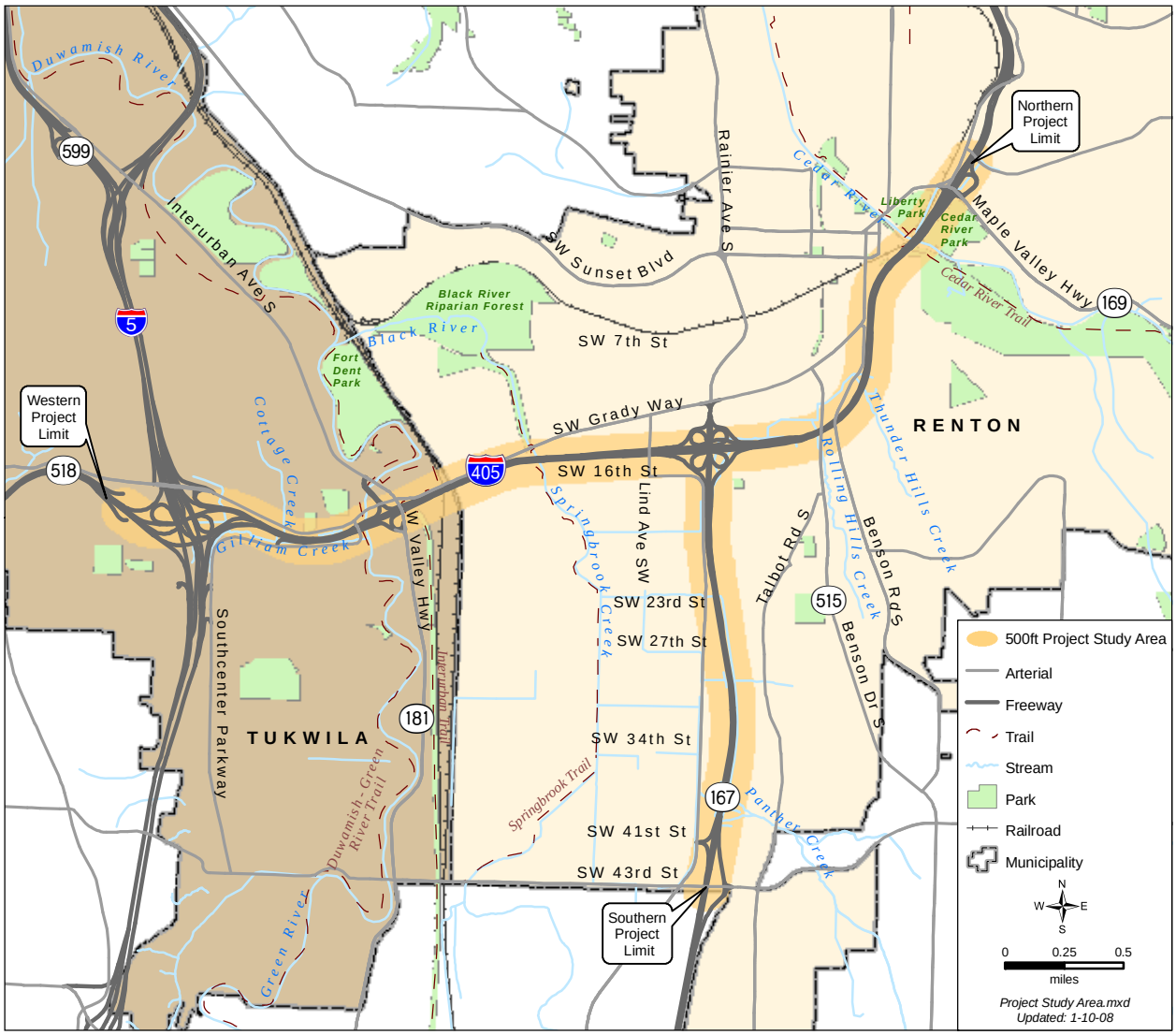
SECTION 4 BASELINE CONDITIONS

What is the study area for the noise analysis?

The Tukwila to Renton Project extends from the vicinity of the I-405/I-5 interchange north to the I-405/SR 169 interchange; south from the I-405/SR 167 interchange to the SW 43rd Street; and north and south of I-405 along SR 181, Lind Avenue SW, Talbot Road S (SR 515), Bronson Way, SR 169/Maple Valley Road, and east-west improvements along Tukwila Parkway and Southcenter Boulevard. The study area for the noise analysis extends approximately 500 feet from the project limits (see Exhibit 4-1).

Exhibit 4-1: Noise Study Area



For a detailed description of land use in the study area please refer to the Land Use Discipline Report.

The Renton Hill neighborhood primarily consists of single-family residences with limited multi-family units, and is located well above the elevation of I-405. The hillside and I-405 retaining walls shield a portion of the I-405 noise.

Most residents in the Talbot Hill neighborhood are located above the elevation of the I-405/SR 167 interchange. However, some residents are located at or below the I-405 elevation. Single-family residences are the primary land use throughout this neighborhood. The closest residences are located approximately 100 feet from I-405, between SR 167 and Talbot Road.

Several multi-family residential buildings are also located above I-405 north and east of the I-405/I-5 interchange. Residences west of Main Avenue S are below the elevation of I-405.

Park and recreation land located within the study area include Liberty Park, Veteran's Park, Cedar River Park and Trail, Freeway Park, Ikawa Park, Tukwila Park, Springbrook Trail, Interurban Trail, and Duwamish-Green River Trail. Additional information on these resources can be found in the *Social, Public Services, and Utilities Technical Memorandum*[7] and *Section 4(f) Evaluation Discipline Report*[8] for this project.

One noise barrier is located in the study area as a result of the Renton Nickel Improvement Project. This noise barrier is located along the southern I-405 right-of-way, placed north of S 14th Street from Talbot Road S to the S 14th Street/S 15th Street intersection. Retaining walls, limited jersey barriers, and topography shield some other residential areas from I-405 traffic noise

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[7] *I-405, Tukwila to Renton Project Social, Public Services, and Utilities Technical Memorandum, WSDOT, 2007.*

[8] *I-405, Tukwila to Renton Project Section 4(f) Evaluation Discipline Report, WSDOT, 2007.*

Where are the modeled noise receptor locations?

Baseline noise levels were modeled at 64 locations that represent 339 residences, 2 hotels, 8 parks, 3 trails, 1 aquatic center, and 1 library. Traffic noise is the dominant noise source in the study area, with periodic air and rail noise.

The modeled noise levels of all 64 sensitive receptors are shown on even-numbered Exhibits 4-2 through 4-14 on the following pages. Odd-numbered Exhibits 4-3 through 4-15 show the locations of all 64 modeled sensitive receptors. Discussions and descriptions of noise measurements locations and procedures taken in the study area are included in Appendix A.

What are baseline conditions?

Baseline conditions describe what will exist in the future after a project that has already been approved and funded is completed. The baseline condition is a snapshot of expected conditions. It provides an important point of comparison for understanding the effects of the proposed Build Alternative.

For the Tukwila to Renton Project, the baseline condition assumes that the Renton Nickel Improvement Project has been completed.

Exhibit 4-2: Modeled Noise Levels at Receptors, as shown on Sheet 1 of 7

Noise Receptor Number	Activity Description	Total Residences Represented	Modeled Baseline Noise Level (dBA)	Future Modeled Noise Levels (dBA) without Additional Abatement	
				2030 No Build	2030 Tukwila to Renton Project
1	Ikawa Park	1	70	70	71
2	Tukwila Park	3	66	66	67
3	Duwamish-Green River Trail	1	72	72	73
4	Family Fun Center	10	71	71	69
5	Interurban Trail	3	74	74	68

Values in **BOLD** approach, meet, or exceed the NAC

Exhibit 4-3: Modeled Noise Receptor Locations, Sheet 1 of 7

Exhibit 4-4: Modeled Noise Levels at Receptors, as shown on Sheet 2 of 7

Noise Receptor Number	Activity Description	Total Residences Represented	Modeled Baseline Noise Level (dBA)	Future Modeled Noise Levels (dBA) without Additional Abatement	
				2030 No Build	2030 Tukwila to Renton Project
6	Springbrook Trail	1*	74	74	70

Values in BOLD approach, meet, or exceed the NAC
* Exhibit B-3 in Appendix B describes the residential equivalency of users at Receptor 6, Springbrook Trail

Exhibit 4-5: Modeled Noise Receptor Locations, Sheet 2 of 7

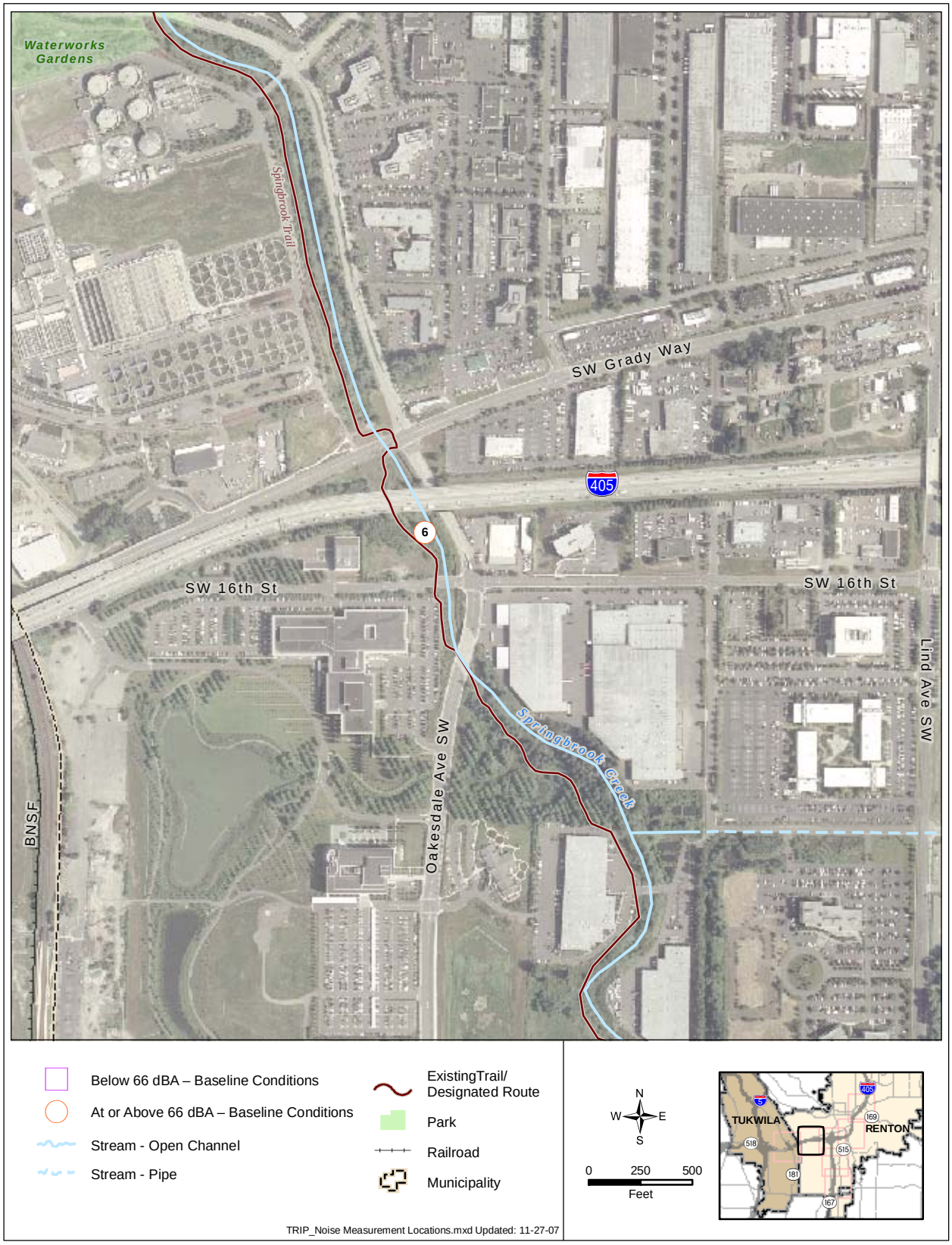

Exhibit 4-6: Modeled Noise Levels at Receptors, as shown on Sheet 3 of 7

Noise Receptor Number	Activity Description	Total Residences Represented	Modeled Baseline Noise Level (dBA)	Future Modeled Noise Levels (dBA) without Additional Abatement	
				2030 No Build	2030 Tukwila to Renton Project
7	Residence at SW 13th St.	3	68	68	67
8	Residence at 1503 Lake Ave. S	5	67	67	69
9	Residence at 1514 Lake Ave. S	3	64	64	67
10	Residence at Lake Ave. S	5	67	67	68
11	Residence at Lake Ave. S	4	63	63	65
12	Residence at Lake Ave. S	6	66	66	67
13	Residence at Lake Ave. S	6	64	64	65
14	Residence at Davis Ave. S	8	65	65	67
15	Residence at Davis Ave. S	6	59	59	61
22	Residence at 301 S 14th St.	8	62	62	N/A
23	Residence at S 15th St.	5	63	63	72
24	Residence at Shattuck Ave. S	6	63	63	70
25	Residence at Whitworth Ave. S	5	62	62	N/A
26	Residence at S 14th St.	3	63	63	N/A
27	Residence at Whitworth Ave. S	6	63	63	68
28	Residence at Morris Ave. S	8	64	64	69
29	Residence at Smithers Ave. S	7	65	65	70
30	Residence at 1306 Smithers Ave. S	2	63	63	N/A

Values in BOLD approach, meet, or exceed the NAC
N/A indicates that property is acquired by WSDOT for right-of-way

Exhibit 4-7: Modeled Noise Receptor Locations, Sheet 3 of 7

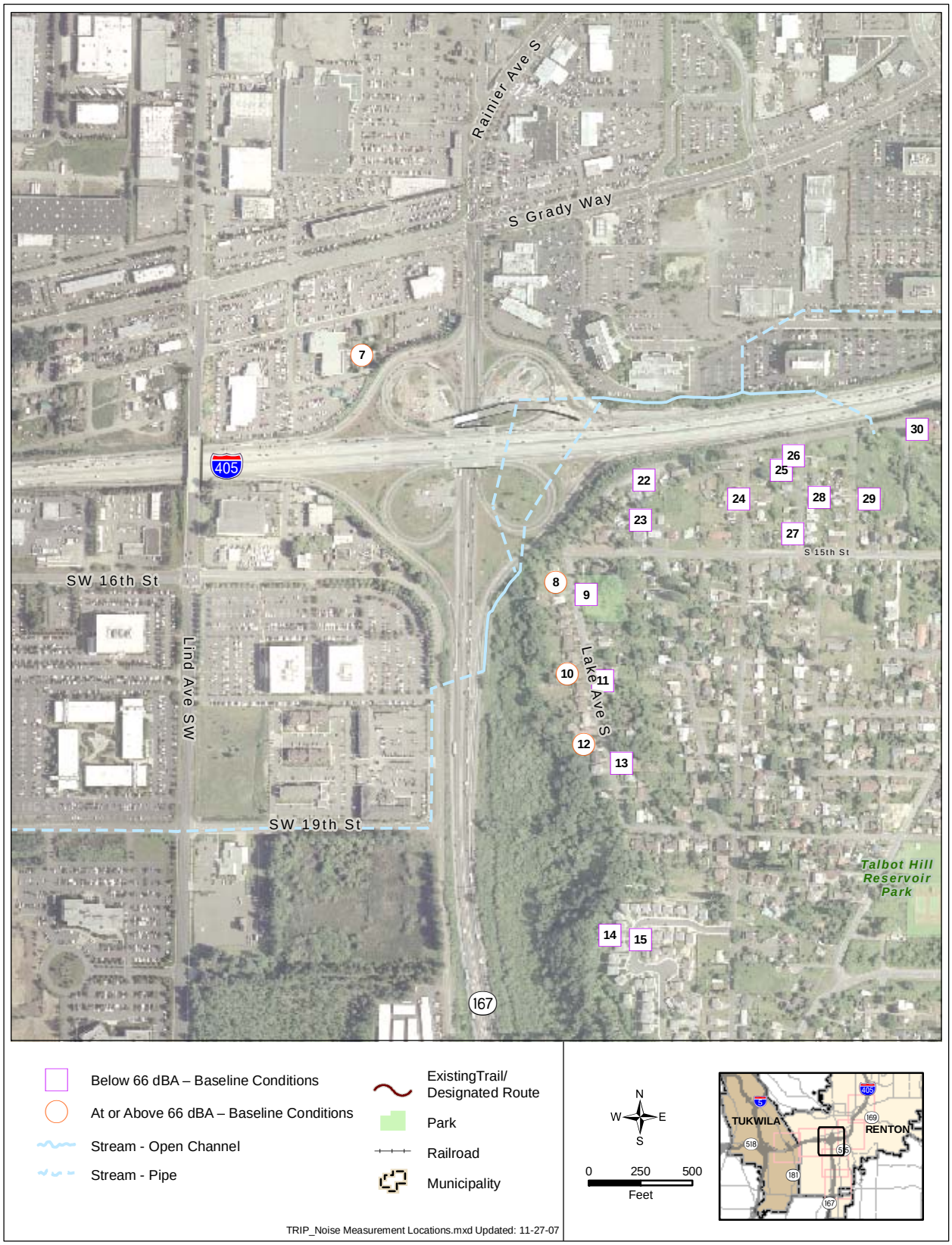

Exhibit 4-8: Modeled Noise Levels at Receptors, as shown on Sheet 4 of 7

Noise Receptor Number	Activity Description	Total Residences Represented	Modeled Baseline Noise Level (dBA)	Future Modeled Noise Levels (dBA) without Additional Abatement	
				2030 No Build	2030 Tukwila to Renton Project
13	Residence at Lake Ave. S	6	64	64	65
14	Residence at Davis Ave. S	8	65	65	67
15	Residence at Davis Ave. S	6	59	59	61
16	Residence at Talbot Crest Dr. S	14	63	63	65
17	Residence at Talbot Crest Dr. S	14	56	56	58
18	Residence at Talbot Rd. S	5	63	63	64
19	Residence at Talbot Rd. S	3	65	65	66

Values in **BOLD** approach, meet, or exceed the NAC

Exhibit 4-9: Modeled Noise Receptor Locations, Sheet 4 of 7

Exhibit 4-10: Modeled Noise Levels at Receptors, as shown on Sheet 5 of 7

Noise Receptor Number	Activity Description	Total Residences Represented	Modeled Baseline Noise Level (dBA)	Future Modeled Noise Levels (dBA) without Additional Abatement	
				2030 No Build	2030 Tukwila to Renton Project
18	Residence at Talbot Rd. S	5	63	63	64
19	Residence at Talbot Rd. S	3	65	65	66
20	Residence at 3521 Shattuck Ave. S	10	65	65	66
21	Residence at 402 S 36th St.	9	60	60	61

Values in **BOLD** approach, meet, or exceed the NAC

Exhibit 4-11: Modeled Noise Receptor Locations, Sheet 5 of 7

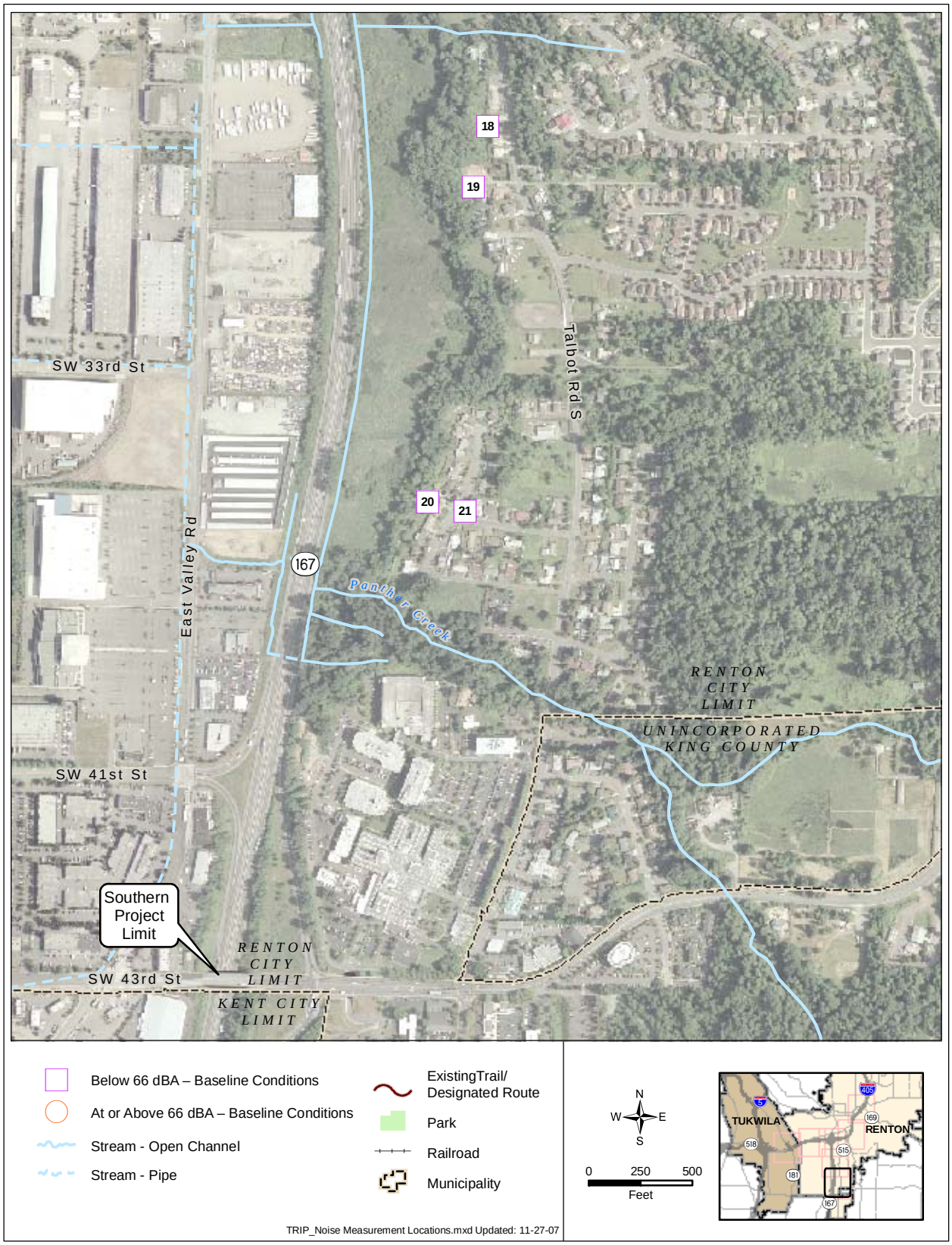

Exhibit 4-12: Modeled Noise Levels at Receptors, as shown on Sheet 6 of 7

Noise Receptor Number	Activity Description	Total Residences Represented	Modeled Baseline Noise Level (dBA)	Future Modeled Noise Levels (dBA) without Additional Abatement	
				2030 No Build	2030 Tukwila to Renton Project
24	Residence at Shattuck Ave. S	6	63	63	74
25	Residence at Whitworth Ave. S	5	62	62	N/A
26	Residence at S 14th St.	3	63	63	N/A
27	Residence at Whitworth Ave. S	6	63	63	70
28	Residence at Morris Ave. S	8	64	64	73
29	Residence at Smithers Ave. S	7	65	65	73
30	Residence at 1306 Smithers Ave. S	2	63	63	N/A
31	Residence at Benson Rd. S	5	65	65	N/A
32A	Residence at 1114 Benson Rd. S	2	67	67	71
32B	Residence at 1114 Benson Rd. S	3	65	65	69
33A	Berkshire Apartments Bldg. L (facing I-405)	4	62	62	66
33A(2)	Berkshire Apartments Bldg. L (facing I-405) – second story	4	67	67	71
33B	Berkshire Apartments Bldg. L (opposite I-405)	4	53	54	54
33B(2)	Berkshire Apartments Bldg. L (opposite I-405) - second story	4	53	54	54
33C	Berkshire Apartments Bldg K (opposite I-405)	3	54	54	55
33C(2)	Berkshire Apartments Bldg K – (opposite I-405) – second story	3	55	55	56
33D	Berkshire Apartments Bldg K (facing I-405)	3	63	63	65
33D(2)	Berkshire Apartments Bldg K – (facing I-405) - second story	3	67	67	69
33E	Berkshire Apartments Bldg N	3	54	54	55

Exhibit 4-12: Modeled Noise Levels at Receptors, as shown on Sheet 6 of 7 (continued)

Noise Receptor Number	Activity Description	Total Residences Represented	Modeled Baseline Noise Level (dBA)	Future Modeled Noise Levels (dBA) without Additional Abatement	
				2030 No Build	2030 Tukwila to Renton Project
33E(2)	Berkshire Apartments Bldg N – second story	3	55	55	57
33F	Berkshire Apartments Bldg J	3	61	62	64
33F(2)	Berkshire Apartments Bldg J – second story	3	66	66	67
33G	Berkshire Apartments Bldg I	4	63	63	66
33G(2)	Berkshire Apartments Bldg I – second story	4	66	66	68
34	Berkshire Apartments Bldg. Q	4	65	65	N/A
35A	Residence at Renton Ave. S	3	63	63	65
35B	Residence at Renton Ave. S	3	64	64	66
35C	Residence at Renton Ave. S	3	67	67	71
35D	Residence at Renton Ave. S	3	66	66	70
36	Residence at Cedar Ave. S	7	67	67	71
37A	Residence at 518 Cedar Ave. S	4	59	59	62
37B	Residence at 518 Cedar Ave. S	4	61	61	64
38A	Residence at 520 Mill Ave. S	3	74	74	75
38B	Residence at 520 Mill Ave. S	2	72	72	73
38C	Residence at 520 Mill Ave. S	2	74	74	75
38D	Residence at 520 Mill Ave. S	3	73	73	74
38E	Residence at 520 Mill Ave. S	3	75	75	76
38F	Residence at 520 Mill Ave. S	3	76	76	77

Exhibit 4-12: Modeled Noise Levels at Receptors, as shown on Sheet 6 of 7 (continued)

Noise Receptor Number	Activity Description	Total Residences Represented	Modeled Baseline Noise Level (dBA)	Future Modeled Noise Levels (dBA) without Additional Abatement	
				2030 No Build	2030 Tukwila to Renton Project
39A	Residence at Cedar Ave. S	2	65	65	68
39B	Residence at Cedar Ave. S	3	64	64	67
39C	Residence at Cedar Ave. S	5	62	62	65
40	Residence at 509 S Main St.	3	73	73	74
41	Residence at 522 Well Ave. S	7	64	64	65
42A	Residence at Mill Ave. S	1	70	70	74
42B	Residence at Mill Ave. S	4	68	68	72
42C	Second-Story Residence at Mill Ave. S	2	71	71	75
42D	Third-Story Residence at Mill Ave. S	2	73	73	77
42E	Residence at Mill Ave. S	2	68	68	72
42F	Second-Story Residence at Mill Ave. S	2	71	71	75
42G	Third-Story Residence at Mill Ave. S	2	73	73	77
42H	Fourth-Story Residence at Mill Ave. S	2	74	74	78
43A	Residence at 412 Mill Ave. S	3	70	70	71
43B	Second-Story Residence at 412 Mill Ave. S	2	75	75	76
43C	Third-Story Residence at 412 Mill Ave. S	2	76	76	77
43D	Residence at 412 Mill Ave. S	2	70	70	71
44A	Residence at Cedar Ave. S	3	62	62	68
44B	Residence at Cedar Ave. S	2	63	63	69
44C	Residence at Cedar Ave. S	2	61	61	67
45A	Residence at Cedar Ave S	3	59	59	65
45B	Residence at Cedar Ave. S	4	55	55	61

Values in BOLD approach, meet, or exceed the NAC
N/A indicates that property is acquired by WSDOT for right-of-way

Exhibit 4-13: Modeled Noise Receptor Locations, Sheet 6 of 7

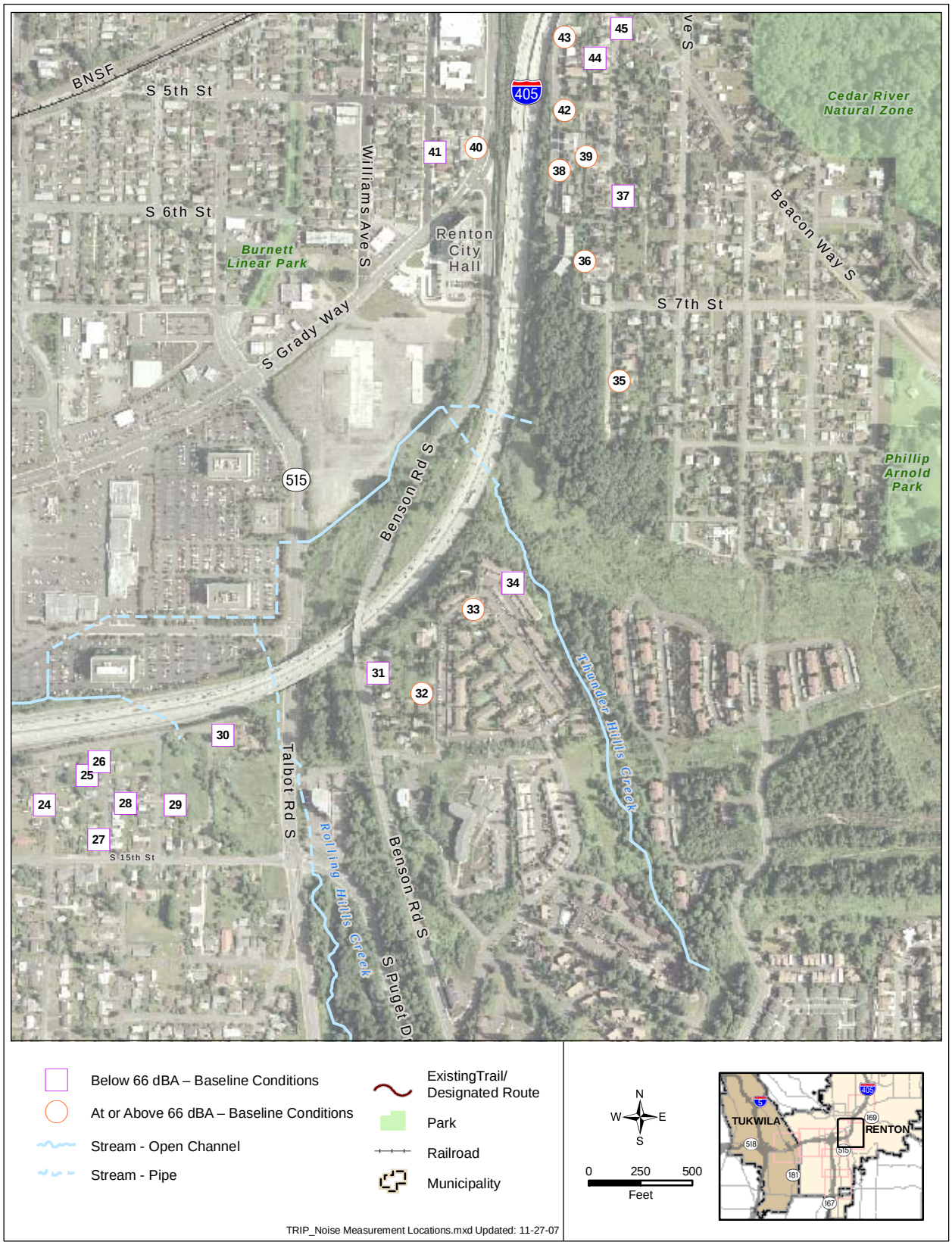

Exhibit 4-14: Modeled Noise Levels at Receptors, as shown on Sheet 7 of 7

Noise Receptor Number	Activity Description	Total Residences Represented	Modeled Baseline Noise Level (dBA)	Future Modeled Noise Levels (dBA) without Additional Abatement	
				2030 No Build	2030 Tukwila to Renton Project
42A	Residence at Mill Ave. S	1	70	70	74
42B	Residence at Mill Ave. S	4	68	68	72
42C	Second-story Residence at Mill Ave. S	2	71	71	75
42D	Third-story Residence at Mill Ave. S	2	73	73	77
42E	Residence at Mill Ave. S	2	68	68	72
42F	Second-story Residence at Mill Ave. S	2	71	71	75
42G	Third-Story Residence at Mill Ave. S	2	73	73	77
42H	Fourth-story Residence at Mill Ave. S	2	74	74	78
43A	Residence at 412 Mill Ave. S	3	70	70	71
43B	Second-story Residence at 412 Mill Ave. S	2	75	75	76
43C	Third-story Residence at 412 Mill Ave. S	2	76	76	77
43D	Residence at 412 Mill Ave. S	2	70	70	71
44A	Residence at Cedar Ave. S	3	62	62	68
44B	Residence at Cedar Ave. S	2	63	63	69
44C	Residence at Cedar Ave. S	2	61	61	67
45A	Residence at Cedar Ave. S	3	59	59	65
45B	Residence at Cedar Ave. S	4	55	55	61
46A	Residence at Beacon Way S	3	64	64	67
46B	Residence at Beacon Way S	1	66	66	69
46C	Residence at Beacon Way S	2	65	65	68
47A	Residence at Beacon Way S	3	58	58	62
47B	Residence at Beacon Way S	4	57	57	61
48	Veteran's Park	1	69	69	70
49	Freeway Park	1	76	76	N/A
50A	Residence at Mill Ave. S	2	67	67	71
50B	Residence at Mill Ave. S	3	63	63	67
51A	Residence at Renton Ave. S	2	66	66	69
51B	Residence at Renton Ave. S	2	63	63	66
52	Cedar River Park – trail, picnic, recreational open space, beach area	5	63	63	67
53	Liberty Park – playground	1	68	68	69
54	Renton Public Library	Library	65	65	67
55*	Liberty Park – furthest baseball field in outfield and tennis court	3	64	64	65
56*	Liberty Park – baseball field, stands, and basketball court	3	69	69	69
57*	Cedar River Park – soccer field and baseball field	3	71	71	73
58	Aquatic Center	Aquatic Center	63	63	63
59	Single-Family Residence	1	64	64	65
60	Silver Cloud Inn	Hotel	71	71	71
61	Hotel	Hotel	74	74	74

Values in BOLD approach, meet, or exceed the NAC
* Measurements were taken as part of the I-405 Renton to Bellevue Project, but were analyzed as part of the Tukwila to Renton Project
N/A indicates that property is acquired by WSDOT for right-of-way

Exhibit 4-15: Modeled Noise Receptor Locations, Sheet 7 of 7

What are the modeled noise levels?

Noise levels for baseline conditions in the study area were modeled using TNM, and levels ranged between 56 and 76 dBA. These levels range from typical suburban outdoor sound levels (from 50 to 60 dBA[9]) to very noisy levels (above 70 dBA), which is typical of locations within 100 feet of a busy freeway. Noise levels at 28 sites, representing an equivalent of 98 residences, 2 hotels, 6 parks and 3 trails, were modeled to approach, meet, or exceed the FHWA criteria of 67 dBA for baseline conditions.

These modeling results represent the loudest traffic hour of the day, when volumes are high but not congested, so traffic speeds remain high.

[9] *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.* Report Number 550/9-74-004. EPA, 1974.