South Mountain Freeway

FREQUENTLY ASKED QUESTIONS ABOUT NOISE – SPRING 2020

WHY IS ADOT CONTINUING TO MEASURE NOISE LEVELS ON THE SOUTH MOUNTAIN FREEWAY?

ADOT is conducting noise measurements in compliance with the Final Environmental Impact Statement (FEIS) for the South Mountain Freeway. Further, ADOT will evaluate the common noise environment within the project area after the freeway is "fully operational."

WHAT DOES IT MEAN THAT THE FREEWAY IS "FULLY OPERATIONAL?"

"Fully operational" means that the monitoring systems and overall conditions on the freeway are conducive to continuous, uninterrupted, and free-flow traffic operations, and that the traffic volumes are aligned with the levels predicted by the Maricopa Association of Governments (MAG) Travel Demand Model for the year 2020.

WHEN IS ADOT GOING TO CONDUCT ADDITIONAL NOISE MEASUREMENTS?

Because of the Covid 19 pandemic, average daily traffic volumes throughout Maricopa County are lower than usual. Taking noise measurements during this pandemic is not representative of typical traffic noise levels. ADOT is *planning* to resume field noise testing in late summer/early fall 2020 and in late February/early March 2021. Beyond that, ADOT will continue testing noise levels throughout the 22-mile corridor regularly in select locations. **Schedules are subject to change because of the pandemic and other unforeseen situations.** Updated information will be posted on the project website at SouthMountainFreeway.com when it is confirmed.

WHERE WILL ADOT CONDUCT NOISE MEASUREMENTS?

Measurements will be taken at representative locations along the South Mountain Freeway; that is, residential neighborhoods, parks, schools and similar locations. Measurements are typically restricted to exterior areas of frequent human use. Interior measurements are taken only when there are no outside activities, such as at churches, hospitals and libraries. Measurements are typically taken in one of three exterior locations: (1) at or near the highway right-of-way line; (2) at or near buildings in residential areas; and (3) at an area between the right-of-way line and the building where frequent human activity occurs, such as a patio or the yard of a home. ADOT will cover all noise-sensitive areas throughout the 22-mile corridor, within the project limits, at areas within approximately 1,000 feet from the freeway. A map with the location, date and time of the field noise measurements will be posted on the project website at SouthMountainFreeway.com when it is confirmed.

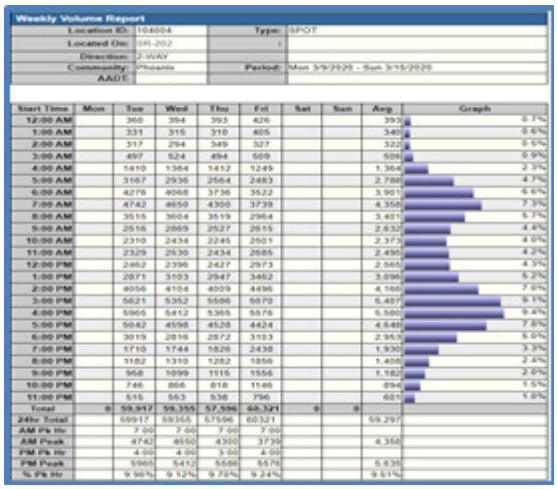
HOW DOES ADOT DETERMINE THE TIME OF DAY TO CONDUCT NOISE MEASUREMENTS?

ADOT utilizes data collected from the permanent Automatic Traffic Recorders, an integral part of ADOT's Traffic Data Management System.

That data will provide hourly/daily traffic patterns which, in turn, will provide the periods that the freeway operates at or close to "Level of Service C" – the highest level of traffic noise based on traffic volume and travel speeds.

ADOT will continue to evaluate data and determine 2.5-hour windows of time - in the morning and afternoon – with similar traffic volumes when testing would occur. As previously noted, this will occur when average daily traffic counts return to more typical conditions.

This is an **example** of an image from the existing Traffic Data Management System:



Weekly Volume Report

Location ID:	104004	Type:	SPOT
Located On:	SR-202		
Direction:	2-WAY		
Community:	Phoenix	Period:	Mon 3/9/2020 - Sun 3/15/2020
AADT:			

Start Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg	Graph
12:00 AM		360	394	393	426			393	0.7%
1:00 AM		331	315	310	405			340	0.6%
2:00 AM		317	294	349	327			322	0.5%
3:00 AM		497	524	494	569			505	0.9%
4:00 AM		1410	1384	1412	1249			1,364	2.3%
5:00 AM		3167	2936	2564	2483			2,788	4.7%
6:00 AM		4276	4068	3736	3522			3,901	6.6%
7:00 AM		4742	4650	4300	3739			4,358	7.3%
8:00 AM		3515	3604	3519	2964			3,401	5.7%
9:00 AM		2516	2869	2527	2615			2,632	4.4%
10:00 AM		2310	2434	2245	2501			2,373	4.0%
11:00 AM		2329	2530	2434	2685			2,495	4.2%
12:00 PM		2462	2396	2427	2973			2,565	4.3%
1:00 PM		2871	3103	2947	3462			3,096	5.2%
2:00 PM		4056	4104	4009	4496			4,166	7.0%
3:00 PM		5621	5352	5586	5070			5,407	9.1%
4:00 PM		5965	5412	5365	5676			5,580	9.4%
5:00 PM		5042	4598	4528	4424			4,648	7.8%
6:00 PM		3019	2816	2872	3103			2,953	5.0%
7:00 PM		1710	1744	1826	2438			1,930	3.3%
8:00 PM		1102	1310	1282	1856			1,408	2.4%
9:00 PM		958	1099	1115	1556			1,182	2.0%
10:00 PM		746	866	818	1146			894	1.5%
11:00 PM		515	553	538	796			601	1.0%
Total		59,917	59,355	57,596	68,321				
24hr Total		59917	59355	57596	60321			59,297	
AM Pk Hr		7:00	7:00	7:00	7:00				
AM Peak		4742	4650	4300	3739			4,358	
PM Pk Hr		4:00	4:00	3:00	4:00				
PM Peak		5965	5412	5586	5676			5,635	
% Pk Hr		9.96%	9.12%	9.70%	9.24%			9.51%	

WHEN IS THE TRAFFIC LOUDEST?

While there are many factors that may have a potential to influence traffic noise, traffic volume is the predominant factor. With that said, traffic is at its loudest when the traffic operates at Level of Service C. This is the condition of a stable flow of vehicles, at or near free flow in a lane, but lane changing and maneuverability may be challenging. During Level of Service C at 70 mph, there are approximately 1,500 vehicles per hour and per lane. When traffic volumes increase beyond Level of Service C, vehicle speeds decrease and lower the noise levels.

The correlation between traffic volumes and noise levels is a helpful tool for ADOT to determine the future noise levels based on current conditions. Generally, doubling the traffic may increase noise levels by 3 decibels (dBA), and an increase of 20-25 percent in traffic volume may increase noise levels by 1 dBA.

CAN I REQUEST THAT MY RESIDENCE IS INCLUDED IN THE NOISE MEASUREMENT SCHEDULE?

At this time, ADOT is not scheduling noise measurements at specific homes or locations upon request. In alignment with the Final EIS, ADOT will conduct noise measurements in noise-sensitive areas along the entire corridor and share the results of decibel readings in correlation with each location.

HOW LONG WILL THE NOISE MEASUREMENT PROCESS LAST?

Given the length of the corridor, number of residential areas and limited number of hours in the morning and afternoon for measurements, ADOT anticipates that each round of noise measurements will take approximately three to four weeks to complete. ADOT will make every effort to complete the measurements as quickly as possible, but also must account for unforeseen events that might require repeating of noise measurements.

WHERE AND WHEN CAN I REVIEW THE RESULTS OF NOISE MEASUREMENTS?

Allow one to two weeks following testing for the team to analyze data and compile the technical memorandum. Once completed, ADOT will post information on the project website at SouthMountainFreeway.com. **Schedules are subject to change because of the pandemic and other unforeseen situations.**

WHAT ACTION WILL ADOT TAKE AFTER EVALUATING THE RESULTS OF NOISE MEASUREMENTS?

ADOT will share the results of field noise measurements with its project partners, including members of the public and key stakeholders. ADOT will make every reasonable effort to address concerns and be innovative and flexible within the federal and state regulatory framework for noise mitigation. Keep in mind that if the noise levels (expressed in LeqA1h) are at or above 64 dBA, it does not guarantee a noise wall will be constructed, as other factors must also be considered. ADOT will explore other possible innovative methods to reduce noise levels. Learn more about ADOT's Noise Mitigation Policy at azdotgov/business/environmental-planning/noise. Chapter 6 of this policy provides information about the three reasonableness factors, or "tests," that must collectively be achieved for a noise abatement measure to be deemed reasonable.

WHERE CAN I LEARN MORE ABOUT HIGHWAY NOISE MITIGATION?

Highway traffic as a noise source creates complexities when it comes to analysis and mitigation, and ADOT understands that you may have additional questions. There are many factors, all of which are relevant, such as traffic volumes and speed, traffic mix, pavement and atmospheric conditions that can impact noise levels. That is why the Federal Highway Administration has provided regulation and guidance on how to analyze and mitigate highway-related noise. The following resources provide information you might find useful:

FHWA - Highway Traffic and Construction Noise - Regulation and Guidance:

https://www.fhwa.dot.gov/Environment/noise/regulations_and_guidance/

FHWA - Noise Policy FAQs - Frequently Asked Questions:

https://www.fhwa.dot.gov/environment/noise/regulations_and_guidance/faq_nois.cfm

ADOT – Environmental Planning – Noise:

https://azdot.gov/business/environmental-planning/noise

US DOT - National Transportation Library:

https://rosap.ntl.bts.gov/welcome

STAY CONNECTED

Website: SouthMountainFreeway.com

Hotline: 1.855.SMF.L202

En español: 623.239.4558

Email: SMFinfo@C202P.com