LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS

In the *Highway Capacity Manual (HCM)*, published by the Transportation Research Board, 2000, level of service for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions: in the absence of traffic control, in the absence of geometric delay, in the absence of incidents, and when there are no other vehicles on the road. Only the portion of total delay attributed to the control facility is quantified. This delay is called *control delay*. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Level of Service criteria for traffic signals are stated in terms of the average control delay per vehicle. Delay is a complex measure and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the *v/c* ratio for the lane group in question.

Level of Service Criteria for Signalized Intersections

Level of Service	Control Delay (Sec/Veh)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Level of Service (LOS) values are used to describe intersection operations with service levels varying from LOS A (free flow) to LOS F (jammed condition). The following descriptions summarize *HCM* criteria for each level of service:

LOS A describes operations with very low control delay, up to 10 seconds per vehicle. This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay values.

LOS B describes operations with control delay greater than 10 and up to 20 seconds per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.

LOS C describes operations with control delay greater than 20 and up to 35 seconds per vehicle. These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.

LOS D describes operations with control delay greater than 35 and up to 55 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high *v/c* ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

LOS E describes operations with control delay greater than 55 and up to 80 seconds per vehicle. This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high *v/c* ratios. Individual cycle failures are frequent occurrences.

LOS F describes operations with control delay in excess of 80 seconds per vehicle. This level, considered to be unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the lane groups. It may also occur at high *v/c* ratios with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors to such delay levels.

HCS7 Two-Way Stop-Control Report

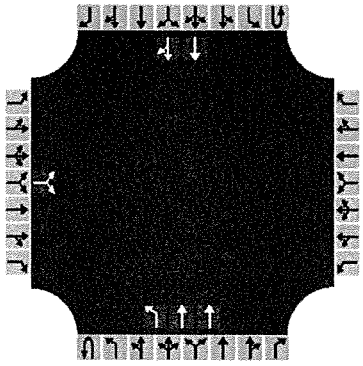
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	7/17/2018
Analysis Year	2018
Time Analyzed	Existing - AM
Intersection Orientation	North-South
Project Description	Twin Oaks - Starbucks

Site Information

Intersection	Intersection #1
Jurisdiction	City of Agoura Hills
East/West Street	Twin Oaks North Driveway
North/South Street	Kanan Road
Peak Hour Factor	1.00
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	2	0	0	0	2	0
Configuration			LR							L	T				T	TR
Volume, V (veh/h)		3		21					8	34	1234				1432	57
Percent Heavy Vehicles (%)		0		0					0	0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								5						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9					6.4	4.1						
Critical Headway (sec)		6.80		6.90					6.40	4.10						
Base Follow-Up Headway (sec)		3.5		3.3					2.5	2.2						
Follow-Up Headway (sec)		3.50		3.30					2.50	2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			24							42						
Capacity, c (veh/h)			321							333						
v/c Ratio			0.07							0.13						
95% Queue Length, Q_{95} (veh)			0.2							0.4						
Control Delay (s/veh)			17.1							17.4						
Level of Service, LOS			C							C						
Approach Delay (s/veh)		17.1								0.6						
Approach LOS		C														

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HCS7 Two-Way Stop-Control Report

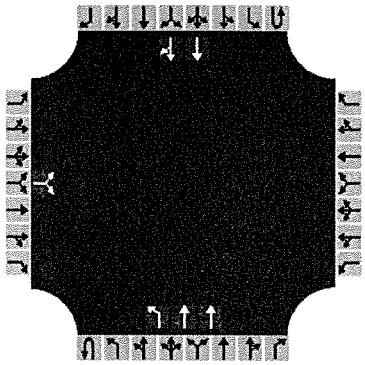
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	7/17/2018
Analysis Year	2018
Time Analyzed	Existing - PM
Intersection Orientation	North-South
Project Description	Twin Oaks - Starbucks

Site Information

Intersection	Intersection #1
Jurisdiction	City of Agoura Hills
East/West Street	Twin Oaks North Driveway
North/South Street	Kanan Road
Peak Hour Factor	1.00
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	2	0	0	0	2	0
Configuration			LR							L	T				T	TR
Volume, V (veh/h)		25		21					7	35	1545				873	10
Percent Heavy Vehicles (%)		0		0					0	0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								5						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9					6.4	4.1						
Critical Headway (sec)		6.80		6.90					6.40	4.10						
Base Follow-Up Headway (sec)		3.5		3.3					2.5	2.2						
Follow-Up Headway (sec)		3.50		3.30					2.50	2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			46							42						
Capacity, c (veh/h)			392							663						
v/c Ratio			0.12							0.06						
95% Queue Length, Q_{95} (veh)			0.4							0.2						
Control Delay (s/veh)			15.4							10.8						
Level of Service, LOS			C							B						
Approach Delay (s/veh)		15.4								0.3						
Approach LOS		C														

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HCS7 Two-Way Stop-Control Report

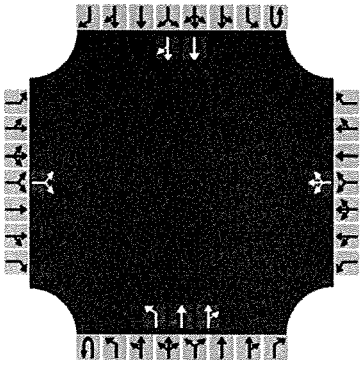
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	7/17/2018
Analysis Year	2018
Time Analyzed	Existing - AM
Intersection Orientation	North-South
Project Description	Twin Oaks - Starbucks

Site Information

Intersection	Intersection #2
Jurisdiction	City of Agoura Hills
East/West Street	Twin Oaks South Driveway
North/South Street	Kanan Road
Peak Hour Factor	1.00
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	2	0	0	0	2	0
Configuration			LR				LTR			L	T	TR			T	TR
Volume, V (veh/h)		4		72		0	1	20		53	1228	11			1391	33
Percent Heavy Vehicles (%)		0		0		0	0	0		0						
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								6						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9		7.5	6.5	6.9		4.1						
Critical Headway (sec)		7.50		6.90		7.50	6.50	6.90		4.10						
Base Follow-Up Headway (sec)		3.5		3.3		3.5	4.0	3.3		2.2						
Follow-Up Headway (sec)		3.50		3.30		3.50	4.00	3.30		2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			76				21			53						
Capacity, c (veh/h)			350				204			484						
v/c Ratio			0.22				0.10			0.11						
95% Queue Length, Q_{95} (veh)			0.8				0.3			0.4						
Control Delay (s/veh)			18.1				24.6			13.3						
Level of Service, LOS			C				C			B						
Approach Delay (s/veh)		18.1				24.6				0.5						
Approach LOS		C				C										

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HCS7 Two-Way Stop-Control Report

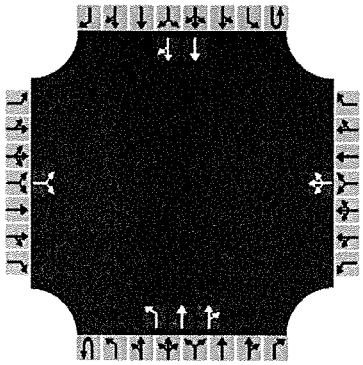
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	7/17/2018
Analysis Year	2018
Time Analyzed	Existing - PM
Intersection Orientation	North-South
Project Description	Twin Oaks - Starbucks

Site Information

Intersection	Intersection #2
Jurisdiction	City of Agoura Hills
East/West Street	Twin Oaks South Driveway
North/South Street	Kanan Road
Peak Hour Factor	1.00
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	2	0	0	0	2	0
Configuration			LR				LTR			L	T	TR			T	TR
Volume, V (veh/h)		20		78		2	0	11	1	122	1555	13			837	55
Percent Heavy Vehicles (%)		0		0		0	0	0	0	0						
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Left Only								6							

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9		7.5	6.5	6.9	6.4	4.1						
Critical Headway (sec)		7.50		6.90		7.50	6.50	6.90	6.40	4.10						
Base Follow-Up Headway (sec)		3.5		3.3		3.5	4.0	3.3	2.5	2.2						
Follow-Up Headway (sec)		3.50		3.30		3.50	4.00	3.30	2.50	2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			98				13			123						
Capacity, c (veh/h)			413				212			761						
v/c Ratio			0.24				0.06			0.16						
95% Queue Length, Q_{95} (veh)			0.9				0.2			0.6						
Control Delay (s/veh)			16.4				23.1			10.6						
Level of Service, LOS			C				C			B						
Approach Delay (s/veh)	16.4				23.1				0.8							
Approach LOS	C				C											

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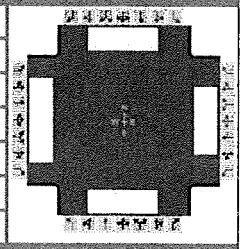
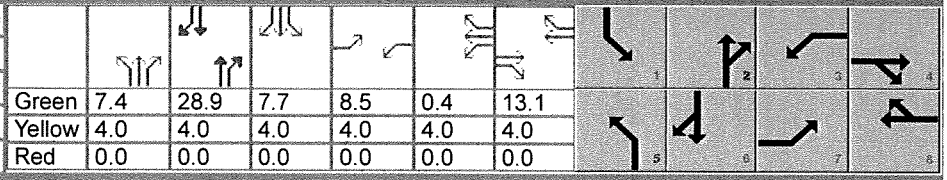
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Aug 29, 2018	Area Type	Other
Jurisdiction	City of Agoura Hills	Time Period	Existing - AM	PHF	1.00
Urban Street	Kanan Rd. / T.O Blvd.	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Intersection #3	File Name	03AM - Existing.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	240	373	163	220	315	189	117	872	170	101	1273	106

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	7.4	28.9	7.7	8.5	0.4	13.1						
Yellow	4.0	4.0	4.0	4.0	4.0	4.0						
Red	0.0	0.0	0.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	12.5	17.1	16.9	21.5	11.4	44.3	11.7	44.6
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	8.0	10.8	12.7	11.6	7.7		6.9	
Green Extension Time (g_e), s	0.5	2.2	0.3	2.3	0.1	0.0	1.5	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	0.95		0.92	
Max Out Probability	0.00	0.00	0.00	0.00	0.00		0.98	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	240	373	163	220	315	189	117	872	170	101	1273	106
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1757	1809	1610	1810	1809	1610	1810	1809	1610	1810	1809	1610
Queue Service Time (g_s), s	6.0	8.8	8.7	10.7	6.9	9.6	5.7	15.8	5.9	4.9	26.8	3.5
Cycle Queue Clearance Time (g_c), s	6.0	8.8	8.7	10.7	6.9	9.6	5.7	15.8	5.9	4.9	26.8	3.5
Green Ratio (*g/C*)	0.09	0.15	0.15	0.14	0.19	0.19	0.08	0.45	0.45	0.09	0.45	0.45
Capacity (*c*), veh/h	331	526	234	259	703	313	149	1621	721	155	1632	726
Volume-to-Capacity Ratio (*X*)	0.725	0.709	0.696	0.849	0.448	0.604	0.784	0.538	0.236	0.652	0.780	0.146
Back of Queue (*Q*), ft/ln (95 th percentile)	114.4	170.7	151.2	208.1	131.3	149.2	116.5	259.9	92.1	97.4	412.7	56.7
Back of Queue (*Q*), veh/ln (95 th percentile)	4.6	6.8	6.0	8.3	5.3	6.0	4.7	10.4	3.7	3.9	16.5	2.3
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	39.6	36.6	36.6	37.6	32.0	3.6	40.5	18.1	7.2	39.8	20.9	14.5
Incremental Delay (d_2), s/veh	1.1	0.7	1.4	3.0	0.2	0.7	3.4	1.3	0.8	1.8	3.8	0.4
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	40.8	37.3	38.0	40.6	32.2	4.3	43.9	19.4	7.9	41.7	24.7	14.9
Level of Service (LOS)	D	D	D	D	C	A	D	B	A	D	C	B
Approach Delay, s/veh / LOS	38.5	D		27.5	C		20.2	C		25.1	C	
Intersection Delay, s/veh / LOS	26.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.45	B	2.46	B	2.56	C
Bicycle LOS Score / LOS	1.13	A	1.08	A	1.44	A	1.71	B

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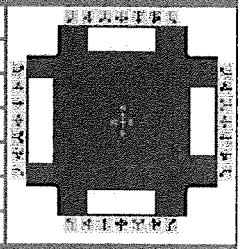
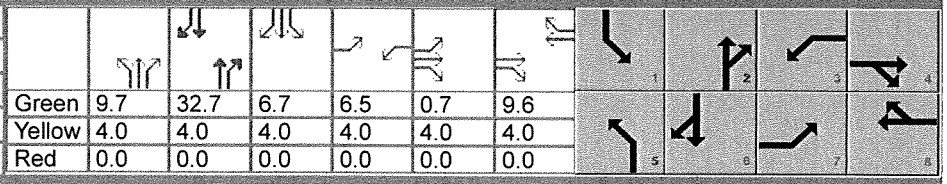
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Aug 29, 2018	Area Type	Other
Jurisdiction	City of Agoura Hills	Time Period	Existing - PM	PHF	1.00
Urban Street	Kanan Rd. / T.O Blvd.	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Intersection #3	File Name	03PM - Existing.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	342	174	136	103	151	119	159	1196	101	91	763	128

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	9.7	32.7	6.7	6.5	0.7	9.6	
Yellow	4.0	4.0	4.0	4.0	4.0	4.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	15.2	18.3	10.5	13.6	13.7	50.5	10.7	47.4
Change Period, (*Y+R c*), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	0.0	3.1	0.0
Queue Clearance Time (*g s*), s	10.5	9.0	7.0	8.4	9.7		6.4	
Green Extension Time (*g e*), s	0.7	1.2	0.0	1.2	0.2	0.0	1.1	0.0
Phase Call Probability	1.00	1.00	0.92	1.00	0.98		0.90	
Max Out Probability	0.00	0.00	0.77	0.00	0.00		0.82	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	342	174	136	103	151	119	159	1196	101	91	763	128
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1757	1809	1610	1810	1809	1610	1810	1809	1610	1810	1809	1610
Queue Service Time (*g s*), s	8.5	3.8	7.0	5.0	3.5	6.4	7.7	21.5	2.9	4.4	12.4	4.0
Cycle Queue Clearance Time (*g c*), s	8.5	3.8	7.0	5.0	3.5	6.4	7.7	21.5	2.9	4.4	12.4	4.0
Green Ratio (*g/C*)	0.12	0.16	0.16	0.07	0.11	0.11	0.11	0.52	0.52	0.07	0.48	0.48
Capacity (*c*), veh/h	439	574	256	131	386	172	196	1868	831	135	1746	777
Volume-to-Capacity Ratio (*X*)	0.779	0.303	0.532	0.784	0.392	0.694	0.812	0.640	0.121	0.675	0.437	0.165
Back of Queue (*Q*), ft/ln (95 th percentile)	161.1	73.3	120.2	103.9	67.9	107.1	156.2	324.5	43.6	88.9	211	64.3
Back of Queue (*Q*), veh/ln (95 th percentile)	6.4	2.9	4.8	4.2	2.7	4.3	6.2	13.0	1.7	3.6	8.4	2.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (*d 1*), s/veh	38.2	33.5	34.8	41.0	37.5	3.5	39.2	15.7	2.6	40.6	15.3	13.1
Incremental Delay (*d 2*), s/veh	1.2	0.1	0.6	3.8	0.2	1.9	3.1	1.7	0.3	2.2	0.8	0.5
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	39.3	33.6	35.4	44.9	37.7	5.3	42.3	17.4	2.9	42.8	16.1	13.5
Level of Service (LOS)	D	C	D	D	D	A	D	B	A	D	B	B
Approach Delay, s/veh / LOS	37.0	D		29.4	C		19.1	B		18.2	B	
Intersection Delay, s/veh / LOS	23.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.45	B	2.46	B	2.55	C
Bicycle LOS Score / LOS	1.03	A	0.80	A	1.69	B	1.30	A

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HCS7 Two-Way Stop-Control Report

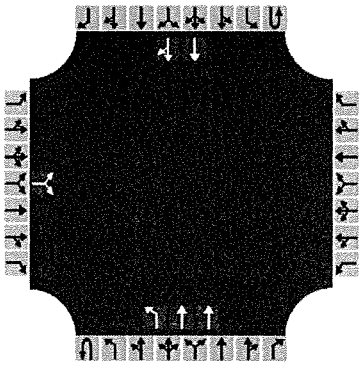
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	7/18/2018
Analysis Year	2018
Time Analyzed	Existing + Project - AM
Intersection Orientation	North-South
Project Description	Twin Oaks - Starbucks

Site Information

Intersection	Intersection #1
Jurisdiction	City of Agoura Hills
East/West Street	Twin Oaks North Driveway
North/South Street	Kanan Road
Peak Hour Factor	1.00
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	2	0	0	0	2	0
Configuration			LR							L	T				T	TR
Volume, V (veh/h)		4		28					8	37	1238				1433	62
Percent Heavy Vehicles (%)		0		0					0	0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								5						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9					6.4	4.1						
Critical Headway (sec)		6.80		6.90					6.40	4.10						
Base Follow-Up Headway (sec)		3.5		3.3					2.5	2.2						
Follow-Up Headway (sec)		3.50		3.30					2.50	2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			32							45						
Capacity, c (veh/h)			319							334						
v/c Ratio			0.10							0.13						
95% Queue Length, Q_{95} (veh)			0.3							0.5						
Control Delay (s/veh)			17.5							17.5						
Level of Service, LOS			C							C						
Approach Delay (s/veh)		17.5								0.6						
Approach LOS		C														

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HCS7 Two-Way Stop-Control Report

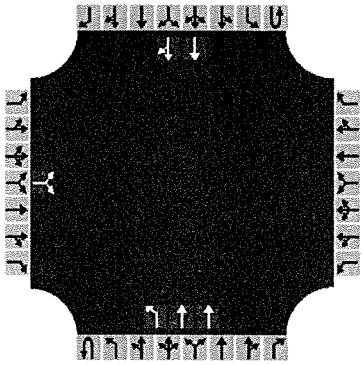
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	7/18/2018
Analysis Year	2018
Time Analyzed	Existing + Project - PM
Intersection Orientation	North-South
Project Description	Twin Oaks - Starbucks

Site Information

Intersection	Intersection #1
Jurisdiction	City of Agoura Hills
East/West Street	Twin Oaks North Driveway
North/South Street	Kanan Road
Peak Hour Factor	1.00
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	2	0	0	0	2	0
Configuration			LR							L	T				T	TR
Volume, V (veh/h)		27		27					7	38	1548				874	15
Percent Heavy Vehicles (%)		0		0					0	0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								5						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9					6.4	4.1						
Critical Headway (sec)		6.80		6.90					6.40	4.10						
Base Follow-Up Headway (sec)		3.5		3.3					2.5	2.2						
Follow-Up Headway (sec)		3.50		3.30					2.50	2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			54							45						
Capacity, c (veh/h)			399							664						
v/c Ratio			0.14							0.07						
95% Queue Length, Q_{95} (veh)			0.5							0.2						
Control Delay (s/veh)			15.4							10.8						
Level of Service, LOS			C							B						
Approach Delay (s/veh)		15.4								0.3						
Approach LOS		C														

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HCS7 Two-Way Stop-Control Report

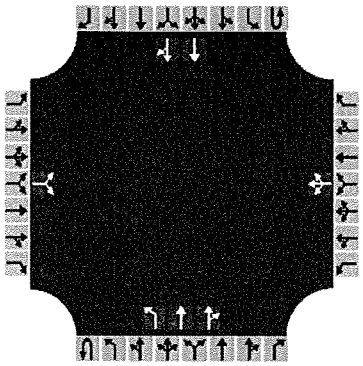
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	7/18/2018
Analysis Year	2018
Time Analyzed	Existing + Project - AM
Intersection Orientation	North-South
Project Description	Twin Oaks - Starbucks

Site Information

Intersection	Intersection #2
Jurisdiction	City of Agoura Hills
East/West Street	Twin Oaks South Driveway
North/South Street	Kanan Road
Peak Hour Factor	1.00
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	2	0	0	0	2	0
Configuration			LR				LTR			L	T	TR			T	TR
Volume, V (veh/h)		4		79		0	1	20		60	1235	11			1398	34
Percent Heavy Vehicles (%)		0		0		0	0	0		0						
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								6						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9		7.5	6.5	6.9		4.1						
Critical Headway (sec)		7.50		6.90		7.50	6.50	6.90		4.10						
Base Follow-Up Headway (sec)		3.5		3.3		3.5	4.0	3.3		2.2						
Follow-Up Headway (sec)		3.50		3.30		3.50	4.00	3.30		2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			83				21			60						
Capacity, c (veh/h)			350				197			481						
v/c Ratio			0.24				0.11			0.12						
95% Queue Length, Q_{95} (veh)			0.9				0.4			0.4						
Control Delay (s/veh)			18.4				25.4			13.6						
Level of Service, LOS			C				D			B						
Approach Delay (s/veh)		18.4				25.4				0.6						
Approach LOS		C				D										

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HCS7 Two-Way Stop-Control Report

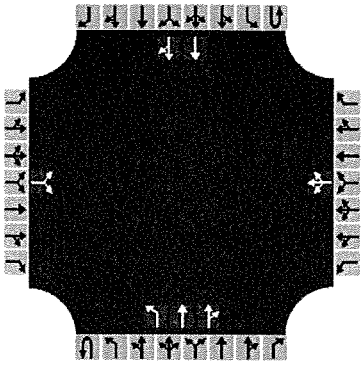
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	7/18/2018
Analysis Year	2018
Time Analyzed	Existing + Project - PM
Intersection Orientation	North-South
Project Description	Twin Oaks - Starbucks

Site Information

Intersection	Intersection #2
Jurisdiction	City of Agoura Hills
East/West Street	Twin Oaks South Driveway
North/South Street	Kanan Road
Peak Hour Factor	1.00
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	2	0	0	0	2	0
Configuration			LR				LTR			L	T	TR			T	TR
Volume, V (veh/h)		21		84		2	0	11	1	129	1560	13			843	56
Percent Heavy Vehicles (%)		0		0		0	0	0	0	0						
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								6						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9		7.5	6.5	6.9	6.4	4.1						
Critical Headway (sec)		7.50		6.90		7.50	6.50	6.90	6.40	4.10						
Base Follow-Up Headway (sec)		3.5		3.3		3.5	4.0	3.3	2.5	2.2						
Follow-Up Headway (sec)		3.50		3.30		3.50	4.00	3.30	2.50	2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			105				13			130						
Capacity, c (veh/h)			408				208			757						
v/c Ratio			0.26				0.06			0.17						
95% Queue Length, Q_{95} (veh)			1.0				0.2			0.6						
Control Delay (s/veh)			16.8				23.5			10.7						
Level of Service, LOS			C				C			B						
Approach Delay (s/veh)		16.8				23.5				0.8						
Approach LOS		C				C										

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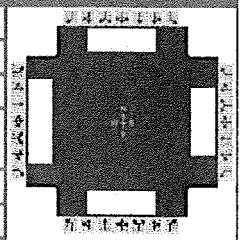
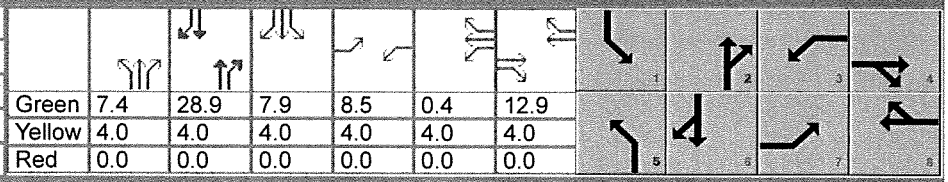
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Aug 29, 2018	Area Type	Other
Jurisdiction	City of Agoura Hills	Time Period	Existing with Project - AM	PHF	1.00
Urban Street	Kanan Rd. / T.O Blvd.	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Intersection #3	File Name	03AM - Existing with Project.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	242	373	163	220	315	190	117	879	170	105	1280	108

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	7.4	28.9	7.9	8.5	0.4	12.9	
Yellow	4.0	4.0	4.0	4.0	4.0	4.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	12.5	16.9	16.9	21.3	11.4	44.3	11.9	44.8
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	8.0	10.9	12.7	11.7	7.7		7.1	
Green Extension Time (g_e), s	0.5	2.1	0.3	2.2	0.1	0.0	1.4	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	0.95		0.93	
Max Out Probability	0.00	0.03	0.00	0.01	0.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	242	373	163	220	315	190	117	879	170	105	1280	108
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1757	1809	1610	1810	1809	1610	1810	1809	1610	1810	1809	1610
Queue Service Time (g_s), s	6.0	8.9	8.7	10.7	6.9	9.7	5.7	16.0	5.9	5.1	26.9	3.5
Cycle Queue Clearance Time (g_c), s	6.0	8.9	8.7	10.7	6.9	9.7	5.7	16.0	5.9	5.1	26.9	3.5
Green Ratio (*g/C*)	0.09	0.14	0.14	0.14	0.19	0.19	0.08	0.45	0.45	0.09	0.45	0.45
Capacity (*c*), veh/h	333	520	231	259	696	310	149	1619	721	159	1639	730
Volume-to-Capacity Ratio (*X*)	0.728	0.717	0.704	0.849	0.453	0.614	0.787	0.543	0.236	0.662	0.781	0.148
Back of Queue (*Q*), ft/ln (95 th percentile)	115.1	171.1	151.7	208.1	131.5	150.6	116.7	263.3	92.4	103	414	57.6
Back of Queue (*Q*), veh/ln (95 th percentile)	4.6	6.8	6.1	8.3	5.3	6.0	4.7	10.5	3.7	4.1	16.6	2.3
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	39.6	36.8	36.7	37.6	32.2	3.6	40.5	18.1	7.2	39.8	20.8	14.4
Incremental Delay (d_2), s/veh	1.1	0.7	1.5	3.0	0.2	0.7	3.5	1.3	0.8	2.6	3.8	0.4
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	40.8	37.5	38.2	40.6	32.3	4.4	44.0	19.4	7.9	42.4	24.6	14.9
Level of Service (LOS)	D	D	D	D	C	A	D	B	A	D	C	B
Approach Delay, s/veh / LOS	38.7	D		27.5	C		20.2	C		25.1	C	
Intersection Delay, s/veh / LOS	26.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.45	B	2.46	B	2.56	C
Bicycle LOS Score / LOS	1.13	A	1.09	A	1.45	A	1.72	B

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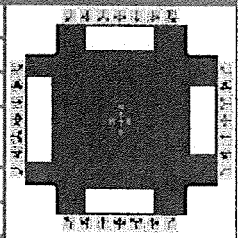
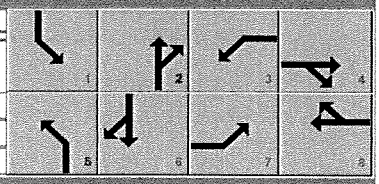
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Aug 29, 2018	Area Type	Other
Jurisdiction	City of Agoura Hills	Time Period	Existing with Project - PM	PHF	1.00
Urban Street	Kanan Rd. / T.O Blvd.	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Intersection #3	File Name	03PM - Existing with Project.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	344	174	136	103	151	120	159	1203	101	94	770	130

Signal Information					EB			WB			NB			SB		
Cycle, s	90.0	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	9.7	32.7		6.9	6.5	0.7	9.5					
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0		4.0	4.0	4.0	4.0					
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0		0.0	0.0	0.0	0.0					



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	15.2	18.2	10.5	13.5	13.7	50.4	10.9	47.5
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	10.5	9.0	7.0	8.5	9.7		6.6	
Green Extension Time (g_e), s	0.7	1.1	0.0	1.1	0.1	0.0	1.0	0.0
Phase Call Probability	1.00	1.00	0.92	1.00	0.98		0.90	
Max Out Probability	0.00	0.00	0.25	0.01	0.02		0.86	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	344	174	136	103	151	120	159	1203	101	94	770	130
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1757	1809	1610	1810	1809	1610	1810	1809	1610	1810	1809	1610
Queue Service Time (g_s), s	8.5	3.8	7.0	5.0	3.5	6.5	7.7	21.7	2.9	4.6	12.6	4.1
Cycle Queue Clearance Time (g_c), s	8.5	3.8	7.0	5.0	3.5	6.5	7.7	21.7	2.9	4.6	12.6	4.1
Green Ratio (*g/C*)	0.12	0.16	0.16	0.07	0.11	0.11	0.11	0.52	0.52	0.08	0.48	0.48
Capacity (*c*), veh/h	439	572	254	132	383	171	195	1863	829	138	1750	779
Volume-to-Capacity Ratio (*X*)	0.784	0.304	0.534	0.783	0.394	0.703	0.816	0.646	0.122	0.680	0.440	0.167
Back of Queue (*Q*), ft/ln (95 th percentile)	162.3	73.3	120.2	103.9	67.9	108.2	156.6	327.9	43.8	91.9	212.6	65.3
Back of Queue (*Q*), veh/ln (95 th percentile)	6.5	2.9	4.8	4.2	2.7	4.3	6.3	13.1	1.8	3.7	8.5	2.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	38.2	33.5	34.8	41.0	37.5	3.5	39.3	15.9	2.9	40.5	15.2	13.0
Incremental Delay (d_2), s/veh	1.2	0.1	0.6	3.8	0.2	2.0	3.2	1.7	0.3	2.2	0.8	0.5
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	39.4	33.6	35.5	44.8	37.8	5.4	42.5	17.6	3.2	42.7	16.0	13.5
Level of Service (LOS)	D	C	D	D	D	A	D	B	A	D	B	B
Approach Delay, s/veh / LOS	37.0	D		29.3	C		19.3	B		18.2	B	
Intersection Delay, s/veh / LOS	23.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.45	B	2.46	B	2.55	C
Bicycle LOS Score / LOS	1.03	A	0.80	A	1.69	B	1.31	A

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HCS7 Two-Way Stop-Control Report

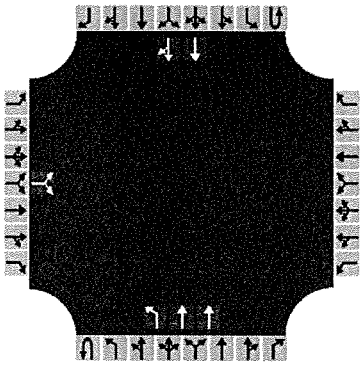
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	7/18/2018
Analysis Year	2019
Time Analyzed	Near Term - AM
Intersection Orientation	North-South
Project Description	Twin Oaks - Starbucks

Site Information

Intersection	Intersection #1
Jurisdiction	City of Agoura Hills
East/West Street	Twin Oaks North Driveway
North/South Street	Kanan Road
Peak Hour Factor	1.00
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	2	0	0	0	2	0
Configuration			LR							L	T				T	TR
Volume, V (veh/h)		3		21					8	34	1243				1443	57
Percent Heavy Vehicles (%)		0		0					0	0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								5						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9					6.4	4.1						
Critical Headway (sec)		6.80		6.90					6.40	4.10						
Base Follow-Up Headway (sec)		3.5		3.3					2.5	2.2						
Follow-Up Headway (sec)		3.50		3.30					2.50	2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			24							42						
Capacity, c (veh/h)			317							329						
v/c Ratio			0.08							0.13						
95% Queue Length, Q_{95} (veh)			0.2							0.4						
Control Delay (s/veh)			17.3							17.6						
Level of Service, LOS			C							C						
Approach Delay (s/veh)		17.3								0.6						
Approach LOS		C														

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HCS7 Two-Way Stop-Control Report

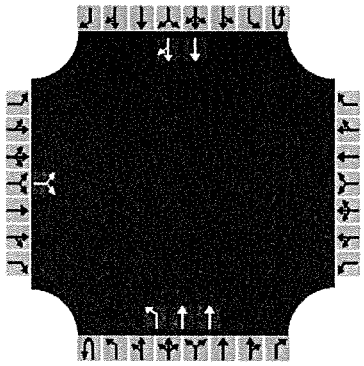
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	7/18/2018
Analysis Year	2019
Time Analyzed	Near Term - PM
Intersection Orientation	North-South
Project Description	Twin Oaks - Starbucks

Site Information

Intersection	Intersection #1
Jurisdiction	City of Agoura Hills
East/West Street	Twin Oaks North Driveway
North/South Street	Kanan Road
Peak Hour Factor	1.00
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	2	0	0	0	2	0
Configuration			LR							L	T				T	TR
Volume, V (veh/h)		25		21					7	35	1557				880	10
Percent Heavy Vehicles (%)		0		0					0	0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								5						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9					6.4	4.1						
Critical Headway (sec)		6.80		6.90					6.40	4.10						
Base Follow-Up Headway (sec)		3.5		3.3					2.5	2.2						
Follow-Up Headway (sec)		3.50		3.30					2.50	2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			46							42						
Capacity, c (veh/h)			389							659						
v/c Ratio			0.12							0.06						
95% Queue Length, Q_{95} (veh)			0.4							0.2						
Control Delay (s/veh)			15.5							10.8						
Level of Service, LOS			C							B						
Approach Delay (s/veh)		15.5								0.3						
Approach LOS		C														

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HCS7 Two-Way Stop-Control Report

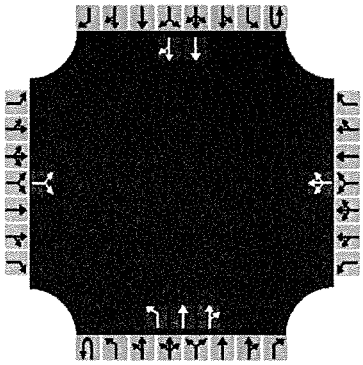
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	7/18/2018
Analysis Year	2019
Time Analyzed	Near Term - AM
Intersection Orientation	North-South
Project Description	Twin Oaks - Starbucks

Site Information

Intersection	Intersection #2
Jurisdiction	City of Agoura Hills
East/West Street	Twin Oaks South Driveway
North/South Street	Kanan Road
Peak Hour Factor	1.00
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	2	0	0	0	2	0
Configuration			LR				LTR			L	T	TR			T	TR
Volume, V (veh/h)		4		73		0	1	20		53	1237	11			1401	33
Percent Heavy Vehicles (%)		0		0		0	0	0		0						
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								6						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9		7.5	6.5	6.9		4.1						
Critical Headway (sec)		7.50		6.90		7.50	6.50	6.90		4.10						
Base Follow-Up Headway (sec)		3.5		3.3		3.5	4.0	3.3		2.2						
Follow-Up Headway (sec)		3.50		3.30		3.50	4.00	3.30		2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			77				21			53						
Capacity, c (veh/h)			348				201			480						
v/c Ratio			0.22				0.10			0.11						
95% Queue Length, Q_{95} (veh)			0.8				0.3			0.4						
Control Delay (s/veh)			18.3				25.0			13.4						
Level of Service, LOS			C				D			B						
Approach Delay (s/veh)		18.3				25.0				0.5						
Approach LOS		C				D										

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HCS7 Two-Way Stop-Control Report

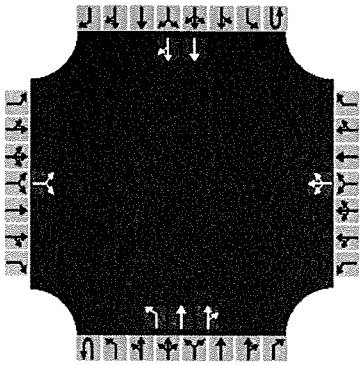
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	7/18/2018
Analysis Year	2019
Time Analyzed	Near Term - PM
Intersection Orientation	North-South
Project Description	Twin Oaks - Starbucks

Site Information

Intersection	Intersection #2
Jurisdiction	City of Agoura Hills
East/West Street	Twin Oaks South Driveway
North/South Street	Kanan Road
Peak Hour Factor	1.00
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	2	0	0	0	2	0
Configuration			LR				LTR			L	T	TR			T	TR
Volume, V (veh/h)		20		79		2	0	11	1	123	1567	13			843	55
Percent Heavy Vehicles (%)		0		0		0	0	0	0	0						
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								6						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9		7.5	6.5	6.9	6.4	4.1						
Critical Headway (sec)		7.50		6.90		7.50	6.50	6.90	6.40	4.10						
Base Follow-Up Headway (sec)		3.5		3.3		3.5	4.0	3.3	2.5	2.2						
Follow-Up Headway (sec)		3.50		3.30		3.50	4.00	3.30	2.50	2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			99				13			124						
Capacity, c (veh/h)			411				209			757						
v/c Ratio			0.24				0.06			0.16						
95% Queue Length, Q_{95} (veh)			0.9				0.2			0.6						
Control Delay (s/veh)			16.5				23.4			10.7						
Level of Service, LOS			C				C			B						
Approach Delay (s/veh)		16.5				23.4				0.8						
Approach LOS		C				C										

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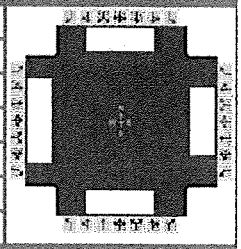
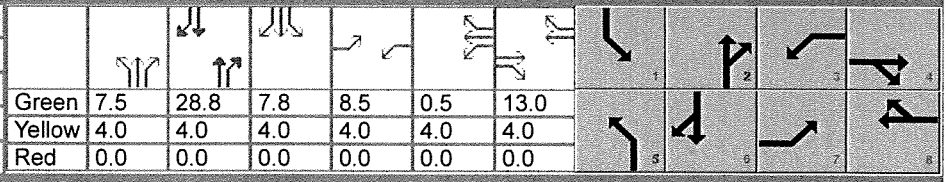
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Aug 29, 2018	Area Type	Other
Jurisdiction	City of Agoura Hills	Time Period	Near Term - AM	PHF	1.00
Urban Street	Kanan Rd. / T.O Blvd.	Analysis Year	2019	Analysis Period	1> 7:00
Intersection	Intersection #3	File Name	03AM - Near Term.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	242	376	164	222	317	190	118	879	171	102	1283	107

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	7.5	28.8		7.8	8.5	0.5	13.0					
Yellow	4.0	4.0		4.0	4.0	4.0	4.0					
Red	0.0	0.0		0.0	0.0	0.0	0.0					

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	12.5	17.0	17.0	21.5	11.5	44.2	11.8	44.5
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	8.0	10.9	12.8	11.7	7.8		6.9	
Green Extension Time (g_e), s	0.5	2.1	0.3	2.2	0.1	0.0	1.5	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	0.95		0.92	
Max Out Probability	0.00	0.03	0.00	0.01	0.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	242	376	164	222	317	190	118	879	171	102	1283	107
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1757	1809	1610	1810	1809	1610	1810	1809	1610	1810	1809	1610
Queue Service Time (g_s), s	6.0	8.9	8.7	10.8	7.0	9.7	5.8	16.0	5.9	4.9	27.2	3.5
Cycle Queue Clearance Time (g_c), s	6.0	8.9	8.7	10.8	7.0	9.7	5.8	16.0	5.9	4.9	27.2	3.5
Green Ratio (*g/C*)	0.09	0.14	0.14	0.14	0.19	0.19	0.08	0.45	0.45	0.09	0.45	0.45
Capacity (*c*), veh/h	333	523	233	261	703	313	150	1617	720	156	1630	725
Volume-to-Capacity Ratio (*X*)	0.728	0.719	0.704	0.850	0.451	0.607	0.788	0.544	0.238	0.654	0.787	0.148
Back of Queue (*Q*), ft/ln (95 th percentile)	115.1	172.4	152.4	209.6	132.3	150.3	117.8	263.3	93.1	98.7	418.5	57.4
Back of Queue (*Q*), veh/ln (95 th percentile)	4.6	6.9	6.1	8.4	5.3	6.0	4.7	10.5	3.7	3.9	16.7	2.3
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	39.6	36.7	36.7	37.6	32.0	3.6	40.5	18.2	7.2	39.8	21.1	14.6
Incremental Delay (d_2), s/veh	1.1	0.7	1.5	3.0	0.2	0.7	3.5	1.3	0.8	2.0	3.9	0.4
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	40.8	37.4	38.1	40.6	32.2	4.3	44.0	19.5	8.0	41.8	25.0	15.0
Level of Service (LOS)	D	D	D	D	C	A	D	B	A	D	C	B
Approach Delay, s/veh / LOS	38.6	D		27.5	C		20.3	C		25.4	C	
Intersection Delay, s/veh / LOS	26.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.45	B	2.46	B	2.56	C
Bicycle LOS Score / LOS	1.13	A	1.09	A	1.45	A	1.72	B

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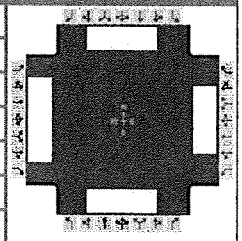
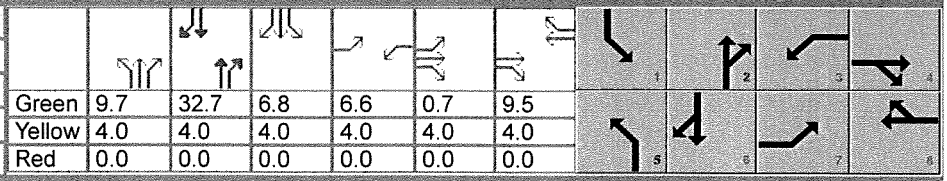
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Aug 29, 2018	Area Type	Other
Jurisdiction	City of Agoura Hills	Time Period	Near Term - PM	PHF	1.00
Urban Street	Kanan Rd. / T.O Blvd.	Analysis Year	2019	Analysis Period	1> 7:00
Intersection	Intersection #3	File Name	03PM - Near Term.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	345	175	137	104	152	120	160	1205	102	92	769	129

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	9.7	32.7	6.8	6.6	0.7	9.5	
Yellow	4.0	4.0	4.0	4.0	4.0	4.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	15.3	18.2	10.6	13.5	13.7	50.4	10.8	47.5
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	10.6	9.0	7.1	8.5	9.8		6.5	
Green Extension Time (g_e), s	0.7	1.2	0.0	1.1	0.1	0.0	1.1	0.0
Phase Call Probability	1.00	1.00	0.93	1.00	0.98		0.90	
Max Out Probability	0.00	0.00	0.24	0.01	0.02		0.83	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	345	175	137	104	152	120	160	1205	102	92	769	129
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1757	1809	1610	1810	1809	1610	1810	1809	1610	1810	1809	1610
Queue Service Time (g_s), s	8.6	3.9	7.0	5.1	3.5	6.5	7.8	21.8	2.9	4.5	12.6	4.1
Cycle Queue Clearance Time (g_c), s	8.6	3.9	7.0	5.1	3.5	6.5	7.8	21.8	2.9	4.5	12.6	4.1
Green Ratio (*g/C*)	0.13	0.16	0.16	0.07	0.11	0.11	0.11	0.52	0.52	0.08	0.48	0.48
Capacity (*c*), veh/h	440	571	254	133	384	171	196	1866	831	136	1747	777
Volume-to-Capacity Ratio (*X*)	0.785	0.307	0.539	0.783	0.396	0.703	0.817	0.646	0.123	0.676	0.440	0.166
Back of Queue (*Q*), ft/ln (95 th percentile)	162.8	73.6	121.3	104.6	68.5	108.2	157.4	327.8	44.1	90.1	212.4	64.9
Back of Queue (*Q*), veh/ln (95 th percentile)	6.5	2.9	4.9	4.2	2.7	4.3	6.3	13.1	1.8	3.6	8.5	2.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	38.2	33.5	34.9	41.0	37.5	3.5	39.3	15.8	2.9	40.5	15.3	13.1
Incremental Delay (d_2), s/veh	1.2	0.1	0.7	3.8	0.2	2.0	3.2	1.7	0.3	2.2	0.8	0.5
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	39.4	33.7	35.6	44.8	37.8	5.4	42.4	17.6	3.2	42.7	16.1	13.5
Level of Service (LOS)	D	C	D	D	D	A	D	B	A	D	B	B
Approach Delay, s/veh / LOS	37.1	D		29.4	C		19.3	B		18.2	B	
Intersection Delay, s/veh / LOS	23.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.45	B	2.46	B	2.55	C
Bicycle LOS Score / LOS	1.03	A	0.80	A	1.70	B	1.30	A

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HCS7 Two-Way Stop-Control Report

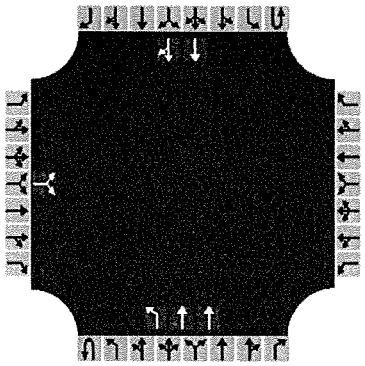
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	7/18/2018
Analysis Year	2019
Time Analyzed	Near Term + Project - AM
Intersection Orientation	North-South
Project Description	Twin Oaks - Starbucks

Site Information

Intersection	Intersection #1
Jurisdiction	City of Agoura Hills
East/West Street	Twin Oaks North Driveway
North/South Street	Kanan Road
Peak Hour Factor	1.00
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	2	0	0	0	2	0
Configuration			LR							L	T				T	TR
Volume, V (veh/h)		4		28					8	37	1247				1444	62
Percent Heavy Vehicles (%)		0		0					0	0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								5						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9					6.4	4.1						
Critical Headway (sec)		6.80		6.90					6.40	4.10						
Base Follow-Up Headway (sec)		3.5		3.3					2.5	2.2						
Follow-Up Headway (sec)		3.50		3.30					2.50	2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			32							45						
Capacity, c (veh/h)			316							330						
v/c Ratio			0.10							0.14						
95% Queue Length, Q_{95} (veh)			0.3							0.5						
Control Delay (s/veh)			17.7							17.6						
Level of Service, LOS			C							C						
Approach Delay (s/veh)		17.7								0.6						
Approach LOS		C														

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HCS7 Two-Way Stop-Control Report

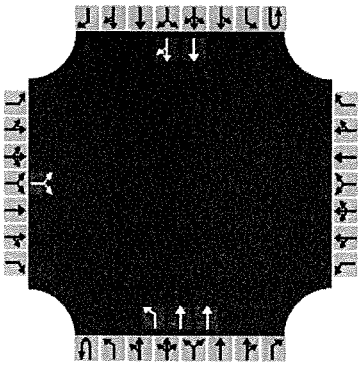
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	7/18/2018
Analysis Year	2019
Time Analyzed	Near Term + Project - PM
Intersection Orientation	North-South
Project Description	Twin Oaks - Starbucks

Site Information

Intersection	Intersection #1
Jurisdiction	City of Agoura Hills
East/West Street	Twin Oaks North Driveway
North/South Street	Kanan Road
Peak Hour Factor	1.00
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	2	0	0	0	2	0
Configuration			LR							L	T				T	TR
Volume, V (veh/h)		27		27					7	38	1560				881	15
Percent Heavy Vehicles (%)		0		0					0	0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								5						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9					6.4	4.1						
Critical Headway (sec)		6.80		6.90					6.40	4.10						
Base Follow-Up Headway (sec)		3.5		3.3					2.5	2.2						
Follow-Up Headway (sec)		3.50		3.30					2.50	2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			54							45						
Capacity, c (veh/h)			396							659						
v/c Ratio			0.14							0.07						
95% Queue Length, Q_{95} (veh)			0.5							0.2						
Control Delay (s/veh)			15.5							10.9						
Level of Service, LOS			C							B						
Approach Delay (s/veh)		15.5								0.3						
Approach LOS		C														

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HCS7 Two-Way Stop-Control Report

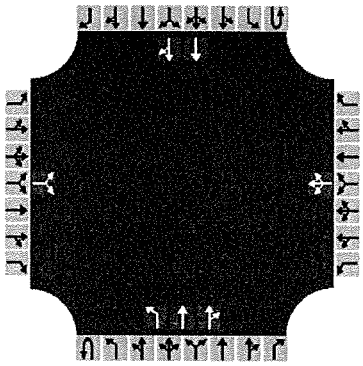
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	7/18/2018
Analysis Year	2019
Time Analyzed	Near Term + Project - AM
Intersection Orientation	North-South
Project Description	Twin Oaks - Starbucks

Site Information

Intersection	Intersection #2
Jurisdiction	City of Agoura Hills
East/West Street	Twin Oaks South Driveway
North/South Street	Kanan Road
Peak Hour Factor	1.00
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	2	0	0	0	2	0
Configuration			LR				LTR			L	T	TR			T	TR
Volume, V (veh/h)		4		80		0	1	20		60	1244	11			1408	33
Percent Heavy Vehicles (%)		0		0		0	0	0		0						
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								6						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9		7.5	6.5	6.9		4.1						
Critical Headway (sec)		7.50		6.90		7.50	6.50	6.90		4.10						
Base Follow-Up Headway (sec)		3.5		3.3		3.5	4.0	3.3		2.2						
Follow-Up Headway (sec)		3.50		3.30		3.50	4.00	3.30		2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			84				21			60						
Capacity, c (veh/h)			348				193			477						
v/c Ratio			0.24				0.11			0.13						
95% Queue Length, Q_{95} (veh)			0.9				0.4			0.4						
Control Delay (s/veh)			18.6				25.9			13.6						
Level of Service, LOS			C				D			B						
Approach Delay (s/veh)		18.6				25.9				0.6						
Approach LOS		C				D										

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HCS7 Two-Way Stop-Control Report

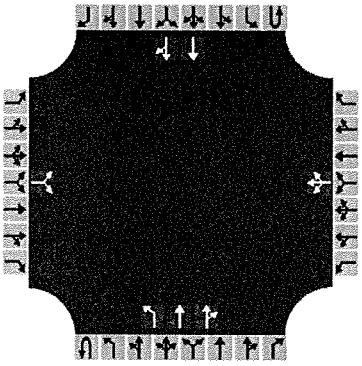
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	7/18/2018
Analysis Year	2019
Time Analyzed	Near Term + Project - PM
Intersection Orientation	North-South
Project Description	Twin Oaks - Starbucks

Site Information

Intersection	Intersection #2
Jurisdiction	City of Agoura Hills
East/West Street	Twin Oaks South Driveway
North/South Street	Kanan Road
Peak Hour Factor	1.00
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	2	0	0	0	2	0
Configuration			LR				LTR			L	T	TR			T	TR
Volume, V (veh/h)		21		85		2	0	11	1	130	1572	13			849	56
Percent Heavy Vehicles (%)		0		0		0	0	0	0	0						
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								6						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9		7.5	6.5	6.9	6.4	4.1						
Critical Headway (sec)		7.50		6.90		7.50	6.50	6.90	6.40	4.10						
Base Follow-Up Headway (sec)		3.5		3.3		3.5	4.0	3.3	2.5	2.2						
Follow-Up Headway (sec)		3.50		3.30		3.50	4.00	3.30	2.50	2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			106				13			131						
Capacity, c (veh/h)			406				205			753						
v/c Ratio			0.26				0.06			0.17						
95% Queue Length, Q_{95} (veh)			1.0				0.2			0.6						
Control Delay (s/veh)			17.0				23.8			10.8						
Level of Service, LOS			C				C			B						
Approach Delay (s/veh)		17.0				23.8				0.8						
Approach LOS		C				C										

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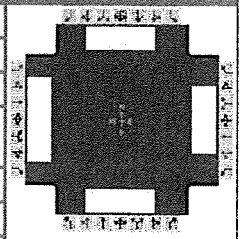
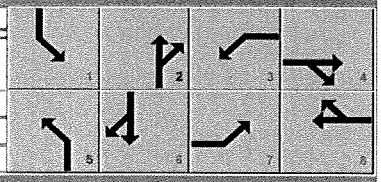
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Aug 29, 2018	Area Type	Other
Jurisdiction	City of Agoura Hills	Time Period	Near Term with Project - AM	PHF	1.00
Urban Street	Kanan Rd. / T.O Blvd.	Analysis Year	2019	Analysis Period	1> 7:00
Intersection	Intersection #3	File Name	03AM - Near Term with Project.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	244	376	164	222	317	191	118	886	171	106	1290	109

Signal Information					EB			WB			NB			SB		
Cycle, s	90.0	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	7.4	28.6		7.9	8.6		0.4	13.0				
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0		4.0	4.0		4.0	4.0				
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0		0.0	0.0		0.0	0.0				



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	12.6	17.0	17.0	21.4	11.4	44.1	11.9	44.6
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	8.1	10.9	12.8	11.8	7.8		7.1	
Green Extension Time (g_e), s	0.5	2.1	0.3	2.2	0.1	0.0	1.4	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	0.95		0.93	
Max Out Probability	0.00	0.04	0.00	0.01	0.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	244	376	164	222	317	191	118	886	171	106	1290	109
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1757	1809	1610	1810	1809	1610	1810	1809	1610	1810	1809	1610
Queue Service Time (g_s), s	6.1	8.9	8.7	10.8	7.0	9.8	5.8	16.2	5.9	5.1	27.4	3.6
Cycle Queue Clearance Time (g_c), s	6.1	8.9	8.7	10.8	7.0	9.8	5.8	16.2	5.9	5.1	27.4	3.6
Green Ratio (*g/C*)	0.10	0.14	0.14	0.14	0.19	0.19	0.08	0.45	0.45	0.09	0.45	0.45
Capacity (*c*), veh/h	335	523	233	261	700	312	150	1610	717	160	1630	726
Volume-to-Capacity Ratio (*X*)	0.729	0.719	0.704	0.850	0.453	0.613	0.788	0.550	0.239	0.664	0.791	0.150
Back of Queue (*Q*), ft/ln (95 th percentile)	116	172.4	152.4	209.7	132.3	151.1	117.8	266.4	93.6	104.3	420.9	58.6
Back of Queue (*Q*), veh/ln (95 th percentile)	4.6	6.9	6.1	8.4	5.3	6.0	4.7	10.7	3.7	4.2	16.8	2.3
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	39.6	36.7	36.7	37.6	32.1	3.6	40.5	18.3	7.2	39.7	21.1	14.6
Incremental Delay (d_2), s/veh	1.1	0.7	1.5	3.0	0.2	0.7	3.5	1.4	0.8	2.8	4.0	0.4
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	40.7	37.5	38.1	40.6	32.2	4.4	44.0	19.7	8.0	42.6	25.1	15.0
Level of Service (LOS)	D	D	D	D	C	A	D	B	A	D	C	B
Approach Delay, s/veh / LOS	38.6	D		27.5	C		20.4	C		25.6	C	
Intersection Delay, s/veh / LOS	26.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.45	B	2.46	B	2.56	C
Bicycle LOS Score / LOS	1.13	A	1.09	A	1.46	A	1.73	B

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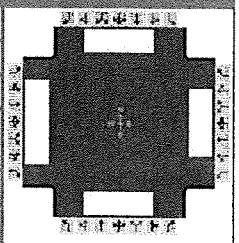
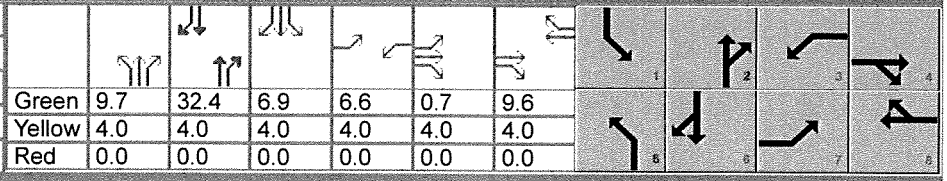
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Aug 29, 2018	Area Type	Other
Jurisdiction	City of Agoura Hills	Time Period	Near Term with Project - PM	PHF	1.00
Urban Street	Kanan Rd. / T.O Blvd.	Analysis Year	2019	Analysis Period	1> 7:00
Intersection	Intersection #3	File Name	03PM - Near Term with Project.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	347	175	137	104	152	121	160	1212	102	95	776	131

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



	EB			WB			NB			SB		
Green	9.7		32.4	6.9		6.6	0.7		9.6			
Yellow	4.0		4.0	4.0		4.0	4.0		4.0			
Red	0.0		0.0	0.0		0.0	0.0		0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	15.3	18.3	10.6	13.6	13.7	50.2	10.9	47.4
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	10.6	9.0	7.1	8.5	9.8		6.6	
Green Extension Time (g_e), s	0.7	1.2	0.0	1.1	0.1	0.0	1.0	0.0
Phase Call Probability	1.00	1.00	0.93	1.00	0.98		0.91	
Max Out Probability	0.00	0.00	0.29	0.01	0.02		0.88	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	347	175	137	104	152	121	160	1212	102	95	776	131
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1757	1809	1610	1810	1809	1610	1810	1809	1610	1810	1809	1610
Queue Service Time (g_s), s	8.6	3.8	7.0	5.1	3.5	6.5	7.8	22.1	3.0	4.6	12.7	4.1
Cycle Queue Clearance Time (g_c), s	8.6	3.8	7.0	5.1	3.5	6.5	7.8	22.1	3.0	4.6	12.7	4.1
Green Ratio (*g/C*)	0.13	0.16	0.16	0.07	0.11	0.11	0.11	0.51	0.51	0.08	0.48	0.48
Capacity (*c*), veh/h	442	575	256	133	386	172	196	1855	826	139	1743	776
Volume-to-Capacity Ratio (*X*)	0.786	0.304	0.535	0.783	0.394	0.705	0.817	0.653	0.124	0.681	0.445	0.169
Back of Queue (*Q*), ft/ln (95 th percentile)	163.5	73.5	121.1	104.6	68.5	109.1	157.4	332.4	44.5	92.7	215.1	66.1
Back of Queue (*Q*), veh/ln (95 th percentile)	6.5	2.9	4.8	4.2	2.7	4.4	6.3	13.3	1.8	3.7	8.6	2.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	38.2	33.5	34.8	41.0	37.5	3.5	39.3	16.1	2.9	40.5	15.4	13.2
Incremental Delay (d_2), s/veh	1.2	0.1	0.6	3.8	0.2	2.0	3.2	1.8	0.3	2.2	0.8	0.5
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	39.3	33.6	35.4	44.8	37.7	5.4	42.4	17.9	3.2	42.6	16.2	13.6
Level of Service (LOS)	D	C	D	D	D	A	D	B	A	D	B	B
Approach Delay, s/veh / LOS	37.0	D		29.3	C		19.5	B		18.4	B	
Intersection Delay, s/veh / LOS	23.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.45	B	2.46	B	2.55	C
Bicycle LOS Score / LOS	1.03	A	0.80	A	1.70	B	1.31	A

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ATTACHMENT I

Seven Elk Ranch Design Inc.

5328 Alhama Drive • Woodland Hills, California 91364
100 Brady Lane • Hamilton, Montana 59840 (mailing address)

Phone (805) 577-8432
kaygreeley@earthlink.net

May 15, 2019

Mr. Ray Kayacan
Regency Centers
915 Wilshire Boulevard, Suite 2200
Los Angeles, California 90017

Subject: Oak Tree Report for Starbucks at Twin Oaks Center
Response to Comments from City of Agoura Hills

Dear Mr. Kayacan:

As requested, I prepared this letter to respond to comments pertaining to the Oak Tree Report we prepared for the proposed Starbucks at Twin Oaks Center in Agoura Hills. My comments are as follows:

Oak Tree Report Review Comment #1: In accordance with the City of Agoura Hills Municipal Code (AHMC), protected oak trees shall be mitigated at 4:1 with the same species as the species that was removed using at least one 36-inch box oak tree, two 24-inch box oak trees, and a fourth oak tree from a minimum 15-gallon container. The proposed sizes of mitigation trees shall be indicated on the project site plan. In addition, the cumulative caliper of the removed trees shall be replaced at 1:1; therefore, additional oak trees may need to be planted to meet the 1:1 caliper requirement. Refer to the average oak tree container size provided in AHMC Section 9657, V., C.1, 4.2 (page 1057) to determine the quantity of oak tree caliper that will be mitigated.

Response: Based on the three trees proposed for removal, the replacement requirements to meet the above statement are the following:

- Three 36-inch box-size valley oak (*Quercus lobata*)
- Six 24-inch box-size valley oak (*Q. lobata*)
- At least three more valley oak (*Q. lobata*), minimum 15-gallon size
- A total caliper of 48 inches
- The 10 replacement trees shown on the conceptual landscape plan includes ten valley oaks, including seven 24-inch box-size and three 36-inch box-size trees. These trees provide a replacement of 23 inches of caliper. There are also two additional valley oaks included on the plan, one of which is a 15-gallon container-size; the other one does not yet have a size specified.
- Regency also proposes to plant two mature "signature" coast live oaks near the corner at Kanan Road and Thousand Oaks Boulevard. These trees each have a caliper of 13 inches, would bring the number of inches planted to at least 49 inches, surpassing the requirement of 48 caliper inches.

Oak Tree Report Review Comment #2: All mitigation trees shall be derived from a local nursery and be certified as disease- and pest-free. All mitigation tree shall be in excellent-to-good health

and shall be inspected by a certified arborist or the City's Oak Tree Consultant within 72-hours prior to planting.

Response: Trees were located in Fillmore, California, which is local to Agoura Hills. Regency can therefore accept this requirement as presented.

Oak Tree Report Review Comment #3: The project site plan shall show the actual canopies drawn to scale for all existing oak trees, rather than symmetrical canopies that are not drawn to scale that misrepresent the existing driplines and Tree Protective Zones (TPZ) of the oak trees.

Response: The tree canopies were measured at eight compass headings in accordance with the requirements of the Guidelines. That data is provided on the Field Evaluation Forms contained in Appendix B of the Oak Tree Report, staring on page 13. The canopies were then drawn to scale on the "Starbucks Landscape Concept Plan", included in Appendix D of the Oak Tree Report, starting on page 29 of the Oak Tree Report to accurately depict the oak tree canopies as measured during the field inventory. Based on this explanation, the City's comment is unclear and further explanation is therefore requested if the City still feels correction is required.

Oak Tree Report Review Comment #4: The OTR shall indicate the percentage of encroachment within the TPZ of trees that will be encroached by the project.

Response: The encroachments are calculated as follows:

- Tree #2486 - The Oak Tree Report includes a detailed evaluation of the percentage of encroachment for each impact to this tree, starting on page 4. The total encroachment is 52.5%, though 26.0% of this amount is in the same footprint of the existing building that is proposed to be removed and rebuilt. New encroachments for the walkway and patio would impact 26.5% of the protected zone.
- Tree #2487 – The existing parking lot planter will be enlarged. The existing encroachment of the curb and asphalt surrounding tree will be reduced from 84.8% to 27.1%. The larger planter will provide added space for fine root hair growth, which may eventually improve the health of the tree.
- Tree #2488 – The existing parking lot planter will be enlarged. The existing encroachment of the curb and asphalt surrounding tree will be reduced from 87.4% to 74.8%. The larger planter will provide added space for fine root hair growth, which may eventually improve the health of the tree.

Oak Tree Report Review Comment #5: It appears that tree #2485 would merely be encroached by the project and that removal of the tree would not be necessary. The applicant shall consider use of permeable concrete underneath trees #2485 and 2486, or a raised patio for the seating area. Tree wells shall be installed around these trees for irrigation and aeration purposes.

Response: The design cannot utilize a raised patio due to grades required to keep the site compliant with ADA standards. Permeable concrete was considered as an option for the patio material during our initial review of the project. However, a geotextile-lined reservoir must be constructed below the paving to accept the water that impacts the pavement. Excavation to create that reservoir and to place the base material required to support the pavement would

eliminate roots in that area. This would require more disturbance to the root zone than a traditional concrete pour.

Oak Tree Report Review Comment #6: Effort shall be made to design the parking spaces around oak tree #2487 and 2488, since these trees have acclimated to the disturbed condition of the existing parking lot and to preserve these trees, rather than planting replacement (mitigation trees).

Response: The parking spaces were redesigned, and these two trees will be preserved in place. Technically these two trees will be encroached on, but the encroachment activity will be to reconfigure the asphalt surrounding each tree, resulting in a larger planter area for each tree, as shown on the most current site plan.

Oak Tree Report Review Comment #7: All mitigation oak trees shall be planted to account for their long-term survival and must be planted in a suitable location. For example, mitigation oak trees planted underneath the power line along Kanan Road should consist of multi-trunk specimens that tend to be shorter, and the proposed mitigation oak tree located next to the drive-thru order sign must be suitable for that location.

Response: We do not support the specification of multi-trunk oak trees. Oak trees naturally grow with a single trunk. Nurseries plant multiple small trees in the same container to create multi-trunk oaks, which ultimately have a weak structure and are thus less sustainable. Rather than planting multi-trunk trees, structural pruning techniques can be utilized as the trees grow to control their height and direct growth away from the power lines.

Oak Tree Report Review Comment #8: All mitigation oak trees shall be monitored by a certified arborist for a 5-year period following installation, and annual monitoring reports shall be prepared by a certified arborist and submitted to the City annual for a 5-year period. Any mitigation tree that dies or severely declines during the 5-year monitoring period shall be replaced and the replacement tree shall also be monitored for a 5-year period.

Response: Regency can accept this condition as written.

Oak Tree Report Review Comment #9: All landscaping within the TPZ of an oak tree shall consist of compatible species with similar watering requirements.

Response: This recommendation is included on page 7 of the Oak Tree Report. Regency can agree to comply with the requirement.

Planning Comment #5: Removing oak trees is always a source of concern for the community, please consider justifying the community benefits that outweigh the loss of the trees. We suggest you submit a written statement to the Planning Department.

Response: Regency originally requested the removal of five oak trees, which was reduced to three trees based on City comments.

Regency feels that upgrades to the Twin Oaks Center will provide long-term benefits to the community through the ability to attract and maintain more attractive tenants in an area of the City that is otherwise under-served. The addition of a drive-through Starbucks will reduce short-

term parking in the area by allowing customers to pass through quickly. The addition of outdoor seating will create a "third place" where people can gather, whether it be for social or business reasons. The outdoor space will be highly functional and attractive in that regard.

Since the center is called "Twin Oaks", Regency would like to re-identify that name by planting two large box-size trees at the corner of Kanan Road and Thousand Oaks Boulevard, at significant cost. The planting of large trees will provide for immediate re-branding of the center, as opposed to the planting of small box-size trees that would take years to become as visible. The two oak trees recently planted in this location will be relocated within the site, at locations designated for mitigation trees within the proposed planting plan.

The removal of the three trees requested will result in the ability to install a drive-through and provide for efficient parking and circulation through the site. The planting of mitigation trees will offset the loss of the three trees in a fashion that will provide the most benefits for the next 20 years.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Kay J. Greeley

KAY J. GREELEY
President

Civil Engineer 37396
Landscape Architect 4035
ISA Board Certified Master Arborist WE-1140B
ISA Tree Risk Assessment Qualified
Member, American Society of Consulting Arborists

Oak Tree Report

Project:

Starbucks

Twin Oaks Shopping Center

5727 Kanan Road

Agoura Hills, California 91301

Prepared for:

Attention: Ray Kaycan

Regency Centers

915 Wilshire Boulevard, Suite 2200

Los Angeles, California 90017

(213) 553-2270

Prepared by:

Kay J. Greeley

Registered Landscape Architect 4035

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Date:

March 26, 2018

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By

TABLE OF CONTENTS

Oak Tree Report

Starbucks
Twin Oaks Shopping Center
5727 Kanan Road
Agoura Hills, California 91301

INTRODUCTION

This oak tree report was prepared at the request of Ray Kayacan, Manager - Investments for Regency Centers. Regency Centers proposes to demolish and then reconstruct the Starbucks located in the northeasterly corner of the Twin Oaks Shopping Center, located at 5727 Kanan Road, Agoura Hills, California. The design concept includes a larger building with a drive-through lane. It will require reconfiguration of the parking lot adjacent to Starbucks for the new drive-through lane. The project area is bounded by Kanan Road on the east, the center's northernmost entrance drive on the south and the center north/south drive aisle on the west.

The project area contains a total of six oak trees protected by the City of Agoura Hills Municipal Code. Five of the six protected oak trees would be removed to construct the project as proposed. Encroachment within the protected zone of the remaining protected oak tree would be required to complete the project as proposed.

The purpose of this Oak Tree Report is as follows:

- Document the findings related to a field inventory and ground-level visual analysis of six protected oak trees, including photographs and a tree location map.
- Analyze potential direct impacts to the subject trees that might result due to the proposed construction.
- Present recommendations with respect to protection of the protected trees during construction activities, as well as any treatments that would serve to improve or promote their health.

This report was prepared in accordance with Article IX, Chapter 6, Division 7 and Appendix A of the City of Agoura Hills Municipal Code - Agoura Hills Oak Tree Preservation Guidelines. The city lies in the County of Los Angeles in the Conejo Valley, the beauty of which is greatly enhanced by the presence of large numbers of majestic oak trees.

It is the policy of the City to require the preservation of all healthy oak trees unless compelling reasons justify the removal, cutting, pruning and/or encroachment into the protected zone of an oak tree. Unless allowed by an Oak Tree Permit, no person shall cut, remove, encroach into the protected zone or relocate any tree of the genus *Quercus* that is at least two inches in diameter when measured at a point three and one-half feet above natural grade.

Oak trees within the City of Agoura Hills are recognized as possessing significant historical, aesthetic and environmental value to the citizens of Agoura Hills, present and future. It is the intent of the Oak Tree Permit to preserve and maintain healthy oak trees in the development process.

SCOPE OF WORK

The scope of work included a full ground field observation of the cultural and physical conditions of a total of six protected oak trees. Pertinent data was recorded by associate Certified Arborist Ann Burroughs on the Field Evaluation Forms contained in Appendix B. Data was collected on December 18, 2017. Photographs for reference and record purposes are included in Appendix C.

A Tree Location Map is included in Appendix D. This map was prepared using a plan provided electronically by Van Atta and Associates, Inc. Landscape Architecture and Planning. All information provided by the preparer is certified to be true and correct as of the date of the field observations.

Four valley oak (*Quercus lobata*) trees and two coast live oak (*Q. agrifolia*) trees were tagged on their northerly sides using round aluminum tags numbered '2483' through '2488', sequentially.

The species, trunk diameter, canopy diameter, height, health and vigor of the protected oak trees are summarized in the table included in Appendix A.

TREE CHARACTERISTICS AND SITE CONDITIONS

As shown on the Oak Tree Location Map contained in Appendix D, the coast live oak trees are located in two parking lot landscape planters south of Starbucks. The valley oak trees are located within a large planting area adjacent to the westerly side of Starbucks

The species distribution for the trees in the study area is as follows:

Species	Common Name	Quantity
Quercus agrifolia	coast live oak	2
Quercus lobata	valley oak	4
Total		**6**

The site is located in the northeasterly corner of the Twin Oaks shopping center. The terrain is relatively level. The four valley oak trees appear to have grown in place. It is likely that tree #2486, a senescent valley oak, was present at the time the site was initially developed. Given the relatively smaller size of the other three valley oaks, they may have sprouted in the planter at some time after the shopping center was developed. The two coast live oaks were planted as part of the parking lot landscape program.

Detailed information with respect to diameter, number of trunks, height, canopy dimensions, form, crown class, age class, and pruning history is provided for the each of the subject trees on the Field Evaluation Forms in Appendix B.

TREE HEALTH AND DEFECTS

Specific tree health details are documented for each tree on the Field Evaluation Forms in Appendix B. Issues noted include foliage color, density and leaf size, and presence of epicormic growth or twig dieback. Assessments of relative annual shoot growth, wound wood development and vigor are also provided. Specific tree defects were evaluated and noted as to their location (root crown, trunk, scaffolds, or branches), as well as the severity of the defect. Any recommended treatments are also noted on the individual Field Evaluation Forms.

The oak trees range in condition from good to average. Particular note must be made of the condition of the senescent valley oak. The age, structure and signs of hollow limbs and decay should be considered of great concern and this tree should be considered as potentially hazardous. Regular inspection, including a risk assessment as often as four times per year, is recommended to monitor the ongoing decline of this tree. Even with such monitoring, catastrophic branch failures or whole tree failure are possible at any time.

The species, trunk diameter(s) and health and appearance ratings for each tagged tree are summarized in the table included in Appendix A.

IMPACT ANALYSIS AND SPECIFIC RECOMMENDATIONS

As noted, Regency Centers proposes to demolish and reconstruct the Starbucks and reconfigure the adjacent parking spaces and drive aisles. One protected oak trees would experience encroachment and five protected oak trees would require removal to construct the project as proposed. These impacts are summarized as follows:

Species	Encroachment	Removal
Quercus agrifolia	0	2
Quercus lobata	1	3
Total	**1**	**5**

The existing, approximately 1,570 square foot Starbucks building would be demolished. The conceptual design provides for a new, approximately 2,240 square foot Starbucks building that would be constructed in approximately the same location. The new building would include a drive-through window with a drive-through lane that wraps around the easterly and northerly sides of the building. The trash enclosure area currently located within the planter containing the valley oaks would be relocated.

Reconfiguration of the adjacent parking lot would include closure of the entry to parking adjacent to Starbucks at the center's northernmost entry drive. Parking spaces in the north/south row near Kanan Road would be eliminated to accommodate the drive-

through lane. Three new spaces would be added at the easterly end of the row of spaces adjacent to the center's entry drive. An additional space would be added at the easterly end of each row in the center of this area. The northernmost row of parking spaces would be relocated closer to the building by eliminating the planter and will increase the number of parking spaces by six in this area.

In addition, as shown in the report prepared by this office dated January 4, 2018, renovation of the existing asphalt pavement will occur within the parking lot and drive aisles.

The proposed building and adjacent hardscape design are presently conceptual in nature as to their precise layout, materials and construction details. The soils investigation for the project is not yet complete and the actual amount of over-excavation for the proposed building is unknown. Regency has informed us they hope to limit this to three feet beyond the building footprint and three feet in depth; this is the distance used in the calculations for the encroachments below. The calculations may require revision once the soils report is complete.

Once the soils report is complete and the proposed design of the building footprint and drive-through lane are confirmed, we recommend an exploratory trench be excavated at the edges of the limits of excavation. Prior to start of construction documents this office should be contacted to review the final layout and design details to ensure that the large oak tree proposed to remain will not suffer from long-term adverse impacts as a result of the project.

The most recent edition of the International Society of Arboriculture (ISA) Best Management Practices (BMP) for Managing Trees during Construction includes guidelines for determining a Tree Protection Zone (TPZ). The TPZ is based on a tree species' tolerance for construction damage and the relative age of the tree. Taking these two factors into consideration, a TPZ can be established using multiples of a tree's trunk diameter measurement. In addition to analyzing impacts based on the City's Oak Tree Preservation Guidelines we have analyzed them based on the ISA BMP. Valley oak trees are reported to have medium tolerance to construction impacts.

Specific comments with respect to potentially impacted trees are as follows:

Tree #2483 and #2484 – These two mature valley oak trees are located north of the northwesterly corner of Starbucks. The trees are within the footprint of the proposed drive-through lane. The trees would therefore require removal to construct the project as proposed.

Tree #2485 – This mature valley oak tree is located west of the northwesterly corner of Starbucks. It is located within the footprint of the proposed concrete paver patio to the west of Starbucks. Installation of pavers typically requires excavation to a depth of one foot. This would therefore require removal of the tree to construct the project as proposed.

Tree #2486 – This over-mature valley oak tree is located west of Starbucks. Using the ISA BMP, the recommended TPZ for an over-mature valley oak of this size is 65 feet. The tree would experience the following encroachments based on the conceptual design:

Proposed new building:

Encroachment by the new building on its east would amount to just under 26 percent of the tree's protected zone and would occur no closer than 11 feet from the trunk. Half of this encroachment is within the footprint of the existing building where it is highly unlikely any roots would be encountered due to the existing soil density.

As stated previously, once the final desired footprint for the building is determined and the soils report completed, an exploratory trench should be excavated at the limits of proposed construction. Based on the results of the excavation it could be determined whether or not the proposed building could be built, and the tree remain with no long-term adverse impacts.

Concrete boardwalk:

The new concrete boardwalk would encroach within 21 percent of the protected zone and construction would occur within 2.6 feet of the trunk on the north of the tree and within five feet the trunk on the east. Excavation for construction on two sides of the tree at these distances would require removal of the tree to construct the project as proposed. A walkway could be constructed in a manner that would allow the tree to remain, but it will most likely need to have a different configuration than is shown in the conceptual plan. The final configuration of the walkway might have to be adjusted in the field to accommodate the structural root configuration as it is discovered during a field investigation.

Concrete paver patio:

Encroachment by the proposed concrete paver patio north of the tree would amount to 5.5 percent of the tree's protected zone and would occur no closer than 10 feet from the trunk. Excavation the base for this patio should be performed under the direct observation of this office to ensure that structural roots are not damaged during the excavation.

Oak woodland garden:

An oak woodland garden featuring oak woodland riparian plants is proposed. At its closest it would come within approximately 2.5 feet from the tree's trunk. Riparian plants are those originating in wetlands adjacent to streams. Valley oaks evolved in a Mediterranean climate, with hot, dry summers and cool, wet winters. They should not receive summer water which favors some soil pathogens. Summer irrigation is a major cause of oak mortality, creating favorable conditions for oak root fungus (*Armillaria mellea*) and avocado root rot (*Phytophthora cinnamomi*).

We recommend the woodland garden and drip irrigation be kept a minimum of eight to ten feet from the trunk of any oak tree. We also recommend that plants with a lower water requirement be used within the protected zones of the oak.

Demolition of existing features:

Demolition of the existing sidewalks, building and trash enclosure and removal of all concrete within the protected zone of the tree will need to be accomplished with great care with hand tools or a mini-excavator to ensure that roots are not damaged during the excavation.

Trees #2487 and #2488 – These two coast live oak trees are located within the planters at the easterly ends of the two southernmost rows of parking spaces. The trees are within

the footprint of proposed parking spaces. The trees will therefore require removal to construct the project as proposed.

Specific Recommendations for Final Design

1. The proposed building, walkway, drive-through lane and patio between the building and the drive aisle will need be designed to limit direct impacts to the valley oak tree to remain.
2. Once the final desired footprints for the building and drive-through lane have been finalized and the soils report completed, exploratory trenches at the limits of proposed construction should be excavated. The work should be performed with an air-spade or hand tools under the direct observation of this office to ensure that roots are not damaged during the excavation. Based on the results of the excavation it can be determined whether the building and drive-through can be built and the tree remain with no long-term impacts.
3. This office should review the final layout and construction details for the walkway and patio within the protected zone of the valley oak to remain. During construction, the exact configuration will need to be adjusted to accommodate any structural roots encountered that are two inches in diameter and over.
4. Demolition of concrete within the protected zones of the valley oak should performed with hand tools or small equipment under the observation of this office.
5. To protect the trunk of the valley oak tree to remain from accidentally being gouged by tools or materials, the trunk should be wrapped to a height of approximately ten feet with heavy padding such as furniture pads or carpet lengths.

GENERAL RECOMMENDATIONS

The following general recommendations should be followed to establish and maintain a healthy cultural environment for trees. It must be understood that these recommendations apply to trees in general; specific questions should always be referred to the arborist.

WORK WITHIN THE PROTECTED ZONE

The protected zone is an area surrounding a tree, defined within the City of Agoura Hills Oak Tree Ordinance. It includes all area within the dripline of the tree, plus five feet beyond the dripline. This distance must be no less than 15 feet from the trunk. Given the high sensitivity of native oak trees, great care must be taken when work is conducted within the protected zone. Specifically:

Observation -- All work conducted within the protected zone of any tree should be performed within the presence of a qualified arborist. Usually this work will also require a permit from the local government. This will help to ensure that work is performed in a manner that will not harm a tree.

Notice -- Forty-eight hours' notice should be provided to the arborist prior to the planned start of work. This notification must usually be provided to the local government also.

The notice will insure that the project receives the highest possible scheduling priority and avoid delays.

Hand Tools -- All excavation within the protected zone should be accomplished with the use of hand tools only. Except under special circumstances, tractors, backhoes and other vehicles cannot be operated in a manner that will preserve major tree roots, minimize soil compaction, and insure the safety of both the vehicle operator and the tree.

Certification -- All work conducted within the protected zone should be certified by a qualified arborist. For work performed under a permit, this may be a requirement of the local government.

WORK OUTSIDE OF THE PROTECTED ZONE

To protect trees within the vicinity of major construction, trees should be temporarily fenced at the edge of the protected zone prior to the beginning of construction operations on a site. The fence should be constructed of chain link material, a minimum of five feet in height. The project arborist should be contacted to develop a fencing plan, generally required by the City of Agoura Hills. The fence may be removed at the completion of the construction upon approval by the City.

PLANTING WITHIN THE PROTECTED ZONE

Planting within the protected zone of a tree is discouraged. Ideally, the leaf litter from the tree should be allowed to collect beneath the tree, creating a natural mulch and fertilizer. If planting is necessary or the natural leaf litter is removed, the following should be considered:

Irrigation -- No spray-type irrigation systems should be used within the dripline. It is important that sprinkler systems do not throw water against the trunk of any tree. A continuously wet soil condition near the root crown, the area where the tree trunk meets the ground, favors the growth of predatory disease organisms. The two most prominent organisms in Southern California are avocado root rot (*Phytophthora cinnamomi*) and oak root fungus (*Armillaria mellea*). As an absolute minimum, all irrigation should be at least 15 feet from the trunk.

Resistant Varieties -- Avoid plants that are susceptible to either avocado root rot or oak root fungus. Many trees are particularly susceptible to these diseases in developed areas. Avoiding other plants susceptible to these diseases will also help to keep the diseases in a dormant state. Consult publications by the University of California Cooperative Extension for plant lists.

Mulch -- Place a four-inch thick layer of organic mulch throughout the protected zone of each tree. Keep mulch from direct contact with trunks. Aesthetically pleasing options include crushed walnut hulls and shredded bark. These mulches are beneficial when the natural leaf litter is not available, minimizing evaporation and providing weed control.

TREE MAINTENANCE AND PRUNING OPERATIONS

Most trees require very little pruning, apart from periodic dead-wooding. However, if a tree has a major defect, the employment of proper pruning practices may be more desirable than the uncontrolled damage that could otherwise occur. Always consult qualified professionals for advice.

Ornamental or Aesthetic Pruning -- Removal of live tissue for the purpose of altering the appearance of tree is not desirable. Activities such as thinning out, heading up, lion-tailing or other similar practices contribute to the onset of insect and disease attacks.

Dead-wooding -- Removal of dead tissue, regardless of size, may usually be performed without a permit. All pruning should follow standards endorsed by the International Society of Arboriculture.

Other Pruning Operations -- Branches that are considered unsafe due to decay, cavities, cracks, physical imbalance, fire damage, disease, or insects should be referred to a qualified oak tree consultant for inspection, especially if the branches exceed two inches in diameter. A permit is generally required to remove such branches. A brief written report will be prepared by the arborist to provide the basis for the request.

Cavities and Hollows -- Cavities and hollows should be kept free of loose debris. Some contain decayed wood; these should generally be referred to a qualified arborist for treatment. Concrete or other materials should not be used to seal or fill in cavities or hollows. These materials create a haven for diseases and insects over time. Openings may be covered with screening to prevent debris build-up.

Wound Seal -- Pruning wounds should generally not be sealed with any type of compound. Over time, these materials crack and create entry points for disease and insects. A proper pruning cut will heal naturally over a short period of time.

WATERING AND FERTILIZATION

Winter rains should be sufficient to provide the water needed for trees in natural areas. Trees in landscaped areas will usually receive enough water from adjacent plantings. If you suspect that your tree needs supplemental water, contact a qualified arborist for advice.

Watering -- If supplemental water is required, use a water probe, such as a "Ross Root Feeder" to apply the water. Alternatively, a low volume soaker hose could be utilized. Apply the water at various locations, just outside the dripline of the tree. A total of 15 to 20 hours of low volume application should suffice. Repeat this watering cycle every one to two months as needed.

Fertilization -- Fertilizer can be applied along with the water. A total of 0.75 pound of actual nitrogen per inch of trunk diameter per year is a basic rule-of-thumb. However, ask your local certified nurseryman for a specific recommendation and follow the manufacturer's directions carefully. Over-fertilization can be deadly.

Aeration -- Ventilation of the root system can be very beneficial in areas where soil has been compacted. Hand dig holes six inches in diameter to a depth of two feet. Do not cut any roots in excess of one inch in diameter. Dig the holes two feet on center, in concentric circles around the trunk, throughout the dripline. If possible, add holes outside of the dripline. Fill the holes with an organic matter. If leaf litter is not available, a mixture such as 50 percent "Kellogg's Nitrohumus" and fifty- percent nitrolized redwood shavings will be beneficial. This organic matter will be decomposed, producing a year-round source of fertilizer for the oak tree.

DISEASES AND INSECTS

Effective pest control starts with observation by the homeowner. Changes, such as abnormal leaf drop, oozing sap, and discolored or dying leaves indicate that something has changed, and expert inspection is required. Homeowners should be very careful when using pesticides around a tree. Herbicides should never be utilized within one hundred feet of tree, unless applied by a certified pesticide applicator. Misuse of these compounds can lead to the death of beneficial organisms or even to the death of the tree.

GRADE CHANGES

Any change to the grade at the root crown of a tree can have a negative impact. As little as six inches can lead to the death of the tree. Drainage patterns should be maintained to prevent water from flowing and ponding at the base of a tree. If fill soil exists, use a shovel to remove the excess soil. The flare at the root crown should just be visible.

INSPECTION

Trees should be inspected on a periodic basis by a qualified arborist. The inspection basis should be determined by the relative hazard value of the tree. For example, trees surrounding a high-use business should be inspected on a quarterly basis, whereas trees located within a low-use open space might only require bi-annual inspection. It is the responsibility of the property owner to establish and implement an appropriate inspection schedule upon the recommendation provided by the arborist.

WARRANTY

The trees discussed herein were generally reviewed for physical, biological, functional, and aesthetic conditions. This examination was conducted in accordance with presently accepted industry procedures: an at-grade, macro-visual observation only. No extensive microbiological, soil/root excavation, upper crown examination, nor internal tree investigation was conducted and therefore, the reportings herein reflect the overall visual appearance of the trees on the date reviewed. No warranty is implied as to the potential failure, health or demise of any part or the whole of any tree described in this report.

Clients are advised that should physical or biological concerns be evidenced for any specimen within this report, prudent further investigation, detailed analysis or remedial action may be required.

As living organisms, plants continually exhibit growth and response to environmental changes that influence the development, health and vigor of the specimen. These influences may not be externally visible and may be present or develop over various time periods depending on the site conditions.

It is recommended that due to the general nature of plant development and continued environmental and physical influences on vegetation at a specific site, regular monitoring by a qualified arborist is scheduled.

Locations of property lines or exact tree locations, site amenities, structures or easements are assumed to be as illustrated on any enclosed maps. They are a composite of information provided by the client, records of fact and/or on-site field review. No investigation was made to verify these conditions.

This report represents the independent opinion of the preparer and was conducted per the client's scope of request. The report is therefore limited to the extent described herein.

Respectfully submitted,

Kay J. Greeley

Kay J. Greeley

Landscape Architect 4035

Board Certified Master Arborist WE-1140B

APPENDIX A – SUMMARY TABLE

OAK TREE SUMMARY

Tree #	Species	Trunk Diameter (dbh)	Ratings		Impact			Impacts	Comments
			Condition	Appearance	Preserve	Encroach	Remove		
2483	*Quercus lobata*	17	B-	B			X	within footprint of new drive-through aisle	Co-dominant scaffolds, small leaves
2484	*Quercus lobata*	16	B-	B			X	within footprint of new drive-through aisle	Slightly sparse
2485	*Quercus lobata*	15	B-	B			X	new building; drive-through lane; boardwalk; sidewalk and ramp; within footprint of new patio	Slightly sparse, minor twig dieback
2486	*Quercus lobata*	53	C	C		X		new building; boardwalk; patio; oak woodland garden	Poor structure, dieback in upper canopy
2487	*Quercus agrifolia*	11	C	B-			X	within footprint of new parking space	Limbs being hit by vehicles
2488	*Quercus agrifolia*	10	C	B-			X	within footprint of new parking space	Conk just beginning to emerge at root crown indicating root or butt rot
				Total	**0**	**1**	**5**		

APPENDIX B – FIELD EVALUATION FORMS

FIELD EVALUATION FORM

Owner: Regency Twin Oaks Center ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 5727 Kanan Rd Agoura Hills, CA Thomas Guide: Page: ____ Coordinate: ____

Date: 12/18/17 Inspector: AB Date of last inspection: _____ ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 2483 Species: ☐ *Quercus agrifolia* ☒ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 17 Height (feet): 55

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	23B	19G	22	24	24	24	26	22
Clearance to canopy (feet)	40	36	45	37	35	50	53	49

Form: ☒ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☒ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio: _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☒ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☐ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Going decid

Foliage color: ☐ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☒ sparse

Leaf size: ☐ normal ☒ small

Annual shoot growth: ☒ excellent ☒ average ☐ poor

Major pests/diseases: _____

Woundwood development: ☐ excellent ☒ average ☒ poor ☐ none

Vigor class: ☐ excellent ☒ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☐ open space ☐ natural ☐ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☒ lawn ☐ shrub border ☐ wind break

Irrigation: ☐ none ☒ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	(10-25%)	25-50%	50-75%	75-100%
% dripline w/fill soil:	(0%)	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	(0%)	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☒ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____ ° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☒ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☒ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2 Tree Number 2483

TARGET

Use Under Tree: ☒ building ☐ parking ☒ traffic ☒ pedestrian ☒ recreation ☒ landscape ☒ hardscape ☐ small features ☐ utility lines **Can target be moved?** Y N **Can use be restricted?** Y N

Occupancy: ☐ occasional use ☐ intermittent use ☐ frequent use ☒ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: **Suspect root rot?** Y (N) **Mushroom/conk present?** Y (N) **ID:** _____

Exposed roots: ☐ severe ☐ moderate ☐ low **Undermined:** ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk **Root area affected:** _____% **Buttress wounded?** Y N **When:** _____

Restricted root area: ☐ severe ☐ moderate ☐ low **Potential for root failure:** ☐ severe ☐ moderate ☐ low

LEAN: 11 degrees from vertical ☒ natural ☐ unnatural ☒ self-corrected **Soil heaving?** Y (N)

Decay in plane of lean? Y N **Roots broken?** Y N **Soil cracking?** Y N **Lean severity:** ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks			M	
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ **Cable/Brace:** _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor **Remove tree?** Y (N) **Replace tree?** Y (N) **Move target:?** Y (N) **Other:** _____ ☐ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate **Notification:** ☐ owner ☐ manager ☐ governing agency **Date:** _____

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Regency Twin Oaks Center ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 5727 Kanan Rd, Agoura Hills, CA Thomas Guide: Page: ___ Coordinate: ___

Date: 12/18/17 Inspector: AB Date of last inspection: _____ ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 2484 Species: ☐ *Quercus agrifolia* ☒ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 16 Height (feet): 38

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	17	15	10	13	22	22	26	23
Clearance to canopy (feet)	7	10	10	8	14	16	18	20

Form: ☐ generally symmetric ☒ minor asymmetry ☒ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☒ co-dominant ☐ intermediate ☒ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio: _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☒ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☐ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH Quercus decid

Foliage color: ☐ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☐ normal ☒ sparse

Leaf size: ☒ normal ☒ small

Annual shoot growth: ☐ excellent ☐ average ☒ poor

Major pests/diseases: _____

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☒ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☐ open space ☐ natural ☐ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☐ shrub border ☐ wind break duff

Irrigation: ☐ none ☒ adequate ☐ inadequate ☒ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	(25-50%)	50-75%	75-100%
% dripline w/fill soil:	(0%)	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	(0%)	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☒ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____ ° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☒ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☒ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2 Tree Number 2484

TARGET

Use Under Tree: ☐ building ☐ parking ☒ traffic ☒ pedestrian ☐ recreation ☐ landscape ☐ hardscape ☐ small features ☐ utility lines Can target be moved? Y (N) Can use be restricted? Y (N)

Occupancy: ☐ occasional use ☐ intermittent use ☐ frequent use ☒ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☒ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: 11 degrees from vertical ☒ natural ☐ unnatural ☒ self-corrected Soil heaving? Y (N)

Decay in plane of lean? Y (N) Roots broken? Y (N) Soil cracking? Y (N) Lean severity: ☐ severe ☐ moderate ☒ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep		L		
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls			L-M	L-M
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☐ no action required at this time

Effect on adjacent trees: ☐ none ☐ evaluate Notification: ☐ owner ☐ manager ☐ governing agency Date: _____

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Reagan Twin Oaks Center ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 5727 Kanan Rd Agoura Hills, CA Thomas Guide: Page: ___ Coordinate: ___

Date: 12/18/17 Inspector: AB Date of last inspection: _____ ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 2485 Species: ☐ *Quercus agrifolia* ☒ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 15 Height (feet): 45

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	16	15	18	12	19	18	14	22
Clearance to canopy (feet)	38	40	40	18	40	42	40	42

Form: ☒ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☒ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio: _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☒ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☐ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☐ normal ☐ chlorotic ☐ necrotic Going deciid

Epicormics? Y (N) Twig Dieback? Y (N) Mino

Foliage density: ☒ normal ☒ sparse

Leaf size: ☒ normal ☒ small

Annual shoot growth: ☐ excellent ☒ average ☐ poor

Major pests/diseases: _____

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☒ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☐ open space ☐ natural ☐ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☐ shrub border ☐ wind break duff

Irrigation: ☒ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	(10-25%)	25-50%	50-75%	75-100%
% dripline w/fill soil:	(0%)	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	(0%)	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☒ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☒ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____ ° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☒ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☒ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2 Tree Number 2485

TARGET

Use Under Tree: ☒ building ☐ parking ☒ traffic ☒ pedestrian ☐ recreation ☐ landscape ☐ hardscape ☒ small features ☐ utility lines Can target be moved? Y (N) Can use be restricted? Y (N)

Occupancy: ☐ occasional use ☐ intermittent use ☒ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☒ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: Poss when center of is developed feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☒ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: _____ degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y N Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
(Bow, sweep)		L		
Co-dominants, forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls		M-S		
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☐ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☐ owner ☐ manager ☐ governing agency Date: _____

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Regency Twin Oaks Center ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 5727 Kanan Rd. Agoura Hills, CA. Thomas Guide: Page: ____ Coordinate: ____

Date: 12/18/17 Inspector: AB Date of last inspection: _____ ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 2486 Species: ☐ *Quercus agrifolia* ☒ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 53@35' Height (feet): 50

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	12	25	24	39	44	41	24	37
Clearance to canopy (feet)	15	32	32	20	16	6	18	20

Form: ☐ generally symmetric ☐ minor asymmetry ☒ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☒ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☐ mature ☒ over-mature/senescent Live crown ratio: _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☒ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☐ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Going decid.

Foliage color: ☐ normal ☐ chlorotic ☒ necrotic

Epicormics? Y (N) Twig Dieback? (Y) N

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☒ poor

Major pests/diseases: _____

Woundwood development: ☐ excellent ☒ average ☒ poor ☐ none

Vigor class: ☐ excellent ☒ average ☒ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☐ open space ☐ natural ☐ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☐ shrub border ☐ wind break duff

Irrigation: ☐ none ☒ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	(25-50%)	50-75%	75-100%
% dripline w/fill soil:	(0%)	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	(0%)	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☒ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____ ° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☒ adjacent vegetation ☐ other _____

Exposure to wind: ☐ single tree ☐ below canopy ☒ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2 Tree Number 2486

TARGET

Use Under Tree: ☒ building ☒ parking ☒ traffic ☒ pedestrian ☒ recreation ☒ landscape ☒ hardscape ☒ small features ☐ utility lines Can target be moved? Y (N) Can use be restricted? Y (N)

Occupancy: ☐ occasional use ☐ intermittent use ☐ frequent use ☒ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☒ moderate ☐ low Potential for root failure: ☐ severe ☒ moderate ☐ low

LEAN: 38 degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y (N)

Decay in plane of lean? (Y) N Roots broken? Y (N) Soil cracking? Y (N) Lean severity: ☐ severe ☒ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
(Bow) sweep		S		
Co-dominants, forks				
Multiple attachments		S		
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity			M	
Conks/mushrooms				
Bleeding/sap flow				
(Loose)/cracked bark		L	L	
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other/Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☐ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☐ owner ☐ manager ☐ governing agency Date: _____

ADDITIONAL COMMENTS

FIELD EVALUATION FORM

Owner: Reagean Twin Oaks Center ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 5727 Kanan Rd, Agoura Hills, CA Thomas Guide: Page: ____ Coordinate: ____

Date: 12/18/17 Inspector: AB Date of last inspection: _____ ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 2487 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 11 Height (feet): 23

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	10	11	11	9	10	10	10	13
Clearance to canopy (feet)	7	8	15	13	12	7	9	10

Form: ☒ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☒ dominant ☐ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio: _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☒ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☐ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? (Y) N

Foliage density: ☐ normal ☒ sparse

Leaf size: ☐ normal ☒ small

Annual shoot growth: ☐ excellent ☒ average ☒ poor

Major pests/diseases: _____

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☒ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☐ open space ☐ natural ☐ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☐ none ☒ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	(50-75%)	75-100%
% dripline w/fill soil:	(0%)	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	(0%)	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☒ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☒ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____ ° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☒ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☒ single tree ☐ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2 Tree Number 2487

TARGET

Use Under Tree: ☐ building ☒ parking ☒ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☒ small features ☐ utility lines Can target be moved? Y (N) Can use be restricted? Y (N)

Occupancy: ☐ occasional use ☐ intermittent use ☒ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (N) Mushroom/conk present? Y (N) ID: _____

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☒ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: 12 degrees from vertical ☐ natural ☐ unnatural ☐ self-corrected Soil heaving? Y N

Decay in plane of lean? Y (N) Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments			S	
Included bark			L	
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other/Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☐ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☐ owner ☐ manager ☐ governing agency Date: _____

ADDITIONAL COMMENTS

Being hit by vehicles @ E canopy

FIELD EVALUATION FORM

Owner: Regency Twin Oaks Center ☐ public ☒ private ☐ unknown ☐ other: _____

Site/Address: 5727 Kanan Rd. Agoura Hills, CA Thomas Guide: Page: ____ Coordinate: ____

Date: 12/18/17 Inspector: AB Date of last inspection: _____ ☐ not previously inspected

TREE CHARACTERISTICS

Tree #: 2188 Species: ☒ *Quercus agrifolia* ☐ *Quercus lobata* ☐ other _____

# of trunks: 1 dbH (inches): 10 Height (feet): 21

Compass direction	N	NE	E	SE	S	SW	W	NW
Dripline (feet)	13	12	11	7	10	11	15	14
Clearance to canopy (feet)	8	10	15	12	10	18	7	12

Form: ☒ generally symmetric ☒ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☒ dominant ☐ co-dominant ☐ intermediate ☐ suppressed

Age class: ☐ young ☐ semi-mature ☒ mature ☐ over-mature/senescent Live crown ratio: _____%

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☒ flush cuts ☐ cabled/braced ☐ none ☒ multiple pruning events Approximate dates: _____ ☐ unknown

Special Value: ☐ specimen ☐ heritage/historic ☒ wildlife ☐ unusual ☐ street tree ☐ screen ☒ shade ☒ indigenous ☒ protected by government agency

TREE HEALTH

Foliage color: ☒ normal ☐ chlorotic ☐ necrotic

Epicormics? Y (N) Twig Dieback? Y (N)

Foliage density: ☒ normal ☐ sparse

Leaf size: ☒ normal ☐ small

Annual shoot growth: ☐ excellent ☒ average ☒ poor

Major pests/diseases: _____

Woundwood development: ☐ excellent ☒ average ☐ poor ☐ none

Vigor class: ☐ excellent ☒ average ☐ fair ☐ poor

Growth obstructions: ☐ stakes ☐ wire/ties ☐ signs ☐ cables ☐ curb/pavement ☐ guards ☐ other _____

SITE CONDITIONS

Site character: ☐ residence ☒ commercial ☐ industrial ☐ park ☐ open space ☐ natural ☐ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☒ shrub border ☐ wind break

Irrigation: ☐ none ☒ adequate ☐ inadequate ☐ excessive ☐ trunk wetted Pavement lifted? Y N

Recent site disturbance? Y (N) ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved:	0%	10-25%	25-50%	(50-75%)	75-100%
% dripline w/fill soil:	0%	10-25%	25-50%	50-75%	75-100%
% dripline grade lowered:	0%	10-25%	25-50%	50-75%	75-100%

Soil problems: ☐ drainage ☐ shallow ☒ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☒ small volume ☐ disease center ☐ history of failure ☐ clay ☐ expansive ☐ slope _____ ° aspect _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent vegetation ☐ other _____

Exposure to wind: ☒ single tree ☐ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms: ☒ never ☐ seldom ☐ regularly

FIELD EVALUATION FORM - PAGE 2 OF 2 Tree Number 2488

TARGET

Use Under Tree: ☐ building ☒ parking ☒ traffic ☐ pedestrian ☐ recreation ☒ landscape ☐ hardscape ☒ small features ☐ utility lines Can target be moved? Y (N) Can use be restricted? Y (N)

Occupancy: ☐ occasional use ☐ intermittent use ☒ frequent use ☐ constant use

TREE DEFECTS - Noted as applicable

ROOT DEFECTS: Suspect root rot? Y (Poss) ☒ Mushroom/conk present? (Y) ☒ ID: Just beginning to emerge - poss Varnish conk

Exposed roots: ☐ severe ☐ moderate ☐ low Undermined: ☐ severe ☐ moderate ☐ low

Root pruned: _____ feet from trunk Root area affected: _____% Buttress wounded? Y N When: _____

Restricted root area: ☐ severe ☐ moderate ☐ low Potential for root failure: ☐ severe ☐ moderate ☐ low

LEAN: 10 degrees from vertical ☒ natural ☐ unnatural ☒ self-corrected Soil heaving? Y (N)

Decay in plane of lean? Y (N) Roots broken? Y N Soil cracking? Y N Lean severity: ☐ severe ☐ moderate ☐ low

Compounding factors: _____

CROWN DEFECTS: S = severe, M = moderate, L = low

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Co-dominants, forks				
Multiple attachments		M		
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
(Conks)/mushrooms	L			
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants	M			
Cankers/galls/burls				
Previous failure				

RECOMMENDED TREATMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Pest control: _____ Cable/Brace: _____

Other Activities: ☐ aerate soil ☐ remove fill soil ☐ remove irrigation/planting ☐ remove wire, etc. ☐ fertilize/water

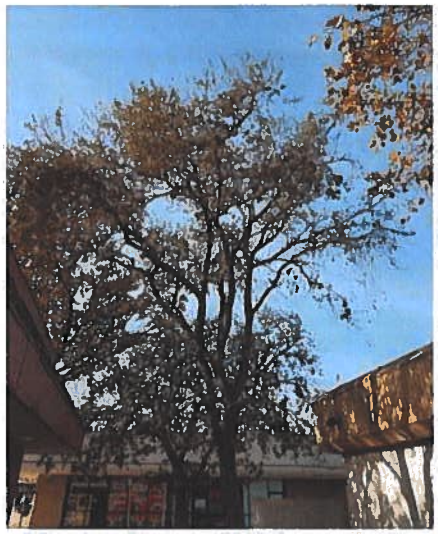
Inspect further: ☐ root crown ☐ decay ☐ aerial ☐ monitor Remove tree? Y (N) Replace tree? Y (N) Move target:? Y (N) Other: _____ ☐ no action required at this time

Effect on adjacent trees: ☒ none ☐ evaluate Notification: ☐ owner ☐ manager ☐ governing agency Date: _____

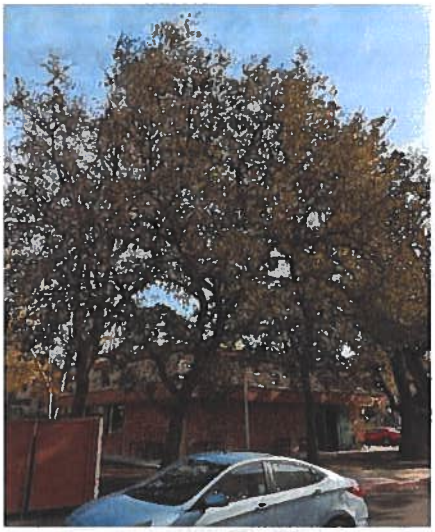
ADDITIONAL COMMENTS

Monitor - conk @ rt crown

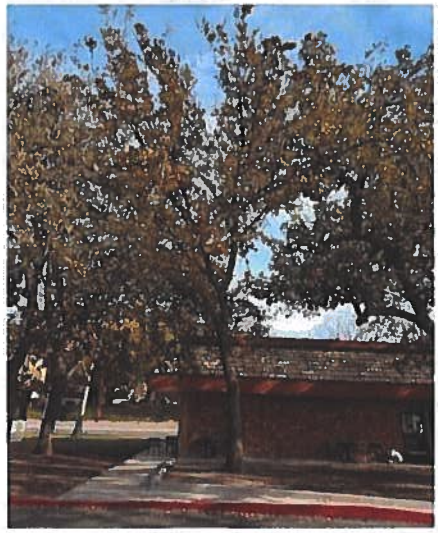
APPENDIX C – PHOTOGRAPHS



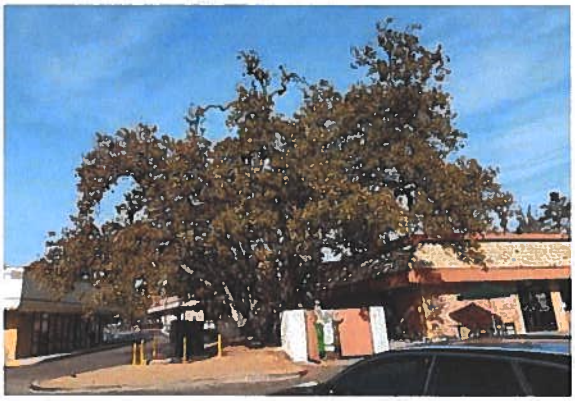
Tree #2483



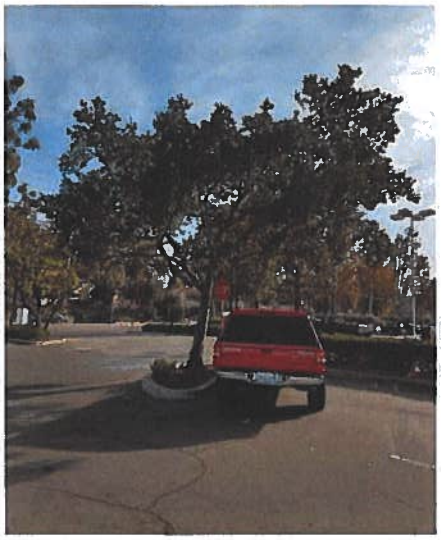
Tree #2484



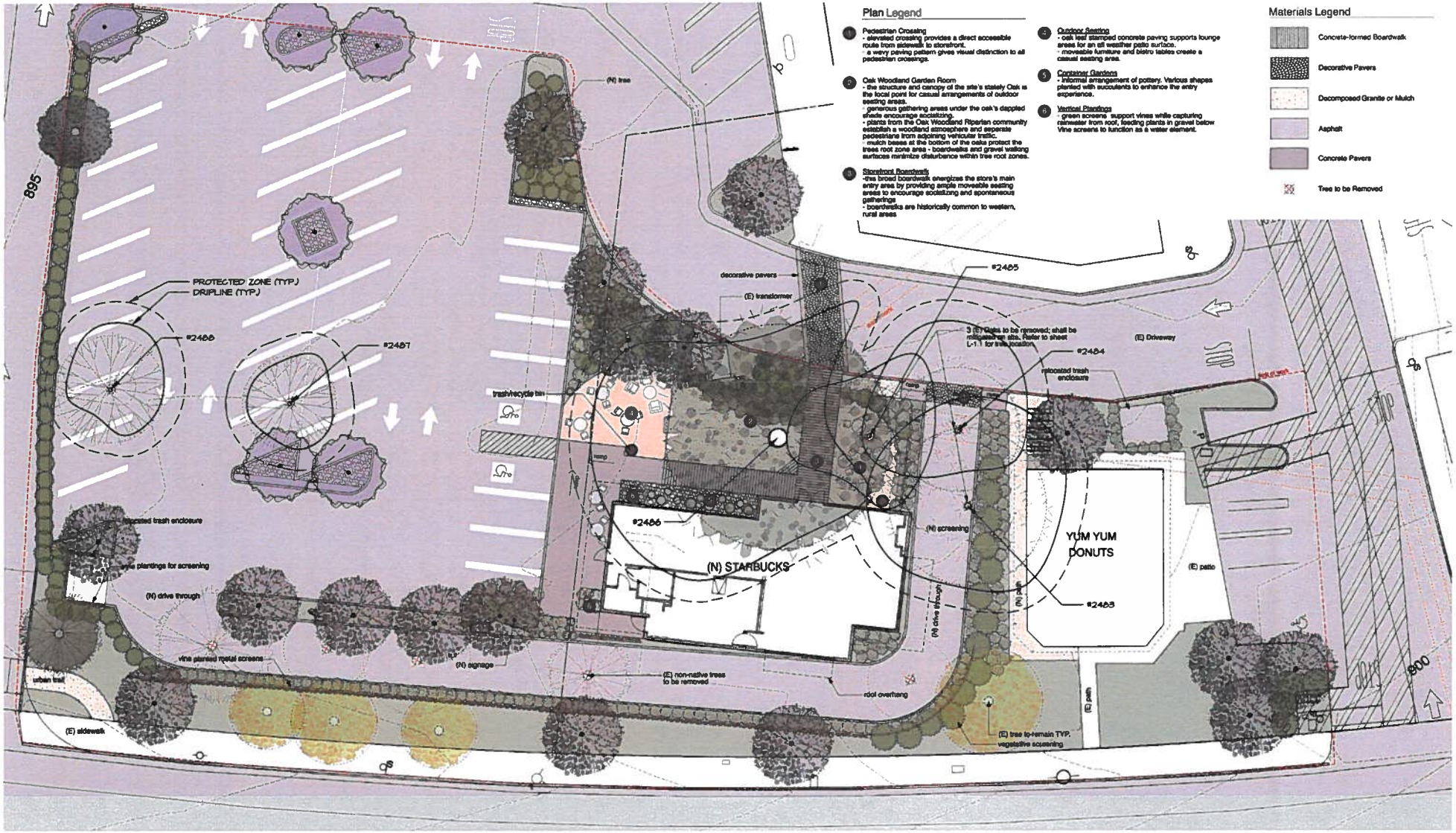
Tree #2485



Tree #2486

	
Tree #2487	Tree #2488

APPENDIX D – OAK TREE LOCATION MAP



TREE LOCATION MAP
PREPARED BY:
KAY J. GREELEY, RLA, BCMA
5328 ALHAMA DRIVE
WOODLAND HILLS, CALIFORNIA 91364
(805) 577-8432

VAI VanAlta Associates Inc.
landscape architecture + planning
Starbucks 03.19.2018

STARBUCKS LANDSCAPE. CONCEPT PLAN

CONCEPT PACKAGE L-1.0

ATTACHMENT J

From: jrl122203@yahoo.com
To: Kimberly Rodrigues
Subject: Starbucks / Twin Oaks Shopping Center
Date: Sunday, June 9, 2019 8:46:43 PM

Re: Case Nos. SPR 01462-2018; OAK 01463-2018; VAR 01581-2019; SIGN 01464-2018; MOD 01626-2019

As a resident of Agoura Hills, I am against the proposed changes that the Twin Oaks Shopping Center wishes to make on the local Starbucks. We don't need a larger Starbucks. We already have the one on Kanan and the one in the Vons.

I feel that tearing down the current Starbucks and building a larger structure will have a negative visual impact and a negative impact on the traffic in the area. That area is already heavily congested especially before and after school starts. Turning left into and out of the Twin Oaks Shopping Center on Kanan is already dangerous. A drive-through larger Starbucks will make the situation worse and cause more accidents and congestion.

Larger signage for Starbucks will add to ugly clutter on our busiest street and distracts from signage which gives traffic instructions.

Putting in a large Starbucks with a drive through will negatively impact the other businesses making it harder for their customers to find parking and to get into and out that area. This area is already the most congested area of Agoura with it already difficult at times to find parking or safely get into and out of the area. Many times I have seen cars parked in red zones and in handicapped parking spaces illegally. High school students are already overwhelming that area at lunch time and after school. Long lines for a drive through would cause even more problems. Starbucks are already not being responsible tenants in regards to stopping customers from parking illegally. I see even more problems developing from this.

As well, the loss of Oak trees just to have a larger Starbucks is not acceptable. Residents of Agoura, like myself, voted for you because we expect you to protect the city from becoming like the valley and also to protect our trees and our wilderness areas. Many of us live in this area because of its small town feel and because of those trees and wilderness.

Overall this construction product adds nothing to our city and only brings more dangers to Kanan and more congestion to that shopping center and to that part of Agoura. Add to that the unnecessary loss of Oak trees and there seems no good reason for the residents of this community to welcome this project. Let's remember that the Acorn is the symbol of this city.

Total Control Panel Login

To: krodrigues@ci.agoura-hills.ca.us
From: jrl122203@yahoo.com

Message Score: 30
My Spam Blocking Level: Medium

Block this sender
Block yahoo.com

High (60): Pass
Medium (75): Pass
Low (90): Pass

This message was delivered because the content filter score did not exceed your filter level.

June 11, 2019

To: Agoura Hills Planning Department

From: Russell Sharp, 29035 Freshwater Drive, Agoura Hills, Ca. 91301 (818) 398-0290

Subject: Proposal for Starbucks Drive-Thru, 5827 Kanan Rd., Agoura Hills, California

Dear Planning Department:

I've heard that June 20, 2019, there will be a hearing, a discussion on a proposed drive-thru for the Starbucks at 5827 Kanan Road. I will be unable to attend the meeting, but I wish to voice my objection to this alteration to the property. I strongly object to a drive-thru for this particular Starbucks. I do so as a neighbor, residing in Morrison Ranch Estates, with great concern that a drive-thru here would cause a dangerous and tremendous traffic burden to the already congested Kanan Road.

I speak with experience, living just 3 blocks away and using Kanan Road as my primary route of travel since 1996. For over 22 years I have watched the traffic continue to grow to the point that it is now, backed up beyond Laro at times, all the way down to the 101 Freeway (and beyond). I regularly walk from my residence (just north of Willow School) to the Twin Oaks shopping center, I see the traffic congestion up close and it is an ugly sight. Drivers are upset, idling cars by the hundreds (maybe thousands), and lengthy delays just to get a few blocks. A Starbucks Drive-thru will add to the congestion and idling cars.

You might ask what other experience I might have to make this statement, as if I am an expert in municipal traffic matters? I have a master's degree from Cal State Northridge in Public Administration, and I have been a big-city cop in the highly congested area of Beverly Hills for 33 years. Before that I worked for LAPD for 4 years. I spent nearly all of those years working in the streets, not behind a desk. Much of that time I worked in the area of traffic enforcement having been assigned to "Motors" for 16 years, to the DUI Unit for 2 years and as a member of the traffic management and accident detail for approximately 8 years. Much of my education is in vehicular and pedestrian traffic management and safety. I know, with education and experience, that a drive-thru will be an unsafe alteration to this already troubled, overly congested shopping area. This is a major artery from Oak Park, through Agoura Hills, to the 101 Freeway, all the way to the Pacific Ocean. Furthermore, we have an elementary school and a popular high school nearby. We have many traffic accidents and injuries in this vicinity and motorists already have trouble turning into and out of the Twin Oaks center.

Please recognize the added danger, the additional accidents and injuries from the additional vehicular congestion and the extended idling that will add to an already ugly traffic situation in our otherwise beautiful city.

Russell Sharp

8/10/2019

Jennifer Allen
5357 Isabella Court
Agoura Hills Ca 91301

City of Agoura Hills Planning Department,

I am writing this letter to lend support for the proposed renovation of the Twin Oaks Starbucks.

As a long time resident of Agoura Hills I strongly believe this renovation will be a tremendous improvement to our community. I regularly frequent the Twin Oaks shopping center to run basic errands and Starbucks is invariably one of my stops. The addition of a drive thru would save time and add convenience to a busy day. The proposed courtyard would provide such a lovely gathering place to meet friends, hold casual meetings or just relax and take a little break. I would be so thrilled with these improvements.

I hope you will take my opinion under consideration. Thank you for your time.

Jennifer Allen

NAME	Jennifer Allen
ORGANIZATION	
ADDRESS	5357 Isabella Court
EMAIL	jallen960@gmail.com,

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6/10/19

Regency Centers.

915 Wilshire Boulevard
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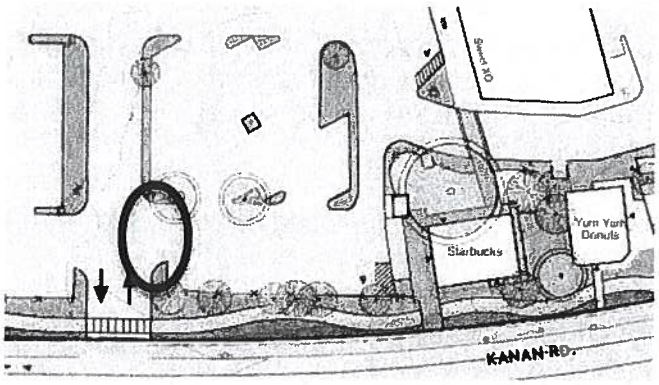
213 553 2200
RegencyCenters.com

TWIN OAKS SHOPPING CENTER – AGOURA HILLS, CALIFORNIA
PROPOSED STARBUCKS DRIVE-THRU

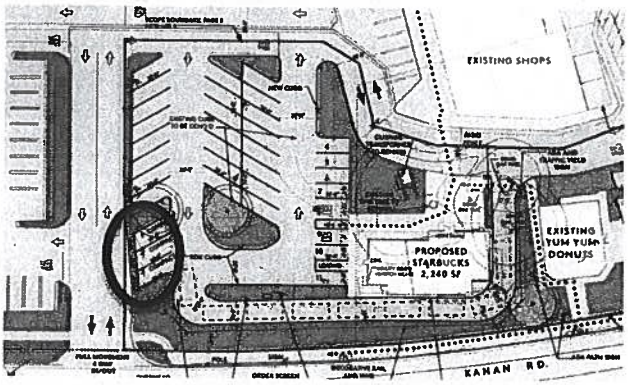
Regency Centers is working to obtain approval from the City of Agoura Hills to install a drive-thru for the Starbucks building at Twin Oaks Shopping Center. Both Regency and Starbucks are excited at the prospect of installing a drive-thru at this location, and are seeking community support in favor of this. Below are a few points that Regency believes will be seen as a result of installing a drive-thru for the Starbucks building.

- Traffic: Yes, there will be some increased trips to Twin Oaks as part of this project. Linscott Law & Greenspan has prepared a 62-page "Assessment of Traffic Operations" for the project which has projected 40-net new AM peak-hour trip and 40-net new PM peak-our trips per day. We realize Kanan can be very busy, and any new traffic can be a burden. Therefore, we have made a few key design components which we believe will mitigate congestion and make our primary entrance off of Kanan safer.
    - Improved traffic flow from Kanan Road:
        - If the drive-thru is approved, the parking lot layout around the main drive aisle entry would be altered as shown below. It is believed that traffic flow from Kanan Road will be improved with the removal of the access point highlighted below in red. This would increase the overall safety of the entrance to Twin Oaks by forcing cars to go further down the drive isle before turning towards Starbucks, and prevent any congestion from backing up onto Kanan.

<u>Existing</u>



<u>Proposed</u>



- Convenience:
    - We like to think of Twin Oaks as a place where the community can live their lives every day. Whether it's picking up groceries, dropping off the dry cleaning or meeting for a cup of coffee, it's a convenient place to check off some to-do list items. The addition of the drive-thru is just a small way to make those errands a little more convenient on those

Regency Centers.

915 Wilshire Boulevard
Suite 2200
Los Angeles, CA 90017

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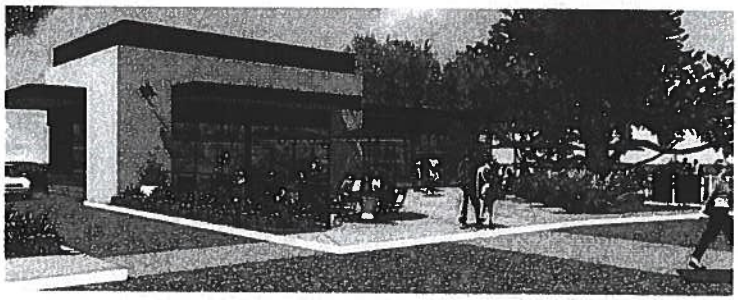
RegencyCenters.com

days where there never seems to be enough time to get it all done, but you still need/want your coffee.

- Gathering Place:
  - In those moments when life does slow down, the new Starbucks plan provides for a much improved patio experience to meet and spend some time with family and friends. With the approval of the drive-thru, a large courtyard area would be installed away from Kanan and under the existing large Valley Oak.



- Third Anchor:
  - Ralphs and Rite Aid are Twin Oaks traditional anchors, but Starbucks is our third anchor and our biggest driver to our local shop tenants. The cross-shopping opportunities by ensuring Starbucks remains in Twin Oaks for many years to come can be a big part of keeping our local merchants a part of Twin Oaks and the Agoura community.

- Oak Tree Removal:
  - In order to install the drive-thru, it is important to note that three (3) oak trees would need to be removed. Regency has obtained expert guidance from a certified arborist in order to meet the City of Agoura Hills' mitigation requirements. The proposed tree replacements would include the following:

    - Plant four (4) new oak trees for each removed oak tree (12 new oak trees in total).
    - In addition to the above, plant two (2) mature "signature" oak trees on the corner of Kanan Road and Thousand Oaks Boulevard in an effort to reflect the shopping center's namesake of Twin Oaks.

Thank you for your time, and Regency sincerely believes that this project will benefit your community. Your support is greatly appreciated!

Please Sign Here to Show Your Support for the Renovations at Twin Oaks

NAME Inge Weinberg
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PLEASE CHECK THIS BOX
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PLEASE CHECK THIS BOX
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NAME Cheryl Zorman
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NAME Nicole Meyer
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PLEASE CHECK THIS BOX
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NAME Naomi Brow
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EMAIL

PLEASE CHECK THIS BOX
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NAME MARJAN KOG
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915 Wilshire Boulevard
Suite 2200
Los Angeles, CA 90017

213 553 2200
RegencyCenters.com

June 12, 2019

Agoura Hills Planning Department

RE: Twin Oaks Starbucks Drive-Thru: Community Outreach Plan

Dear Planning Commissioners & Staff,

It is with great pleasure that Regency Centers is presenting plans for the construction of a new Starbucks Drive-Thru to be located at 5827 Kanan Rd. in the City of Agoura Hills. We take great pride in being the best-in-class grocery anchored community shopping center owner and operator in the nation, and we find value in having the support of the community, with regard to upgrades or modifications to our properties.

In addition to obtaining both written and/or verbal support from all of Starbucks' neighboring tenants, Regency has begun a community outreach effort that has resulted in over 150 signatures in support of the project from residents of the community. We plan on continuing this effort until the Planning Commission hearing scheduled for June 20th, 2019. To date, the vast majority of residents we have engaged have exhibited overwhelming support for and satisfaction with the design, pedestrian friendly orientation, convenience of drive-thru (especially for mothers with toddlers, students, commuters, and the elderly), and the extensive measures Regency Centers will take in the mitigation of removing three existing oak trees.

We are sensitive to community members who care for these protected trees and Regency Centers will not only be planting the required twelve mitigating oak trees in place of the three being removed, but will also be planting two large (13 caliper inch) mature live oaks at the corner of Kanan Rd. and Thousand Oaks Blvd. to once again make the shopping center, the "Twin Oaks" Shopping Center.

Attached to this letter, please find the aforementioned signatures of over 150 neighbors as well as the Outreach Memo being provided to the community members.

Sincerely,

Ray Kayacan
Manager – Investments
Regency Centers

I am a tenant at Twin Oaks Shopping Center, and fully support Starbucks' building being renovated to include a drive-through.

Tenant	Date	Employee Name	Employee Title	Signature
Agoura Dental	6/11/19	Pankea Chorvani	Manager	
GNC	6/11/19	Jose Fernandez	store manager	
Great Clips	6/11/19	Monique Grove	Manager	
K.S. Jewelers	6/11/19	Krikor Sandjian	Owner	
LEXT Robo Academy	6/11/19	Liby	Manager	
Maria's Italian Kitchen				
Nail Spa				
OneWest Bank	6-12-19	Klaudija	QPS Manager	
Orangetheory Fitness	6/11/2019	Madison Zagarino	Manager	
Postal Annex	6/11/2019	Robert Eftekhari	Owner	
Ralphs	6/11/19	Silvia Gonzalez	SALES MGR	
RiteAid	6/11/19	Robert Siemer	Store Mgr.	
Serious Cycling	6/11/19	Scott Johnson	Owner	
Subway	6/11/19	Luz E. Benitez	counter help	Luz Erica Paredes

I am a tenant at Twin Oaks Shopping Center, and fully support Starbucks' building being renovated to include a drive-through.

Tenant	Date	Employee Name	Employee Title	Signature
T-Mobile	6-11-19	Cory Mosrec	Manager	
Tic Toc Dry Cleaners	6/11/19	UIYONG CHOE	OWNER	
Union Bank	6/11/19	Mary Butts	Mgr	
Wells Fargo Bank				
Yum Yum Donuts				

Please Sign Here to Show Your Support for the Renovations at Twin Oaks

NAME	Jorio Tavi
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☐ PLEASE CHECK THIS BOX IF YOU DO NOT WISH TO RECEIVE PROJECT UPDATES

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NAME	Tom Allen
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Please Sign Here to Show Your Support for the Renovations at Twin Oaks

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NAME	
ORGANIZATION	
ADDRESS	
EMAIL	

☐ PLEASE CHECK THIS BOX IF YOU DO NOT WISH TO RECEIVE PROJECT UPDATES

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NAME	
ORGANIZATION	
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