

Appendix F

Noise

Project Name: BSMP
 Analysis Scenario: Existing Conditions
 Source of Traffic Volumes: F&P, 2017

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Noise Level (Ldn) dBA	
			Auto	MT	HT	Total	Auto	MT		HT
Highway 99										
SR20 to Sunsweet Blvd	Hard	50	55	55	55	2687	2526	107.5	53.74	75
Sunsweet Blvd to Bridge St	Hard	50	55	55	55	2682	2521	107.3	53.64	75
Bridge St to Franklin Ave	Hard	50	55	55	55	2819	2650	112.8	56.38	76
Franklin Ave to Hunn Rd	Hard	50	55	55	55	2776	2609	111	55.52	75
Hunn Rd to Richland Rd	Hard	50	55	55	55	2697	2535	107.9	53.94	75
Richland Rd to Lincoln Rd	Hard	50	55	55	55	2550	2397	102	51	75
Lincoln Rd to Smith Rd	Hard	50	55	55	55	1919	1804	76.76	38.38	74
Smith Rd to Bogue Rd	Hard	50	55	55	55	1847	1736	73.88	36.94	74
Bogue Rd to Stewart Rd	Hard	50	55	55	55	1728	1624	69.12	34.56	73
Stewart Rd to Reed Rd	Hard	50	55	55	55	1674	1574	66.96	33.48	73
Reed Rd to Walnut Ave	Hard	50	55	55	55	1655	1556	66.2	33.1	73
Walnut Ave to Barry Rd	Hard	50	55	55	55	1647	1548	65.88	32.94	73
Walton Ave										
Bridge St to Franklin Ave	Hard	50	35	35	35	1886	1811	75.44	0	68
Franklin Ave to Richland Rd	Hard	50	35	35	35	1385	1330	55.4	0	66
Richland Rd to Lincoln Rd	Hard	50	35	35	35	1096	1052	43.84	0	65
Lincoln Rd to Bogue Rd	Hard	50	35	35	35	736	706.6	29.44	0	63
Rogue Rd to Kells Ranch Rd	Hard	50	35	35	35	326	313	13.04	0	60
Kells Ranch Rd to Stewart Rd	Hard	50	35	35	35	326	313	13.04	0	60
Stewart Rd to Reed Rd	Hard	50	35	35	35	191	183.4	7.64	0	58
Phillips Rd										
Lincoln Rd to Smith Rd	Hard	50	35	35	35	418	401.3	16.72	0	61
Smith Rd to Rogue Rd	Hard	50	35	35	35	193	185.3	7.72	0	58
Rogue Rd to Newkom Ranch Rd	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Newkom Ranch Rd to Stewart Rd	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Railroad Ave										
Lincoln Rd to Bogue Rd	Hard	50	45	45	45	433	415.7	17.32	0	64
Bogue Rd to Newkom Ranch Rd	Hard	50	45	45	45	394	378.2	15.76	0	64
Newkom Ranch Rd to Stewart Rd	Hard	50	45	45	45	394	378.2	15.76	0	64
Garden Highway										
Lincoln Rd to Bogue Rd	Hard	50	45	45	45	1503	1413	60.12	30.06	70
Bogue Rd to Shanghai Bend Rd	Hard	50	45	45	45	1089	1024	43.56	21.78	69
Shanghai Bend Rd to Stewart Rd	Hard	50	45	45	45	954	896.8	38.16	19.08	68
Gilsizer Ranch Wy										
Bogue to Kells Ranch Rd	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Kells Ranch Rd to Stewart Rd	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Chagaris Ranch Wy										
Halprin Ranch Dr to Shanghai Bend Rd	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Shanghai Bend Rd to Newkom Ranch Rd	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Bridge St										
Walton Ave to Hwy 99	Hard	50	45	45	45	1587	1492	63.48	31.74	71
Franklin Rd										
Walton Ave to Hwy 99	Hard	50	45	45	45	1775	1669	71	35.5	71
Richland Rd										
Walton Ave to Hwy 99	Hard	50	35	35	35	299	287	11.96	0	60
Lincoln Rd										
Walton Ave to Hwy 99	Hard	50	45	45	45	987	927.8	39.48	19.74	68
Hwy 99 to Phillips Rd	Hard	50	45	45	45	1204	1132	48.16	24.08	69
Phillips Rd to Railroad Ave	Hard	50	45	45	45	1139	1071	45.56	22.78	69
Railroad Ave to Garden Hwy	Hard	50	45	45	45	865	813.1	34.6	17.3	68
Bogue Rd										
Walton Ave to Kells Ranch Rd	Hard	50	45	45	45	1323	1244	52.92	26.46	70
Kells ranch Rd to Hwy 99	Hard	50	45	45	45	1323	1244	52.92	26.46	70
Hwy 99 to Phillips Rd	Hard	50	45	45	45	1335	1255	53.4	26.7	70
Phillips Rd to Railroad Ave	Hard	50	45	45	45	799	751.1	31.96	15.98	68
Railroad Ave to Garden Hwy	Hard	50	45	45	45	816	767	32.64	16.32	68
Newkom Ranch Rd										
Phillips Rd to Railroad Ave	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Railroad Ave to Chagaris Ranch Wy	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Kells Ranch Rd										
Walton Ave to Gilsizer Ranch Wy	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Stewart Road										
Walton Ave to Kells Ranch Rd	Hard	50	35	35	35	163	156.5	6.52	0	57
Kells Ranch Rd to Hwy 99	Hard	50	35	35	35	163	156.5	6.52	0	57
Hwy 99 to Phillips Rd	Hard	50	35	35	35	236	226.6	9.44	0	58
Phillips Rd to Muir Rd	Hard	50	35	35	35	240	230.4	9.6	0	59
Muir Rd to Railroad Ave	Hard	50	35	35	35	272	261.1	10.88	0	59
Railroad Ave to Garden Hwy	Hard	50	35	35	35	706	677.8	28.24	0	63

Model Notes:
 The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
 The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
 Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
 Noise propagation greater than 50 feet is based on the following assumptions:
 For hard ground, the propagation rate is 3 dB per doubling the distance.
 For soft ground, the propagation rate is 4.5 dB per doubling the distance.
 Vehicles are assumed to be on a long straight roadway with cruise speed.
 Roadway grade is less than 1.5%.

Project Name: BSMP
 Analysis Scenario: Existing Plus Phase 1/Phase 2
 Source of Traffic Volumes: F&P, 2017

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Noise Level (Ldn) dBA	
			Auto	MT	HT	Total	Auto	MT		HT
Highway 99										
SR20 to Sunsweet Blvd	Hard	50	55	55	55	2940	2764	117.6	58.8	76
Sunsweet Blvd to Bridge St	Hard	50	55	55	55	2965	2787	118.6	59.3	76
Bridge St to Franklin Ave	Hard	50	55	55	55	3190	2999	127.6	63.8	76
Franklin Ave to Hunn Rd	Hard	50	55	55	55	3255	3060	130.2	65.1	76
Hunn Rd to Richland Rd	Hard	50	55	55	55	3220	3027	128.8	64.4	76
Richland Rd to Lincoln Rd	Hard	50	55	55	55	3195	3003	127.8	63.9	76
Lincoln Rd to Smith Rd	Hard	50	55	55	55	2681	2520	107.2	53.62	75
Smith Rd to Bogue Rd	Hard	50	55	55	55	2640	2482	105.6	52.8	75
Bogue Rd to Stewart Rd	Hard	50	55	55	55	1855	1744	74.2	37.1	74
Stewart Rd to Reed Rd	Hard	50	55	55	55	1873	1761	74.92	37.46	74
Reed Rd to Walnut Ave	Hard	50	55	55	55	1850	1739	74	37	74
Walnut Ave to Barry Rd	Hard	50	55	55	55	1840	1730	73.6	36.8	74
Walton Ave										
Bridge St to Franklin Ave	Hard	50	35	35	35	1980	1901	79.2	0	68
Franklin Ave to Richland Rd	Hard	50	35	35	35	1470	1411	58.8	0	66
Richland Rd to Lincoln Rd	Hard	50	35	35	35	1210	1162	48.4	0	66
Lincoln Rd to Bogue Rd	Hard	50	35	35	35	880	844.8	35.2	0	64
Bogue Rd to Kells Ranch Rd	Hard	50	35	35	35	270	259.2	10.8	0	59
Kells Ranch Rd to Stewart Rd	Hard	50	35	35	35	270	259.2	10.8	0	59
Stewart Rd to Reed Rd	Hard	50	35	35	35	210	201.6	8.4	0	58
Phillips Rd										
Lincoln Rd to Smith Rd	Hard	50	35	35	35	360	345.6	14.4	0	60
Smith Rd to Bogue Rd	Hard	50	35	35	35	270	259.2	10.8	0	59
Bogue Rd to Newkom Ranch Rd	Hard	50	35	35	35	940	902.4	37.6	0	64
Newkom Ranch Rd to Stewart Rd	Hard	50	35	35	35	160	153.6	6.4	0	57
Railroad Ave										
Lincoln Rd to Bogue Rd	Hard	50	45	45	45	490	470.4	19.6	0	65
Bogue Rd to Newkom Ranch Rd	Hard	50	45	45	45	420	403.2	16.8	0	64
Newkom Ranch Rd to Stewart Rd	Hard	50	45	45	45	420	403.2	16.8	0	64
Garden Highway										
Lincoln Rd to Bogue Rd	Hard	50	45	45	45	1660	1560	66.4	33.2	71
Bogue Rd to Shanghai Bend Rd	Hard	50	45	45	45	1166	1096	46.64	23.32	69
Shanghai Bend Rd to Stewart Rd	Hard	50	45	45	45	1011	950.3	40.44	20.22	69
Gilsizer Ranch Wy										
Bogue to Kells Ranch Rd	Hard	50	35	35	35	190	182.4	7.6	0	58
Kells Ranch Rd to Stewart Rd	Hard	50	35	35	35	80	76.8	3.2	0	54
Chagaris Ranch Wy										
Halprin Ranch Dr to Shanghai Bend Rd	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Shanghai Bend Rd to Newkom Ranch Rd	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Bridge St										
Walton Ave to Hwy 99	Hard	50	45	45	45	1650	1551	66	33	71
Franklin Rd										
Walton Ave to Hwy 99	Hard	50	45	45	45	1860	1748	74.4	37.2	71
Richland Rd										
Walton Ave to Hwy 99	Hard	50	35	35	35	360	345.6	14.4	0	60
Lincoln Rd										
Walton Ave to Hwy 99	Hard	50	45	45	45	1066	1002	42.64	21.32	69
Hwy 99 to Phillips Rd	Hard	50	45	45	45	1290	1213	51.6	25.8	70
Phillips Rd to Railroad Ave	Hard	50	45	45	45	1230	1156	49.2	24.6	69
Railroad Ave to Garden Hwy	Hard	50	45	45	45	940	883.6	37.6	18.8	68
Bogue Rd										
Walton Ave to Kells Ranch Rd	Hard	50	45	45	45	1040	977.6	41.6	20.8	69
Kells ranch Rd to Hwy 99	Hard	50	45	45	45	1535	1443	61.4	30.7	70
Hwy 99 to Phillips Rd	Hard	50	45	45	45	1980	1861	79.2	39.6	72
Phillips Rd to Railroad Ave	Hard	50	45	45	45	1250	1175	50	25	70
Railroad Ave to Garden Hwy	Hard	50	45	45	45	1151	1082	46.04	23.02	69
Newkom Ranch Rd										
Phillips Rd to Railroad Ave	Hard	50	35	35	35	100	96	4	0	55
Railroad Ave to Chagaris Ranch Wy	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Kells Ranch Rd										
Walton Ave to Gilsizer Ranch Wy	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Stewart Road										
Walton Ave to Kells Ranch Rd	Hard	50	35	35	35	65	62.4	2.6	0	53
Kells Ranch Rd to Hwy 99	Hard	50	35	35	35	95	91.2	3.8	0	55
Hwy 99 to Phillips Rd	Hard	50	35	35	35	300	288	12	0	60
Phillips Rd to Muir Rd	Hard	50	35	35	35	285	273.6	11.4	0	59
Muir Rd to Railroad Ave	Hard	50	35	35	35	300	288	12	0	60
Railroad Ave to Garden Hwy	Hard	50	35	35	35	730	700.8	29.2	0	63

Model Notes:

The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
 The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
 Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.

Noise propagation greater than 50 feet is based on the following assumptions:

- For hard ground, the propagation rate is 3 dB per doubling the distance.
- For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.
 Roadway grade is less than 1.5%.

Project Name: BSMP
 Analysis Scenario: Existing Plus Full Master Plan
 Source of Traffic Volumes: F&P, 2017

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Noise Level (Ldn) dBA)	
			Auto	MT	HT	Total	Auto	MT		HT
Highway 99										
SR20 to Sunsweet Blvd	Hard	50	55	55	55	3040	2858	121.6	60.8	76
Sunsweet Blvd to Bridge St	Hard	50	55	55	55	3050	2867	122	61	76
Bridge St to Franklin Ave	Hard	50	55	55	55	3405	3201	136.2	68.1	76
Franklin Ave to Hunn Rd	Hard	50	55	55	55	3600	3384	144	72	77
Hunn Rd to Richland Rd	Hard	50	55	55	55	3570	3356	142.8	71.4	77
Richland Rd to Lincoln Rd	Hard	50	55	55	55	3575	3361	143	71.5	77
Lincoln Rd to Smith Rd	Hard	50	55	55	55	3082	2897	123.3	61.64	76
Smith Rd to Bogue Rd	Hard	50	55	55	55	3050	2867	122	61	76
Bogue Rd to Stewart Rd	Hard	50	55	55	55	2015	1894	80.6	40.3	74
Stewart Rd to Reed Rd	Hard	50	55	55	55	2038	1916	81.52	40.76	74
Reed Rd to Walnut Ave	Hard	50	55	55	55	2015	1894	80.6	40.3	74
Walnut Ave to Barry Rd	Hard	50	55	55	55	2000	1880	80	40	74
Walton Ave										
Bridge St to Franklin Ave	Hard	50	35	35	35	2040	1958	81.6	0	68
Franklin Ave to Richland Rd	Hard	50	35	35	35	1460	1402	58.4	0	66
Richland Rd to Lincoln Rd	Hard	50	35	35	35	1240	1190	49.6	0	66
Lincoln Rd to Bogue Rd	Hard	50	35	35	35	980	940.8	39.2	0	65
Bogue Rd to Kells Ranch Rd	Hard	50	35	35	35	450	432	18	0	61
Kells Ranch Rd to Stewart Rd	Hard	50	35	35	35	450	432	18	0	61
Stewart Rd to Reed Rd	Hard	50	35	35	35	215	206.4	8.6	0	58
Phillips Rd										
Lincoln Rd to Smith Rd	Hard	50	35	35	35	440	422.4	17.6	0	61
Smith Rd to Rogue Rd	Hard	50	35	35	35	240	230.4	9.6	0	59
Bogue Rd to Newkom Ranch Rd	Hard	50	35	35	35	970	931.2	38.8	0	65
Newkom Ranch Rd to Stewart Rd	Hard	50	35	35	35	180	172.8	7.2	0	57
Railroad Ave										
Lincoln Rd to Bogue Rd	Hard	50	45	45	45	660	633.6	26.4	0	66
Bogue Rd to Newkom Ranch Rd	Hard	50	45	45	45	710	681.6	28.4	0	66
Newkom Ranch Rd to Stewart Rd	Hard	50	45	45	45	710	681.6	28.4	0	66
Garden Highway										
Lincoln Rd to Bogue Rd	Hard	50	45	45	45	1885	1772	75.4	37.7	71
Bogue Rd to Shanghai Bend Rd	Hard	50	45	45	45	1381	1298	55.24	27.62	70
Shanghai Bend Rd to Stewart Rd	Hard	50	45	45	45	1251	1176	50.04	25.02	70
Gilsizer Ranch Wy										
Bogue to Kells Ranch Rd	Hard	50	35	35	35	380	364.8	15.2	0	61
Kells Ranch Rd to Stewart Rd	Hard	50	35	35	35	105	100.8	4.2	0	55
Chagaris Ranch Wy										
Halprin Ranch Dr to Shangha Bend Rd	Hard	50	35	35	35	210	201.6	8.4	0	58
Shangha Bend Rd to Newkom Ranch Rd	Hard	50	35	35	35	130	124.8	5.2	0	56
Bridge St										
Walton Ave to Hwy 99	Hard	50	45	45	45	1690	1589	67.6	33.8	71
Franklin Rd										
Walton Ave to Hwy 99	Hard	50	45	45	45	2030	1908	81.2	40.6	72
Richland Rd										
Walton Ave to Hwy 99	Hard	50	35	35	35	370	355.2	14.8	0	60
Lincoln Rd										
Walton Ave to Hwy 99	Hard	50	45	45	45	1069	1005	42.76	21.38	69
Hwy 99 to Phillips Rd	Hard	50	45	45	45	1320	1241	52.8	26.4	70
Phillips Rd to Railroad Ave	Hard	50	45	45	45	1260	1184	50.4	25.2	70
Railroad Ave to Garden Hwy	Hard	50	45	45	45	1010	949.4	40.4	20.2	69
Bogue Rd										
Walton Ave to Kells Ranch Rd	Hard	50	45	45	45	1140	1072	45.6	22.8	69
Kells ranch Rd to Hwy 99	Hard	50	45	45	45	1885	1772	75.4	37.7	71
Hwy 99 to Phillips Rd	Hard	50	45	45	45	2320	2181	92.8	46.4	72
Phillips Rd to Railroad Ave	Hard	50	45	45	45	1430	1344	57.2	28.6	70
Railroad Ave to Garden Hwy	Hard	50	45	45	45	1300	1222	52	26	70
Newkom Ranch Rd										
Phillips Rd to Railroad Ave	Hard	50	35	35	35	280	268.8	11.2	0	59
Railroad Ave to Chagaris Ranch Wy	Hard	50	35	35	35	130	124.8	5.2	0	56
Kells Ranch Rd										
Walton Ave to Gilsizer Ranch Wy	Hard	50	35	35	35	270	259.2	10.8	0	59
Stewart Road										
Walton Ave to Kells Ranch Rd	Hard	50	35	35	35	160	153.6	6.4	0	57
Kells Ranch Rd to Hwy 99	Hard	50	35	35	35	234	224.6	9.36	0	58
Hwy 99 to Phillips Rd	Hard	50	35	35	35	547	525.1	21.88	0	62
Phillips Rd to Muir Rd	Hard	50	35	35	35	410	393.6	16.4	0	61
Muir Rd to Railroad Ave	Hard	50	35	35	35	435	417.6	17.4	0	61
Railroad Ave to Garden Hwy	Hard	50	35	35	35	810	777.6	32.4	0	64

Model Notes:

The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
 The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
 Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
 Noise propagation greater than 50 feet is based on the following assumptions:
 For hard ground, the propagation rate is 3 dB per doubling the distance.
 For soft ground, the propagation rate is 4.5 dB per doubling the distance.
 Vehicles are assumed to be on a long straight roadway with cruise speed.
 Roadway grade is less than 1.5%.

Project Name: BSMP
 Analysis Scenario: Cumulative
 Source of Traffic Volumes: F&P, 2017

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Noise Level (Ldn) dBA	
			Auto	MT	HT	Total	Auto	MT		HT
Highway 99										
SR20 to Sunsweet Blvd	Hard	50	55	55	55	4060	3816	162.4	81.2	77
Sunsweet Blvd to Bridge St	Hard	50	55	55	55	3910	3675	156.4	78.2	77
Bridge St to Franklin Ave	Hard	50	55	55	55	3490	3281	139.6	69.8	76
Franklin Ave to Hunn Rd	Hard	50	55	55	55	3460	3252	138.4	69.2	76
Hunn Rd to Richland Rd	Hard	50	55	55	55	3350	3149	134	67	76
Richland Rd to Lincoln Rd	Hard	50	55	55	55	3150	2961	126	63	76
Lincoln Rd to Smith Rd	Hard	50	55	55	55	3185	2994	127.4	63.7	76
Smith Rd to Bogue Rd	Hard	50	55	55	55	3115	2928	124.6	62.3	76
Bogue Rd to Stewart Rd	Hard	50	55	55	55	3200	3008	128	64	76
Stewart Rd to Reed Rd	Hard	50	55	55	55	3160	2970	126.4	63.2	76
Reed Rd to Walnut Ave	Hard	50	55	55	55	3140	2952	125.6	62.8	76
Walnut Ave to Barry Rd	Hard	50	55	55	55	3130	2942	125.2	62.6	76
Walton Ave										
Bridge St to Franklin Ave	Hard	50	35	35	35	2140	2054	85.6	0	68
Franklin Ave to Richland Rd	Hard	50	35	35	35	1750	1680	70	0	67
Richland Rd to Lincoln Rd	Hard	50	35	35	35	1755	1685	70.2	0	67
Lincoln Rd to Bogue Rd	Hard	50	35	35	35	785	753.6	31.4	0	64
Rogue Rd to Kells Ranch Rd	Hard	50	35	35	35	270	259.2	10.8	0	59
Kells Ranch Rd to Stewart Rd	Hard	50	35	35	35	270	259.2	10.8	0	59
Stewart Rd to Reed Rd	Hard	50	35	35	35	230	220.8	9.2	0	58
Phillips Rd										
Lincoln Rd to Smith Rd	Hard	50	35	35	35	470	451.2	18.8	0	61
Smith Rd to Rogue Rd	Hard	50	35	35	35	210	201.6	8.4	0	58
Rogue Rd to Newkom Ranch Rd	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Newkom Ranch Rd to Stewart Rd	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Railroad Ave										
Lincoln Rd to Bogue Rd	Hard	50	45	45	45	540	518.4	21.6	0	65
Bogue Rd to Newkom Ranch Rd	Hard	50	45	45	45	440	422.4	17.6	0	64
Newkom Ranch Rd to Stewart Rd	Hard	50	45	45	45	440	422.4	17.6	0	64
Garden Highway										
Lincoln Rd to Bogue Rd	Hard	50	45	45	45	2315	2176	92.6	46.3	72
Bogue Rd to Shanghai Bend Rd	Hard	50	45	45	45	1235	1161	49.4	24.7	69
Shanghai Bend Rd to Stewart Rd	Hard	50	45	45	45	1085	1020	43.4	21.7	69
Gilsizer Ranch Wy										
Bogue to Kells Ranch Rd	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Kells Ranch Rd to Stewart Rd	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Chagaris Ranch Wy										
Halprin Ranch Dr to Shanghai Bend Rd	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Shanghai Bend Rd to Newkom Ranch Rd	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Bridge St										
Walton Ave to Hwy 99	Hard	50	45	45	45	2740	2576	109.6	54.8	73
Franklin Rd										
Walton Ave to Hwy 99	Hard	50	45	45	45	3065	2881	122.6	61.3	73
Richland Rd										
Walton Ave to Hwy 99	Hard	50	35	35	35	405	388.8	16.2	0	61
Lincoln Rd										
Walton Ave to Hwy 99	Hard	50	45	45	45	2415	2270	96.6	48.3	72
Hwy 99 to Phillips Rd	Hard	50	45	45	45	2420	2275	96.8	48.4	72
Phillips Rd to Railroad Ave	Hard	50	45	45	45	1980	1861	79.2	39.6	72
Railroad Ave to Garden Hwy	Hard	50	45	45	45	1880	1767	75.2	37.6	71
Bogue Rd										
Walton Ave to Kells Ranch Rd	Hard	50	45	45	45	1140	1072	45.6	22.8	69
Kells ranch Rd to Hwy 99	Hard	50	45	45	45	1140	1072	45.6	22.8	69
Hwy 99 to Phillips Rd	Hard	50	45	45	45	1140	1072	45.6	22.8	69
Phillips Rd to Railroad Ave	Hard	50	45	45	45	990	930.6	39.6	19.8	69
Railroad Ave to Garden Hwy	Hard	50	45	45	45	1125	1058	45	22.5	69
Newkom Ranch Rd										
Phillips Rd to Railroad Ave	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Railroad Ave to Chagaris Ranch Wy	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Kells Ranch Rd										
Walton Ave to Gilsizer Ranch Wy	Hard	50	35	35	35	#N/A	#N/A	#N/A	#N/A	#N/A
Stewart Road										
Walton Ave to Kells Ranch Rd	Hard	50	35	35	35	70	67.2	2.8	0	53
Kells Ranch Rd to Hwy 99	Hard	50	35	35	35	70	67.2	2.8	0	53
Hwy 99 to Phillips Rd	Hard	50	35	35	35	285	273.6	11.4	0	59
Phillips Rd to Muir Rd	Hard	50	35	35	35	285	273.6	11.4	0	59
Muir Rd to Railroad Ave	Hard	50	35	35	35	315	302.4	12.6	0	60
Railroad Ave to Garden Hwy	Hard	50	35	35	35	730	700.8	29.2	0	63

Model Notes:

The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
 The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
 Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.

Noise propagation greater than 50 feet is based on the following assumptions:

- For hard ground, the propagation rate is 3 dB per doubling the distance.
- For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.

Roadway grade is less than 1.5%.

Project Name: BSMP
 Analysis Scenario: Cumulative Plus Full Master Plan
 Source of Traffic Volumes: F&P, 2017

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Noise Level (Ldn) dBA	
			Auto	MT	HT	Total	Auto	MT		HT
Highway 99										
SR20 to Sunsweet Blvd	Hard	50	55	55	55	4155	3906	166.2	83.1	77
Sunsweet Blvd to Bridge St	Hard	50	55	55	55	3820	3591	152.8	76.4	77
Bridge St to Franklin Ave	Hard	50	55	55	55	3585	3370	143.4	71.7	77
Franklin Ave to Hunn Rd	Hard	50	55	55	55	3675	3455	147	73.5	77
Hunn Rd to Richland Rd	Hard	50	55	55	55	3595	3379	143.8	71.9	77
Richland Rd to Lincoln Rd	Hard	50	55	55	55	3575	3361	143	71.5	77
Lincoln Rd to Smith Rd	Hard	50	55	55	55	3610	3393	144.4	72.2	77
Smith Rd to Bogue Rd	Hard	50	55	55	55	3520	3309	140.8	70.4	77
Bogue Rd to Stewart Rd	Hard	50	55	55	55	3225	3032	129	64.5	76
Stewart Rd to Reed Rd	Hard	50	55	55	55	3260	3064	130.4	65.2	76
Reed Rd to Walnut Ave	Hard	50	55	55	55	3240	3046	129.6	64.8	76
Walnut Ave to Barry Rd	Hard	50	55	55	55	3230	3036	129.2	64.6	76
Walton Ave										
Bridge St to Franklin Ave	Hard	50	35	35	35	2130	2045	85.2	0	68
Franklin Ave to Richland Rd	Hard	50	35	35	35	1970	1891	78.8	0	68
Richland Rd to Lincoln Rd	Hard	50	35	35	35	1920	1843	76.8	0	68
Lincoln Rd to Bogue Rd	Hard	50	35	35	35	1075	1032	43	0	65
Bogue Rd to Kells Ranch Rd	Hard	50	35	35	35	510	489.6	20.4	0	62
Kells Ranch Rd to Stewart Rd	Hard	50	35	35	35	510	489.6	20.4	0	62
Stewart Rd to Reed Rd	Hard	50	35	35	35	230	220.8	9.2	0	58
Phillips Rd										
Lincoln Rd to Smith Rd	Hard	50	35	35	35	460	441.6	18.4	0	61
Smith Rd to Rogue Rd	Hard	50	35	35	35	240	230.4	9.6	0	59
Bogue Rd to Newkom Ranch Rd	Hard	50	35	35	35	880	844.8	35.2	0	64
Newkom Ranch Rd to Stewart Rd	Hard	50	35	35	35	160	153.6	6.4	0	57
Railroad Ave										
Lincoln Rd to Bogue Rd	Hard	50	45	45	45	680	652.8	27.2	0	66
Bogue Rd to Newkom Ranch Rd	Hard	50	45	45	45	730	700.8	29.2	0	66
Newkom Ranch Rd to Stewart Rd	Hard	50	45	45	45	730	700.8	29.2	0	66
Garden Highway										
Lincoln Rd to Bogue Rd	Hard	50	45	45	45	2635	2477	105.4	52.7	73
Bogue Rd to Shanghai Bend Rd	Hard	50	45	45	45	1455	1368	58.2	29.1	70
Shanghai Bend Rd to Stewart Rd	Hard	50	45	45	45	1325	1246	53	26.5	70
Gilsizer Ranch Wy										
Bogue to Kells Ranch Rd	Hard	50	35	35	35	350	336	14	0	60
Kells Ranch Rd to Stewart Rd	Hard	50	35	35	35	100	96	4	0	55
Chagaris Ranch Wy										
Halprin Ranch Dr to Shangha Bend Rd	Hard	50	35	35	35	220	211.2	8.8	0	58
Shangha Bend Rd to Newkom Ranch Rd	Hard	50	35	35	35	190	182.4	7.6	0	58
Bridge St										
Walton Ave to Hwy 99	Hard	50	45	45	45	2740	2576	109.6	54.8	73
Franklin Rd										
Walton Ave to Hwy 99	Hard	50	45	45	45	3035	2853	121.4	60.7	73
Richland Rd										
Walton Ave to Hwy 99	Hard	50	35	35	35	380	364.8	15.2	0	61
Lincoln Rd										
Walton Ave to Hwy 99	Hard	50	45	45	45	2175	2045	87	43.5	72
Hwy 99 to Phillips Rd	Hard	50	45	45	45	2410	2265	96.4	48.2	72
Phillips Rd to Railroad Ave	Hard	50	45	45	45	1990	1871	79.6	39.8	72
Railroad Ave to Garden Hwy	Hard	50	45	45	45	1800	1692	72	36	71
Bogue Rd										
Walton Ave to Kells Ranch Rd	Hard	50	45	45	45	1760	1654	70.4	35.2	71
Kells ranch Rd to Hwy 99	Hard	50	45	45	45	2410	2265	96.4	48.2	72
Hwy 99 to Phillips Rd	Hard	50	45	45	45	2425	2280	97	48.5	72
Phillips Rd to Railroad Ave	Hard	50	45	45	45	1510	1419	60.4	30.2	70
Railroad Ave to Garden Hwy	Hard	50	45	45	45	1565	1471	62.6	31.3	70
Newkom Ranch Rd										
Phillips Rd to Railroad Ave	Hard	50	35	35	35	230	220.8	9.2	0	58
Railroad Ave to Chagaris Ranch Wy	Hard	50	35	35	35	50	48	2	0	52
Kells Ranch Rd										
Walton Ave to Gilsizer Ranch Wy	Hard	50	35	35	35	240	230.4	9.6	0	59
Stewart Road										
Walton Ave to Kells Ranch Rd	Hard	50	35	35	35	140	134.4	5.6	0	56
Kells Ranch Rd to Hwy 99	Hard	50	35	35	35	190	182.4	7.6	0	58
Hwy 99 to Phillips Rd	Hard	50	35	35	35	535	513.6	21.4	0	62
Phillips Rd to Muir Rd	Hard	50	35	35	35	430	412.8	17.2	0	61
Muir Rd to Railroad Ave	Hard	50	35	35	35	460	441.6	18.4	0	61
Railroad Ave to Garden Hwy	Hard	50	35	35	35	830	796.8	33.2	0	64

Model Notes:
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