

LOOP 202 SOUTH MOUNTAIN FREEWAY NOISE MEASUREMENT LEVELS | OCTOBER 20-23, 2020

In October 2020, ADOT conducted noise measurements in compliance with the Final Environmental Impact Statement (FEIS) for the Loop 202 South Mountain Freeway, and evaluated the common noise environment within the project area after the freeway was considered “fully operational.” ADOT took noise measurements at representative locations along the South Mountain Freeway, such as neighborhoods, parks, schools and similar locations, and covered all noise-sensitive areas throughout the corridor, within the project limits, and at areas within approximately 1,000 feet from the freeway. The specific locations are provided in the table below, with dates and times, and the decibel levels observed. The noise measurements were conducted in the morning and the afternoon at every location.

LOCATION	LOCATION DESCRIPTION	NEAREST POSTAL ADDRESS	Date	Time (AM)	Total Leq (dBA)	Leq Test 1	Leq Test 2	Leq Test 3	Time (PM)	Total Leq (dBA)	Leq Test 1	Leq Test 2	Leq Test 3
SITE 1	CORNER AT N59 DR/W BELLEVIEW ST	1144 N 59TH DR, PHOENIX	10/21/2020	6:18:00 AM	61.3	61.7	62.5	59.8	2:25:00 PM	60.0	60.1	59.8	60.1
SITE 2	CUL DE SAC N59TH DR	1031 N 59TH DR, PHOENIX	10/21/2020	6:59:00 AM	57.6	58.1	57.8	57.0	3:08:00 PM	54.7	54.8	54.1	55.3
SITE 3	CUL DE SAC W RAYMOND ST	6201 W RAYMOND ST, PHOENIX	10/21/2020	7:45:00 AM	54.9	55.5	54.0	55.3	3:48:00 PM	53.1	54.0	52.9	52.3
SITE 4	CORNER OF W JONES AVE/S61ST AVE	6059 W JONES AVE, PHOENIX	10/22/2020	6:26:00 AM	58.7	58.8	58.4	58.8	2:37:00 PM	54.1	53.1	54.6	54.5
SITE 5	CORNER OF S 62ND AVE AND W ENCINAS LANE	6206 W ENCINAS LN, PHOENIX	10/22/2020	7:06:00 AM	58.4	58.8	58.5	57.9	3:16:00 PM	57.1	57.8	56.6	57.0
SITE 6	COUNTRY GARDENS CHARTER SCHOOL	6313 W SOUTHERN AVE, LAVEEN VILLAGE	10/22/2020	7:48:00 AM	59.6	61.5	59.2	58.2	4:01:00 PM	56.9	55.8	58.3	56.7
SITE 7	NEAR CORNER OF W CARSON RD AND 63RD AVE	7110 S 62ND AVE, LAVEEN VILLAGE	10/23/2020	6:27:00 AM	65.2	65.2	65.8	64.7	2:39:00 PM	59.9	61.2	59.8	58.8
SITE 8	NEAR THE RESIDENCE IN POSTAL ADDRESS	4436 W. MONTEREY RD, LAVEEN VILLAGE	10/23/2020	7:24:00 AM	54.6	55.3	55.6	52.8	3:30:00 PM	55.2	55.8	57.3	52.6
SITE 9	NEAR THE RESIDENCE IN POSTAL ADDRESS	4338 W. GALVESTON ST., LAVEEN VILLAGE	10/23/2020	7:55:00 AM	54.6	52.9	55.3	55.7	4:09:00 PM	57.1	57.2	57.2	57.0
SITE 10	NEAR S32ND LANE AND W REDWOOD LN	3209-3205 W REDWOOD LN, PHOENIX	10/20-21/202	6:50:00 AM	59.6	59.9	59.7	59.3	2:30:00 PM	54.9	54.8	54.6	55.4
SITE 11	ON S CHANDLER BLVD, S27 AVE AND W CEDARWOOD	2720 W BRIARWOOD TERRACE, PHOENIX	10/20-21/202	7:33:00 AM	60.2	60.9	59.9	59.7	3:24:00 PM	51.3	50.7	51.4	51.7
SITE 12	CORNER OF COTTONWOOD AND S18 DR	1825 W LIBERTY LN PHOENIX	10/20-21/202	8:15:00 AM	49.1	48.8	49.1	49.3	4:08:00 PM	50.9	51.2	50.7	50.9
SITE 13	CORNER OF W LIBERTY AND S14 AVE	1403 W WINDSONG DR PHOENIX	10/21-22/202	6:45:00 AM	61.2	60.7	61.1	61.7	2:30:00 PM	60.3	59.1	60.8	60.9
SITE 14	CORNER OF W LIBERTY AND 1 SOUTH DR	16861 SOUTH 1ST DRIVE, PHOENIX	10/21-22/202	7:30:00 AM	58.7	57.8	58.9	59.5	3:26:00 PM	62.0	61.5	61.9	62.5
SITE 15	PARKING LOT NEAR 301 E REDWOOD LN PHOENIX 85048	301 E REDWOOD LN PHOENIX	10/21-22/202	8:18:00 AM	54.8	55.0	54.9	54.5	2:27:00 PM	61.1	61.7	61.0	60.5
SITE 16	NEAR USPS OFFICE AT 16825 S DESERT FOOTHILLS PKWY	16825 S DESERT FOOTHILLS PKWY	10/22-23/202	6:30:00 AM	66.3	66.4	66.1	66.3	2:37:00 PM	65.1	63.7	65.9	65.7
SITE 17	PARKING LOT AT HORIZON PRESBYTERIAN CHURCH	1401 E LIBERTY LN, PHOENIX	10/22-23/202	7:27:00 AM	54.6	54.5	54.6	54.6	3:28:00 PM	63.7	64.5	63.7	63.0
SITE 18	CORNER OF S18 WAY AND E LIBERTY	16880 S 18TH WY PHOENIX	10/22-23/202	8:16:00 AM	63.7	63.7	64.0	63.5	4:08:00 PM	63.4	63.1	63.4	63.7
SITE 19	NEAR FOOTHILLS COMMUNITY ASSOCIATION	16867 S 20TH WY PHOENIX	10/21/2020	8:05:00 AM	55.8	55.7	55.3	56.4	2:25:00 PM	56.5	54.2	54.6	60.7
SITE 20	CUL DE SAC (FORMER MOUNTAIN PARK CHURCH) ON S24 PL	16855 S 24TH PL PHOENIX	10/21/2020	7:19:00 AM	54.1	54.5	54.2	53.5	3:42:00 PM	53.5	53.9	53.8	52.8
SITE 21	CORNER OF E REDWOOD AND S29TH PL	16814 S 29TH PL PHOENIX	10/21/2020	6:31:00 AM	53.3	53.7	52.9	53.4	4:22:00 PM	49.6	50.1	49.7	49.1
SITE 22	NEAR 3215 E CEDARWOOD LN, PHOENIX, AZ, USA	3215 E CEDARWOOD LN, PHOENIX	10/22/2020	8:30:00 AM	53.5	51.0	54.3	55.1	3:15:00 PM	53.9	50.3	54.3	57.0
SITE 23	NEAR 3301 E CEDARWOOD LN, PHOENIX, AZ, USA	3301 E CEDARWOOD LN, PHOENIX	10/22/2020	7:37:00 AM	56.2	56.7	55.8	56.0	4:00:00 PM	54.3	53.8	54.6	54.4
SITE 24	NEAR 17014 SOUTH 34TH STREET, PHOENIX, AZ, USA	17014 SOUTH 34TH STREET, PHOENIX	10/22/2020	6:30:00 AM	56.5	56.4	57.7	55.4	2:30:00 PM	50.6	50.6	50.8	50.4
SITE 25	CORNER OF E CEDARWOOD AND S36TH WAY	16857 S 36TH WAY, PHOENIX	10/23/2020	6:30:00 AM	53.5	53.2	53.3	54.0	2:30:00 PM	56.0	56.3	56.7	54.9
SITE 26	RAMADA IN NEIGHBORHOOD PARK FOOTHILLS PASEO II	4301 E CEDARWOOD LN PHOENIX	10/23/2020	7:15:00 AM	52.5	52.6	52.9	52.0	4:23:00 PM	58.9	58.7	58.7	59.2
SITE 27	CUL DE SAC AT S46 PL	16645 S 46TH PL PHOENIX	10/23/2020	8:00:00 AM	48.8	50.1	48.1	48.3	3:36:00 PM	51.7	49.7	52.7	52.7

Based on the analysis, noise abatement measures are in compliance with the Final Environmental Impact Statement (FEIS), and meet or exceed federal and ADOT requirements. Any further noise analysis is not warranted at this time.

In addition to the noise measurements in the field, the testing of acoustical performance of the pavement surface was completed. Three procedures were performed and results compared to other pavement surfaces on the system:

- Controlled Wayside Statistical Isolated Pass-by Method (AASHTO TP98-18)
- Measurement of Interior Sound Levels of Light Vehicles (SAE J1477)
- Acoustic camera – Beamforming (Delay and Sum FD algorithm)

The finding is that the acoustical performance of the new pavement surface exceeds performance expectations.

Figure 1 – Location of testing sites – Site 1 and Site 2

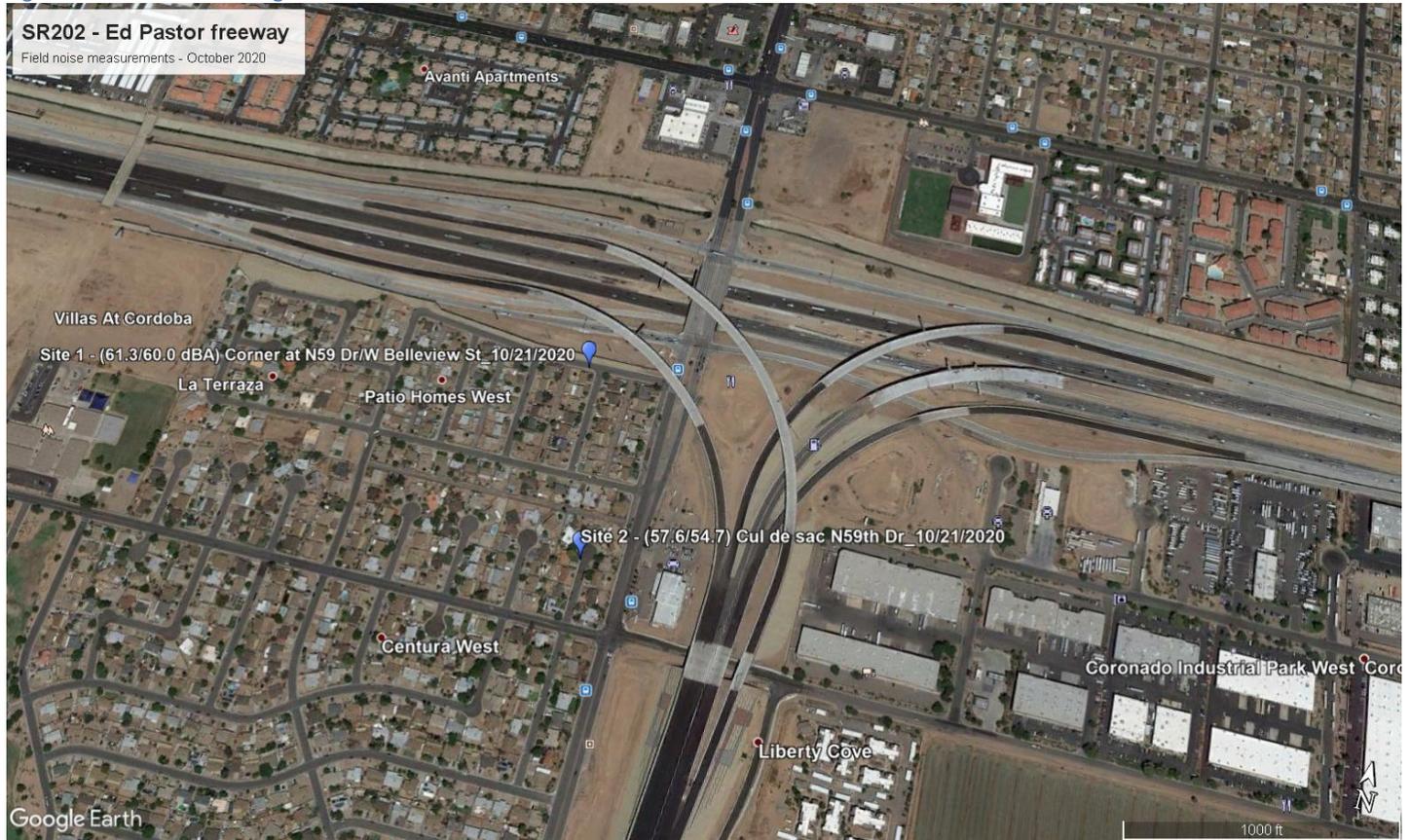


Figure 2 – Location of testing sites – Site 3, Site 4, and Site 5



Figure 3– Location of testing sites – Site 6



Figure 4– Location of testing sites – Site 7



Figure 5 – Location of testing sites – Site 8 and Site 9



Figure 6 – Location of testing sites – Site 10



Figure 7 – Location of testing sites – Site 11



Figure 8 – Location of testing sites – Site 12



Figure 9 – Location of testing sites – Site 13 and Site 14



Figure 10 – Location of testing sites – Site 15



Figure 11 – Location of testing sites – Site 16 and Site 17



Figure 12 – Location of testing sites – Site 18 and Site 19

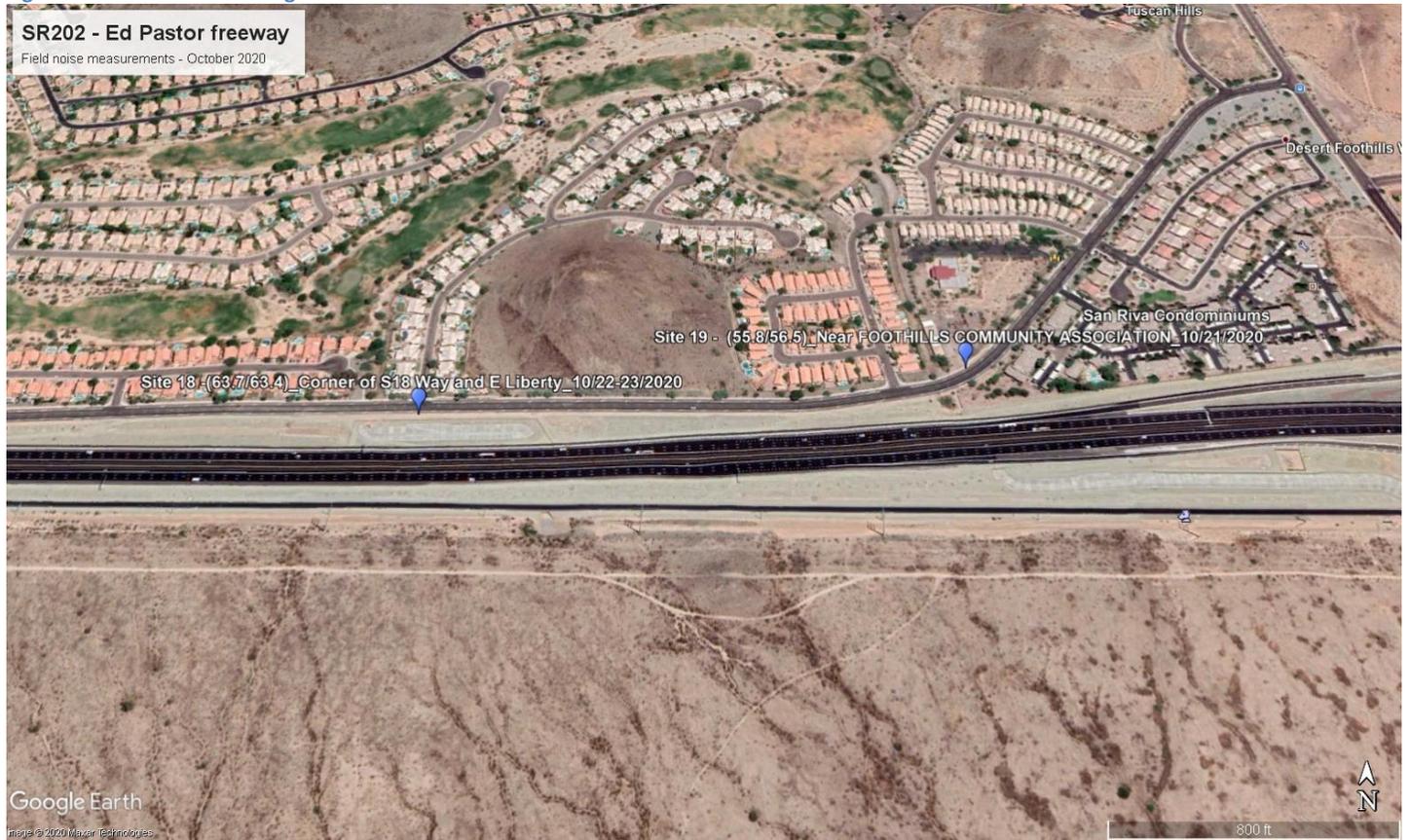


Figure 13 – Location of testing sites – Site 20 and Site 21



Figure 14 – Location of testing sites – Site 22, Site 23, and Site 24

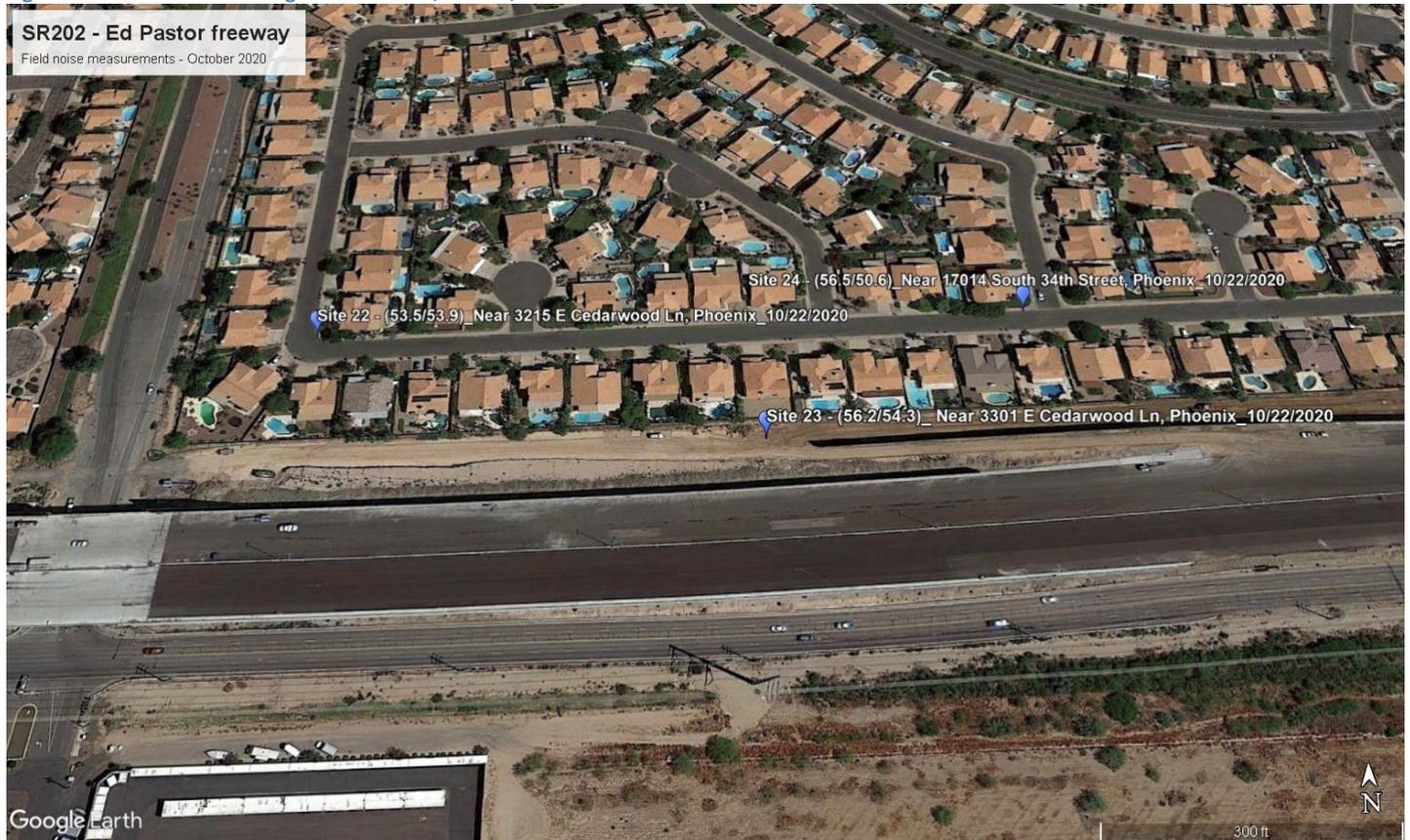


Figure 15 – Location of testing sites – Site 25

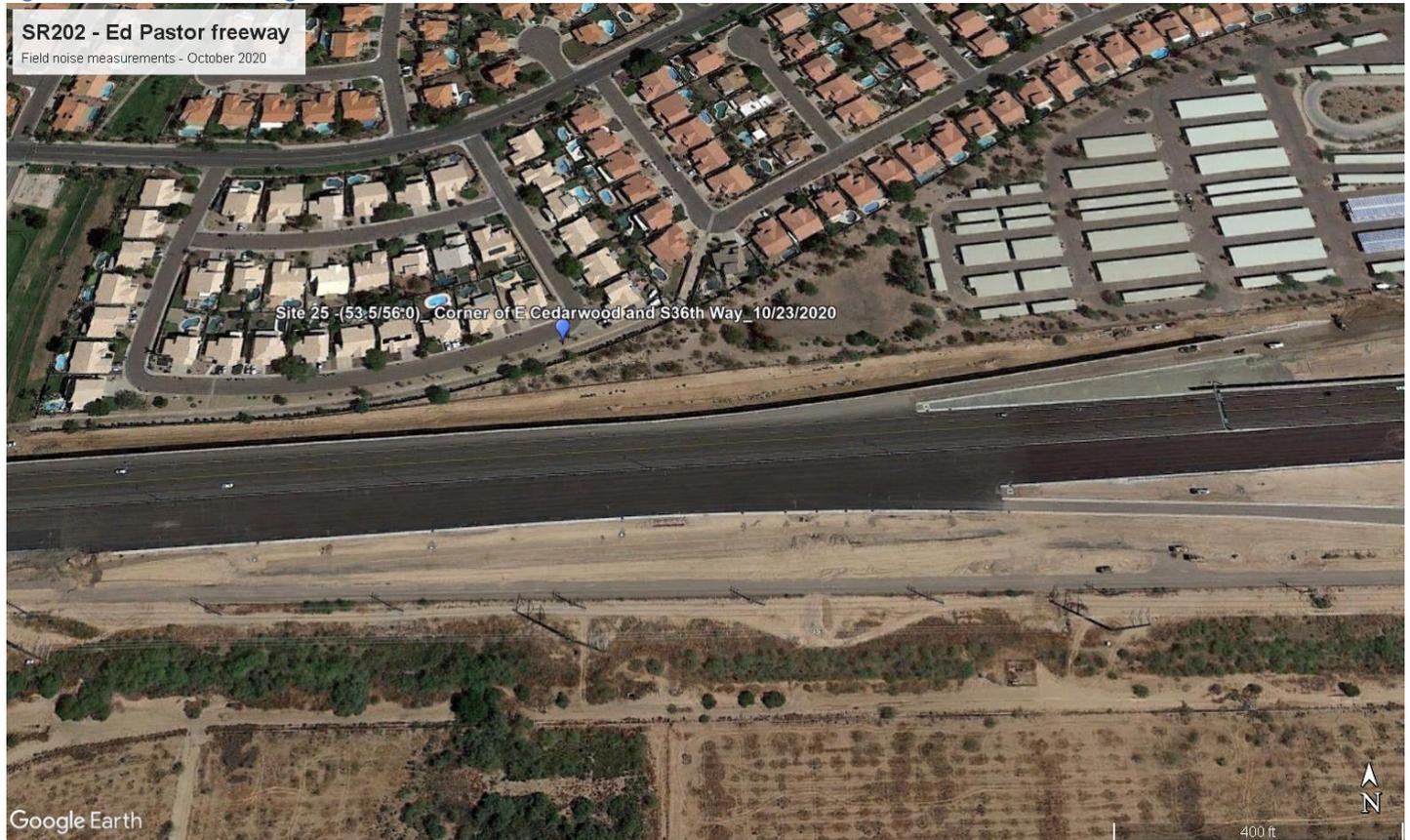


Figure 16 – Location of testing sites – Site 26 and Site 27

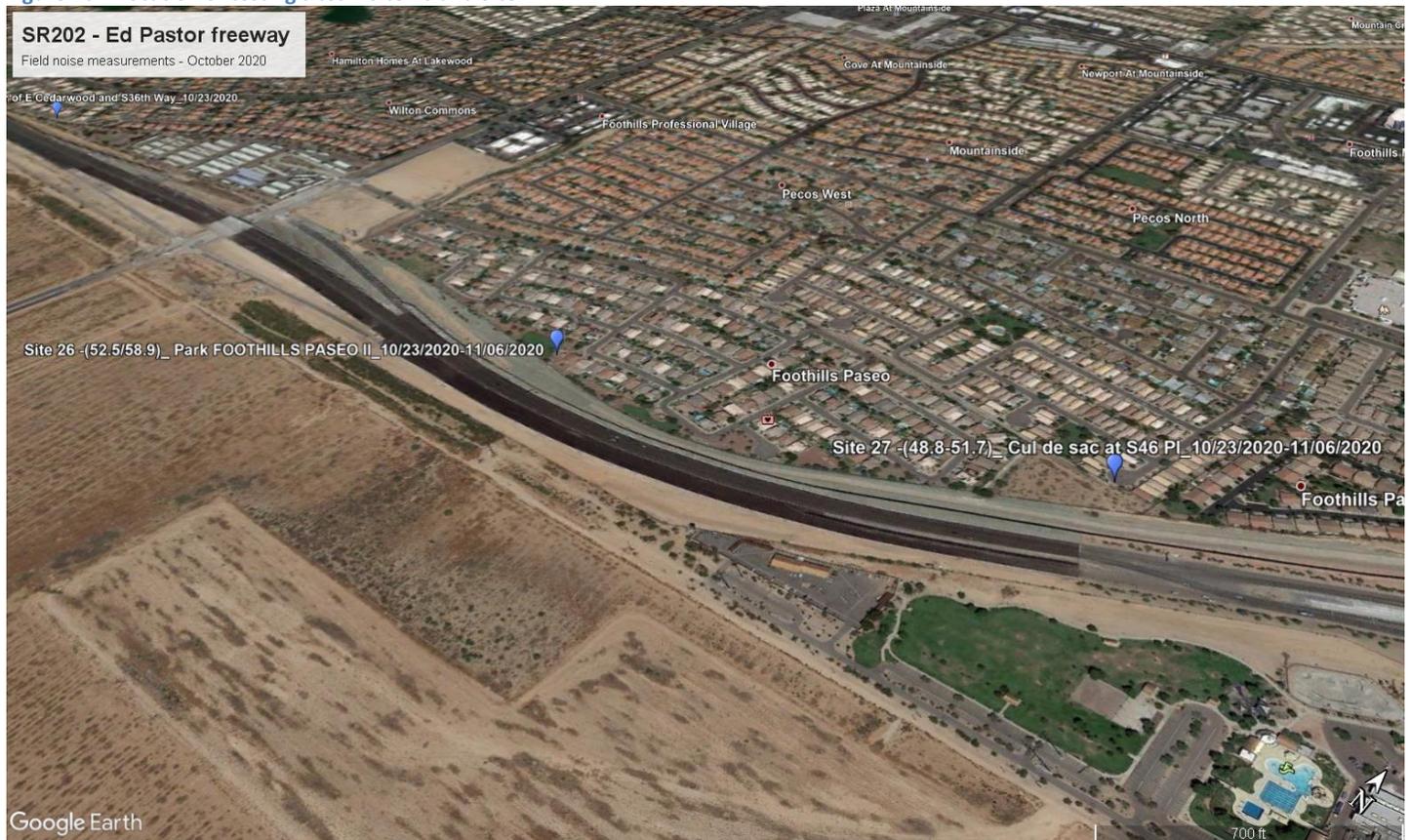


Figure 17 – Acoustical performance of pavement surface - methodologies

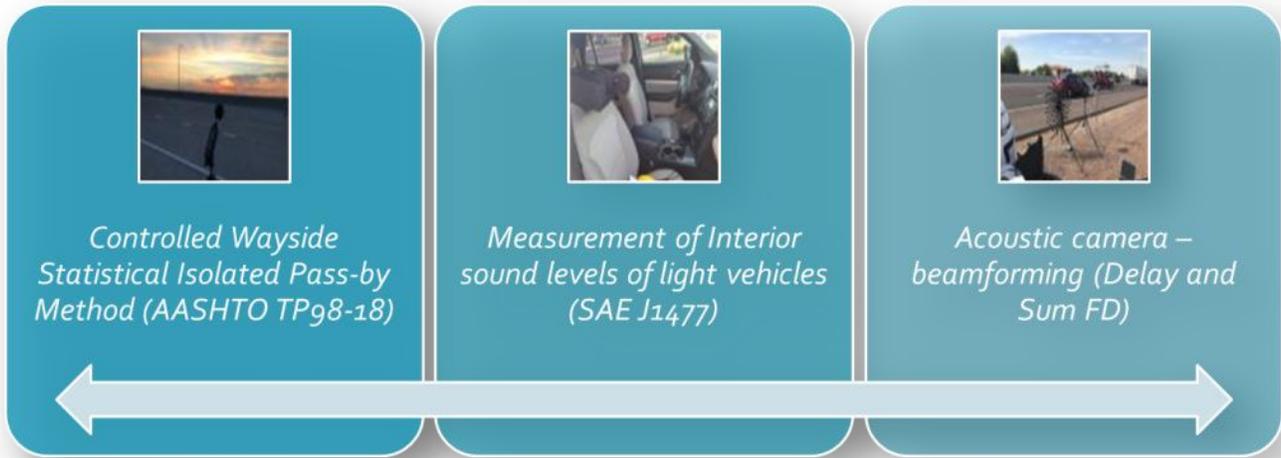


Figure 18 – Acoustical performance of pavement surface – example of a SUV and heavy duty trucks sound sources contribution

