the Specific Plan Area, the Placer Vineyards roadway system will be developed and managed to accommodate a Level of Service (LOS) D. Outside the Specific Plan Area, roadways shall conform to the Dry Creek/West Placer Community Plan Final Transportation and Circulation Element (2011).

- The Dry Creek/West Placer Community Plan states that the Capital Improvement Program (CIP) shall be sufficient to maintain LOS D on the Community Plan area road network – given the projected buildout of the Community Plan area and implementation of the CIP, except for the following arterial roadways, roadway segments, and intersections that will operate at the listed LOS when fully improved:

  Arterial Roadways -

  - Baseline Road – Sutter County Line to Walerga Road/Fiddyment Road: LOS E
  - Watt Avenue – Sacramento County Line to Baseline Road: LOS F

  Roadway Segments -

  - Cook-Riolo Road – Vineyard Road to Baseline Road: LOS E
  - Cook-Riolo Road – PFE Road to Vineyard Road: LOS F
  - North Antelope Road – PFE Road to Sacramento County Line: LOS E
  - PFE Road – Cook-Riolo Road to North Antelope Road: LOS F
  - Vineyard Road – Cook-Riolo Road to Foothills Boulevard: LOS F

  Intersections –

  - Baseline Road/Watt Avenue: LOS F
  - Baseline Road/Walerga Road/Fiddyment Road: LOS F
  - PFE Road/Cook-Riolo Road: LOS F
  - PFE Road/Walerga Road: LOS F
  - PFE Road/Antelope Road: LOS F

Furthermore, to ensure that mitigation measures are proportionate to the level of impact that a specific project has on an intersection or roadway, Placer County developed the following level of service methodology of assessment:

Roadway Segments:

A project may be considered to exceed the minimum LOS policies if;

1) A roadway segment operating at or above the established Placer County policy without the project will decrease to an unacceptable LOS with the project; or

2) A roadway segment currently operating below the applicable established policy will experience an increase in V/C (volume to capacity) ratio of 0.05 or greater; or

3) A roadway segment experiences an increase in ADT of 100 or more project generated trips, per lane, and the LOS policy is exceeded.

Signalized Intersections:

A project may be considered to exceed the minimum LOS policies if;

1) An intersection operating at or above the established Placer County policies without the project will decrease to an unacceptable LOS with the project; or

2) An intersection currently operating below the acceptable LOS established policy will experience an increase in V/C (volume to capacity) ratio of 0.05 or greater; or

3) An intersection currently operating below the acceptable LOS policy will experience an increase in delay of 4 seconds or greater.

Unsignalized Intersections:

A project may be considered to exceed the minimum LOS policies if;

1) An unsignalized intersection which currently operates at or above the established Placer County policies without the project will deteriorate to an unacceptable LOS with the project; or

2) An unsignalized intersection which currently operates below the acceptable LOS established policy will experience an increase of 2.5 seconds or more with the project.

CHANGE IN TRAFFIC VOLUMES

The trip distribution estimates of project traffic (one and two closures on Locust Road) were developed using the year 2035 SACOG travel demand model. The travel demand model was utilized to determine the difference in trip distribution between the no closure and closure model scenarios. The net project traffic differences were then added to the intersection traffic forecasts contained in the 2006 Placer Vineyards EIR technical appendix (Note that the LOS computation sheets were provided by the authors of the EIR transportation study, DKS Associates and the specific title of the 2006 computation sheets is "Cumulative Plus Project".). It is important to recognize that the model results for the no project scenario (as previously approved with the Placer Vineyards Specific Plan) were slightly different from those reported in the Placer Vineyards EIR due to minor changes in the model network and modeling assumptions from 2006 to 2015. It is for this reason that the travel demand model was only utilized to determine the net difference in the no closure and plus closure impact(s).

One Closure Scenario:

Under the one closure scenario, Locust Road would experience a slight reduction in vehicular volume travelling south, while Dyer Lane and surrounding streets would experience a slight increase in volume, as can be seen in Table 4.

TABLE 4:
IMPACT OF NORTH LOCUST ROAD CLOSURE ON ROADWAY SEGMENT LOS

Roadway Segment	Number of Lanes	Cumulative Plus Project (No Closure)		Cumulative Plus Project with One Closure		Percent Increase in Traffic	ADT Increase
		ADT	LOS	ADT	LOS		
Locust Road – North of County Line	2	17,100	E	16,800	E	-1.8%	-300
Locust Road – South of Baseline Road	2	2,700	A	700	A	-74.1%	-2,000
Dyer Lane – South of Baseline Road	4	15,800	A	17,800	A	12.7%	2,000
Dyer Lane – South of Town Center	4	7,300	A	7,700	A	5.5%	400
Dyer Lane – Tanwood Ave to 11th Street	4	25,200	B	25,400	C	0.8%	200
Dyer Lane – 11th Street to Watt Avenue	4	32,300	D	32,500	E**	0.6%	200
Watt Avenue – South of Dyer Lane	6	62,900	F	63,000	F	0.2%	100
PFE Road – East of Watt Avenue	4	14,300	A	14,400	A	0.7%	100
16th Street – South of Town Center	4	-*	-*	7,800	A	N/A	N/A
16th Street – South of Dyer Lane	4	16,200	A	16,300	A	0.6%	100
Palladay Road – North of County Line	4	16,600	A	16,700	A	0.6%	100

*This roadway segment was not analyzed as part of the 2006 EIR.

**The increase of 200 ADT is less than 5% and 100 ADT per lane significance thresholds.

Additionally, the shift in volumes would alter various turning movement volumes at the study intersections under the one closure scenario. Figure 1 gives an overview of the differences in turning movements at each of these study intersections.

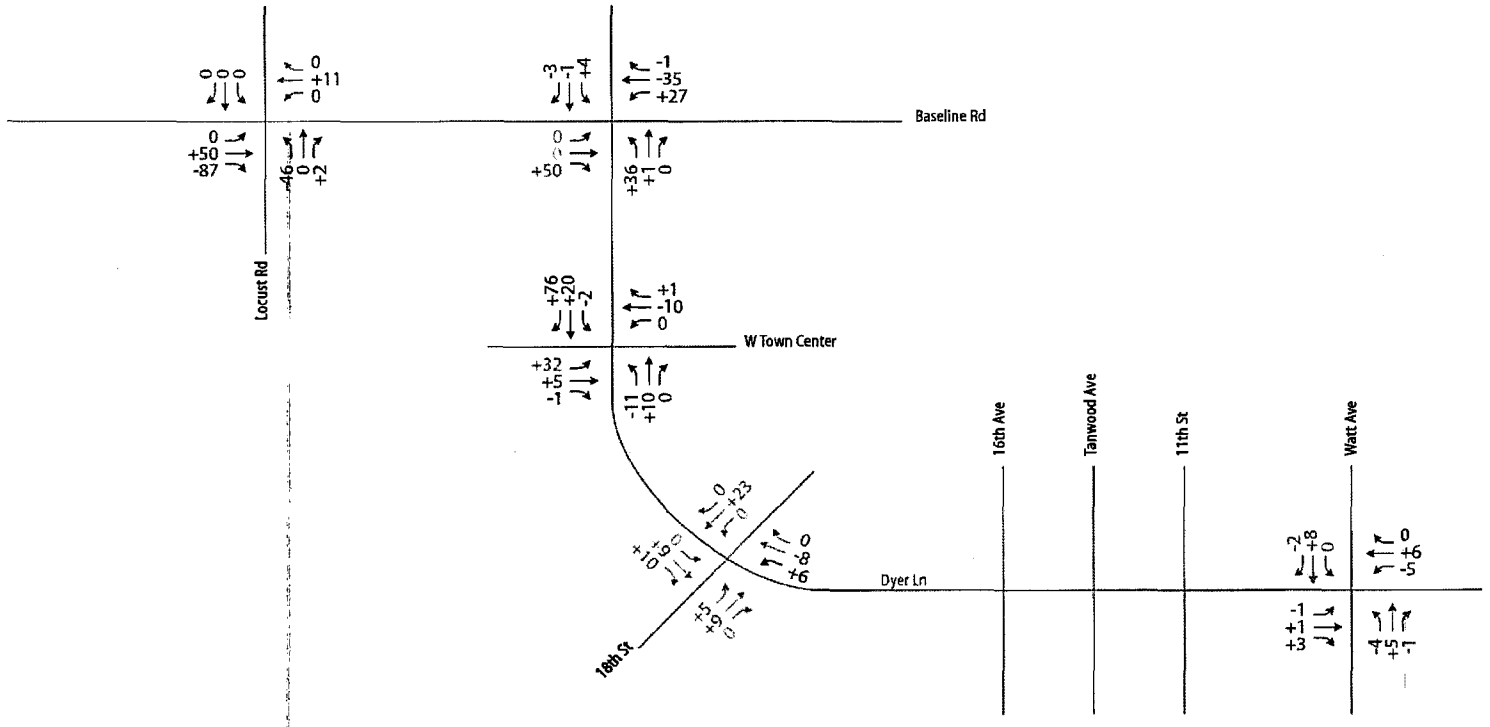

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Figure 1

Locust Road Closure Study
1 Closure Scenario

Table 5 provides the LOS and V/C ratios associated with the one closure along Locust Road.

TABLE 5:
IMPACT OF NORTH LOCUST ROAD CLOSURE ON INTERSCTION PM PEAK HOUR LOS

Intersection	Cumulative Plus Project (No Closure)		Cumulative Plus Project with One Closure		Increase in V/C Ratio
	Signalized Intersection (V/C Ratio)[1]	LOS [1]	Signalized Intersection (V/C Ratio)[1]	LOS [1]	
1. Baseline Road/Dyer Lane	0.90	D	0.92	E	0.02
2. W. Town Center/Dyer Lane	0.54	A	0.58	A	0.04
3. Dyer Lane/18th Street	0.41	A	0.41	A	0.00
4. Baseline Road/Locust Road	0.63[2]	B[2]	0.61[2]	B[2]	-0.02
5. Dyer Lane/Watt Avenue	1.06	F	1.06	F	0.00

Notes:
[1] V/C and LOS for signalized intersections are calculated using the *Transportation Research Board Circular 212* method.
[2] V/C and LOS calculated using adjusted northbound right turn volumes.
Source: Fehr & Peers, 2015

Roadway Segments:

Under this scenario, an unacceptable condition would be created at one roadway. Dyer Lane from 11th Street to Watt Avenue would worsen from LOS D to E. The daily traffic volume would increase by 200 vehicles along this 4 lane segment, from 32,300 to 32,500 vehicles per day. 32,400 is the transition from LOS D to LOS E, so the resulting traffic volume is only 100 vehicles (or 0.3 percent) above LOS D. Although the redistribution of traffic would cause the LOS to degrade along this segment from LOS D to LOS E, the segment would experience an increase in V/C (volume to capacity) ratio of less than 0.05 (or 5%) and would therefore be considered to be less than significant. Additionally, the methodology of assessment identifies a roadway segment which would experience an increase in ADT of 100 or more project generated trips, per lane, at an already unacceptable LOS to be significant. The one closure scenario would contribute 200 ADT to this four lane segment (50 per lane) which is below the 100 ADT threshold and is therefore considered not to be significant. Although no mitigation is identified for this scenario, Level of Service along this segment could be increased to LOS B by widening the roadway from 4 lanes to 6 lanes.

Intersections:

The one closure scenario does not result in unacceptable LOS at any of the intersections. Though the Baseline Road/Dyer Lane intersection goes from LOS D to E, LOS E is considered acceptable along this segment of Baseline Road under the Community Plan LOS threshold criteria.

Two Closure Scenario:

Under the two closure scenario, Locust Road would experience a higher reduction in vehicular volume travelling south and north, while Dyer Lane and surrounding streets would experience a greater increase in volume, as can be seen in Table 6.

Additionally, the shift in volumes would alter various turning movement volumes at the study intersections under the two closure scenario. Figure 2 gives an overview of the differences in turning movements at each of these study intersections.

TABLE 6:
IMPACT OF NORTH AND SOUTH LOCUST ROAD CLOSURE ON ROADWAY SEGMENT LOS

Roadway Segment	Number of Lanes	Cumulative Plus Project (No Closure)		Cumulative Plus Project with Two Closures		Percent Increase in Traffic	ADT Increase
		ADT	LOS	ADT	LOS		
Locust Road – North of County Line	2	17,100	E	700	A	-95.9%	-16,400
Locust Road – South of Baseline Road	2	2,700	A	700	A	-74.1%	-2,000
Dyer Lane – South of Baseline Road	4	15,800	A	18,300	A	15.8%	2,500
Dyer Lane – South of Town Center	4	7,300	A	9,800	A	34.2%	2,500
Dyer Lane – Tanwood Ave to 11th Street	4	25,200	B	25,800	C	2.4%	600
Dyer Lane – 11th Street to Watt Avenue	4	32,300	D	**33,100**	**E****	**2.5%**	**800**
Watt Avenue – South of Dyer Lane	6	62,900	F	65,200	F	3.7%	2,300
PFE Road – East of Watt Avenue	4	14,300	A	15,400	A	7.7%	1,100
16th Street – South of Town Center	4	-*	-*	7,500	A	N/A	N/A
16th Street – South of Dyer Lane	4	16,200	A	16,700	A	3.1%	500
Palladay Road – North of County Line	4	16,600	A	18,100	A	9.0%	1,500

*This roadway segment was not analyzed as part of the 2006 EIR.

**The increase of 800 ADT is less than 5% threshold of significance, but exceeds 100 ADT per lane threshold.

Figure 2

Locust Road Closure Study
2 Closure Scenario

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Table 7 provides the LOS and V/C ratios associated with the two closures along Locust Road.

TABLE 7:
IMPACT OF NORTH AND SOUTH LOCUST ROAD CLOSURE ON INTERSCTION PM PEAK HOUR LOS

Intersection	Cumulative Plus Project (No Closure)		Cumulative Plus Project with Two Closures		Increase in V/C Ratio
	Signalized Intersection (V/C Ratio)[1]	LOS [1]	Signalized Intersection (V/C Ratio)[1]	LOS [1]	
1. Baseline Road/Locust Road	0.63[2]	B[2]	0.72[2]	C[2]	0.09
2. Baseline Road/Dyer Lane	0.90	D	0.85	D	-0.05
3. Dyer Lane/Palladay Road	0.87	D	0.79	C	-0.08
4. Dyer Lane/16th Street	0.66	B	0.64	B	-0.02
5. Dyer Lane/Watt Avenue	1.06 With mitigation	F	**1.13** (1.01)*	**F**	**0.07** (-0.05)*
6. Watt Avenue/PFE Road	0.70	C	0.74	C	0.04
7. Pleasant Grove S./Riego Road[3]	0.95[3]	E[3]	0.99[3]	E[3]	0.04

Notes:
[1] V/C and LOS for signalized intersections are calculated using the *Transportation Research Board Circular 212* method.
[2] V/C and LOS calculated using adjusted northbound right turn volumes.
[3] Pleasant Grove South/Riego Road, located in Sutter County, was analyzed using the same levels of significance as the rest of the project for consistency.
Source: Fehr & Peers, 2015

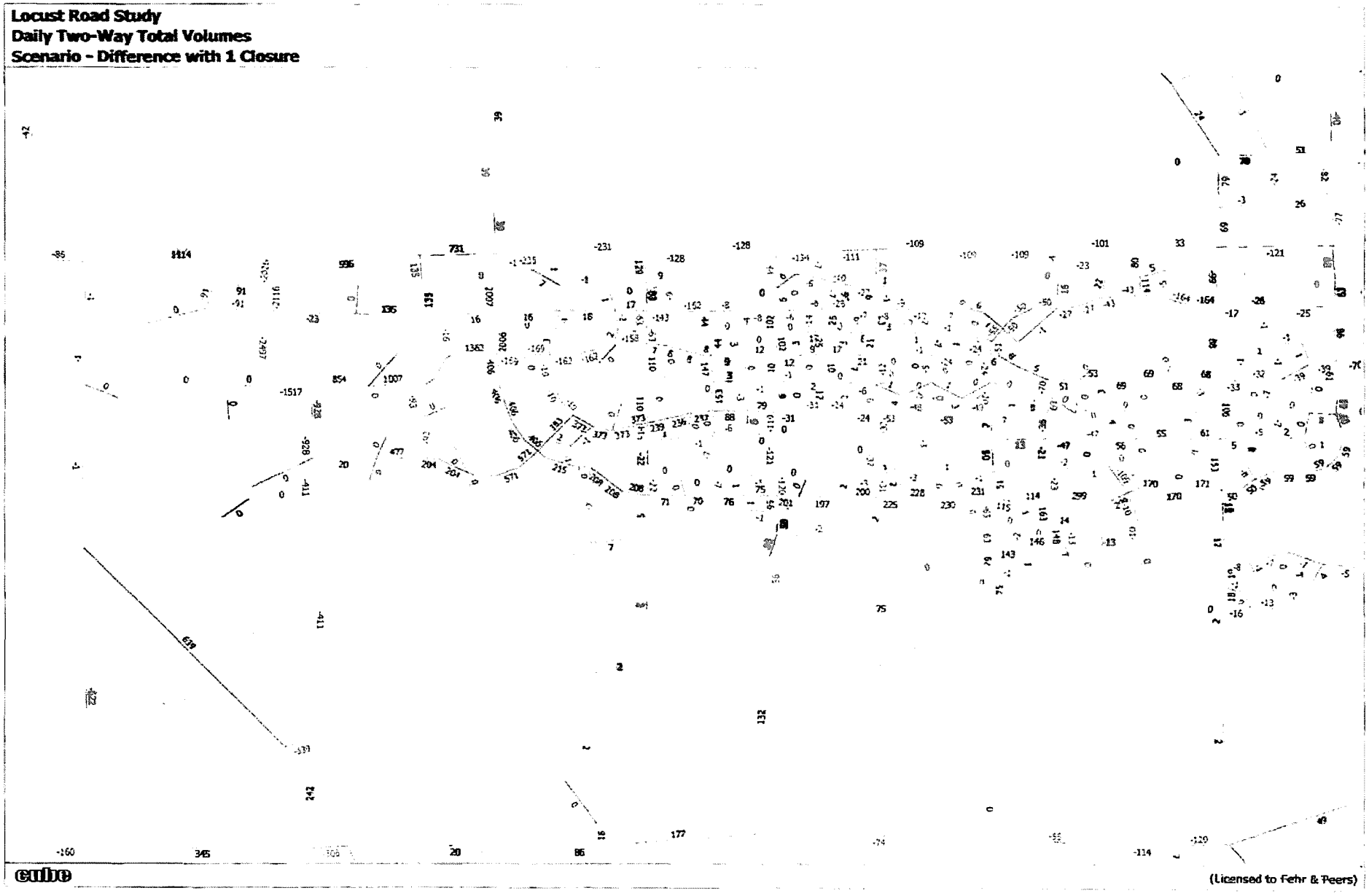
*With Mitigation

Roadway Segments:

Under this scenario, one roadway segment would potentially operate unacceptably. Dyer Lane from 11th Street to Watt Avenue would worsen from LOS D to E. The two closures would reroute 800 vehicles onto this segment of Dyer Lane (32,300 ADT to 33,100 ADT), resulting in a 2.5% increase in ADT. Although the redistribution of traffic would cause the LOS to degrade along this segment from LOS D to LOS E, the segment would experience an increase in V/C (volume to capacity) ratio of less than 0.05 (or 5%) and would therefore be considered to be less than significant. Additionally, the methodology of assessment identifies a roadway segment which would experience an increase in ADT of 100 or more project generated trips, per lane, at an already unacceptable LOS to be significant. The two closure scenario would contribute 800 ADT to this four lane segment (200 per lane) which exceeds the 100 ADT threshold and is therefore considered to be significant. Level of Service along this segment could be increased to LOS B by widening the roadway from 4 lane to 6 lanes. If implemented, the two closure project impact would be considered less than significant with the above mitigation.

Intersections:

The two closure scenario would result in a potentially significant impact at one intersection, Dyer Lane/Watt Avenue. The Cumulative No Project LOS is projected to be LOS F (v/c 1.06). The redistribution of traffic associated with two closures would result in an increase in LOS F (v/c 1.13). The impact associated with this increase in delay at LOS F greater than 0.05 V/C and can therefore be considered potentially significant. However, this intersection could be mitigated by adding a second right-turn lane at the intersection's eastbound approach, resulting in a lesser V/C ratio of 1.01. If implemented, the increase in V/C of 0.07 as a result of the two closure project would be mitigated with the second right-turn lane and therefore the project's impacts could be considered to be less than significant.


Locust Road Study
Daily Two-Way Total Volumes
Scenario - Difference with 1 Closure
cube
(Licensed to Fehr & Peers)

Locust Road Study
Daily Two-Way Total Volumes
Scenario - Difference with 2 Closures
(Licensed to Fehr & Peers)

LOCUST ROAD CLOSURE LOCATION MAP