

Q. Will prevailing winds and wind speeds be taken into account in the noise study?

Yes, engineers will review weather and wind data, and will look for conditions with light winds coming from the direction of Anthony Henday Drive toward the noise monitors to ensure representative conditions.

Q. Noise from Anthony Henday Drive seems to funnel down the pipeline corridor. Is that accurate?

Yes, noise travel is affected by topography including things like the contour of the pipeline corridor.

Q. Noise on my home's main level is okay but it is very loud on the second-story. Please explain why.

The most likely reason for higher noise levels on the second-story is because of the more direct line-of-sight to the road.

Q. Does the study monitor for noise at the second-story level?

The Alberta Transportation noise guidelines require that monitoring take place at a height of 1.2 metres above ground level, not at the second-story level. This is to ensure that noise readings are recorded fairly—noise monitoring happens in the same place for everyone.

Q. Can you measure one-off noises and frequencies? (example: loud engine retarder brakes)

The noise study model does not include loud isolated noises because they are not consistent or predictable. These noises are removed from the data. That being said, noise mitigation methods (i.e., noise barriers) will not mask those types of isolated “bursts” of noise.

Noises from engine retarder brakes and drag racing are removed from the data because they are illegal, making them a bylaw issue rather than a noise issue. In the interest of providing a complete picture however, the noise study final report will include reference to all noises that have been removed from the data.

Q. Has truck traffic increased on the Anthony Henday? If so, is that taken into consideration?

Yes, traffic studies indicate there is an increase in large truck traffic on the freeway and the study's noise monitors will capture the resulting noise.

Q. How accurate will the results be for the areas in between the noise monitors?

Monitoring locations are specifically chosen to be representative of the area. If there are long distances between the monitors, the accuracy may change by as much as ± 2 dBA which is near the level where most people would start to notice a difference in noise output. Alberta Transportation is looking at adding monitoring locations to the original layout to improve the data snapshot in this study.

Q. Why isn't monitoring being done behind fences? Was that done in the 2007/2013 studies?

Generally, all monitors are set up within the Transportation Utility Corridor (TUC) to eliminate monitoring behind fences and the resulting property access issues. What this means is that noise monitors are actually closer to the road and therefore taking louder, clearer readings of the traffic noise from Anthony Henday Drive.

Noise monitoring behind fences was not part of the noise monitoring in the 2007 and 2013 studies.

In this study, some measurements may be taken on private property and the effect of any fence on noise will be considered in the data.

Q. How is the future expansion of Anthony Henday Drive being taken into account in the noise study?

The study is being conducted based on the existing lane configuration. If and when the expansion of Anthony Henday Drive takes place, a new study will be conducted.

Q. Is there a difference in the traffic noise created on a concrete versus an asphalt surface?

In both the 2007 and 2013 noise studies conducted by Alberta Transportation, the roadway surfaces, both asphalt and concrete, near Blackmud Creek were monitored. It was determined that the concrete was louder than asphalt by only 1 dBA at the start and, in fact, the difference is decreasing as the road surface wears.

Q. With the opening of the northeast Anthony Henday Drive connection, have traffic counts decreased on the southwest portion of the freeway, due to the ability of traffic to travel to the east?

Yes, traffic volumes have decreased by up to eight per cent along southwest Anthony Henday Drive, since the opening of the northeast section of the highway.

Q. Why wasn't noise mitigation included as part of the original construction of Anthony Henday Drive?

At the time of the construction of the freeway, it was not anticipated that the noise levels would be above 65dBA within the 10-year planning horizon as specified in the Alberta Transportation criteria.

Q. What is the protocol to determine whether noise mitigation methods will be implemented? When will it happen?

Based on Alberta Transportation's noise policy, if the level of 65dBA is reached along the freeway, mitigation will be considered. The type and timeline of mitigation would be determined when that level is reached.

Q. What impact does the speed of cars have on noise?

As traffic speed increases, the noise level also increases. The effects of this were accounted for in the previous studies (2007/2013) during the noise modeling process by incorporating speeds of ± 10 km/h relative to the posted speed limits in the noise models. This modeling will be included in this updated study as well.

Q. How will Alberta Transportation respond if only some locations in the noise study area have noise levels greater than 65dB?

If monitoring and modeling indicates that some locations have reached the 65dB threshold, Alberta Transportation will consider mitigation for these specific areas.

Q. How are specific monitoring locations determined? Why are they placed where they are?

Monitoring locations for the 2016/2017 study are the same as those used in both the 2007 and 2013 studies. This provides both current measurements as well as data for comparison.

Locations are chosen to provide an accurate sampling of data spanning the entire study corridor to produce a fair and accurate model. Factors that are considered in the selection of a noise monitoring location include:

- Proximity to adjacent roadways
- Proximity to adjacent residential property
- Line-of-sight and topography between the noise monitor and the adjacent roadways
- Proximity to barriers and vegetation
- Proximity to reflecting surfaces
- Proximity to other non-transportation related noise sources
- Security issues
- Accessibility

Q. Can additional monitoring locations be added?

The sound consultant, ACI Acoustical Consultants Inc. makes recommendations on the monitoring locations. Additional locations may be added if it is determined that the additional location(s) would improve the quality of data being collected. The cost benefit of adding more locations would also need to be considered.

Q. Who is responsible for enforcement of traffic laws on Anthony Henday Drive?

Edmonton Police Service is responsible for law enforcement on the southwest Anthony Henday Drive, including the inspection of commercial trucks.

Q. Will the north monitoring station located east of 87 Avenue next to the interchange provide accurate results?

The noise monitoring at this location in both 2007 and 2013 provided accurate results. The level of accuracy should remain the same for the 2016/2017 study.

Q. Does vehicle acceleration influence noise, specifically at the interchanges at 87 Avenue and Stony Plain Road where cars are accelerating onto Anthony Henday Drive? If so, what can be done?

Yes, vehicle acceleration does affect noise. The noise monitor will pick up these noise variations. The model that is created using the noise study data will account for traffic speeds on interchange ramps being higher than the posted speed limits to account for the effect of vehicle acceleration.

Q. How do noise attenuation walls or berms work?

Without a berm/wall, noise generally travels directly from the road towards the adjacent houses. With the installation of a berm/wall, there is a blocked line-of-sight and the path length for the noise to travel is longer which results in a reduction in sound.

Q. Would an expansion of Anthony Henday Drive increase traffic noise levels?

While an expansion would allow for an increase in the volume of traffic (potentially resulting in higher noise levels) it would take a significant increase in traffic to raise noise levels enough that the human ear would notice a difference.

The rule-of-thumb is that it would take about a 2 – 3 dBA increase before most people will notice a change in noise levels. That works out to an increase in traffic of about 1.5 – 2 times the current volumes. For example, if average annual daily traffic is 50,000 vehicles, it would take almost a doubling of the traffic volume to 100,000 vehicles to increase noise significantly enough that the human ear would notice a difference.

At the far end of the scale, a traffic increase of 10 times (i.e. 50,000 to 500,000) would result in a 10 dBA increase in noise. This increase would be deemed by most people to be twice as loud.

Another thing to note is that this subjective impression of noise increasing is very much time dependent. If the noise level suddenly jumped by 3 dBA overnight it would be much more noticeable than if it increased by 3 dBA slowly over several years.

Q. If noise mitigation is not possible, can the speed on Anthony Henday Drive be lowered to reduce traffic noise?

A 10 km/h reduction in the speed limit would decrease noise by only about 1 dBA which would not be subjectively noticeable to the human ear. For traffic noise to become noticeably quieter, the speed would have to be reduced by at least 20-30 km/h. A speed reduction of this magnitude is not feasible on Anthony Henday Drive.

Q. Can trees be used as a noise mitigation strategy?

Trees are not the most practical form of noise mitigation for this area.

Q. What weighting will cost benefit be given to mitigation options? What is the formula for calculations?

If the threshold is reached where sound mitigation is required, as per Alberta Transportation's noise guidelines, design and construction of the noise attenuation will proceed based on provincial priorities and available budgets.

Q. Will the noise study take into account the future use of driverless vehicles?

No special consideration has been given for autonomous vehicles as there is no measurement data currently available.

The only significant changes in traffic noise would result from quieter tires and motors, rather than vehicle speed changes, which is an anticipated benefit of a driverless vehicle.