

Appendix D Roadway Construction Noise Modeling Data

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Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/05/2018
 Case Description: Arbor Car Wash Site Preparation

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Single-Family Residence	Residential	69.7	52.2	52.2

Equipment

Description	Impact Device	Usage (%)	Actual Receptor		Estimated Distance (feet)	Shielding (dBA)
			Lmax (dBA)	Lmax (dBA)		
Grader	No	40	85.0	360.0	360.0	0.0
Dozer	No	40	81.7	360.0	360.0	0.0
Front End Loader	No	40	79.1	360.0	360.0	0.0
Backhoe	No	40	77.6	360.0	360.0	0.0
Tractor	No	40	84.0	360.0	360.0	0.0

Results

Equipment Lmax Leq	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader N/A	67.9	63.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer N/A	64.5	60.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader N/A N/A	62.0	58.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe N/A	60.4	56.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor N/A	66.9	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total N/A	67.9	68.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Mulberry Ed. Center	Commercial	69.7	52.2	52.2

Equipment

Description	Impact	Usage Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Grader	No	40	85.0	205.0	0.0		
Dozer	No	40	81.7	205.0	0.0		
Front End Loader	No	40	79.1	205.0	0.0		
Backhoe	No	40	77.6	205.0	0.0		
Tractor	No	40	84.0	205.0	0.0		

Results

Equipment Lmax Leq	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader N/A	72.7	68.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer N/A	69.4	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader N/A N/A	66.9	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe N/A	65.3	61.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor N/A	71.7	67.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total N/A	72.7	73.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 09/05/2018
 Case Description: Arbor Car Wash Paving

**** Receptor #1 ****

Description	Baselines (dBA)		
	Land Use	Daytime	Evening Night
Single-Family Residence	Residential	69.7	52.2 52.2

Description	Equipment					
	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Concrete Mixer Truck	No	40	40	78.8	360.0	0.0
Paver	No	50	50	77.2	360.0	0.0
Roller	No	20	20	80.0	360.0	0.0
Backhoe	No	40	40	77.6	360.0	0.0
Tractor	No	40	40	84.0	360.0	0.0
Front End Loader	No	40	40	79.1	360.0	0.0
All Other Equipment > 5 HP	No	50	50	85.0	360.0	0.0

Equipment	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq		
Concrete Mixer Truck	61.7	57.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Paver	60.1	57.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Roller	62.9	55.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Backhoe	60.4	56.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Tractor	66.9	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Front End Loader	62.0	58.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
All Other Equipment > 5 HP	67.9	64.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Total	67.9	68.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

**** Receptor #2 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Mulberry Ed. Center	Commercial	69.7	52.2	52.2

Equipment

Description	Impact Usage Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Concrete Mixer Truck	No	40	40	78.8	205.0	0.0
Paver	No	50	50	77.2	205.0	0.0
Roller	No	20	20	80.0	205.0	0.0
Backhoe	No	40	40	77.6	205.0	0.0
Tractor	No	40	84.0		205.0	0.0
Front End Loader	No	40	40	79.1	205.0	0.0
All Other Equipment > 5 HP	No	50	50	85.0	205.0	0.0

Results

Equipment	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck	66.5	62.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	65.0	62.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	67.7	60.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	65.3	61.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	71.7	67.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	66.9	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	72.7	69.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	72.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/05/2018
 Case Description: Arbor Car Wash Site Preparation

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Single-Family Residence	Residential	69.7	52.2	52.2

Description	Equipment					
	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		360.0	0.0
Dozer	No	40		81.7	360.0	0.0
Front End Loader	No	40		79.1	360.0	0.0
Backhoe	No	40		77.6	360.0	0.0
Tractor	No	40	84.0		360.0	0.0

Equipment	Results												
	Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night
Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	67.9	63.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													
Dozer	64.5	60.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													
Front End Loader	62.0	58.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													
Backhoe	60.4	56.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													
Tractor	66.9	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													
Total	67.9	68.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													

**** Receptor #2 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Mulberry Ed. Center	Commercial	69.7	52.2	52.2

Equipment

Description	Impact	Usage Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Grader	No	40	85.0	205.0	0.0		
Dozer	No	40	81.7	205.0	0.0		
Front End Loader	No	40	79.1	205.0	0.0		
Backhoe	No	40	77.6	205.0	0.0		
Tractor	No	40	84.0	205.0	0.0		

Results

Equipment	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	72.7	68.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A														
Dozer	69.4	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A														
Front End Loader	66.9	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A N/A														
Backhoe	65.3	61.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A														
Tractor	71.7	67.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A														
Total	72.7	73.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A														

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/05/2018
 Case Description: Arbor Car Wash Demolition

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Single-Family Residence	Residential	69.7	52.2	52.2

Description	Equipment					
	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20	89.6	89.6	360.0	0.0
Dozer	No	40	81.7	81.7	360.0	0.0
Front End Loader	No	40	79.1	79.1	360.0	0.0
Tractor	No	40	84.0	84.0	360.0	0.0
Backhoe	No	40	77.6	77.6	360.0	0.0

Equipment	Results												
	Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night
Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	72.4	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	64.5	60.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	62.0	58.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	66.9	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	60.4	56.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	72.4	68.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Mulberry Ed. Center	Commercial	69.7	52.2	52.2

Equipment

Description	Impact	Usage Device	Actual (%)	Receptor		Estimated Distance (feet)	Shielding (dBA)
				Lmax (dBA)	Lmax (dBA)		
Concrete Saw	No	No	20	89.6	205.0	205.0	0.0
Dozer	No	No	40	81.7	205.0	205.0	0.0
Front End Loader	No	No	40	79.1	205.0	205.0	0.0
Tractor	No	No	40	84.0	205.0	205.0	0.0
Backhoe	No	No	40	77.6	205.0	205.0	0.0

Results

Equipment	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	77.3	70.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	69.4	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	66.9	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	71.7	67.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	65.3	61.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.3	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/05/2018
 Case Description: Arbor Car Wash Construction

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Single-Family Residence	Residential	69.7	52.2	52.2

Description	Equipment					
	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Crane	No	16	80.6	360.0	0.0	
Welder / Torch	No	40	74.0	360.0	0.0	
Roller	No	20	80.0	360.0	0.0	
Backhoe	No	40	77.6	360.0	0.0	
Tractor	No	40	84.0	360.0	0.0	
Front End Loader	No	40	79.1	360.0	0.0	
All Other Equipment > 5 HP	No	50	85.0	360.0	0.0	

Equipment	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq		
Crane	63.4	55.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Welder / Torch	56.9	52.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Roller	62.9	55.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Backhoe	60.4	56.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Tractor	66.9	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Front End Loader	62.0	58.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
All Other Equipment > 5 HP	67.9	64.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Total	67.9	68.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

**** Receptor #2 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Mulberry Ed. Center	Commercial	69.7	52.2	52.2

Equipment

Description	Impact	Spec Usage Device (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Crane	No	16	80.6	205.0	0.0	
Welder / Torch	No	40	74.0	205.0	0.0	
Roller	No	20	80.0	205.0	0.0	
Backhoe	No	40	77.6	205.0	0.0	
Tractor	No	40	84.0	205.0	0.0	
Front End Loader	No	40	79.1	205.0	0.0	
All Other Equipment > 5 HP	No	50	85.0	205.0	0.0	

Results

Equipment Lmax Leq	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq		
Crane N/A	68.3	60.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Welder / Torch N/A N/A	61.7	57.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Roller N/A	67.7	60.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Backhoe N/A	65.3	61.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Tractor N/A	71.7	67.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Front End Loader N/A N/A	66.9	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
All Other Equipment > 5 HP N/A N/A N/A	72.7	69.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Total	72.7	73.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 09/05/2018
 Case Description: Arbor Car Wash Arch Coatings

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Single-Family Residence	Residential	69.7	52.2	52.2

Equipment

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

Results

Equipment Lmax Leq	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	60.5	56.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	60.5	56.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Mulberry Ed. Center	Commercial	69.7	52.2	52.2

Equipment

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

Results

Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
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Equipment	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	65.4	61.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	65.4	61.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/26/2018
 Case Description: Hypothetical Retail Site Preparation

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Single Family Residence	Residential	69.7	52.2	52.2

Description	Equipment					
	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Grader	No	40	85.0	146.0	0.0	
Dozer	No	40	81.7	146.0	0.0	
Backhoe	No	40	77.6	146.0	0.0	
Front End Loader	No	40	79.1	146.0	0.0	
Tractor	No	40	84.0	146.0	0.0	

Equipment	Results												
	Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night
Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	75.7	71.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													
Dozer	72.4	68.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													
Backhoe	68.3	64.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													
Front End Loader	69.8	65.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													
Tractor	74.7	70.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													
Total	75.7	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													

**** Receptor #2 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Mulberry Ed. Center	Commercial	69.7	52.2	52.2

Equipment

Description	Impact	Usage Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Grader	No	No	40	85.0		308.0	0.0
Dozer	No	No	40		81.7	308.0	0.0
Backhoe	No	No	40		77.6	308.0	0.0
Front End Loader	No	No	40		79.1	308.0	0.0
Tractor	No	No	40	84.0		308.0	0.0

Results

Equipment Lmax Leq	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader N/A	69.2	65.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer N/A	65.9	61.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe N/A	61.8	57.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader N/A N/A	63.3	59.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor N/A	68.2	64.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total N/A	69.2	69.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/26/2018
 Case Description: Hypothetical Retail Paving

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Single Family Residence	Residential	69.7	52.2	52.2

Description	Equipment					
	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Concrete Mixer Truck	No	40	78.8	146.0	0.0	
Paver	No	50	77.2	146.0	0.0	
All Other Equipment > 5 HP	No	50	85.0	146.0	0.0	
Roller	No	20	80.0	146.0	0.0	
Backhoe	No	40	77.6	146.0	0.0	
Front End Loader	No	40	79.1	146.0	0.0	
Tractor	No	40	84.0	146.0	0.0	

Equipment	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck	69.5	65.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	67.9	64.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	75.7	72.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	70.7	63.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	68.3	64.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	69.8	65.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	74.7	70.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	75.7	76.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Mulberry Ed. Center	Commercial	69.7	52.2	52.2

Equipment

Description	Impact	Spec Usage Device (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Concrete Mixer Truck	No	40	78.8	308.0	0.0	
Paver	No	50	77.2	308.0	0.0	
All Other Equipment > 5 HP	No	50	85.0	308.0	0.0	
Roller	No	20	80.0	308.0	0.0	
Backhoe	No	40	77.6	308.0	0.0	
Front End Loader	No	40	79.1	308.0	0.0	
Tractor	No	40	84.0	308.0	0.0	

Results

Equipment	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq		
Concrete Mixer Truck	63.0	59.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Paver	61.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
All Other Equipment > 5 HP	69.2	66.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Roller	64.2	57.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Backhoe	61.8	57.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Front End Loader	63.3	59.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Tractor	68.2	64.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Total	69.2	70.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/26/2018
 Case Description: Hypothetical Retail Grading

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Single Family Residence	Residential	69.7	52.0	52.2

Description	Equipment				
	Impact Device	Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance Shielding (dBA)
Grader	No	40	85.0	146.0	0.0
Dozer	No	40	81.7	146.0	0.0
Backhoe	No	40	77.6	146.0	0.0
Front End Loader	No	40	79.1	146.0	0.0
Tractor	No	40	84.0	146.0	0.0

Equipment	Results												
	Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night
Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	75.7	71.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													
Dozer	72.4	68.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													
Backhoe	68.3	64.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													
Front End Loader	69.8	65.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A												
Tractor	74.7	70.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													
Total	75.7	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A													

**** Receptor #2 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Mulberry Ed. Center	Commercial	69.7	52.2	52.2

Equipment

Description	Impact	Usage Device	Actual		Receptor		Estimated	
			Lmax (dBA)	Leq (%)	Lmax (dBA)	Distance (feet)	Shielding (dBA)	
Grader	No	40	85.0		308.0	0.0		
Dozer	No	40	81.7		308.0	0.0		
Backhoe	No	40	77.6		308.0	0.0		
Front End Loader	No	40	79.1		308.0	0.0		
Tractor	No	40	84.0		308.0	0.0		

Results

Equipment	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	69.2	65.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	65.9	61.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	61.8	57.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	63.3	59.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	68.2	64.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	69.2	69.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/26/2018
 Case Description: Hypothetical Retail Construction

**** Receptor #1 ****

Description	Baselines (dBA)		
	Land Use	Daytime	Evening Night
Single Family Residence	Residential	69.7	52.2 52.2

Description	Equipment					
	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Crane	No	16	80.6	146.0	0.0	
All Other Equipment > 5 HP	> 5 HP	No	50	85.0	146.0	0.0
Generator	No	50	80.6	146.0	0.0	
Backhoe	No	40	77.6	146.0	0.0	
Front End Loader	No	40	79.1	146.0	0.0	
Tractor	No	40	84.0	146.0	0.0	
Welder / Torch	No	40	74.0	146.0	0.0	

Equipment	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	71.2	63.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	75.7	72.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	71.3	68.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	68.3	64.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	69.8	65.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	74.7	70.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	64.7	60.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	75.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Mulberry Ed. Center	Commercial	69.7	52.2	52.2

Equipment

Description	Impact	Spec Usage Device (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Crane	No	16	80.6	308.0	0.0	
All Other Equipment > 5 HP	No	50	85.0	308.0	0.0	
Generator	No	50	80.6	308.0	0.0	
Backhoe	No	40	77.6	308.0	0.0	
Front End Loader	No	40	79.1	308.0	0.0	
Tractor	No	40	84.0	308.0	0.0	
Welder / Torch	No	40	74.0	308.0	0.0	

Results

Equipment	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq		
Crane	64.8	56.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
All Other Equipment > 5 HP	69.2	66.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Generator	64.8	61.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Backhoe	61.8	57.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Front End Loader	63.3	59.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Tractor	68.2	64.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Welder / Torch	58.2	54.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Total	69.2	70.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/26/2018
 Case Description: Hypothetical Retail Arch Coatings

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Single Family Residence	Residential	69.7	52.2	52.2

Equipment

Description	Impact Device	Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Compressor (air)	No	40	77.7	146.0	0.0	

Results

Equipment Lmax Leq	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	68.4	64.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	68.4	64.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Mulberry Ed. Center	Commercial	69.7	52.2	52.2

Equipment

Description	Impact Device	Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Compressor (air)	No	40	77.7	308.0	0.0	

Results

Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
--------------------	--	--	--	--	--	------------------------------	--	--	--	--	--

Equipment	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	61.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	61.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A