

**APPENDIX 4.7**

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**Noise Study**

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 2/26/2019  
 Case Description: Green Valley Site Preparation

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)			
		Daytime	Evening	Night	
NE Residences	Residential		57	57	57

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No		40	81.7	260	0
Dozer	No		40	81.7	260	0
Dozer	No		40	81.7	260	0
Tractor	No		40	84	260	0
Tractor	No		40	84	260	0
Tractor	No		40	84	260	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
	*Lmax	Leq	Day		Evening		Night		Day		Evening		Night		
			Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	
Dozer	67.3		63.4	N/A	62	N/A	N/A	N/A	N/A	N/A	1.4	N/A	N/A	N/A	N/A
Dozer	67.3		63.4	N/A	62	N/A	N/A	N/A	N/A	N/A	1.4	N/A	N/A	N/A	N/A
Dozer	67.3		63.4	N/A	62	N/A	N/A	N/A	N/A	N/A	1.4	N/A	N/A	N/A	N/A
Tractor	69.7		65.7	N/A	62	N/A	N/A	N/A	N/A	N/A	3.7	N/A	N/A	N/A	N/A
Tractor	69.7		65.7	N/A	62	N/A	N/A	N/A	N/A	N/A	3.7	N/A	N/A	N/A	N/A
Tractor	69.7		65.7	N/A	62	N/A	N/A	N/A	N/A	N/A	3.7	N/A	N/A	N/A	N/A
Tractor	69.7		65.7	N/A	62	N/A	N/A	N/A	N/A	N/A	3.7	N/A	N/A	N/A	N/A
Total	69.7		73.3	N/A	62	N/A	N/A	N/A	N/A	N/A	11.3	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)			
		Daytime	Evening	Night	
Medical Offices	Residential		57	57	57

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No		40	81.7	270	0
Dozer	No		40	81.7	270	0
Dozer	No		40	81.7	270	0
Tractor	No		40	84	270	0
Tractor	No		40	84	270	0

Tractor	No	40	84	270	0
Tractor	No	40	84	270	0

Results

Equipment	Calculated (dBA)			Noise Limits (dBA)					Noise Limit Exceedance (dBA)				
	*Lmax	Leq	Day	Evening		Night	Leq	Lmax	Leq	Evening		Night	Leq
			Lmax	Leq	Lmax	Leq				Lmax	Leq	Lmax	
Dozer	67		63 N/A	62 N/A	N/A	N/A	N/A	N/A	N/A	1.1 N/A	N/A	N/A	N/A
Dozer	67		63 N/A	62 N/A	N/A	N/A	N/A	N/A	N/A	1.1 N/A	N/A	N/A	N/A
Dozer	67		63 N/A	62 N/A	N/A	N/A	N/A	N/A	N/A	1.1 N/A	N/A	N/A	N/A
Tractor	69.4		65.4 N/A	62 N/A	N/A	N/A	N/A	N/A	N/A	3.4 N/A	N/A	N/A	N/A
Tractor	69.4		65.4 N/A	62 N/A	N/A	N/A	N/A	N/A	N/A	3.4 N/A	N/A	N/A	N/A
Tractor	69.4		65.4 N/A	62 N/A	N/A	N/A	N/A	N/A	N/A	3.4 N/A	N/A	N/A	N/A
Tractor	69.4		65.4 N/A	62 N/A	N/A	N/A	N/A	N/A	N/A	3.4 N/A	N/A	N/A	N/A
Total	69.4		73 N/A	62 N/A	N/A	N/A	N/A	N/A	N/A	11 N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
NW Residences	Residential	57	57	57

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40	81.7	730	0	
Dozer	No	40	81.7	730	0	
Tractor	No	40	84	730	0	
Tractor	No	40	84	730	0	
Tractor	No	40	84	730	0	
Tractor	No	40	84	730	0	

Results

Equipment	Calculated (dBA)			Noise Limits (dBA)					Noise Limit Exceedance (dBA)				
	*Lmax	Leq	Day	Evening		Night	Leq	Lmax	Leq	Evening		Night	Leq
			Lmax	Leq	Lmax	Leq				Lmax	Leq	Lmax	
Dozer	58.4		54.4 N/A	62 N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A
Dozer	58.4		54.4 N/A	62 N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A
Dozer	58.4		54.4 N/A	62 N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A
Tractor	60.7		56.7 N/A	62 N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A
Tractor	60.7		56.7 N/A	62 N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A
Tractor	60.7		56.7 N/A	62 N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A
Tractor	60.7		56.7 N/A	62 N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A
Total	60.7		64.3 N/A	62 N/A	N/A	N/A	N/A	N/A	N/A	2.3 N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Rockville Terrace Residences	Residential		57	57 57

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No		40	81.7	1000	0
Dozer	No		40	81.7	1000	0
Dozer	No		40	81.7	1000	0
Tractor	No		40	84	1000	0
Tractor	No		40	84	1000	0
Tractor	No		40	84	1000	0
Tractor	No		40	84	1000	0

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	*Lmax	Leq	Day		Evening		Night		Day		Evening		Night	
			Lmax	Leq	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	
Dozer	55.6	51.7	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Dozer	55.6	51.7	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Dozer	55.6	51.7	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Tractor	58	54	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Tractor	58	54	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Tractor	58	54	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Tractor	58	54	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Total	58	61.6	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 2/26/2019  
 Case Description: Green Valley Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
NE Residences	Residential	57	57	57

Description	Device	Impact	Usage(%)	Equipment			Estimated Shielding (dBA)
				Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Excavator	No		40	80.7	260	0	
Excavator	No		40	80.7	260	0	
Grader	No		40	85	260	0	
Dozer	No		40	81.7	260	0	
Scraper	No		40	83.6	260	0	
Scraper	No		40	83.6	260	0	
Tractor	No		40	84	260	0	
Tractor	No		40	84	260	0	

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
	*Lmax	Leq	Day		Evening		Night		Day Leq	Evening		Night			
			Lmax	Leq	Lmax	Leq	Lmax	Leq		Lmax	Leq	Lmax	Leq		
Excavator	66.4	62.4	N/A		62	N/A	N/A	N/A	N/A	N/A	0.4	N/A	N/A	N/A	N/A
Excavator	66.4	62.4	N/A		62	N/A	N/A	N/A	N/A	N/A	0.4	N/A	N/A	N/A	N/A
Grader	70.7	66.7	N/A		62	N/A	N/A	N/A	N/A	N/A	4.7	N/A	N/A	N/A	N/A
Dozer	67.3	63.4	N/A		62	N/A	N/A	N/A	N/A	N/A	1.4	N/A	N/A	N/A	N/A
Scraper	69.3	65.3	N/A		62	N/A	N/A	N/A	N/A	N/A	3.3	N/A	N/A	N/A	N/A
Scraper	69.3	65.3	N/A		62	N/A	N/A	N/A	N/A	N/A	3.3	N/A	N/A	N/A	N/A
Tractor	69.7	65.7	N/A		62	N/A	N/A	N/A	N/A	N/A	3.7	N/A	N/A	N/A	N/A
Tractor	69.7	65.7	N/A		62	N/A	N/A	N/A	N/A	N/A	3.7	N/A	N/A	N/A	N/A
Total	70.7	73.9	N/A		62	N/A	N/A	N/A	N/A	N/A	11.9	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Medical Offices	Residential	57	57	57

Description	Device	Impact	Usage(%)	Equipment			Estimated Shielding (dBA)
				Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Excavator	No		40	80.7	270	0	

Excavator	No	40		80.7	270	0
Grader	No	40	85		270	0
Dozer	No	40		81.7	270	0
Scraper	No	40		83.6	270	0
Scraper	No	40		83.6	270	0
Tractor	No	40	84		270	0
Tractor	No	40	84		270	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
	*Lmax	Leq	Day		Evening		Night		Day	Evening		Night			
			Lmax	Leq	Lmax	Leq	Lmax	Leq		Lmax	Leq	Lmax	Leq		
Excavator	66.1	62.1	N/A		62	N/A	N/A	N/A	N/A	N/A	0.1	N/A	N/A	N/A	N/A
Excavator	66.1	62.1	N/A		62	N/A	N/A	N/A	N/A	N/A	0.1	N/A	N/A	N/A	N/A
Grader	70.4	66.4	N/A		62	N/A	N/A	N/A	N/A	N/A	4.4	N/A	N/A	N/A	N/A
Dozer	67	63	N/A		62	N/A	N/A	N/A	N/A	N/A	1.1	N/A	N/A	N/A	N/A
Scraper	68.9	65	N/A		62	N/A	N/A	N/A	N/A	N/A	3	N/A	N/A	N/A	N/A
Scraper	68.9	65	N/A		62	N/A	N/A	N/A	N/A	N/A	3	N/A	N/A	N/A	N/A
Tractor	69.4	65.4	N/A		62	N/A	N/A	N/A	N/A	N/A	3.4	N/A	N/A	N/A	N/A
Tractor	69.4	65.4	N/A		62	N/A	N/A	N/A	N/A	N/A	3.4	N/A	N/A	N/A	N/A
Total	70.4	73.6	N/A		62	N/A	N/A	N/A	N/A	N/A	11.6	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
NW Residences	Residential	57	57	57

Equipment

Description	Device	Usage(%)	Spec (dBA)	Actual (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	730	0
Excavator	No	40		80.7	730	0
Grader	No	40	85		730	0
Dozer	No	40		81.7	730	0
Scraper	No	40		83.6	730	0
Scraper	No	40		83.6	730	0
Tractor	No	40	84		730	0
Tractor	No	40	84		730	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
	*Lmax	Leq	Day		Evening		Night		Day	Evening		Night			
			Lmax	Leq	Lmax	Leq	Lmax	Leq		Lmax	Leq				
Excavator	57.4	53.4	N/A		62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Excavator	57.4	53.4	N/A		62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Grader	61.7	57.7	N/A		62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A

Dozer		58.4	54.4	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Scraper		60.3	56.3	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Scraper		60.3	56.3	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Tractor		60.7	56.7	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Tractor		60.7	56.7	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
	Total	61.7	64.9	N/A	62	N/A	N/A	N/A	N/A	N/A	2.9	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Rockville Terrace Residences	Residential	57	57	57

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No		40	80.7	1000	0
Excavator	No		40	80.7	1000	0
Grader	No		40	85	1000	0
Dozer	No		40	81.7	1000	0
Scraper	No		40	83.6	1000	0
Scraper	No		40	83.6	1000	0
Tractor	No		40	84	1000	0
Tractor	No		40	84	1000	0

Results

Equipment	Calculated (dBA)			Noise Limits (dBA)					Noise Limit Exceedance (dBA)					
	*Lmax	Leq	Day Lmax	Evening		Night		Day Lmax	Evening		Night			
				Leq	Lmax	Leq	Lmax		Leq	Lmax	Leq	Lmax		
Excavator	54.7	50.7	N/A	62	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A	
Excavator	54.7	50.7	N/A	62	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A	
Grader	59	55	N/A	62	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A	
Dozer	55.6	51.7	N/A	62	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A	
Scraper	57.6	53.6	N/A	62	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A	
Scraper	57.6	53.6	N/A	62	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A	
Tractor	58	54	N/A	62	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A	
Tractor	58	54	N/A	62	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A	
	Total	59	62.2	N/A	62	N/A	N/A	N/A	N/A	0.2	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 2/26/2019  
 Case Description: Green Valley Building Construction

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
NE Residences	Residential	57	57	57

Description	Device	Usage(%)	Equipment			
			Impact	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)
Crane	No	16		80.6	260	0
Man Lift	No	20		74.7	260	0
Man Lift	No	20		74.7	260	0
Man Lift	No	20		74.7	260	0
Generator	No	50		80.6	260	0
Tractor	No	40	84		260	0
Tractor	No	40	84		260	0
Tractor	No	40	84		260	0
Welder / Torch	No	40		74	260	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Crane	66.2	58.3	N/A		62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A
Man Lift	60.4	53.4	N/A		62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A
Man Lift	60.4	53.4	N/A		62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A
Man Lift	60.4	53.4	N/A		62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A
Generator	66.3	63.3	N/A		62	N/A	N/A	N/A	N/A	N/A	1.3	N/A	N/A	N/A
Tractor	69.7	65.7	N/A		62	N/A	N/A	N/A	N/A	N/A	3.7	N/A	N/A	N/A
Tractor	69.7	65.7	N/A		62	N/A	N/A	N/A	N/A	N/A	3.7	N/A	N/A	N/A
Tractor	69.7	65.7	N/A		62	N/A	N/A	N/A	N/A	N/A	3.7	N/A	N/A	N/A
Welder / Torch	59.7	55.7	N/A		62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A
<b>Total</b>	<b>69.7</b>	<b>71.8</b>	<b>N/A</b>		<b>62</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>9.8</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Medical Offices	Residential	57	57	57

Description	Device	Usage(%)	Equipment			
			Impact	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)



Crane	No	16		80.6	270	0
Man Lift	No	20		74.7	270	0
Man Lift	No	20		74.7	270	0
Man Lift	No	20		74.7	270	0
Generator	No	50		80.6	270	0
Tractor	No	40	84		270	0
Tractor	No	40	84		270	0
Tractor	No	40	84		270	0
Welder / Torch	No	40		74	270	0

Results

Equipment	Calculated (dBA)			Noise Limits (dBA)					Noise Limit Exceedance (dBA)						
	*Lmax	Leq	Day	Leq	Evening		Night	Leq	Lmax	Day	Evening		Night	Leq	
			Lmax		Lmax	Lmax				Leq	Lmax	Leq			
Crane	65.9		N/A		62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Man Lift	60.1		N/A		62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Man Lift	60.1		N/A		62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Man Lift	60.1		N/A		62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Generator	66		N/A		62	N/A	N/A	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A
Tractor	69.4		N/A		62	N/A	N/A	N/A	N/A	N/A	3.4	N/A	N/A	N/A	N/A
Tractor	69.4		N/A		62	N/A	N/A	N/A	N/A	N/A	3.4	N/A	N/A	N/A	N/A
Tractor	69.4		N/A		62	N/A	N/A	N/A	N/A	N/A	3.4	N/A	N/A	N/A	N/A
Welder / Torch	59.4		N/A		62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Total	69.4		N/A		62	N/A	N/A	N/A	N/A	N/A	9.4	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)			Equipment			
		Daytime	Evening	Night	Spec	Actual	Receptor	Estimated
Device	Usage(%)	Lmax	Lmax	Lmax	Lmax	Distance	Shielding	
NW Residences	Residential	57	57	57				
Crane		No	16		80.6	730	0	
Man Lift		No	20		74.7	730	0	
Man Lift		No	20		74.7	730	0	
Man Lift		No	20		74.7	730	0	
Generator		No	50		80.6	730	0	
Tractor		No	40	84		730	0	
Tractor		No	40	84		730	0	
Tractor		No	40	84		730	0	
Welder / Torch		No	40		74	730	0	

Results

Equipment	Calculated (dBA)			Noise Limits (dBA)					Noise Limit Exceedance (dBA)					
	*Lmax	Leq	Day	Leq	Evening		Night	Leq	Lmax	Day	Evening		Night	Leq
			Lmax		Lmax	Lmax				Leq	Lmax	Leq		

Crane		57.3	49.3 N/A	62 N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Man Lift		51.4	44.4 N/A	62 N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Man Lift		51.4	44.4 N/A	62 N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Man Lift		51.4	44.4 N/A	62 N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Generator		57.3	54.3 N/A	62 N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Tractor		60.7	56.7 N/A	62 N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Tractor		60.7	56.7 N/A	62 N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Tractor		60.7	56.7 N/A	62 N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Welder / Torch		50.7	46.7 N/A	62 N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
	Total	60.7	62.8 N/A	62 N/A	N/A	N/A	N/A	N/A	0.8	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Rockville Terrace Residences	Residential	57	57	57

		Equipment				
Description	Impact Device	Usage(%)	Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Crane	No		16	80.6	1000	0
Man Lift	No		20	74.7	1000	0
Man Lift	No		20	74.7	1000	0
Man Lift	No		20	74.7	1000	0
Generator	No		50	80.6	1000	0
Tractor	No		40	84	1000	0
Tractor	No		40	84	1000	0
Tractor	No		40	84	1000	0
Welder / Torch	No		40	74	1000	0

Results

Equipment	Calculated (dBA)			Noise Limits (dBA)				Noise Limit Exceedance (dBA)						
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Crane	54.5	46.6	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Man Lift	48.7	41.7	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Man Lift	48.7	41.7	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Man Lift	48.7	41.7	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Generator	54.6	51.6	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Tractor	58	54	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Tractor	58	54	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Tractor	58	54	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Welder / Torch	48	44	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
			Total	58	60.1	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 2/26/2019  
 Case Description: Green Valley Paving

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
NE Residences	Residential	57	57	57

Description	Equipment	Impact Device	Usage(%)	Spec	Actual	Receptor	Estimated
				Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver	No	No	50	77.2	77.2	260	0
Paver	No	No	50	77.2	77.2	260	0
Paver	No	No	50	77.2	77.2	260	0
Paver	No	No	50	77.2	77.2	260	0
Roller	No	No	20	80	80	260	0
Roller	No	No	20	80	80	260	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
	*Lmax	Leq	Day		Evening		Night		Day		Evening		Night		
			Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	
Paver	62.9	59.9	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Paver	62.9	59.9	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Paver	62.9	59.9	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Paver	62.9	59.9	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Roller	65.7	58.7	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Roller	65.7	58.7	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Total	65.7	67.3	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	5.3	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Medical Offices	Residential	57	57	57

Description	Equipment	Impact Device	Usage(%)	Spec	Actual	Receptor	Estimated
				Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver	No	No	50	77.2	77.2	270	0
Paver	No	No	50	77.2	77.2	270	0
Paver	No	No	50	77.2	77.2	270	0
Paver	No	No	50	77.2	77.2	270	0
Roller	No	No	20	80	80	270	0

Roller No 20 80 270 0

		Results													
		Calculated (dBA)				Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
		Day		Evening		Night		Day		Evening		Night			
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		65.9	57.9	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Paver		60.1	53.1	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Paver		60.1	53.1	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Paver		60.1	53.1	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Roller		66	63	N/A	62	N/A	N/A	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A
Roller		69.4	65.4	N/A	62	N/A	N/A	N/A	N/A	N/A	3.4	N/A	N/A	N/A	N/A
	Total	69.4	71.4	N/A	62	N/A	N/A	N/A	N/A	N/A	9.4	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
NW Residences	Residential	57	57	57

		Equipment				
		Spec	Actual	Receptor	Estimated	
Description	Impact	Lmax	Lmax	Distance	Shielding	
	Device	Usage(%)	(dBA)	(feet)	(dBA)	
Paver	No	50	77.2	730	0	
Paver	No	50	77.2	730	0	
Paver	No	50	77.2	730	0	
Paver	No	50	77.2	730	0	
Roller	No	20	80	730	0	
Roller	No	20	80	730	0	

		Results													
		Calculated (dBA)				Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
		Day		Evening		Night		Day		Evening		Night			
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		57.3	49.3	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Paver		51.4	44.4	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Paver		51.4	44.4	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Paver		51.4	44.4	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Roller		57.3	54.3	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Roller		60.7	56.7	N/A	62	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
	Total	60.7	62.8	N/A	62	N/A	N/A	N/A	N/A	N/A	0.8	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Rockville Terrace Residences	Residential	57	57	57

Description	Impact Device	Usage(%)	Equipment			Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
			Paver	No	50	
Paver	No	50	77.2	1000	0	
Paver	No	50	77.2	1000	0	
Paver	No	50	77.2	1000	0	
Roller	No	20	80	1000	0	
Roller	No	20	80	1000	0	

Equipment	Results													
	Calculated (dBA)			Noise Limits (dBA)						Noise Limit Exceedance (dBA)				
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Paver	54.5	46.6	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	48.7	41.7	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	48.7	41.7	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	48.7	41.7	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	54.6	51.6	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	58	54	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	58	60.1	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 2/26/2019  
 Case Description: Green Valley Architectural Coating

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
NE Residences	Residential	57	57	57

Description	Impact Device	Usage(%)	Equipment			Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)			
Compressor (air)	No	40		77.7	260	0	

Equipment	Description	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
		*Lmax	Leq	Day		Evening		Night		Day		Evening		Night	
				Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		63.3	59.4	N/A		62	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
	Total	63.3	59.4	N/A		62	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Medical Offices	Residential	57	57	57

Description	Impact Device	Usage(%)	Equipment			Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)			
Compressor (air)	No	40		77.7	270	0	

Equipment	Description	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
		*Lmax	Leq	Day		Evening		Night		Day		Evening		Night	
				Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		63	59	N/A		62	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
	Total	63	59	N/A		62	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
NW Residences	Residential	57	57	57

Description	Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	730	0

Equipment	Calculated (dBA)	Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
		Day	Evening	Night	Day	Evening	Night	Leq	Lmax	Leq	Lmax	Leq		
Compressor (air)	*Lmax 54.4 Leq 50.4	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Total	54.4 50.4	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Rockville Terrace Residences	Residential	57	57	57

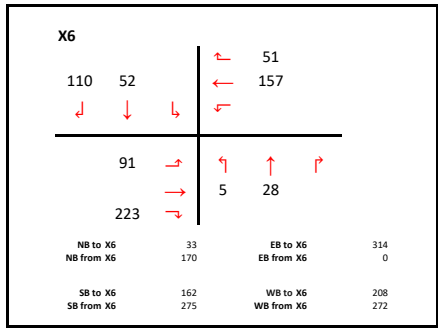
Description	Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	1000	0

Equipment	Calculated (dBA)	Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
		Day	Evening	Night	Day	Evening	Night	Leq	Lmax	Leq	Lmax	Leq		
Compressor (air)	*Lmax 54.5 Leq 46.6	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A
Total	58 60.1	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

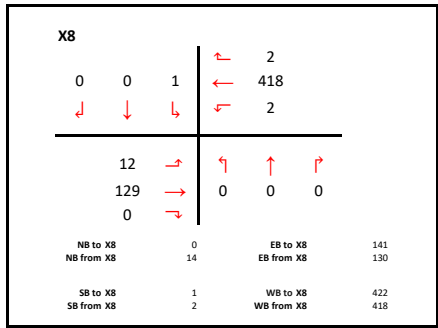
# Green Valley Traffic Noise Analysis

## Green Valley AM Existing



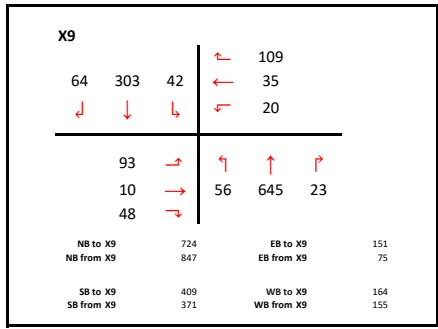
X6 Westamerica Drive at Mangels Boulevard

NB to X6	33	0	0	EB to X6	314	0	0
NB from X6	170	0	0	EB from X6	0	0	0
SB to X6	162	0	0	WB to X6	208	0	0
SB from X6	275	0	0	WB from X6	272	0	0



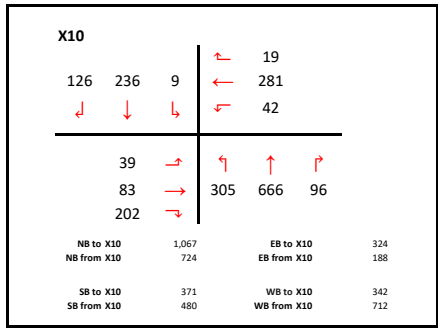
X8 NorthBay Driveway at Business Center Drive

NB to X8	0	0	0	EB to X8	141	0	0
NB from X8	14	0	0	EB from X8	130	0	0
SB to X8	1	0	0	WB to X8	422	0	0
SB from X8	2	0	0	WB from X8	418	0	0



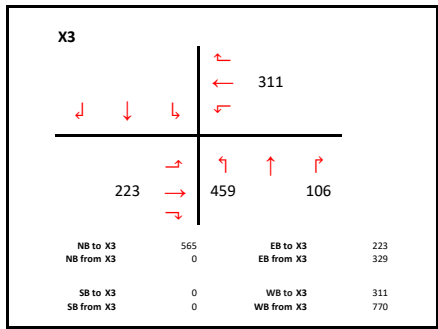
X9 Suisun Valley Road at Westamerica Drive

NB to X9	724	0	0	EB to X9	151	0	0
NB from X9	847	0	0	EB from X9	75	0	0
SB to X9	409	0	0	WB to X9	164	0	0
SB from X9	371	0	0	WB from X9	155	0	0



X10 Suisun Valley Road at Business Center Drive

NB to X10	1067	0	0	EB to X10	324	0	0
NB from X10	724	0	0	EB from X10	188	0	0
SB to X10	371	0	0	WB to X10	342	0	0
SB from X10	480	0	0	WB from X10	712	0	0

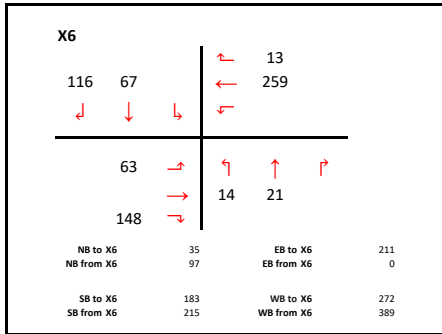


X3 Neitzel Road at Business Center Drive

NB to X3	565	0	0	EB to X3	223	0	0
NB from X3	0	0	0	EB from X3	329	0	0
SB to X3	0	0	0	WB to X3	311	0	0
SB from X3	0	0	0	WB from X3	770	0	0

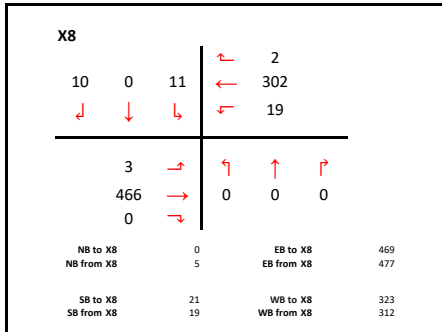


Green Valley PM Existing



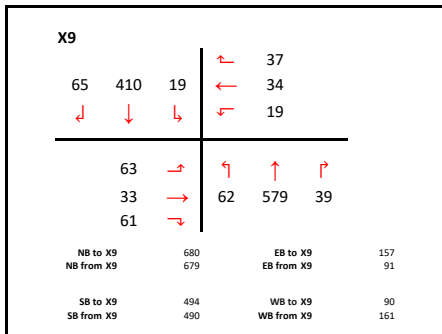
X6 Westamerica Drive at Mangels Boulevard

NB to X6	35	0	0	EB to X6	211	0	0
NB from X6	97	0	0	EB from X6	0	0	0
SB to X6	183	0	0	WB to X6	272	0	0
SB from X6	215	0	0	WB from X6	389	0	0



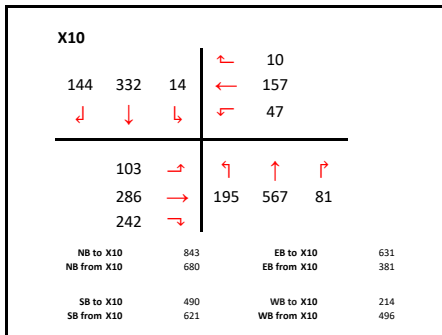
X8 NorthBay Driveway at Business Center Drive

NB to X8	0	0	0	EB to X8	469	0	0
NB from X8	5	0	0	EB from X8	477	0	0
SB to X8	21	0	0	WB to X8	323	0	0
SB from X8	19	0	0	WB from X8	312	0	0



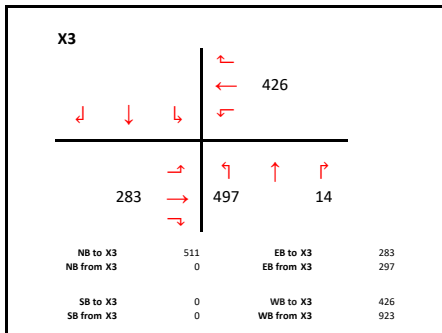
X9 Suisun Valley Road at Westamerica Drive

NB to X9	680	0	0	EB to X9	157	0	0
NB from X9	679	0	0	EB from X9	91	0	0
SB to X9	494	0	0	WB to X9	90	0	0
SB from X9	490	0	0	WB from X9	161	0	0



X10 Suisun Valley Road at Business Center Drive

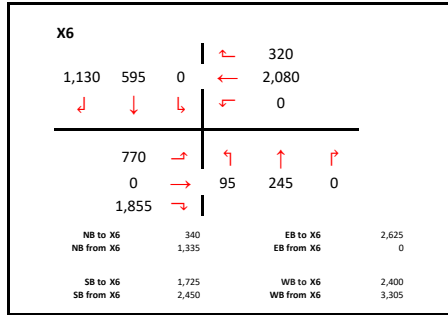
NB to X10	843	0	0	EB to X10	631	0	0
NB from X10	680	0	0	EB from X10	381	0	0
SB to X10	490	0	0	WB to X10	214	0	0
SB from X10	621	0	0	WB from X10	496	0	0



X3 Neitzel Road at Business Center Drive

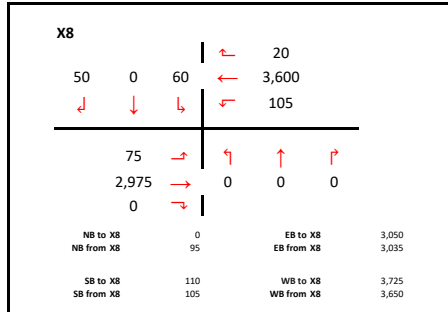
NB to X3	511	0	0	EB to X3	283	0	0
NB from X3	0	0	0	EB from X3	297	0	0
SB to X3	0	0	0	WB to X3	426	0	0
SB from X3	0	0	0	WB from X3	923	0	0

Green Valley Existing DAILY



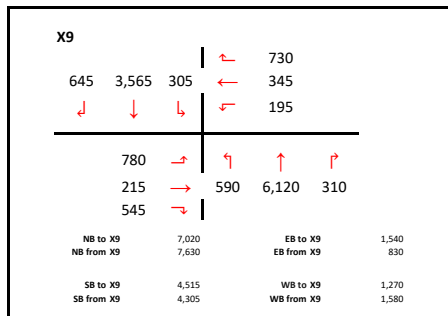
**X6 Westamerica Drive at Mangels Boulevard**

ADT					
NB to X6	340	0	0	EB to X6	2625
NB from X6	1335	0	0	EB from X6	0
SB to X6	1725	0	0	WB to X6	2400
SB from X6	2450	0	0	WB from X6	3305



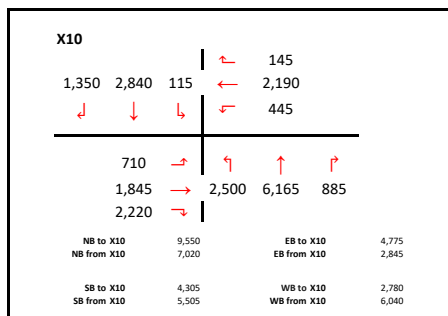
**X8 NorthBay Driveway at Business Center Drive**

NB to X8	0	0	0	EB to X8	3050
NB from X8	95	0	0	EB from X8	3035
SB to X8	110	0	0	WB to X8	3725
SB from X8	105	0	0	WB from X8	3650



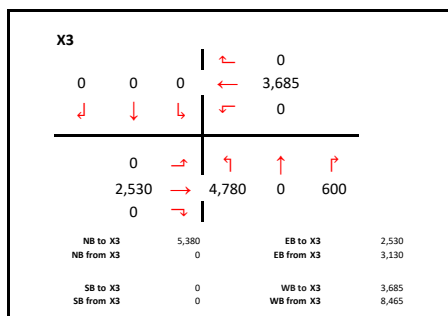
**X9 Suisun Valley Road at Westamerica Drive**

NB to X9	7020	0	0	EB to X9	1540
NB from X9	7630	0	0	EB from X9	830
SB to X9	4515	0	0	WB to X9	1270
SB from X9	4305	0	0	WB from X9	1580



**X10 Suisun Valley Road at Business Center Drive**

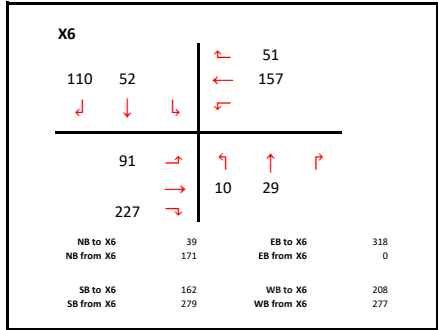
NB to X10	9550	0	0	EB to X10	4775
NB from X10	7020	0	0	EB from X10	2845
SB to X10	4305	0	0	WB to X10	2780
SB from X10	5505	0	0	WB from X10	6040



**X3 Neitzel Road at Business Center Drive**

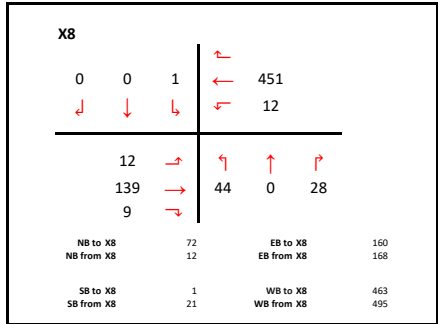
NB to X3	5380	0	0	EB to X3	2530
NB from X3	0	0	0	EB from X3	3130
SB to X3	0	0	0	WB to X3	3685
SB from X3	0	0	0	WB from X3	8465

Green Valley AM Existing Plus Alternative 1



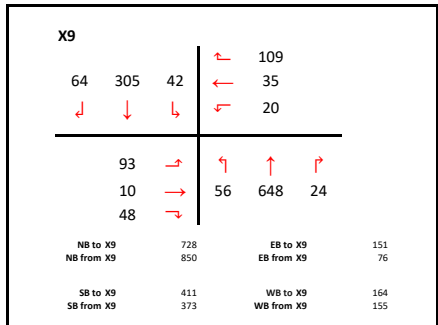
X6 Westamerica Drive at Mangels Boulevard

NB to X6	39	0	0	EB to X6	318	0	0
NB from X6	171	0	0	EB from X6	0	0	0
SB to X6	162	0	0	WB to X6	208	0	0
SB from X6	279	0	0	WB from X6	277	0	0



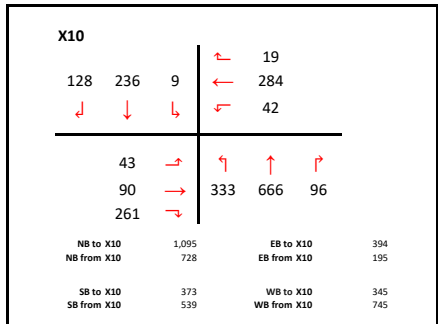
X8 NorthBay Driveway at Business Center Drive

NB to X8	72	0	0	EB to X8	160	0	0
NB from X8	12	0	0	EB from X8	168	0	0
SB to X8	1	0	0	WB to X8	463	0	0
SB from X8	21	0	0	WB from X8	495	0	0



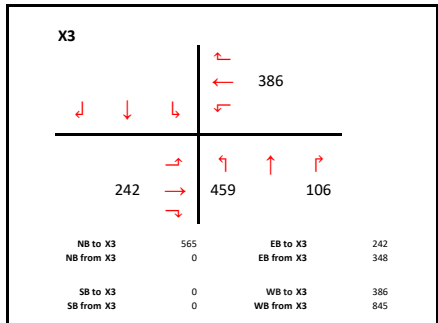
X9 Suisun Valley Road at Westamerica Drive

NB to X9	728	0	0	EB to X9	151	0	0
NB from X9	850	0	0	EB from X9	76	0	0
SB to X9	411	0	0	WB to X9	164	0	0
SB from X9	373	0	0	WB from X9	155	0	0



X10 Suisun Valley Road at Business Center Drive

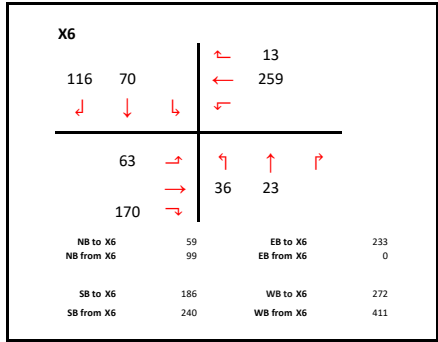
NB to X10	1,095	0	0	EB to X10	394	0	0
NB from X10	728	0	0	EB from X10	195	0	0
SB to X10	373	0	0	WB to X10	345	0	0
SB from X10	539	0	0	WB from X10	745	0	0



X3 Neitzel Road at Business Center Drive

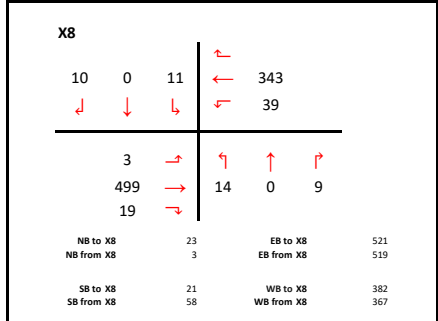
NB to X3	565	0	0	EB to X3	242	0	0
NB from X3	0	0	0	EB from X3	348	0	0
SB to X3	0	0	0	WB to X3	386	0	0
SB from X3	0	0	0	WB from X3	845	0	0

**Green Valley PM Existing Plus Alternative 1**



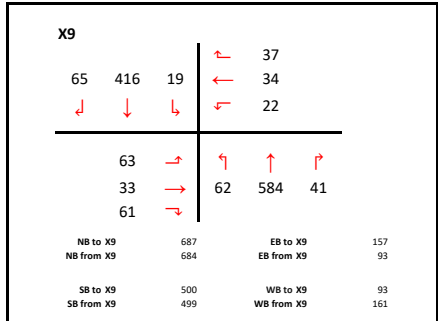
**X6 Westamerica Drive at Mangels Boulevard**

NB to X6	59	0	0	EB to X6	233	0	0
NB from X6	99	0	0	EB from X6	0	0	0
SB to X6	186	0	0	WB to X6	272	0	0
SB from X6	240	0	0	WB from X6	411	0	0



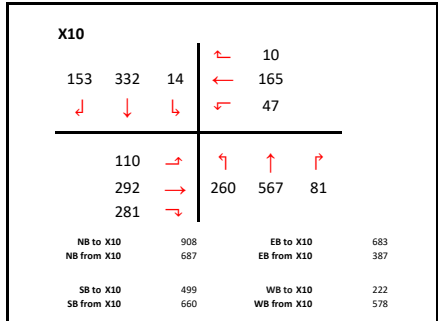
**X8 NorthBay Driveway at Business Center Drive**

NB to X8	23	0	0	EB to X8	521	0	0
NB from X8	3	0	0	EB from X8	519	0	0
SB to X8	21	0	0	WB to X8	382	0	0
SB from X8	58	0	0	WB from X8	367	0	0



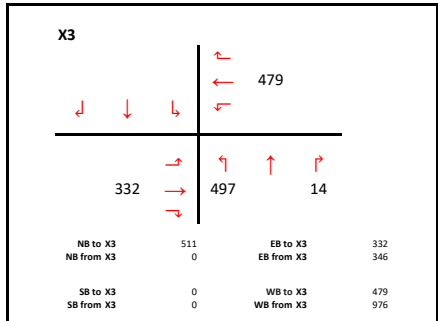
**X9 Suisun Valley Road at Westamerica Drive**

NB to X9	687	0	0	EB to X9	157	0	0
NB from X9	684	0	0	EB from X9	93	0	0
SB to X9	500	0	0	WB to X9	93	0	0
SB from X9	499	0	0	WB from X9	161	0	0



**X10 Suisun Valley Road at Business Center Drive**

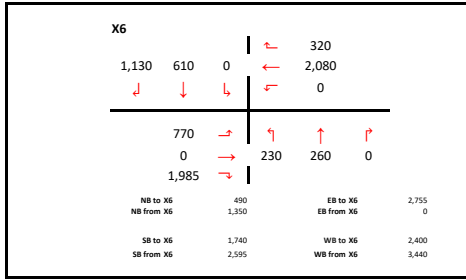
NB to X10	908	0	0	EB to X10	683	0	0
NB from X10	687	0	0	EB from X10	387	0	0
SB to X10	499	0	0	WB to X10	222	0	0
SB from X10	660	0	0	WB from X10	578	0	0



**X3 Neitzel Road at Business Center Drive**

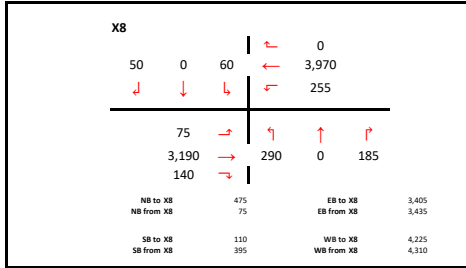
NB to X3	511	0	0	EB to X3	332	0	0
NB from X3	0	0	0	EB from X3	346	0	0
SB to X3	0	0	0	WB to X3	479	0	0
SB from X3	0	0	0	WB from X3	976	0	0

Green Valley Existing Plus Project DAILY



Percent Increase from Existing

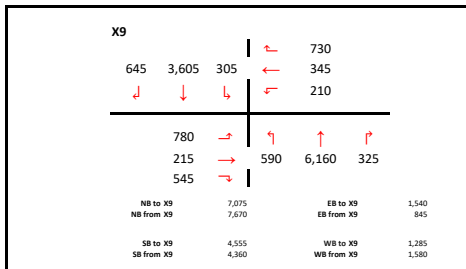
	ADT		ADT		Percent Increase from Existing
NB to X6	490	0	0	EB to X6	2755 0 0 5%
NB from X6	1350	0	0	EB from X6	0 0 0 0%
SB to X6	1740	0	0	WB to X6	2400 0 0 0%
SB from X6	2595	0	0	WB from X6	3440 0 0 4%



Percent Increase from Existing

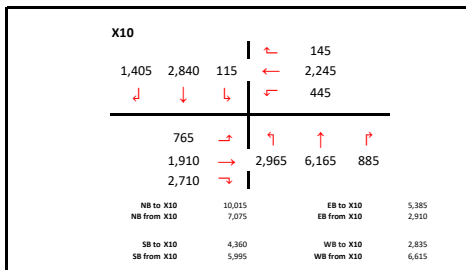
	ADT		ADT		Percent Increase from Existing
NB to X8	475	0	0	EB to X8	3405 0 0 12%
NB from X8	75	0	0	EB from X8	3435 0 0 13%
SB to X8	110	0	0	WB to X8	4225 0 0 13%
SB from X8	395	0	0	WB from X8	4310 0 0 18%

Due to individual turn volumes exceeding 100%, a segment analysis is provided at the bottom of the page.



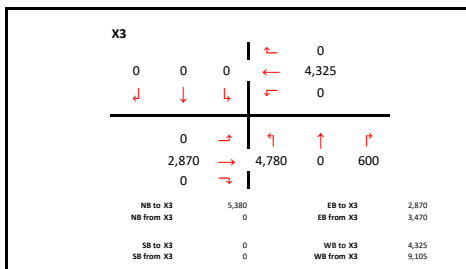
Percent Increase from Existing

	ADT		ADT		Percent Increase from Existing
NB to X9	7075	0	0	EB to X9	1540 0 0 0%
NB from X9	7670	0	0	EB from X9	845 0 0 2%
SB to X9	4555	0	0	WB to X9	1285 0 0 1%
SB from X9	4360	0	0	WB from X9	1580 0 0 0%



Percent Increase from Existing

	ADT		ADT		Percent Increase from Existing
NB to X10	10015	0	0	EB to X10	5385 0 0 13%
NB from X10	7075	0	0	EB from X10	2910 0 0 2%
SB to X10	4360	0	0	WB to X10	2835 0 0 2%
SB from X10	5995	0	0	WB from X10	6615 0 0 10%

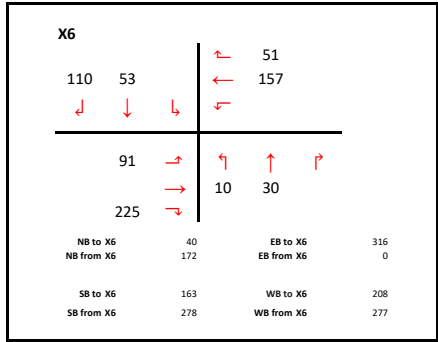


Percent Increase from Existing

	ADT		ADT		Percent Increase from Existing
NB to X3	5380	0	0	EB to X3	2870 0 0 13%
NB from X3	0	0	0	EB from X3	3470 0 0 11%
SB to X3	0	0	0	WB to X3	4325 0 0 17%
SB from X3	0	0	0	WB from X3	9105 0 0 8%

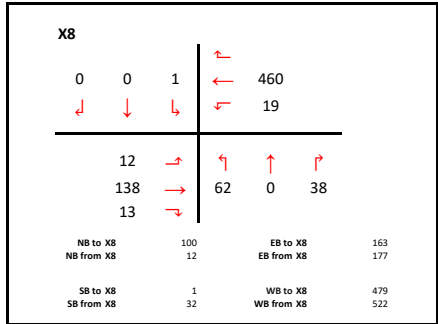
Segment Analysis  
 Business Center Drive from Neitzel Road to Northbay Driveway  
 ADT: 7755  
 Increase from Existing: 998  
 Percent Increase: 13%

Green Valley AM Existing Plus Alternative 2



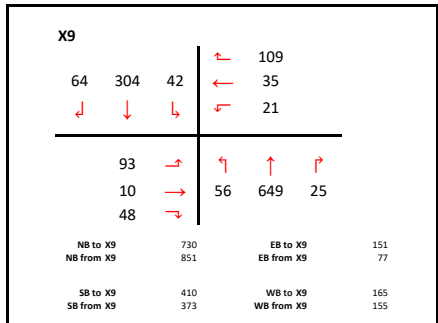
X6 Westamerica Drive at Mangels Boulevard

NB to X6	40	0	0	EB to X6	316	0	0
NB from X6	172	0	0	EB from X6	0	0	0
SB to X6	163	0	0	WB to X6	208	0	0
SB from X6	278	0	0	WB from X6	277	0	0



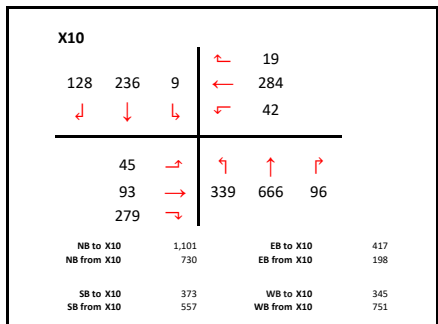
X8 NorthBay Driveway at Business Center Drive

NB to X8	100	0	0	EB to X8	163	0	0
NB from X8	12	0	0	EB from X8	177	0	0
SB to X8	1	0	0	WB to X8	479	0	0
SB from X8	32	0	0	WB from X8	522	0	0



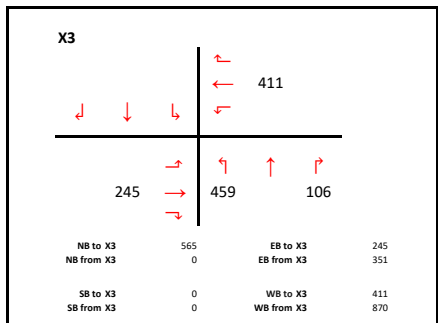
X9 Suisun Valley Road at Westamerica Drive

NB to X9	730	0	0	EB to X9	151	0	0
NB from X9	851	0	0	EB from X9	77	0	0
SB to X9	410	0	0	WB to X9	165	0	0
SB from X9	373	0	0	WB from X9	155	0	0



X10 Suisun Valley Road at Business Center Drive

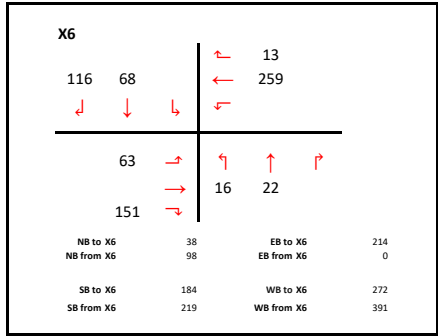
NB to X10	1,101	0	0	EB to X10	417	0	0
NB from X10	730	0	0	EB from X10	198	0	0
SB to X10	373	0	0	WB to X10	345	0	0
SB from X10	557	0	0	WB from X10	751	0	0



X3 Neitzel Road at Business Center Drive

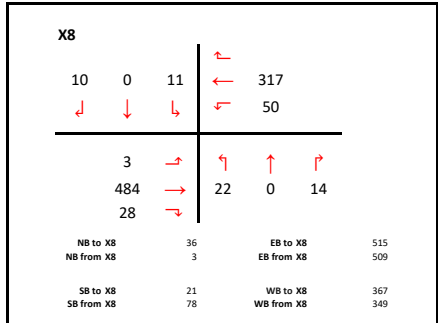
NB to X3	565	0	0	EB to X3	245	0	0
NB from X3	0	0	0	EB from X3	351	0	0
SB to X3	0	0	0	WB to X3	411	0	0
SB from X3	0	0	0	WB from X3	870	0	0

Green Valley PM Existing Plus Alternative 2



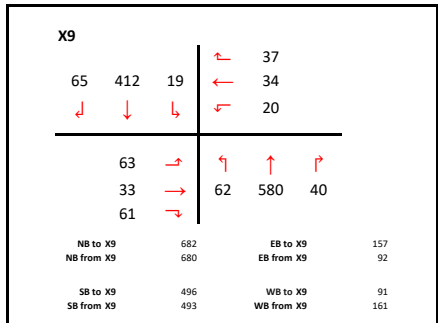
X6 Westamerica Drive at Mangels Boulevard

NB to X6	38	0	0	EB to X6	214	0	0
NB from X6	98	0	0	EB from X6	0	0	0
SB to X6	184	0	0	WB to X6	272	0	0
SB from X6	219	0	0	WB from X6	391	0	0



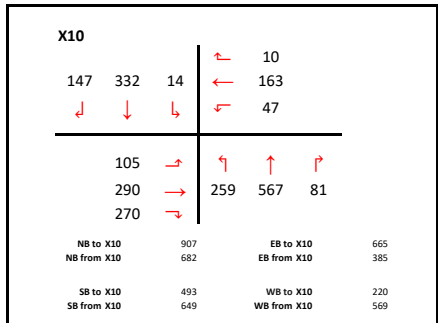
X8 NorthBay Driveway at Business Center Drive

NB to X8	36	0	0	EB to X8	515	0	0
NB from X8	3	0	0	EB from X8	509	0	0
SB to X8	21	0	0	WB to X8	367	0	0
SB from X8	78	0	0	WB from X8	349	0	0



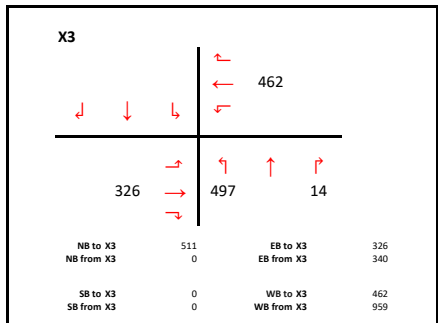
X9 Suisun Valley Road at Westamerica Drive

NB to X9	682	0	0	EB to X9	157	0	0
NB from X9	680	0	0	EB from X9	92	0	0
SB to X9	496	0	0	WB to X9	91	0	0
SB from X9	493	0	0	WB from X9	161	0	0



X10 Suisun Valley Road at Business Center Drive

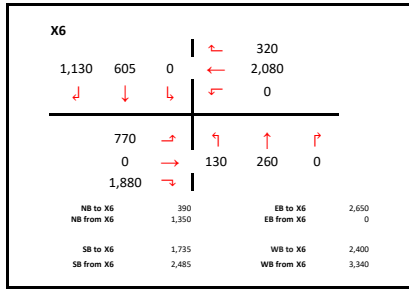
NB to X10	907	0	0	EB to X10	665	0	0
NB from X10	682	0	0	EB from X10	385	0	0
SB to X10	493	0	0	WB to X10	220	0	0
SB from X10	649	0	0	WB from X10	569	0	0



X3 Neitzel Road at Business Center Drive

NB to X3	511	0	0	EB to X3	326	0	0
NB from X3	0	0	0	EB from X3	340	0	0
SB to X3	0	0	0	WB to X3	462	0	0
SB from X3	0	0	0	WB from X3	959	0	0

Green Valley Existing Plus Approved Projects DAILY

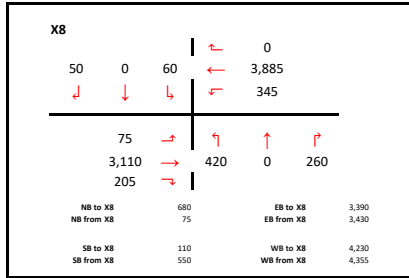


X6 Westamerica Drive at Mangels Boulevard

Percent Increase from Existing

15%	NB to X6	390	0	0	EB to X6	2,650	0	0	1%
1%	NB from X6	1,350	0	0	EB from X6	0	0	0	0%
1%	SB to X6	1,735	0	0	WB to X6	2,400	0	0	0%
1%	SB from X6	2,485	0	0	WB from X6	3,340	0	0	1%

Percent Increase from Existing



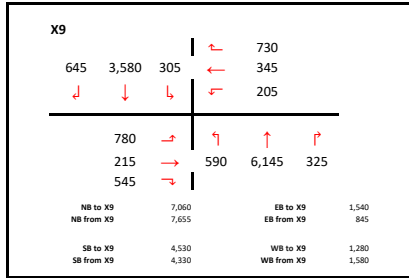
X8 NorthBay Driveway at Business Center Drive

Percent Increase from Existing

100%	NB to X8	680	0	0	EB to X8	3,390	0	0	11%
-21%	NB from X8	75	0	0	EB from X8	3,430	0	0	13%
0%	SB to X8	110	0	0	WB to X8	4,230	0	0	14%
424%	SB from X8	550	0	0	WB from X8	4,355	0	0	19%

Percent Increase from Existing

Due to individual turn volumes exceeding 100%, a segment analysis is provided at the bottom of the page.

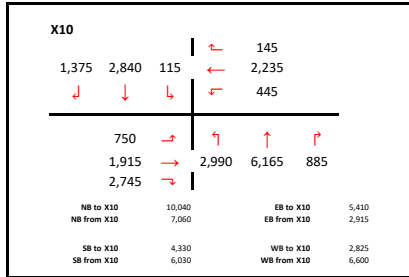


X9 Suisun Valley Road at Westamerica Drive

Percent Increase from Existing

1%	NB to X9	7,060	0	0	EB to X9	1,540	0	0	0%
0%	NB from X9	7,655	0	0	EB from X9	845	0	0	2%
0%	SB to X9	4,530	0	0	WB to X9	1,280	0	0	1%
1%	SB from X9	4,330	0	0	WB from X9	1,580	0	0	0%

Percent Increase from Existing

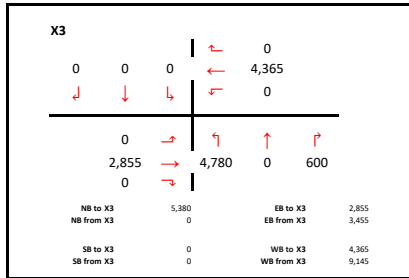


X10 Suisun Valley Road at Business Center Drive

Percent Increase from Existing

5%	NB to X10	10,040	0	0	EB to X10	5,410	0	0	13%
1%	NB from X10	7,060	0	0	EB from X10	2,915	0	0	2%
1%	SB to X10	4,330	0	0	WB to X10	2,825	0	0	2%
10%	SB from X10	6,030	0	0	WB from X10	6,600	0	0	9%

Percent Increase from Existing



X3 Neitzel Road at Business Center Drive

Percent Increase from Existing

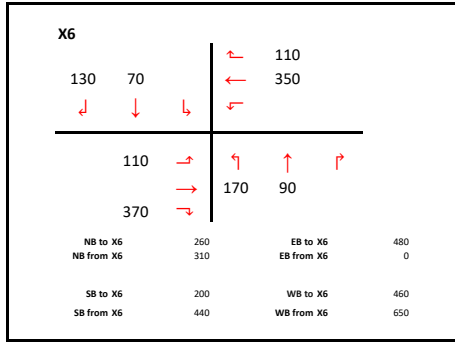
0%	NB to X3	5,380	0	0	EB to X3	2,855	0	0	13%
0%	NB from X3	0	0	0	EB from X3	3,455	0	0	10%
0%	SB to X3	0	0	0	WB to X3	4,365	0	0	18%
0%	SB from X3	0	0	0	WB from X3	9,145	0	0	8%

Percent Increase from Existing

Segment Analysis  
 Business Center Drive from Neitzel Road to Northbay Driveway  
 ADT: 7783  
 Increase fr: 1025  
 Percent Inc: 15%

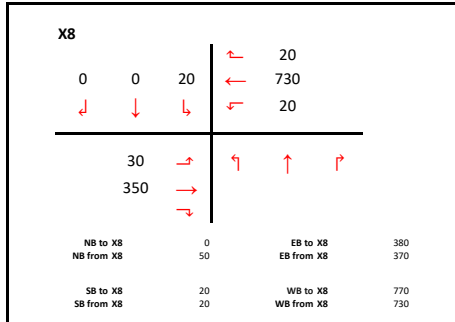


Green Valley AM 2035 No Project



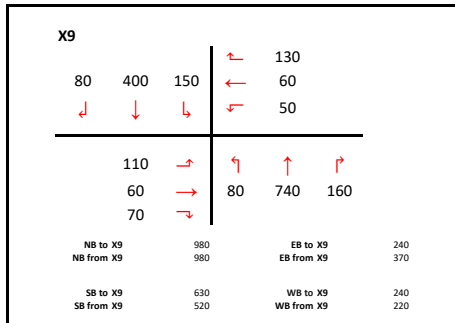
X6 Westamerica Drive at Mangels Boulevard

NB to X6	260	0	0	EB to X6	480	0	0
NB from X6	310	0	0	EB from X6	0	0	0
SB to X6	200	0	0	WB to X6	460	0	0
SB from X6	440	0	0	WB from X6	650	0	0



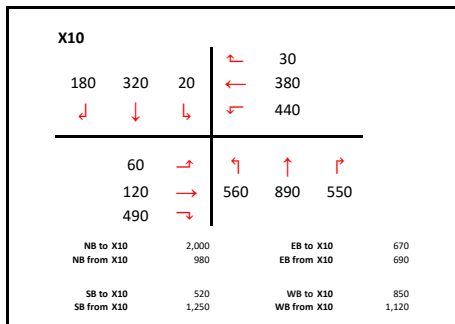
X8 NorthBay Driveway at Business Center Drive

NB to X8	0	0	0	EB to X8	380	0	0
NB from X8	50	0	0	EB from X8	370	0	0
SB to X8	20	0	0	WB to X8	770	0	0
SB from X8	20	0	0	WB from X8	730	0	0



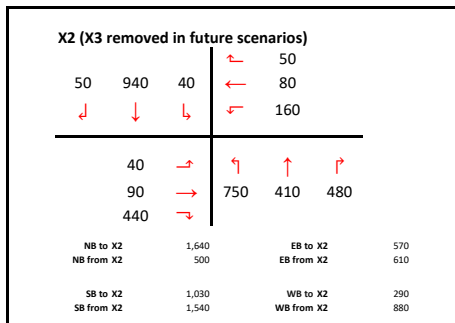
X9 Suisun Valley Road at Westamerica Drive

NB to X9	980	0	0	EB to X9	240	0	0
NB from X9	980	0	0	EB from X9	370	0	0
SB to X9	630	0	0	WB to X9	240	0	0
SB from X9	520	0	0	WB from X9	220	0	0



X10 Suisun Valley Road at Business Center Drive

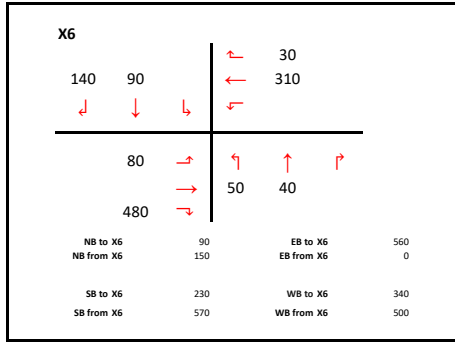
NB to X10	2000	0	0	EB to X10	670	0	0
NB from X10	980	0	0	EB from X10	690	0	0
SB to X10	520	0	0	WB to X10	850	0	0
SB from X10	1250	0	0	WB from X10	1120	0	0



X2 Green Valley Road at Business Center Drive

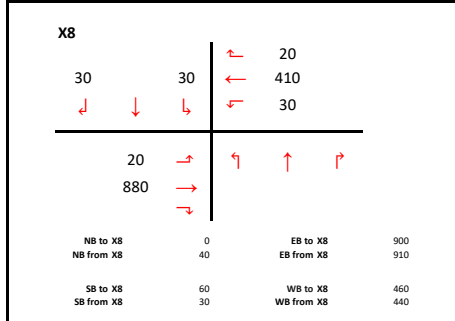
NB to X2	1640	0	0	EB to X2	570	0	0
NB from X2	500	0	0	EB from X2	610	0	0
SB to X2	1030	0	0	WB to X2	290	0	0
SB from X2	1540	0	0	WB from X2	880	0	0

Green Valley PM 2035 No Project



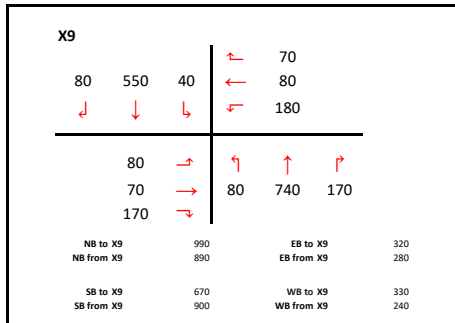
X6 Westamerica Drive at Mangels Boulevard

NB to X6	90	0	0	EB to X6	560	0	0
NB from X6	150	0	0	EB from X6	0	0	0
SB to X6	230	0	0	WB to X6	340	0	0
SB from X6	570	0	0	WB from X6	500	0	0



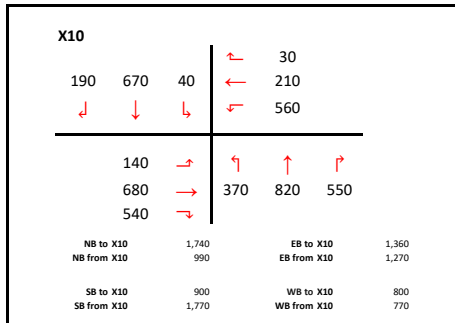
X8 NorthBay Driveway at Business Center Drive

NB to X8	0	0	0	EB to X8	900	0	0
NB from X8	40	0	0	EB from X8	910	0	0
SB to X8	60	0	0	WB to X8	460	0	0
SB from X8	30	0	0	WB from X8	440	0	0



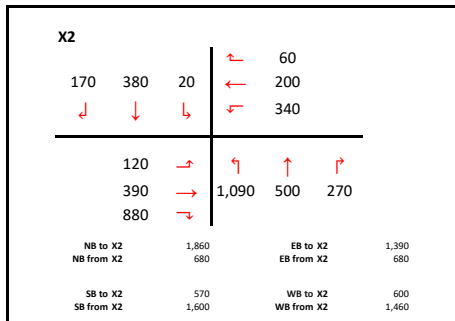
X9 Suisun Valley Road at Westamerica Drive

NB to X9	990	0	0	EB to X9	320	0	0
NB from X9	890	0	0	EB from X9	280	0	0
SB to X9	670	0	0	WB to X9	330	0	0
SB from X9	900	0	0	WB from X9	240	0	0



X10 Suisun Valley Road at Business Center Drive

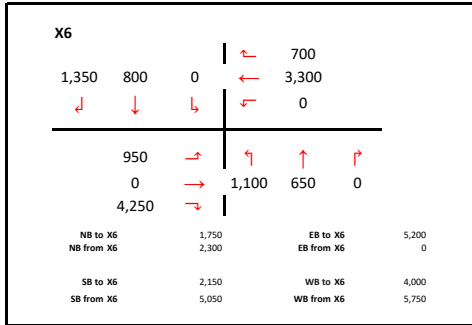
NB to X10	1740	0	0	EB to X10	1360	0	0
NB from X10	990	0	0	EB from X10	1270	0	0
SB to X10	900	0	0	WB to X10	800	0	0
SB from X10	1770	0	0	WB from X10	770	0	0



X2 Green Valley Road at Business Center Drive

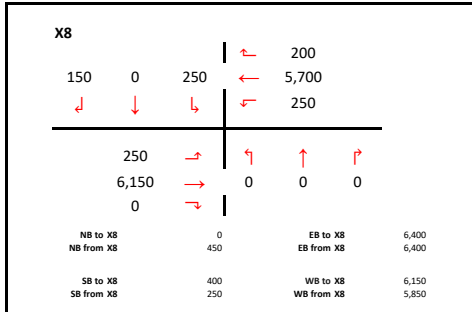
NB to X2	1860	0	0	EB to X2	1390	0	0
NB from X2	680	0	0	EB from X2	680	0	0
SB to X2	570	0	0	WB to X2	600	0	0
SB from X2	1600	0	0	WB from X2	1460	0	0

Green Valley 2035 No Project DAILY



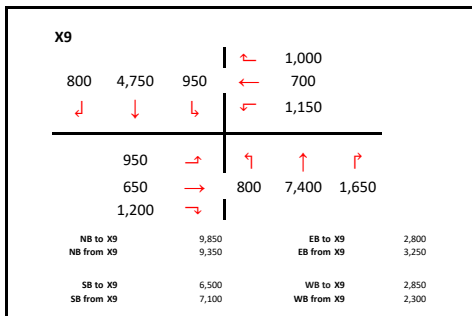
X6 Westamerica Drive at Mangels Boulevard

NB to X6	1750	0	0	EB to X6	5200	0	0
NB from X6	2300	0	0	EB from X6	0	0	0
SB to X6	2150	0	0	WB to X6	4000	0	0
SB from X6	5050	0	0	WB from X6	5750	0	0



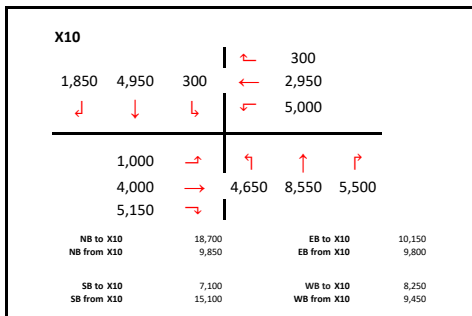
X8 NorthBay Driveway at Business Center Drive

NB to X8	0	0	0	EB to X8	6400	0	0
NB from X8	450	0	0	EB from X8	6400	0	0
SB to X8	400	0	0	WB to X8	6150	0	0
SB from X8	250	0	0	WB from X8	5850	0	0



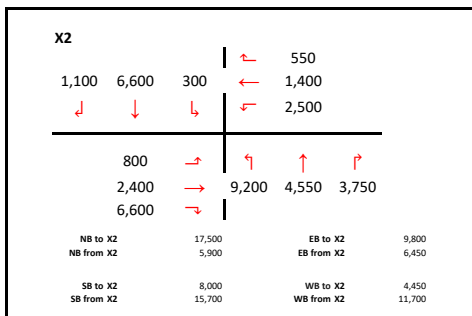
X9 Suisun Valley Road at Westamerica Drive

NB to X9	9850	0	0	EB to X9	2800	0	0
NB from X9	9350	0	0	EB from X9	3250	0	0
SB to X9	6500	0	0	WB to X9	2850	0	0
SB from X9	7100	0	0	WB from X9	2300	0	0



X10 Suisun Valley Road at Business Center Drive

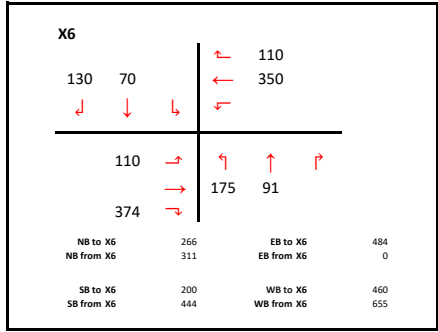
NB to X10	18700	0	0	EB to X10	10150	0	0
NB from X10	9850	0	0	EB from X10	9800	0	0
SB to X10	7100	0	0	WB to X10	8250	0	0
SB from X10	15100	0	0	WB from X10	9450	0	0



X2 Green Valley Road at Business Center Drive

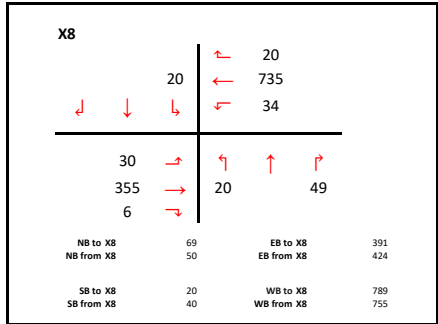
NB to X2	17500	0	0	EB to X2	9800	0	0
NB from X2	5900	0	0	EB from X2	6450	0	0
SB to X2	8000	0	0	WB to X2	4450	0	0
SB from X2	15700	0	0	WB from X2	11700	0	0

Green Valley AM 2035 Plus Alternative 1



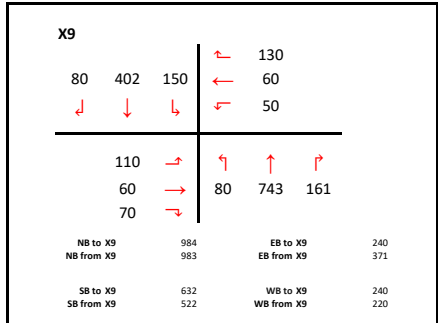
X6 Westamerica Drive at Mangels Boulevard

NB to X6	266	0	0	EB to X6	484	0	0
NB from X6	311	0	0	EB from X6	0	0	0
SB to X6	200	0	0	WB to X6	460	0	0
SB from X6	444	0	0	WB from X6	655	0	0



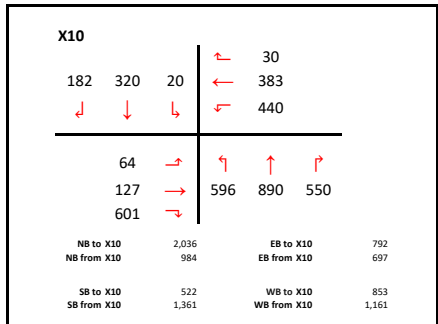
X8 NorthBay Driveway at Business Center Drive

NB to X8	69	0	0	EB to X8	391	0	0
NB from X8	50	0	0	EB from X8	424	0	0
SB to X8	20	0	0	WB to X8	789	0	0
SB from X8	40	0	0	WB from X8	755	0	0



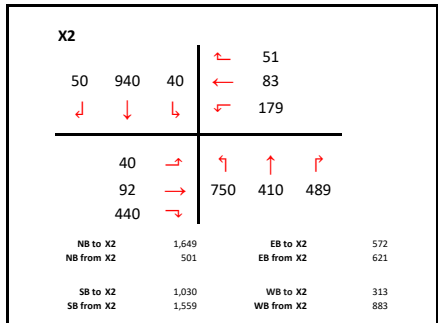
X9 Suisun Valley Road at Westamerica Drive

NB to X9	984	0	0	EB to X9	240	0	0
NB from X9	983	0	0	EB from X9	371	0	0
SB to X9	632	0	0	WB to X9	240	0	0
SB from X9	522	0	0	WB from X9	220	0	0



X10 Suisun Valley Road at Business Center Drive

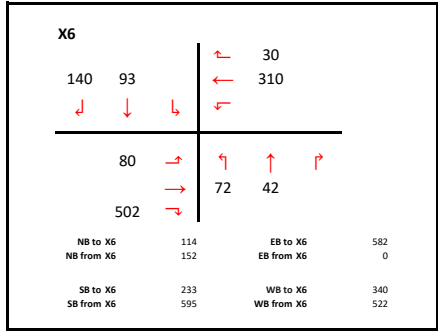
NB to X10	2036	0	0	EB to X10	792	0	0
NB from X10	984	0	0	EB from X10	697	0	0
SB to X10	522	0	0	WB to X10	853	0	0
SB from X10	1361	0	0	WB from X10	1161	0	0



X2 Green Valley Road at Business Center Drive

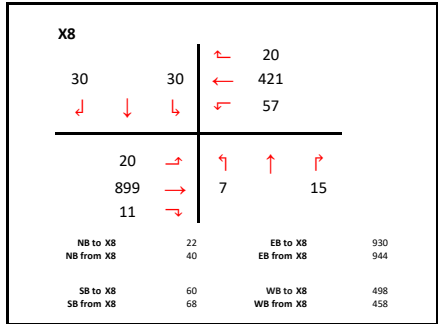
NB to X2	1649	0	0	EB to X2	572	0	0
NB from X2	501	0	0	EB from X2	621	0	0
SB to X2	1030	0	0	WB to X2	313	0	0
SB from X2	1559	0	0	WB from X2	883	0	0

Green Valley PM 2035 Plus Alternative 1



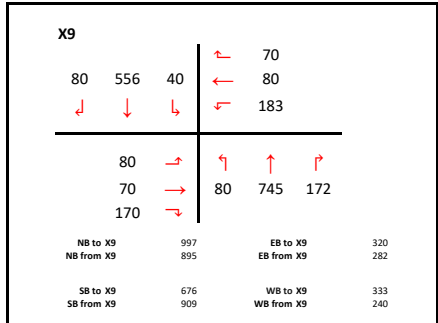
X6 Westamerica Drive at Mangels Boulevard

NB to X6	114	0	0	EB to X6	582	0	0
NB from X6	152	0	0	EB from X6	0	0	0
SB to X6	233	0	0	WB to X6	340	0	0
SB from X6	595	0	0	WB from X6	522	0	0



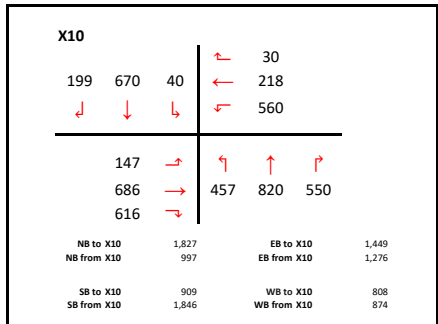
X8 NorthBay Driveway at Business Center Drive

NB to X8	22	0	0	EB to X8	930	0	0
NB from X8	40	0	0	EB from X8	944	0	0
SB to X8	60	0	0	WB to X8	498	0	0
SB from X8	68	0	0	WB from X8	458	0	0



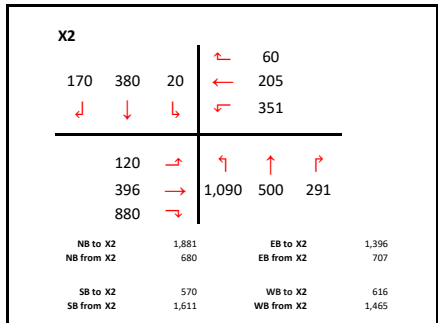
X9 Suisun Valley Road at Westamerica Drive

NB to X9	997	0	0	EB to X9	320	0	0
NB from X9	895	0	0	EB from X9	282	0	0
SB to X9	676	0	0	WB to X9	333	0	0
SB from X9	909	0	0	WB from X9	240	0	0



X10 Suisun Valley Road at Business Center Drive

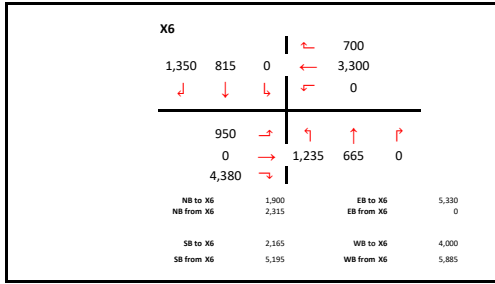
NB to X10	1,827	0	0	EB to X10	1,449	0	0
NB from X10	997	0	0	EB from X10	1,276	0	0
SB to X10	909	0	0	WB to X10	808	0	0
SB from X10	1,846	0	0	WB from X10	874	0	0



X2 Green Valley Road at Business Center Drive

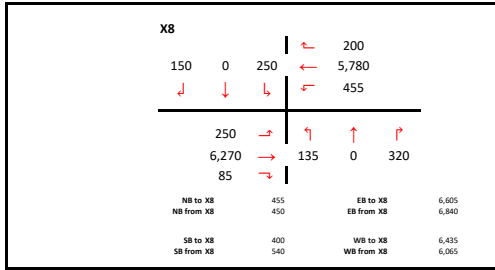
NB to X2	1,881	0	0	EB to X2	1,396	0	0
NB from X2	680	0	0	EB from X2	707	0	0
SB to X2	570	0	0	WB to X2	616	0	0
SB from X2	1,611	0	0	WB from X2	1,465	0	0

Green Valley 2035 + Alternative 1 DAILY



**X6 Westamerica Drive at Mangels Boulevard**

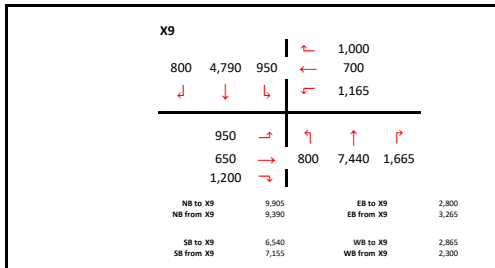
Percent Increase from Existing	NB to X6	EB to X6	Percent Increase from Existing
9%	1900	5330	3%
1%	NB from X6 2315	EB from X6 0	0%
1%	SB to X6 2165	WB to X6 4000	0%
3%	SB from X6 5195	WB from X6 5885	2%



**X8 NorthBay Driveway at Business Center Drive**

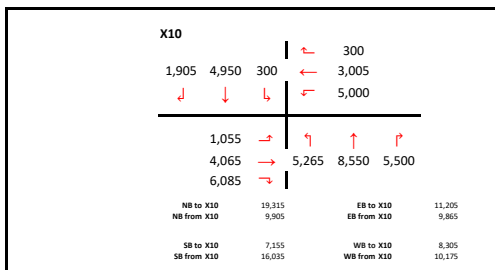
Percent Increase from Existing	NB to X8	EB to X8	Percent Increase from Existing
100%	455	6605	3%
0%	NB from X8 450	EB from X8 6840	7%
0%	SB to X8 400	WB to X8 6435	5%
116%	SB from X8 540	WB from X8 6065	4%

Due to individual turn volumes exceeding 100%, a segment analysis is provided at the bottom of the page.



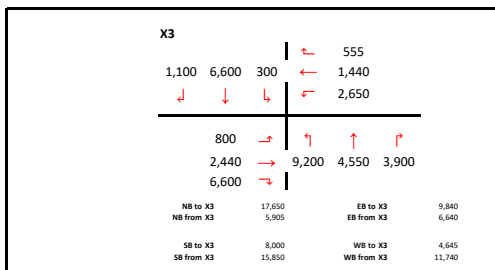
**X9 Suisun Valley Road at Westamerica Drive**

Percent Increase from Existing	NB to X9	EB to X9	Percent Increase from Existing
1%	9905	2800	0%
0%	NB from X9 9390	EB from X9 3265	0%
1%	SB to X9 6540	WB to X9 2865	1%
1%	SB from X9 7155	WB from X9 2300	0%



**X10 Suisun Valley Road at Business Center Drive**

Percent Increase from Existing	NB to X10	EB to X10	Percent Increase from Existing
3%	19315	11205	10%
1%	NB from X10 9905	EB from X10 9865	1%
1%	SB to X10 7155	WB to X10 8305	1%
6%	SB from X10 16035	WB from X10 10175	8%



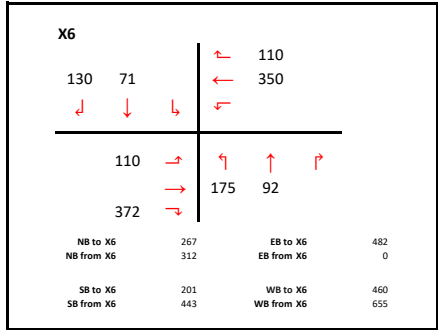
**X3 Neitzel Road at Business Center Drive**

Percent Increase from Existing	NB to X3	EB to X3	Percent Increase from Existing
1%	17650	9840	0%
0%	NB from X3 5905	EB from X3 6640	3%
0%	SB to X3 8000	WB to X3 4645	4%
1%	SB from X3 15850	WB from X3 11740	0%

**Segment Analysis**  
 Business Center Drive from Neitzel Road to Northbay Driveway  
 ADT: 11978  
 Increase from Existing: 520  
 Percent Increase: 77%

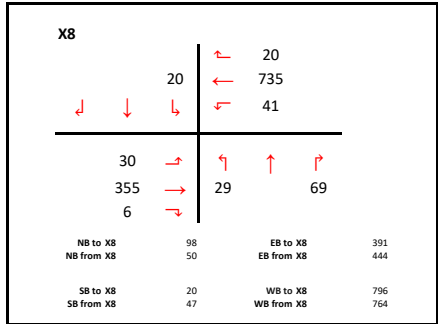
**Segment Analysis**  
 Business Center Drive from Neitzel Road to Northbay Driveway  
 ADT: 11977.5  
 Increase from Cumulative No Project: 403  
 Percent Increase: 3%

Green Valley AM 2035 Plus Alternative 2



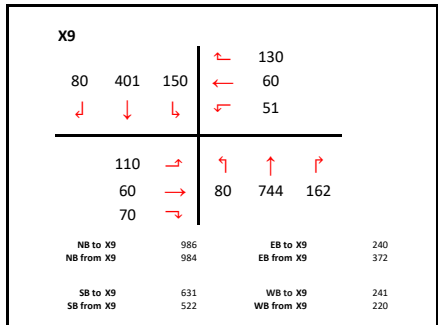
X6 Westamerica Drive at Mangels Boulevard

NB to X6	267	0	0	EB to X6	482	0	0
NB from X6	312	0	0	EB from X6	0	0	0
SB to X6	201	0	0	WB to X6	460	0	0
SB from X6	443	0	0	WB from X6	655	0	0



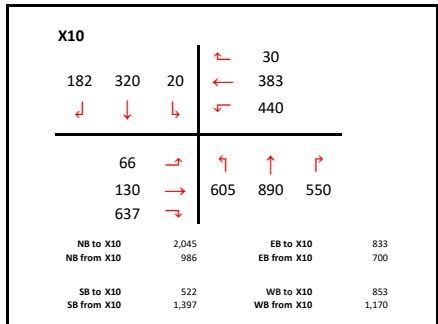
X8 NorthBay Driveway at Business Center Drive

NB to X8	98	0	0	EB to X8	391	0	0
NB from X8	50	0	0	EB from X8	444	0	0
SB to X8	20	0	0	WB to X8	796	0	0
SB from X8	47	0	0	WB from X8	764	0	0



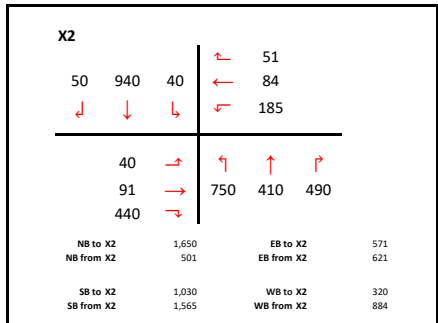
X9 Suisun Valley Road at Westamerica Drive

NB to X9	986	0	0	EB to X9	240	0	0
NB from X9	984	0	0	EB from X9	372	0	0
SB to X9	631	0	0	WB to X9	241	0	0
SB from X9	522	0	0	WB from X9	220	0	0



X10 Suisun Valley Road at Business Center Drive

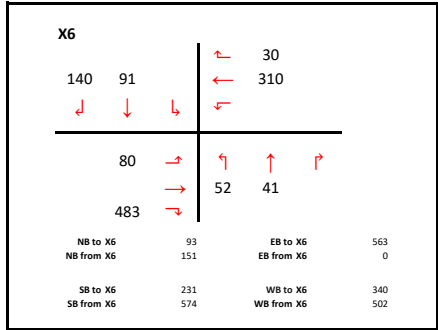
NB to X10	2045	0	0	EB to X10	833	0	0
NB from X10	986	0	0	EB from X10	700	0	0
SB to X10	522	0	0	WB to X10	853	0	0
SB from X10	1397	0	0	WB from X10	1170	0	0



X2 Green Valley Road at Business Center Drive

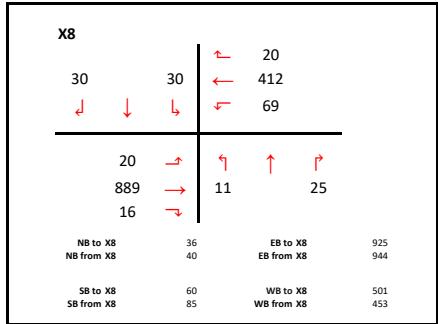
NB to X2	1650	0	0	EB to X2	571	0	0
NB from X2	501	0	0	EB from X2	621	0	0
SB to X2	1030	0	0	WB to X2	320	0	0
SB from X2	1565	0	0	WB from X2	884	0	0

Green Valley PM 2035 Plus Alternative 2



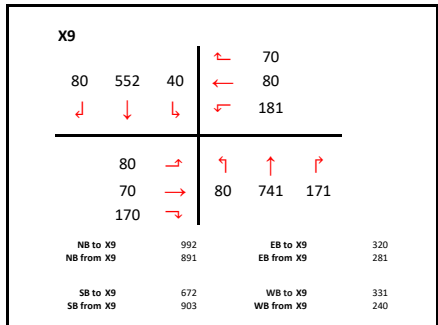
X6 Westamerica Drive at Mangels Boulevard

NB to X6	93	0	0	EB to X6	563	0	0
NB from X6	151	0	0	EB from X6	0	0	0
SB to X6	231	0	0	WB to X6	340	0	0
SB from X6	574	0	0	WB from X6	502	0	0



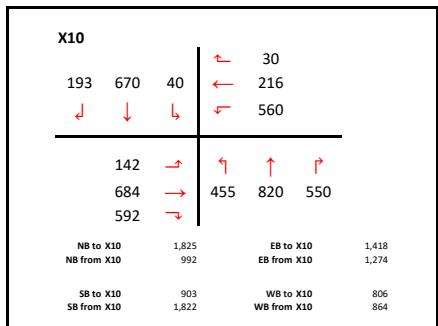
X8 NorthBay Driveway at Business Center Drive

NB to X8	36	0	0	EB to X8	925	0	0
NB from X8	40	0	0	EB from X8	944	0	0
SB to X8	60	0	0	WB to X8	501	0	0
SB from X8	85	0	0	WB from X8	453	0	0



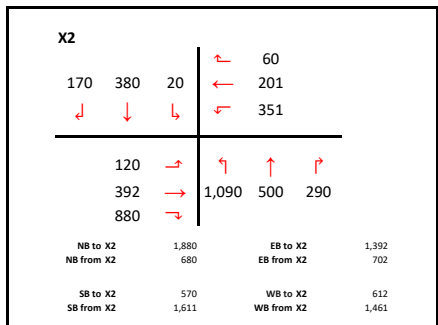
X9 Suisun Valley Road at Westamerica Drive

NB to X9	992	0	0	EB to X9	320	0	0
NB from X9	891	0	0	EB from X9	281	0	0
SB to X9	672	0	0	WB to X9	331	0	0
SB from X9	903	0	0	WB from X9	240	0	0



X10 Suisun Valley Road at Business Center Drive

NB to X10	1,825	0	0	EB to X10	1,418	0	0
NB from X10	992	0	0	EB from X10	1,274	0	0
SB to X10	903	0	0	WB to X10	806	0	0
SB from X10	1,822	0	0	WB from X10	864	0	0

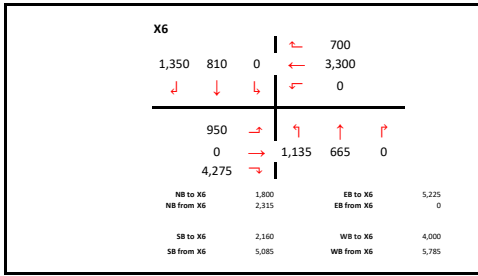


X2 Green Valley Road at Business Center Drive

NB to X2	1,880	0	0	EB to X2	1,392	0	0
NB from X2	680	0	0	EB from X2	702	0	0
SB to X2	570	0	0	WB to X2	612	0	0
SB from X2	1,611	0	0	WB from X2	1,461	0	0



Green Valley 2035 + Alternative 2 DAILY



**X6 Westamerica Drive at Mangels Boulevard**

Percent Increase from Existing

3%	NB to X6	1800	0	0	EB to X6	5225	0	0	0%
1%	NB from X6	2315	0	0	EB from X6	0	0	0	0%
0%	SB to X6	2160	0	0	WB to X6	4000	0	0	0%
1%	SB from X6	5085	0	0	WB from X6	5785	0	0	1%

Percent Increase from Existing



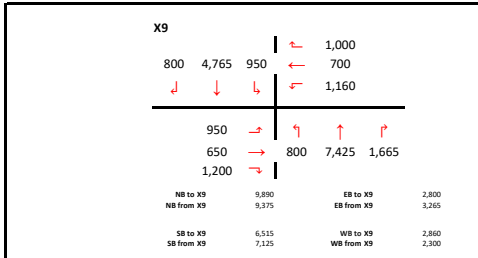
**X8 NorthBay Driveway at Business Center Drive**

Percent Increase from Existing

100%	NB to X8	670	0	0	EB to X8	6380	0	0	3%
0%	NB from X8	450	0	0	EB from X8	6340	0	0	8%
0%	SB to X8	400	0	0	WB to X8	6485	0	0	5%
164%	SB from X8	660	0	0	WB from X8	6085	0	0	4%

Percent Increase from Existing

Due to individual turn volumes exceeding 100%, a segment analysis is provided at the bottom of the page.

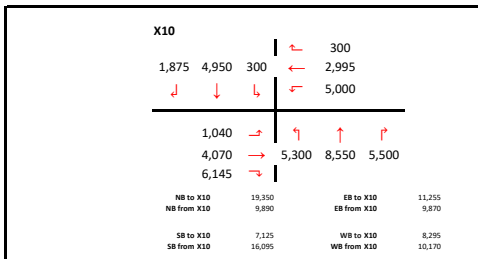


**X9 Suisun Valley Road at Westamerica Drive**

Percent Increase from Existing

0%	NB to X9	9890	0	0	EB to X9	2800	0	0	0%
0%	NB from X9	9375	0	0	EB from X9	3265	0	0	0%
0%	SB to X9	6515	0	0	WB to X9	2860	0	0	0%
0%	SB from X9	7125	0	0	WB from X9	2300	0	0	0%

Percent Increase from Existing

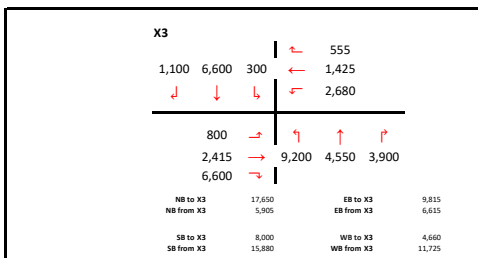


**X10 Suisun Valley Road at Business Center Drive**

Percent Increase from Existing

3%	NB to X10	19350	0	0	EB to X10	11255	0	0	11%
0%	NB from X10	9890	0	0	EB from X10	9870	0	0	1%
0%	SB to X10	7125	0	0	WB to X10	8295	0	0	1%
7%	SB from X10	16095	0	0	WB from X10	10170	0	0	8%

Percent Increase from Existing



**X3 Neitzel Road at Business Center Drive**

Percent Increase from Existing

1%	NB to X3	17650	0	0	EB to X3	9815	0	0	0%
0%	NB from X3	5905	0	0	EB from X3	6615	0	0	3%
0%	SB to X3	8000	0	0	WB to X3	4660	0	0	5%
1%	SB from X3	15880	0	0	WB from X3	11725	0	0	0%

Percent Increase from Existing

**Segment Analysis**  
 Business Center Drive from Neitzel Road to Northbay Driveway  
 ADT: 11970  
 Increase from Existing: 5213  
 Percent Increase: 77%

**Segment Analysis**  
 Business Center Drive from Neitzel Road to Northbay Driveway  
 ADT: 11970  
 Increase from Cumulative No Project: 395  
 Percent Increase: 3%

# Green Valley Apartments

City of Fairfield, California

February 28, 2018

jcb Project # 2017-125

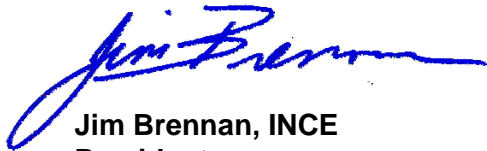
Prepared for:



Attn: Ms. Karen E. Garrett  
A.G. Spanos Companies  
10100 Trinity Parkway, 5th Floor  
Stockton, CA 95219

Prepared by:

**j.c. brennan & associates, Inc.**

A handwritten signature in blue ink that reads "Jim Brennan".

**Jim Brennan, INCE**  
President  
Member, Institute of Noise Control Engineering (INCE)

## **INTRODUCTION**

The proposed Green Valley Apartments project is located north of Interstate 80 off of the Suisun Valley Road exit, in the City of Fairfield. The site is bound on the north by Mangels Boulevard, on the east by Neitzel Road/Suisun Valley Road, to the south by a vacant lot, and to the west by Business Center Drive. The site is approximately 13.31 acres in size, and includes 4 residential buildings, 1 clubhouse/leasing center, and 4 commercial buildings. The project includes a total of 616 total parking spaces for both the commercial and residential portions of the project site.

Figure 1 shows the project area and noise measurement locations. Figure 2 shows the project site plan.

This analysis will assess the potential noise generation from the transportation noise sources adjacent to, and near the project site. Predicted noise levels will be compared to the noise level standards of the City of Fairfield General Plan Noise Element.

## **ENVIRONMENTAL SETTING**

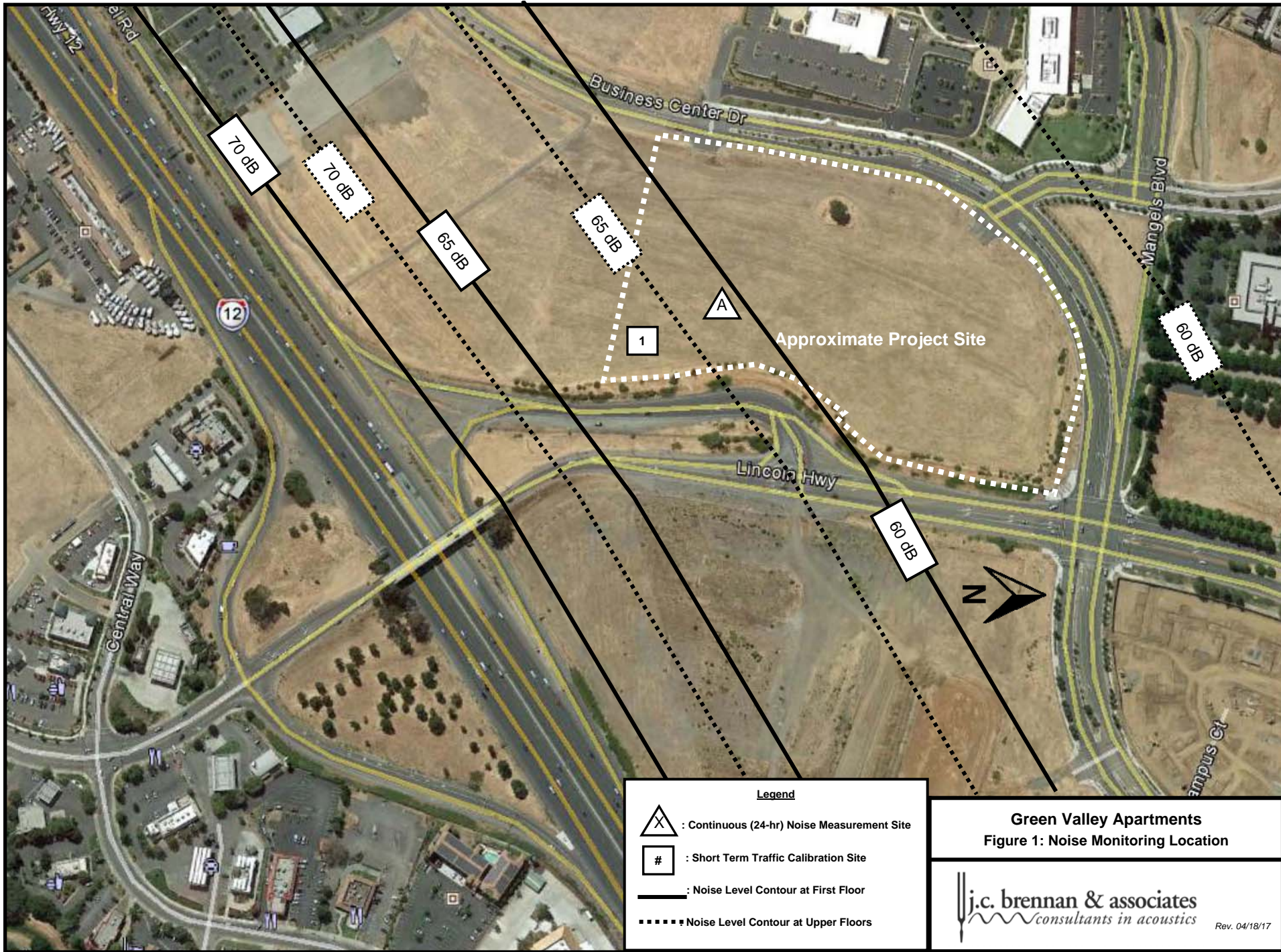
### **BACKGROUND INFORMATION ON NOISE**

#### ***Fundamentals of Acoustics***

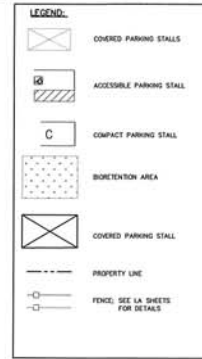
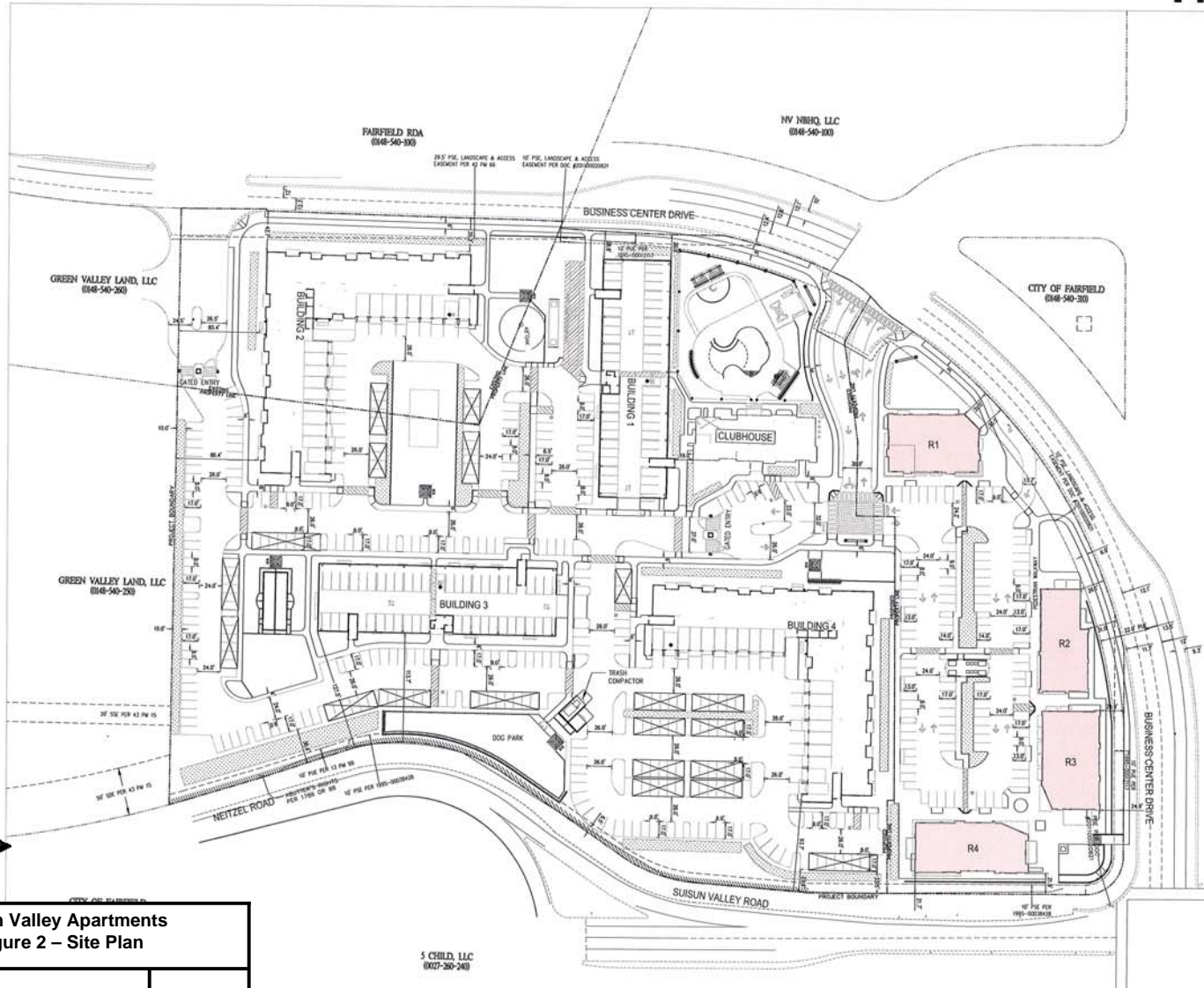
Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.



# Preliminary Site Plan



## PROJECT SUMMARY

**SITE AREA**  
 GROSS: 13.31 ACRES

**EX GENERAL PLAN DESIGNATION** BUSINESS AND INDUSTRIAL PARK

**EX ZONING** IBP-NC

**LAND USE SUMMARY:**

MULTI-FAMILY : 258 UNITS  
 RETAIL SPACE : 1  
 4 BUILDINGS: 4 UNITS

**RETAIL SITE**

1317 AC BRUSH AREA  
 100' x 100' x 100'  
 100' x 100' x 100'  
 100' x 100' x 100'  
 100' x 100' x 100'

**PARKING SUMMARY FOR RETAIL AREA**

87 STANDARD SP  
 5 ACCESSIBLE SP  
 100 BICYCLE PARKING  
 3 FOR USE OF GENERAL PARKING WARD  
 1 FOR 20 SP BICYCLE STORAGE WARD

**PARKING SUMMARY FOR RESIDENTIAL AREA**

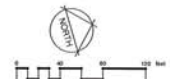
106 RESIDENT CARPORT OWNED  
 106 RESIDENT CARPORT  
 106 MOTOR  
 4 RESIDENT AC CARPORT  
 106 MOTOR AC STORAGE  
 360 TOTAL

**RESIDENTIAL SITE REQUIRED PARKING**

106 1 MOTOR WARD (20 x 10)  
 106 2 MOTOR WARD (20 x 10)  
 27 MOTOR PARKING (20 WARD / 7)  
 360 TOTAL REQUIRED

**RESIDENTIAL SITE**

1064 AC BRUSH AREA  
 106 1060 MOTOR  
 106 1060 MOTOR  
 106 1060 MOTOR  
 258 UNIT TOTAL  
 106 1060 MOTOR



Green Valley Apartments  
 Figure 2 – Site Plan

j.c. brennan & associates  
 consultants in acoustics

Date:  
 04/18/17

S CHILD, LLC  
 (007-260-240)

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (Leq), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptor, Ldn, and shows very good correlation with community response to noise.

The day/night average level (Ldn) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because Ldn represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. Appendix A provides a summary of acoustical terms used in this report.

Table 1

## LOUDNESS COMPARISON CHART (dBA)

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 1000 ft	110	Rock Band
Gas Lawn Mower at 3 ft	100	
	90	Food Blender at 3 ft
Diesel Truck at 50 ft at 50 mph	80	Garbage Disposal at 3 ft
Noisy Urban Area, Daytime		Vacuum Cleaner at 10 ft
Gas Lawn Mower at 100 ft	70	Normal Speech at 3 ft
Commercial Area		
Heavy Traffic at 300 ft	60	Large Business Office
Quiet Urban, Daytime	50	Dishwasher Next Room
Quiet Urban, Nighttime		Theater, Large Conference Room (Background)
Quiet Suburban, Nighttime	40	Library
	30	Bedroom at Night, Concert Hall (Background)
Quiet Rural, Nighttime	20	Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

An increase of 3 dBA is barely perceptible to the human ear.



### Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.



## REGULATORY CONTEXT

### State

#### ***California State Building Codes***

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB  $L_{dn}$  or CNEL in any habitable room.

Title 24 also mandates that for structures containing noise-sensitive uses to be located where the  $L_{dn}$  or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment.

### Local

#### ***City of Fairfield General Plan Health and Safety Element***

The City of Fairfield General Plan Health and Safety Element noise level criteria for land use compatibility. The following summarizes the policies and criteria applicable to the proposed project: noise level criteria for land use compatibility. The following summarizes the policies and criteria applicable to the proposed project:

#### **Policy HS 9.1**

Ground transportation noise: The compatibility of proposed projects with existing and future noise levels due to ground transportation noise sources shall be evaluated by comparison to Table HS-1 where the existing or future noise level from ground transportation noise sources is determined to exceed the standards of Table HS-1 [Table 2]. Noise levels in outdoor activity areas and interior spaces shall be mitigated to the levels shown in Table HS-1[Table 2].

*(Author's Note: One of the issues relevant to this project, is where on the project site should the City apply the exterior noise level criteria. The exterior noise level criterion is generally applied at the outdoor activity areas of a project site. In the case of a single family residential development, the exterior noise level standard is applied at the rear yard area of each residence.*

*In the case of multi-family residential developments such as an apartment or condominium complex, the standard could be applied at the individual patios, a property line, or at a common area which is designated for recreation or outdoor activities such as the recreation or pool areas. This practice is common in many jurisdictions. Generally, the intent is to allow for an outdoor area where individuals can relax and conduct outdoor*

*activities, and then focus on maintaining interior noise levels consistent with the General Plan Noise Element for each of the individual units.*

*The proposed Green Valley Apartment project includes a designated clubhouse and pool area which is intended to be a common outdoor area. This analysis will focus on applying the exterior noise level criteria at the common outdoor area (the Clubhouse / Pool). Attaining acceptable interior noise levels will also be addressed).*

### **Policy HS 9.3**

Non-transportation noise: Noise created by new non-transportation noise sources shall be mitigated so as not to exceed the interior and exterior noise level standards of Table HS-2 [Table 3]. Where proposed non-transportation noise sources are likely to produce noise levels exceeding the performance standards of Table HS-2 [Table 3], an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

### **Policy HS 9.5**

All acoustical analyses required by the Noise Component of the Health and Safety Element shall:

- Be the responsibility of the applicant.
- Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.
- Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.
- Estimate existing and projected noise levels in terms of Ldn and/or the standards of Table HS-2, and compare those levels to the policies of this Element.
- Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of this Element. Where the noise source in question consists of intermittent single events, the report must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance.
- Estimate noise exposure after the prescribed mitigation measures have been implemented.
- Describe a post-project assessment program which could be used to evaluate the effectiveness of the proposed mitigation measures.

### **Policy HS 9.6**

The City shall utilize procedures for project review and issuance of building permits to ensure that noise mitigation measures identified in an acoustical analysis are implemented in the project design.

**Policy HS 9.7**

The City shall require monitoring of compliance with the standards of the Noise Element after completion of projects where noise mitigation measures have been required.

**Policy HS 9.11**

The City shall require all development projects to mitigate noise impacts associated with construction activities.

Table HS-2 [Table 3] of the Health and Safety Element establishes both daytime (7 a.m. - 10 p.m.) and nighttime (10 p.m. - 7 a.m.) noise level performance standards. These standards are based upon hourly average (Leq) and maximum (Lmax) noise level descriptors. For this project, the noise level performance standards are applied at residential and residentially zoned property. The performance standards are as follows:

**TABLE 2 (Table HS-1 of the General Plan)  
Maximum Allowable Noise Exposure to Ground Transportation Noise Sources**

Land Use	Outdoor Activity Areas	Interior Spaces	
	L <sub>dn</sub> /CNEL, dB	L <sub>dn</sub> /CNEL, dB	L <sub>eq</sub> , dB <sup>b</sup>
Residential	60 <sup>c</sup>	45	--
Transient Lodging	60 <sup>c</sup>	45	--
Hospitals, nursing homes	60 <sup>c</sup>	45	--
Theaters, auditoriums, music halls	--	--	35
Churches, meeting halls	60 <sup>c</sup>	--	40
Office buildings	--	--	45
Schools, libraries, museums	--	--	45
Playgrounds, neighborhood parks	70	--	--

Note: -- = N/A

- a Where the location of outdoor activity areas is unknown, the exterior noise-level standard shall be applied to the property line of the receiving land use.
- b As determined for a typical worst-case hour during periods of use.
- c Where it is not possible to reduce noise in outdoor activity areas to 60 db Ldn/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn/CNEL may be allowed provided that available exterior noise-level reduction measures have been implemented and interior noise levels are in compliance with this table.

Source: City of Fairfield General Plan Health and Safety Element

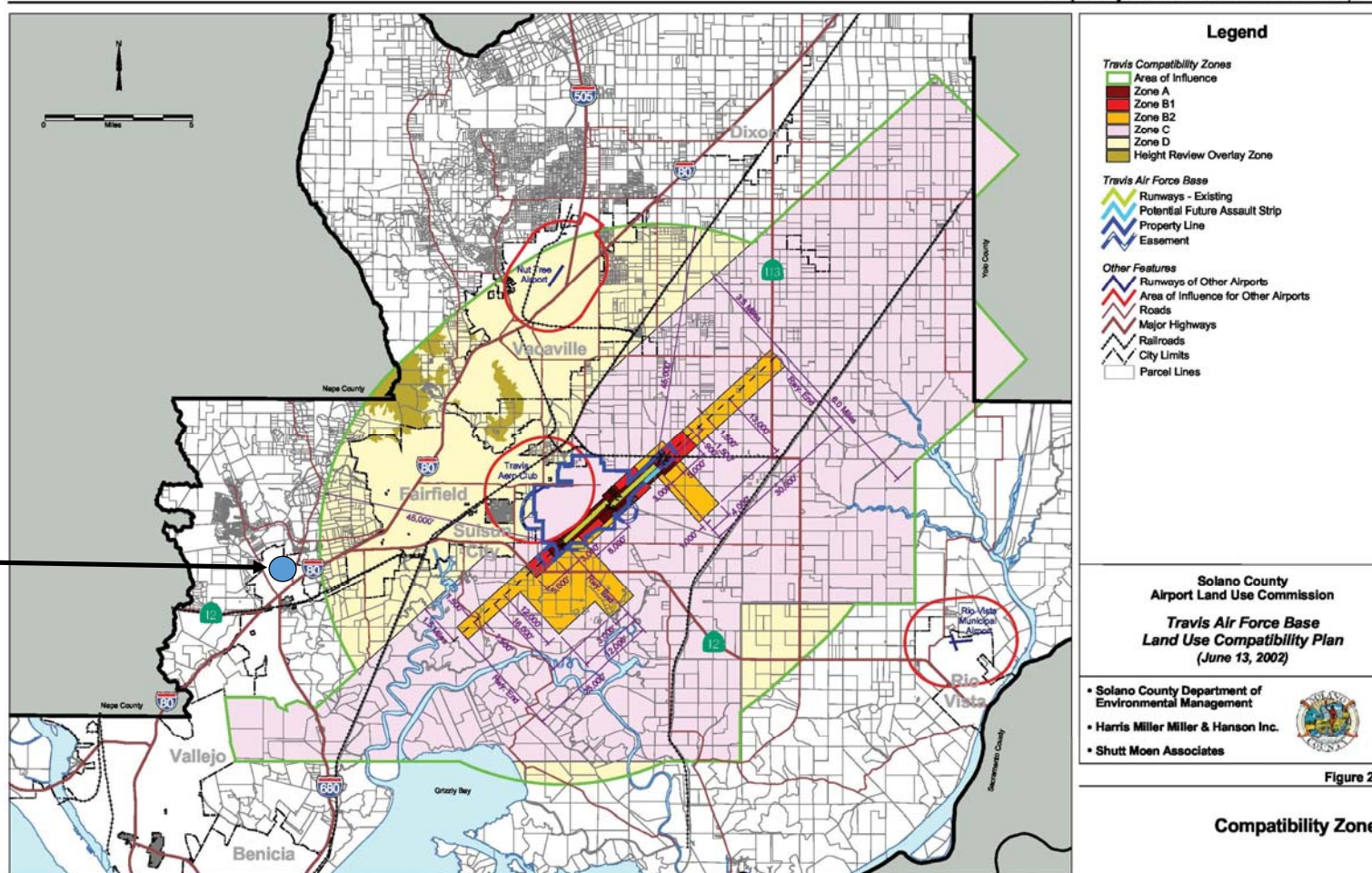
**TABLE 3 (Table HS-2 of the General Plan)  
Noise-Level Performance Standards For New Projects Affected By Or Including Non-transportation Sources**

Land Use	Noise-Level Descriptor	Exterior Noise-Level Standard (Applicable at Property Line)		Interior Noise-Level Standard	
		Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Residential	L <sub>eq</sub>	50	45	40	35
	L <sub>max</sub>	70	65	60	55
Transient lodging, hospitals, nursing homes	L <sub>eq</sub>	--	--	40	35
	L <sub>max</sub>	--	--	60	55
Theaters, auditoriums, music halls	L <sub>eq</sub>	--	--	35	35
Churches, meeting halls	L <sub>eq</sub>	--	--	40	40
Office buildings	L <sub>eq</sub>	--	--	45	--
Schools, libraries, museums	L <sub>eq</sub>	--	--	45	--
Playgrounds, parks	L <sub>eq</sub>	65	--	--	--

Notes: -- = N/A  
Each of the noise levels specified above shall be lowered by 5 dB for simple tone noises, noises consisting primarily of speech or music, or recurring impulsive noises. These noise-level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwelling)  
Source: City of Fairfield General Plan Health and Safety Element

### ***Travis Air Force Base Land Use Compatibility Plan***

The Travis Air Force Base Land Use Compatibility Plan establishes criteria for varying Land Use Compatibility Zones. Based upon Figures 3 and 4, the project site is located outside of the area of influence, and outside of the current and future 60 dBA CNEL noise level contours. Therefore, potential noise impacts associated with aircraft noise will not be discussed further in this report.



Compatibility Zones

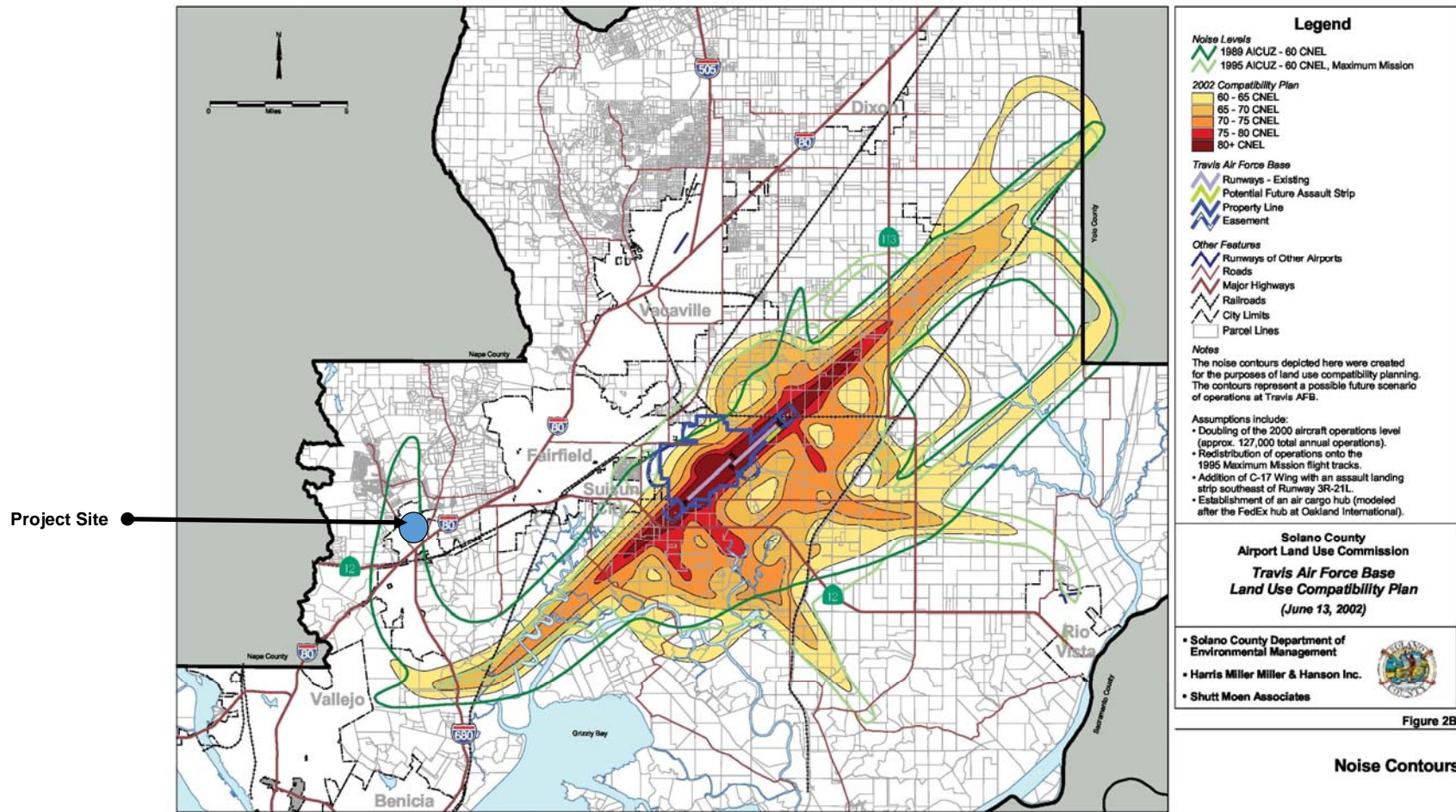
Project Site

Figure 3  
Travis CLUP Land Use Zones

● Project Site

j.c. brennan & associates  
consultants in acoustics

Date:  
04/18/17



Project Site

Figure 4  
Travis Noise Contours

Project Site

## EVALUATION OF THE EXISTING NOISE ENVIRONMENT AT THE PROJECT SITE

### Background Noise Levels

j.c. brennan & associates, Inc. conducted continuous 24-hour noise level measurements at the project site on Tuesday - Wednesday April 4<sup>th</sup> - 5<sup>th</sup>, 2017. The intent of the noise level measurements was to quantify existing background at the project site. Based upon observation, the primary noise source was I-80. The I-80 centerline is approximately 510-feet from the project site. Other adjacent roadways and light industrial uses were not a contributing factor the overall noise environment. Table 4 shows the results of the continuous 24-hour noise measurements. Appendix B graphically shows the measured background noise levels.

**TABLE 4  
EXISTING AMBIENT NOISE MONITORING RESULTS  
GREEN VALLEY APARTMENTS**

Site	Location	Date	Average Measured Hourly Noise Levels, (dBA)						
			24-hr Ldn	Daytime (7:00 am - 10:00 pm)			Nighttime (10:00 pm - 7 am)		
				Leq	L50	Lmax	Leq	L50	Lmax
<b>Continuous 24hr Noise Measurement Site</b>									
A	Central Portion of the Project Site	April 4-5, 2017	62 dBA	57 dBA	56 dBA	73 dBA	56 dBA	54 dBA	66 dBA
Source - j.c. brennan & associates, Inc. 2017									

## EVALUATION OF FUTURE NOISE LEVELS

### Existing and Future Traffic Noise Impacts at the Project Site

To determine I-80 traffic noise levels, simultaneous traffic counts and traffic noise level measurements were conducted as a means of calibrating the FHWA model. The purpose of the noise measurements was to determine the accuracy of the FHWA model in describing I-80 traffic noise at the project site. The noise measurements were conducted to evaluate both first floor elevations, and upper floor (2nd through 4th) elevations. Table 5 shows the results of the traffic noise calibration results. A complete listing of FHWA Model inputs and results are shown in Appendix C.

Based upon Table 5, the FHWA Model over-predicted traffic noise levels at the site. Based upon observations, the Pittman Road / Lincoln Highway overpass shielded traffic noise levels at the site. It was also apparent that elevated receivers do not benefit from excess ground absorption and predicted noise levels at the elevated apartments will be exposed to I-80 traffic noise levels of approximately 3 to 4 dB higher than the first floor apartments.

**TABLE 5  
COMPARISON OF I-80 MEASURED TO MODELED TRAFFIC NOISE LEVELS**

Site	Location	Vehicles			Speed (mph)	Distance	Measured L <sub>eq</sub> , dBA	Modeled L <sub>eq</sub> , dBA*
		Autos	Med. Trks.	Hvy.Trks.				
1 / I-80	First Floor	1501	39	157	65	510	59.0	68.4
1 / I-80	Upper Floor						63.0	68.4

\* Acoustically "soft" site assumed

To predict future traffic volumes for future conditions j.c. brennan & associates, Inc. utilized traffic volumes and truck count information published by Caltrans for existing conditions. A 2% per year increase was utilized to evaluate future 2030 traffic volumes.

Table 6 shows the existing traffic noise levels in terms of L<sub>dn</sub> at the project site at first floor and upper floor locations. This table also shows the distances to existing traffic noise contours. A complete listing of the FHWA Model input data is contained in Appendix C. Figure 1 also shows the locations of the I-80 traffic noise contours.

**TABLE 6  
FUTURE TRAFFIC NOISE LEVELS AND DISTANCES TO CONTOURS**

Roadway	Location	L <sub>dn</sub> @ Project Site	Distance to Contours		
			70 dB	65 dB	60 dB
I-80	<b>Building 1</b> First Floor Upper Floors	62 dBA 66 dBA	First Floor 209-feet	First Floor 450-feet	First Floor 970-feet
I-80	<b>Building 2</b> First Floor Upper Floors	61 dBA 65 dBA			
I-80	<b>Building 3</b> First Floor Upper Floors	62 dBA 66 dBA	Upper Floors 386-feet	Upper Floors 832-feet	Upper Floors 1,792-feet
I-80	<b>Building 4</b> First Floor Upper Floors	60 dBA 64 dBA			
I-80	<b>Clubhouse</b>	58 dBA			

Notes: Distances to traffic noise contours are measured in feet from the centerlines of the roadways.

Source: FHWA-RD-77-108 with inputs from Caltrans, and j.c. brennan & associates, Inc. 2017.

Based upon Table 6, portions of the project site, ground floor areas, including the clubhouse / pool area will be located outside of the 60 dB L<sub>dn</sub> I-80 traffic noise contour. The project site will comply with the City of Fairfield exterior noise level standard of 60 dB L<sub>dn</sub> at the Common Outdoor Area (Clubhouse).



### Interior Noise Levels at the Project Site:

Standard construction practices, consistent with the uniform building code typically provides an exterior-to-interior noise level reduction of approximately 25 dBA, assuming that air conditioning is included for each unit, which allows residents to close windows for the required acoustical isolation. Based upon the measured and calculated traffic noise levels, it is not expected that the site will be exposed to noise levels which exceed 66 dB Ldn. Therefore, typical construction practices are expected to result in compliance with the interior noise level standard of 45 dB Ldn.

### Construction Noise Levels:

Construction of the project is expected to occur for a total of 18 months. The primary noise impacts will occur during site preparation, installation of utilities and excavation of the site. The duration of these activities are expected to occur for 2 to 4 months. The primary noise sources will include a front-end loader, dump truck, concrete pump truck, backhoe and paver. During the construction of the project including related infrastructure, noise from construction activities would add to the noise environment in the project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 7, ranging from 76 to 82 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

**Table 7  
Construction Equipment Noise**

Type of Equipment	Maximum Level, dB at 50 feet
Backhoe	78
Dump Truck	76
Front-end Loader	79
Concrete Pump Truck	82
Paver	77

Source: *Roadway Construction Noise Model User's Guide*. Federal Highway Administration. FHWA-HEP-05-054. January 2006.

The primary construction area of the project site is located approximately 250-feet from the nearest existing buildings. Based upon those distances, and the maximum noise levels shown in Table 7, the maximum noise levels at the nearest buildings are expected to range between 57 dBA and 63 dBA. The maximum noise levels will be similar to those which currently exist in the project vicinity.

## **POTENTIAL MITIGATION OF IMPACTS**

The project will comply with the City of Fairfield noise level standards, while applying the exterior noise level standard of 60 dB Ldn at the Common Area (clubhouse) with the following mitigation measures.

### **Compliance with the Interior Noise Level Standard:**

It is expected that interior noise levels will comply with the interior noise level standard of 45 dB Ldn provided that the following is included in the project design:

1. Mechanical ventilation is included to allow occupants to close doors and windows for the proper acoustical isolation.

## Appendix A Acoustical Terminology

<b>Acoustics</b>	The science of sound.
<b>Ambient Noise</b>	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
<b>Attenuation</b>	The reduction of an acoustic signal.
<b>A-Weighting</b>	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
<b>Decibel or dB</b>	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
<b>CNEL</b>	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
<b>Frequency</b>	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
<b>L<sub>dn</sub></b>	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
<b>L<sub>eq</sub></b>	Equivalent or energy-averaged sound level.
<b>L<sub>max</sub></b>	The highest root-mean-square (RMS) sound level measured over a given period of time.
<b>L<sub>(n)</sub></b>	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L <sub>50</sub> is the sound level exceeded 50% of the time during the one hour period.
<b>Loudness</b>	A subjective term for the sensation of the magnitude of sound.
<b>Noise</b>	Unwanted sound.
<b>NRC</b>	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
<b>Peak Noise</b>	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the <i>Maximum</i> level, which is the highest RMS level.
<b>RT<sub>60</sub></b>	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
<b>Sabin</b>	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
<b>SEL</b>	Sound Exposure Level. SEL is a rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.
<b>STC</b>	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations.
<b>Threshold of Hearing</b>	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
<b>Threshold of Pain</b>	Approximately 120 dB above the threshold of hearing.
<b>Impulsive</b>	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
<b>Simple Tone</b>	Any sound which can be judged as audible as a single pitch or set of single pitches.

**Appendix B**

Green Valley Apartments

24hr Continuous Noise Monitoring - Site A

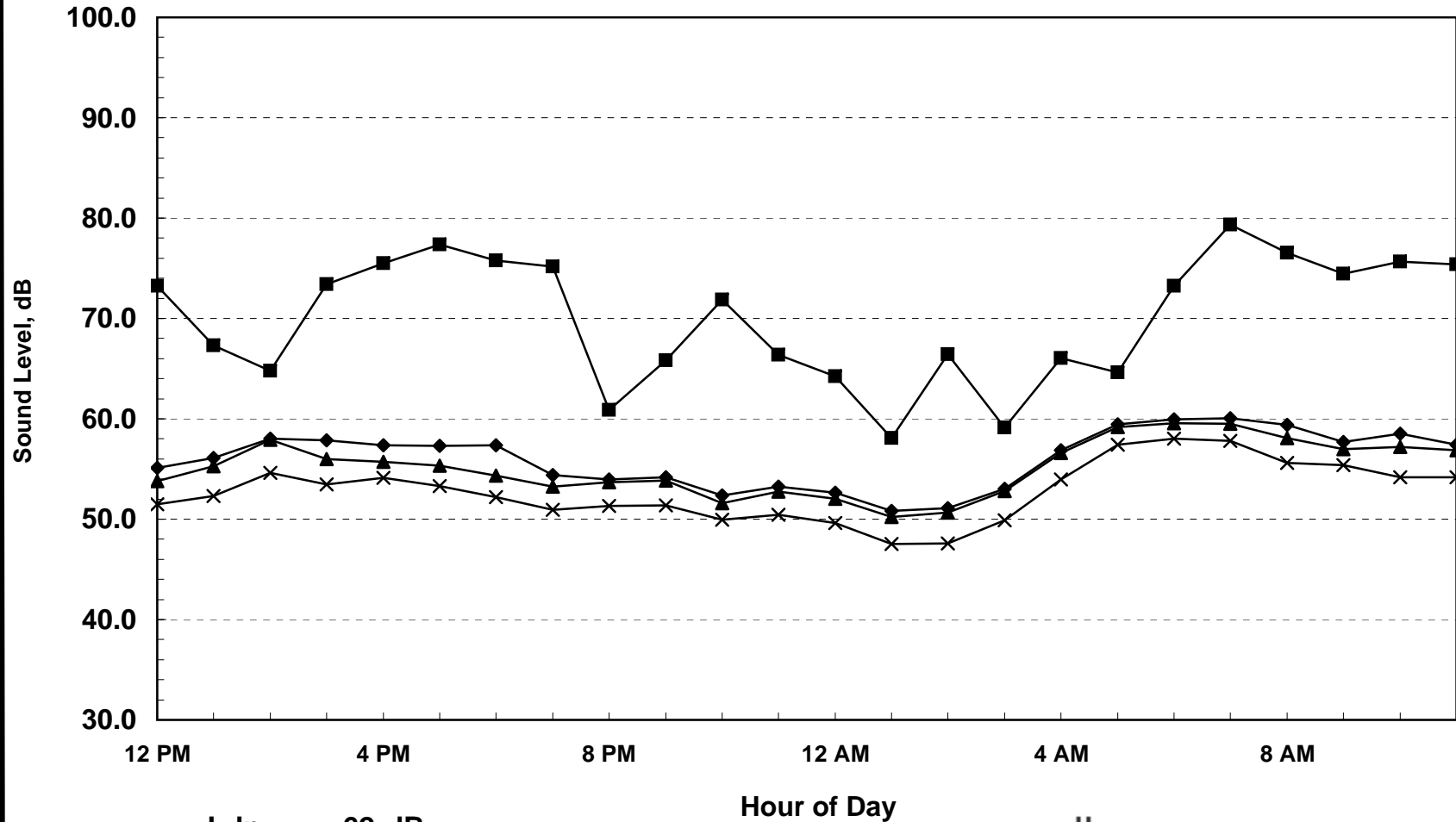
April 4th - April 5th, 2017

Hour	Leq	Lmax	L50	L90
12:00:00	55.1	73.3	53.8	51.5
13:00:00	56.1	67.3	55.3	52.3
14:00:00	58.0	64.8	57.9	54.6
15:00:00	57.8	73.4	56.0	53.5
16:00:00	57.4	75.5	55.7	54.1
17:00:00	57.3	77.4	55.3	53.3
18:00:00	57.4	75.8	54.4	52.2
19:00:00	54.4	75.2	53.2	50.9
20:00:00	53.9	60.9	53.7	51.3
21:00:00	54.2	65.8	53.8	51.4
22:00:00	52.4	71.9	51.6	49.9
23:00:00	53.3	66.4	52.7	50.4
0:00:00	52.6	64.2	52.1	49.6
1:00:00	50.9	58.1	50.2	47.5
2:00:00	51.1	66.4	50.7	47.6
3:00:00	53.0	59.1	52.8	49.9
4:00:00	56.9	66.0	56.6	54.0
5:00:00	59.4	64.6	59.2	57.4
6:00:00	59.9	73.2	59.6	58.0
7:00:00	60.1	79.4	59.5	57.8
8:00:00	59.4	76.5	58.1	55.6
9:00:00	57.7	74.4	57.0	55.4
10:00:00	58.5	75.7	57.2	54.2
11:00:00	57.4	75.4	56.9	54.2

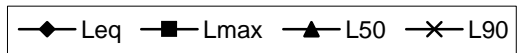
	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	60	54	57	60	51	56
Lmax (Maximum)	79	61	73	73	58	66
L50 (Median)	60	53	56	60	50	54
L90 (Background)	58	51	53	58	48	52

Computed Ldn, dB	62
% Daytime Energy	71%
% Nighttime Energy	29%

**Appendix B**  
 Green Valley Apartments  
 24hr Continuous Noise Monitoring - Site A  
 April 4th - April 5th, 2017



Ldn = 62 dB



**Appendix B**

2017- Short-Term Noise Monitoring Summary

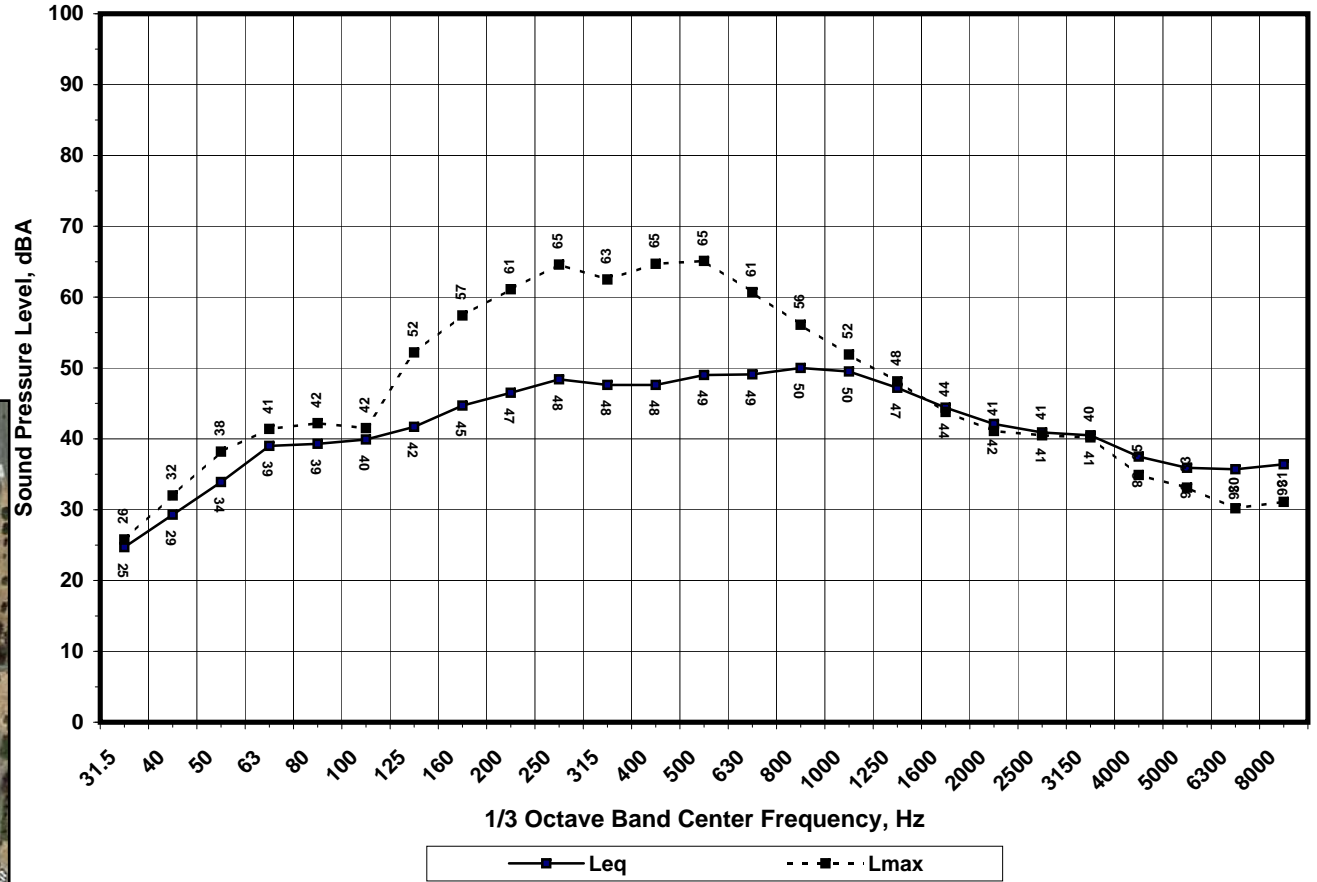
**Project:** Green Valley Apartments  
**Location:** Site 1-2 West  
**Date:** 4/4/2017  
**Time:** 12:08 PM  
**SLM:** Larson Davis Model 824-1

**Calibrator:** LDL CAL 200  
**Wind Speed:** Calm  
**Weather:** Clear, 65% humidity, ~ 60 F  
**Field Tech:** AT

**Measurement Results, dBA**

**Duration:** 0:10  
**L<sub>eq</sub>:** 59.0 dBA  
**L<sub>max</sub>:** 71.5 dBA  
**L<sub>min</sub>:** 54.3 dBA  
**L<sub>50</sub>:** 57.0 dBA  
**L<sub>90</sub>:** 55.2 dBA

**Notes**



**Appendix C**

**FHWA-RD-77-108 Highway Traffic Noise Prediction Model**

**Data Input Sheet**

Project #: 2017-125  
 Description: Green Valley Apts  
 Ldn/CNEL: Ldn  
 Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	I-80	Building 1 First Floor	240,000	75		25	1.5	4	65	875	-8
2	I-80	Building 1 Upper Floors	240,000	75		25	1.5	4	65	875	-4
3	I-80	Building 2 First Floor	240,000	75		25	1.5	4	65	1000	-8
4	I-80	Building 2 Upper Floors	240,000	75		25	1.5	4	65	1000	-4
5	I-80	Building 3 First Floor	240,000	75		25	1.5	4	65	890	-8
6	I-80	Building 3 Upper Floors	240,000	75		25	1.5	4	65	890	-4
7	I-80	Building 4 First Floor	240,000	75		25	1.5	4	65	1100	-8
8	I-80	Building 4 Upper Floors	240,000	75		25	1.5	4	65	1100	-4
9	I-80	Clubhouse	240,000	75		25	1.5	4	65	1400	-8
10	I-80	Clubhouse	240,000	75		25	1.5	4	65	1400	-4
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

**Appendix C**  
**FHWA-RD-77-108 Highway Traffic Noise Prediction Model**  
**Predicted Levels**

Project #: 2017-125  
 Description: Green Valley Apts  
 Ldn/CNEL: Ldn  
 Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	I-80	Building 1 First Floor	59.0	47.2	54.9	61
2	I-80	Building 1 Upper Floors	63.0	51.2	58.9	65
3	I-80	Building 2 First Floor	58.2	46.3	54.1	60
4	I-80	Building 2 Upper Floors	62.2	50.3	58.1	64
5	I-80	Building 3 First Floor	58.9	47.1	54.8	61
6	I-80	Building 3 Upper Floors	62.9	51.1	58.8	65
7	I-80	Building 4 First Floor	57.6	45.7	53.4	59
8	I-80	Building 4 Upper Floors	61.6	49.7	57.4	63
9	I-80	Clubhouse	56.0	44.1	51.9	58
10	I-80	Clubhouse	60.0	48.1	55.9	62



**Appendix C**

**FHWA-RD-77-108 Highway Traffic Noise Prediction Model**

**Noise Contour Output**

Project #: 2017-125  
Description: Green Valley Apts  
Ldn/CNEL: Ldn  
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	----- Distances to Traffic Noise Contours -----				
			75	70	65	60	55
1	I-80	Building 1 First Floor	97	209	450	970	2089
2	I-80	Building 1 Upper Floors	179	386	832	1792	3860
3	I-80	Building 2 First Floor	97	209	450	970	2089
4	I-80	Building 2 Upper Floors	179	386	832	1792	3860
5	I-80	Building 3 First Floor	97	209	450	970	2089
6	I-80	Building 3 Upper Floors	179	386	832	1792	3860
7	I-80	Building 4 First Floor	97	209	450	970	2089
8	I-80	Building 4 Upper Floors	179	386	832	1792	3860
9	I-80	Clubhouse	97	209	450	970	2089
10	I-80	Clubhouse	179	386	832	1792	3860