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February 13, 2021

ATTN: Peter Martz
4 Way Ranch Joint Venture, LLC
P.O. Box 50223
Colorado Springs, CO 80949

RE: Waterbury Filing Nos. 1 and 2
Noise Impact Study
El Paso County, Colorado
LSC #204221

Dear Peter:

In response to your request, LSC Transportation Consultants, Inc. has completed this analysis of the noise impacts of Stapleton Drive on the proposed Waterbury Filing Nos. 1 and 2, to be located north of Stapleton Drive and east of Eastonville Road in El Paso County, Colorado. LSC has completed an evaluation of the noise exposure for submittal to El Paso County in accordance with Federal Highway Administration (FHWA) and El Paso County requirements.

LSC used the software program Traffic Noise Model Version 2.5, developed by FHWA, to predict the noise levels at eleven locations within the development adjacent to Stapleton Drive. Figure 1 shows the location of the receivers. An elevation of five feet was assumed for the receivers.

The input data for the noise predictions included the projected traffic volumes, roadway geometries, topographic elevations, and receiver locations. The analysis was completed using the projected 2040 traffic volumes taken from the *Waterbury Filing Nos. 1 and 2 Traffic Impact Analysis* by LSC dated February 12, 2021. The noise analysis input and output reports are attached.

All receiver locations along Stapleton Drive have predicted noise levels that would not exceed the 67 decibels Leq threshold, where noise mitigation would be required, per the El Paso County *Engineering Criteria Manual*.

We trust that this noise impact study will assist you in planning the proposed Waterview North Preliminary Plan. Please contact me if you have any questions or need further assistance.
Respectfully submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

By 
Kirstin Day Ferrin, P.E.
Senior Transportation Engineer

KDF:jas

Enclosures: Figure 1
Noise Analysis Input and Output Reports

Figure 1



Noise Analysis Inputs/Outputs



INPUT: TRAFFIC FOR LAeq1h Volumes

Waterbury Fil Nos 1 & 2

LSC		12 February 2021												
KDF		TNM 2.5												
INPUT: TRAFFIC FOR LAeq1h Volumes														
PROJECT/CONTRACT:		Waterbury Fil Nos 1 & 2												
RUN:		2040 PM Peak Hour												
Roadway	Points													
Name	Name	No.	Segment		MTrucks		HTrucks		Buses		Motorcycles			
			Autos		V	S	V	S	V	S	V	S	V	S
					veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Stapleton Dr WB W/O Saybrook Dr	point1	1	1140	45	24	45	12	45	0	0	0	0	0	0
	point3	3	1140	45	24	45	12	45	0	0	0	0	0	0
	point4	4	1140	45	24	45	12	45	0	0	0	0	0	0
	point5	5	1140	45	24	45	12	45	0	0	0	0	0	0
	point6	6	1140	45	24	45	12	45	0	0	0	0	0	0
	point7	7	1140	45	24	45	12	45	0	0	0	0	0	0
	point8	8	1140	45	24	45	12	45	0	0	0	0	0	0
	point9	9	1140	45	24	45	12	45	0	0	0	0	0	0
	point10	10	1140	45	24	45	12	45	0	0	0	0	0	0
	point11	11	1140	45	24	45	12	45	0	0	0	0	0	0
	point12	12	1140	45	24	45	12	45	0	0	0	0	0	0
		point2	2											
Stapleton Dr WB E/O Saybrook Dr	point13	13	1121	45	23	45	12	45	0	0	0	0	0	0
	point15	15	1121	45	23	45	12	45	0	0	0	0	0	0
	point16	16	1121	45	23	45	12	45	0	0	0	0	0	0
	point17	17	1121	45	23	45	12	45	0	0	0	0	0	0
	point18	18	1121	45	23	45	12	45	0	0	0	0	0	0
	point19	19	1121	45	23	45	12	45	0	0	0	0	0	0
	point20	20	1121	45	23	45	12	45	0	0	0	0	0	0
		point14	14											
Stapleton Dr EB W/O Saybrook Dr	point21	21	916	45	19	45	9	45	0	0	0	0	0	0
	point23	23	916	45	19	45	9	45	0	0	0	0	0	0
	point24	24	916	45	19	45	9	45	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes**Waterbury Fil Nos 1 & 2**

	point25	25	916	45	19	45	9	45	0	0	0	0
	point26	26	916	45	19	45	9	45	0	0	0	0
	point27	27	916	45	19	45	9	45	0	0	0	0
	point28	28	916	45	19	45	9	45	0	0	0	0
	point29	29	916	45	19	45	9	45	0	0	0	0
	point30	30	916	45	19	45	9	45	0	0	0	0
	point31	31	916	45	19	45	9	45	0	0	0	0
	point32	32	916	45	19	45	9	45	0	0	0	0
	point22	22										
Stapleton Dr EB E/O Saybrook Dr	point33	33	804	45	17	45	8	45	0	0	0	0
	point35	35	804	45	17	45	8	45	0	0	0	0
	point36	36	804	45	17	45	8	45	0	0	0	0
	point37	37	804	45	17	45	8	45	0	0	0	0
	point38	38	804	45	17	45	8	45	0	0	0	0
	point39	39	804	45	17	45	8	45	0	0	0	0
	point40	40	804	45	17	45	8	45	0	0	0	0
	point34	34										

INPUT: ROADWAYS

Waterbury Fil Nos 1 & 2

LSC					12 February 2021						
KDF					TNM 2.5						
INPUT: ROADWAYS									Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA		
PROJECT/CONTRACT:	Waterbury Fil Nos 1 & 2										
RUN:	2040 PM Peak Hour										

Roadway	Width	Points	No.	Coordinates (pavement)			Flow Control			Segment	
Name		Name		X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Stapleton Dr WB W/O Saybrook Dr	24.0	point1	1	3,265,046.0	1,415,171.8	6,922.00	Signal	0.00	50	Average	
		point3	3	3,264,875.2	1,415,089.1	6,920.00				Average	
		point4	4	3,264,784.5	1,415,044.8	6,918.00				Average	
		point5	5	3,264,361.0	1,414,840.2	6,916.00				Average	
		point6	6	3,264,326.8	1,414,823.9	6,914.00				Average	
		point7	7	3,264,309.2	1,414,815.9	6,914.00				Average	
		point8	8	3,264,252.2	1,414,792.1	6,916.00				Average	
		point9	9	3,264,219.8	1,414,778.5	6,918.00				Average	
		point10	10	3,264,208.5	1,414,773.9	6,920.00				Average	
		point11	11	3,264,165.0	1,414,755.8	6,920.00				Average	
		point12	12	3,264,132.0	1,414,741.9	6,918.00				Average	
		point2	2	3,264,062.0	1,414,714.6	6,916.50					
Stapleton Dr WB E/O Saybrook Dr	24.0	point13	13	3,266,223.8	1,415,181.8	6,908.00				Average	
		point15	15	3,266,065.2	1,415,244.2	6,910.00				Average	
		point16	16	3,265,901.8	1,415,286.2	6,912.00				Average	
		point17	17	3,265,719.8	1,415,308.8	6,914.00				Average	
		point18	18	3,265,529.8	1,415,306.4	6,916.00				Average	
		point19	19	3,265,330.0	1,415,273.8	6,915.00				Average	
		point20	20	3,265,144.2	1,415,215.2	6,916.00				Average	
		point14	14	3,265,051.5	1,415,171.8	6,916.50					
Stapleton Dr EB W/O Saybrook Dr	24.0	point21	21	3,264,083.0	1,414,659.8	6,916.50				Average	
		point23	23	3,264,154.5	1,414,687.6	6,918.00				Average	
		point24	24	3,264,187.8	1,414,701.5	6,920.00				Average	
		point25	25	3,264,231.2	1,414,719.6	6,920.00				Average	
		point26	26	3,264,242.5	1,414,724.2	6,918.00				Average	

INPUT: ROADWAYS

Waterbury Fil Nos 1 & 2

		point27	27	3,264,275.0	1,414,737.8	6,916.00				Average
		point28	28	3,264,332.0	1,414,761.8	6,914.00				Average
		point29	29	3,264,349.2	1,414,768.9	6,914.00				Average
		point30	30	3,264,388.0	1,414,787.1	6,916.00				Average
		point31	31	3,264,810.5	1,414,991.6	6,918.00				Average
		point32	32	3,264,901.2	1,415,035.6	6,920.00				Average
		point22	22	3,265,070.2	1,415,117.4	6,922.00				
Stapleton Dr EB E/O Saybrook Dr	24.0	point33	33	3,265,075.5	1,415,120.0	6,916.50	Signal	0.00	50	Average
		point35	35	3,265,166.2	1,415,159.8	6,916.00				Average
		point36	36	3,265,343.8	1,415,215.8	6,915.00				Average
		point37	37	3,265,533.2	1,415,246.1	6,916.00				Average
		point38	38	3,265,716.5	1,415,249.2	6,914.00				Average
		point39	39	3,265,884.5	1,415,229.1	6,912.00				Average
		point40	40	3,266,047.0	1,415,187.8	6,910.00				Average
		point34	34	3,266,197.2	1,415,128.5	6,908.00				

INPUT: RECEIVERS

Waterbury Fil Nos 1 & 2

LSC							12 February 2021				
KDF							TNM 2.5				
INPUT: RECEIVERS											
PROJECT/CONTRACT:		Waterbury Fil Nos 1 & 2									
RUN:		2040 PM Peak Hour									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Lot 20	1	1	3,264,593.2	1,415,094.8	6,931.00	4.92	0.00	67	10.0	8.0	Y
Lot 21	2	1	3,264,689.2	1,415,101.9	6,931.00	4.92	0.00	67	10.0	8.0	Y
Lot 22	3	1	3,264,758.5	1,415,244.8	6,935.00	4.92	0.00	67	10.0	8.0	Y
Lot 45	4	1	3,264,875.2	1,415,278.1	6,935.00	4.92	0.00	67	10.0	8.0	Y
Lot 46	5	1	3,265,056.0	1,415,400.5	6,935.00	4.92	0.00	67	10.0	8.0	Y
Lot 68	6	1	3,265,203.2	1,415,378.6	6,927.50	4.92	0.00	67	10.0	8.0	Y
Lot 69	7	1	3,265,287.8	1,415,362.6	6,925.50	4.92	0.00	67	10.0	8.0	Y
Lot 70	8	1	3,265,346.8	1,415,372.6	6,924.50	4.92	0.00	67	10.0	8.0	Y
Lot 71	9	1	3,265,406.0	1,415,382.8	6,924.00	4.92	0.00	67	10.0	8.0	Y
Lot 72	10	1	3,265,465.2	1,415,392.9	6,923.00	4.92	0.00	67	10.0	8.0	Y
Lot 73	11	1	3,265,579.5	1,415,414.6	6,922.00	4.92	0.00	67	10.0	8.0	Y