

**Town of Springdale  
Planning Commission  
20230419**

*Zion National Park comments for commissioner consideration.*

- 1. Wireless Communication Facility Permit.**
- 2. DDR approval for concealed attached wireless communication facility**

This project is located on property adjacent to the park boundary and is therefore visible from the park. In recent years, the park went through a similar process to install a Verizon communication structure. The park offers the following considerations and suggestions for the planning commission to discuss with the applicant.

- *Visual impacts.* From the applicant drawings, it appears the structure would mirror an existing structure on the roof (that in turn mirrors the cooling towers on the park's visitor center). This architectural integrity is greatly appreciated and provides a continuity of experience for the visitor in the built environment. Ensuring that the structure be no taller and ideally no wider than the existing structure would be in keeping with the existing structure and limit visual impacts from nearby areas, including the park.
  - Does the applicant anticipate any tree trimming or removing due to line of site issues? If so, to what extent and are their mitigations that can be done?
- *Sound impacts.* Potential acoustic impacts can occur with this type of installation. Generators are usually installed with these facilities for back-up power in the event of a power disruption. These generators need to be run periodically for testing and maintenance. We suggest that sound testing be conducted and mitigated. Our management standard for this area of the park is not to exceed 60 decibels measured on a weighted scale at 50 feet. Verizon, working with the park has recently used sound mitigation techniques for all motorized equipment (HVAC, Generator, etc.) such as baffling and timing to reduce soundscape impacts in this heavily visited area.
  - The park could potentially share technical information as needed. Consider adding a condition (if approving) that sound testing and mitigation measures that parallel park standards be made as part of installation. Attached is a noise abatement procedures and standards that was developed as part of a similar installation in the park for context.

#### **4. Ordinance Revision: Addition of Workforce Housing Overlay Zone**

*Please see note from Superintendent Bradybaugh on the topic for your consideration.*

The park appreciates all of the work that the Planning Commission has done on the topic of workforce housing. It is a critical issue that impacts the community canyon-wide. Like many parks, staff housing is a challenge for Zion National Park. As housing costs have increased in the region, staff who otherwise may seek to live in the area have reported to us that they are challenged in finding housing both in availability and/or at obtainable prices. This is true from our more temporary seasonal positions to supervisors and leadership positions. The park is currently investigating potential ways to expand in-park housing options, particularly for required occupancy such as law enforcement rangers and our seasonal work force. Currently no funding source exists, however even if some in-park housing comes to fruition, it will likely remain inadequate in terms of supply needed.

No one development or solution will address the complex and layered issue of workforce housing. The ability to add a Workforce Housing Overlay Zone is an additional tool for Springdale. If the right situation arises in town, this zoning could allow additional housing to be developed in a thoughtful manner. As with most legislative actions, there are tradeoffs for this approach. Having a local workforce be able to live nearby effects any business or agency's ability to hire adequate staff and only adds to the rich character of the town.

# Exhibit E

Page 1 of 2

This Exhibit is attached to and a part of Right-of-Way Permit No. RW ZION-20-001

## Generator Noise Abatement Procedures and Standards

### Introduction

Verizon generator noise levels will be measured and compared to NPS thresholds by a qualified acoustical consultant or certified noise control engineer after generator installation and prior to completion of construction, so that any noise control recommendations can be implemented before onsite construction efforts are completed. The goal of the measurements will be to ensure that generator noise will not interfere with park visitor activities or be objectionable to park visitors or staff working at the site. Zion National Park will provide a minimum of two (2) onsite observers at the time of measurement to make subjective assessments of noise reasonableness (36 CFR 2.12) and provide input to the acoustical consultant on generator noise with respect to park visitor or interpretive activity that may occur at key measurement locations and other surrounding areas.

### Test Conditions and Deliverables

Overall A-weighted sound levels will be measured at key locations using a calibrated Type 2 or better sound level meter (SLM) under expected full load and no load conditions representative of actual backup and weekly test conditions (SLM Type 2 is defined in American National Standards Institute ANSI S1.4 Specifications for Sound Level Meters). To minimize background sound levels, measurements will be made when adjacent Virgin River flow rate remains below 100 cfs and wind speeds remain below 5 m/s (11 mph). If the acoustical engineer or noise control engineer judges it to be important for assessment of any needed generator noise control improvements, octave or 1/3 octave sound pressure levels will also be measured.

Within two weeks of the measurement, we ask that the certified acoustical engineer or noise control engineer provide Verizon and NPS with a 2-5 page summary report that includes the measured generator sound levels, NPS participant observations, and any recommendations that may be needed for control of generator noise levels.

### NPS Thresholds for Noise at Zion National Park

- 60 dBA - speech interference threshold for normal conversation of individuals at 2 meter distance [[EPA 1974 Levels Document, p. D-9](#) and [ZION Soundscape Management Plan, 2010](#)]
- 52 dBA - speech interference threshold for raised voice interpretation to audience at 10 meters [[EPA 1974 Levels Document, p. D-9](#) and [ZION Soundscape Management Plan, 2010](#)]
- 45 dBA – recommended nighttime limit for noise events at designated campsites, hotels and housing areas, to minimize sleep interruption [[ZION Soundscape Management Plan, 2010](#)];  
45 dBA - recommended maximum LAeq for continuous noise outside bedrooms (or RVs, assuming windows open); recommended maximum LAmx for single events inside bedrooms (or tents, assuming open camping) [[WHO Guidelines for Community Noise, 1999](#)]
- 35 dBA - noise threshold at which increases in blood pressure and heart rate can occur
- Generator noise audibility should be assessed noting that with limited exceptions in campsites and for medical conditions, generator use is unacceptable for any period of time throughout the park, is prohibited at all times in all loops of the nearby Watchman Campground, and is prohibited in South

Campground, except between 8am to 10am and 6pm to 8pm [[ZION 36 CFR 1.7\(b\), Compendium 2016](#), sections (a)(2)(iv) and (a)(5)]

### Measurement Locations, Metrics, and Proposed Limits

At minimum, noise measurement metrics will include Equivalent Continuous Sound Level ( $L_{Aeq}$ ) and Maximum Sound Level ( $L_{Amax}$ ). Other metrics such as exceedance levels may be included at the discretion of the acoustical consultant or noise control engineer.

At the adjacent access road, generator noise levels should not exceed 60 dBA, to meet Zion Soundscape Management Plan speech interference criteria for normal conversation. The distance between the generator room air intake louver and access road is estimated to be **5 feet**.

At the closest edge of the covered outdoor gazebo with interpretive panels directly east of the generator (southwest of the Visitor Center and at the southeast corner of the restroom building), generator noise levels should not exceed 52 dBA, to meet Zion Soundscape Management Plan speech interference criteria for interpretative programs. The distance between the generator air exhaust louver and outdoor gazebo is estimated to be **50 feet**.

At the Zion Park Fee Collection office and on walkways between the entry and the Visitor Center, generator noise levels should be compared to common sound sources such as pedestrian speech, idling vehicles, and natural sounds such as bird song. As a proxy for more distance locations like the campgrounds, a 45 dBA criterial may be used. The distance between the generator room air intake louver and the closest fee collection pedestrian areas is estimated to be **150 feet**.

At the closest campground sites, generator noise audibility should be assessed, with measured noise levels, if possible. Generator noise should be compared to applicable Zion Sound Soundscape Management Plan criteria. The distance to Watchman Campground sites is estimated to be **600 feet**.

### Noise Mitigation Approach

If noise levels are found to exceed thresholds or are otherwise found by NPS onsite observers to be objectionable, one or more of the following noise mitigation options could be considered:

1. Upgrade of one or both acoustical louvers to ones providing greater noise attenuation
2. Insertion of acoustically lined duct with elbows or turns between generator cooling air exhaust and building air exhaust louver
3. Insertion of sound walls or other barriers between building noise sources and key receivers
4. Upgrade of the engine exhaust muffler (silencer)

### References

[National Park Service. Audio Disturbances Rule, 36 CFR 2.12](#)

[Environmental Protection Agency, 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, Report No. 550/9-74-004, March 1974.](#)

[World Health Organization, 1999. Guidelines for Community Noise.](#)

[National Park Service. Zion National Park Soundscape Management Plan, September 2010.](#)

[National Park Service. Zion National Park, 36 CFR 1.7\(b\), Superintendent's Compendium 2016](#), sections (a)(2)(iv) and (a)(5)