Exhibit 1E-1. Existing Peak-Hour Traffic Noise Levels for Washington Park Arboretum

Receiver Number	NAC[a]	Existing Noise Level[b,c]	Residences Exceeding NAC[d]
AB-1	66	**66**	--
AB-2	66	**67**	--
AB-3	66	**68**	--
AB-4	66	**80**	--
AB-5	66	**76**	--
AB-6	66	**72**	--
AB-7	66	**70**	--
AB-8	66	**69**	--
AB-9	66	**68**	--
AB-10	66	**67**	--
AB-11	66	**67**	--
AB-12	66	**66**	--
AB-13	66	65	--
AB-14	66	63	--
AB-15	66	**71**	--
AB-16	66	65	--
AB-17	66	60	--
AB-18	66	56	--
AB-19	66	64	--
AB-20	66	63	--

-- = Receiver location in new highway right-of-way; therefore, no noise levels were calculated.

[a] NAC is the WSDOT Noise Abatement Criteria level.

[b] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[c] Bold numbers indicate noise levels exceeding the NAC.

[d] There are no residences in the Aboretum.

Exhibit 1E-2. No Build Alternative Peak-Hour Traffic Noise Levels for Washington Park Arboretum

Receiver Number	NAC[a]	Existing Noise Level[b,c]	2030 No Build Noise Level	Change in Noise Level	No Build Alternative Residences Exceeding NAC[d]
AB-1	66	**66**	**67**	1	0
AB-2	66	**67**	**68**	1	0
AB-3	66	**68**	**69**	1	0
AB-4	66	**80**	**80**	0	0
AB-5	66	**76**	**77**	1	0
AB-6	66	**72**	**73**	1	0
AB-7	66	**70**	**71**	1	0
AB-8	66	**69**	**70**	1	0
AB-9	66	**68**	**69**	1	0
AB-10	66	**67**	**68**	1	0
AB-11	66	**67**	**67**	0	0
AB-12	66	**66**	**67**	1	0
AB-13	66	65	**66**	1	0
AB-14	66	63	63	0	0
AB-15	66	**71**	**72**	1	0
AB-16	66	65	**66**	1	0
AB-17	66	60	60	0	0
AB-18	66	56	57	1	0
AB-19	66	64	65	1	0
AB-20	66	63	64	1	0

[a] NAC is the WSDOT Noise Abatement Criteria level.

[b] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[c] Bold numbers indicate noise levels exceeding the NAC.

[d] Estimated number of residences with noise levels exceeding the NAC.

Exhibit 1E-3. Future 4-Lane Alternative Peak-Hour Traffic Noise Levels for Washington Park Arboretum

Receiver Number	Residential Structures	NAC	Existing[a,b]	4-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
AB-1	0	66	**66**	**69**	61	-8
AB-2	0	66	**67**	**70**	60	-10
AB-3	0	66	**68**	**71**	62	-9
AB-4	0	66	**80**	**72**	56	-16
AB-5	0	66	**76**	**71**	57	-14
AB-6	0	66	**72**	**71**	58	-13
AB-7	0	66	**70**	**70**	58	-12
AB-8	0	66	**69**	**69**	57	-12
AB-9	0	66	**68**	**69**	58	-11
AB-10	0	66	**67**	**68**	58	-10
AB-11	0	66	**67**	**68**	58	-10
AB-12	0	66	**66**	**67**	58	-9
AB-13	0	66	65	**66**	58	-8
AB-14	0	66	63	**66**	57	-9
AB-15	0	66	**71**	**71**	63	-8
AB-16	0	66	65	**67**	61	-6
AB-17	0	66	60	61	56	-5
AB-18	0	66	56	56	52	-4
AB-19	0	66	64	63	61	-2
AB-20	0	66	63	65	61	-4

[a] L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.

Exhibit 1E-4. Future 6-Lane Alternative Peak-Hour Traffic Noise Levels for Washington Park Arboretum

Receiver Number	Residential Structures	NAC	Existing[a,b]	6-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
AB-1	0	66	**66**	**69**	60	-9
AB-2	0	66	**67**	**70**	59	-11
AB-3	0	66	**68**	**71**	60	-11
AB-4	0	66	**80**	**72**	62	-10
AB-5	0	66	**76**	**71**	61	-10
AB-6	0	66	**72**	**71**	61	-10
AB-7	0	66	**70**	**70**	61	-9
AB-8	0	66	**69**	**69**	60	-9
AB-9	0	66	**68**	**69**	59	-10
AB-10	0	66	**67**	**68**	59	-9
AB-11	0	66	**67**	**68**	59	-9
AB-12	0	66	**66**	**67**	58	-9
AB-13	0	66	65	**66**	58	-8
AB-14	0	66	63	**66**	57	-9
AB-15	0	66	**71**	**71**	59	-12
AB-16	0	66	65	**67**	58	-9
AB-17	0	66	60	61	54	-7
AB-18	0	66	56	56	52	-4
AB-19	0	66	64	63	62	-1
AB-20	0	66	63	65	61	-4

[a] L_{eq} noise levels in decibels with A-weighting (dBA).

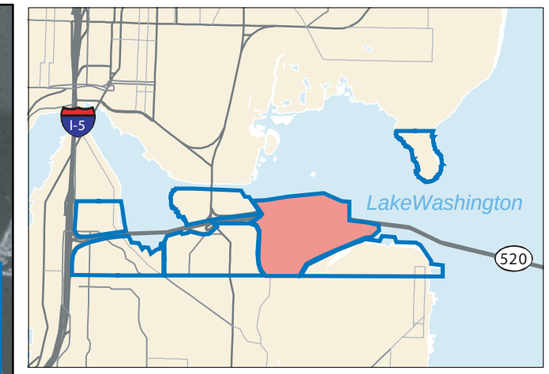
[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.

Exhibit 1E-5. Comparison of Future Peak-Hour Traffic Noise Levels for Washington Park Arboretum

Receiver Number	Existing[a,b]	Future 2030 Noise Levels[a,b]			Change from Existing		
		No Build	4-Lane	6-Lane	No Build	4-Lane	6-Lane
AB-1	**66**	**67**	61	60	1	-5	-6
AB-2	**67**	**68**	60	59	1	-7	-8
AB-3	**68**	**69**	62	60	1	-6	-8
AB-4	**80**	**80**	56	62	0	-24	-18
AB-5	**76**	**77**	57	61	1	-19	-15
AB-6	**72**	**73**	58	61	1	-14	-11
AB-7	**70**	**71**	58	61	1	-12	-9
AB-8	**69**	**70**	57	60	1	-12	-9
AB-9	**68**	**69**	58	59	1	-10	-9
AB-10	**67**	**68**	58	59	1	-9	-8
AB-11	**67**	**67**	58	59	0	-9	-8
AB-12	**66**	**67**	58	58	1	-8	-8
AB-13	65	**66**	58	58	1	-7	-7
AB-14	63	63	57	57	0	-6	-6
AB-15	**71**	**72**	63	59	1	-8	-12
AB-16	65	**66**	61	58	1	-4	-7
AB-17	60	60	56	54	0	-4	-6
AB-18	56	57	52	52	1	-4	-4
AB-19	64	65	61	62	1	-3	-2
AB-20	63	64	61	61	1	-2	-2

[a] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.



Location map showing noise analysis area

Modeling location

Monitoring and modeling location

Noise analysis area

AB-19
Ex NB 4 6
64 65 63 63
- - 61 62

Modeling number

Alternatives
(Existing, No Build, 4-Lane, 6-Lane)

Noise level in decibels without wall

Noise level in decibels with wall

N

0 200 400 Feet

Exhibit 1E-6. **Noise Modeling Locations, Arboretum**

SR 520 Bridge Replacement and HOV Project

1F: Madison Park Neighborhood

Exhibit 1F-1. Noise Model Validation Summary for Madison Park Neighborhood

TNM Modeling #	Monitoring #	Measured[a]	Modeled[a]	Difference (modeled - measured)
MP-2	M35	65	66	1
MP-3	M36	66	67	1
MP-9	M34	58	60	2
MP-17	M37	61	62	1

[a] Measured and modeled L_{eq} noise level in decibels with A-weighting (dBA).

Exhibit 1F-2. Existing Peak-Hour Traffic Noise Levels for Madison Park Neighborhood

Receiver Number	NAC[a]	Existing Noise Level[b,c]	Residences Exceeding NAC[d]
MP-1	66	**66**	3
MP-2	66	**67**	30
MP-3	66	**68**	20
MP-4	66	**69**	10
MP-5	66	**66**	10
MP-6	66	63	--
MP-7	66	61	--
MP-8	66	60	--
MP-9	66	61	--
MP-10	66	61	--
MP-11	66	61	--
MP-12	66	59	--
MP-13	66	60	--
MP-14	66	61	--
MP-15	66	61	--
MP-16	66	63	--
MP-17	66	64	--
MP-18	66	65	--
MP-19	66	**66**	16
MP-20	66	64	--
MP-21	66	60	--
MP-22	66	58	--
MP-23	66	57	--

-- = Receiver location in new highway right-of-way; therefore, no noise levels were calculated.

[a] NAC is the WSDOT Noise Abatement Criteria level.

[b] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[c] Bold numbers indicate noise levels exceeding the NAC.

[d] Estimated number of residences with noise levels exceeding the NAC.

Exhibit 1F-3. No Build Alternative Peak-Hour Traffic Noise Levels for Madison Park Neighborhood

Receiver Number	NAC[a]	Existing Noise Level[b,c]	2030 No Build Noise Level	Change in Noise Level	No Build Alternative Residences Exceeding NAC[d]
MP-1	66	**66**	**67**	1	3
MP-2	66	**67**	**68**	1	30
MP-3	66	**68**	**69**	1	20
MP-4	66	**69**	**70**	1	10
MP-5	66	**66**	**67**	1	10
MP-6	66	63	64	1	0
MP-7	66	61	62	1	0
MP-8	66	60	60	0	0
MP-9	66	61	62	1	0
MP-10	66	61	62	1	0
MP-11	66	61	62	1	0
MP-12	66	59	60	1	0
MP-13	66	60	61	1	0
MP-14	66	61	61	0	0
MP-15	66	61	62	1	0
MP-16	66	63	64	1	0
MP-17	66	64	64	0	0
MP-18	66	65	65	0	0
MP-19	66	**66**	**67**	1	16
MP-20	66	64	65	1	0
MP-21	66	60	61	1	0
MP-22	66	58	59	1	0
MP-23	66	57	57	0	0

[a] NAC is the WSDOT Noise Abatement Criteria level.

[b] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[c] Bold numbers indicate noise levels exceeding the NAC.

[d] Estimated number of residences with noise levels exceeding the NAC.

Exhibit 1F-4. 4-Lane Alternative Peak-Hour Traffic Noise Levels for Madison Park Neighborhood

Receiver Number	Residential Structures	NAC	Existing[a,b]	4-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
MP-1	3	66	**66**	65	61	-4
MP-2	30	66	**67**	**66**	62	-4
MP-3	20	66	**68**	**66**	62	-4
MP-4	10	66	**69**	**67**	63	-4
MP-5	10	66	**66**	64	61	-3
MP-6	6	66	63	62	58	-4
MP-7	6	66	61	59	56	-3
MP-8	2	66	60	58	56	-2
MP-9	1	66	61	60	58	-2
MP-10	0	66	61	60	57	-3
MP-11	0	66	61	60	58	-2
MP-12	4	66	59	60	56	-4
MP-13	3	66	60	61	58	-3
MP-14	10	66	61	60	57	-3
MP-15	10	66	61	60	57	-3
MP-16	6	66	63	61	57	-4
MP-17	10	66	64	62	58	-4
MP-18	16	66	65	63	59	-4
MP-19	16	66	**66**	64	60	-4
MP-20	30	66	64	62	59	-3
MP-21	3	66	60	60	56	-4
MP-22	4	66	58	57	55	-2
MP-23	1	66	57	57	55	-2

[a] L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.

Exhibit 1F-5. 6-Lane Alternative Peak-Hour Traffic Noise Levels for Madison Park Neighborhood

Receiver Number	Residential Structures	NAC		6-Lane Alternative		Sound Wall Reduction[a]
			Existing[a,b]	No Wall[a]	w/ Wall[a]	
MP-1	3	66	**66**	64	58	-6
MP-2	30	66	**67**	**66**	59	-7
MP-3	20	66	**68**	**66**	60	-6
MP-4	10	66	**69**	**67**	61	-6
MP-5	10	66	**66**	**66**	59	-7
MP-6	6	66	63	63	57	-6
MP-7	6	66	61	60	56	-4
MP-8	2	66	60	59	55	-4
MP-9	1	66	61	60	54	-6
MP-10	0	66	61	60	55	-5
MP-11	0	66	61	60	55	-5
MP-12	4	66	59	61	54	-7
MP-13	3	66	60	62	55	-7
MP-14	10	66	61	61	56	-5
MP-15	10	66	61	60	56	-4
MP-16	6	66	63	61	57	-4
MP-17	10	66	64	63	58	-5
MP-18	16	66	65	64	58	-6
MP-19	16	66	**66**	65	60	-5
MP-20	30	66	64	63	59	-4
MP-21	3	66	60	62	55	-7
MP-22	4	66	58	57	53	-4
MP-23	1	66	57	56	54	-2

[a] L_{eq} noise levels in decibels with A-weighting (dBA).

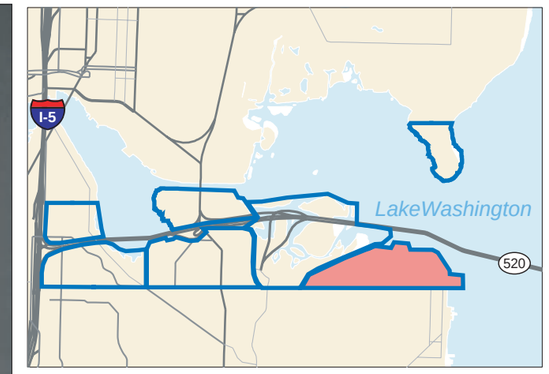
[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.

Exhibit 1F-6. Comparison of Future Peak-Hour Traffic Noise Levels for Madison Park Neighborhood

Receiver Number	Existing[a,b]	Future 2030 Noise Levels[a,b]			Change from Existing		
		No Build	4-Lane	6-Lane	No Build	4-Lane	6-Lane
MP-1	**66**	**67**	61	58	1	-5	-8
MP-2	**67**	**68**	62	59	1	-5	-8
MP-3	**68**	**69**	62	60	1	-6	-8
MP-4	**69**	**70**	63	61	1	-6	-8
MP-5	**66**	**67**	61	59	1	-5	-7
MP-6	63	64	58	57	1	-5	-6
MP-7	61	62	56	56	1	-5	-5
MP-8	60	60	56	55	0	-4	-5
MP-9	61	62	58	54	1	-3	-7
MP-10	61	62	57	55	1	-4	-6
MP-11	61	62	58	55	1	-3	-6
MP-12	59	60	56	54	1	-3	-5
MP-13	60	61	58	55	1	-2	-5
MP-14	61	61	57	56	0	-4	-5
MP-15	61	62	57	56	1	-4	-5
MP-16	63	64	57	57	1	-6	-6
MP-17	64	64	58	58	0	-6	-6
MP-18	65	65	59	58	0	-6	-7
MP-19	**66**	**67**	60	60	1	-6	-6
MP-20	64	65	59	59	1	-5	-5
MP-21	60	61	56	55	1	-4	-5
MP-22	58	59	55	53	1	-3	-5
MP-23	57	57	55	54	0	-2	-3

[a] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.



Location map showing noise analysis area

Modeling location

Monitoring and modeling location

Noise analysis area

MP-19
Ex NB 4 6
64 65 63 63
- - 61 62

Modeling number

Alternatives (Existing, No Build, 4-Lane, 6-Lane)

Noise level in decibels without wall

Noise level in decibels with wall

N

0 200 400 Feet

Exhibit 1F-7. **Noise Modeling Locations, Madison Park**

SR 520 Bridge Replacement and HOV Project

1G: Laurelhurst Neighborhood

Exhibit 1G-1. Noise Model Validation Summary for Laurelhurst Neighborhood

TNM Modeling #	Monitoring #	Measured[a]	Modeled[a]	Difference (modeled - measured)
LH-1	M39	58	59	1
LH-7	M38	48	49	1

[a] Measured and modeled L_{eq} noise level in decibels with A-weighting (dBA).

Exhibit 1G-2. Existing Peak-Hour Traffic Noise Levels for Laurelhurst Neighborhood

Receiver Number	NAC[a]	Existing Noise Level[b,c]	Residences Exceeding NAC[d]
LH-1	66	61	--
LH-2	66	61	--
LH-3	66	59	--
LH-4	66	60	--
LH-5	66	53	--
LH-6	66	57	--
LH-7	66	51	--

-- = Receiver location in new highway right-of-way; therefore, no noise levels were calculated.

[a] NAC is the WSDOT Noise Abatement Criteria level.

[b] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[c] Bold numbers indicate noise levels exceeding the NAC.

[d] Estimated number of residences with noise levels exceeding the NAC.

Exhibit 1G-3. No Build Alternative Peak-Hour Traffic Noise Levels for Laurelhurst Neighborhood

Receiver Number	NAC[a]	Existing Noise Level[b,c]	2030 No Build Noise Level	Change in Noise Level	No Build Alternative Residences Exceeding NAC[d]
LH-1	66	61	61	0	0
LH-2	66	61	61	0	0
LH-3	66	59	60	1	0
LH-4	66	60	60	0	0
LH-5	66	53	54	1	0
LH-6	66	57	58	1	0
LH-7	66	51	51	0	0

[a] NAC is the WSDOT Noise Abatement Criteria level.

[b] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[c] Bold numbers indicate noise levels exceeding the NAC.

[d] Estimated number of residences with noise levels exceeding the NAC.

Exhibit 1G-4. 4-Lane Alternative Peak-Hour Traffic Noise Levels for Laurelhurst Neighborhood

Receiver Number	Residential Structures	NAC	Existing[a,b]	4-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
LH-1	2	66	61	62	62	0
LH-2	2	66	61	62	62	0
LH-3	2	66	59	61	61	0
LH-4	2	66	60	61	61	0
LH-5	2	66	53	55	55	0
LH-6	3	66	57	59	59	0
LH-7	2	66	51	56	56	0

[a] L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.

Exhibit 1G-5. 6-Lane Alternative Peak-Hour Traffic Noise Levels for Laurelhurst Neighborhood

Receiver Number	Residential Structures	NAC	Existing[a,b]	6-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
LH-1	2	66	61	63	63	0
LH-2	2	66	61	62	62	0
LH-3	2	66	59	62	61	-1
LH-4	2	66	60	62	62	0
LH-5	2	66	53	56	56	0
LH-6	3	66	57	59	59	0
LH-7	2	66	51	56	55	-1

[a] L_{eq} noise levels in decibels with A-weighting (dBA).

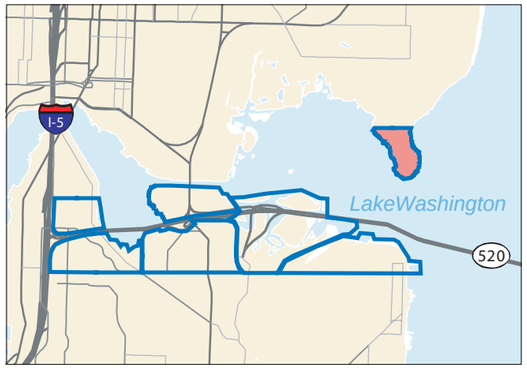
[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.

Exhibit 1G-6. Comparison of Future Peak-Hour Traffic Noise Levels for Laurelhurst Neighborhood

Receiver Number	Existing[a,b]	Future 2030 Noise Levels[a,b]			Change from Existing		
		No Build	4-Lane	6-Lane	No Build	4-Lane	6-Lane
LH-1	61	61	62	63	0	1	2
LH-2	61	61	62	62	0	1	1
LH-3	59	60	61	61	1	2	2
LH-4	60	60	61	62	0	1	2
LH-5	53	54	55	56	1	2	3
LH-6	57	58	59	59	1	2	2
LH-7	51	51	56	55	0	5	4

[a] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.



Location map showing noise analysis area

Modeling location

Monitoring and modeling location

Noise analysis area

LH-19
Ex NB 4 6
64 65 63 63
- - 61 62

Modeling number

Alternatives
(Existing, No Build, 4-Lane, 6-Lane)

Noise level in decibels without wall

Noise level in decibels with wall

N

0 300 600 Feet

Exhibit 1G-7. **Noise Modeling Locations, Laurelhurst**

SR 520 Bridge Replacement and HOV Project

Attachment 2

Noise Levels in the Eastside Project Area

2A: Medina and Hunts Point North of SR 520

Exhibit 2A-1. Noise Model Validation Summary for Medina and Hunts Point North of SR 520

TNM Modeling #	Monitoring #	Measured[a]	Modeled[a]	Difference (modeled - measured)
PN-1	M40	60	61	1
PN-3	M43	70	68	-2
PN-4	M49	67	65	-2
PN-5	M45	61	61	0
PN-9	M46	63	--	N/A[b]
PN-27	M54	62	63	1
PN-28	M57	65	65	0
PN-29	M56	59	63	**4**[c]
PN-35	M52	58	57	-1

-- = Receiver location in new highway right-of-way; therefore, no noise levels were calculated.

[a] Measured and modeled L_{eq} noise level in decibels with A-weighting (dBA).

[b] Located too far (more than 1,000 feet) from SR 520 for an accurate validation.

[c] Higher modeled noise due to gridlock on SR 520 and westbound on-ramp.

Exhibit 2A-2. Existing Peak-Hour Traffic Noise Levels for Medina and Hunts Point North of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	Residences Exceeding NAC[d]
PN-1	66	**67**	3
PN-2	66	**69**	3
PN-3	66	**75**	4
PN-4	66	**70**	0
PN-5	66	**66**	3
PN-6	66	64	--
PN-7	66	61	--
PN-8	66	60	--
PN-9	66	60	--
PN-10	66	59	--
PN-11	66	63	--
PN-12	66	57	--
PN-13	66	57	--
PN-14	66	56	--
PN-15	66	**80**	0
PN-16	66	**74**	0
PN-17	66	**72**	0
PN-18	66	**66**	0
PN-19	66	65	--
PN-20	66	64	--
PN-21	66	63	--
PN-22	66	61	--
PN-23	66	61	--
PN-24	66	60	--
PN-25	66	**67**	3
PN-26	66	**71**	2
PN-27	66	**69**	1
PN-28	66	**71**	6
PN-29	66	**67**	4
PN-30	66	60	--
PN-31	66	63	--
PN-32	66	63	--

Exhibit 2A-2. Existing Peak-Hour Traffic Noise Levels for Medina and Hunts Point North of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	Residences Exceeding NAC[d]
PN-33	66	64	--
PN-34	66	62	--
PN-35	66	62	--
PN-36	66	61	--
PN-37	66	60	--
PN-38	66	58	--
PN-39	66	57	--
PN-40	66	60	--
PN-41	66	57	--
PN-42	66	57	--
PN-43	66	52	--

-- = Receiver location in new highway right-of-way; therefore, no noise levels were calculated.

[a] NAC is the WSDOT Noise Abatement Criteria level.

[b] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[c] Bold numbers indicate noise levels exceeding the NAC.

[d] Estimated number of residences with noise levels exceeding the NAC.

Exhibit 2A-3. No Build Alternative Peak-Hour Traffic Noise Levels for Medina and Hunts Point North of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	2030 No Build Noise Level	Change in Noise Level	No Build Alternative Residences Exceeding NAC[d]
PN-1	66	**67**	**68**	1	3
PN-2	66	**69**	**70**	1	3
PN-3	66	**75**	**75**	0	4
PN-4	66	**70**	**71**	1	0
PN-5	66	**66**	**67**	1	3
PN-6	66	64	65	1	0
PN-7	66	61	62	1	0
PN-8	66	60	60	0	0
PN-9	66	60	61	1	0
PN-10	66	59	60	1	0
PN-11	66	63	64	1	0
PN-12	66	57	58	1	0
PN-13	66	57	58	1	0
PN-14	66	56	57	1	0
PN-15	66	**80**	**80**	0	0
PN-16	66	**74**	**75**	1	0
PN-17	66	**72**	**72**	0	0
PN-18	66	**66**	**67**	1	0
PN-19	66	65	**66**	1	0
PN-20	66	64	64	0	0
PN-21	66	63	63	0	0
PN-22	66	61	62	1	0
PN-23	66	61	62	1	0
PN-24	66	60	61	1	0
PN-25	66	**67**	**67**	0	3
PN-26	66	**71**	**71**	0	2
PN-27	66	**69**	**69**	0	1
PN-28	66	**71**	**72**	1	6
PN-29	66	**67**	**68**	1	4
PN-30	66	60	61	1	0
PN-31	66	63	64	1	0

Exhibit 2A-3. No Build Alternative Peak-Hour Traffic Noise Levels for Medina and Hunts Point North of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	2030 No Build Noise Level	Change in Noise Level	No Build Alternative Residences Exceeding NAC[d]
PN-32	66	63	64	1	0
PN-33	66	64	65	1	0
PN-34	66	62	63	1	0
PN-35	66	62	63	1	0
PN-36	66	61	62	1	0
PN-37	66	60	61	1	0
PN-38	66	58	59	1	0
PN-39	66	57	57	0	0
PN-40	66	60	61	1	0
PN-41	66	57	57	0	0
PN-42	66	57	57	0	0
PN-43	66	52	53	1	0

[a] NAC is the WSDOT Noise Abatement Criteria level.

[b] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[c] Bold numbers indicate noise levels exceeding the NAC.

[d] Estimated number of residences with noise levels exceeding the NAC.

Exhibit 2A-4. 4-Lane Alternative Peak-Hour Traffic Noise Levels for Medina and Hunts Point North of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	4-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PN-1	3	66	**67**	62	56	-6
PN-2	3	66	**69**	**71**	60	-11
PN-3	4	66	**75**	**79**	65	-14
PN-4	0	66	**70**	**74**	64	-10
PN-5	3	66	**66**	**69**	60	-9
PN-6	2	66	64	**67**	58	-9
PN-7	6	66	61	63	55	-8
PN-8	4	66	60	61	55	-6
PN-9	3	66	60	60	57	-3
PN-10	4	66	59	61	54	-7
PN-11	0	66	63	**66**	56	-10
PN-12	4	66	57	59	52	-7
PN-13	3	66	57	58	52	-6
PN-14	4	66	56	57	51	-6
PN-15	0	66	**80**	**73**	61	-12
PN-16	0	66	**74**	**70**	59	-11
PN-17	0	66	**72**	**67**	58	-9
PN-18	0	66	**66**	**66**	57	-9
PN-19	0	66	65	64	56	-8
PN-20	0	66	64	63	55	-8
PN-21	0	66	63	62	54	-8
PN-22	0	66	61	61	54	-7
PN-23	0	66	61	61	53	-8
PN-24	0	66	60	60	53	-7
PN-25	3	66	**67**	**68**	58	-10
PN-26	2	66	**71**	**71**	60	-11
PN-27	1	66	**69**	**68**	59	-9
PN-28	6	66	**71**	**73**	63	-10
PN-29	4	66	**67**	**68**	**66**	-2
PN-30	6	66	60	62	58	-4
PN-31	4	66	63	64	58	-6

Exhibit 2A-4. 4-Lane Alternative Peak-Hour Traffic Noise Levels for Medina and Hunts Point North of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	4-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PN-32	3	66	63	64	56	-8
PN-33	4	66	64	64	56	-8
PN-34	4	66	62	63	55	-8
PN-35	3	66	62	62	54	-8
PN-36	4	66	61	62	55	-7
PN-37	6	66	60	61	55	-6
PN-38	4	66	58	60	55	-5
PN-39	6	66	57	58	55	-3
PN-40	4	66	60	60	53	-7
PN-41	4	66	57	58	52	-6
PN-42	4	66	57	58	52	-6
PN-43	3	66	52	54	51	-3

[a] L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.

Exhibit 2A-5. 6-Lane Alternative Peak-Hour Traffic Noise Levels for Medina and Hunts Point North of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	6-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PN-1	3	66	**67**	62	57	-5
PN-2	3	66	**69**	**73**	61	-12
PN-3	4	66	**75**	**--**	**--**	--
PN-4	0	66	**70**	**66**	61	-5
PN-5	3	66	**66**	**66**	61	-5
PN-6	2	66	64	64	59	-5
PN-7	6	66	61	60	57	-3
PN-8	4	66	60	59	56	-3
PN-9	3	66	60	59	58	-1
PN-10	4	66	59	58	54	-4
PN-11	0	66	63	61	55	-6
PN-12	4	66	57	56	52	-4
PN-13	3	66	57	58	53	-5
PN-14	4	66	56	57	52	-5
PN-15	0	66	**80**	**75**	63	-12
PN-16	0	66	**74**	**72**	61	-11
PN-17	0	66	**72**	**67**	59	-8
PN-18	0	66	**66**	**66**	58	-8
PN-19	0	66	65	64	57	-7
PN-20	0	66	64	63	56	-7
PN-21	0	66	63	62	55	-7
PN-22	0	66	61	61	54	-7
PN-23	0	66	61	61	54	-7
PN-24	0	66	60	60	54	-6
PN-25	3	66	**67**	**69**	59	-10
PN-26	2	66	**71**	**73**	62	-11
PN-27	1	66	**69**	**71**	61	-10
PN-28	6	66	**71**	**74**	63	-11
PN-29	4	66	**67**	**66**	65	-1
PN-30	6	66	60	60	58	-2
PN-31	4	66	63	63	58	-5

Exhibit 2A-5. 6-Lane Alternative Peak-Hour Traffic Noise Levels for Medina and Hunts Point North of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	6-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PN-32	3	66	63	64	58	-6
PN-33	4	66	64	65	58	-7
PN-34	4	66	62	64	56	-8
PN-35	3	66	62	63	55	-8
PN-36	4	66	61	62	55	-7
PN-37	6	66	60	60	56	-4
PN-38	4	66	58	59	55	-4
PN-39	6	66	57	57	55	-2
PN-40	4	66	60	61	54	-7
PN-41	4	66	57	58	52	-6
PN-42	4	66	57	58	53	-5
PN-43	3	66	52	54	51	-3

-- = Receiver location in new highway right-of-way; therefore, no noise levels were calculated.

[a] L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.

Exhibit 2A-6. Comparison of Future Peak-Hour Traffic Noise Levels for Medina and Hunts Point North of SR 520

Receiver Number	Existing[a,b]	Future 2030 Noise Levels[a,b]			Change from Existing		
		No Build	4-Lane	6-Lane	No Build	4-Lane	6-Lane
PN-1	**67**	**68**	56	57	1	-11	-10
PN-2	**69**	**70**	60	61	1	-9	-8
PN-3	**75**	**75**	65	**--**	0	-10	--
PN-4	**70**	**71**	64	61	1	-6	-9
PN-5	**66**	**67**	60	61	1	-6	-5
PN-6	64	65	58	59	1	-6	-5
PN-7	61	62	55	57	1	-6	-4
PN-8	60	60	55	56	0	-5	-4
PN-9	60	61	57	58	1	-3	-2
PN-10	59	60	54	54	1	-5	-5
PN-11	63	64	56	55	1	-7	-8
PN-12	57	58	52	52	1	-5	-5
PN-13	57	58	52	53	1	-5	-4
PN-14	56	57	51	52	1	-5	-4
PN-15	**80**	**80**	61	63	0	-19	-17
PN-16	**74**	**75**	59	61	1	-15	-13
PN-17	**72**	**72**	58	59	0	-14	-13
PN-18	**66**	**67**	57	58	1	-9	-8
PN-19	65	**66**	56	57	1	-9	-8
PN-20	64	64	55	56	0	-9	-8
PN-21	63	63	54	55	0	-9	-8
PN-22	61	62	54	54	1	-7	-7
PN-23	61	62	53	54	1	-8	-7
PN-24	60	61	53	54	1	-7	-6
PN-25	**67**	**67**	58	59	0	-9	-8
PN-26	**71**	**71**	60	62	0	-11	-9
PN-27	**69**	**69**	59	61	0	-10	-8
PN-28	**71**	**72**	63	63	1	-8	-8
PN-29	**67**	**68**	**66**	65	1	-1	-2
PN-30	60	61	58	58	1	-2	-2

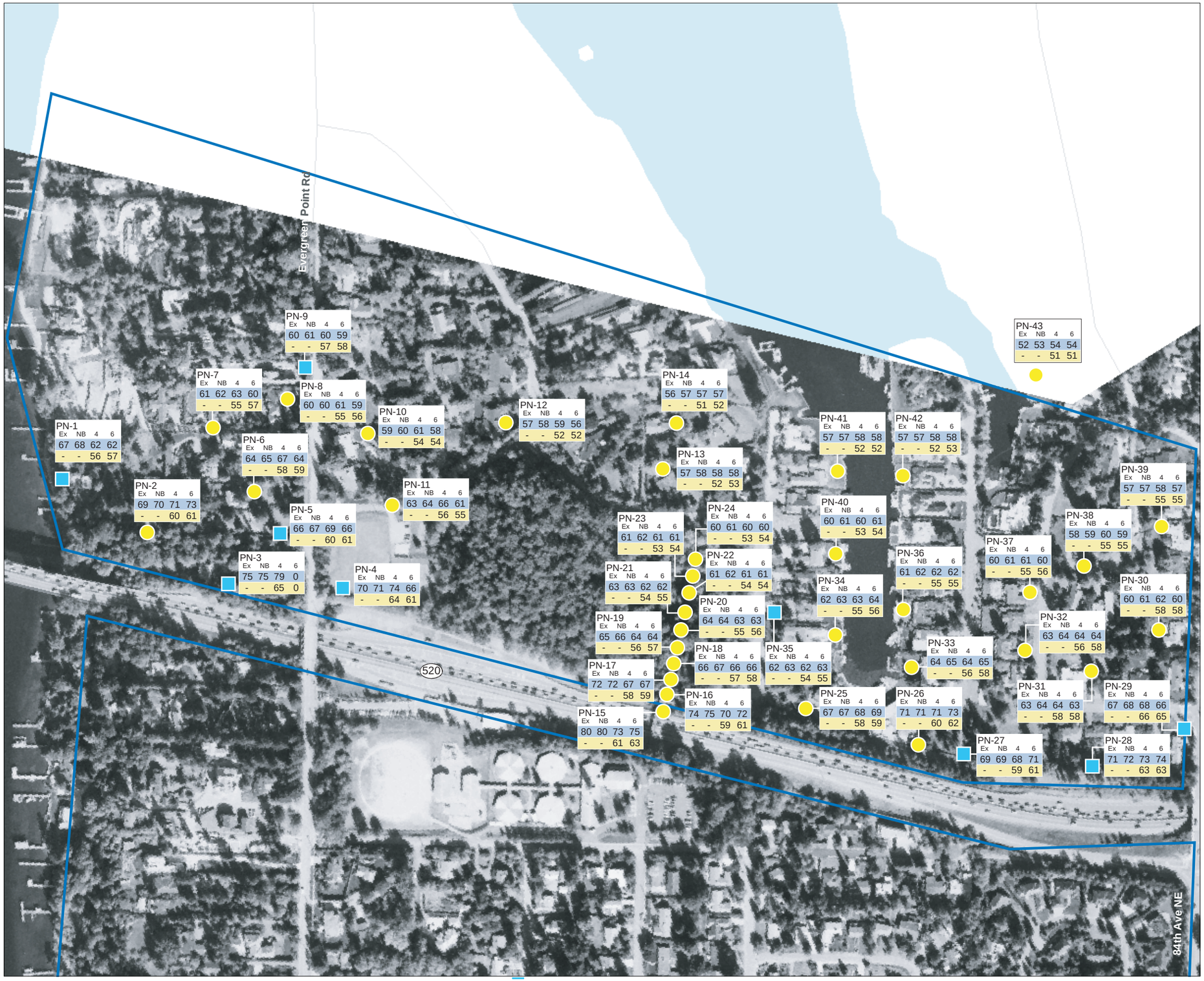
Exhibit 2A-6. Comparison of Future Peak-Hour Traffic Noise Levels for Medina and Hunts Point North of SR 520

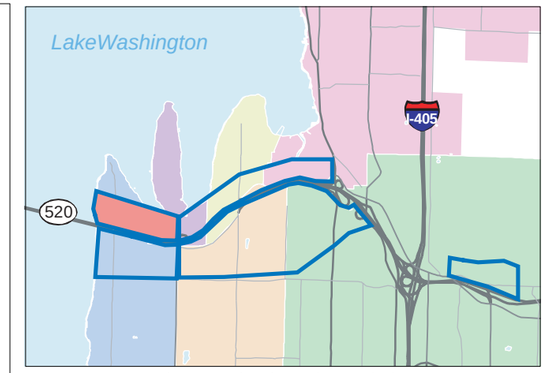
Receiver Number	Existing[a,b]	Future 2030 Noise Levels[a,b]			Change from Existing		
		No Build	4-Lane	6-Lane	No Build	4-Lane	6-Lane
PN-31	63	64	58	58	1	-5	-5
PN-32	63	64	56	58	1	-7	-5
PN-33	64	65	56	58	1	-8	-6
PN-34	62	63	55	56	1	-7	-6
PN-35	62	63	54	55	1	-8	-7
PN-36	61	62	55	55	1	-6	-6
PN-37	60	61	55	56	1	-5	-4
PN-38	58	59	55	55	1	-3	-3
PN-39	57	57	55	55	0	-2	-2
PN-40	60	61	53	54	1	-7	-6
PN-41	57	57	52	52	0	-5	-5
PN-42	57	57	52	53	0	-5	-4
PN-43	52	53	51	51	1	-1	-1

-- = Receiver location in new highway right-of-way; therefore, no noise levels were calculated.

[a] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.





Location map showing noise analysis area

Modeling location

Monitoring and modeling location

Noise analysis area

MS-19 Ex NB 4 6
64 65 63 63
- - 61 62

Modeling number
Alternatives (Existing, No Build, 4-Lane, 6-Lane)
Noise level in decibels without wall
Noise level in decibels with wall

N

0 200 400 Feet

Exhibit 2A-7. **Noise Modeling Locations, Medina and Hunts Point North of SR 520**

SR 520 Bridge Replacement and HOV Project

2B: Medina and Hunts Point South of SR 520

Existing 2B-1. Noise Model Validation Summary for Medina and Hunts Point South of SR 520

TNM Modeling #	Monitoring #	Measured[a]	Modeled[a]	Difference (modeled - measured)
PS-2	M42	62	61	-1
PS-3	M44	64	65	1
PS-5	M47	72	67	**-5**[b]
PS-6	M50	66	66	0
PS-9	M53	63	61	-2
PS-10	M55	67	66	-1
PS-13	M58	67	70	**3**[c]
PS-23	M41	59	59	0
PS-25	M48	53	55	2
PS-29	M51	48	--	N/A[d]

-- = Receiver location in new highway right-of-way; therefore, no noise levels were calculated.

[a] Measured and modeled L_{eq} noise level in decibels with A-weighting (dBA).

[b] Nontraffic-related noise sources distorted readings during measurement.

[c] Higher modeled level due to stop-and-go traffic on SR 520 and westbound on-ramp.

[d] Located too far from SR 520 for an accurate validation.

Existing 2B-2. Existing Peak-Hour Traffic Noise Levels for Medina and Hunts Point South of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	Residences Exceeding NAC[d]
PS-1	66	**68**	3
PS-2	66	**67**	3
PS-3	66	**71**	2
PS-4	66	**73**	4
PS-5	66	**73**	2
PS-6	66	**71**	0
PS-7	66	**70**	1
PS-8	66	**71**	1
PS-9	66	**66**	4
PS-10	66	**68**	4
PS-11	66	64	--
PS-12	66	**67**	2
PS-13	66	**72**	3
PS-14	66	**66**	4
PS-15	66	60	--
PS-16	66	63	--
PS-17	66	64	--
PS-18	66	**66**	4
PS-19	66	64	--
PS-20	66	**66**	0
PS-21	66	63	--
PS-22	66	62	--
PS-23	66	65	--
PS-24	66	62	--
PS-25	66	61	--
PS-26	66	57	--
PS-27	66	59	--
PS-28	66	57	--
PS-29	66	59	--
PS-30	66	61	--
PS-31	66	59	--

Existing 2B-2. Existing Peak-Hour Traffic Noise Levels for Medina and Hunts Point South of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	Residences Exceeding NAC[d]
PS-32	66	56	--
PS-33	66	63	--

-- = Receiver location in new highway right-of-way; therefore, no noise levels were calculated.

[a] NAC is the WSDOT Noise Abatement Criteria level.

[b] Modeled Leq noise levels in decibels with A-weighting (dBA).

[c] Bold numbers indicate noise levels exceeding the NAC.

[d] Estimated number of residences with noise levels exceeding the NAC.

Existing 2B-3. No Build Alternative Peak-Hour Traffic Noise Levels for Medina and Hunts Point South of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	2030 No Build Noise Level	Change in Noise Level	No Build Alternative Residences Exceeding NAC[d]
PS-1	66	**68**	**69**	1	3
PS-2	66	**67**	**68**	1	3
PS-3	66	**71**	**71**	0	2
PS-4	66	**73**	**74**	1	4
PS-5	66	**73**	**73**	0	2
PS-6	66	**71**	**72**	1	0
PS-7	66	**70**	**71**	1	1
PS-8	66	**71**	**71**	0	1
PS-9	66	**66**	**67**	1	4
PS-10	66	**68**	**69**	1	4
PS-11	66	64	65	1	0
PS-12	66	**67**	**68**	1	2
PS-13	66	**72**	**73**	1	3
PS-14	66	**66**	**68**	2	4
PS-15	66	60	61	1	0
PS-16	66	63	63	0	0
PS-17	66	64	65	1	0
PS-18	66	**66**	**66**	0	4
PS-19	66	64	64	0	0
PS-20	66	**66**	**67**	1	0
PS-21	66	63	64	1	0
PS-22	66	62	62	0	0
PS-23	66	65	**66**	1	4
PS-24	66	62	63	1	0
PS-25	66	61	61	0	0
PS-26	66	57	58	1	0
PS-27	66	59	59	0	0
PS-28	66	57	57	0	0
PS-29	66	59	59	0	0
PS-30	66	61	62	1	0
PS-31	66	59	59	0	0

Existing 2B-3. No Build Alternative Peak-Hour Traffic Noise Levels for Medina and Hunts Point South of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	2030 No Build Noise Level	Change in Noise Level	No Build Alternative Residences Exceeding NAC[d]
PS-32	66	56	57	1	0
PS-33	66	63	65	2	0

[a] NAC is the WSDOT Noise Abatement Criteria level.

[b] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[c] Bold numbers indicate noise levels exceeding the NAC.

[d] Estimated number of residences with noise levels exceeding the NAC.

Existing 2B-4. 4-Lane Alternative Peak-Hour Traffic Noise Levels for Medina and Hunts Point South of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	4-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PS-1	3	66	**68**	63	57	-6
PS-2	3	66	**67**	65	58	-7
PS-3	2	66	**71**	**71**	60	-11
PS-4	4	66	**73**	**74**	63	-11
PS-5	2	66	**73**	**75**	**67**	-8
PS-6	0	66	**71**	**73**	61	-12
PS-7	1	66	**70**	**73**	62	-11
PS-8	1	66	**71**	**72**	63	-9
PS-9	4	66	**66**	**68**	60	-8
PS-10	4	66	**68**	**70**	61	-9
PS-11	3	66	64	**67**	60	-7
PS-12	2	66	**67**	**67**	65	-2
PS-13	3	66	**72**	**73**	**68**	-5
PS-14	4	66	**66**	**68**	63	-5
PS-15	4	66	60	61	57	-4
PS-16	3	66	63	63	58	-5
PS-17	4	66	64	65	59	-6
PS-18	4	66	**66**	**68**	61	-7
PS-19	3	66	64	65	57	-8
PS-20	0	66	**66**	**68**	59	-9
PS-21	2	66	63	65	58	-7
PS-22	3	66	62	63	56	-7
PS-23	4	66	65	59	56	-3
PS-24	4	66	62	58	55	-3
PS-25	3	66	61	62	56	-6
PS-26	4	66	57	59	53	-6
PS-27	4	66	59	61	54	-7
PS-28	6	66	57	58	53	-5
PS-29	6	66	59	60	55	-5
PS-30	4	66	61	62	56	-6
PS-31	5	66	59	60	54	-6

Existing 2B-4. 4-Lane Alternative Peak-Hour Traffic Noise Levels for Medina and Hunts Point South of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	4-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PS-32	6	66	56	57	53	-4
PS-33	4	66	63	65	60	-5

[a] L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.

Existing 2B-5. 6-Lane Alternative Peak-Hour Traffic Noise Levels for Medina and Hunts Point South of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	6-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PS-1	3	66	**68**	63	55	-8
PS-2	3	66	**67**	65	55	-10
PS-3	2	66	**71**	**66**	58	-8
PS-4	4	66	**73**	**67**	63	-4
PS-5	2	66	**73**	**67**	62	-5
PS-6	0	66	**71**	**71**	60	-11
PS-7	1	66	**70**	**71**	62	-9
PS-8	1	66	**71**	**72**	65	-7
PS-9	4	66	**66**	**66**	60	-6
PS-10	4	66	**68**	**68**	61	-7
PS-11	3	66	64	65	59	-6
PS-12	2	66	**67**	**66**	62	-4
PS-13	3	66	**72**	**66**	64	-2
PS-14	4	66	**66**	62	62	0
PS-15	4	66	60	59	56	-3
PS-16	3	66	63	62	57	-5
PS-17	4	66	64	63	58	-5
PS-18	4	66	**66**	**66**	61	-5
PS-19	3	66	64	64	57	-7
PS-20	0	66	**66**	**66**	58	-8
PS-21	2	66	63	62	56	-6
PS-22	3	66	62	59	54	-5
PS-23	4	66	65	59	54	-5
PS-24	4	66	62	57	52	-5
PS-25	3	66	61	59	54	-5
PS-26	4	66	57	56	51	-5
PS-27	4	66	59	59	53	-6
PS-28	6	66	57	57	52	-5
PS-29	6	66	59	60	55	-5
PS-30	4	66	61	61	56	-5
PS-31	5	66	59	60	54	-6

Existing 2B-5. 6-Lane Alternative Peak-Hour Traffic Noise Levels for Medina and Hunts Point South of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	6-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PS-32	6	66	56	56	53	-3
PS-33	4	66	63	65	60	-5

[a] L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.

Existing 2B-6. Comparison of Future Peak-Hour Traffic Noise Levels for Medina and Hunts Point South of SR 520

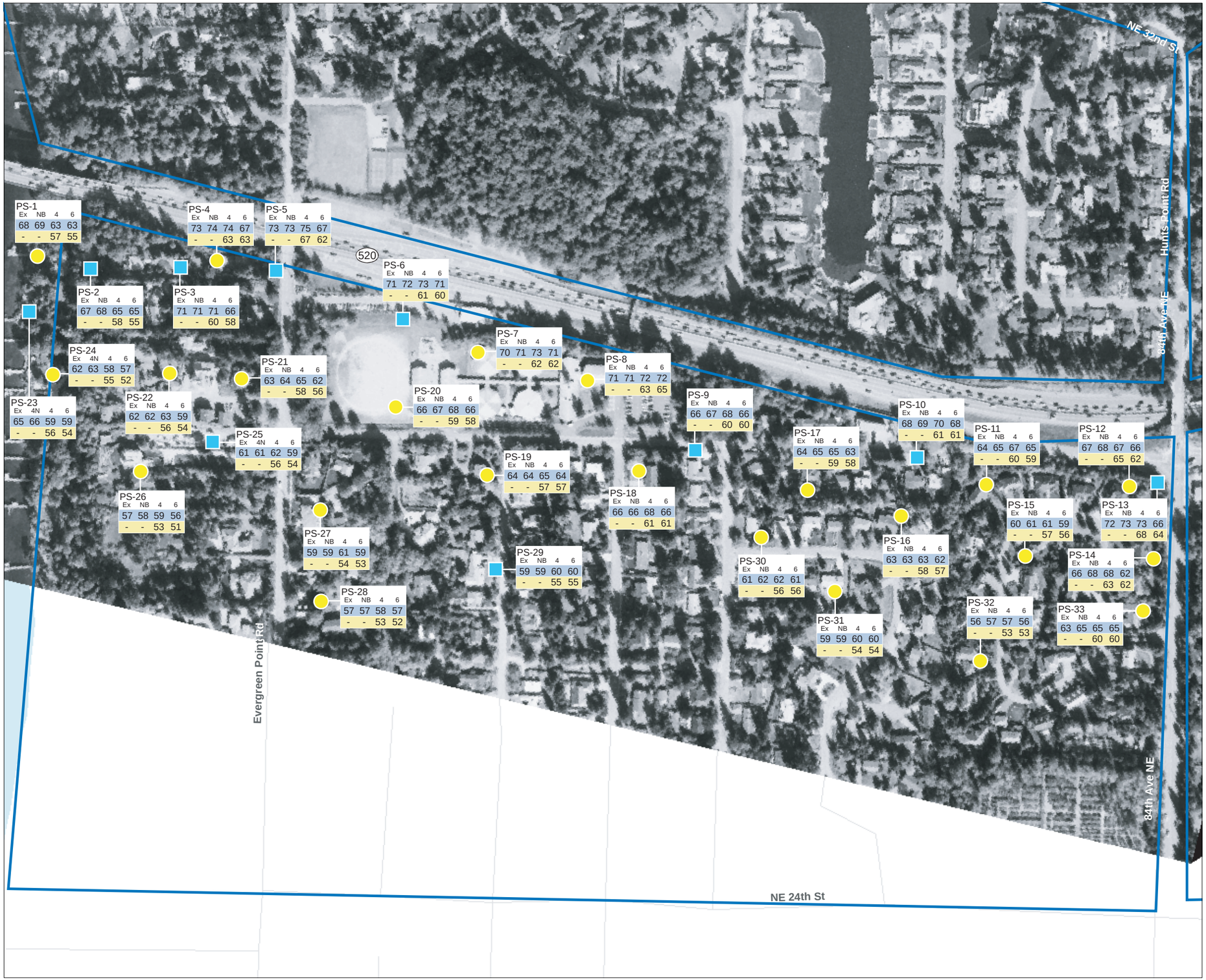
Receiver Number	Existing[a,b]	Future 2030 Noise Levels[a,b]			Change from Existing		
		No Build	4-Lane	6-Lane	No Build	4-Lane	6-Lane
PS-1	**68**	**69**	57	55	1	-11	-13
PS-2	**67**	**68**	58	55	1	-9	-12
PS-3	**71**	**71**	60	58	0	-11	-13
PS-4	**73**	**74**	63	63	1	-10	-10
PS-5	**73**	**73**	**67**	62	0	-6	-11
PS-6	**71**	**72**	61	60	1	-10	-11
PS-7	**70**	**71**	62	62	1	-8	-8
PS-8	**71**	**71**	63	65	0	-8	-6
PS-9	**66**	**67**	60	60	1	-6	-6
PS-10	**68**	**69**	61	61	1	-7	-7
PS-11	64	65	60	59	1	-4	-5
PS-12	**67**	**68**	65	62	1	-2	-5
PS-13	**72**	**73**	**68**	64	1	-4	-8
PS-14	**66**	**68**	63	62	2	-3	-4
PS-15	60	61	57	56	1	-3	-4
PS-16	63	63	58	57	0	-5	-6
PS-17	64	65	59	58	1	-5	-6
PS-18	**66**	**66**	61	61	0	-5	-5
PS-19	64	64	57	57	0	-7	-7
PS-20	**66**	**67**	59	58	1	-7	-8
PS-21	63	64	58	56	1	-5	-7
PS-22	62	62	56	54	0	-6	-8
PS-23	65	**66**	56	54	1	-9	-11
PS-24	62	63	55	52	1	-7	-10
PS-25	61	61	56	54	0	-5	-7
PS-26	57	58	53	51	1	-4	-6
PS-27	59	59	54	53	0	-5	-6
PS-28	57	57	53	52	0	-4	-5
PS-29	59	59	55	55	0	-4	-4
PS-30	61	62	56	56	1	-5	-5

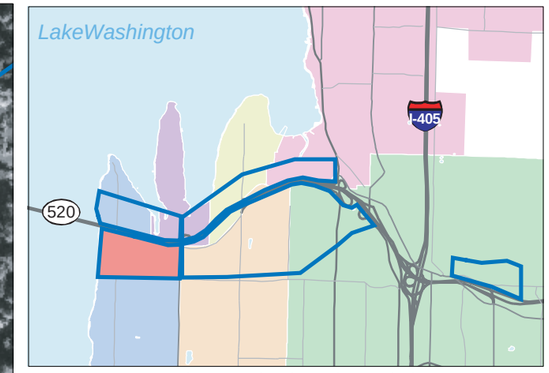
Existing 2B-6. Comparison of Future Peak-Hour Traffic Noise Levels for Medina and Hunts Point South of SR 520

Receiver Number	Existing[a,b]	Future 2030 Noise Levels[a,b]			Change from Existing		
		No Build	4-Lane	6-Lane	No Build	4-Lane	6-Lane
PS-31	59	59	54	54	0	-5	-5
PS-32	56	57	53	53	1	-3	-3
PS-33	63	65	60	60	2	-3	-3

[a] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.





Location map showing noise analysis area

Modeling location

Monitoring and modeling location

Noise analysis area

MS-19 Ex NB 4 6 64 65 63 63 - - 61 62

Modeling number

Alternatives (Existing, No Build, 4-Lane, 6-Lane)

Noise level in decibels without wall

Noise level in decibels with wall

N

0 200 400 Feet

Exhibit 2B-7. **Noise Modeling Locations, Medina and Hunts Point South of SR 520**

SR 520 Bridge Replacement and HOV Project

2C: Hunts Point, Clyde Hill, Yarrow Point, and Kirkland North of SR 520

Exhibit 2C-1. Noise Model Validation Summary for Hunts Point, Clyde Hill, Yarrow Point, and Kirkland North of SR 520

TNM Modeling #	Monitoring #	Measured[a]	Modeled[a]	Difference (modeled - measured)
PK-1	M59	59	60	1
PK-3	M65	64	62	-2
PK-4	M62	63	56	**-7**[b]
PK-5	M64	55	53	-2
PK-6	M63	51	49	-2
PK-17	M75	60	62	2
PK-18	M84	61	63	2
PK-22	M80	64	62	-2
PK-24	M71	62	64	2
PK-26	M74	53	53	0
PK-29	M79	61	61	0
PK-35	M83	55	--	N/A[c]
PK-47	M88	59	57	-2
PK-48	M90	57	56	-1

[a] Measured and modeled L_{eq} noise level in decibels with A-weighting (dBA).

[b] High local noise levels distorted readings during measurement, including activities in the park and local construction.

[c] Located too far from SR 520 for an accurate validation

Exhibit 2C-2. Existing Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Kirkland North of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	Residences Exceeding NAC[d]
PK-1	66	65	--
PK-2	66	64	--
PK-3	66	**68**	3
PK-4	66	61	--
PK-5	66	58	--
PK-6	66	54	--
PK-7	66	59	--
PK-8	66	58	--
PK-9	66	56	--
PK-10	66	55	--
PK-11	66	54	--
PK-12	66	53	--
PK-13	66	52	--
PK-14	66	51	--
PK-15	66	50	--
PK-16	66	49	--
PK-17	66	**70**	3
PK-18	66	**68**	4
PK-19	66	60	--
PK-20	66	58	--
PK-21	66	60	--
PK-22	66	**67**	2
PK-23	66	62	--
PK-24	66	**66**	4
PK-25	66	55	--
PK-26	66	57	--
PK-27	66	57	--
PK-28	66	61	--
PK-29	66	61	--
PK-30	66	54	--
PK-31	66	53	--

Exhibit 2C-2. Existing Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Kirkland North of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	Residences Exceeding NAC[d]
PK-32	66	49	--
PK-33	66	53	--
PK-34	66	51	--
PK-35	66	53	--
PK-36	66	**73**	0
PK-37	66	**67**	0
PK-38	66	65	--
PK-39	66	63	--
PK-40	66	62	--
PK-41	66	60	--
PK-42	66	59	--
PK-43	66	58	--
PK-44	66	58	--
PK-45	66	57	--
PK-46	66	62	--
PK-47	66	62	--
PK-48	66	60	--
PK-49	66	59	--
PK-50	66	59	--

-- = Receiver location in new highway right-of-way; therefore, no noise levels were calculated.

[a] NAC is the WSDOT Noise Abatement Criteria level.

[b] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[c] Bold numbers indicate noise levels exceeding the NAC.

[d] Estimated number of residences with noise levels exceeding the NAC.

Exhibit 2C-3. No Build Alternative Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Kirkland North of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	2030 No Build Noise Level	Change in Noise Level	No Build Alternative Residences Exceeding NAC[d]
PK-1	66	65	**66**	1	2
PK-2	66	64	65	1	0
PK-3	66	**68**	**69**	1	3
PK-4	66	61	62	1	0
PK-5	66	58	58	0	0
PK-6	66	54	54	0	0
PK-7	66	59	60	1	0
PK-8	66	58	59	1	0
PK-9	66	56	57	1	0
PK-10	66	55	56	1	0
PK-11	66	54	55	1	0
PK-12	66	53	54	1	0
PK-13	66	52	53	1	0
PK-14	66	51	52	1	0
PK-15	66	50	51	1	0
PK-16	66	49	50	1	0
PK-17	66	**70**	**71**	1	3
PK-18	66	**68**	**69**	1	4
PK-19	66	60	61	1	0
PK-20	66	58	59	1	0
PK-21	66	60	61	1	0
PK-22	66	**67**	**68**	1	2
PK-23	66	62	63	1	0
PK-24	66	**66**	**67**	1	4
PK-25	66	55	56	1	0
PK-26	66	57	57	0	0
PK-27	66	57	58	1	0
PK-28	66	61	61	0	0
PK-29	66	61	62	1	0
PK-30	66	54	55	1	0

Exhibit 2C-3. No Build Alternative Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Kirkland North of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	2030 No Build Noise Level	Change in Noise Level	No Build Alternative Residences Exceeding NAC[d]
PK-31	66	53	54	1	0
PK-32	66	49	50	1	0
PK-33	66	53	53	0	0
PK-34	66	51	52	1	0
PK-35	66	53	54	1	0
PK-36	66	**73**	**74**	1	0
PK-37	66	**67**	**68**	1	0
PK-38	66	65	**66**	1	0
PK-39	66	63	64	1	0
PK-40	66	62	62	0	0
PK-41	66	60	61	1	0
PK-42	66	59	60	1	0
PK-43	66	58	59	1	0
PK-44	66	58	59	1	0
PK-45	66	57	58	1	0
PK-46	66	62	63	1	0
PK-47	66	62	63	1	0
PK-48	66	60	61	1	0
PK-49	66	59	59	0	0
PK-50	66	59	60	1	0

[a] NAC is the WSDOT Noise Abatement Criteria level.

[b] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[c] Bold numbers indicate noise levels exceeding the NAC.

[d] Estimated number of residences with noise levels exceeding the NAC.

Exhibit 2C-4. 4-Lane Alternative Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Kirkland North of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	4-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PK-1	2	66	65	**66**	60	-6
PK-2	0	66	64	**66**	58	-8
PK-3	3	66	**68**	**68**	60	-8
PK-4	3	66	61	63	56	-7
PK-5	4	66	58	59	53	-6
PK-6	5	66	54	55	51	-4
PK-7	0	66	59	57	56	-1
PK-8	0	66	58	58	54	-4
PK-9	0	66	56	56	53	-4
PK-10	0	66	55	55	51	-4
PK-11	0	66	54	54	50	-4
PK-12	0	66	53	53	49	-4
PK-13	0	66	52	52	48	-4
PK-14	0	66	51	51	48	-4
PK-15	0	66	50	50	47	-3
PK-16	0	66	49	50	47	-4
PK-17	3	66	**70**	**73**	64	-9
PK-18	4	66	**68**	**74**	63	-11
PK-19	2	66	60	**67**	63	-4
PK-20	3	66	58	64	61	-3
PK-21	3	66	60	**66**	59	-7
PK-22	2	66	**67**	**70**	61	-9
PK-23	3	66	62	63	58	-5
PK-24	4	66	**66**	**67**	57	-10
PK-25	3	66	55	55	51	-4
PK-26	4	66	57	57	54	-3
PK-27	4	66	57	58	56	-2
PK-28	3	66	61	63	56	-7
PK-29	3	66	61	63	62	-1
PK-30	4	66	54	55	52	-3

Exhibit 2C-4. 4-Lane Alternative Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Kirkland North of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	4-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PK-31	4	66	53	54	50	-4
PK-32	3	66	49	50	47	-3
PK-33	3	66	53	53	50	-3
PK-34	3	66	51	52	50	-2
PK-35	5	66	53	56	53	-3
PK-36	0	66	**73**	**77**	65	-12
PK-37	0	66	**67**	**66**	59	-7
PK-38	0	66	65	65	58	-7
PK-39	0	66	63	62	56	-6
PK-40	0	66	62	61	54	-7
PK-41	0	66	60	60	54	-6
PK-42	0	66	59	59	53	-6
PK-43	0	66	58	59	53	-6
PK-44	0	66	58	58	52	-6
PK-45	0	66	57	58	52	-6
PK-46	4	66	62	62	57	-5
PK-47	2	66	62	62	56	-6
PK-48	4	66	60	60	56	-4
PK-49	20	66	59	59	55	-4
PK-50	6	66	59	60	55	-5

[a] L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.

Exhibit 2C-5. 6-Lane Alternative Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Kirkland North of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	6-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PK-1	2	66	65	**67**	60	-7
PK-2	0	66	64	65	58	-7
PK-3	3	66	**68**	**69**	61	-8
PK-4	3	66	61	62	57	-5
PK-5	4	66	58	59	56	-3
PK-6	5	66	54	54	52	-2
PK-7	0	66	**59**	58	58	
PK-8	0	66	58	61	56	-5
PK-9	0	66	56	59	54	-5
PK-10	0	66	55	57	53	-5
PK-11	0	66	54	55	51	-4
PK-12	0	66	53	54	50	-4
PK-13	0	66	52	53	49	-4
PK-14	0	66	51	52	49	-4
PK-15	0	66	50	52	48	-4
PK-16	0	66	49	51	47	-4
PK-17	3	66	**70**	**68**	62	-6
PK-18	4	66	**68**	**74**	65	-9
PK-19	2	66	60	**66**	59	-7
PK-20	3	66	58	62	58	-4
PK-21	3	66	60	64	58	-6
PK-22	2	66	**67**	**68**	62	-6
PK-23	3	66	62	63	58	-5
PK-24	4	66	**66**	**66**	59	-7
PK-25	3	66	55	57	54	-3
PK-26	4	66	57	56	54	-2
PK-27	4	66	57	57	55	-2
PK-28	3	66	61	62	56	-6
PK-29	3	66	61	63	62	-1
PK-30	4	66	54	55	52	-3

Exhibit 2C-5. 6-Lane Alternative Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Kirkland North of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	6-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PK-31	4	66	53	55	51	-4
PK-32	3	66	49	51	50	-1
PK-33	3	66	53	53	51	-2
PK-34	3	66	51	52	49	-3
PK-35	5	66	53	56	53	-3
PK-36	0	66	**73**	**78**	65	-13
PK-37	0	66	**67**	**67**	59	-8
PK-38	0	66	65	65	58	-7
PK-39	0	66	63	63	56	-7
PK-40	0	66	62	61	55	-6
PK-41	0	66	60	60	54	-6
PK-42	0	66	59	59	53	-6
PK-43	0	66	58	59	53	-6
PK-44	0	66	58	58	53	-5
PK-45	0	66	57	58	52	-6
PK-46	4	66	62	62	56	-6
PK-47	2	66	62	62	56	-6
PK-48	4	66	60	60	56	-4
PK-49	20	66	59	59	55	-4
PK-50	6	66	59	60	54	-6

[a] L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.

Exhibit 2C-6. Comparison of Future Peak-Hour Traffic Noise Levels for Hunts Points, Clyde Hill, Yarrow Point, and Kirkland North of SR 520

Receiver Number	Existing[a,b]	Future 2030 Noise Levels[a,b]			Change from Existing		
		No Build	4-Lane	6-Lane	No Build	4-Lane	6-Lane
PK-1	65	**66**	60	60	1	-5	-5
PK-2	64	65	58	58	1	-6	-6
PK-3	**68**	**69**	60	61	1	-8	-7
PK-4	61	62	56	57	1	-5	-4
PK-5	58	58	53	56	0	-5	-2
PK-6	54	54	51	52	0	-3	-2
PK-7	59	60	56	58	1	-3	-1
PK-8	58	59	54	56	1	-4	-2
PK-9	56	57	53	54	1	-4	-2
PK-10	55	56	51	53	1	-4	-3
PK-11	54	55	50	51	1	-4	-3
PK-12	53	54	49	50	1	-4	-3
PK-13	52	53	48	49	1	-4	-2
PK-14	51	52	48	49	1	-3	-2
PK-15	50	51	47	48	1	-3	-2
PK-16	49	50	47	47	1	-3	-3
PK-17	**70**	**71**	64	62	1	-6	-8
PK-18	**68**	**69**	63	65	1	-5	-3
PK-19	60	61	63	59	1	3	-1
PK-20	58	59	61	58	1	3	0
PK-21	60	61	59	58	1	-1	-2
PK-22	**67**	**68**	61	62	1	-6	-5
PK-23	62	63	58	58	1	-4	-4
PK-24	**66**	**67**	57	59	1	-9	-7
PK-25	55	56	51	54	1	-4	-1
PK-26	57	57	54	54	0	-3	-3
PK-27	57	58	56	55	1	-1	-2
PK-28	61	61	56	56	0	-5	-5
PK-29	61	62	62	62	1	1	1
PK-30	54	55	52	52	1	-2	-2

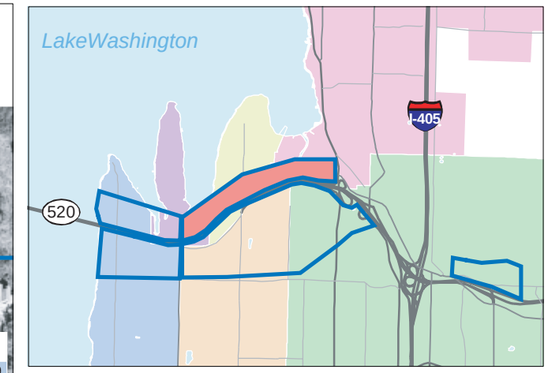
Exhibit 2C-6. Comparison of Future Peak-Hour Traffic Noise Levels for Hunts Points, Clyde Hill, Yarrow Point, and Kirkland North of SR 520

Receiver Number	Existing[a,b]	Future 2030 Noise Levels[a,b]			Change from Existing		
		No Build	4-Lane	6-Lane	No Build	4-Lane	6-Lane
PK-31	53	54	50	51	1	-3	-2
PK-32	49	50	47	50	1	-2	1
PK-33	53	53	50	51	0	-3	-2
PK-34	51	52	50	49	1	-1	-2
PK-35	53	54	53	53	1	0	0
PK-36	**73**	**74**	65	65	1	-8	-8
PK-37	**67**	**68**	59	59	1	-8	-8
PK-38	65	**66**	58	58	1	-7	-7
PK-39	63	64	56	56	1	-7	-7
PK-40	62	62	54	55	0	-8	-7
PK-41	60	61	54	54	1	-6	-6
PK-42	59	60	53	53	1	-6	-6
PK-43	58	59	53	53	1	-5	-5
PK-44	58	59	52	53	1	-6	-5
PK-45	57	58	52	52	1	-5	-5
PK-46	62	63	57	56	1	-5	-6
PK-47	62	63	56	56	1	-6	-6
PK-48	60	61	56	56	1	-4	-4
PK-49	59	59	55	55	0	-4	-4
PK-50	59	60	55	54	1	-4	-5

-- = Receiver location in new highway right-of-way; therefore, no noise levels were calculated.

[a] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.



Location map showing noise analysis area

Modeling location

Monitoring and modeling location

Noise analysis area

MS-19 Ex NB 4 6
64 65 63 63
- - 61 62

Modeling number
Alternatives (Existing, No Build, 4-Lane, 6-Lane)
Noise level in decibels without wall
Noise level in decibels with wall

N

0 300 600 Feet

Exhibit 2C-7. **Noise Modeling Locations, Hunts Point, Clyde Hill, Yarrow Point, and Kirkland North of SR 520**

SR 520 Bridge Replacement and HOV Project

2D: Hunts Point, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

Exhibit 2D-1. Noise Model Validation Summary for Hunts Point, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

TNM Modeling #	Monitoring #	Measured[a]	Modeled[a]	Difference (modeled - measured)
PB-1	M60	67	68	1
PB-5	M66	72	70	-2
PB-6	M68	60	59	-1
PB-9	M70	66	67	1
PB-10	M72	61	63	2
PB-11	M76	65	66	1
PB-12	M77	64	65	1
PB-13	M78	57	57	0
PB-18	M86	69	68	-1
PB-20	M89	68	66	-2
PB-23	M91	68	66	-2
PB-25	M92	62	60	-2
PB-35	M87	62	61	-1
PB-40	M85	52	51	-1
PB-43	M73	62	63	1
PB-52	M61	48	--	N/A[b]
PB-57	M67	63	63	0
PB-62	M81	61	--	N/A[b]
PB-63	M69	61	--	N/A[b]
PB-64	M82	60	--	N/A[b]

-- = Receiver location in new highway right-of-way; therefore, no noise levels were calculated.

[a] Measured and modeled L_{eq} noise level in decibels with A-weighting (dBA).

[b] Located too far from SR 520 for an accurate validation.

Exhibit 2D-2. Existing Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	Residences Exceeding NAC[d]
PB-1	66	**72**	2
PB-2	66	**69**	2
PB-3	66	**68**	2
PB-4	66	**69**	3
PB-5	66	**73**	3
PB-6	66	62	--
PB-7	66	62	--
PB-8	66	64	--
PB-9	66	**70**	3
PB-10	66	**66**	4
PB-11	66	**68**	3
PB-12	66	**68**	2
PB-13	66	60	--
PB-14	66	61	--
PB-15	66	65	--
PB-16	66	**66**	4
PB-17	66	65	--
PB-18	66	**71**	2
PB-19	66	**71**	2
PB-20	66	**69**	3
PB-21	66	**68**	0
PB-22	66	**67**	4
PB-23	66	**69**	4
PB-24	66	**67**	4
PB-25	66	62	--
PB-26	66	60	--
PB-27	66	58	--
PB-28	66	61	--
PB-29	66	65	--
PB-30	66	62	--
PB-31	66	62	--

Exhibit 2D-2. Existing Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	Residences Exceeding NAC[d]
PB-32	66	64	--
PB-33	66	62	--
PB-34	66	65	--
PB-35	66	64	--
PB-36	66	59	--
PB-37	66	60	--
PB-38	66	58	--
PB-39	66	59	--
PB-40	66	53	--
PB-41	66	54	--
PB-42	66	56	--
PB-43	66	64	--
PB-44	66	59	--
PB-45	66	60	--
PB-46	66	62	--
PB-47	66	62	--
PB-48	66	64	--
PB-49	66	62	--
PB-50	66	64	--
PB-51	66	60	--
PB-52	66	55	--
PB-53	66	54	--
PB-54	66	58	--
PB-55	66	62	--
PB-56	66	59	--
PB-57	66	64	--
PB-58	66	61	--
PB-59	66	58	--
PB-60	66	59	--
PB-61	66	59	--
PB-62	66	51	--

Exhibit 2D-2. Existing Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	Residences Exceeding NAC[d]
PB-63	66	50	--
PB-64	66	48	--

-- = Receiver location in new highway right-of-way; therefore, no noise levels were calculated.

[a] NAC is the WSDOT Noise Abatement Criteria level.

[b] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[c] Bold numbers indicate noise levels exceeding the NAC.

[d] Estimated number of residences with noise levels exceeding the NAC.

Exhibit 2D-3. No Build Alternative Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	2030 No Build Noise Level	Change in Noise Level	No Build Alternative Residences Exceeding NAC[d]
PB-1	66	**72**	**72**	0	2
PB-2	66	**69**	**70**	1	2
PB-3	66	**68**	**68**	0	2
PB-4	66	**69**	**70**	1	3
PB-5	66	**73**	**74**	1	3
PB-6	66	62	63	1	0
PB-7	66	62	63	1	0
PB-8	66	64	65	1	0
PB-9	66	**70**	**71**	1	3
PB-10	66	**66**	**67**	1	4
PB-11	66	**68**	**69**	1	3
PB-12	66	**68**	**69**	1	2
PB-13	66	60	61	1	0
PB-14	66	61	62	1	0
PB-15	66	65	**66**	1	4
PB-16	66	**66**	**67**	1	4
PB-17	66	65	**66**	1	4
PB-18	66	**71**	**71**	0	2
PB-19	66	**71**	**71**	0	2
PB-20	66	**69**	**70**	1	3
PB-21	66	**68**	**69**	1	0
PB-22	66	**67**	**68**	1	4
PB-23	66	**69**	**69**	0	4
PB-24	66	**67**	**68**	1	4
PB-25	66	62	62	0	0
PB-26	66	60	60	0	0
PB-27	66	58	59	1	0
PB-28	66	61	62	1	0
PB-29	66	65	**66**	1	2
PB-30	66	62	62	0	0

Exhibit 2D-3. No Build Alternative Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	2030 No Build Noise Level	Change in Noise Level	No Build Alternative Residences Exceeding NAC[d]
PB-31	66	62	63	1	0
PB-32	66	64	64	0	0
PB-33	66	62	63	1	0
PB-34	66	65	**66**	1	3
PB-35	66	64	65	1	0
PB-36	66	59	60	1	0
PB-37	66	60	60	0	0
PB-38	66	58	59	1	0
PB-39	66	59	60	1	0
PB-40	66	53	54	1	0
PB-41	66	54	55	1	0
PB-42	66	56	57	1	0
PB-43	66	64	65	1	0
PB-44	66	59	60	1	0
PB-45	66	60	60	0	0
PB-46	66	62	63	1	0
PB-47	66	62	63	1	0
PB-48	66	64	65	1	0
PB-49	66	62	63	1	0
PB-50	66	64	64	0	0
PB-51	66	60	61	1	0
PB-52	66	55	56	1	0
PB-53	66	54	55	1	0
PB-54	66	58	58	0	0
PB-55	66	62	63	1	0
PB-56	66	59	60	1	0
PB-57	66	64	65	1	0
PB-58	66	61	62	1	0
PB-59	66	58	59	1	0
PB-60	66	59	60	1	0

Exhibit 2D-3. No Build Alternative Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	2030 No Build Noise Level	Change in Noise Level	No Build Alternative Residences Exceeding NAC[d]
PB-61	66	59	60	1	0
PB-62	66	51	52	1	0
PB-63	66	50	51	1	0
PB-64	66	48	49	1	0

[a] NAC is the WSDOT Noise Abatement Criteria level.

[b] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[c] Bold numbers indicate noise levels exceeding the NAC.

[d] Estimated number of residences with noise levels exceeding the NAC.

Exhibit 2D-4. 4-Lane Alternative Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	4-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PB-1	2	66	**72**	**68**	64	-4
PB-2	2	66	**69**	**68**	62	-6
PB-3	2	66	**68**	**68**	61	-7
PB-4	3	66	**69**	**71**	60	-11
PB-5	3	66	**73**	**76**	63	-13
PB-6	4	66	62	64	59	-5
PB-7	2	66	62	64	58	-6
PB-8	3	66	64	**66**	59	-7
PB-9	3	66	**70**	**73**	63	-10
PB-10	4	66	**66**	**67**	61	-6
PB-11	3	66	**68**	**71**	64	-7
PB-12	2	66	**68**	**70**	**68**	-2
PB-13	3	66	60	62	62	0
PB-14	4	66	61	63	61	-2
PB-15	4	66	65	**68**	64	-4
PB-16	4	66	**66**	**68**	58	-10
PB-17	4	66	65	**66**	58	-8
PB-18	2	66	**71**	**72**	62	-10
PB-19	2	66	**71**	**72**	65	-7
PB-20	3	66	**69**	**71**	63	-8
PB-21	0	66	**68**	**71**	60	-11
PB-22	4	66	**67**	**69**	61	-8
PB-23	4	66	**69**	**71**	65	-6
PB-24	4	66	**67**	**69**	**66**	-3
PB-25	15	66	62	62	62	0
PB-26	15	66	60	60	60	0
PB-27	15	66	58	59	59	0
PB-28	4	66	61	62	60	-2
PB-29	2	66	65	**66**	58	-8
PB-30	3	66	62	62	57	-5

Exhibit 2D-4. 4-Lane Alternative Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	4-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PB-31	4	66	62	63	58	-5
PB-32	3	66	64	65	59	-6
PB-33	3	66	62	63	58	-5
PB-34	3	66	65	**67**	61	-6
PB-35	3	66	64	65	59	-6
PB-36	4	66	59	59	55	-4
PB-37	3	66	60	60	55	-5
PB-38	3	66	58	59	55	-4
PB-39	4	66	59	60	57	-3
PB-40	4	66	53	54	52	-2
PB-41	4	66	54	55	54	-1
PB-42	3	66	56	57	56	-1
PB-43	3	66	64	**66**	**66**	0
PB-44	4	66	59	60	59	-1
PB-45	3	66	60	60	59	-1
PB-46	4	66	62	63	58	-5
PB-47	3	66	62	64	57	-7
PB-48	3	66	64	**66**	59	-7
PB-49	3	66	62	63	61	-2
PB-50	4	66	64	64	63	-1
PB-51	4	66	60	61	61	0
PB-52	4	66	55	56	56	0
PB-53	4	66	54	55	55	0
PB-54	2	66	58	58	57	-1
PB-55	2	66	62	63	60	-3
PB-56	3	66	59	61	57	-4
PB-57	3	66	64	65	63	-2
PB-58	2	66	61	62	59	-3
PB-59	4	66	58	59	57	-2
PB-60	4	66	59	59	58	-1

Exhibit 2D-4. 4-Lane Alternative Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	4-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PB-61	6	66	59	60	58	-2
PB-62	4	66	51	52	51	-1
PB-63	4	66	50	51	50	-1
PB-64	4	66	48	49	48	-1

[a] L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.

Exhibit 2D-5. 6-Lane Alternative Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	6-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PB-1	2	66	**72**	**73**	64	-9
PB-2	2	66	**69**	**75**	62	-13
PB-3	2	66	**68**	**72**	61	-11
PB-4	3	66	**69**	**71**	60	-11
PB-5	3	66	**73**	**76**	63	-13
PB-6	4	66	62	64	59	-5
PB-7	2	66	62	64	58	-6
PB-8	3	66	64	65	59	-6
PB-9	3	66	**70**	**75**	63	-12
PB-10	4	66	**66**	**70**	61	-9
PB-11	3	66	**68**	**68**	62	-6
PB-12	2	66	**68**	**66**	61	-5
PB-13	3	66	60	**67**	62	-5
PB-14	4	66	61	64	61	-3
PB-15	4	66	65	**67**	64	-3
PB-16	4	66	**66**	**67**	58	-9
PB-17	4	66	65	**66**	58	-8
PB-18	2	66	**71**	**73**	63	-10
PB-19	2	66	**71**	**73**	**66**	-7
PB-20	3	66	**69**	**72**	64	-8
PB-21	0	66	**68**	**72**	61	-11
PB-22	4	66	**67**	**69**	62	-7
PB-23	4	66	**69**	**72**	64	-8
PB-24	4	66	**67**	**70**	**66**	-4
PB-25	15	66	62	62	62	0
PB-26	15	66	60	60	60	0
PB-27	15	66	58	59	59	0
PB-28	4	66	61	63	60	-3
PB-29	2	66	65	**67**	58	-9
PB-30	3	66	62	63	57	-6

Exhibit 2D-5. 6-Lane Alternative Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	6-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PB-31	4	66	62	64	59	-5
PB-32	3	66	64	65	61	-4
PB-33	3	66	62	63	59	-4
PB-34	3	66	65	**67**	62	-5
PB-35	3	66	64	65	60	-5
PB-36	4	66	59	60	55	-5
PB-37	3	66	60	60	55	-5
PB-38	3	66	58	59	55	-4
PB-39	4	66	59	61	57	-4
PB-40	4	66	53	57	52	-5
PB-41	4	66	54	58	54	-4
PB-42	3	66	56	59	56	-3
PB-43	3	66	64	67	64	-3
PB-44	4	66	59	61	59	-2
PB-45	3	66	60	61	59	-2
PB-46	4	66	62	62	58	-4
PB-47	3	66	62	63	57	-6
PB-48	3	66	64	65	59	-6
PB-49	3	66	62	64	61	-3
PB-50	4	66	64	64	62	-2
PB-51	4	66	60	60	59	-1
PB-52	4	66	55	55	54	-1
PB-53	4	66	54	55	54	-1
PB-54	2	66	58	59	57	-2
PB-55	2	66	62	63	60	-3
PB-56	3	66	59	60	57	-3
PB-57	3	66	64	64	63	-1
PB-58	2	66	61	62	59	-3
PB-59	4	66	58	59	57	-2
PB-60	4	66	59	60	58	-2

Exhibit 2D-5. 6-Lane Alternative Peak-Hour Traffic Noise Levels for Hunts Point, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

Receiver Number	Residential Structures	NAC	Existing[a,b]	6-Lane Alternative		Sound Wall Reduction[a]
				No Wall[a]	w/ Wall[a]	
PB-61	6	66	59	60	58	-2
PB-62	4	66	51	52	51	-1
PB-63	4	66	50	51	50	-1
PB-64	4	66	48	48	48	0

[a] L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.

Exhibit 2D-6. Comparison of Future Peak-Hour Traffic Noise Levels for Hunts Points, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

Receiver Number	Existing[a,b]	Future 2030 Noise Levels[a,b]			Change from Existing		
		No Build	4-Lane	6-Lane	No Build	4-Lane	6-Lane
PB-1	**72**	**72**	64	64	0	-8	-8
PB-2	**69**	**70**	62	62	1	-7	-7
PB-3	**68**	**68**	61	61	0	-7	-7
PB-4	**69**	**70**	60	60	1	-9	-9
PB-5	**73**	**74**	63	63	1	-10	-10
PB-6	62	63	59	59	1	-3	-3
PB-7	62	63	58	58	1	-4	-4
PB-8	64	65	59	59	1	-5	-5
PB-9	**70**	**71**	63	63	1	-7	-7
PB-10	**66**	**67**	61	61	1	-5	-5
PB-11	**68**	**69**	64	62	1	-4	-6
PB-12	**68**	**69**	**68**	61	1	0	-7
PB-13	60	61	62	62	1	2	2
PB-14	61	62	61	61	1	0	0
PB-15	65	**66**	64	64	1	-1	-1
PB-16	**66**	**67**	58	58	1	-8	-8
PB-17	65	66	58	58	1	-7	-7
PB-18	71	71	62	63	0	-9	-8
PB-19	71	71	65	66	0	-6	-5
PB-20	69	70	63	64	1	-6	-5
PB-21	68	69	60	61	1	-8	-7
PB-22	67	68	61	62	1	-6	-5
PB-23	69	69	65	64	0	-4	-5
PB-24	67	68	66	66	1	-1	-1
PB-25	62	62	62	62	0	0	0
PB-26	60	60	60	60	0	0	0
PB-27	58	59	59	59	1	1	1
PB-28	61	62	60	60	1	-1	-1
PB-29	65	**66**	58	58	1	-7	-7
PB-30	62	62	57	57	0	-5	-5

Exhibit 2D-6. Comparison of Future Peak-Hour Traffic Noise Levels for Hunts Points, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

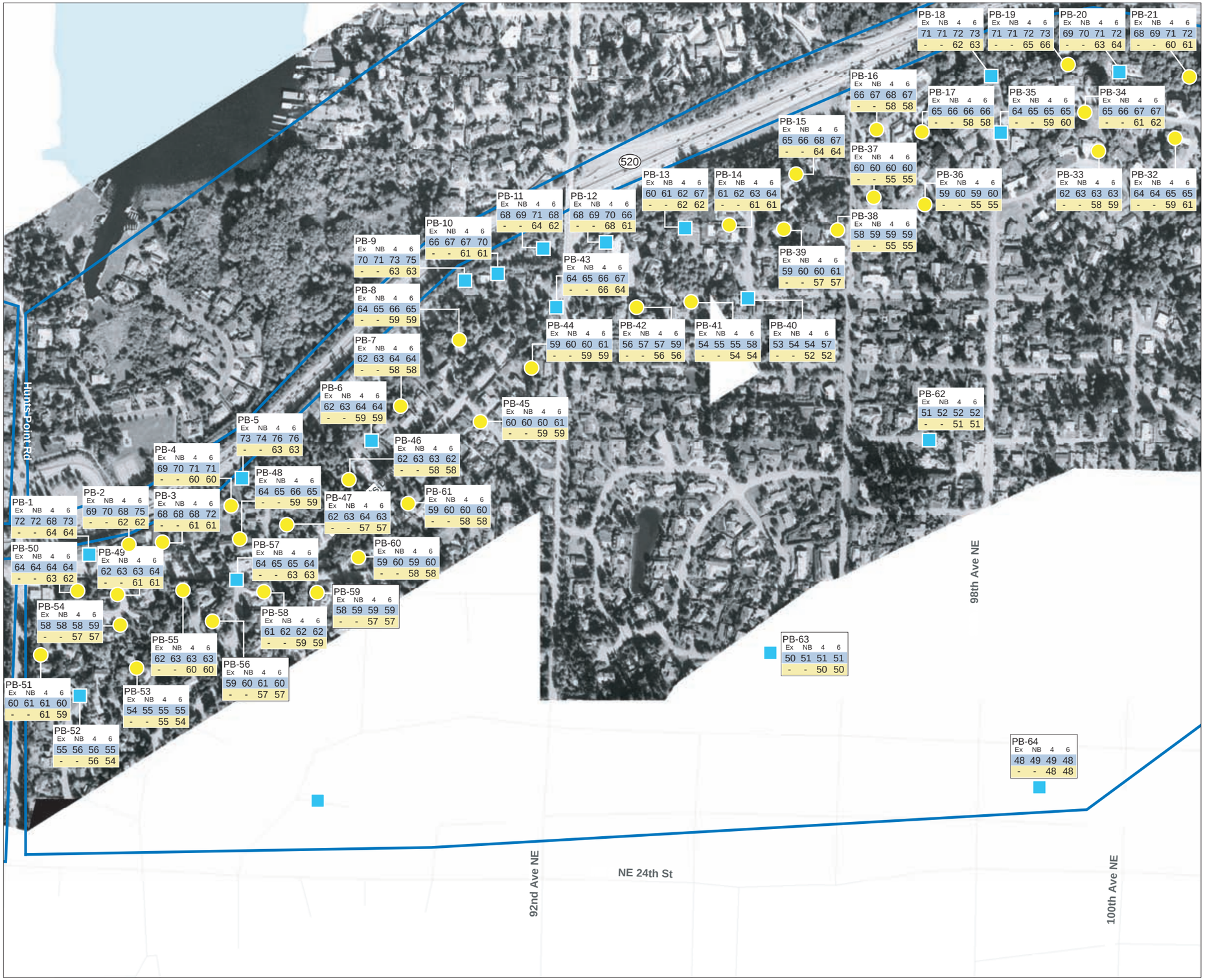
Receiver Number	Existing[a,b]	Future 2030 Noise Levels[a,b]			Change from Existing		
		No Build	4-Lane	6-Lane	No Build	4-Lane	6-Lane
PB-31	62	63	58	59	1	-4	-3
PB-32	64	64	59	61	0	-5	-3
PB-33	62	63	58	59	1	-4	-3
PB-34	65	**66**	61	62	1	-4	-3
PB-35	64	65	59	60	1	-5	-4
PB-36	59	60	55	55	1	-4	-4
PB-37	60	60	55	55	0	-5	-5
PB-38	58	59	55	55	1	-3	-3
PB-39	59	60	57	57	1	-2	-2
PB-40	53	54	52	52	1	-1	-1
PB-41	54	55	54	54	1	0	0
PB-42	56	57	56	56	1	0	0
PB-43	64	65	**66**	64	1	2	0
PB-44	59	60	59	59	1	0	0
PB-45	60	60	59	59	0	-1	-1
PB-46	62	63	58	58	1	-4	-4
PB-47	62	63	57	57	1	-5	-5
PB-48	64	65	59	59	1	-5	-5
PB-49	62	63	61	61	1	-1	-1
PB-50	64	64	63	62	0	-1	-2
PB-51	60	61	61	59	1	1	-1
PB-52	55	56	56	54	1	1	-1
PB-53	54	55	55	54	1	1	0
PB-54	58	58	57	57	0	-1	-1
PB-55	62	63	60	60	1	-2	-2
PB-56	59	60	57	57	1	-2	-2
PB-57	64	65	63	63	1	-1	-1
PB-58	61	62	59	59	1	-2	-2
PB-59	58	59	57	57	1	-1	-1
PB-60	59	60	58	58	1	-1	-1

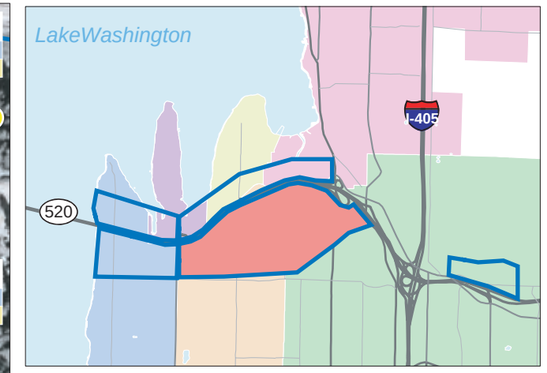
Exhibit 2D-6. Comparison of Future Peak-Hour Traffic Noise Levels for Hunts Points, Clyde Hill, Yarrow Point, and Bellevue South of SR 520

Receiver Number	Existing[a,b]	Future 2030 Noise Levels[a,b]			Change from Existing		
		No Build	4-Lane	6-Lane	No Build	4-Lane	6-Lane
PB-61	59	60	58	58	1	-1	-1
PB-62	51	52	51	51	1	0	0
PB-63	50	51	50	50	1	0	0
PB-64	48	49	48	48	1	0	0

[a] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.





Location map showing noise analysis area

Modeling location

Monitoring and modeling location

Noise analysis area

MS-19 Ex NB 4 6 64 65 63 63 - - 61 62

Modeling number

Alternatives (Existing, No Build, 4-Lane, 6-Lane)

Noise level in decibels without wall

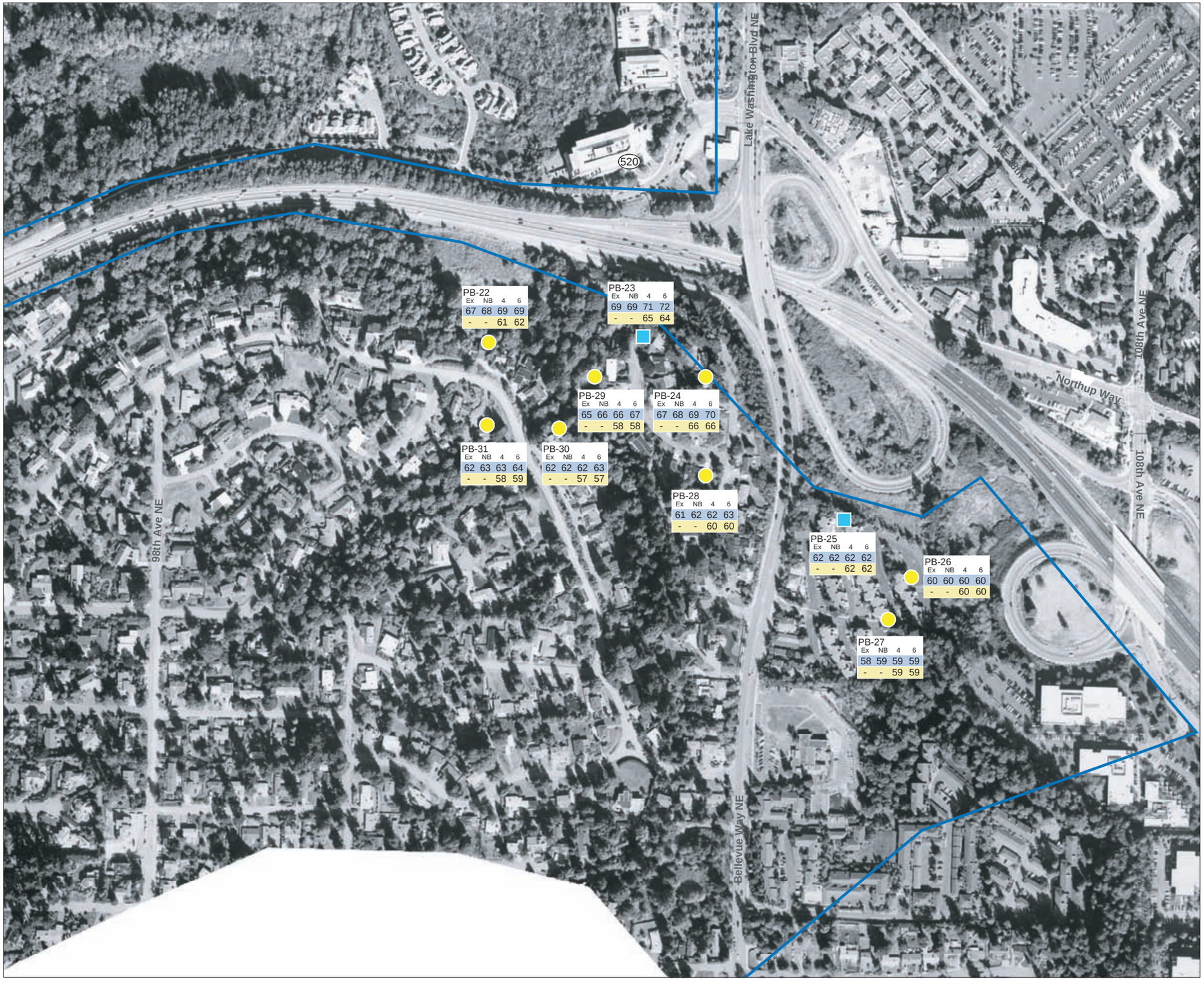
Noise level in decibels with wall

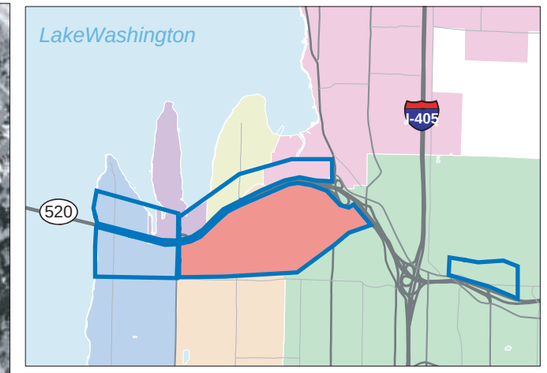
N

0 300 600 Feet

Exhibit 2D-7a. **Noise Modeling Locations, Hunts Point, Clyde Hill, Yarrow Point, and Bellevue South of SR 520**

SR 520 Bridge Replacement and HOV Project





Location map showing noise analysis area

Modeling location

Monitoring and modeling location

Noise analysis area

MS-19
Ex NB 4 6
64 65 63 63
- - 61 62

Modeling number
Alternatives (Existing, No Build, 4-Lane, 6-Lane)
Noise level in decibels without wall
Noise level in decibels with wall

N

0 200 400 Feet

Exhibit 2D-7b. **Noise Modeling Locations, Hunts Point, Clyde Hill, Yarrow Point, and Bellevue South of SR 520**

SR 520 Bridge Replacement and HOV Project

2E: Bellevue East of I-405 and North of SR 520

Exhibit 2E-1. Noise Model Validation Summary for Bellevue East of I-405 and North of SR 520

TNM Modeling #	Monitoring #	Measured[a]	Modeled[a]	Difference (modeled - measured)
E405-1	M93	68	67	-1
E405-3	M96	74	69	-5[1]
E405-4	M98	70	69	-1
E405-5	M97	60	--	N/A[b]
E405-7	M95	70	--	N/A[c]
E405-9	M94	54	--	N/A[c]

[a] Measured and modeled L_{eq} noise level in decibels with A-weighting (dBA).

[b] Not validated due to local access traffic resulting in higher measurements.

[c] Located too far from SR 520 for an accurate validation.

Exhibit 2E-2. Existing Peak-Hour Traffic Noise Levels for Bellevue East of I-405 and North of SR 520

Receiver Number	NAC[a]	Existing Noise Level[b,c]	Residences Exceeding NAC[d]
E405-1	66	**66**	0
E405-2	66	**67**	0
E405-3	66	**69**	4
E405-4	66	**68**	2
E405-5	66	63	--
E405-6	66	59	--
E405-7	66	63	--
E405-8	66	62	--
E405-9	66	60	--

-- = Receiver location in new highway right-of-way; therefore, no noise levels were calculated.

[a] NAC is the WSDOT Noise Abatement Criteria level.

[b] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[c] Bold numbers indicate noise levels exceeding the NAC.

[d] Estimated number of residences with noise levels exceeding the NAC.

Exhibit 2E-3. No Build Peak-Hour Traffic Noise Levels for Bellevue East of I-405

Receiver Number	NAC[a]	2030			No Build Residences Exceeding NAC[d]
		Existing Noise Level[b,c]	No Build Noise Level	Change in Noise Level	
E405-1	66	**66**	**67**	1	0
E405-2	66	**67**	**68**	1	0
E405-3	66	**69**	**69**	0	4
E405-4	66	**68**	**69**	1	2
E405-5	66	63	64	1	0
E405-6	66	59	59	0	0
E405-7	66	63	64	1	0
E405-8	66	62	63	1	0
E405-9	66	60	60	0	0

[a] NAC is the WSDOT Noise Abatement Criteria level.

[b] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[c] Bold numbers indicate noise levels exceeding the NAC.

[d] Estimated number of residences exceeding the NAC.

Exhibit 2E-4. 6-Lane Alternative Peak-Hour Traffic Noise Levels for Bellevue East of I-405 and North of SR 520

Receiver Number	Residential Structures	NAC		6-Lane Alternative		Noise Reduction[a,c]
			Existing[a,b]	No Wall[a]	w/ Wall[a]	
E405-1	0	66	**66**	**69**	**69**	N/A
E405-2	0	66	**67**	**70**	**70**	N/A
E405-3	4	66	**69**	**72**	**72**	N/A
E405-4	2	66	**68**	**71**	**71**	N/A
E405-5	4	66	63	**67**	**67**	N/A
E405-6	4	66	59	62	62	N/A
E405-7	2	66	63	**66**	**66**	N/A
E405-8	1	66	62	65	65	N/A
E405-9	0	66	60	63	63	N/A

[a] L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.

[c] No noise wall is proposed for this area.

Exhibit 2E-5. Comparison of Future Peak-Hour Traffic Noise Levels for Bellevue East of I-405 and North of SR 520

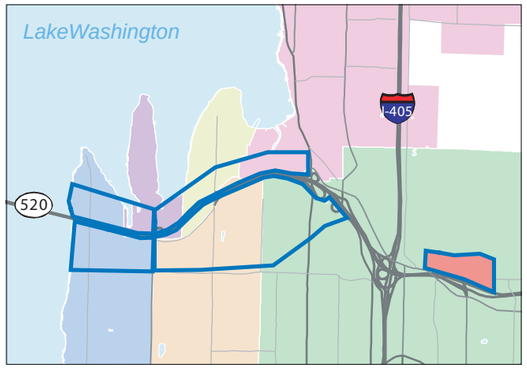
Receiver Number	Existing[a,b]	Future 2030 Noise Levels[a,b]			Change from Existing		
		No Build	4-Lane[c]	6-Lane	No Build	4-Lane[c]	6-Lane
E405-1	**66**	**67**	--	**69**	1	--	3
E405-2	**67**	**68**	--	**70**	1	--	3
E405-3	**69**	**69**	--	**72**	0	--	3
E405-4	**68**	**69**	--	**71**	1	--	3
E405-5	63	64	--	**67**	1	--	4
E405-6	59	59	--	62	0	--	3
E405-7	63	64	--	**66**	1	--	3
E405-8	62	63	--	65	1	--	3
E405-9	60	60	--	63	0	--	3

-- = Receiver location in new highway right-of-way; therefore, no noise levels were calculated.

[a] Modeled L_{eq} noise levels in decibels with A-weighting (dBA).

[b] Bold numbers indicate noise levels exceeding the NAC, 66 dBA L_{eq}.

[b] Same as No Build.



Location map showing noise analysis area

Modeling location

Monitoring and modeling location

Noise analysis area

E405-19
Ex NB 4 6
64 65 - 63
- - - 62

Modeling number

Alternatives
(Existing, No Build, 4-Lane, 6-Lane)

Noise level in decibels without wall

Noise level in decibels with wall

N

0 200 400 Feet

Exhibit 2E-6. **Noise Modeling Locations, Bellevue East of I-405**

SR 520 Bridge Replacement and HOV Project