

*Appendix F*

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Noise Data

<b>Site Number:</b> FD001			
<b>Recorded By:</b> Kelly Chiene			
<b>Job Number:</b> 35-101038			
<b>Date:</b> 8/11/10			
<b>Time:</b> 2:32 p.m.			
<b>Location:</b> Northwestern corner of the project site near residential uses			
<b>Source of Peak Noise:</b> Cars along Grant Line Road, Byron Road, and I-205; dogs barking; plane			
Noise Data			
Leq (dB)	Lmin (dB)	Lmax (dB)	Peak (dB)
56.6	45.7	79.7	102.1

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	2548189	11/14/2007	
	Microphone	Brüel & Kjær	4189	2543364	11/15/2007	
	Preamp	Brüel & Kjær	ZC 0032	4265	7/18/2006	
	Calibrator	Brüel & Kjær	4231	2545667	7/31/2006	
Weather Data						
Est.	<b>Duration:</b> 10 minutes			<b>Sky:</b> ☀		
	<b>Note:</b> dBA Offset = 0.03			<b>Sensor Height (ft):</b> 5 ft		
	<b>Wind Ave Speed (mph / m/s)</b>		<b>Temperature (degrees Fahrenheit)</b>		<b>Barometer Pressure (hPa)</b>	
	6		77		1012.4	

**Photo of Measurement Location**



2250

Instrument:		2250
Application:		BZ7225 Version 2.0.2
Start Time:		08/11/2010 14:32:51
End Time:		08/11/2010 14:42:51
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		140.15

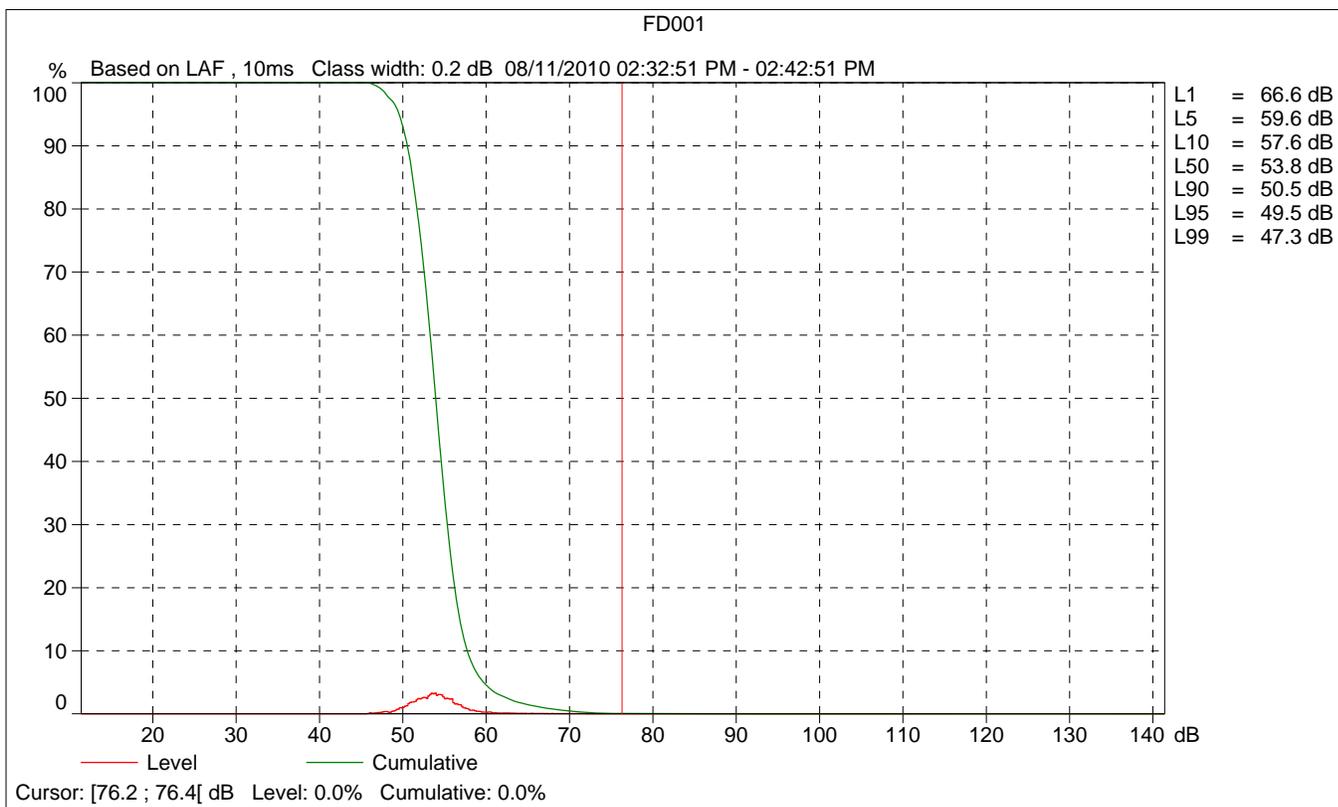
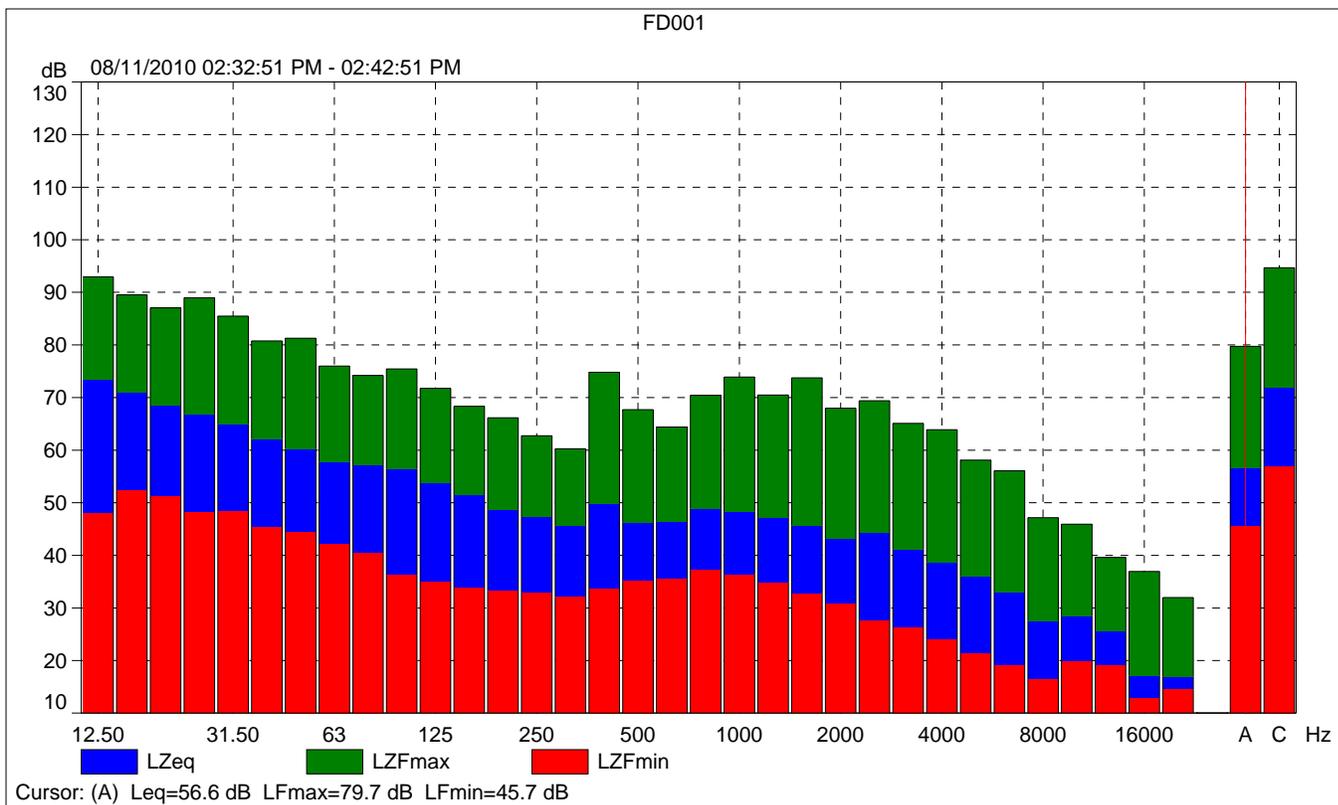
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

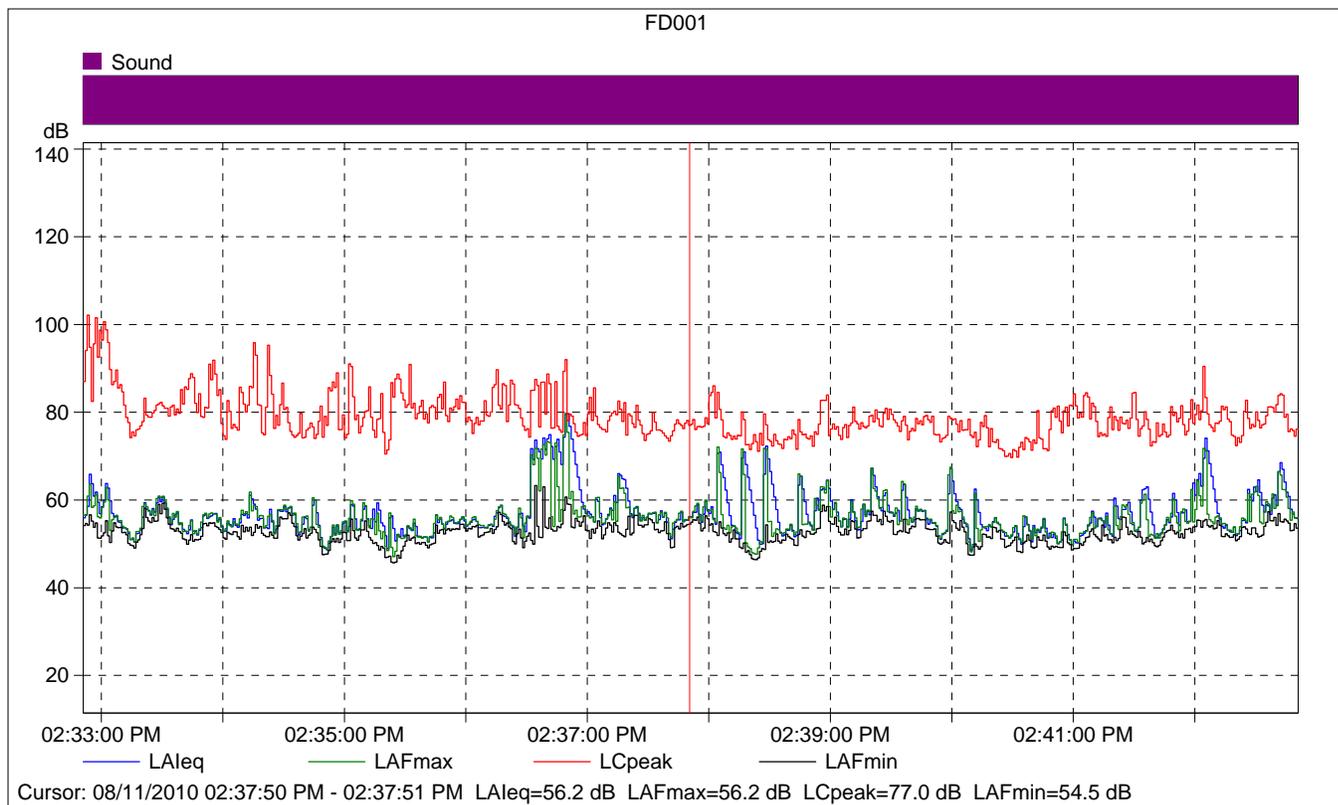
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Diffuse-field

Calibration Time:		08/10/2010 15:49:12
Calibration Type:		External reference
Sensitivity:		54.75 mV/Pa

FD001

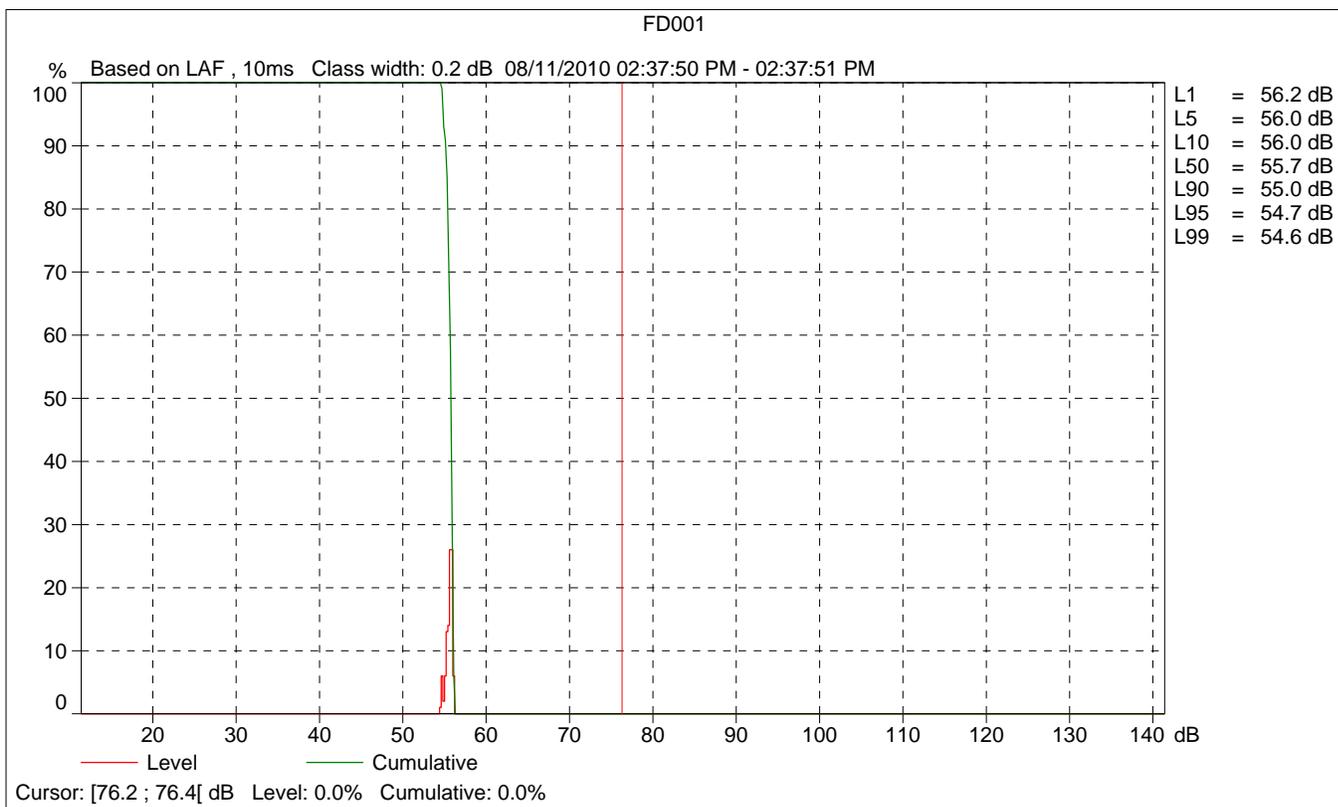
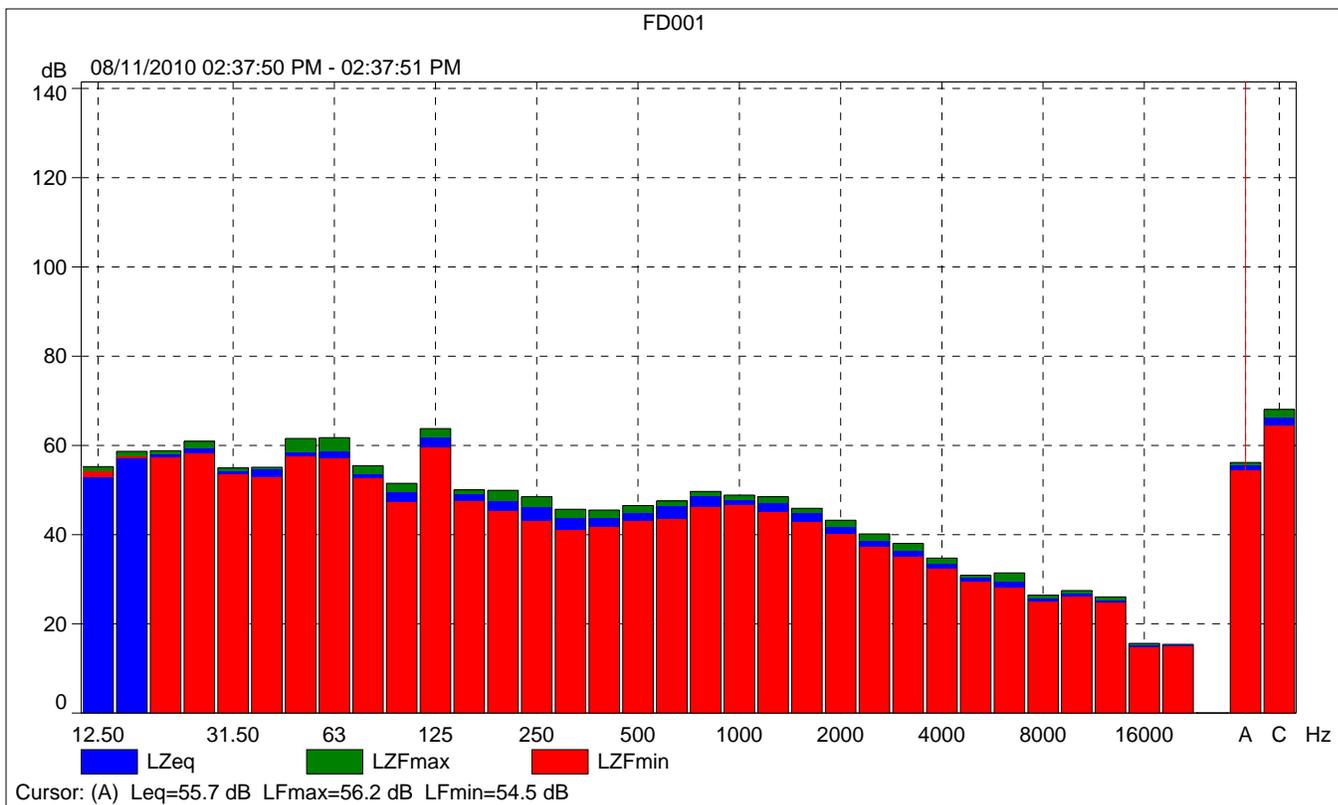
	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	56.6	79.7	45.7
Time	02:32:51 PM	02:42:51 PM	0:10:00				
Date	08/11/2010	08/11/2010					

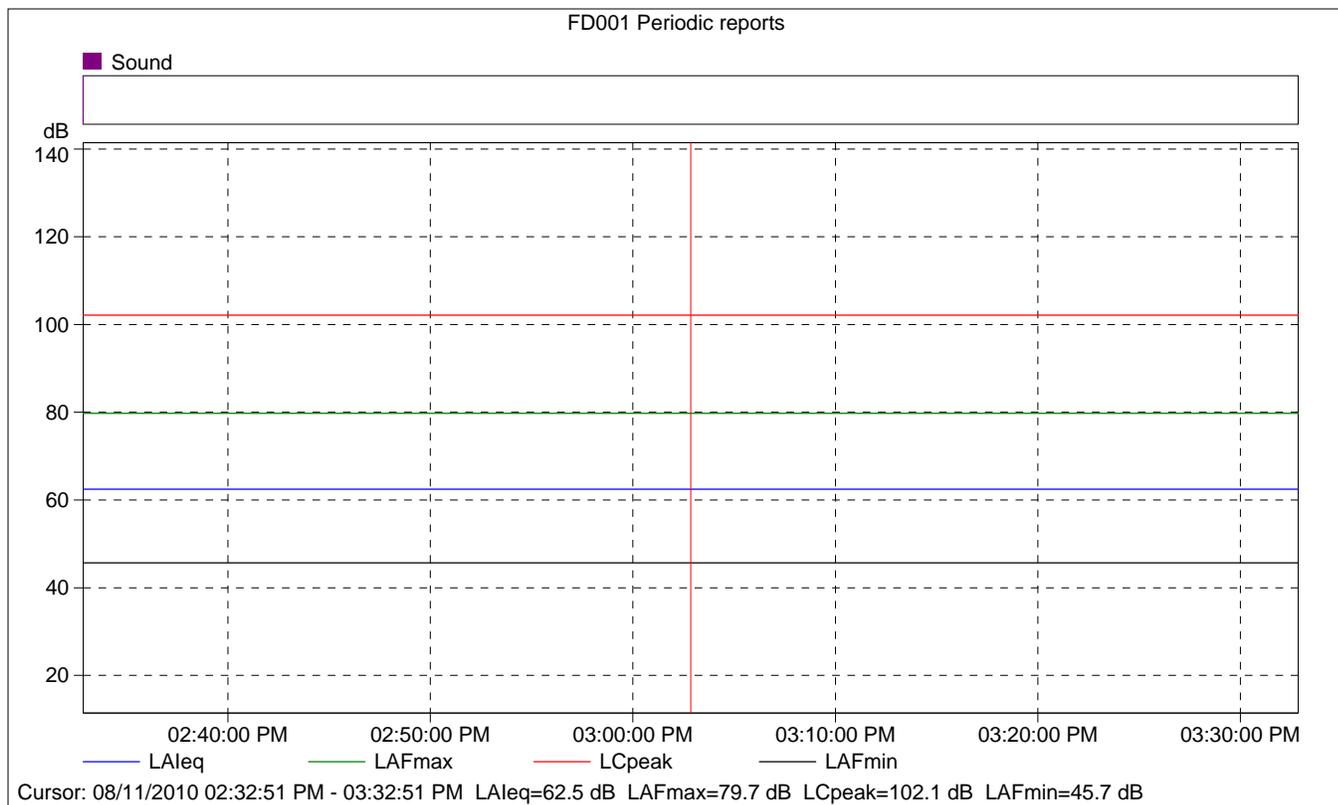




### FD001

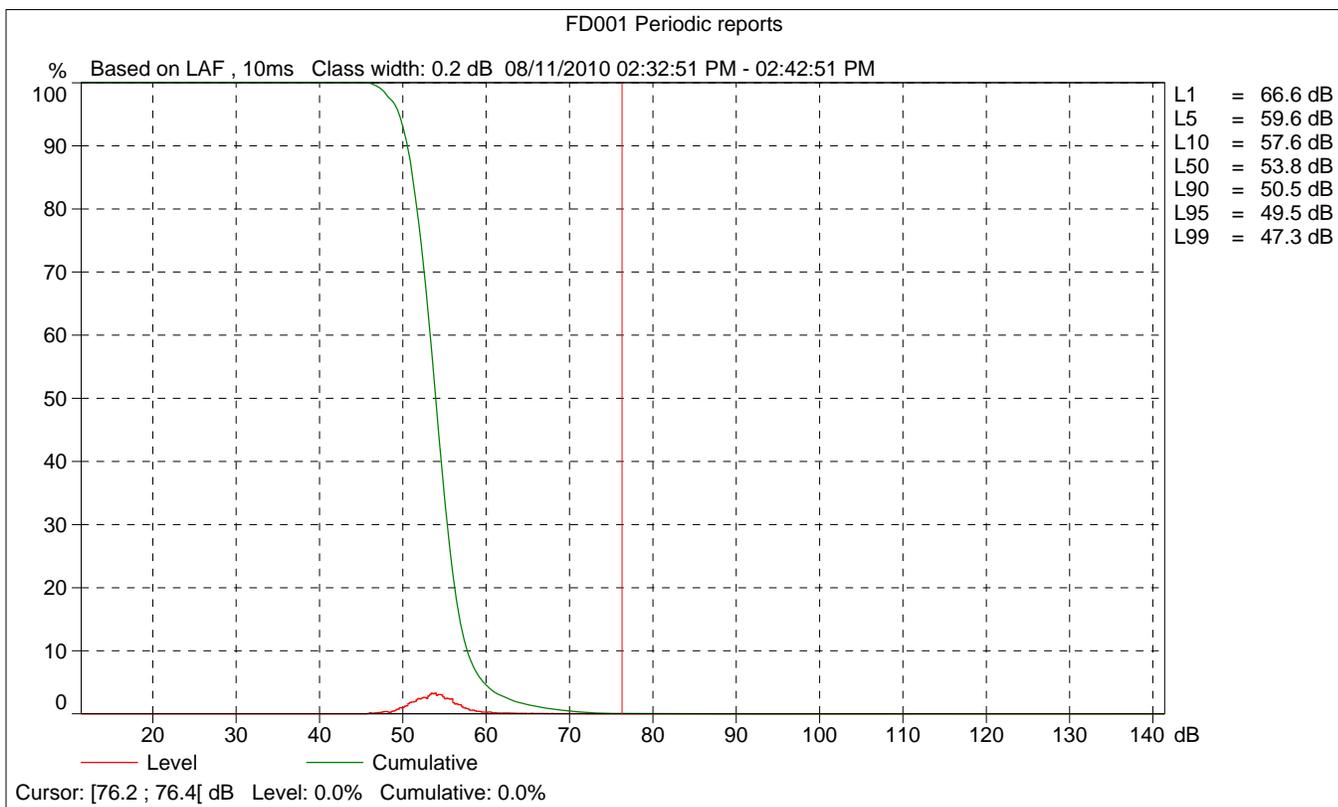
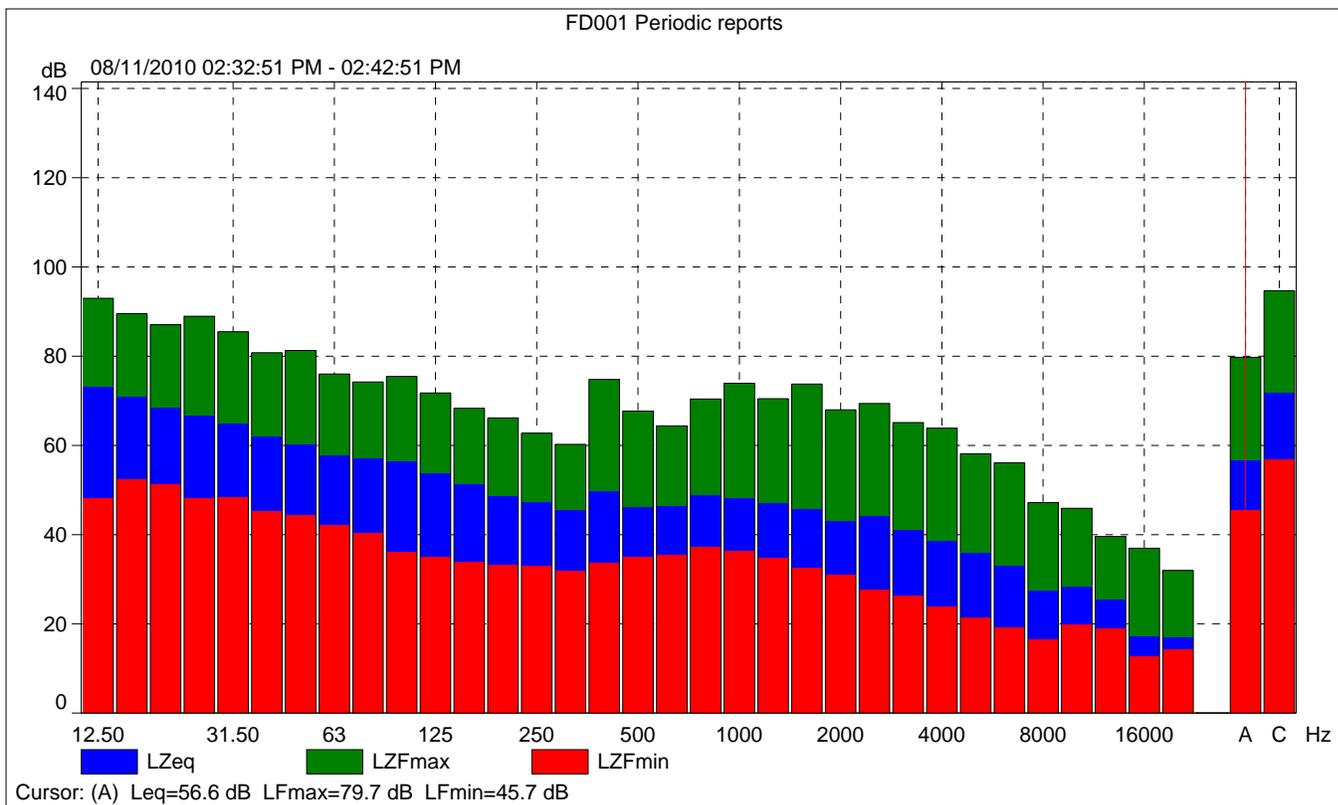
	Start time	Elapsed time	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			56.2	56.2	54.5
Time	02:37:50 PM	0:00:01			
Date	08/11/2010				

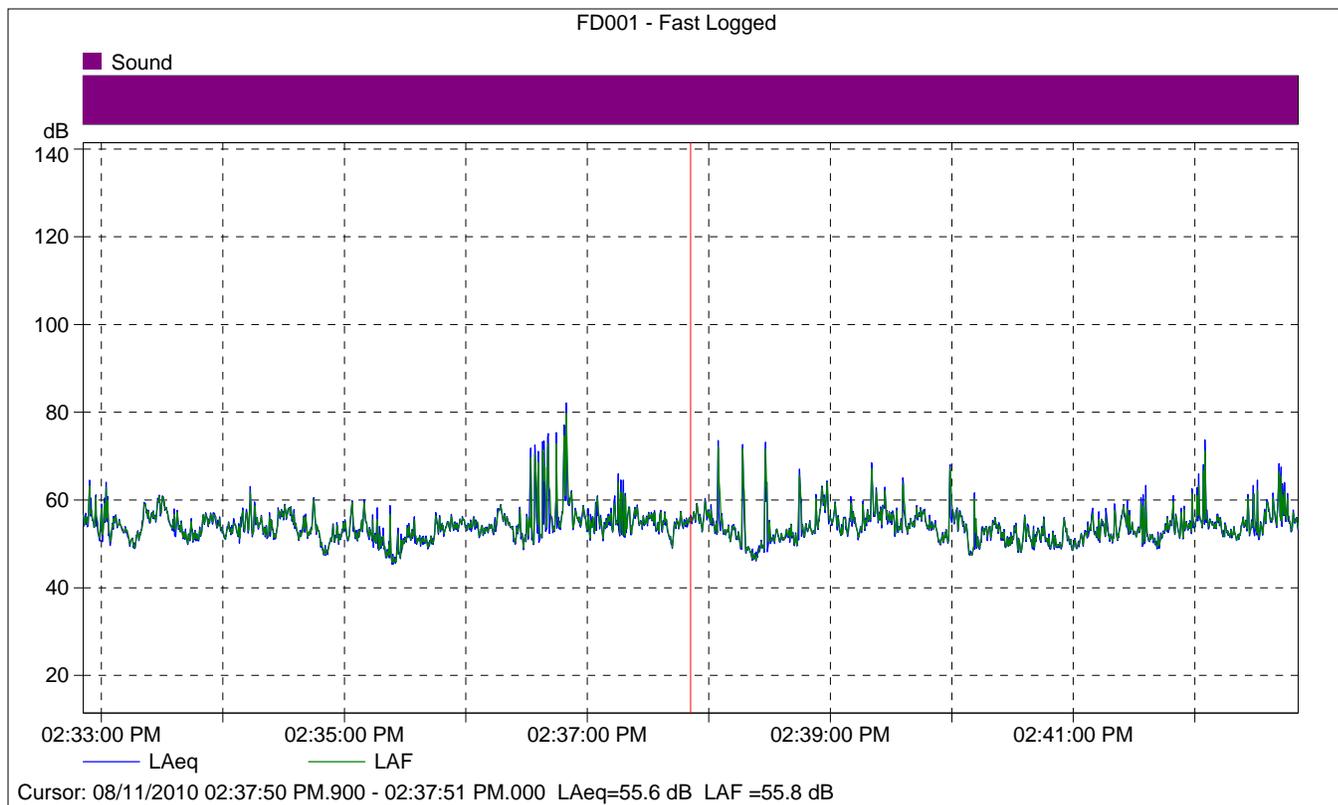




### FD001 Periodic reports

	Start time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	62.5	79.7	45.7
Time	02:32:51 PM	0:10:00				
Date	08/11/2010					





### FD001 - Fast Logged

	Start time	Elapsed time	LAeq [dB]
Value			55.6
Time	02:37:50 PM.900	0:00:00.100	
Date	08/11/2010		

<b>Site Number:</b> FD002			
<b>Recorded By:</b> Kelly Chiene			
<b>Job Number:</b> 35-101038			
<b>Date:</b> 8/11/10			
<b>Time:</b> 2:56 p.m.			
<b>Location:</b> Northeastern corner of the project site near a residential use			
<b>Source of Peak Noise:</b> Cars along Grant Line Road, Byron Road, and I-205; parking lot noise from adjacent commercial uses			
Noise Data			
Leq (dB)	Lmin (dB)	Lmax (dB)	Peak (dB)
57.3	48.9	71.0	98.1

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	2548189	11/14/2007	
	Microphone	Brüel & Kjær	4189	2543364	11/15/2007	
	Preamp	Brüel & Kjær	ZC 0032	4265	7/18/2006	
	Calibrator	Brüel & Kjær	4231	2545667	7/31/2006	
Weather Data						
Est.	Duration: 10 minutes			Sky: ☀		
	Note: dBA Offset = 0.03			Sensor Height (ft): 5 ft		
	Wind Ave Speed (mph / m/s)		Temperature (degrees Fahrenheit)		Barometer Pressure (hPa)	
	8		79		1012.5	

**Photo of Measurement Location**



2250

Instrument:		2250
Application:		BZ7225 Version 2.0.2
Start Time:		08/11/2010 14:56:36
End Time:		08/11/2010 15:06:36
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		140.15

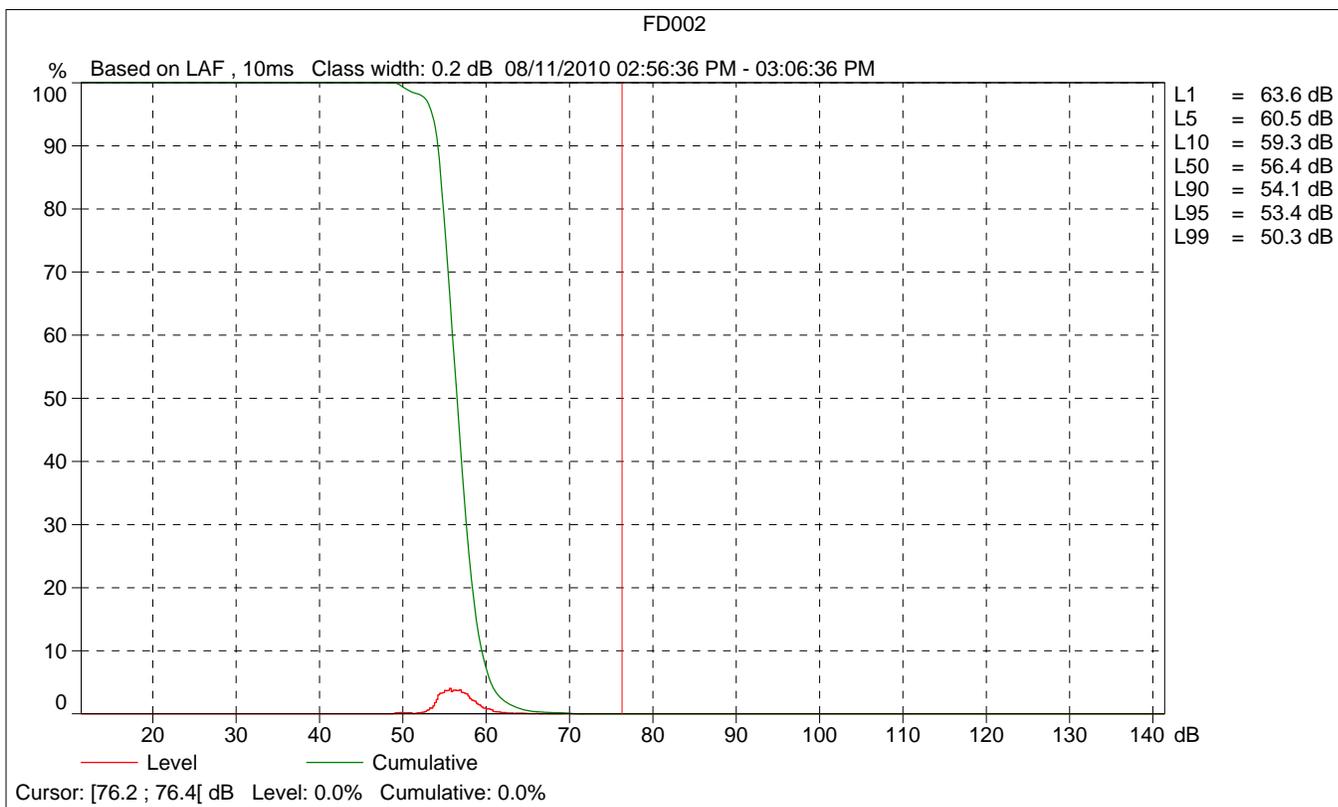
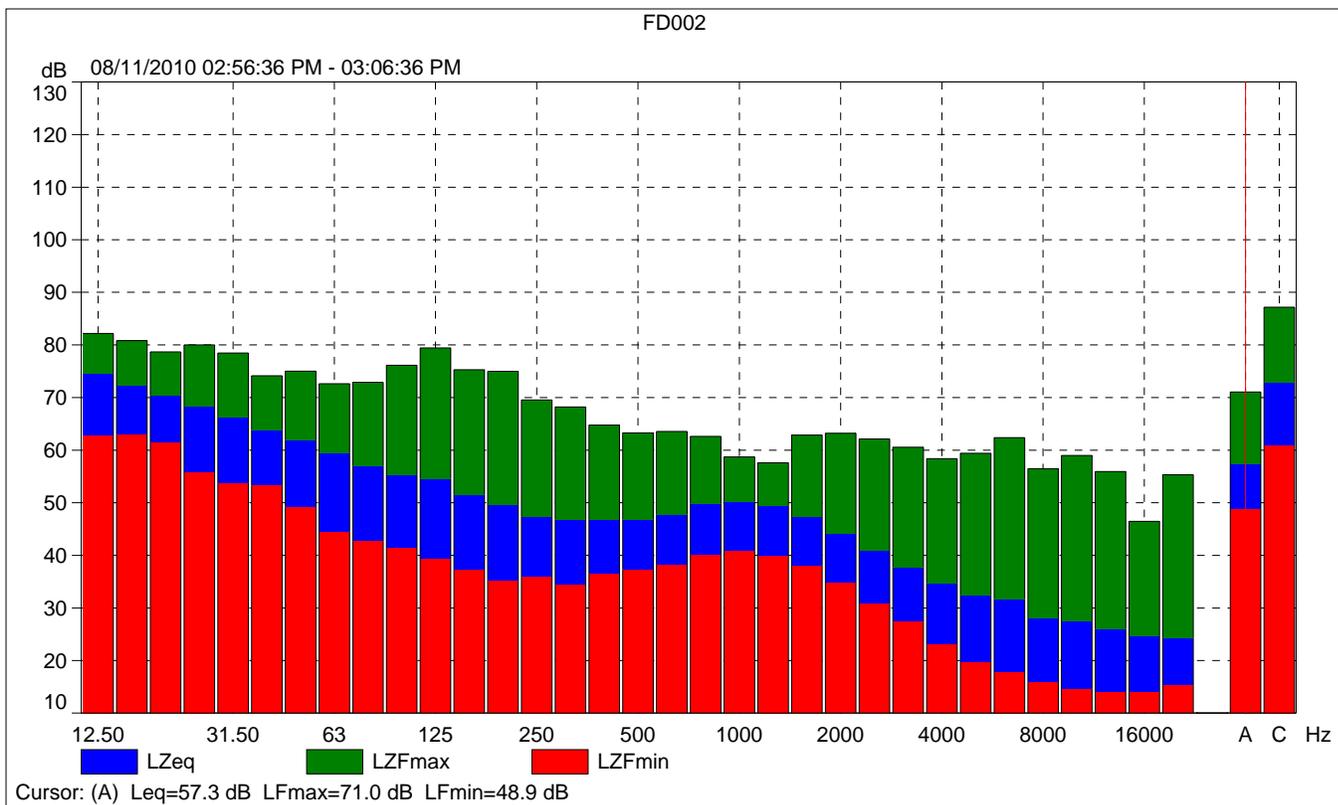
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

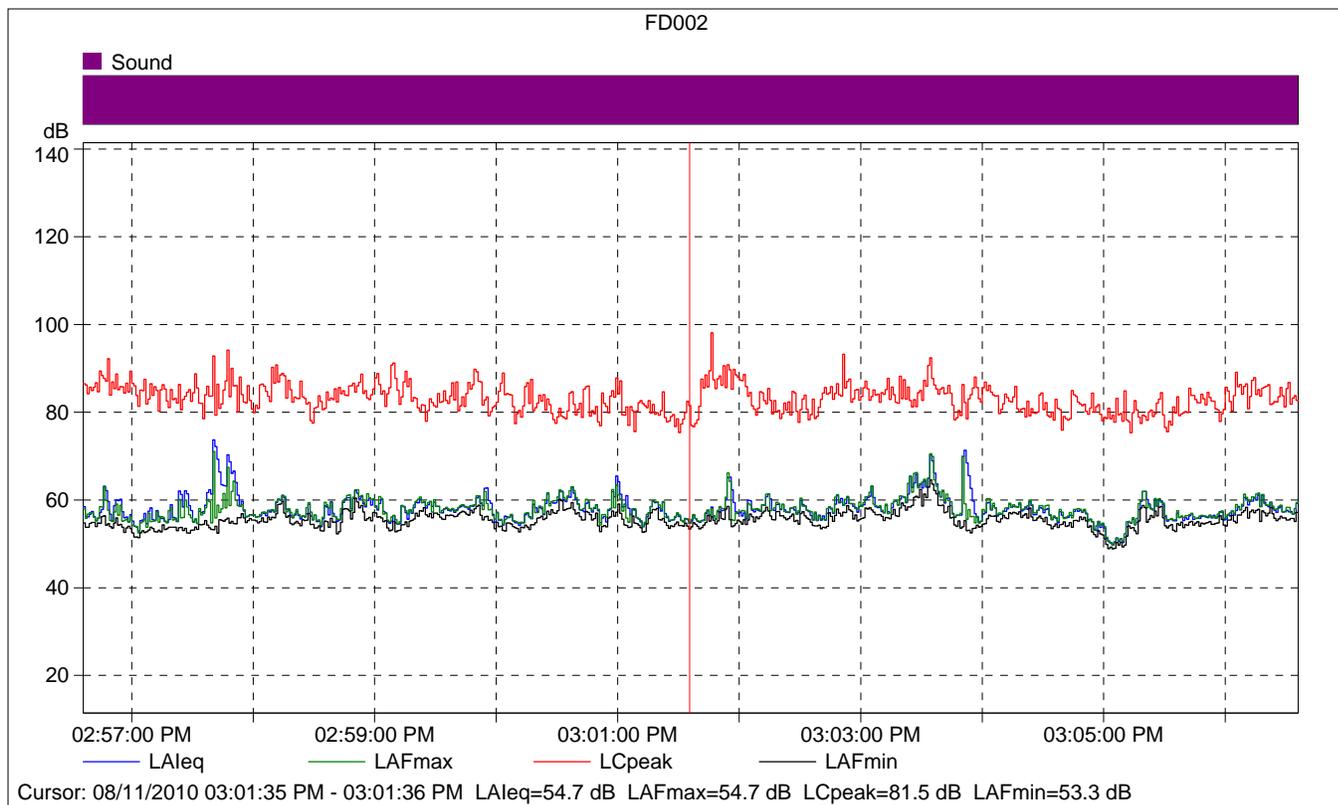
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Diffuse-field

Calibration Time:		08/10/2010 15:49:12
Calibration Type:		External reference
Sensitivity:		54.75 mV/Pa

FD002

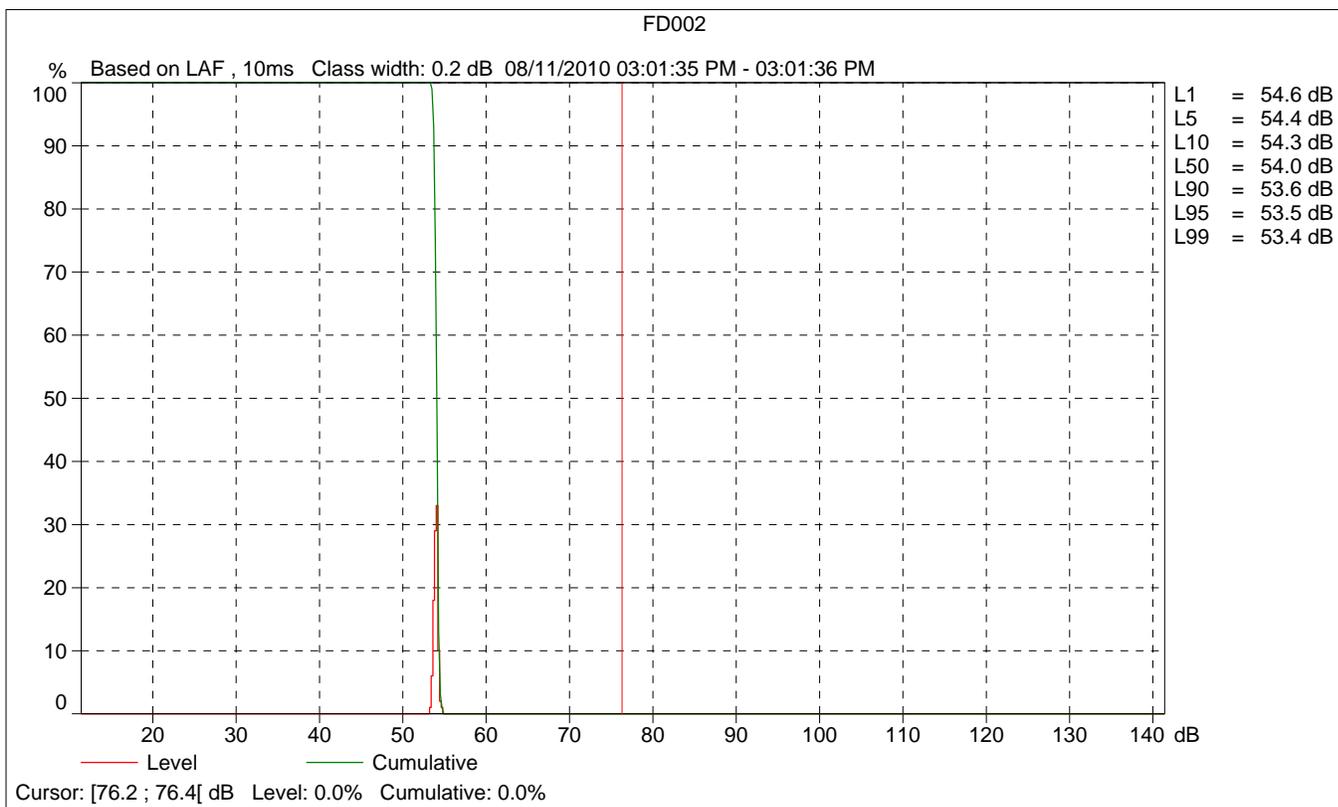
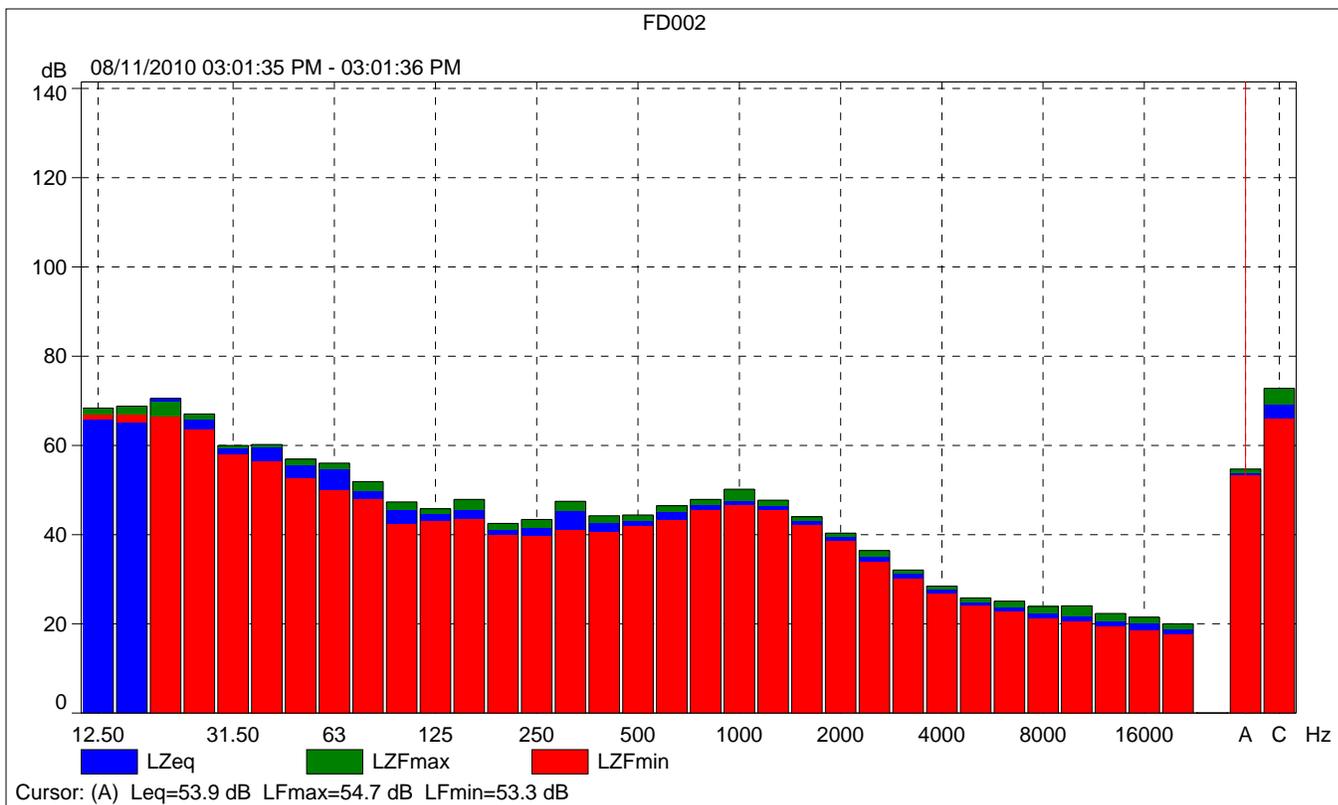
	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	57.3	71.0	48.9
Time	02:56:36 PM	03:06:36 PM	0:10:00				
Date	08/11/2010	08/11/2010					

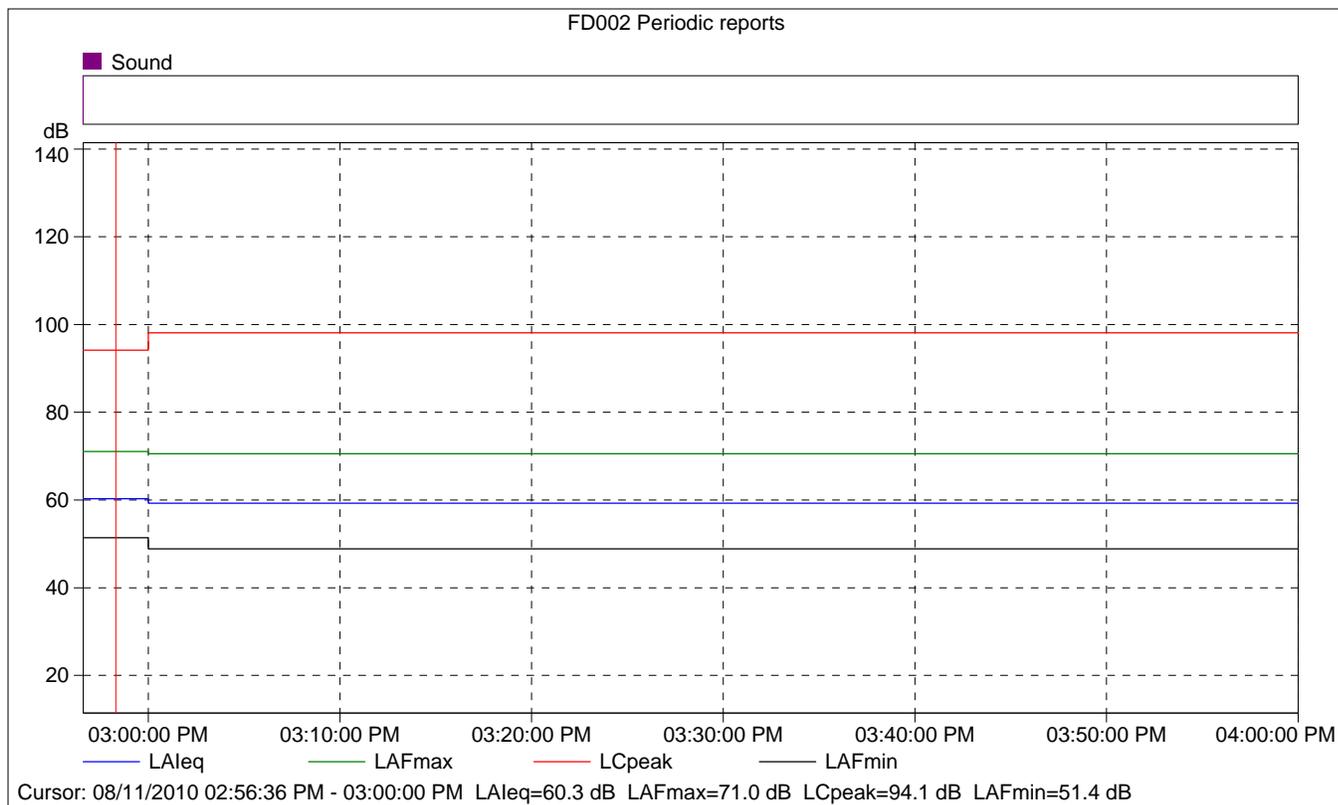




### FD002

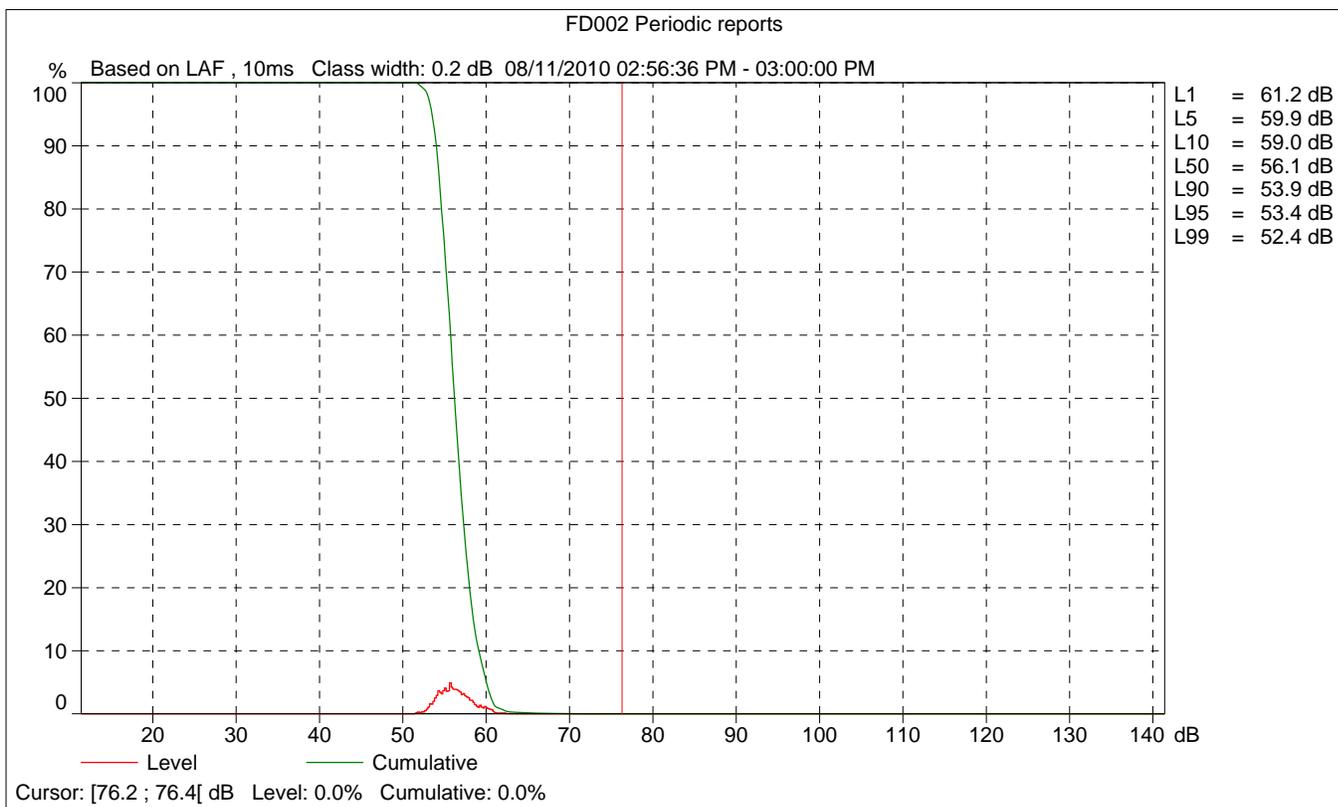
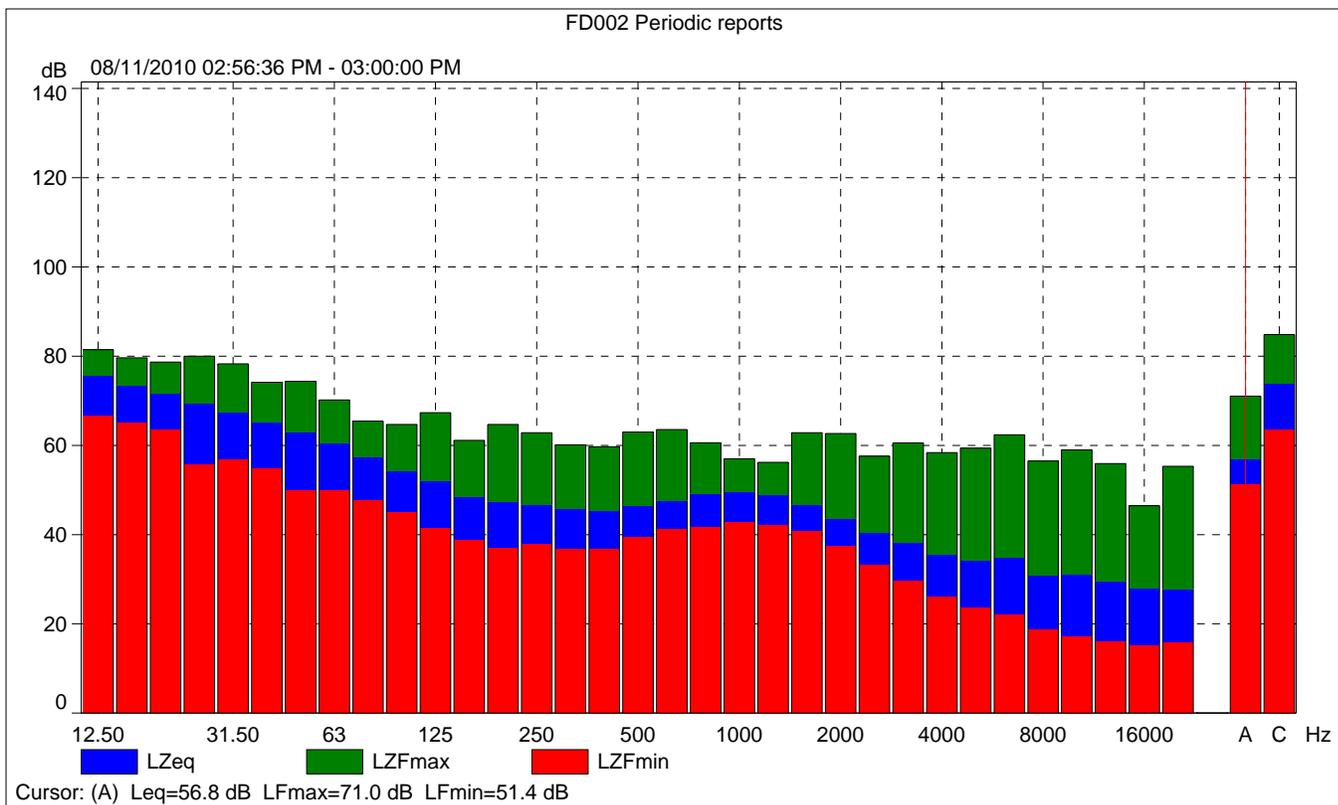
	Start time	Elapsed time	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			54.7	54.7	53.3
Time	03:01:35 PM	0:00:01			
Date	08/11/2010				

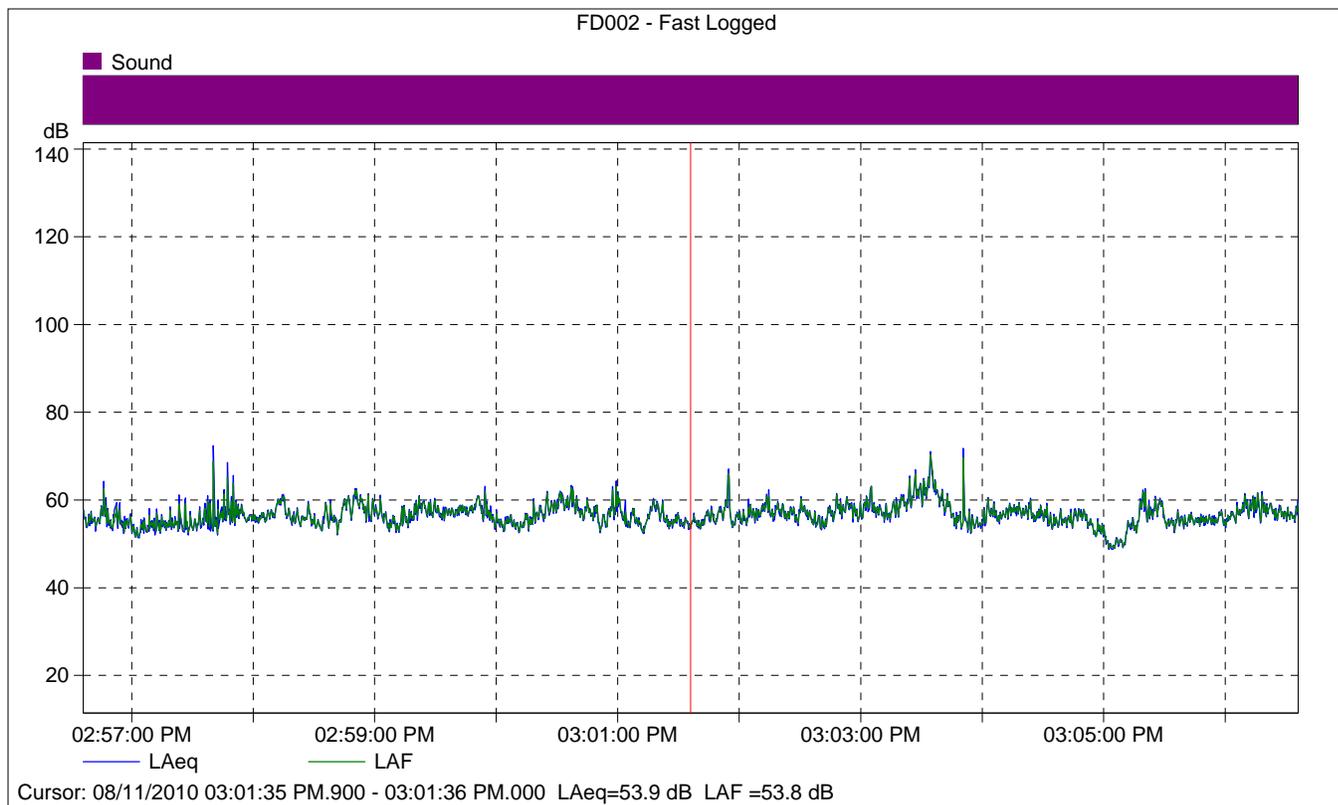




### FD002 Periodic reports

	Start time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	60.3	71.0	51.4
Time	02:56:36 PM	0:03:24				
Date	08/11/2010					





### FD002 - Fast Logged

	Start time	Elapsed time	LAeq [dB]
Value			53.9
Time	03:01:35 PM.900	0:00:00.100	
Date	08/11/2010		

<b>Site Number:</b> FD003			
<b>Recorded By:</b> Kelly Chiene			
<b>Job Number:</b> 35-101038			
<b>Date:</b> 8/11/10			
<b>Time:</b> 3:12 p.m.			
<b>Location:</b> Southeastern corner of the project site near the Costco loading dock			
<b>Source of Peak Noise:</b> Cars along Grant Line Road, Byron Road, and I-205			
Noise Data			
Leq (dB)	Lmin (dB)	Lmax (dB)	Peak (dB)
54.9	50.6	60.4	95.8

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	2548189	11/14/2007	
	Microphone	Brüel & Kjær	4189	2543364	11/15/2007	
	Preamp	Brüel & Kjær	ZC 0032	4265	7/18/2006	
	Calibrator	Brüel & Kjær	4231	2545667	7/31/2006	
Weather Data						
Est.	<b>Duration:</b> 10 minutes			<b>Sky:</b> ☀		
	<b>Note:</b> dBA Offset = 0.03			<b>Sensor Height (ft):</b> 5 ft		
	<b>Wind Ave Speed (mph / m/s)</b>		<b>Temperature (degrees Fahrenheit)</b>		<b>Barometer Pressure (hPa)</b>	
	7		79		1012.2	

**Photo of Measurement Location**



2250

Instrument:		2250
Application:		BZ7225 Version 2.0.2
Start Time:		08/11/2010 15:12:00
End Time:		08/11/2010 15:22:00
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		140.15

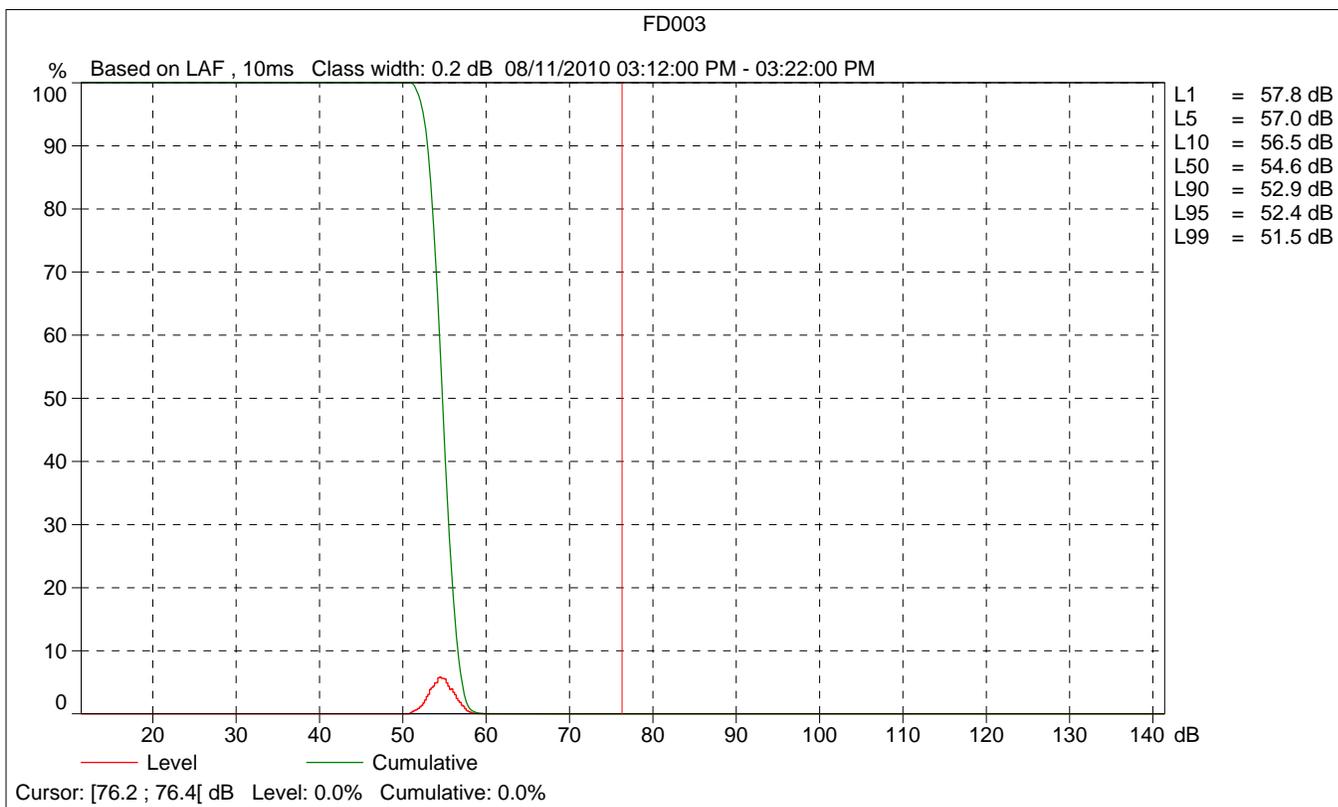
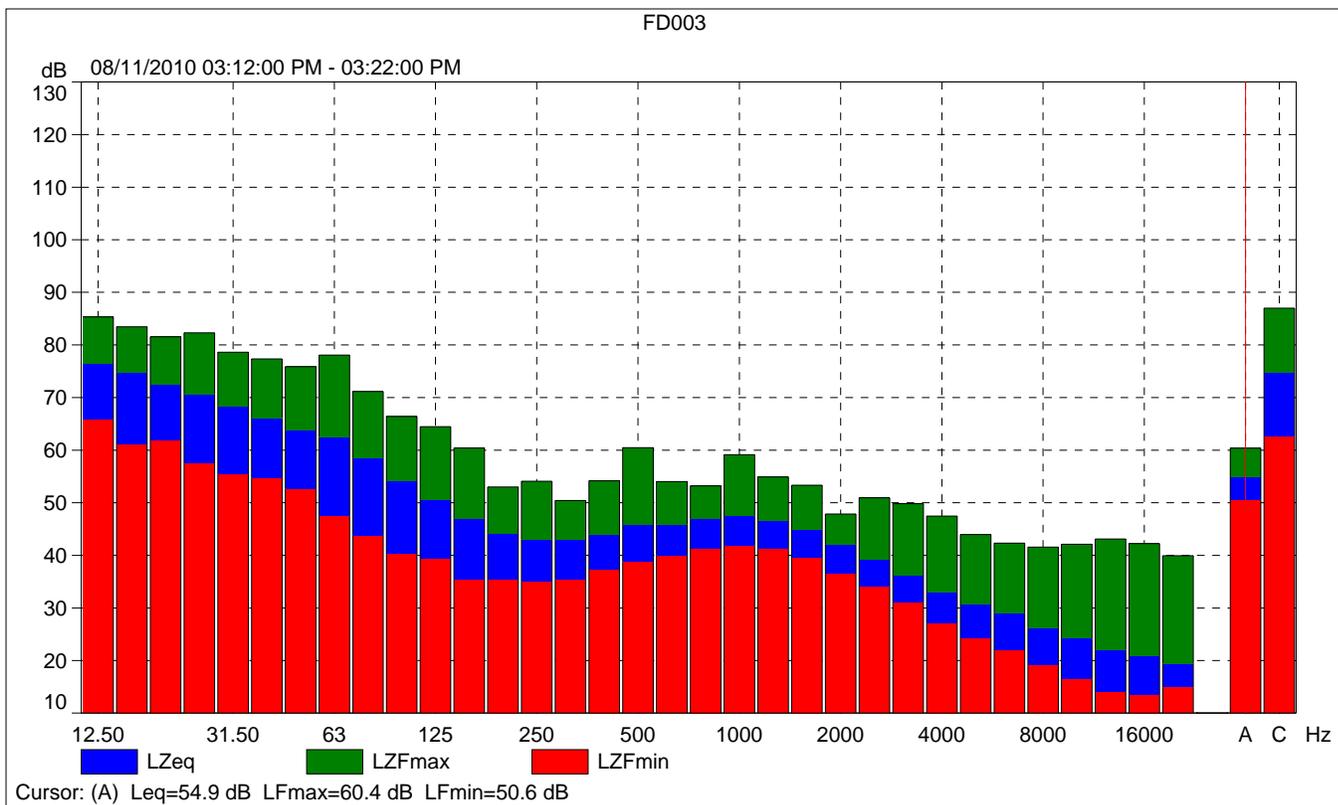
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

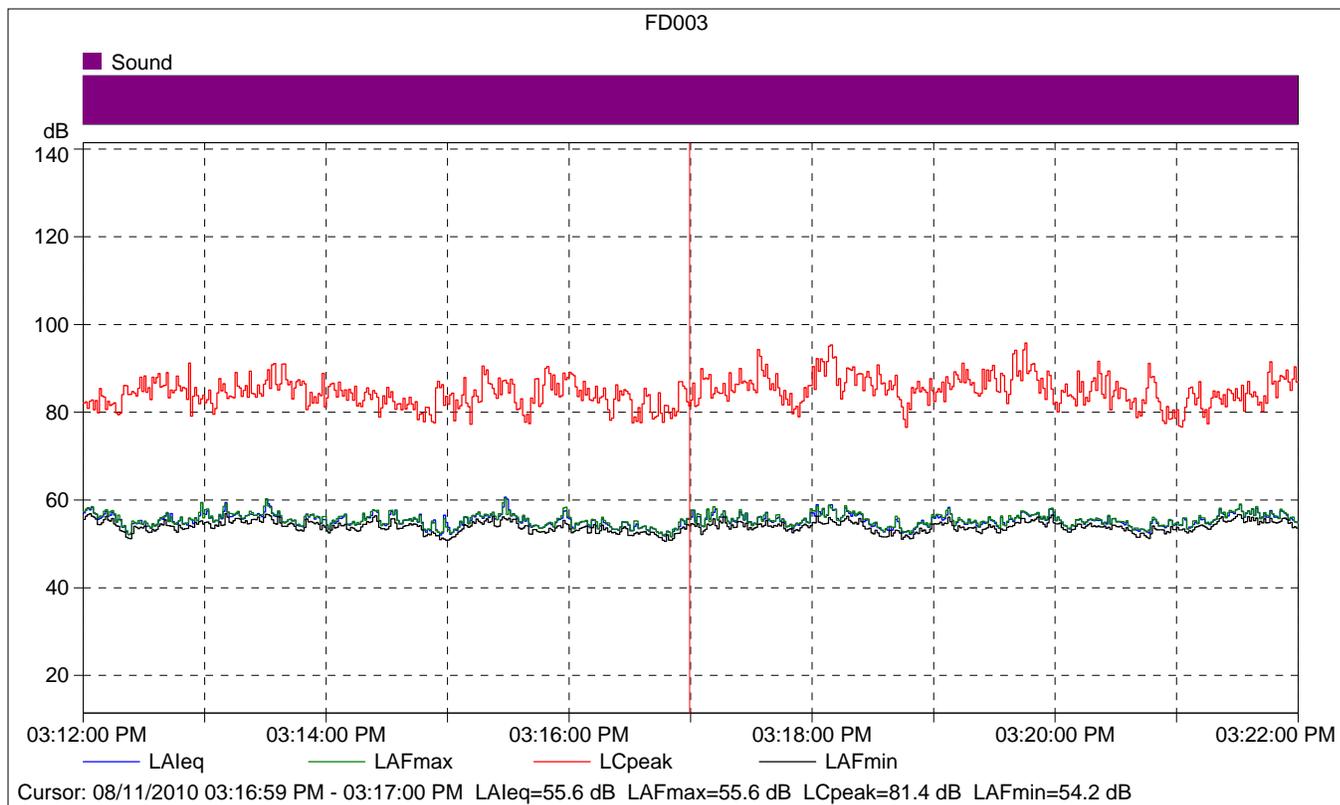
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Diffuse-field

Calibration Time:		08/10/2010 15:49:12
Calibration Type:		External reference
Sensitivity:		54.75 mV/Pa

FD003

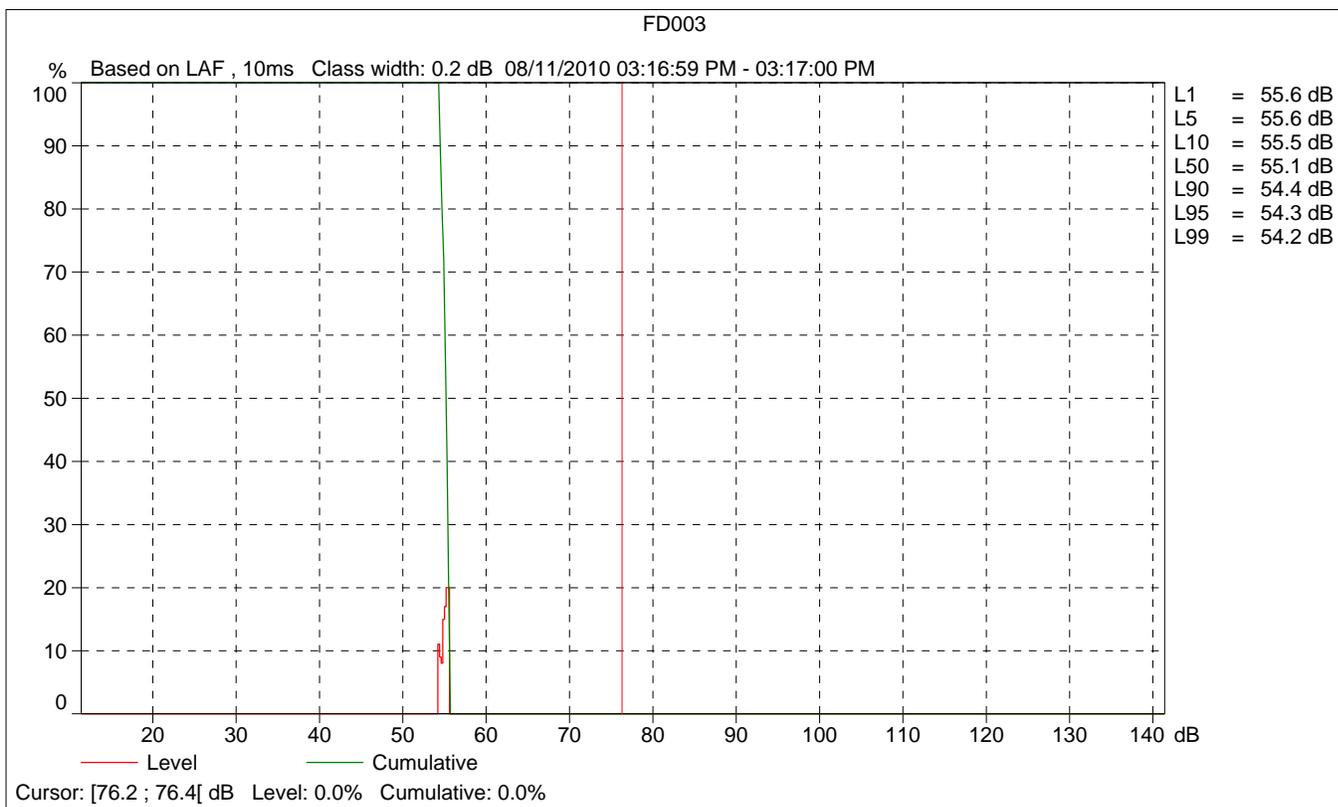
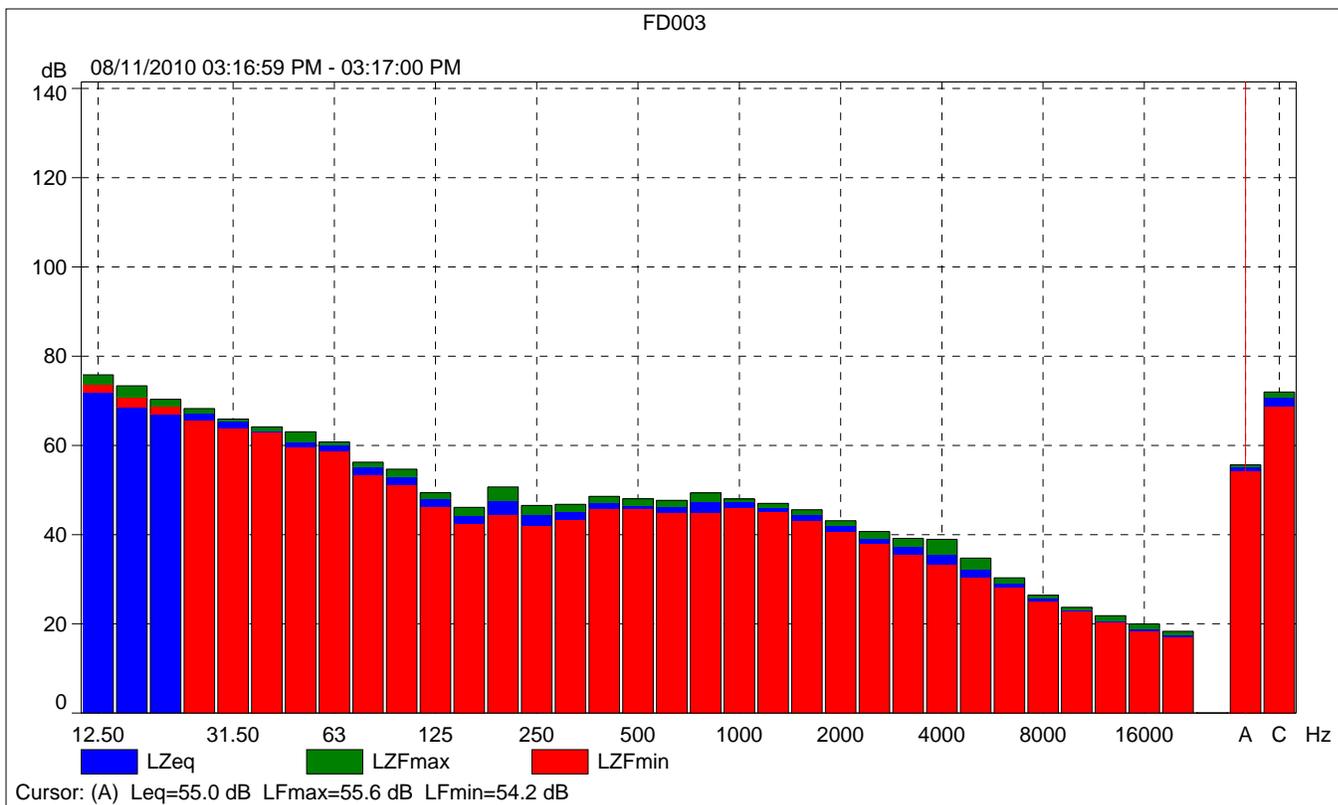
	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	54.9	60.4	50.6
Time	03:12:00 PM	03:22:00 PM	0:10:00				
Date	08/11/2010	08/11/2010					

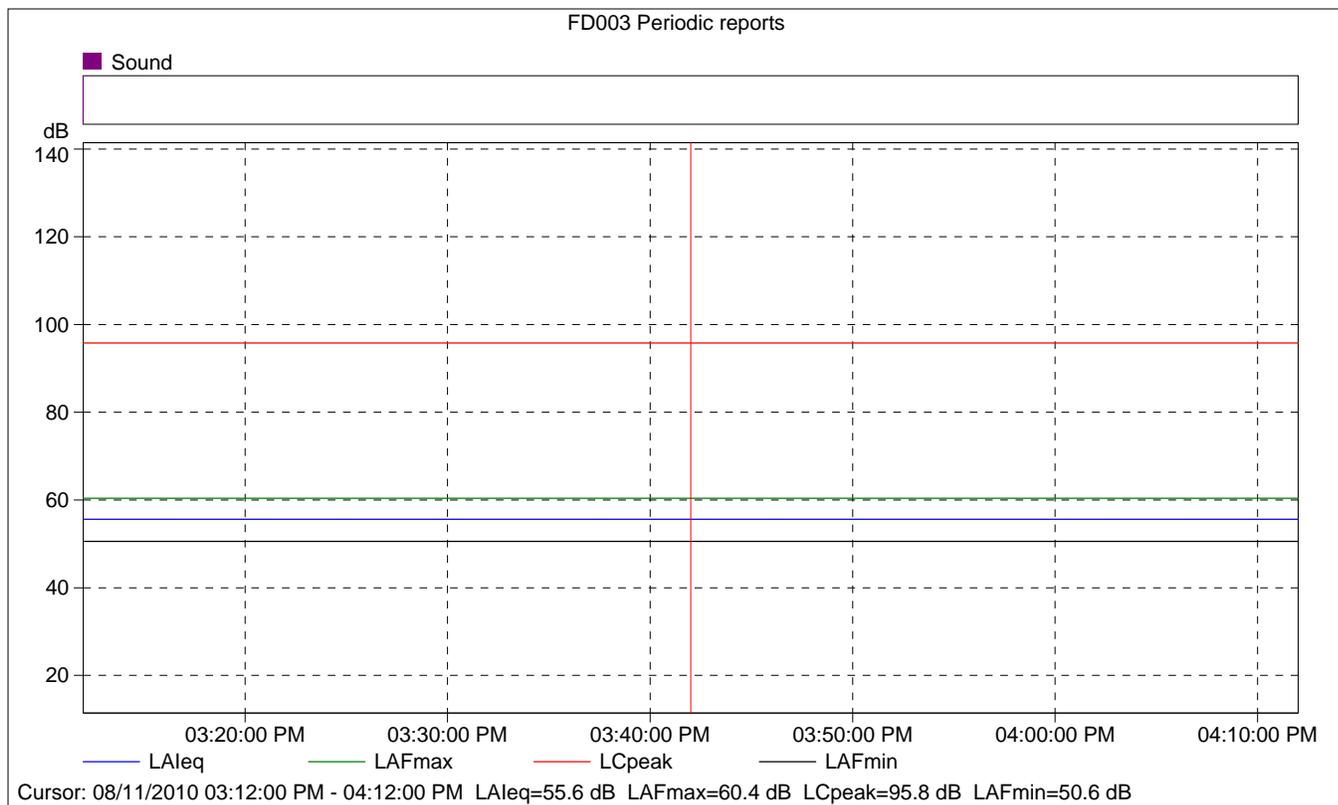




### FD003

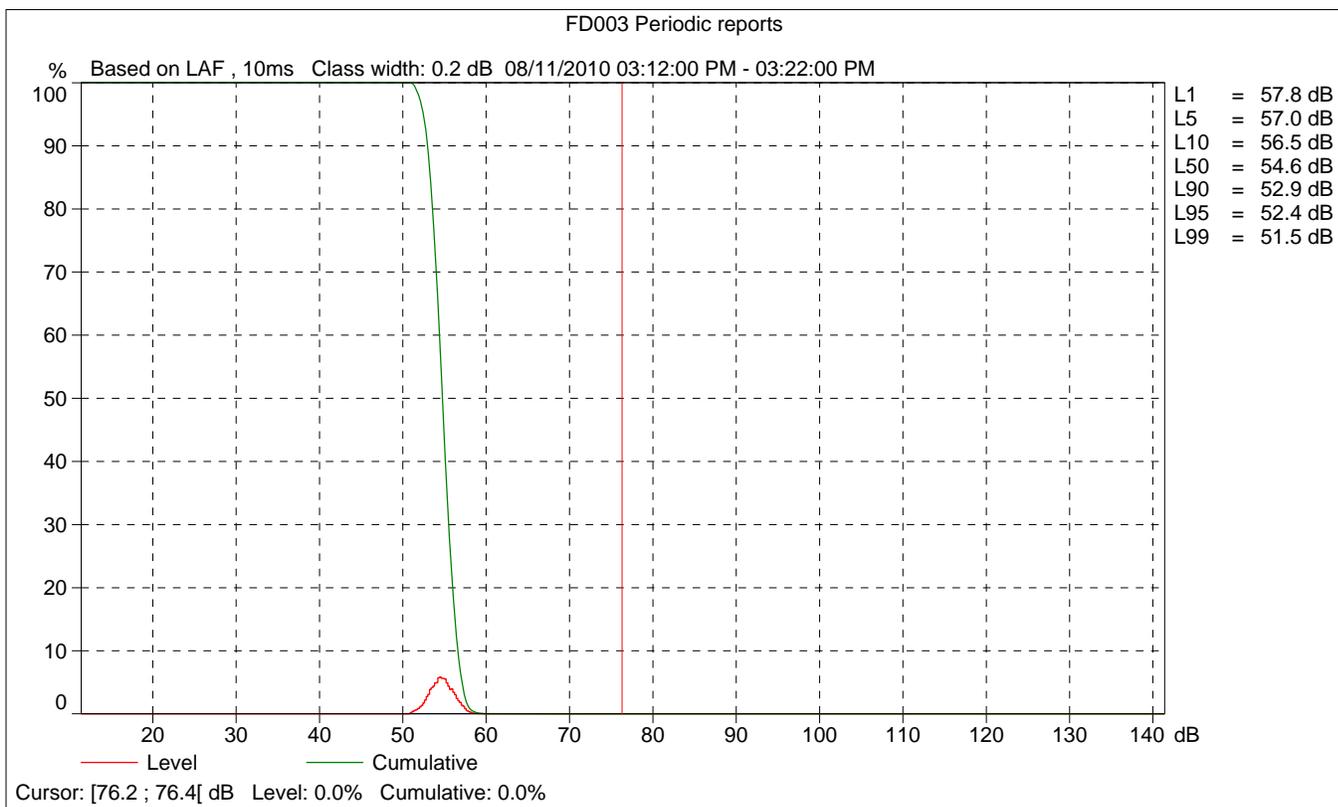
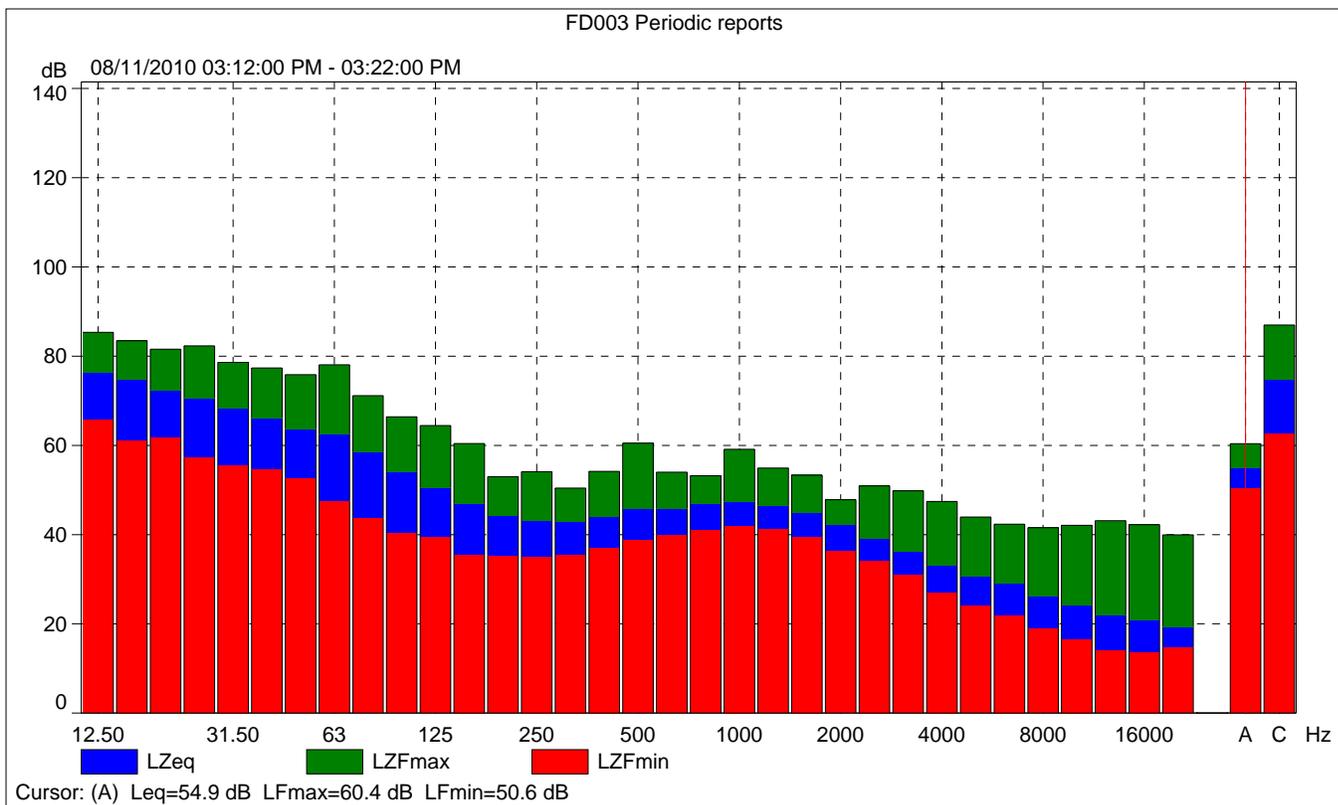
	Start time	Elapsed time	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			55.6	55.6	54.2
Time	03:16:59 PM	0:00:01			
Date	08/11/2010				

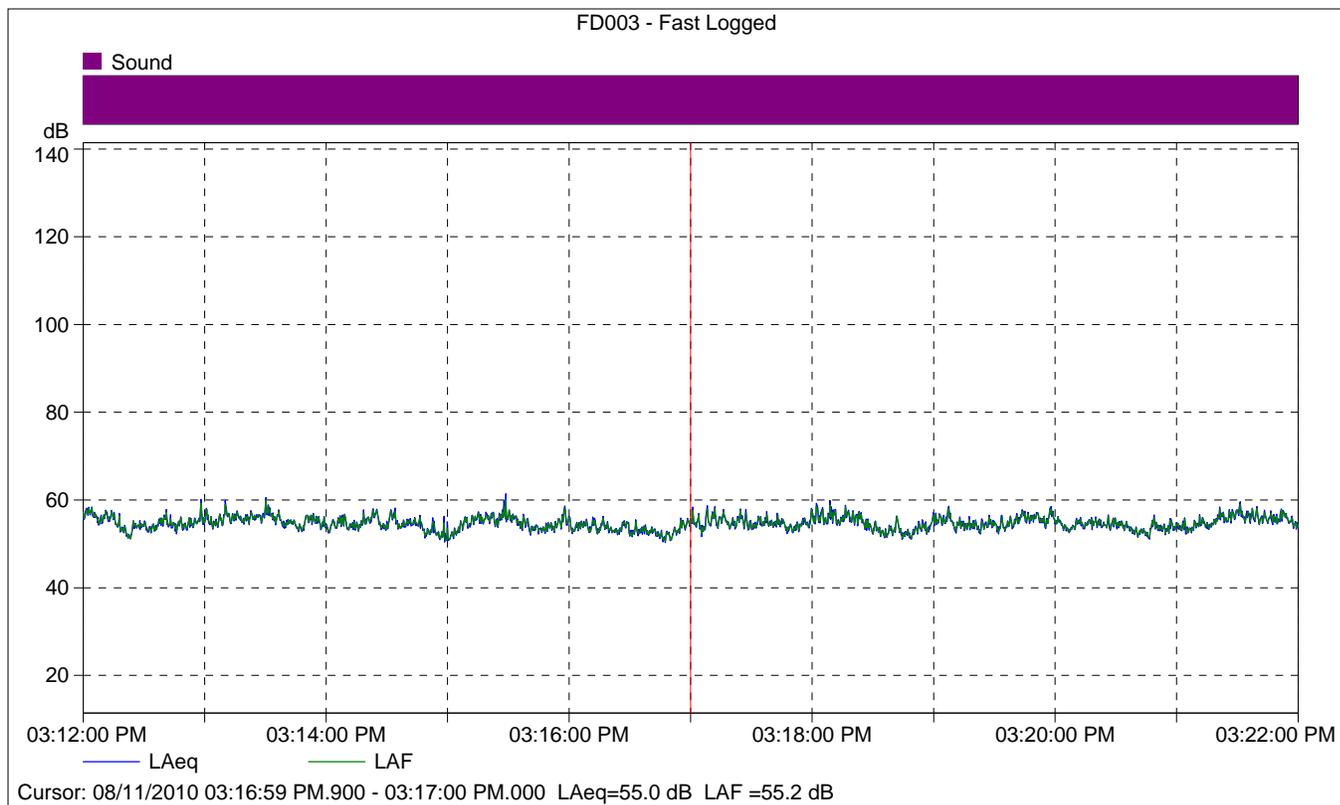




### FD003 Periodic reports

	Start time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	55.6	60.4	50.6
Time	03:12:00 PM	0:10:00				
Date	08/11/2010					





### FD003 - Fast Logged

	Start time	Elapsed time	LAeq [dB]
Value			55.0
Time	03:16:59 PM.900	0:00:00.100	
Date	08/11/2010		

<b>Site Number:</b> FD004			
<b>Recorded By:</b> Kelly Chiene			
<b>Job Number:</b> 35-101038			
<b>Date:</b> 8/11/10			
<b>Time:</b> 3:29 p.m.			
<b>Location:</b> Central/southeastern portion of the project site			
<b>Source of Peak Noise:</b> Cars along Grant Line Road, Byron Road, and I-205			
Noise Data			
Leq (dB)	Lmin (dB)	Lmax (dB)	Peak (dB)
54.2	48.6	64.1	98.1

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	2548189	11/14/2007	
	Microphone	Brüel & Kjær	4189	2543364	11/15/2007	
	Preamp	Brüel & Kjær	ZC 0032	4265	7/18/2006	
	Calibrator	Brüel & Kjær	4231	2545667	7/31/2006	
Weather Data						
Est.	<b>Duration:</b> 10 minutes			<b>Sky:</b> ☀		
	<b>Note:</b> dBA Offset = 0.03			<b>Sensor Height (ft):</b> 5 ft		
	<b>Wind Ave Speed (mph / m/s)</b>		<b>Temperature (degrees Fahrenheit)</b>		<b>Barometer Pressure (hPa)</b>	
	7		80		1012.5	

**Photo of Measurement Location**



2250

Instrument:		2250
Application:		BZ7225 Version 2.0.2
Start Time:		08/11/2010 15:29:12
End Time:		08/11/2010 15:39:12
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		140.15

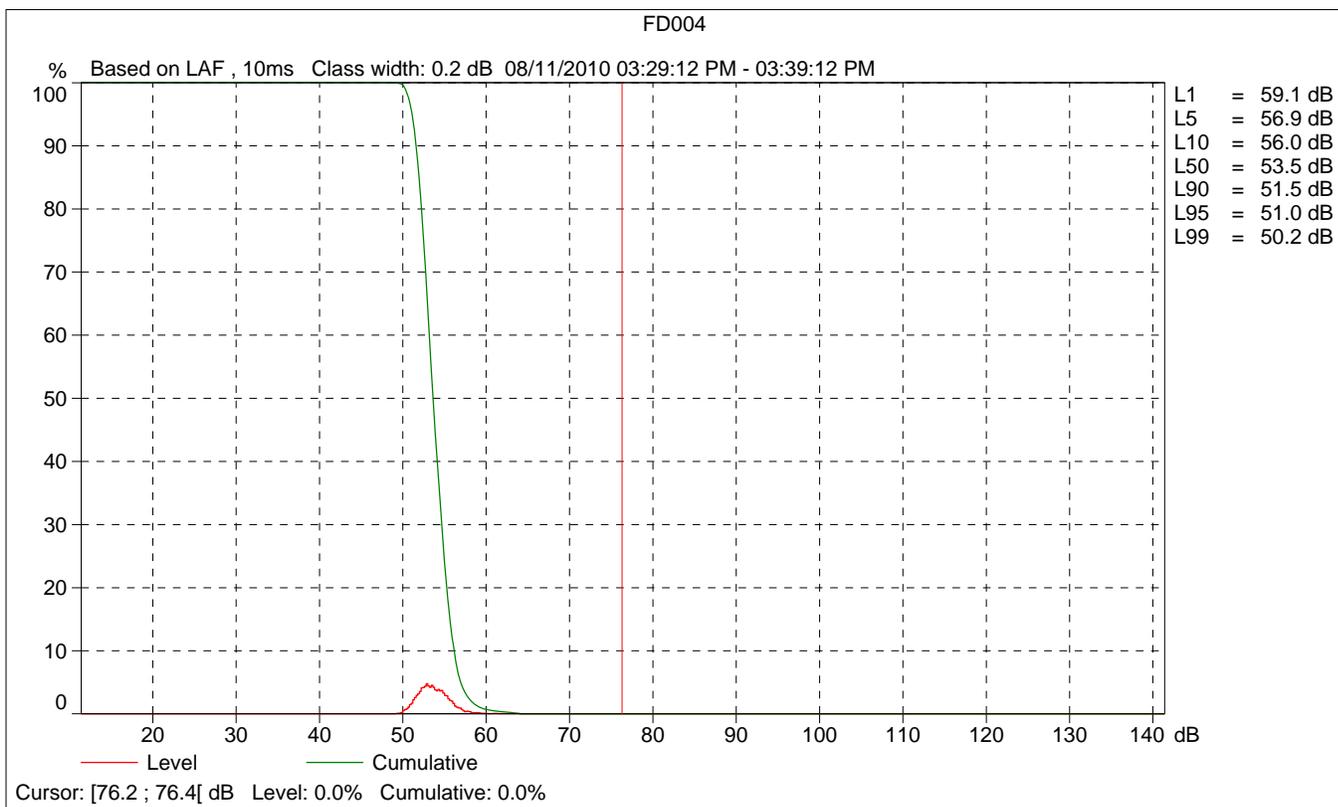
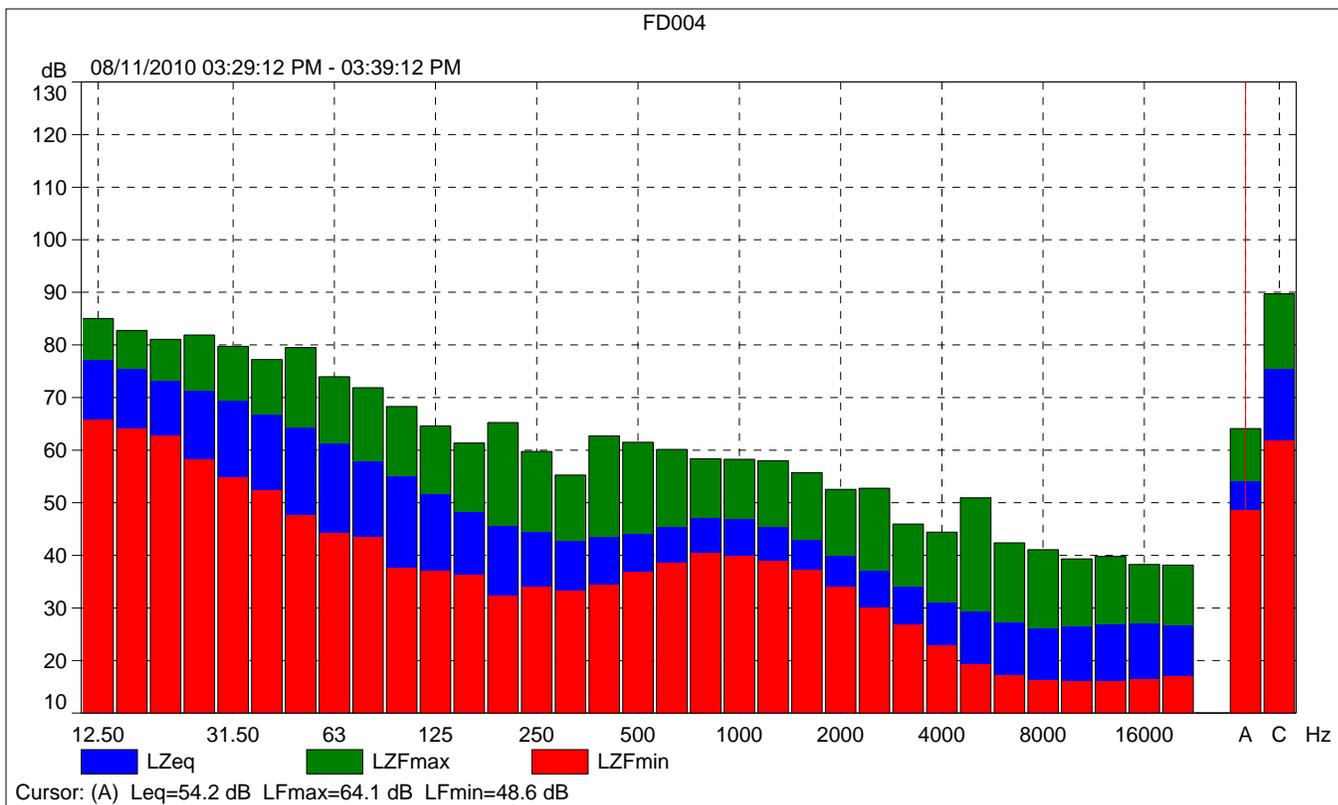
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

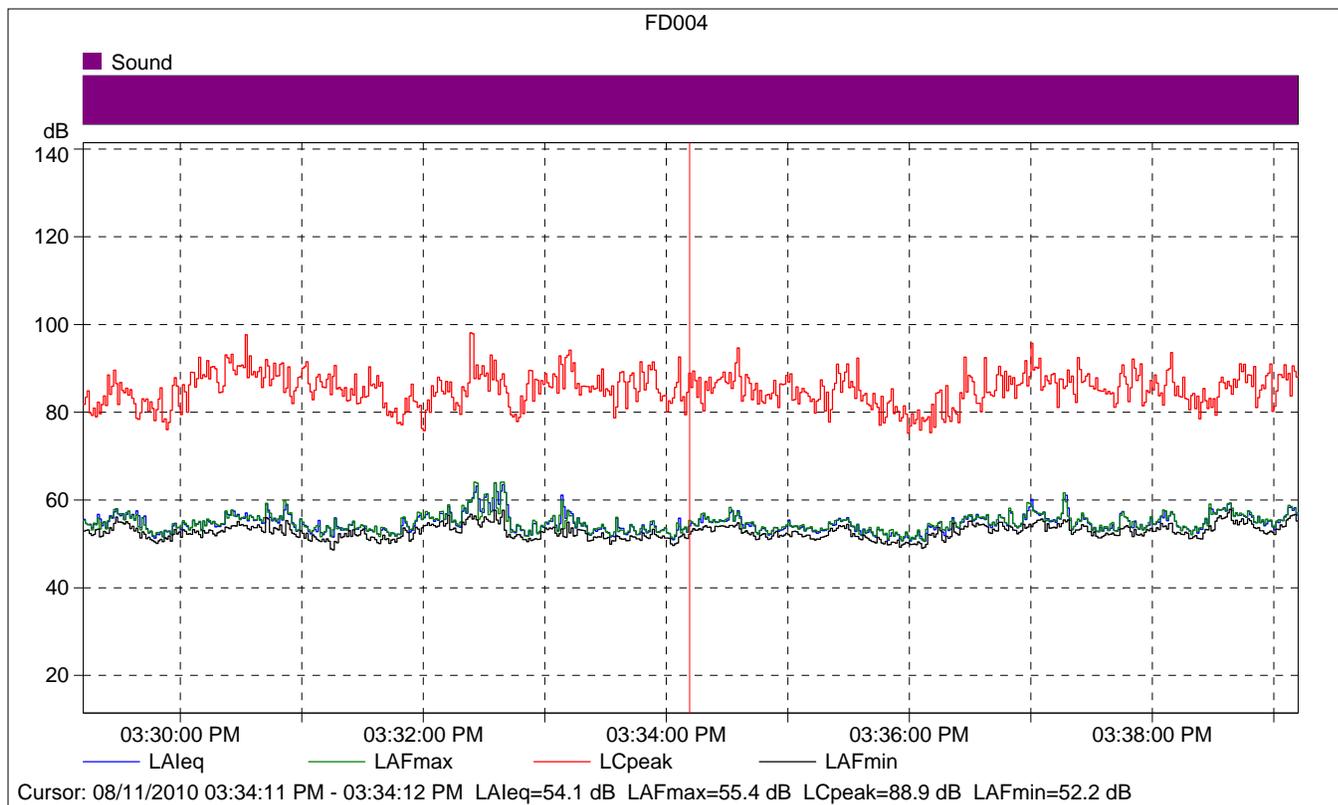
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Diffuse-field

Calibration Time:		08/10/2010 15:49:12
Calibration Type:		External reference
Sensitivity:		54.75 mV/Pa

FD004

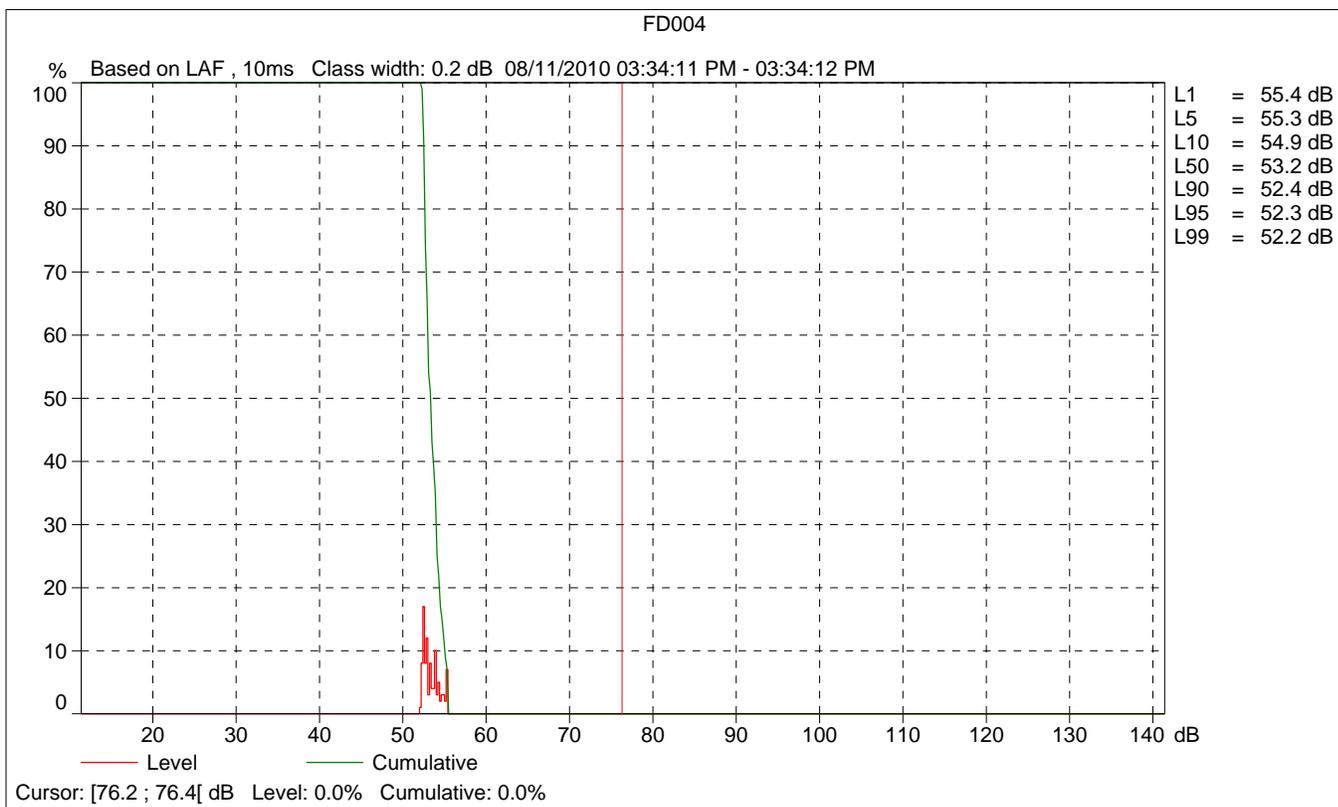
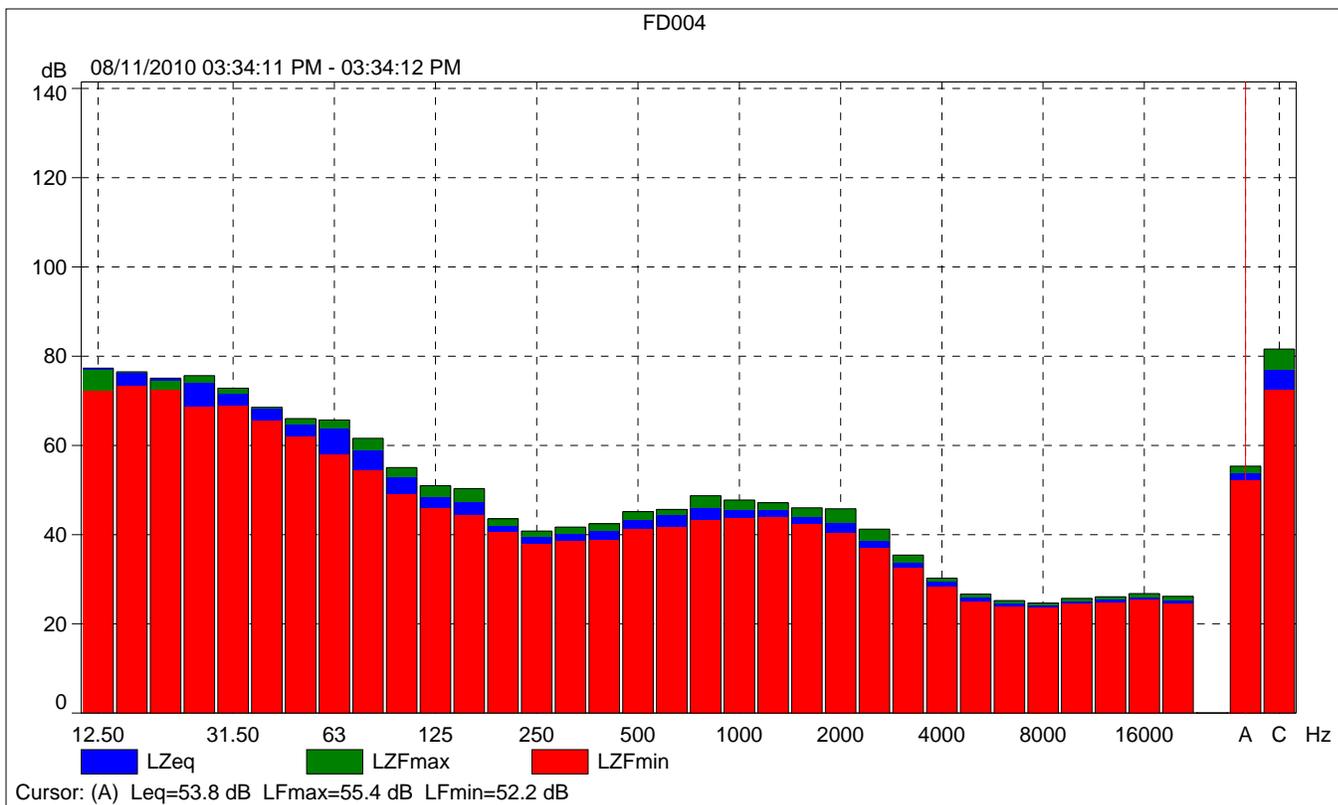
	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	54.2	64.1	48.6
Time	03:29:12 PM	03:39:12 PM	0:10:00				
Date	08/11/2010	08/11/2010					

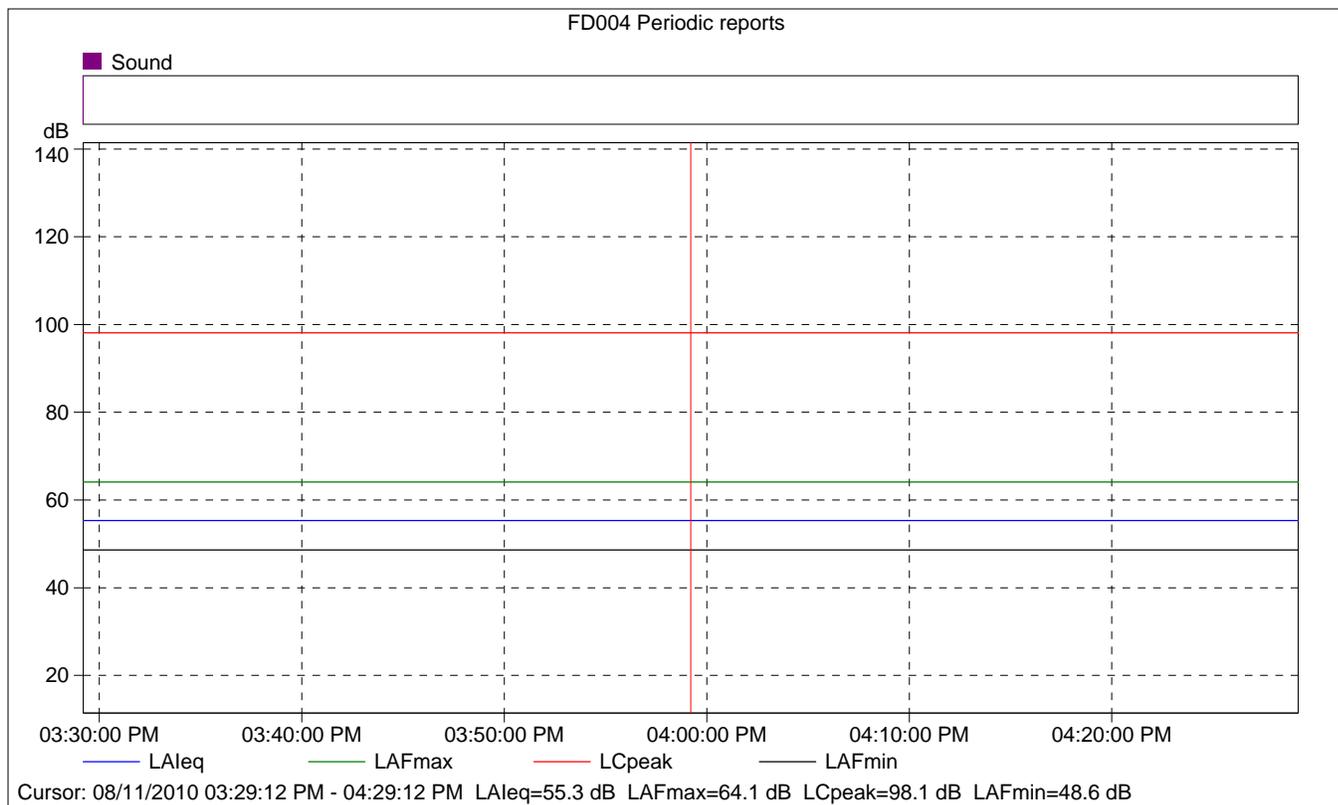




### FD004

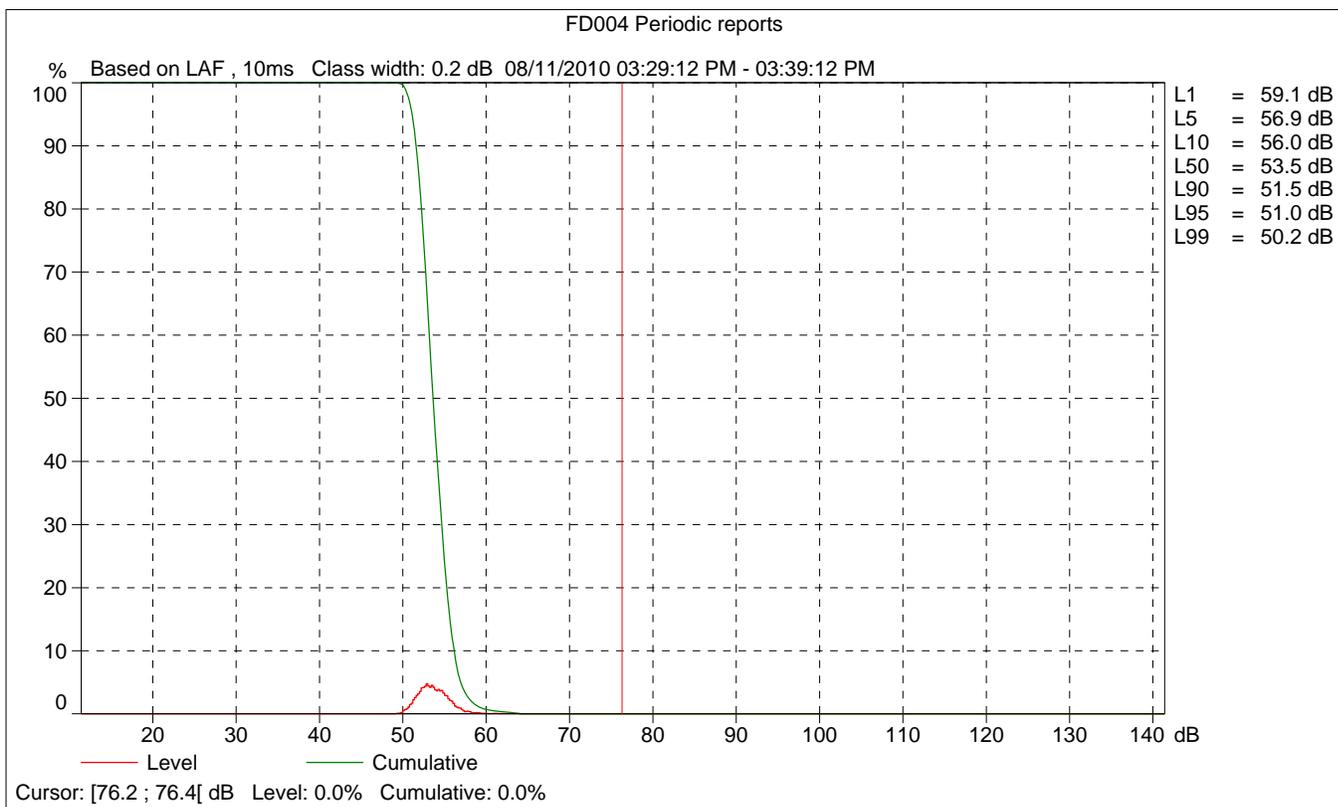
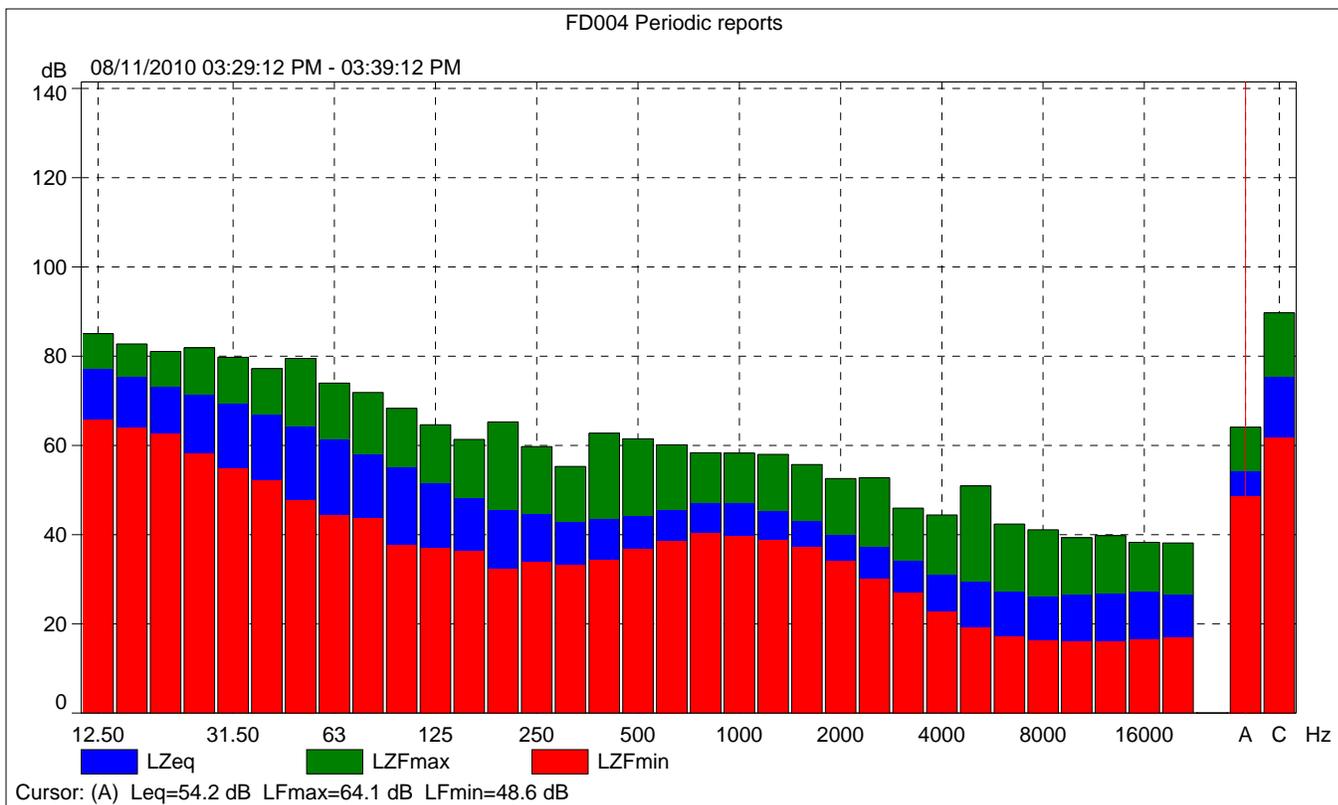
	Start time	Elapsed time	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			54.1	55.4	52.2
Time	03:34:11 PM	0:00:01			
Date	08/11/2010				

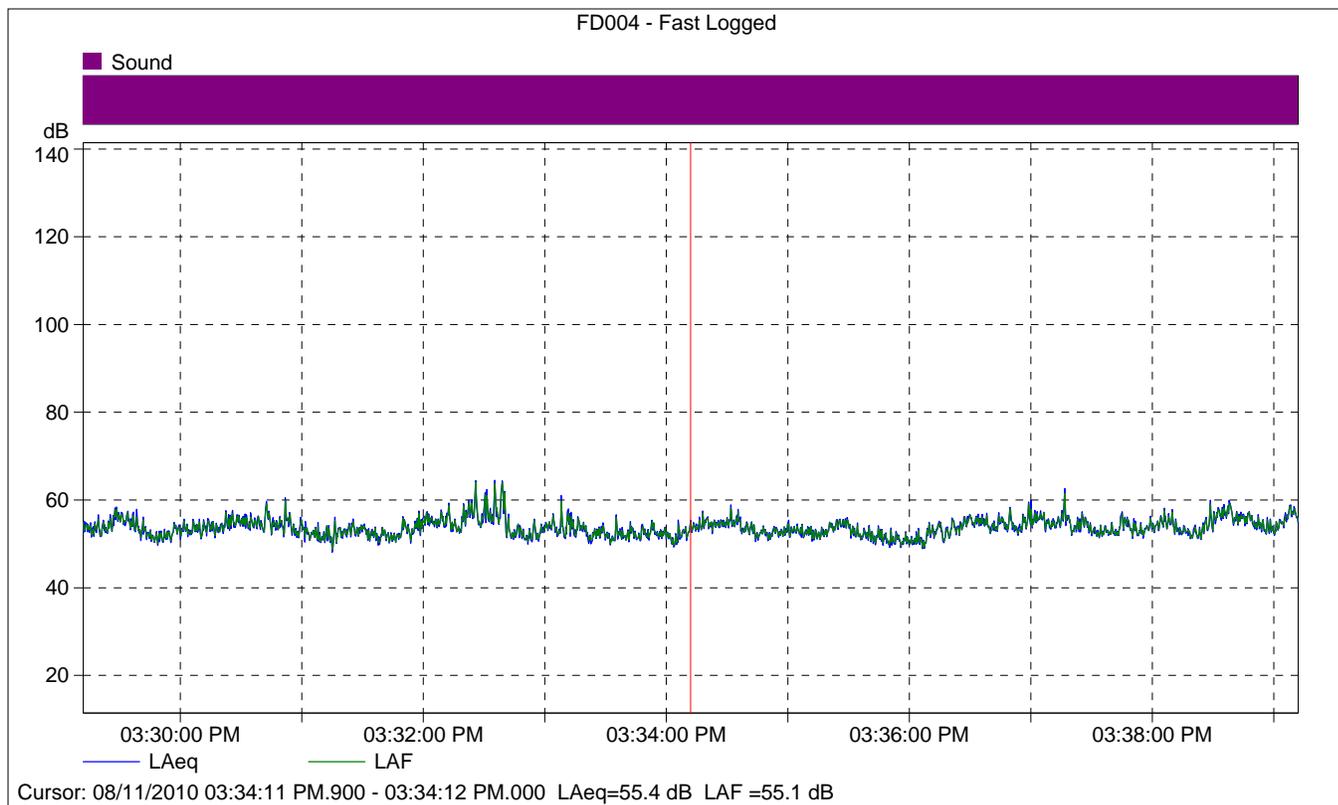




### FD004 Periodic reports

	Start time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	55.3	64.1	48.6
Time	03:29:12 PM	0:10:00				
Date	08/11/2010					





### FD004 - Fast Logged

	Start time	Elapsed time	LAeq [dB]
Value			55.4
Time	03:34:11 PM.900	0:00:00.100	
Date	08/11/2010		

**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

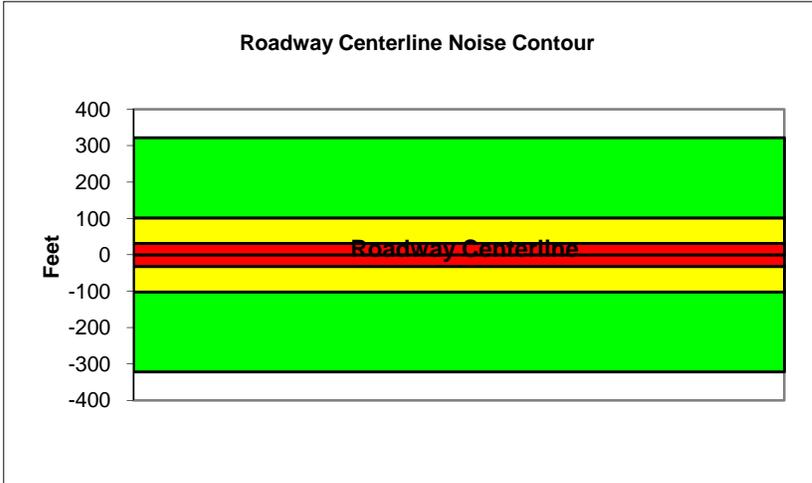
Project Name:	Filius Dobler	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Byron Road to Lammers Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	13,745			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1374.5			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.1	61.8	60.1	54.0	62.6	63.2
Medium Trucks:	62.0	54.0	47.6	46.0	54.5	54.7
Heavy Trucks:	66.9	54.9	45.9	47.1	56.8	56.9
<b>Vehicle Noise:</b>	<b>69.2</b>	<b>63.4</b>	<b>60.5</b>	<b>55.6</b>	<b>64.1</b>	<b>64.6</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	322
65 dBA	102
70 dBA	32
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

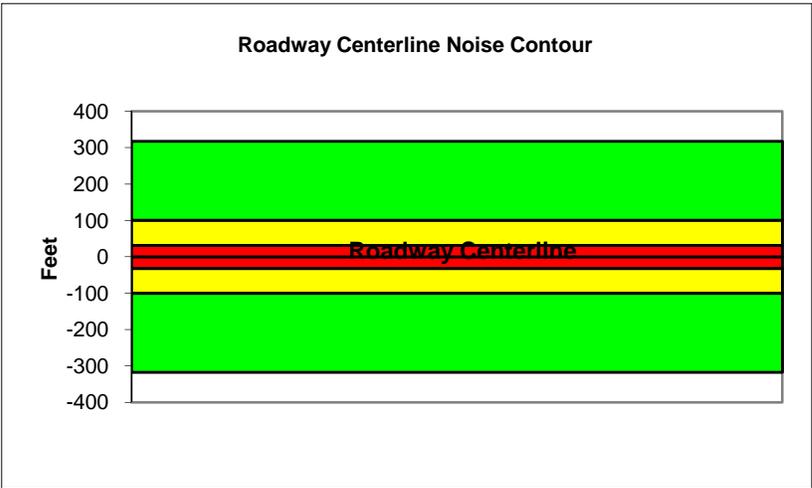
Project Name:	Filius Dobler	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Lammers Road to Costco Driveway		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	13,545			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1354.5			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.6	61.4	59.6	53.5	62.2	62.8
Medium Trucks:	61.5	53.5	47.1	45.5	54.0	54.2
Heavy Trucks:	66.4	54.5	45.4	46.6	56.3	56.5
<b>Vehicle Noise:</b>	<b>68.8</b>	<b>63.0</b>	<b>60.0</b>	<b>55.1</b>	<b>63.7</b>	<b>64.1</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	318
65 dBA	100
70 dBA	32
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

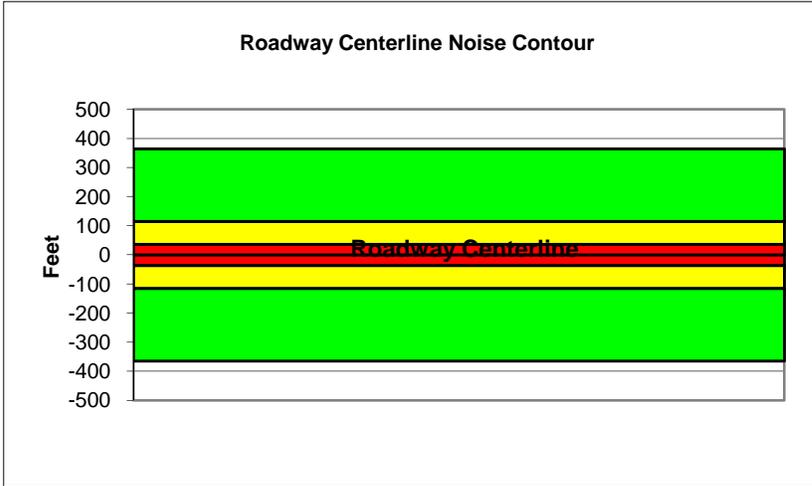
Project Name:	Filius Dobler	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Costco to Walmart Driveway		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	15,568			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1556.8			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.2	62.0	60.2	54.1	62.8	63.4
Medium Trucks:	62.1	54.1	47.7	46.1	54.6	54.8
Heavy Trucks:	67.0	55.1	46.0	47.2	56.9	57.1
<b>Vehicle Noise:</b>	<b>69.4</b>	<b>63.6</b>	<b>60.6</b>	<b>55.7</b>	<b>64.3</b>	<b>64.7</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	365
65 dBA	115
70 dBA	36
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

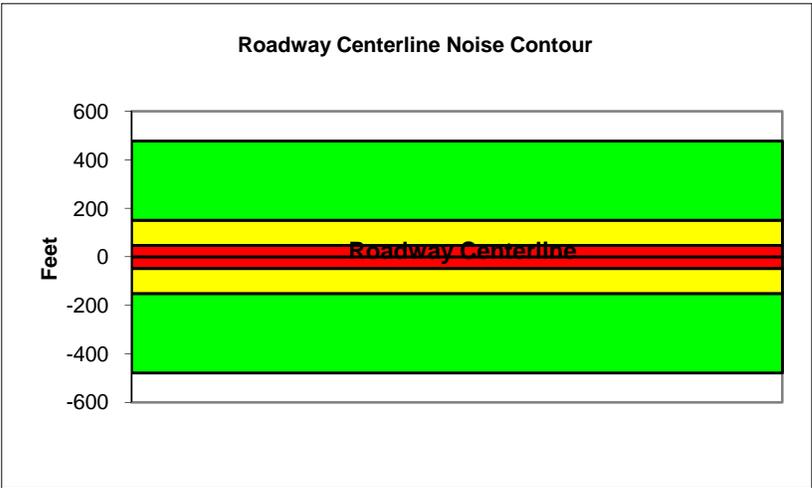
Project Name:	Filius Dobler	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Walmart Driveway to Naglee Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	20,409			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2040.9			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.4	63.2	61.4	55.3	63.9	64.5
Medium Trucks:	63.3	55.3	48.9	47.3	55.8	56.0
Heavy Trucks:	68.2	56.2	47.2	48.4	58.1	58.2
<b>Vehicle Noise:</b>	<b>70.5</b>	<b>64.7</b>	<b>61.8</b>	<b>56.9</b>	<b>65.4</b>	<b>65.9</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	479
65 dBA	151
70 dBA	48
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

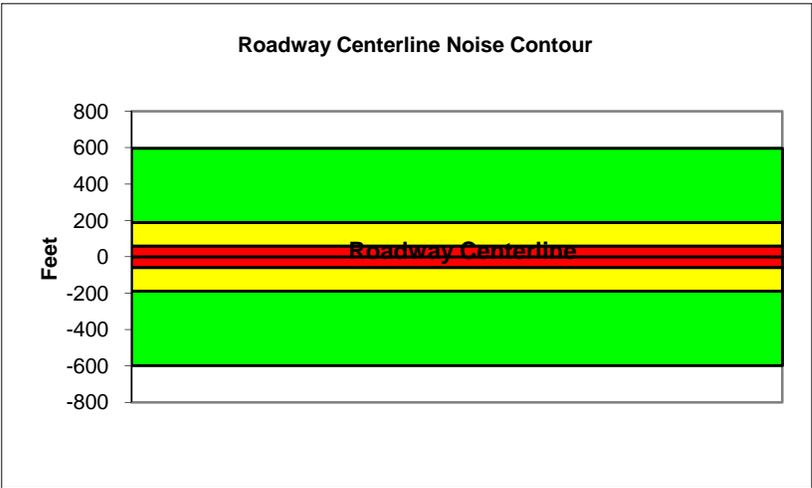
Project Name:	Filius Dobler	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Naglee Road to I-205 Ramps		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	25,455			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2545.5			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.3	64.1	62.3	56.2	64.9	65.5
Medium Trucks:	64.3	56.2	49.8	48.3	56.7	57.0
Heavy Trucks:	69.1	57.2	48.1	49.4	59.1	59.2
<b>Vehicle Noise:</b>	<b>71.5</b>	<b>65.7</b>	<b>62.8</b>	<b>57.8</b>	<b>66.4</b>	<b>66.9</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	597
65 dBA	189
70 dBA	60
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

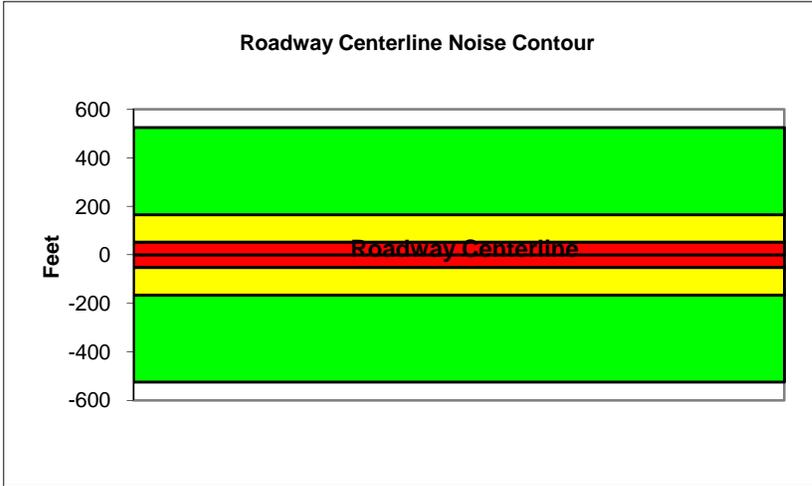
Project Name:	Filius Dobler	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	I-205 Ramps to Corral Hollow Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	22,386			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2238.6			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	60			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.6	63.4	61.6	55.5	64.2	64.8
Medium Trucks:	63.6	55.5	49.1	47.6	56.1	56.3
Heavy Trucks:	68.4	56.5	47.4	48.7	58.4	58.5
<b>Vehicle Noise:</b>	<b>70.8</b>	<b>65.0</b>	<b>62.1</b>	<b>57.1</b>	<b>65.7</b>	<b>66.2</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	525
65 dBA	166
70 dBA	52
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

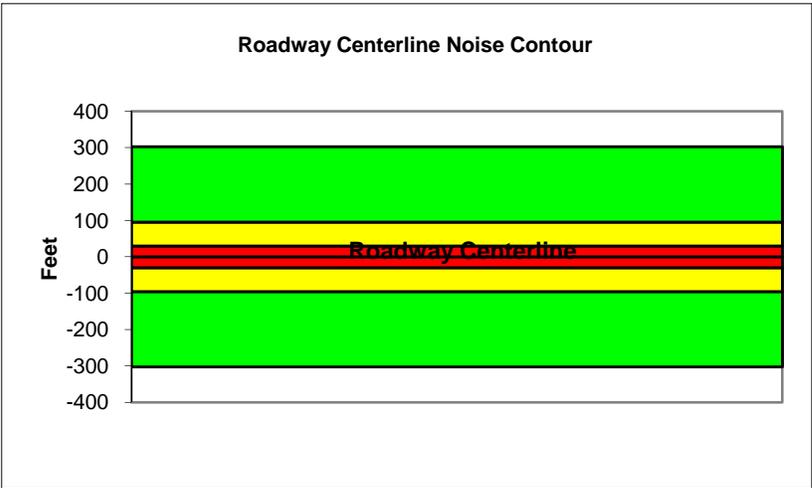
Project Name:	Filius Dobler	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	East of Corral Hollow Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	12,909			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1290.9			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.4	61.2	59.4	53.3	61.9	62.5
Medium Trucks:	61.3	53.3	46.9	45.3	53.8	54.0
Heavy Trucks:	66.2	54.2	45.2	46.4	56.1	56.2
<b>Vehicle Noise:</b>	<b>68.6</b>	<b>62.7</b>	<b>59.8</b>	<b>54.9</b>	<b>63.5</b>	<b>63.9</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	303
65 dBA	96
70 dBA	30
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

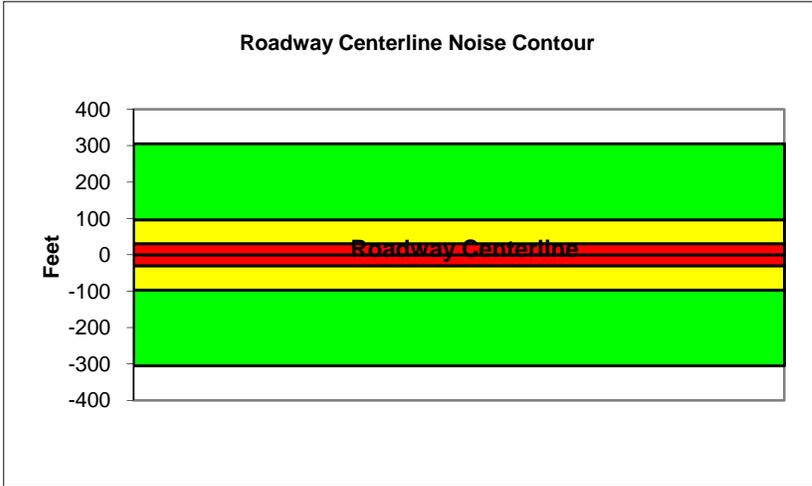
Project Name:	Filius Dobler	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	North of Grant Line Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	9,818			
Receiver Barrier Dist:	0	Peak Hour Traffic:	981.8			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.1	61.9	60.1	54.0	62.6	63.2
Medium Trucks:	61.4	53.3	46.9	45.3	53.8	54.1
Heavy Trucks:	65.9	53.9	44.9	46.1	55.6	55.8
<b>Vehicle Noise:</b>	<b>68.2</b>	<b>63.2</b>	<b>60.4</b>	<b>55.3</b>	<b>63.9</b>	<b>64.4</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	305
65 dBA	97
70 dBA	31
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

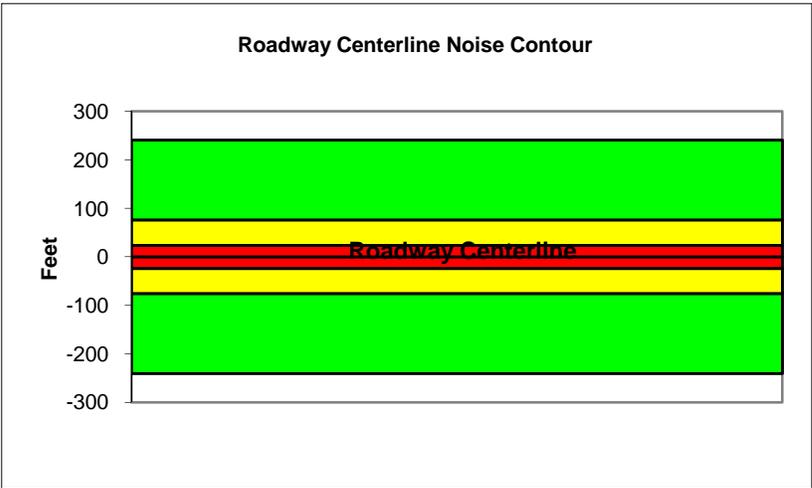
Project Name:	Filius Dobler	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	Grant Line Road to Lammers Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	7,750			
Receiver Barrier Dist:	0	Peak Hour Traffic:	775			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.1	60.8	59.0	53.0	61.6	62.2
Medium Trucks:	60.3	52.3	45.9	44.3	52.8	53.0
Heavy Trucks:	64.9	52.9	43.9	45.1	54.6	54.7
<b>Vehicle Noise:</b>	<b>67.2</b>	<b>62.1</b>	<b>59.4</b>	<b>54.3</b>	<b>62.9</b>	<b>63.4</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	241
65 dBA	76
70 dBA	24
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

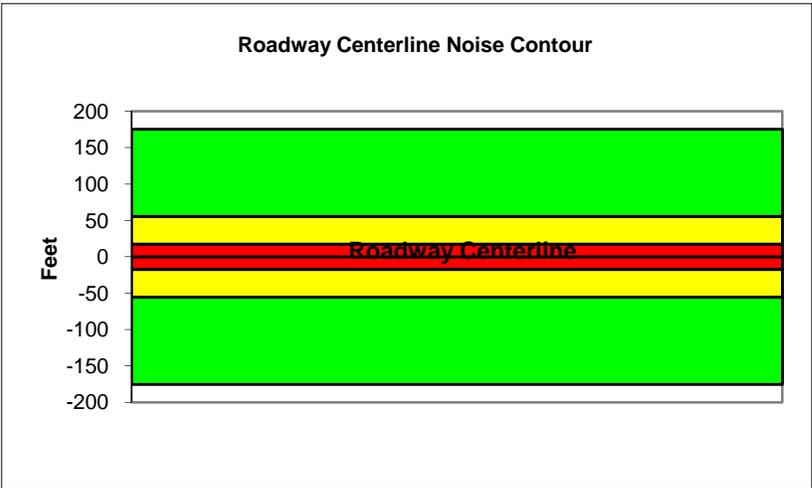
Project Name:	Filius Dobler	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	Lammers Road to Corral Hollow		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	5,636			
Receiver Barrier Dist:	0	Peak Hour Traffic:	563.6			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	40			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.4	59.2	57.4	51.3	60.0	60.6
Medium Trucks:	58.7	50.6	44.2	42.7	51.1	51.4
Heavy Trucks:	63.2	51.3	42.2	43.4	53.0	53.1
<b>Vehicle Noise:</b>	<b>65.5</b>	<b>60.5</b>	<b>57.8</b>	<b>52.6</b>	<b>61.2</b>	<b>61.7</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	175
65 dBA	55
70 dBA	18
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

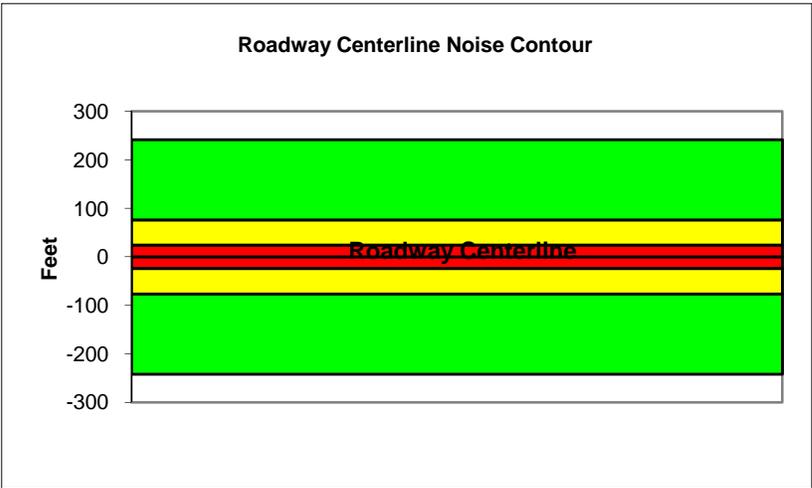
Project Name:	Filius Dobler	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	North of Grant Line Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	7,773			
Receiver Barrier Dist:	0	Peak Hour Traffic:	777.3			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	80			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.3	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	59.5	51.5	45.1	43.5	52.0	52.2
Heavy Trucks:	64.1	52.1	43.1	44.3	53.8	54.0
<b>Vehicle Noise:</b>	<b>66.4</b>	<b>61.3</b>	<b>58.6</b>	<b>53.5</b>	<b>62.1</b>	<b>62.6</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	242
65 dBA	77
70 dBA	24
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

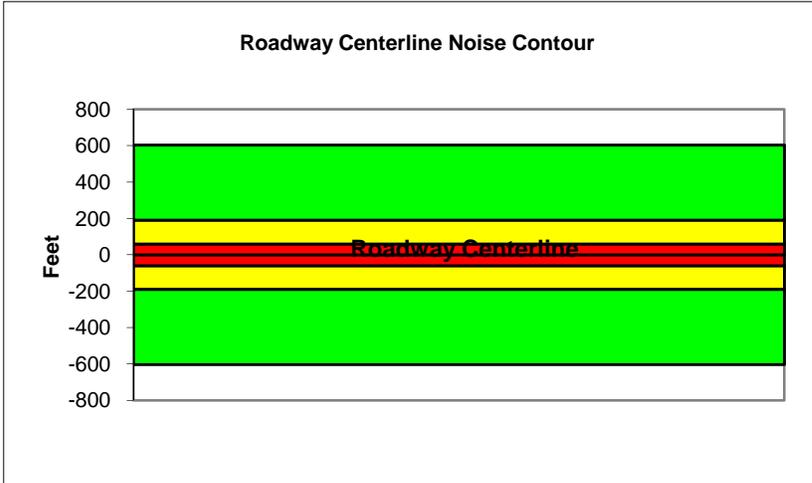
Project Name:	Filius Dobler	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	Grant Line Road to Byron Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	19,409			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1940.9			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	80			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.2	64.0	62.2	56.1	64.8	65.4
Medium Trucks:	63.5	55.4	49.1	47.5	56.0	56.2
Heavy Trucks:	68.0	56.1	47.0	48.3	57.8	57.9
<b>Vehicle Noise:</b>	<b>70.4</b>	<b>65.3</b>	<b>62.6</b>	<b>57.4</b>	<b>66.0</b>	<b>66.5</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	603
65 dBA	191
70 dBA	60
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

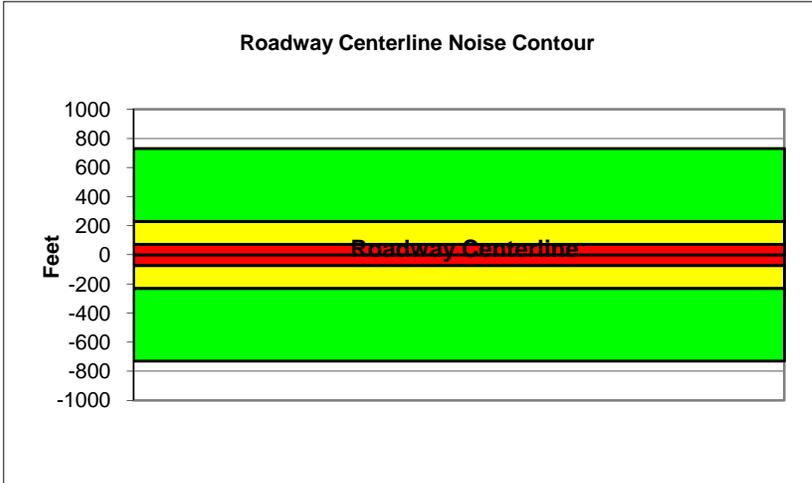
Project Name:	Filius Dobler	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	South of Byron Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	23,500			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2350			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	72			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.2	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	64.4	56.4	50.0	48.4	56.9	57.1
Heavy Trucks:	69.0	57.0	48.0	49.2	58.7	58.9
<b>Vehicle Noise:</b>	<b>71.3</b>	<b>66.2</b>	<b>63.5</b>	<b>58.4</b>	<b>67.0</b>	<b>67.5</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	731
65 dBA	231
70 dBA	73
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

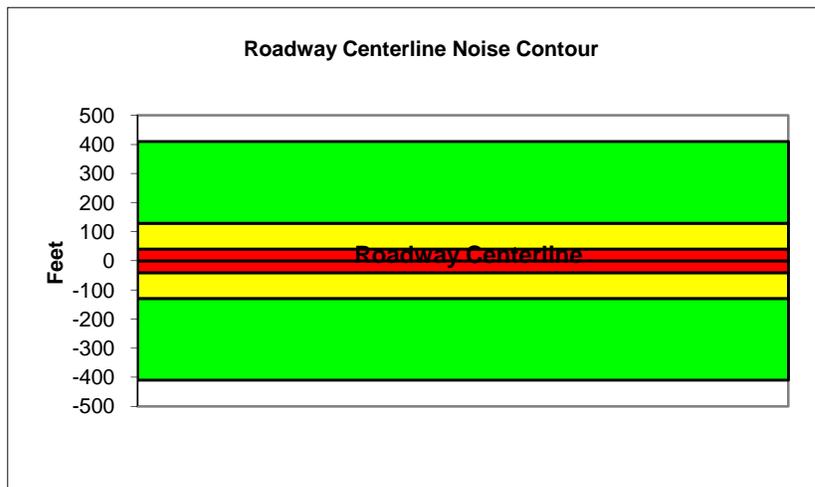
Project Name:	Filius Dobler	Scenario:	Existing Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Byron Road to Lammers Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	17,495			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1749.5			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.1	62.9	61.1	55.0	63.7	64.3
Medium Trucks:	63.1	55.0	48.6	47.0	55.5	55.8
Heavy Trucks:	67.9	56.0	46.9	48.1	57.9	58.0
<b>Vehicle Noise:</b>	<b>70.3</b>	<b>64.5</b>	<b>61.6</b>	<b>56.6</b>	<b>65.2</b>	<b>65.7</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	410
65 dBA	130
70 dBA	41
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

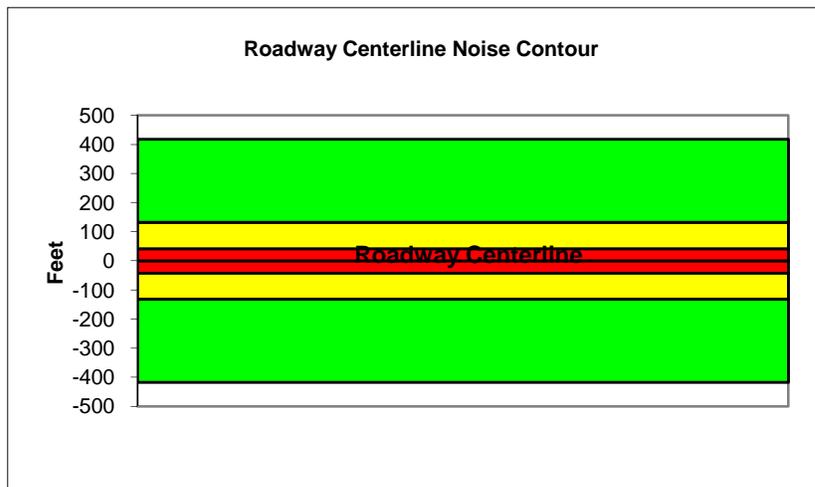
Project Name:	Filius Dobler	Scenario:	Existing Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Lammers Road to Costco Driveway		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	17,818			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1781.8			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b> Lft View: <b>-90</b>		Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.8	62.6	60.8	54.7	63.3	63.9
Medium Trucks:	62.7	54.7	48.3	46.7	55.2	55.4
Heavy Trucks:	67.6	55.6	46.6	47.8	57.5	57.6
<b>Vehicle Noise:</b>	<b>70.0</b>	<b>64.1</b>	<b>61.2</b>	<b>56.3</b>	<b>64.9</b>	<b>65.3</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	418
65 dBA	132
70 dBA	42
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

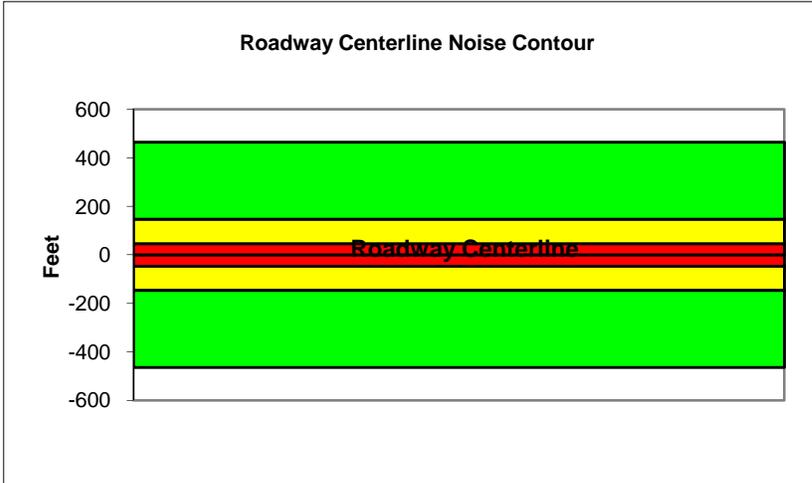
Project Name:	Filius Dobler	Scenario:	Existing Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Costco to Walmart Driveway		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	19,805			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1980.5			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.2	63.0	61.2	55.2	63.8	64.4
Medium Trucks:	63.2	55.1	48.7	47.2	55.7	55.9
Heavy Trucks:	68.0	56.1	47.0	48.3	58.0	58.1
<b>Vehicle Noise:</b>	<b>70.4</b>	<b>64.6</b>	<b>61.7</b>	<b>56.7</b>	<b>65.3</b>	<b>65.8</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	465
65 dBA	147
70 dBA	46
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

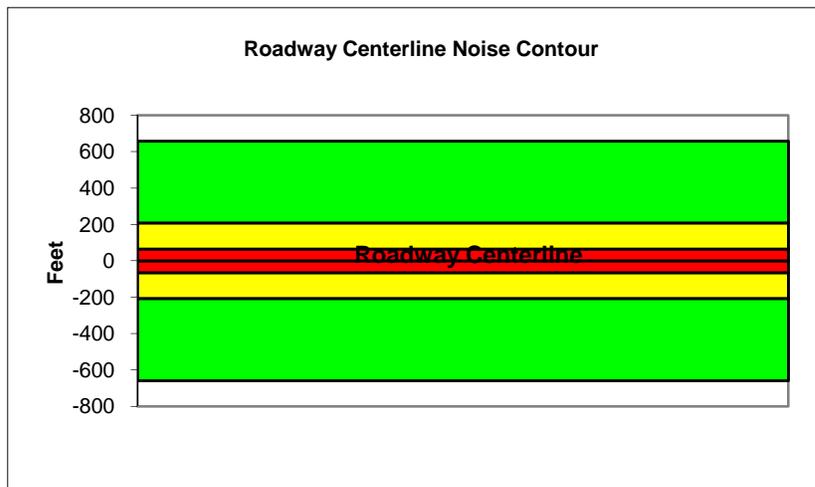
Project Name:	Filius Dobler	Scenario:	Existing Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Walmart Driveway to Naglee Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	28,127			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2812.7			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.8	64.5	62.8	56.7	65.3	65.9
Medium Trucks:	64.7	56.7	50.3	48.7	57.2	57.4
Heavy Trucks:	69.6	57.6	48.6	49.8	59.5	59.6
<b>Vehicle Noise:</b>	<b>71.9</b>	<b>66.1</b>	<b>63.2</b>	<b>58.3</b>	<b>66.8</b>	<b>67.3</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	659
65 dBA	208
70 dBA	66
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

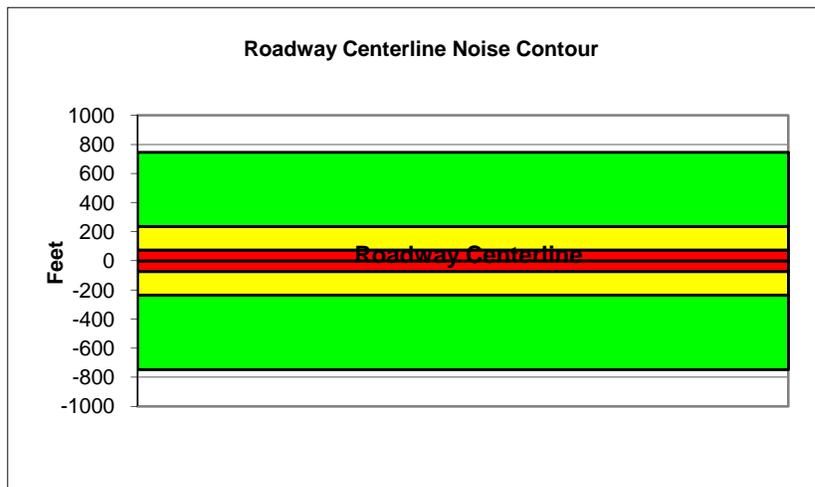
Project Name:	Filius Dobler	Scenario:	Existing Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Naglee Road to I-205 Ramps		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	31,845			
Receiver Barrier Dist:	0	Peak Hour Traffic:	3184.5			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.3	65.1	63.3	57.2	65.9	66.5
Medium Trucks:	65.3	57.2	50.8	49.2	57.7	58.0
Heavy Trucks:	70.1	58.2	49.1	50.3	60.0	60.2
<b>Vehicle Noise:</b>	<b>72.5</b>	<b>66.7</b>	<b>63.7</b>	<b>58.8</b>	<b>67.4</b>	<b>67.9</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	747
65 dBA	236
70 dBA	75
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

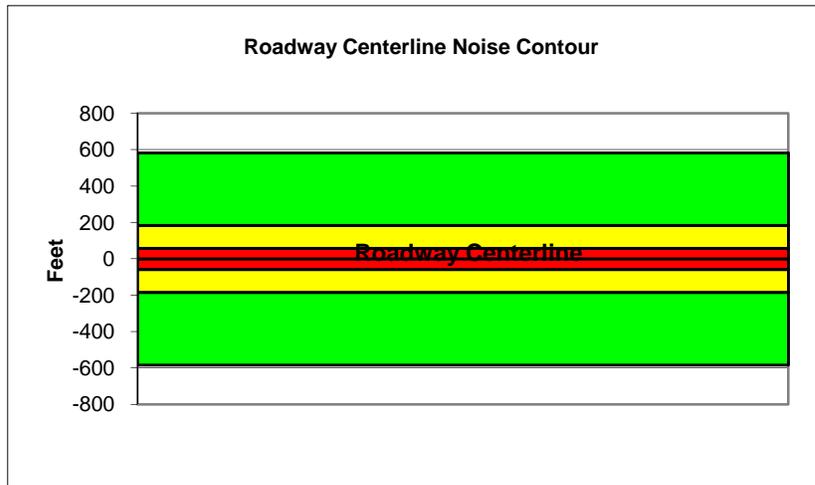
Project Name:	Filius Dobler	Scenario:	Existing Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	I-205 Ramps to Corral Hollow Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	24,900			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2490			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	60			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.1	63.9	62.1	56.0	64.7	65.3
Medium Trucks:	64.0	56.0	49.6	48.0	56.5	56.7
Heavy Trucks:	68.9	57.0	47.9	49.1	58.8	59.0
<b>Vehicle Noise:</b>	<b>71.3</b>	<b>65.5</b>	<b>62.5</b>	<b>57.6</b>	<b>66.2</b>	<b>66.6</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	584
65 dBA	185
70 dBA	58
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

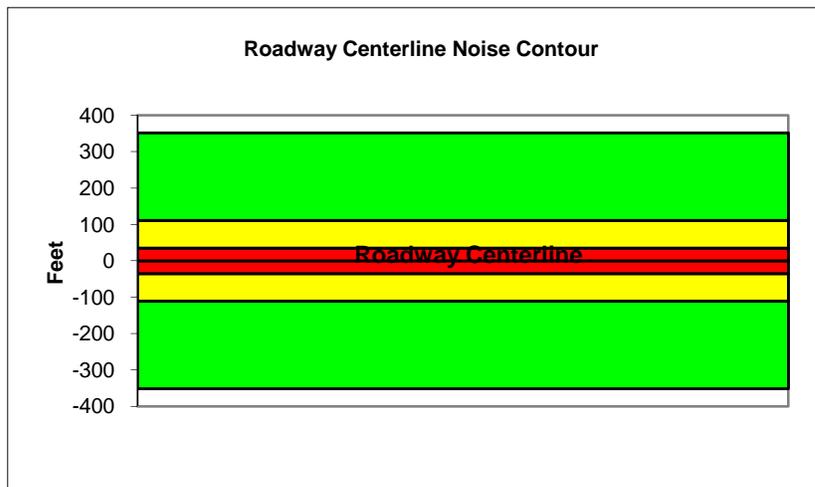
Project Name:	Filius Dobler	Scenario:	Existing Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	East of Corral Hollow Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	15,000			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1500			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.0	61.8	60.0	53.9	62.6	63.2
Medium Trucks:	62.0	53.9	47.5	46.0	54.5	54.7
Heavy Trucks:	66.8	54.9	45.8	47.1	56.8	56.9
<b>Vehicle Noise:</b>	<b>69.2</b>	<b>63.4</b>	<b>60.5</b>	<b>55.5</b>	<b>64.1</b>	<b>64.6</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	352
65 dBA	111
70 dBA	35
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

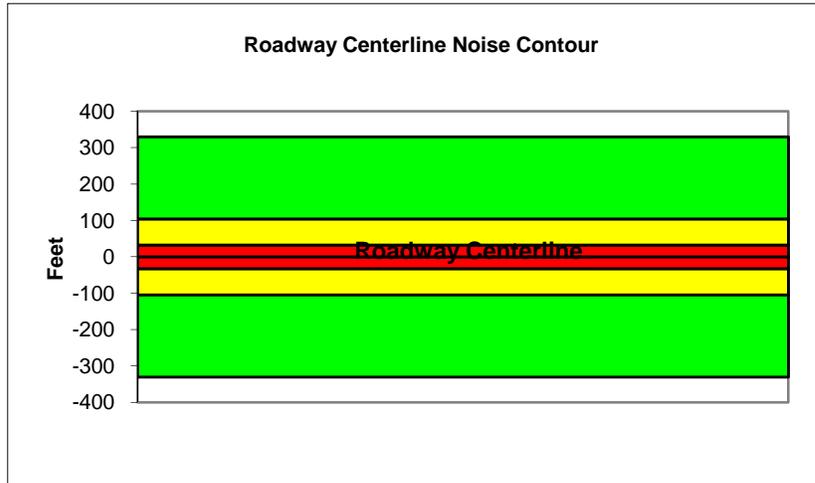
Project Name:	Filius Dobler	Scenario:	Existing Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	North of Grant Line Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	10,627			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1062.7			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.4	62.2	60.4	54.3	63.0	63.6
Medium Trucks:	61.7	53.6	47.3	45.7	54.2	54.4
Heavy Trucks:	66.2	54.3	45.2	46.4	56.0	56.1
<b>Vehicle Noise:</b>	<b>68.6</b>	<b>63.5</b>	<b>60.8</b>	<b>55.6</b>	<b>64.2</b>	<b>64.7</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	330
65 dBA	104
70 dBA	33
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

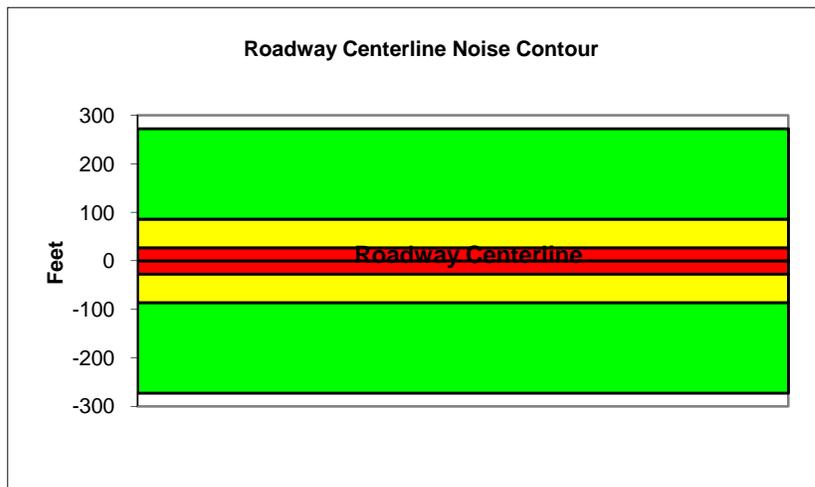
Project Name:	Filius Dobler	Scenario:	Existing Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	Grant Line Road to Lammers Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	8,777			
Receiver Barrier Dist:	0	Peak Hour Traffic:	877.7			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.6	61.4	59.6	53.5	62.2	62.8
Medium Trucks:	60.9	52.8	46.4	44.8	53.3	53.6
Heavy Trucks:	65.4	53.5	44.4	45.6	55.2	55.3
<b>Vehicle Noise:</b>	<b>67.7</b>	<b>62.7</b>	<b>60.0</b>	<b>54.8</b>	<b>63.4</b>	<b>63.9</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	273
65 dBA	86
70 dBA	27
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

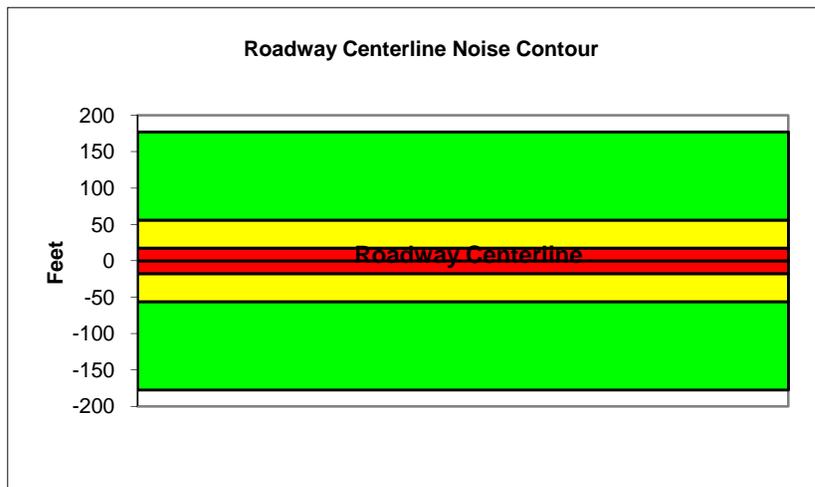
Project Name:	Filius Dobler	Scenario:	Existing Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	Lammers Road to Corral Hollow		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	5,714			
Receiver Barrier Dist:	0	Peak Hour Traffic:	571.4			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	40			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.5	59.2	57.5	51.4	60.0	60.6
Medium Trucks:	58.7	50.7	44.3	42.7	51.2	51.4
Heavy Trucks:	63.3	51.3	42.3	43.5	53.0	53.2
<b>Vehicle Noise:</b>	<b>65.6</b>	<b>60.5</b>	<b>57.8</b>	<b>52.7</b>	<b>61.3</b>	<b>61.8</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	177
65 dBA	56
70 dBA	18
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

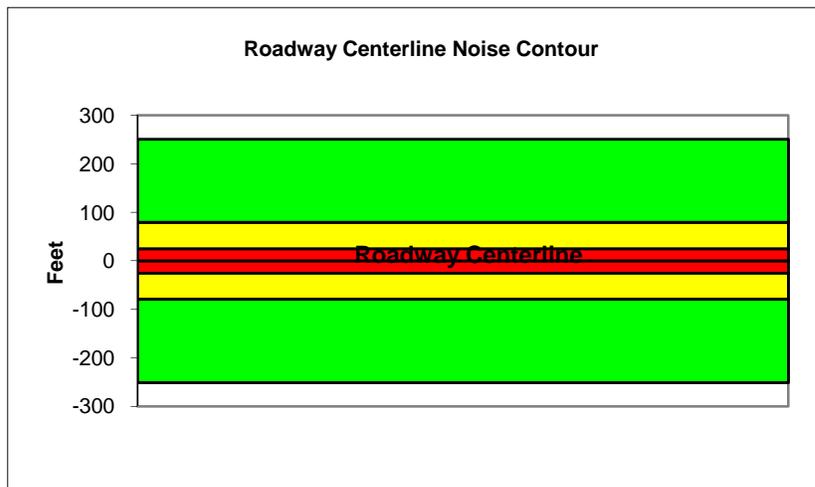
Project Name:	Filius Dobler	Scenario:	Existing Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	North of Grant Line Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	8,082			
Receiver Barrier Dist:	0	Peak Hour Traffic:	808.2			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	80			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.4	60.2	58.4	52.3	61.0	61.6
Medium Trucks:	59.7	51.6	45.3	43.7	52.2	52.4
Heavy Trucks:	64.2	52.3	43.2	44.5	54.0	54.1
<b>Vehicle Noise:</b>	<b>66.6</b>	<b>61.5</b>	<b>58.8</b>	<b>53.6</b>	<b>62.2</b>	<b>62.7</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	251
65 dBA	79
70 dBA	25
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

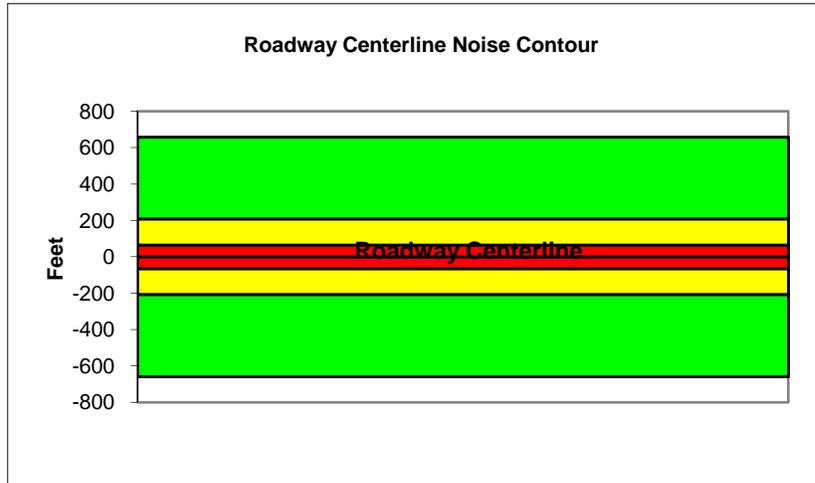
Project Name:	Filius Dobler	Scenario:	Existing Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	Grant Line Road to Byron Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	21,200			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2120			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	80			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.6	64.4	62.6	56.5	65.2	65.8
Medium Trucks:	63.9	55.8	49.4	47.9	56.4	56.6
Heavy Trucks:	68.4	56.5	47.4	48.6	58.2	58.3
<b>Vehicle Noise:</b>	<b>70.7</b>	<b>65.7</b>	<b>63.0</b>	<b>57.8</b>	<b>66.4</b>	<b>66.9</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	659
65 dBA	208
70 dBA	66
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

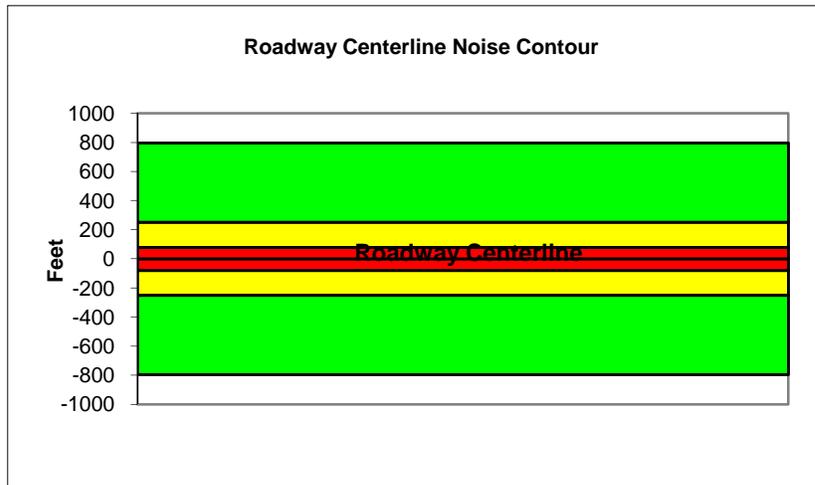
Project Name:	Filius Dobler	Scenario:	Existing Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	South of Byron Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	25,591			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2559.1			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	72			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.5	65.3	63.5	57.4	66.1	66.7
Medium Trucks:	64.8	56.7	50.4	48.8	57.3	57.5
Heavy Trucks:	69.3	57.4	48.3	49.6	59.1	59.2
<b>Vehicle Noise:</b>	<b>71.7</b>	<b>66.6</b>	<b>63.9</b>	<b>58.7</b>	<b>67.3</b>	<b>67.8</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	796
65 dBA	252
70 dBA	80
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

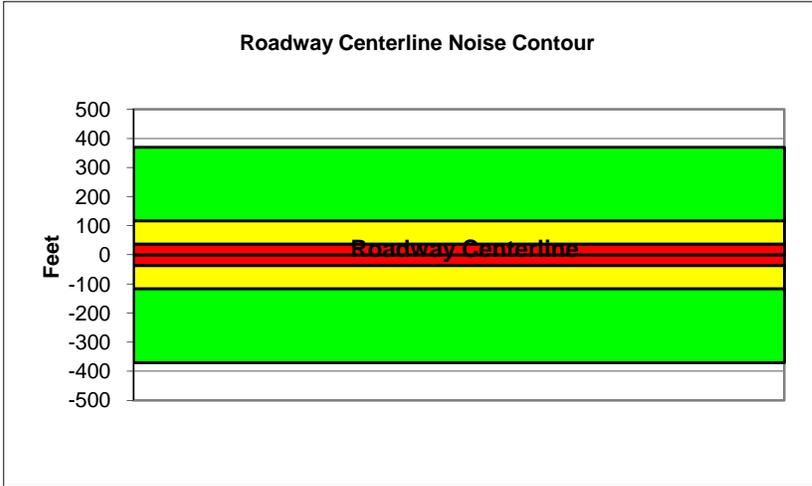
Project Name:	Filius Dobler	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Byron Road to Lammers Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	15,809			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1580.9			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.7	62.5	60.7	54.6	63.2	63.8
Medium Trucks:	62.6	54.6	48.2	46.6	55.1	55.3
Heavy Trucks:	67.5	55.5	46.5	47.7	57.4	57.5
<b>Vehicle Noise:</b>	<b>69.9</b>	<b>64.0</b>	<b>61.1</b>	<b>56.2</b>	<b>64.7</b>	<b>65.2</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	370
65 dBA	117
70 dBA	37
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

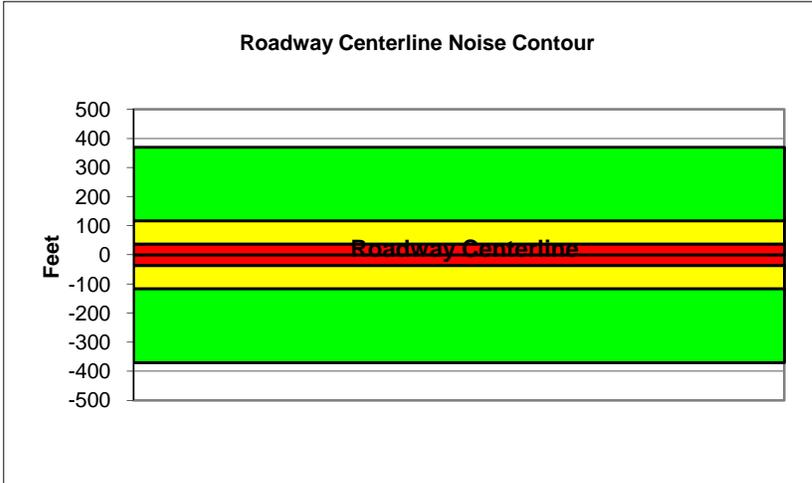
Project Name:	Filius Dobler	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Lammers Road to Costco Driveway		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	15,768			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1576.8			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.3	62.0	60.2	54.2	62.8	63.4
Medium Trucks:	62.2	54.1	47.8	46.2	54.7	54.9
Heavy Trucks:	67.1	55.1	46.1	47.3	57.0	57.1
<b>Vehicle Noise:</b>	<b>69.4</b>	<b>63.6</b>	<b>60.7</b>	<b>55.7</b>	<b>64.3</b>	<b>64.8</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	370
65 dBA	117
70 dBA	37
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

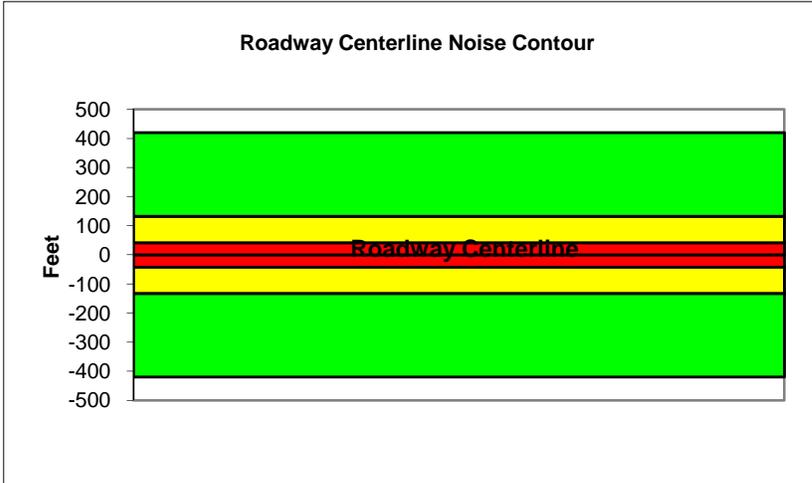
Project Name:	Filius Dobler	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Costco to Walmart Driveway		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	17,914			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1791.4			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.8	62.6	60.8	54.7	63.4	64.0
Medium Trucks:	62.8	54.7	48.3	46.7	55.2	55.5
Heavy Trucks:	67.6	55.7	46.6	47.8	57.5	57.7
<b>Vehicle Noise:</b>	<b>70.0</b>	<b>64.2</b>	<b>61.2</b>	<b>56.3</b>	<b>64.9</b>	<b>65.4</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	420
65 dBA	133
70 dBA	42
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

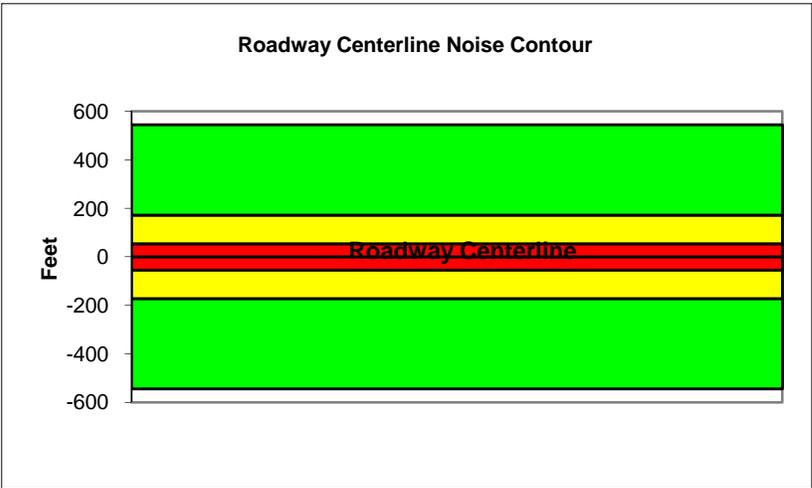
Project Name:	Filius Dobler	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Walmart Driveway to Naglee Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	23,241			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2324.1			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90 Lft View: -90		Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.9	63.7	61.9	55.8	64.5	65.1
Medium Trucks:	63.9	55.8	49.4	47.9	56.4	56.6
Heavy Trucks:	68.7	56.8	47.7	49.0	58.7	58.8
<b>Vehicle Noise:</b>	<b>71.1</b>	<b>65.3</b>	<b>62.4</b>	<b>57.4</b>	<b>66.0</b>	<b>66.5</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	545
65 dBA	172
70 dBA	54
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

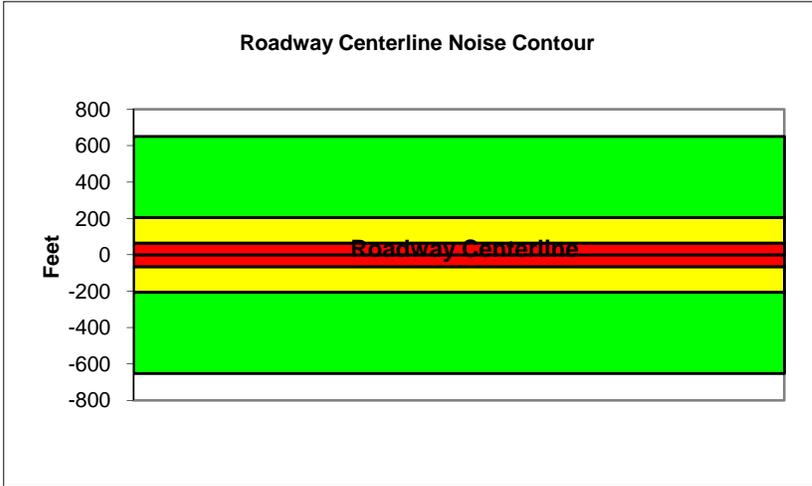
Project Name:	Filius Dobler	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Naglee Road to I-205 Ramps		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	27,809			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2780.9			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.7	64.5	62.7	56.6	65.3	65.9
Medium Trucks:	64.7	56.6	50.2	48.6	57.1	57.4
Heavy Trucks:	69.5	57.6	48.5	49.7	59.5	59.6
<b>Vehicle Noise:</b>	<b>71.9</b>	<b>66.1</b>	<b>63.2</b>	<b>58.2</b>	<b>66.8</b>	<b>67.3</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	652
65 dBA	206
70 dBA	65
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

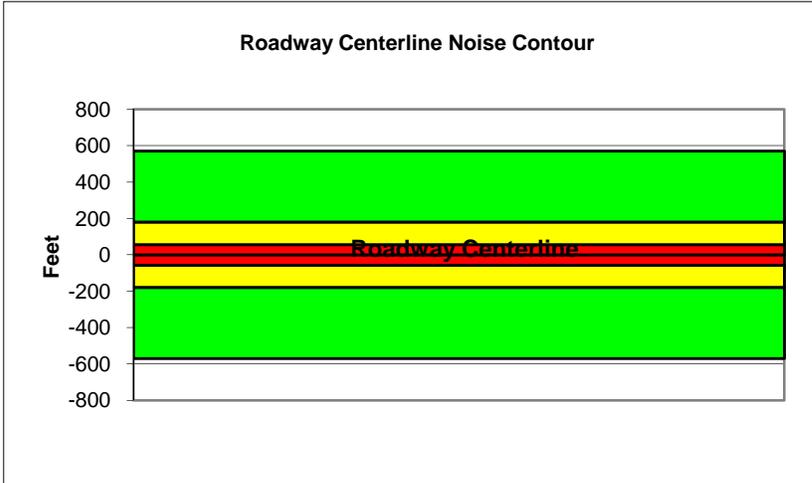
Project Name:	Filius Dobler	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	I-205 Ramps to Corral Hollow Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	24,309			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2430.9			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	60			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.0	63.8	62.0	55.9	64.6	65.2
Medium Trucks:	63.9	55.9	49.5	47.9	56.4	56.6
Heavy Trucks:	68.8	56.9	47.8	49.0	58.7	58.9
<b>Vehicle Noise:</b>	<b>71.2</b>	<b>65.4</b>	<b>62.4</b>	<b>57.5</b>	<b>66.1</b>	<b>66.5</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	570
65 dBA	180
70 dBA	57
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

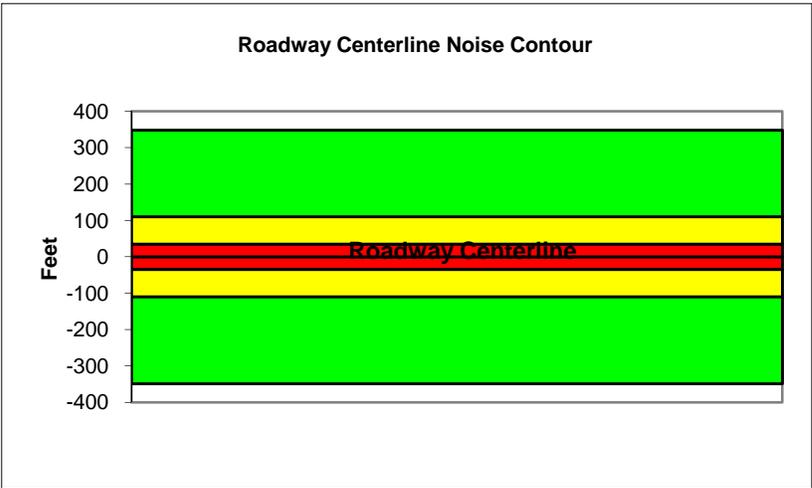
Project Name:	Filius Dobler	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	East of Corral Hollow Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	14,873			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1487.3			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.0	61.8	60.0	53.9	62.6	63.2
Medium Trucks:	62.0	53.9	47.5	45.9	54.4	54.6
Heavy Trucks:	66.8	54.9	45.8	47.0	56.7	56.9
<b>Vehicle Noise:</b>	<b>69.2</b>	<b>63.4</b>	<b>60.4</b>	<b>55.5</b>	<b>64.1</b>	<b>64.5</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	348
65 dBA	110
70 dBA	35
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

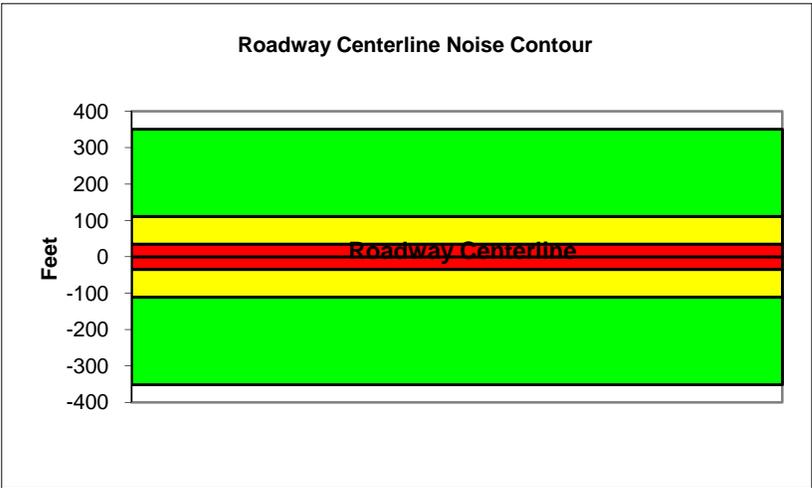
Project Name:	Filius Dobler	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	North of Grant Line Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	11,300			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1130			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.7	62.5	60.7	54.6	63.3	63.9
Medium Trucks:	62.0	53.9	47.5	45.9	54.4	54.7
Heavy Trucks:	66.5	54.6	45.5	46.7	56.3	56.4
<b>Vehicle Noise:</b>	<b>68.8</b>	<b>63.8</b>	<b>61.0</b>	<b>55.9</b>	<b>64.5</b>	<b>65.0</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	351
65 dBA	111
70 dBA	35
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

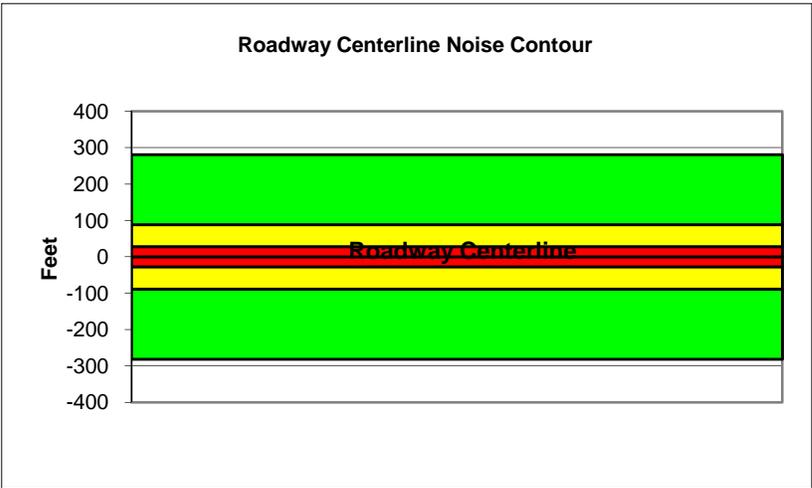
Project Name:	Filius Dobler	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	Grant Line Road to Lammers Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	9,041			
Receiver Barrier Dist:	0	Peak Hour Traffic:	904.1			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.7	61.5	59.7	53.6	62.3	62.9
Medium Trucks:	61.0	52.9	46.6	45.0	53.5	53.7
Heavy Trucks:	65.5	53.6	44.5	45.7	55.3	55.4
<b>Vehicle Noise:</b>	<b>67.9</b>	<b>62.8</b>	<b>60.1</b>	<b>54.9</b>	<b>63.5</b>	<b>64.0</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	281
65 dBA	89
70 dBA	28
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

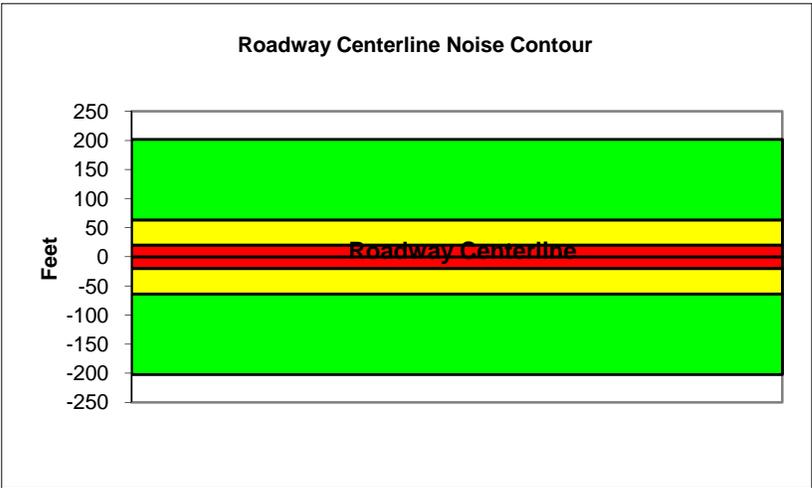
Project Name:	Filius Dobler	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	Lammers Road to Corral Hollow		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	6,491			
Receiver Barrier Dist:	0	Peak Hour Traffic:	649.1			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	40			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.0	59.8	58.0	51.9	60.6	61.2
Medium Trucks:	59.3	51.2	44.8	43.3	51.8	52.0
Heavy Trucks:	63.8	51.9	42.8	44.0	53.6	53.7
<b>Vehicle Noise:</b>	<b>66.2</b>	<b>61.1</b>	<b>58.4</b>	<b>53.2</b>	<b>61.8</b>	<b>62.3</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	202
65 dBA	64
70 dBA	20
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

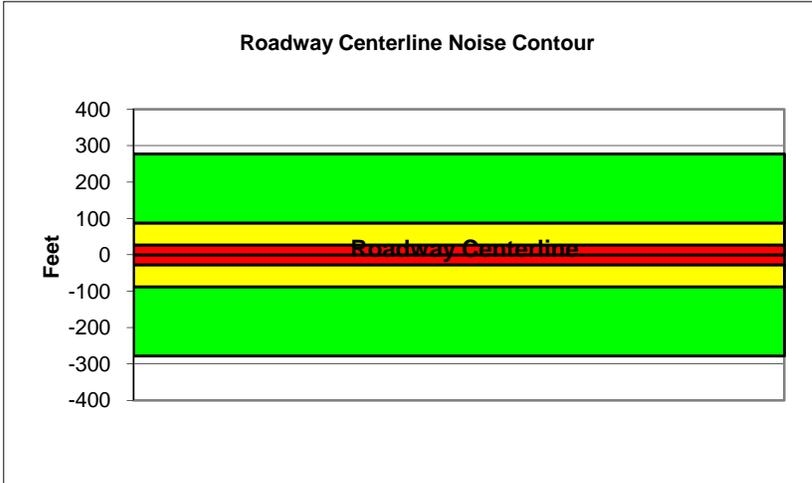
Project Name:	Filius Dobler	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	North of Grant Line Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	8,936			
Receiver Barrier Dist:	0	Peak Hour Traffic:	893.6			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	80			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.9	60.6	58.9	52.8	61.4	62.0
Medium Trucks:	60.1	52.1	45.7	44.1	52.6	52.8
Heavy Trucks:	64.7	52.7	43.7	44.9	54.4	54.6
<b>Vehicle Noise:</b>	<b>67.0</b>	<b>61.9</b>	<b>59.2</b>	<b>54.1</b>	<b>62.7</b>	<b>63.2</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	278
65 dBA	88
70 dBA	28
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

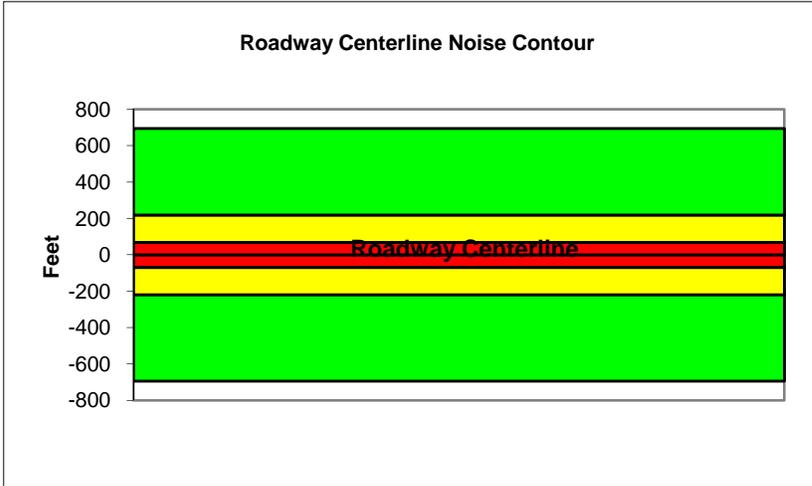
Project Name:	Filius Dobler	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	Grant Line Road to Byron Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	22,332			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2233.2			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	80			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.8	64.6	62.8	56.7	65.4	66.0
Medium Trucks:	64.1	56.1	49.7	48.1	56.6	56.8
Heavy Trucks:	68.6	56.7	47.6	48.9	58.4	58.5
<b>Vehicle Noise:</b>	<b>71.0</b>	<b>65.9</b>	<b>63.2</b>	<b>58.0</b>	<b>66.6</b>	<b>67.1</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	694
65 dBA	220
70 dBA	69
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

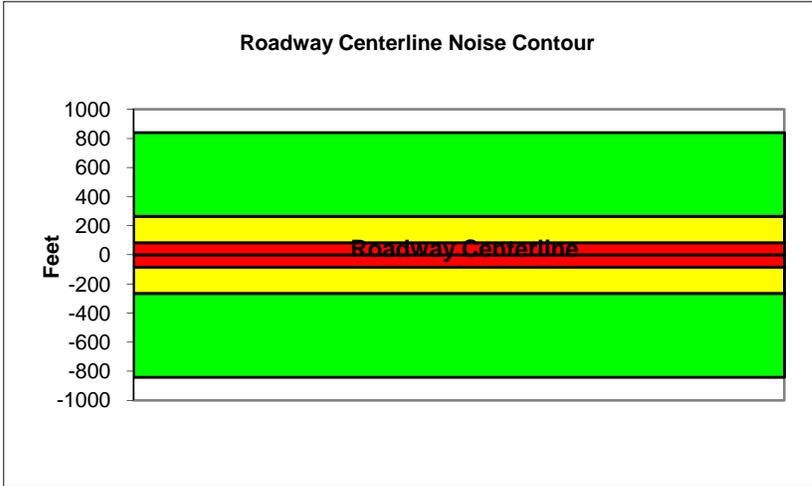
Project Name:	Filius Dobler	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	South of Byron Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	27,036			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2703.6			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	72			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.8	65.5	63.8	57.7	66.3	66.9
Medium Trucks:	65.0	57.0	50.6	49.0	57.5	57.7
Heavy Trucks:	69.6	57.6	48.6	49.8	59.3	59.5
<b>Vehicle Noise:</b>	<b>71.9</b>	<b>66.9</b>	<b>64.1</b>	<b>59.0</b>	<b>67.6</b>	<b>68.1</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	841
65 dBA	266
70 dBA	84
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

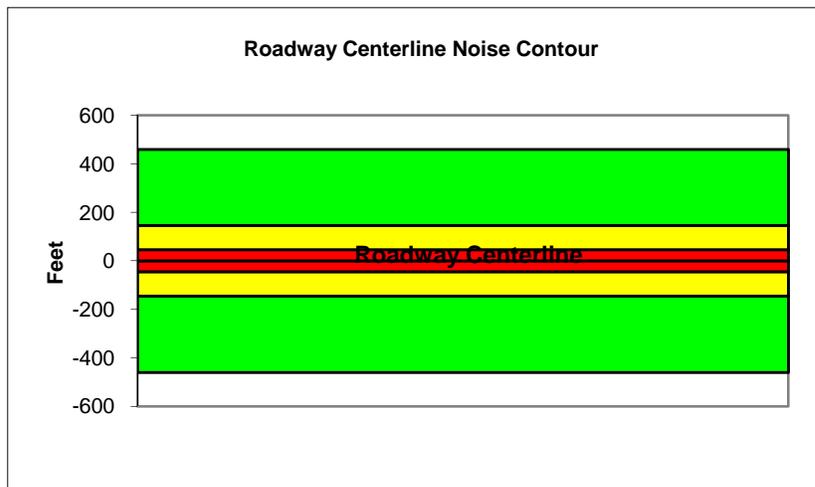
Project Name:	Filius Dobler	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Byron Road to Lammers Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	19,605			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1960.5			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.6	63.4	61.6	55.5	64.2	64.8
Medium Trucks:	63.6	55.5	49.1	47.5	56.0	56.3
Heavy Trucks:	68.4	56.5	47.4	48.6	58.4	58.5
<b>Vehicle Noise:</b>	<b>70.8</b>	<b>65.0</b>	<b>62.0</b>	<b>57.1</b>	<b>65.7</b>	<b>66.2</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	460
65 dBA	145
70 dBA	46
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

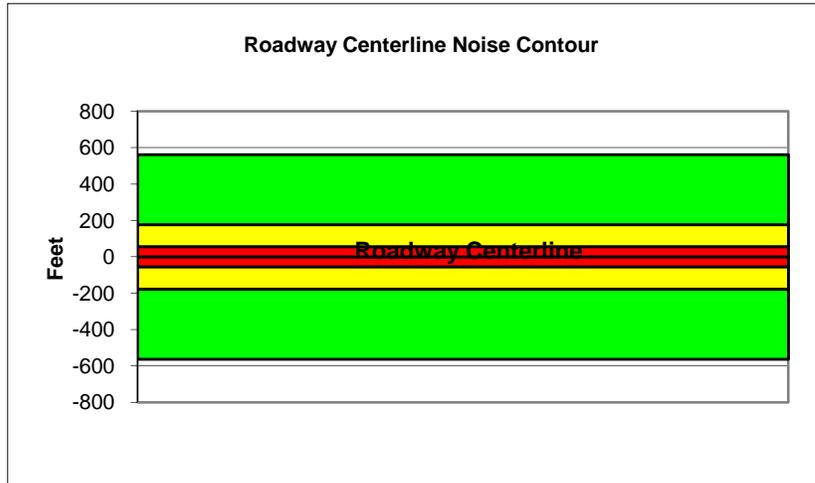
Project Name:	Filius Dobler	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Lammers Road to Costco Driveway		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	24,009			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2400.9			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.1	63.9	62.1	56.0	64.6	65.2
Medium Trucks:	64.0	56.0	49.6	48.0	56.5	56.7
Heavy Trucks:	68.9	56.9	47.9	49.1	58.8	58.9
<b>Vehicle Noise:</b>	<b>71.3</b>	<b>65.4</b>	<b>62.5</b>	<b>57.6</b>	<b>66.1</b>	<b>66.6</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	562
65 dBA	178
70 dBA	56
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

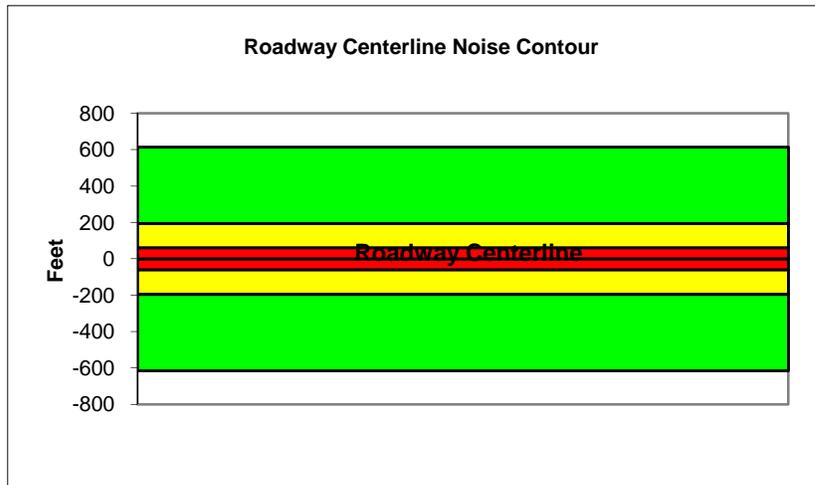
Project Name:	Filius Dobler	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Costco to Walmart Driveway		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	26,241			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2624.1			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.5	64.2	62.5	56.4	65.0	65.6
Medium Trucks:	64.4	56.3	50.0	48.4	56.9	57.1
Heavy Trucks:	69.3	57.3	48.3	49.5	59.2	59.3
<b>Vehicle Noise:</b>	<b>71.6</b>	<b>65.8</b>	<b>62.9</b>	<b>57.9</b>	<b>66.5</b>	<b>67.0</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	615
65 dBA	195
70 dBA	62
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

Project Name:	Filios Dobler	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Walmart Driveway to Naglee Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	31,805			
Receiver Barrier Dist:	0	Peak Hour Traffic:	3180.5			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.3	65.1	63.3	57.2	65.9	66.5
Medium Trucks:	65.3	57.2	50.8	49.2	57.7	57.9
Heavy Trucks:	70.1	58.2	49.1	50.3	60.0	60.2
<b>Vehicle Noise:</b>	<b>72.5</b>	<b>66.7</b>	<b>63.7</b>	<b>58.8</b>	<b>67.4</b>	<b>67.8</b>

**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

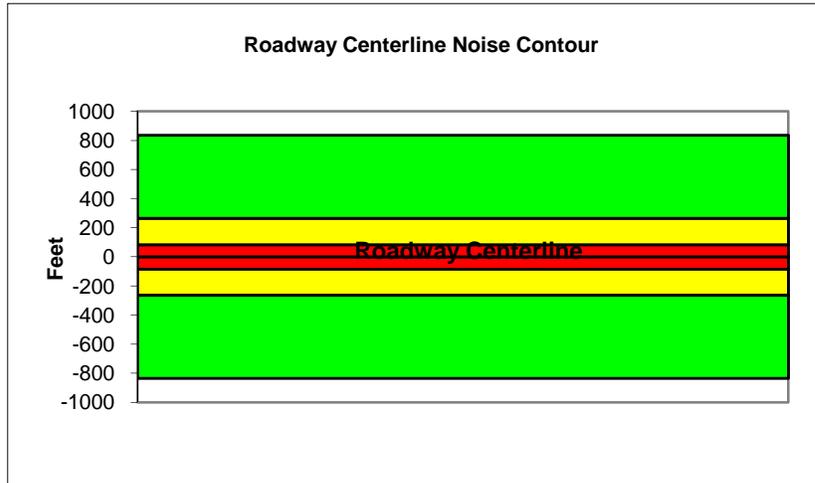
Project Name:	Filius Dobler	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Naglee Road to I-205 Ramps		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	35,664			
Receiver Barrier Dist:	0	Peak Hour Traffic:	3566.4			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.8	65.6	63.8	57.7	66.4	67.0
Medium Trucks:	65.7	57.7	51.3	49.7	58.2	58.4
Heavy Trucks:	70.6	58.7	49.6	50.8	60.5	60.7
<b>Vehicle Noise:</b>	<b>73.0</b>	<b>67.2</b>	<b>64.2</b>	<b>59.3</b>	<b>67.9</b>	<b>68.3</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	836
65 dBA	264
70 dBA	84
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

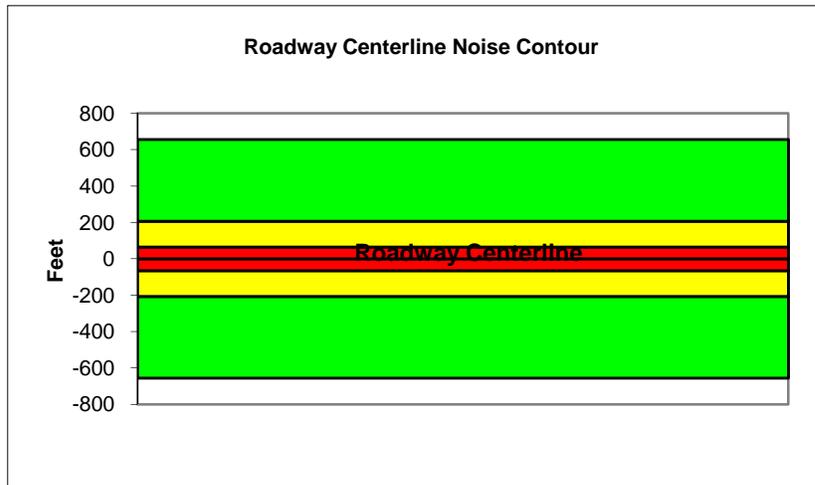
Project Name:	Filius Dobler	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	I-205 Ramps to Corral Hollow Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	27,982			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2798.2			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	60			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.6	64.4	62.6	56.5	65.2	65.8
Medium Trucks:	64.6	56.5	50.1	48.5	57.0	57.3
Heavy Trucks:	69.4	57.5	48.4	49.6	59.3	59.5
<b>Vehicle Noise:</b>	<b>71.8</b>	<b>66.0</b>	<b>63.0</b>	<b>58.1</b>	<b>66.7</b>	<b>67.2</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	656
65 dBA	208
70 dBA	66
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

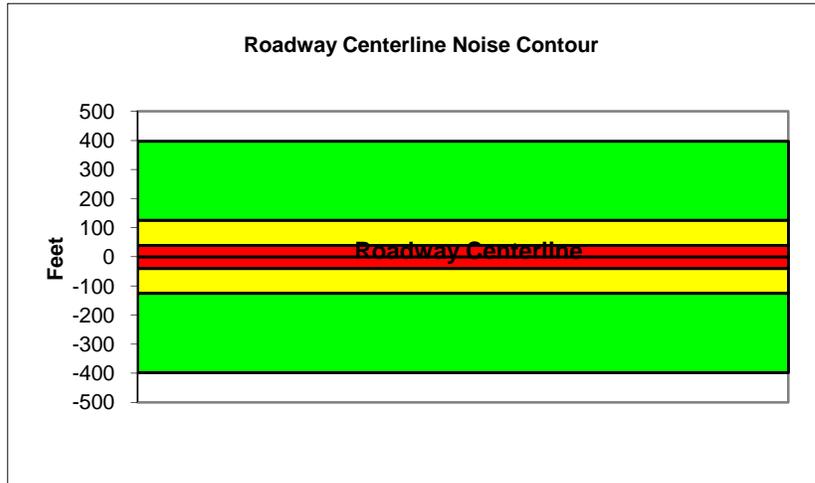
Project Name:	Filius Dobler	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	East of Corral Hollow Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	16,964			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1696.4			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.6	62.3	60.6	54.5	63.1	63.7
Medium Trucks:	62.5	54.5	48.1	46.5	55.0	55.2
Heavy Trucks:	67.4	55.4	46.4	47.6	57.3	57.4
<b>Vehicle Noise:</b>	<b>69.7</b>	<b>63.9</b>	<b>61.0</b>	<b>56.1</b>	<b>64.6</b>	<b>65.1</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	397
65 dBA	126
70 dBA	40
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

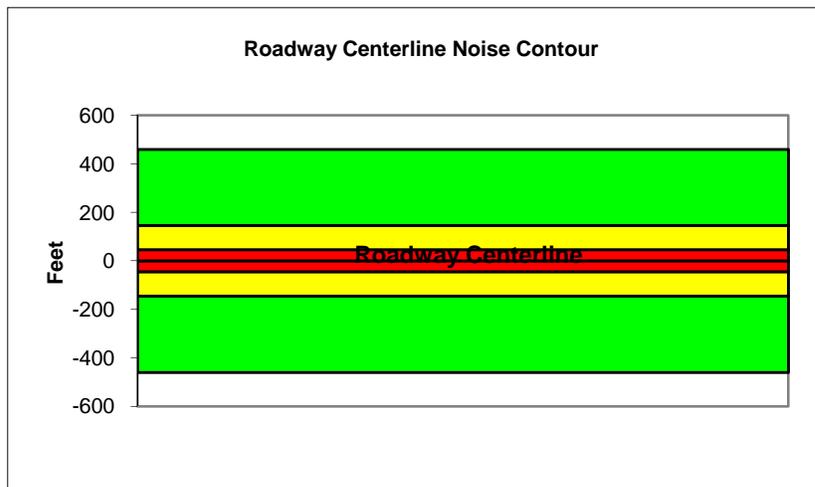
Project Name:	Filius Dobler	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	North of Grant Line Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	14,800			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1480			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.9	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	63.1	55.1	48.7	47.1	55.6	55.8
Heavy Trucks:	67.7	55.7	46.7	47.9	57.4	57.6
<b>Vehicle Noise:</b>	<b>70.0</b>	<b>64.9</b>	<b>62.2</b>	<b>57.1</b>	<b>65.7</b>	<b>66.2</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	460
65 dBA	145
70 dBA	46
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

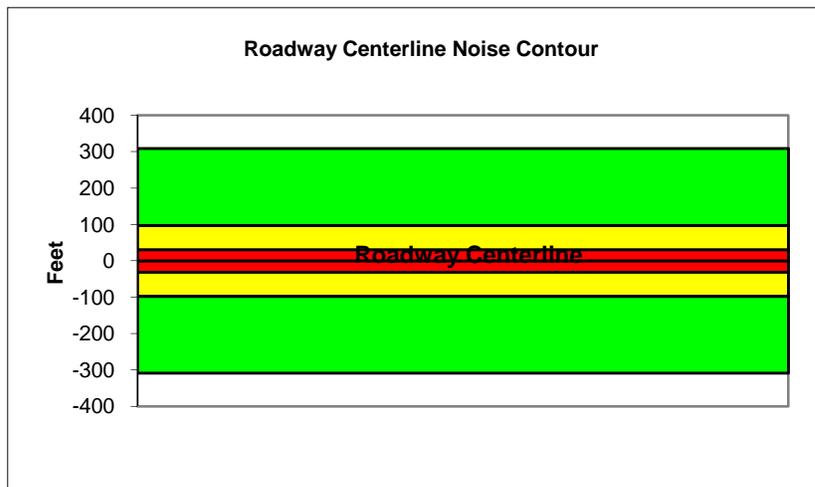
Project Name:	Filius Dobler	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	Grant Line Road to Lammers Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	9,927			
Receiver Barrier Dist:	0	Peak Hour Traffic:	992.7			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.1	61.9	60.1	54.0	62.7	63.3
Medium Trucks:	61.4	53.3	47.0	45.4	53.9	54.1
Heavy Trucks:	65.9	54.0	44.9	46.2	55.7	55.8
<b>Vehicle Noise:</b>	<b>68.3</b>	<b>63.2</b>	<b>60.5</b>	<b>55.3</b>	<b>63.9</b>	<b>64.4</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	309
65 dBA	98
70 dBA	31
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

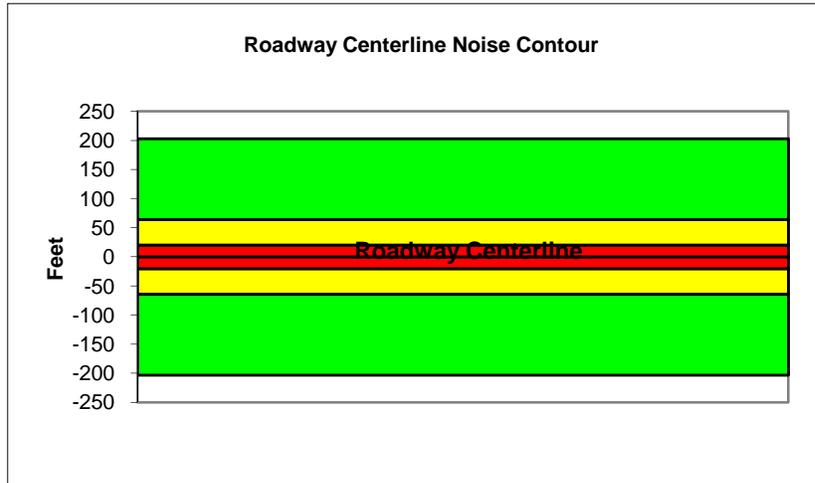
Project Name:	Filius Dobler	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	Lammers Road to Corral Hollow		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	6,541			
Receiver Barrier Dist:	0	Peak Hour Traffic:	654.1			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	40			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.1	59.8	58.0	52.0	60.6	61.2
Medium Trucks:	59.3	51.3	44.9	43.3	51.8	52.0
Heavy Trucks:	63.9	51.9	42.9	44.1	53.6	53.7
<b>Vehicle Noise:</b>	<b>66.2</b>	<b>61.1</b>	<b>58.4</b>	<b>53.3</b>	<b>61.9</b>	<b>62.4</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	203
65 dBA	64
70 dBA	20
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

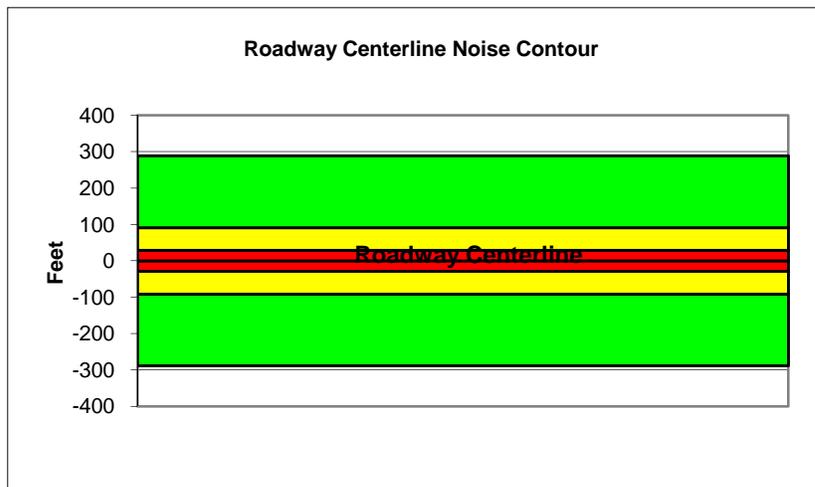
Project Name:	Filius Dobler	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	North of Grant Line Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	9,300			
Receiver Barrier Dist:	0	Peak Hour Traffic:	930			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	80			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.0	60.8	59.0	52.9	61.6	62.2
Medium Trucks:	60.3	52.2	45.9	44.3	52.8	53.0
Heavy Trucks:	64.8	52.9	43.8	45.1	54.6	54.7
<b>Vehicle Noise:</b>	<b>67.2</b>	<b>62.1</b>	<b>59.4</b>	<b>54.2</b>	<b>62.8</b>	<b>63.3</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	289
65 dBA	91
70 dBA	29
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

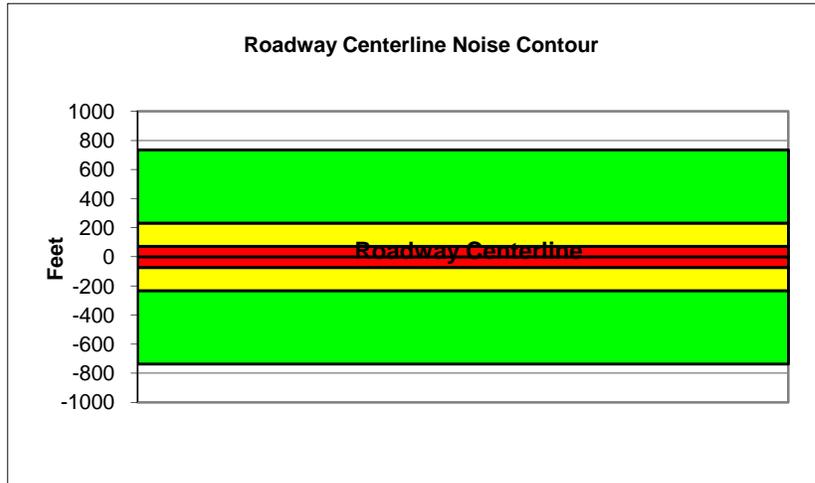
Project Name:	Filius Dobler	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	Grant Line Road to Byron Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	23,664			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2366.4			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	80			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.1	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	64.4	56.3	49.9	48.3	56.8	57.1
Heavy Trucks:	68.9	57.0	47.9	49.1	58.7	58.8
<b>Vehicle Noise:</b>	<b>71.2</b>	<b>66.2</b>	<b>63.5</b>	<b>58.3</b>	<b>66.9</b>	<b>67.4</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	736
65 dBA	233
70 dBA	74
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

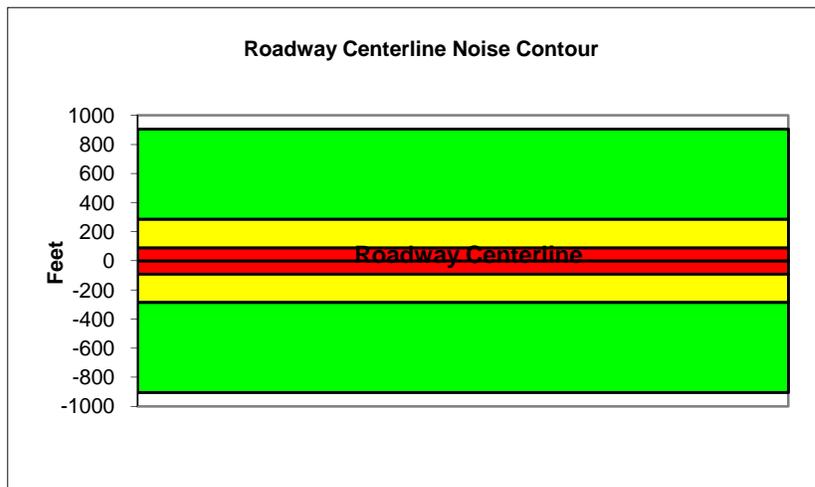
Project Name:	Filius Dobler	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	South of Byron Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	29,118			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2911.8			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	72			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.1	65.9	64.1	58.0	66.7	67.3
Medium Trucks:	65.4	57.3	50.9	49.3	57.8	58.1
Heavy Trucks:	69.9	58.0	48.9	50.1	59.7	59.8
<b>Vehicle Noise:</b>	<b>72.2</b>	<b>67.2</b>	<b>64.4</b>	<b>59.3</b>	<b>67.9</b>	<b>68.4</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	905
65 dBA	286
70 dBA	91
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

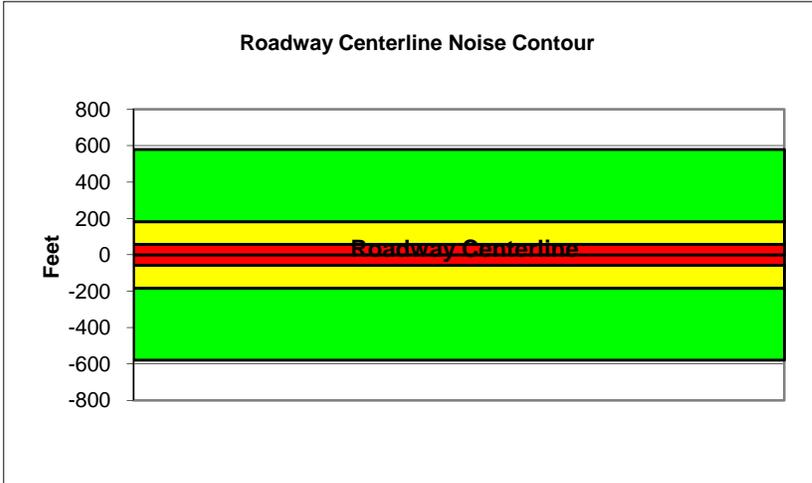
Project Name:	Filius Dobler	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Byron Road to Lammers Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	24,682			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2468.2			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.6	64.4	62.6	56.5	65.2	65.8
Medium Trucks:	64.6	56.5	50.1	48.5	57.0	57.3
Heavy Trucks:	69.4	57.5	48.4	49.6	59.4	59.5
<b>Vehicle Noise:</b>	<b>71.8</b>	<b>66.0</b>	<b>63.0</b>	<b>58.1</b>	<b>66.7</b>	<b>67.2</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	579
65 dBA	183
70 dBA	58
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

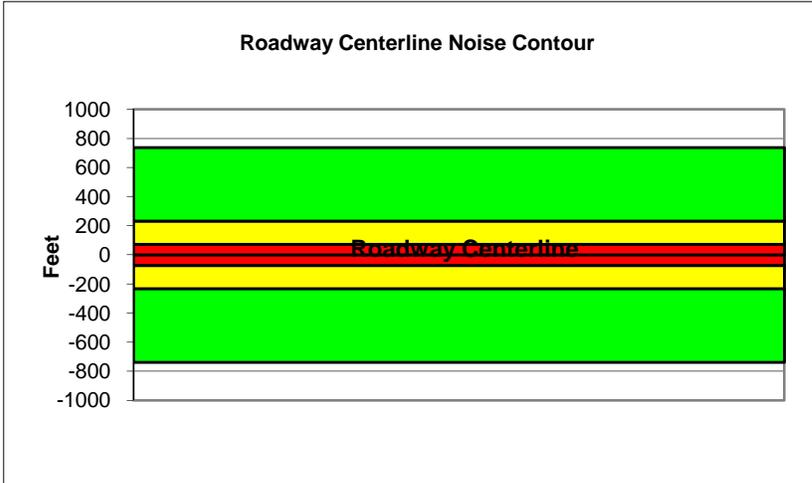
Project Name:	Filius Dobler	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Lammers Road to Costco Driveway		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	31,500			
Receiver Barrier Dist:	0	Peak Hour Traffic:	3150			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.3	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	65.2	57.1	50.8	49.2	57.7	57.9
Heavy Trucks:	70.1	58.1	49.1	50.3	60.0	60.1
<b>Vehicle Noise:</b>	<b>72.4</b>	<b>66.6</b>	<b>63.7</b>	<b>58.7</b>	<b>67.3</b>	<b>67.8</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	738
65 dBA	233
70 dBA	74
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

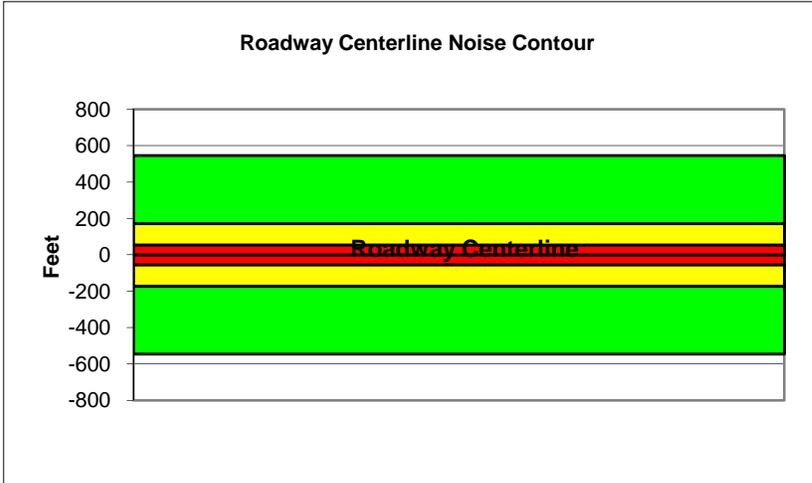
Project Name:	Filius Dobler	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Costco to Walmart Driveway		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	23,268			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2326.8			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.9	63.7	61.9	55.9	64.5	65.1
Medium Trucks:	63.9	55.8	49.4	47.9	56.4	56.6
Heavy Trucks:	68.7	56.8	47.7	49.0	58.7	58.8
<b>Vehicle Noise:</b>	<b>71.1</b>	<b>65.3</b>	<b>62.4</b>	<b>57.4</b>	<b>66.0</b>	<b>66.5</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	546
65 dBA	173
70 dBA	55
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

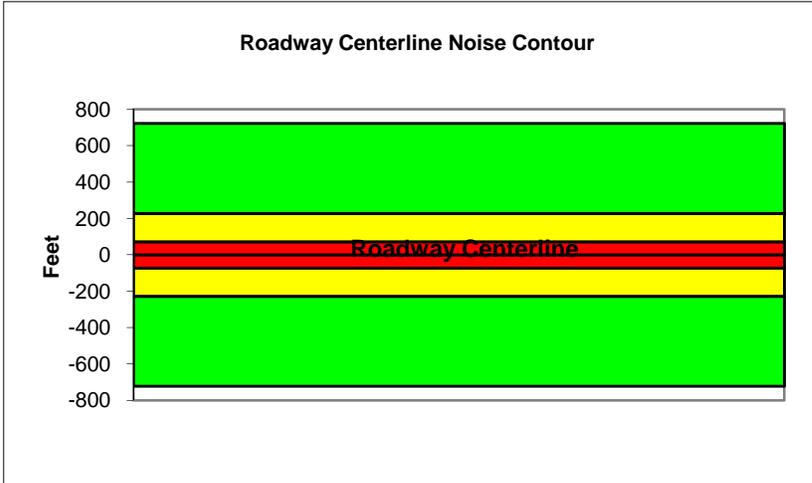
Project Name:	Filius Dobler	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Walmart Driveway to Naglee Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	30,814			
Receiver Barrier Dist:	0	Peak Hour Traffic:	3081.4			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.2	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	65.1	57.0	50.7	49.1	57.6	57.8
Heavy Trucks:	70.0	58.0	49.0	50.2	59.9	60.0
<b>Vehicle Noise:</b>	<b>72.3</b>	<b>66.5</b>	<b>63.6</b>	<b>58.6</b>	<b>67.2</b>	<b>67.7</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	723
65 dBA	229
70 dBA	72
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

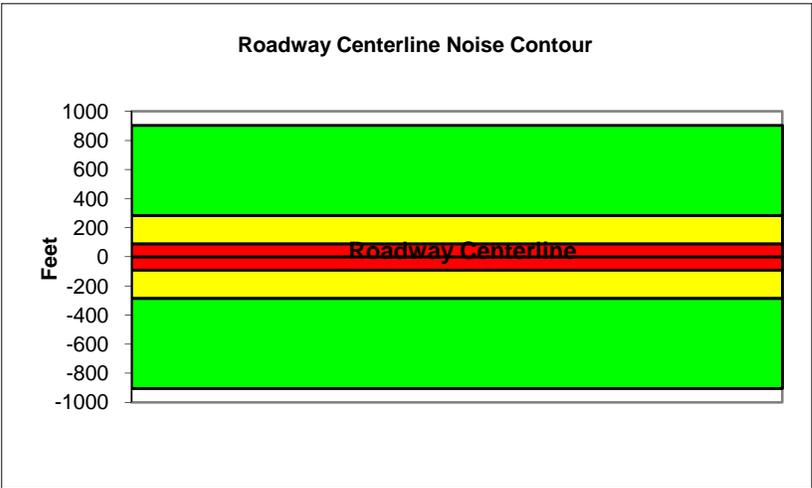
Project Name:	Filius Dobler	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Naglee Road to I-205 Ramps		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	38,591			
Receiver Barrier Dist:	0	Peak Hour Traffic:	3859.1			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.1	65.9	64.1	58.0	66.7	67.3
Medium Trucks:	66.1	58.0	51.6	50.1	58.6	58.8
Heavy Trucks:	70.9	59.0	49.9	51.2	60.9	61.0
<b>Vehicle Noise:</b>	<b>73.3</b>	<b>67.5</b>	<b>64.6</b>	<b>59.6</b>	<b>68.2</b>	<b>68.7</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	904
65 dBA	286
70 dBA	90
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

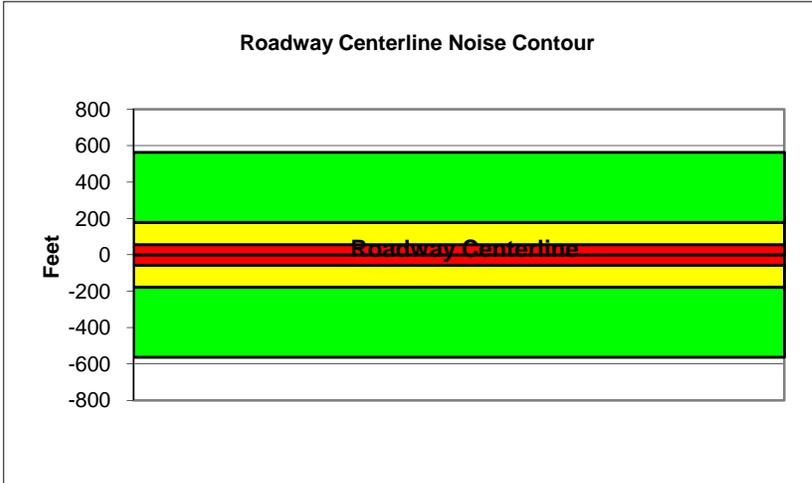
Project Name:	Filius Dobler	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	I-205 Ramps to Corral Hollow Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	24,077			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2407.7			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	60			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.0	63.7	61.9	55.9	64.5	65.1
Medium Trucks:	63.9	55.8	49.5	47.9	56.4	56.6
Heavy Trucks:	68.7	56.8	47.8	49.0	58.7	58.8
<b>Vehicle Noise:</b>	<b>71.1</b>	<b>65.3</b>	<b>62.4</b>	<b>57.4</b>	<b>66.0</b>	<b>66.5</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	564
65 dBA	178
70 dBA	56
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

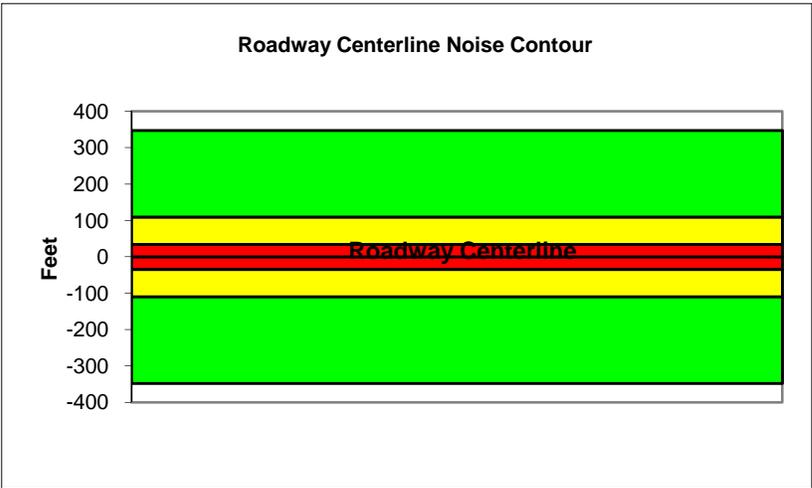
Project Name:	Filius Dobler	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	East of Corral Hollow Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	14,818			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1481.8			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.0	61.8	60.0	53.9	62.5	63.1
Medium Trucks:	61.9	53.9	47.5	45.9	54.4	54.6
Heavy Trucks:	66.8	54.8	45.8	47.0	56.7	56.8
<b>Vehicle Noise:</b>	<b>69.2</b>	<b>63.3</b>	<b>60.4</b>	<b>55.5</b>	<b>64.0</b>	<b>64.5</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	348
65 dBA	110
70 dBA	35
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

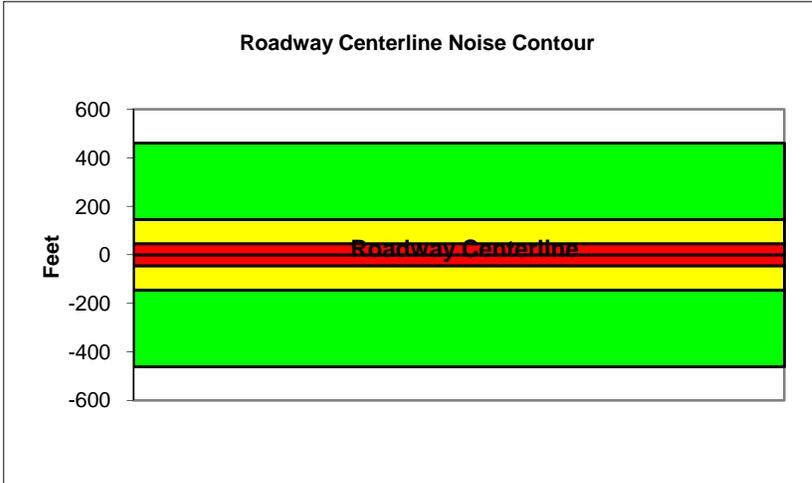
Project Name:	Filius Dobler	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	North of Grant Line Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	14,818			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1481.8			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.9	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	63.1	55.1	48.7	47.1	55.6	55.8
Heavy Trucks:	67.7	55.7	46.7	47.9	57.4	57.6
<b>Vehicle Noise:</b>	<b>70.0</b>	<b>65.0</b>	<b>62.2</b>	<b>57.1</b>	<b>65.7</b>	<b>66.2</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	461
65 dBA	146
70 dBA	46
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

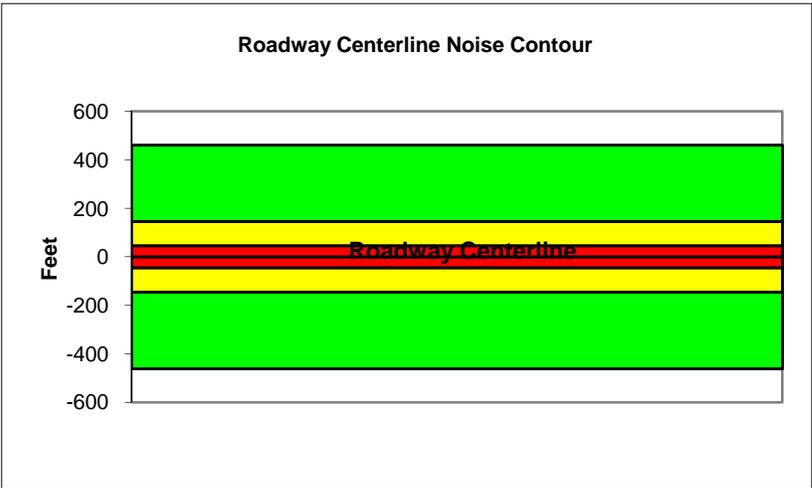
Project Name:	Filius Dobler	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	Grant Line Road to Lammers Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	14,818			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1481.8			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.9	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	63.1	55.1	48.7	47.1	55.6	55.8
Heavy Trucks:	67.7	55.7	46.7	47.9	57.4	57.6
<b>Vehicle Noise:</b>	<b>70.0</b>	<b>65.0</b>	<b>62.2</b>	<b>57.1</b>	<b>65.7</b>	<b>66.2</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	461
65 dBA	146
70 dBA	46
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

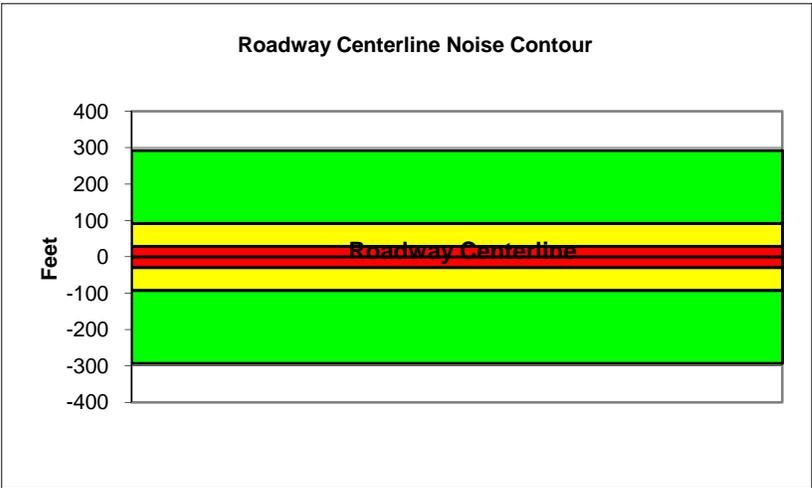
Project Name:	Filius Dobler	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	Lammers Road to Corral Hollow		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	9,409			
Receiver Barrier Dist:	0	Peak Hour Traffic:	940.9			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	40			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.6	61.4	59.6	53.5	62.2	62.8
Medium Trucks:	60.9	52.8	46.5	44.9	53.4	53.6
Heavy Trucks:	65.4	53.5	44.4	45.7	55.2	55.3
<b>Vehicle Noise:</b>	<b>67.8</b>	<b>62.7</b>	<b>60.0</b>	<b>54.8</b>	<b>63.4</b>	<b>63.9</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	292
65 dBA	92
70 dBA	29
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

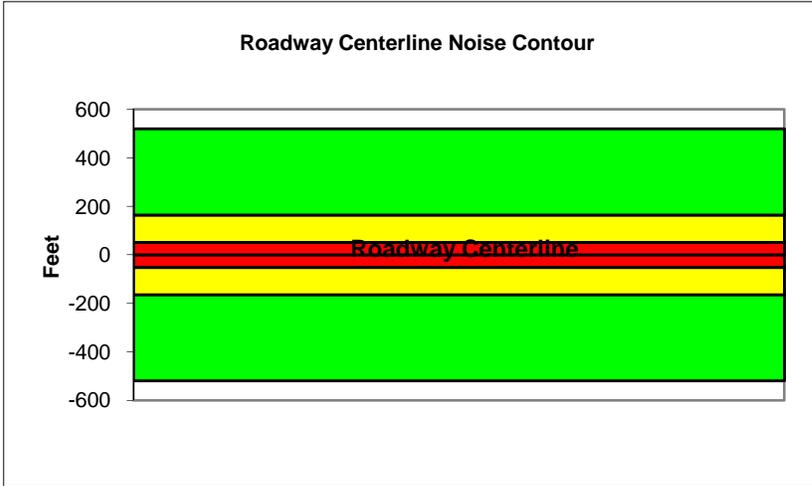
Project Name:	Filius Dobler	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	North of Grant Line Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	16,727			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1672.7			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	80			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.6	63.4	61.6	55.5	64.1	64.8
Medium Trucks:	62.9	54.8	48.4	46.8	55.3	55.6
Heavy Trucks:	67.4	55.4	46.4	47.6	57.2	57.3
<b>Vehicle Noise:</b>	<b>69.7</b>	<b>64.7</b>	<b>61.9</b>	<b>56.8</b>	<b>65.4</b>	<b>65.9</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	520
65 dBA	164
70 dBA	52
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

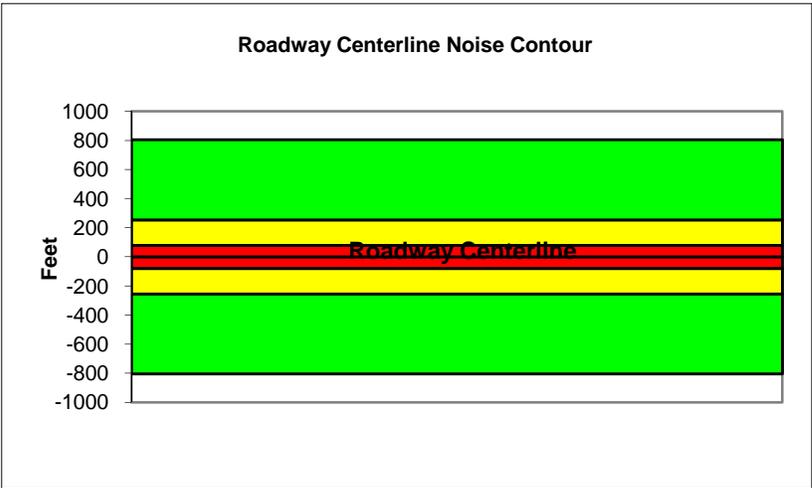
Project Name:	Filius Dobler	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	Grant Line Road to Byron Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	25,877			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2587.7			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	80			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.5	65.3	63.5	57.4	66.0	66.6
Medium Trucks:	64.8	56.7	50.3	48.7	57.2	57.5
Heavy Trucks:	69.3	57.3	48.3	49.5	59.0	59.2
<b>Vehicle Noise:</b>	<b>71.6</b>	<b>66.6</b>	<b>63.8</b>	<b>58.7</b>	<b>67.3</b>	<b>67.8</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	805
65 dBA	254
70 dBA	80
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

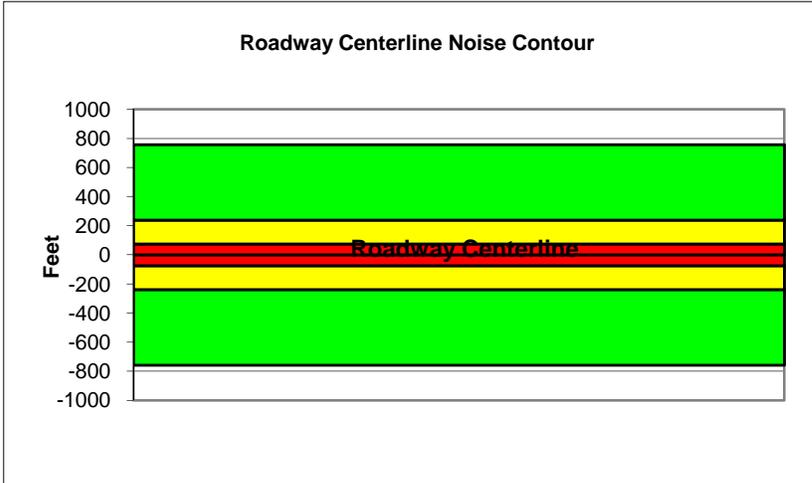
Project Name:	Filius Dobler	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	South of Byron Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	24,364			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2436.4			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	72			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.3	65.1	63.3	57.2	65.9	66.5
Medium Trucks:	64.6	56.5	50.1	48.6	57.1	57.3
Heavy Trucks:	69.1	57.2	48.1	49.3	58.9	59.0
<b>Vehicle Noise:</b>	<b>71.5</b>	<b>66.4</b>	<b>63.7</b>	<b>58.5</b>	<b>67.1</b>	<b>67.6</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	758
65 dBA	240
70 dBA	76
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

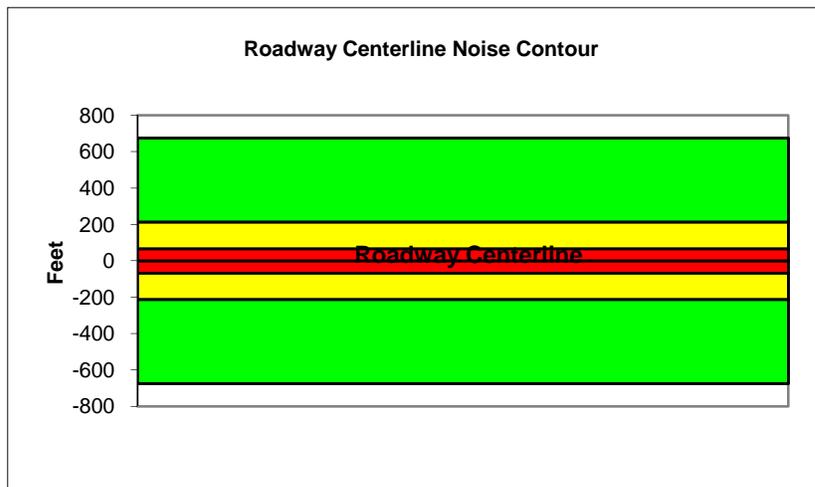
Project Name:	Filius Dobler	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Byron Road to Lammers Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	28,855			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2885.5			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.3	65.1	63.3	57.2	65.8	66.5
Medium Trucks:	65.2	57.2	50.8	49.2	57.7	57.9
Heavy Trucks:	70.1	58.2	49.1	50.3	60.0	60.2
<b>Vehicle Noise:</b>	<b>72.5</b>	<b>66.6</b>	<b>63.7</b>	<b>58.8</b>	<b>67.4</b>	<b>67.8</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	676
65 dBA	214
70 dBA	68
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

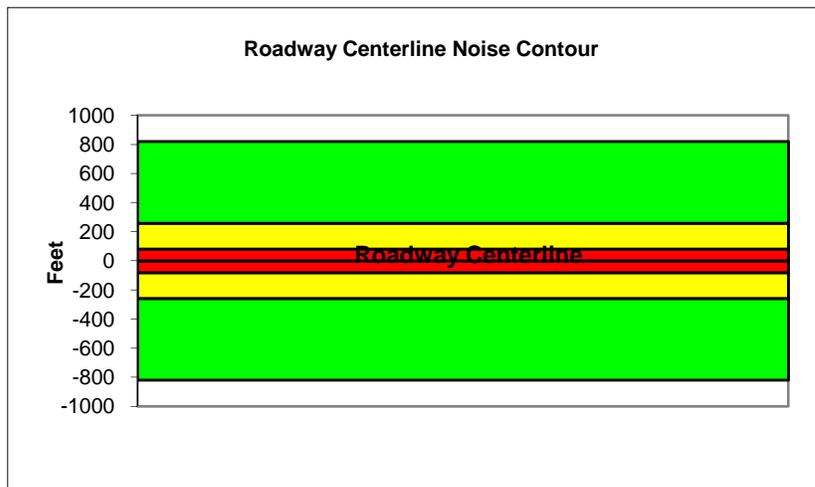
Project Name:	Filius Dobler	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Lammers Road to Costco Driveway		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	35,036			
Receiver Barrier Dist:	0	Peak Hour Traffic:	3503.6			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.7	65.5	63.7	57.6	66.3	66.9
Medium Trucks:	65.7	57.6	51.2	49.6	58.1	58.4
Heavy Trucks:	70.5	58.6	49.5	50.7	60.5	60.6
<b>Vehicle Noise:</b>	<b>72.9</b>	<b>67.1</b>	<b>64.2</b>	<b>59.2</b>	<b>67.8</b>	<b>68.3</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	820
65 dBA	259
70 dBA	82
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

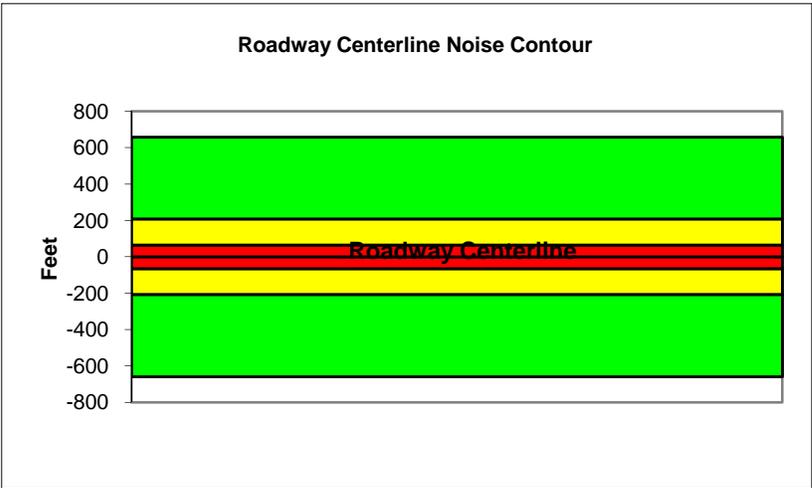
Project Name:	Filius Dobler	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Costco to Walmart Driveway		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	28,118			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2811.8			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: <b>90</b>	Lft View: <b>-90</b>	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.8	64.5	62.8	56.7	65.3	65.9
Medium Trucks:	64.7	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	69.6	57.6	48.6	49.8	59.5	59.6
<b>Vehicle Noise:</b>	<b>71.9</b>	<b>66.1</b>	<b>63.2</b>	<b>58.2</b>	<b>66.8</b>	<b>67.3</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	659
65 dBA	208
70 dBA	66
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

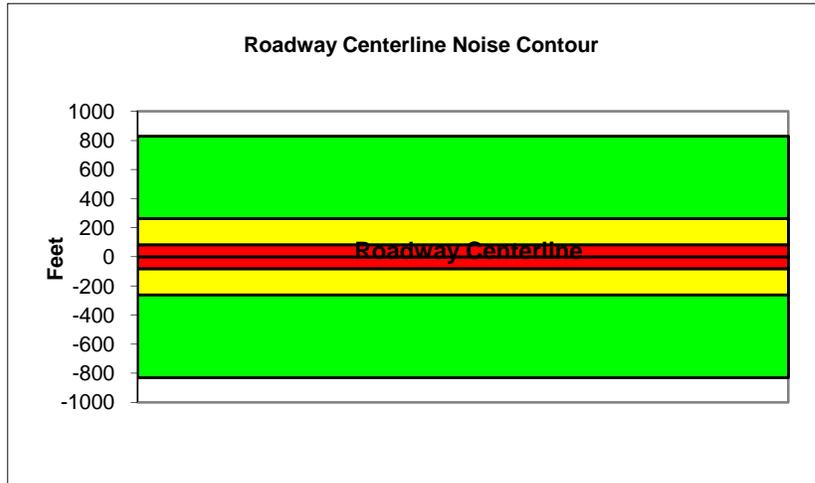
Project Name:	Filius Dobler	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Walmart Driveway to Naglee Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	35,436			
Receiver Barrier Dist:	0	Peak Hour Traffic:	3543.6			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.8	65.5	63.8	57.7	66.3	66.9
Medium Trucks:	65.7	57.7	51.3	49.7	58.2	58.4
Heavy Trucks:	70.6	58.6	49.6	50.8	60.5	60.6
<b>Vehicle Noise:</b>	<b>72.9</b>	<b>67.1</b>	<b>64.2</b>	<b>59.3</b>	<b>67.8</b>	<b>68.3</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	830
65 dBA	262
70 dBA	83
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

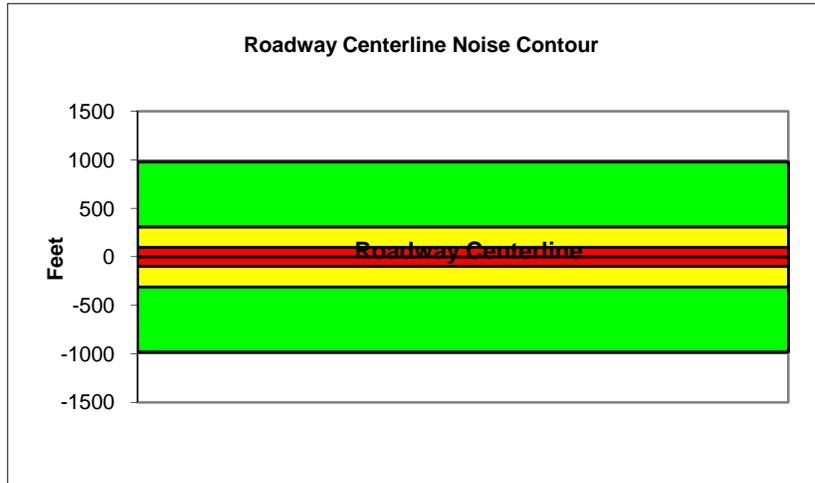
Project Name:	Filius Dobler	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	Naglee Road to I-205 Ramps		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	41,782			
Receiver Barrier Dist:	0	Peak Hour Traffic:	4178.2			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.5	66.3	64.5	58.4	67.0	67.6
Medium Trucks:	66.4	58.4	52.0	50.4	58.9	59.1
Heavy Trucks:	71.3	59.3	50.3	51.5	61.2	61.4
<b>Vehicle Noise:</b>	<b>73.7</b>	<b>67.8</b>	<b>64.9</b>	<b>60.0</b>	<b>68.6</b>	<b>69.0</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	980
65 dBA	310
70 dBA	98
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

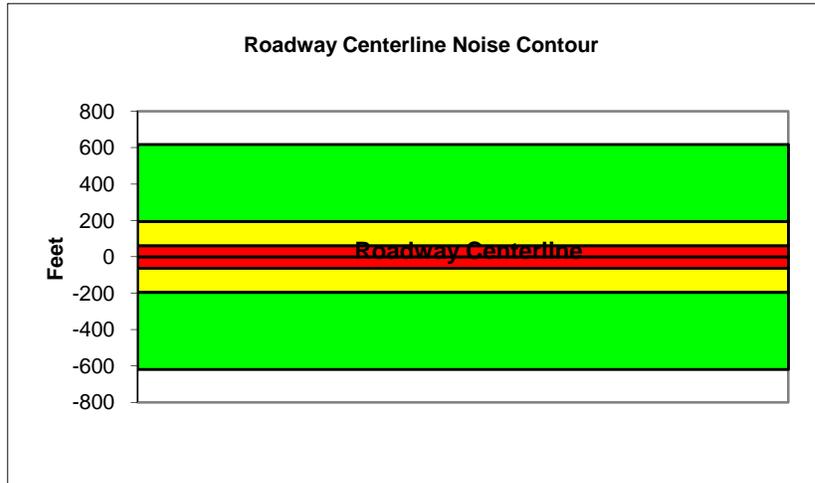
Project Name:	Filius Dobler	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	I-205 Ramps to Corral Hollow Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	26,373			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2637.3			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	60			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.3	64.1	62.3	56.3	64.9	65.5
Medium Trucks:	64.3	56.2	49.8	48.3	56.8	57.0
Heavy Trucks:	69.1	57.2	48.2	49.4	59.1	59.2
<b>Vehicle Noise:</b>	<b>71.5</b>	<b>65.7</b>	<b>62.8</b>	<b>57.8</b>	<b>66.4</b>	<b>66.9</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	618
65 dBA	195
70 dBA	62
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

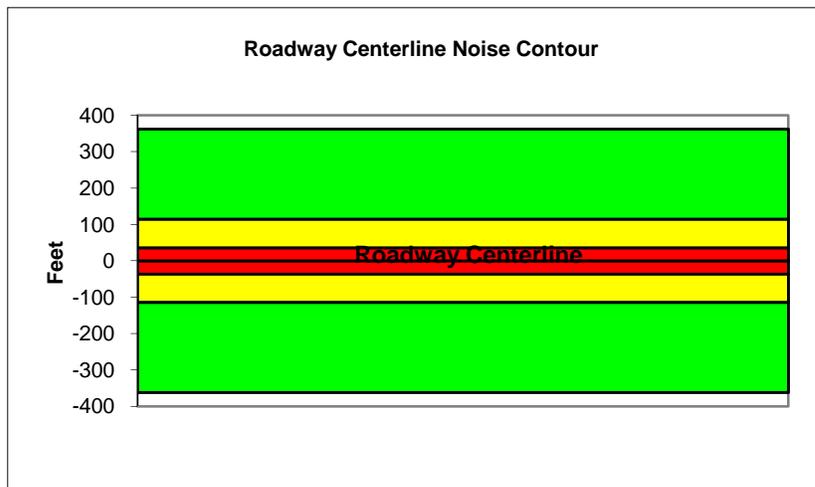
Project Name:	Filius Dobler	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Grant Line Road		
Road Segment:	East of Corral Hollow Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	15,445			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1544.5			
Centerline Dist. To Observer:	100	Vehicle Speed:	40			
Barrier Near Lane CL Dist:	0	Centerline Separation:	50			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.2	61.9	60.2	54.1	62.7	63.3
Medium Trucks:	62.1	54.0	47.7	46.1	54.6	54.8
Heavy Trucks:	67.0	55.0	46.0	47.2	56.9	57.0
<b>Vehicle Noise:</b>	<b>69.3</b>	<b>63.5</b>	<b>60.6</b>	<b>55.6</b>	<b>64.2</b>	<b>64.7</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	362
65 dBA	115
70 dBA	36
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

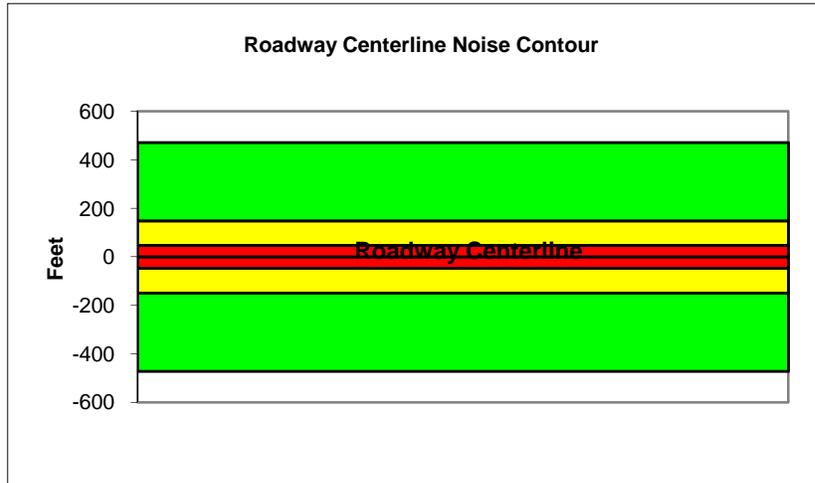
Project Name:	Filius Dobler	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	North of Grant Line Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	15,173			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1517.3			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.0	63.8	62.0	55.9	64.5	65.1
Medium Trucks:	63.2	55.2	48.8	47.2	55.7	55.9
Heavy Trucks:	67.8	55.8	46.8	48.0	57.5	57.7
<b>Vehicle Noise:</b>	<b>70.1</b>	<b>65.1</b>	<b>62.3</b>	<b>57.2</b>	<b>65.8</b>	<b>66.3</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	472
65 dBA	149
70 dBA	47
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

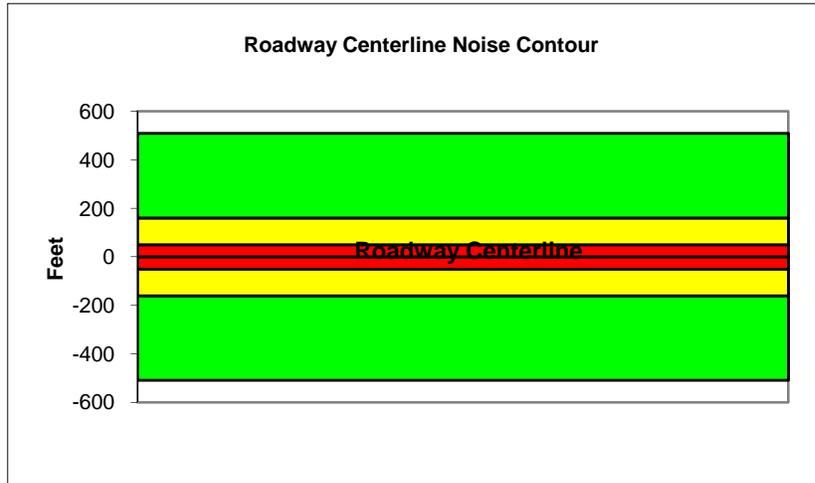
Project Name:	Filius Dobler	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	Grant Line Road to Lammers Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	16,368			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1636.8			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.3	64.1	62.3	56.2	64.9	65.5
Medium Trucks:	63.6	55.5	49.1	47.6	56.0	56.3
Heavy Trucks:	68.1	56.2	47.1	48.3	57.9	58.0
<b>Vehicle Noise:</b>	<b>70.4</b>	<b>65.4</b>	<b>62.7</b>	<b>57.5</b>	<b>66.1</b>	<b>66.6</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	509
65 dBA	161
70 dBA	51
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

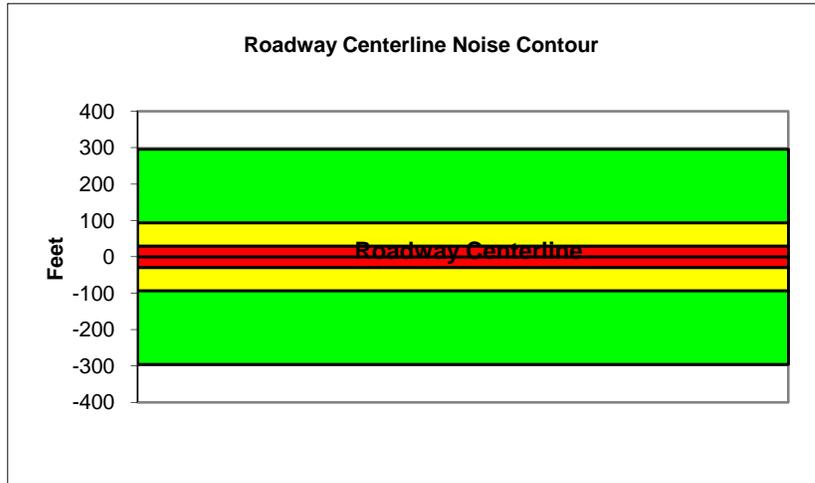
Project Name:	Filius Dobler	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Byron Road		
Road Segment:	Lammers Road to Corral Hollow		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	9,509			
Receiver Barrier Dist:	0	Peak Hour Traffic:	950.9			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	40			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.7	61.5	59.7	53.6	62.2	62.8
Medium Trucks:	61.0	52.9	46.5	44.9	53.4	53.7
Heavy Trucks:	65.5	53.5	44.5	45.7	55.2	55.4
<b>Vehicle Noise:</b>	<b>67.8</b>	<b>62.8</b>	<b>60.0</b>	<b>54.9</b>	<b>63.5</b>	<b>64.0</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	296
65 dBA	94
70 dBA	30
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

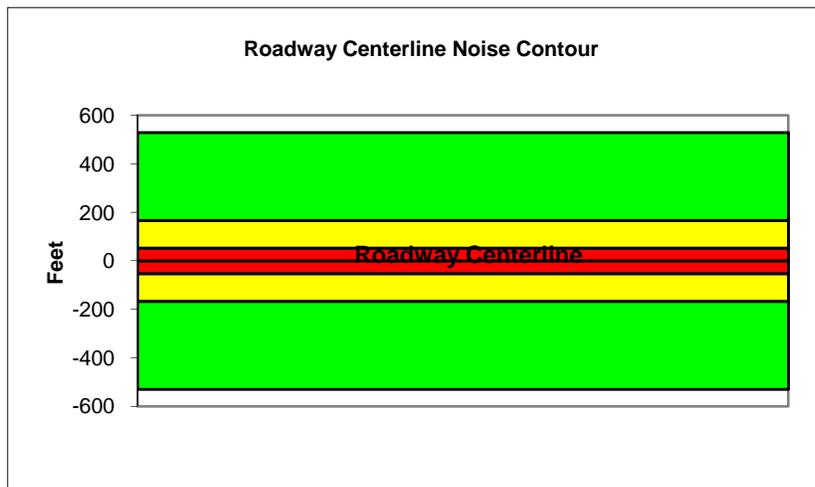
Project Name:	Filius Dobler	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	North of Grant Line Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	17,027			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1702.7			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	80			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.7	63.4	61.7	55.6	64.2	64.8
Medium Trucks:	62.9	54.9	48.5	46.9	55.4	55.6
Heavy Trucks:	67.5	55.5	46.5	47.7	57.2	57.4
<b>Vehicle Noise:</b>	<b>69.8</b>	<b>64.7</b>	<b>62.0</b>	<b>56.9</b>	<b>65.5</b>	<b>66.0</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	529
65 dBA	167
70 dBA	53
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

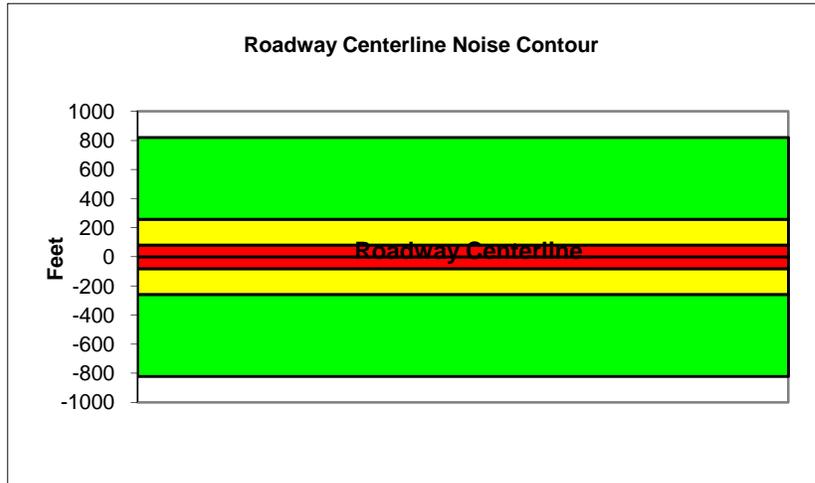
Project Name:	Filius Dobler	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	Grant Line Road to Byron Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	26,445			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2644.5			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	80			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90 Lft View: -90		Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.6	65.4	63.6	57.5	66.1	66.7
Medium Trucks:	64.9	56.8	50.4	48.8	57.3	57.6
Heavy Trucks:	69.4	57.4	48.4	49.6	59.1	59.3
<b>Vehicle Noise:</b>	<b>71.7</b>	<b>66.7</b>	<b>63.9</b>	<b>58.8</b>	<b>67.4</b>	<b>67.9</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	822
65 dBA	260
70 dBA	82
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108  
Traffic Noise Prediction Model (CALVENO)**

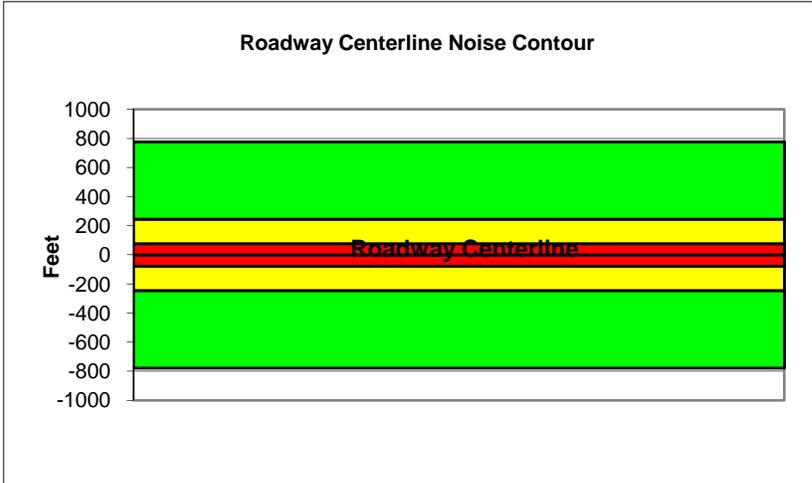
Project Name:	Filius Dobler	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35101038
Roadway:	Corral Hollow Road		
Road Segment:	South of Byron Road		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	25,000			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2500			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	72			
Barrier Far lane CL Dist:	0	<b>NOISE INPUTS</b>				
Pad Elevation:	0.5	Site conditions <b>HARD SITE</b>				
Road Elevation:	0	<b>FLEET MIX</b>				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.775	0.129	0.096	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.848	0.049	0.103	0.0184
<b>NOISE SOURCE ELEVATIONS (Feet)</b>		Heavy Truck	0.865	0.027	0.108	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.4	65.2	63.4	57.3	66.0	66.6
Medium Trucks:	64.7	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	69.2	57.3	48.2	49.5	59.0	59.1
<b>Vehicle Noise:</b>	<b>71.6</b>	<b>66.5</b>	<b>63.8</b>	<b>58.6</b>	<b>67.2</b>	<b>67.7</b>

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	778
65 dBA	246
70 dBA	78
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Railroad Administration  
High Speed Rail Initial Noise Evaluation

Case: Example

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Results	
Ldn at 100 ft w/ shielding	63
Leq day at 100 ft w/shielding	61
Leq night at 100 ft w/shielding	61

Noise Calculations:		
Active Train Type:	Electric	HSR Reference
Total Train Length, ft	776	Calc. from Inputs
Hourly Train Vol, day	0.80	Calc. from Inputs
Hourly Train Vol, night	0.89	Calc. from Inputs
Speed Regime	I	from Table 4-2
Reference SEL, dBA	89	from Table 4-2
K	3	from Table 4-2
Reference Speed, mph	20	from Table 4-2
Reference Train Length, ft	73	from Table 4-2
Shielding Cs	-3	from Table 4-3
Shielding atten, dBA	0	Inputs, Sect 4.2.3
SEL at 50 ft, dBA	100.5	from Table 4-4
Leq day	60.9	from Table 4-4
Leq night	61.3	from Table 4-4
Ldn at 50 ft	67.7	from Table 4-4
Ldn at 100 ft	63	from Sect 4.2.3
Ldn at 100 ft w/ shielding	63	from Sect 4.2.3
Leq day at 100 ft w/shielding	60.9	from Sect 4.2.3
Leq night at 100 ft w/shielding	61.3	from Sect 4.2.3

Reference Quantity	Abbr.	Speed Regime	Steel-Wheeled		Maglev
			Electric	Fossil Fuel	
Reference SEL	SELref	I	89 dBA	87 dBA	72 dBA
		II	93 dBA	94 dBA	73 dBA
		III	99 dBA	dBA	78 dBA
Speed Coefficient	K	I	3	5	2
		II	17	16	17
		III	47		50
Reference Speed	Sref	I	20 mph	20 mph	20 mph
		II	90 mph	90 mph	60 mph
		III	180 mph	mph	120 mph
Reference Length	lenref	I	73 feet	73 feet	82 feet
		II	634 feet	634 feet	82 feet
		III	73 feet	feet	82 feet
Transition Speed	St1	I->II	60 mph	60 mph	60 mph
	St1	II->III	170 mph	mph	120 mph

Case	Speed Regime	Shielding Correction (Cs)
1. Tracks in Shallow Cut	I	0
	II	-10
	III	-3
2. Tracks in Deep Trench or cut	I	-10
	II	-15
	III	-10
3. Tracks on Aerial Structure	I	4
	II	4
	III	2
4. Tracks on Embankment	I	0
	II	-5
	III	0
5. Noise Barrier	I	0
	II	-10
	III	-5

***Appendix G***

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Traffic Technical Appendix

## **APPENDIX-A-1**

### **TRACER Schedules and Routes**

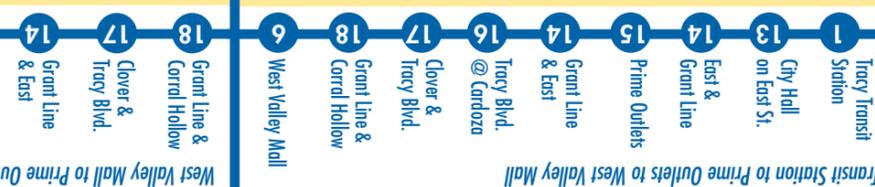
# TRACER INFORMATION: (209) 831-4BUS (4287)

6:10	6:15	6:22	6:30	6:37	6:41	6:51	7:00	7:05	7:10
5:00	5:05	5:12	5:20	5:27	5:31	5:41	5:50	5:55	6:00
3:55	4:00	4:07	4:15	4:22	4:26	4:36	4:45	4:50	4:55
2:55	3:00	3:10	3:20	3:27	3:31	3:40	3:48	3:52	3:55
1:35	1:40	1:47	1:55	2:02	2:06	2:16	2:25	2:30	2:35
12:30	12:35	12:42	12:50	12:57	1:01	1:11	1:20	1:25	1:30
11:25	11:30	11:37	11:45	11:52	11:56	12:06	12:15	12:20	12:25
10:15	10:20	10:27	10:35	10:42	10:46	10:56	11:05	11:10	11:15
9:10	9:15	9:22	9:30	9:37	9:41	9:51	10:00	10:05	10:10
8:05	8:10	8:17	8:25	8:32	8:36	8:46	8:55	9:00	9:05
7:00	7:05	7:12	7:20	7:27	7:31	7:41	7:50	7:56	8:00
6:30	6:35	6:43	6:51	6:58	7:02	7:12	7:20	7:27	7:30



A: Trip does not serve Tracy Transit Station

6:00	6:03	6:07	6:12	6:17	6:22	6:27	6:34	6:39	6:44	6:51	6:58	7:03	7:08	7:12	7:15
4:35	4:38	4:42	4:47	4:52	4:57	5:02	5:09	5:14	5:19	5:26	5:33	5:38	5:43	5:47	5:55
3:00	3:10	3:20	3:25	3:30	3:35	3:40	3:47	3:52	3:57	4:04	4:11	4:16	4:21	4:25	4:28
1:20	1:23	1:27	1:32	1:37	1:42	1:47	1:54	1:59	2:04	2:11	2:18	2:23	2:28	2:32	2:35
11:55	11:58	12:02	12:07	12:12	12:17	12:22	12:29	12:34	12:39	12:46	12:53	12:58	1:03	1:07	1:10
10:35	10:38	10:42	10:47	10:52	10:57	11:02	11:09	11:14	11:19	11:26	11:33	11:38	11:43	11:47	11:50
9:15	9:18	9:22	9:27	9:32	9:37	9:42	9:49	9:54	9:59	10:06	10:13	10:18	10:23	10:27	10:30
7:55	7:58	8:02	8:07	8:12	8:17	8:22	8:29	8:34	8:39	8:46	8:53	8:58	9:03	9:07	9:10
6:30	6:33	6:37	6:42	6:47	6:52	6:57	7:04	7:09	7:14	7:23	7:30	7:35	7:40	7:47	7:50



Transferring points are West Valley Mall and Tracy Transit Station. PM times are shown in **BOLD FACE type**. Times are approximate and may vary due to traffic or weather conditions. Saturday service does NOT operate during times shown in light yellow tint blocks.

### Schedule Notes:

6:40	6:44	6:50	7:00	7:13	7:18	7:27	7:33	7:42	7:50	8:00	8:05	8:09	7:15	7:18	7:20	7:24	7:30	7:34	7:40	7:48	7:58	8:08	8:17	8:24	8:31	8:37	8:42	8:48	8:54	9:05																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
5:35	5:39	5:44	5:50	5:57	6:04	6:10	6:19	6:25	6:30	6:35	6:40	6:44	6:49	6:55	7:02	7:09	7:15	7:24	7:30	7:35	7:40	7:45	7:50	7:55	8:00	8:05	8:10	8:15	8:20	8:25	8:30	8:35	8:40	8:45	8:50	8:55	9:00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
4:30	4:34	4:39	4:45	4:52	4:59	5:05	5:14	5:20	5:25	5:30	5:35	5:40	5:45	5:50	5:57	6:04	6:10	6:19	6:25	6:30	6:35	6:40	6:44	6:49	6:55	7:00	7:05	7:10	7:14	7:19	7:25	7:32	7:39	7:45	7:54	8:00	8:05	8:10	8:15	8:20	8:24	8:30	8:37	8:44	8:50	8:55	9:00	9:05	9:10	9:15	9:20	9:24	9:29	9:35	9:42	9:49	9:55	10:00	10:04	10:10	10:15	10:20	10:25	10:29	10:34	10:40	10:47	10:54	11:00	11:09	11:15	11:25	11:30	11:35	11:40	11:45	11:50	12:00	12:07	12:14	12:20	12:29	12:35	12:40	12:45	12:50	12:54	12:59	1:05	1:12	1:19	1:25	1:34	1:40	1:45	1:50	2:00	2:04	2:10	2:17	2:24	2:30	2:39	2:45	2:50	2:55	3:05	3:12	3:20	3:30	3:40	3:48	3:57	4:07	4:15	4:20	4:25	4:30	4:34	4:39	4:45	4:52	4:59	5:05	5:14	5:20	5:25	5:30	5:35	5:39	5:44	5:50	5:57	6:04	6:10	6:19	6:25	6:30	6:35	6:40	6:44	6:49	6:55	7:02	7:09	7:15	7:24	7:30	7:35	7:40	7:45	7:50	8:00	8:05	8:10	8:15	8:20	8:24	8:30	8:37	8:44	8:50	8:55	9:00	9:05	9:10	9:15	9:20	9:24	9:29	9:35	9:42	9:49	9:55	10:00	10:04	10:10	10:15	10:20	10:25	10:29	10:34	10:40	10:47	10:54	11:00	11:09	11:15	11:25	11:30	11:35	11:40	11:45	11:50	12:00	12:07	12:14	12:20	12:29	12:35	12:40	12:45	12:50	12:54	12:59	1:05	1:12	1:19	1:25	1:34	1:40	1:45	1:50	2:00	2:04	2:10	2:17	2:24	2:30	2:39	2:45	2:50	2:55	3:05	3:12	3:20	3:30	3:40	3:48	3:57	4:07	4:15	4:20	4:25	4:30	4:34	4:39	4:45	4:52	4:59	5:05	5:14	5:20	5:25	5:30	5:35	5:39	5:44	5:50	5:57	6:04	6:10	6:19	6:25	6:30	6:35	6:40	6:44	6:49	6:55	7:02	7:09	7:15	7:24	7:30	7:35	7:40	7:45	7:50	8:00	8:05	8:10	8:15	8:20	8:24	8:30	8:37	8:44	8:50	8:55	9:00	9:05	9:10	9:15	9:20	9:24	9:29	9:35	9:42	9:49	9:55	10:00	10:04	10:10	10:15	10:20	10:25	10:29	10:34	10:40	10:47	10:54	11:00	11:09	11:15	11:25	11:30	11:35	11:40	11:45	11:50	12:00	12:07	12:14	12:20	12:29	12:35	12:40	12:45	12:50	12:54	12:59	1:05	1:12	1:19	1:25	1:34	1:40	1:45	1:50	2:00	2:04	2:10	2:17	2:24	2:30	2:39	2:45	2:50	2:55	3:05	3:12	3:20	3:30	3:40	3:48	3:57	4:07	4:15	4:20	4:25	4:30	4:34	4:39	4:45	4:52	4:59	5:05	5:14	5:20	5:25	5:30	5:35	5:39	5:44	5:50	5:57	6:04	6:10	6:19	6:25	6:30	6:35	6:40	6:44	6:49	6:55	7:02	7:09	7:15	7:24	7:30	7:35	7:40	7:45	7:50	8:00	8:05	8:10	8:15	8:20	8:24	8:30	8:37	8:44	8:50	8:55	9:00	9:05	9:10	9:15	9:20	9:24	9:29	9:35	9:42	9:49	9:55	10:00	10:04	10:10	10:15	10:20	10:25	10:29	10:34	10:40	10:47	10:54	11:00	11:09	11:15	11:25	11:30	11:35	11:40	11:45	11:50	12:00	12:07	12:14	12:20	12:29	12:35	12:40	12:45	12:50	12:54	12:59	1:05	1:12	1:19	1:25	1:34	1:40	1:45	1:50	2:00	2:04	2:10	2:17	2:24	2:30	2:39	2:45	2:50	2:55	3:05	3:12	3:20	3:30	3:40	3:48	3:57	4:07	4:15	4:20	4:25	4:30	4:34	4:39	4:45	4:52	4:59	5:05	5:14	5:20	5:25	5:30	5:35	5:39	5:44	5:50	5:57	6:04	6:10	6:19	6:25	6:30	6:35	6:40	6:44	6:49	6:55	7:02	7:09	7:15	7:24	7:30	7:35	7:40	7:45	7:50	8:00	8:05	8:10	8:15	8:20	8:24	8:30	8:37	8:44	8:50	8:55	9:00	9:05	9:10	9:15	9:20	9:24	9:29	9:35	9:42	9:49	9:55	10:00	10:04	10:10	10:15	10:20	10:25	10:29	10:34	10:40	10:47	10:54	11:00	11:09	11:15	11:25	11:30	11:35	11:40	11:45	11:50	12:00	12:07	12:14	12:20	12:29	12:35	12:40	12:45	12:50	12:54	12:59	1:05	1:12	1:19	1:25	1:34	1:40	1:45	1:50	2:00	2:04	2:10	2:17	2:24	2:30	2:39	2:45	2:50	2:55	3:05	3:12	3:20	3:30	3:40	3:48	3:57	4:07	4:15	4:20	4:25	4:30	4:34	4:39	4:45	4:52	4:59	5:05	5:14	5:20	5:25	5:30	5:35	5:39	5:44	5:50	5:57	6:04	6:10	6:19	6:25	6:30	6:35	6:40	6:44	6:49	6:55	7:02	7:09	7:15	7:24	7:30	7:35	7:40	7:45	7:50	8:00	8:05	8:10	8:15	8:20	8:24	8:30	8:37	8:44	8:50	8:55	9:00	9:05	9:10	9:15	9:20	9:24	9:29	9:35	9:42	9:49	9:55	10:00	10:04	10:10	10:15	10:20	10:25	10:29	10:34	10:40	10:47	10:54	11:00	11:09	11:15	11:25	11:30	11:35	11:40	11:45	11:50	12:00	12:07	12:14	12:20	12:29	12:35	12:40	12:45	12:50	12:54	12:59	1:05	1:12	1:19	1:25	1:34	1:40	1:45	1:50	2:00	2:04	2:10	2:17	2:24	2:30	2:39	2:45	2:50	2:55	3:05	3:12	3:20	3:30	3:40	3:48	3:57	4:07	4:15	4:20	4:25	4:30	4:34	4:39	4:45	4:52	4:59	5:05	5:14	5:20	5:25	5:30	5:35	5:39	5:44	5:50	5:57	6:04	6:10	6:19	6:25	6:30	6:35	6:40	6:44	6:49	6:55	7:02	7:09	7:15	7:24	7:30	7:35	7:40	7:45	7:50	8:00	8:05	8:10	8:15	8:20	8:24	8:30	8:37	8:44	8:50	8:55	9:00	9:05	9:10	9:15	9:20	9:24	9:29	9:35	9:42	9:49	9:55	10:00	10:04	10:10	10:15	10:20	10:25	10:29	10:34	10:40	10:47	10:54	11:00	11:09	11:15	11:25	11:30	11:35	11:40	11:45	11:50	12:00	12:07	12:14	12:20	12:29	12:35	12:40	12:45	12:50	12:54	12:59	1:05	1:12	1:19	1:25	1:34	1:40	1:45	1:50	2:00	2:04	2:10	2:17	2:24	2:30	2:39	2:45	2:50	2:55	3:05	3:12	3:20	3:30	3:40	3:48	3:57	4:07	4:15	4:20	4:25	4:30	4:34	4:39	4:45	4:52	4:59	5:05	5:14	5:20	5:25	5:30	5:35	5:39	5:44	5:50	5:57	6:04	6:10	6:19	6:25	6:30	6:35	6:40	6:44	6:49	6:55	7:02	7:09	7:15	7:24	7:30	7:35	7:40	7:45	7:50	8:00	8:05	8:10	8:15	8:20	8:24	8:30	8:37	8:44	8:50	8:55	9:00	9:05	9:10	9:15	9:20	9:24	9:29	9:35	9:42	9:49	9:55	10:00	10:04	10:10	10:15	10:20	10:25	10:29	10:34	10:40	10:47	10:54	11:00	11:09	11:15	11:25	11:30	11:35	11:40	11:45	11:50	12:00	12:07	12:14	12:20	12:29	12:35	12:40	12:45	12:50	12:54	12:59	1:05	1:12	1:19	1:25	1:34	1:40	1:45	1:50	2:00	2:04	2:10	

**The Downtown Transit Center (DTC)**

The DTC, at 421 E. Weber Avenue, is Stockton's downtown public transit hub. Nearly all RTD routes connect at the DTC, with 20 sheltered, off-street bus stops on two passenger boarding platforms, and additional stops on Channel Street and Weber Avenue. At the on-site customer service center (open Monday-Friday 8:00 a.m.-5:00 p.m.), customers can get system maps and schedules, purchase fares, and make customer comments.

**SAN JOAQUIN RTD  
REGIONAL FARE STRUCTURE  
EFFECTIVE: OCTOBER 5, 2008**

**CASH FARES**

Metro - Intercity - Hopper - Metro Express (Route 40)

Adults (Ages 18-64)	\$ 1.50
Student (Ages 5-17 & college students w/ proper ID)	\$ 1.25
Seniors (Age 65 & over)	\$ 0.75
Disabled	\$ 0.75
Medicare Card Holders (w/ ID card)	\$ 0.75
Child (Under age 5) (Up to three children under age 5 when accompanied by a fare paying adult)	FREE
Each Additional Child (Under age 5)	\$ 1.25
Hopper	\$ 1.50
Trolley	\$ 0.50
Trolley Senior/Disabled/Medicare Card Holder	\$ 0.25
Intercity Express	\$ 2.00
Dial-A-Ride	\$ 3.00
Transfers	\$ 0.50
Hopper Deviations	\$ 1.00

**31-DAY PASSES**

(Unlimited rides for 31 days from first day of use)

Adult	\$ 65.00
Student	\$ 40.00
Senior/Disabled/Medicare Card Holder	\$ 30.00

**10-RIDE PASSES**

(Good for 10 rides anytime)

Adult	\$ 14.00
Student	\$ 12.00
Senior/Disabled/Medicare Card Holder	\$ 7.00
Dial-A-Ride	\$ 27.50

**DAY PASSES**

(Unlimited rides on the day issued)

Adult	\$ 4.00
Student	\$ 3.00
Senior/Disabled/Medicare Card Holder	\$ 2.00

**ROUTE 26 - SATURDAY/SUNDAY/HOLIDAY**

Tracy / Lathrop / Stockton

<i>Wal-Mart (Tracy)</i>	<i>Grant Line - MacArthur</i>	<i>5th Street @ Lathrop Community Center</i>	<i>San Joaquin County Hospital</i>	<i>DTC Arrive - Channel</i>
9:25A	9:42A	9:59A	10:11A	10:28A
11:50A	12:07P	12:24P	12:36P	12:53P
2:20P	2:37P	2:54P	3:06P	3:23P
4:50P	5:07P	5:24P	5:36P	5:53P

**ROUTE 26 - SATURDAY/SUNDAY/HOLIDAY**

Stockton / Lathrop / Tracy

<i>DTC Depart - Channel</i>	<i>San Joaquin County Hospital</i>	<i>5th Street @ Lathrop Community Center</i>	<i>Grant Line - MacArthur</i>	<i>Wal-Mart (Tracy)</i>
* —	8:35A	8:47A	9:04A	9:21A
10:35A	10:52A	11:04A	11:21A	11:38A
1:05P	1:22P	1:34P	1:51P	2:08P
3:35P	3:52P	4:04P	4:21P	4:38P

\* Southbound passengers traveling to Lathrop and Tracy should use Route 51 departing the DTC at 8 a.m.



**ROUTE 26**

SAN JOAQUIN REGIONAL TRANSIT DISTRICT

**EFFECTIVE: JANUARY 24, 2010**

The first Sat/Sun/Hol southbound trip originates at San Joaquin County Hospital. Southbound passengers traveling to Lathrop and Tracy should use Route 51 departing the DTC at 8 a.m. and transfer to the 26 at the RTD bus shelter on Hospital Road near Hospital Main Entrance.

**TO: Tracy / Lathrop / Stockton**

**TO: Stockton / Lathrop / Tracy**

**HOW TO CONTACT RTD**

1.800.HOW.TO.RIDE  
209.943.1111  
www.sanjoaquinRTD.com

**421 E. WEBER AVE.  
STOCKTON, CA 95202**

## ROUTE 26 - WEEKDAY

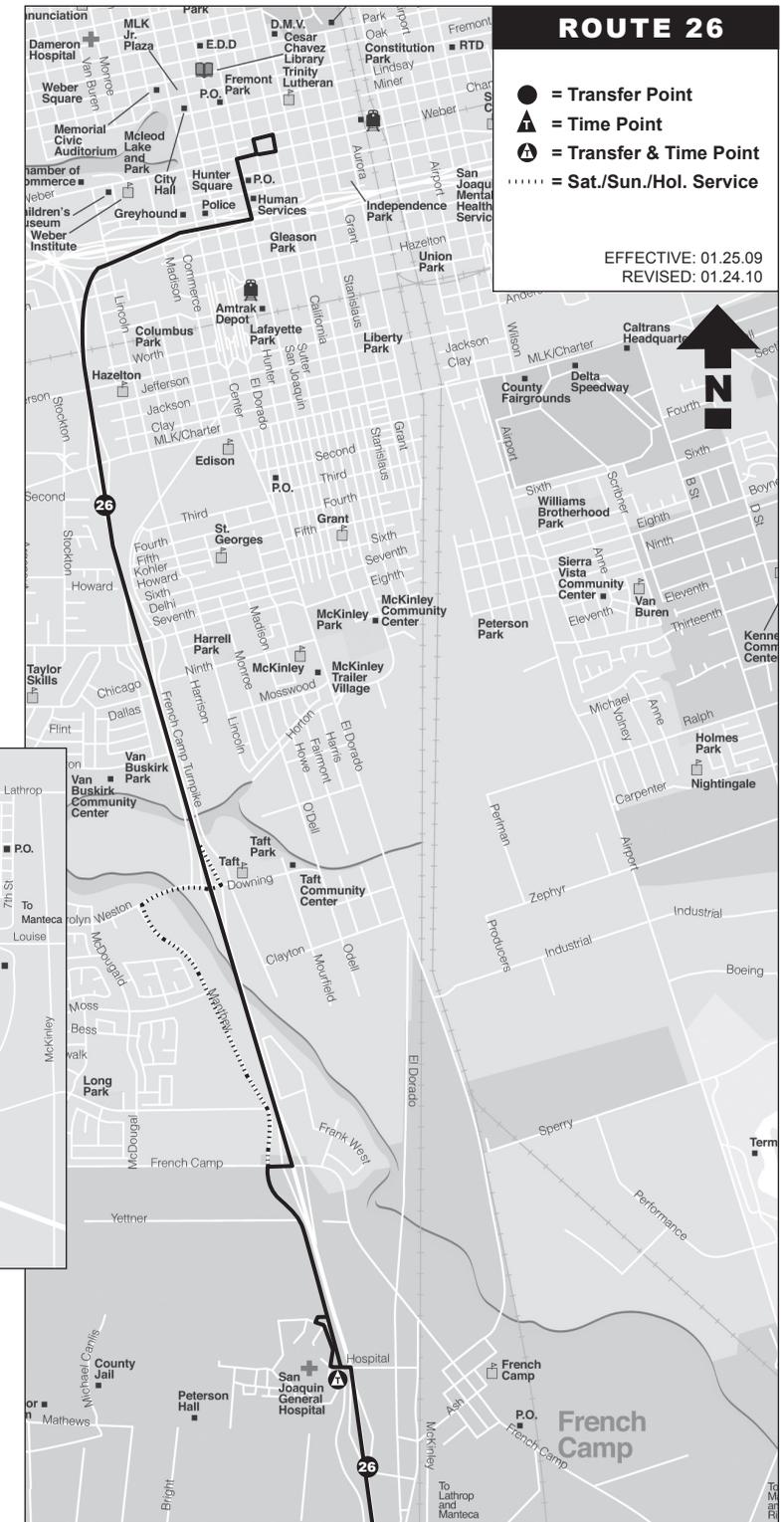
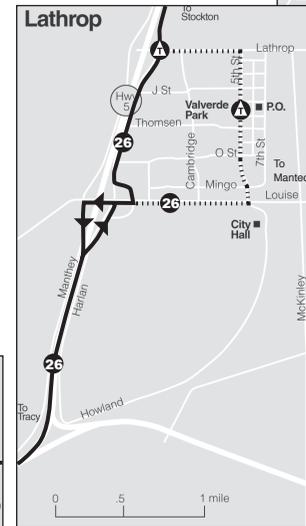
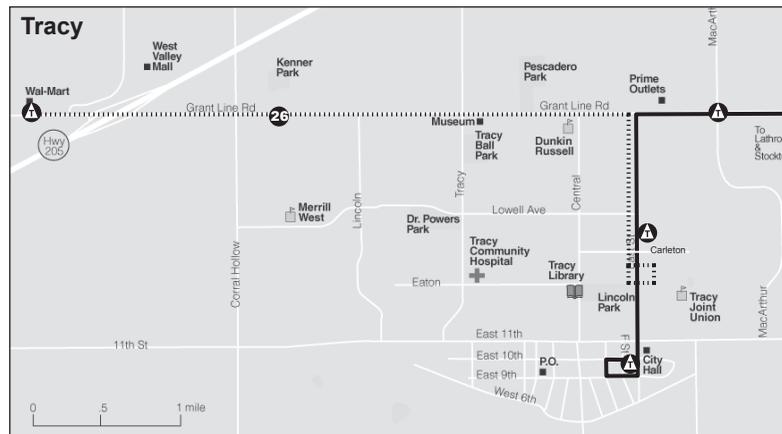
### Tracy / Lathrop / Stockton

East - 10th Street	Harlan - Lathrop	San Joaquin County Hospital	DTC Arrive
5:58A	6:20A	6:33A	6:48A
6:28A	6:50A	7:03A	7:18A
8:00A	8:22A	8:35A	8:50A
10:00A	10:22A	10:35A	10:50A
4:10P	4:32P	4:45P	5:00P
5:35P	5:57P	6:10P	6:25P
6:35P	6:57P	7:10P	7:25P
8:35P	8:57P	9:10P	9:25P

### Stockton / Lathrop / Tracy

DTC Depart	San Joaquin County Hospital	Harlan - Lathrop	East - 10th Street
5:00A	5:15A	5:28A	5:51A
5:30A	5:45A	5:58A	6:21A
7:05A	7:20A	7:33A	7:56A
9:05A	9:20A	9:33A	9:56A
3:15P	3:30P	3:43P	4:06P
4:35P	4:50P	5:03P	5:28P
5:35P	5:50P	6:03P	6:28P
7:35P	7:50P	8:03P	8:28P

For late night service to Lathrop and Tracy, please refer to the Route 90 public timetable.



**The Downtown Transit Center (DTC)**

Located at 421 E. Weber Avenue in downtown Stockton, the DTC is RTD's primary transfer hub, where nearly all routes connect. The on-site customer service center is open Monday-Friday 8:00 a.m.-5:00 p.m.

**Mall Transfer Station**

Located on Yokuts Avenue between the Weberstown and Sherwood Malls, this is RTD's north Stockton hub for Metro Express, fixed routes, and Hopper services.

**SAN JOAQUIN RTD  
REGIONAL FARE STRUCTURE  
EFFECTIVE: JULY 25, 2010**

**CASH FARES**

Metro - Intercity - Hopper - Metro Express (Route 40)

Adults (Ages 18-64)	\$ 1.50
Student (Ages 5-17 & college students w/ proper ID)	\$ 1.25
Seniors (Age 65 & over)	\$ 0.75
Disabled	\$ 0.75
Medicare Card Holders (w/ ID card)	\$ 0.75
Child (Under age 5) (Up to three children under age 5 when accompanied by a fare paying adult)	FREE
Each Additional Child (Under age 5)	\$ 1.25
Hopper	\$ 1.50
Trolley	\$ 0.50
Trolley Senior/Disabled/Medicare Card Holder	\$ 0.25
Intercity Express	\$ 2.00
Dial-A-Ride	\$ 3.00
Transfers (Weekdays only)	\$ 0.50
Hopper Deviations	\$ 1.00

**31-DAY PASSES**

(Unlimited rides for 31 days from first day of use)

Adult	\$ 65.00
Student	\$ 40.00
Senior/Disabled/Medicare Card Holder	\$ 30.00

**10-RIDE PASSES**

(Good for 10 rides anytime)

Adult	\$ 14.00
Student	\$ 12.00
Senior/Disabled/Medicare Card Holder	\$ 7.00
Dial-A-Ride	\$ 27.50

**DAY PASSES - WEEKDAYS**

(Unlimited rides on the day issued)

Adult	\$ 4.00
Student	\$ 3.00
Senior/Disabled/Medicare Card Holder	\$ 2.00

**DAY PASSES - WEEKENDS**

(Unlimited rides on the day issued)

Adult/Student	\$ 3.00
Senior/Disabled/Medicare Card Holder	\$ 1.50

**ROUTE 90 - WEEKDAY**

**Tracy - Lathrop - Stockton**

Wal-Mart (Tracy)	Grant Line - MacArthur	5th Street @ Lathrop Community Center	San Joaquin County Hospital	DTC Arrive	DTC Depart	Delta College - Shima
5:30A	5:50A	6:06A	6:19A	6:36A	6:40A	7:00A
7:15A	7:31A	7:47A	8:00A	8:17A	-----	-----
8:45A	9:01A	9:19A	9:32A	9:49A	9:51A	10:01A
9:35A	9:51A	10:09A	10:22A	10:39A	-----	-----
11:50A	12:06P	12:24P	12:37A	12:54P	-----	-----
-----	-----	-----	-----	-----	2:00P	2:20P
1:55P	2:11P	2:29P	2:42P	2:59P	-----	-----
3:51P	4:06P	4:24P	4:37P	4:54P	4:56P	5:16P
5:25P	5:41P	5:59P	6:12P	6:29P	-----	-----
7:30P	7:46P	8:04P	8:17P	8:34P	-----	-----
8:05P	8:21P	8:39P	8:52P	9:08P	9:20P	9:40P

**ROUTE 90 - WEEKDAY**

**Stockton - Lathrop - Tracy**

Delta College - Shima	DTC Arrive	DTC Depart	San Joaquin County Hospital	5th Street @ Lathrop Community Center	Grant Line - MacArthur	Wal-Mart (Tracy)
7:04A	7:24A	7:35A	7:52A	8:05A	8:21A	8:36A
-----	-----	8:25A	8:42A	8:55A	9:13A	9:28A
10:10A	10:30A	10:40A	10:57A	11:10A	11:28A	11:44A
-----	-----	12:46P	1:03P	1:16P	1:34P	1:50P
2:24P	2:44P	2:46P	3:03P	3:16P	3:34P	3:50P
-----	-----	4:05P	4:22P	4:35P	4:49P	5:15P
5:20P	5:50P	6:10P	6:27P	6:40P	6:58P	7:14P
-----	-----	6:46P	7:03P	7:16P	7:34P	7:50P
-----	-----	8:40P	8:56P	9:09P	9:25P	9:41P
9:55P	10:15P	10:20P	10:36P	10:49P	11:05P	11:21P



**ROUTE 90**

SAN JOAQUIN REGIONAL TRANSIT DISTRICT

**EFFECTIVE: JANUARY 25, 2009**

**REVISED: JULY 25, 2010**

**HOPPER**

Stockton / Lathrop / Tracy

**HOW TO CONTACT RTD**

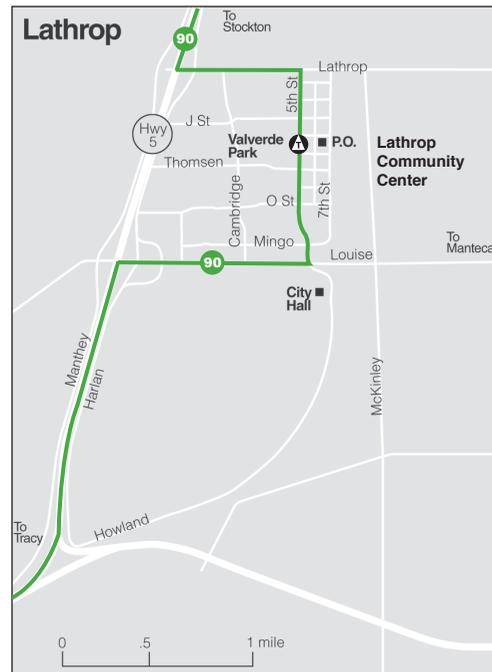
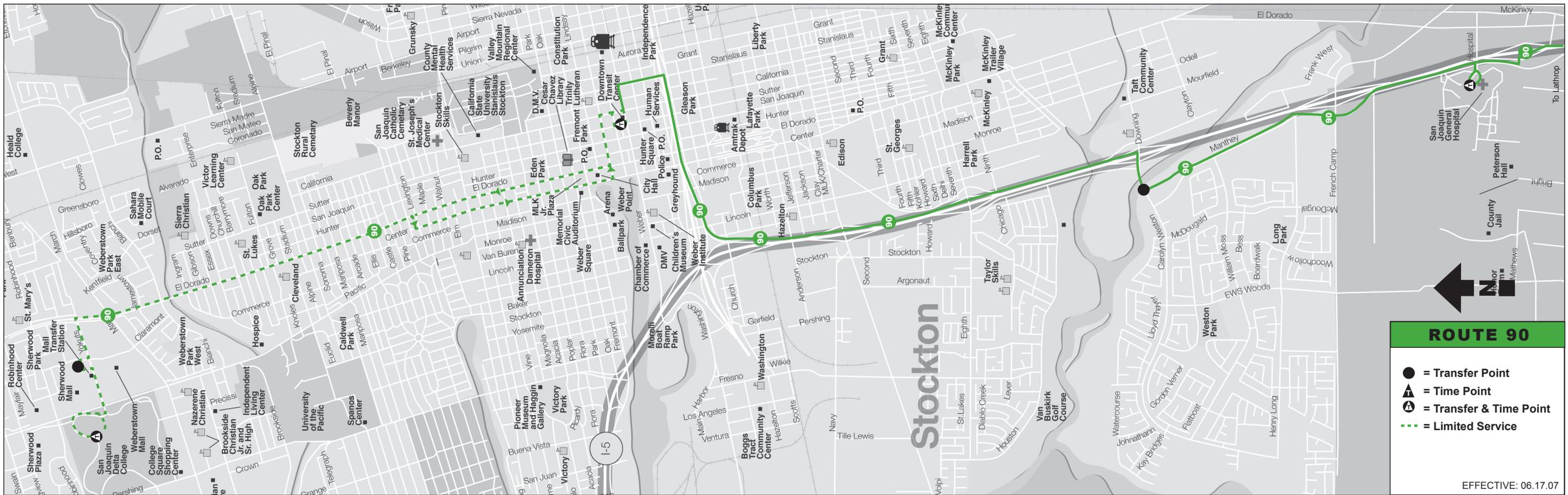
1.800.HOW.TO.RIDE

209.943.1111

www.sanjoaquinRTD.com

**421 E. WEBER AVE.  
STOCKTON, CA 95202**

*(Information contained herein is subject to change without notice)*



## APPENDIX A-2

### Existing Traffic Count Data

# All Traffic Data

(916)771-8700

TRACY

File Name : 09-7488-023 LAMMERS-GRANT-F

Site Code : 00000000

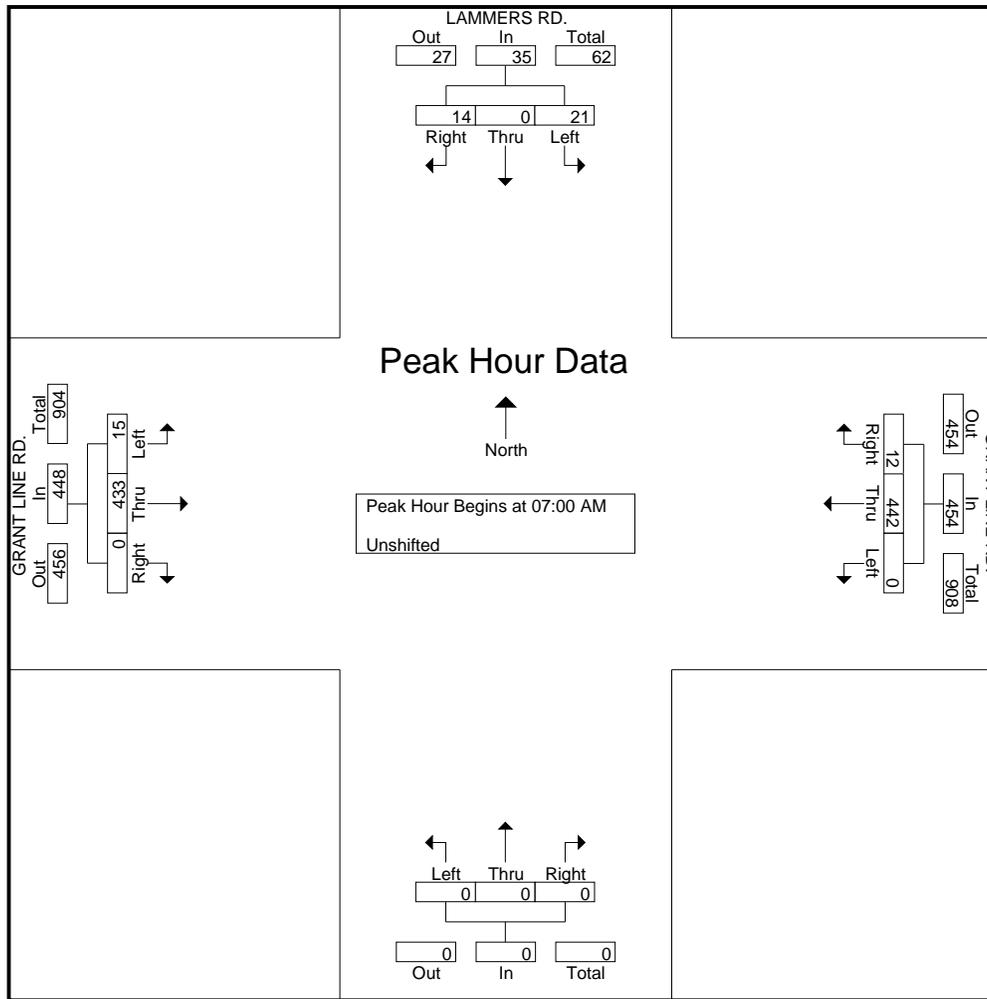
Start Date : 12/8/2009

Page No : 1

## Groups Printed- Unshifted

Start Time	LAMMERS RD. From North				GRANT LINE RD. From East				From South				GRANT LINE RD. From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	5	0	5	10	0	131	2	133	0	0	0	0	3	101	0	104	247
07:15 AM	2	0	2	4	0	107	1	108	0	0	0	0	6	100	0	106	218
07:30 AM	2	0	4	6	0	102	8	110	0	0	0	0	1	119	0	120	236
07:45 AM	12	0	3	15	0	102	1	103	0	0	0	0	5	113	0	118	236
Total	21	0	14	35	0	442	12	454	0	0	0	0	15	433	0	448	937
08:00 AM	6	0	2	8	0	111	12	123	0	0	0	0	1	113	0	114	245
08:15 AM	6	0	3	9	0	93	2	95	0	0	0	0	0	109	0	109	213
08:30 AM	12	0	4	16	0	85	7	92	0	0	0	0	1	107	0	108	216
08:45 AM	5	0	2	7	0	78	6	84	0	0	0	0	7	98	0	105	196
Total	29	0	11	40	0	367	27	394	0	0	0	0	9	427	0	436	870
04:00 PM	37	0	44	81	0	123	45	168	0	0	0	0	49	123	0	172	421
04:15 PM	34	0	52	86	0	137	47	184	0	0	0	0	57	129	0	186	456
04:30 PM	28	0	58	86	0	129	53	182	0	0	0	0	60	125	0	185	453
04:45 PM	36	0	58	94	0	133	39	172	0	0	0	0	47	131	0	178	444
Total	135	0	212	347	0	522	184	706	0	0	0	0	213	508	0	721	1774
05:00 PM	21	0	56	77	0	133	31	164	0	0	0	0	51	134	0	185	426
05:15 PM	33	0	50	83	0	131	35	166	0	0	0	0	57	125	0	182	431
05:30 PM	32	0	67	99	0	132	31	163	0	0	0	0	51	122	0	173	435
05:45 PM	41	0	59	100	0	123	29	152	0	0	0	0	54	113	0	167	419
Total	127	0	232	359	0	519	126	645	0	0	0	0	213	494	0	707	1711
Grand Total	312	0	469	781	0	1850	349	2199	0	0	0	0	450	1862	0	2312	5292
Apprch %	39.9	0	60.1		0	84.1	15.9		0	0	0		19.5	80.5	0		
Total %	5.9	0	8.9	14.8	0	35	6.6	41.6	0	0	0	0	8.5	35.2	0	43.7	

Start Time	LAMMERS RD. From North				GRANT LINE RD. From East				From South				GRANT LINE RD. From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	5	0	5	10	0	131	2	133	0	0	0	0	3	101	0	104	247
07:15 AM	2	0	2	4	0	107	1	108	0	0	0	0	6	100	0	106	218
07:30 AM	2	0	4	6	0	102	8	110	0	0	0	0	1	119	0	120	236
07:45 AM	12	0	3	15	0	102	1	103	0	0	0	0	5	113	0	118	236
Total Volume	21	0	14	35	0	442	12	454	0	0	0	0	15	433	0	448	937
% App. Total	60	0	40		0	97.4	2.6		0	0	0		3.3	96.7	0		



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:15 PM

04:15 PM	34	0	52	86	0	<b>137</b>	47	<b>184</b>	0	0	0	0	57	129	0	<b>186</b>	<b>456</b>
04:30 PM	28	0	<b>58</b>	86	0	129	<b>53</b>	182	0	0	0	0	<b>60</b>	125	0	185	453
04:45 PM	<b>36</b>	0	58	<b>94</b>	0	133	39	172	0	0	0	0	47	131	0	178	444
05:00 PM	21	0	56	77	0	133	31	164	0	0	0	0	51	<b>134</b>	0	185	426
Total Volume	119	0	224	343	0	532	170	702	0	0	0	0	215	519	0	734	1779
% App. Total	34.7	0	65.3		0	75.8	24.2		0	0	0		29.3	70.7	0		
PHF	.826	.000	.966	.912	.000	.971	.802	.954	.000	.000	.000	.000	.896	.968	.000	.987	.975

# All Traffic Data

(916)771-8700

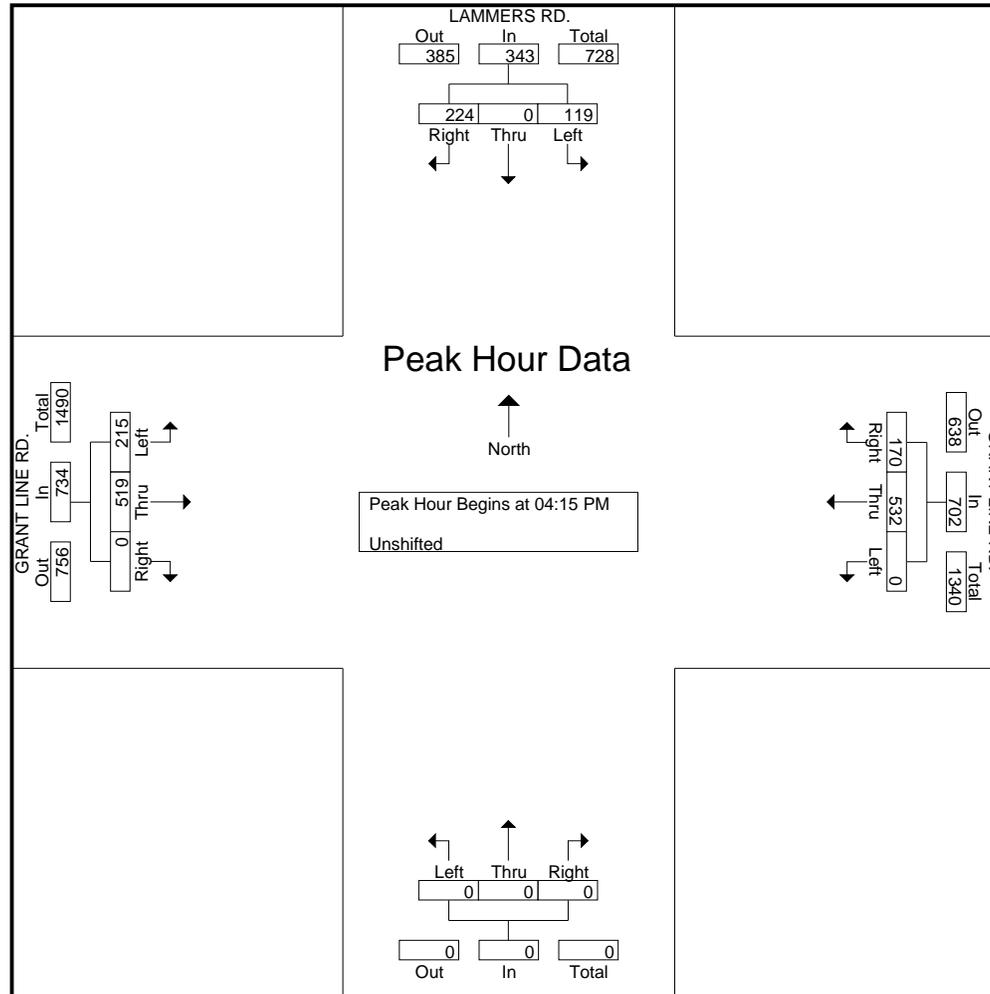
TRACY

File Name : 09-7488-023 LAMMERS-GRANT-F

Site Code : 00000000

Start Date : 12/8/2009

Page No : 3



# All Traffic Data

(916)771-8700

TRACY

File Name : 09-7488-047 BYRON-GRANT-F

Site Code : 00000000

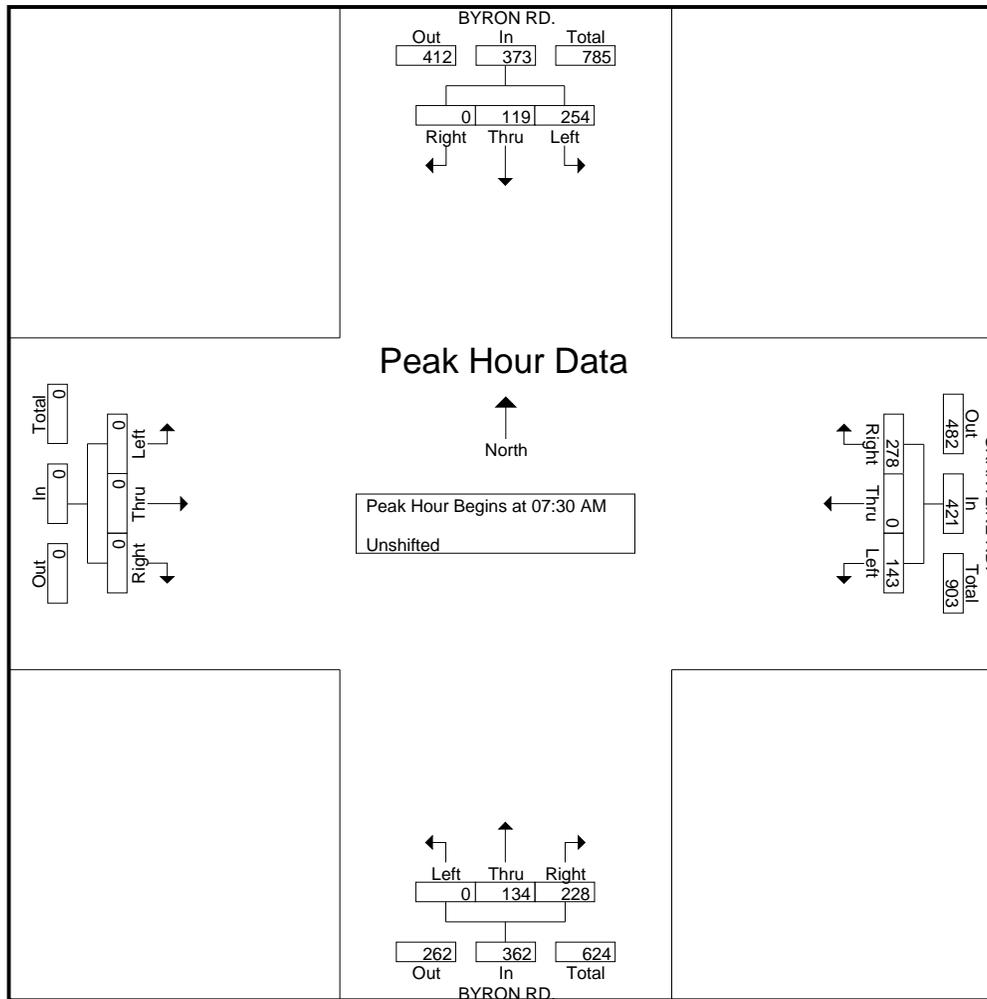
Start Date : 12/8/2009

Page No : 1

## Groups Printed- Unshifted

Start Time	BYRON RD. From North				GRANTLINE RD. From East				BYRON RD. From South				From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	58	11	0	69	31	0	109	140	0	20	33	53	0	0	0	0	262
07:15 AM	65	25	0	90	19	0	92	111	0	25	40	65	0	0	0	0	266
07:30 AM	79	32	0	111	30	0	76	106	0	19	43	62	0	0	0	0	279
07:45 AM	58	26	0	84	26	0	82	108	0	38	59	97	0	0	0	0	289
Total	260	94	0	354	106	0	359	465	0	102	175	277	0	0	0	0	1096
08:00 AM	58	33	0	91	50	0	61	111	0	38	62	100	0	0	0	0	302
08:15 AM	59	28	0	87	37	0	59	96	0	39	64	103	0	0	0	0	286
08:30 AM	63	23	0	86	35	0	48	83	0	22	60	82	0	0	0	0	251
08:45 AM	53	21	0	74	31	0	56	87	0	19	53	72	0	0	0	0	233
Total	233	105	0	338	153	0	224	377	0	118	239	357	0	0	0	0	1072
04:00 PM	103	35	0	138	75	0	96	171	0	23	73	96	0	0	0	0	405
04:15 PM	107	34	0	141	80	0	106	186	0	20	79	99	0	0	0	0	426
04:30 PM	109	40	0	149	80	0	93	173	0	12	77	89	0	0	0	0	411
04:45 PM	103	32	0	135	79	0	98	177	0	26	71	97	0	0	0	0	409
Total	422	141	0	563	314	0	393	707	0	81	300	381	0	0	0	0	1651
05:00 PM	111	40	0	151	79	0	114	193	0	23	67	90	0	0	0	0	434
05:15 PM	95	34	0	129	76	0	108	184	0	16	83	99	0	0	0	0	412
05:30 PM	103	20	0	123	74	0	122	196	0	15	62	77	0	0	0	0	396
05:45 PM	93	34	0	127	71	0	110	181	0	11	63	74	0	0	0	0	382
Total	402	128	0	530	300	0	454	754	0	65	275	340	0	0	0	0	1624
Grand Total	1317	468	0	1785	873	0	1430	2303	0	366	989	1355	0	0	0	0	5443
Apprch %	73.8	26.2	0		37.9	0	62.1		0	27	73		0	0	0		
Total %	24.2	8.6	0	32.8	16	0	26.3	42.3	0	6.7	18.2	24.9	0	0	0	0	

Start Time	BYRON RD. From North				GRANTLINE RD. From East				BYRON RD. From South				From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	79	32	0	111	30	0	76	106	0	19	43	62	0	0	0	0	279
07:45 AM	58	26	0	84	26	0	82	108	0	38	59	97	0	0	0	0	289
08:00 AM	58	33	0	91	50	0	61	111	0	38	62	100	0	0	0	0	302
08:15 AM	59	28	0	87	37	0	59	96	0	39	64	103	0	0	0	0	286
Total Volume	254	119	0	373	143	0	278	421	0	134	228	362	0	0	0	0	1156
% App. Total	68.1	31.9	0		34	0	66		0	37	63		0	0	0		



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:15 PM

04:15 PM	107	34	0	141	<b>80</b>	0	106	186	0	20	<b>79</b>	<b>99</b>	0	0	0	0	426
04:30 PM	109	<b>40</b>	0	149	80	0	93	173	0	12	77	89	0	0	0	0	411
04:45 PM	103	32	0	135	79	0	98	177	0	<b>26</b>	71	97	0	0	0	0	409
05:00 PM	<b>111</b>	40	0	<b>151</b>	79	0	<b>114</b>	<b>193</b>	0	23	67	90	0	0	0	0	<b>434</b>
Total Volume	430	146	0	576	318	0	411	729	0	81	294	375	0	0	0	0	1680
% App. Total	74.7	25.3	0		43.6	0	56.4		0	21.6	78.4		0	0	0		
PHF	.968	.913	.000	.954	.994	.000	.901	.944	.000	.779	.930	.947	.000	.000	.000	.000	.968

# All Traffic Data

(916)771-8700

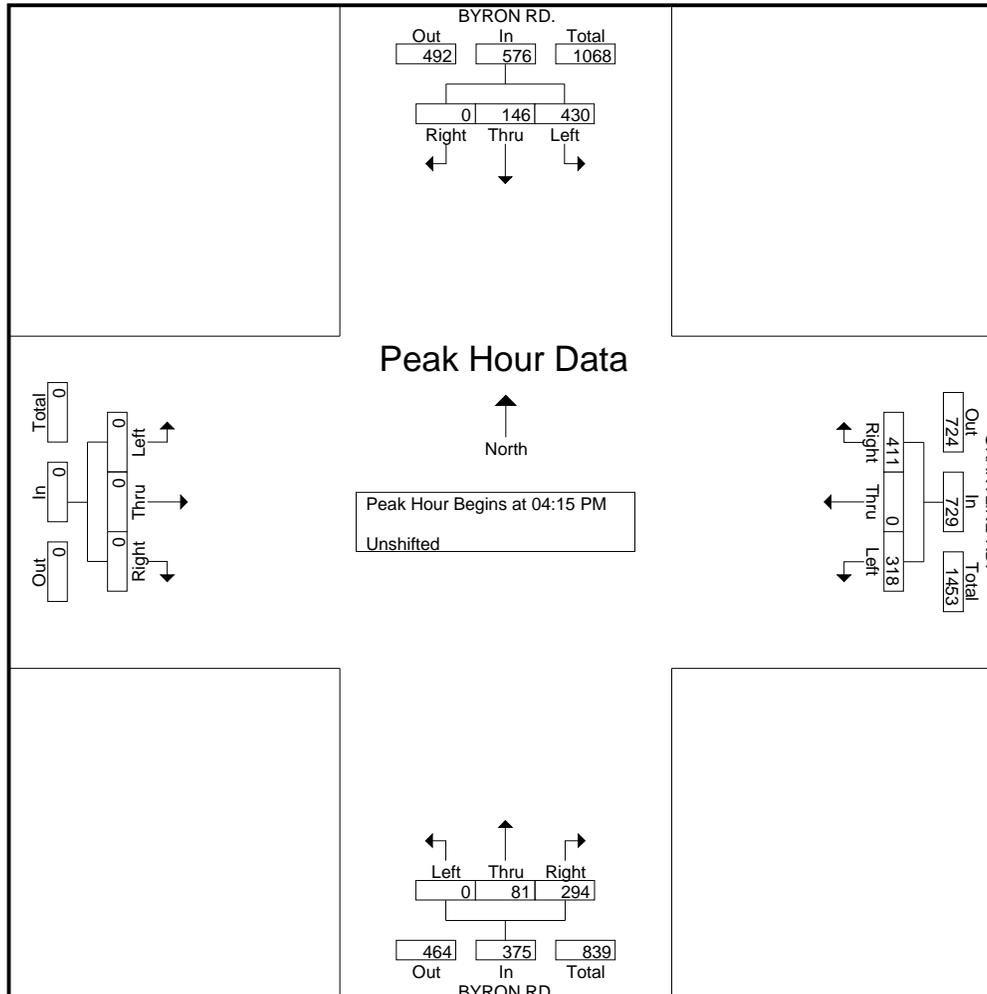
TRACY

File Name : 09-7488-047 BYRON-GRANT-F

Site Code : 00000000

Start Date : 12/8/2009

Page No : 3



# All Traffic Data

(916) 771-8700  
Fax 786-2879

TRACY

File Name : 09-7093-001 CORRAL-11TH-F  
Site Code : 00000000  
Start Date : 24/02/2009  
Page No : 1

## Groups Printed- Unshifted

Start Time	CORRAL HOLLOW RD. Southbound				11TH ST. Westbound				CORRAL HOLLOW RD. Northbound				11TH ST. Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
16:00	56	155	18	229	63	103	65	231	62	184	29	275	93	204	139	436	1171
16:15	78	152	16	246	90	103	78	271	48	168	22	238	100	206	109	415	1170
16:30	64	138	19	221	64	85	63	212	56	166	24	246	89	239	161	489	1168
16:45	87	180	18	285	55	79	71	205	73	201	29	303	114	211	175	500	1293
Total	285	625	71	981	272	370	277	919	239	719	104	1062	396	860	584	1840	4802
17:00	79	179	18	276	82	96	60	238	43	192	26	261	107	239	167	513	1288
17:15	61	171	18	250	79	106	72	257	52	228	18	298	115	224	198	537	1342
17:30	62	176	24	262	60	88	53	201	73	193	18	284	118	176	194	488	1235
17:45	82	172	22	276	77	97	50	224	85	197	27	309	138	163	195	496	1305
Total	284	698	82	1064	298	387	235	920	253	810	89	1152	478	802	754	2034	5170
Grand Total	569	1323	153	2045	570	757	512	1839	492	1529	193	2214	874	1662	1338	3874	9972
Apprch %	27.8	64.7	7.5		31	41.2	27.8		22.2	69.1	8.7		22.6	42.9	34.5		
Total %	5.7	13.3	1.5	20.5	5.7	7.6	5.1	18.4	4.9	15.3	1.9	22.2	8.8	16.7	13.4	38.8	

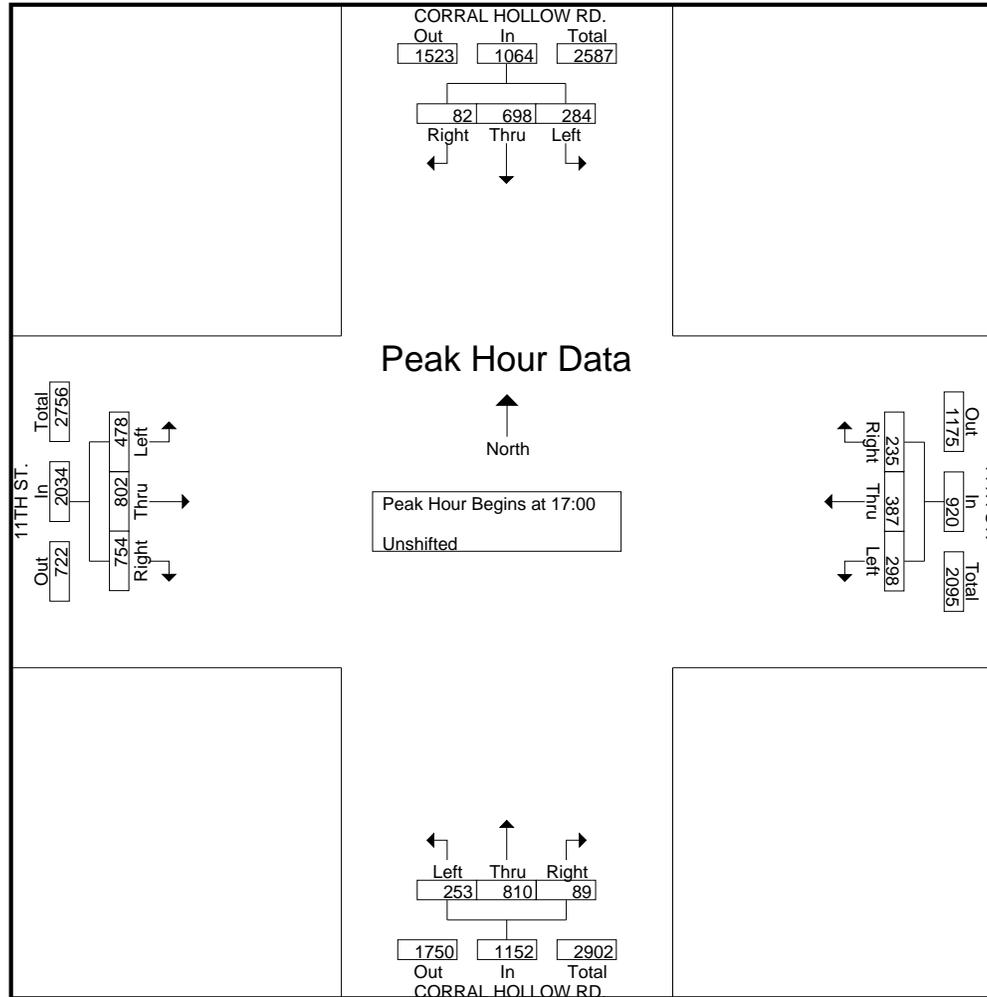
Start Time	CORRAL HOLLOW RD. Southbound				11TH ST. Westbound				CORRAL HOLLOW RD. Northbound				11TH ST. Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	79	<b>179</b>	18	<b>276</b>	<b>82</b>	96	60	238	43	192	26	261	107	<b>239</b>	167	513	1288
17:15	61	171	18	250	79	<b>106</b>	<b>72</b>	<b>257</b>	52	<b>228</b>	18	298	115	224	<b>198</b>	<b>537</b>	<b>1342</b>
17:30	62	176	<b>24</b>	262	60	88	53	201	73	193	18	284	118	176	194	488	1235
17:45	<b>82</b>	172	22	276	77	97	50	224	<b>85</b>	197	<b>27</b>	<b>309</b>	<b>138</b>	163	195	496	1305
Total Volume	284	698	82	1064	298	387	235	920	253	810	89	1152	478	802	754	2034	5170
% App. Total	26.7	65.6	7.7		32.4	42.1	25.5		22	70.3	7.7		23.5	39.4	37.1		
PHF	.866	.975	.854	.964	.909	.913	.816	.895	.744	.888	.824	.932	.866	.839	.952	.947	.963

# All Traffic Data

(916) 771-8700  
Fax 786-2879

TRACY

File Name : 09-7093-001 CORRAL-11TH-F  
Site Code : 00000000  
Start Date : 24/02/2009  
Page No : 2



*ALL TRAFFIC DATA, INC*

(916)771-8700

FAX 786-2879

City of Tracy  
10-7351-003

Costco Dwy & Grant Line Rd

Date: 9/14/2010

Start Time	Costco Dwy Southbound				Grant Line Rd Westbound				Costco Dwy Northbound				Grant Line Rd Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
7:00	0	0	0	0	11	95	0	106	4	0	11	15	0	81	10	91	212
7:15	0	0	0	0	14	115	0	129	4	0	14	18	0	112	10	122	269
7:30	0	0	0	0	12	102	0	114	5	0	7	12	0	117	5	122	248
7:45	0	0	0	0	11	116	0	127	6	0	6	12	0	127	7	134	273
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>48</b>	<b>428</b>	<b>0</b>	<b>476</b>	<b>19</b>	<b>0</b>	<b>38</b>	<b>57</b>	<b>0</b>	<b>437</b>	<b>32</b>	<b>469</b>	<b>1002</b>
8:00	0	0	0	0	10	108	0	118	7	0	12	19	0	117	15	132	269
8:15	0	0	0	0	27	107	0	134	2	0	20	22	0	127	17	144	300
8:30	0	0	0	0	14	65	0	79	9	0	12	21	0	91	19	110	210
8:45	0	0	0	0	23	93	0	116	5	0	16	21	0	101	14	115	252
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>74</b>	<b>373</b>	<b>0</b>	<b>447</b>	<b>23</b>	<b>0</b>	<b>60</b>	<b>83</b>	<b>0</b>	<b>436</b>	<b>65</b>	<b>501</b>	<b>1031</b>
16:00	0	0	0	0	62	149	0	211	27	0	42	69	0	153	32	185	465
16:15	0	0	0	0	79	125	0	204	36	0	60	96	0	143	33	176	476
16:30	0	0	0	0	76	134	0	210	36	0	74	110	0	148	41	189	509
16:45	0	0	0	0	72	126	0	198	36	0	70	106	0	133	27	160	464
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>289</b>	<b>534</b>	<b>0</b>	<b>823</b>	<b>135</b>	<b>0</b>	<b>246</b>	<b>381</b>	<b>0</b>	<b>577</b>	<b>133</b>	<b>710</b>	<b>1914</b>
17:00	0	0	0	0	58	159	0	217	28	0	77	105	0	144	30	174	496
17:15	0	0	0	0	59	169	0	228	30	0	54	84	0	140	29	169	481
17:30	0	0	0	0	55	134	0	189	28	0	58	86	0	154	39	193	468
17:45	0	0	0	0	40	161	0	201	36	0	58	94	0	156	36	192	487
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>212</b>	<b>623</b>	<b>0</b>	<b>835</b>	<b>122</b>	<b>0</b>	<b>247</b>	<b>369</b>	<b>0</b>	<b>594</b>	<b>134</b>	<b>728</b>	<b>1932</b>
<b>Grand Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>623</b>	<b>1958</b>	<b>0</b>	<b>2581</b>	<b>299</b>	<b>0</b>	<b>591</b>	<b>890</b>	<b>0</b>	<b>2044</b>	<b>364</b>	<b>2408</b>	<b>5879</b>
<b>Apprch%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>24.1%</b>	<b>75.9%</b>	<b>0.0%</b>		<b>33.6%</b>	<b>0.0%</b>	<b>66.4%</b>		<b>0.0%</b>	<b>84.9%</b>	<b>15.1%</b>		
<b>Total %</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>10.6%</b>	<b>33.3%</b>	<b>0.0%</b>	<b>43.9%</b>	<b>5.1%</b>	<b>0.0%</b>	<b>10.1%</b>	<b>15.1%</b>	<b>0.0%</b>	<b>34.8%</b>	<b>6.2%</b>	<b>41.0%</b>	

AM Peak Hr Begins at: 730 AM

Start Time	Costco Dwy Southbound				Grant Line Rd Westbound				Costco Dwy Northbound				Grant Line Rd Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
730	0	0	0	0	12	102	0	114	5	0	7	12	0	117	5	122	248
745	0	0	0	0	11	116	0	127	6	0	6	12	0	127	7	134	273
800	0	0	0	0	10	108	0	118	7	0	12	19	0	117	15	132	269
815	0	0	0	0	27	107	0	134	2	0	20	22	0	127	17	144	300
Total Volume	0	0	0	0	60	433	0	493	20	0	45	65	0	488	44	532	1090
% App Total.	0.0%	0.0%	0.0%		12.2%	87.8%	0.0%		30.8%	0.0%	69.2%		0.0%	91.7%	8.3%		
PHF	0.000				0.920				0.739				0.924				

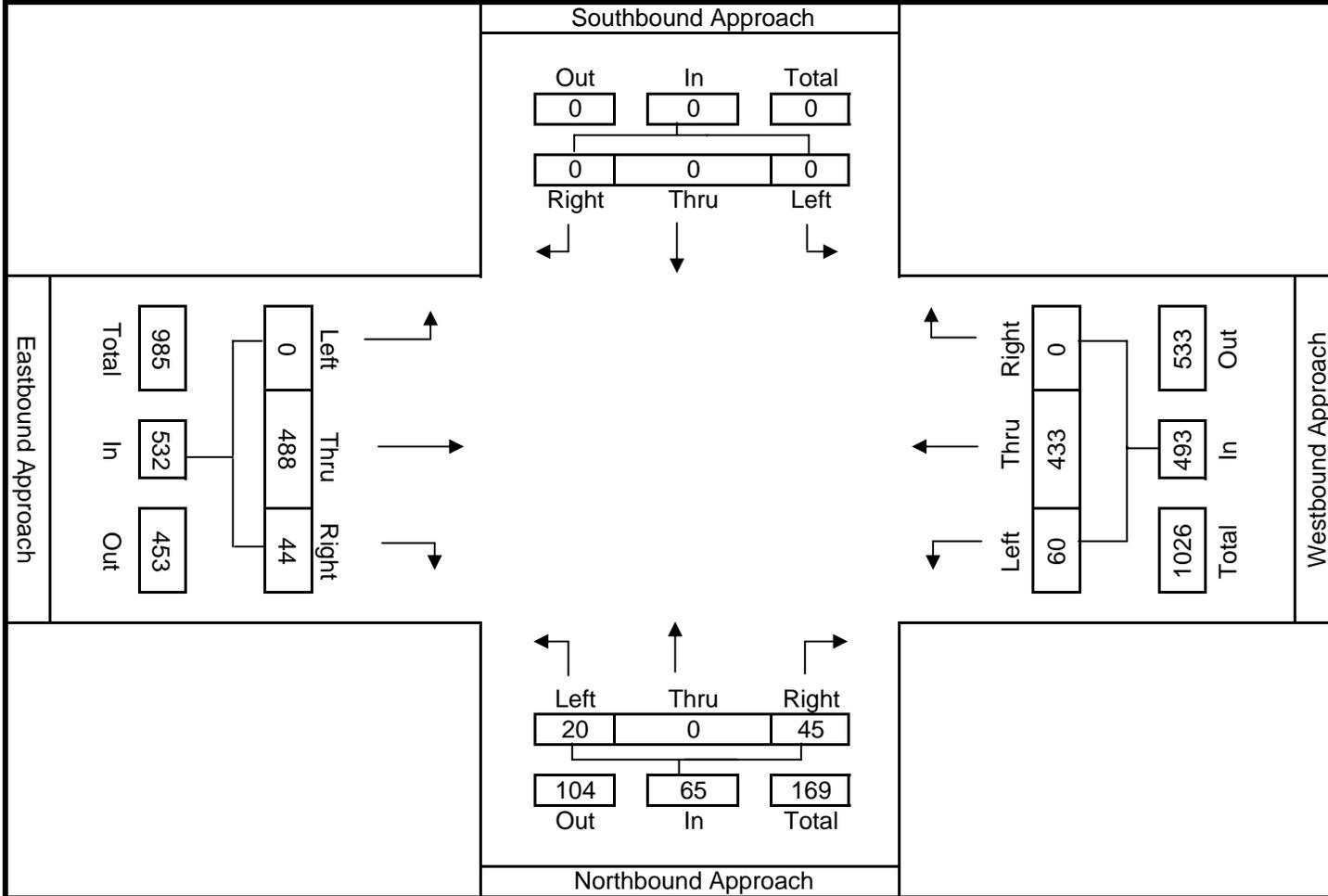
PM Peak Hr Begins at: 430 PM

Start Time	Costco Dwy Southbound				Grant Line Rd Westbound				Costco Dwy Northbound				Grant Line Rd Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
430	0	0	0	0	76	134	0	210	36	0	74	110	0	148	41	189	509
445	0	0	0	0	72	126	0	198	36	0	70	106	0	133	27	160	464
500	0	0	0	0	58	159	0	217	28	0	77	105	0	144	30	174	496
515	0	0	0	0	59	169	0	228	30	0	54	84	0	140	29	169	481
Total Volume	0	0	0	0	265	588	0	853	130	0	275	405	0	565	127	692	1950
% App Total.	0.0%	0.0%	0.0%		31.1%	68.9%	0.0%		32.1%	0.0%	67.9%		0.0%	81.6%	18.4%		
PHF	0.000				0.935				0.920				0.915				

ALL TRAFFIC DATA, INC

North/South Street: Costco Dwy  
 East/West Street: Grant Line Rd  
 AM Peak Hr Begins at: 730 AM

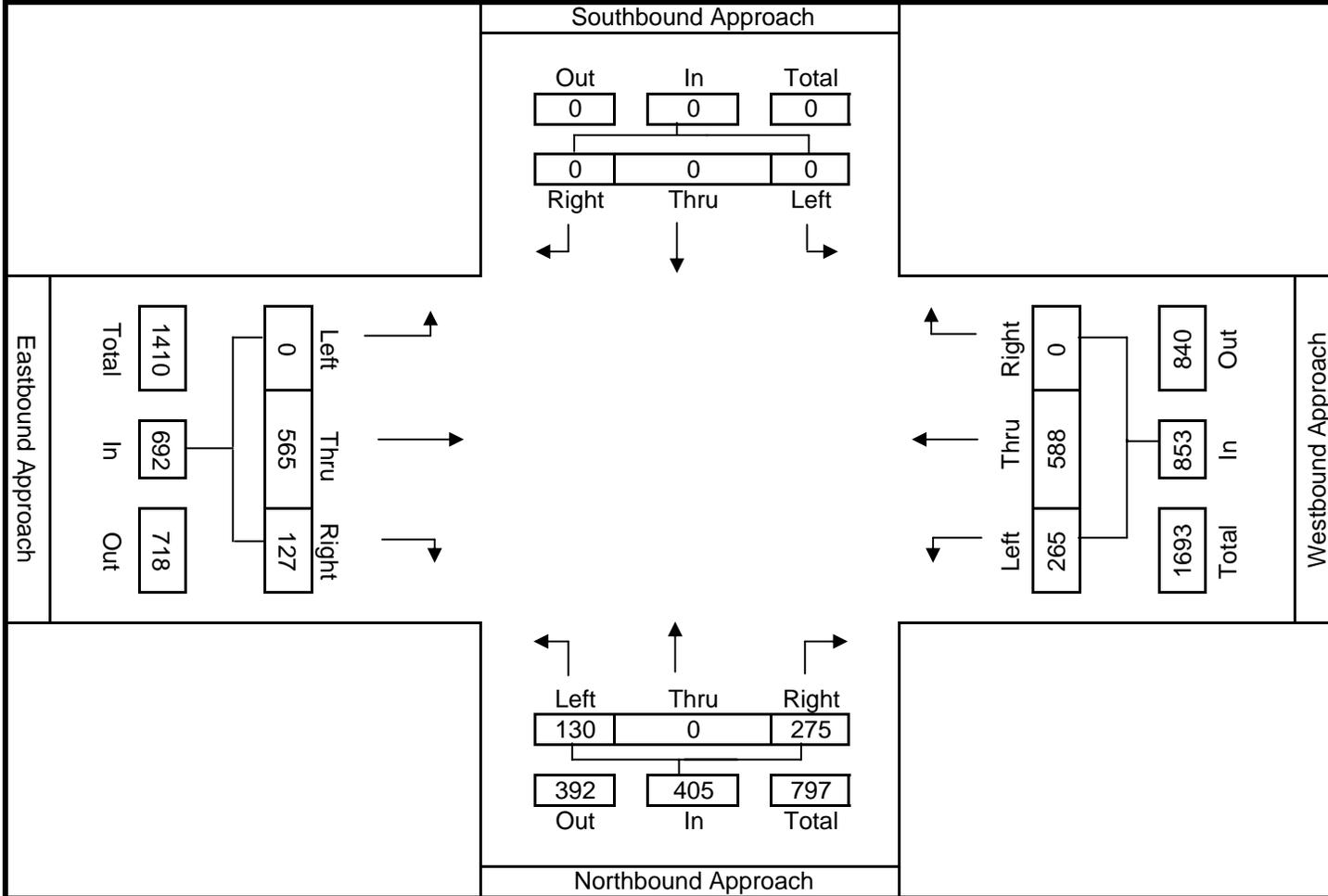
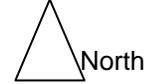
Date: 9/14/2010  
 City: City of Tracy  
 File Name: 10-7351-003



ALL TRAFFIC DATA, INC

North/South Street: Costco Dwy  
 East/West Street: Grant Line Rd  
 PM Peak Hr Begins at: 430 PM

Date: 9/14/2010  
 City: City of Tracy  
 File Name: 10-7351-003



*ALL TRAFFIC DATA, INC*

(916)771-8700

FAX 786-2879

City of Tracy  
10-7351-004

Wal-Mart Dwy & Grant Line Rd

Date: 9/14/2010

Start Time	Wal-Mart Dwy Southbound				Grant Line Rd Westbound				Wal-Mart Dwy Northbound				Grant Line Rd Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
7:00	0	0	0	0	10	102	0	112	4	0	7	11	0	90	3	93	216
7:15	0	0	0	0	6	126	0	132	3	0	19	22	0	112	1	113	267
7:30	0	0	0	0	8	111	0	119	3	0	16	19	0	118	2	120	258
7:45	0	0	0	0	11	125	0	136	1	0	15	16	0	148	1	149	301
Total	0	0	0	0	35	464	0	499	11	0	57	68	0	468	7	475	1042
8:00	0	0	0	0	27	115	0	142	4	0	10	14	0	112	11	123	279
8:15	0	0	0	0	26	131	0	157	3	0	24	27	0	136	12	148	332
8:30	0	0	0	0	28	78	0	106	1	0	24	25	0	99	3	102	233
8:45	0	0	0	0	32	106	0	138	12	0	27	39	0	99	18	117	294
Total	0	0	0	0	113	430	0	543	20	0	85	105	0	446	44	490	1138
16:00	0	0	0	0	61	189	0	250	20	0	55	75	0	182	12	194	519
16:15	0	0	0	0	74	166	0	240	14	0	61	75	0	187	20	207	522
16:30	0	0	0	0	53	219	0	272	21	0	51	72	0	210	10	220	564
16:45	0	0	0	0	45	178	0	223	16	0	43	59	0	187	14	201	483
Total	0	0	0	0	233	752	0	985	71	0	210	281	0	766	56	822	2088
17:00	0	0	0	0	49	189	0	238	26	0	52	78	0	198	6	204	520
17:15	0	0	0	0	70	219	0	289	20	0	53	73	0	193	16	209	571
17:30	0	0	0	0	55	164	0	219	19	0	42	61	0	189	11	200	480
17:45	0	0	0	0	72	175	0	247	24	0	34	58	0	212	14	226	531
Total	0	0	0	0	246	747	0	993	89	0	181	270	0	792	47	839	2102
Grand Total	0	0	0	0	627	2393	0	3020	191	0	533	724	0	2472	154	2626	6370
Apprch%	0.0%	0.0%	0.0%		20.8%	79.2%	0.0%		26.4%	0.0%	73.6%		0.0%	94.1%	5.9%		
Total %	0.0%	0.0%	0.0%	0.0%	9.8%	37.6%	0.0%	47.4%	3.0%	0.0%	8.4%	11.4%	0.0%	38.8%	2.4%	41.2%	

AM Peak Hr Begins at: 730 AM

Start Time	Wal-Mart Dwy Southbound				Grant Line Rd Westbound				Wal-Mart Dwy Northbound				Grant Line Rd Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
730	0	0	0	0	8	111	0	119	3	0	16	19	0	118	2	120	258
745	0	0	0	0	11	125	0	136	1	0	15	16	0	148	1	149	301
800	0	0	0	0	27	115	0	142	4	0	10	14	0	112	11	123	279
815	0	0	0	0	26	131	0	157	3	0	24	27	0	136	12	148	332
Total Volume	0	0	0	0	72	482	0	554	11	0	65	76	0	514	26	540	1170
% App Total.	0.0%	0.0%	0.0%		13.0%	87.0%	0.0%		14.5%	0.0%	85.5%		0.0%	95.2%	4.8%		
PHF	0.000				0.882				0.704				0.906				

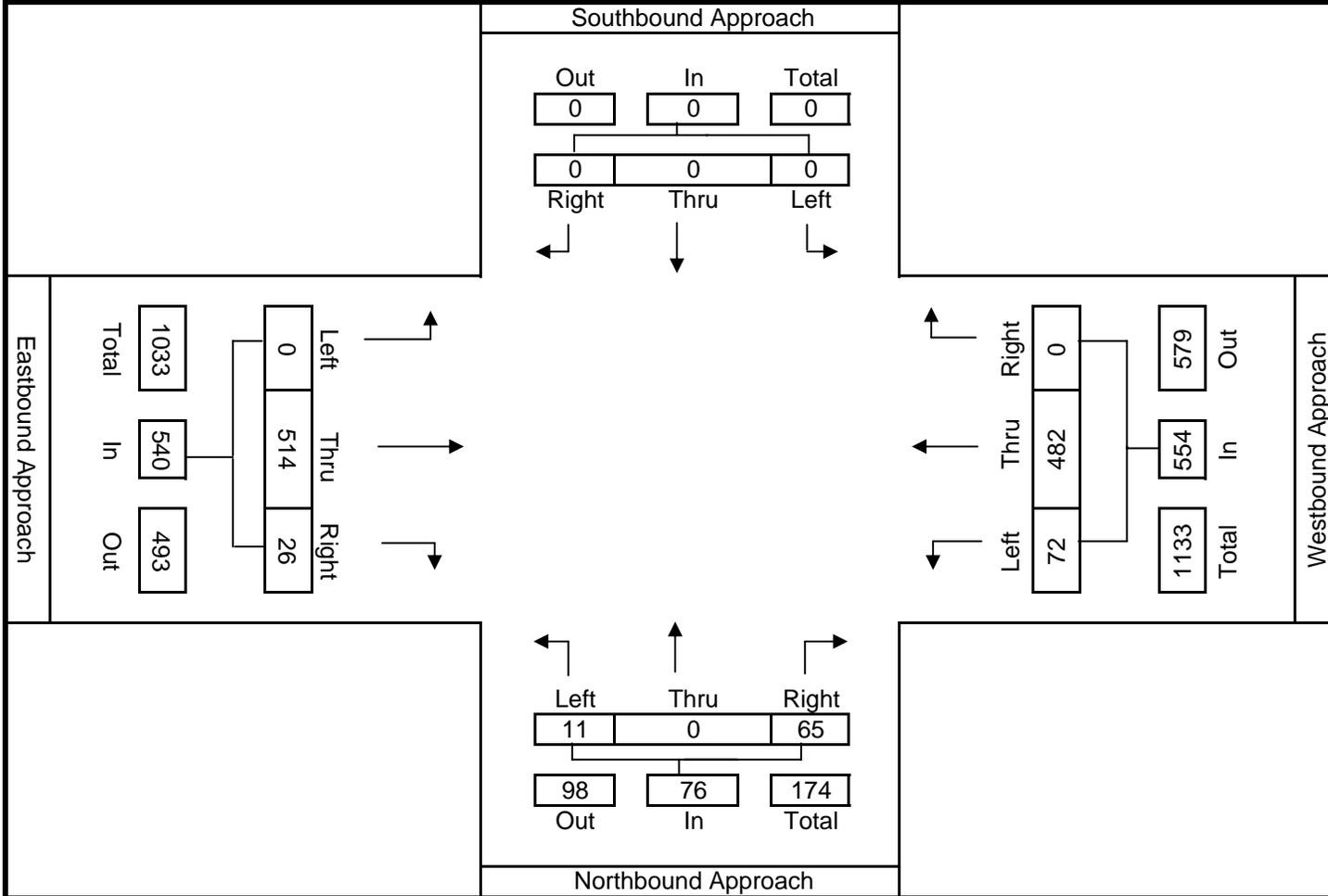
PM Peak Hr Begins at: 430 PM

Start Time	Wal-Mart Dwy Southbound				Grant Line Rd Westbound				Wal-Mart Dwy Northbound				Grant Line Rd Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
430	0	0	0	0	53	219	0	272	21	0	51	72	0	210	10	220	564
445	0	0	0	0	45	178	0	223	16	0	43	59	0	187	14	201	483
500	0	0	0	0	49	189	0	238	26	0	52	78	0	198	6	204	520
515	0	0	0	0	70	219	0	289	20	0	53	73	0	193	16	209	571
Total Volume	0	0	0	0	217	805	0	1022	83	0	199	282	0	788	46	834	2138
% App Total.	0.0%	0.0%	0.0%		21.2%	78.8%	0.0%		29.4%	0.0%	70.6%		0.0%	94.5%	5.5%		
PHF	0.000				0.884				0.904				0.948				

ALL TRAFFIC DATA, INC

North/South Street: Wal-Mart Dwy  
 East/West Street: Grant Line Rd  
 AM Peak Hr Begins at: 730 AM

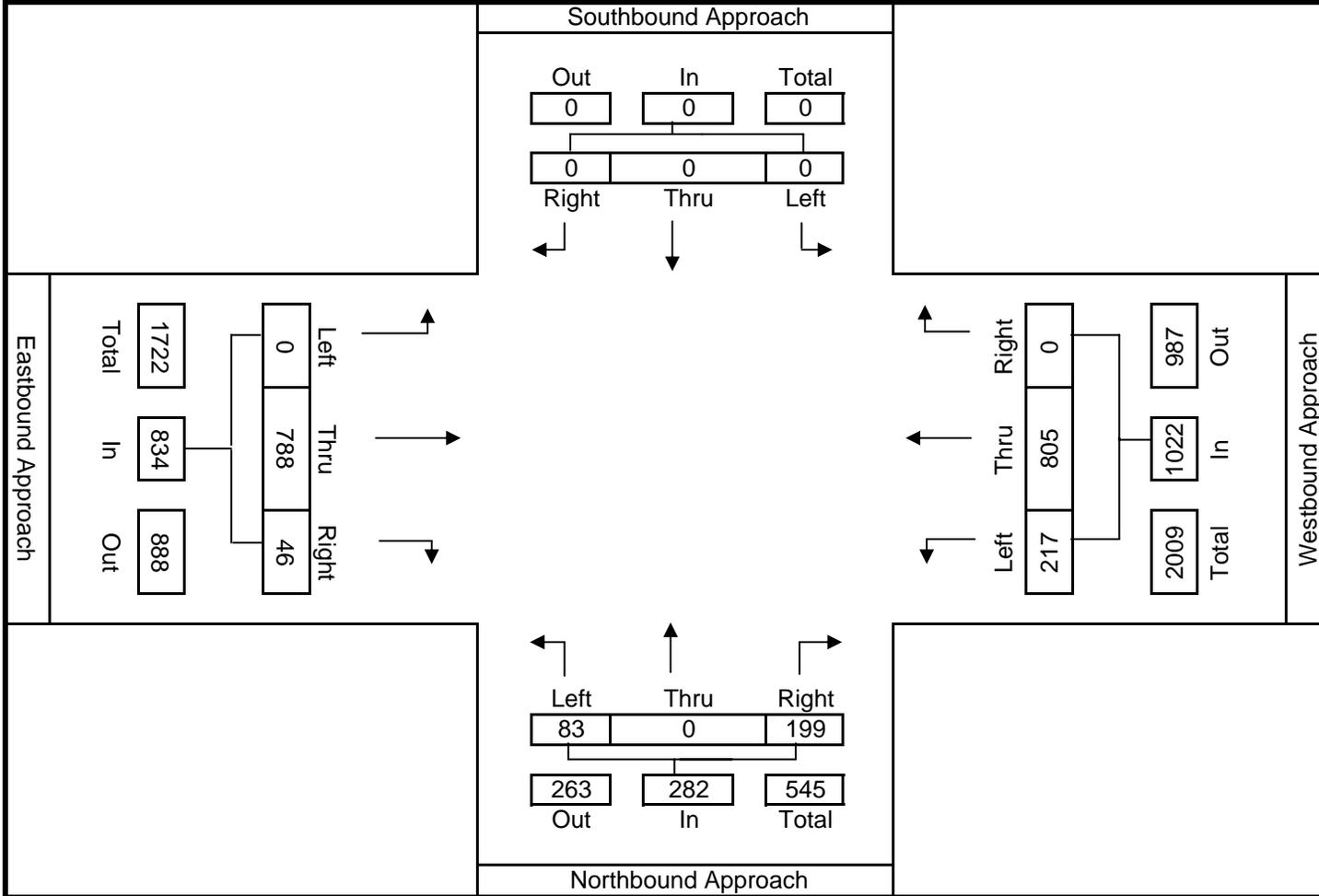
Date: 9/14/2010  
 City: City of Tracy  
 File Name: 10-7351-004



ALL TRAFFIC DATA, INC

North/South Street: Wal-Mart Dwy  
 East/West Street: Grant Line Rd  
 PM Peak Hr Begins at: 430 PM

Date: 9/14/2010  
 City: City of Tracy  
 File Name: 10-7351-004



*ALL TRAFFIC DATA, INC*

(916)771-8700

FAX 786-2879

City of Tracy  
10-7351-007

Corral Hollow Rd & Grant Line Rd

Date: 9/14/2010

Start Time	Corral Hollow Rd Southbound				Grant Line Rd Westbound				Corral Hollow Rd Northbound				Grant Line Rd Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
7:00	2	16	8	26	16	60	4	80	52	6	15	73	3	31	15	49	228
7:15	5	24	19	48	31	62	5	98	86	27	14	127	2	43	21	66	339
7:30	6	40	12	58	43	60	8	111	72	42	60	174	4	67	16	87	430
7:45	1	27	19	47	35	106	16	157	101	80	65	246	15	44	24	83	533
Total	14	107	58	179	125	288	33	446	311	155	154	620	24	185	76	285	1530
8:00	9	31	31	71	34	123	5	162	72	66	39	177	12	55	29	96	506
8:15	4	44	19	67	30	105	9	144	118	61	39	218	9	41	21	71	500
8:30	4	28	20	52	20	77	8	105	101	34	15	150	5	39	47	91	398
8:45	12	19	11	42	25	97	18	140	105	41	21	167	4	48	50	102	451
Total	29	122	81	232	109	402	40	551	396	202	114	712	30	183	147	360	1855
16:00	24	57	21	102	37	101	18	156	135	32	28	195	13	158	116	287	740
16:15	23	46	15	84	33	107	20	160	106	59	44	209	27	131	120	278	731
16:30	22	57	15	94	33	86	17	136	125	35	16	176	25	133	113	271	677
16:45	25	60	22	107	37	82	19	138	98	59	24	181	19	134	109	262	688
Total	94	220	73	387	140	376	74	590	464	185	112	761	84	556	458	1098	2836
17:00	22	61	15	98	36	100	22	158	137	74	27	238	20	118	117	255	749
17:15	35	69	15	119	38	108	18	164	130	63	16	209	30	165	137	332	824
17:30	26	73	16	115	31	87	12	130	103	78	30	211	27	144	132	303	759
17:45	25	50	25	100	43	91	17	151	145	68	37	250	16	159	137	312	813
Total	108	253	71	432	148	386	69	603	515	283	110	908	93	586	523	1202	3145
Grand Total	245	702	283	1230	522	1452	216	2190	1686	825	490	3001	231	1510	1204	2945	9366
Apprch%	19.9%	57.1%	23.0%	13.1%	23.8%	66.3%	9.9%	23.4%	56.2%	27.5%	16.3%	32.0%	7.8%	51.3%	40.9%	31.4%	
Total %	2.6%	7.5%	3.0%	13.1%	5.6%	15.5%	2.3%	23.4%	18.0%	8.8%	5.2%	32.0%	2.5%	16.1%	12.9%	31.4%	

AM Peak Hr Begins at: 730 AM

Start Time	Corral Hollow Rd Southbound				Grant Line Rd Westbound				Corral Hollow Rd Northbound				Grant Line Rd Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
730	6	40	12	58	43	60	8	111	72	42	60	174	4	67	16	87	430
745	1	27	19	47	35	106	16	157	101	80	65	246	15	44	24	83	533
800	9	31	31	71	34	123	5	162	72	66	39	177	12	55	29	96	506
815	4	44	19	67	30	105	9	144	118	61	39	218	9	41	21	71	500
Total Volume	20	142	81	243	142	394	38	574	363	249	203	815	40	207	90	337	1969
% App Total.	8.2%	58.4%	33.3%		24.7%	68.6%	6.6%		44.5%	30.6%	24.9%		11.9%	61.4%	26.7%		
PHF	0.856				0.886				0.828				0.878				

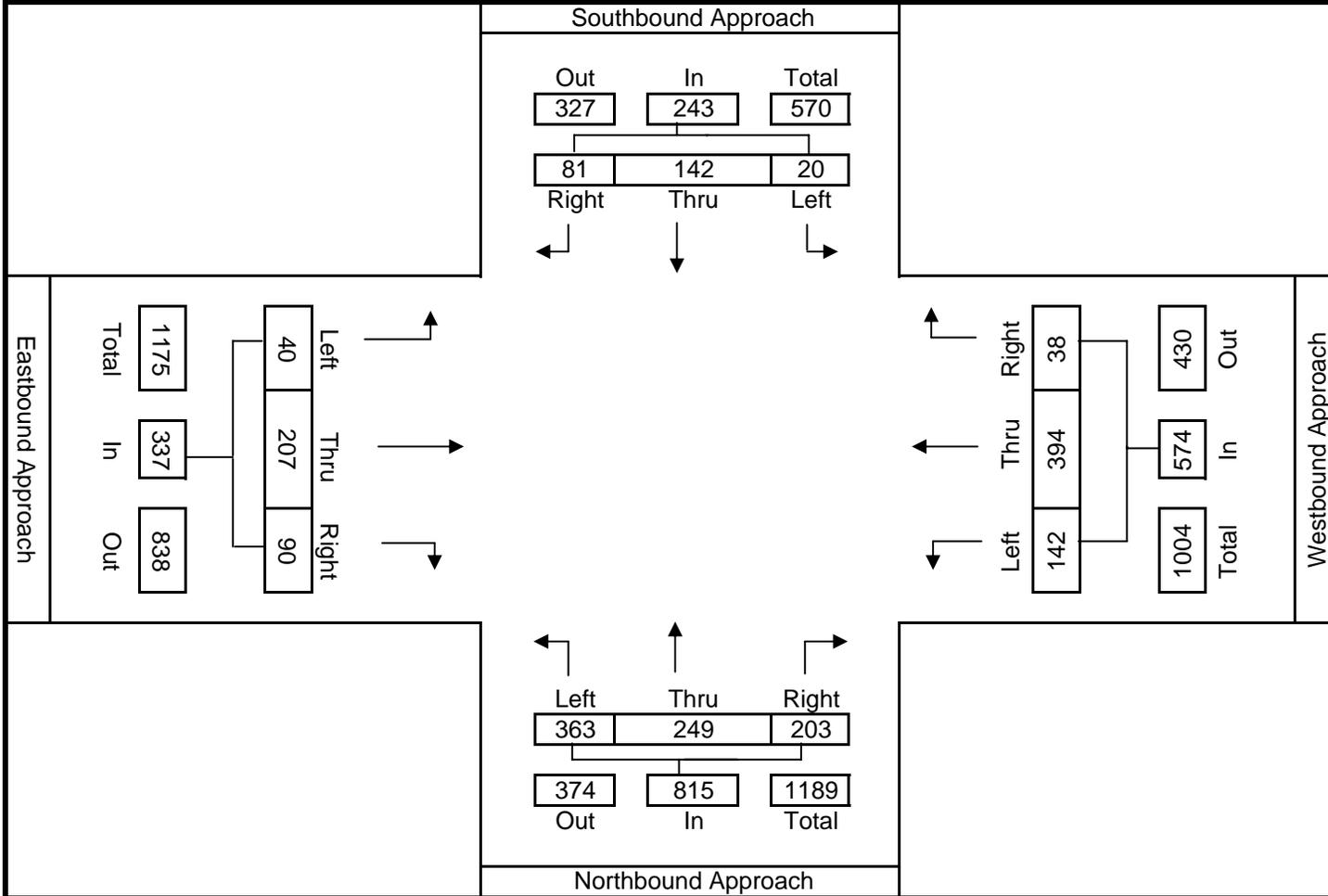
PM Peak Hr Begins at: 500 PM

Start Time	Corral Hollow Rd Southbound				Grant Line Rd Westbound				Corral Hollow Rd Northbound				Grant Line Rd Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
500	22	61	15	98	36	100	22	158	137	74	27	238	20	118	117	255	749
515	35	69	15	119	38	108	18	164	130	63	16	209	30	165	137	332	824
530	26	73	16	115	31	87	12	130	103	78	30	211	27	144	132	303	759
545	25	50	25	100	43	91	17	151	145	68	37	250	16	159	137	312	813
Total Volume	108	253	71	432	148	386	69	603	515	283	110	908	93	586	523	1202	3145
% App Total.	25.0%	58.6%	16.4%		24.5%	64.0%	11.4%		56.7%	31.2%	12.1%		7.7%	48.8%	43.5%		
PHF	0.908				0.919				0.908				0.905				

ALL TRAFFIC DATA, INC

North/South Street: Corral Hollow Rd  
 East/West Street: Grant Line Rd  
 AM Peak Hr Begins at: 730 AM

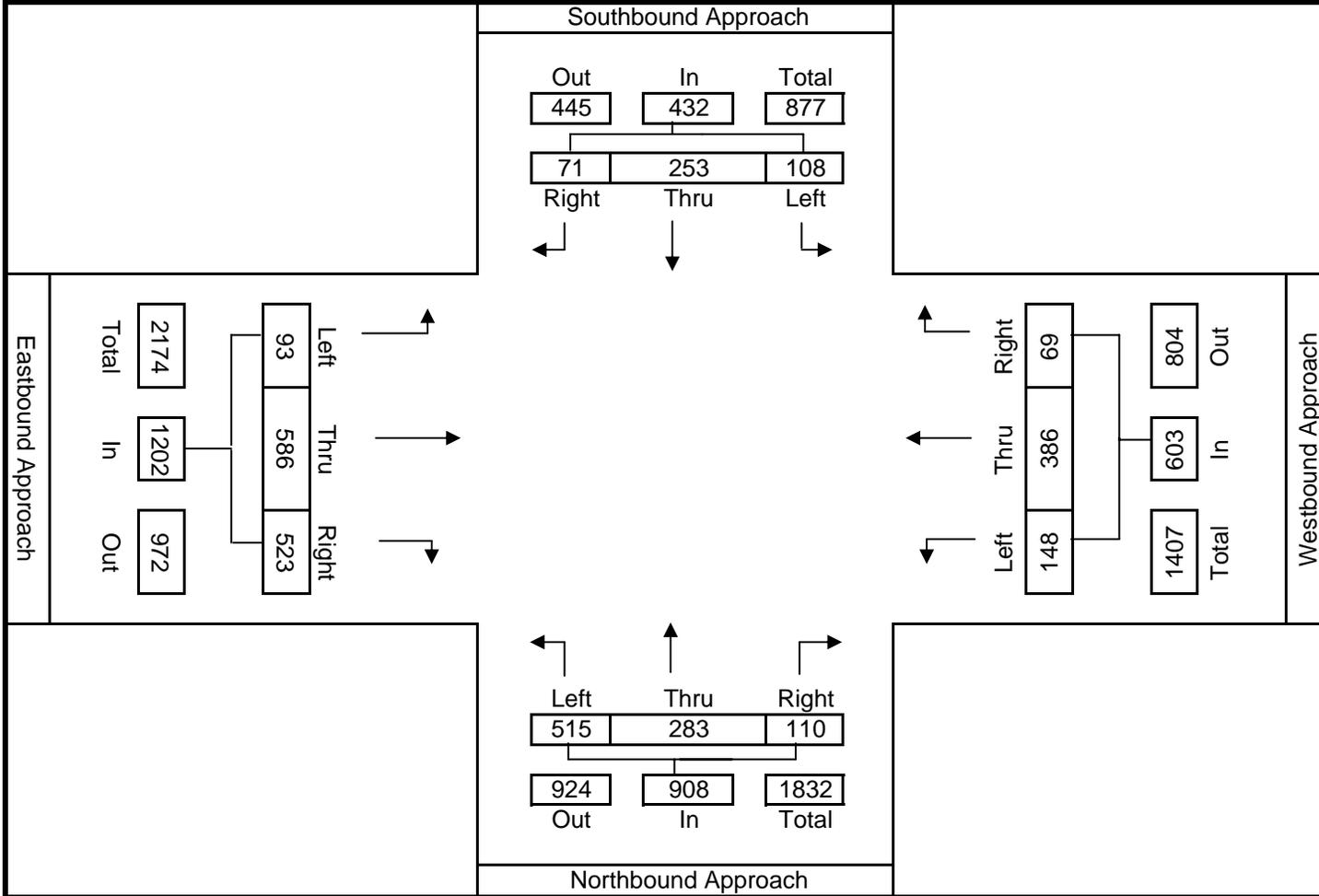
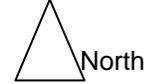
Date: 9/14/2010  
 City: City of Tracy  
 File Name: 10-7351-007



ALL TRAFFIC DATA, INC

North/South Street: Corral Hollow Rd  
 East/West Street: Grant Line Rd  
 PM Peak Hr Begins at: 500 PM

Date: 9/14/2010  
 City: City of Tracy  
 File Name: 10-7351-007



*ALL TRAFFIC DATA, INC*

(916)771-8700

FAX 786-2879

City of Tracy  
10-7351-009

Corral Hollow Rd & Byron Rd

Date: 9/14/2010

Start Time	Corral Hollow Rd Southbound				Byron Rd Westbound				Corral Hollow Rd Northbound				Byron Rd Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
7:00	0	83	7	90	0	1	2	3	21	103	0	124	24	1	22	47	264
7:15	0	84	20	104	1	0	0	1	29	181	1	211	62	0	27	89	405
7:30	0	198	35	233	1	0	0	1	32	316	1	349	121	0	39	160	743
7:45	1	255	67	323	0	0	0	0	59	225	0	284	93	0	77	170	777
<b>Total</b>	<b>1</b>	<b>620</b>	<b>129</b>	<b>750</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>5</b>	<b>141</b>	<b>825</b>	<b>2</b>	<b>968</b>	<b>300</b>	<b>1</b>	<b>165</b>	<b>466</b>	<b>2189</b>
8:00	0	147	48	195	2	0	1	3	41	189	0	230	91	0	72	163	591
8:15	0	125	54	179	0	0	0	0	52	227	0	279	33	0	59	92	550
8:30	0	111	24	135	0	0	0	0	46	178	0	224	22	0	48	70	429
8:45	0	110	17	127	0	0	0	0	40	186	2	228	21	0	52	73	428
<b>Total</b>	<b>0</b>	<b>493</b>	<b>143</b>	<b>636</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>179</b>	<b>780</b>	<b>2</b>	<b>961</b>	<b>167</b>	<b>0</b>	<b>231</b>	<b>398</b>	<b>1998</b>
16:00	0	246	34	280	0	0	3	3	51	260	0	311	37	0	41	78	672
16:15	0	240	26	266	0	2	2	4	51	218	0	269	32	0	50	82	621
16:30	0	232	29	261	0	0	2	2	41	224	2	267	33	0	52	85	615
16:45	0	220	19	239	1	2	0	3	44	226	0	270	28	0	57	85	597
<b>Total</b>	<b>0</b>	<b>938</b>	<b>108</b>	<b>1046</b>	<b>1</b>	<b>4</b>	<b>7</b>	<b>12</b>	<b>187</b>	<b>928</b>	<b>2</b>	<b>1117</b>	<b>130</b>	<b>0</b>	<b>200</b>	<b>330</b>	<b>2505</b>
17:00	0	255	32	287	0	0	0	0	33	260	1	294	36	2	62	100	681
17:15	0	257	29	286	0	0	2	2	57	252	1	310	33	0	53	86	684
17:30	0	251	18	269	1	0	2	3	34	296	0	330	44	0	65	109	711
17:45	0	250	28	278	0	2	1	3	53	321	0	374	56	0	68	124	779
<b>Total</b>	<b>0</b>	<b>1013</b>	<b>107</b>	<b>1120</b>	<b>1</b>	<b>2</b>	<b>5</b>	<b>8</b>	<b>177</b>	<b>1129</b>	<b>2</b>	<b>1308</b>	<b>169</b>	<b>2</b>	<b>248</b>	<b>419</b>	<b>2855</b>
<b>Grand Total</b>	<b>1</b>	<b>3064</b>	<b>487</b>	<b>3552</b>	<b>6</b>	<b>7</b>	<b>15</b>	<b>28</b>	<b>684</b>	<b>3662</b>	<b>8</b>	<b>4354</b>	<b>766</b>	<b>3</b>	<b>844</b>	<b>1613</b>	<b>9547</b>
<b>Apprch%</b>	<b>0.0%</b>	<b>86.3%</b>	<b>13.7%</b>	<b>37.2%</b>	<b>21.4%</b>	<b>25.0%</b>	<b>53.6%</b>	<b>0.3%</b>	<b>15.7%</b>	<b>84.1%</b>	<b>0.2%</b>	<b>45.6%</b>	<b>47.5%</b>	<b>0.2%</b>	<b>52.3%</b>	<b>16.9%</b>	
<b>Total %</b>	<b>0.0%</b>	<b>32.1%</b>	<b>5.1%</b>	<b>37.2%</b>	<b>0.1%</b>	<b>0.1%</b>	<b>0.2%</b>	<b>0.3%</b>	<b>7.2%</b>	<b>38.4%</b>	<b>0.1%</b>	<b>45.6%</b>	<b>8.0%</b>	<b>0.0%</b>	<b>8.8%</b>	<b>16.9%</b>	

AM Peak Hr Begins at: 730 AM

Start Time	Corral Hollow Rd Southbound				Byron Rd Westbound				Corral Hollow Rd Northbound				Byron Rd Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
730	0	198	35	233	1	0	0	1	32	316	1	349	121	0	39	160	743
745	1	255	67	323	0	0	0	0	59	225	0	284	93	0	77	170	777
800	0	147	48	195	2	0	1	3	41	189	0	230	91	0	72	163	591
815	0	125	54	179	0	0	0	0	52	227	0	279	33	0	59	92	550
Total Volume	1	725	204	930	3	0	1	4	184	957	1	1142	338	0	247	585	2661
% App Total.	0.1%	78.0%	21.9%		75.0%	0.0%	25.0%		16.1%	83.8%	0.1%		57.8%	0.0%	42.2%		
PHF	0.720				0.333				0.818				0.860				

PM Peak Hr Begins at: 500 PM

Start Time	Corral Hollow Rd Southbound				Byron Rd Westbound				Corral Hollow Rd Northbound				Byron Rd Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
500	0	255	32	287	0	0	0	0	33	260	1	294	36	2	62	100	681
515	0	257	29	286	0	0	2	2	57	252	1	310	33	0	53	86	684
530	0	251	18	269	1	0	2	3	34	296	0	330	44	0	65	109	711
545	0	250	28	278	0	2	1	3	53	321	0	374	56	0	68	124	779
Total Volume	0	1013	107	1120	1	2	5	8	177	1129	2	1308	169	2	248	419	2855
% App Total.	0.0%	90.4%	9.6%		12.5%	25.0%	62.5%		13.5%	86.3%	0.2%		40.3%	0.5%	59.2%		
PHF	0.976				0.667				0.874				0.845				

ALL TRAFFIC DATA, INC

North/South Street: Corral Hollow Rd

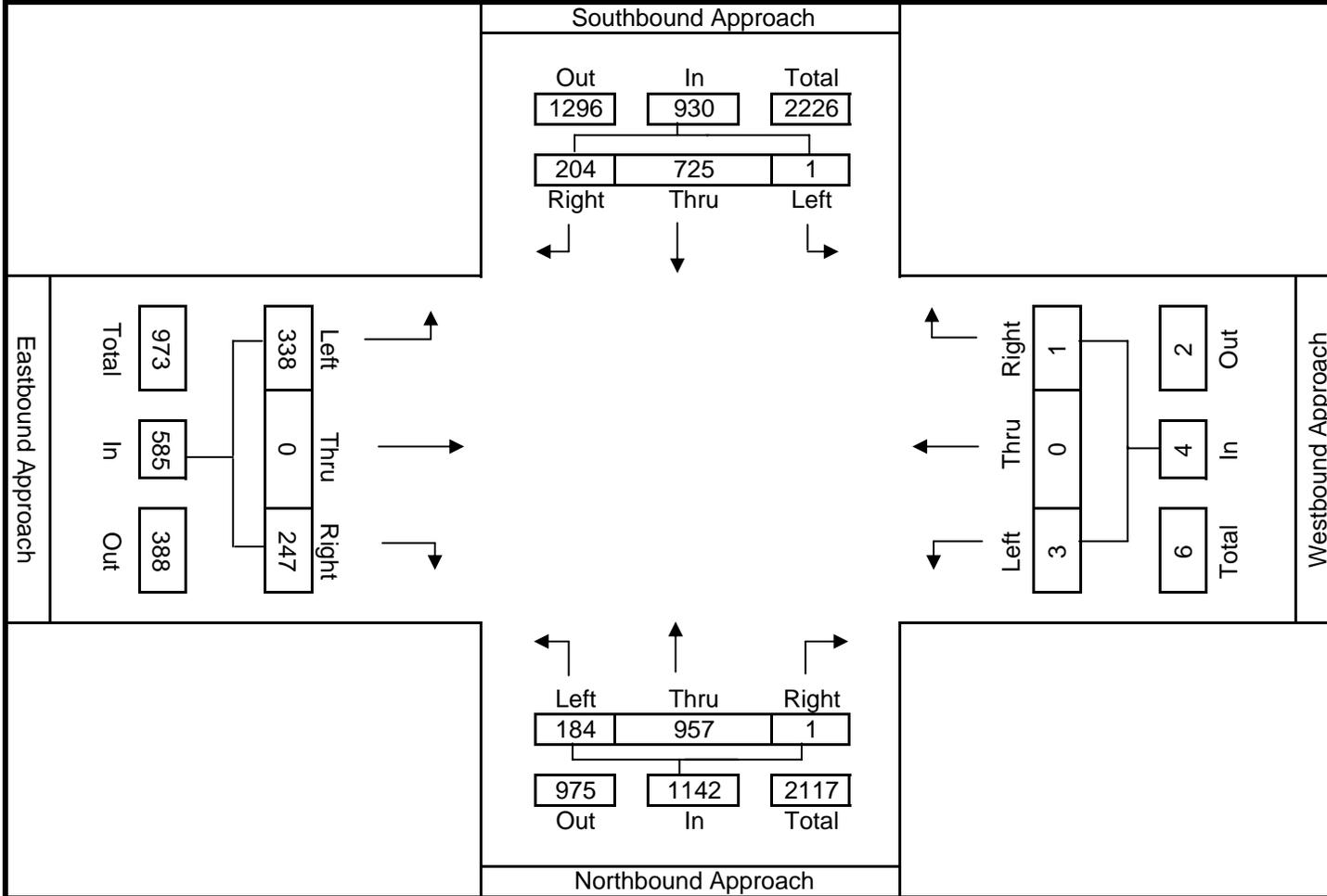
Date: 9/14/2010

East/West Street: Byron Rd

City: City of Tracy

AM Peak Hr Begins at: 730 AM

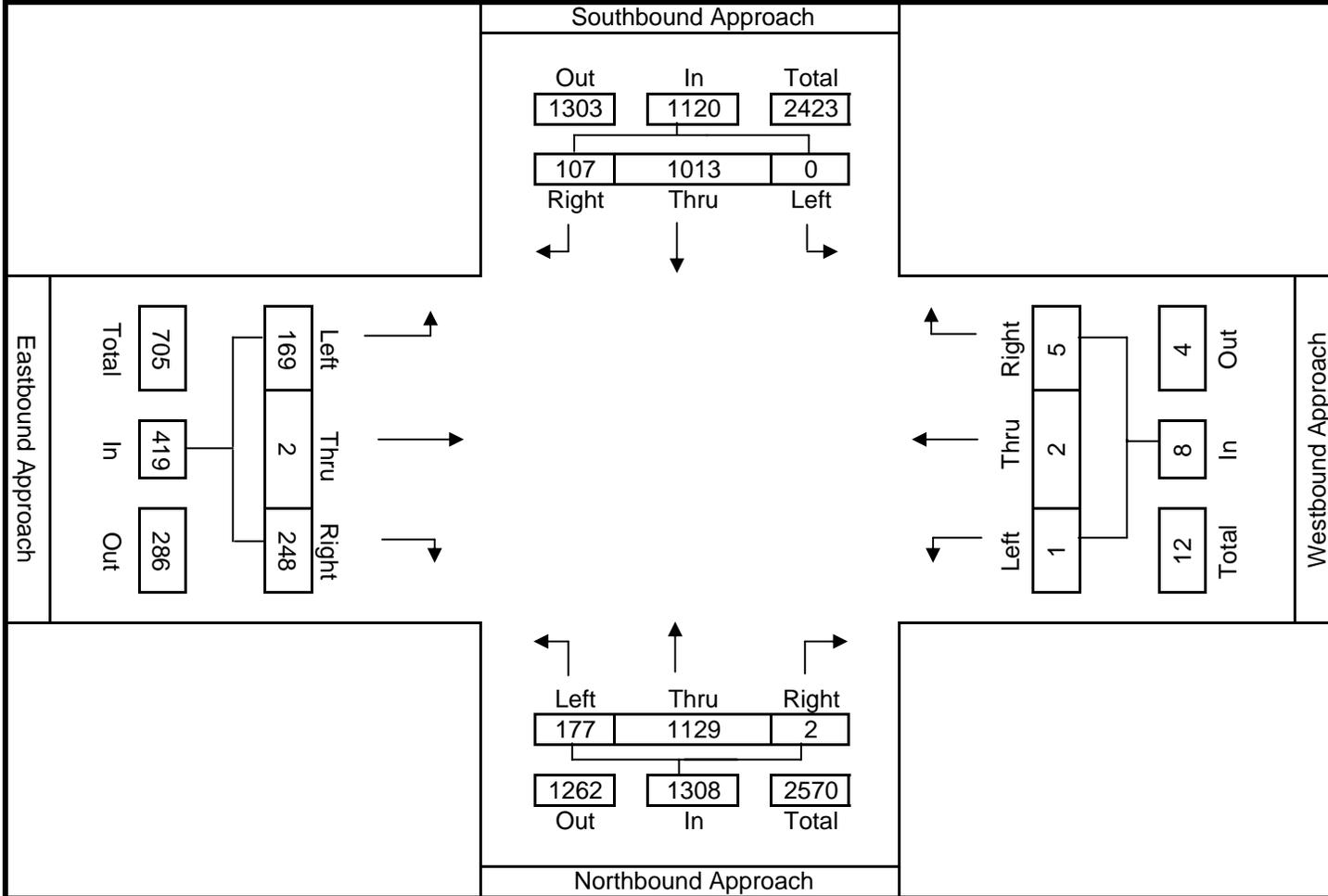
File Name: 10-7351-009



ALL TRAFFIC DATA, INC

North/South Street: Corral Hollow Rd  
 East/West Street: Byron Rd  
 PM Peak Hr Begins at: 500 PM

Date: 9/14/2010  
 City: City of Tracy  
 File Name: 10-7351-009



ALL TRAFFIC DATA, INC

(916)771-8700

FAX 786-2879

City of Tracy  
10-7351-010

Lammers Rd & 11th St

Date: 9/14/2010

Start Time	Lammers Rd Southbound				11th St Westbound				Lammers Rd Northbound				11th St Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
7:00	4	7	21	32	17	241	10	268	13	21	16	50	2	27	1	30	380
7:15	8	14	23	45	18	286	12	316	13	11	29	53	3	57	12	72	486
7:30	18	25	28	71	62	252	19	333	24	22	42	88	0	47	8	55	547
7:45	21	36	12	69	74	229	22	325	15	31	86	132	4	66	14	84	610
Total	51	82	84	217	171	1008	63	1242	65	85	173	323	9	197	35	241	2023
8:00	14	42	9	65	117	266	33	416	27	37	141	205	3	46	39	88	774
8:15	10	35	17	62	73	279	21	373	43	68	179	290	3	68	33	104	829
8:30	15	12	15	42	23	244	16	283	20	29	39	88	3	57	6	66	479
8:45	4	12	20	36	10	153	15	178	5	24	16	45	2	43	11	56	315
Total	43	101	61	205	223	942	85	1250	95	158	375	628	11	214	89	314	2397
16:00	20	26	2	48	25	81	23	129	6	17	45	68	18	217	21	256	501
16:15	18	27	4	49	21	87	17	125	10	27	42	79	24	228	18	270	523
16:30	19	33	6	58	35	85	23	143	8	17	26	51	19	272	21	312	564
16:45	16	34	12	62	20	100	18	138	6	21	29	56	26	259	21	306	562
Total	73	120	24	217	101	353	81	535	30	82	142	254	87	976	81	1144	2150
17:00	13	29	7	49	11	84	17	112	8	16	30	54	35	276	23	334	549
17:15	22	33	3	58	20	83	20	123	4	37	29	70	31	280	28	339	590
17:30	21	20	4	45	22	83	14	119	12	23	29	64	41	304	27	372	600
17:45	13	30	6	49	29	93	30	152	10	22	23	55	28	288	24	340	596
Total	69	112	20	201	82	343	81	506	34	98	111	243	135	1148	102	1385	2335
Grand Total	236	415	189	840	577	2646	310	3533	224	423	801	1448	242	2535	307	3084	8905
Apprch%	28.1%	49.4%	22.5%	9.4%	16.3%	74.9%	8.8%	39.7%	15.5%	29.2%	55.3%	16.3%	7.8%	82.2%	10.0%	34.6%	
Total %	2.7%	4.7%	2.1%	9.4%	6.5%	29.7%	3.5%	39.7%	2.5%	4.8%	9.0%	16.3%	2.7%	28.5%	3.4%	34.6%	

AM Peak Hr Begins at: 730 AM

Start Time	Lammers Rd Southbound				11th St Westbound				Lammers Rd Northbound				11th St Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
730	18	25	28	71	62	252	19	333	24	22	42	88	0	47	8	55	547
745	21	36	12	69	74	229	22	325	15	31	86	132	4	66	14	84	610
800	14	42	9	65	117	266	33	416	27	37	141	205	3	46	39	88	774
815	10	35	17	62	73	279	21	373	43	68	179	290	3	68	33	104	829
Total Volume	63	138	66	267	326	1026	95	1447	109	158	448	715	10	227	94	331	2760
% App Total.	23.6%	51.7%	24.7%		22.5%	70.9%	6.6%		15.2%	22.1%	62.7%		3.0%	68.6%	28.4%		
PHF	0.940				0.870				0.616				0.796				

PM Peak Hr Begins at: 500 PM

Start Time	Lammers Rd Southbound				11th St Westbound				Lammers Rd Northbound				11th St Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
500	13	29	7	49	11	84	17	112	8	16	30	54	35	276	23	334	549
515	22	33	3	58	20	83	20	123	4	37	29	70	31	280	28	339	590
530	21	20	4	45	22	83	14	119	12	23	29	64	41	304	27	372	600
545	13	30	6	49	29	93	30	152	10	22	23	55	28	288	24	340	596
Total Volume	69	112	20	201	82	343	81	506	34	98	111	243	135	1148	102	1385	2335
% App Total.	34.3%	55.7%	10.0%		16.2%	67.8%	16.0%		14.0%	40.3%	45.7%		9.7%	82.9%	7.4%		
PHF	0.866				0.832				0.868				0.931				

ALL TRAFFIC DATA, INC

North/South Street: Lammers Rd

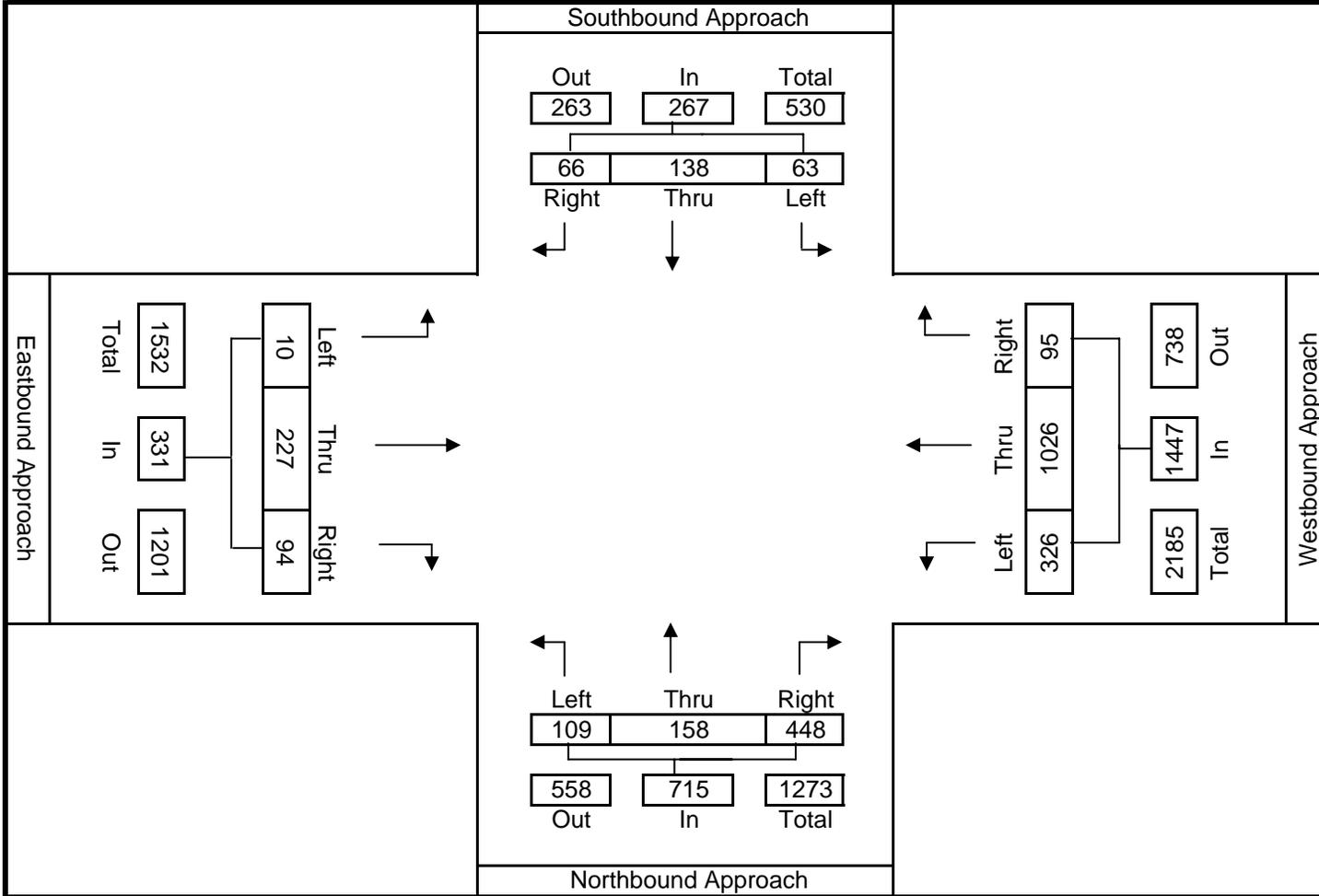
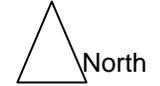
Date: 9/14/2010

East/West Street: 11th St

City: City of Tracy

AM Peak Hr Begins at: 730 AM

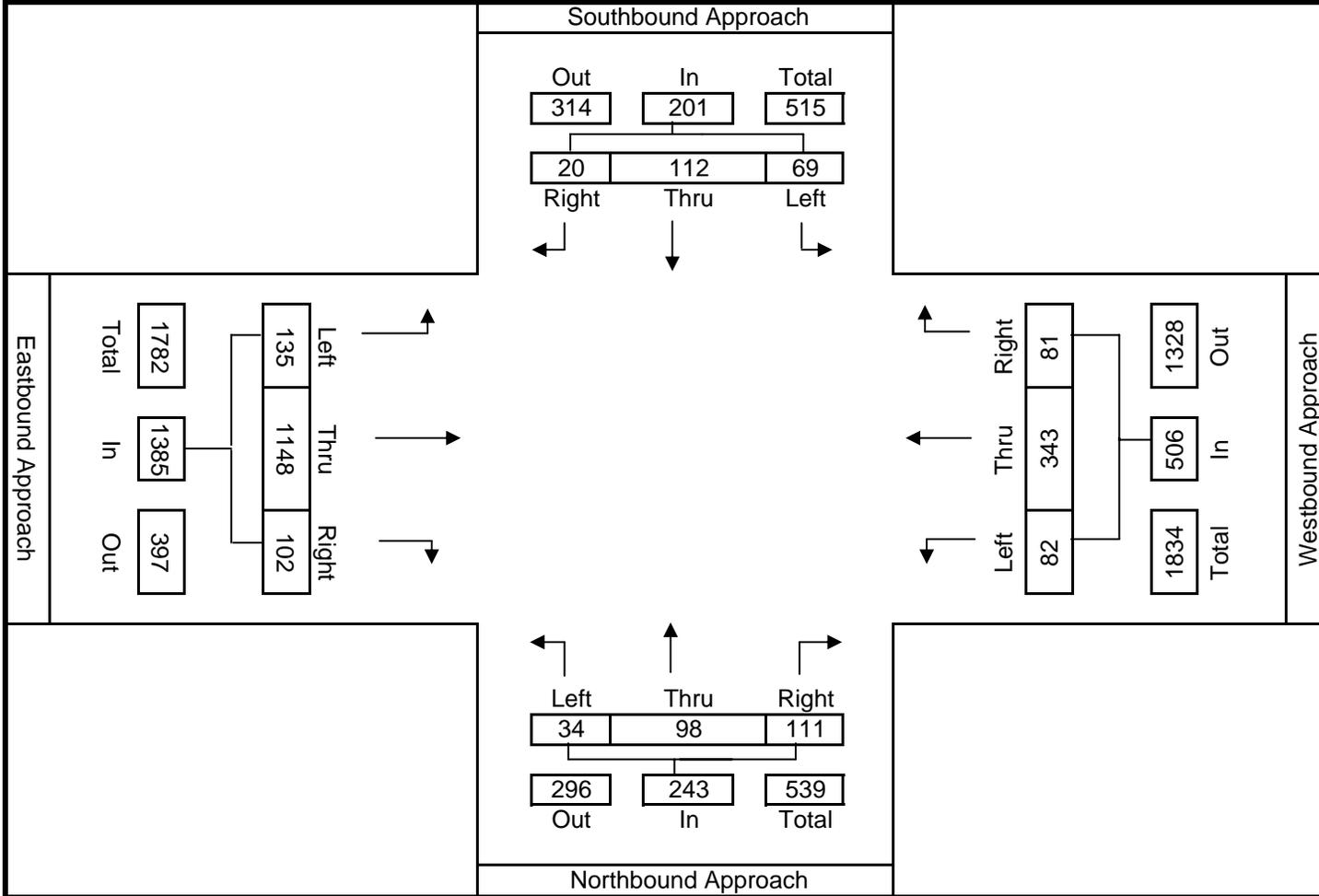
File Name: 10-7351-010



ALL TRAFFIC DATA, INC

North/South Street: Lammers Rd  
 East/West Street: 11th St  
 PM Peak Hr Begins at: 500 PM

Date: 9/14/2010  
 City: City of Tracy  
 File Name: 10-7351-010



*ALL TRAFFIC DATA, INC*

(916)771-8700

FAX 786-2879

City of Tracy  
10-7351-011

Corral Hollow Rd & 11th St

Date: 9/14/2010

Start Time	Corral Hollow Rd Southbound				11th St Westbound				Corral Hollow Rd Northbound				11th St Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
7:00	20	46	32	98	19	110	24	153	121	109	3	233	16	44	15	75	559
7:15	34	47	30	111	13	133	25	171	106	190	18	314	41	49	24	114	710
7:30	56	140	41	237	26	125	52	203	86	245	53	384	48	115	40	203	1027
7:45	97	162	62	321	57	172	60	289	100	224	43	367	38	120	54	212	1189
Total	207	395	165	767	115	540	161	816	413	768	117	1298	143	328	133	604	3485
8:00	61	109	36	206	51	164	52	267	138	201	53	392	39	100	50	189	1054
8:15	59	87	28	174	42	151	60	253	120	191	38	349	37	109	61	207	983
8:30	70	56	20	146	41	155	59	255	116	168	25	309	25	67	28	120	830
8:45	55	75	19	149	39	79	51	169	85	148	24	257	23	62	30	115	690
Total	245	327	103	675	173	549	222	944	459	708	140	1307	124	338	169	631	3557
Grand Total	452	722	268	1442	288	1089	383	1760	872	1476	257	2605	267	666	302	1235	7042
Apprch%	31.3%	50.1%	18.6%		16.4%	61.9%	21.8%		33.5%	56.7%	9.9%		21.6%	53.9%	24.5%		
Total %	6.4%	10.3%	3.8%	20.5%	4.1%	15.5%	5.4%	25.0%	12.4%	21.0%	3.6%	37.0%	3.8%	9.5%	4.3%	17.5%	

AM Peak Hr Begins at: 730 AM

Start Time	Corral Hollow Rd Southbound				11th St Westbound				Corral Hollow Rd Northbound				11th St Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
730	56	140	41	237	26	125	52	203	86	245	53	384	48	115	40	203	1027
745	97	162	62	321	57	172	60	289	100	224	43	367	38	120	54	212	1189
800	61	109	36	206	51	164	52	267	138	201	53	392	39	100	50	189	1054
815	59	87	28	174	42	151	60	253	120	191	38	349	37	109	61	207	983
Total Volume	273	498	167	938	176	612	224	1012	444	861	187	1492	162	444	205	811	4253
% App Total	29.1%	53.1%	17.8%		17.4%	60.5%	22.1%		29.8%	57.7%	12.5%		20.0%	54.7%	25.3%		
PHF	0.731				0.875				0.952				0.956				

ALL TRAFFIC DATA, INC

North/South Street: Corral Hollow Rd

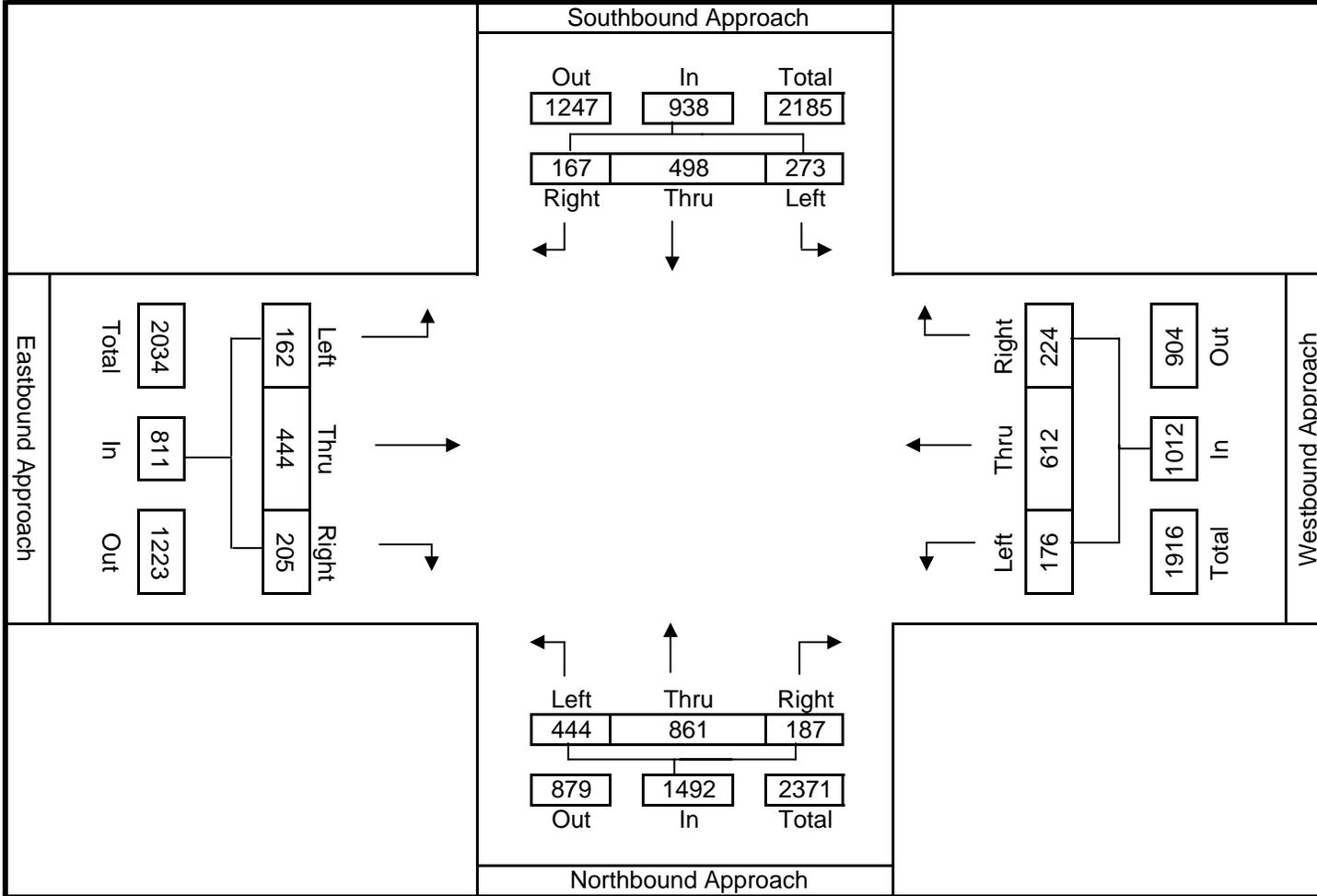
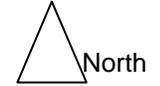
East/West Street: 11th St

AM Peak Hr Begins at: 730 AM

Date: 9/14/2010

City: City of Tracy

File Name: 10-7351-011



*ALL TRAFFIC DATA, INC*

(916)771-8700

FAX 786-2879

City of Tracy  
10-7351-011

Corral Hollow Rd & 11th St

Date: 9/14/2010

Start Time	Corral Hollow Rd Southbound				11th St Westbound				Corral Hollow Rd Northbound				11th St Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
7:00	20	46	32	98	19	110	24	153	121	109	3	233	16	44	15	75	559
7:15	34	47	30	111	13	133	25	171	106	190	18	314	41	49	24	114	710
7:30	56	140	41	237	26	125	52	203	86	245	53	384	48	115	40	203	1027
7:45	97	162	62	321	57	172	60	289	100	224	43	367	38	120	54	212	1189
Total	207	395	165	767	115	540	161	816	413	768	117	1298	143	328	133	604	3485
8:00	61	109	36	206	51	164	52	267	138	201	53	392	39	100	50	189	1054
8:15	59	87	28	174	42	151	60	253	120	191	38	349	37	109	61	207	983
8:30	70	56	20	146	41	155	59	255	116	168	25	309	25	67	28	120	830
8:45	55	75	19	149	39	79	51	169	85	148	24	257	23	62	30	115	690
Total	245	327	103	675	173	549	222	944	459	708	140	1307	124	338	169	631	3557
Grand Total	452	722	268	1442	288	1089	383	1760	872	1476	257	2605	267	666	302	1235	7042
Apprch%	31.3%	50.1%	18.6%		16.4%	61.9%	21.8%		33.5%	56.7%	9.9%		21.6%	53.9%	24.5%		
Total %	6.4%	10.3%	3.8%	20.5%	4.1%	15.5%	5.4%	25.0%	12.4%	21.0%	3.6%	37.0%	3.8%	9.5%	4.3%	17.5%	

AM Peak Hr Begins at: 730 AM

Start Time	Corral Hollow Rd Southbound				11th St Westbound				Corral Hollow Rd Northbound				11th St Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
730	56	140	41	237	26	125	52	203	86	245	53	384	48	115	40	203	1027
745	97	162	62	321	57	172	60	289	100	224	43	367	38	120	54	212	1189
800	61	109	36	206	51	164	52	267	138	201	53	392	39	100	50	189	1054
815	59	87	28	174	42	151	60	253	120	191	38	349	37	109	61	207	983
Total Volume	273	498	167	938	176	612	224	1012	444	861	187	1492	162	444	205	811	4253
% App Total.	29.1%	53.1%	17.8%		17.4%	60.5%	22.1%		29.8%	57.7%	12.5%		20.0%	54.7%	25.3%		
PHF	0.731				0.875				0.952				0.956				

# All Traffic Data

(916) 771-8700

Fax 771-8700

TRACY

File Name : CORRAL HOLLOW-GRANT LINE-F

Site Code : 00000000

Start Date : 12/4/2008

Page No : 1

## Groups Printed- Unshifted

Start Time	CORRAL HOLLOW RD. Southbound				GRANT LINE RD. Westbound				CORRAL HOLLOW RD. Northbound				GRANT LINE RD. Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
16:00	35	61	21	117	40	124	19	183	131	70	59	260	24	171	153	348	908
16:15	32	83	19	134	40	122	25	187	130	80	62	272	28	174	125	327	920
16:30	35	74	23	132	46	127	25	198	130	86	52	268	28	148	140	316	914
16:45	33	73	17	123	24	103	26	153	119	86	71	276	30	172	151	353	905
Total	135	291	80	506	150	476	95	721	510	322	244	1076	110	665	569	1344	3647
17:00	27	96	20	143	52	94	26	172	113	89	75	277	25	182	168	375	967
17:15	28	90	14	132	47	108	26	181	108	88	58	254	28	183	139	350	917
17:30	32	82	16	130	69	129	31	229	130	84	65	279	25	186	162	373	1011
17:45	33	82	15	130	67	101	25	193	131	91	49	271	34	189	187	410	1004
Total	120	350	65	535	235	432	108	775	482	352	247	1081	112	740	656	1508	3899
Grand Total	255	641	145	1041	385	908	203	1496	992	674	491	2157	222	1405	1225	2852	7546
Apprch %	24.5	61.6	13.9		25.7	60.7	13.6		46	31.2	22.8		7.8	49.3	43		
Total %	3.4	8.5	1.9	13.8	5.1	12	2.7	19.8	13.1	8.9	6.5	28.6	2.9	18.6	16.2	37.8	

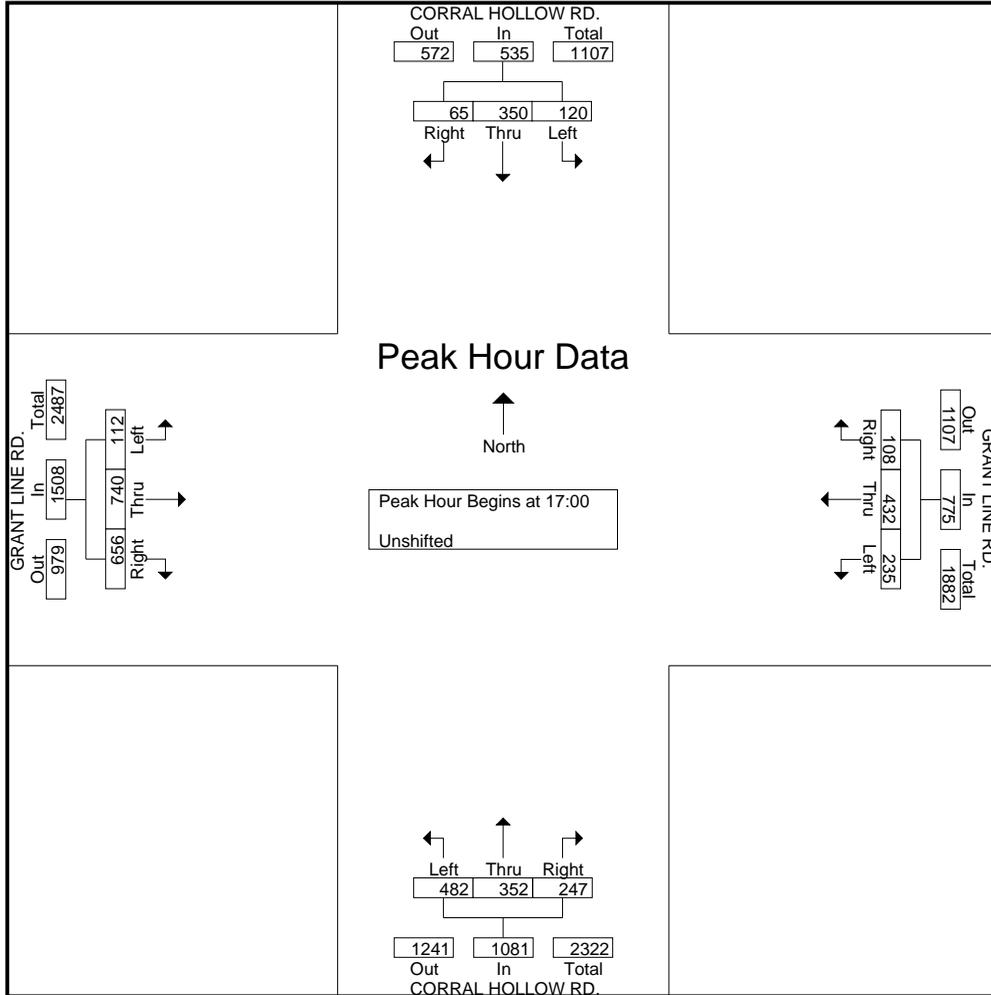
Start Time	CORRAL HOLLOW RD. Southbound				GRANT LINE RD. Westbound				CORRAL HOLLOW RD. Northbound				GRANT LINE RD. Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	27	<b>96</b>	<b>20</b>	<b>143</b>	52	94	26	172	113	89	<b>75</b>	277	25	182	168	375	967
17:15	28	90	14	132	47	108	26	181	108	88	58	254	28	183	139	350	917
17:30	32	82	16	130	<b>69</b>	<b>129</b>	<b>31</b>	<b>229</b>	130	84	65	<b>279</b>	25	186	162	373	<b>1011</b>
17:45	<b>33</b>	82	15	130	67	101	25	193	<b>131</b>	<b>91</b>	49	271	<b>34</b>	<b>189</b>	<b>187</b>	<b>410</b>	1004
Total Volume	120	350	65	535	235	432	108	775	482	352	247	1081	112	740	656	1508	3899
% App. Total	22.4	65.4	12.1		30.3	55.7	13.9		44.6	32.6	22.8		7.4	49.1	43.5		
PHF	.909	.911	.813	.935	.851	.837	.871	.846	.920	.967	.823	.969	.824	.979	.877	.920	.964

# All Traffic Data

(916) 771-8700  
Fax 771-8700

TRACY

File Name : CORRAL HOLLOW-GRANT LINE-F  
Site Code : 00000000  
Start Date : 12/4/2008  
Page No : 2



# All Traffic Data

(916)771-8700

TRACY

File Name : 09-7488-004 EB 205-GRANT-F

Site Code : 00000000

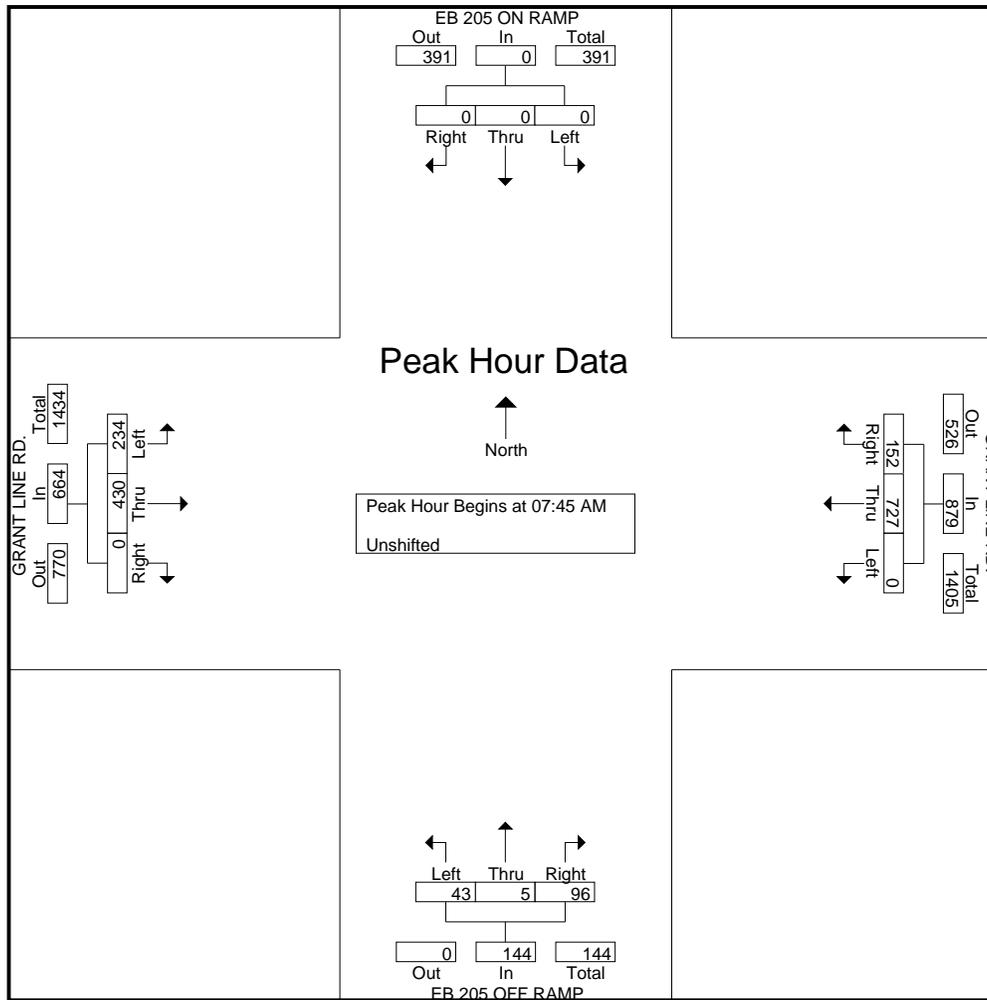
Start Date : 12/8/2009

Page No : 1

## Groups Printed- Unshifted

Start Time	EB 205 ON RAMP From North				GRANT LINE RD. From East				EB 205 OFF RAMP From South				GRANT LINE RD. From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	133	52	185	10	0	22	32	48	51	0	99	316
07:15 AM	0	0	0	0	0	143	57	200	9	0	24	33	72	77	0	149	382
07:30 AM	0	0	0	0	0	163	60	223	13	0	32	45	60	90	0	150	418
07:45 AM	0	0	0	0	0	198	58	256	12	0	25	37	46	102	0	148	441
Total	0	0	0	0	0	637	227	864	44	0	103	147	226	320	0	546	1557
08:00 AM	0	0	0	0	0	162	31	193	8	3	22	33	51	109	0	160	386
08:15 AM	0	0	0	0	0	179	25	204	12	2	23	37	69	106	0	175	416
08:30 AM	0	0	0	0	0	188	38	226	11	0	26	37	68	113	0	181	444
08:45 AM	0	0	0	0	0	170	41	211	15	0	19	34	54	107	0	161	406
Total	0	0	0	0	0	699	135	834	46	5	90	141	242	435	0	677	1652
04:00 PM	0	0	0	0	0	234	41	275	49	0	78	127	117	283	0	400	802
04:15 PM	0	0	0	0	0	225	54	279	57	0	111	168	105	308	0	413	860
04:30 PM	0	0	0	0	0	221	59	280	51	1	113	165	124	276	0	400	845
04:45 PM	0	0	0	0	0	219	47	266	45	0	102	147	135	290	0	425	838
Total	0	0	0	0	0	899	201	1100	202	1	404	607	481	1157	0	1638	3345
05:00 PM	0	0	0	0	0	230	83	313	47	0	97	144	155	302	0	457	914
05:15 PM	0	0	0	0	0	221	69	290	51	1	92	144	130	271	0	401	835
05:30 PM	0	0	0	0	0	221	75	296	55	0	121	176	135	287	0	422	894
05:45 PM	0	0	0	0	0	218	54	272	54	1	124	179	106	250	0	356	807
Total	0	0	0	0	0	890	281	1171	207	2	434	643	526	1110	0	1636	3450
Grand Total	0	0	0	0	0	3125	844	3969	499	8	1031	1538	1475	3022	0	4497	10004
Apprch %	0	0	0	0	0	78.7	21.3		32.4	0.5	67		32.8	67.2	0		
Total %	0	0	0	0	0	31.2	8.4	39.7	5	0.1	10.3	15.4	14.7	30.2	0	45	

Start Time	EB 205 ON RAMP From North				GRANT LINE RD. From East				EB 205 OFF RAMP From South				GRANT LINE RD. From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	198	58	256	12	0	25	37	46	102	0	148	441
08:00 AM	0	0	0	0	0	162	31	193	8	3	22	33	51	109	0	160	386
08:15 AM	0	0	0	0	0	179	25	204	12	2	23	37	69	106	0	175	416
08:30 AM	0	0	0	0	0	188	38	226	11	0	26	37	68	113	0	181	444
Total Volume	0	0	0	0	0	727	152	879	43	5	96	144	234	430	0	664	1687
% App. Total	0	0	0	0	0	82.7	17.3		29.9	3.5	66.7		35.2	64.8	0		



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Entire Intersection Begins at 04:45 PM

04:45 PM	0	0	0	0	0	219	47	266	45	0	102	147	135	290	0	425	838
05:00 PM	0	0	0	0	0	<b>230</b>	<b>83</b>	<b>313</b>	47	0	97	144	<b>155</b>	<b>302</b>	0	<b>457</b>	<b>914</b>
05:15 PM	0	0	0	0	0	221	69	290	51	<b>1</b>	92	144	130	271	0	401	835
05:30 PM	0	0	0	0	0	221	75	296	<b>55</b>	0	<b>121</b>	<b>176</b>	135	287	0	422	894
Total Volume	0	0	0	0	0	891	274	1165	198	1	412	611	555	1150	0	1705	3481
% App. Total	0	0	0	0	0	76.5	23.5		32.4	0.2	67.4		32.6	67.4	0		
PHF	.000	.000	.000	.000	.000	.968	.825	.931	.900	.250	.851	.868	.895	.952	.000	.933	.952

# All Traffic Data

(916)771-8700

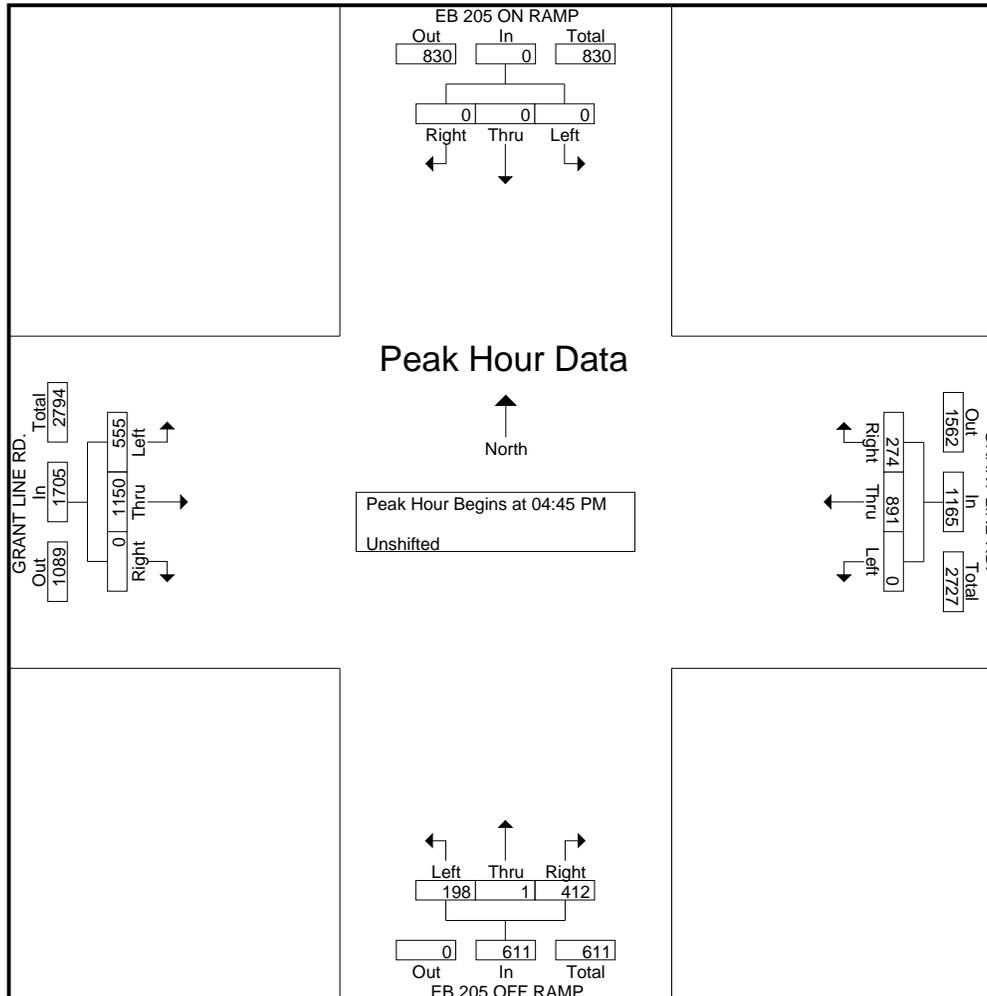
TRACY

File Name : 09-7488-004 EB 205-GRANT-F

Site Code : 00000000

Start Date : 12/8/2009

Page No : 3



# All Traffic Data

(916)771-8700

TRACY

File Name : 09-7488-009 GRANT-WB 205-F

Site Code : 00000000

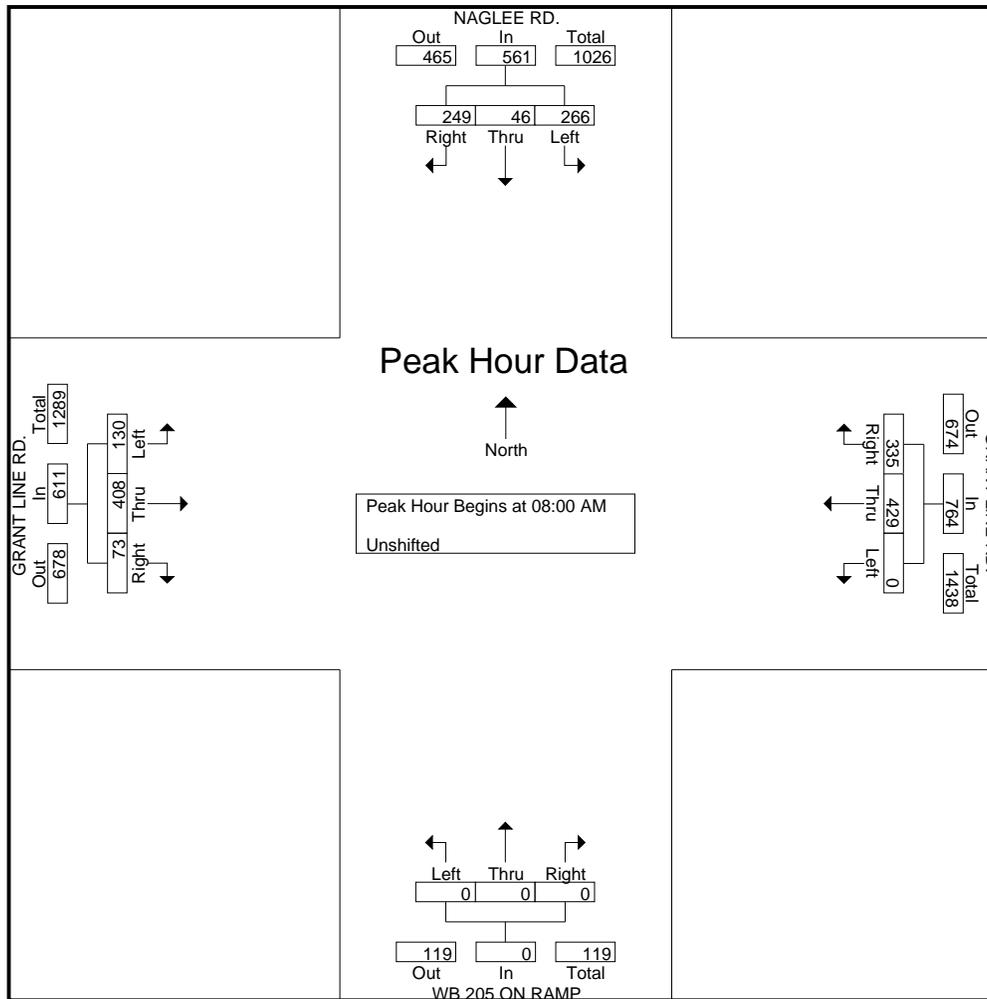
Start Date : 12/8/2009

Page No : 1

## Groups Printed- Unshifted

Start Time	NAGLEE RD. From North				GRANT LINE RD. From East				WB 205 ON RAMP From South				GRANT LINE RD. From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	30	10	63	103	0	78	64	142	0	0	0	0	7	67	23	97	342
07:15 AM	42	12	62	116	0	76	65	141	0	0	0	0	7	108	14	129	386
07:30 AM	43	14	38	95	0	99	84	183	0	0	0	0	19	110	25	154	432
07:45 AM	52	15	49	116	0	121	82	203	0	0	0	0	23	96	22	141	460
Total	167	51	212	430	0	374	295	669	0	0	0	0	56	381	84	521	1620
08:00 AM	55	15	61	131	0	102	77	179	0	0	0	0	27	103	17	147	457
08:15 AM	72	5	59	136	0	108	86	194	0	0	0	0	38	102	23	163	493
08:30 AM	71	13	70	154	0	117	86	203	0	0	0	0	36	111	19	166	523
08:45 AM	68	13	59	140	0	102	86	188	0	0	0	0	29	92	14	135	463
Total	266	46	249	561	0	429	335	764	0	0	0	0	130	408	73	611	1936
04:00 PM	139	5	108	252	0	188	85	273	0	0	0	0	70	256	7	333	858
04:15 PM	167	5	111	283	0	188	107	295	0	0	0	0	65	246	13	324	902
04:30 PM	165	2	112	279	0	166	105	271	0	0	0	0	60	231	16	307	857
04:45 PM	169	10	120	299	0	161	100	261	0	0	0	0	70	256	11	337	897
Total	640	22	451	1113	0	703	397	1100	0	0	0	0	265	989	47	1301	3514
05:00 PM	181	5	107	293	0	171	109	280	0	0	0	0	74	270	11	355	928
05:15 PM	171	9	115	295	0	170	100	270	0	0	0	0	70	231	7	308	873
05:30 PM	165	11	113	289	0	170	107	277	0	0	0	0	70	254	12	336	902
05:45 PM	172	8	108	288	0	173	106	279	0	0	0	0	66	185	14	265	832
Total	689	33	443	1165	0	684	422	1106	0	0	0	0	280	940	44	1264	3535
Grand Total	1762	152	1355	3269	0	2190	1449	3639	0	0	0	0	731	2718	248	3697	10605
Apprch %	53.9	4.6	41.4		0	60.2	39.8		0	0	0		19.8	73.5	6.7		
Total %	16.6	1.4	12.8	30.8	0	20.7	13.7	34.3	0	0	0	0	6.9	25.6	2.3	34.9	

Start Time	NAGLEE RD. From North				GRANT LINE RD. From East				WB 205 ON RAMP From South				GRANT LINE RD. From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	55	15	61	131	0	102	77	179	0	0	0	0	27	103	17	147	457
08:15 AM	72	5	59	136	0	108	86	194	0	0	0	0	38	102	23	163	493
08:30 AM	71	13	70	154	0	117	86	203	0	0	0	0	36	111	19	166	523
08:45 AM	68	13	59	140	0	102	86	188	0	0	0	0	29	92	14	135	463
Total Volume	266	46	249	561	0	429	335	764	0	0	0	0	130	408	73	611	1936
% App. Total	47.4	8.2	44.4		0	56.2	43.8		0	0	0		21.3	66.8	11.9		



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:45 PM

04:45 PM	169	10	<b>120</b>	<b>299</b>	0	161	100	261	0	0	0	0	70	256	11	337	897
05:00 PM	<b>181</b>	5	107	293	0	<b>171</b>	<b>109</b>	<b>280</b>	0	0	0	0	<b>74</b>	<b>270</b>	11	<b>355</b>	<b>928</b>
05:15 PM	171	9	115	295	0	170	100	270	0	0	0	0	70	231	7	308	873
05:30 PM	165	<b>11</b>	113	289	0	170	107	277	0	0	0	0	70	254	<b>12</b>	336	902
Total Volume	686	35	455	1176	0	672	416	1088	0	0	0	0	284	1011	41	1336	3600
% App. Total	58.3	3	38.7		0	61.8	38.2		0	0	0		21.3	75.7	3.1		
PHF	.948	.795	.948	.983	.000	.982	.954	.971	.000	.000	.000	.000	.959	.936	.854	.941	.970

# All Traffic Data

(916)771-8700

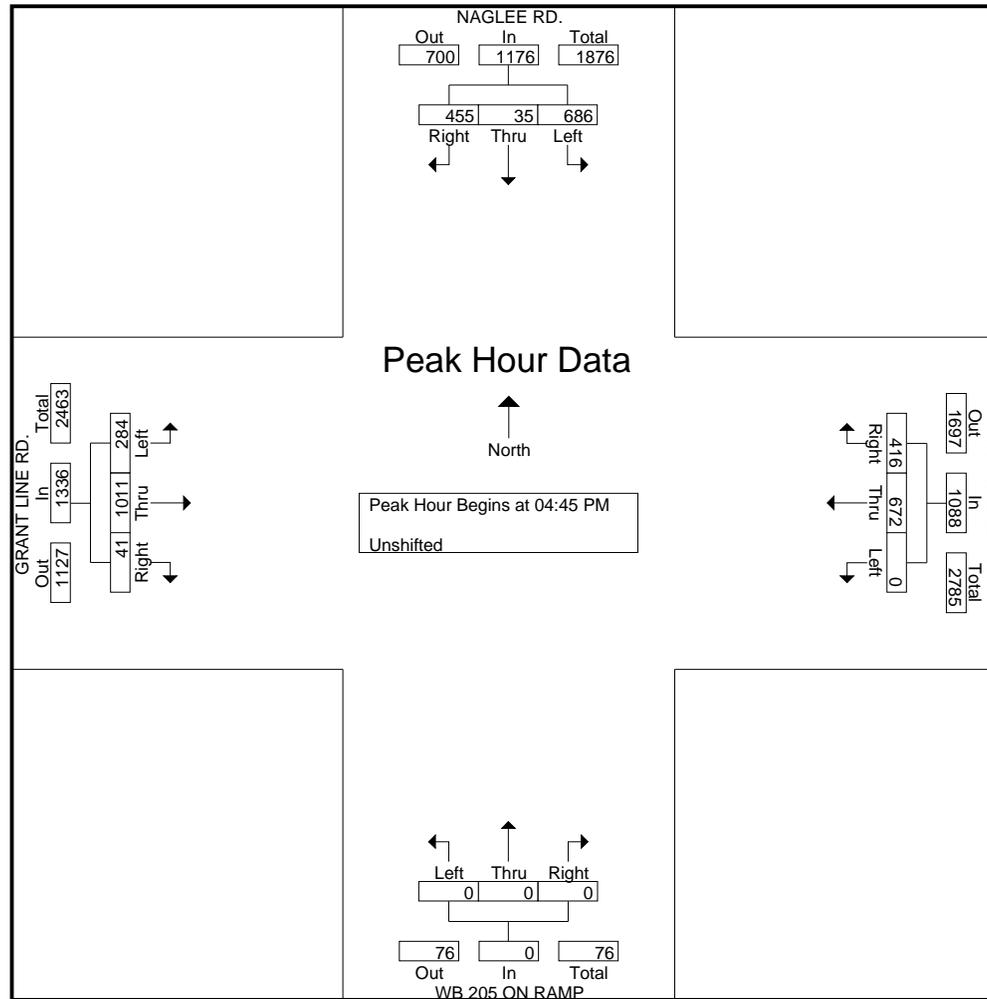
TRACY

File Name : 09-7488-009 GRANT-WB 205-F

Site Code : 00000000

Start Date : 12/8/2009

Page No : 3



# All Traffic Data

(916)771-8700

TRACY

File Name : 09-7488-022 BYRON-LAMMERS-F

Site Code : 00000000

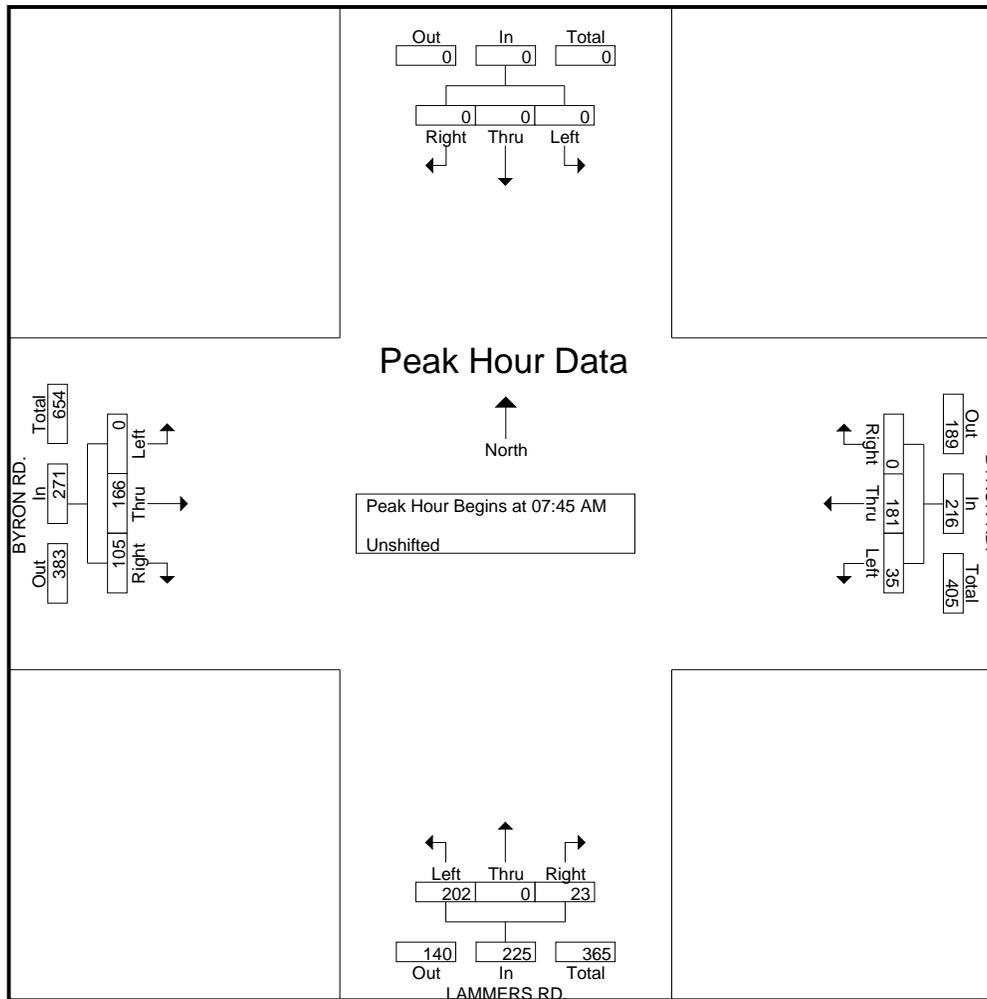
Start Date : 12/4/2009

Page No : 1

## Groups Printed- Unshifted

Start Time	From North				BYRON RD. From East				LAMMERS RD. From South				BYRON RD. From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	4	27	0	31	31	0	2	33	0	25	19	44	108
07:15 AM	0	0	0	0	5	29	0	34	30	0	10	40	0	34	14	48	122
07:30 AM	0	0	0	0	9	28	0	37	29	0	5	34	0	39	21	60	131
07:45 AM	0	0	0	0	12	47	0	59	51	0	6	57	0	33	23	56	172
Total	0	0	0	0	30	131	0	161	141	0	23	164	0	131	77	208	533
08:00 AM	0	0	0	0	9	47	0	56	56	0	8	64	0	52	29	81	201
08:15 AM	0	0	0	0	7	43	0	50	59	0	5	64	0	45	29	74	188
08:30 AM	0	0	0	0	7	44	0	51	36	0	4	40	0	36	24	60	151
08:45 AM	0	0	0	0	0	37	0	37	36	0	0	36	0	41	14	55	128
Total	0	0	0	0	23	171	0	194	187	0	17	204	0	174	96	270	668
04:00 PM	0	0	0	0	3	51	0	54	50	0	4	54	0	70	40	110	218
04:15 PM	0	0	0	0	2	53	0	55	49	0	6	55	0	61	50	111	221
04:30 PM	0	0	0	0	3	44	0	47	37	0	8	45	0	74	49	123	215
04:45 PM	0	0	0	0	2	49	0	51	47	0	8	55	0	62	48	110	216
Total	0	0	0	0	10	197	0	207	183	0	26	209	0	267	187	454	870
05:00 PM	0	0	0	0	6	50	0	56	36	0	9	45	0	71	64	135	236
05:15 PM	0	0	0	0	6	46	0	52	46	0	2	48	0	56	54	110	210
05:30 PM	0	0	0	0	3	37	0	40	42	0	6	48	0	53	48	101	189
05:45 PM	0	0	0	0	2	35	0	37	44	0	6	50	0	62	54	116	203
Total	0	0	0	0	17	168	0	185	168	0	23	191	0	242	220	462	838
Grand Total	0	0	0	0	80	667	0	747	679	0	89	768	0	814	580	1394	2909
Apprch %	0	0	0		10.7	89.3	0		88.4	0	11.6		0	58.4	41.6		
Total %	0	0	0		2.8	22.9	0	25.7	23.3	0	3.1	26.4	0	28	19.9	47.9	

Start Time	From North				BYRON RD. From East				LAMMERS RD. From South				BYRON RD. From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	12	47	0	59	51	0	6	57	0	33	23	56	172
08:00 AM	0	0	0	0	9	47	0	56	56	0	8	64	0	52	29	81	201
08:15 AM	0	0	0	0	7	43	0	50	59	0	5	64	0	45	29	74	188
08:30 AM	0	0	0	0	7	44	0	51	36	0	4	40	0	36	24	60	151
Total Volume	0	0	0	0	35	181	0	216	202	0	23	225	0	166	105	271	712
% App. Total	0	0	0		16.2	83.8	0		89.8	0	10.2		0	61.3	38.7		



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:15 PM

04:15 PM	0	0	0	0	2	<b>53</b>	0	55	<b>49</b>	0	6	<b>55</b>	0	61	50	111	221
04:30 PM	0	0	0	0	3	44	0	47	37	0	8	45	0	<b>74</b>	49	123	215
04:45 PM	0	0	0	0	2	49	0	51	47	0	8	55	0	62	48	110	216
05:00 PM	0	0	0	0	<b>6</b>	50	0	<b>56</b>	36	0	<b>9</b>	45	0	71	<b>64</b>	<b>135</b>	<b>236</b>
Total Volume	0	0	0	0	13	196	0	209	169	0	31	200	0	268	211	479	888
% App. Total	0	0	0	0	6.2	93.8	0	84.5	84.5	0	15.5	100.0	0	55.9	44.1	100.0	100.0
PHF	.000	.000	.000	.000	.542	.925	.000	.933	.862	.000	.861	.909	.000	.905	.824	.887	.941

# All Traffic Data

(916)771-8700

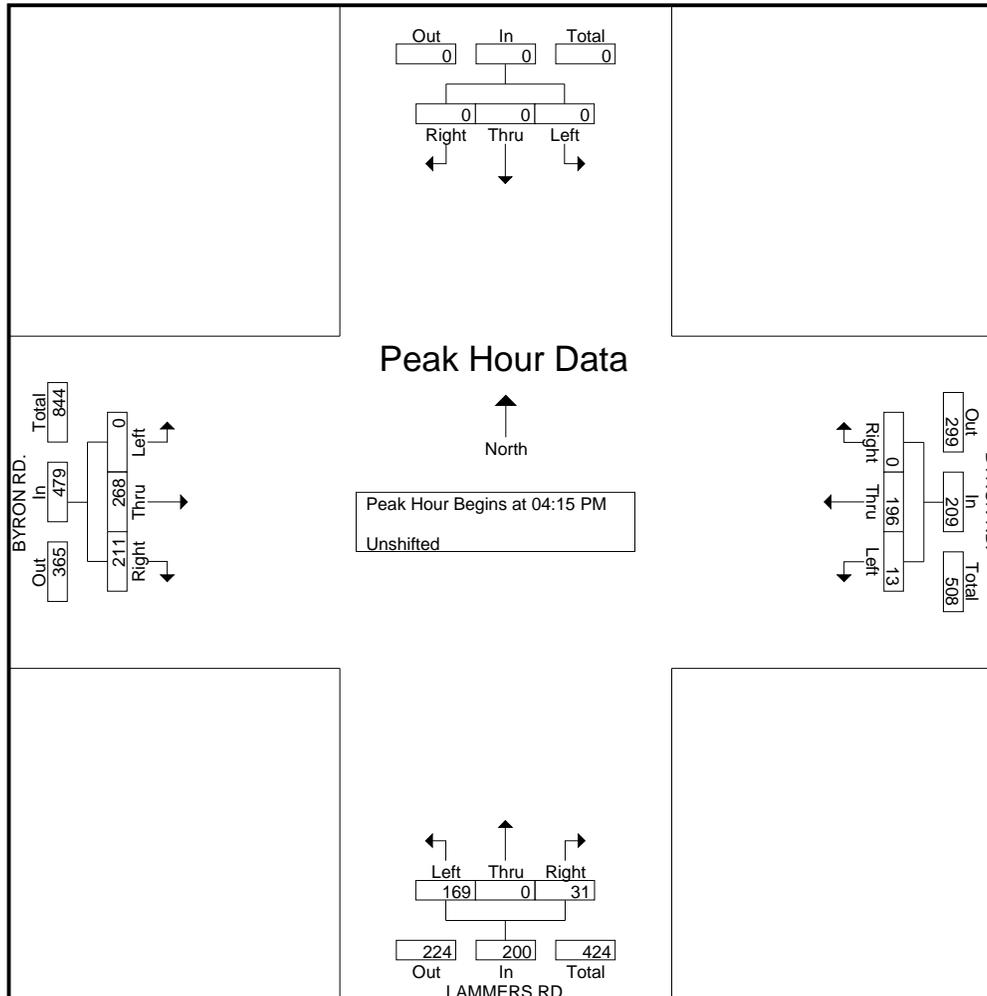
TRACY

File Name : 09-7488-022 BYRON-LAMMERS-F

Site Code : 00000000

Start Date : 12/4/2009

Page No : 3



*ALL TRAFFIC DATA, INC*

(916)771-8700

FAX 786-2879

City of Tracy  
10-7456-001

Naglee Rd & W Grant Line Rd

Date: 11/6/2010

Start Time	Naglee Rd Southbound				W Grant Line Rd Westbound				Naglee Rd Northbound				W Grant Line Rd Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
12:00	145	8	124	277	0	231	134	365	0	0	0	0	87	185	14	286	928
12:15	140	12	157	309	0	231	115	346	0	0	0	0	87	221	24	332	987
12:30	151	11	138	300	0	193	137	330	0	0	0	0	109	255	29	393	1023
12:45	156	16	137	309	0	217	133	350	0	0	0	0	112	204	24	340	999
Total	592	47	556	1195	0	872	519	1391	0	0	0	0	395	865	91	1351	3937
13:00	188	19	158	365	0	242	144	386	0	0	0	0	111	241	32	384	1135
13:15	182	20	151	353	0	210	154	364	0	0	0	0	100	225	24	349	1066
13:30	178	11	160	349	0	196	132	328	0	0	0	0	80	216	33	329	1006
13:45	219	11	166	396	0	211	113	324	0	0	0	0	104	240	17	361	1081
Total	767	61	635	1463	0	859	543	1402	0	0	0	0	395	922	106	1423	4288
Grand Total	1359	108	1191	2658	0	1731	1062	2793	0	0	0	0	790	1787	197	2774	8225
Apprch%	51.1%	4.1%	44.8%		0.0%	62.0%	38.0%		0.0%	0.0%	0.0%		28.5%	64.4%	7.1%		
Total %	16.5%	1.3%	14.5%	32.3%	0.0%	21.0%	12.9%	34.0%	0.0%	0.0%	0.0%	0.0%	9.6%	21.7%	2.4%	33.7%	

City of Tracy

Naglee Rd & W Grant Line Rd

Date: 11/6/2010

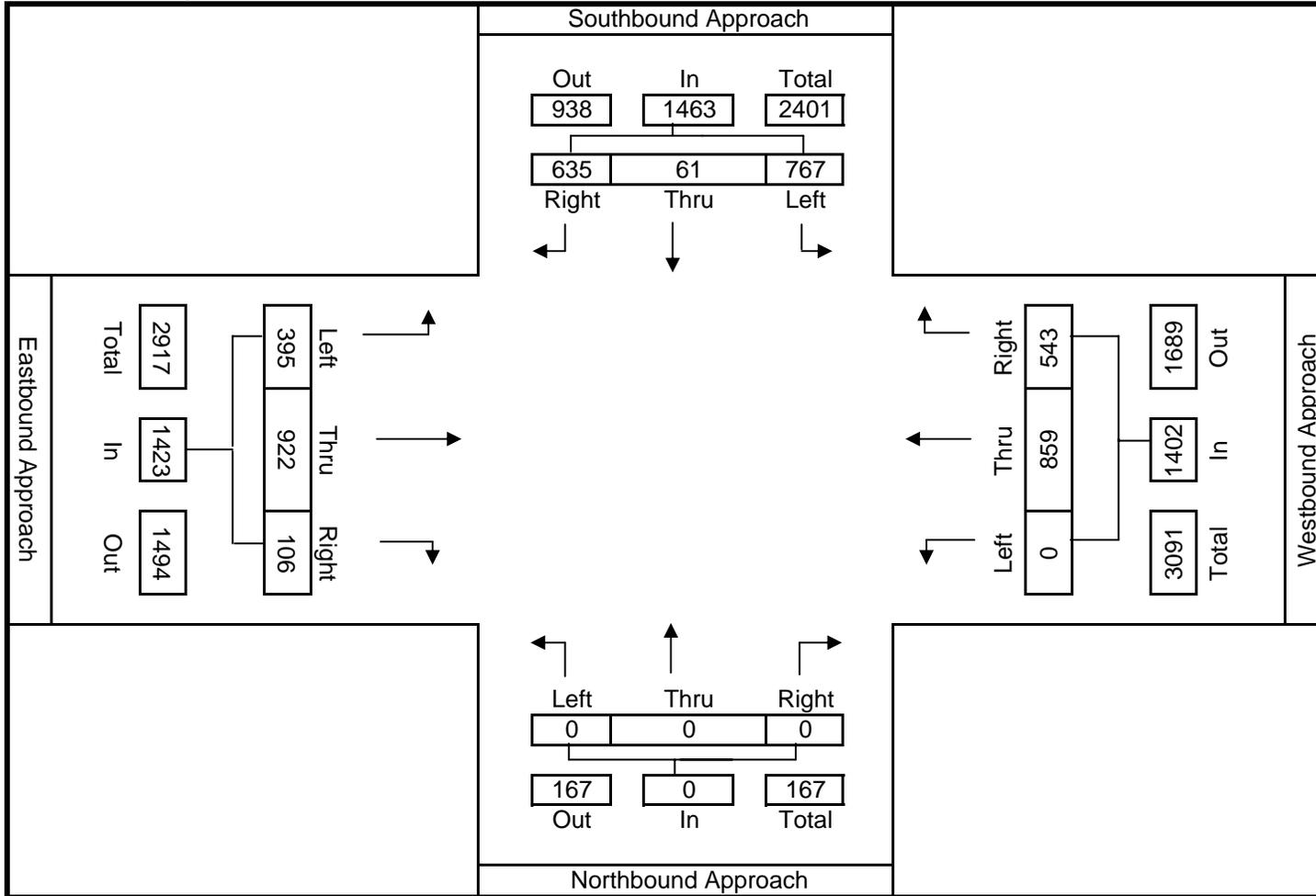
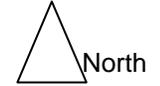
NOON Peak Hr Begins : 100 PM

Start Time	Naglee Rd Southbound				W Grant Line Rd Westbound				Naglee Rd Northbound				W Grant Line Rd Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
100	188	19	158	365	0	242	144	386	0	0	0	0	111	241	32	384	1135
115	182	20	151	353	0	210	154	364	0	0	0	0	100	225	24	349	1066
130	178	11	160	349	0	196	132	328	0	0	0	0	80	216	33	329	1006
145	219	11	166	396	0	211	113	324	0	0	0	0	104	240	17	361	1081
Total Volume	767	61	635	1463	0	859	543	1402	0	0	0	0	395	922	106	1423	4288
% App Total.	52.4%	4.2%	43.4%		0.0%	61.3%	38.7%		0.0%	0.0%	0.0%		27.8%	64.8%	7.4%		
PHF	0.924				0.908				0.000				0.926				

ALL TRAFFIC DATA, INC

North/South Street: Naglee Rd  
 East/West Street: W Grant Line Rd  
 NOON Peak Hr Begins at: 100 PM

Date: 11/6/2010  
 City: City of Tracy  
 File Name: 10-7456-001



*ALL TRAFFIC DATA, INC*

(916)771-8700

FAX 786-2879

City of Tracy  
10-7456-003

SR-205 NB Off-Ramp & W Grant Line Rd

Date: 11/6/2010

Start Time	SR-205 NB Off-Ramp Southbound				W Grant Line Rd Westbound				SR-205 NB Off-Ramp Northbound				W Grant Line Rd Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
12:00	0	0	0	0	12	323	40	375	42	0	38	80	95	231	0	326	781
12:15	0	0	0	0	11	305	56	372	43	0	50	93	111	253	0	364	829
12:30	0	0	0	0	9	285	61	355	40	0	38	78	101	299	0	400	833
12:45	0	0	0	0	9	311	52	372	44	0	46	90	93	274	0	367	829
Total	0	0	0	0	41	1224	209	1474	169	0	172	341	400	1057	0	1457	3272
13:00	0	0	0	0	9	338	59	406	43	0	40	83	119	303	0	422	911
13:15	0	0	0	0	5	313	48	366	46	0	56	102	118	287	0	405	873
13:30	0	0	0	0	6	298	51	355	35	0	47	82	121	275	0	396	833
13:45	0	0	0	0	6	282	58	346	33	0	61	94	133	324	0	457	897
Total	0	0	0	0	26	1231	216	1473	157	0	204	361	491	1189	0	1680	3514
Grand Total	0	0	0	0	67	2455	425	2947	326	0	376	702	891	2246	0	3137	6786
Apprch%	0.0%	0.0%	0.0%	0.0%	2.3%	83.3%	14.4%	46.4%	0.0%	53.6%	10.3%	28.4%	71.6%	0.0%	46.2%		
Total %	0.0%	0.0%	0.0%	0.0%	1.0%	36.2%	6.3%	43.4%	4.8%	0.0%	5.5%	10.3%	13.1%	33.1%	0.0%	46.2%	

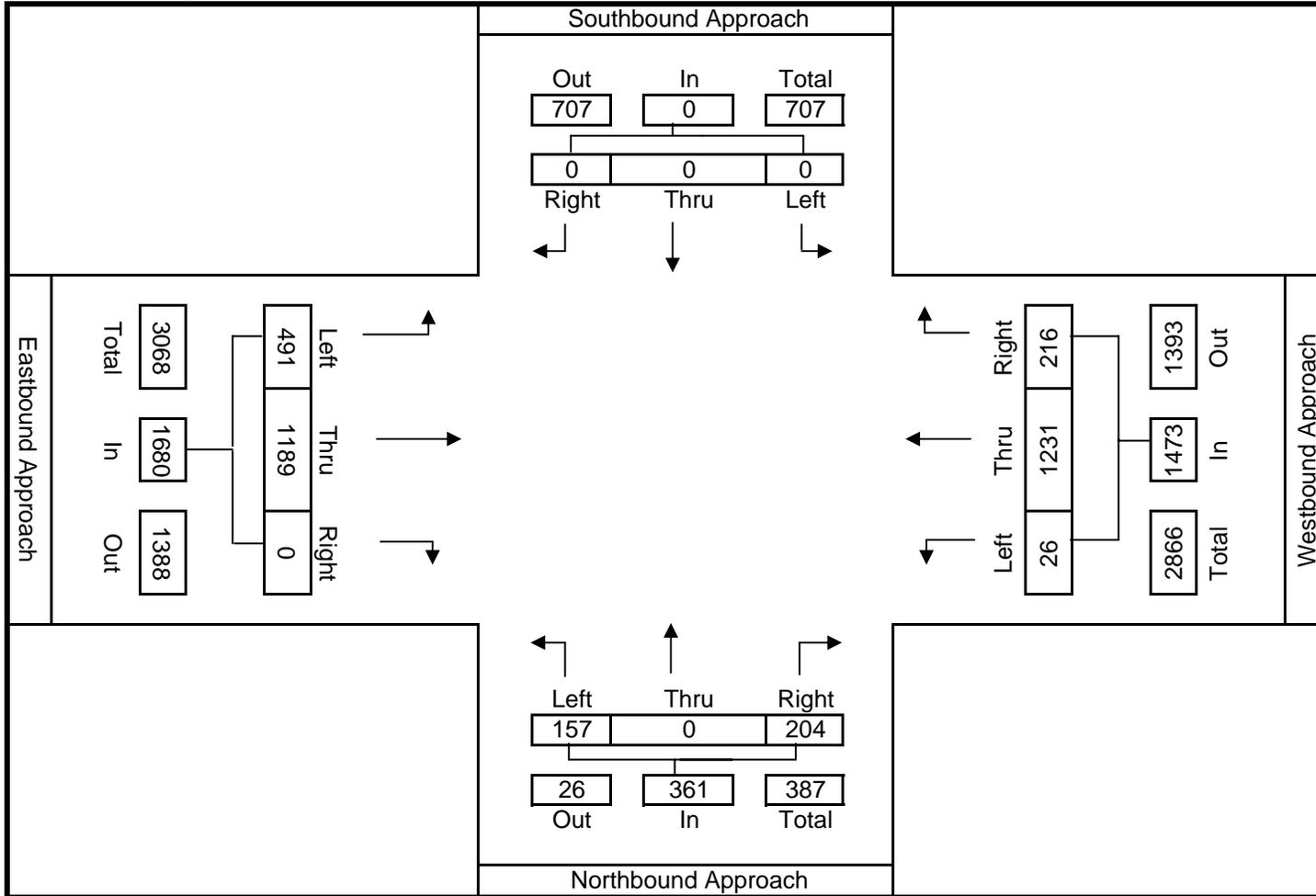
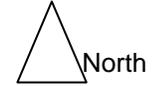
NOON Peak Hr Begins : 100 PM

Start Time	SR-205 NB Off-Ramp Southbound				W Grant Line Rd Westbound				SR-205 NB Off-Ramp Northbound				W Grant Line Rd Eastbound				Int Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
100	0	0	0	0	9	338	59	406	43	0	40	83	119	303	0	422	911
115	0	0	0	0	5	313	48	366	46	0	56	102	118	287	0	405	873
130	0	0	0	0	6	298	51	355	35	0	47	82	121	275	0	396	833
145	0	0	0	0	6	282	58	346	33	0	61	94	133	324	0	457	897
Total Volume	0	0	0	0	26	1231	216	1473	157	0	204	361	491	1189	0	1680	3514
% App Total	0.0%	0.0%	0.0%		1.8%	83.6%	14.7%		43.5%	0.0%	56.5%		29.2%	70.8%	0.0%		
PHF	0.000				0.907				0.885				0.919				

ALL TRAFFIC DATA, INC

North/South Street: SR-205 NB Off-Ramp  
 East/West Street: W Grant Line Rd  
 NOON Peak Hr Begins at: 100 PM

Date: 11/6/2010  
 City: City of Tracy  
 File Name: 10-7456-003



## **APPENDIX A-3**

### **Existing Conditions LOS Analysis Worksheets**



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	145	280	135	230	255	120
Sign Control	Free		Stop			Stop
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	151	292	141	240	266	125
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	0		594	0	758	448
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		594	0	758	448
tC, single (s)	4.1		6.6	6.2	7.2	6.6
tC, 2 stage (s)						
tF (s)	2.2		4.0	3.3	3.5	4.0
p0 queue free %	91		63	78	0	72
cM capacity (veh/h)	1604		375	1076	164	454
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>	<b>SB 2</b>		
Volume Total	443	380	266	125		
Volume Left	151	0	266	0		
Volume Right	292	240	0	0		
cSH	1604	636	164	454		
Volume to Capacity	0.09	0.60	1.62	0.28		
Queue Length 95th (ft)	8	99	454	28		
Control Delay (s)	3.1	18.7	353.2	15.9		
Lane LOS	A	C	F	C		
Approach Delay (s)	3.1	18.7	245.2			
Approach LOS		C	F			
<b>Intersection Summary</b>						
Average Delay			85.9			
Intersection Capacity Utilization			70.6%		ICU Level of Service	C
Analysis Period (min)			15			

## 2: GRANT LINE RD & S Lammers Rd

EXISTING FILIOS-DOBLER - AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	15	435	445	15	25	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	458	468	16	26	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			492			
pX, platoon unblocked	0.84				0.84	0.84
vC, conflicting volume	484				966	476
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	293				865	284
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				90	97
cM capacity (veh/h)	1053				265	630
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>SB 1</b>			
Volume Total	474	484	42			
Volume Left	16	0	26			
Volume Right	0	16	16			
cSH	1053	1700	339			
Volume to Capacity	0.01	0.28	0.12			
Queue Length 95th (ft)	1	0	11			
Control Delay (s)	0.5	0.0	17.1			
Lane LOS	A		C			
Approach Delay (s)	0.5	0.0	17.1			
Approach LOS			C			
<b>Intersection Summary</b>						
Average Delay			0.9			
Intersection Capacity Utilization			45.0%		ICU Level of Service	A
Analysis Period (min)			15			

### 3: GRANT LINE RD & COSTCO DVWY.

EXISTING FILIOS-DOBLER - AM



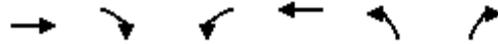
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↙	↑↑	↙	↗
Volume (vph)	490	45	60	435	20	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4878		1719	3438	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4878		1719	3438	1719	1538
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	538	49	66	478	22	49
RTOR Reduction (vph)	21	0	0	0	0	21
Lane Group Flow (vph)	566	0	66	478	22	28
Turn Type			Prot		pm+ov	
Protected Phases	4		3	8	2	3
Permitted Phases						2
Actuated Green, G (s)	13.5		6.6	24.1	27.9	34.5
Effective Green, g (s)	13.5		6.6	24.1	27.9	34.5
Actuated g/C Ratio	0.22		0.11	0.40	0.46	0.57
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1098		189	1381	799	987
v/s Ratio Prot	c0.12		0.04	c0.14	0.01	c0.00
v/s Ratio Perm						0.02
v/c Ratio	0.52		0.35	0.35	0.03	0.03
Uniform Delay, d1	20.4		24.7	12.5	8.7	5.5
Progression Factor	1.00		1.42	1.11	1.00	1.00
Incremental Delay, d2	0.4		1.1	0.1	0.1	0.0
Delay (s)	20.8		36.1	14.1	8.8	5.5
Level of Service	C		D	B	A	A
Approach Delay (s)	20.8			16.7	6.5	
Approach LOS	C			B	A	

#### Intersection Summary

HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

4: GRANT LINE RD & WALMART DVWY.

EXISTING FILIOS-DOBLER - AM



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑	↵	↵
Volume (vph)	515	30	75	485	15	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4899		1719	3438	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4899		1719	3438	1719	1538
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	585	34	85	551	17	74
RTOR Reduction (vph)	12	0	0	0	0	41
Lane Group Flow (vph)	608	0	85	551	17	33
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	14.0		7.2	25.2	26.8	26.8
Effective Green, g (s)	14.0		7.2	25.2	26.8	26.8
Actuated g/C Ratio	0.23		0.12	0.42	0.45	0.45
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1143		206	1444	768	687
v/s Ratio Prot	c0.12		0.05	c0.16	0.01	
v/s Ratio Perm						c0.02
v/c Ratio	0.53		0.41	0.38	0.02	0.05
Uniform Delay, d1	20.1		24.4	12.0	9.3	9.4
Progression Factor	1.68		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5		1.3	0.2	0.1	0.1
Delay (s)	34.3		25.8	12.2	9.3	9.5
Level of Service	C		C	B	A	A
Approach Delay (s)	34.3			14.0	9.5	
Approach LOS	C			B	A	

Intersection Summary

HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	28.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

5: GRANT LINE RD & NAGLEE ROAD

EXISTING FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	410	75	0	430	335	0	0	0	270	50	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (prot)	3335	3438	1538		4940	1538				1633	1662	1538
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (perm)	3335	3438	1538		4940	1538				1633	1662	1538
Peak-hour factor, PHF	0.92	0.92	0.92	1.00	0.92	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Adj. Flow (vph)	141	446	82	0	467	335	0	0	0	293	54	272
RTOR Reduction (vph)	0	0	24	0	0	0	0	0	0	0	0	220
Lane Group Flow (vph)	141	446	58	0	467	335	0	0	0	173	174	52
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6						4	
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	8.5	51.3	51.3		38.6	75.0				13.8	13.8	13.8
Effective Green, g (s)	8.7	52.6	52.6		39.9	75.0				14.4	14.4	14.4
Actuated g/C Ratio	0.12	0.70	0.70		0.53	1.00				0.19	0.19	0.19
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	387	2411	1079		2628	1538				314	319	295
v/s Ratio Prot	c0.04	0.13			0.09							
v/s Ratio Perm			0.04			c0.22				c0.11	0.10	0.03
v/c Ratio	0.36	0.18	0.05		0.18	0.22				0.55	0.55	0.18
Uniform Delay, d1	30.6	3.8	3.5		9.1	0.0				27.4	27.3	25.3
Progression Factor	1.00	1.00	1.00		1.31	1.00				1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	0.1		0.1	0.3				2.1	1.9	0.3
Delay (s)	31.2	4.0	3.6		12.0	0.3				29.5	29.3	25.6
Level of Service	C	A	A		B	A				C	C	C
Approach Delay (s)		9.7			7.1			0.0			27.7	
Approach LOS		A			A			A			C	

Intersection Summary

HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	30.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

6: GRANT LINE RD & I-205 EAST

EXISTING FILIOS-DOBLER - AM



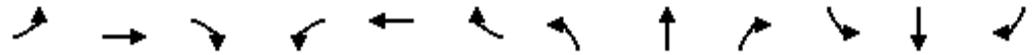
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↘	↑↑			↑↑↑		↘		↘				
Volume (vph)	235	430	0	0	730	0	45	0	100	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0				
Lane Util. Factor	1.00	0.95			0.91		1.00		1.00				
Frt	1.00	1.00			1.00		1.00		0.85				
Flt Protected	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (prot)	1719	3438			4940		1719		1538				
Flt Permitted	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (perm)	1719	3438			4940		1719		1538				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	247	453	0	0	768	0	47	0	105	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	96	0	0	0	
Lane Group Flow (vph)	247	453	0	0	768	0	47	0	9	0	0	0	
Turn Type	Prot							custom		custom			
Protected Phases	5	2						6					
Permitted Phases								8		8			
Actuated Green, G (s)	20.6	59.0						34.2		6.5		6.5	
Effective Green, g (s)	20.8	60.3						35.5		6.7		6.7	
Actuated g/C Ratio	0.28	0.80						0.47		0.09		0.09	
Clearance Time (s)	4.2	5.3						5.3		4.2		4.2	
Vehicle Extension (s)	3.0	3.0						3.0		3.0		3.0	
Lane Grp Cap (vph)	477	2764						2338		154		137	
v/s Ratio Prot	c0.14	0.13						c0.16					
v/s Ratio Perm								c0.03		0.01			
v/c Ratio	0.52	0.16						0.33		0.31		0.07	
Uniform Delay, d1	22.9	1.7						12.3		32.0		31.3	
Progression Factor	1.39	0.57						1.00		1.00		1.00	
Incremental Delay, d2	0.9	0.1						0.4		1.1		0.2	
Delay (s)	32.7	1.1						12.7		33.1		31.5	
Level of Service	C	A						B		C		C	
Approach Delay (s)	12.2							12.7		32.0		0.0	
Approach LOS	B							B		C		A	

Intersection Summary

HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

7: GRANT LINE RD & CORRAL HOLLOW RD

EXISTING FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	210	90	145	395	40	365	250	205	20	145	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		0.94	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1719	3438	2707	1719	3391		4848	3438	1538	1719	3248	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1719	3438	2707	1719	3391		4848	3438	1538	1719	3248	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	100%	100%	75%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	43	228	73	158	429	43	397	272	223	22	158	92
RTOR Reduction (vph)	0	0	54	0	8	0	0	0	147	0	69	0
Lane Group Flow (vph)	43	228	19	158	464	0	397	272	76	22	181	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	2.1	12.8	12.8	7.1	17.8		6.1	17.0	17.0	1.0	11.9	
Effective Green, g (s)	4.1	14.8	14.8	9.1	19.8		8.1	19.0	19.0	3.0	13.9	
Actuated g/C Ratio	0.07	0.26	0.26	0.16	0.35		0.14	0.34	0.34	0.05	0.25	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	126	910	717	280	1201		702	1169	523	92	808	
v/s Ratio Prot	0.03	0.07		c0.09	c0.14		c0.08	c0.08		0.01	0.06	
v/s Ratio Perm			0.01						0.05			
v/c Ratio	0.34	0.25	0.03	0.56	0.39		0.57	0.23	0.14	0.24	0.22	
Uniform Delay, d1	24.6	16.2	15.2	21.6	13.5		22.3	13.2	12.8	25.4	16.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	0.1	0.0	2.6	0.2		1.0	0.1	0.1	1.3	0.1	
Delay (s)	26.2	16.3	15.2	24.2	13.7		23.3	13.3	12.9	26.7	16.8	
Level of Service	C	B	B	C	B		C	B	B	C	B	
Approach Delay (s)		17.3			16.3			17.7			17.6	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	55.9	Sum of lost time (s)	4.0
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩		↩	↩	↩	↩
Sign Control	Stop			Stop	Stop	
Volume (vph)	170	105	35	185	205	25
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	191	118	39	208	230	28

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total (vph)	309	39	208	258
Volume Left (vph)	0	39	0	230
Volume Right (vph)	118	0	0	28
Hadj (s)	-0.14	0.59	0.09	0.20
Departure Headway (s)	5.0	6.2	5.7	5.5
Degree Utilization, x	0.43	0.07	0.33	0.39
Capacity (veh/h)	685	550	601	606
Control Delay (s)	11.7	8.5	10.3	12.0
Approach Delay (s)	11.7	10.0		12.0
Approach LOS	B	A		B

Intersection Summary			
Delay		11.3	
HCM Level of Service		B	
Intersection Capacity Utilization		41.6%	ICU Level of Service
Analysis Period (min)		15	A

9: BYRON & CORRAL HOLLOW RD

EXISTING FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	340	5	250	5	5	5	185	960	5	0	725	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95			0.95	
Frt	1.00	0.85			0.96		1.00	1.00			0.97	
Flt Protected	0.95	1.00			0.98		0.95	1.00			1.00	
Satd. Flow (prot)	1719	1544			1700		1719	3435			3324	
Flt Permitted	0.75	1.00			0.92		0.95	1.00			1.00	
Satd. Flow (perm)	1349	1544			1582		1719	3435			3324	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	400	6	294	6	6	6	218	1129	6	0	853	241
RTOR Reduction (vph)	0	198	0	0	4	0	0	0	0	0	35	0
Lane Group Flow (vph)	400	102	0	0	14	0	218	1135	0	0	1059	0
Turn Type	Perm		Perm				Prot					
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8								
Actuated Green, G (s)	23.6	23.6			23.6		10.9	40.7			25.8	
Effective Green, g (s)	23.6	23.6			23.6		10.9	40.7			25.8	
Actuated g/C Ratio	0.33	0.33			0.33		0.15	0.56			0.36	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	440	504			516		259	1934			1186	
v/s Ratio Prot		0.07					c0.13	0.33			c0.32	
v/s Ratio Perm	c0.30				0.01							
v/c Ratio	0.91	0.20			0.03		0.84	0.59			0.89	
Uniform Delay, d1	23.3	17.6			16.5		29.9	10.3			21.9	
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2	22.3	0.2			0.0		21.2	0.5			8.8	
Delay (s)	45.6	17.8			16.6		51.1	10.8			30.8	
Level of Service	D	B			B		D	B			C	
Approach Delay (s)		33.7			16.6			17.3			30.8	
Approach LOS		C			B			B			C	

Intersection Summary

HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	72.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

10: ELEVENTH ST. & LAMMERS RD

EXISTING FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	230	95	330	1030	95	110	160	450	65	140	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	1719	4940	1538	3335	3438	1538	3335	1810	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	1719	4940	1538	3335	3438	1538	3335	1810	1538
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	12	277	114	398	1241	114	133	193	542	78	169	84
RTOR Reduction (vph)	0	0	83	0	0	49	0	0	389	0	0	62
Lane Group Flow (vph)	12	277	31	398	1241	65	133	193	153	78	169	22
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	0.9	15.1	15.1	11.8	26.0	26.0	6.3	13.3	13.3	5.6	12.6	12.6
Effective Green, g (s)	3.0	17.2	17.2	13.9	28.1	28.1	8.4	15.4	15.4	7.7	14.7	14.7
Actuated g/C Ratio	0.05	0.27	0.27	0.22	0.44	0.44	0.13	0.24	0.24	0.12	0.23	0.23
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	157	1332	415	375	2176	677	439	830	371	403	417	354
v/s Ratio Prot	0.00	0.06		c0.23	c0.25		c0.04	0.06		0.02	0.09	
v/s Ratio Perm			0.02			0.04			c0.10			0.01
v/c Ratio	0.08	0.21	0.07	1.06	0.57	0.10	0.30	0.23	0.41	0.19	0.41	0.06
Uniform Delay, d1	29.1	18.0	17.4	24.9	13.3	10.4	25.1	19.5	20.4	25.3	20.8	19.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.1	63.6	0.4	0.1	0.4	0.1	0.7	0.2	0.6	0.1
Delay (s)	29.3	18.1	17.4	88.6	13.7	10.5	25.4	19.6	21.1	25.5	21.5	19.2
Level of Service	C	B	B	F	B	B	C	B	C	C	C	B
Approach Delay (s)		18.3			30.5			21.5			21.9	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	3.8
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

11: ELEVENTH ST. & CORRAL HOLLOW RD

EXISTING FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	445	205	180	615	225	445	865	190	275	500	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3335	3438	1538	3335	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3335	3438	1538	3335	3438	1538
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	185	500	230	202	691	253	500	972	213	309	562	191
RTOR Reduction (vph)	0	0	0	0	0	192	0	0	98	0	0	132
Lane Group Flow (vph)	185	500	230	202	691	61	500	972	115	309	562	59
Turn Type	Prot		Free	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			Free			6			4			8
Actuated Green, G (s)	8.1	19.7	89.7	8.2	19.8	19.8	18.1	32.0	32.0	11.8	25.7	25.7
Effective Green, g (s)	10.1	21.7	89.7	10.2	21.8	21.8	20.1	34.0	34.0	13.8	27.7	27.7
Actuated g/C Ratio	0.11	0.24	1.00	0.11	0.24	0.24	0.22	0.38	0.38	0.15	0.31	0.31
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	376	1195	1538	379	1201	374	747	1303	583	513	1062	475
v/s Ratio Prot	0.06	0.10		c0.06	c0.14		c0.15	c0.28		0.09	0.16	
v/s Ratio Perm			c0.15			0.04			0.07			0.04
v/c Ratio	0.49	0.42	0.15	0.53	0.58	0.16	0.67	0.75	0.20	0.60	0.53	0.12
Uniform Delay, d1	37.4	28.7	0.0	37.5	29.9	26.8	31.8	24.1	18.7	35.4	25.6	22.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.2	0.2	1.4	0.7	0.2	2.3	2.4	0.2	2.0	0.5	0.1
Delay (s)	38.4	28.9	0.2	38.9	30.5	27.0	34.1	26.5	18.9	37.4	26.1	22.4
Level of Service	D	C	A	D	C	C	C	C	B	D	C	C
Approach Delay (s)		23.6			31.2			27.8			28.7	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	89.7	Sum of lost time (s)	4.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

1: GRANT LINE RD & BYRON

EXISTING FILIOS-DOBLER - PM



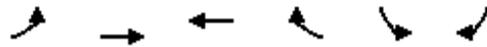
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	320	415	85	295	430	150
Sign Control	Free		Stop			Stop
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	333	432	89	307	448	156
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	0		1099	0	1234	883
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		1099	0	1234	883
tC, single (s)	4.1		6.6	6.2	7.2	6.6
tC, 2 stage (s)						
tF (s)	2.2		4.0	3.3	3.5	4.0
p0 queue free %	79		47	71	0	30
cM capacity (veh/h)	1604		166	1076	54	223

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	766	396	448	156
Volume Left	333	0	448	0
Volume Right	432	307	0	0
cSH	1604	484	54	223
Volume to Capacity	0.21	0.82	8.36	0.70
Queue Length 95th (ft)	20	197	Err	114
Control Delay (s)	4.6	38.0	Err	51.9
Lane LOS	A	E	F	F
Approach Delay (s)	4.6	38.0	7426.5	
Approach LOS		E	F	

Intersection Summary			
Average Delay		2551.7	
Intersection Capacity Utilization		99.7%	ICU Level of Service F
Analysis Period (min)		15	

2: GRANT LINE RD & S Lammers Rd

EXISTING FILIOS-DOBLER - PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	9	785	760	35	20	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	9	826	800	37	21	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			492			
pX, platoon unblocked	0.82				0.82	0.82
vC, conflicting volume	837				1664	818
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	693				1699	671
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				74	97
cM capacity (veh/h)	730				81	371

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	836	837	32
Volume Left	9	0	21
Volume Right	0	37	11
cSH	730	1700	109
Volume to Capacity	0.01	0.49	0.29
Queue Length 95th (ft)	1	0	27
Control Delay (s)	0.4	0.0	50.8
Lane LOS	A		F
Approach Delay (s)	0.4	0.0	50.8
Approach LOS			F

Intersection Summary			
Average Delay		1.1	
Intersection Capacity Utilization		58.5%	ICU Level of Service
Analysis Period (min)		15	B

3: GRANT LINE RD & COSTCO DVWY.

EXISTING FILIOS-DOBLER - PM



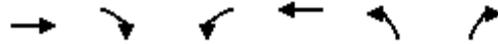
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↙	↑↑	↙	↗
Volume (vph)	565	130	265	590	130	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4802		1719	3438	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4802		1719	3438	1719	1538
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	589	135	276	615	135	286
RTOR Reduction (vph)	67	0	0	0	0	196
Lane Group Flow (vph)	657	0	276	615	135	90
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	14.5		14.6	33.1	18.9	18.9
Effective Green, g (s)	14.5		14.6	33.1	18.9	18.9
Actuated g/C Ratio	0.24		0.24	0.55	0.32	0.32
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1160		418	1897	541	484
v/s Ratio Prot	c0.14		c0.16	0.18	c0.08	
v/s Ratio Perm						0.06
v/c Ratio	0.57		0.66	0.32	0.25	0.19
Uniform Delay, d1	20.0		20.5	7.3	15.3	15.0
Progression Factor	1.00		1.58	0.84	1.00	1.00
Incremental Delay, d2	0.6		3.7	0.1	1.1	0.8
Delay (s)	20.6		35.9	6.3	16.4	15.8
Level of Service	C		D	A	B	B
Approach Delay (s)	20.6			15.5	16.0	
Approach LOS	C			B	B	

Intersection Summary

HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

4: GRANT LINE RD & WALMART DVWY.

EXISTING FILIOS-DOBLER - PM



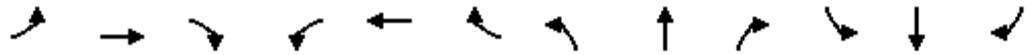
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑	↵	↵
Volume (vph)	790	50	220	805	85	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4896		1719	3438	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4896		1719	3438	1719	1538
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	840	53	234	856	90	213
RTOR Reduction (vph)	12	0	0	0	0	152
Lane Group Flow (vph)	881	0	234	856	90	61
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	17.3		13.4	34.7	17.3	17.3
Effective Green, g (s)	17.3		13.4	34.7	17.3	17.3
Actuated g/C Ratio	0.29		0.22	0.58	0.29	0.29
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1412		384	1988	496	443
v/s Ratio Prot	c0.18		c0.14	0.25	c0.05	
v/s Ratio Perm						0.04
v/c Ratio	0.62		0.61	0.43	0.18	0.14
Uniform Delay, d1	18.5		20.9	7.1	16.0	15.8
Progression Factor	1.48		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		2.7	0.2	0.8	0.7
Delay (s)	28.2		23.7	7.3	16.8	16.5
Level of Service	C		C	A	B	B
Approach Delay (s)	28.2			10.8	16.6	
Approach LOS	C			B	B	

Intersection Summary

HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

5: GRANT LINE RD & NAGLEE ROAD

EXISTING FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	285	1015	45	0	675	420	0	0	0	690	35	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3335	3438	1538		4940	1538				1633	1645	1538
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3335	3438	1538		4940	1538				1633	1645	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	294	1046	46	0	696	433	0	0	0	711	36	469
RTOR Reduction (vph)	0	0	14	0	0	0	0	0	0	0	0	275
Lane Group Flow (vph)	294	1046	32	0	696	433	0	0	0	370	377	194
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6						4	
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	12.5	52.6	52.6		35.9	90.0				27.5	27.5	27.5
Effective Green, g (s)	12.7	53.9	53.9		37.2	90.0				28.1	28.1	28.1
Actuated g/C Ratio	0.14	0.60	0.60		0.41	1.00				0.31	0.31	0.31
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	471	2059	921		2042	1538				510	514	480
v/s Ratio Prot	c0.09	c0.30			0.14							
v/s Ratio Perm			0.02			0.28				0.23	0.23	0.13
v/c Ratio	0.62	0.51	0.03		0.34	0.28				0.73	0.73	0.40
Uniform Delay, d1	36.4	10.4	7.4		18.0	0.0				27.5	27.6	24.4
Progression Factor	1.00	1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	2.6	0.9	0.1		0.5	0.5				5.1	5.4	0.6
Delay (s)	39.0	11.3	7.5		18.5	0.5				32.6	33.0	24.9
Level of Service	D	B	A		B	A				C	C	C
Approach Delay (s)		17.0			11.6			0.0			29.8	
Approach LOS		B			B			A			C	

Intersection Summary

HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

6: GRANT LINE RD & I-205 EAST

EXISTING FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑↑		↘		↘			
Volume (vph)	555	1150	0	0	895	0	200	0	415	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0			
Lane Util. Factor	1.00	0.95			0.91		1.00		1.00			
Frt	1.00	1.00			1.00		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	1719	3438			4940		1719		1538			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1719	3438			4940		1719		1538			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	584	1211	0	0	942	0	211	0	437	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	33	0	0	0
Lane Group Flow (vph)	584	1211	0	0	942	0	211	0	404	0	0	0
Turn Type	Prot							custom		custom		
Protected Phases	5	2						6				
Permitted Phases								8		8		
Actuated Green, G (s)	24.0	45.7						17.5	25.6	25.6		
Effective Green, g (s)	24.2	47.0						18.8	25.8	25.8		
Actuated g/C Ratio	0.30	0.58						0.23	0.32	0.32		
Clearance Time (s)	4.2	5.3						5.3	4.2	4.2		
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0		
Lane Grp Cap (vph)	515	2000						1149	549	491		
v/s Ratio Prot	c0.34	0.35						c0.19				
v/s Ratio Perm									0.12	c0.26		
v/c Ratio	1.13	0.61						0.82	0.38	0.82		
Uniform Delay, d1	28.3	10.9						29.4	21.3	25.4		
Progression Factor	1.00	1.00						1.00	1.00	1.00		
Incremental Delay, d2	82.0	0.5						4.7	0.4	10.7		
Delay (s)	110.3	11.4						34.1	21.8	36.1		
Level of Service	F	B						C	C	D		
Approach Delay (s)	43.6							34.1	31.5	0.0		
Approach LOS	D							C	C	A		

Intersection Summary

HCM Average Control Delay	38.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	80.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

7: GRANT LINE RD & CORRAL HOLLOW RD

EXISTING FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	590	525	150	390	70	515	285	110	110	255	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		0.94	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1719	3438	2707	1719	3359		4848	3438	1538	1719	3321	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1719	3438	2707	1719	3359		4848	3438	1538	1719	3321	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (vph)	100%	100%	75%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	100	621	414	158	411	74	542	300	116	116	268	79
RTOR Reduction (vph)	0	0	275	0	15	0	0	0	88	0	30	0
Lane Group Flow (vph)	100	621	139	158	470	0	542	300	28	116	317	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	5.4	20.1	20.1	6.1	20.8		7.1	14.1	14.1	7.4	14.4	
Effective Green, g (s)	7.4	22.1	22.1	8.1	22.8		9.1	16.1	16.1	9.4	16.4	
Actuated g/C Ratio	0.11	0.34	0.34	0.12	0.35		0.14	0.25	0.25	0.14	0.25	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	194	1156	911	212	1166		671	842	377	246	829	
v/s Ratio Prot	0.06	c0.18		c0.09	0.14		c0.11	0.09		0.07	c0.10	
v/s Ratio Perm			0.05						0.02			
v/c Ratio	0.52	0.54	0.15	0.75	0.40		0.81	0.36	0.08	0.47	0.38	
Uniform Delay, d1	27.5	17.7	15.3	27.8	16.3		27.5	20.5	19.1	25.9	20.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.3	0.5	0.1	13.3	0.2		7.1	0.3	0.1	1.4	0.3	
Delay (s)	29.8	18.1	15.3	41.1	16.5		34.5	20.8	19.2	27.3	20.7	
Level of Service	C	B	B	D	B		C	C	B	C	C	
Approach Delay (s)		18.1			22.5			28.4			22.4	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	65.7	Sum of lost time (s)	7.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩		↩	↩	↩	↩
Sign Control	Stop			Stop	Stop	
Volume (vph)	270	215	15	200	170	35
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	287	229	16	213	181	37

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total (vph)	516	16	213	218
Volume Left (vph)	0	16	0	181
Volume Right (vph)	229	0	0	37
Hadj (s)	-0.18	0.59	0.08	0.15
Departure Headway (s)	4.9	6.3	5.8	5.9
Degree Utilization, x	0.70	0.03	0.35	0.36
Capacity (veh/h)	719	539	588	555
Control Delay (s)	18.4	8.3	10.7	12.1
Approach Delay (s)	18.4	10.5		12.1
Approach LOS	C	B		B

Intersection Summary			
Delay		15.1	
HCM Level of Service		C	
Intersection Capacity Utilization		45.6%	ICU Level of Service A
Analysis Period (min)		15	

9: BYRON & CORRAL HOLLOW RD

EXISTING FILIOS-DOBLER - PM



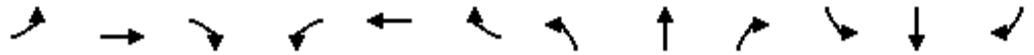
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	5	250	5	5	5	180	1130	5	0	1015	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				4.0
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95				0.95
Frt	1.00	0.85			0.96		1.00	1.00				0.99
Flt Protected	0.95	1.00			0.98		0.95	1.00				1.00
Satd. Flow (prot)	1719	1543			1700		1719	3436				3387
Flt Permitted	0.75	1.00			0.90		0.95	1.00				1.00
Satd. Flow (perm)	1353	1543			1556		1719	3436				3387
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	5	272	5	5	5	196	1228	5	0	1103	120
RTOR Reduction (vph)	0	212	0	0	4	0	0	0	0	0	10	0
Lane Group Flow (vph)	185	65	0	0	11	0	196	1233	0	0	1213	0
Turn Type	Perm		Perm				Prot					
Protected Phases		4			8		5	2				6
Permitted Phases	4			8								
Actuated Green, G (s)	14.0	14.0			14.0		10.0	41.2				27.2
Effective Green, g (s)	14.0	14.0			14.0		10.0	41.2				27.2
Actuated g/C Ratio	0.22	0.22			0.22		0.16	0.65				0.43
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0				4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	300	342			345		272	2240				1458
v/s Ratio Prot		0.04					c0.11	0.36				c0.36
v/s Ratio Perm	c0.14				0.01							
v/c Ratio	0.62	0.19			0.03		0.72	0.55				0.83
Uniform Delay, d1	22.2	20.0			19.3		25.3	6.0				16.0
Progression Factor	1.00	1.00			1.00		1.00	1.00				1.00
Incremental Delay, d2	3.7	0.3			0.0		9.0	0.3				4.2
Delay (s)	25.9	20.3			19.3		34.3	6.3				20.2
Level of Service	C	C			B		C	A				C
Approach Delay (s)		22.5			19.3			10.1				20.2
Approach LOS		C			B			B				C

Intersection Summary

HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

10: ELEVENTH ST. & LAMMERS RD

EXISTING FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	135	1150	105	85	345	85	35	100	115	70	115	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	1719	4940	1538	3335	3438	1538	3335	1810	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	1719	4940	1538	3335	3438	1538	3335	1810	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	139	1186	108	88	356	88	36	103	119	72	119	21
RTOR Reduction (vph)	0	0	60	0	0	48	0	0	101	0	0	17
Lane Group Flow (vph)	139	1186	48	88	356	40	36	103	18	72	119	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	6.0	25.8	25.8	6.3	26.1	26.1	3.3	7.6	7.6	5.0	9.3	9.3
Effective Green, g (s)	8.1	27.9	27.9	8.4	28.2	28.2	5.4	9.7	9.7	7.1	11.4	11.4
Actuated g/C Ratio	0.13	0.44	0.44	0.13	0.45	0.45	0.09	0.15	0.15	0.11	0.18	0.18
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	431	2198	684	230	2222	692	287	532	238	378	329	280
v/s Ratio Prot	0.04	c0.24		c0.05	0.07		0.01	0.03		c0.02	c0.07	
v/s Ratio Perm			0.03			0.03			0.01			0.00
v/c Ratio	0.32	0.54	0.07	0.38	0.16	0.06	0.13	0.19	0.08	0.19	0.36	0.01
Uniform Delay, d1	24.8	12.7	10.0	24.8	10.2	9.7	26.5	23.1	22.7	25.2	22.5	21.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.3	0.0	1.1	0.0	0.0	0.2	0.2	0.1	0.2	0.7	0.0
Delay (s)	25.2	13.0	10.0	25.8	10.3	9.8	26.7	23.3	22.8	25.4	23.1	21.1
Level of Service	C	B	B	C	B	A	C	C	C	C	C	C
Approach Delay (s)		13.9			12.8			23.5			23.7	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	6.7
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

11: ELEVENTH ST. & CORRAL HOLLOW RD

EXISTING FILIOS-DOBLER - PM



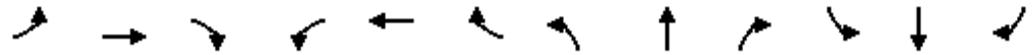
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	480	805	755	300	390	235	255	810	90	285	700	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3335	3438	1538	3335	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3335	3438	1538	3335	3438	1538
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	500	839	786	312	406	245	266	844	94	297	729	89
RTOR Reduction (vph)	0	0	0	0	0	21	0	0	17	0	0	45
Lane Group Flow (vph)	500	839	786	312	406	224	266	844	77	297	729	44
Turn Type	Prot		Free	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	5	2		1	6	3	7	4	1	3	8	5
Permitted Phases			Free			6			4			8
Actuated Green, G (s)	15.4	22.5	91.9	13.3	20.4	28.6	11.9	29.9	43.2	8.2	26.2	41.6
Effective Green, g (s)	17.4	24.5	91.9	15.3	22.4	32.6	13.9	31.9	47.2	10.2	28.2	45.6
Actuated g/C Ratio	0.19	0.27	1.00	0.17	0.24	0.35	0.15	0.35	0.51	0.11	0.31	0.50
Clearance Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	631	1317	1538	555	1204	546	504	1193	790	370	1055	763
v/s Ratio Prot	c0.15	c0.17		0.09	0.08	0.05	c0.08	c0.25	0.02	c0.09	0.21	0.01
v/s Ratio Perm			0.51			0.10			0.03			0.02
v/c Ratio	0.79	0.64	0.51	0.56	0.34	0.41	0.53	0.71	0.10	0.80	0.69	0.06
Uniform Delay, d1	35.5	29.8	0.0	35.2	28.6	22.4	36.0	26.0	11.4	39.9	28.0	12.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.8	1.0	1.2	1.3	0.2	0.5	1.0	1.9	0.1	11.9	2.0	0.0
Delay (s)	42.3	30.8	1.2	36.5	28.8	22.9	37.0	27.9	11.5	51.7	30.0	12.0
Level of Service	D	C	A	D	C	C	D	C	B	D	C	B
Approach Delay (s)		22.6			29.8			28.6			34.3	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	91.9	Sum of lost time (s)	4.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

5: GRANT LINE RD & NAGLEE ROAD

EXISTING FILIOS-DOBLER - SAT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	395	925	110	0	860	545	0	0	0	770	65	635
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3335	3438	1538		4940	1538				1633	1649	1538
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3335	3438	1538		4940	1538				1633	1649	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	407	954	113	0	887	562	0	0	0	794	67	655
RTOR Reduction (vph)	0	0	41	0	0	0	0	0	0	0	0	262
Lane Group Flow (vph)	407	954	72	0	887	562	0	0	0	429	432	393
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6						4	
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	14.3	50.2	50.2		31.7	90.0				29.9	29.9	29.9
Effective Green, g (s)	14.5	51.5	51.5		33.0	90.0				30.5	30.5	30.5
Actuated g/C Ratio	0.16	0.57	0.57		0.37	1.00				0.34	0.34	0.34
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	537	1967	880		1811	1538				553	559	521
v/s Ratio Prot	c0.12	c0.28			0.18							
v/s Ratio Perm			0.05			0.37				c0.26	0.26	0.26
v/c Ratio	0.76	0.49	0.08		0.49	0.37				0.78	0.77	0.75
Uniform Delay, d1	36.1	11.4	8.6		22.0	0.0				26.7	26.6	26.4
Progression Factor	1.00	1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	6.1	0.9	0.2		1.0	0.7				6.7	6.6	6.1
Delay (s)	42.1	12.3	8.8		23.0	0.7				33.4	33.2	32.5
Level of Service	D	B	A		C	A				C	C	C
Approach Delay (s)		20.2			14.3			0.0			33.0	
Approach LOS		C			B			A			C	

Intersection Summary

HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

6: GRANT LINE RD & I-205 EAST

EXISTING FILIOS-DOBLER - SAT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↘	↑↑			↑↑↑		↘		↘				
Volume (vph)	495	1190	0	0	1235	0	160	0	205	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0				
Lane Util. Factor	1.00	0.95			0.91		1.00		1.00				
Frt	1.00	1.00			1.00		1.00		0.85				
Flt Protected	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (prot)	1719	3438			4940		1719		1538				
Flt Permitted	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (perm)	1719	3438			4940		1719		1538				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	521	1253	0	0	1300	0	168	0	216	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	35	0	0	0	
Lane Group Flow (vph)	521	1253	0	0	1300	0	168	0	181	0	0	0	
Turn Type	Prot							custom		custom			
Protected Phases	5	2						6					
Permitted Phases								8		8			
Actuated Green, G (s)	23.9	45.7						17.6		13.2			
Effective Green, g (s)	24.1	47.0						18.9		13.4			
Actuated g/C Ratio	0.35	0.69						0.28		0.20			
Clearance Time (s)	4.2	5.3						5.3		4.2			
Vehicle Extension (s)	3.0	3.0						3.0		3.0			
Lane Grp Cap (vph)	606	2362						1365		301			
v/s Ratio Prot	c0.30	0.36						c0.26					
v/s Ratio Perm								0.10		c0.12			
v/c Ratio	0.86	0.53						0.95		0.50			
Uniform Delay, d1	20.6	5.3						24.3		24.5			
Progression Factor	1.00	1.00						1.00		1.00			
Incremental Delay, d2	11.7	0.2						14.5		1.2			
Delay (s)	32.3	5.5						38.8		25.7			
Level of Service	C	A						D		C			
Approach Delay (s)	13.4							38.8		27.2		0.0	
Approach LOS	B							D		C		A	

Intersection Summary

HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

1: GRANT LINE RD & BYRON

EXISTING FILIOS-DOBLER - AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	145	280	135	230	255	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.91		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	1538	1656		1719	1810
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1719	1538	1656		1719	1810
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	151	292	141	240	266	125
RTOR Reduction (vph)	0	229	107	0	0	0
Lane Group Flow (vph)	151	63	274	0	266	125
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	9.8	9.8	12.3		11.6	27.9
Effective Green, g (s)	9.8	9.8	12.3		11.6	27.9
Actuated g/C Ratio	0.21	0.21	0.27		0.25	0.61
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	369	330	446		436	1105
v/s Ratio Prot	c0.09		c0.17		c0.15	0.07
v/s Ratio Perm		0.04				
v/c Ratio	0.41	0.19	0.62		0.61	0.11
Uniform Delay, d1	15.5	14.7	14.6		15.1	3.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.7	0.3	2.5		2.5	0.0
Delay (s)	16.2	15.0	17.1		17.6	3.8
Level of Service	B	B	B		B	A
Approach Delay (s)	15.4		17.1			13.2
Approach LOS	B		B			B

Intersection Summary

HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	45.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

1: GRANT LINE RD & BYRON

EXISTING FILIOS-DOBLER - PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	320	415	85	295	430	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.90		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	1538	1620		1719	1810
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1719	1538	1620		1719	1810
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	333	432	89	307	448	156
RTOR Reduction (vph)	0	317	228	0	0	0
Lane Group Flow (vph)	333	115	168	0	448	156
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	13.9	13.9	10.0		16.2	30.2
Effective Green, g (s)	13.9	13.9	10.0		16.2	30.2
Actuated g/C Ratio	0.27	0.27	0.19		0.31	0.58
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	459	410	311		535	1049
v/s Ratio Prot	c0.19		c0.10		c0.26	0.09
v/s Ratio Perm		0.07				
v/c Ratio	0.73	0.28	0.54		0.84	0.15
Uniform Delay, d1	17.4	15.1	19.0		16.7	5.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.6	0.4	1.9		11.0	0.1
Delay (s)	23.0	15.5	20.9		27.7	5.1
Level of Service	C	B	C		C	A
Approach Delay (s)	18.8		20.9			21.9
Approach LOS	B		C			C

Intersection Summary

HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

## APPENDIX A-4

Byron Road /Grant Line Road

- Signal and Striping Plan
- LOS Analysis Worksheet

## Arshad Syed - FW: Byron and grant Line PDF files

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**From:** "Ripon Bhatia" <Ripon.Bhatia@ci.tracy.ca.us>  
**To:** "Arshad Syed" <asyed@rbf.com>  
**Date:** 1/24/2011 1:36 PM  
**Subject:** FW: Byron and grant Line PDF files  
**Attachments:** TYPICAL SECT.pdf; TITLE.pdf; SUMMARY QUANT.pdf; STRIPING.pdf; SIGNAL PLAN.pdf; PLAN1.pdf; CONST DET.pdf

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Arshad

Attached please find the design plans for the intersection improvements at byron and Grant line Road that are being proposed by the San Joaquin County as we discussed. Let me know should you have any question or concern. Hope this helps.

RIPON BHATIA

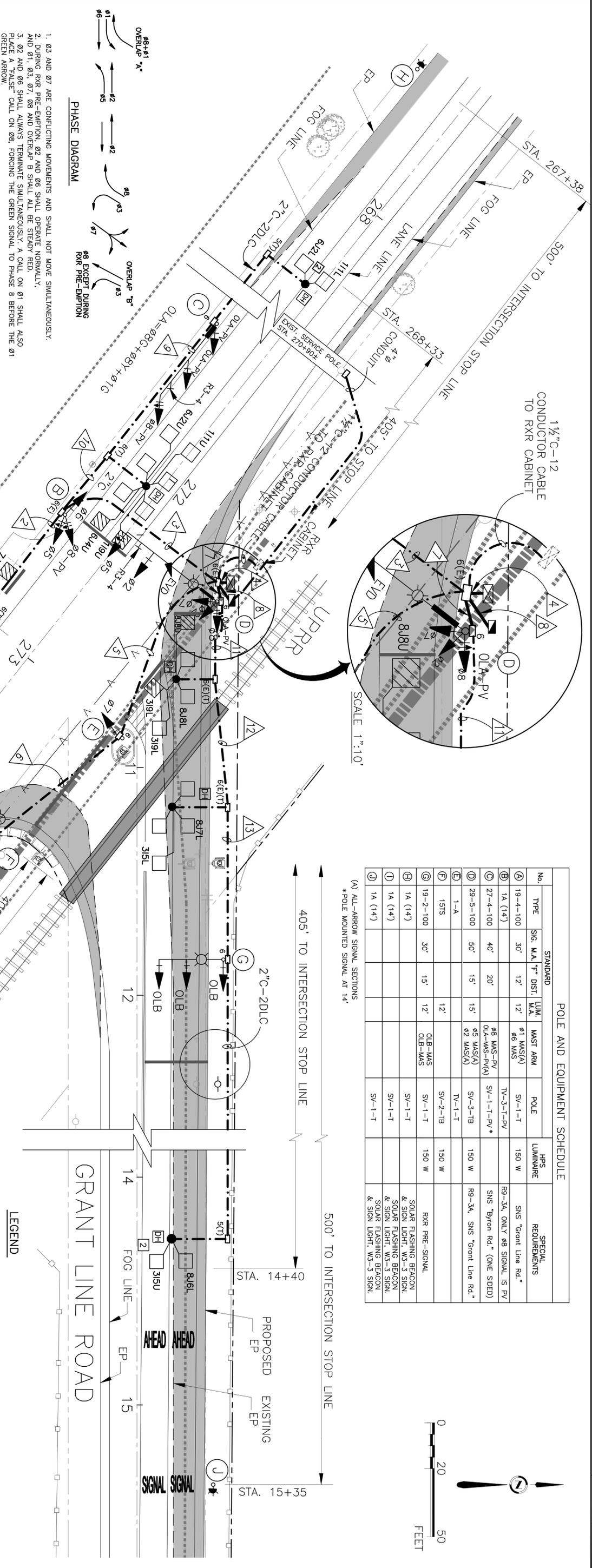
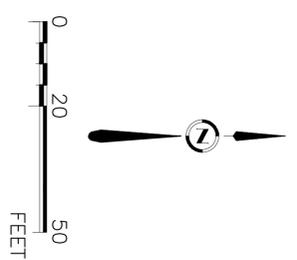
DEVELOPMENT & ENGINEERING SERVICES

325 CIVIC CENTER PLAZA. TRACY, CA 95376

Ph (209) 831-6455; Fax (209) 831-4636

POLE AND EQUIPMENT SCHEDULE						
STANDARD			SPECIAL REQUIREMENTS			
No.	TYPE	SIG. M.A. 1"= DIST.	LUM. M.A. 1"= DIST.	MAST ARM	POLE	HPS LUMINAIRE
(A)	19-4-100	30'	12'	Ø1 MAST(A)	SV-1-1	150 W
(B)	1A (1+4)	40'	20'	Ø8 MAST-PV Ø6 MAST	TV-3-T-PV	R9-3A, ONLY Ø8 SIGNAL IS PV
(C)	27-4-100	40'	20'	Ø8 MAST-PV Ø4-MAST-PV(A)	SV-1-T-PV*	SNS "Byron Rd." (ONE SIDED)
(D)	29-5-100	50'	15'	Ø5 MAST(A) Ø2 MAST(A)	SV-3-TB	SNS "Grant Line Rd."
(E)	1-A	15'	12'	TV-1-1	TV-1-1	
(F)	1S15	15'	12'	Ø1B-MA5 Ø1B-MA5	SV-2-TB	150 W
(G)	19-2-100	30'	15'	Ø1B-MA5 Ø1B-MA5	SV-1-1	150 W
(H)	1A (1+4)	40'	20'	Ø8 MAST-PV Ø4-MAST-PV(A)	SV-1-1	SOLAR FLASHING BEACON & SIGN LIGHT, W3-3 SIGN
(I)	1A (1+4)	40'	20'	Ø8 MAST-PV Ø4-MAST-PV(A)	SV-1-1	SOLAR FLASHING BEACON & SIGN LIGHT, W3-3 SIGN
(J)	1A (1+4)	40'	20'	Ø8 MAST-PV Ø4-MAST-PV(A)	SV-1-1	SOLAR FLASHING BEACON & SIGN LIGHT, W3-3 SIGN

(A) ALL-ARROW SIGNAL SECTIONS  
\*POLE MOUNTED SIGNAL AT 14'



1. Ø3 AND Ø7 ARE CONFLICTING MOVEMENTS AND SHALL NOT MOVE SIMULTANEOUSLY.
2. DURING RXR PRE-EMPTION, Ø2 AND Ø6 SHALL OPERATE NORMALLY, AND Ø1, Ø3, Ø7, Ø8 AND OVERLAP B SHALL ALL BE STEADY RED.
3. Ø2 AND Ø6 SHALL ALWAYS TERMINATE SIMULTANEOUSLY. A CALL ON Ø1 SHALL ALSO PLACE A "FALSE" CALL ON Ø8, FORCING THE GREEN SIGNAL TO PHASE 8 BEFORE THE Ø1 GREEN ARROW.

CONDUCTOR SCHEDULE		CONDUIT SIZE & RUN NUMBER	
AWG SIZE	POLE CIRCUIT	CONDUIT SIZE	RUN NUMBER
3-12 CONDUCTOR CABLE	POLE A	0-1 0-1 0-1 0-1	0-1 0-1
	POLE B	1-1 1-1 1-1	1-1 1-1
	POLE C	0-1 0-1 0-1	0-1 0-1
	POLE D	1-1 1-1 1-1	1-1 1-1
	POLE E	0-1 0-1 0-1	0-1 0-1
	POLE F	1-1 1-1 1-1	1-1 1-1
	POLE G	0-1 0-1 0-1	0-1 0-1
	POLE H(J) (SOLAR)	0-1 0-1 0-1 0-1 0-1 0-1	0-1 0-1 0-1 0-1 0-1 0-1
	TOTAL CABLES	0-1 0-1 1-3 3-7 1-2 1-1 1-2	0-1 0-1 0-1 0-1 0-1 0-1
	NO. 12 AVG LUMINAIRES	2 2 2 2 2 2 2	2 2 2 2 2 2 2
	NO. 10 AVG RXR PRE-EMPT SERVICE	1 1 1 1 1 1 1	1 1 1 1 1 1 1
	NO. 6 AVG DETECTOR	3 3 3 3 3 3 3	2 1 3 3 2 1 3
	DIC	2 2 2 2 2 2 2	3 2 1 3 2 1 3
	TOTAL DIC	1 1 1 1 1 1 1	4 2 1 4 2 1 4
	EMERGENCY VEHICLE CABLE	1 1 1 1 1 1 1	2 6 7 4 2 2
	TOTAL EV CONDUIT SIZE	2" 2" 2" 2" 2" 2" 2"	4" 4" 4" 4" 4" 4" 4"

- 1) FOR Ø2, INSTALL PULL BOX MIDWAY BETWEEN ADJACENT PULL BOXES.
- 2) FOR Ø1, Ø2, Ø6 AND Ø8, ADVANCE DETECTOR LOOPS SHALL HAVE 4 TURNS.
- 3) ONE 3-CONDUCTOR CABLE TO POLES B, D AND F SHALL BE LABELED "SPARES".
- 4) ADVANCE LOOP DETECTORS SHALL HAVE 4 WINDING OF DETECTOR WIRE.



Wilbur Elias Registered Traffic Engineer  
 Wilbur Elias Registered Electrical Engineer  
 Wilbur Elias Registered Civil Engineer

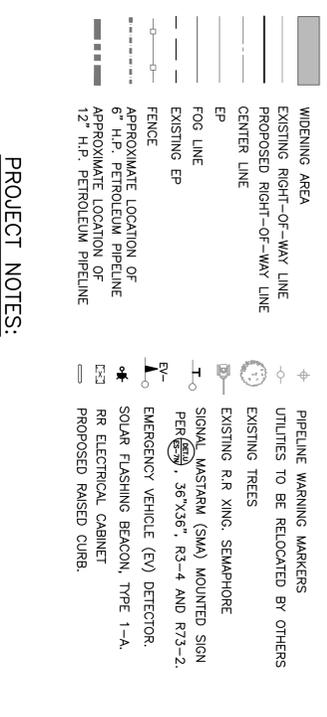
DRAWN BY	DATE	PROJECT ENGINEER	DATE	CHECKED	DATE	APPROVAL RECOMMENDED	DATE
Enrique Silva	06/10						
FILE NAME	DRAWER	SHEET NO.	ACAD	REVISIONS	DATE		

COUNTY OF SAN JOAQUIN SCALE 1" = 20'

TRAFFIC SIGNAL PLAN

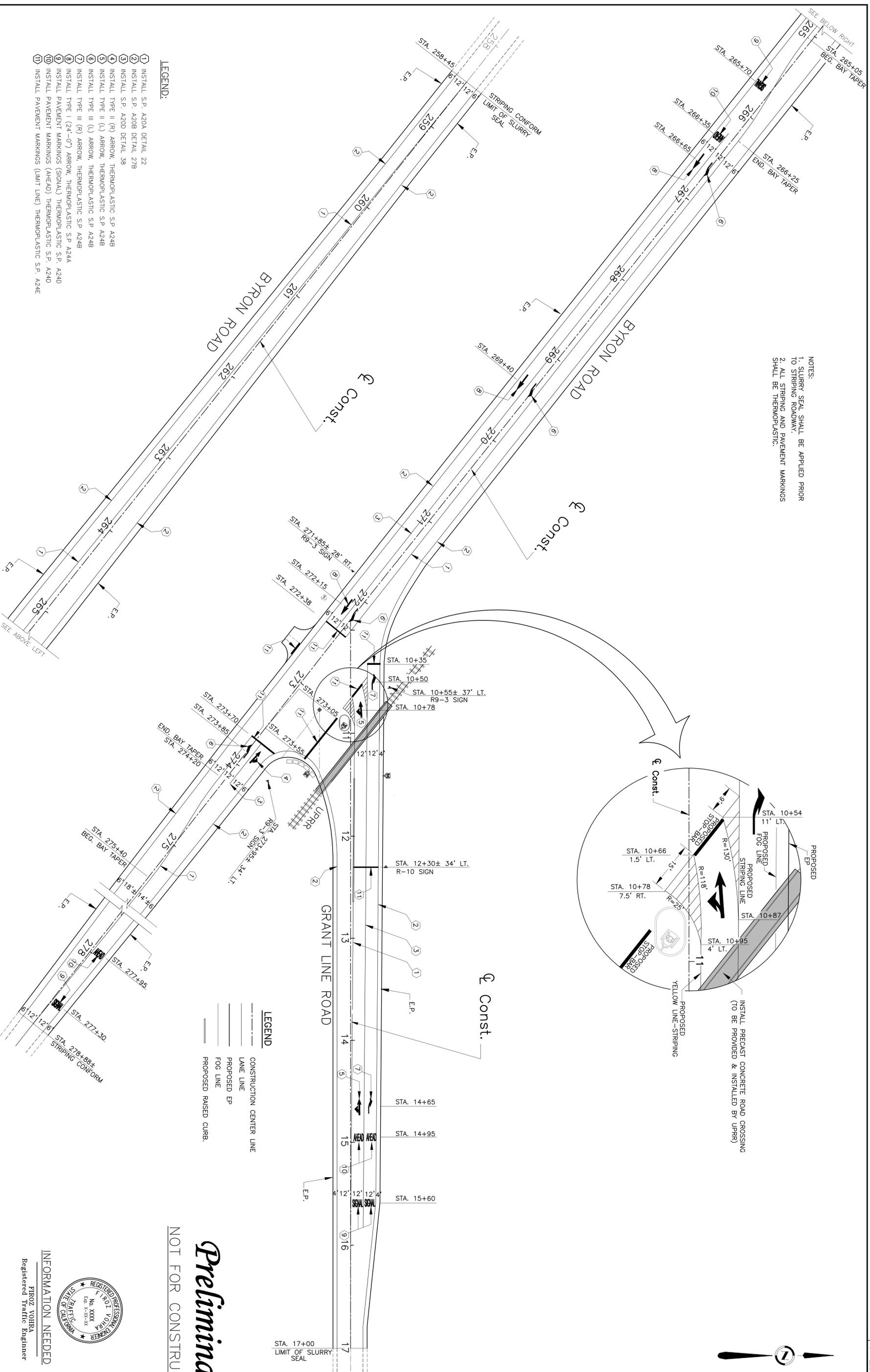
BYRON ROAD AND GRANT LINE ROAD INTERSECTION IMPROVEMENTS

SHEET NO.	TOTAL SHEETS
5	7



- PROJECT NOTES:**
- 1) (POLE), 120/240 V, 1 PHASE, 3 WIRES SERVICE LOAD: TRAFFIC SIGNAL SYSTEM (120 V), APPROX. 300 WATTS, 4-200W, HPS LUMINAIRES, (240 TOTAL LOAD: 1,200W WATTS, EXISTING POLE FOR ELECTRICAL RISER, RISER LOCATION ON THE POLE, SIZE AND HEIGHT SHALL MEET PACIFIC GAS AND ELECTRIC (PG&E) SPECIFICATION).
  - 2) TYPE III-AF SERVICE ENCLOSURE (SEE ES-20). PROVIDE ITEMS 1 THRU 8, 13, 15 THRU 17, AND 20 THRU 23, REC TYPE V, ADD BATTERY BACKUP SYSTEM (BBS) WITH BATTERIES, INVERTER/CHARGER AND WIRING.
  - 3) MODEL 332 CABINET WITH TYPE 2070 CONTROLLER ASSEMBLY, B1 TRANS 200 CA SOFTWARE AND AUXILIARY EQUIPMENT TO FACILITATE THE 5 SIGNAL PHASE OPERATION. PRIOR TO INSTALLATION CONTRACTOR SHALL HAVE CABINET AND CONTROLLER TESTED PER CALTRANS STANDARD SPECIFICATIONS AND SUPPLY THE COUNTY OF SAN JOAQUIN CONSTRUCTION INSPECTOR WITH A CERTIFICATE OF COMPLIANCE.
  - 4) ADVANCE LOOP DETECTORS SHALL HAVE 4 WINDING OF DETECTOR WIRE.

NOTES:  
 1. SLURRY SEAL SHALL BE APPLIED PRIOR TO STRIPING ROADWAY.  
 2. ALL STRIPING AND PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.



**LEGEND:**

- ① INSTALL S.P. A20A DETAIL 22
- ② INSTALL S.P. A20B DETAIL 27B
- ③ INSTALL S.P. A20D DETAIL 3B
- ④ INSTALL TYPE II (R) ARROW, THERMOPLASTIC S.P. A24B
- ⑤ INSTALL TYPE II (L) ARROW, THERMOPLASTIC S.P. A24B
- ⑥ INSTALL TYPE III (L) ARROW, THERMOPLASTIC S.P. A24B
- ⑦ INSTALL TYPE III (R) ARROW, THERMOPLASTIC S.P. A24B
- ⑧ INSTALL TYPE I (24"-0") ARROW, THERMOPLASTIC S.P. A24A
- ⑨ INSTALL PAVEMENT MARKINGS (SIGNAL) THERMOPLASTIC S.P. A24D
- ⑩ INSTALL PAVEMENT MARKINGS (AHEAD) THERMOPLASTIC S.P. A24D
- ⑪ INSTALL PAVEMENT MARKINGS (LIMIT LINE) THERMOPLASTIC S.P. A24E

- LEGEND**
- CONSTRUCTION CENTER LINE
  - LANE LINE
  - PROPOSED EP
  - FOG LINE
  - PROPOSED RAISED CURB.

DRAWN BY	DATE	PROJECT ENGINEER	DATE	CHECKED	DATE	APPROVAL RECOMMENDED	DATE
Enrique Silva	06/10						
FILE NAME	DRAWER	SHEET NO.	ACAD	REVISIONS	DATE		
E:\proj\2010\Byron-Grant Line Rd\All Plans\Str Plan							

COUNTY OF SAN JOAQUIN

SCALE  
1" = 40'

SIGNING AND STRIPING PLAN

BYRON ROAD AND GRANT LINE ROAD  
INTERSECTION IMPROVEMENTS

SHEET NO.	TOTAL SHEETS
4	7

INFORMATION NEEDED  
 FIRDZ VOHRA  
 Registered Traffic Engineer



*Preliminary*  
 NOT FOR CONSTRUCTION

1: GRANT LINE RD & BYRON

EXISTING FILIOS-DOBLER - AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	145	280	135	230	255	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.91		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	1538	1656		1719	1810
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1719	1538	1656		1719	1810
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	151	292	141	240	266	125
RTOR Reduction (vph)	0	229	107	0	0	0
Lane Group Flow (vph)	151	63	274	0	266	125
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	9.8	9.8	12.3		11.6	27.9
Effective Green, g (s)	9.8	9.8	12.3		11.6	27.9
Actuated g/C Ratio	0.21	0.21	0.27		0.25	0.61
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	369	330	446		436	1105
v/s Ratio Prot	c0.09		c0.17		c0.15	0.07
v/s Ratio Perm		0.04				
v/c Ratio	0.41	0.19	0.62		0.61	0.11
Uniform Delay, d1	15.5	14.7	14.6		15.1	3.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.7	0.3	2.5		2.5	0.0
Delay (s)	16.2	15.0	17.1		17.6	3.8
Level of Service	B	B	B		B	A
Approach Delay (s)	15.4		17.1			13.2
Approach LOS	B		B			B

Intersection Summary

HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	45.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

1: GRANT LINE RD & BYRON

EXISTING FILIOS-DOBLER - PM



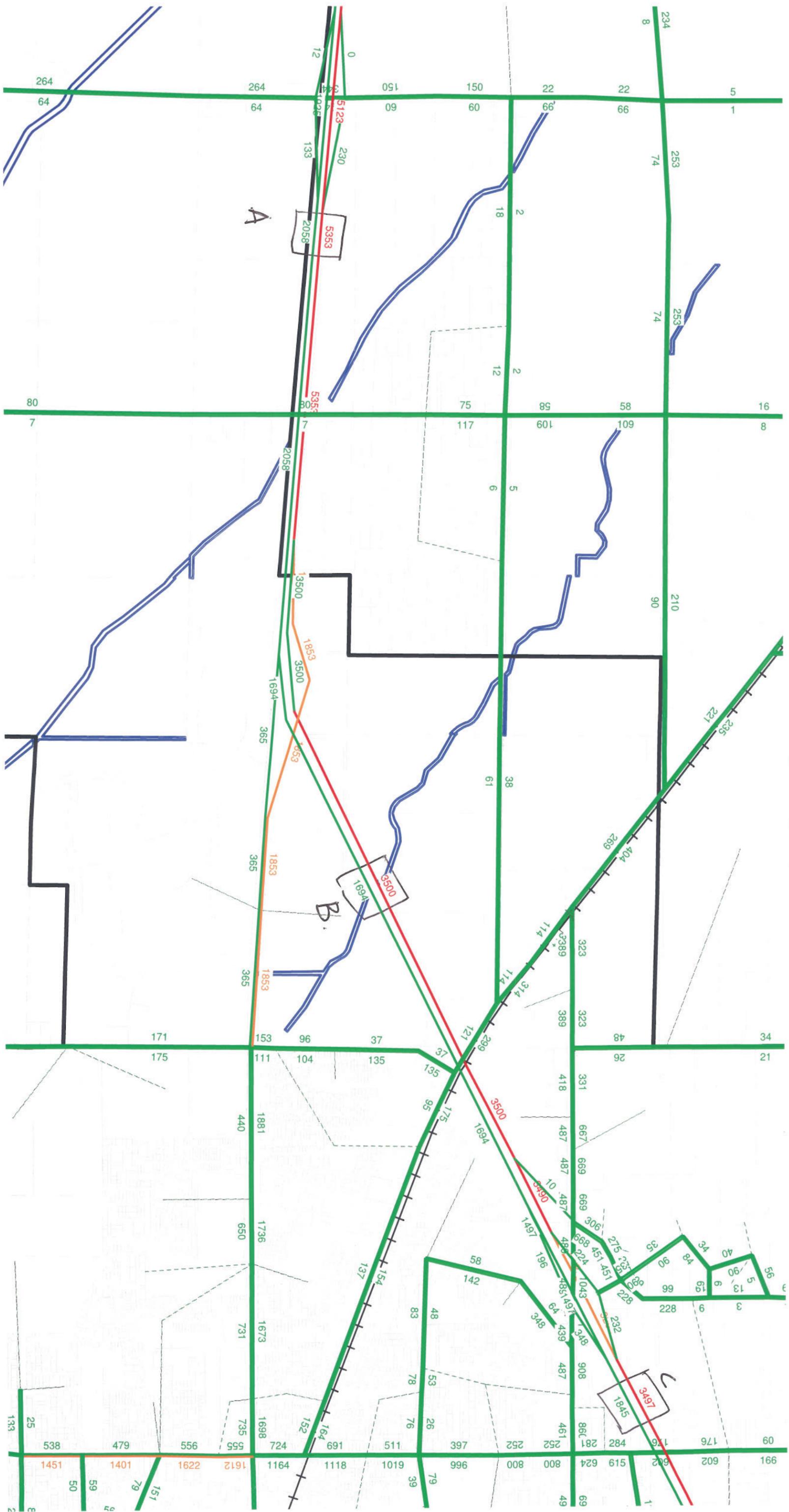
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	320	415	85	295	430	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.90		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	1538	1620		1719	1810
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1719	1538	1620		1719	1810
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	333	432	89	307	448	156
RTOR Reduction (vph)	0	317	228	0	0	0
Lane Group Flow (vph)	333	115	168	0	448	156
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	13.9	13.9	10.0		16.2	30.2
Effective Green, g (s)	13.9	13.9	10.0		16.2	30.2
Actuated g/C Ratio	0.27	0.27	0.19		0.31	0.58
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	459	410	311		535	1049
v/s Ratio Prot	c0.19		c0.10		c0.26	0.09
v/s Ratio Perm		0.07				
v/c Ratio	0.73	0.28	0.54		0.84	0.15
Uniform Delay, d1	17.4	15.1	19.0		16.7	5.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.6	0.4	1.9		11.0	0.1
Delay (s)	23.0	15.5	20.9		27.7	5.1
Level of Service	C	B	C		C	A
Approach Delay (s)	18.8		20.9			21.9
Approach LOS	B		C			C

Intersection Summary

HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

## **APPENDIX A-5**

### **Existing Conditions Freeway Segment Volumes**



2009 - AM - VOL

A

B

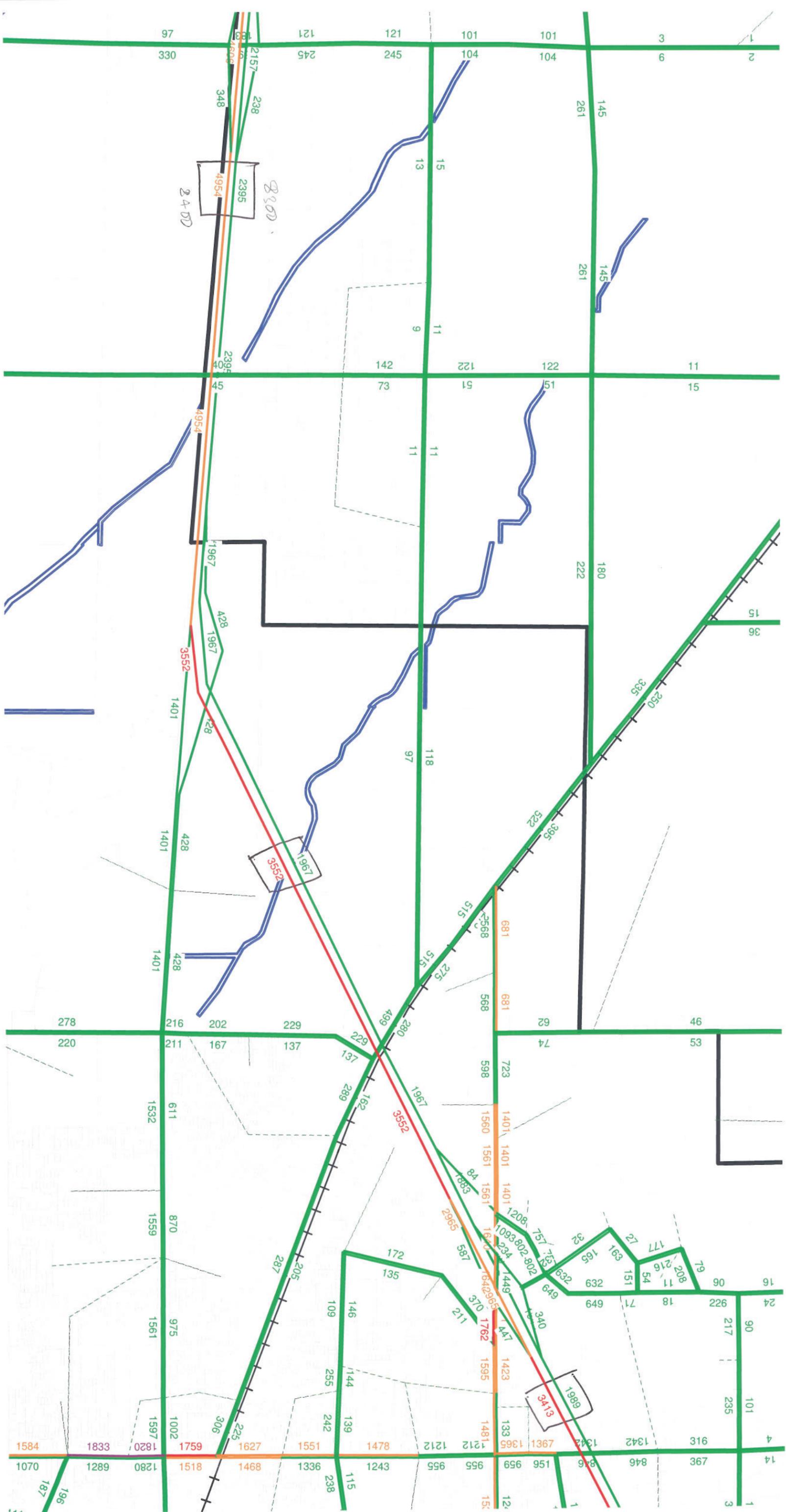
C

5353

3300

3497  
1845

264 64 264 64 091 150 22 22 5 1  
 12 0 5123 230 133 2058 18 2 253 74 253 74 8  
 80 7 80 7 75 117 89 601 58 109 16 8  
 2058 7 2058 7 6 5 6 5 210 90 253 74  
 13500 1853 3500 1694 365 1853 365 1853 365  
 1694 365 1853 365 171 175 153 96 37 37 35 121 299 323 389 323 48 26 34 21  
 111 104 135 37 135 95 175 1694 389 323 418 667 669 669 306 275 235 35 34 40 56  
 440 1881 1736 650 1736 1673 731 137 154 58 142 196 1497 487 487 487 10 487 568 451 451 228 228 228  
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2009 - PM-VOL

## **APPENDIX A-6**

### **Near Term Conditions LOS Analysis Worksheets**



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	145	280	135	230	255	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.91		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	1538	1656		1719	1810
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1719	1538	1656		1719	1810
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	174	335	162	276	305	144
RTOR Reduction (vph)	0	263	104	0	0	0
Lane Group Flow (vph)	174	72	334	0	305	144
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	10.6	10.6	14.1		12.6	30.7
Effective Green, g (s)	10.6	10.6	14.1		12.6	30.7
Actuated g/C Ratio	0.22	0.22	0.29		0.26	0.62
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	370	331	474		439	1127
v/s Ratio Prot	c0.10		c0.20		c0.18	0.08
v/s Ratio Perm		0.05				
v/c Ratio	0.47	0.22	0.70		0.69	0.13
Uniform Delay, d1	16.9	15.9	15.7		16.6	3.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.9	0.3	4.7		4.7	0.1
Delay (s)	17.8	16.3	20.4		21.3	3.9
Level of Service	B	B	C		C	A
Approach Delay (s)	16.8		20.4			15.7
Approach LOS	B		C			B

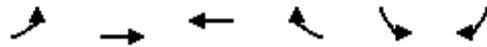
**Intersection Summary**

HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	49.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

2: GRANT LINE RD & S Lammers Rd

NEAR TERM FILIOS-DOBLER - AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	15	435	445	15	25	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	18	527	539	18	30	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			492			
pX, platoon unblocked	0.82				0.82	0.82
vC, conflicting volume	557				1111	548
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	344				1023	333
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				85	97
cM capacity (veh/h)	978				206	573

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	545	557	48
Volume Left	18	0	30
Volume Right	0	18	18
cSH	978	1700	272
Volume to Capacity	0.02	0.33	0.18
Queue Length 95th (ft)	1	0	16
Control Delay (s)	0.5	0.0	21.1
Lane LOS	A		C
Approach Delay (s)	0.5	0.0	21.1
Approach LOS			C

Intersection Summary			
Average Delay		1.1	
Intersection Capacity Utilization		50.3%	ICU Level of Service
Analysis Period (min)		15	A

### 3: GRANT LINE RD & COSTCO DVWY.

NEAR TERM FILIOS-DOBLER - AM



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↙	↑↑	↙	↗
Volume (vph)	490	45	60	435	20	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4878		1719	3438	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4878		1719	3438	1719	1538
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor (vph)	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	619	57	76	550	25	57
RTOR Reduction (vph)	19	0	0	0	0	31
Lane Group Flow (vph)	657	0	76	550	25	26
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	15.1		5.6	24.7	27.3	27.3
Effective Green, g (s)	15.1		5.6	24.7	27.3	27.3
Actuated g/C Ratio	0.25		0.09	0.41	0.46	0.46
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1228		160	1415	782	700
v/s Ratio Prot	c0.13		0.04	c0.16	0.01	
v/s Ratio Perm						c0.02
v/c Ratio	0.53		0.48	0.39	0.03	0.04
Uniform Delay, d1	19.4		25.8	12.4	9.0	9.1
Progression Factor	1.00		1.39	1.28	1.00	1.00
Incremental Delay, d2	0.5		2.1	0.2	0.1	0.1
Delay (s)	19.9		38.0	15.9	9.1	9.2
Level of Service	B		D	B	A	A
Approach Delay (s)	19.9			18.6	9.1	
Approach LOS	B			B	A	

#### Intersection Summary

HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	29.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

4: GRANT LINE RD & WALMART DVWY.

NEAR TERM FILIOS-DOBLER - AM



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↘	↑↑	↘	↗
Volume (vph)	515	30	75	485	15	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4899		1719	3438	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4899		1719	3438	1719	1538
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor (vph)	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	673	39	98	634	20	85
RTOR Reduction (vph)	11	0	0	0	0	50
Lane Group Flow (vph)	701	0	98	634	20	35
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	15.6		7.6	27.2	24.8	24.8
Effective Green, g (s)	15.6		7.6	27.2	24.8	24.8
Actuated g/C Ratio	0.26		0.13	0.45	0.41	0.41
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1274		218	1559	711	636
v/s Ratio Prot	c0.14		0.06	c0.18	0.01	
v/s Ratio Perm						c0.02
v/c Ratio	0.55		0.45	0.41	0.03	0.06
Uniform Delay, d1	19.2		24.3	11.0	10.4	10.6
Progression Factor	1.85		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5		1.5	0.2	0.1	0.2
Delay (s)	35.9		25.7	11.2	10.5	10.7
Level of Service	D		C	B	B	B
Approach Delay (s)	35.9			13.1	10.7	
Approach LOS	D			B	B	

Intersection Summary

HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	30.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

5: GRANT LINE RD & NAGLEE ROAD

NEAR TERM FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↕	↖		↕↕↕	↖				↖	↕	↖
Volume (vph)	130	410	75	0	430	335	0	0	0	270	50	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (prot)	3335	3438	1538		4940	1538				1633	1662	1538
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (perm)	3335	3438	1538		4940	1538				1633	1662	1538
Peak-hour factor, PHF	0.92	0.92	0.92	1.00	0.92	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Growth Factor (vph)	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	162	512	94	0	538	385	0	0	0	338	62	312
RTOR Reduction (vph)	0	0	30	0	0	0	0	0	0	0	0	245
Lane Group Flow (vph)	162	512	64	0	538	385	0	0	0	199	201	67
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6							4
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	9.0	49.6	49.6		36.4	75.0				15.5	15.5	15.5
Effective Green, g (s)	9.2	50.9	50.9		37.7	75.0				16.1	16.1	16.1
Actuated g/C Ratio	0.12	0.68	0.68		0.50	1.00				0.21	0.21	0.21
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	409	2333	1044		2483	1538				351	357	330
v/s Ratio Prot	c0.05	0.15			0.11							
v/s Ratio Perm			0.04			c0.25				c0.12	0.12	0.04
v/c Ratio	0.40	0.22	0.06		0.22	0.25				0.57	0.56	0.20
Uniform Delay, d1	30.3	4.5	4.0		10.4	0.0				26.3	26.3	24.2
Progression Factor	1.00	1.00	1.00		1.81	1.00				1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	0.1		0.2	0.4				2.1	2.0	0.3
Delay (s)	31.0	4.8	4.2		19.0	0.4				28.4	28.3	24.5
Level of Service	C	A	A		B	A				C	C	C
Approach Delay (s)		10.2			11.2			0.0			26.7	
Approach LOS		B			B			A			C	

Intersection Summary

HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

6: GRANT LINE RD & I-205 EAST

NEAR TERM FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑↑		↘		↘			
Volume (vph)	235	430	0	0	730	0	45	0	100	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0			
Lane Util. Factor	1.00	0.95			0.91		1.00		1.00			
Frt	1.00	1.00			1.00		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	1719	3438			4940		1719		1538			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1719	3438			4940		1719		1538			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (vph)	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	284	521	0	0	884	0	54	0	121	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	110	0	0	0
Lane Group Flow (vph)	284	521	0	0	884	0	54	0	11	0	0	0
Turn Type	Prot						custom		custom			
Protected Phases	5	2			6							
Permitted Phases							8		8			
Actuated Green, G (s)	24.2	58.7			30.3		6.8		6.8			
Effective Green, g (s)	24.4	60.0			31.6		7.0		7.0			
Actuated g/C Ratio	0.33	0.80			0.42		0.09		0.09			
Clearance Time (s)	4.2	5.3			5.3		4.2		4.2			
Vehicle Extension (s)	3.0	3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)	559	2750			2081		160		144			
v/s Ratio Prot	c0.17	0.15			c0.18							
v/s Ratio Perm							c0.03		0.01			
v/c Ratio	0.51	0.19			0.42		0.34		0.08			
Uniform Delay, d1	20.4	1.8			15.3		31.8		31.1			
Progression Factor	1.45	0.56			1.00		1.00		1.00			
Incremental Delay, d2	0.7	0.1			0.6		1.3		0.2			
Delay (s)	30.3	1.1			15.9		33.1		31.3			
Level of Service	C	A			B		C		C			
Approach Delay (s)		11.4			15.9			31.8			0.0	
Approach LOS		B			B			C			A	

Intersection Summary

HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

7: GRANT LINE RD & CORRAL HOLLOW RD

NEAR TERM FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	210	90	145	395	40	365	250	205	20	145	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		0.94	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1719	3438	2707	1719	3391		4848	3438	1538	1719	3248	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1719	3438	2707	1719	3391		4848	3438	1538	1719	3248	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	50	262	112	181	494	50	456	312	256	25	181	106
RTOR Reduction (vph)	0	0	81	0	8	0	0	0	169	0	79	0
Lane Group Flow (vph)	50	262	31	181	536	0	456	312	87	25	208	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	3.3	14.1	14.1	7.1	17.9		6.1	17.7	17.7	1.0	12.6	
Effective Green, g (s)	5.3	16.1	16.1	9.1	19.9		8.1	19.7	19.7	3.0	14.6	
Actuated g/C Ratio	0.09	0.28	0.28	0.16	0.34		0.14	0.34	0.34	0.05	0.25	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	157	956	753	270	1165		678	1170	523	89	819	
v/s Ratio Prot	0.03	0.08		c0.11	c0.16		c0.09	c0.09		0.01	0.06	
v/s Ratio Perm			0.01						0.06			
v/c Ratio	0.32	0.27	0.04	0.67	0.46		0.67	0.27	0.17	0.28	0.25	
Uniform Delay, d1	24.6	16.3	15.3	23.0	14.8		23.6	13.9	13.4	26.4	17.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.2	0.0	6.4	0.3		2.6	0.1	0.2	1.7	0.2	
Delay (s)	25.8	16.5	15.3	29.4	15.1		26.3	14.0	13.5	28.1	17.5	
Level of Service	C	B	B	C	B		C	B	B	C	B	
Approach Delay (s)		17.3			18.7			19.3			18.3	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	4.0
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	170	105	35	185	205	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.95		1.00	1.00	0.99	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	1716		1719	1810	1707	
Flt Permitted	1.00		0.95	1.00	0.96	
Satd. Flow (perm)	1716		1719	1810	1707	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor (vph)	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	220	136	45	239	265	32
RTOR Reduction (vph)	38	0	0	0	7	0
Lane Group Flow (vph)	318	0	45	239	290	0
Turn Type			Prot			
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	12.7		1.6	18.3	12.6	
Effective Green, g (s)	12.7		1.6	18.3	12.6	
Actuated g/C Ratio	0.33		0.04	0.47	0.32	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	560		71	851	553	
v/s Ratio Prot	c0.19		c0.03	0.13	c0.17	
v/s Ratio Perm						
v/c Ratio	0.57		0.63	0.28	0.52	
Uniform Delay, d1	10.8		18.4	6.3	10.7	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.3		17.0	0.2	0.9	
Delay (s)	12.2		35.4	6.5	11.6	
Level of Service	B		D	A	B	
Approach Delay (s)	12.2			11.0	11.6	
Approach LOS	B			B	B	

**Intersection Summary**

HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	38.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

9: BYRON & CORRAL HOLLOW RD

NEAR TERM FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	340	5	250	5	5	5	185	960	5	0	725	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95			0.95	
Frt	1.00	0.85			0.96		1.00	1.00			0.97	
Flt Protected	0.95	1.00			0.98		0.95	1.00			1.00	
Satd. Flow (prot)	1719	1544			1700		1719	3435			3325	
Flt Permitted	0.74	1.00			0.91		0.95	1.00			1.00	
Satd. Flow (perm)	1346	1544			1568		1719	3435			3325	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor (vph)	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	460	7	338	7	7	7	250	1299	7	0	981	277
RTOR Reduction (vph)	0	222	0	0	5	0	0	0	0	0	29	0
Lane Group Flow (vph)	460	123	0	0	16	0	250	1306	0	0	1230	0
Turn Type	Perm		Perm				Prot					
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8								
Actuated Green, G (s)	31.0	31.0			31.0		14.0	51.0			33.0	
Effective Green, g (s)	31.0	31.0			31.0		14.0	51.0			33.0	
Actuated g/C Ratio	0.34	0.34			0.34		0.16	0.57			0.37	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	464	532			540		267	1947			1219	
v/s Ratio Prot		0.08					c0.15	0.38			c0.37	
v/s Ratio Perm	c0.34			0.01								
v/c Ratio	0.99	0.23		0.03			0.94	0.67			1.01	
Uniform Delay, d1	29.4	21.0		19.5			37.6	13.6			28.5	
Progression Factor	1.00	1.00		1.00			1.00	1.00			1.00	
Incremental Delay, d2	39.4	0.2		0.0			37.9	1.9			27.9	
Delay (s)	68.7	21.2		19.6			75.5	15.5			56.4	
Level of Service	E	C		B			E	B			E	
Approach Delay (s)		48.4		19.6				25.1			56.4	
Approach LOS		D		B				C			E	

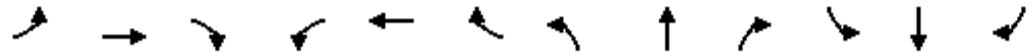
Intersection Summary

HCM Average Control Delay	41.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

10: ELEVENTH ST. & LAMMERS RD

NEAR TERM FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↗↗↗	↖	↖	↗↗↗	↖	↖↖	↗↗	↖	↖↖	↗	↖
Volume (vph)	10	230	95	330	1030	95	110	160	450	65	140	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	1719	4940	1538	3335	3438	1538	3335	1810	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	1719	4940	1538	3335	3438	1538	3335	1810	1538
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor (vph)	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	14	319	132	457	1427	132	152	222	623	90	194	97
RTOR Reduction (vph)	0	0	105	0	0	44	0	0	412	0	0	51
Lane Group Flow (vph)	14	319	27	457	1427	88	152	222	211	90	194	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.0	16.2	16.2	26.9	42.1	42.1	8.9	20.5	20.5	6.4	18.0	18.0
Effective Green, g (s)	3.1	18.3	18.3	29.0	44.2	44.2	11.0	22.6	22.6	8.5	20.1	20.1
Actuated g/C Ratio	0.04	0.21	0.21	0.33	0.50	0.50	0.12	0.26	0.26	0.10	0.23	0.23
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	117	1027	320	566	2481	772	417	883	395	322	413	351
v/s Ratio Prot	0.00	0.06		c0.27	c0.29		c0.05	0.06		0.03	0.11	
v/s Ratio Perm			0.02			0.06			c0.14			0.03
v/c Ratio	0.12	0.31	0.09	0.81	0.58	0.11	0.36	0.25	0.53	0.28	0.47	0.13
Uniform Delay, d1	41.1	29.5	28.1	26.9	15.3	11.6	35.3	26.0	28.2	36.9	29.3	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.2	0.1	8.3	0.3	0.1	0.5	0.2	1.4	0.5	0.8	0.2
Delay (s)	41.6	29.7	28.2	35.2	15.7	11.6	35.8	26.1	29.6	37.4	30.2	27.2
Level of Service	D	C	C	D	B	B	D	C	C	D	C	C
Approach Delay (s)		29.6			19.8			29.8			31.1	
Approach LOS		C			B			C			C	

Intersection Summary

HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	3.8
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

11: ELEVENTH ST. & CORRAL HOLLOW RD

NEAR TERM FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	445	205	180	615	225	445	865	190	275	500	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3335	3438	1538	3335	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3335	3438	1538	3335	3438	1538
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor (vph)	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	213	575	265	233	795	291	575	1118	246	355	646	220
RTOR Reduction (vph)	0	0	0	0	0	191	0	0	96	0	0	115
Lane Group Flow (vph)	213	575	265	233	795	100	575	1118	150	355	646	105
Turn Type	Prot		Free	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			Free			6			4			8
Actuated Green, G (s)	8.1	23.6	100.8	8.1	23.6	23.6	20.3	38.2	38.2	12.9	30.8	30.8
Effective Green, g (s)	10.1	25.6	100.8	10.1	25.6	25.6	22.3	40.2	40.2	14.9	32.8	32.8
Actuated g/C Ratio	0.10	0.25	1.00	0.10	0.25	0.25	0.22	0.40	0.40	0.15	0.33	0.33
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	334	1255	1538	334	1255	391	738	1371	613	493	1119	500
v/s Ratio Prot	0.06	0.12		c0.07	c0.16		c0.17	c0.33		0.11	0.19	
v/s Ratio Perm			0.17			0.07			0.10			0.07
v/c Ratio	0.64	0.46	0.17	0.70	0.63	0.26	0.78	0.82	0.25	0.72	0.58	0.21
Uniform Delay, d1	43.6	31.7	0.0	43.9	33.4	30.0	36.9	27.0	20.2	41.0	28.2	24.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.3	0.2	6.2	1.1	0.3	5.2	3.9	0.2	5.1	0.7	0.2
Delay (s)	47.6	32.0	0.2	50.1	34.5	30.3	42.1	30.9	20.4	46.1	29.0	24.8
Level of Service	D	C	A	D	C	C	D	C	C	D	C	C
Approach Delay (s)		27.2			36.3			32.9			33.2	
Approach LOS		C			D			C			C	

Intersection Summary

HCM Average Control Delay	32.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	100.8	Sum of lost time (s)	7.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

1: GRANT LINE RD & BYRON

NEAR TERM FILIOS-DOBLER - PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	320	415	85	295	430	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.90		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	1538	1620		1719	1810
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1719	1538	1620		1719	1810
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	383	497	102	353	515	180
RTOR Reduction (vph)	0	367	172	0	0	0
Lane Group Flow (vph)	383	130	283	0	515	180
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	18.0	18.0	15.4		23.3	42.7
Effective Green, g (s)	18.0	18.0	15.4		23.3	42.7
Actuated g/C Ratio	0.26	0.26	0.22		0.34	0.62
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	450	403	363		583	1125
v/s Ratio Prot	c0.22		c0.17		c0.30	0.10
v/s Ratio Perm		0.08				
v/c Ratio	0.85	0.32	0.78		0.88	0.16
Uniform Delay, d1	24.1	20.4	25.1		21.4	5.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	14.3	0.5	10.1		14.7	0.1
Delay (s)	38.4	20.9	35.2		36.2	5.5
Level of Service	D	C	D		D	A
Approach Delay (s)	28.5		35.2			28.2
Approach LOS	C		D			C

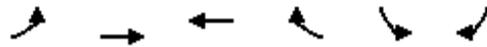
Intersection Summary

HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	68.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

2: GRANT LINE RD & S Lammers Rd

NEAR TERM FILIOS-DOBLER - PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	9	785	760	35	20	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	11	950	920	42	24	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			492			
pX, platoon unblocked	0.80				0.80	0.80
vC, conflicting volume	962				1913	941
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	828				2017	802
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				51	96
cM capacity (veh/h)	632				50	304

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	961	962	36
Volume Left	11	0	24
Volume Right	0	42	12
cSH	632	1700	69
Volume to Capacity	0.02	0.57	0.53
Queue Length 95th (ft)	1	0	55
Control Delay (s)	0.5	0.0	105.2
Lane LOS	A		F
Approach Delay (s)	0.5	0.0	105.2
Approach LOS			F

Intersection Summary			
Average Delay		2.2	
Intersection Capacity Utilization		65.8%	ICU Level of Service C
Analysis Period (min)		15	

### 3: GRANT LINE RD & COSTCO DVWY.

NEAR TERM FILIOS-DOBLER - PM



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑	↵	↵
Volume (vph)	565	130	265	590	130	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4801		1719	3438	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4801		1719	3438	1719	1538
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	677	156	317	707	156	329
RTOR Reduction (vph)	66	0	0	0	0	240
Lane Group Flow (vph)	767	0	317	707	156	89
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	16.0		15.8	35.8	16.2	16.2
Effective Green, g (s)	16.0		15.8	35.8	16.2	16.2
Actuated g/C Ratio	0.27		0.26	0.60	0.27	0.27
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1280		453	2051	464	415
v/s Ratio Prot	c0.16		c0.18	0.21	c0.09	
v/s Ratio Perm						0.06
v/c Ratio	0.60		0.70	0.34	0.34	0.21
Uniform Delay, d1	19.2		20.0	6.1	17.6	17.0
Progression Factor	1.00		1.53	0.79	1.00	1.00
Incremental Delay, d2	0.8		4.3	0.1	2.0	1.2
Delay (s)	20.0		35.0	4.9	19.5	18.1
Level of Service	B		C	A	B	B
Approach Delay (s)	20.0			14.2	18.6	
Approach LOS	B			B	B	

#### Intersection Summary

HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

#### 4: GRANT LINE RD & WALMART DVWY.

NEAR TERM FILIOS-DOBLER - PM



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↘	↑↑	↘	↗
Volume (vph)	790	50	220	805	85	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4896		1719	3438	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4896		1719	3438	1719	1538
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	966	61	269	985	104	245
RTOR Reduction (vph)	12	0	0	0	0	185
Lane Group Flow (vph)	1015	0	269	985	104	60
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	18.8		14.6	37.4	14.6	14.6
Effective Green, g (s)	18.8		14.6	37.4	14.6	14.6
Actuated g/C Ratio	0.31		0.24	0.62	0.24	0.24
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1534		418	2143	418	374
v/s Ratio Prot	c0.21		c0.16	0.29	c0.06	
v/s Ratio Perm						0.04
v/c Ratio	0.66		0.64	0.46	0.25	0.16
Uniform Delay, d1	17.8		20.4	6.0	18.3	17.9
Progression Factor	1.50		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9		3.4	0.2	1.4	0.9
Delay (s)	27.7		23.7	6.1	19.7	18.8
Level of Service	C		C	A	B	B
Approach Delay (s)	27.7			9.9	19.1	
Approach LOS	C			A	B	

#### Intersection Summary

HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

5: GRANT LINE RD & NAGLEE ROAD

NEAR TERM FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	285	1015	45	0	675	420	0	0	0	690	35	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3335	3438	1538		4940	1538				1633	1645	1538
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3335	3438	1538		4940	1538				1633	1645	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor (vph)	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	338	1203	53	0	800	498	0	0	0	818	41	539
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	259
Lane Group Flow (vph)	338	1203	38	0	800	498	0	0	0	425	434	280
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6							4
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	13.1	50.0	50.0		32.7	90.0				30.1	30.1	30.1
Effective Green, g (s)	13.3	51.3	51.3		34.0	90.0				30.7	30.7	30.7
Actuated g/C Ratio	0.15	0.57	0.57		0.38	1.00				0.34	0.34	0.34
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	493	1960	877		1866	1538				557	561	525
v/s Ratio Prot	c0.10	c0.35			0.16							
v/s Ratio Perm			0.02			0.32				0.26	0.26	0.18
v/c Ratio	0.69	0.61	0.04		0.43	0.32				0.76	0.77	0.53
Uniform Delay, d1	36.4	12.8	8.5		20.8	0.0				26.4	26.5	23.9
Progression Factor	1.00	1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	3.9	1.4	0.1		0.7	0.6				6.1	6.6	1.0
Delay (s)	40.3	14.2	8.6		21.5	0.6				32.5	33.1	24.9
Level of Service	D	B	A		C	A				C	C	C
Approach Delay (s)		19.6			13.5			0.0			29.8	
Approach LOS		B			B			A			C	

Intersection Summary

HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

6: GRANT LINE RD & I-205 EAST

NEAR TERM FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	555	1150	0	0	895	0	200	0	415	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0			
Lane Util. Factor	1.00	0.95			0.91		1.00		1.00			
Frt	1.00	1.00			1.00		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	1719	3438			4940		1719		1538			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1719	3438			4940		1719		1538			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (vph)	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	672	1392	0	0	1083	0	242	0	502	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	19	0	0	0
Lane Group Flow (vph)	672	1392	0	0	1083	0	242	0	483	0	0	0
Turn Type	Prot						custom		custom			
Protected Phases	5	2			6							
Permitted Phases							8		8			
Actuated Green, G (s)	23.9	45.7			17.6		30.3		30.3			
Effective Green, g (s)	24.1	47.0			18.9		30.5		30.5			
Actuated g/C Ratio	0.28	0.55			0.22		0.36		0.36			
Clearance Time (s)	4.2	5.3			5.3		4.2		4.2			
Vehicle Extension (s)	3.0	3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)	485	1890			1092		613		549			
v/s Ratio Prot	c0.39	0.40			c0.22							
v/s Ratio Perm							0.14		c0.31			
v/c Ratio	1.39	0.74			0.99		0.39		0.88			
Uniform Delay, d1	30.7	14.6			33.2		20.6		25.8			
Progression Factor	1.00	1.00			1.00		1.00		1.00			
Incremental Delay, d2	185.9	1.5			25.1		0.4		15.2			
Delay (s)	216.6	16.1			58.3		21.0		41.0			
Level of Service	F	B			E		C		D			
Approach Delay (s)		81.4			58.3			34.5			0.0	
Approach LOS		F			E			C			A	

Intersection Summary

HCM Average Control Delay	66.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	85.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

7: GRANT LINE RD & CORRAL HOLLOW RD

NEAR TERM FILIOS-DOBLER - PM

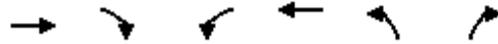


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	590	525	150	390	70	515	285	110	110	255	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		0.94	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1719	3438	2707	1719	3359		4848	3438	1538	1719	3321	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1719	3438	2707	1719	3359		4848	3438	1538	1719	3321	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (vph)	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	115	714	636	182	472	85	623	345	133	133	309	91
RTOR Reduction (vph)	0	0	424	0	12	0	0	0	102	0	26	0
Lane Group Flow (vph)	115	714	212	182	545	0	623	345	31	133	374	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	10.8	27.5	27.5	12.7	29.4		14.9	18.6	18.6	11.9	15.6	
Effective Green, g (s)	12.8	29.5	29.5	14.7	31.4		16.9	20.6	20.6	13.9	17.6	
Actuated g/C Ratio	0.14	0.33	0.33	0.17	0.35		0.19	0.23	0.23	0.16	0.20	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	248	1143	900	285	1189		924	798	357	269	659	
v/s Ratio Prot	0.07	c0.21		c0.11	0.16		c0.13	0.10		0.08	c0.11	
v/s Ratio Perm			0.08						0.02			
v/c Ratio	0.46	0.62	0.24	0.64	0.46		0.67	0.43	0.09	0.49	0.57	
Uniform Delay, d1	34.8	24.9	21.4	34.5	22.1		33.3	29.1	26.7	34.2	32.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	1.1	0.1	4.6	0.3		2.0	0.4	0.1	1.4	1.1	
Delay (s)	36.2	26.0	21.6	39.2	22.4		35.3	29.4	26.8	35.6	33.2	
Level of Service	D	C	C	D	C		D	C	C	D	C	
Approach Delay (s)		24.9			26.5			32.4			33.8	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	270	215	15	200	170	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.94		1.00	1.00	0.98	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	1701		1719	1810	1697	
Flt Permitted	1.00		0.95	1.00	0.96	
Satd. Flow (perm)	1701		1719	1810	1697	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	330	263	18	245	208	43
RTOR Reduction (vph)	52	0	0	0	12	0
Lane Group Flow (vph)	541	0	18	245	239	0
Turn Type			Prot			
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	17.2		0.5	21.7	11.1	
Effective Green, g (s)	17.2		0.5	21.7	11.1	
Actuated g/C Ratio	0.42		0.01	0.53	0.27	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	717		21	963	462	
v/s Ratio Prot	c0.32		0.01	c0.14	c0.14	
v/s Ratio Perm						
v/c Ratio	0.75		0.86	0.25	0.52	
Uniform Delay, d1	10.0		20.1	5.2	12.6	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	4.5		129.6	0.1	1.0	
Delay (s)	14.5		149.7	5.3	13.6	
Level of Service	B		F	A	B	
Approach Delay (s)	14.5			15.2	13.6	
Approach LOS	B			B	B	

**Intersection Summary**

HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	40.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

9: BYRON & CORRAL HOLLOW RD

NEAR TERM FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	5	250	5	5	5	180	1130	5	0	1015	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				4.0
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95				0.95
Frt	1.00	0.85			0.96		1.00	1.00				0.99
Flt Protected	0.95	1.00			0.98		0.95	1.00				1.00
Satd. Flow (prot)	1719	1543			1700		1719	3436				3388
Flt Permitted	0.75	1.00			0.90		0.95	1.00				1.00
Satd. Flow (perm)	1349	1543			1550		1719	3436				3388
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	212	6	312	6	6	6	225	1412	6	0	1269	138
RTOR Reduction (vph)	0	222	0	0	5	0	0	0	0	0	9	0
Lane Group Flow (vph)	212	96	0	0	13	0	225	1418	0	0	1398	0
Turn Type	Perm			Perm			Prot					
Protected Phases		4			8		5	2				6
Permitted Phases	4			8								
Actuated Green, G (s)	17.7	17.7			17.7		13.1	54.6				37.5
Effective Green, g (s)	17.7	17.7			17.7		13.1	54.6				37.5
Actuated g/C Ratio	0.22	0.22			0.22		0.16	0.68				0.47
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0				4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	297	340			342		280	2336				1582
v/s Ratio Prot		0.06					c0.13	0.41				c0.41
v/s Ratio Perm	c0.16				0.01							
v/c Ratio	0.71	0.28			0.04		0.80	0.61				0.88
Uniform Delay, d1	29.0	26.0			24.6		32.4	7.0				19.4
Progression Factor	1.00	1.00			1.00		1.00	1.00				1.00
Incremental Delay, d2	7.9	0.5			0.0		15.3	0.5				6.3
Delay (s)	36.8	26.5			24.7		47.6	7.5				25.7
Level of Service	D	C			C		D	A				C
Approach Delay (s)		30.6			24.7			13.0				25.7
Approach LOS		C			C			B				C

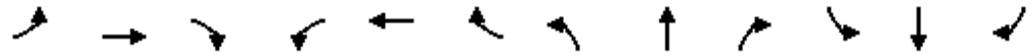
Intersection Summary

HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	80.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

10: ELEVENTH ST. & LAMMERS RD

NEAR TERM FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	135	1150	105	85	345	85	35	100	115	70	115	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	1719	4940	1538	3335	3438	1538	3335	1810	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	1719	4940	1538	3335	3438	1538	3335	1810	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor (vph)	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	160	1363	124	101	409	101	41	119	136	83	136	24
RTOR Reduction (vph)	0	0	69	0	0	59	0	0	110	0	0	18
Lane Group Flow (vph)	160	1363	55	101	409	42	41	119	26	83	136	6
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	9.6	30.7	30.7	7.7	28.8	28.8	3.6	11.8	11.8	5.8	14.0	14.0
Effective Green, g (s)	11.7	32.8	32.8	9.8	30.9	30.9	5.7	13.9	13.9	7.9	16.1	16.1
Actuated g/C Ratio	0.16	0.44	0.44	0.13	0.42	0.42	0.08	0.19	0.19	0.11	0.22	0.22
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	527	2190	682	228	2063	642	257	646	289	356	394	335
v/s Ratio Prot	0.05	c0.28		c0.06	0.08		0.01	0.03		c0.02	c0.08	
v/s Ratio Perm			0.04			0.03			0.02			0.00
v/c Ratio	0.30	0.62	0.08	0.44	0.20	0.07	0.16	0.18	0.09	0.23	0.35	0.02
Uniform Delay, d1	27.5	15.8	11.9	29.6	13.7	12.9	31.9	25.3	24.8	30.3	24.5	22.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.6	0.1	1.4	0.0	0.0	0.3	0.1	0.1	0.3	0.5	0.0
Delay (s)	27.9	16.4	11.9	31.0	13.7	12.9	32.2	25.4	25.0	30.6	25.0	22.8
Level of Service	C	B	B	C	B	B	C	C	C	C	C	C
Approach Delay (s)		17.2			16.4			26.1			26.7	
Approach LOS		B			B			C			C	

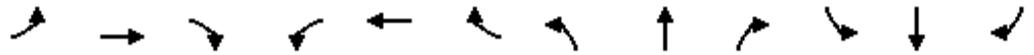
Intersection Summary

HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	74.0	Sum of lost time (s)	3.8
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

11: ELEVENTH ST. & CORRAL HOLLOW RD

NEAR TERM FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	480	805	755	300	390	235	255	810	90	285	700	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3335	3438	1538	3335	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3335	3438	1538	3335	3438	1538
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	575	964	904	359	467	282	305	970	108	341	839	102
RTOR Reduction (vph)	0	0	0	0	0	12	0	0	12	0	0	53
Lane Group Flow (vph)	575	964	904	359	467	270	305	970	96	341	839	49
Turn Type	Prot		Free	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	5	2		1	6	3	7	4	1	3	8	5
Permitted Phases			Free			6			4			8
Actuated Green, G (s)	14.2	26.4	98.9	13.0	25.2	33.3	11.8	33.4	46.4	8.1	29.7	43.9
Effective Green, g (s)	16.2	28.4	98.9	15.0	27.2	37.3	13.8	35.4	50.4	10.1	31.7	47.9
Actuated g/C Ratio	0.16	0.29	1.00	0.15	0.28	0.38	0.14	0.36	0.51	0.10	0.32	0.48
Clearance Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	546	1419	1538	506	1359	580	465	1231	784	341	1102	745
v/s Ratio Prot	c0.17	c0.20		0.11	0.09	0.05	c0.09	c0.28	0.02	c0.10	0.24	0.01
v/s Ratio Perm			c0.59			0.13			0.04			0.02
v/c Ratio	1.05	0.68	0.59	0.71	0.34	0.47	0.66	0.79	0.12	1.00	0.76	0.07
Uniform Delay, d1	41.4	31.2	0.0	39.9	28.7	23.3	40.3	28.4	12.7	44.4	30.2	13.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	53.2	1.3	1.7	4.5	0.2	0.6	3.3	3.4	0.1	48.7	3.2	0.0
Delay (s)	94.6	32.5	1.7	44.4	28.9	23.9	43.6	31.8	12.8	93.1	33.4	13.6
Level of Service	F	C	A	D	C	C	D	C	B	F	C	B
Approach Delay (s)		35.7			32.6			32.9			47.7	
Approach LOS		D			C			C			D	

Intersection Summary

HCM Average Control Delay	37.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	98.9	Sum of lost time (s)	4.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

5: GRANT LINE RD & NAGLEE ROAD

NEAR TERM FILIOS-DOBLER - SAT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	395	925	110	0	860	545	0	0	0	770	65	635
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3335	3438	1538		4940	1538				1633	1649	1538
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3335	3438	1538		4940	1538				1633	1649	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor (vph)	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	468	1097	130	0	1020	646	0	0	0	913	77	753
RTOR Reduction (vph)	0	0	44	0	0	0	0	0	0	0	0	249
Lane Group Flow (vph)	468	1097	86	0	1020	646	0	0	0	493	497	504
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6							4
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	14.6	48.2	48.2		29.4	90.0				31.9	31.9	31.9
Effective Green, g (s)	14.8	49.5	49.5		30.7	90.0				32.5	32.5	32.5
Actuated g/C Ratio	0.16	0.55	0.55		0.34	1.00				0.36	0.36	0.36
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	548	1891	846		1685	1538				590	595	555
v/s Ratio Prot	c0.14	c0.32			0.21							
v/s Ratio Perm			0.06			0.42				0.30	0.30	c0.33
v/c Ratio	0.85	0.58	0.10		0.61	0.42				0.84	0.84	0.91
Uniform Delay, d1	36.5	13.4	9.7		24.6	0.0				26.3	26.3	27.3
Progression Factor	1.00	1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	12.3	1.3	0.2		1.6	0.8				10.0	9.9	18.7
Delay (s)	48.9	14.7	9.9		26.2	0.8				36.3	36.2	46.0
Level of Service	D	B	A		C	A				D	D	D
Approach Delay (s)		23.8			16.4			0.0			40.4	
Approach LOS		C			B			A			D	

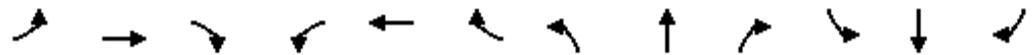
Intersection Summary

HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

6: GRANT LINE RD & I-205 EAST

NEAR TERM FILIOS-DOBLER - SAT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗↗			↗↗↗		↘		↘			
Volume (vph)	495	1190	0	0	1235	0	160	0	205	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0			
Lane Util. Factor	1.00	0.95			0.91		1.00		1.00			
Frt	1.00	1.00			1.00		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	1719	3438			4940		1719		1538			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1719	3438			4940		1719		1538			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (vph)	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Adj. Flow (vph)	599	1441	0	0	1495	0	194	0	248	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	19	0	0	0
Lane Group Flow (vph)	599	1441	0	0	1495	0	194	0	229	0	0	0
Turn Type	Prot						custom		custom			
Protected Phases	5	2			6							
Permitted Phases							8		8			
Actuated Green, G (s)	23.9	45.7			17.6		15.6		15.6			
Effective Green, g (s)	24.1	47.0			18.9		15.8		15.8			
Actuated g/C Ratio	0.34	0.66			0.27		0.22		0.22			
Clearance Time (s)	4.2	5.3			5.3		4.2		4.2			
Vehicle Extension (s)	3.0	3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)	585	2282			1319		384		343			
v/s Ratio Prot	c0.35	0.42			c0.30							
v/s Ratio Perm							0.11		c0.15			
v/c Ratio	1.02	0.63			1.13		0.51		0.67			
Uniform Delay, d1	23.3	6.9			25.9		24.1		25.1			
Progression Factor	1.00	1.00			1.00		1.00		1.00			
Incremental Delay, d2	43.4	0.6			70.0		1.0		4.8			
Delay (s)	66.8	7.5			95.9		25.1		29.9			
Level of Service	E	A			F		C		C			
Approach Delay (s)		24.9			95.9			27.8			0.0	
Approach LOS		C			F			C			A	

Intersection Summary

HCM Average Control Delay	51.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

## **APPENDIX A-7**

### **Cumulative Conditions LOS Analysis Worksheets**

# 1: GRANT LINE ROAD & LAMMERS EXTENSION

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	360	130	370	400	280	260	290	470	260	170	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	0.97	0.95	1.00	0.97	0.95	0.88	0.97	0.91	
Frbp, ped/bikes		1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	3433	3539	1568	3433	3539	2759	3433	3390	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	3433	3539	1568	3433	3539	2759	3433	3390	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	360	130	370	400	280	260	290	470	260	170	0
RTOR Reduction (vph)	0	0	92	0	0	147	0	0	71	0	0	0
Lane Group Flow (vph)	0	360	38	370	400	133	260	290	399	260	170	0
Confl. Peds. (#/hr)						2			2			2
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		Perm
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		13.9	26.0	13.8	31.7	42.8	12.1	33.2	47.0	11.1	32.2	
Effective Green, g (s)		14.9	26.0	13.8	32.7	42.8	12.1	34.2	47.0	11.1	33.2	
Actuated g/C Ratio		0.17	0.29	0.15	0.36	0.48	0.13	0.38	0.52	0.12	0.37	
Clearance Time (s)		5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		586	528	526	1286	746	462	1345	1441	423	1251	
v/s Ratio Prot		c0.10	0.01	c0.11	0.11	0.02	c0.08	0.08	c0.04	c0.08	0.05	
v/s Ratio Perm			0.01			0.06			0.10			
v/c Ratio		0.61	0.07	0.70	0.31	0.18	0.56	0.22	0.28	0.61	0.14	
Uniform Delay, d1		34.9	23.2	36.2	20.6	13.5	36.5	18.8	12.0	37.4	18.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.9	0.1	4.2	0.1	0.1	1.6	0.4	0.1	2.6	0.2	
Delay (s)		36.8	23.3	40.4	20.7	13.6	38.0	19.2	12.1	40.1	19.1	
Level of Service		D	C	D	C	B	D	B	B	D	B	
Approach Delay (s)		33.2			25.8			20.7			31.8	
Approach LOS		C			C			C			C	

## Intersection Summary

HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

## 2: GRANT LINE RD & S LAMMERS ROAD

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑↑			↑↑↑	↵				↵↵↵	↵	
Volume (vph)	170	880	0	0	930	100	0	0	0	250	0	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0				4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91	1.00				0.94	1.00	
Frt	1.00	1.00			1.00	0.85				1.00	0.85	
Flt Protected	0.95	1.00			1.00	1.00				0.95	1.00	
Satd. Flow (prot)	1770	5085			5085	1583				4990	1583	
Flt Permitted	0.95	1.00			1.00	1.00				0.95	1.00	
Satd. Flow (perm)	1770	5085			5085	1583				4990	1583	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	170	880	0	0	930	100	0	0	0	250	0	120
RTOR Reduction (vph)	0	0	0	0	0	62	0	0	0	0	98	0
Lane Group Flow (vph)	170	880	0	0	930	38	0	0	0	250	22	0
Turn Type	Prot					Perm				Split		
Protected Phases	7	4			8					6	6	
Permitted Phases						8						
Actuated Green, G (s)	8.2	29.9			17.7	17.7				8.6	8.6	
Effective Green, g (s)	8.2	29.9			17.7	17.7				8.6	8.6	
Actuated g/C Ratio	0.18	0.64			0.38	0.38				0.18	0.18	
Clearance Time (s)	4.0	4.0			4.0	4.0				4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0	3.0	
Lane Grp Cap (vph)	312	3270			1936	603				923	293	
v/s Ratio Prot	c0.10	0.17			c0.18					c0.05	0.01	
v/s Ratio Perm						0.02						
v/c Ratio	0.54	0.27			0.48	0.06				0.27	0.08	
Uniform Delay, d1	17.4	3.6			10.9	9.1				16.3	15.7	
Progression Factor	1.00	1.00			1.00	1.00				1.00	1.00	
Incremental Delay, d2	1.9	0.0			0.2	0.0				0.2	0.1	
Delay (s)	19.4	3.6			11.1	9.2				16.4	15.8	
Level of Service	B	A			B	A				B	B	
Approach Delay (s)		6.2			10.9			0.0			16.2	
Approach LOS		A			B			A			B	

### Intersection Summary

HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	46.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

### 3: GRANT LINE RD & COSTCO DVWY.

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↙	↑↑↑	↙	↗
Volume (vph)	1090	50	70	970	30	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	5052		1770	5085	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	5052		1770	5085	1770	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1090	50	70	970	30	50
RTOR Reduction (vph)	7	0	0	0	0	31
Lane Group Flow (vph)	1133	0	70	970	30	19
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	26.8		7.2	38.0	29.0	29.0
Effective Green, g (s)	26.8		7.2	38.0	29.0	29.0
Actuated g/C Ratio	0.36		0.10	0.51	0.39	0.39
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1805		170	2576	684	612
v/s Ratio Prot	c0.22		0.04	c0.19	c0.02	
v/s Ratio Perm						0.01
v/c Ratio	0.63		0.41	0.38	0.04	0.03
Uniform Delay, d1	20.0		31.9	11.3	14.4	14.3
Progression Factor	1.00		1.29	0.91	1.00	1.00
Incremental Delay, d2	0.7		1.6	0.1	0.1	0.1
Delay (s)	20.7		42.7	10.3	14.5	14.4
Level of Service	C		D	B	B	B
Approach Delay (s)	20.7			12.5	14.4	
Approach LOS	C			B	B	

#### Intersection Summary

HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

#### 4: GRANT LINE RD & WALMART DVWY.

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↘	↑↑↑	↘	↗
Volume (vph)	520	30	80	490	20	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	5044		1770	5085	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	5044		1770	5085	1770	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	520	30	80	490	20	70
RTOR Reduction (vph)	11	0	0	0	0	32
Lane Group Flow (vph)	539	0	80	490	20	38
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	14.2		7.6	25.8	41.2	41.2
Effective Green, g (s)	14.2		7.6	25.8	41.2	41.2
Actuated g/C Ratio	0.19		0.10	0.34	0.55	0.55
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	955		179	1749	972	870
v/s Ratio Prot	c0.11		c0.05	0.10	0.01	
v/s Ratio Perm						c0.02
v/c Ratio	0.56		0.45	0.28	0.02	0.04
Uniform Delay, d1	27.6		31.7	17.9	7.7	7.8
Progression Factor	1.61		1.06	1.25	1.00	1.00
Incremental Delay, d2	0.7		1.4	0.1	0.0	0.1
Delay (s)	45.1		34.9	22.4	7.7	7.9
Level of Service	D		C	C	A	A
Approach Delay (s)	45.1			24.2	7.9	
Approach LOS	D			C	A	

#### Intersection Summary

HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	28.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

5: GRANT LINE RD & NAGLEE ROAD

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	830	220	0	790	340	0	0	0	270	50	650
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.0	4.0		4.0	4.0				5.2	5.2	5.2
Lane Util. Factor	0.97	0.91	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (prot)	3433	5085	1583		5085	1583				1681	1711	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (perm)	3433	5085	1583		5085	1583				1681	1711	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	160	830	220	0	790	340	0	0	0	270	50	650
RTOR Reduction (vph)	0	0	103	0	0	0	0	0	0	0	0	149
Lane Group Flow (vph)	160	830	117	0	790	340	0	0	0	159	161	501
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6						4	
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	5.8	38.6	38.6		28.6	75.0				26.5	26.5	26.5
Effective Green, g (s)	5.6	39.9	39.9		29.9	75.0				25.9	25.9	25.9
Actuated g/C Ratio	0.07	0.53	0.53		0.40	1.00				0.35	0.35	0.35
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	256	2705	842		2027	1583				581	591	547
v/s Ratio Prot	c0.05	0.16			c0.16							
v/s Ratio Perm			0.07			0.21				0.09	0.09	c0.32
v/c Ratio	0.62	0.31	0.14		0.39	0.21				0.27	0.27	0.92
Uniform Delay, d1	33.7	9.8	8.9		16.1	0.0				17.7	17.7	23.5
Progression Factor	1.25	0.54	0.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	4.7	0.3	0.3		0.6	0.3				0.3	0.3	20.1
Delay (s)	46.8	5.6	0.3		16.6	0.3				18.0	18.0	43.7
Level of Service	D	A	A		B	A				B	B	D
Approach Delay (s)		10.1			11.7			0.0			35.2	
Approach LOS		B			B			A			D	

Intersection Summary		
HCM Average Control Delay	18.0	HCM Level of Service B
HCM Volume to Capacity ratio	0.63	
Actuated Cycle Length (s)	75.0	Sum of lost time (s) 13.6
Intersection Capacity Utilization	63.2%	ICU Level of Service B
Analysis Period (min)	15	
c Critical Lane Group		

6: GRANT LINE RD & I-205 EAST

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↘	↑↑↑			↑↑↑		↘		↗				
Volume (vph)	590	440	0	0	730	0	60	0	100	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.4	4.0			4.0		4.4		4.4				
Lane Util. Factor	1.00	0.91			0.91		1.00		1.00				
Frt	1.00	1.00			1.00		1.00		0.85				
Flt Protected	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (prot)	1770	5085			5085		1770		1583				
Flt Permitted	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (perm)	1770	5085			5085		1770		1583				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	590	440	0	0	730	0	60	0	100	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	93	0	0	0	
Lane Group Flow (vph)	590	440	0	0	730	0	60	0	8	0	0	0	
Turn Type	Prot							custom		custom			
Protected Phases	5	2						6					
Permitted Phases								8		8			
Actuated Green, G (s)	39.7	82.8						38.9		7.7			
Effective Green, g (s)	39.5	84.1						40.2		7.5			
Actuated g/C Ratio	0.40	0.84						0.40		0.08			
Clearance Time (s)	4.2	5.3						5.3		4.2			
Vehicle Extension (s)	3.0	3.0						3.0		3.0			
Lane Grp Cap (vph)	699	4276						2044		133			
v/s Ratio Prot	c0.33	0.09						c0.14					
v/s Ratio Perm								c0.03		0.00			
v/c Ratio	0.84	0.10						0.36		0.45			
Uniform Delay, d1	27.5	1.4						20.9		44.3			
Progression Factor	1.00	1.00						1.00		1.00			
Incremental Delay, d2	9.2	0.0						0.5		2.4			
Delay (s)	36.6	1.4						21.4		46.7			
Level of Service	D	A						C		D			
Approach Delay (s)	21.6							21.4		44.5		0.0	
Approach LOS	C							C		D		A	

Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.8
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		
c	Critical Lane Group		

# 7: GRANT LINE RD & CORRAL HOLLOW RD

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	210	100	150	400	50	370	410	210	30	160	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		0.94	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	2787	1770	3480		4990	3539	1583	1770	3348	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	2787	1770	3480		4990	3539	1583	1770	3348	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor (vph)	100%	100%	75%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	80	210	75	150	400	50	370	410	210	30	160	90
RTOR Reduction (vph)	0	0	59	0	9	0	0	0	137	0	70	0
Lane Group Flow (vph)	80	210	16	150	441	0	370	410	73	30	180	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	6.6	11.2	11.2	10.7	15.3		9.8	19.2	19.2	2.1	11.5	
Effective Green, g (s)	8.6	13.2	13.2	12.7	17.3		11.8	21.2	21.2	4.1	13.5	
Actuated g/C Ratio	0.14	0.22	0.22	0.21	0.28		0.19	0.35	0.35	0.07	0.22	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	249	763	601	367	984		962	1226	548	119	739	
v/s Ratio Prot	0.05	0.06		c0.08	c0.13		c0.07	c0.12		0.02	0.05	
v/s Ratio Perm			0.01						0.05			
v/c Ratio	0.32	0.28	0.03	0.41	0.45		0.38	0.33	0.13	0.25	0.24	
Uniform Delay, d1	23.7	20.0	18.9	21.0	18.0		21.5	14.8	13.7	27.1	19.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	0.2	0.0	0.7	0.3		0.3	0.2	0.1	1.1	0.2	
Delay (s)	24.4	20.2	19.0	21.7	18.4		21.8	14.9	13.8	28.2	19.8	
Level of Service	C	C	B	C	B		C	B	B	C	B	
Approach Delay (s)		20.9			19.2			17.3			20.7	
Approach LOS		C			B			B			C	

## Intersection Summary

HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	4.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

8: BYRON & LAMMERS RD

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	170	110	40	190	210	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.95		1.00	1.00	0.98	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	1764		1770	1863	1749	
Flt Permitted	1.00		0.95	1.00	0.96	
Satd. Flow (perm)	1764		1770	1863	1749	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	170	110	40	190	210	40
RTOR Reduction (vph)	41	0	0	0	12	0
Lane Group Flow (vph)	239	0	40	190	238	0
Turn Type			Prot			
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	10.3		1.7	16.0	11.8	
Effective Green, g (s)	10.3		1.7	16.0	11.8	
Actuated g/C Ratio	0.29		0.05	0.45	0.33	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	508		84	833	576	
v/s Ratio Prot	c0.14		c0.02	0.10	c0.14	
v/s Ratio Perm						
v/c Ratio	0.47		0.48	0.23	0.41	
Uniform Delay, d1	10.5		16.6	6.1	9.3	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.7		4.2	0.1	0.5	
Delay (s)	11.2		20.8	6.2	9.8	
Level of Service	B		C	A	A	
Approach Delay (s)	11.2			8.8	9.8	
Approach LOS	B			A	A	

Intersection Summary

HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	35.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

9: BYRON & CORRAL HOLLOW RD

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	520	0	250	0	0	0	190	960	0	0	730	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0					4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00					1.00	0.91			0.91	
Frt	1.00	0.85					1.00	1.00			0.93	
Flt Protected	0.95	1.00					0.95	1.00			1.00	
Satd. Flow (prot)	1770	1583					1770	5085			4723	
Flt Permitted	0.76	1.00					0.95	1.00			1.00	
Satd. Flow (perm)	1410	1583					1770	5085			4723	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	520	0	250	0	0	0	190	960	0	0	730	660
RTOR Reduction (vph)	0	147	0	0	0	0	0	0	0	0	178	0
Lane Group Flow (vph)	520	103	0	0	0	0	190	960	0	0	1212	0
Turn Type	Perm		Perm				Prot					
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8								
Actuated Green, G (s)	34.4	34.4					12.1	41.2			25.1	
Effective Green, g (s)	34.4	34.4					12.1	41.2			25.1	
Actuated g/C Ratio	0.41	0.41					0.14	0.49			0.30	
Clearance Time (s)	4.0	4.0					4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0			3.0	
Lane Grp Cap (vph)	580	651					256	2506			1418	
v/s Ratio Prot		0.06					c0.11	0.19			c0.26	
v/s Ratio Perm	c0.37											
v/c Ratio	0.90	0.16					0.74	0.38			1.00dr	
Uniform Delay, d1	22.9	15.5					34.3	13.3			27.5	
Progression Factor	1.00	1.00					1.00	1.00			1.00	
Incremental Delay, d2	16.4	0.1					11.0	0.1			5.3	
Delay (s)	39.3	15.6					45.3	13.4			32.8	
Level of Service	D	B					D	B			C	
Approach Delay (s)		31.6			0.0			18.6			32.8	
Approach LOS		C			A			B			C	

Intersection Summary

HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	83.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

10: ELEVENTH ST. & LAMMERS RD

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 	 		 	 	
Volume (vph)	40	410	400	340	1590	100	630	160	450	70	140	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.9	2.9	1.9	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	1770	5085	1583	3433	3539	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	1770	5085	1583	3433	3539	1583	3433	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	410	400	340	1590	100	630	160	450	70	140	170
RTOR Reduction (vph)	0	0	0	0	0	31	0	0	308	0	0	133
Lane Group Flow (vph)	40	410	400	340	1590	69	630	160	142	70	140	37
Turn Type	Prot		Free	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6			8			4
Actuated Green, G (s)	3.8	21.1	88.7	18.3	35.6	35.6	18.3	25.4	25.4	5.9	13.0	13.0
Effective Green, g (s)	5.9	23.2	88.7	20.4	37.7	37.7	20.4	27.5	27.5	8.0	15.1	15.1
Actuated g/C Ratio	0.07	0.26	1.00	0.23	0.43	0.43	0.23	0.31	0.31	0.09	0.17	0.17
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	228	1330	1583	407	2161	673	790	1097	491	310	317	269
v/s Ratio Prot	0.01	0.08		c0.19	c0.31		c0.18	0.05		0.02	c0.08	
v/s Ratio Perm			0.25			0.04			0.09			0.02
v/c Ratio	0.18	0.31	0.25	0.84	0.74	0.10	0.80	0.15	0.29	0.23	0.44	0.14
Uniform Delay, d1	39.1	26.3	0.0	32.5	21.3	15.3	32.2	22.1	23.2	37.5	33.0	31.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.4	13.8	1.3	0.1	5.6	0.1	0.3	0.4	1.0	0.2
Delay (s)	39.5	26.4	0.4	46.3	22.7	15.4	37.8	22.2	23.5	37.8	34.0	31.5
Level of Service	D	C	A	D	C	B	D	C	C	D	C	C
Approach Delay (s)		14.8			26.3			30.6			33.6	
Approach LOS		B			C			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			25.9				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			88.7				Sum of lost time (s)			6.7		
Intersection Capacity Utilization			72.7%				ICU Level of Service			C		
Analysis Period (min)			15									
c	Critical Lane Group											

11: ELEVENTH ST. & CORRAL HOLLOW RD

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↑↑↑	↗	↖↖	↑↑↑	↗	↖↖	↑↑↑	↗	↖↖	↑↑↑	↗
Volume (vph)	170	450	210	200	780	240	450	870	320	280	500	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	170	450	210	200	780	240	450	870	320	280	500	170
RTOR Reduction (vph)	0	0	0	0	0	30	0	0	91	0	0	30
Lane Group Flow (vph)	170	450	210	200	780	210	450	870	229	280	500	140
Turn Type	Prot		Free	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	5	2		1	6	3	7	4	1	3	8	5
Permitted Phases			Free			6			4			8
Actuated Green, G (s)	8.5	18.0	75.7	8.7	18.2	29.3	15.4	19.9	28.6	11.1	15.6	24.1
Effective Green, g (s)	10.5	20.0	75.7	10.7	20.2	33.3	17.4	21.9	32.6	13.1	17.6	28.1
Actuated g/C Ratio	0.14	0.26	1.00	0.14	0.27	0.44	0.23	0.29	0.43	0.17	0.23	0.37
Clearance Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	476	1343	1583	485	1357	696	789	1471	682	594	1182	588
v/s Ratio Prot	0.05	0.09		c0.06	c0.15	0.05	c0.13	c0.17	0.05	0.08	0.10	0.03
v/s Ratio Perm			c0.13			0.08			0.10			0.06
v/c Ratio	0.36	0.34	0.13	0.41	0.57	0.30	0.57	0.59	0.34	0.47	0.42	0.24
Uniform Delay, d1	29.5	22.5	0.0	29.6	24.0	13.7	25.8	23.1	14.3	28.2	24.7	16.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	0.2	0.6	0.6	0.2	1.0	0.6	0.3	0.6	0.2	0.2
Delay (s)	30.0	22.6	0.2	30.2	24.6	13.9	26.8	23.7	14.6	28.8	25.0	16.6
Level of Service	C	C	A	C	C	B	C	C	B	C	C	B
Approach Delay (s)		18.5			23.4			22.8			24.6	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	75.7	Sum of lost time (s)	4.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

12: GRANT LINE ROAD & PAVILLION PKWY

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Volume (vph)	10	430	10	30	600	0	0	0	50	0	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.85			1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1770	3527		1770	3539			1583			1863	
Flt Permitted	0.40	1.00		0.49	1.00			1.00			1.00	
Satd. Flow (perm)	736	3527		917	3539			1583			1863	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	10	430	10	30	600	0	0	0	50	0	10	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	33	0	0	0	0
Lane Group Flow (vph)	10	437	0	30	600	0	0	18	0	0	10	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	31.0	31.0		31.0	31.0			21.0			21.0	
Effective Green, g (s)	31.0	31.0		31.0	31.0			21.0			21.0	
Actuated g/C Ratio	0.52	0.52		0.52	0.52			0.35			0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Grp Cap (vph)	380	1822		474	1828			554			652	
v/s Ratio Prot		0.12			c0.17			c0.01			0.01	
v/s Ratio Perm	0.01			0.03								
v/c Ratio	0.03	0.24		0.06	0.33			0.03			0.02	
Uniform Delay, d1	7.1	8.0		7.2	8.4			12.8			12.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			0.53	
Incremental Delay, d2	0.1	0.3		0.3	0.5			0.1			0.0	
Delay (s)	7.2	8.3		7.5	8.9			12.9			6.8	
Level of Service	A	A		A	A			B			A	
Approach Delay (s)		8.3			8.9			12.9			6.8	
Approach LOS		A			A			B			A	

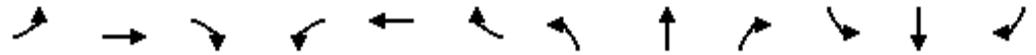
Intersection Summary

HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

14: I-205 WB ON /OFF RAMP & LAMMERS EXTN

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖ ↗	↖	↗		↑↑	↖ ↗		↑↑↑	↖
Volume (vph)	0	0	0	420	0	210	0	950	1350	0	450	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.91	0.91	1.00		0.95	0.88		0.91	1.00
Frt				1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95	0.95	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3221	1610	1583		3539	2787		5085	1583
Flt Permitted				0.95	0.95	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3221	1610	1583		3539	2787		5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	420	0	210	0	950	1350	0	450	100
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	37
Lane Group Flow (vph)	0	0	0	281	139	210	0	950	1350	0	450	63
Turn Type				Split		Free			pm+ov			Perm
Protected Phases				8	8			2	8		6	
Permitted Phases						Free			2			6
Actuated Green, G (s)				20.1	20.1	75.0		46.9	67.0		46.9	46.9
Effective Green, g (s)				20.1	20.1	75.0		46.9	67.0		46.9	46.9
Actuated g/C Ratio				0.27	0.27	1.00		0.63	0.89		0.63	0.63
Clearance Time (s)				4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)				3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)				863	431	1583		2213	2787		3180	990
v/s Ratio Prot				0.09	0.09			0.27	c0.13		0.09	
v/s Ratio Perm						0.13			0.35			0.04
v/c Ratio				0.33	0.32	0.13		0.43	0.48		0.14	0.06
Uniform Delay, d1				22.0	22.0	0.0		7.2	0.8		5.8	5.5
Progression Factor				1.00	1.00	1.00		1.20	1.00		1.00	1.00
Incremental Delay, d2				0.2	0.4	0.2		0.5	0.1		0.1	0.1
Delay (s)				22.2	22.4	0.2		9.2	0.9		5.9	5.6
Level of Service				C	C	A		A	A		A	A
Approach Delay (s)		0.0			14.9			4.3			5.8	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

15: I-205 EB OFF /ON-RAMP & LAMMERS EXTN

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑↑↑	↗↗		↑↑↑	↗
Volume (vph)	120	0	350	0	0	0	0	2180	250	0	790	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00					0.91	0.88		0.91	1.00
Frt		1.00	0.85					1.00	0.85		1.00	0.85
Flt Protected		0.95	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)		1770	1583					5085	2787		5085	1583
Flt Permitted		0.95	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)		1770	1583					5085	2787		5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	120	0	350	0	0	0	0	2180	250	0	790	80
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	61	0	0	20
Lane Group Flow (vph)	0	120	350	0	0	0	0	2180	189	0	790	60
Turn Type	Prot		Free						Perm			Perm
Protected Phases	7	4						2			6	
Permitted Phases			Free						2			6
Actuated Green, G (s)		10.4	75.0					56.6	56.6		56.6	56.6
Effective Green, g (s)		10.4	75.0					56.6	56.6		56.6	56.6
Actuated g/C Ratio		0.14	1.00					0.75	0.75		0.75	0.75
Clearance Time (s)		4.0						4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0						3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		245	1583					3837	2103		3837	1195
v/s Ratio Prot		c0.07						c0.43			0.16	
v/s Ratio Perm			0.22						0.07			0.04
v/c Ratio		0.49	0.22					0.57	0.09		0.21	0.05
Uniform Delay, d1		29.8	0.0					4.0	2.4		2.7	2.3
Progression Factor		1.00	1.00					2.10	5.72		0.79	1.46
Incremental Delay, d2		1.5	0.3					0.6	0.1		0.1	0.1
Delay (s)		31.4	0.3					8.8	13.9		2.2	3.5
Level of Service		C	A					A	B		A	A
Approach Delay (s)		8.3			0.0			9.4			2.4	
Approach LOS		A			A			A			A	

Intersection Summary		
HCM Average Control Delay	7.6	HCM Level of Service
HCM Volume to Capacity ratio	0.56	A
Actuated Cycle Length (s)	75.0	Sum of lost time (s)
Intersection Capacity Utilization	55.4%	8.0
Analysis Period (min)	15	ICU Level of Service
		B
c Critical Lane Group		

16: COMMERCE ROAD & LAMMERS EXTN

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	60	60	590	2440	840	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.94	1.00	0.97	0.86	0.91	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	4990	1583	3433	6408	5085	2787
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	4990	1583	3433	6408	5085	2787
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	60	60	590	2440	840	250
RTOR Reduction (vph)	0	20	0	0	0	0
Lane Group Flow (vph)	60	40	590	2440	840	250
Turn Type		pt+ov	Prot			Free
Protected Phases	4	4 5	5	2	6	
Permitted Phases						Free
Actuated Green, G (s)	5.5	27.8	18.3	61.5	39.2	75.0
Effective Green, g (s)	5.5	27.8	18.3	61.5	39.2	75.0
Actuated g/C Ratio	0.07	0.37	0.24	0.82	0.52	1.00
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	366	587	838	5255	2658	2787
v/s Ratio Prot	c0.01	0.03	c0.17	c0.38	0.17	
v/s Ratio Perm						0.09
v/c Ratio	0.16	0.07	0.70	0.46	0.32	0.09
Uniform Delay, d1	32.6	15.2	25.9	2.0	10.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	0.83	1.00
Incremental Delay, d2	0.2	0.0	2.7	0.3	0.3	0.1
Delay (s)	32.8	15.3	28.6	2.3	8.8	0.1
Level of Service	C	B	C	A	A	A
Approach Delay (s)	24.0			7.4	6.8	
Approach LOS	C			A	A	

Intersection Summary

HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

1: GRANT LINE ROAD & LAMMERS EXTENSION

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	390	290	410	430	420	190	420	740	440	350	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	0.97	0.95	1.00	0.97	0.95	0.88	0.97	0.91	
Frbp, ped/bikes		1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	3433	3539	1569	3433	3539	2760	3433	3390	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	3433	3539	1569	3433	3539	2760	3433	3390	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	390	290	410	430	420	190	420	740	440	350	0
RTOR Reduction (vph)	0	0	172	0	0	164	0	0	40	0	0	0
Lane Group Flow (vph)	0	390	118	410	430	256	190	420	700	440	350	0
Confl. Peds. (#/hr)						2			2			2
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		Perm
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		14.3	24.3	13.7	32.0	45.8	10.0	30.2	43.9	13.8	34.0	
Effective Green, g (s)		15.3	24.3	13.7	33.0	45.8	10.0	31.2	43.9	13.8	35.0	
Actuated g/C Ratio		0.17	0.27	0.15	0.37	0.51	0.11	0.35	0.49	0.15	0.39	
Clearance Time (s)		5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		602	498	523	1298	798	381	1227	1346	526	1318	
v/s Ratio Prot		c0.11	0.03	c0.12	0.12	0.05	0.06	0.12	c0.08	c0.13	0.10	
v/s Ratio Perm			0.05			0.11			0.17			
v/c Ratio		0.65	0.24	0.78	0.33	0.32	0.50	0.34	0.52	0.84	0.27	
Uniform Delay, d1		34.8	25.6	36.7	20.5	13.0	37.6	21.8	15.8	37.0	18.7	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.4	0.2	7.6	0.2	0.2	1.0	0.8	0.4	11.1	0.5	
Delay (s)		37.2	25.9	44.3	20.7	13.2	38.7	22.6	16.2	48.1	19.2	
Level of Service		D	C	D	C	B	D	C	B	D	B	
Approach Delay (s)		32.4			25.9			21.3			35.3	
Approach LOS		C			C			C			D	

Intersection Summary

HCM Average Control Delay	27.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

## 2: GRANT LINE RD & S LAMMERS ROAD

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑↑			↑↑↑	↵				↵↵↵	↵	
Volume (vph)	250	1210	0	0	930	610	0	0	0	850	0	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0				4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91	1.00				0.94	1.00	
Frt	1.00	1.00			1.00	0.85				1.00	0.85	
Flt Protected	0.95	1.00			1.00	1.00				0.95	1.00	
Satd. Flow (prot)	1770	5085			5085	1583				4990	1583	
Flt Permitted	0.95	1.00			1.00	1.00				0.95	1.00	
Satd. Flow (perm)	1770	5085			5085	1583				4990	1583	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	250	1210	0	0	930	610	0	0	0	850	0	210
RTOR Reduction (vph)	0	0	0	0	0	397	0	0	0	0	152	0
Lane Group Flow (vph)	250	1210	0	0	930	213	0	0	0	850	58	0
Turn Type	Prot					Perm					Split	
Protected Phases	7	4			8					6	6	
Permitted Phases						8						
Actuated Green, G (s)	15.7	45.7			26.0	26.0				20.6	20.6	
Effective Green, g (s)	15.7	45.7			26.0	26.0				20.6	20.6	
Actuated g/C Ratio	0.21	0.62			0.35	0.35				0.28	0.28	
Clearance Time (s)	4.0	4.0			4.0	4.0				4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0	3.0	
Lane Grp Cap (vph)	374	3128			1779	554				1383	439	
v/s Ratio Prot	c0.14	0.24			c0.18					c0.17	0.04	
v/s Ratio Perm						0.13						
v/c Ratio	0.67	0.39			0.52	0.39				0.61	0.13	
Uniform Delay, d1	26.9	7.2			19.2	18.1				23.4	20.1	
Progression Factor	1.00	1.00			1.00	1.00				1.00	1.00	
Incremental Delay, d2	4.5	0.1			0.3	0.4				0.8	0.1	
Delay (s)	31.4	7.3			19.5	18.6				24.2	20.3	
Level of Service	C	A			B	B				C	C	
Approach Delay (s)		11.4			19.1			0.0			23.4	
Approach LOS		B			B			A			C	

### Intersection Summary

HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	74.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

### 3: GRANT LINE RD & COSTCO DVWY.

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM



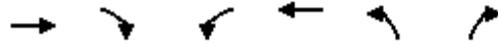
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↘	↑↑↑	↘	↗
Volume (vph)	1650	140	290	1240	140	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	5026		1770	5085	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	5026		1770	5085	1770	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1650	140	290	1240	140	300
RTOR Reduction (vph)	10	0	0	0	0	241
Lane Group Flow (vph)	1780	0	290	1240	140	59
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	41.1		19.2	64.3	17.7	17.7
Effective Green, g (s)	41.1		19.2	64.3	17.7	17.7
Actuated g/C Ratio	0.46		0.21	0.71	0.20	0.20
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2295		378	3633	348	311
v/s Ratio Prot	c0.35		c0.16	0.24	c0.08	
v/s Ratio Perm						0.04
v/c Ratio	0.78		0.77	0.34	0.40	0.19
Uniform Delay, d1	20.6		33.3	4.9	31.5	30.2
Progression Factor	1.00		1.19	0.48	1.00	1.00
Incremental Delay, d2	1.7		9.0	0.1	3.4	1.4
Delay (s)	22.3		48.7	2.4	35.0	31.5
Level of Service	C		D	A	C	C
Approach Delay (s)	22.3			11.2	32.6	
Approach LOS	C			B	C	

#### Intersection Summary

HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

4: GRANT LINE RD & WALMART DVWY.

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↙	↑↑↑	↙	↗
Volume (vph)	790	50	240	810	90	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	5040		1770	5085	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	5040		1770	5085	1770	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	790	50	240	810	90	220
RTOR Reduction (vph)	8	0	0	0	0	127
Lane Group Flow (vph)	832	0	240	810	90	93
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	22.4		17.4	43.8	38.2	38.2
Effective Green, g (s)	22.4		17.4	43.8	38.2	38.2
Actuated g/C Ratio	0.25		0.19	0.49	0.42	0.42
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1254		342	2475	751	672
v/s Ratio Prot	c0.17		c0.14	0.16	0.05	
v/s Ratio Perm						c0.06
v/c Ratio	0.66		0.70	0.33	0.12	0.14
Uniform Delay, d1	30.4		33.9	14.1	15.7	15.8
Progression Factor	1.56		1.56	0.58	1.00	1.00
Incremental Delay, d2	0.9		5.2	0.1	0.3	0.4
Delay (s)	48.3		58.0	8.2	16.0	16.3
Level of Service	D		E	A	B	B
Approach Delay (s)	48.3			19.6	16.2	
Approach LOS	D			B	B	

Intersection Summary

HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

# 5: GRANT LINE RD & NAGLEE ROAD

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	2200	570	0	1280	420	0	0	0	690	70	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.0	4.0		4.0	4.0				5.2	5.2	5.2
Lane Util. Factor	0.97	0.91	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3433	5085	1583		5085	1583				1681	1700	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3433	5085	1583		5085	1583				1681	1700	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	290	2200	570	0	1280	420	0	0	0	690	70	460
RTOR Reduction (vph)	0	0	122	0	0	0	0	0	0	0	0	238
Lane Group Flow (vph)	290	2200	448	0	1280	420	0	0	0	379	381	222
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6							4
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	12.1	53.1	53.1		36.8	90.0				27.0	27.0	27.0
Effective Green, g (s)	11.9	54.4	54.4		38.1	90.0				26.4	26.4	26.4
Actuated g/C Ratio	0.13	0.60	0.60		0.42	1.00				0.29	0.29	0.29
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	454	3074	957		2153	1583				493	499	464
v/s Ratio Prot	0.08	c0.43			0.25							
v/s Ratio Perm			0.28			0.27				c0.23	0.22	0.14
v/c Ratio	0.64	0.72	0.47		0.59	0.27				0.77	0.76	0.48
Uniform Delay, d1	37.0	12.4	9.8		20.0	0.0				29.0	29.0	26.1
Progression Factor	1.23	0.72	0.46		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	2.9	1.4	1.6		1.2	0.4				7.1	6.8	0.8
Delay (s)	48.3	10.4	6.1		21.2	0.4				36.1	35.8	26.9
Level of Service	D	B	A		C	A				D	D	C
Approach Delay (s)		13.2			16.1			0.0			32.5	
Approach LOS		B			B			A			C	

## Intersection Summary

HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

6: GRANT LINE RD & I-205 EAST

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1310	1280	0	0	900	0	410	0	470	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.0			4.0		4.4		4.4			
Lane Util. Factor	1.00	0.91			0.91		1.00		1.00			
Frt	1.00	1.00			1.00		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	1770	5085			5085		1770		1583			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1770	5085			5085		1770		1583			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1310	1280	0	0	900	0	410	0	470	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	55	0	0	0
Lane Group Flow (vph)	1310	1280	0	0	900	0	410	0	415	0	0	0
Turn Type	Prot						custom		custom			
Protected Phases	5	2			6							
Permitted Phases							8		8			
Actuated Green, G (s)	54.4	76.9			18.5			33.6	33.6			
Effective Green, g (s)	54.2	78.2			19.8			33.4	33.4			
Actuated g/C Ratio	0.45	0.65			0.17			0.28	0.28			
Clearance Time (s)	4.0	5.3			5.3			4.2	4.2			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	799	3314			839			493	441			
v/s Ratio Prot	c0.74	0.25			c0.18							
v/s Ratio Perm							0.23	c0.26				
v/c Ratio	1.64	0.39			1.07			0.83	0.94			
Uniform Delay, d1	32.9	9.7			50.1			40.7	42.3			
Progression Factor	1.00	1.00			1.00			1.00	1.00			
Incremental Delay, d2	293.5	0.3			52.5			11.4	28.5			
Delay (s)	326.4	10.1			102.6			52.1	70.8			
Level of Service	F	B			F			D	E			
Approach Delay (s)	170.0				102.6			62.1			0.0	
Approach LOS	F				F			E			A	
<b>Intersection Summary</b>												
HCM Average Control Delay			134.4		HCM Level of Service				F			
HCM Volume to Capacity ratio			1.32									
Actuated Cycle Length (s)			120.0		Sum of lost time (s)				12.6			
Intersection Capacity Utilization			122.7%		ICU Level of Service				H			
Analysis Period (min)			15									
c Critical Lane Group												

7: GRANT LINE RD & CORRAL HOLLOW RD

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	670	550	150	390	140	520	550	120	160	610	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		0.94	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	2787	1770	3399		4990	3539	1583	1770	3429	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	2787	1770	3399		4990	3539	1583	1770	3429	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	220	670	550	150	390	140	520	550	120	160	610	160
RTOR Reduction (vph)	0	0	384	0	33	0	0	0	83	0	20	0
Lane Group Flow (vph)	220	670	166	150	497	0	520	550	37	160	750	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	15.3	27.5	27.5	12.7	24.9		12.4	27.8	27.8	11.6	27.0	
Effective Green, g (s)	17.3	29.5	29.5	14.7	26.9		14.4	29.8	29.8	13.6	29.0	
Actuated g/C Ratio	0.18	0.30	0.30	0.15	0.28		0.15	0.31	0.31	0.14	0.30	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	314	1070	842	267	937		736	1081	483	247	1019	
v/s Ratio Prot	c0.12	c0.19		0.08	0.15		c0.10	0.16		0.09	c0.22	
v/s Ratio Perm			0.06						0.02			
v/c Ratio	0.70	0.63	0.20	0.56	0.53		0.71	0.51	0.08	0.65	0.74	
Uniform Delay, d1	37.7	29.3	25.3	38.5	30.0		39.6	27.9	24.1	39.7	30.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.9	1.2	0.1	2.7	0.6		3.1	0.4	0.1	5.7	2.8	
Delay (s)	44.6	30.5	25.4	41.2	30.6		42.7	28.3	24.2	45.5	33.7	
Level of Service	D	C	C	D	C		D	C	C	D	C	
Approach Delay (s)		30.7			32.9			34.2			35.7	
Approach LOS		C			C			C			D	

Intersection Summary

HCM Average Control Delay	33.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	97.6	Sum of lost time (s)	7.0
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

8: BYRON & LAMMERS RD

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	
Volume (vph)	270	220	40	200	170	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.94		1.00	1.00	0.97	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	1750		1770	1863	1738	
Flt Permitted	1.00		0.95	1.00	0.96	
Satd. Flow (perm)	1750		1770	1863	1738	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	270	220	40	200	170	50
RTOR Reduction (vph)	45	0	0	0	21	0
Lane Group Flow (vph)	445	0	40	200	199	0
Turn Type			Prot			
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	14.7		1.7	20.4	10.3	
Effective Green, g (s)	14.7		1.7	20.4	10.3	
Actuated g/C Ratio	0.38		0.04	0.53	0.27	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	665		78	982	463	
v/s Ratio Prot	c0.25		c0.02	0.11	c0.11	
v/s Ratio Perm						
v/c Ratio	0.67		0.51	0.20	0.43	
Uniform Delay, d1	10.0		18.1	4.8	11.8	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.6		5.6	0.1	0.6	
Delay (s)	12.5		23.7	5.0	12.4	
Level of Service	B		C	A	B	
Approach Delay (s)	12.5			8.1	12.4	
Approach LOS	B			A	B	

Intersection Summary

HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	38.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

9: BYRON & CORRAL HOLLOW RD

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	580	0	250	0	0	0	180	1130	0	0	1120	500
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0					4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00					1.00	0.91			0.91	
Frt	1.00	0.85					1.00	1.00			0.95	
Flt Protected	0.95	1.00					0.95	1.00			1.00	
Satd. Flow (prot)	1770	1583					1770	5085			4850	
Flt Permitted	0.76	1.00					0.95	1.00			1.00	
Satd. Flow (perm)	1410	1583					1770	5085			4850	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	580	0	250	0	0	0	180	1130	0	0	1120	500
RTOR Reduction (vph)	0	144	0	0	0	0	0	0	0	0	89	0
Lane Group Flow (vph)	580	106	0	0	0	0	180	1130	0	0	1531	0
Turn Type	Perm		Perm				Prot					
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8								
Actuated Green, G (s)	38.0	38.0					10.0	44.0			30.0	
Effective Green, g (s)	38.0	38.0					10.0	44.0			30.0	
Actuated g/C Ratio	0.42	0.42					0.11	0.49			0.33	
Clearance Time (s)	4.0	4.0					4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0			3.0	
Lane Grp Cap (vph)	595	668					197	2486			1617	
v/s Ratio Prot		0.07					c0.10	0.22			c0.32	
v/s Ratio Perm	c0.41											
v/c Ratio	0.97	0.16					0.91	0.45			0.95	
Uniform Delay, d1	25.5	16.1					39.6	15.1			29.2	
Progression Factor	1.00	1.00					1.00	1.00			1.00	
Incremental Delay, d2	30.3	0.1					40.5	0.1			11.9	
Delay (s)	55.9	16.2					80.1	15.2			41.1	
Level of Service	E	B					F	B			D	
Approach Delay (s)		43.9			0.0			24.2			41.1	
Approach LOS		D			A			C			D	

**Intersection Summary**

HCM Average Control Delay	35.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

10: ELEVENTH ST. & LAMMERS RD

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1910	940	90	990	90	670	100	120	70	120	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.9	2.9	1.9	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	1770	5085	1583	3433	3539	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	1770	5085	1583	3433	3539	1583	3433	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	250	1910	940	90	990	90	670	100	120	70	120	90
RTOR Reduction (vph)	0	0	0	0	0	46	0	0	87	0	0	76
Lane Group Flow (vph)	250	1910	940	90	990	44	670	100	33	70	120	14
Turn Type	Prot		Free	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6			8			4
Actuated Green, G (s)	11.7	39.1	94.1	7.5	34.9	34.9	17.1	23.5	23.5	6.0	12.4	12.4
Effective Green, g (s)	13.8	41.2	94.1	9.6	37.0	37.0	19.2	25.6	25.6	8.1	14.5	14.5
Actuated g/C Ratio	0.15	0.44	1.00	0.10	0.39	0.39	0.20	0.27	0.27	0.09	0.15	0.15
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	503	2226	1583	181	1999	622	700	963	431	296	287	244
v/s Ratio Prot	0.07	c0.38		0.05	0.19		c0.20	0.03		0.02	0.06	
v/s Ratio Perm			c0.59			0.03			0.02			0.01
v/c Ratio	0.50	0.86	0.59	0.50	0.50	0.07	0.96	0.10	0.08	0.24	0.42	0.06
Uniform Delay, d1	37.0	23.8	0.0	40.0	21.5	17.8	37.0	25.7	25.5	40.1	36.0	34.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	3.5	1.6	2.1	0.2	0.0	23.7	0.0	0.1	0.4	1.0	0.1
Delay (s)	37.7	27.3	1.6	42.1	21.7	17.9	60.7	25.7	25.5	40.5	37.0	34.1
Level of Service	D	C	A	D	C	B	E	C	C	D	D	C
Approach Delay (s)		20.4			23.0			52.1			36.9	
Approach LOS		C			C			D			D	

Intersection Summary

HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	94.1	Sum of lost time (s)	1.9
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

11: ELEVENTH ST. & CORRAL HOLLOW RD

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM



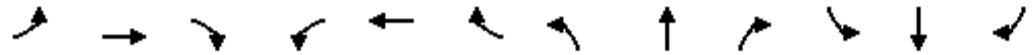
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	490	930	760	450	480	290	260	940	240	300	960	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	490	930	760	450	480	290	260	940	240	300	960	100
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	14	0	0	53
Lane Group Flow (vph)	490	930	760	450	480	276	260	940	226	300	960	47
Turn Type	Prot		Free	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	5	2		1	6	3	7	4	1	3	8	5
Permitted Phases			Free			6			4			8
Actuated Green, G (s)	14.3	24.1	91.9	13.2	23.0	32.2	12.0	27.4	40.6	9.2	24.6	38.9
Effective Green, g (s)	16.3	26.1	91.9	15.2	25.0	36.2	14.0	29.4	44.6	11.2	26.6	42.9
Actuated g/C Ratio	0.18	0.28	1.00	0.17	0.27	0.39	0.15	0.32	0.49	0.12	0.29	0.47
Clearance Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	609	1444	1583	568	1383	624	523	1627	768	418	1472	739
v/s Ratio Prot	c0.14	c0.18		0.13	0.09	0.05	c0.08	0.18	0.05	c0.09	c0.19	0.01
v/s Ratio Perm			c0.48			0.12			0.09			0.02
v/c Ratio	0.80	0.64	0.48	0.79	0.35	0.44	0.50	0.58	0.29	0.72	0.65	0.06
Uniform Delay, d1	36.3	28.8	0.0	36.8	26.9	20.4	35.7	26.1	14.2	38.8	28.6	13.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.6	1.0	1.0	7.5	0.2	0.5	0.7	0.5	0.2	5.8	1.0	0.0
Delay (s)	43.9	29.8	1.0	44.3	27.0	20.9	36.5	26.6	14.4	44.6	29.6	13.5
Level of Service	D	C	A	D	C	C	D	C	B	D	C	B
Approach Delay (s)		23.0			32.0			26.3			31.8	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	91.9	Sum of lost time (s)	7.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

12: GRANT LINE ROAD & PAVILLION PKWY

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	620	0	40	570	0	10	60	30	0	40	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.95			0.88	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	3539		1770	3539		1770	1770			1632	
Flt Permitted	0.42	1.00		0.39	1.00		0.55	1.00			1.00	
Satd. Flow (perm)	781	3539		730	3539		1025	1770			1632	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	160	620	0	40	570	0	10	60	30	0	40	190
RTOR Reduction (vph)	0	0	0	0	0	0	0	21	0	0	130	0
Lane Group Flow (vph)	160	620	0	40	570	0	10	70	0	0	100	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	33.0	33.0		33.0	33.0		19.0	19.0			19.0	
Effective Green, g (s)	33.0	33.0		33.0	33.0		19.0	19.0			19.0	
Actuated g/C Ratio	0.55	0.55		0.55	0.55		0.32	0.32			0.32	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Grp Cap (vph)	430	1946		402	1946		325	561			517	
v/s Ratio Prot		0.18			0.16			0.04			c0.06	
v/s Ratio Perm	c0.20			0.05			0.01					
v/c Ratio	0.37	0.32		0.10	0.29		0.03	0.12			0.19	
Uniform Delay, d1	7.6	7.4		6.4	7.2		14.1	14.6			14.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			5.49	
Incremental Delay, d2	2.5	0.4		0.5	0.4		0.2	0.5			0.8	
Delay (s)	10.1	7.8		6.9	7.6		14.3	15.0			82.6	
Level of Service	B	A		A	A		B	B			F	
Approach Delay (s)		8.3			7.6			15.0			82.6	
Approach LOS		A			A			B			F	

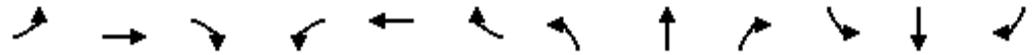
Intersection Summary

HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

14: I-205 WB ON /OFF RAMP & LAMMERS EXTN

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	740	0	230	0	1230	700	0	1380	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.91	0.91	1.00		0.95	0.88		0.91	1.00
Frt				1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95	0.95	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3221	1610	1583		3539	2787		5085	1583
Flt Permitted				0.95	0.95	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3221	1610	1583		3539	2787		5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	740	0	230	0	1230	700	0	1380	100
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	38
Lane Group Flow (vph)	0	0	0	496	244	230	0	1230	700	0	1380	62
Turn Type				Split		Free			pm+ov			Perm
Protected Phases				8	8			2	8		6	
Permitted Phases						Free			2			6
Actuated Green, G (s)				20.4	20.4	75.0		46.6	67.0		46.6	46.6
Effective Green, g (s)				20.4	20.4	75.0		46.6	67.0		46.6	46.6
Actuated g/C Ratio				0.27	0.27	1.00		0.62	0.89		0.62	0.62
Clearance Time (s)				4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)				3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)				876	438	1583		2199	2787		3159	984
v/s Ratio Prot				c0.15	0.15			c0.35	0.07		0.27	
v/s Ratio Perm						0.15			0.18			0.04
v/c Ratio				0.57	0.56	0.15		0.56	0.25		0.44	0.06
Uniform Delay, d1				23.5	23.4	0.0		8.2	0.6		7.4	5.6
Progression Factor				1.00	1.00	1.00		0.62	1.00		1.00	1.00
Incremental Delay, d2				0.8	1.5	0.2		0.9	0.0		0.4	0.1
Delay (s)				24.3	25.0	0.2		6.0	0.6		7.8	5.7
Level of Service				C	C	A		A	A		A	A
Approach Delay (s)		0.0			18.8			4.0			7.7	
Approach LOS		A			B			A			A	

Intersection Summary		
HCM Average Control Delay	8.5	HCM Level of Service
HCM Volume to Capacity ratio	0.56	A
Actuated Cycle Length (s)	75.0	Sum of lost time (s)
Intersection Capacity Utilization	54.7%	ICU Level of Service
Analysis Period (min)	15	A
c Critical Lane Group		

15: I-205 EB OFF /ON-RAMP & LAMMERS EXTN

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑↑↑	↗↗		↑↑↑	↗
Volume (vph)	270	0	940	0	0	0	0	1660	450	0	1790	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00					0.91	0.88		0.91	1.00
Frt		1.00	0.85					1.00	0.85		1.00	0.85
Flt Protected		0.95	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)		1770	1583					5085	2787		5085	1583
Flt Permitted		0.95	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)		1770	1583					5085	2787		5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	270	0	940	0	0	0	0	1660	450	0	1790	330
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	126	0	0	92
Lane Group Flow (vph)	0	270	940	0	0	0	0	1660	324	0	1790	238
Turn Type	Prot		Free						Perm			Perm
Protected Phases	7	4						2			6	
Permitted Phases			Free						2			6
Actuated Green, G (s)		13.0	75.0					54.0	54.0		54.0	54.0
Effective Green, g (s)		13.0	75.0					54.0	54.0		54.0	54.0
Actuated g/C Ratio		0.17	1.00					0.72	0.72		0.72	0.72
Clearance Time (s)		4.0						4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0						3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		307	1583					3661	2007		3661	1140
v/s Ratio Prot		c0.15						0.33			0.35	
v/s Ratio Perm			c0.59						0.12			0.15
v/c Ratio		0.88	0.59					0.45	0.16		0.49	0.21
Uniform Delay, d1		30.2	0.0					4.4	3.3		4.5	3.5
Progression Factor		1.00	1.00					0.82	1.89		1.08	3.45
Incremental Delay, d2		23.6	1.6					0.4	0.2		0.4	0.4
Delay (s)		53.8	1.6					4.0	6.5		5.3	12.3
Level of Service		D	A					A	A		A	B
Approach Delay (s)		13.3			0.0			4.5			6.4	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

16: COMMERCE ROAD & LAMMERS EXTN

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	380	410	210	1630	2700	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.94	1.00	0.97	0.86	0.91	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	4990	1583	3433	6408	5085	2787
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	4990	1583	3433	6408	5085	2787
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	380	410	210	1630	2700	80
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	380	409	210	1630	2700	80
Turn Type		pt+ov	Prot			Free
Protected Phases	4	4 5	5	2	6	
Permitted Phases						Free
Actuated Green, G (s)	15.8	25.0	5.2	51.2	42.0	75.0
Effective Green, g (s)	15.8	25.0	5.2	51.2	42.0	75.0
Actuated g/C Ratio	0.21	0.33	0.07	0.68	0.56	1.00
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1051	528	238	4375	2848	2787
v/s Ratio Prot	0.08	c0.26	0.06	0.25	c0.53	
v/s Ratio Perm						0.03
v/c Ratio	0.36	0.78	0.88	0.37	0.95	0.03
Uniform Delay, d1	25.3	22.5	34.6	5.1	15.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.03	1.00
Incremental Delay, d2	0.2	7.0	29.4	0.2	7.6	0.0
Delay (s)	25.5	29.5	64.0	5.3	23.6	0.0
Level of Service	C	C	E	A	C	A
Approach Delay (s)	27.6			12.0	22.9	
Approach LOS	C			B	C	

Intersection Summary

HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

# 5: GRANT LINE RD & NAGLEE ROAD

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - SAT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	404	2007	848	0	1637	549	0	0	0	772	122	642
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.0	4.0		4.0	4.0				5.2	5.2	4.8
Lane Util. Factor	0.97	0.91	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3335	4940	1538		4940	1538				1633	1659	1538
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3335	4940	1538		4940	1538				1633	1659	1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	404	2007	848	0	1637	549	0	0	0	772	122	642
RTOR Reduction (vph)	0	0	225	0	0	0	0	0	0	0	0	2
Lane Group Flow (vph)	404	2007	623	0	1637	549	0	0	0	448	446	640
Turn Type	Prot		Perm			Free				Split		pm+ov
Protected Phases	5	2			6					4	4	5
Permitted Phases			2			Free						4
Actuated Green, G (s)	13.5	49.5	49.5		31.8	86.4				27.0	27.0	40.5
Effective Green, g (s)	13.3	50.8	50.8		33.1	86.4				26.4	26.4	39.3
Actuated g/C Ratio	0.15	0.59	0.59		0.38	1.00				0.31	0.31	0.45
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.2
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	513	2905	904		1893	1538				499	507	700
v/s Ratio Prot	0.12	0.41			c0.33					0.27	0.27	c0.14
v/s Ratio Perm			0.40			0.36						0.28
v/c Ratio	0.79	0.69	0.69		0.86	0.36				0.90	0.88	0.91
Uniform Delay, d1	35.2	12.4	12.3		24.6	0.0				28.7	28.5	22.0
Progression Factor	1.00	1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	7.8	0.7	2.2		4.4	0.6				18.6	15.9	16.5
Delay (s)	43.0	13.1	14.5		29.0	0.6				47.3	44.4	38.5
Level of Service	D	B	B		C	A				D	D	D
Approach Delay (s)		17.2			21.9			0.0			42.8	
Approach LOS		B			C			A			D	

## Intersection Summary

HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	86.4	Sum of lost time (s)	13.6
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

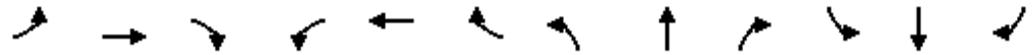
6: GRANT LINE RD & I-205 EAST

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - SAT

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	1159	1324	0	0	1270	0	326	0	233	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.4	4.0			4.0		4.4		4.4				
Lane Util. Factor	1.00	0.91			0.91		1.00		1.00				
Frt	1.00	1.00			1.00		1.00		0.85				
Flt Protected	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (prot)	1719	4940			4940		1719		1538				
Flt Permitted	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (perm)	1719	4940			4940		1719		1538				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	1159	1324	0	0	1270	0	326	0	233	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	53	0	0	0	
Lane Group Flow (vph)	1159	1324	0	0	1270	0	326	0	180	0	0	0	
Turn Type	Prot						custom		custom				
Protected Phases	5	2			6								
Permitted Phases							8		8				
Actuated Green, G (s)	55.0	82.7			23.5			27.8	27.8				
Effective Green, g (s)	54.8	84.0			24.8			27.6	27.6				
Actuated g/C Ratio	0.46	0.70			0.21			0.23	0.23				
Clearance Time (s)	4.2	5.3			5.3			4.2	4.2				
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0				
Lane Grp Cap (vph)	785	3458			1021			395	354				
v/s Ratio Prot	c0.67	0.27			c0.26								
v/s Ratio Perm							c0.19		0.12				
v/c Ratio	1.48	0.38			1.24			0.83	0.51				
Uniform Delay, d1	32.6	7.4			47.6			43.9	40.3				
Progression Factor	1.15	0.87			1.00			1.00	1.00				
Incremental Delay, d2	219.0	0.2			118.1			13.1	1.1				
Delay (s)	256.6	6.7			165.7			57.0	41.4				
Level of Service	F	A			F			E	D				
Approach Delay (s)	123.3				165.7				50.5		0.0		
Approach LOS	F				F				D		A		
<b>Intersection Summary</b>													
HCM Average Control Delay			126.4		HCM Level of Service				F				
HCM Volume to Capacity ratio			1.25										
Actuated Cycle Length (s)			120.0		Sum of lost time (s)				12.8				
Intersection Capacity Utilization			116.8%		ICU Level of Service				H				
Analysis Period (min)			15										
c Critical Lane Group													

14: I-205 WB ON /OFF RAMP & LAMMERS EXTN

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - SAT

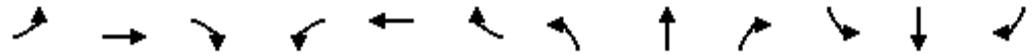


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖↗	↖	↗		↕↕	↖↗		↕↕↕	↖
Volume (vph)	0	0	0	740	0	230	0	1230	700	0	1380	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.91	0.91	1.00		0.95	0.88		0.91	1.00
Fr <sub>t</sub>				1.00	1.00	0.85		1.00	0.85		1.00	0.85
Fl <sub>t</sub> Protected				0.95	0.95	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3221	1610	1583		3539	2787		5085	1583
Fl <sub>t</sub> Permitted				0.95	0.95	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3221	1610	1583		3539	2787		5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor (vph)	110%	110%	110%	110%	110%	110%	110%	110%	110%	110%	110%	110%
Adj. Flow (vph)	0	0	0	814	0	253	0	1353	770	0	1518	110
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	43
Lane Group Flow (vph)	0	0	0	545	269	253	0	1353	770	0	1518	67
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Split		Free			pm+ov			Perm
Protected Phases				8	8			2	8		6	
Permitted Phases						Free			2			6
Actuated Green, G (s)				21.3	21.3	75.0		45.7	67.0		45.7	45.7
Effective Green, g (s)				21.3	21.3	75.0		45.7	67.0		45.7	45.7
Actuated g/C Ratio				0.28	0.28	1.00		0.61	0.89		0.61	0.61
Clearance Time (s)				4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)				3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)				915	457	1583		2156	2787		3098	965
v/s Ratio Prot				c0.17	0.17			c0.38	0.08		0.30	
v/s Ratio Perm						0.16			0.20			0.04
v/c Ratio				0.60	0.59	0.16		0.63	0.28		0.49	0.07
Uniform Delay, d <sub>1</sub>				23.1	23.1	0.0		9.3	0.6		8.2	6.0
Progression Factor				1.00	1.00	1.00		0.75	1.00		1.00	1.00
Incremental Delay, d <sub>2</sub>				1.0	1.9	0.2		1.2	0.0		0.6	0.1
Delay (s)				24.2	25.0	0.2		8.1	0.6		8.7	6.1
Level of Service				C	C	A		A	A		A	A
Approach Delay (s)		0.0			18.7			5.4			8.5	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

15: I-205 EB OFF /ON-RAMP & LAMMERS EXTN

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - SAT

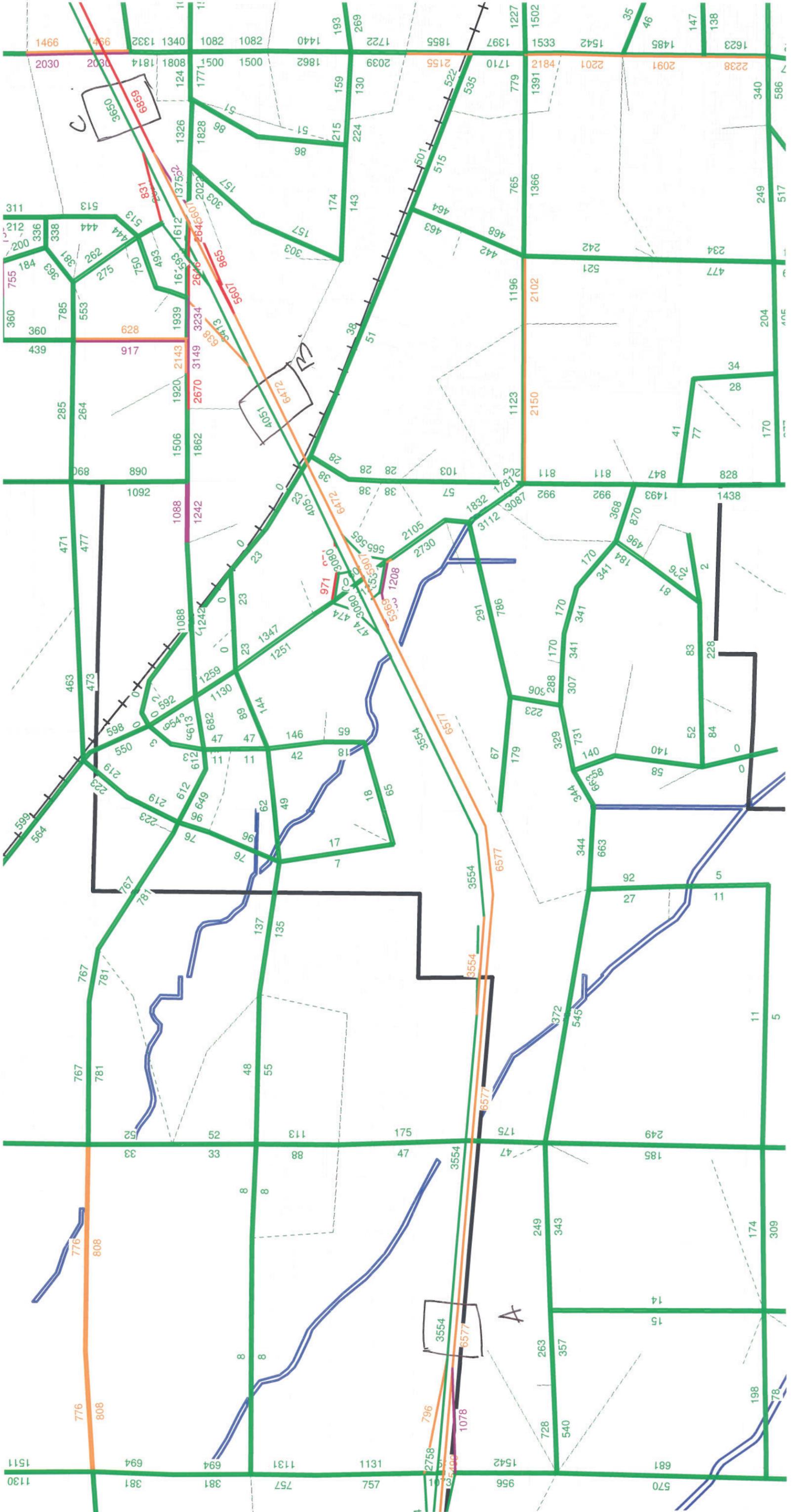


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑↑↑	↗↗		↑↑↑	↗
Volume (vph)	270	0	940	0	0	0	0	1660	450	0	1790	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00					0.91	0.88		0.91	1.00
Frt		1.00	0.85					1.00	0.85		1.00	0.85
Flt Protected		0.95	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)		1770	1583					5085	2787		5085	1583
Flt Permitted		0.95	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)		1770	1583					5085	2787		5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor (vph)	110%	110%	110%	110%	100%	100%	100%	110%	110%	100%	110%	110%
Adj. Flow (vph)	297	0	1034	0	0	0	0	1826	495	0	1969	363
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	139	0	0	102
Lane Group Flow (vph)	0	297	1034	0	0	0	0	1826	356	0	1969	261
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free						Perm			Perm
Protected Phases	7	4						2			6	
Permitted Phases			Free						2			6
Actuated Green, G (s)		13.0	75.0					54.0	54.0		54.0	54.0
Effective Green, g (s)		13.0	75.0					54.0	54.0		54.0	54.0
Actuated g/C Ratio		0.17	1.00					0.72	0.72		0.72	0.72
Clearance Time (s)		4.0						4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0						3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		307	1583					3661	2007		3661	1140
v/s Ratio Prot		c0.17						0.36			0.39	
v/s Ratio Perm			c0.65						0.13			0.17
v/c Ratio		0.97	0.65					0.50	0.18		0.54	0.23
Uniform Delay, d1		30.8	0.0					4.6	3.4		4.8	3.5
Progression Factor		1.00	1.00					1.00	1.00		1.18	4.16
Incremental Delay, d2		42.1	2.1					0.5	0.2		0.5	0.4
Delay (s)		72.9	2.1					5.1	3.6		6.2	15.1
Level of Service		E	A					A	A		A	B
Approach Delay (s)		17.9			0.0			4.8			7.6	
Approach LOS		B			A			A			A	

Intersection Summary		
HCM Average Control Delay	8.8	HCM Level of Service
HCM Volume to Capacity ratio	0.71	A
Actuated Cycle Length (s)	75.0	Sum of lost time (s)
Intersection Capacity Utilization	61.2%	4.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		B



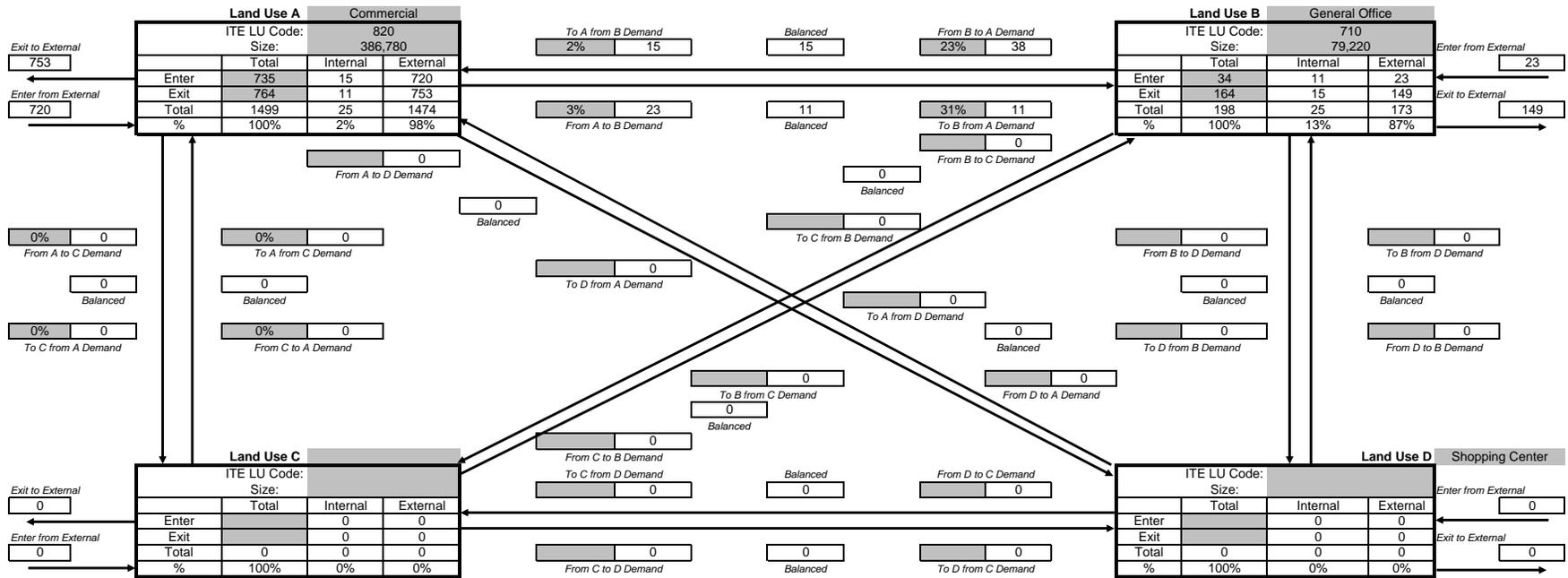
2030 - PM - Vol



## **APPENDIX A-8**

### **Trip Generation Analysis Worksheets**

# Internal Capture Rate Worksheet



Net External Trips for Multi-Use Development

	Land Use A	Land Use B	Land Use C	Land Use D	Total
Enter	720	23	0	0	744
Exit	753	149	0	0	903
Total	1474	173	0	0	1647
Single-Use	1499	198	0	0	1697

**INTERNAL CAPTURE**

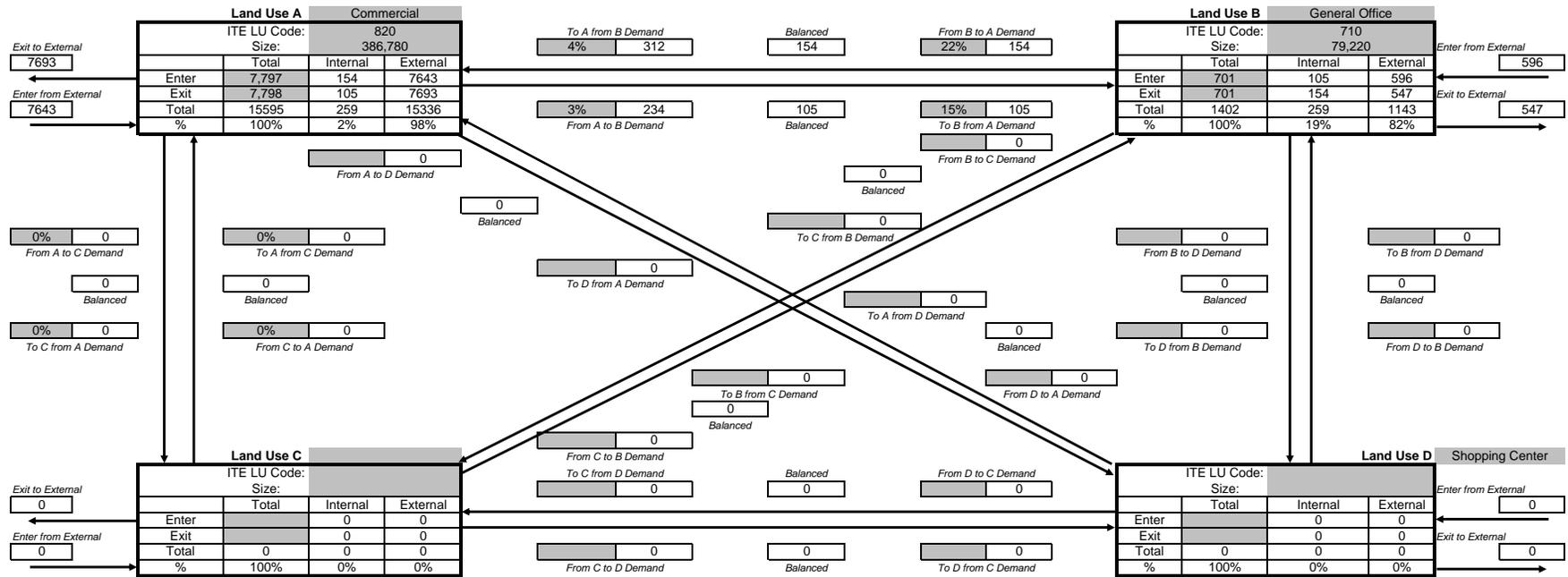
**2.97%**

		PM Peak of Street		
		Mid-day Peak	PM Peak of Street	Daily
from OFFICE	to Office	2%	1%	2%
	to Retail	20%	23%	22%
	to Residential	0%	2%	2%
from RETAIL	to Office	3%	3%	3%
	to Retail	29%	20%	30%
	to Residential	7%	12%	11%
from RESIDENTIAL	to Office	N/A	N/A	N/A
	to Retail	34%	53%	38%
	to Residential	N/A	N/A	N/A

Pioneer Commercial Center  
Internal Capture - PM Peak Hour

		PM Peak of Street		
		Mid-day Peak	PM Peak of Street	Daily
to OFFICE	from Office	6%	6%	2%
	from Retail	38%	31%	15%
	from Residential	0%	0%	N/A
to RETAIL	from Office	4%	2%	4%
	from Retail	31%	20%	28%
	from Residential	5%	9%	9%
to RESIDENTIAL	from Office	0%	2%	3%
	from Retail	37%	31%	33%
	from Residential	N/A	N/A	N/A

# Internal Capture Rate Worksheet



Net External Trips for Multi-Use Development

	Land Use A	Land Use B	Land Use C	Land Use D	Total
Enter	7643	596	0	0	8239
Exit	7693	547	0	0	8240
Total	15336	1143	0	0	16478
Single-Use	15595	1402	0	0	16997

**INTERNAL CAPTURE**

**3.05%**

		PM Peak of Street		
		Mid-day Peak	PM Peak of Street	Daily
from OFFICE	to Office	2%	1%	2%
	to Retail	20%	23%	22%
	to Residential	0%	2%	2%
from RETAIL	to Office	3%	3%	3%
	to Retail	29%	20%	30%
	to Residential	7%	12%	11%
from RESIDENTIAL	to Office	N/A	N/A	N/A
	to Retail	34%	53%	38%
	to Residential	N/A	N/A	N/A

Pioneer Commercial Center  
Internal Capuure - PM Peak Hour

		PM Peak of Street		
		Mid-day Peak	PM Peak of Street	Daily
to OFFICE	from Office	6%	6%	2%
	from Retail	38%	31%	15%
	from Residential	0%	0%	N/A
to RETAIL	from Office	4%	2%	4%
	from Retail	31%	20%	28%
	from Residential	5%	9%	9%
to RESIDENTIAL	from Office	0%	2%	3%
	from Retail	37%	31%	33%
	from Residential	N/A	N/A	N/A

Land Use	ITE Code	Size (Sq. ft)	Daily Trips			AM Peak Hour			PM Peak Hour			Saturday Trips	Mid-Day Peak Hour				
			In	Out	Total	In	Out	Total	In	Out	Total		In	Out	Total		
Option I (General Office - 17% and Shopping Center - 83%)																	
A) General Office		710	106,700	701	701	1,402	174	24	198	34	164	198		253	24	20	44
Internal Reduction*				105	154	259	n/a	n/a	n/a	11	15	25			n/a	n/a	n/a
Net Office External Trips				596	547	1,143	174	24	198	23	149	173		253	24	20	44
B) Shopping Center		820	359,300	7,797	7,798	15,595	200	128	328	735	764	1,499		20,682	1,023	945	1,968
Internal Reduction*				154	105	259	n/a	n/a	n/a	15	11	25			n/a	n/a	n/a
Net Shopping Center External Trips				7,643	7,693	15,336	200	128	328	720	753	1,474		20,682	1,023	945	1,968
Shopping Center Pass-By Trips	-34%			(251)	(251)	(501)	n/a	n/a	n/a	(251)	(251)	(501)	-26%	-	(335)	(335)	(669)
Shopping Center Net New Trips	66%			7,392	7,442	14,835	200	128	328	470	503	973	74%	-	688	610	1,299
<b>Total Filios-Dobler Trips</b>			<b>466,000</b>	<b>7,988</b>	<b>7,989</b>	<b>15,977</b>	<b>374</b>	<b>152</b>	<b>526</b>	<b>493</b>	<b>652</b>	<b>1,145</b>		<b>20,935</b>	<b>712</b>	<b>630</b>	<b>1,343</b>

\* Internal Reduction - See Internal Capture Worksheet

## TRIP GENERATION WORKSHEET EQUATIONS

**Development:** Filios-Dobler  
**Size:** 106,700 GSF

**ITE Land Use Code:** General Office Building,

**Variable:** Per 1,000 GSF (G)

### Total Weekday Trips

$$\ln(T) = 0.77 \ln(G) + 3.65$$

	Enter	Exit	Total
<b>Vehicle Trips</b>	701	701	1402
<b>Site Distribution</b>	50%	50%	100%

### Weekday AM Peak Hour Trips

$$\ln(T) = 0.80 \ln(G) + 1.55$$

	Enter	Exit	Total
<b>Vehicle Trips</b>	174	24	198
<b>Site Distribution</b>	88%	12%	100%

### Weekday PM Peak Hour Trips

$$T = 1.12(G) + 78.81$$

	Enter	Exit	Total
<b>Vehicle Trips</b>	34	164	198
<b>Site Distribution</b>	17%	83%	100%

## TRIP GENERATION WORKSHEET RATES

**Development:** Filios-Dobler  
**Size:** 106,700 GSF  
  
**ITE Land Use Code:** General Office Building,  
 Code 710 (7th Edition)  
  
**Variable:** Per 1,000 GSF (G)

### Total Saturday Trips

$$T = 2.37 \times (G)$$

	Enter	Exit	Total
<b>Vehicle Trips</b>	127	126	253
<b>Site Distribution</b>	50%	50%	100%

### Saturday Peak Hour of Generator Trips

$$T = 0.41 \times (G)$$

	Enter	Exit	Total
<b>Vehicle Trips</b>	24	20	44
<b>Site Distribution</b>	54%	46%	100%

## TRIP GENERATION WORKSHEET EQUATIONS

**Development:** Filios-Dobler  
**Size:** 359,300 GSF

**ITE Land Use Code:** Shopping Center, Code 820 (7th Edition)

**Variable:** Per 1,000 GSF (G)

### Total Weekday Trips

$$\ln(T) = 0.65 \ln(G) + 5.83$$

		Enter	Exit	Total
<b>Vehicle Trips</b>		7797	7798	15,595
<b>Site Distribution</b>		50%	50%	100%
<b>34%</b>	<b>Pass-by Trips</b>	2651	2651	5,302
<b>66%</b>	<b>New Trips</b>	5,146	5,147	10,293
				<b>15,595</b>

### Weekday AM Peak Hour Trips

$$\ln(T) = 0.59 \ln(G) + 2.32$$

		Enter	Exit	Total
<b>Vehicle Trips</b>		200	128	328
<b>Site Distribution</b>		61%	39%	100%
<b>34%</b>	<b>Pass-by Trips</b>	56	56	112
<b>66%</b>	<b>New Trips</b>	144	72	216
				<b>328</b>

### Weekday PM Peak Hour Trips

$$\ln(T) = 0.67 \ln(G) + 3.37$$

		Enter	Exit	Total
<b>Vehicle Trips</b>		735	764	1,499
<b>Site Distribution</b>		49%	51%	100%
<b>34%</b>	<b>Pass-by Trips</b>	255	255	510
<b>66%</b>	<b>New Trips</b>	480	509	989
				<b>1499</b>

## TRIP GENERATION WORKSHEET EQUATIONS

**Development:** Flios  
**Size:** 359,300 GSF

**ITE Land Use Code:** Shopping Center, Code 820 (7th Edition)

**Variable:** Per 1,000 GSF (G)

### Total Saturday Trips

$$\text{Ln}(T) = 0.63 \text{ Ln}(G) + 6.23$$

		Enter	Exit	Total
<b>Vehicle Trips</b>		10341	10341	20,682
<b>Site Distribution</b>		50%	50%	100%
<b>26%</b>	<b>Pass-by Trips</b>	2688	2689	5,377
<b>74%</b>	<b>New Trips</b>	7653	7652	15305

**20682**

### Saturday Peak Hour Trips

$$\text{Ln}(T) = 0.65 \text{ Ln}(G) + 3.76$$

		Enter	Exit	Total
<b>Vehicle Trips</b>		1023	945	1,968
<b>Site Distribution</b>		52%	48%	100%
<b>26%</b>	<b>Pass-by Trips</b>	256	256	512
<b>74%</b>	<b>New Trips</b>	767	689	1456

**1968**

## **APPENDIX A-9**

### **Existing + Project Conditions LOS Analysis Worksheets**

1: GRANT LINE RD & BYRON



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	160	292	135	267	285	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.91		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	1538	1647		1719	1810
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1719	1538	1647		1719	1810
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	167	304	141	278	297	125
RTOR Reduction (vph)	0	238	123	0	0	0
Lane Group Flow (vph)	167	66	296	0	297	125
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	10.3	10.3	13.0		12.4	29.4
Effective Green, g (s)	10.3	10.3	13.0		12.4	29.4
Actuated g/C Ratio	0.22	0.22	0.27		0.26	0.62
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	371	332	449		447	1116
v/s Ratio Prot	c0.10		c0.18		c0.17	0.07
v/s Ratio Perm		0.04				
v/c Ratio	0.45	0.20	0.66		0.66	0.11
Uniform Delay, d1	16.2	15.3	15.4		15.8	3.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.9	0.3	3.5		3.7	0.0
Delay (s)	17.1	15.6	18.9		19.5	3.8
Level of Service	B	B	B		B	A
Approach Delay (s)	16.1		18.9			14.8
Approach LOS	B		B			B

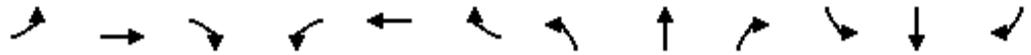
Intersection Summary

HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	47.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

EXISTING CONDITIONS FILIOS-DOBLER - AM

2: GRANT LINE RD & LAMMERS ROAD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	15	521	10	120	624	15	12	3	36	25	7	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	566	11	130	678	16	13	3	39	27	8	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					492							
pX, platoon unblocked	0.71						0.71	0.71		0.71	0.71	0.71
vC, conflicting volume	695			577			1572	1560	572	1592	1557	686
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	361			577			1601	1585	572	1631	1581	349
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			87			72	95	92	39	88	97
cM capacity (veh/h)	835			982			46	64	514	45	64	486

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	593	825	55	51
Volume Left	16	130	13	27
Volume Right	11	16	39	16
cSH	835	982	136	67
Volume to Capacity	0.02	0.13	0.41	0.76
Queue Length 95th (ft)	1	11	44	87
Control Delay (s)	0.5	3.2	48.8	151.0
Lane LOS	A	A	E	F
Approach Delay (s)	0.5	3.2	48.8	151.0
Approach LOS			E	F

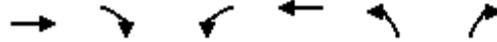
Intersection Summary			
Average Delay		8.8	
Intersection Capacity Utilization		84.7%	ICU Level of Service
Analysis Period (min)		15	E

3: GRANT LINE RD & COSTCO DVWY.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↙	↑↑	↙	↗
Volume (vph)	612	45	60	734	20	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4889		1719	3438	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4889		1719	3438	1719	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	665	49	65	798	22	49
RTOR Reduction (vph)	15	0	0	0	0	28
Lane Group Flow (vph)	699	0	65	798	22	21
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	17.2		5.3	26.5	25.5	25.5
Effective Green, g (s)	17.2		5.3	26.5	25.5	25.5
Actuated g/C Ratio	0.29		0.09	0.44	0.42	0.42
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1402		152	1518	731	654
v/s Ratio Prot	0.14		0.04	c0.23	0.01	
v/s Ratio Perm						c0.01
v/c Ratio	0.50		0.43	0.53	0.03	0.03
Uniform Delay, d1	17.8		25.9	12.2	10.0	10.1
Progression Factor	1.00		1.33	1.44	1.00	1.00
Incremental Delay, d2	0.3		1.7	0.3	0.1	0.1
Delay (s)	18.1		36.1	17.8	10.1	10.1
Level of Service	B		D	B	B	B
Approach Delay (s)	18.1			19.2	10.1	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	30.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↙	↑↑	↙	↗
Volume (vph)	637	30	75	784	15	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4907		1719	3438	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4907		1719	3438	1719	1538
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	724	34	85	891	17	74
RTOR Reduction (vph)	9	0	0	0	0	45
Lane Group Flow (vph)	749	0	85	891	17	29
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	17.3		7.2	28.5	23.5	23.5
Effective Green, g (s)	17.3		7.2	28.5	23.5	23.5
Actuated g/C Ratio	0.29		0.12	0.48	0.39	0.39
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1415		206	1633	673	602
v/s Ratio Prot	0.15		0.05	c0.26	0.01	
v/s Ratio Perm						c0.02
v/c Ratio	0.53		0.41	0.55	0.03	0.05
Uniform Delay, d1	17.9		24.4	11.2	11.2	11.3
Progression Factor	1.91		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3		1.3	0.4	0.1	0.2
Delay (s)	34.5		25.8	11.5	11.3	11.5
Level of Service	C		C	B	B	B
Approach Delay (s)	34.5			12.8	11.4	
Approach LOS	C			B	B	

**Intersection Summary**

HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

EXISTING CONDITIONS FILIOS-DOBLER - AM

5: GRANT LINE RD & NAGLEE ROAD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	138	516	83	0	617	335	0	0	0	270	50	362
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (prot)	3335	3438	1538		4940	1538				1633	1662	1538
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (perm)	3335	3438	1538		4940	1538				1633	1662	1538
Peak-hour factor, PHF	0.92	0.92	0.92	1.00	0.92	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Adj. Flow (vph)	150	561	90	0	671	335	0	0	0	293	54	393
RTOR Reduction (vph)	0	0	29	0	0	0	0	0	0	0	0	217
Lane Group Flow (vph)	150	561	61	0	671	335	0	0	0	173	174	176
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6						4	
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	8.4	49.8	49.8		37.2	75.0				15.3	15.3	15.3
Effective Green, g (s)	8.6	51.1	51.1		38.5	75.0				15.9	15.9	15.9
Actuated g/C Ratio	0.11	0.68	0.68		0.51	1.00				0.21	0.21	0.21
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	382	2342	1048		2536	1538				346	352	326
v/s Ratio Prot	c0.04	0.16			c0.14							
v/s Ratio Perm			0.04			0.22				0.11	0.10	c0.11
v/c Ratio	0.39	0.24	0.06		0.26	0.22				0.50	0.49	0.54
Uniform Delay, d1	30.8	4.6	4.0		10.3	0.0				26.0	26.0	26.3
Progression Factor	1.00	1.00	1.00		1.98	1.00				1.00	1.00	1.00
Incremental Delay, d2	0.7	0.2	0.1		0.2	0.3				1.1	1.1	1.7
Delay (s)	31.4	4.8	4.1		20.6	0.3				27.2	27.1	28.0
Level of Service	C	A	A		C	A				C	C	C
Approach Delay (s)		9.7			13.9			0.0			27.6	
Approach LOS		A			B			A			C	

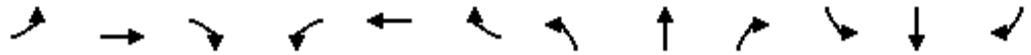
Intersection Summary

HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

EXISTING CONDITIONS FILIOS-DOBLER - AM

6: GRANT LINE RD & I-205 EAST

WITH PROJECT



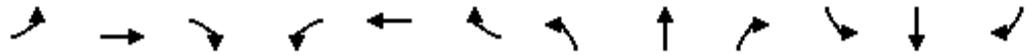
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	273	498	0	0	898	0	64	0	100	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0				
Lane Util. Factor	1.00	0.95			0.91		1.00		1.00				
Frt	1.00	1.00			1.00		1.00		0.85				
Flt Protected	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (prot)	1719	3438			4940		1719		1538				
Flt Permitted	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (perm)	1719	3438			4940		1719		1538				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	287	524	0	0	945	0	67	0	105	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	95	0	0	0	
Lane Group Flow (vph)	287	524	0	0	945	0	67	0	11	0	0	0	
Turn Type	Prot							custom		custom			
Protected Phases	5	2						6					
Permitted Phases								8		8			
Actuated Green, G (s)	24.4	58.2						29.6		7.3			
Effective Green, g (s)	24.6	59.5						30.9		7.5			
Actuated g/C Ratio	0.33	0.79						0.41		0.10			
Clearance Time (s)	4.2	5.3						5.3		4.2			
Vehicle Extension (s)	3.0	3.0						3.0		3.0			
Lane Grp Cap (vph)	564	2727						2035		154			
v/s Ratio Prot	c0.17	0.15						c0.19					
v/s Ratio Perm								c0.04		0.01			
v/c Ratio	0.51	0.19						0.46		0.39			
Uniform Delay, d1	20.3	1.9						16.0		31.6			
Progression Factor	1.36	0.91						1.00		1.00			
Incremental Delay, d2	0.7	0.2						0.8		1.5			
Delay (s)	28.3	1.9						16.8		33.1			
Level of Service	C	A						B		C			
Approach Delay (s)	11.2							16.8		31.7		0.0	
Approach LOS	B							B		C		A	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		
c	Critical Lane Group		

EXISTING CONDITIONS FILIOS-DOBLER - AM

7: GRANT LINE RD & CORRAL HOLLOW RD

WITH PROJECT



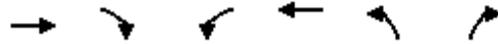
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	240	123	145	470	40	447	250	205	20	145	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		0.94	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1719	3438	2707	1719	3398		4848	3438	1538	1719	3248	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1719	3438	2707	1719	3398		4848	3438	1538	1719	3248	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	100%	100%	75%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	43	261	100	158	511	43	486	272	223	22	158	92
RTOR Reduction (vph)	0	0	72	0	6	0	0	0	148	0	69	0
Lane Group Flow (vph)	43	261	28	158	548	0	486	272	75	22	181	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	2.1	14.0	14.0	7.1	19.0		6.1	17.2	17.2	1.0	12.1	
Effective Green, g (s)	4.1	16.0	16.0	9.1	21.0		8.1	19.2	19.2	3.0	14.1	
Actuated g/C Ratio	0.07	0.28	0.28	0.16	0.37		0.14	0.34	0.34	0.05	0.25	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	123	960	756	273	1245		685	1152	515	90	799	
v/s Ratio Prot	0.03	0.08		c0.09	c0.16		c0.10	c0.08		0.01	0.06	
v/s Ratio Perm			0.01						0.05			
v/c Ratio	0.35	0.27	0.04	0.58	0.44		0.71	0.24	0.15	0.24	0.23	
Uniform Delay, d1	25.3	16.1	15.0	22.3	13.7		23.5	13.8	13.3	26.1	17.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	0.2	0.0	3.0	0.2		3.4	0.1	0.1	1.4	0.1	
Delay (s)	27.1	16.3	15.1	25.3	14.0		26.9	13.9	13.4	27.5	17.4	
Level of Service	C	B	B	C	B		C	B	B	C	B	
Approach Delay (s)		17.1			16.5			20.2			18.2	
Approach LOS		B			B			C			B	

Intersection Summary

HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	4.0
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

8: BYRON & LAMMERS RD



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	
Sign Control	Stop			Stop	Stop	
Volume (vph)	172	118	35	191	237	25
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	193	133	39	215	266	28

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total (vph)	326	39	215	294
Volume Left (vph)	0	39	0	266
Volume Right (vph)	133	0	0	28
Hadj (s)	-0.16	0.58	0.08	0.21
Departure Headway (s)	5.2	6.4	5.9	5.6
Degree Utilization, x	0.47	0.07	0.35	0.46
Capacity (veh/h)	667	533	582	597
Control Delay (s)	12.6	8.7	10.9	13.3
Approach Delay (s)	12.6	10.5		13.3
Approach LOS	B	B		B

Intersection Summary			
Delay		12.2	
HCM Level of Service		B	
Intersection Capacity Utilization		44.2%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	340	5	250	5	5	5	185	1035	5	0	755	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95			0.95	
Frt	1.00	0.85			0.95		1.00	1.00			0.97	
Flt Protected	0.95	1.00			0.98		0.95	1.00			1.00	
Satd. Flow (prot)	1719	1544			1700		1719	3436			3328	
Flt Permitted	0.75	1.00			0.92		0.95	1.00			1.00	
Satd. Flow (perm)	1349	1544			1582		1719	3436			3328	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	400	6	294	6	6	6	218	1218	6	0	888	241
RTOR Reduction (vph)	0	198	0	0	4	0	0	0	0	0	33	0
Lane Group Flow (vph)	400	102	0	0	14	0	218	1224	0	0	1096	0
Turn Type	Perm		Perm				Prot					
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8								
Actuated Green, G (s)	23.7	23.7			23.7		10.9	41.2			26.3	
Effective Green, g (s)	23.7	23.7			23.7		10.9	41.2			26.3	
Actuated g/C Ratio	0.33	0.33			0.33		0.15	0.57			0.36	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	439	502			514		257	1942			1201	
v/s Ratio Prot		0.07					c0.13	0.36			c0.33	
v/s Ratio Perm	c0.30				0.01							
v/c Ratio	0.91	0.20			0.03		0.85	0.63			0.91	
Uniform Delay, d1	23.6	17.8			16.8		30.2	10.7			22.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2	22.9	0.2			0.0		22.0	0.7			10.6	
Delay (s)	46.5	18.0			16.8		52.2	11.4			32.8	
Level of Service	D	B			B		D	B			C	
Approach Delay (s)		34.3			16.8			17.6			32.8	
Approach LOS		C			B			B			C	

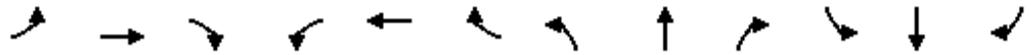
**Intersection Summary**

HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	72.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

EXISTING CONDITIONS FILIOS-DOBLER - AM

10: ELEVENTH ST. & LAMMERS RD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	230	95	330	1030	102	110	179	450	68	148	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	1719	4940	1538	3335	3438	1538	3335	1810	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	1719	4940	1538	3335	3438	1538	3335	1810	1538
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	12	277	114	398	1241	123	133	216	542	82	178	84
RTOR Reduction (vph)	0	0	83	0	0	53	0	0	384	0	0	58
Lane Group Flow (vph)	12	277	31	398	1241	70	133	216	158	82	178	26
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	0.9	15.2	15.2	11.8	26.1	26.1	6.4	13.6	13.6	5.7	12.9	12.9
Effective Green, g (s)	3.0	17.3	17.3	13.9	28.2	28.2	8.5	15.7	15.7	7.8	15.0	15.0
Actuated g/C Ratio	0.05	0.27	0.27	0.22	0.44	0.44	0.13	0.24	0.24	0.12	0.23	0.23
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	156	1329	414	372	2167	675	441	839	376	405	422	359
v/s Ratio Prot	0.00	0.06		c0.23	c0.25		c0.04	0.06		0.02	0.10	
v/s Ratio Perm			0.02			0.05			c0.10			0.02
v/c Ratio	0.08	0.21	0.07	1.07	0.57	0.10	0.30	0.26	0.42	0.20	0.42	0.07
Uniform Delay, d1	29.3	18.2	17.5	25.2	13.5	10.6	25.2	19.6	20.5	25.4	21.0	19.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.1	66.5	0.4	0.1	0.4	0.2	0.8	0.2	0.7	0.1
Delay (s)	29.5	18.3	17.6	91.7	13.9	10.7	25.6	19.8	21.2	25.7	21.6	19.3
Level of Service	C	B	B	F	B	B	C	B	C	C	C	B
Approach Delay (s)		18.4			31.2			21.5			22.0	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	26.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	64.3	Sum of lost time (s)	3.8
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

EXISTING CONDITIONS FILIOS-DOBLER - AM

11: ELEVENTH ST. & CORRAL HOLLOW RD

WITH PROJECT

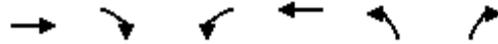


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	445	205	180	615	244	445	921	190	283	523	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3335	3438	1538	3335	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3335	3438	1538	3335	3438	1538
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	185	500	230	202	691	274	500	1035	213	318	588	191
RTOR Reduction (vph)	0	0	0	0	0	189	0	0	90	0	0	129
Lane Group Flow (vph)	185	500	230	202	691	85	500	1035	123	318	588	62
Turn Type	Prot		Free	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			Free			6			4			8
Actuated Green, G (s)	8.0	20.2	92.6	8.1	20.3	20.3	18.3	34.4	34.4	11.9	28.0	28.0
Effective Green, g (s)	10.0	22.2	92.6	10.1	22.3	22.3	20.3	36.4	36.4	13.9	30.0	30.0
Actuated g/C Ratio	0.11	0.24	1.00	0.11	0.24	0.24	0.22	0.39	0.39	0.15	0.32	0.32
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	360	1184	1538	364	1190	370	731	1351	605	501	1114	498
v/s Ratio Prot	0.06	0.10		c0.06	c0.14		c0.15	c0.30		0.10	0.17	
v/s Ratio Perm			c0.15			0.06			0.08			0.04
v/c Ratio	0.51	0.42	0.15	0.55	0.58	0.23	0.68	0.77	0.20	0.63	0.53	0.12
Uniform Delay, d1	39.0	29.8	0.0	39.1	31.0	28.2	33.2	24.4	18.5	37.0	25.5	22.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.2	0.2	1.8	0.7	0.3	2.7	2.7	0.2	2.6	0.5	0.1
Delay (s)	40.2	30.0	0.2	41.0	31.7	28.6	35.9	27.1	18.7	39.6	26.0	22.2
Level of Service	D	C	A	D	C	C	D	C	B	D	C	C
Approach Delay (s)		24.6			32.6			28.6			29.3	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	92.6	Sum of lost time (s)	4.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

17: GRANT LINE RD & ACCESS-2



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	490	32	134	472	15	46
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	533	35	146	513	16	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			567	1354		550
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			567	1354		550
tC, single (s)			4.1	6.4		6.2
tC, 2 stage (s)						
tF (s)			2.2	3.5		3.3
p0 queue free %			85	88		91
cM capacity (veh/h)			990	139		529
<b>Direction, Lane #</b>						
	EB 1	WB 1	NB 1			
Volume Total	567	659	66			
Volume Left	0	146	16			
Volume Right	35	0	50			
cSH	1700	990	312			
Volume to Capacity	0.33	0.15	0.21			
Queue Length 95th (ft)	0	13	20			
Control Delay (s)	0.0	3.6	19.6			
Lane LOS			A	C		
Approach Delay (s)	0.0	3.6	19.6			
Approach LOS			C			
<b>Intersection Summary</b>						
Average Delay			2.8			
Intersection Capacity Utilization			73.6%	ICU Level of Service		D
Analysis Period (min)			15			

18: GRANT LINE RD & ACCESS-1



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Volume (veh/h)	502	15	0	487	0	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	546	16	0	529	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)	826					
pX, platoon unblocked						
vC, conflicting volume			562		1083	554
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			562		1083	554
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	96
cM capacity (veh/h)			995		237	526

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	562	529	22
Volume Left	0	0	0
Volume Right	16	0	22
cSH	1700	1700	526
Volume to Capacity	0.33	0.31	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	12.1
Lane LOS	B		
Approach Delay (s)	0.0	0.0	12.1
Approach LOS	B		

Intersection Summary			
Average Delay			0.2
Intersection Capacity Utilization	37.3%		ICU Level of Service
Analysis Period (min)	15		A

19: GRANT LINE RD & ACCESS-3



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	526	10	45	606	0	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	572	11	49	659	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				1070		
pX, platoon unblocked				0.72		
vC, conflicting volume	583			1334 577		
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	583			1268 577		
tC, single (s)	4.1			6.4 6.2		
tC, 2 stage (s)						
tF (s)	2.2			3.5 3.3		
p0 queue free %	95			100 96		
cM capacity (veh/h)	977			125 510		

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	583	708	22
Volume Left	0	49	0
Volume Right	11	0	22
cSH	1700	977	510
Volume to Capacity	0.34	0.05	0.04
Queue Length 95th (ft)	0	4	3
Control Delay (s)	0.0	1.3	12.4
Lane LOS		A	B
Approach Delay (s)	0.0	1.3	12.4
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

## 1: GRANT LINE RD &amp; BYRON



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	385	467	85	344	469	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.89		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	1538	1614		1719	1810
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1719	1538	1614		1719	1810
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	401	486	89	358	489	156
RTOR Reduction (vph)	0	348	267	0	0	0
Lane Group Flow (vph)	401	138	180	0	489	156
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	15.3	15.3	10.2		16.2	30.4
Effective Green, g (s)	15.3	15.3	10.2		16.2	30.4
Actuated g/C Ratio	0.28	0.28	0.19		0.30	0.57
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	490	438	307		519	1025
v/s Ratio Prot	c0.23		c0.11		c0.28	0.09
v/s Ratio Perm		0.09				
v/c Ratio	0.82	0.32	0.59		0.94	0.15
Uniform Delay, d1	17.9	15.1	19.8		18.3	5.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	10.2	0.4	2.9		25.7	0.1
Delay (s)	28.1	15.5	22.7		44.0	5.6
Level of Service	C	B	C		D	A
Approach Delay (s)	21.2		22.7			34.7
Approach LOS	C		C			C

## Intersection Summary

HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

2: GRANT LINE RD & LAMMERS ROAD



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	9	1057	62	213	941	35	113	13	251	20	11	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	1149	67	232	1023	38	123	14	273	22	12	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					492							
pX, platoon unblocked	0.39						0.39	0.39		0.39	0.39	0.39
vC, conflicting volume	1061			1216			2724	2726	1183	2987	2741	1042
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	387			1216			4603	4608	1183	5269	4645	339
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			59			0	0	0	0	0	96
cM capacity (veh/h)	456			563			0	0	228	0	0	275

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1226	1292	410	45
Volume Left	10	232	123	22
Volume Right	67	38	273	11
cSH	456	563	0	0
Volume to Capacity	0.02	0.41	Err	Err
Queue Length 95th (ft)	2	50	Err	Err
Control Delay (s)	1.1	15.8	Err	Err
Lane LOS	A	C	F	F
Approach Delay (s)	1.1	15.8	Err	Err
Approach LOS			F	F

Intersection Summary			
Average Delay		Err	
Intersection Capacity Utilization		158.0%	ICU Level of Service
Analysis Period (min)		15	H

## 3: GRANT LINE RD &amp; COSTCO DVWY.

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↘	↑↑	↘	↗
Volume (vph)	1087	130	265	984	130	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4861		1719	3438	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4861		1719	3438	1719	1538
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1132	135	276	1025	135	286
RTOR Reduction (vph)	16	0	0	0	0	202
Lane Group Flow (vph)	1251	0	276	1025	135	84
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	32.1		19.5	55.6	26.4	26.4
Effective Green, g (s)	32.1		19.5	55.6	26.4	26.4
Actuated g/C Ratio	0.36		0.22	0.62	0.29	0.29
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1734		372	2124	504	451
v/s Ratio Prot	c0.26		c0.16	0.30	c0.08	
v/s Ratio Perm						0.05
v/c Ratio	0.72		0.74	0.48	0.27	0.19
Uniform Delay, d1	25.1		32.9	9.4	24.4	23.8
Progression Factor	1.00		1.36	0.55	1.00	1.00
Incremental Delay, d2	1.5		6.8	0.2	1.3	0.9
Delay (s)	26.6		51.6	5.3	25.7	24.7
Level of Service	C		D	A	C	C
Approach Delay (s)	26.6			15.1	25.0	
Approach LOS	C			B	C	
<b>Intersection Summary</b>						
HCM Average Control Delay			21.4		HCM Level of Service	C
HCM Volume to Capacity ratio			0.57			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			55.8%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

4: GRANT LINE RD & WALMART DVWY.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑	↵	↵
Volume (vph)	1312	50	220	1199	85	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4913		1719	3438	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4913		1719	3438	1719	1538
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1396	53	234	1276	90	213
RTOR Reduction (vph)	4	0	0	0	0	157
Lane Group Flow (vph)	1445	0	234	1276	90	56
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	37.2		17.3	58.5	23.5	23.5
Effective Green, g (s)	37.2		17.3	58.5	23.5	23.5
Actuated g/C Ratio	0.41		0.19	0.65	0.26	0.26
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2031		330	2235	449	402
v/s Ratio Prot	c0.29		c0.14	0.37	c0.05	
v/s Ratio Perm						0.04
v/c Ratio	0.71		0.71	0.57	0.20	0.14
Uniform Delay, d1	21.9		34.0	8.8	25.9	25.5
Progression Factor	1.46		1.40	0.65	1.00	1.00
Incremental Delay, d2	0.9		5.6	0.3	1.0	0.7
Delay (s)	33.1		53.2	6.0	26.9	26.2
Level of Service	C		D	A	C	C
Approach Delay (s)	33.1			13.3	26.4	
Approach LOS	C			B	C	

Intersection Summary

HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

5: GRANT LINE RD & NAGLEE ROAD

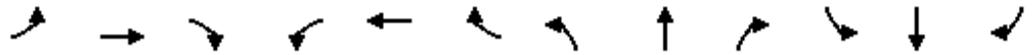
WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	318	1471	78	0	922	420	0	0	0	690	35	603
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3335	3438	1538		4940	1538				1633	1645	1538
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3335	3438	1538		4940	1538				1633	1645	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	328	1516	80	0	951	433	0	0	0	711	36	622
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	0	0	0	258
Lane Group Flow (vph)	328	1516	63	0	951	433	0	0	0	370	377	364
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6						4	
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	13.0	51.6	51.6		34.4	90.0				28.5	28.5	28.5
Effective Green, g (s)	13.2	52.9	52.9		35.7	90.0				29.1	29.1	29.1
Actuated g/C Ratio	0.15	0.59	0.59		0.40	1.00				0.32	0.32	0.32
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	489	2021	904		1960	1538				528	532	497
v/s Ratio Prot	0.10	c0.44			0.19							
v/s Ratio Perm			0.04			0.28				0.23	0.23	c0.24
v/c Ratio	0.67	0.75	0.07		0.49	0.28				0.70	0.71	0.73
Uniform Delay, d1	36.3	13.7	8.0		20.3	0.0				26.6	26.7	27.0
Progression Factor	1.50	0.62	0.85		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	3.1	2.2	0.1		0.9	0.5				4.2	4.3	5.5
Delay (s)	57.6	10.7	6.9		21.1	0.5				30.8	31.0	32.5
Level of Service	E	B	A		C	A				C	C	C
Approach Delay (s)		18.5			14.7			0.0			31.7	
Approach LOS		B			B			A			C	

Intersection Summary		
HCM Average Control Delay	21.2	HCM Level of Service C
HCM Volume to Capacity ratio	0.74	
Actuated Cycle Length (s)	90.0	Sum of lost time (s) 8.0
Intersection Capacity Utilization	67.4%	ICU Level of Service C
Analysis Period (min)	15	
c Critical Lane Group		

6: GRANT LINE RD & I-205 EAST



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	718	1443	0	0	1117	0	225	0	415	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0			
Lane Util. Factor	1.00	0.95			0.91		1.00		1.00			
Frt	1.00	1.00			1.00		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	1719	3438			4940		1719		1538			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1719	3438			4940		1719		1538			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	756	1519	0	0	1176	0	237	0	437	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	13	0	0	0
Lane Group Flow (vph)	756	1519	0	0	1176	0	237	0	424	0	0	0
Turn Type	Prot							custom		custom		
Protected Phases	5	2						6				
Permitted Phases								8		8		
Actuated Green, G (s)	23.0	45.8						18.6	26.8	26.8		
Effective Green, g (s)	23.2	47.1						19.9	27.0	27.0		
Actuated g/C Ratio	0.28	0.57						0.24	0.33	0.33		
Clearance Time (s)	4.2	5.3						5.3	4.2	4.2		
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0		
Lane Grp Cap (vph)	486	1972						1197	565	506		
v/s Ratio Prot	c0.44	0.44						c0.24				
v/s Ratio Perm								0.14			c0.28	
v/c Ratio	1.56	0.77						0.98	0.42	0.84		
Uniform Delay, d1	29.4	13.4						30.9	21.4	25.5		
Progression Factor	1.00	1.00						1.00	1.00	1.00		
Incremental Delay, d2	260.0	1.9						21.7	0.5	11.5		
Delay (s)	289.4	15.3						52.7	22.0	37.0		
Level of Service	F	B						D	C	D		
Approach Delay (s)	106.4							52.7	31.7		0.0	
Approach LOS	F							D	C		A	

Intersection Summary			
HCM Average Control Delay	78.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	82.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		
c	Critical Lane Group		

7: GRANT LINE RD & CORRAL HOLLOW RD



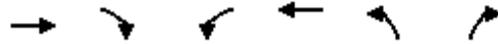
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	720	668	150	489	70	623	285	110	110	255	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		0.94	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1719	3438	2707	1719	3373		4848	3438	1538	1719	3321	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1719	3438	2707	1719	3373		4848	3438	1538	1719	3321	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (vph)	100%	100%	75%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	100	758	527	158	515	74	656	300	116	116	268	79
RTOR Reduction (vph)	0	0	327	0	11	0	0	0	89	0	30	0
Lane Group Flow (vph)	100	758	200	158	578	0	656	300	27	116	317	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	5.4	25.0	25.0	6.1	25.7		7.2	14.8	14.8	7.4	15.0	
Effective Green, g (s)	7.4	27.0	27.0	8.1	27.7		9.2	16.8	16.8	9.4	17.0	
Actuated g/C Ratio	0.10	0.38	0.38	0.11	0.39		0.13	0.24	0.24	0.13	0.24	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	178	1302	1025	195	1310		626	810	362	227	792	
v/s Ratio Prot	0.06	c0.22		c0.09	0.17		c0.14	0.09		0.07	c0.10	
v/s Ratio Perm			0.07						0.02			
v/c Ratio	0.56	0.58	0.19	0.81	0.44		1.05	0.37	0.08	0.51	0.40	
Uniform Delay, d1	30.4	17.7	14.9	30.8	16.1		31.0	22.8	21.2	28.8	22.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.0	0.7	0.1	21.8	0.2		49.2	0.3	0.1	1.9	0.3	
Delay (s)	34.4	18.3	15.0	52.7	16.3		80.2	23.1	21.3	30.7	23.2	
Level of Service	C	B	B	D	B		F	C	C	C	C	
Approach Delay (s)		18.2			24.0			57.9			25.1	
Approach LOS		B			C			E			C	

Intersection Summary

HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	71.3	Sum of lost time (s)	7.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

8: BYRON & LAMMERS RD



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	
Sign Control	Stop			Stop	Stop	
Volume (vph)	280	270	15	207	212	35
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	298	287	16	220	226	37

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total (vph)	585	16	220	263
Volume Left (vph)	0	16	0	226
Volume Right (vph)	287	0	0	37
Hadj (s)	-0.21	0.58	0.09	0.17
Departure Headway (s)	5.1	6.7	6.2	6.2
Degree Utilization, x	0.83	0.03	0.38	0.45
Capacity (veh/h)	696	510	552	540
Control Delay (s)	27.3	8.7	11.7	14.1
Approach Delay (s)	27.3	11.5		14.1
Approach LOS	D	B		B

Intersection Summary			
Delay		20.7	
HCM Level of Service		C	
Intersection Capacity Utilization		51.8%	ICU Level of Service A
Analysis Period (min)		15	

9: BYRON & CORRAL HOLLOW RD

WITH PROJECT

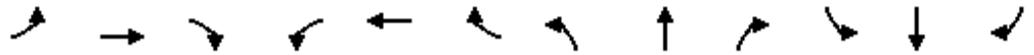


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	5	250	5	5	5	180	1229	5	0	1145	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95			0.95	
Frt	1.00	0.85			0.95		1.00	1.00			0.99	
Flt Protected	0.95	1.00			0.98		0.95	1.00			1.00	
Satd. Flow (prot)	1719	1543			1700		1719	3436			3393	
Flt Permitted	0.75	1.00			0.90		0.95	1.00			1.00	
Satd. Flow (perm)	1353	1543			1556		1719	3436			3393	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	5	272	5	5	5	196	1336	5	0	1245	120
RTOR Reduction (vph)	0	213	0	0	4	0	0	0	0	0	8	0
Lane Group Flow (vph)	185	64	0	0	11	0	196	1341	0	0	1357	0
Turn Type	Perm		Perm				Prot					
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8								
Actuated Green, G (s)	14.0	14.0			14.0		9.9	42.1			28.2	
Effective Green, g (s)	14.0	14.0			14.0		9.9	42.1			28.2	
Actuated g/C Ratio	0.22	0.22			0.22		0.15	0.66			0.44	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	296	337			340		265	2257			1493	
v/s Ratio Prot		0.04					0.11	c0.39			c0.40	
v/s Ratio Perm	c0.14				0.01							
v/c Ratio	0.62	0.19			0.03		0.74	0.59			0.91	
Uniform Delay, d1	22.7	20.4			19.7		25.9	6.2			16.7	
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2	4.1	0.3			0.0		10.3	0.4			8.4	
Delay (s)	26.8	20.7			19.8		36.2	6.6			25.1	
Level of Service	C	C			B		D	A			C	
Approach Delay (s)		23.1			19.8			10.4			25.1	
Approach LOS		C			B			B			C	

**Intersection Summary**

HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	64.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

10: ELEVENTH ST. & LAMMERS RD

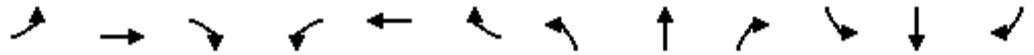


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	135	1150	105	85	345	95	35	125	115	83	148	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	1719	4940	1538	3335	3438	1538	3335	1810	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	1719	4940	1538	3335	3438	1538	3335	1810	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	139	1186	108	88	356	98	36	129	119	86	153	21
RTOR Reduction (vph)	0	0	65	0	0	59	0	0	94	0	0	16
Lane Group Flow (vph)	139	1186	43	88	356	39	36	129	25	86	153	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	6.2	23.6	23.6	6.6	24.0	24.0	3.4	11.5	11.5	5.5	13.6	13.6
Effective Green, g (s)	8.3	25.7	25.7	8.7	26.1	26.1	5.5	13.6	13.6	7.6	15.7	15.7
Actuated g/C Ratio	0.13	0.39	0.39	0.13	0.40	0.40	0.08	0.21	0.21	0.12	0.24	0.24
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	425	1947	606	229	1978	616	281	717	321	389	436	370
v/s Ratio Prot	0.04	c0.24		c0.05	0.07		0.01	0.04		c0.03	c0.08	
v/s Ratio Perm			0.03			0.03			0.02			0.00
v/c Ratio	0.33	0.61	0.07	0.38	0.18	0.06	0.13	0.18	0.08	0.22	0.35	0.01
Uniform Delay, d1	25.9	15.7	12.3	25.8	12.6	12.0	27.6	21.2	20.8	26.1	20.5	18.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	0.0	1.1	0.0	0.0	0.2	0.1	0.1	0.3	0.5	0.0
Delay (s)	26.4	16.3	12.4	26.9	12.7	12.1	27.8	21.3	20.9	26.4	21.0	18.9
Level of Service	C	B	B	C	B	B	C	C	C	C	C	B
Approach Delay (s)		17.0			14.9			22.0			22.6	
Approach LOS		B			B			C			C	

**Intersection Summary**

HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	6.7
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

11: ELEVENTH ST. & CORRAL HOLLOW RD



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	480	805	755	300	390	260	255	884	90	318	798	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3335	3438	1538	3335	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3335	3438	1538	3335	3438	1538
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	500	839	786	312	406	271	266	921	94	331	831	89
RTOR Reduction (vph)	0	0	0	0	0	16	0	0	18	0	0	44
Lane Group Flow (vph)	500	839	786	312	406	255	266	921	76	331	831	45
Turn Type	Prot		Free	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	5	2		1	6	3	7	4	1	3	8	5
Permitted Phases			Free			6			4			8
Actuated Green, G (s)	15.3	22.9	94.7	13.0	20.6	28.8	11.9	32.6	45.6	8.2	28.9	44.2
Effective Green, g (s)	17.3	24.9	94.7	15.0	22.6	32.8	13.9	34.6	49.6	10.2	30.9	48.2
Actuated g/C Ratio	0.18	0.26	1.00	0.16	0.24	0.35	0.15	0.37	0.52	0.11	0.33	0.51
Clearance Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	609	1299	1538	528	1179	533	490	1256	806	359	1122	783
v/s Ratio Prot	c0.15	c0.17		0.09	0.08	0.05	c0.08	c0.27	0.02	c0.10	0.24	0.01
v/s Ratio Perm			0.51			0.11			0.03			0.02
v/c Ratio	0.82	0.65	0.51	0.59	0.34	0.48	0.54	0.73	0.09	0.92	0.74	0.06
Uniform Delay, d1	37.2	31.0	0.0	37.0	29.9	24.2	37.5	26.0	11.3	41.9	28.3	11.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	1.1	1.2	1.8	0.2	0.7	1.2	2.3	0.1	28.5	2.7	0.0
Delay (s)	45.9	32.1	1.2	38.8	30.1	24.9	38.7	28.3	11.4	70.4	31.0	11.8
Level of Service	D	C	A	D	C	C	D	C	B	E	C	B
Approach Delay (s)		23.9			31.4			29.2			40.1	
Approach LOS		C			C			C			D	

Intersection Summary		
HCM Average Control Delay	30.0	HCM Level of Service C
HCM Volume to Capacity ratio	0.72	
Actuated Cycle Length (s)	94.7	Sum of lost time (s) 4.0
Intersection Capacity Utilization	71.0%	ICU Level of Service C
Analysis Period (min)	15	
c Critical Lane Group		

17: GRANT LINE RD & ACCESS-2

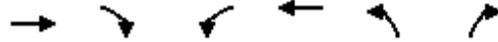


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	807	104	282	757	131	297
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	877	113	307	823	142	323
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			990		2370	934
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			990		2370	934
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			55		0	0
cM capacity (veh/h)			686		21	318

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	990	1129	465
Volume Left	0	307	142
Volume Right	113	0	323
cSH	1700	686	59
Volume to Capacity	0.58	0.45	7.86
Queue Length 95th (ft)	0	58	Err
Control Delay (s)	0.0	13.0	Err
Lane LOS		B	F
Approach Delay (s)	0.0	13.0	Err
Approach LOS			F

Intersection Summary			
Average Delay		1805.3	
Intersection Capacity Utilization		139.8%	ICU Level of Service H
Analysis Period (min)		15	

18: GRANT LINE RD & ACCESS-1



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	861	21	0	888	0	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	936	23	0	965	0	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	871					
pX, platoon unblocked						
vC, conflicting volume			959	1912	947	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			959	1912	947	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			100	100	83	
cM capacity (veh/h)			705	73	313	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	959	965	54
Volume Left	0	0	0
Volume Right	23	0	54
cSH	1700	1700	313
Volume to Capacity	0.56	0.57	0.17
Queue Length 95th (ft)	0	0	15
Control Delay (s)	0.0	0.0	18.9
Lane LOS	C		
Approach Delay (s)	0.0	0.0	18.9
Approach LOS	C		

Intersection Summary			
Average Delay			0.5
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)			15

19: GRANT LINE RD & ACCESS-3



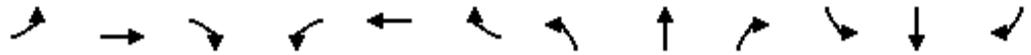
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1078	25	25	1039	0	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1172	27	27	1129	0	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				1070		
pX, platoon unblocked				0.72		
vC, conflicting volume			1199		2369 1185	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1199		2702 1185	
tC, single (s)			4.1		6.4 6.2	
tC, 2 stage (s)						
tF (s)			2.2		3.5 3.3	
p0 queue free %			95		100 76	
cM capacity (veh/h)			572		16 227	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	1199	1157	54
Volume Left	0	27	0
Volume Right	27	0	54
cSH	1700	572	227
Volume to Capacity	0.71	0.05	0.24
Queue Length 95th (ft)	0	4	23
Control Delay (s)	0.0	1.9	25.8
Lane LOS		A	D
Approach Delay (s)	0.0	1.9	25.8
Approach LOS			D

Intersection Summary			
Average Delay		1.5	
Intersection Capacity Utilization		78.1%	ICU Level of Service D
Analysis Period (min)		15	

5: GRANT LINE RD & NAGLEE ROAD

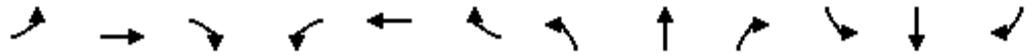
WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	427	1366	142	0	1216	545	0	0	0	770	65	849
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3335	3438	1538		4940	1538				1633	1649	1538
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3335	3438	1538		4940	1538				1633	1649	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	440	1408	146	0	1254	562	0	0	0	794	67	875
RTOR Reduction (vph)	0	0	39	0	0	0	0	0	0	0	0	227
Lane Group Flow (vph)	440	1408	107	0	1254	562	0	0	0	429	432	648
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6							4
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	13.8	45.7	45.7		27.7	90.0				34.4	34.4	34.4
Effective Green, g (s)	14.0	47.0	47.0		29.0	90.0				35.0	35.0	35.0
Actuated g/C Ratio	0.16	0.52	0.52		0.32	1.00				0.39	0.39	0.39
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	519	1795	803		1592	1538				635	641	598
v/s Ratio Prot	0.13	c0.41			0.25							
v/s Ratio Perm			0.07			0.37				0.26	0.26	c0.42
v/c Ratio	0.85	0.78	0.13		0.79	0.37				0.68	0.67	1.08
Uniform Delay, d1	37.0	17.4	11.0		27.7	0.0				22.8	22.8	27.5
Progression Factor	1.00	1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	12.2	3.5	0.3		4.0	0.7				2.8	2.8	61.7
Delay (s)	49.2	20.9	11.4		31.7	0.7				25.6	25.6	89.2
Level of Service	D	C	B		C	A				C	C	F
Approach Delay (s)		26.5			22.1		0.0				57.6	
Approach LOS		C			C		A				E	

Intersection Summary		
HCM Average Control Delay	34.8	HCM Level of Service C
HCM Volume to Capacity ratio	0.91	
Actuated Cycle Length (s)	90.0	Sum of lost time (s) 8.0
Intersection Capacity Utilization	82.7%	ICU Level of Service E
Analysis Period (min)	15	
c Critical Lane Group		

6: GRANT LINE RD & I-205 EAST



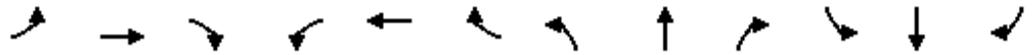
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↘	↗↗			↗↗↗		↘		↘				
Volume (vph)	653	1474	0	0	1555	0	196	0	205	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0				
Lane Util. Factor	1.00	0.95			0.91		1.00		1.00				
Frt	1.00	1.00			1.00		1.00		0.85				
Flt Protected	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (prot)	1719	3438			4940		1719		1538				
Flt Permitted	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (perm)	1719	3438			4940		1719		1538				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	687	1552	0	0	1637	0	206	0	216	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	15	0	0	0	
Lane Group Flow (vph)	687	1552	0	0	1637	0	206	0	201	0	0	0	
Turn Type	Prot							custom		custom			
Protected Phases	5	2						6					
Permitted Phases								8		8			
Actuated Green, G (s)	22.9	45.7						18.6	14.3	14.3			
Effective Green, g (s)	23.1	47.0						19.9	14.5	14.5			
Actuated g/C Ratio	0.33	0.68						0.29	0.21	0.21			
Clearance Time (s)	4.2	5.3						5.3	4.2	4.2			
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0			
Lane Grp Cap (vph)	571	2325						1414	359	321			
v/s Ratio Prot	c0.40	0.45						c0.33					
v/s Ratio Perm								0.12		c0.13			
v/c Ratio	1.20	0.67						1.16	0.57	0.63			
Uniform Delay, d1	23.2	6.6						24.8	24.7	25.0			
Progression Factor	1.00	1.00						1.00	1.00	1.00			
Incremental Delay, d2	107.3	0.7						79.3	2.2	3.8			
Delay (s)	130.5	7.4						104.1	26.9	28.8			
Level of Service	F	A						F	C	C			
Approach Delay (s)	45.2							104.1	27.9		0.0		
Approach LOS	D							F	C		A		

Intersection Summary			
HCM Average Control Delay	65.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	69.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		
c	Critical Lane Group		



2: GRANT LINE RD & LAMMERS ROAD

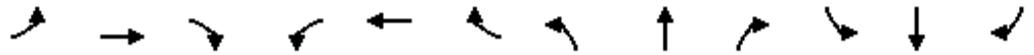
WITH PROJECT - WITH MITIGATION



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	521	10	120	624	15	12	3	36	25	7	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	
Satd. Flow (prot)	1719	3428		1719	3426			1739	1538		1688	
Flt Permitted	0.95	1.00		0.95	1.00			0.87	1.00		0.90	
Satd. Flow (perm)	1719	3428		1719	3426			1581	1538		1553	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	566	11	130	678	16	13	3	39	27	8	16
RTOR Reduction (vph)	0	2	0	0	3	0	0	0	25	0	10	0
Lane Group Flow (vph)	16	575	0	130	691	0	0	16	14	0	41	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	7	4		3	8			2				6
Permitted Phases							2		2	6		
Actuated Green, G (s)	1.5	18.4		8.6	25.5			21.0	21.0		21.0	
Effective Green, g (s)	1.5	18.4		8.6	25.5			21.0	21.0		21.0	
Actuated g/C Ratio	0.02	0.31		0.14	0.42			0.35	0.35		0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	43	1051		246	1456			553	538		544	
v/s Ratio Prot	0.01	c0.17		c0.08	0.20							
v/s Ratio Perm								0.01	0.01		c0.03	
v/c Ratio	0.37	0.55		0.53	0.47			0.03	0.03		0.07	
Uniform Delay, d1	28.8	17.3		23.8	12.4			12.8	12.8		13.0	
Progression Factor	0.50	1.51		1.27	0.69			1.00	1.00		1.00	
Incremental Delay, d2	4.9	0.5		1.9	0.2			0.1	0.1		0.1	
Delay (s)	19.4	26.8		32.2	8.9			12.9	12.9		13.1	
Level of Service	B	C		C	A			B	B		B	
Approach Delay (s)		26.6			12.5			12.9			13.1	
Approach LOS		C			B			B			B	

Intersection Summary		
HCM Average Control Delay	18.0	HCM Level of Service
HCM Volume to Capacity ratio	0.34	B
Actuated Cycle Length (s)	60.0	Sum of lost time (s)
Intersection Capacity Utilization	40.7%	12.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		A

6: GRANT LINE RD & I-205 EAST

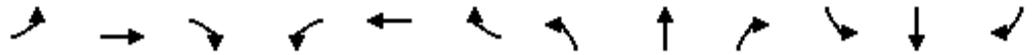


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↖			↖↖↖		↖		↖			
Volume (vph)	273	498	0	0	898	0	64	0	100	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0			
Lane Util. Factor	0.97	0.95			0.91		1.00		1.00			
Frt	1.00	1.00			1.00		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	3335	3438			4940		1719		1538			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	3335	3438			4940		1719		1538			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	287	524	0	0	945	0	67	0	105	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	95	0	0	0
Lane Group Flow (vph)	287	524	0	0	945	0	67	0	11	0	0	0
Turn Type	Prot							custom		custom		
Protected Phases	5	2						6				
Permitted Phases								8		8		
Actuated Green, G (s)	11.8	58.2						42.2		7.3		
Effective Green, g (s)	12.0	59.5						43.5		7.5		
Actuated g/C Ratio	0.16	0.79						0.58		0.10		
Clearance Time (s)	4.2	5.3						5.3		4.2		
Vehicle Extension (s)	3.0	3.0						3.0		3.0		
Lane Grp Cap (vph)	534	2727						2865		172		
v/s Ratio Prot	c0.09	0.15						c0.19				
v/s Ratio Perm								c0.04		0.01		
v/c Ratio	0.54	0.19						0.33		0.39		
Uniform Delay, d1	28.9	1.9						8.2		31.6		
Progression Factor	1.13	0.91						1.00		1.00		
Incremental Delay, d2	1.0	0.2						0.3		1.5		
Delay (s)	33.6	1.9						8.5		33.1		
Level of Service	C	A						A		C		
Approach Delay (s)								8.5		31.7		
Approach LOS								A		C		

Intersection Summary		
HCM Average Control Delay	12.5	HCM Level of Service
HCM Volume to Capacity ratio	0.38	B
Actuated Cycle Length (s)	75.0	Sum of lost time (s)
Intersection Capacity Utilization	38.7%	ICU Level of Service
Analysis Period (min)	15	A
c Critical Lane Group		

11: ELEVENTH ST. & CORRAL HOLLOW RD

WITH PROJECT - WITH MITIGATION

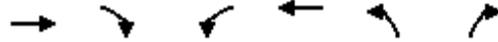


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	445	205	180	615	244	445	921	190	283	523	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Util. Factor	0.97	0.91	0.88	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	2707	3335	4940	1538	3335	4940	1538	3335	4940	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	2707	3335	4940	1538	3335	4940	1538	3335	4940	1538
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	185	500	230	202	691	274	500	1035	213	318	588	191
RTOR Reduction (vph)	0	0	172	0	0	205	0	0	139	0	0	139
Lane Group Flow (vph)	185	500	58	202	691	69	500	1035	74	318	588	52
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	8.0	19.2	19.2	8.1	19.3	19.3	17.7	26.0	26.0	12.7	21.0	21.0
Effective Green, g (s)	10.0	21.2	21.2	10.1	21.3	21.3	19.7	28.0	28.0	14.7	23.0	23.0
Actuated g/C Ratio	0.12	0.25	0.25	0.12	0.25	0.25	0.23	0.33	0.33	0.18	0.27	0.27
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	397	1247	683	401	1253	390	782	1647	513	584	1353	421
v/s Ratio Prot	0.06	0.10		c0.06	c0.14		c0.15	c0.21		0.10	0.12	
v/s Ratio Perm			0.02			0.05			0.05			0.03
v/c Ratio	0.47	0.40	0.08	0.50	0.55	0.18	0.64	0.63	0.14	0.54	0.43	0.12
Uniform Delay, d1	34.5	26.1	24.0	34.6	27.2	24.5	29.0	23.6	19.6	31.6	25.1	22.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.2	0.1	1.0	0.5	0.2	1.7	0.8	0.1	1.0	0.2	0.1
Delay (s)	35.4	26.3	24.0	35.6	27.7	24.7	30.7	24.4	19.7	32.6	25.4	23.1
Level of Service	D	C	C	D	C	C	C	C	B	C	C	C
Approach Delay (s)		27.6			28.4			25.6			27.1	
Approach LOS		C			C			C			C	

**Intersection Summary**

HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	84.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

17: GRANT LINE RD & ACCESS-2



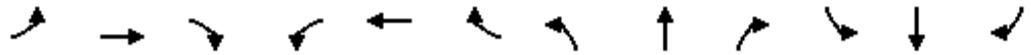
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Volume (vph)	490	32	134	472	15	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3438	1538	1719	3438	1719	1538
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3438	1538	1719	3438	1719	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	533	35	146	513	16	50
RTOR Reduction (vph)	0	26	0	0	0	22
Lane Group Flow (vph)	533	9	146	513	16	28
Turn Type		Perm	Prot		pm+ov	
Protected Phases	4		3	8	2	3
Permitted Phases		4				2
Actuated Green, G (s)	14.9	14.9	8.6	27.5	24.5	33.1
Effective Green, g (s)	14.9	14.9	8.6	27.5	24.5	33.1
Actuated g/C Ratio	0.25	0.25	0.14	0.46	0.41	0.55
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	854	382	246	1576	702	951
v/s Ratio Prot	c0.16		c0.08	0.15	0.01	c0.00
v/s Ratio Perm		0.01				0.01
v/c Ratio	0.62	0.02	0.59	0.33	0.02	0.03
Uniform Delay, d1	20.1	17.0	24.1	10.3	10.6	6.1
Progression Factor	1.00	1.00	1.38	0.88	1.00	1.00
Incremental Delay, d2	1.4	0.0	3.5	0.1	0.1	0.0
Delay (s)	21.5	17.1	36.7	9.2	10.7	6.1
Level of Service	C	B	D	A	B	A
Approach Delay (s)	21.2			15.3	7.2	
Approach LOS	C			B	A	

Intersection Summary

HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

2: GRANT LINE RD & LAMMERS ROAD

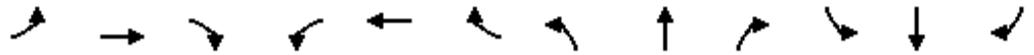
WITH PROJECT - WITH MITIGATION



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	1057	62	213	941	35	113	13	251	20	11	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1719	3410		1719	3420			1732	1538		1708	
Flt Permitted	0.95	1.00		0.95	1.00			0.75	1.00		0.85	
Satd. Flow (perm)	1719	3410		1719	3420			1361	1538		1495	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	1149	67	232	1023	38	123	14	273	22	12	11
RTOR Reduction (vph)	0	4	0	0	3	0	0	0	214	0	9	0
Lane Group Flow (vph)	10	1212	0	232	1058	0	0	137	59	0	36	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	7	4		3	8			2				6
Permitted Phases							2		2	6		
Actuated Green, G (s)	0.8	41.5		17.0	57.7			19.5	19.5		19.5	
Effective Green, g (s)	0.8	41.5		17.0	57.7			19.5	19.5		19.5	
Actuated g/C Ratio	0.01	0.46		0.19	0.64			0.22	0.22		0.22	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	15	1572		325	2193			295	333		324	
v/s Ratio Prot	0.01	c0.36		c0.13	0.31							
v/s Ratio Perm								c0.10	0.04		0.02	
v/c Ratio	0.67	0.77		0.71	0.48			0.46	0.18		0.11	
Uniform Delay, d1	44.5	20.3		34.2	8.4			30.7	28.7		28.3	
Progression Factor	0.86	0.77		1.15	0.43			1.00	1.00		1.00	
Incremental Delay, d2	70.4	2.2		6.8	0.2			5.2	1.2		0.7	
Delay (s)	108.7	17.8		46.2	3.8			35.9	29.9		29.0	
Level of Service	F	B		D	A			D	C		C	
Approach Delay (s)		18.5			11.4			31.9			29.0	
Approach LOS		B			B			C			C	

Intersection Summary		
HCM Average Control Delay	17.4	HCM Level of Service
HCM Volume to Capacity ratio	0.68	B
Actuated Cycle Length (s)	90.0	Sum of lost time (s)
Intersection Capacity Utilization	64.7%	ICU Level of Service
Analysis Period (min)	15	C
c Critical Lane Group		

6: GRANT LINE RD & I-205 EAST



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↖↖	↗↗			↖↖↖		↖		↗				
Volume (vph)	718	1443	0	0	1117	0	225	0	415	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0				
Lane Util. Factor	0.97	0.95			0.91		1.00		1.00				
Frt	1.00	1.00			1.00		1.00		0.85				
Flt Protected	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (prot)	3335	3438			4940		1719		1538				
Flt Permitted	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (perm)	3335	3438			4940		1719		1538				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	756	1519	0	0	1176	0	237	0	437	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	13	0	0	0	
Lane Group Flow (vph)	756	1519	0	0	1176	0	237	0	424	0	0	0	
Turn Type	Prot							custom		custom			
Protected Phases	5	2						6					
Permitted Phases								8		8			
Actuated Green, G (s)	21.4	44.4						18.8		26.6			
Effective Green, g (s)	21.6	45.7						20.1		26.8			
Actuated g/C Ratio	0.27	0.57						0.25		0.33			
Clearance Time (s)	4.2	5.3						5.3		4.2			
Vehicle Extension (s)	3.0	3.0						3.0		3.0			
Lane Grp Cap (vph)	895	1952						1233		512			
v/s Ratio Prot	0.23	c0.44						c0.24					
v/s Ratio Perm								0.14		c0.28			
v/c Ratio	0.84	0.78						0.95		0.41			
Uniform Delay, d1	27.9	13.5						29.7		20.8			
Progression Factor	1.00	1.00						1.00		1.00			
Incremental Delay, d2	7.4	2.0						15.8		0.5			
Delay (s)	35.2	15.5						45.5		21.3			
Level of Service	D	B						D		C			
Approach Delay (s)	22.1							45.5		30.4		0.0	
Approach LOS	C							D		C		A	

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c	Critical Lane Group		

11: ELEVENTH ST. & CORRAL HOLLOW RD

WITH PROJECT - WITH MITIGATION

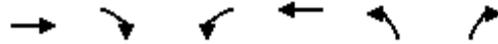


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	480	805	755	300	390	260	255	884	90	318	798	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0
Lane Util. Factor	0.97	0.91	0.88	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	2707	3335	4940	1538	3335	4940	1538	3335	4940	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	2707	3335	4940	1538	3335	4940	1538	3335	4940	1538
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	500	839	786	312	406	271	266	921	94	331	831	89
RTOR Reduction (vph)	0	0	29	0	0	17	0	0	20	0	0	51
Lane Group Flow (vph)	500	839	757	312	406	254	266	921	74	331	831	38
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	5	2	7	1	6	3	7	4	1	3	8	5
Permitted Phases			2			6			4			8
Actuated Green, G (s)	10.2	20.5	32.7	10.2	20.5	28.6	12.2	24.8	35.0	8.1	20.7	30.9
Effective Green, g (s)	12.2	22.5	36.7	12.2	22.5	32.6	14.2	26.8	39.0	10.1	22.7	34.9
Actuated g/C Ratio	0.15	0.28	0.45	0.15	0.28	0.40	0.17	0.33	0.48	0.12	0.28	0.43
Clearance Time (s)	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	499	1362	1217	499	1362	614	580	1622	735	413	1374	658
v/s Ratio Prot	c0.15	0.17	c0.11	0.09	0.08	0.05	0.08	c0.19	0.01	c0.10	0.17	0.01
v/s Ratio Perm			0.17			0.11			0.03			0.02
v/c Ratio	1.00	0.62	0.62	0.63	0.30	0.41	0.46	0.57	0.10	0.80	0.60	0.06
Uniform Delay, d1	34.7	25.8	17.1	32.6	23.3	17.6	30.2	22.6	11.7	34.8	25.6	13.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.8	0.8	1.0	2.4	0.1	0.5	0.6	0.5	0.1	10.7	0.8	0.0
Delay (s)	75.5	26.6	18.1	35.0	23.4	18.1	30.8	23.1	11.7	45.5	26.3	13.7
Level of Service	E	C	B	C	C	B	C	C	B	D	C	B
Approach Delay (s)		35.0			25.6			23.9			30.5	
Approach LOS		C			C			C			C	

**Intersection Summary**

HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	81.6	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

17: GRANT LINE RD & ACCESS-2

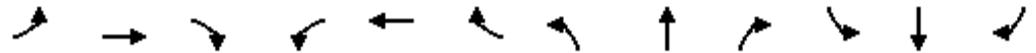


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Volume (vph)	807	104	282	757	131	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3438	1538	1719	3438	1719	1538
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3438	1538	1719	3438	1719	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	877	113	307	823	142	323
RTOR Reduction (vph)	0	74	0	0	0	49
Lane Group Flow (vph)	877	39	307	823	142	274
Turn Type		Perm	Prot			pm+ov
Protected Phases	4		3	8	2	3
Permitted Phases		4				2
Actuated Green, G (s)	31.4	31.4	17.0	52.4	29.6	46.6
Effective Green, g (s)	31.4	31.4	17.0	52.4	29.6	46.6
Actuated g/C Ratio	0.35	0.35	0.19	0.58	0.33	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1199	537	325	2002	565	865
v/s Ratio Prot	c0.26		c0.18	0.24	0.08	c0.06
v/s Ratio Perm		0.03				0.12
v/c Ratio	0.73	0.07	0.94	0.41	0.25	0.32
Uniform Delay, d1	25.6	19.6	36.0	10.3	22.1	12.5
Progression Factor	1.00	1.00	1.18	1.22	1.00	1.00
Incremental Delay, d2	2.3	0.1	33.2	0.1	1.1	0.2
Delay (s)	27.9	19.6	75.7	12.8	23.2	12.7
Level of Service	C	B	E	B	C	B
Approach Delay (s)	27.0			29.9	15.9	
Approach LOS	C			C	B	

Intersection Summary

HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

6: GRANT LINE RD & I-205 EAST



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	653	1474	0	0	1555	0	196	0	205	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0			
Lane Util. Factor	0.97	0.95			0.91		1.00		1.00			
Frt	1.00	1.00			1.00		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	3335	3438			4940		1719		1538			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	3335	3438			4940		1719		1538			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	687	1552	0	0	1637	0	206	0	216	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	687	1552	0	0	1637	0	206	0	201	0	0	0
Turn Type	Prot							custom		custom		
Protected Phases	5	2						6				
Permitted Phases								8		8		
Actuated Green, G (s)	18.6	41.6						18.8	14.1	14.1		
Effective Green, g (s)	18.8	42.9						20.1	14.3	14.3		
Actuated g/C Ratio	0.29	0.66						0.31	0.22	0.22		
Clearance Time (s)	4.2	5.3						5.3	4.2	4.2		
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0		
Lane Grp Cap (vph)	962	2262						1523	377	337		
v/s Ratio Prot	0.21	c0.45						c0.33				
v/s Ratio Perm									0.12	c0.13		
v/c Ratio	0.71	0.69						1.07	0.55	0.60		
Uniform Delay, d1	20.8	7.0						22.6	22.6	22.9		
Progression Factor	1.00	1.00						1.00	1.00	1.00		
Incremental Delay, d2	2.5	0.9						46.1	1.6	2.8		
Delay (s)	23.3	7.8						68.6	24.2	25.7		
Level of Service	C	A						E	C	C		
Approach Delay (s)	12.6							68.6	25.0		0.0	
Approach LOS	B							E	C		A	
<b>Intersection Summary</b>												
HCM Average Control Delay			35.2					HCM Level of Service		D		
HCM Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			65.2					Sum of lost time (s)		8.0		
Intersection Capacity Utilization			69.5%					ICU Level of Service		C		
Analysis Period (min)			15									
c	Critical Lane Group											

**EXISTING CONDITIONS - PEAK HOUR VOLUME WARRANT  
(URBAN CONDITIONS)**

**General Information**

Description Intersection 2: Lammers Road / Grant Line Road  
 Major Approach Street Name Grant Line Road  
 Minor Approach Street Name Lammers Road

**Geometry**

Number of Approach Legs 4  
 Number of Major Approach Lanes 2  
 Number of Minor Approach Lanes 2

**Volumes and Delay**

Major Approach Volumes (Both Directions) 2309  
 Minor Approach Volume (One Direction Only) 377  
 Total Entering Volume 2696  
 Minor Approach Delay per Vehicle 49.3

**SIGNAL WARRANT SATISFIED**

**WARRANT 3 - Peak Hour  
(Part A or Part B must be satisfied)**

**PART A**

SATISFIED YES  NO

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; **AND**

Total Delay (Vehicle Hours) 5.16

2. The volume on the same minor street approach (one direction only equal or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; **AND**

Total Minor Approach Volume 377

3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.

Total Entering Volume 2696

**PART B**

SATISFIED YES  NO

APPROACH LANES	Hour		
	One	2 or More	
Both Approaches - Major Street		✓	2309
Higher Approach - Minor Street		✓	377

The plotted point falls above the curve in Figure 4C-3. YES  NO

OR. The plotted point falls above the curve in Figure 4C-4. YES  NO

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

**EXISTING CONDITIONS - PEAK HOUR VOLUME WARRANT  
(URBAN CONDITIONS)**

Peak Hour **AM**

Major Stre **Grant Line Road**

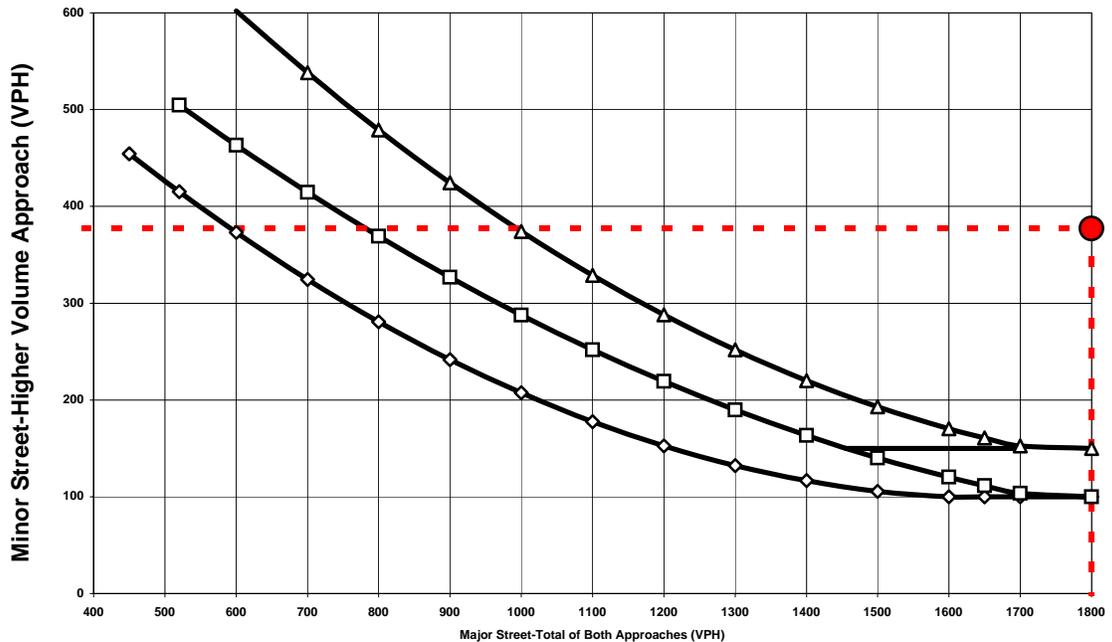
Minor **Lammers Road**

Total of Both Approaches (VPH): **2309**  
Number of Approach Lanes: **2**

Higher Volume Approach (VPH): **377**  
Number of Approach Lanes: **2**

**SIGNAL WARRANT SATISFIED**

Figure 4C-3. Peak Hour Warrant (Urban)



- ◇— 1 Lane Major & 1 Lane Minor
- 2 or More Lanes Major & 1 Lane Minor
- △— 2 or More Lanes Major & 2 or More Lanes Minor
- - - Major Street
- - - - Minor Street

\* Note: p pp pp  
vph Applies as the  
Lower Threshold Volume for a Minor Street Approach with One Lane.

Source: MUTCD 2003 Revision 1, as amended for use in California (September 26, 2006).

## **APPENDIX A-10**

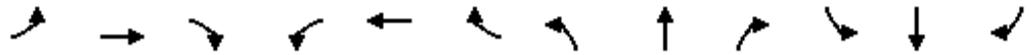
### **Near Term + Project Conditions LOS Analysis Worksheets**

## 1: GRANT LINE RD &amp; BYRON



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	182	334	155	302	323	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.91		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	1538	1648		1719	1810
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1719	1538	1648		1719	1810
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	190	348	161	315	336	144
RTOR Reduction (vph)	0	273	117	0	0	0
Lane Group Flow (vph)	190	75	359	0	336	144
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	11.0	11.0	14.8		13.5	32.3
Effective Green, g (s)	11.0	11.0	14.8		13.5	32.3
Actuated g/C Ratio	0.21	0.21	0.29		0.26	0.63
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	369	330	475		452	1140
v/s Ratio Prot	c0.11		c0.22		c0.20	0.08
v/s Ratio Perm		0.05				
v/c Ratio	0.51	0.23	0.76		0.74	0.13
Uniform Delay, d1	17.8	16.6	16.6		17.3	3.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	0.4	6.8		6.5	0.1
Delay (s)	19.0	17.0	23.4		23.8	3.9
Level of Service	B	B	C		C	A
Approach Delay (s)	17.7		23.4			17.8
Approach LOS	B		C			B
<b>Intersection Summary</b>						
HCM Average Control Delay			19.6		HCM Level of Service	B
HCM Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			51.3		Sum of lost time (s)	12.0
Intersection Capacity Utilization			64.7%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

2: GRANT LINE RD & LAMMERS ROAD



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	17	586	10	120	691	17	12	3	36	29	7	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	637	11	130	751	18	13	3	39	32	8	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					492							
pX, platoon unblocked	0.68						0.68	0.68		0.68	0.68	0.68
vC, conflicting volume	770			648			1723	1710	642	1741	1706	760
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	418			648			1830	1811	642	1857	1805	404
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			86			54	93	92	0	83	96
cM capacity (veh/h)	760			924			28	44	469	28	44	432

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	666	900	55	58
Volume Left	18	130	13	32
Volume Right	11	18	39	18
cSH	760	924	90	43
Volume to Capacity	0.02	0.14	0.62	1.33
Queue Length 95th (ft)	2	12	72	141
Control Delay (s)	0.7	3.5	94.8	397.1
Lane LOS	A	A	F	F
Approach Delay (s)	0.7	3.5	94.8	397.1
Approach LOS			F	F

Intersection Summary			
Average Delay		18.9	
Intersection Capacity Utilization		92.7%	ICU Level of Service
Analysis Period (min)		15	F

## 3: GRANT LINE RD &amp; COSTCO DVWY.

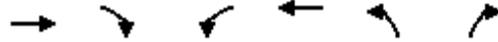


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↘	↑↑	↘	↗
Volume (vph)	686	52	69	799	23	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4888		1719	3438	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4888		1719	3438	1719	1538
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	754	57	76	878	25	57
RTOR Reduction (vph)	14	0	0	0	0	35
Lane Group Flow (vph)	797	0	76	878	25	22
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	19.2		5.6	28.8	23.2	23.2
Effective Green, g (s)	19.2		5.6	28.8	23.2	23.2
Actuated g/C Ratio	0.32		0.09	0.48	0.39	0.39
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1564		160	1650	665	595
v/s Ratio Prot	0.16		0.04	c0.26	c0.01	
v/s Ratio Perm						0.01
v/c Ratio	0.51		0.47	0.53	0.04	0.04
Uniform Delay, d1	16.6		25.8	10.9	11.5	11.4
Progression Factor	1.00		1.30	1.40	1.00	1.00
Incremental Delay, d2	0.3		1.9	0.3	0.1	0.1
Delay (s)	16.8		35.6	15.5	11.6	11.6
Level of Service	B		D	B	B	B
Approach Delay (s)	16.8			17.1	11.6	
Approach LOS	B			B	B	

## Intersection Summary

HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

## 4: GRANT LINE RD &amp; WALMART DVWY



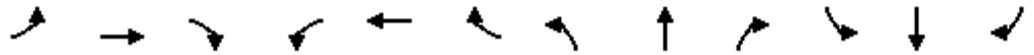
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑	↵	↵
Volume (vph)	714	35	86	857	17	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4905		1719	3438	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4905		1719	3438	1719	1538
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	811	40	98	974	19	85
RTOR Reduction (vph)	9	0	0	0	0	54
Lane Group Flow (vph)	842	0	98	974	19	31
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	18.8		7.6	30.4	21.6	21.6
Effective Green, g (s)	18.8		7.6	30.4	21.6	21.6
Actuated g/C Ratio	0.31		0.13	0.51	0.36	0.36
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1537		218	1742	619	554
v/s Ratio Prot	0.17		0.06	c0.28	0.01	
v/s Ratio Perm						c0.02
v/c Ratio	0.55		0.45	0.56	0.03	0.06
Uniform Delay, d1	17.1		24.3	10.2	12.4	12.5
Progression Factor	1.93		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4		1.5	0.4	0.1	0.2
Delay (s)	33.3		25.7	10.6	12.5	12.7
Level of Service	C		C	B	B	B
Approach Delay (s)	33.3			12.0	12.7	
Approach LOS	C			B	B	

## Intersection Summary

HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

5: GRANT LINE RD & NAGLEE ROAD

WITH PROJECT



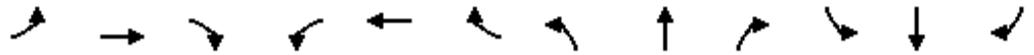
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↕	↖		↕↕↕	↖				↖	↕	↖
Volume (vph)	158	578	94	0	682	385	0	0	0	311	58	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (prot)	3335	3438	1538		4940	1538				1633	1662	1538
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (perm)	3335	3438	1538		4940	1538				1633	1662	1538
Peak-hour factor, PHF	0.92	0.92	0.92	1.00	0.92	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Adj. Flow (vph)	172	628	102	0	741	385	0	0	0	338	63	435
RTOR Reduction (vph)	0	0	36	0	0	0	0	0	0	0	0	195
Lane Group Flow (vph)	172	628	66	0	741	385	0	0	0	199	202	240
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6							4
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	8.1	47.3	47.3		35.0	75.0				17.8	17.8	17.8
Effective Green, g (s)	8.3	48.6	48.6		36.3	75.0				18.4	18.4	18.4
Actuated g/C Ratio	0.11	0.65	0.65		0.48	1.00				0.25	0.25	0.25
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	369	2228	997		2391	1538				401	408	377
v/s Ratio Prot	c0.05	0.18			c0.15							
v/s Ratio Perm			0.04			0.25				0.12	0.12	c0.16
v/c Ratio	0.47	0.28	0.07		0.31	0.25				0.50	0.50	0.64
Uniform Delay, d1	31.3	5.7	4.9		11.7	0.0				24.3	24.3	25.3
Progression Factor	1.00	1.00	1.00		2.47	1.00				1.00	1.00	1.00
Incremental Delay, d2	0.9	0.3	0.1		0.3	0.3				1.0	0.9	3.5
Delay (s)	32.2	6.0	5.0		29.3	0.3				25.3	25.3	28.8
Level of Service	C	A	A		C	A				C	C	C
Approach Delay (s)		10.9			19.4			0.0			27.1	
Approach LOS		B			B			A			C	

Intersection Summary		
HCM Average Control Delay	19.0	HCM Level of Service
HCM Volume to Capacity ratio	0.43	B
Actuated Cycle Length (s)	75.0	Sum of lost time (s)
Intersection Capacity Utilization	44.6%	12.0
Analysis Period (min)	15	ICU Level of Service
		A

c Critical Lane Group

6: GRANT LINE RD & I-205 EAST

WITH PROJECT

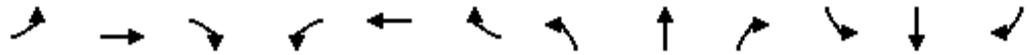


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	308	563	0	0	1008	0	71	0	115	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0				
Lane Util. Factor	1.00	0.95			0.91		1.00		1.00				
Frt	1.00	1.00			1.00		1.00		0.85				
Flt Protected	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (prot)	1719	3438			4940		1719		1538				
Flt Permitted	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (perm)	1719	3438			4940		1719		1538				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	324	593	0	0	1061	0	75	0	121	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	108	0	0	0	
Lane Group Flow (vph)	324	593	0	0	1061	0	75	0	13	0	0	0	
Turn Type	Prot							custom		custom			
Protected Phases	5	2						6					
Permitted Phases								8		8			
Actuated Green, G (s)	27.8	57.9						25.9	7.6	7.6			
Effective Green, g (s)	28.0	59.2						27.2	7.8	7.8			
Actuated g/C Ratio	0.37	0.79						0.36	0.10	0.10			
Clearance Time (s)	4.2	5.3						5.3	4.2	4.2			
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0			
Lane Grp Cap (vph)	642	2714						1792	179	160			
v/s Ratio Prot	c0.19	0.17						c0.21					
v/s Ratio Perm								c0.04		0.01			
v/c Ratio	0.50	0.22						0.59	0.42	0.08			
Uniform Delay, d1	18.1	2.0						19.4	31.5	30.4			
Progression Factor	1.14	1.25						1.00	1.00	1.00			
Incremental Delay, d2	0.6	0.2						1.4	1.6	0.2			
Delay (s)	21.3	2.7						20.8	33.1	30.6			
Level of Service	C	A						C	C	C			
Approach Delay (s)	9.3							20.8	31.5		0.0		
Approach LOS	A							C	C		A		

Intersection Summary		
HCM Average Control Delay	16.9	HCM Level of Service
HCM Volume to Capacity ratio	0.53	B
Actuated Cycle Length (s)	75.0	Sum of lost time (s)
Intersection Capacity Utilization	50.5%	ICU Level of Service
Analysis Period (min)	15	A
c Critical Lane Group		

7: GRANT LINE RD & CORRAL HOLLOW RD

WITH PROJECT



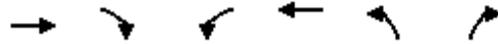
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	272	137	167	529	46	502	288	236	23	167	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		0.94	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1719	3438	2707	1719	3397		4848	3438	1538	1719	3247	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1719	3438	2707	1719	3397		4848	3438	1538	1719	3247	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	100%	100%	75%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	50	296	112	182	575	50	546	313	257	25	182	107
RTOR Reduction (vph)	0	0	79	0	6	0	0	0	176	0	81	0
Lane Group Flow (vph)	50	296	33	182	619	0	546	313	81	25	208	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	3.3	15.5	15.5	7.2	19.4		6.1	16.7	16.7	2.1	12.7	
Effective Green, g (s)	5.3	17.5	17.5	9.2	21.4		8.1	18.7	18.7	4.1	14.7	
Actuated g/C Ratio	0.09	0.29	0.29	0.15	0.36		0.14	0.31	0.31	0.07	0.25	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	153	1011	796	266	1222		660	1081	483	118	802	
v/s Ratio Prot	0.03	0.09		c0.11	c0.18		c0.11	c0.09		0.01	0.06	
v/s Ratio Perm			0.01						0.05			
v/c Ratio	0.33	0.29	0.04	0.68	0.51		0.83	0.29	0.17	0.21	0.26	
Uniform Delay, d1	25.4	16.2	15.0	23.8	14.9		25.0	15.4	14.8	26.2	18.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.3	0.2	0.0	7.1	0.3		8.4	0.1	0.2	0.9	0.2	
Delay (s)	26.7	16.4	15.0	30.9	15.2		33.4	15.5	14.9	27.1	18.2	
Level of Service	C	B	B	C	B		C	B	B	C	B	
Approach Delay (s)		17.2			18.8			24.1			18.9	
Approach LOS		B			B			C			B	

Intersection Summary

HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	4.0
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

## 8: BYRON &amp; LAMMERS RD



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	198	134	40	219	268	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.95		1.00	1.00	0.99	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	1711		1719	1810	1708	
Flt Permitted	1.00		0.95	1.00	0.96	
Satd. Flow (perm)	1711		1719	1810	1708	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	222	151	45	246	301	33
RTOR Reduction (vph)	41	0	0	0	7	0
Lane Group Flow (vph)	332	0	45	246	327	0
Turn Type			Prot			
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	13.3		1.4	18.7	13.8	
Effective Green, g (s)	13.3		1.4	18.7	13.8	
Actuated g/C Ratio	0.33		0.03	0.46	0.34	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	562		59	836	582	
v/s Ratio Prot	c0.19		c0.03	0.14	c0.19	
v/s Ratio Perm						
v/c Ratio	0.59		0.76	0.29	0.56	
Uniform Delay, d1	11.3		19.4	6.8	10.9	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.7		43.5	0.2	1.2	
Delay (s)	13.0		62.9	7.0	12.1	
Level of Service	B		E	A	B	
Approach Delay (s)	13.0			15.6	12.1	
Approach LOS	B			B	B	

## Intersection Summary

HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	40.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

9: BYRON & CORRAL HOLLOW RD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	391	6	288	6	6	6	213	1179	6	0	864	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				4.0
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95				0.95
Frt	1.00	0.85			0.95		1.00	1.00				0.97
Flt Protected	0.95	1.00			0.98		0.95	1.00				1.00
Satd. Flow (prot)	1719	1544			1700		1719	3436				3327
Flt Permitted	0.74	1.00			0.91		0.95	1.00				1.00
Satd. Flow (perm)	1346	1544			1565		1719	3436				3327
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	460	7	339	7	7	7	251	1387	7	0	1016	278
RTOR Reduction (vph)	0	222	0	0	5	0	0	0	0	0	33	0
Lane Group Flow (vph)	460	124	0	0	16	0	251	1394	0	0	1261	0
Turn Type	Perm		Perm				Prot					
Protected Phases		4			8		5	2				6
Permitted Phases	4			8								
Actuated Green, G (s)	25.0	25.0			25.0		11.0	42.0				27.0
Effective Green, g (s)	25.0	25.0			25.0		11.0	42.0				27.0
Actuated g/C Ratio	0.33	0.33			0.33		0.15	0.56				0.36
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0				4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	449	515			522		252	1924				1198
v/s Ratio Prot		0.08					c0.15	0.41				c0.38
v/s Ratio Perm	c0.34				0.01							
v/c Ratio	1.02	0.24			0.03		1.00	0.72				1.05
Uniform Delay, d1	25.0	18.1			16.8		32.0	12.2				24.0
Progression Factor	1.00	1.00			1.00		1.00	1.00				1.00
Incremental Delay, d2	48.9	0.2			0.0		55.2	1.4				40.9
Delay (s)	73.9	18.4			16.9		87.2	13.6				64.9
Level of Service	E	B			B		F	B				E
Approach Delay (s)		50.0			16.9			24.8				64.9
Approach LOS		D			B			C				E

**Intersection Summary**

HCM Average Control Delay	44.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

## 10: ELEVENTH ST. &amp; LAMMERS RD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↗↗↗	↖	↖	↗↗↗	↖	↖↖	↗↗	↖	↖↖	↗	↖
Volume (vph)	12	265	109	380	1185	116	127	203	518	78	169	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	1719	4940	1538	3335	3438	1538	3335	1810	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	1719	4940	1538	3335	3438	1538	3335	1810	1538
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	14	319	131	458	1428	140	153	245	624	94	204	98
RTOR Reduction (vph)	0	0	104	0	0	47	0	0	408	0	0	48
Lane Group Flow (vph)	14	319	27	458	1428	93	153	245	216	94	204	50
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.0	16.2	16.2	26.9	42.1	42.1	8.9	20.9	20.9	6.5	18.5	18.5
Effective Green, g (s)	3.1	18.3	18.3	29.0	44.2	44.2	11.0	23.0	23.0	8.6	20.6	20.6
Actuated g/C Ratio	0.04	0.21	0.21	0.33	0.50	0.50	0.12	0.26	0.26	0.10	0.23	0.23
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	117	1021	318	563	2467	768	415	893	400	324	421	358
v/s Ratio Prot	0.00	0.06		c0.27	c0.29		c0.05	0.07		0.03	0.11	
v/s Ratio Perm			0.02			0.06			c0.14			0.03
v/c Ratio	0.12	0.31	0.09	0.81	0.58	0.12	0.37	0.27	0.54	0.29	0.48	0.14
Uniform Delay, d1	41.4	29.8	28.3	27.3	15.6	11.8	35.6	26.1	28.2	37.1	29.4	26.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.2	0.1	8.8	0.3	0.1	0.6	0.2	1.5	0.5	0.9	0.2
Delay (s)	41.8	29.9	28.5	36.1	15.9	11.9	36.1	26.3	29.7	37.6	30.2	27.1
Level of Service	D	C	C	D	B	B	D	C	C	D	C	C
Approach Delay (s)		29.9			20.2			29.8			31.2	
Approach LOS		C			C			C			C	

## Intersection Summary

HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	88.5	Sum of lost time (s)	3.8
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

11: ELEVENTH ST. & CORRAL HOLLOW RD

WITH PROJECT

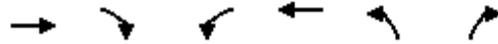


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	512	236	207	707	278	512	1051	219	324	598	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3335	3438	1538	3335	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3335	3438	1538	3335	3438	1538
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	213	575	265	233	794	312	575	1181	246	364	672	220
RTOR Reduction (vph)	0	0	0	0	0	179	0	0	88	0	0	115
Lane Group Flow (vph)	213	575	265	233	794	133	575	1181	158	364	672	105
Turn Type	Prot		Free	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			Free			6			4			8
Actuated Green, G (s)	8.0	23.5	101.4	8.0	23.5	23.5	19.9	39.8	39.8	12.1	32.0	32.0
Effective Green, g (s)	10.0	25.5	101.4	10.0	25.5	25.5	21.9	41.8	41.8	14.1	34.0	34.0
Actuated g/C Ratio	0.10	0.25	1.00	0.10	0.25	0.25	0.22	0.41	0.41	0.14	0.34	0.34
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	329	1242	1538	329	1242	387	720	1417	634	464	1153	516
v/s Ratio Prot	0.06	0.12		c0.07	c0.16		c0.17	c0.34		0.11	0.20	
v/s Ratio Perm			0.17			0.09			0.10			0.07
v/c Ratio	0.65	0.46	0.17	0.71	0.64	0.34	0.80	0.83	0.25	0.78	0.58	0.20
Uniform Delay, d1	44.0	32.1	0.0	44.3	33.8	31.1	37.7	26.7	19.5	42.2	27.8	24.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.3	0.3	0.2	6.8	1.1	0.5	6.2	4.4	0.2	8.5	0.8	0.2
Delay (s)	48.3	32.4	0.2	51.1	34.9	31.6	43.8	31.1	19.7	50.6	28.6	24.2
Level of Service	D	C	A	D	C	C	D	C	B	D	C	C
Approach Delay (s)		27.5			37.0			33.3			34.2	
Approach LOS		C			D			C			C	

Intersection Summary

HCM Average Control Delay	33.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	101.4	Sum of lost time (s)	7.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

## 17: GRANT LINE RD &amp; ACCESS-2



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	558	32	134	541	15	46
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	607	35	146	588	16	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			641		1503	624
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			641		1503	624
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			84		85	90
cM capacity (veh/h)			929		111	480
<b>Direction, Lane #</b>						
	EB 1	WB 1	NB 1			
Volume Total	641	734	66			
Volume Left	0	146	16			
Volume Right	35	0	50			
cSH	1700	929	264			
Volume to Capacity	0.38	0.16	0.25			
Queue Length 95th (ft)	0	14	24			
Control Delay (s)	0.0	3.7	23.1			
Lane LOS		A	C			
Approach Delay (s)	0.0	3.7	23.1			
Approach LOS			C			
<b>Intersection Summary</b>						
Average Delay			3.0			
Intersection Capacity Utilization			80.9%	ICU Level of Service		D
Analysis Period (min)			15			

18: GRANT LINE RD & ACCESS-1

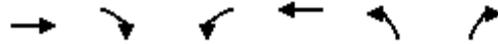


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻		↻
Volume (veh/h)	570	15	0	556	0	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	620	16	0	604	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)	826					
pX, platoon unblocked						
vC, conflicting volume			636		1232	628
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			636		1232	628
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	95
cM capacity (veh/h)			933		193	478

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	636	604	22
Volume Left	0	0	0
Volume Right	16	0	22
cSH	1700	1700	478
Volume to Capacity	0.37	0.36	0.05
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.0	0.0	12.9
Lane LOS	B		
Approach Delay (s)	0.0	0.0	12.9
Approach LOS	B		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		

## 19: GRANT LINE RD &amp; ACCESS-3



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	594	10	45	675	0	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	646	11	49	734	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1070					
pX, platoon unblocked					0.69	
vC, conflicting volume	657			1483	651	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	657			1475	651	
tC, single (s)	4.1			6.4	6.2	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	95			100	95	
cM capacity (veh/h)	917			89	463	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	657	783	22			
Volume Left	0	49	0			
Volume Right	11	0	22			
cSH	1700	917	463			
Volume to Capacity	0.39	0.05	0.05			
Queue Length 95th (ft)	0	4	4			
Control Delay (s)	0.0	1.4	13.2			
Lane LOS	A		B			
Approach Delay (s)	0.0	1.4	13.2			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay	0.9					
Intersection Capacity Utilization	75.8%			ICU Level of Service	D	
Analysis Period (min)	15					

## 1: GRANT LINE RD &amp; BYRON



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	433	529	98	388	534	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.89		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	1538	1614		1719	1810
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1719	1538	1614		1719	1810
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	451	551	102	404	556	180
RTOR Reduction (vph)	0	393	254	0	0	0
Lane Group Flow (vph)	451	158	252	0	556	180
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	16.1	16.1	12.1		16.1	32.2
Effective Green, g (s)	16.1	16.1	12.1		16.1	32.2
Actuated g/C Ratio	0.29	0.29	0.21		0.29	0.57
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	492	440	347		492	1035
v/s Ratio Prot	c0.26		c0.16		c0.32	0.10
v/s Ratio Perm		0.10				
v/c Ratio	0.92	0.36	0.73		1.13	0.17
Uniform Delay, d1	19.5	16.0	20.6		20.1	5.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	21.8	0.5	7.3		81.4	0.1
Delay (s)	41.2	16.5	27.9		101.5	5.8
Level of Service	D	B	C		F	A
Approach Delay (s)	27.6		27.9			78.1
Approach LOS	C		C			E

## Intersection Summary

HCM Average Control Delay	44.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

## 2: GRANT LINE RD &amp; LAMMERS ROAD



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	10	1175	62	213	1055	40	113	13	251	23	11	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			1.00			0.91			0.96	
Flt Protected		1.00			0.99			0.99			0.98	
Satd. Flow (prot)		1797			1788			1623			1703	
Flt Permitted		0.99			0.58			0.89			0.65	
Satd. Flow (perm)		1773			1048			1473			1137	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1277	67	232	1147	43	123	14	273	25	12	13
RTOR Reduction (vph)	0	1	0	0	1	0	0	79	0	0	11	0
Lane Group Flow (vph)	0	1354	0	0	1421	0	0	331	0	0	39	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)		65.0			65.0			17.0			17.0	
Effective Green, g (s)		65.0			65.0			17.0			17.0	
Actuated g/C Ratio		0.72			0.72			0.19			0.19	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1281			757			278			215	
v/s Ratio Prot												
v/s Ratio Perm		0.76			c1.36			c0.22			0.03	
v/c Ratio		1.06			1.88			1.19			0.18	
Uniform Delay, d1		12.5			12.5			36.5			30.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		41.8			399.7			115.1			1.9	
Delay (s)		54.3			412.2			151.6			32.5	
Level of Service		D			F			F			C	
Approach Delay (s)		54.3			412.2			151.6			32.5	
Approach LOS		D			F			F			C	

## Intersection Summary

HCM Average Control Delay	223.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	170.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

## 3: GRANT LINE RD &amp; COSTCO DVWY.

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↘	↑↑	↘	↗
Volume (vph)	1172	150	305	1073	150	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4856		1719	3438	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4856		1719	3438	1719	1538
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1221	156	318	1118	156	329
RTOR Reduction (vph)	17	0	0	0	0	244
Lane Group Flow (vph)	1360	0	318	1118	156	85
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	33.2		21.6	58.8	23.2	23.2
Effective Green, g (s)	33.2		21.6	58.8	23.2	23.2
Actuated g/C Ratio	0.37		0.24	0.65	0.26	0.26
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1791		413	2246	443	396
v/s Ratio Prot	c0.28		c0.18	0.33	c0.09	
v/s Ratio Perm						0.06
v/c Ratio	0.76		0.77	0.50	0.35	0.21
Uniform Delay, d1	24.9		31.9	8.0	27.3	26.2
Progression Factor	1.07		1.33	0.54	1.00	1.00
Incremental Delay, d2	0.2		7.2	0.1	2.2	1.2
Delay (s)	26.9		49.8	4.5	29.5	27.5
Level of Service	C		D	A	C	C
Approach Delay (s)	26.9			14.5	28.1	
Approach LOS	C			B	C	
<b>Intersection Summary</b>						
HCM Average Control Delay			21.7		HCM Level of Service	C
HCM Volume to Capacity ratio			0.64			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			61.2%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

## 4: GRANT LINE RD &amp; WALMART DVWY.



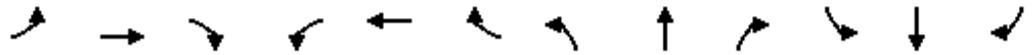
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑	↵	↵
Volume (vph)	1431	58	253	1320	98	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4911		1719	3438	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4911		1719	3438	1719	1538
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1522	62	269	1404	104	245
RTOR Reduction (vph)	5	0	0	0	0	191
Lane Group Flow (vph)	1579	0	269	1404	104	54
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	39.0		19.1	62.1	19.9	19.9
Effective Green, g (s)	39.0		19.1	62.1	19.9	19.9
Actuated g/C Ratio	0.43		0.21	0.69	0.22	0.22
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2128		365	2372	380	340
v/s Ratio Prot	c0.32		c0.16	0.41	c0.06	
v/s Ratio Perm						0.04
v/c Ratio	0.74		0.74	0.59	0.27	0.16
Uniform Delay, d1	21.3		33.1	7.3	29.1	28.3
Progression Factor	1.44		1.39	0.67	1.00	1.00
Incremental Delay, d2	1.0		5.6	0.3	1.8	1.0
Delay (s)	31.7		51.7	5.2	30.8	29.3
Level of Service	C		D	A	C	C
Approach Delay (s)	31.7			12.7	29.8	
Approach LOS	C			B	C	

## Intersection Summary

HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

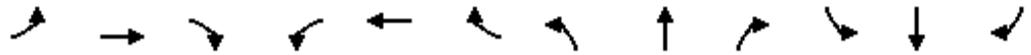
5: GRANT LINE RD & NAGLEE ROAD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	361	1623	85	0	1023	483	0	0	0	794	40	671
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3335	3438	1538		4940	1538				1633	1645	1538
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3335	3438	1538		4940	1538				1633	1645	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	372	1673	88	0	1055	498	0	0	0	819	41	692
RTOR Reduction (vph)	0	0	18	0	0	0	0	0	0	0	0	246
Lane Group Flow (vph)	372	1673	70	0	1055	498	0	0	0	426	434	446
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6						4	
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	13.3	49.5	49.5		32.0	90.0				30.6	30.6	30.6
Effective Green, g (s)	13.5	50.8	50.8		33.3	90.0				31.2	31.2	31.2
Actuated g/C Ratio	0.15	0.56	0.56		0.37	1.00				0.35	0.35	0.35
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	500	1941	868		1828	1538				566	570	533
v/s Ratio Prot	0.11	c0.49			0.21							
v/s Ratio Perm			0.05			0.32				0.26	0.26	c0.29
v/c Ratio	0.74	0.86	0.08		0.58	0.32				0.75	0.76	0.84
Uniform Delay, d1	36.6	16.6	8.9		22.7	0.0				26.0	26.1	27.1
Progression Factor	1.43	0.76	1.09		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	4.9	4.5	0.1		1.3	0.6				5.6	6.0	11.0
Delay (s)	57.3	17.0	9.9		24.0	0.6				31.6	32.1	38.1
Level of Service	E	B	A		C	A				C	C	D
Approach Delay (s)		23.7			16.5			0.0			34.6	
Approach LOS		C			B			A			C	

Intersection Summary		
HCM Average Control Delay	24.8	HCM Level of Service C
HCM Volume to Capacity ratio	0.85	
Actuated Cycle Length (s)	90.0	Sum of lost time (s) 8.0
Intersection Capacity Utilization	74.6%	ICU Level of Service D
Analysis Period (min)	15	
c Critical Lane Group		



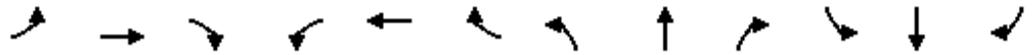
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑↑		↘		↘			
Volume (vph)	801	1616	0	0	1251	0	255	0	477	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0			
Lane Util. Factor	1.00	0.95			0.91		1.00		1.00			
Frt	1.00	1.00			1.00		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	1719	3438			4940		1719		1538			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1719	3438			4940		1719		1538			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	843	1701	0	0	1317	0	268	0	502	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	8	0	0	0
Lane Group Flow (vph)	843	1701	0	0	1317	0	268	0	494	0	0	0
Turn Type	Prot							custom		custom		
Protected Phases	5	2						6				
Permitted Phases							8		8			
Actuated Green, G (s)	19.9	45.7						21.6	31.0	31.0		
Effective Green, g (s)	20.1	47.0						22.9	31.2	31.2		
Actuated g/C Ratio	0.23	0.55						0.27	0.36	0.36		
Clearance Time (s)	4.2	5.3						5.3	4.2	4.2		
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0		
Lane Grp Cap (vph)	401	1875						1312	622	557		
v/s Ratio Prot	c0.49	0.49						c0.27				
v/s Ratio Perm							0.16		c0.32			
v/c Ratio	2.10	0.91						1.00	0.43	0.89		
Uniform Delay, d1	33.0	17.6						31.7	20.8	25.9		
Progression Factor	1.00	1.00						1.00	1.00	1.00		
Incremental Delay, d2	504.4	6.8						25.8	0.5	15.7		
Delay (s)	537.5	24.4						57.4	21.3	41.6		
Level of Service	F	C						E	C	D		
Approach Delay (s)	194.4							57.4	34.5		0.0	
Approach LOS	F							E	C		A	

**Intersection Summary**

HCM Average Control Delay	128.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	86.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

7: GRANT LINE RD & CORRAL HOLLOW RD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	109	809	747	173	548	81	700	328	127	127	293	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		0.94	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1719	3438	2707	1719	3372		4848	3438	1538	1719	3320	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1719	3438	2707	1719	3372		4848	3438	1538	1719	3320	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (vph)	100%	100%	75%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	115	852	590	182	577	85	737	345	134	134	308	91
RTOR Reduction (vph)	0	0	378	0	10	0	0	0	101	0	27	0
Lane Group Flow (vph)	115	852	212	182	652	0	737	345	33	134	372	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	10.6	31.8	31.8	11.1	32.3		17.2	21.1	21.1	12.2	16.1	
Effective Green, g (s)	12.6	33.8	33.8	13.1	34.3		19.2	23.1	23.1	14.2	18.1	
Actuated g/C Ratio	0.13	0.36	0.36	0.14	0.36		0.20	0.25	0.25	0.15	0.19	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	230	1234	971	239	1228		988	843	377	259	638	
v/s Ratio Prot	0.07	c0.25		c0.11	0.19		c0.15	0.10		0.08	c0.11	
v/s Ratio Perm			0.08						0.02			
v/c Ratio	0.50	0.69	0.22	0.76	0.53		0.75	0.41	0.09	0.52	0.58	
Uniform Delay, d1	37.9	25.7	21.0	39.0	23.6		35.2	29.8	27.4	36.8	34.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	1.7	0.1	13.3	0.4		3.1	0.3	0.1	1.7	1.4	
Delay (s)	39.6	27.4	21.1	52.4	24.1		38.3	30.2	27.5	38.6	36.0	
Level of Service	D	C	C	D	C		D	C	C	D	D	
Approach Delay (s)		25.9			30.2			34.8			36.6	
Approach LOS		C			C			C			D	

Intersection Summary

HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	94.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

## 8: BYRON &amp; LAMMERS RD



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	321	302	17	237	238	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.93		1.00	1.00	0.98	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	1691		1719	1810	1701	
Flt Permitted	1.00		0.95	1.00	0.96	
Satd. Flow (perm)	1691		1719	1810	1701	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	341	321	18	252	253	43
RTOR Reduction (vph)	57	0	0	0	10	0
Lane Group Flow (vph)	605	0	18	252	286	0
Turn Type			Prot			
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	20.3		0.6	24.9	12.5	
Effective Green, g (s)	20.3		0.6	24.9	12.5	
Actuated g/C Ratio	0.45		0.01	0.55	0.28	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	756		23	993	468	
v/s Ratio Prot	c0.36		0.01	c0.14	c0.17	
v/s Ratio Perm						
v/c Ratio	0.80		0.78	0.25	0.61	
Uniform Delay, d1	10.8		22.3	5.4	14.3	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	6.1		93.8	0.1	2.4	
Delay (s)	16.9		116.1	5.5	16.7	
Level of Service	B		F	A	B	
Approach Delay (s)	16.9			12.9	16.7	
Approach LOS	B			B	B	

## Intersection Summary

HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	45.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

9: BYRON & CORRAL HOLLOW RD

WITH PROJECT

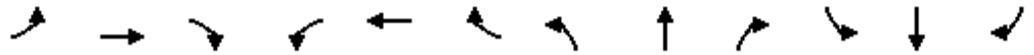


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	196	6	288	6	6	6	207	1399	6	0	1297	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95			0.95	
Frt	1.00	0.85			0.95		1.00	1.00			0.99	
Flt Protected	0.95	1.00			0.98		0.95	1.00			1.00	
Satd. Flow (prot)	1719	1544			1700		1719	3436			3392	
Flt Permitted	0.74	1.00			0.87		0.95	1.00			1.00	
Satd. Flow (perm)	1346	1544			1511		1719	3436			3392	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	213	7	313	7	7	7	225	1521	7	0	1410	138
RTOR Reduction (vph)	0	203	0	0	5	0	0	0	0	0	8	0
Lane Group Flow (vph)	213	117	0	0	16	0	225	1528	0	0	1540	0
Turn Type	Perm		Perm				Prot					
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8								
Actuated Green, G (s)	18.0	18.0			18.0		12.0	57.2			41.2	
Effective Green, g (s)	18.0	18.0			18.0		12.0	57.2			41.2	
Actuated g/C Ratio	0.22	0.22			0.22		0.14	0.69			0.50	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	291	334			327		248	2362			1680	
v/s Ratio Prot		0.08					c0.13	0.44			c0.45	
v/s Ratio Perm	c0.16				0.01							
v/c Ratio	0.73	0.35			0.05		0.91	0.65			0.92	
Uniform Delay, d1	30.4	27.6			25.8		35.1	7.3			19.4	
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2	9.1	0.6			0.1		33.2	0.6			8.3	
Delay (s)	39.5	28.3			25.9		68.3	7.9			27.7	
Level of Service	D	C			C		E	A			C	
Approach Delay (s)		32.8			25.9			15.7			27.7	
Approach LOS		C			C			B			C	

Intersection Summary		
HCM Average Control Delay	22.9	HCM Level of Service C
HCM Volume to Capacity ratio	0.87	
Actuated Cycle Length (s)	83.2	Sum of lost time (s) 12.0
Intersection Capacity Utilization	79.5%	ICU Level of Service D
Analysis Period (min)	15	
c Critical Lane Group		

10: ELEVENTH ST. & LAMMERS RD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	1323	121	98	397	108	40	140	132	94	165	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	1719	4940	1538	3335	3438	1538	3335	1810	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	1719	4940	1538	3335	3438	1538	3335	1810	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	160	1364	125	101	409	111	41	144	136	97	170	24
RTOR Reduction (vph)	0	0	72	0	0	67	0	0	109	0	0	18
Lane Group Flow (vph)	160	1364	53	101	409	44	41	144	27	97	170	6
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	9.1	27.9	27.9	6.9	25.7	25.7	3.6	12.2	12.2	5.8	14.4	14.4
Effective Green, g (s)	11.2	30.0	30.0	9.0	27.8	27.8	5.7	14.3	14.3	7.9	16.5	16.5
Actuated g/C Ratio	0.16	0.42	0.42	0.13	0.39	0.39	0.08	0.20	0.20	0.11	0.23	0.23
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	528	2093	652	219	1940	604	268	694	311	372	422	358
v/s Ratio Prot	c0.05	c0.28		c0.06	0.08		0.01	0.04		c0.03	c0.09	
v/s Ratio Perm			0.03			0.03			0.02			0.00
v/c Ratio	0.30	0.65	0.08	0.46	0.21	0.07	0.15	0.21	0.09	0.26	0.40	0.02
Uniform Delay, d1	26.3	16.2	12.2	28.7	14.2	13.4	30.3	23.5	23.0	28.8	23.0	20.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.7	0.1	1.5	0.1	0.1	0.3	0.1	0.1	0.4	0.6	0.0
Delay (s)	26.7	17.0	12.2	30.2	14.3	13.5	30.6	23.7	23.1	29.2	23.6	20.9
Level of Service	C	B	B	C	B	B	C	C	C	C	C	C
Approach Delay (s)		17.6			16.7			24.3			25.2	
Approach LOS		B			B			C			C	

**Intersection Summary**

HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	3.8
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

11: ELEVENTH ST. & CORRAL HOLLOW RD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↑↑↑	↗	↖↖	↑↑↑	↗	↖↖	↑↑	↗	↖↖	↑↑	↗
Volume (vph)	552	926	868	345	449	295	293	1006	104	361	903	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3335	3438	1538	3335	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3335	3438	1538	3335	3438	1538
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	575	965	904	359	468	307	305	1048	108	376	941	102
RTOR Reduction (vph)	0	0	0	0	0	9	0	0	12	0	0	48
Lane Group Flow (vph)	575	965	904	359	468	298	305	1048	96	376	941	54
Turn Type	Prot		Free	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	5	2		1	6	3	7	4	1	3	8	5
Permitted Phases			Free			6			4			8
Actuated Green, G (s)	13.1	26.7	101.5	12.1	25.7	34.8	11.8	35.6	47.7	9.1	32.9	46.0
Effective Green, g (s)	15.1	28.7	101.5	14.1	27.7	38.8	13.8	37.6	51.7	11.1	34.9	50.0
Actuated g/C Ratio	0.15	0.28	1.00	0.14	0.27	0.38	0.14	0.37	0.51	0.11	0.34	0.49
Clearance Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	496	1397	1538	463	1348	588	453	1274	783	365	1182	758
v/s Ratio Prot	c0.17	c0.20		0.11	0.09	0.06	c0.09	c0.30	0.02	c0.11	0.27	0.01
v/s Ratio Perm			c0.59			0.14			0.05			0.02
v/c Ratio	1.16	0.69	0.59	0.78	0.35	0.51	0.67	0.82	0.12	1.03	0.80	0.07
Uniform Delay, d1	43.2	32.4	0.0	42.2	29.6	24.0	41.7	28.9	13.0	45.2	30.1	13.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	92.2	1.5	1.7	7.9	0.2	0.7	3.9	4.4	0.1	55.1	3.8	0.0
Delay (s)	135.4	33.9	1.7	50.1	29.8	24.7	45.6	33.4	13.1	100.3	33.9	13.6
Level of Service	F	C	A	D	C	C	D	C	B	F	C	B
Approach Delay (s)		45.9			34.9			34.4			50.0	
Approach LOS		D			C			C			D	

Intersection Summary		
HCM Average Control Delay	42.3	HCM Level of Service D
HCM Volume to Capacity ratio	0.82	
Actuated Cycle Length (s)	101.5	Sum of lost time (s) 4.0
Intersection Capacity Utilization	79.2%	ICU Level of Service D
Analysis Period (min)	15	
c Critical Lane Group		

## 17: GRANT LINE RD &amp; ACCESS-2



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (vph)	926	104	282	873	131	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.99			1.00	0.91	
Flt Protected	1.00			0.99	0.98	
Satd. Flow (prot)	1785			1788	1615	
Flt Permitted	1.00			0.07	0.98	
Satd. Flow (perm)	1785			125	1615	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1007	113	307	949	142	323
RTOR Reduction (vph)	4	0	0	0	136	0
Lane Group Flow (vph)	1116	0	0	1256	329	0
Turn Type			Prot			
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	36.0			36.0	16.0	
Effective Green, g (s)	36.0			36.0	16.0	
Actuated g/C Ratio	0.60			0.60	0.27	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	1071			75	431	
v/s Ratio Prot	0.63				c0.20	
v/s Ratio Perm				c10.04		
v/c Ratio	1.04			16.75	0.76	
Uniform Delay, d1	12.0			12.0	20.3	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	39.1			7111.4	12.0	
Delay (s)	51.1			7123.4	32.3	
Level of Service	D			F	C	
Approach Delay (s)	51.1			7123.4	32.3	
Approach LOS	D			F	C	

## Intersection Summary

HCM Average Control Delay	3174.7	HCM Level of Service	F
HCM Volume to Capacity ratio	11.83		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	152.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

18: GRANT LINE RD & ACCESS-1

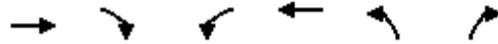


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	980	21	0	1004	0	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1065	23	0	1091	0	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	871			780		
pX, platoon unblocked					0.44	
vC, conflicting volume	1088			2168 1077		
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1088			3034 1077		
tC, single (s)	4.1			6.4 6.2		
tC, 2 stage (s)						
tF (s)	2.2			3.5 3.3		
p0 queue free %	100			100 79		
cM capacity (veh/h)	630			6 263		

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	1088	1091	54
Volume Left	0	0	0
Volume Right	23	0	54
cSH	1700	1700	263
Volume to Capacity	0.64	0.64	0.21
Queue Length 95th (ft)	0	0	19
Control Delay (s)	0.0	0.0	22.2
Lane LOS	C		
Approach Delay (s)	0.0	0.0	22.2
Approach LOS	C		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

19: GRANT LINE RD & ACCESS-3



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1197	25	25	1155	0	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1301	27	27	1255	0	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	600			578		
pX, platoon unblocked			0.43	0.58	0.43	
vC, conflicting volume			1328	2624	1315	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1098	1216	1066	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			90	100	52	
cM capacity (veh/h)			267	103	114	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	1328	1283	54
Volume Left	0	27	0
Volume Right	27	0	54
cSH	1700	267	114
Volume to Capacity	0.78	0.10	0.48
Queue Length 95th (ft)	0	8	53
Control Delay (s)	0.0	8.1	62.7
Lane LOS		A	F
Approach Delay (s)	0.0	8.1	62.7
Approach LOS			F

Intersection Summary			
Average Delay		5.2	
Intersection Capacity Utilization		84.2%	ICU Level of Service E
Analysis Period (min)		15	

## 5: GRANT LINE RD &amp; NAGLEE ROAD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	360	1608	84	0	1132	483	0	0	0	794	40	737
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3335	3438	1538		4940	1538				1633	1645	1538
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3335	3438	1538		4940	1538				1633	1645	1538
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	371	1658	87	0	1167	498	0	0	0	819	41	760
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	0	0	0	235
Lane Group Flow (vph)	371	1658	68	0	1167	498	0	0	0	426	434	525
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6						4	
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	13.3	47.5	47.5		30.0	90.0				32.6	32.6	32.6
Effective Green, g (s)	13.5	48.8	48.8		31.3	90.0				33.2	33.2	33.2
Actuated g/C Ratio	0.15	0.54	0.54		0.35	1.00				0.37	0.37	0.37
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	500	1864	834		1718	1538				602	607	567
v/s Ratio Prot	0.11	c0.48			0.24							
v/s Ratio Perm			0.04			0.32				0.26	0.26	c0.34
v/c Ratio	0.74	0.89	0.08		0.68	0.32				0.71	0.71	0.93
Uniform Delay, d1	36.6	18.2	9.9		25.1	0.0				24.3	24.3	27.2
Progression Factor	1.00	1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	5.9	6.8	0.2		2.2	0.6				3.8	4.0	21.1
Delay (s)	42.5	25.0	10.1		27.2	0.6				28.1	28.3	48.3
Level of Service	D	C	B		C	A				C	C	D
Approach Delay (s)		27.5			19.3			0.0			37.6	
Approach LOS		C			B			A			D	

## Intersection Summary

HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗			↗		↘		↘			
Volume (vph)	796	1607	0	0	1349	0	266	0	477	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0			
Lane Util. Factor	1.00	0.95			0.91		1.00		1.00			
Frt	1.00	1.00			1.00		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	1719	3438			4940		1719		1538			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1719	3438			4940		1719		1538			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	838	1692	0	0	1420	0	280	0	502	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	13	0	0	0
Lane Group Flow (vph)	838	1692	0	0	1420	0	280	0	489	0	0	0
Turn Type	Prot							custom		custom		
Protected Phases	5	2						6				
Permitted Phases								8		8		
Actuated Green, G (s)	23.9	55.6						27.5	33.3	33.3		
Effective Green, g (s)	24.1	56.9						28.8	33.5	33.5		
Actuated g/C Ratio	0.24	0.58						0.29	0.34	0.34		
Clearance Time (s)	4.2	5.3						5.3	4.2	4.2		
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0		
Lane Grp Cap (vph)	421	1988						1446	585	524		
v/s Ratio Prot	c0.49	0.49						c0.29				
v/s Ratio Perm								0.16		c0.32		
v/c Ratio	1.99	0.85						0.98	0.48	0.93		
Uniform Delay, d1	37.2	17.2						34.5	25.6	31.4		
Progression Factor	1.00	1.00						1.00	1.00	1.00		
Incremental Delay, d2	454.2	3.7						19.4	0.6	23.9		
Delay (s)	491.3	21.0						53.9	26.2	55.3		
Level of Service	F	C						D	C	E		
Approach Delay (s)	176.7							53.9	44.9		0.0	
Approach LOS	F							D	D		A	

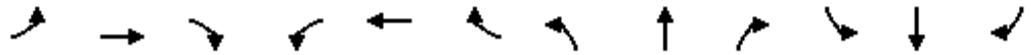
**Intersection Summary**

HCM Average Control Delay	118.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



2: GRANT LINE RD & LAMMERS ROAD

WITH PROJECT-WITH MITIGATION

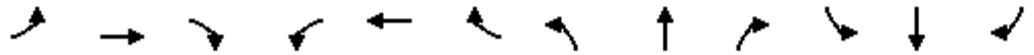


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	586	10	120	691	17	12	3	36	29	7	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.97	
Satd. Flow (prot)	1719	3438	1538	1719	3426			1739	1538		1687	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.87	1.00		0.88	
Satd. Flow (perm)	1719	3438	1538	1719	3426			1569	1538		1532	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	637	11	130	751	18	13	3	39	32	8	18
RTOR Reduction (vph)	0	0	7	0	3	0	0	0	26	0	12	0
Lane Group Flow (vph)	18	637	4	130	766	0	0	16	13	0	46	0
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		
Protected Phases	7	4		3	8			2				6
Permitted Phases			4				2		2	6		
Actuated Green, G (s)	1.5	20.0	20.0	8.5	27.0			19.5	19.5		19.5	
Effective Green, g (s)	1.5	20.0	20.0	8.5	27.0			19.5	19.5		19.5	
Actuated g/C Ratio	0.02	0.33	0.33	0.14	0.45			0.32	0.32		0.32	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	43	1146	513	244	1542			510	500		498	
v/s Ratio Prot	0.01	0.19		c0.08	c0.22							
v/s Ratio Perm			0.00					0.01	0.01		c0.03	
v/c Ratio	0.42	0.56	0.01	0.53	0.50			0.03	0.03		0.09	
Uniform Delay, d1	28.8	16.4	13.4	23.9	11.7			13.8	13.8		14.1	
Progression Factor	0.47	1.60	2.75	1.25	0.68			1.00	1.00		1.00	
Incremental Delay, d2	5.7	0.5	0.0	2.0	0.2			0.1	0.1		0.1	
Delay (s)	19.2	26.7	36.8	31.9	8.2			13.9	13.9		14.2	
Level of Service	B	C	D	C	A			B	B		B	
Approach Delay (s)		26.7			11.6			13.9			14.2	
Approach LOS		C			B			B			B	

Intersection Summary		
HCM Average Control Delay	17.7	HCM Level of Service
HCM Volume to Capacity ratio	0.34	B
Actuated Cycle Length (s)	60.0	Sum of lost time (s)
Intersection Capacity Utilization	42.7%	8.0
Analysis Period (min)	15	ICU Level of Service
		A
c Critical Lane Group		

6: GRANT LINE RD & I-205 EAST

WITH PROJECT-WITH MITIGATION



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	308	563	0	0	1008	0	71	0	115	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0				
Lane Util. Factor	0.97	0.95			0.91		1.00		1.00				
Frt	1.00	1.00			1.00		1.00		0.85				
Flt Protected	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (prot)	3335	3438			4940		1719		1538				
Flt Permitted	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (perm)	3335	3438			4940		1719		1538				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	324	593	0	0	1061	0	75	0	121	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	108	0	0	0	
Lane Group Flow (vph)	324	593	0	0	1061	0	75	0	13	0	0	0	
Turn Type	Prot							custom		custom			
Protected Phases	5	2						6					
Permitted Phases								8		8			
Actuated Green, G (s)	12.8	57.9						40.9		7.6			
Effective Green, g (s)	13.0	59.2						42.2		7.8			
Actuated g/C Ratio	0.17	0.79						0.56		0.10			
Clearance Time (s)	4.2	5.3						5.3		4.2			
Vehicle Extension (s)	3.0	3.0						3.0		3.0			
Lane Grp Cap (vph)	578	2714						2780		179			
v/s Ratio Prot	c0.10	0.17						c0.21					
v/s Ratio Perm								c0.04		0.01			
v/c Ratio	0.56	0.22						0.38		0.42			
Uniform Delay, d1	28.4	2.0						9.1		31.5			
Progression Factor	1.11	1.25						1.00		1.00			
Incremental Delay, d2	1.2	0.2						0.4		1.6			
Delay (s)	32.6	2.7						9.5		33.1			
Level of Service	C	A						A		C			
Approach Delay (s)	13.3							9.5		31.5		0.0	
Approach LOS	B							A		C		A	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

17: GRANT LINE RD & ACCESS-2



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↵	↑↑	↵	↵
Volume (vph)	558	32	134	541	15	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3438	1538	1719	3438	1719	1538
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3438	1538	1719	3438	1719	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	607	35	146	588	16	50
RTOR Reduction (vph)	0	26	0	0	0	23
Lane Group Flow (vph)	607	9	146	588	16	27
Turn Type		Perm	Prot		pm+ov	
Protected Phases	4		3	8	2	3
Permitted Phases		4				2
Actuated Green, G (s)	16.0	16.0	8.6	28.6	23.4	32.0
Effective Green, g (s)	16.0	16.0	8.6	28.6	23.4	32.0
Actuated g/C Ratio	0.27	0.27	0.14	0.48	0.39	0.53
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	917	410	246	1639	670	923
v/s Ratio Prot	c0.18		c0.08	0.17	0.01	c0.00
v/s Ratio Perm		0.01				0.01
v/c Ratio	0.66	0.02	0.59	0.36	0.02	0.03
Uniform Delay, d1	19.6	16.2	24.1	9.9	11.3	6.6
Progression Factor	1.00	1.00	1.32	0.97	1.00	1.00
Incremental Delay, d2	1.8	0.0	3.5	0.1	0.1	0.0
Delay (s)	21.4	16.3	35.3	9.8	11.3	6.6
Level of Service	C	B	D	A	B	A
Approach Delay (s)	21.1			14.9	7.8	
Approach LOS	C			B	A	

Intersection Summary

HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

18: GRANT LINE RD & ACCESS-1

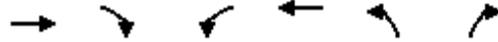


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↗
Volume (veh/h)	570	15	0	556	0	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	620	16	0	604	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	826			780		
pX, platoon unblocked					0.92	
vC, conflicting volume				636	930	318
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				636	743	318
tC, single (s)				4.2	6.9	7.0
tC, 2 stage (s)						
tF (s)				2.2	3.6	3.4
p0 queue free %				100	100	97
cM capacity (veh/h)				923	316	669

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	413	223	302	302	22
Volume Left	0	0	0	0	0
Volume Right	0	16	0	0	22
cSH	1700	1700	1700	1700	669
Volume to Capacity	0.24	0.13	0.18	0.18	0.03
Queue Length 95th (ft)	0	0	0	0	3
Control Delay (s)	0.0	0.0	0.0	0.0	10.6
Lane LOS	B				
Approach Delay (s)	0.0		0.0		10.6
Approach LOS	B				

Intersection Summary					
Average Delay			0.2		
Intersection Capacity Utilization			26.2%	ICU Level of Service	A
Analysis Period (min)	15				

19: GRANT LINE RD & ACCESS-3



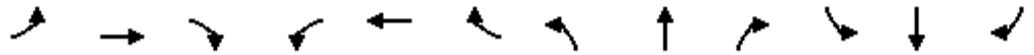
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑		↗
Volume (veh/h)	594	10	45	675	0	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	646	11	49	734	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	600			578		
pX, platoon unblocked				0.86	0.93	0.86
vC, conflicting volume				657	1116	328
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				277	303	0
tC, single (s)				4.2	6.9	7.0
tC, 2 stage (s)						
tF (s)				2.2	3.6	3.4
p0 queue free %				95	100	98
cM capacity (veh/h)				1086	583	925

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	430	226	49	367	367	22
Volume Left	0	0	49	0	0	0
Volume Right	0	11	0	0	0	22
cSH	1700	1700	1086	1700	1700	925
Volume to Capacity	0.25	0.13	0.05	0.22	0.22	0.02
Queue Length 95th (ft)	0	0	4	0	0	2
Control Delay (s)	0.0	0.0	8.5	0.0	0.0	9.0
Lane LOS				A		
Approach Delay (s)	0.0	0.5				9.0
Approach LOS						A

Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			26.7%	ICU Level of Service		A
Analysis Period (min)			15			

2: GRANT LINE RD & LAMMERS ROAD

WITH PROJECT - WITH MITIGATION

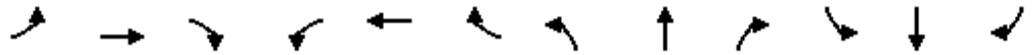


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1175	62	213	1055	40	113	13	251	23	11	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1719	3412		1719	3419			1732	1538		1703	
Flt Permitted	0.95	1.00		0.95	1.00			0.76	1.00		0.84	
Satd. Flow (perm)	1719	3412		1719	3419			1384	1538		1468	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1277	67	232	1147	43	123	14	273	25	12	13
RTOR Reduction (vph)	0	4	0	0	3	0	0	0	219	0	10	0
Lane Group Flow (vph)	11	1340	0	232	1187	0	0	137	54	0	40	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	7	4		3	8			2				6
Permitted Phases							2		2	6		
Actuated Green, G (s)	0.8	43.7		16.6	59.5			17.7	17.7		17.7	
Effective Green, g (s)	0.8	43.7		16.6	59.5			17.7	17.7		17.7	
Actuated g/C Ratio	0.01	0.49		0.18	0.66			0.20	0.20		0.20	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	15	1657		317	2260			272	302		289	
v/s Ratio Prot	0.01	c0.39		c0.13	0.35							
v/s Ratio Perm								c0.10	0.03		0.03	
v/c Ratio	0.73	0.81		0.73	0.53			0.50	0.18		0.14	
Uniform Delay, d1	44.5	19.6		34.6	7.9			32.2	30.1		29.8	
Progression Factor	1.00	1.00		1.08	0.50			1.00	1.00		1.00	
Incremental Delay, d2	103.2	3.0		7.9	0.2			6.5	1.3		1.0	
Delay (s)	147.7	22.6		45.2	4.2			38.8	31.4		30.8	
Level of Service	F	C		D	A			D	C		C	
Approach Delay (s)		23.6			10.9			33.8			30.8	
Approach LOS		C			B			C			C	

Intersection Summary		
HCM Average Control Delay	19.4	HCM Level of Service
HCM Volume to Capacity ratio	0.72	B
Actuated Cycle Length (s)	90.0	Sum of lost time (s)
Intersection Capacity Utilization	67.8%	12.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		C

6: GRANT LINE RD & I-205 EAST

WITH PROJECT - WITH MITIGATION



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↖↖	↗↗			↖↖↖		↖		↗				
Volume (vph)	801	1616	0	0	1251	0	255	0	477	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0				
Lane Util. Factor	0.97	0.95			0.91		1.00		1.00				
Frt	1.00	1.00			1.00		1.00		0.85				
Flt Protected	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (prot)	3335	3438			4940		1719		1538				
Flt Permitted	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (perm)	3335	3438			4940		1719		1538				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	843	1701	0	0	1317	0	268	0	502	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	8	0	0	0	
Lane Group Flow (vph)	843	1701	0	0	1317	0	268	0	494	0	0	0	
Turn Type	Prot							custom		custom			
Protected Phases	5	2						6					
Permitted Phases								8		8			
Actuated Green, G (s)	19.9	45.7						21.6		31.0			
Effective Green, g (s)	20.1	47.0						22.9		31.2			
Actuated g/C Ratio	0.23	0.55						0.27		0.36			
Clearance Time (s)	4.2	5.3						5.3		4.2			
Vehicle Extension (s)	3.0	3.0						3.0		3.0			
Lane Grp Cap (vph)	778	1875						1312		622			
v/s Ratio Prot	c0.25	0.49						c0.27					
v/s Ratio Perm								0.16		c0.32			
v/c Ratio	1.08	0.91						1.00		0.43			
Uniform Delay, d1	33.0	17.6						31.7		20.8			
Progression Factor	1.00	1.00						1.00		1.00			
Incremental Delay, d2	57.3	6.8						25.8		0.5			
Delay (s)	90.3	24.4						57.4		21.3			
Level of Service	F	C						E		C			
Approach Delay (s)	46.3							57.4		34.5		0.0	
Approach LOS	D							E		C		A	

Intersection Summary			
HCM Average Control Delay	47.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	86.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		
c	Critical Lane Group		

## 17: GRANT LINE RD &amp; ACCESS-2



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↙	↑↑	↙	↙
Volume (vph)	926	104	282	873	131	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3438	1538	1719	3438	1719	1538
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3438	1538	1719	3438	1719	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1007	113	307	949	142	323
RTOR Reduction (vph)	0	78	0	0	0	6
Lane Group Flow (vph)	1007	35	307	949	142	317
Turn Type		Perm	Prot			pm+ov
Protected Phases	4		3	8	2	3
Permitted Phases		4				2
Actuated Green, G (s)	18.7	18.7	13.3	36.0	16.0	29.3
Effective Green, g (s)	18.7	18.7	13.3	36.0	16.0	29.3
Actuated g/C Ratio	0.31	0.31	0.22	0.60	0.27	0.49
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1072	479	381	2063	458	854
v/s Ratio Prot	c0.29		c0.18	0.28	0.08	c0.08
v/s Ratio Perm		0.02				0.12
v/c Ratio	0.94	0.07	0.81	0.46	0.31	0.37
Uniform Delay, d1	20.1	14.5	22.1	6.6	17.6	9.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.9	0.1	11.7	0.2	1.8	0.3
Delay (s)	35.0	14.6	33.9	6.8	19.3	9.9
Level of Service	D	B	C	A	B	A
Approach Delay (s)	33.0			13.4	12.8	
Approach LOS	C			B	B	

## Intersection Summary

HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

18: GRANT LINE RD & ACCESS-1



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑
Volume (veh/h)	980	21	0	1004	0	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1065	23	0	1091	0	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	871			780		
pX, platoon unblocked					0.86	
vC, conflicting volume				1088	1622	544
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				1088	1390	544
tC, single (s)				4.2	6.9	7.0
tC, 2 stage (s)						
tF (s)				2.2	3.6	3.4
p0 queue free %				100	100	89
cM capacity (veh/h)				620	111	476

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	710	378	546	546	54
Volume Left	0	0	0	0	0
Volume Right	0	23	0	0	54
cSH	1700	1700	1700	1700	476
Volume to Capacity	0.42	0.22	0.32	0.32	0.11
Queue Length 95th (ft)	0	0	0	0	10
Control Delay (s)	0.0	0.0	0.0	0.0	13.5
Lane LOS					B
Approach Delay (s)	0.0	0.0		13.5	
Approach LOS					B

Intersection Summary					
Average Delay			0.3		
Intersection Capacity Utilization	37.8%		ICU Level of Service		A
Analysis Period (min)	15				

19: GRANT LINE RD & ACCESS-3



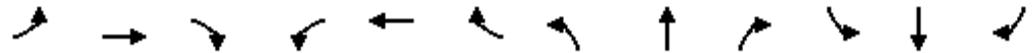
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑		↗
Volume (veh/h)	1197	25	25	1155	0	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1301	27	27	1255	0	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	600			578		
pX, platoon unblocked				0.73	0.82	0.73
vC, conflicting volume				1328	1997	664
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				704	794	0
tC, single (s)				4.2	6.9	7.0
tC, 2 stage (s)						
tF (s)				2.2	3.6	3.4
p0 queue free %				96	100	93
cM capacity (veh/h)				633	250	783

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	867	461	27	628	628	54
Volume Left	0	0	27	0	0	0
Volume Right	0	27	0	0	0	54
cSH	1700	1700	633	1700	1700	783
Volume to Capacity	0.51	0.27	0.04	0.37	0.37	0.07
Queue Length 95th (ft)	0	0	3	0	0	6
Control Delay (s)	0.0	0.0	10.9	0.0	0.0	9.9
Lane LOS				B		
Approach Delay (s)	0.0		0.2		9.9	
Approach LOS				A		

Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			43.9%	ICU Level of Service		A
Analysis Period (min)			15			

6: GRANT LINE RD & I-205 EAST

WITH PROJECT - WITH MITIGATION



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↗↗			↖↖↖		↖		↗			
Volume (vph)	796	1607	0	0	1349	0	266	0	477	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0			
Lane Util. Factor	0.97	0.95			0.91		1.00		1.00			
Frt	1.00	1.00			1.00		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	3335	3438			4940		1719		1538			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	3335	3438			4940		1719		1538			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	838	1692	0	0	1420	0	280	0	502	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	13	0	0	0
Lane Group Flow (vph)	838	1692	0	0	1420	0	280	0	489	0	0	0
Turn Type	Prot							custom		custom		
Protected Phases	5	2						6				
Permitted Phases								8		8		
Actuated Green, G (s)	23.9	55.6						27.5	33.3	33.3		
Effective Green, g (s)	24.1	56.9						28.8	33.5	33.5		
Actuated g/C Ratio	0.24	0.58						0.29	0.34	0.34		
Clearance Time (s)	4.2	5.3						5.3	4.2	4.2		
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0		
Lane Grp Cap (vph)	817	1988						1446	585	524		
v/s Ratio Prot	c0.25	0.49						c0.29				
v/s Ratio Perm								0.16		c0.32		
v/c Ratio	1.03	0.85						0.98	0.48	0.93		
Uniform Delay, d1	37.2	17.2						34.5	25.6	31.4		
Progression Factor	1.00	1.00						1.00	1.00	1.00		
Incremental Delay, d2	38.2	3.7						19.4	0.6	23.9		
Delay (s)	75.3	21.0						53.9	26.2	55.3		
Level of Service	E	C						D	C	E		
Approach Delay (s)	39.0							53.9	44.9		0.0	
Approach LOS	D							D	D		A	

Intersection Summary

HCM Average Control Delay	44.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

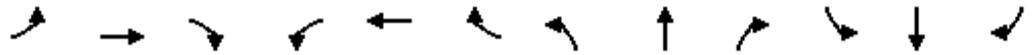
## APPENDIX A-11

### Cumulative + Project Conditions LOS Analysis Worksheets

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM

1: GRANT LINE ROAD & LAMMERS EXTENSION

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	390	130	415	412	285	260	290	572	272	170	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	0.97	0.95	1.00	0.97	0.95	0.88	0.97	0.91	
Frbp, ped/bikes		1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	3433	3539	1568	3433	3539	2760	3433	3390	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	3433	3539	1568	3433	3539	2760	3433	3390	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	390	130	415	412	285	260	290	572	272	170	0
RTOR Reduction (vph)	0	0	92	0	0	146	0	0	60	0	0	0
Lane Group Flow (vph)	0	390	38	415	412	139	260	290	512	272	170	0
Confl. Peds. (#/hr)						2			2			2
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		Perm
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		14.3	26.3	14.5	32.8	44.0	12.0	32.0	46.5	11.2	31.2	
Effective Green, g (s)		15.3	26.3	14.5	33.8	44.0	12.0	33.0	46.5	11.2	32.2	
Actuated g/C Ratio		0.17	0.29	0.16	0.38	0.49	0.13	0.37	0.52	0.12	0.36	
Clearance Time (s)		5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		602	533	553	1329	767	458	1298	1426	427	1213	
v/s Ratio Prot		c0.11	0.01	c0.12	0.12	0.02	c0.08	0.08	c0.06	c0.08	0.05	
v/s Ratio Perm			0.01			0.07			0.13			
v/c Ratio		0.65	0.07	0.75	0.31	0.18	0.57	0.22	0.36	0.64	0.14	
Uniform Delay, d1		34.8	23.0	36.0	19.9	12.9	36.6	19.7	12.9	37.5	19.5	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.4	0.1	5.7	0.1	0.1	1.6	0.4	0.2	3.1	0.2	
Delay (s)		37.2	23.1	41.7	20.0	13.0	38.2	20.1	13.1	40.6	19.8	
Level of Service		D	C	D	B	B	D	C	B	D	B	
Approach Delay (s)		33.7			26.3			20.7			32.6	
Approach LOS		C			C			C			C	

Intersection Summary

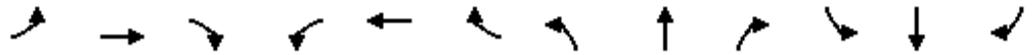
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM

2: GRANT LINE RD & S LAMMERS ROAD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑			↑↑↑	↗		↕		↗↗↗	↘	
Volume (vph)	177	914	6	75	1022	100	4	16	30	250	38	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91	1.00		1.00		0.94	1.00	
Frt	1.00	1.00			1.00	0.85		0.92		1.00	0.88	
Flt Protected	0.95	1.00			1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1770	5080			5068	1583		1705		4990	1644	
Flt Permitted	0.95	1.00			0.82	1.00		1.00		0.95	1.00	
Satd. Flow (perm)	1770	5080			4170	1583		1705		4990	1644	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	177	914	6	75	1022	100	4	16	30	250	38	137
RTOR Reduction (vph)	0	1	0	0	0	56	0	30	0	0	115	0
Lane Group Flow (vph)	177	919	0	0	1097	44	0	20	0	250	60	0
Turn Type	Prot					Perm				Split		
Protected Phases	7	4			8					6	6	
Permitted Phases						8						
Actuated Green, G (s)	11.0	40.3			25.3	25.3		0.0		9.1	9.1	
Effective Green, g (s)	11.0	40.3			25.3	25.3		0.0		9.1	9.1	
Actuated g/C Ratio	0.19	0.70			0.44	0.44		0.00		0.16	0.16	
Clearance Time (s)	4.0	4.0			4.0	4.0				4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0	3.0	
Lane Grp Cap (vph)	339	3567			1838	698		0		791	261	
v/s Ratio Prot	c0.10	0.18								c0.05	0.04	
v/s Ratio Perm					c0.26	0.03						
v/c Ratio	0.52	0.26			0.60	0.06		no cap		0.32	0.23	
Uniform Delay, d1	20.8	3.1			12.2	9.2		Error		21.4	21.1	
Progression Factor	1.00	1.00			1.00	1.00				1.00	1.00	
Incremental Delay, d2	1.5	0.0			0.5	0.0		Error		0.2	0.4	
Delay (s)	22.3	3.1			12.7	9.3		Error		21.6	21.5	
Level of Service	C	A			B	A		F		C	C	
Approach Delay (s)		6.2			12.4			Error			21.6	
Approach LOS		A			B			F			C	

Intersection Summary

HCM Average Control Delay	Error	HCM Level of Service	F
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	57.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

3: GRANT LINE RD & COSTCO DVWY.

WITH PROJECT



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↙	↑↑↑	↙	↗
Volume (vph)	1154	50	70	1137	30	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	5054		1770	5085	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	5054		1770	5085	1770	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1154	50	70	1137	30	50
RTOR Reduction (vph)	6	0	0	0	0	32
Lane Group Flow (vph)	1198	0	70	1137	30	18
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	28.1		7.2	39.3	27.7	27.7
Effective Green, g (s)	28.1		7.2	39.3	27.7	27.7
Actuated g/C Ratio	0.37		0.10	0.52	0.37	0.37
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1894		170	2665	654	585
v/s Ratio Prot	c0.24		0.04	c0.22	c0.02	
v/s Ratio Perm						0.01
v/c Ratio	0.63		0.41	0.43	0.05	0.03
Uniform Delay, d1	19.2		31.9	10.9	15.2	15.1
Progression Factor	1.00		1.31	0.84	1.00	1.00
Incremental Delay, d2	0.7		1.6	0.1	0.1	0.1
Delay (s)	19.9		43.5	9.3	15.3	15.2
Level of Service	B		D	A	B	B
Approach Delay (s)	19.9			11.3	15.2	
Approach LOS	B			B	B	

**Intersection Summary**

HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



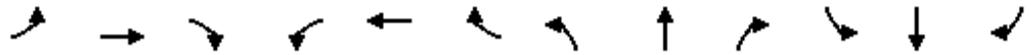
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↙	↑↑↑	↙	↗
Volume (vph)	584	30	80	657	20	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	5048		1770	5085	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	5048		1770	5085	1770	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	584	30	80	657	20	70
RTOR Reduction (vph)	9	0	0	0	0	33
Lane Group Flow (vph)	605	0	80	657	20	37
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	15.6		7.6	27.2	39.8	39.8
Effective Green, g (s)	15.6		7.6	27.2	39.8	39.8
Actuated g/C Ratio	0.21		0.10	0.36	0.53	0.53
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1050		179	1844	939	840
v/s Ratio Prot	c0.12		c0.05	0.13	0.01	
v/s Ratio Perm						c0.02
v/c Ratio	0.58		0.45	0.36	0.02	0.04
Uniform Delay, d1	26.7		31.7	17.5	8.4	8.5
Progression Factor	1.66		1.04	1.22	1.00	1.00
Incremental Delay, d2	0.7		1.3	0.1	0.0	0.1
Delay (s)	45.0		34.4	21.3	8.4	8.6
Level of Service	D		C	C	A	A
Approach Delay (s)	45.0			22.8	8.5	
Approach LOS	D			C	A	

Intersection Summary			
HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	29.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM

5: GRANT LINE RD & NAGLEE ROAD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	168	882	220	0	884	340	0	0	0	270	50	713
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.0	4.0		4.0	4.0				5.2	5.2	5.2
Lane Util. Factor	0.97	0.91	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (prot)	3433	5085	1583		5085	1583				1681	1711	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (perm)	3433	5085	1583		5085	1583				1681	1711	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	168	882	220	0	884	340	0	0	0	270	50	713
RTOR Reduction (vph)	0	0	110	0	0	0	0	0	0	0	0	131
Lane Group Flow (vph)	168	882	110	0	884	340	0	0	0	159	161	582
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6						4	
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	5.1	36.2	36.2		26.9	75.0				28.9	28.9	28.9
Effective Green, g (s)	4.9	37.5	37.5		28.2	75.0				28.3	28.3	28.3
Actuated g/C Ratio	0.07	0.50	0.50		0.38	1.00				0.38	0.38	0.38
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	224	2543	792		1912	1583				634	646	597
v/s Ratio Prot	c0.05	0.17			c0.17							
v/s Ratio Perm			0.07			0.21				0.09	0.09	c0.37
v/c Ratio	0.75	0.35	0.14		0.46	0.21				0.25	0.25	0.98
Uniform Delay, d1	34.4	11.3	10.1		17.7	0.0				16.1	16.0	23.0
Progression Factor	1.27	0.57	0.09		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	13.1	0.4	0.4		0.8	0.3				0.2	0.2	30.4
Delay (s)	56.9	6.8	1.2		18.5	0.3				16.3	16.3	53.4
Level of Service	E	A	A		B	A				B	B	D
Approach Delay (s)		12.5			13.4			0.0			41.9	
Approach LOS		B			B			A			D	

Intersection Summary		
HCM Average Control Delay	21.4	HCM Level of Service C
HCM Volume to Capacity ratio	0.72	
Actuated Cycle Length (s)	75.0	Sum of lost time (s) 13.6
Intersection Capacity Utilization	68.9%	ICU Level of Service C
Analysis Period (min)	15	
c Critical Lane Group		

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM

6: GRANT LINE RD & I-205 EAST

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↖	↑↑↑			↑↑↑		↖		↖				
Volume (vph)	604	478	0	0	824	0	60	0	100	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.4	4.0			4.0		4.4		4.4				
Lane Util. Factor	1.00	0.91			0.91		1.00		1.00				
Frt	1.00	1.00			1.00		1.00		0.85				
Flt Protected	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (prot)	1770	5085			5085		1770		1583				
Flt Permitted	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (perm)	1770	5085			5085		1770		1583				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	604	478	0	0	824	0	60	0	100	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	93	0	0	0	
Lane Group Flow (vph)	604	478	0	0	824	0	60	0	8	0	0	0	
Turn Type	Prot							custom		custom			
Protected Phases	5	2						6					
Permitted Phases								8		8			
Actuated Green, G (s)	41.2	82.8						37.4		7.7			
Effective Green, g (s)	41.0	84.1						38.7		7.5			
Actuated g/C Ratio	0.41	0.84						0.39		0.08			
Clearance Time (s)	4.2	5.3						5.3		4.2			
Vehicle Extension (s)	3.0	3.0						3.0		3.0			
Lane Grp Cap (vph)	726	4276						1968		133			
v/s Ratio Prot	c0.34	0.09						c0.16					
v/s Ratio Perm								c0.03		0.00			
v/c Ratio	0.83	0.11						0.42		0.45			
Uniform Delay, d1	26.4	1.4						22.4		44.3			
Progression Factor	1.00	1.00						1.00		1.00			
Incremental Delay, d2	8.1	0.1						0.7		2.4			
Delay (s)	34.5	1.4						23.1		46.7			
Level of Service	C	A						C		D			
Approach Delay (s)	19.9							23.1		44.5		0.0	
Approach LOS	B							C		D		A	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.8
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c	Critical Lane Group		

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM

7: GRANT LINE RD & CORRAL HOLLOW RD

WITH PROJECT

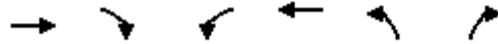


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	219	120	150	422	50	419	410	210	30	160	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		0.94	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	2787	1770	3483		4990	3539	1583	1770	3339	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	2787	1770	3483		4990	3539	1583	1770	3339	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor (vph)	100%	100%	75%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	83	219	90	150	422	50	419	410	210	30	160	97
RTOR Reduction (vph)	0	0	70	0	9	0	0	0	137	0	76	0
Lane Group Flow (vph)	83	219	20	150	463	0	419	410	73	30	181	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	6.7	11.8	11.8	10.8	15.9		10.3	19.8	19.8	2.1	11.6	
Effective Green, g (s)	8.7	13.8	13.8	12.8	17.9		12.3	21.8	21.8	4.1	13.6	
Actuated g/C Ratio	0.14	0.22	0.22	0.20	0.29		0.20	0.35	0.35	0.07	0.22	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	246	781	615	362	998		982	1234	552	116	727	
v/s Ratio Prot	0.05	0.06		c0.08	c0.13		c0.08	c0.12		0.02	0.05	
v/s Ratio Perm			0.01						0.05			
v/c Ratio	0.34	0.28	0.03	0.41	0.46		0.43	0.33	0.13	0.26	0.25	
Uniform Delay, d1	24.3	20.2	19.1	21.6	18.3		22.0	15.0	13.9	27.8	20.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	0.2	0.0	0.8	0.3		0.3	0.2	0.1	1.2	0.2	
Delay (s)	25.1	20.4	19.1	22.4	18.7		22.3	15.1	14.0	28.9	20.4	
Level of Service	C	C	B	C	B		C	B	B	C	C	
Approach Delay (s)		21.1			19.6			17.8			21.3	
Approach LOS		C			B			B			C	

Intersection Summary

HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	62.5	Sum of lost time (s)	4.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	
Volume (vph)	173	112	40	195	217	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.95		1.00	1.00	0.98	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	1764		1770	1863	1750	
Flt Permitted	1.00		0.95	1.00	0.96	
Satd. Flow (perm)	1764		1770	1863	1750	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	173	112	40	195	217	40
RTOR Reduction (vph)	41	0	0	0	11	0
Lane Group Flow (vph)	244	0	40	195	246	0
Turn Type			Prot			
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	10.4		1.7	16.1	12.0	
Effective Green, g (s)	10.4		1.7	16.1	12.0	
Actuated g/C Ratio	0.29		0.05	0.45	0.33	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	508		83	831	582	
v/s Ratio Prot	c0.14		c0.02	0.10	c0.14	
v/s Ratio Perm						
v/c Ratio	0.48		0.48	0.23	0.42	
Uniform Delay, d1	10.6		16.8	6.2	9.4	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.7		4.4	0.1	0.5	
Delay (s)	11.3		21.1	6.3	9.9	
Level of Service	B		C	A	A	
Approach Delay (s)	11.3			8.9	9.9	
Approach LOS	B			A	A	

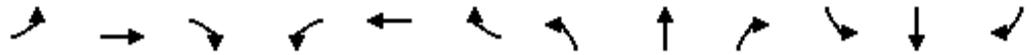
**Intersection Summary**

HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	36.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM

9: BYRON & CORRAL HOLLOW RD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	520	0	250	0	0	0	190	1001	0	0	747	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0					4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00					1.00	0.91			0.91	
Frt	1.00	0.85					1.00	1.00			0.93	
Flt Protected	0.95	1.00					0.95	1.00			1.00	
Satd. Flow (prot)	1770	1583					1770	5085			4727	
Flt Permitted	0.76	1.00					0.95	1.00			1.00	
Satd. Flow (perm)	1410	1583					1770	5085			4727	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	520	0	250	0	0	0	190	1001	0	0	747	660
RTOR Reduction (vph)	0	147	0	0	0	0	0	0	0	0	174	0
Lane Group Flow (vph)	520	103	0	0	0	0	190	1001	0	0	1233	0
Turn Type	Perm		Perm				Prot					
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8								
Actuated Green, G (s)	34.4	34.4					12.1	41.3			25.2	
Effective Green, g (s)	34.4	34.4					12.1	41.3			25.2	
Actuated g/C Ratio	0.41	0.41					0.14	0.49			0.30	
Clearance Time (s)	4.0	4.0					4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0			3.0	
Lane Grp Cap (vph)	579	651					256	2509			1423	
v/s Ratio Prot		0.06					c0.11	0.20			c0.26	
v/s Ratio Perm	c0.37											
v/c Ratio	0.90	0.16					0.74	0.40			1.00dr	
Uniform Delay, d1	23.0	15.5					34.3	13.4			27.7	
Progression Factor	1.00	1.00					1.00	1.00			1.00	
Incremental Delay, d2	16.6	0.1					11.0	0.1			5.8	
Delay (s)	39.6	15.6					45.3	13.5			33.5	
Level of Service	D	B					D	B			C	
Approach Delay (s)		31.8			0.0			18.6			33.5	
Approach LOS		C			A			B			C	

Intersection Summary

HCM Average Control Delay	27.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

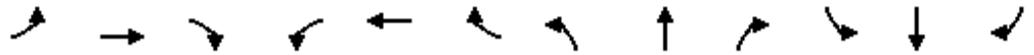
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM

10: ELEVENTH ST. & LAMMERS RD

WITH PROJECT



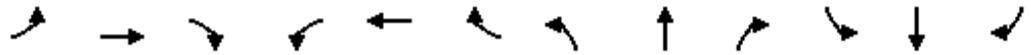
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↑↑↑	↗	↖	↑↑↑	↗	↖↖	↑↑	↗	↖↖	↑	↗
Volume (vph)	40	415	414	340	1601	100	664	160	450	70	140	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.9	2.9	1.9	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	1770	5085	1583	3433	3539	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	1770	5085	1583	3433	3539	1583	3433	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	415	414	340	1601	100	664	160	450	70	140	170
RTOR Reduction (vph)	0	0	0	0	0	31	0	0	307	0	0	133
Lane Group Flow (vph)	40	415	414	340	1601	69	664	160	143	70	140	37
Turn Type	Prot		Free	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6			8			4
Actuated Green, G (s)	3.8	21.1	88.7	18.3	35.6	35.6	18.3	25.4	25.4	5.9	13.0	13.0
Effective Green, g (s)	5.9	23.2	88.7	20.4	37.7	37.7	20.4	27.5	27.5	8.0	15.1	15.1
Actuated g/C Ratio	0.07	0.26	1.00	0.23	0.43	0.43	0.23	0.31	0.31	0.09	0.17	0.17
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	228	1330	1583	407	2161	673	790	1097	491	310	317	269
v/s Ratio Prot	0.01	0.08		c0.19	c0.31		c0.19	0.05		0.02	c0.08	
v/s Ratio Perm			0.26			0.04			0.09			0.02
v/c Ratio	0.18	0.31	0.26	0.84	0.74	0.10	0.84	0.15	0.29	0.23	0.44	0.14
Uniform Delay, d1	39.1	26.3	0.0	32.5	21.4	15.3	32.6	22.1	23.2	37.5	33.0	31.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.4	13.8	1.4	0.1	8.0	0.1	0.3	0.4	1.0	0.2
Delay (s)	39.5	26.5	0.4	46.3	22.8	15.4	40.6	22.2	23.5	37.8	34.0	31.5
Level of Service	D	C	A	D	C	B	D	C	C	D	C	C
Approach Delay (s)		14.6			26.4			32.3			33.6	
Approach LOS		B			C			C			C	

Intersection Summary		
HCM Average Control Delay	26.4	HCM Level of Service C
HCM Volume to Capacity ratio	0.72	
Actuated Cycle Length (s)	88.7	Sum of lost time (s) 6.7
Intersection Capacity Utilization	73.9%	ICU Level of Service D
Analysis Period (min)	15	
c Critical Lane Group		

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM

11: ELEVENTH ST. & CORRAL HOLLOW RD

WITH PROJECT



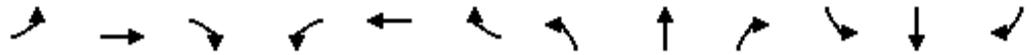
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↑↑↑	↗	↖↖	↑↑↑	↗	↖↖	↑↑↑	↗	↖↖	↑↑↑	↗
Volume (vph)	170	450	210	200	780	259	450	892	320	288	509	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	170	450	210	200	780	259	450	892	320	288	509	170
RTOR Reduction (vph)	0	0	0	0	0	27	0	0	89	0	0	30
Lane Group Flow (vph)	170	450	210	200	780	232	450	892	231	288	509	140
Turn Type	Prot		Free	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	5	2		1	6	3	7	4	1	3	8	5
Permitted Phases			Free			6			4			8
Actuated Green, G (s)	8.6	18.4	77.7	8.8	18.6	30.2	15.7	20.9	29.7	11.6	16.8	25.4
Effective Green, g (s)	10.6	20.4	77.7	10.8	20.6	34.2	17.7	22.9	33.7	13.6	18.8	29.4
Actuated g/C Ratio	0.14	0.26	1.00	0.14	0.27	0.44	0.23	0.29	0.43	0.18	0.24	0.38
Clearance Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	468	1335	1583	477	1348	697	782	1499	687	601	1230	599
v/s Ratio Prot	0.05	0.09		c0.06	c0.15	0.06	c0.13	c0.18	0.05	0.08	0.10	0.03
v/s Ratio Perm			c0.13			0.09			0.10			0.06
v/c Ratio	0.36	0.34	0.13	0.42	0.58	0.33	0.58	0.60	0.34	0.48	0.41	0.23
Uniform Delay, d1	30.5	23.2	0.0	30.6	24.8	14.3	26.7	23.4	14.6	28.9	24.8	16.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.2	0.2	0.6	0.6	0.3	1.0	0.6	0.3	0.6	0.2	0.2
Delay (s)	31.0	23.3	0.2	31.2	25.4	14.5	27.7	24.1	14.9	29.5	25.0	16.7
Level of Service	C	C	A	C	C	B	C	C	B	C	C	B
Approach Delay (s)		19.0			24.1			23.3			24.9	
Approach LOS		B			C			C			C	

Intersection Summary		
HCM Average Control Delay	23.1	HCM Level of Service C
HCM Volume to Capacity ratio	0.53	
Actuated Cycle Length (s)	77.7	Sum of lost time (s) 4.0
Intersection Capacity Utilization	58.7%	ICU Level of Service B
Analysis Period (min)	15	
c Critical Lane Group		

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM

12: GRANT LINE ROAD & PAVILLION PKWY

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	460	10	30	612	0	0	0	50	0	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.85			1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1770	3528		1770	3539			1583			1863	
Flt Permitted	0.39	1.00		0.47	1.00			1.00			1.00	
Satd. Flow (perm)	724	3528		881	3539			1583			1863	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	10	460	10	30	612	0	0	0	50	0	10	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	33	0	0	0	0
Lane Group Flow (vph)	10	468	0	30	612	0	0	18	0	0	10	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	31.0	31.0		31.0	31.0			21.0			21.0	
Effective Green, g (s)	31.0	31.0		31.0	31.0			21.0			21.0	
Actuated g/C Ratio	0.52	0.52		0.52	0.52			0.35			0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Grp Cap (vph)	374	1823		455	1828			554			652	
v/s Ratio Prot		0.13			c0.17			c0.01			0.01	
v/s Ratio Perm	0.01			0.03								
v/c Ratio	0.03	0.26		0.07	0.33			0.03			0.02	
Uniform Delay, d1	7.1	8.1		7.3	8.5			12.8			12.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			0.60	
Incremental Delay, d2	0.1	0.3		0.3	0.5			0.1			0.0	
Delay (s)	7.2	8.4		7.5	9.0			12.9			7.6	
Level of Service	A	A		A	A			B			A	
Approach Delay (s)		8.4			8.9			12.9			7.6	
Approach LOS		A			A			B			A	

Intersection Summary

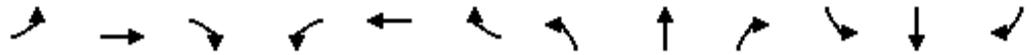
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM

14: I-205 WB ON /OFF RAMP & LAMMERS EXTN

WITH PROJECT

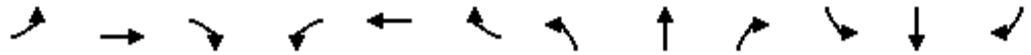


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖↗	↖	↗		↕↕	↖↗		↕↕↕	↖
Volume (vph)	0	0	0	420	0	226	0	1025	1350	0	483	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.91	0.91	1.00		0.95	0.88		0.91	1.00
Frt				1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95	0.95	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3221	1610	1583		3539	2787		5085	1583
Flt Permitted				0.95	0.95	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3221	1610	1583		3539	2787		5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	420	0	226	0	1025	1350	0	483	108
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	40
Lane Group Flow (vph)	0	0	0	281	139	226	0	1025	1350	0	483	68
Turn Type				Split		Free		pm+ov				Perm
Protected Phases				8	8			2	8		6	
Permitted Phases						Free			2			6
Actuated Green, G (s)				20.1	20.1	75.0		46.9	67.0		46.9	46.9
Effective Green, g (s)				20.1	20.1	75.0		46.9	67.0		46.9	46.9
Actuated g/C Ratio				0.27	0.27	1.00		0.63	0.89		0.63	0.63
Clearance Time (s)				4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)				3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)				863	431	1583		2213	2787		3180	990
v/s Ratio Prot				0.09	0.09			0.29	c0.13		0.09	
v/s Ratio Perm						0.14			0.35			0.04
v/c Ratio				0.33	0.32	0.14		0.46	0.48		0.15	0.07
Uniform Delay, d1				22.0	22.0	0.0		7.4	0.8		5.8	5.5
Progression Factor				1.00	1.00	1.00		1.21	1.00		1.00	1.00
Incremental Delay, d2				0.2	0.4	0.2		0.6	0.1		0.1	0.1
Delay (s)				22.2	22.4	0.2		9.6	0.9		5.9	5.6
Level of Service				C	C	A		A	A		A	A
Approach Delay (s)		0.0			14.6			4.6			5.9	
Approach LOS		A			B			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay			6.6		HCM Level of Service				A			
HCM Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			75.0		Sum of lost time (s)				0.0			
Intersection Capacity Utilization			50.6%		ICU Level of Service				A			
Analysis Period (min)			15									
c	Critical Lane Group											

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM

15: I-205 EB OFF /ON-RAMP & LAMMERS EXTN

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑↑↑	↗↘		↑↑↑	↗
Volume (vph)	139	0	350	0	0	0	0	2236	250	0	813	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00					0.91	0.88		0.91	1.00
Frt		1.00	0.85					1.00	0.85		1.00	0.85
Flt Protected		0.95	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)		1770	1583					5085	2787		5085	1583
Flt Permitted		0.95	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)		1770	1583					5085	2787		5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	139	0	350	0	0	0	0	2236	250	0	813	90
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	61	0	0	22
Lane Group Flow (vph)	0	139	350	0	0	0	0	2236	189	0	813	68
Turn Type	Prot		Free						Perm			Perm
Protected Phases	7	4						2			6	
Permitted Phases			Free						2			6
Actuated Green, G (s)		10.4	75.0					56.6	56.6		56.6	56.6
Effective Green, g (s)		10.4	75.0					56.6	56.6		56.6	56.6
Actuated g/C Ratio		0.14	1.00					0.75	0.75		0.75	0.75
Clearance Time (s)		4.0						4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0						3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		245	1583					3837	2103		3837	1195
v/s Ratio Prot		c0.08						c0.44			0.16	
v/s Ratio Perm			0.22						0.07			0.04
v/c Ratio		0.57	0.22					0.58	0.09		0.21	0.06
Uniform Delay, d1		30.2	0.0					4.0	2.4		2.7	2.4
Progression Factor		1.00	1.00					2.11	5.72		0.83	1.61
Incremental Delay, d2		3.0	0.3					0.6	0.1		0.1	0.1
Delay (s)		33.2	0.3					9.1	13.9		2.4	3.9
Level of Service		C	A					A	B		A	A
Approach Delay (s)		9.7			0.0			9.6			2.5	
Approach LOS		A			A			A			A	

Intersection Summary		
HCM Average Control Delay	7.9	HCM Level of Service
HCM Volume to Capacity ratio	0.58	A
Actuated Cycle Length (s)	75.0	Sum of lost time (s)
Intersection Capacity Utilization	57.6%	8.0
Analysis Period (min)	15	ICU Level of Service
		B
c Critical Lane Group		

16: COMMERCE ROAD & LAMMERS EXTN

WITH PROJECT



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	71	60	590	2485	858	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.94	1.00	0.97	0.86	0.91	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	4990	1583	3433	6408	5085	2787
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	4990	1583	3433	6408	5085	2787
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	71	60	590	2485	858	255
RTOR Reduction (vph)	0	18	0	0	0	0
Lane Group Flow (vph)	71	42	590	2485	858	255
Turn Type		pt+ov	Prot			Free
Protected Phases	4	4 5	5	2	6	
Permitted Phases						Free
Actuated Green, G (s)	5.6	27.9	18.3	61.4	39.1	75.0
Effective Green, g (s)	5.6	27.9	18.3	61.4	39.1	75.0
Actuated g/C Ratio	0.07	0.37	0.24	0.82	0.52	1.00
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	373	589	838	5246	2651	2787
v/s Ratio Prot	c0.01	0.03	c0.17	c0.39	0.17	
v/s Ratio Perm						0.09
v/c Ratio	0.19	0.07	0.70	0.47	0.32	0.09
Uniform Delay, d1	32.6	15.2	25.9	2.0	10.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	0.85	1.00
Incremental Delay, d2	0.2	0.1	2.7	0.3	0.3	0.1
Delay (s)	32.8	15.2	28.6	2.3	9.1	0.1
Level of Service	C	B	C	A	A	A
Approach Delay (s)	24.8			7.4	7.0	
Approach LOS	C			A	A	

Intersection Summary

HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

17: GRANT LINE RD & ACCESS-2

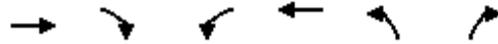
WITH PROJECT



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↓	↑↑↑	↓	↓
Volume (veh/h)	1141	59	79	1054	59	21
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1141	59	79	1054	59	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1200		1650	380
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1200		1650	380
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			86		24	97
cM capacity (veh/h)			577		77	618

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	380	380	380	59	79	351	351	351	80
Volume Left	0	0	0	0	79	0	0	0	59
Volume Right	0	0	0	59	0	0	0	0	21
cSH	1700	1700	1700	1700	577	1700	1700	1700	100
Volume to Capacity	0.22	0.22	0.22	0.03	0.14	0.21	0.21	0.21	0.80
Queue Length 95th (ft)	0	0	0	0	12	0	0	0	109
Control Delay (s)	0.0	0.0	0.0	0.0	12.2	0.0	0.0	0.0	117.5
Lane LOS					B				F
Approach Delay (s)	0.0				0.9				117.5
Approach LOS									F

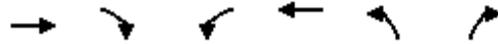
Intersection Summary		
Average Delay		4.3
Intersection Capacity Utilization	41.0%	ICU Level of Service
Analysis Period (min)		15



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↗
Volume (veh/h)	1190	44	0	1113	0	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1190	44	0	1113	0	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1234		1583	419
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1234		1583	419
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	98
cM capacity (veh/h)			560		99	583

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	476	476	282	371	371	371	10
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	44	0	0	0	10
cSH	1700	1700	1700	1700	1700	1700	583
Volume to Capacity	0.28	0.28	0.17	0.22	0.22	0.22	0.02
Queue Length 95th (ft)	0	0	0	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.3
Lane LOS							B
Approach Delay (s)	0.0			0.0			11.3
Approach LOS							B

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↙	↑↑↑		↗
Volume (veh/h)	1127	35	30	1133	0	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1127	35	30	1133	0	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	897					
pX, platoon unblocked					0.89	
vC, conflicting volume	1162			1582	393	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1162			1228	393	
tC, single (s)	4.1			6.8	6.9	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	95			100	98	
cM capacity (veh/h)	597			144	606	

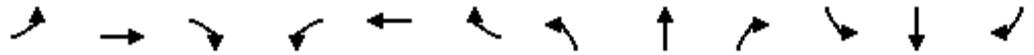
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	451	451	260	30	378	378	378	10
Volume Left	0	0	0	30	0	0	0	0
Volume Right	0	0	35	0	0	0	0	10
cSH	1700	1700	1700	597	1700	1700	1700	606
Volume to Capacity	0.27	0.27	0.15	0.05	0.22	0.22	0.22	0.02
Queue Length 95th (ft)	0	0	0	4	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	11.3	0.0	0.0	0.0	11.0
Lane LOS				B				
Approach Delay (s)	0.0			0.3				
Approach LOS					B			

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM

1: GRANT LINE ROAD & LAMMERS EXTENSION

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	429	290	600	482	442	190	420	891	457	350	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	0.97	0.95	1.00	0.97	0.95	0.88	0.97	0.91	
Frbp, ped/bikes		1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	3433	3539	1568	3433	3539	2761	3433	3390	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	3433	3539	1568	3433	3539	2761	3433	3390	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	429	290	600	482	442	190	420	891	457	350	0
RTOR Reduction (vph)	0	0	167	0	0	159	0	0	32	0	0	0
Lane Group Flow (vph)	0	429	123	600	482	283	190	420	859	457	350	0
Confl. Peds. (#/hr)						2			2			2
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		Perm
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		14.8	24.8	14.2	33.0	46.9	10.0	29.1	43.3	13.9	33.0	
Effective Green, g (s)		15.8	24.8	14.2	34.0	46.9	10.0	30.1	43.3	13.9	34.0	
Actuated g/C Ratio		0.18	0.28	0.16	0.38	0.52	0.11	0.33	0.48	0.15	0.38	
Clearance Time (s)		5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		621	507	542	1337	817	381	1184	1328	530	1281	
v/s Ratio Prot		c0.12	0.03	c0.17	0.14	0.05	0.06	0.12	c0.10	c0.13	0.10	
v/s Ratio Perm			0.05			0.13			0.21			
v/c Ratio		0.69	0.24	1.11	0.36	0.35	0.50	0.35	0.65	0.86	0.27	
Uniform Delay, d1		34.8	25.3	37.9	20.2	12.6	37.6	22.6	17.6	37.1	19.4	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		3.3	0.3	71.3	0.2	0.3	1.0	0.8	1.1	13.5	0.5	
Delay (s)		38.1	25.6	109.2	20.3	12.8	38.7	23.4	18.7	50.7	20.0	
Level of Service		D	C	F	C	B	D	C	B	D	B	
Approach Delay (s)		33.1			53.2			22.6			37.3	
Approach LOS		C			D			C			D	

Intersection Summary

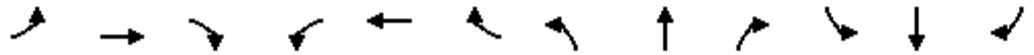
HCM Average Control Delay	37.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM

2: GRANT LINE RD & S LAMMERS ROAD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑			↑↑↑	↗		↕		↗↗↗	↘	
Volume (vph)	279	1326	77	129	1005	610	129	67	164	850	54	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91	1.00		1.00		0.94	1.00	
Frt	1.00	0.99			1.00	0.85		0.94		1.00	0.88	
Flt Protected	0.95	1.00			0.99	1.00		0.98		0.95	1.00	
Satd. Flow (prot)	1770	5043			5057	1583		1717		4990	1636	
Flt Permitted	0.95	1.00			0.67	1.00		0.98		0.95	1.00	
Satd. Flow (perm)	1770	5043			3426	1583		1717		4990	1636	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	279	1326	77	129	1005	610	129	67	164	850	54	231
RTOR Reduction (vph)	0	7	0	0	0	371	0	33	0	0	171	0
Lane Group Flow (vph)	279	1396	0	0	1134	239	0	327	0	850	114	0
Turn Type	Prot				Perm				Split			
Protected Phases	7	4			8					6	6	
Permitted Phases						8						
Actuated Green, G (s)	17.3	54.1			32.8	32.8		0.0		21.6	21.6	
Effective Green, g (s)	17.3	54.1			32.8	32.8		0.0		21.6	21.6	
Actuated g/C Ratio	0.21	0.65			0.39	0.39		0.00		0.26	0.26	
Clearance Time (s)	4.0	4.0			4.0	4.0				4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0	3.0	
Lane Grp Cap (vph)	366	3260			1343	620		0		1288	422	
v/s Ratio Prot	c0.16	0.28								c0.17	0.07	
v/s Ratio Perm					c0.33	0.15						
v/c Ratio	0.76	0.43			0.84	0.39		no cap		0.66	0.27	
Uniform Delay, d1	31.3	7.2			23.1	18.2		Error		27.8	24.8	
Progression Factor	1.00	1.00			1.00	1.00				1.00	1.00	
Incremental Delay, d2	9.1	0.1			5.0	0.4		Error		1.2	0.3	
Delay (s)	40.3	7.3			28.2	18.6		Error		29.0	25.1	
Level of Service	D	A			C	B		F		C	C	
Approach Delay (s)		12.8			24.8			Error			28.0	
Approach LOS		B			C			F			C	

Intersection Summary		
HCM Average Control Delay	Error	HCM Level of Service
HCM Volume to Capacity ratio	0.77	F
Actuated Cycle Length (s)	83.7	Sum of lost time (s)
Intersection Capacity Utilization	100.5%	ICU Level of Service
Analysis Period (min)	15	G
c	Critical Lane Group	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↙	↑↑↑	↙	↗
Volume (vph)	1929	140	290	1444	140	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	5034		1770	5085	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	5034		1770	5085	1770	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1929	140	290	1444	140	300
RTOR Reduction (vph)	8	0	0	0	0	253
Lane Group Flow (vph)	2061	0	290	1444	140	47
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	44.7		19.2	67.9	14.1	14.1
Effective Green, g (s)	44.7		19.2	67.9	14.1	14.1
Actuated g/C Ratio	0.50		0.21	0.75	0.16	0.16
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2500		378	3836	277	248
v/s Ratio Prot	c0.41		c0.16	0.28	c0.08	
v/s Ratio Perm						0.03
v/c Ratio	0.82		0.77	0.38	0.51	0.19
Uniform Delay, d1	19.3		33.3	3.8	34.8	33.0
Progression Factor	1.00		1.20	0.48	1.00	1.00
Incremental Delay, d2	2.3		8.9	0.1	6.5	1.7
Delay (s)	21.6		49.0	1.9	41.2	34.7
Level of Service	C		D	A	D	C
Approach Delay (s)	21.6			9.8	36.8	
Approach LOS	C			A	D	

**Intersection Summary**

HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



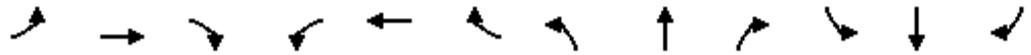
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑↑	↵	↵
Volume (vph)	1069	50	240	1014	90	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	5051		1770	5085	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	5051		1770	5085	1770	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1069	50	240	1014	90	220
RTOR Reduction (vph)	5	0	0	0	0	143
Lane Group Flow (vph)	1114	0	240	1014	90	77
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	29.0		17.4	50.4	31.6	31.6
Effective Green, g (s)	29.0		17.4	50.4	31.6	31.6
Actuated g/C Ratio	0.32		0.19	0.56	0.35	0.35
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1628		342	2848	621	556
v/s Ratio Prot	c0.22		c0.14	0.20	c0.05	
v/s Ratio Perm						0.05
v/c Ratio	0.68		0.70	0.36	0.14	0.14
Uniform Delay, d1	26.5		33.9	10.9	20.0	19.9
Progression Factor	1.71		1.55	0.53	1.00	1.00
Incremental Delay, d2	0.7		4.8	0.1	0.5	0.5
Delay (s)	46.1		57.4	5.9	20.5	20.4
Level of Service	D		E	A	C	C
Approach Delay (s)	46.1			15.7	20.4	
Approach LOS	D			B	C	

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM

5: GRANT LINE RD & NAGLEE ROAD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	323	2427	570	0	1403	420	0	0	0	690	70	526
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.0	4.0		4.0	4.0				5.2	5.2	5.2
Lane Util. Factor	0.97	0.91	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3433	5085	1583		5085	1583				1681	1700	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3433	5085	1583		5085	1583				1681	1700	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	323	2427	570	0	1403	420	0	0	0	690	70	526
RTOR Reduction (vph)	0	0	112	0	0	0	0	0	0	0	0	236
Lane Group Flow (vph)	323	2427	458	0	1403	420	0	0	0	379	381	290
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6							4
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	12.4	52.8	52.8		36.2	90.0				27.3	27.3	27.3
Effective Green, g (s)	12.2	54.1	54.1		37.5	90.0				26.7	26.7	26.7
Actuated g/C Ratio	0.14	0.60	0.60		0.42	1.00				0.30	0.30	0.30
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	465	3057	952		2119	1583				499	504	470
v/s Ratio Prot	0.09	c0.48			0.28							
v/s Ratio Perm			0.29			0.27				c0.23	0.22	0.18
v/c Ratio	0.69	0.79	0.48		0.66	0.27				0.76	0.76	0.62
Uniform Delay, d1	37.1	13.7	10.1		21.1	0.0				28.7	28.7	27.3
Progression Factor	1.26	0.69	0.46		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	4.4	2.2	1.7		1.6	0.4				6.6	6.4	2.4
Delay (s)	51.3	11.6	6.4		22.8	0.4				35.3	35.1	29.7
Level of Service	D	B	A		C	A				D	D	C
Approach Delay (s)		14.5			17.6			0.0			32.9	
Approach LOS		B			B			A			C	

Intersection Summary		
HCM Average Control Delay	19.1	HCM Level of Service B
HCM Volume to Capacity ratio	0.78	
Actuated Cycle Length (s)	90.0	Sum of lost time (s) 9.2
Intersection Capacity Utilization	75.5%	ICU Level of Service D
Analysis Period (min)	15	
c Critical Lane Group		

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM

6: GRANT LINE RD & I-205 EAST

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↘	↑↑↑			↑↑↑		↘		↘				
Volume (vph)	1374	1443	0	0	1023	0	410	0	470	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.0			4.0		4.4		4.4				
Lane Util. Factor	1.00	0.91			0.91		1.00		1.00				
Frt	1.00	1.00			1.00		1.00		0.85				
Flt Protected	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (prot)	1770	5085			5085		1770		1583				
Flt Permitted	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (perm)	1770	5085			5085		1770		1583				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	1374	1443	0	0	1023	0	410	0	470	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	38	0	0	0	
Lane Group Flow (vph)	1374	1443	0	0	1023	0	410	0	432	0	0	0	
Turn Type	Prot							custom		custom			
Protected Phases	5	2						6					
Permitted Phases								8		8			
Actuated Green, G (s)	53.8	76.3						18.5		34.2			
Effective Green, g (s)	53.6	77.6						19.8		34.0			
Actuated g/C Ratio	0.45	0.65						0.16		0.28			
Clearance Time (s)	4.0	5.3						5.3		4.2			
Vehicle Extension (s)	3.0	3.0						3.0		3.0			
Lane Grp Cap (vph)	791	3288						839		502			
v/s Ratio Prot	c0.78	0.28						c0.20					
v/s Ratio Perm								0.23		c0.27			
v/c Ratio	1.74	0.44						1.22		0.82			
Uniform Delay, d1	33.2	10.5						50.1		40.1			
Progression Factor	1.00	1.00						1.00		1.00			
Incremental Delay, d2	336.9	0.4						109.4		9.9			
Delay (s)	370.1	10.9						159.5		50.0			
Level of Service	F	B						F		D			
Approach Delay (s)	186.1							159.5		63.4		0.0	
Approach LOS	F							F		E		A	

Intersection Summary

HCM Average Control Delay	157.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.6
Intersection Capacity Utilization	128.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM

7: GRANT LINE RD & CORRAL HOLLOW RD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	233	709	635	150	420	140	584	550	120	160	610	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0	2.0	3.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		0.94	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	2787	1770	3406		4990	3539	1583	1770	3424	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	2787	1770	3406		4990	3539	1583	1770	3424	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	233	709	635	150	420	140	584	550	120	160	610	170
RTOR Reduction (vph)	0	0	389	0	29	0	0	0	84	0	22	0
Lane Group Flow (vph)	233	709	246	150	531	0	584	550	36	160	758	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	15.6	29.4	29.4	12.7	26.5		12.3	28.4	28.4	11.6	27.7	
Effective Green, g (s)	17.6	31.4	31.4	14.7	28.5		14.3	30.4	30.4	13.6	29.7	
Actuated g/C Ratio	0.18	0.31	0.31	0.15	0.28		0.14	0.30	0.30	0.14	0.30	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	311	1110	874	260	970		713	1075	481	240	1016	
v/s Ratio Prot	c0.13	c0.20		0.08	0.16		c0.12	0.16		0.09	c0.22	
v/s Ratio Perm			0.09						0.02			
v/c Ratio	0.75	0.64	0.28	0.58	0.55		0.82	0.51	0.08	0.67	0.75	
Uniform Delay, d1	39.2	29.5	25.9	39.8	30.3		41.6	28.7	24.8	41.1	31.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.5	1.2	0.2	3.1	0.6		7.3	0.4	0.1	6.8	3.0	
Delay (s)	48.7	30.7	26.0	42.9	31.0		48.9	29.1	24.9	47.9	34.8	
Level of Service	D	C	C	D	C		D	C	C	D	C	
Approach Delay (s)		31.5			33.5			38.0			37.1	
Approach LOS		C			C			D			D	

**Intersection Summary**

HCM Average Control Delay	34.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.1	Sum of lost time (s)	7.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



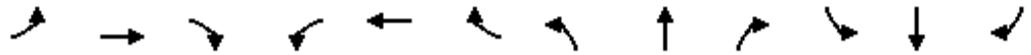
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	281	228	40	211	174	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.94		1.00	1.00	0.97	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	1750		1770	1863	1739	
Flt Permitted	1.00		0.95	1.00	0.96	
Satd. Flow (perm)	1750		1770	1863	1739	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	281	228	40	211	174	50
RTOR Reduction (vph)	45	0	0	0	20	0
Lane Group Flow (vph)	464	0	40	211	204	0
Turn Type			Prot			
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	15.1		1.7	20.8	10.4	
Effective Green, g (s)	15.1		1.7	20.8	10.4	
Actuated g/C Ratio	0.39		0.04	0.53	0.27	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	674		77	989	461	
v/s Ratio Prot	c0.27		c0.02	0.11	c0.12	
v/s Ratio Perm						
v/c Ratio	0.69		0.52	0.21	0.44	
Uniform Delay, d1	10.1		18.4	4.9	12.0	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.9		5.8	0.1	0.7	
Delay (s)	13.0		24.2	5.0	12.7	
Level of Service	B		C	A	B	
Approach Delay (s)	13.0			8.0	12.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	39.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM

9: BYRON & CORRAL HOLLOW RD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	580	0	250	0	0	0	180	1184	0	0	1192	500
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0					4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00					1.00	0.91			0.91	
Frt	1.00	0.85					1.00	1.00			0.96	
Flt Protected	0.95	1.00					0.95	1.00			1.00	
Satd. Flow (prot)	1770	1583					1770	5085			4860	
Flt Permitted	0.76	1.00					0.95	1.00			1.00	
Satd. Flow (perm)	1410	1583					1770	5085			4860	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	580	0	250	0	0	0	180	1184	0	0	1192	500
RTOR Reduction (vph)	0	144	0	0	0	0	0	0	0	0	84	0
Lane Group Flow (vph)	580	106	0	0	0	0	180	1184	0	0	1608	0
Turn Type	Perm		Perm				Prot					
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8								
Actuated Green, G (s)	38.0	38.0					10.0	44.0			30.0	
Effective Green, g (s)	38.0	38.0					10.0	44.0			30.0	
Actuated g/C Ratio	0.42	0.42					0.11	0.49			0.33	
Clearance Time (s)	4.0	4.0					4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0			3.0	
Lane Grp Cap (vph)	595	668					197	2486			1620	
v/s Ratio Prot		0.07					c0.10	0.23			c0.33	
v/s Ratio Perm	c0.41											
v/c Ratio	0.97	0.16					0.91	0.48			0.99	
Uniform Delay, d1	25.5	16.1					39.6	15.3			29.9	
Progression Factor	1.00	1.00					1.00	1.00			1.00	
Incremental Delay, d2	30.3	0.1					40.5	0.1			20.5	
Delay (s)	55.9	16.2					80.1	15.5			50.4	
Level of Service	E	B					F	B			D	
Approach Delay (s)		43.9			0.0			24.0			50.4	
Approach LOS		D			A			C			D	

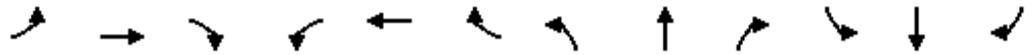
Intersection Summary

HCM Average Control Delay	39.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM

10: ELEVENTH ST. & LAMMERS RD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1930	999	90	1005	90	714	100	120	70	120	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1.9	2.9	1.9	1.9	2.9	2.9	1.9	2.9	2.9	1.9	2.9	2.9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	1770	5085	1583	3433	3539	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	1770	5085	1583	3433	3539	1583	3433	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	250	1930	999	90	1005	90	714	100	120	70	120	90
RTOR Reduction (vph)	0	0	0	0	0	46	0	0	86	0	0	76
Lane Group Flow (vph)	250	1930	999	90	1005	44	714	100	34	70	120	14
Turn Type	Prot		Free	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6			8			4
Actuated Green, G (s)	11.2	38.1	94.1	7.5	34.4	34.4	18.1	24.5	24.5	6.0	12.4	12.4
Effective Green, g (s)	13.3	40.2	94.1	9.6	36.5	36.5	20.2	26.6	26.6	8.1	14.5	14.5
Actuated g/C Ratio	0.14	0.43	1.00	0.10	0.39	0.39	0.21	0.28	0.28	0.09	0.15	0.15
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	485	2172	1583	181	1972	614	737	1000	447	296	287	244
v/s Ratio Prot	0.07	c0.38		0.05	0.20		c0.21	0.03		0.02	0.06	
v/s Ratio Perm			c0.63			0.03			0.02			0.01
v/c Ratio	0.52	0.89	0.63	0.50	0.51	0.07	0.97	0.10	0.08	0.24	0.42	0.06
Uniform Delay, d1	37.4	24.9	0.0	40.0	22.0	18.1	36.6	24.9	24.7	40.1	36.0	34.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	4.9	1.9	2.1	0.2	0.0	25.3	0.0	0.1	0.4	1.0	0.1
Delay (s)	38.3	29.8	1.9	42.1	22.2	18.2	62.0	25.0	24.8	40.5	37.0	34.1
Level of Service	D	C	A	D	C	B	E	C	C	D	D	C
Approach Delay (s)		21.7			23.4			53.2			36.9	
Approach LOS		C			C			D			D	

Intersection Summary

HCM Average Control Delay	28.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	94.1	Sum of lost time (s)	1.9
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM

11: ELEVENTH ST. & CORRAL HOLLOW RD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	490	930	760	450	480	315	260	970	240	333	999	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	490	930	760	450	480	315	260	970	240	333	999	100
RTOR Reduction (vph)	0	0	0	0	0	12	0	0	12	0	0	53
Lane Group Flow (vph)	490	930	760	450	480	303	260	970	228	333	999	47
Turn Type	Prot		Free	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	5	2		1	6	3	7	4	1	3	8	5
Permitted Phases			Free			6			4			8
Actuated Green, G (s)	14.2	24.3	94.0	14.2	24.3	33.5	11.7	28.3	42.5	9.2	25.8	40.0
Effective Green, g (s)	16.2	26.3	94.0	16.2	26.3	37.5	13.7	30.3	46.5	11.2	27.8	44.0
Actuated g/C Ratio	0.17	0.28	1.00	0.17	0.28	0.40	0.15	0.32	0.49	0.12	0.30	0.47
Clearance Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	592	1423	1583	592	1423	632	500	1639	783	409	1504	741
v/s Ratio Prot	c0.14	c0.18		0.13	0.09	0.06	c0.08	0.19	0.05	c0.10	c0.20	0.01
v/s Ratio Perm			0.48			0.13			0.09			0.02
v/c Ratio	0.83	0.65	0.48	0.76	0.34	0.48	0.52	0.59	0.29	0.81	0.66	0.06
Uniform Delay, d1	37.6	29.8	0.0	37.0	26.9	21.0	37.1	26.7	14.0	40.4	29.0	13.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.3	1.1	1.0	5.7	0.1	0.6	1.0	0.6	0.2	11.8	1.1	0.0
Delay (s)	46.8	30.9	1.0	42.8	27.1	21.6	38.1	27.2	14.2	52.2	30.1	13.7
Level of Service	D	C	A	D	C	C	D	C	B	D	C	B
Approach Delay (s)		24.1			31.3			27.0			34.1	
Approach LOS		C			C			C			C	

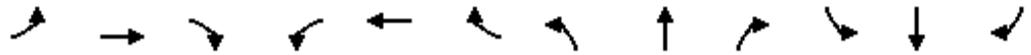
**Intersection Summary**

HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	94.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM

12: GRANT LINE ROAD & PAVILLION PKWY

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	659	0	40	622	0	10	60	30	0	40	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.95			0.88	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	3539		1770	3539		1770	1770			1632	
Flt Permitted	0.39	1.00		0.37	1.00		0.55	1.00			1.00	
Satd. Flow (perm)	728	3539		692	3539		1025	1770			1632	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	160	659	0	40	622	0	10	60	30	0	40	190
RTOR Reduction (vph)	0	0	0	0	0	0	0	21	0	0	130	0
Lane Group Flow (vph)	160	659	0	40	622	0	10	70	0	0	100	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	33.0	33.0		33.0	33.0		19.0	19.0			19.0	
Effective Green, g (s)	33.0	33.0		33.0	33.0		19.0	19.0			19.0	
Actuated g/C Ratio	0.55	0.55		0.55	0.55		0.32	0.32			0.32	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Grp Cap (vph)	400	1946		381	1946		325	561			517	
v/s Ratio Prot		0.19			0.18			0.04			c0.06	
v/s Ratio Perm	c0.22			0.06			0.01					
v/c Ratio	0.40	0.34		0.10	0.32		0.03	0.12			0.19	
Uniform Delay, d1	7.8	7.5		6.4	7.4		14.1	14.6			14.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			5.73	
Incremental Delay, d2	3.0	0.5		0.6	0.4		0.2	0.5			0.8	
Delay (s)	10.8	7.9		7.0	7.8		14.3	15.0			86.3	
Level of Service	B	A		A	A		B	B			F	
Approach Delay (s)		8.5			7.8			15.0			86.3	
Approach LOS		A			A			B			F	

Intersection Summary

HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM

14: I-205 WB ON /OFF RAMP & LAMMERS EXTN

WITH PROJECT



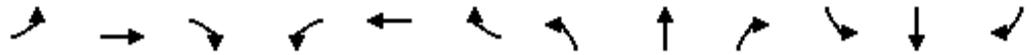
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖↗	↖	↗		↕↕	↖↗		↕↕↕	↖
Volume (vph)	0	0	0	740	0	268	0	1329	700	0	1518	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.91	0.91	1.00		0.95	0.88		0.91	1.00
Frt				1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95	0.95	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3221	1610	1583		3539	2787		5085	1583
Flt Permitted				0.95	0.95	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3221	1610	1583		3539	2787		5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	740	0	268	0	1329	700	0	1518	133
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	50
Lane Group Flow (vph)	0	0	0	496	244	268	0	1329	700	0	1518	83
Turn Type				Split		Free		pm+ov				Perm
Protected Phases				8	8			2	8		6	
Permitted Phases						Free			2			6
Actuated Green, G (s)				20.4	20.4	75.0		46.6	67.0		46.6	46.6
Effective Green, g (s)				20.4	20.4	75.0		46.6	67.0		46.6	46.6
Actuated g/C Ratio				0.27	0.27	1.00		0.62	0.89		0.62	0.62
Clearance Time (s)				4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)				3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)				876	438	1583		2199	2787		3159	984
v/s Ratio Prot				c0.15	0.15			c0.38	0.07		0.30	
v/s Ratio Perm						0.17			0.18			0.05
v/c Ratio				0.57	0.56	0.17		0.60	0.25		0.48	0.08
Uniform Delay, d1				23.5	23.4	0.0		8.6	0.6		7.7	5.7
Progression Factor				1.00	1.00	1.00		0.62	1.00		1.00	1.00
Incremental Delay, d2				0.8	1.5	0.2		1.1	0.0		0.5	0.2
Delay (s)				24.3	25.0	0.2		6.4	0.6		8.2	5.8
Level of Service				C	C	A		A	A		A	A
Approach Delay (s)		0.0			18.1			4.4			8.0	
Approach LOS		A			B			A			A	

Intersection Summary		
HCM Average Control Delay	8.6	HCM Level of Service
HCM Volume to Capacity ratio	0.59	A
Actuated Cycle Length (s)	75.0	Sum of lost time (s)
Intersection Capacity Utilization	57.5%	8.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		B

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM

15: I-205 EB OFF /ON-RAMP & LAMMERS EXTN

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑↑↑	↗↗		↑↑↑	↗
Volume (vph)	295	0	940	0	0	0	0	1734	450	0	1888	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00					0.91	0.88		0.91	1.00
Frt		1.00	0.85					1.00	0.85		1.00	0.85
Flt Protected		0.95	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)		1770	1583					5085	2787		5085	1583
Flt Permitted		0.95	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)		1770	1583					5085	2787		5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	295	0	940	0	0	0	0	1734	450	0	1888	370
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	126	0	0	104
Lane Group Flow (vph)	0	295	940	0	0	0	0	1734	324	0	1888	266
Turn Type	Prot		Free						Perm			Perm
Protected Phases	7	4						2			6	
Permitted Phases			Free						2			6
Actuated Green, G (s)		13.0	75.0					54.0	54.0		54.0	54.0
Effective Green, g (s)		13.0	75.0					54.0	54.0		54.0	54.0
Actuated g/C Ratio		0.17	1.00					0.72	0.72		0.72	0.72
Clearance Time (s)		4.0						4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0						3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		307	1583					3661	2007		3661	1140
v/s Ratio Prot		c0.17						0.34			0.37	
v/s Ratio Perm			c0.59						0.12			0.17
v/c Ratio		0.96	0.59					0.47	0.16		0.52	0.23
Uniform Delay, d1		30.7	0.0					4.5	3.3		4.7	3.5
Progression Factor		1.00	1.00					0.83	1.86		1.17	4.11
Incremental Delay, d2		40.7	1.6					0.4	0.2		0.5	0.4
Delay (s)		71.5	1.6					4.1	6.4		6.0	14.9
Level of Service		E	A					A	A		A	B
Approach Delay (s)		18.3			0.0			4.6			7.4	
Approach LOS		B			A			A			A	

Intersection Summary		
HCM Average Control Delay	8.7	HCM Level of Service
HCM Volume to Capacity ratio	0.66	A
Actuated Cycle Length (s)	75.0	Sum of lost time (s)
Intersection Capacity Utilization	59.5%	4.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		B

16: COMMERCE ROAD & LAMMERS EXTN

WITH PROJECT



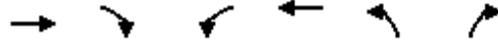
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	395	410	210	1689	2778	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.94	1.00	0.97	0.86	0.91	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	4990	1583	3433	6408	5085	2787
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	4990	1583	3433	6408	5085	2787
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	395	410	210	1689	2778	100
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	395	409	210	1689	2778	100
Turn Type		pt+ov	Prot			Free
Protected Phases	4	4 5	5	2	6	
Permitted Phases						Free
Actuated Green, G (s)	15.8	25.0	5.2	51.2	42.0	75.0
Effective Green, g (s)	15.8	25.0	5.2	51.2	42.0	75.0
Actuated g/C Ratio	0.21	0.33	0.07	0.68	0.56	1.00
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1051	528	238	4375	2848	2787
v/s Ratio Prot	0.08	c0.26	0.06	0.26	c0.55	
v/s Ratio Perm						0.04
v/c Ratio	0.38	0.78	0.88	0.39	0.98	0.04
Uniform Delay, d1	25.4	22.5	34.6	5.1	16.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.05	1.00
Incremental Delay, d2	0.2	7.0	29.4	0.3	10.8	0.0
Delay (s)	25.6	29.5	64.0	5.4	27.7	0.0
Level of Service	C	C	E	A	C	A
Approach Delay (s)	27.6			11.9	26.7	
Approach LOS	C			B	C	

Intersection Summary

HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

17: GRANT LINE RD & ACCESS-2

WITH PROJECT



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↓	↑↑↑	↓	↓
Volume (veh/h)	1623	164	192	1263	261	170
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1623	164	192	1263	261	170
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1787		2428	541
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1787		2428	541
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			44		0	65
cM capacity (veh/h)			343		12	485

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	541	541	541	164	192	421	421	421	431
Volume Left	0	0	0	0	192	0	0	0	261
Volume Right	0	0	0	164	0	0	0	0	170
cSH	1700	1700	1700	1700	343	1700	1700	1700	19
Volume to Capacity	0.32	0.32	0.32	0.10	0.56	0.25	0.25	0.25	22.69
Queue Length 95th (ft)	0	0	0	0	81	0	0	0	Err
Control Delay (s)	0.0	0.0	0.0	0.0	28.1	0.0	0.0	0.0	Err
Lane LOS					D				F
Approach Delay (s)	0.0				3.7				Err
Approach LOS									F

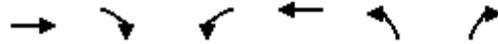
Intersection Summary			
Average Delay	1174.8		
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↗
Volume (veh/h)	1737	40	0	1524	0	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1737	40	0	1524	0	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1777		2265	599
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1777		2265	599
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	89
cM capacity (veh/h)			346		34	445

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	695	695	387	508	508	508	50
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	40	0	0	0	50
cSH	1700	1700	1700	1700	1700	1700	445
Volume to Capacity	0.41	0.41	0.23	0.30	0.30	0.30	0.11
Queue Length 95th (ft)	0	0	0	0	0	0	9
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	14.1
Lane LOS							B
Approach Delay (s)	0.0			0.0			14.1
Approach LOS							B

Intersection Summary			
Average Delay			0.2
Intersection Capacity Utilization	44.5%		ICU Level of Service
Analysis Period (min)	15		A



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑↑		↵
Volume (veh/h)	1742	50	30	1455	0	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1742	50	30	1455	0	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	897					
pX, platoon unblocked					0.86	
vC, conflicting volume	1792			2312	606	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1792			1948	606	
tC, single (s)	4.1			6.8	6.9	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	91			100	89	
cM capacity (veh/h)	341			44	440	

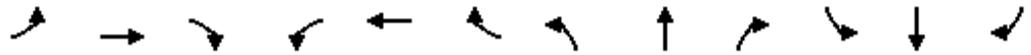
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	697	697	398	30	485	485	485	50
Volume Left	0	0	0	30	0	0	0	0
Volume Right	0	0	50	0	0	0	0	50
cSH	1700	1700	1700	341	1700	1700	1700	440
Volume to Capacity	0.41	0.41	0.23	0.09	0.29	0.29	0.29	0.11
Queue Length 95th (ft)	0	0	0	7	0	0	0	10
Control Delay (s)	0.0	0.0	0.0	16.6	0.0	0.0	0.0	14.2
Lane LOS	C				B			
Approach Delay (s)	0.0			0.3	14.2			
Approach LOS					B			

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - SAT

5: GRANT LINE RD & NAGLEE ROAD

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↑↑↑	↗		↑↑↑	↗				↖	↗	↗
Volume (vph)	436	2216	848	0	1815	549	0	0	0	772	122	736
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.0	4.0		4.0	4.0				5.2	5.2	5.2
Lane Util. Factor	0.97	0.91	1.00		0.91	1.00				0.95	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3433	5085	1583		5085	1583				1681	1708	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3433	5085	1583		5085	1583				1681	1708	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	436	2216	848	0	1815	549	0	0	0	772	122	736
RTOR Reduction (vph)	0	0	209	0	0	0	0	0	0	0	0	196
Lane Group Flow (vph)	436	2216	639	0	1815	549	0	0	0	448	446	540
Turn Type	Prot		Perm			Free				Perm		Perm
Protected Phases	5	2			6						4	
Permitted Phases			2			Free				4		4
Actuated Green, G (s)	12.2	49.6	49.6		33.2	90.0				30.5	30.5	30.5
Effective Green, g (s)	12.0	50.9	50.9		34.5	90.0				29.9	29.9	29.9
Actuated g/C Ratio	0.13	0.57	0.57		0.38	1.00				0.33	0.33	0.33
Clearance Time (s)	4.2	5.3	5.3		5.3					4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0		3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	458	2876	895		1949	1583				558	567	526
v/s Ratio Prot	c0.13	0.44			c0.36							
v/s Ratio Perm			0.40			0.35				0.27	0.26	c0.34
v/c Ratio	0.95	0.77	0.71		0.93	0.35				0.80	0.79	1.03
Uniform Delay, d1	38.7	15.1	14.2		26.6	0.0				27.4	27.2	30.1
Progression Factor	1.00	1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	30.0	2.1	4.8		9.6	0.6				8.2	7.1	46.0
Delay (s)	68.7	17.1	19.1		36.2	0.6				35.5	34.3	76.1
Level of Service	E	B	B		D	A				D	C	E
Approach Delay (s)		24.0			27.9			0.0			53.5	
Approach LOS		C			C			A			D	

Intersection Summary		
HCM Average Control Delay	31.7	HCM Level of Service C
HCM Volume to Capacity ratio	0.97	
Actuated Cycle Length (s)	90.0	Sum of lost time (s) 13.6
Intersection Capacity Utilization	88.3%	ICU Level of Service E
Analysis Period (min)	15	
c Critical Lane Group		

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - SAT

6: GRANT LINE RD & I-205 EAST

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↘	↑↑↑			↑↑↑		↘		↘				
Volume (vph)	1211	1481	0	0	1448	0	326	0	233	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.4	4.0			4.0		4.4		4.4				
Lane Util. Factor	1.00	0.91			0.91		1.00		1.00				
Frt	1.00	1.00			1.00		1.00		0.85				
Flt Protected	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (prot)	1770	5085			5085		1770		1583				
Flt Permitted	0.95	1.00			1.00		0.95		1.00				
Satd. Flow (perm)	1770	5085			5085		1770		1583				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	1211	1481	0	0	1448	0	326	0	233	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	24	0	0	0	
Lane Group Flow (vph)	1211	1481	0	0	1448	0	326	0	209	0	0	0	
Turn Type	Prot							custom		custom			
Protected Phases	5	2						6					
Permitted Phases								8		8			
Actuated Green, G (s)	44.7	66.4						17.5		24.1			
Effective Green, g (s)	44.5	67.7						18.8		23.9			
Actuated g/C Ratio	0.44	0.68						0.19		0.24			
Clearance Time (s)	4.2	5.3						5.3		4.2			
Vehicle Extension (s)	3.0	3.0						3.0		3.0			
Lane Grp Cap (vph)	788	3443						956		423			
v/s Ratio Prot	c0.68	0.29						c0.28					
v/s Ratio Perm								c0.18		0.13			
v/c Ratio	1.54	0.43						1.51		0.77			
Uniform Delay, d1	27.7	7.4						40.6		35.5			
Progression Factor	1.00	1.00						1.00		1.00			
Incremental Delay, d2	247.9	0.4						237.0		8.4			
Delay (s)	275.7	7.8						277.6		43.9			
Level of Service	F	A						F		D			
Approach Delay (s)	128.3							277.6		40.2		0.0	
Approach LOS	F							F		D		A	

Intersection Summary

HCM Average Control Delay	163.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.8
Intersection Capacity Utilization	123.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - SAT

14: I-205 WB ON /OFF RAMP & LAMMERS EXTN

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖↖	↖	↖		↗↗	↗↗		↗↗↗	↗
Volume (vph)	0	0	0	740	0	285	0	1372	700	0	1523	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.91	0.91	1.00		0.95	0.88		0.91	1.00
Frt				1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95	0.95	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3221	1610	1583		3539	2787		5085	1583
Flt Permitted				0.95	0.95	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3221	1610	1583		3539	2787		5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	740	0	285	0	1372	700	0	1523	132
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	52
Lane Group Flow (vph)	0	0	0	496	244	285	0	1372	700	0	1523	80
Turn Type				Split		Free			pm+ov			Perm
Protected Phases				8	8			2	8		6	
Permitted Phases						Free			2			6
Actuated Green, G (s)				21.6	21.6	75.0		45.4	67.0		45.4	45.4
Effective Green, g (s)				21.6	21.6	75.0		45.4	67.0		45.4	45.4
Actuated g/C Ratio				0.29	0.29	1.00		0.61	0.89		0.61	0.61
Clearance Time (s)				4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)				3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)				928	464	1583		2142	2787		3078	958
v/s Ratio Prot				c0.15	0.15			c0.39	0.07		0.30	
v/s Ratio Perm						0.18			0.18			0.05
v/c Ratio				0.53	0.53	0.18		0.64	0.25		0.49	0.08
Uniform Delay, d1				22.5	22.4	0.0		9.5	0.6		8.3	6.2
Progression Factor				1.00	1.00	1.00		0.73	1.00		1.00	1.00
Incremental Delay, d2				0.6	1.1	0.2		1.2	0.0		0.6	0.2
Delay (s)				23.1	23.5	0.2		8.2	0.6		8.9	6.3
Level of Service				C	C	A		A	A		A	A
Approach Delay (s)		0.0			16.8			5.6			8.7	
Approach LOS		A			B			A			A	

Intersection Summary

HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - SAT

15: I-205 EB OFF /ON-RAMP & LAMMERS EXTN

WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑↑↑	↗↗		↑↑↑	↗
Volume (vph)	306	0	940	0	0	0	0	1767	450	0	1885	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00					0.91	0.88		0.91	1.00
Frt		1.00	0.85					1.00	0.85		1.00	0.85
Flt Protected		0.95	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)		1770	1583					5085	2787		5085	1583
Flt Permitted		0.95	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)		1770	1583					5085	2787		5085	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	306	0	940	0	0	0	0	1767	450	0	1885	379
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	126	0	0	106
Lane Group Flow (vph)	0	306	940	0	0	0	0	1767	324	0	1885	273
Turn Type	Prot		Free						Perm			Perm
Protected Phases	7	4						2			6	
Permitted Phases			Free						2			6
Actuated Green, G (s)		13.0	75.0					54.0	54.0		54.0	54.0
Effective Green, g (s)		13.0	75.0					54.0	54.0		54.0	54.0
Actuated g/C Ratio		0.17	1.00					0.72	0.72		0.72	0.72
Clearance Time (s)		4.0						4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0						3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		307	1583					3661	2007		3661	1140
v/s Ratio Prot		c0.17						0.35			0.37	
v/s Ratio Perm			c0.59						0.12			0.17
v/c Ratio		1.00	0.59					0.48	0.16		0.51	0.24
Uniform Delay, d1		31.0	0.0					4.5	3.3		4.7	3.6
Progression Factor		1.00	1.00					1.00	1.00		1.36	5.40
Incremental Delay, d2		50.1	1.6					0.5	0.2		0.5	0.4
Delay (s)		81.1	1.6					5.0	3.5		6.8	19.6
Level of Service		F	A					A	A		A	B
Approach Delay (s)		21.2			0.0			4.7			8.9	
Approach LOS		C			A			A			A	

Intersection Summary

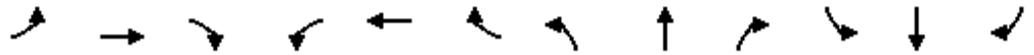
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM

2: GRANT LINE RD & S LAMMERS ROAD

WITH PROJECT-WITH MITIGATION



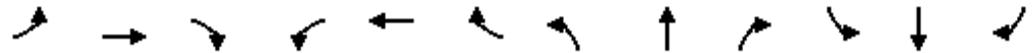
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑↑		↖	↑↑↑	↖	↖	↖		↖↖↖	↖	
Volume (vph)	177	914	6	75	1022	100	4	16	30	250	38	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00		0.94	1.00	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.90		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5080		1770	5085	1583	1770	1681		4990	1644	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5080		1770	5085	1583	1770	1681		4990	1644	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	177	914	6	75	1022	100	4	16	30	250	38	137
RTOR Reduction (vph)	0	1	0	0	0	68	0	27	0	0	107	0
Lane Group Flow (vph)	177	919	0	75	1022	32	4	19	0	250	68	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	9.5	23.6		4.2	18.3	18.3	0.7	5.2		8.1	12.6	
Effective Green, g (s)	9.5	23.6		4.2	18.3	18.3	0.7	5.2		8.1	12.6	
Actuated g/C Ratio	0.17	0.41		0.07	0.32	0.32	0.01	0.09		0.14	0.22	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	294	2100		130	1630	507	22	153		708	363	
v/s Ratio Prot	c0.10	0.18		0.04	c0.20		0.00	0.01		c0.05	c0.04	
v/s Ratio Perm						0.02						
v/c Ratio	0.60	0.44		0.58	0.63	0.06	0.18	0.12		0.35	0.19	
Uniform Delay, d1	22.0	12.0		25.6	16.5	13.5	27.9	23.9		22.1	18.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.5	0.1		6.1	0.8	0.1	4.0	0.4		0.3	0.3	
Delay (s)	25.5	12.1		31.7	17.3	13.5	31.9	24.2		22.4	18.3	
Level of Service	C	B		C	B	B	C	C		C	B	
Approach Delay (s)		14.3			17.8			24.8			20.8	
Approach LOS		B			B			C			C	

Intersection Summary		
HCM Average Control Delay	17.0	HCM Level of Service
HCM Volume to Capacity ratio	0.48	B
Actuated Cycle Length (s)	57.1	Sum of lost time (s)
Intersection Capacity Utilization	51.0%	12.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		A

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM

6: GRANT LINE RD & I-205 EAST

WITH PROJECT-WITH MITIGATION



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑↑		↖		↗			
Volume (vph)	0	478	604	0	824	0	60	0	100	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.4		4.4			
Lane Util. Factor		0.95	1.00		0.91		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		3539	1583		5085		1770		1583			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		3539	1583		5085		1770		1583			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	478	604	0	824	0	60	0	100	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	91	0	0	0
Lane Group Flow (vph)	0	478	604	0	824	0	60	0	9	0	0	0
Turn Type			Free				custom		custom			
Protected Phases		2			6							
Permitted Phases			Free				8		8			
Actuated Green, G (s)		58.6	75.0		58.6		6.9		6.9			
Effective Green, g (s)		59.9	75.0		59.9		6.7		6.7			
Actuated g/C Ratio		0.80	1.00		0.80		0.09		0.09			
Clearance Time (s)		5.3			5.3		4.2		4.2			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		2826	1583		4061		158		141			
v/s Ratio Prot		0.14			0.16							
v/s Ratio Perm			c0.38				0.03		0.01			
v/c Ratio		0.17	0.38		0.20		0.38		0.06			
Uniform Delay, d1		1.8	0.0		1.8		32.2		31.3			
Progression Factor		2.90	1.00		1.00		1.00		1.00			
Incremental Delay, d2		0.1	0.7		0.1		1.5		0.2			
Delay (s)		5.2	0.7		1.9		33.7		31.5			
Level of Service		A	A		A		C		C			
Approach Delay (s)		2.7			1.9			32.3			0.0	
Approach LOS		A			A			C			A	

Intersection Summary

HCM Average Control Delay	4.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM

17: GRANT LINE RD & ACCESS-2

WITH PROJECT-WITH MITIGATION



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↗	↖
Volume (vph)	1141	59	79	1054	59	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1141	59	79	1054	59	21
RTOR Reduction (vph)	0	34	0	0	0	17
Lane Group Flow (vph)	1141	25	79	1054	59	4
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	17.6	17.6	3.8	25.4	7.4	7.4
Effective Green, g (s)	17.6	17.6	3.8	25.4	7.4	7.4
Actuated g/C Ratio	0.43	0.43	0.09	0.62	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2194	683	165	3166	321	287
v/s Ratio Prot	c0.22		c0.04	0.21	c0.03	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.52	0.04	0.48	0.33	0.18	0.01
Uniform Delay, d1	8.5	6.7	17.6	3.7	14.1	13.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	2.2	0.1	0.3	0.0
Delay (s)	8.7	6.7	19.7	3.7	14.4	13.7
Level of Service	A	A	B	A	B	B
Approach Delay (s)	8.6			4.8	14.2	
Approach LOS	A			A	B	

Intersection Summary

HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	40.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - AM

18: GRANT LINE RD & ACCESS-1

WITH PROJECT-WITH MITIGATION



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↗
Volume (veh/h)	1190	44	0	1113	0	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1190	44	0	1113	0	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1234		1583	419
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1234		1583	419
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	98
cM capacity (veh/h)			560		99	583

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	476	476	282	371	371	371	10
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	44	0	0	0	10
cSH	1700	1700	1700	1700	1700	1700	583
Volume to Capacity	0.28	0.28	0.17	0.22	0.22	0.22	0.02
Queue Length 95th (ft)	0	0	0	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.3
Lane LOS							B
Approach Delay (s)	0.0			0.0			11.3
Approach LOS							B

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		

19: GRANT LINE RD & ACCESS-3

WITH PROJECT-WITH MITIGATION



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑↑		↵
Volume (veh/h)	1127	35	30	1133	0	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1127	35	30	1133	0	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1044			897		
pX, platoon unblocked				0.95	0.88	0.95
vC, conflicting volume				1162	1582	393
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				995	822	188
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				95	100	99
cM capacity (veh/h)				658	262	783

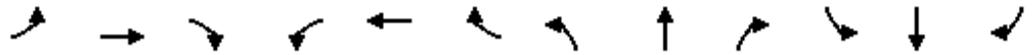
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	451	451	260	30	378	378	378	10
Volume Left	0	0	0	30	0	0	0	0
Volume Right	0	0	35	0	0	0	0	10
cSH	1700	1700	1700	658	1700	1700	1700	783
Volume to Capacity	0.27	0.27	0.15	0.05	0.22	0.22	0.22	0.01
Queue Length 95th (ft)	0	0	0	4	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	10.7	0.0	0.0	0.0	9.7
Lane LOS				B				A
Approach Delay (s)	0.0			0.3				9.7
Approach LOS								A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM

2: GRANT LINE RD & S LAMMERS ROAD

WITH PROJECT-WITH MITIGATION



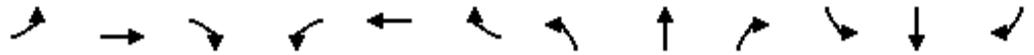
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑		↘	↑↑↑	↗	↘	↗		↗↗↗	↗	
Volume (vph)	279	1326	77	129	1005	610	129	67	164	850	54	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00		0.94	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.89		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5043		1770	5085	1583	1770	1664		4990	1636	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5043		1770	5085	1583	1770	1664		4990	1636	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	279	1326	77	129	1005	610	129	67	164	850	54	231
RTOR Reduction (vph)	0	7	0	0	0	453	0	103	0	0	171	0
Lane Group Flow (vph)	279	1396	0	129	1005	157	129	128	0	850	114	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	16.3	28.9		8.7	21.3	21.3	8.9	12.0		17.2	20.3	
Effective Green, g (s)	16.3	28.9		8.7	21.3	21.3	8.9	12.0		17.2	20.3	
Actuated g/C Ratio	0.20	0.35		0.11	0.26	0.26	0.11	0.14		0.21	0.25	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	348	1760		186	1308	407	190	241		1037	401	
v/s Ratio Prot	c0.16	c0.28		0.07	0.20		0.07	c0.08		c0.17	0.07	
v/s Ratio Perm						0.10						
v/c Ratio	0.80	0.79		0.69	0.77	0.39	0.68	0.53		0.82	0.29	
Uniform Delay, d1	31.7	24.3		35.8	28.5	25.4	35.6	32.8		31.3	25.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.5	2.5		10.7	2.8	0.6	9.3	2.1		5.2	0.4	
Delay (s)	44.2	26.8		46.4	31.2	26.0	44.8	34.9		36.5	25.8	
Level of Service	D	C		D	C	C	D	C		D	C	
Approach Delay (s)	29.7			30.5			38.4			33.8		
Approach LOS	C			C			D			C		

Intersection Summary		
HCM Average Control Delay	31.6	HCM Level of Service C
HCM Volume to Capacity ratio	0.74	
Actuated Cycle Length (s)	82.8	Sum of lost time (s) 12.0
Intersection Capacity Utilization	78.0%	ICU Level of Service D
Analysis Period (min)	15	
c Critical Lane Group		

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM

6: GRANT LINE RD & I-205 EAST

WITH PROJECT-WITH MITIGATION



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑↑		↑		↑			
Volume (vph)	0	1443	1374	0	1023	0	410	0	470	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.4		4.4			
Lane Util. Factor		0.95	1.00		0.91		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		3539	1583		5085		1770		1583			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		3539	1583		5085		1770		1583			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1443	1374	0	1023	0	410	0	470	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	16	0	0	0
Lane Group Flow (vph)	0	1443	1374	0	1023	0	410	0	454	0	0	0
Turn Type			Free				custom		custom			
Protected Phases		2			6							
Permitted Phases			Free				8		8			
Actuated Green, G (s)		49.8	90.0		49.8		30.7		30.7			
Effective Green, g (s)		51.1	90.0		51.1		30.5		30.5			
Actuated g/C Ratio		0.57	1.00		0.57		0.34		0.34			
Clearance Time (s)		5.3			5.3		4.2		4.2			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		2009	1583		2887		600		536			
v/s Ratio Prot		0.41			0.20							
v/s Ratio Perm			c0.87				0.23		0.29			
v/c Ratio		0.72	0.87		0.35		0.68		0.85			
Uniform Delay, d1		14.2	0.0		10.5		25.6		27.6			
Progression Factor		0.65	1.00		1.00		1.00		1.00			
Incremental Delay, d2		1.4	4.4		0.3		3.2		11.8			
Delay (s)		10.6	4.4		10.9		28.8		39.4			
Level of Service		B	A		B		C		D			
Approach Delay (s)		7.6			10.9			34.5			0.0	
Approach LOS		A			B			C			A	

Intersection Summary		
HCM Average Control Delay	13.3	HCM Level of Service B
HCM Volume to Capacity ratio	0.87	
Actuated Cycle Length (s)	90.0	Sum of lost time (s) 0.0
Intersection Capacity Utilization	76.0%	ICU Level of Service D
Analysis Period (min)	15	
c Critical Lane Group		

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - PM

17: GRANT LINE RD & ACCESS-2

WITH PROJECT-WITH MITIGATION



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖	↑↑↑	↖	↗
Volume (vph)	1623	164	192	1263	261	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1623	164	192	1263	261	170
RTOR Reduction (vph)	0	99	0	0	0	131
Lane Group Flow (vph)	1623	65	192	1263	261	39
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	22.0	22.0	8.7	34.7	12.9	12.9
Effective Green, g (s)	22.0	22.0	8.7	34.7	12.9	12.9
Actuated g/C Ratio	0.40	0.40	0.16	0.62	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2012	626	277	3174	411	367
v/s Ratio Prot	c0.32		c0.11	0.25	c0.15	
v/s Ratio Perm		0.04				0.02
v/c Ratio	0.81	0.10	0.69	0.40	0.64	0.11
Uniform Delay, d1	14.9	10.6	22.2	5.2	19.2	16.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.1	7.3	0.1	3.2	0.1
Delay (s)	17.4	10.7	29.5	5.3	22.4	16.9
Level of Service	B	B	C	A	C	B
Approach Delay (s)	16.8			8.5	20.3	
Approach LOS	B			A	C	

Intersection Summary

HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	55.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↗
Volume (veh/h)	1737	40	0	1524	0	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1737	40	0	1524	0	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1777		2265	599
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1777		2265	599
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	89
cM capacity (veh/h)			346		34	445

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	695	695	387	508	508	508	50
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	40	0	0	0	50
cSH	1700	1700	1700	1700	1700	1700	445
Volume to Capacity	0.41	0.41	0.23	0.30	0.30	0.30	0.11
Queue Length 95th (ft)	0	0	0	0	0	0	9
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	14.1
Lane LOS							B
Approach Delay (s)	0.0			0.0			14.1
Approach LOS							B

Intersection Summary			
Average Delay			0.2
Intersection Capacity Utilization	44.5%		ICU Level of Service
Analysis Period (min)	15		A



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↙	↑↑↑		↗
Volume (veh/h)	1742	50	30	1455	0	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1742	50	30	1455	0	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1044			897		
pX, platoon unblocked				0.73	0.81	0.73
vC, conflicting volume				1792	2312	606
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				785	406	0
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				95	100	94
cM capacity (veh/h)				604	443	790

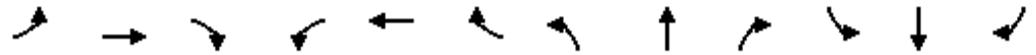
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	697	697	398	30	485	485	485	50
Volume Left	0	0	0	30	0	0	0	0
Volume Right	0	0	50	0	0	0	0	50
cSH	1700	1700	1700	604	1700	1700	1700	790
Volume to Capacity	0.41	0.41	0.23	0.05	0.29	0.29	0.29	0.06
Queue Length 95th (ft)	0	0	0	4	0	0	0	5
Control Delay (s)	0.0	0.0	0.0	11.3	0.0	0.0	0.0	9.9
Lane LOS				B				A
Approach Delay (s)	0.0			0.2				9.9
Approach LOS								A

Intersection Summary								
Average Delay				0.2				
Intersection Capacity Utilization				44.8%	ICU Level of Service	A		
Analysis Period (min)				15				

CUMULATIVE CONDITIONS 2030 FILIOS-DOBLER - SAT

6: GRANT LINE RD & I-205 EAST

WITH PROJECT-WITH MITIGATION



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑↑		↖		↗			
Volume (vph)	0	1481	1211	0	1448	0	326	0	233	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.4		4.4			
Lane Util. Factor		0.95	1.00		0.91		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		3539	1583		5085		1770		1583			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		3539	1583		5085		1770		1583			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1481	1211	0	1448	0	326	0	233	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	17	0	0	0
Lane Group Flow (vph)	0	1481	1211	0	1448	0	326	0	216	0	0	0
Turn Type			Free				custom		custom			
Protected Phases		2			6							
Permitted Phases			Free				8		8			
Actuated Green, G (s)		58.1	90.0		58.1		22.4		22.4			
Effective Green, g (s)		59.4	90.0		59.4		22.2		22.2			
Actuated g/C Ratio		0.66	1.00		0.66		0.25		0.25			
Clearance Time (s)		5.3			5.3		4.2		4.2			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		2336	1583		3356		437		390			
v/s Ratio Prot		0.42			0.28							
v/s Ratio Perm			c0.76				0.18		0.14			
v/c Ratio		0.63	0.77		0.43		0.75		0.55			
Uniform Delay, d1		8.9	0.0		7.3		31.3		29.6			
Progression Factor		0.87	1.00		1.00		1.00		1.00			
Incremental Delay, d2		0.8	2.2		0.4		6.8		1.7			
Delay (s)		8.6	2.2		7.7		38.1		31.3			
Level of Service		A	A		A		D		C			
Approach Delay (s)		5.7			7.7			35.3			0.0	
Approach LOS		A			A			D			A	

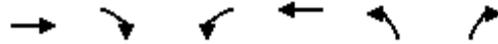
Intersection Summary

HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

## APPENDIX A-12

# Transportation Master Plan Conditions LOS Analysis Worksheets

22: BYRON ROAD & LAMMERS RD

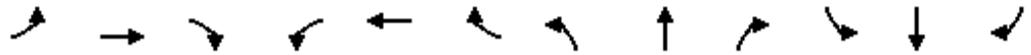


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑↑	↑	↑	↑
Volume (vph)	210	550	460	350	690	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	3433	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	3433	1863	1770	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	210	550	460	350	690	360
RTOR Reduction (vph)	0	307	0	0	0	0
Lane Group Flow (vph)	210	243	460	350	690	360
Turn Type		Over	Prot			Free
Protected Phases	4	2	3	8	2	
Permitted Phases						Free
Actuated Green, G (s)	13.9	30.3	12.4	21.0	30.3	68.6
Effective Green, g (s)	13.9	30.3	12.4	21.0	30.3	68.6
Actuated g/C Ratio	0.20	0.44	0.18	0.31	0.44	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	377	699	621	570	782	1583
v/s Ratio Prot	0.11	0.15	c0.13	c0.19	c0.39	
v/s Ratio Perm						0.23
v/c Ratio	0.56	0.35	0.74	0.61	0.88	0.23
Uniform Delay, d1	24.6	12.6	26.6	20.3	17.5	0.0
Progression Factor	1.00	3.38	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.3	4.7	2.0	11.5	0.3
Delay (s)	26.0	43.0	31.3	22.3	29.0	0.3
Level of Service	C	D	C	C	C	A
Approach Delay (s)	38.3			27.4	19.2	
Approach LOS	D			C	B	

Intersection Summary			
HCM Average Control Delay	27.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	68.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

23: GRANT LINE RD & LAMMERS RD

With Byron Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	1190	330	320	1350	30	400	30	450	20	10	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3424		1770	3539	1583	1770	1601		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3424		1770	3539	1583	1770	1601		1770	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	20	1190	330	320	1350	30	400	30	450	20	10	20
RTOR Reduction (vph)	0	16	0	0	0	0	0	317	0	0	0	19
Lane Group Flow (vph)	20	1504	0	320	1350	30	400	163	0	20	10	1
Turn Type	Prot			Prot		Free	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						Free						6
Actuated Green, G (s)	3.0	60.6		25.0	82.6	139.2	31.0	30.5		7.1	6.6	6.6
Effective Green, g (s)	3.0	60.6		25.0	82.6	139.2	31.0	30.5		7.1	6.6	6.6
Actuated g/C Ratio	0.02	0.44		0.18	0.59	1.00	0.22	0.22		0.05	0.05	0.05
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	38	1491		318	2100	1583	394	351		90	88	75
v/s Ratio Prot	0.01	c0.44		c0.18	0.38		c0.23	c0.10		0.01	0.01	
v/s Ratio Perm						0.02						0.00
v/c Ratio	0.53	1.01		1.01	0.64	0.02	1.02	0.46		0.22	0.11	0.01
Uniform Delay, d1	67.4	39.3		57.1	18.6	0.0	54.1	47.2		63.4	63.5	63.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	12.5	25.5		52.1	0.7	0.0	49.2	1.0		1.3	0.6	0.1
Delay (s)	79.9	64.8		109.2	19.3	0.0	103.3	48.2		64.7	64.1	63.3
Level of Service	E	E		F	B	A	F	D		E	E	E
Approach Delay (s)		65.0			35.9			73.3			64.0	
Approach LOS		E			D			E			E	

Intersection Summary		
HCM Average Control Delay	54.8	HCM Level of Service D
HCM Volume to Capacity ratio	0.96	
Actuated Cycle Length (s)	139.2	Sum of lost time (s) 12.0
Intersection Capacity Utilization	100.6%	ICU Level of Service G
Analysis Period (min)	15	
c Critical Lane Group		

69: BYRON ROAD & LAMMERS ROAD



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	100	70	300	750	560	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.98	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	1750	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	1750	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	100	70	300	750	560	100
RTOR Reduction (vph)	0	0	0	68	9	0
Lane Group Flow (vph)	100	70	300	682	651	0
Turn Type	Prot			pm+ov		
Protected Phases	7	4	8	6	6	
Permitted Phases				8		
Actuated Green, G (s)	5.3	13.9	21.0	51.3	30.3	
Effective Green, g (s)	5.3	13.9	21.0	51.3	30.3	
Actuated g/C Ratio	0.08	0.20	0.31	0.75	0.44	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	137	377	570	1276	773	
v/s Ratio Prot	c0.06	0.04	0.16	c0.24	c0.37	
v/s Ratio Perm				0.19		
v/c Ratio	0.73	0.19	0.53	0.53	0.84	
Uniform Delay, d1	31.0	22.7	19.7	3.6	17.0	
Progression Factor	1.00	1.00	1.23	1.97	1.00	
Incremental Delay, d2	17.6	0.2	0.6	0.3	8.3	
Delay (s)	48.6	22.9	24.9	7.5	25.3	
Level of Service	D	C	C	A	C	
Approach Delay (s)		38.0	12.4		25.3	
Approach LOS		D	B		C	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	68.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

22: BYRON ROAD & LAMMERS RD



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑↑	↑	↑	↑
Volume (vph)	470	590	530	390	900	670
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	3433	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	3433	1863	1770	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	470	590	530	390	900	670
RTOR Reduction (vph)	0	280	0	0	0	0
Lane Group Flow (vph)	470	310	530	390	900	670
Turn Type		Over	Prot			Free
Protected Phases	4	2	3	8	2	
Permitted Phases						Free
Actuated Green, G (s)	28.0	63.0	17.0	30.3	63.0	120.0
Effective Green, g (s)	28.0	63.0	17.0	30.3	63.0	120.0
Actuated g/C Ratio	0.23	0.52	0.14	0.25	0.52	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	435	831	486	470	929	1583
v/s Ratio Prot	c0.25	0.20	c0.15	0.21	c0.51	
v/s Ratio Perm						c0.42
v/c Ratio	1.08	0.37	1.09	0.83	0.97	0.42
Uniform Delay, d1	46.0	16.8	51.5	42.4	27.5	0.0
Progression Factor	1.02	1.82	1.00	1.00	1.00	1.00
Incremental Delay, d2	47.7	0.1	67.6	11.6	22.0	0.8
Delay (s)	94.5	30.7	119.1	54.0	49.5	0.8
Level of Service	F	C	F	D	D	A
Approach Delay (s)	59.0			91.5	28.7	
Approach LOS	E			F	C	

Intersection Summary			
HCM Average Control Delay	54.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

23: GRANT LINE RD & LAMMERS RD

With Byron Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	330	1300	450	520	1130	920	420	20	640	180	30	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3403		1770	3539	1583	1770	1592		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3403		1770	3539	1583	1770	1592		1770	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	330	1300	450	520	1130	920	420	20	640	180	30	170
RTOR Reduction (vph)	0	29	0	0	0	277	0	282	0	0	0	139
Lane Group Flow (vph)	330	1721	0	520	1130	643	420	378	0	180	30	31
Turn Type	Prot			Prot		pm+ov	Prot			Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	22.0	41.0		22.0	41.0	57.3	18.0	23.0		16.3	21.3	21.3
Effective Green, g (s)	22.0	41.0		22.0	41.0	57.3	18.0	23.0		16.3	21.3	21.3
Actuated g/C Ratio	0.19	0.35		0.19	0.35	0.48	0.15	0.19		0.14	0.18	0.18
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	329	1179		329	1227	820	269	310		244	335	285
v/s Ratio Prot	0.19	c0.51		c0.29	0.32	0.11	c0.24	c0.24		0.10	0.02	
v/s Ratio Perm						0.30						0.02
v/c Ratio	1.00	1.46		1.58	0.92	0.78	1.56	1.22		0.74	0.09	0.11
Uniform Delay, d1	48.1	38.6		48.1	37.1	25.3	50.1	47.6		48.9	40.4	40.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	50.4	211.7		275.4	11.3	4.9	270.0	124.4		11.0	0.1	0.2
Delay (s)	98.5	250.4		323.5	48.4	30.3	320.2	172.0		60.0	40.5	40.7
Level of Service	F	F		F	D	C	F	F		E	D	D
Approach Delay (s)		226.3			97.6			229.6			49.8	
Approach LOS		F			F			F			D	

**Intersection Summary**

HCM Average Control Delay	161.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	118.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	143.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

69: BYRON ROAD & LAMMERS ROAD



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	190	120	290	890	930	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.99	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	1763	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	1763	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	190	120	290	890	930	70
RTOR Reduction (vph)	0	0	0	33	2	0
Lane Group Flow (vph)	190	120	290	857	998	0
Turn Type	Prot			pm+ov		
Protected Phases	7	4	8	6	6	
Permitted Phases				8		
Actuated Green, G (s)	14.7	28.0	30.3	93.3	63.0	
Effective Green, g (s)	14.7	28.0	30.3	93.3	63.0	
Actuated g/C Ratio	0.12	0.23	0.25	0.78	0.52	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	217	435	470	1284	926	
v/s Ratio Prot	c0.11	0.06	0.16	c0.35	c0.57	
v/s Ratio Perm				0.19		
v/c Ratio	0.88	0.28	0.62	0.67	1.08	
Uniform Delay, d1	51.8	37.7	39.7	6.2	28.5	
Progression Factor	1.00	1.00	1.17	0.80	1.00	
Incremental Delay, d2	30.1	0.3	0.9	0.5	52.7	
Delay (s)	81.8	38.0	47.4	5.4	81.2	
Level of Service	F	D	D	A	F	
Approach Delay (s)		64.9	15.7		81.2	
Approach LOS		E	B		F	

Intersection Summary			
HCM Average Control Delay	48.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

22: BYRON ROAD & LAMMERS RD



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑↑	↑	↑↑	↑
Volume (vph)	210	550	460	350	690	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	1.00	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	3433	1863	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	3433	1863	3433	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	210	550	460	350	690	360
RTOR Reduction (vph)	0	310	0	0	0	0
Lane Group Flow (vph)	210	240	460	350	690	360
Turn Type		Over	Prot			Free
Protected Phases	4	2	3	8	2	
Permitted Phases						Free
Actuated Green, G (s)	13.7	29.4	12.4	20.9	29.4	67.5
Effective Green, g (s)	13.7	29.4	12.4	20.9	29.4	67.5
Actuated g/C Ratio	0.20	0.44	0.18	0.31	0.44	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	378	689	631	577	1495	1583
v/s Ratio Prot	0.11	0.15	c0.13	c0.19	c0.20	
v/s Ratio Perm						0.23
v/c Ratio	0.56	0.35	0.73	0.61	0.46	0.23
Uniform Delay, d1	24.2	12.7	26.0	19.8	13.5	0.0
Progression Factor	0.99	3.49	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.3	4.2	1.8	0.2	0.3
Delay (s)	25.5	44.4	30.2	21.6	13.7	0.3
Level of Service	C	D	C	C	B	A
Approach Delay (s)	39.2			26.5	9.1	
Approach LOS	D			C	A	

Intersection Summary

HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	67.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

23: GRANT LINE RD & LAMMERS RD



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	1190	330	320	1350	30	400	30	450	20	10	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1537	1504	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	1537	1504	1770	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	20	1190	330	320	1350	30	400	30	450	20	10	20
RTOR Reduction (vph)	0	0	131	0	0	0	0	175	170	0	0	18
Lane Group Flow (vph)	20	1190	199	320	1350	30	400	67	68	20	10	2
Turn Type	Prot		pm+ov	Prot		Free	Prot		pm+ov	Prot		Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			Free			2			6
Actuated Green, G (s)	1.5	33.3	47.1	9.0	40.8	78.2	13.8	13.5	22.5	6.4	6.1	6.1
Effective Green, g (s)	1.5	33.3	47.1	9.0	40.8	78.2	13.8	13.5	22.5	6.4	6.1	6.1
Actuated g/C Ratio	0.02	0.43	0.60	0.12	0.52	1.00	0.18	0.17	0.29	0.08	0.08	0.08
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	34	1507	1034	395	1846	1583	606	265	510	145	145	123
v/s Ratio Prot	0.01	c0.34	0.03	c0.09	0.38		c0.12	c0.04	0.02	0.01	0.01	
v/s Ratio Perm			0.09			0.02			0.03			0.00
v/c Ratio	0.59	0.79	0.19	0.81	0.73	0.02	0.66	0.25	0.13	0.14	0.07	0.01
Uniform Delay, d1	38.0	19.4	7.0	33.8	14.5	0.0	30.0	28.0	20.6	33.3	33.4	33.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.4	2.8	0.1	11.9	1.5	0.0	2.7	0.5	0.1	0.4	0.2	0.0
Delay (s)	61.4	22.3	7.1	45.6	16.0	0.0	32.7	28.5	20.8	33.8	33.6	33.3
Level of Service	E	C	A	D	B	A	C	C	C	C	C	C
Approach Delay (s)		19.5			21.3			28.3			33.6	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

69: BYRON ROAD & LAMMERS ROAD

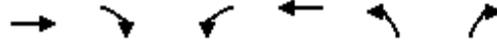


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	100	70	300	750	560	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.98	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	1750	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	1750	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	100	70	300	750	560	100
RTOR Reduction (vph)	0	0	0	69	9	0
Lane Group Flow (vph)	100	70	300	681	651	0
Turn Type	Prot		pm+ov			
Protected Phases	7	4	8	6	6	
Permitted Phases				8		
Actuated Green, G (s)	5.2	13.7	20.9	50.3	29.4	
Effective Green, g (s)	5.2	13.7	20.9	50.3	29.4	
Actuated g/C Ratio	0.08	0.20	0.31	0.75	0.44	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	136	378	577	1273	762	
v/s Ratio Prot	c0.06	0.04	0.16	c0.23	c0.37	
v/s Ratio Perm				0.20		
v/c Ratio	0.74	0.19	0.52	0.54	0.85	
Uniform Delay, d1	30.5	22.3	19.2	3.6	17.1	
Progression Factor	1.00	1.00	1.36	2.79	1.00	
Incremental Delay, d2	18.5	0.2	0.7	0.4	9.2	
Delay (s)	49.0	22.5	26.7	10.6	26.4	
Level of Service	D	C	C	B	C	
Approach Delay (s)		38.1	15.2		26.4	
Approach LOS		D	B		C	

Intersection Summary

HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	67.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

22: BYRON ROAD & LAMMERS RD



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑↑	↑	↑↑	↑
Volume (vph)	470	590	530	390	900	670
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	1.00	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	3433	1863	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	3433	1863	3433	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	470	590	530	390	900	670
RTOR Reduction (vph)	0	288	0	0	0	0
Lane Group Flow (vph)	470	302	530	390	900	670
Turn Type		Over	Prot			Free
Protected Phases	4	2	3	8	2	
Permitted Phases						Free
Actuated Green, G (s)	20.0	46.0	12.0	22.0	46.0	90.0
Effective Green, g (s)	20.0	46.0	12.0	22.0	46.0	90.0
Actuated g/C Ratio	0.22	0.51	0.13	0.24	0.51	1.00
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	414	809	458	455	1755	1583
v/s Ratio Prot	c0.25	0.19	c0.15	0.21	c0.26	
v/s Ratio Perm						c0.42
v/c Ratio	1.14	0.37	1.16	0.86	0.51	0.42
Uniform Delay, d1	35.0	13.3	39.0	32.5	14.6	0.0
Progression Factor	1.08	2.79	1.00	1.00	1.00	1.00
Incremental Delay, d2	64.0	0.0	92.8	14.7	0.3	0.8
Delay (s)	101.8	37.1	131.8	47.2	14.8	0.8
Level of Service	F	D	F	D	B	A
Approach Delay (s)	65.8			95.9	8.9	
Approach LOS	E			F	A	

Intersection Summary

HCM Average Control Delay	48.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

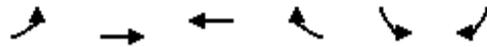
23: GRANT LINE RD & LAMMERS RD



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	330	1300	450	520	1130	920	420	20	640	180	30	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1520	1504	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	1520	1504	1770	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	330	1300	450	520	1130	920	420	20	640	180	30	170
RTOR Reduction (vph)	0	0	171	0	0	0	0	280	53	0	0	155
Lane Group Flow (vph)	330	1300	279	520	1130	920	420	54	273	180	30	15
Turn Type	Prot		pm+ov	Prot		Free	Prot		pm+ov	Prot		Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			Free			2			6
Actuated Green, G (s)	23.8	45.6	62.7	19.4	41.2	107.6	17.1	11.5	30.9	15.1	9.5	9.5
Effective Green, g (s)	23.8	45.6	62.7	19.4	41.2	107.6	17.1	11.5	30.9	15.1	9.5	9.5
Actuated g/C Ratio	0.22	0.42	0.58	0.18	0.38	1.00	0.16	0.11	0.29	0.14	0.09	0.09
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	392	1500	981	619	1355	1583	546	162	488	248	164	140
v/s Ratio Prot	c0.19	c0.37	0.05	0.15	0.32		c0.12	0.04	0.10	0.10	0.02	
v/s Ratio Perm			0.13			c0.58			0.08			0.01
v/c Ratio	0.84	0.87	0.28	0.84	0.83	0.58	0.77	0.33	0.56	0.73	0.18	0.11
Uniform Delay, d1	40.1	28.2	11.2	42.6	30.1	0.0	43.4	44.5	32.6	44.3	45.5	45.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.0	5.5	0.2	10.0	4.6	1.6	6.5	1.2	1.4	10.1	0.5	0.3
Delay (s)	55.1	33.8	11.4	52.6	34.7	1.6	49.8	45.7	33.9	54.4	46.0	45.5
Level of Service	E	C	B	D	C	A	D	D	C	D	D	D
Approach Delay (s)		32.3			26.4			43.7			49.7	
Approach LOS		C			C			D			D	

Intersection Summary		
HCM Average Control Delay	33.0	HCM Level of Service C
HCM Volume to Capacity ratio	0.80	
Actuated Cycle Length (s)	107.6	Sum of lost time (s) 8.0
Intersection Capacity Utilization	88.3%	ICU Level of Service E
Analysis Period (min)	15	
c Critical Lane Group		

69: BYRON ROAD & LAMMERS ROAD



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	190	120	290	890	930	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.99	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	1763	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	1763	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	190	120	290	890	930	70
RTOR Reduction (vph)	0	0	0	28	3	0
Lane Group Flow (vph)	190	120	290	862	997	0
Turn Type	Prot			pm+ov		
Protected Phases	7	4	8	6	6	
Permitted Phases				8		
Actuated Green, G (s)	10.0	20.0	22.0	68.0	46.0	
Effective Green, g (s)	10.0	20.0	22.0	68.0	46.0	
Actuated g/C Ratio	0.11	0.22	0.24	0.76	0.51	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	197	414	455	1266	901	
v/s Ratio Prot	c0.11	0.06	0.16	c0.35	c0.57	
v/s Ratio Perm				0.20		
v/c Ratio	0.96	0.29	0.64	0.68	1.11	
Uniform Delay, d1	39.8	29.1	30.4	5.5	22.0	
Progression Factor	1.00	1.00	1.38	1.45	1.00	
Incremental Delay, d2	53.5	0.4	2.3	1.2	63.6	
Delay (s)	93.3	29.5	44.4	9.2	85.6	
Level of Service	F	C	D	A	F	
Approach Delay (s)		68.6	17.9		85.6	
Approach LOS		E	B		F	

Intersection Summary

HCM Average Control Delay	51.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			