

APPENDIX K-1
Proposed Action Construction Noise Levels

Results

Equipment	Calculated (dBA)	
	*Lmax	L10
Dozer	81.7	80.7
Dozer	81.7	80.7
Backhoe	77.6	76.6
Roller	80	76
Flat Bed Truck	74.3	73.3
Pickup Truck	75	74
Pickup Truck	75	74
Pickup Truck	75	74
Pickup Truck	75	74
Pickup Truck	75	74
Pickup Truck	75	74
Total	81.7	86.9

*Calculated Lmax is the Loudest value.

Results

Equipment	Calculated (dBA)	
	*Lmax	L10
Dozer	75.6	74.7
Dozer	75.6	74.7
Backhoe	71.5	70.6
Roller	74	70
Flat Bed Truck	68.2	67.3
Pickup Truck	69	68
Pickup Truck	69	68
Pickup Truck	69	68
Pickup Truck	69	68
Pickup Truck	69	68
Pickup Truck	69	68
Total	75.6	80.9

*Calculated Lmax is the Loudest value.

Results

Equipment	Calculated (dBA)	
	*Lmax	L10
Dozer	59.3	58.3
Dozer	59.3	58.3
Backhoe	55.1	54.2
Roller	57.6	53.6
Flat Bed Truck	51.8	50.9
Pickup Truck	52.6	51.6
Pickup Truck	52.6	51.6
Pickup Truck	52.6	51.6
Pickup Truck	52.6	51.6
Pickup Truck	52.6	51.6
Pickup Truck	52.6	51.6
Total	59.3	64.5

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/9/2019
 Case Description: **Trenching - 50 Feet**

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Receptors	Commercial	65	65	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
All Other Equipment > 5 HP	No	50	85		50	0
Roller	No	20		80	50	0
Backhoe	No	40		77.6	50	0
Flat Bed Truck	No	40		74.3	50	0
Pickup Truck	No	40		75	50	0
Pickup Truck	No	40		75	50	0
Pickup Truck	No	40		75	50	0
Dump Truck	No	40		76.5	50	0

Results

Equipment	Calculated (dBA)	
	*Lmax	L10
All Other Equipment > 5 HP	85	85
Roller	80	76
Backhoe	77.6	76.6
Flat Bed Truck	74.3	73.3
Pickup Truck	75	74
Pickup Truck	75	74
Pickup Truck	75	74
Dump Truck	76.5	75.5
Total	85	87.3

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/9/2019
 Case Description: **Trenching - 100 Feet**

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Receptors	Commercial	65	65	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
All Other Equipment > 5 HP	No	50	85		100	0
Roller	No	20		80	100	0
Backhoe	No	40		77.6	100	0
Flat Bed Truck	No	40		74.3	100	0
Pickup Truck	No	40		75	100	0
Pickup Truck	No	40		75	100	0
Pickup Truck	No	40		75	100	0
Dump Truck	No	40		76.5	100	0

Results

Equipment	Calculated (dBA)	
	*Lmax	L10
All Other Equipment > 5 HP	79	79
Roller	74	70
Backhoe	71.5	70.6
Flat Bed Truck	68.2	67.3
Pickup Truck	69	68
Pickup Truck	69	68
Pickup Truck	69	68
Dump Truck	70.4	69.5
Total	79	81.2

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/9/2019
 Case Description: **Trenching - 660 Feet**

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Receptors	Commercial	65	65	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
All Other Equipment > 5 HP	No	50	85		660	0
Roller	No	20		80	660	0
Backhoe	No	40		77.6	660	0
Flat Bed Truck	No	40		74.3	660	0
Pickup Truck	No	40		75	660	0
Pickup Truck	No	40		75	660	0
Pickup Truck	No	40		75	660	0
Dump Truck	No	40		76.5	660	0

Results

Equipment	Calculated (dBA)	
	*Lmax	L10
All Other Equipment > 5 HP	62.6	62.6
Roller	57.6	53.6
Backhoe	55.1	54.2
Flat Bed Truck	51.8	50.9
Pickup Truck	52.6	51.6
Pickup Truck	52.6	51.6
Pickup Truck	52.6	51.6
Dump Truck	54	53.1
Total	62.6	64.9

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/9/2019
 Case Description: **Horizontal Directional Drilling - 50 Feet**

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptors	Commercial	65	65	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	50	0
Backhoe	No	40		77.6	50	0
Auger Drill Rig	No	20		84.4	50	0
Slurry Trenching Machine	No	50		80.4	50	0
Flat Bed Truck	No	40		74.3	50	0
Drill Rig Truck	No	20		79.1	50	0
Dump Truck	No	40		76.5	50	0
Pickup Truck	No	40		75	50	0
Pickup Truck	No	40		75	50	0
Pickup Truck	No	40		75	50	0
Pickup Truck	No	40		75	50	0

Results

Equipment	Calculated (dBA)	
	*Lmax	L10
Excavator	80.7	79.7
Backhoe	77.6	76.6
Auger Drill Rig	84.4	80.4
Slurry Trenching Machine	80.4	80.3
Flat Bed Truck	74.3	73.3
Drill Rig Truck	79.1	75.2
Dump Truck	76.5	75.5
Pickup Truck	75	74
Pickup Truck	75	74
Pickup Truck	75	74
Pickup Truck	75	74
Total	84.4	87.4

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/9/2019
 Case Description: **Horizontal Directional Drilling - 100 Feet**

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptors	Commercial	65	65	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	100	0
Backhoe	No	40		77.6	100	0
Auger Drill Rig	No	20		84.4	100	0
Slurry Trenching Machine	No	50		80.4	100	0
Flat Bed Truck	No	40		74.3	100	0
Drill Rig Truck	No	20		79.1	100	0
Dump Truck	No	40		76.5	100	0
Pickup Truck	No	40		75	100	0
Pickup Truck	No	40		75	100	0
Pickup Truck	No	40		75	100	0
Pickup Truck	No	40		75	100	0

Results

Equipment	Calculated (dBA)	
	*Lmax	L10
Excavator	74.7	73.7
Backhoe	71.5	70.6
Auger Drill Rig	78.3	74.3
Slurry Trenching Machine	74.3	74.3
Flat Bed Truck	68.2	67.3
Drill Rig Truck	73.1	69.1
Dump Truck	70.4	69.5
Pickup Truck	69	68
Pickup Truck	69	68
Pickup Truck	69	68
Pickup Truck	69	68
Total	78.3	81.4

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/9/2019
 Case Description: **Horizontal Directional Drilling - 660 Feet**

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptors	Commercial	65	65	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	660	0
Backhoe	No	40		77.6	660	0
Auger Drill Rig	No	20		84.4	660	0
Slurry Trenching Machine	No	50		80.4	660	0
Flat Bed Truck	No	40		74.3	660	0
Drill Rig Truck	No	20		79.1	660	0
Dump Truck	No	40		76.5	660	0
Pickup Truck	No	40		75	660	0
Pickup Truck	No	40		75	660	0
Pickup Truck	No	40		75	660	0
Pickup Truck	No	40		75	660	0

Results

Equipment	Calculated (dBA)	
	*Lmax	L10
Excavator	58.3	57.3
Backhoe	55.1	54.2
Auger Drill Rig	61.9	58
Slurry Trenching Machine	57.9	57.9
Flat Bed Truck	51.8	50.9
Drill Rig Truck	56.7	52.7
Dump Truck	54	53.1
Pickup Truck	52.6	51.6
Pickup Truck	52.6	51.6
Pickup Truck	52.6	51.6
Pickup Truck	52.6	51.6
Total	61.9	65

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 12/9/2019

Case Description: **Cable Pulling - 50 Feet**

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Receptors	Commercial	65	65	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	50	0
Excavator	No	40		80.7	50	0
Crane	No	16		80.6	50	0
All Other Equipment > 5 HP	No	50	85		50	0
Compressor (air)	No	40		77.7	50	0
Tractor	No	40	84		50	0
Pickup Truck	No	40		75	50	0

Results

Equipment	Calculated (dBA)	
	*Lmax	L10
Backhoe	77.6	76.6
Excavator	80.7	79.7
Crane	80.6	75.6
All Other Equipment > 5 HP	85	85
Compressor (air)	77.7	76.7
Tractor	84	83
Pickup Truck	75	74
Total	85	88.8

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/9/2019
 Case Description: **Cable Pulling - 100 Feet**

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Receptors	Commercial	65	65	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	100	0
Excavator	No	40		80.7	100	0
Crane	No	16		80.6	100	0
All Other Equipment > 5 HP	No	50	85		100	0
Compressor (air)	No	40		77.7	100	0
Tractor	No	40	84		100	0
Pickup Truck	No	40		75	100	0

Results

Equipment	Calculated (dBA)	
	*Lmax	L10
Backhoe	71.5	70.6
Excavator	74.7	73.7
Crane	74.5	69.6
All Other Equipment > 5 HP	79	79
Compressor (air)	71.6	70.7
Tractor	78	77
Pickup Truck	69	68
Total	79	82.8

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/9/2019
 Case Description: **Cable Pulling - 660 Feet**

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Receptors	Commercial	65	65	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	660	0
Excavator	No	40		80.7	660	0
Crane	No	16		80.6	660	0
All Other Equipment > 5 HP	No	50	85		660	0
Compressor (air)	No	40		77.7	660	0
Tractor	No	40	84		660	0
Pickup Truck	No	40		75	660	0

Results

Equipment	Calculated (dBA)	
	*Lmax	L10
Backhoe	55.1	54.2
Excavator	58.3	57.3
Crane	58.1	53.2
All Other Equipment > 5 HP	62.6	62.6
Compressor (air)	55.3	54.3
Tractor	61.6	60.6
Pickup Truck	52.6	51.6
Total	62.6	66.4

*Calculated Lmax is the Loudest value.

APPENDIX K-2
Connected Action Construction Noise Levels

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/6/2019

Case Description: **Connected Action - 50 feet**

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Receptors	Commercial	65	65	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Drill Rig Truck	No	20	20	79.1	50	0
Drill Rig Truck	No	20	20	79.1	50	0
Horizontal Boring Hydr. Jack	No	25	25	82	50	0
Horizontal Boring Hydr. Jack	No	25	25	82	50	0
Excavator	No	40	40	80.7	50	0
Excavator	No	40	40	80.7	50	0
Compressor (air)	No	40	40	77.7	50	0
Dump Truck	No	40	40	76.5	50	0
Dump Truck	No	40	40	76.5	50	0
Pickup Truck	No	40	40	75	50	0
Pickup Truck	No	40	40	75	50	0
Pickup Truck	No	40	40	75	50	0
Vacuum Excavator (Vac-truck)	No	40	40	85.3	50	0
Compactor (ground)	No	20	20	83.2	50	0

Results

Equipment	Calculated (dBA)	
	*Lmax	L10
Drill Rig Truck	79.1	75.2
Drill Rig Truck	79.1	75.2
Horizontal Boring Hydr. Jack	82	79
Horizontal Boring Hydr. Jack	82	79
Excavator	80.7	79.7
Excavator	80.7	79.7
Compressor (air)	77.7	76.7
Dump Truck	76.5	75.5
Dump Truck	76.5	75.5
Pickup Truck	75	74
Pickup Truck	75	74
Pickup Truck	75	74
Vacuum Excavator (Vac-truck)	85.3	84.3
Compactor (ground)	83.2	79.2
Total	85.3	89.8

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/6/2019

Case Description: **Connected Action - 100 feet**

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Receptors	Commercial	65	65	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Drill Rig Truck	No	20	20	79.1	100	0
Drill Rig Truck	No	20	20	79.1	100	0
Horizontal Boring Hydr. Jack	No	25	25	82	100	0
Horizontal Boring Hydr. Jack	No	25	25	82	100	0
Excavator	No	40	40	80.7	100	0
Excavator	No	40	40	80.7	100	0
Compressor (air)	No	40	40	77.7	100	0
Dump Truck	No	40	40	76.5	100	0
Dump Truck	No	40	40	76.5	100	0
Pickup Truck	No	40	40	75	100	0
Pickup Truck	No	40	40	75	100	0
Pickup Truck	No	40	40	75	100	0
Vacuum Excavator (Vac-truck)	No	40	40	85.3	100	0
Compactor (ground)	No	20	20	83.2	100	0

Results

Equipment	Calculated (dBA)	
	*Lmax	L10
Drill Rig Truck	73.1	69.1
Drill Rig Truck	73.1	69.1
Horizontal Boring Hydr. Jack	76	73
Horizontal Boring Hydr. Jack	76	73
Excavator	74.7	73.7
Excavator	74.7	73.7
Compressor (air)	71.6	70.7
Dump Truck	70.4	69.5
Dump Truck	70.4	69.5
Pickup Truck	69	68
Pickup Truck	69	68
Pickup Truck	69	68
Vacuum Excavator (Vac-truck)	79.3	78.3
Compactor (ground)	77.2	73.2
Total	79.3	83.8

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/6/2019
 Case Description: **Connected Action - 660 feet**

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Receptors	Commercial	65	65	50

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Drill Rig Truck	No	20	20	79.1	660	0
Drill Rig Truck	No	20	20	79.1	660	0
Horizontal Boring Hydr. Jack	No	25	25	82	660	0
Horizontal Boring Hydr. Jack	No	25	25	82	660	0
Excavator	No	40	40	80.7	660	0
Excavator	No	40	40	80.7	660	0
Compressor (air)	No	40	40	77.7	660	0
Dump Truck	No	40	40	76.5	660	0
Dump Truck	No	40	40	76.5	660	0
Pickup Truck	No	40	40	75	660	0
Pickup Truck	No	40	40	75	660	0
Pickup Truck	No	40	40	75	660	0
Vacuum Excavator (Vac-truck)	No	40	40	85.3	660	0
Compactor (ground)	No	20	20	83.2	660	0

Results

Equipment	Calculated (dBA)	
	*Lmax	L10
Drill Rig Truck	56.7	52.7
Drill Rig Truck	56.7	52.7
Horizontal Boring Hydr. Jack	59.6	56.6
Horizontal Boring Hydr. Jack	59.6	56.6
Excavator	58.3	57.3
Excavator	58.3	57.3
Compressor (air)	55.3	54.3
Dump Truck	54	53.1
Dump Truck	54	53.1
Pickup Truck	52.6	51.6
Pickup Truck	52.6	51.6
Pickup Truck	52.6	51.6
Vacuum Excavator (Vac-truck)	62.9	61.9
Compactor (ground)	60.8	56.8
Total	62.9	67.4

*Calculated Lmax is the Loudest value.