

Comment on ADOT's 1-11 Final Tier 1 Environmental Impact Statement

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Human-induced noise has negative effects on wildlife. Chronic traffic noise, for example, increases stress in animal populations, reduces wildlife diversity and abundance, and interferes with key survival behaviors, like the ability to establish territories, find suitable mates, protect young, and avoid predators. Noise can even affect plants that depend on animal populations for pollination or seed dispersal.

Decades of research suggest that traffic noise is a primary cause of declining wildlife populations near roads. In a two-year Idaho study designed to measure the effects of traffic, sounds of 12 cars recorded in Glacier National Park were broadcast through an array of speakers in a roadless natural area, creating a "phantom road." Traffic noise was turned off at night when less traffic would be expected. Thirty-one percent of the migrating and resident birds exposed to a gradient of sound levels avoided the phantom road, and those birds that stayed suffered declines in their overall body condition, driven by decreases in foraging success and increased vigilance. In summary, "noise pollution represents an invisible source of habitat degradation that has been largely ignored."

In deserts, noise pollution from highway traffic can be heard miles from its source. With no big trees or dense vegetation to scatter and muffle sound, it travels farther than in forested environments. During a calm spring afternoon in the desert foothills of the Tucson Mountains, I could clearly hear the footsteps of a jogger on a dirt road a third of a mile from the hilltop where I was standing (a straight-line measurement on a map).

To avoid heat and drought, most desert animals emerge from hiding during twilight and nighttime hours. Many rely on hearing more than vision, and noise travels even farther at night. Deserts commonly experience a shift in temperature of 20–30°F (11–17°C) from day to night, creating a dramatic temperature inversion, with the temperature coolest close to the ground and getting warmer with increasing altitude. The part of a sound wave traveling in cooler air close to the ground moves more slowly than its counterpart in warmer air above. This bends the sound wave, directing it back toward the ground. As a result, nighttime noise can be heard more clearly over longer distances than during the day.

The sounds around us also affect our bodies and brains. Even if not consciously "noticed," noise numbs our sense of hearing and deprives us of a vital connection with the natural world. For hundreds of years, health experts have known that natural sounds and undeveloped landscapes offer healing, restorative effects, now confirmed by modern brain scans, heart-rate monitors, and behavioral studies. During the Covid-19 pandemic, many people have turned to the peace of parklands

for safeguarding mental, physical, and spiritual health.

We are losing something basic and precious to us all—our ability to listen to the pulse of our planet. This should serve as a wake-up call for citizens and city planners to focus consciously and aggressively on preserving open spaces in a natural state to maintain the integrity of our ecosystems, in which wild soundscapes are a vital part.

For the well-being of wildlife and ourselves, parklands must be considered inviolate sanctuaries. No proposal to run a major highway by or near Saguaro National Park should be given serious consideration. I strongly oppose the “West Option” for a new interstate highway through Avra Valley.

And I support extending the deadline from 30 to 120 days for public comments on the Final Environmental Impact Statement—this document is too long to be digested in 30 days.