APPENDIX E – NOISE MODELING

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/21/2018
Case Description: Greenville Project- Site Prep

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest House	Residential	1	1	1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		1325	5
Tractor	No	40	84		1325	5

Results

Equipment		Calculated (dBA) *Lmax	L10	Noise Limits (dBA) Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10	Noise Limit Exceedance (dBA) Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10
Grader		51.5	50.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		50.5	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	51.5	53.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/21/2018
Case Description: Greenville Project- Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Nearest House	Residential	1	1	1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	1325	5
Dozer	No	40		81.7	1325	5
Tractor	No	40	84		1325	5
Tractor	No	40	84		1325	5

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
	*Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Concrete Saw	56.1	52.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	48.2	47.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	50.5	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	50.5	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	56.1	56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/21/2018
Case Description: Greenville Project- Construction

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Nearest House	Residential	1	1	1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	1325	5
Front End Loader	No	40		79.1	1325	5
Front End Loader	No	40		79.1	1325	5
Tractor	No	40	84		1325	5
Tractor	No	40	84		1325	5

Results

Equipment		Calculated (dBA) *Lmax	L10	Noise Limits (dBA) Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10	Noise Limit Exceedance (dBA) Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10
Crane		47.1	42.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader		45.6	44.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader		45.6	44.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		50.5	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		50.5	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	50.5	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/21/2018
Case Description: Greenville Project- Paving

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Nearest House	Residential	1	1	1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Drum Mixer	No	50		80	1325	5
Drum Mixer	No	50		80	1325	5
Drum Mixer	No	50		80	1325	5
Drum Mixer	No	50		80	1325	5
Paver	No	50		77.2	1325	5
Roller	No	20		80	1325	5
Tractor	No	40	84		1325	5

Results

Calculated (dBA)   Noise Limits (dBA)   Noise Limit Exceedance (dBA)

Equipment	*Lmax	L10	Day Lmax	Day L10	Evening Lmax	Evening L10	Night Lmax	Night L10	Day Lmax	Day L10	Evening Lmax	Evening L10	Night Lmax	Night L10
Drum Mixer	46.5	46.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drum Mixer	46.5	46.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drum Mixer	46.5	46.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drum Mixer	46.5	46.5	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	43.8	43.7	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	46.5	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	50.5	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	50.5	54.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 169896
Project Name: Greenville Plaza Project

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Aliquot (2018)
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	CNEL at 100 Feet	Distance in Feet from Centerline of Roadway to Contour 70 CNEL	65 CNEL	60 CNEL	55 CNEL
Northfront Road												
Greenville Road to Herman Avenue	2	0	8,300	40	0.5	4.1%	10.9%	64.8	45	97	209	451
Greenville Road												
Northfront Road to Southfront Road	2	0	13,300	45	0.5	4.1%	10.9%	67.6	69	148	320	688

[1] Distance is from the centerline of the roadway segment to the receptor location.

"-" = contour is located within the roadway right-of-way.

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 169896
Project Name: Greenville Plaza Project

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Aliquot (2018)
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	CNEL at 100 Feet	Distance in Feet from Centerline of Roadway to Contour 70 CNEL	65 CNEL	60 CNEL	55 CNEL
Northfront Road												
Greenville Road to Herman Avenue	2	0	10,100	40	0.5	4.1%	10.9%	65.7	51	111	239	514
Greenville Road												
Northfront Road to Southfront Road	2	0	15,100	45	0.5	4.1%	10.9%	68.1	75	161	348	749

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 169896
Project Name: Greenville Plaza Project

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Aliquot (2018)
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix Medium Trucks	Heavy Trucks	CNEL at 100 Feet	Distance in Feet from Centerline of Roadway to Contour 70 CNEL	65 CNEL	60 CNEL	55 CNEL
Northfront Road												
Greenville Road to Herman Avenue	2	0	11,600	40	0.5	4.1%	10.9%	66.3	56	122	262	564
Greenville Road												
Northfront Road to Southfront Road	2	0	18,600	45	0.5	4.1%	10.9%	69.0	86	185	400	861

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 169896
Project Name: Greenville Plaza Project

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Aliquot (2018)
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	CNEL at 100 Feet	Distance in Feet from Centerline of Roadway to Contour 70 CNEL	65 CNEL	60 CNEL	55 CNEL
Northfront Road												
Greenville Road to Herman Avenue	2	0	13,400	40	0.5	4.1%	10.9%	66.9	62	134	288	621
Greenville Road												
Northfront Road to Southfront Road	2	0	19,800	45	0.5	4.1%	10.9%	69.3	90	193	417	898

[1] Distance is from the centerline of the roadway segment to the receptor location.

"-" = contour is located within the roadway right-of-way.