



July 11, 2019

Mr. Tom Smith  
Todd Road Partners  
304 Todd Road  
Santa Rosa, CA 95407

## **Addendum to the *Traffic Impact Study for the Ghilotti Construction Yard***

Dear Mr. Smith;

As discussed, further analysis has been performed to determine what level of activity associated with the Ghilotti Construction Yard could be accommodated without triggering a significant impact at the intersection of Todd Road/Standish Avenue-Ghilotti Road. This letter sets forth the background for the additional analysis, the assumptions applied in re-evaluating the intersection of Todd Road/Standish Avenue-Ghilotti Road, our findings from an iterative analysis, and our recommendations.

### **Background**

As you may recall, the assumptions applied in the *Traffic Impact Study for the Ghilotti Construction Yard*, November 15, 2017, were quite conservative and represented more traffic than the project is realistically expected to generate. As with most construction-related activities, the bulk of the activity would be expected to occur prior to 4:00 p.m., or before the beginning of the evening peak period. It was, however, assumed that the project would have 15 trucks enter and exit during the p.m. peak hour. The addition of 30 truck trip ends (or 90 passenger vehicle equivalents) resulted in a deterioration from LOS E to LOS F during the p.m. peak hour under both Existing plus Project and Baseline plus Project conditions.

### **Assumptions**

Because the County of Sonoma is currently initiating the design for a traffic signal at Todd Road/Standish Avenue-Ghilotti Road, it was assumed that the signal would be operational prior to the horizon year for the "Future Conditions" analyses. These scenarios were therefore not evaluated. It was further noted that projected delay under Baseline plus Project conditions was higher than for Existing plus Project conditions, so any trips that could be added to Baseline p.m. peak hour volumes without triggering LOS F operation could also be added to Existing p.m. peak hour volumes without triggering a significant impact. Finally, as 96 percent of trips were from/to the east, inbound trips were only added to the westbound left turn and outbound trips were assumed to all make a northbound right turn.

### **Findings**

Through an iterative analysis it was determined that the maximum number of passenger vehicle trips that could be added to Baseline p.m. peak hour volumes without causing operation to deteriorate to LOS F is six (6) trips inbound and nine (9) trips outbound. Because few trucks would be entering the site after 4:00 p.m., and nearly all would leave the site before 4:00 p.m., the project's actual trip generation is expected to be equal to or less than two (2) trucks inbound and three (3) trucks outbound on a typical daily basis. The impact is therefore expected to be less-than-significant.

It is understood that Ghilotti Construction would offer to re-route Ghilotti Road to the west to intersect Todd Road more directly across from Standish Avenue. This improvement is not required to achieve signalization but would result in substantially-improved operation of the traffic signal compared to the existing offset configuration.

### Recommendations

- To ensure that the project has a less-than-significant impact on traffic operation, until the traffic signal is constructed the construction yard should close daily at 4:00 p.m. Should there be a few trucks that miss the closing time and must therefore enter and exit after 4:00 p.m., the impact would remain less-than-significant as two inbound and three outbound trucks can be accommodated without pushing operation to LOS F.
- Through coordination with the County, the south leg of the intersection of Todd Road/Standish Avenue-Ghilotti Road should be realigned to support the County's planned signalization project. This would require dedication of right-of-way as well as construction of the roadway, and the County may wish to consider the cost of these improvements as an offset to the project's "proportional share" payment for the signalization.

We hope this information is adequate to address the change in operation needed to avoid this significant impact in the short term. Please contact me if you have any further questions. Thank you for giving us the opportunity to provide these services.

Sincerely,



Dalene J. Whitlock, PE, PTOE  
Senior Principal

DJW/djw/SOX574.L1

Enclosures: LOS Calculations



**Intersection Level Of Service Report**  
**Intersection 1: Todd Rd/Ghilotti Ave-Standish Ave**

Control Type:	Two-way stop	Delay (sec / veh):	171.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.130

**Intersection Setup**

Name	Ghilotti Ave			Standish Ave			Todd Rd			Todd Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	150.00	100.00	100.00
Speed [mph]	10.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Ghilotti Ave			Standish Ave			Todd Rd			Todd Rd		
Base Volume Input [veh/h]	2	4	25	252	2	65	45	316	7	15	264	171
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	9	0	0	0	0	0	0	5	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	4	34	252	2	65	45	316	7	20	264	171
Peak Hour Factor	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	9	68	1	17	12	85	2	5	71	46
Total Analysis Volume [veh/h]	2	4	37	271	2	70	48	339	8	21	284	184
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	Yes		
Storage Area [veh]	0	1	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.02	0.05	1.13	0.01	0.10	0.04	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	21.71	20.27	10.70	171.95	170.00	162.30	8.44	0.00	0.00	8.02	0.00	0.00
Movement LOS	C	C	B	F	F	F	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.25	0.25	0.25	16.09	16.09	16.09	0.14	0.00	0.00	0.05	0.00	0.00
95th-Percentile Queue Length [ft]	6.34	6.34	6.34	402.19	402.19	402.19	3.44	0.00	0.00	1.32	0.00	0.00
d_A, Approach Delay [s/veh]	12.10			169.97			1.03			0.34		
Approach LOS	B			F			A			A		
d_I, Intersection Delay [s/veh]	46.77											
Intersection LOS	F											

**Intersection Level Of Service Report**  
**Intersection 1: Todd Rd/Ghiloti Ave-Standish Ave**

Control Type:	Two-way stop	Delay (sec / veh):	156.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.094

**Intersection Setup**

Name	Ghiloti Ave			Standish Ave			Todd Rd			Todd Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	150.00	100.00	100.00
Speed [mph]	10.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Ghiloti Ave			Standish Ave			Todd Rd			Todd Rd		
Base Volume Input [veh/h]	2	4	20	252	2	65	45	316	7	10	264	171
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	9	0	0	0	0	0	0	5	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volumes [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	4	29	252	2	65	45	316	7	15	264	171
Peak Hour Factor	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	8	68	1	17	12	85	2	4	71	46
Total Analysis Volume [veh/h]	2	4	31	271	2	70	48	339	8	16	284	184
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	Yes		
Storage Area [veh]	0	1	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.02	0.04	1.09	0.01	0.10	0.04	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	21.35	19.95	10.64	156.66	154.97	147.49	8.44	0.00	0.00	8.01	0.00	0.00
Movement LOS	C	C	B	F	F	F	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.22	0.22	0.22	15.37	15.37	15.37	0.14	0.00	0.00	0.04	0.00	0.00
95th-Percentile Queue Length [ft]	5.55	5.55	5.55	384.34	384.34	384.34	3.44	0.00	0.00	1.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.23			154.78			1.03			0.26		
Approach LOS	B			F			A			A		
d_I, Intersection Delay [s/veh]	42.95											
Intersection LOS	F											

**Intersection Level Of Service Report**  
**Intersection 1: Todd Rd/Ghiloti Ave-Standish Ave**

Control Type:	Two-way stop	Delay (sec / veh):	1,495.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	3.758

**Intersection Setup**

Name	Ghiloti Ave			Standish Ave			Todd Rd			Todd Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	150.00	100.00	100.00
Speed [mph]	10.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Ghiloti Ave			Standish Ave			Todd Rd			Todd Rd		
Base Volume Input [veh/h]	3	4	34	438	2	199	108	350	8	24	443	355
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	9	0	0	0	0	0	0	5	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	4	43	438	2	199	108	350	8	29	443	355
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	11	110	1	50	27	88	2	7	111	89
Total Analysis Volume [veh/h]	3	4	43	438	2	199	108	350	8	29	443	355
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	Yes		
Storage Area [veh]	0	1	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.05	0.03	0.06	3.76	0.01	0.41	0.13	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	61.12	38.07	11.92	1495.85	1489.63	1472.35	10.02	0.00	0.00	8.07	0.00	0.00
Movement LOS	F	E	B	F	F	F	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.49	0.49	0.49	64.47	64.47	64.47	0.45	0.00	0.00	0.07	0.00	0.00
95th-Percentile Queue Length [ft]	12.31	12.31	12.31	1611.74	1611.74	1611.74	11.25	0.00	0.00	1.86	0.00	0.00
d_A, Approach Delay [s/veh]	16.96			1488.52			2.32			0.28		
Approach LOS	C			F			A			A		
d_I, Intersection Delay [s/veh]	480.99											
Intersection LOS	F											