

## Appendix A. Computer Model

### A.1 Computer Model Overview

In determining the most appropriate way to model OSVs, the two primary models considered were the FHWA's TNM and the FAA's INM. Both models have been extensively validated<sup>14, 27, 28, 29</sup>. The TNM was designed for modeling noise in the vicinity of highways, while INM was designed for modeling noise in the vicinity of airports. Both models take into account sound attenuation due to diffraction over intervening terrain, but the ground-to-ground algorithms in TNM are considered more robust for modeling ground-to-ground propagation. So, TNM provides a solid foundation upon which to model OSVs, except for two issues. First, it is not capable of computing audibility, which is an important metric to the NPS. Therefore either sweeping changes to the TNM source code would be necessary, or audibility would have to be computed in post-processing, which would be cumbersome due to the large number of data points that would need to be evaluated for the two parks. Post-processing would also likely be error prone. Second, TNM is designed for relatively small-scale modeling scenarios, and using TNM over such a large geographic area would likely result in unacceptable runtimes.

The INM has been used to model noise in the national parks since about 1996<sup>30</sup>. The INM can be set up to produce results for contours, grids, and in tabular form. Beginning with Version 6.2, the INM is also able to calculate time audible, so minimal post processing was required. Further, it is a simple matter to import United States Geological Survey (USGS) terrain data into the INM. Version 6.2 could be easily adapted to model the more complex ground-to-ground propagation associated with OSVs.

The INM accepts as inputs: terrain data, ambient sound levels, source level as a function of distance, and operational data including vehicle tracks/paths, speeds, and number of operations. Terrain data is used to determine line-of-sight blockage and distances from source to receiver. Ambient sound levels are used to determine acoustic masking of sound sources (that is, audibility). The source level data are used to determine the sound source level based on vehicle operation and distance from the receiver. The tracks/paths determine the location of vehicles, while the number of operations and speeds determine how often a vehicle is present on a given segment and the time it is on the segment. If there are multiple operations for the same vehicle on the same segment at the same speed, the INM does not repeat the calculations but instead assumes identical results and combines the two in a manner appropriate for a given metric. For OSVs, the majority of these input data conform to a standard format. The one exception is source level as a function of distance. Normally, these relationships are developed as a function of engine power (for aircraft). For the current study of OSVs, these relationships were developed as a function of speed. For practical purposes, this is only a semantic distinction and has no side effects in the modeling.

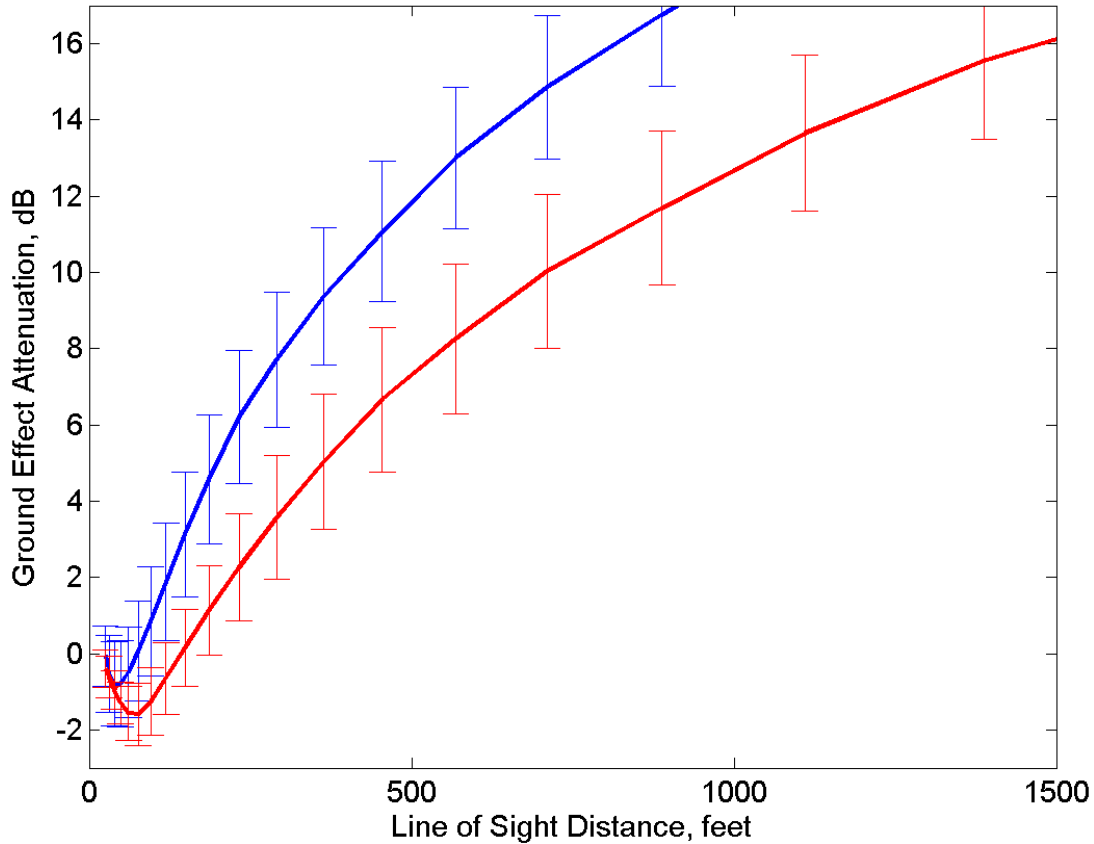
Finally, it was deemed most appropriate to update the ground-to-ground propagation algorithm in Version 6.2 of the INM to better represent propagation of noise from OSVs over snow-covered terrain. This resulted in the inclusion of two new ground-to-ground attenuation relationships in INM, one for snowmobiles and the other for snowcoaches. Historically, the INM's ground-to-ground algorithm was based on empirical data, which is representative of acoustically soft ground (field grass) and aircraft sound sources. Since ground effects are dependent on source – ground – receiver geometry, source spectra, and ground cover, the

standard INM ground-to-ground algorithm is not representative of OSVs or snow-covered terrain. In order to develop appropriate ground-to-ground algorithms for the current study, the physical acoustics algorithm of the TNM was utilized. The theoretical ground-to-ground attenuation were then averaged and regressions were developed.

One potential limitation of the INM for modeling audibility is that it treats the results from each operation as independent from all others. This means that the INM does not account for the fact that acoustic profiles of vehicles in close proximity with one another may overlap in time. If overlap does occur and if measured results are determined to be different for the case of overlapped profiles and non-overlapped profiles, then overlapping may need to be accounted for. One method of accounting for overlapping profiles is to conduct an extensive study of OSV operational patterns and to develop a curve fit to adjust the percent time audible results. A similar approach was taken for the Grand Canyon's tour aircraft overflights<sup>14</sup>. Another method of accounting for this would be to manually group simultaneous operations. For example, consider a group of ten snowmobiles in a guided group. Their one-third octave-band spectra could be summed across the vehicles creating a single source, which would then go through the operations as normal. This method is discussed in further detail in Appendix A.C.2.

## **A.2 Multi-Vehicle Ground Effects – An Enhancement to the Integrated Noise Model**

When sound arrives at a receiver's position by a direct path and a path containing a ground reflection, the sound at the receiver is affected by the material properties of the ground at the reflection point. This ground effect can be modeled by using the material's effective flow resistivity<sup>31</sup>. Ground effects were determined for granular snow, 40 cgs rayls, and powdered snow, 10 cgs rayls. Because ground effects may be sensitive to source heights particularly when heights are close to the ground, these effects were determined separately for snowmobiles and for snowcoaches for each vehicle's one-third octave-band levels and source heights. The results were then averaged for each vehicle type. It can be seen from Figure 35 that there is a clear separation between the ground effects for snowmobiles and snowcoaches as evidenced by the fact that they are separated by more than two standard deviations of the estimated ground effects for the vehicles sampled.



**Figure 35: Comparison of ground effects for snowmobiles (blue) and snowcoaches (red). Vertical bars are +/- one standard deviation**

A curve fit was developed to approximate these theoretical ground effects in the INM. The curve fit was chosen to be of the form:

$$GE(x)_{Vehicle,SourceHeight} = a(1 - e^{-bx})^3,$$

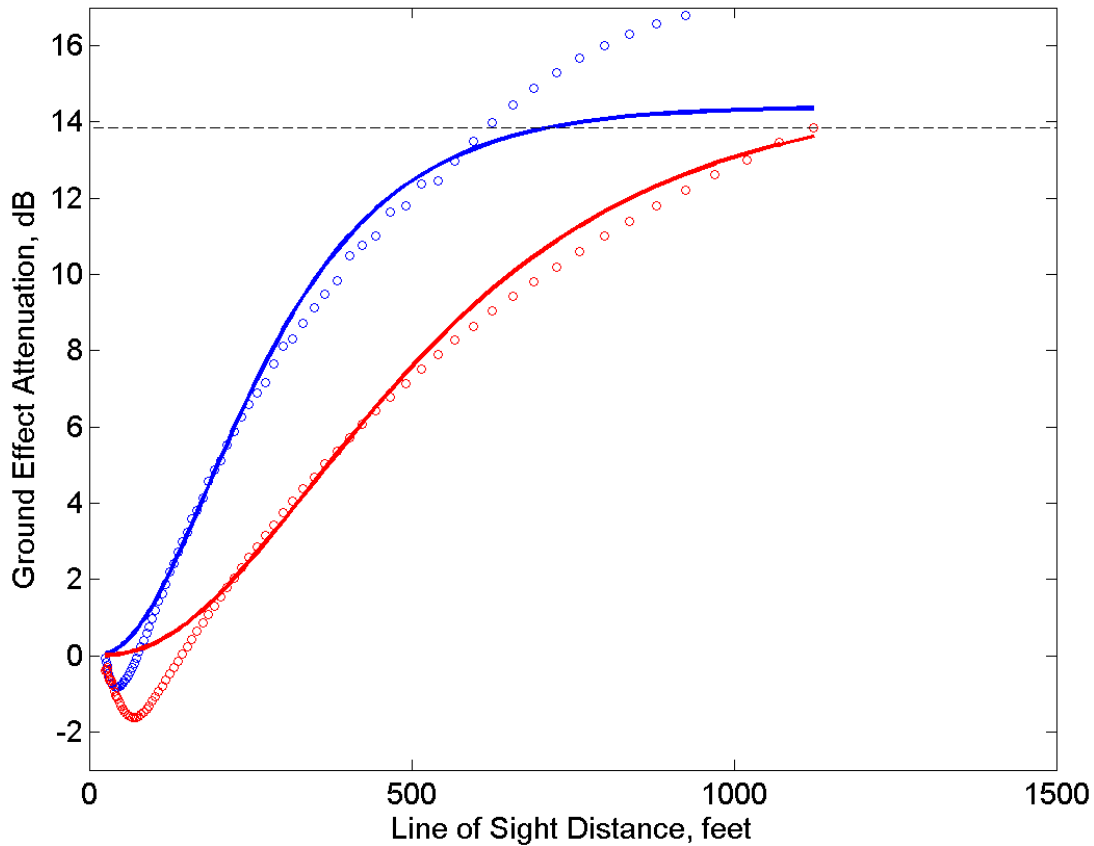
where  $x$  is in feet. Note, this is simply a first order system response raised to the third power to create an asymptotic approach to  $x = 0$ . A non-linear regression was used to determine the coefficients,  $a$  and  $b$ , in this function. Forty-five logarithmically-spaced distances between 25 and 5294 feet were used for the regression analysis. For snowmobiles, the final function was:

$$SM(x)_{1.5ft} = 14.41(1 - e^{-0.006094x})^3$$

and for snowcoaches the final function was:

$$SC(x)_{3ft} = 14.77(1 - e^{-0.003224x})^3$$

A comparison of theoretical ground effects and the INM regressions is shown in Figure 36. The two areas of deviation from the theoretical relationship occur near the source and far from the source. At distances very near the source, the theoretical ground effects indicate that there should be a slight increase in sound level due to the ground reflections. A satisfactory equation was not developed to model this behavior, however, at these close distances, the source will always be audible when present, so the effect of this shortcoming will be negligible. At far distances empirical evidence indicates that ground effects asymptote to approximately 12 to 20 dB<sup>32</sup>. In the INM, the limit is 13.86 dB. This is shown as the dashed line in Figure 36. It can be seen that the regression does follow the theoretical ground effects up to this limit.



**Figure 36: Ground effects for granular snow, 40 rays, for snowmobiles (blue) and snowcoaches (red). Receiver is at 4 feet. Lines are curve fits. Circles are theoretical ground effect predictions. Dashed line is the Integrated Noise Model's hard coded limit on attenuation due to ground effects**

## Appendix B. Ambient Measurements

## B.1. Site Locations

Table 14: Ambient measurement sites in Yellowstone

| Description                     | Latitude (deg) | Longitude (deg) | Elevation (feet) |
|---------------------------------|----------------|-----------------|------------------|
| Old Faithful Weather Station    | 44.45688       | 110.83178       | 7400             |
| Old Faithful Upper Basin        | 44.46325       | 110.82740       | 7400             |
| Lone Star Geyser                | 44.41930       | 110.80482       | 7700             |
| Mary Mountain Trail 1000 (feet) | 44.56947       | 110.81088       | 7240             |
| Mary Mountain 4000 (feet)       | 44.57433       | 110.80228       | 7236             |
| Mary Mountain 8000 (feet)       | 44.58153       | 110.78603       | 7200             |
| West Yellowstone 3.1 (miles)    | 44.65060       | 111.02554       | 6700             |
| West Thumb                      | 44.41589       | 110.57093       | 7900             |
| Madison Junction: 2.3 (miles)   | 44.64253       | 110.89645       | 6800             |

Table 15: Ambient measurement sites in Grand Teton

| Description                             | Latitude (deg) | Longitude (deg) | Elevation (feet) |
|---|----------------|-----------------|------------------|
| Jackson Lake South Landing <sup>a</sup> | 43.82221       | -110.62323      | 6775             |
| White Grass Ranch                       | 43.65477       | -110.76902      | 6680             |
| Jackson Lake Cow Island                 | 43.93135       | -110.64674      | 6775             |
| Jackson Lake Catholic Bay               | 43.85165       | -110.59328      | 6800             |

## B.2. Measurement System Noise Floor

The estimated natural ambient sound levels in Yellowstone and Grand Teton are low relative to the noise floors measured by using the system with a microphone simulator. See Figure 37 and Figure 38 for representative level differences between measured and instrument noise levels. Ideally the measured levels should be at least 10 dB greater than the instrument noise floor in order to assure that the instrument noise floor's contamination to the measured level is negligible. In several measured one-third octave-bands, the levels are quite close to the instrument noise floor. However, this is not a significant problem for the current modeling for several reasons. Audibility is driven primarily by low frequencies, which do not attenuate as quickly as high frequencies over distance. Since at the low frequencies, the signal-to-noise ratios of the ambient data are greater than 10 dB (with the exception of the 50 Hz band for open natural ambient), their estimates will not be affected by the noise floor. The lowest one-third octave-bands of the open natural ambient are within 10 dB of the noise floor, however, at these low frequencies the auditory systems noise floor will dominate the audibility calculation. If the ambient sound level is less than the Equivalent Auditory System Noise (EASN), then the equivalent auditory system noise is used in the determination of audibility<sup>14</sup>. It can be seen from Figure 39 that at most frequencies the equivalent auditory system noise will dominate the masking pattern involved with the audibility metric. That is, the equivalent auditory system noise will act as the masker in much of the audibility calculations.

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<sup>a</sup> Measured by using a low noise system.

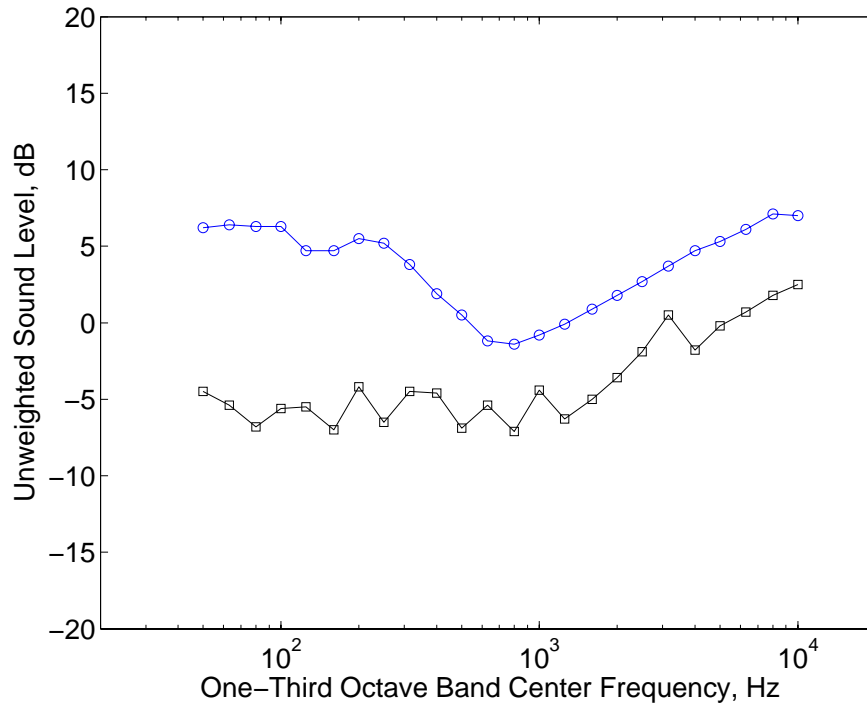


Figure 37: Comparison of forested natural ambient ( $L_{90}$ ) and noise floor measured using microphone simulator.  $\square$  – Instrument noise floor,  $\circ$  – Estimated ambient.

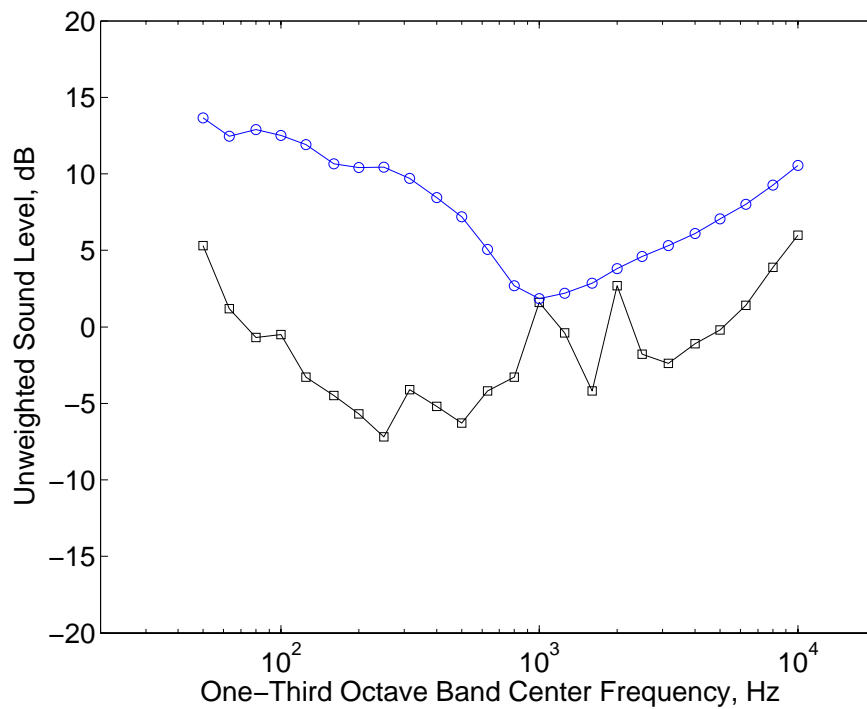
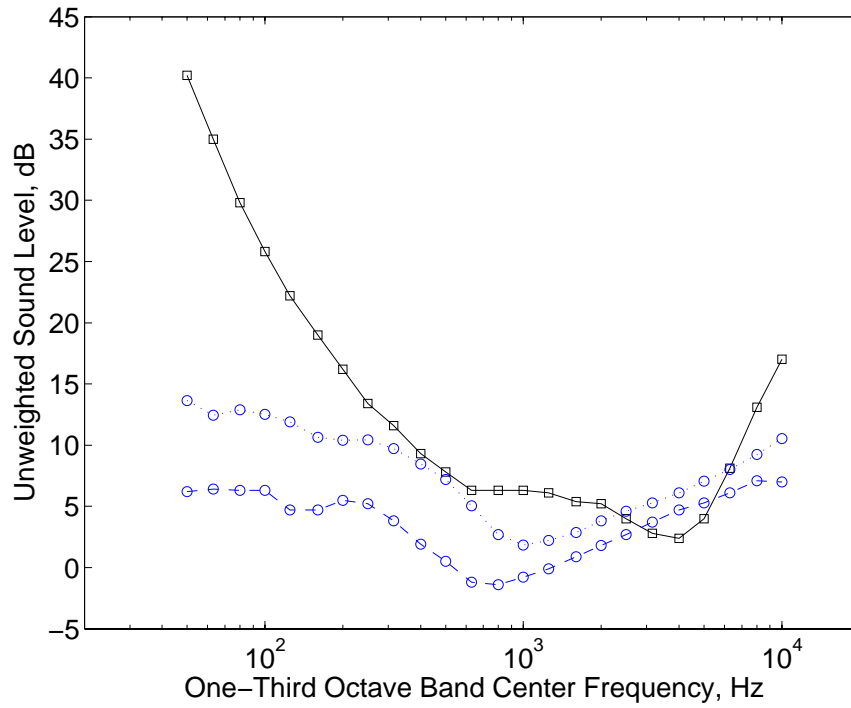


Figure 38: Comparison of open natural ambient ( $L_{90}$ ) and noise floor measured using microphone simulator.  $\square$  – Instrument noise floor,  $\circ$  – Estimated ambient.



**Figure 39: Comparison of natural ambient and threshold of human hearing for Yellowstone and Grand Teton National Parks. □ – EASN, ○ (··) – Open ambient, ○ (- -) – Forest ambient.**





## Appendix C. Sound Sources

### C.1. Spectral Class Data and Noise-Speed-Distance Relationships

The data in Table 16<sup>a</sup> are derived from Reference 9, where sound sources were measured “in substantial conformance with SAE J192 and J1161”. These one-third octave-band levels are based on numerous averages of vehicle pass-bys for speeds ranging from 30 to 40 miles per hour for snowmobiles and 20 to 30 miles per hour for snowcoaches. The data in Table 16 were used in developing ground-to-ground attenuation curves where the aggregate spectral shapes were most important. The one-third octave-band levels in Table 17 are derived primarily from Reference 8, which had more clearly defined speeds for each data set<sup>b</sup>. Because the data in Table 17 had more clearly defined speeds, they were used to develop the relationship between speed and sound level. The data in Table 17 are shown graphically for two-stroke snowmobile, four-stroke snowmobile, Bombardier, Mattrack, and Snow Buster in Figure 43 to Figure 47.

After the 2005-2006 winter season, the National Park Service provided updated  $L_{Amax}$  measurements for four-stroke snowmobiles at 50 feet. Fifteen measurements of four-strokes were made at 15 mph with an average level of 64.7 dB(A). Fifty-four measurements were made at 30 mph with an average level of 71.4 dB(A). Eighteen measurements were made at 40 mph with an average level of 71.5 dB(A)<sup>c</sup>. Because these measurements covered a greater speed range, were more current than previous four-stroke measurements (2006 compared to 2000), and since four-strokes are being used to model BAT, the levels in the NSD relationships, Table 3, have been updated so that levels at 50 feet for four-strokes match those measured during the 2005-2006 winter season, see Figure 19.

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<sup>a</sup> except for the full-track BAT, which is derived from data in Reference 8.

<sup>b</sup> Because sound levels of fewer vehicles were measured for Reference 8, there is less confidence in these spectra representing the “average” spectra for a given vehicle type. However, these spectra are only used to determine attenuation due to atmospheric absorption, which is much less significant than attenuation due to ground effects, line-of-site blockage, and spherical spreading.

<sup>c</sup> The sound source data for the four-stroke snowmobiles at 30 mph included SAE J192 (full-throttle) and J1161 (constant speed) type measurements while at 40 mph only SAE J1161 type measurements were available. Although the sound level at 30 mph is lower than at 40 mph, it would have been a further 2.6 dB lower if the SAE J192 had been excluded from the 30 mph data. If new scenarios are developed to focus on the effects of operating snowmobiles at different speeds, only the SAE J1161 sound level data should be used.

Table 16: One-third octave-band levels used for developing snow covered ground-to-ground attenuation and spectral classes

| Veh./OB Center Freq | 50   | 63   | 80   | 100  | 125  | 160  | 200  | 250  | 315  | 400  | 500  | 630  | 800  | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 4000 | 5000 | 6300 | 8000 | 10000 |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Arctic Cat 1 (SM4)  | 47.0 | 50.9 | 56.6 | 53.3 | 66.1 | 58.4 | 65.6 | 67.8 | 56.8 | 70.5 | 68.8 | 62.0 | 56.5 | 58.6 | 57.6 | 58.1 | 60.4 | 56.8 | 55.3 | 52.0 | 49.9 | 47.0 | 44.2 | 41.7  |
| Frontier (SM4)      | 47.8 | 51.6 | 75.6 | 56.0 | 56.1 | 71.6 | 62.4 | 65.8 | 61.6 | 68.9 | 65.2 | 59.9 | 58.9 | 59.4 | 56.2 | 58.7 | 60.7 | 58.4 | 58.2 | 58.6 | 54.3 | 51.6 | 46.6 | 42.4  |
| Arctic Cat 2 (SM4)  | 54.8 | 54.0 | 57.6 | 57.6 | 62.2 | 68.9 | 59.1 | 66.8 | 71.1 | 63.5 | 65.9 | 69.1 | 61.4 | 59.0 | 62.2 | 61.8 | 62.7 | 62.2 | 60.2 | 55.3 | 52.9 | 51.0 | 48.8 | 45.6  |
| Polaris (SM4)       | 49.6 | 49.7 | 67.3 | 75.6 | 60.0 | 61.2 | 65.4 | 64.5 | 66.2 | 64.1 | 63.6 | 63.7 | 59.5 | 58.0 | 61.1 | 60.4 | 61.7 | 61.3 | 58.5 | 58.1 | 55.3 | 52.4 | 48.6 | 44.5  |
| Arctic Cat 3 (SM4)  | 52.0 | 51.7 | 57.5 | 54.4 | 69.4 | 61.6 | 58.6 | 64.9 | 68.5 | 64.5 | 64.9 | 64.9 | 59.4 | 57.4 | 60.3 | 59.8 | 59.9 | 60.3 | 58.1 | 56.1 | 54.6 | 53.3 | 50.1 | 46.1  |
| Polaris 550cc (SM2) | 50.0 | 50.9 | 49.7 | 52.5 | 54.1 | 56.0 | 64.8 | 66.1 | 59.2 | 60.4 | 67.5 | 58.5 | 61.8 | 66.0 | 62.5 | 65.1 | 67.1 | 64.5 | 60.3 | 58.8 | 57.3 | 52.4 | 50.1 | 46.8  |
| Polaris 500cc (SM2) | 48.0 | 49.1 | 51.9 | 61.5 | 55.7 | 55.4 | 71.9 | 63.6 | 65.5 | 66.4 | 61.6 | 61.2 | 61.9 | 61.3 | 66.8 | 66.0 | 64.4 | 61.2 | 59.3 | 58.3 | 55.6 | 54.2 | 51.2 | 48.2  |
| Yamaha 600cc (SM2)  | 57.1 | 57.8 | 56.6 | 65.5 | 56.1 | 54.9 | 63.5 | 64.7 | 71.2 | 68.7 | 70.3 | 63.6 | 59.5 | 63.6 | 60.9 | 61.2 | 60.6 | 58.3 | 55.2 | 52.1 | 49.9 | 48.2 | 44.8 | 41.5  |
| Polaris 800cc (SM2) | 52.5 | 51.3 | 57.0 | 59.5 | 59.0 | 59.2 | 63.8 | 66.7 | 61.3 | 64.7 | 65.4 | 60.8 | 59.2 | 59.9 | 61.9 | 65.4 | 64.0 | 60.1 | 59.3 | 59.7 | 59.0 | 56.1 | 50.9 | 49.7  |
| Alpen (Bomb.)       | 59.7 | 65.4 | 66.3 | 67.0 | 57.6 | 61.3 | 65.2 | 60.6 | 60.6 | 57.6 | 57.6 | 57.5 | 58.4 | 58.3 | 57.4 | 57.7 | 55.8 | 56.4 | 53.6 | 51.6 | 50.7 | 48.2 | 44.7 | 41.6  |
| Yellow (Bomb.)      | 62.3 | 66.8 | 64.2 | 75.5 | 66.5 | 66.1 | 63.8 | 64.3 | 65.8 | 59.6 | 62.0 | 63.0 | 64.2 | 61.6 | 61.9 | 60.1 | 58.6 | 56.7 | 56.9 | 57.3 | 58.8 | 57.9 | 54.2 | 46.6  |
| Matracks Diesel     | 58.9 | 61.5 | 58.1 | 59.5 | 70.5 | 68.8 | 62.9 | 77.3 | 72.4 | 68.7 | 64.6 | 63.5 | 64.2 | 65.8 | 64.4 | 65.3 | 63.4 | 62.2 | 58.6 | 55.1 | 53.6 | 51.6 | 50.4 | 48.7  |
| Matracks Gas        | 54.9 | 65.0 | 58.5 | 67.1 | 68.0 | 57.9 | 68.8 | 70.2 | 69.0 | 65.7 | 63.0 | 61.7 | 64.1 | 64.1 | 61.6 | 59.4 | 57.4 | 55.9 | 53.6 | 50.9 | 49.2 | 46.4 | 43.0 | 40.5  |
| Fultrack            | 54.2 | 57.8 | 59.3 | 58.9 | 54.6 | 58.0 | 62.5 | 58.5 | 57.8 | 57.7 | 54.8 | 56.2 | 56.7 | 56.7 | 58.1 | 59.8 | 55.3 | 52.3 | 50.1 | 46.9 | 43.5 | 40.8 | 38.6 | 35.8  |
| Fultrack BAT (2001) | 56.2 | 55.6 | 54.8 | 58.2 | 66.1 | 61.5 | 60.2 | 62.7 | 61.0 | 61.3 | 59.8 | 59.6 | 59.9 | 60.1 | 61.6 | 59.8 | 59.9 | 56.8 | 53.1 | 49.7 | 46.5 | 44.5 | 42.3 | 38.3  |

Table 17: One-third octave-band levels used for developing Noise-Speed-Distance relationships

| Type | Class | Spd, mph | Total Band | 50   | 63   | 80   | 100  | 125  | 160  | 200  | 250  | 315  | 400  | 500  | 630  | 800  | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 4000 | 5000 | 6300 | 8000 | 10000 |  |
|------|-------|----------|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|--|
| SM   | 4     | 30       | 77.6       | 47.3 | 51.2 | 72.5 | 54.8 | 63.6 | 68.2 | 64.4 | 66.8 | 59.8 | 69.8 | 67.3 | 61.0 | 57.7 | 58.9 | 56.9 | 58.3 | 60.4 | 57.6 | 56.9 | 56.3 | 52.6 | 49.8 | 45.4 | 41.9  |  |
| SM   | 4     | 40       | 76.6       | 53.7 | 53.1 | 57.4 | 56.2 | 67.0 | 66.6 | 58.8 | 65.9 | 69.9 | 64.0 | 65.4 | 67.4 | 60.5 | 58.4 | 61.4 | 61.0 | 61.5 | 61.5 | 59.2 | 55.7 | 53.6 | 52.4 | 49.6 | 46.1  |  |
| SM   | 2     | 10       | 72.5       | 55.9 | 55.7 | 60.6 | 54.6 | 59.9 | 68.9 | 60.5 | 52.0 | 55.6 | 52.5 | 55.6 | 58.7 | 62.2 | 57.5 | 58.5 | 54.3 | 52.9 | 51.8 | 50.6 | 49.3 | 46.5 | 42.1 | 38.3 | 35.0  |  |
| SM   | 2     | 20       | 74.6       | 43.7 | 48.8 | 57.4 | 58.1 | 61.0 | 66.4 | 66.5 | 59.4 | 60.0 | 62.0 | 59.9 | 60.5 | 64.3 | 65.0 | 64.7 | 59.2 | 58.8 | 56.9 | 56.2 | 55.1 | 52.4 | 48.7 | 45.4 | 41.3  |  |
| SM   | 2     | 35       | 75.3       | 44.4 | 49.2 | 49.2 | 57.9 | 57.0 | 62.6 | 66.1 | 63.8 | 61.3 | 65.0 | 64.2 | 61.2 | 63.4 | 65.1 | 67.2 | 61.8 | 61.1 | 58.9 | 57.7 | 56.4 | 55.7 | 51.4 | 47.6 | 43.7  |  |
| SM   | 2     | 40       | 78.3       | 55.1 | 55.2 | 54.7 | 58.7 | 63.1 | 59.0 | 59.5 | 65.1 | 75.2 | 66.2 | 66.4 | 66.7 | 62.6 | 64.0 | 63.2 | 62.5 | 62.5 | 61.2 | 58.8 | 56.8 | 53.6 | 51.9 | 49.0 | 45.7  |  |
| SC   | B     | 15       | 74.9       | 63.8 | 63.5 | 70.1 | 62.5 | 61.7 | 66.2 | 65.5 | 61.3 | 59.0 | 55.7 | 57.9 | 53.3 | 57.2 | 55.5 | 52.3 | 51.0 | 49.8 | 49.2 | 46.9 | 45.1 | 43.5 | 43.2 | 41.2 | 37.0  |  |
| SC   | B     | 20       | 78.2       | 64.5 | 64.7 | 70.3 | 66.6 | 67.2 | 67.6 | 68.7 | 69.2 | 66.6 | 65.3 | 63.9 | 62.0 | 61.7 | 59.8 | 62.0 | 57.1 | 56.2 | 56.7 | 53.7 | 52.8 | 53.0 | 53.3 | 48.5 | 44.8  |  |
| SC   | B     | 35       | 82.4       | 66.6 | 67.2 | 69.5 | 60.7 | 66.1 | 78.6 | 69.2 | 68.8 | 70.5 | 71.8 | 65.7 | 66.2 | 68.8 | 66.6 | 65.3 | 65.1 | 65.5 | 62.7 | 61.8 | 59.8 | 56.3 | 54.1 | 50.8 | 47.3  |  |
| SC   | M     | 10       | 67.4       | 55.4 | 62.5 | 51.5 | 52.0 | 53.6 | 49.7 | 55.2 | 53.4 | 56.0 | 57.2 | 52.4 | 53.4 | 51.6 | 50.7 | 50.7 | 50.6 | 47.5 | 46.2 | 44.4 | 45.7 | 45.7 | 46.2 | 47.3 | 48.0  |  |
| SC   | M     | 20       | 71.4       | 57.1 | 51.3 | 54.2 | 58.7 | 53.5 | 50.8 | 61.2 | 59.1 | 63.3 | 64.5 | 60.6 | 58.7 | 57.4 | 59.1 | 57.0 | 55.3 | 52.2 | 49.4 | 48.8 | 48.4 | 47.7 | 45.6 | 42.7 | 40.8  |  |
| SC   | M     | 35       | 75.9       | 55.9 | 62.0 | 55.5 | 54.8 | 62.5 | 61.8 | 61.6 | 66.2 | 70.9 | 65.0 | 66.2 | 62.3 | 61.9 | 61.0 | 61.5 | 57.9 | 56.0 | 54.5 | 53.8 | 52.7 | 52.0 | 50.7 | 48.0 | 45.0  |  |
| SC   | F     | 10       | 70.0       | 63.9 | 60.2 | 50.3 | 62.5 | 51.0 | 48.9 | 51.0 | 53.1 | 56.9 | 50.8 | 50.0 | 50.0 | 51.3 | 63.8 | 55.9 | 48.3 | 49.2 | 48.4 | 46.1 | 45.3 | 42.3 | 40.5 | 39.0 | 35.9  |  |
| SC   | F     | 15       | 70.7       | 62.6 | 56.7 | 62.4 | 57.1 | 63.9 | 56.9 | 54.1 | 55.8 | 60.7 | 54.1 | 54.9 | 52.8 | 53.4 | 54.5 | 51.8 | 51.1 | 47.7 | 52.8 | 50.5 | 48.6 | 56.7 | 43.2 | 40.9 | 40.4  |  |
| SC   | F     | 20       | 73.8       | 56.5 | 66.6 | 55.2 | 64.2 | 67.2 | 52.9 | 58.9 | 53.8 | 58.9 | 56.5 | 59.3 | 59.3 | 61.8 | 59.9 | 61.2 | 58.6 | 55.3 | 55.5 | 54.8 | 54.8 | 58.3 | 46.8 | 43.1 | 42.2  |  |
| SC   | F     | 35       | 78.8       | 56.6 | 69.2 | 59.4 | 74.1 | 64.9 | 67.8 | 62.3 | 61.9 | 68.6 | 66.0 | 63.2 | 61.5 | 63.2 | 65.7 | 65.0 | 62.4 | 57.4 | 59.0 | 56.6 | 55.3 | 53.8 | 49.0 | 45.1 | 41.6  |  |



Figure 40: Yamaha mountain max snowmobile with two-stroke engine, Reference 9



Figure 41: Red Alpen Guide Bombardier snowcoach with low exhaust, Reference 9



Figure 42: Conversion van snowcoach with Mattracks, Reference 9

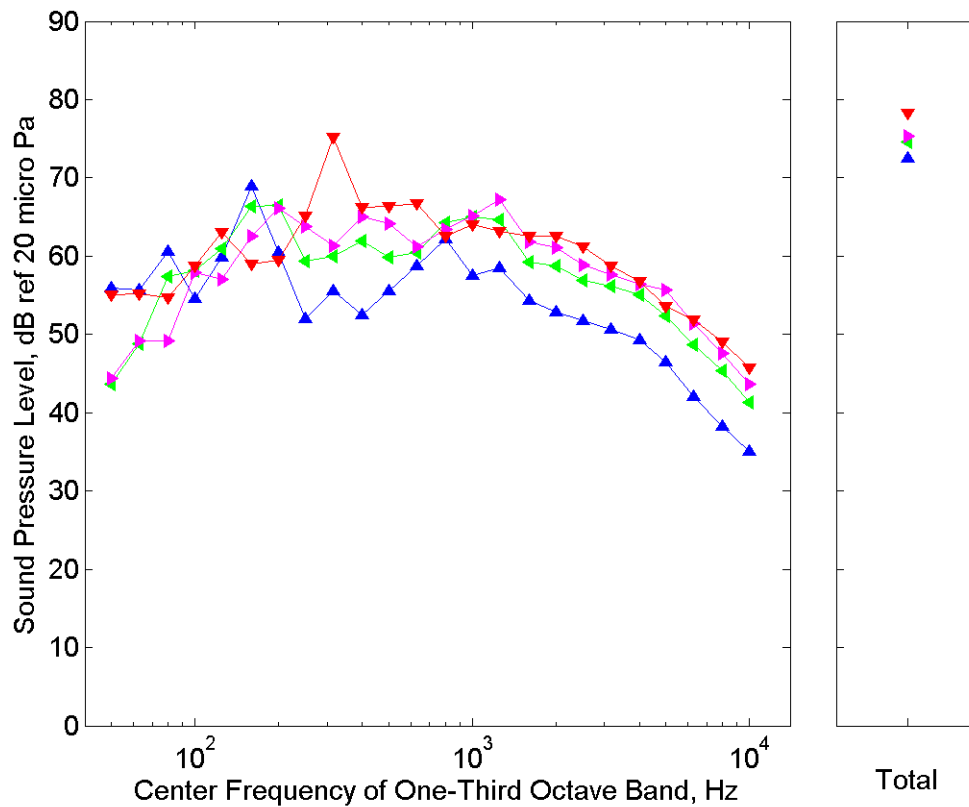


Figure 43: Two-stroke spectra used for generating Noise-Speed-Distance (NSD) relationships. ▼ – Vehicle speed is 40 miles per hour. ▲ – Vehicle speed is 35 miles per hour. ▲ – Vehicle speed is 20 miles per hour. ▲ – Vehicle speed is 10 miles per hour

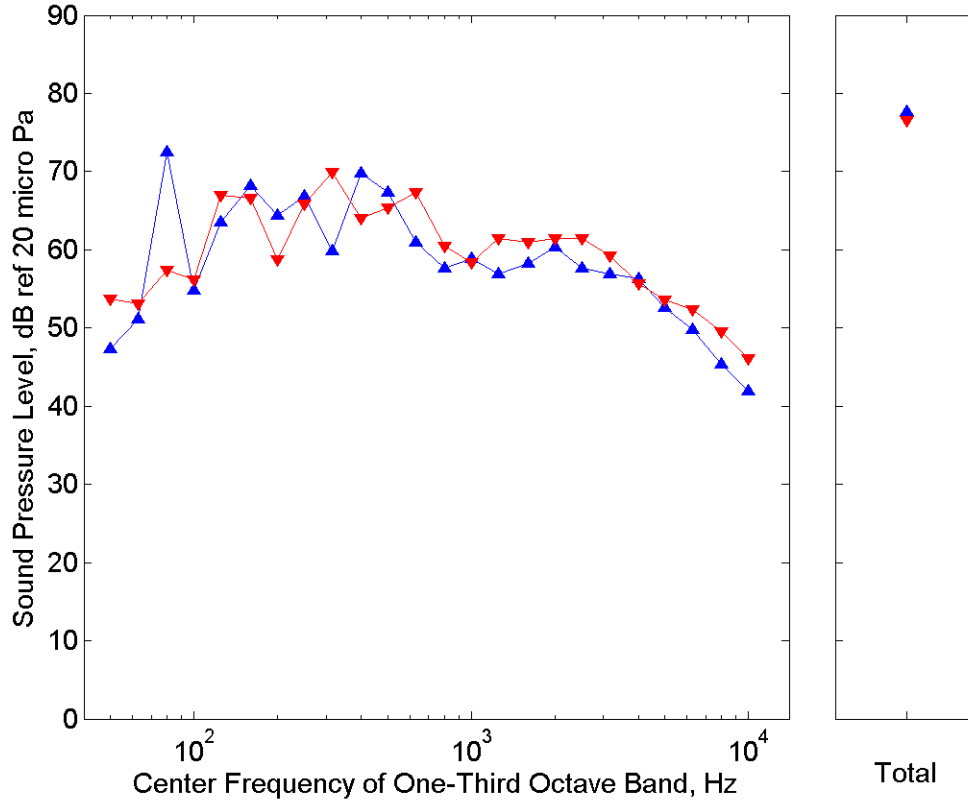
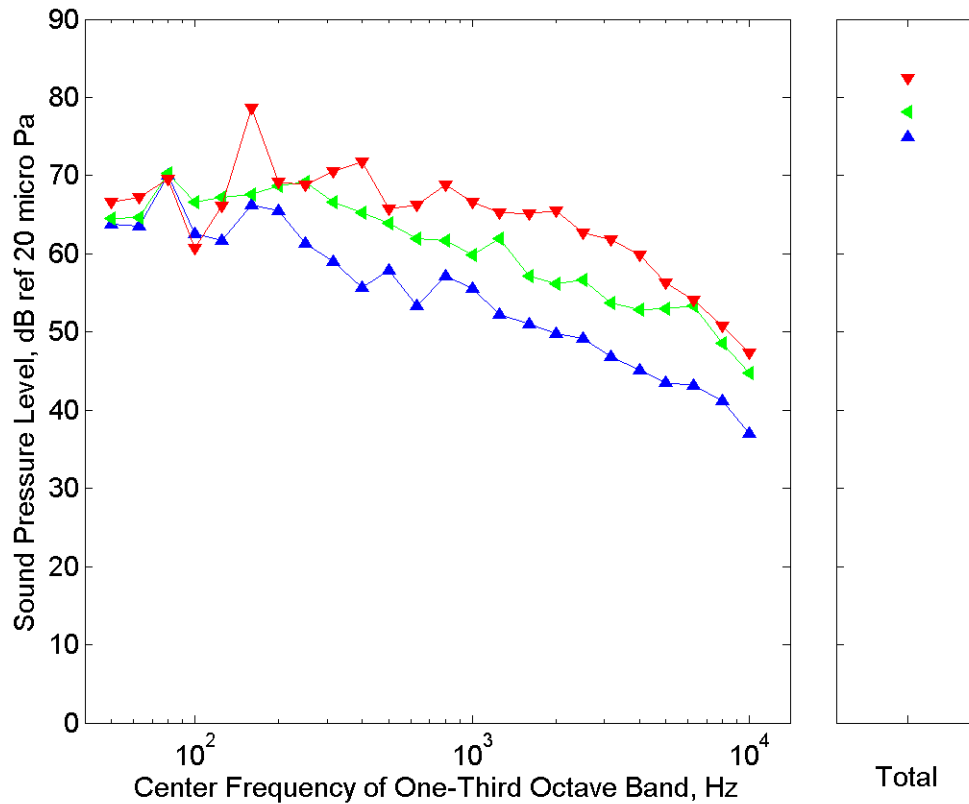
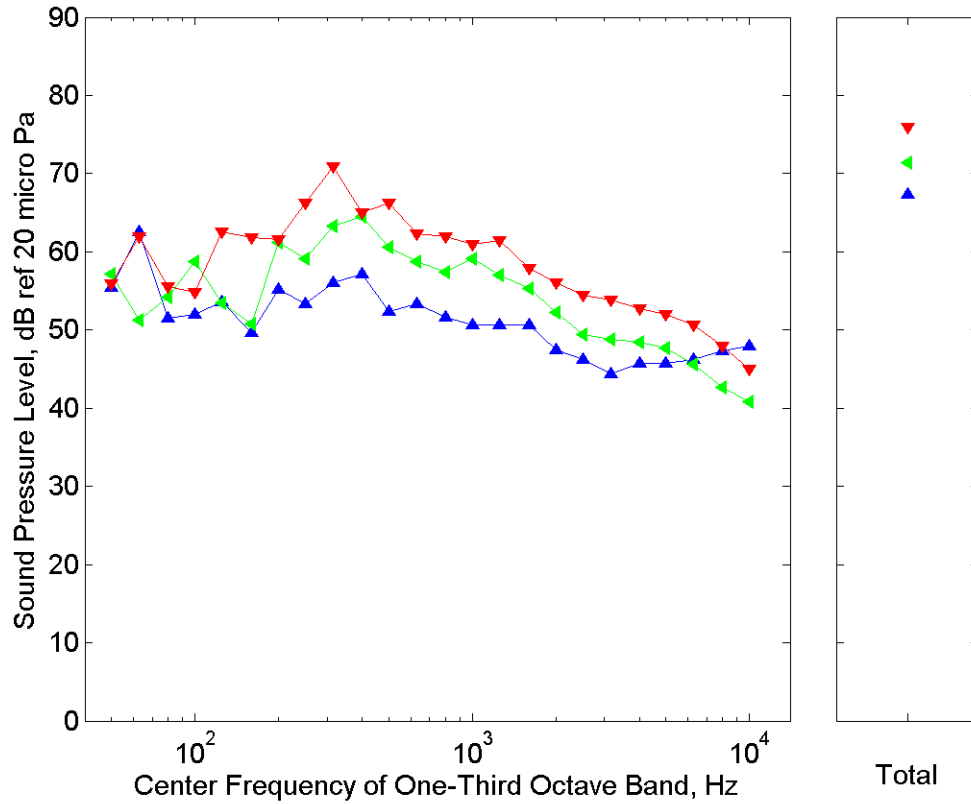


Figure 44: Four-stroke spectra used for generating Noise-Speed-Distance (NSD) relationships. ▼ – Vehicle speed is 40 miles per hour. ▲ – Vehicle speed is 30 miles per hour



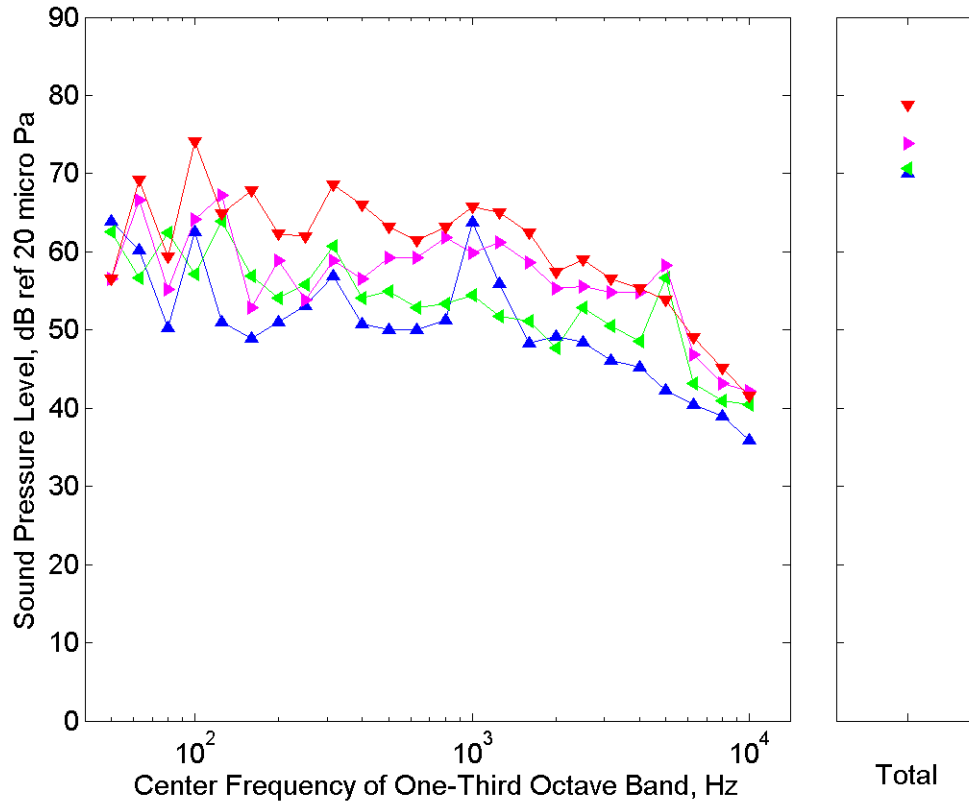
**Figure 45: Bombardier spectra used for generating Noise-Speed-Distance (NSD) relationships<sup>a</sup>. ▼ – Vehicle speed is 35 miles per hour. ◀ – Vehicle speed is 20 miles per hour. ▲ – Vehicle speed is 15 miles per hour**

<sup>a</sup> Speed related sound spectra for the Bombardier were limited to the Xanterra (Yellow) Bombardier since this was the only one with sufficient data at different speeds.



**Figure 46: Mattrack spectra used for generating Noise-Speed-Distance (NSD) relationships. ▼ – Vehicle speed is 35 miles per hour. ◀ – Vehicle speed is 20 miles per hour. ▲ – Vehicle speed is 10 miles per hour**





**Figure 47: Full-track / Snow Buster spectra used for generating Noise-Speed-Distance (NSD) relationships. ▼ – Vehicle speed is 35 miles per hour. ► – Vehicle speed is 20 miles per hour. ◀ – Vehicle speed is 15 miles per hour. ▲ – Vehicle speed is 10 miles per hour**

### C.2. Grouping of Sound Sources

In previous modeling, see for example results in Appendix D, OSV operations were considered to be evenly distributed throughout the day. The National Park Service was concerned that this may not sufficiently represent the snowmobile operations in the Parks. In order to include snowmobile grouping in the modeling, groups were assumed to be a single point source. It was further assumed that the level of this source increases as a function of the number of snowmobiles in the group,

$$L_{Amax, group} = L_{Amax, single} + 10 \times \log_{10}(N),$$

where  $L_{Amax, group}$  is the maximum A-weighted sound level for the group;  $L_{Amax, single}$  is the maximum A-weighted sound level for a single vehicle of the specified type; and  $N$  is the number of vehicles in the group. The term  $10 \times \log_{10}(N)$  is used to convert the NSD relationship from single operations to group operations.

When evaluating audibility in the Parks, a point source assumption for groups is suitable for the following reasons. One, validity of the assumption increases with increasing distance. When the

distance between the group and the receiver is large, the group will be perceived as a point source. When the distance between the group and the receiver is small, the group will be audible regardless of whether or not they are perceived as a point source. Two, modeling groups as point sources represents a limiting case of the acoustics involved in modeling groups. That is, by modeling the groups as single point sources, the time interval for audibility is at a minimum but the area of effect is at a maximum.

Several sample audibility calculations were run to illustrate the differences between snowmobiles traveling individually and as groups. For this illustration two sample cases were considered, “I”, where snowmobiles were operated individually, and “G” where the snowmobiles were operated in groups. Four-stroke snowmobiles were modeled throughout Yellowstone for a one-hour time interval. Each road segment had either 15, 30, 60, 120, or 240 snowmobiles over the one-hour time interval<sup>a</sup>. The number of operations was determined by the hourly number of snowmobiles and whether they were grouped or not. Thus for example, with 60 snowmobiles per segment for a one-hour time interval, case “I” would have 60 operations (on each road segment), while case “G” would have 6 operations (on each road segment). The combination of sample case and snowmobiles per hour can be thought of as an analog to a modeling scenario. Each grouped operation would have a maximum A-weighted sound level 10 dB<sup>b</sup> greater than the individual operations. The audibility contours are shown in Figure 48 to Figure 57.

By comparing Figure 48 and Figure 49 it can be seen that, for the same number of snowmobiles, individual operations produce higher percent time audible results but “any audibility” is confined to a smaller park area. When the number of snowmobiles is increased to 30, the area nearest the travel corridor reaches 100% audibility for the case “I”, individual operations, but for case “G”, grouped operations, it reaches only about 20% audibility. See Figure 50 and Figure 51. In Figure 52, Figure 54, and Figure 56, the number of snowmobiles is increased from 60 to 240 snowmobiles per hour for individual operations. Over this range, the percent time audible does not increase significantly for individually operated snowmobiles since the maximum audibility has been reached. However, it should be verified that closely spaced snowmobiles can still be treated as point sources. If this is not the case, then the park area with “any audibility” may increase<sup>c</sup>. In Figure 53, Figure 55, and Figure 57, the number of snowmobiles is increased from 60 to 240 snowmobiles per hour for grouped operations. Over this range, the percent time audible increases for group-operated snowmobiles since grouped operations do not reach 100% audibility until about 240 snowmobiles. One final observation, although case “G” with 120 snowmobiles has fewer operations than case “I” with 15 snowmobiles, case “G” has a much greater park area with 100% audibility<sup>d</sup>. This is because the increased sound source levels cause groups to be audible over greater distances along the road. This shows the affect of source level on audibility near the travel corridor.

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<sup>a</sup> For all cases, the line-of-sight blockage was turned off to increase the speed of computation. For the purpose of comparing grouped and non-grouped operations, this is acceptable, however, these results cannot be compared with other results in this report where the line-of-sight blockage was included in the computations.

<sup>b</sup>  $10 \times \log_{10}(10)$

<sup>c</sup> The extreme case of this would be when snowmobiles were arranged end-to-end along the length of the road segment, which would form a line source.

<sup>d</sup> It should be remembered that case “I” only has 15 snowmobiles whereas case “G” has 120 snowmobiles.

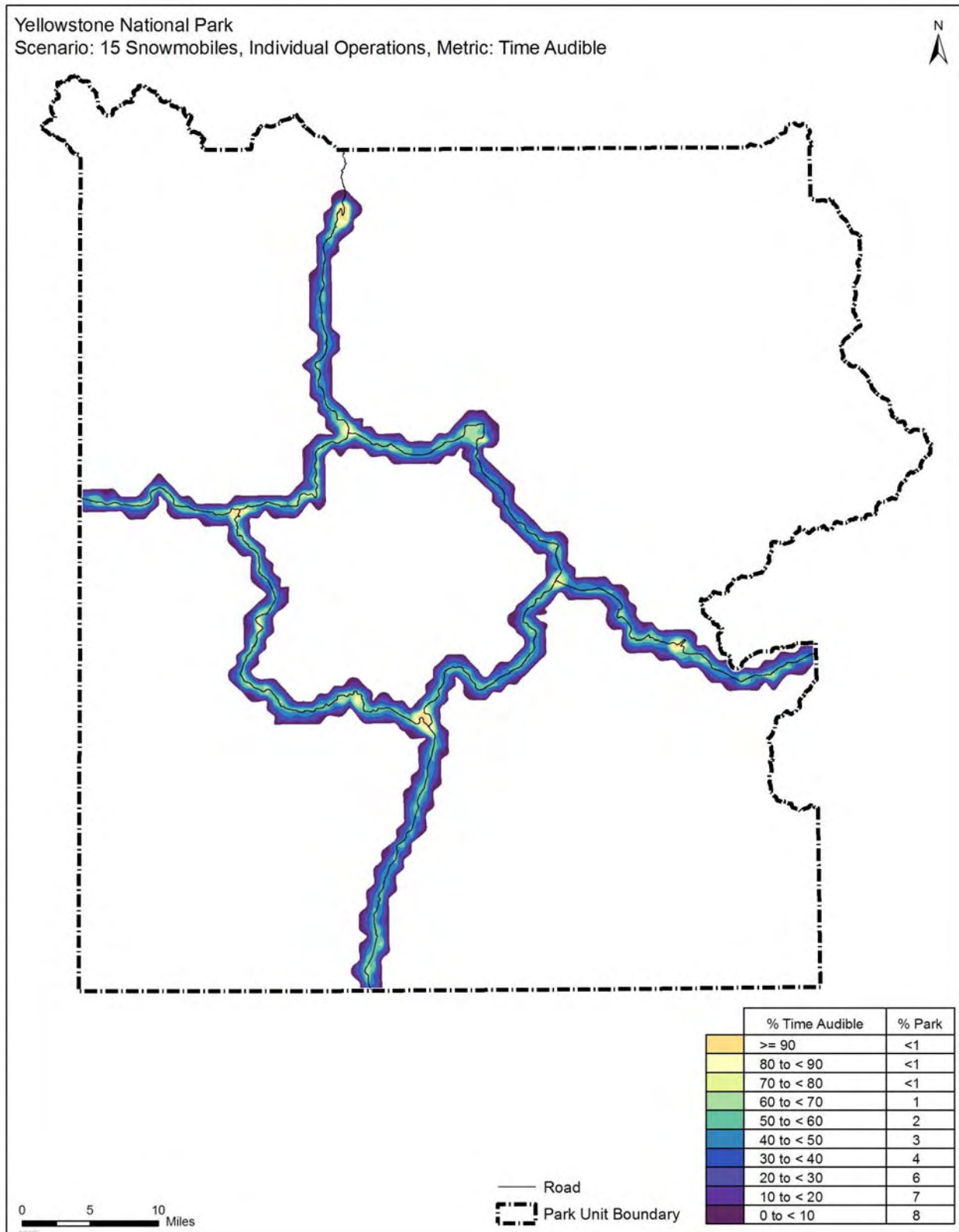


Figure 48: Group study case "I", 15 snowmobiles operated individually on each road segment over a one-hour period.

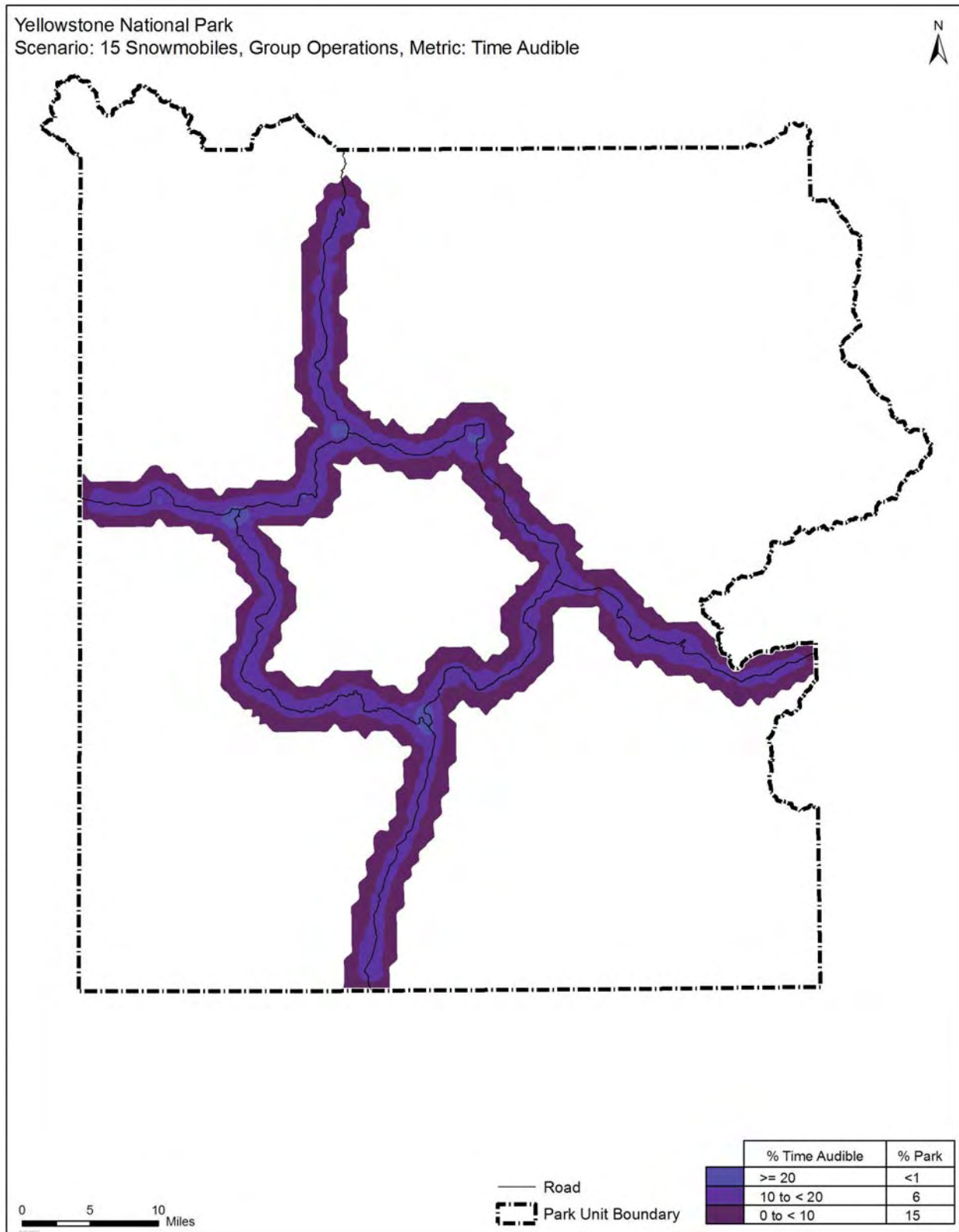


Figure 49: Group study case "G", 15 snowmobiles operated in groups of 10 on each road segment over a one-hour period.

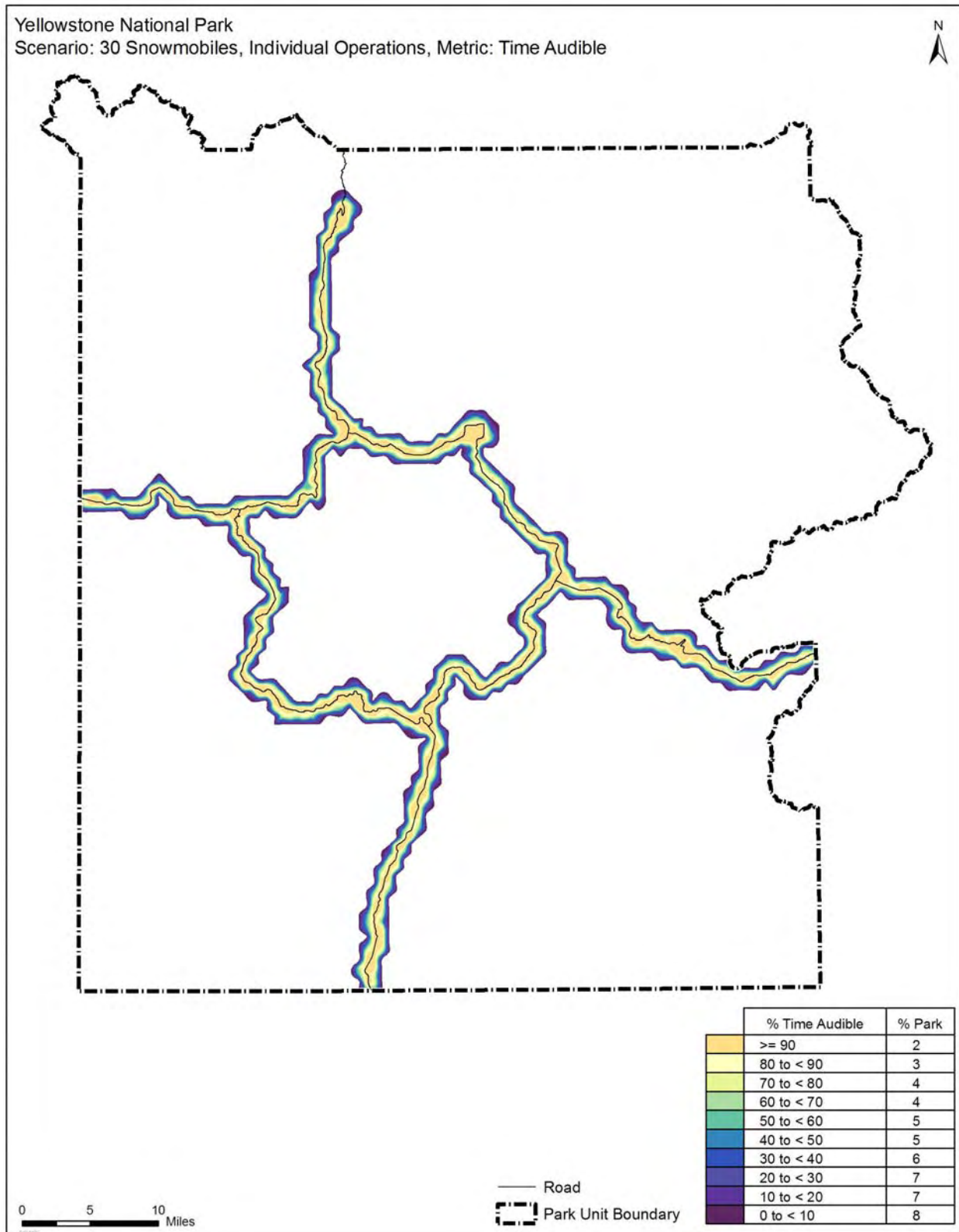


Figure 50: Group study case "I", 30 snowmobiles operated individually on each road segment over a one-hour period.

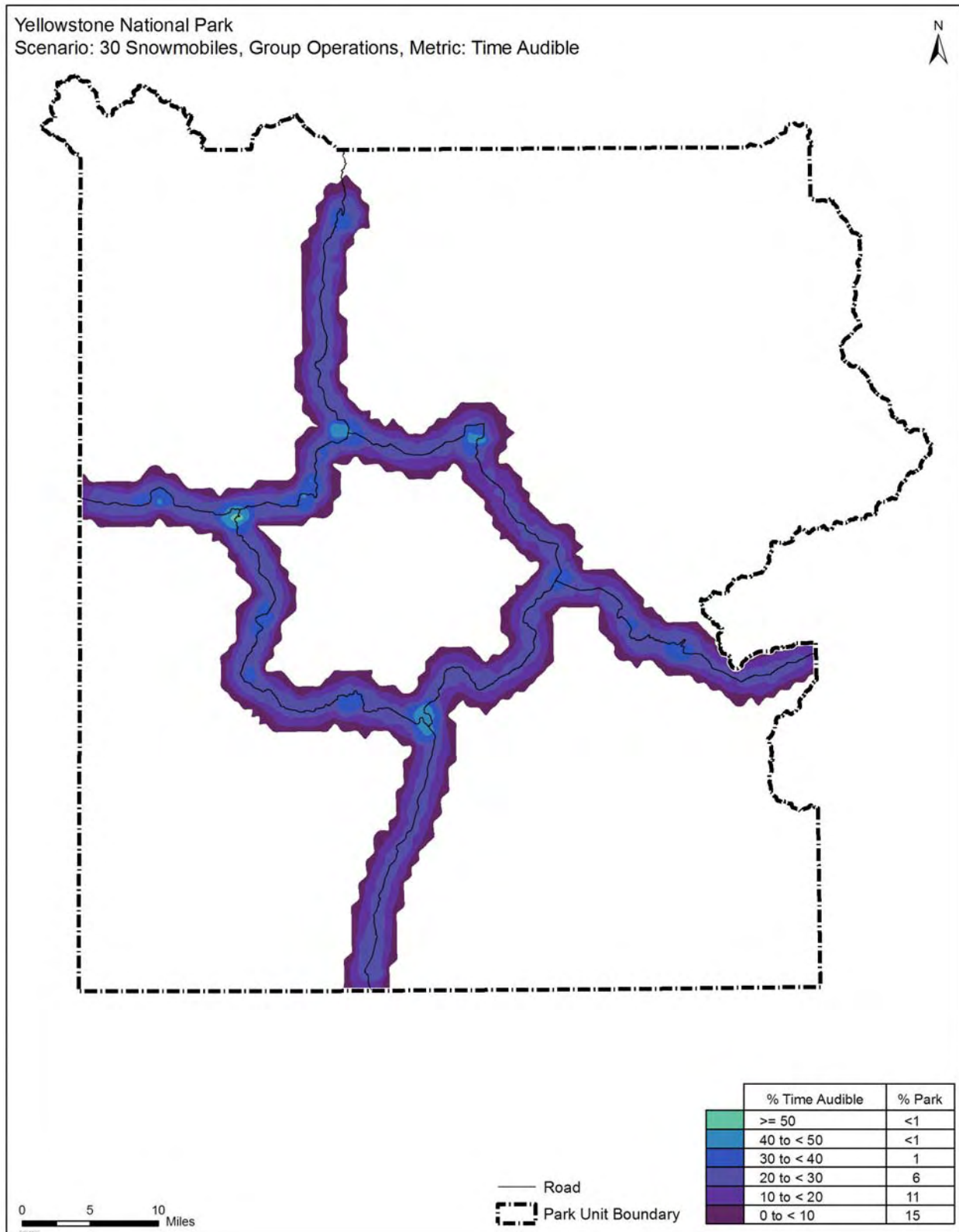


Figure 51: Group study case "G", 30 snowmobiles operated in groups of 10 on each road segment over a one-hour period.



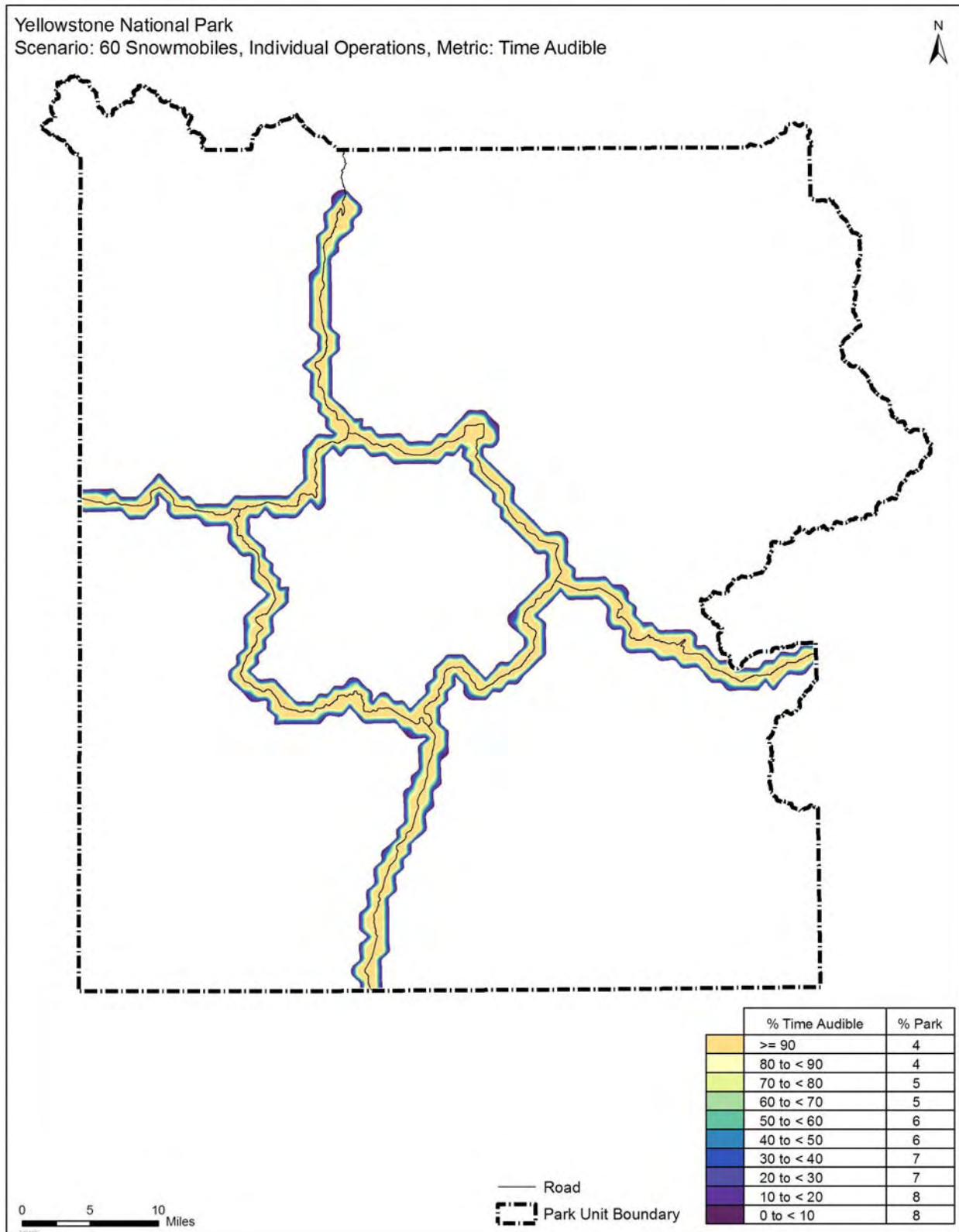


Figure 52: Group study case "I", 60 snowmobiles operated individually on each road segment over a one-hour period.

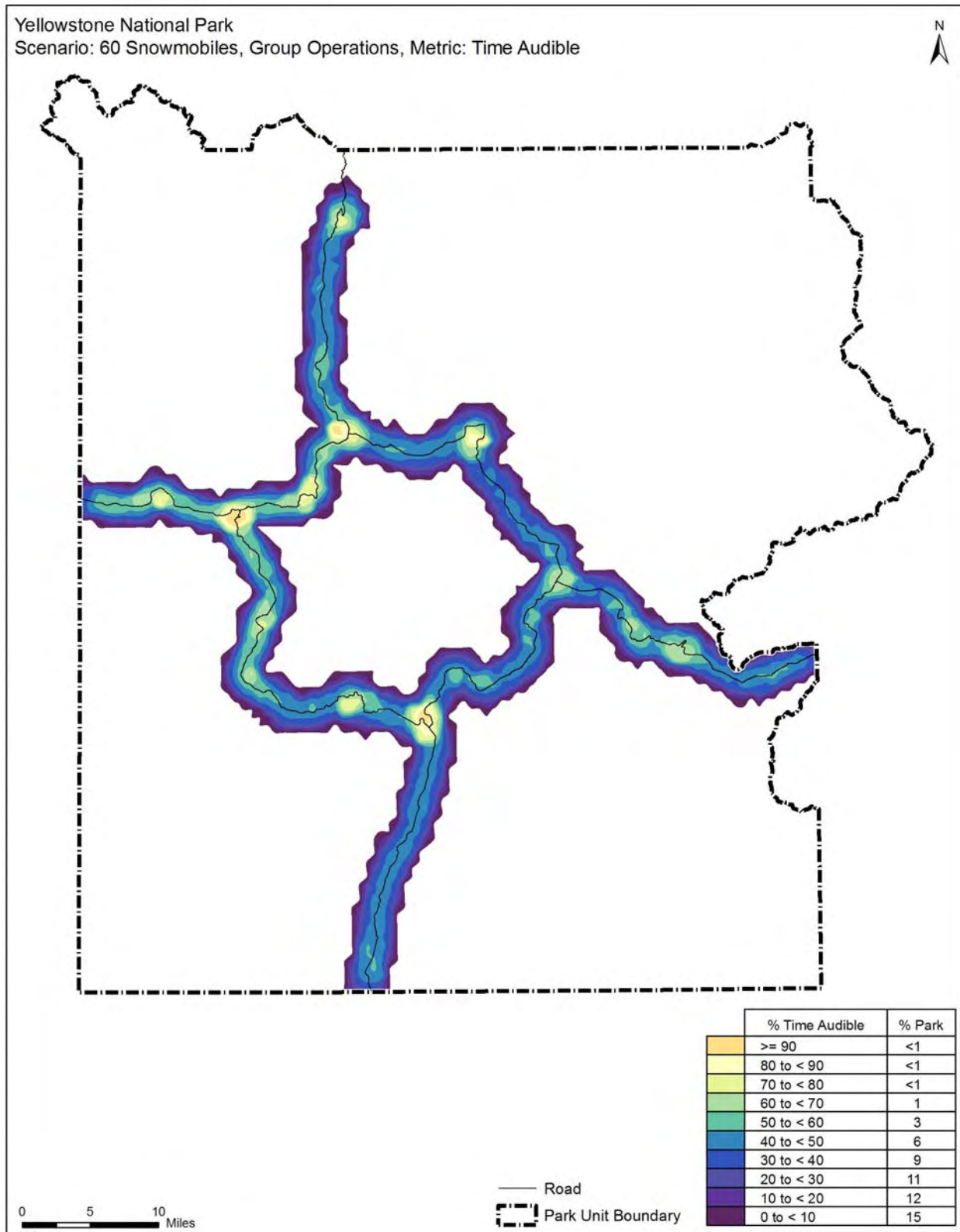


Figure 53: Group study case "G", 60 snowmobiles operated in groups of 10 on each road segment over a one-hour period.



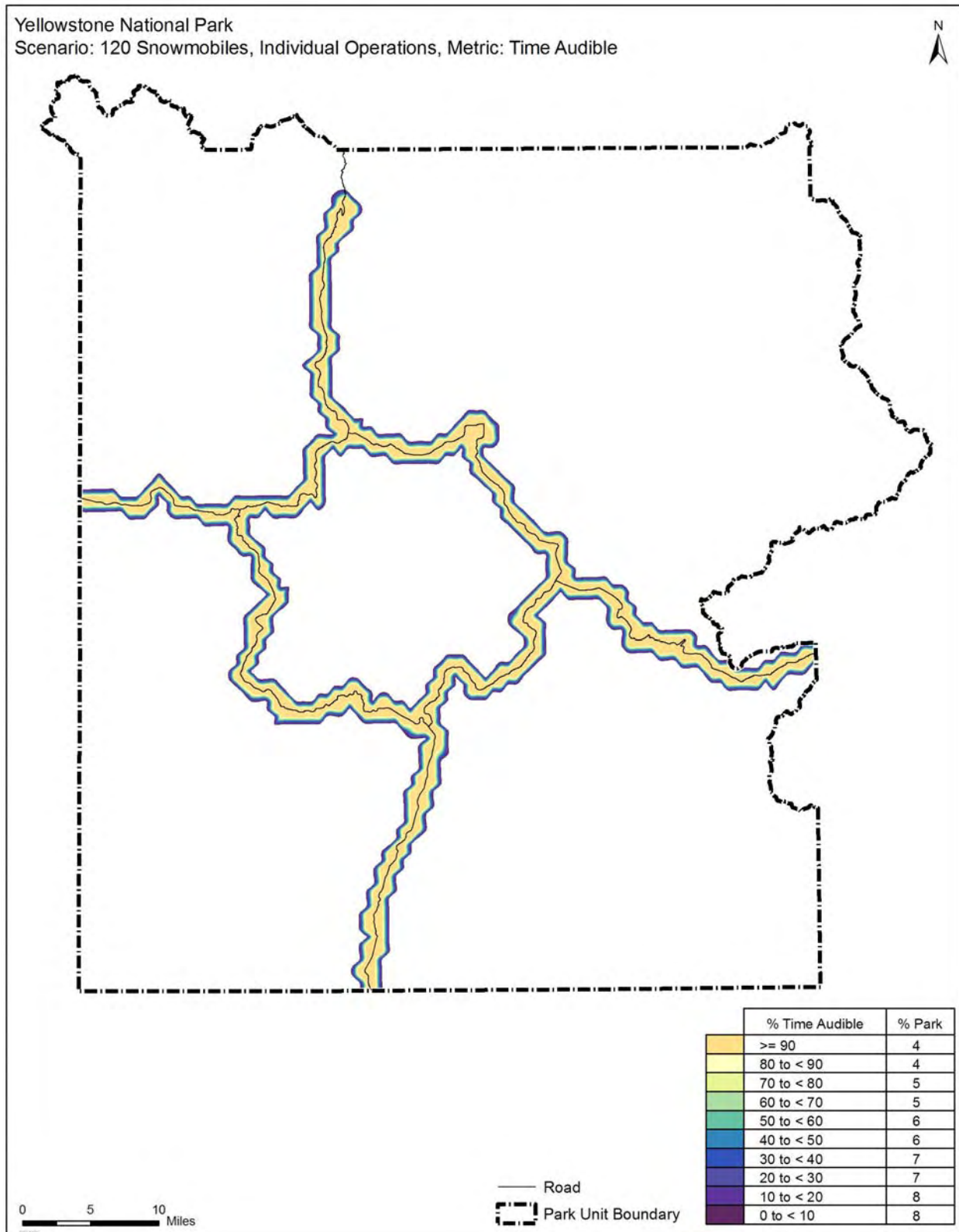


Figure 54: Group study case "I", 120 snowmobiles operated individually on each road segment over a one-hour period.

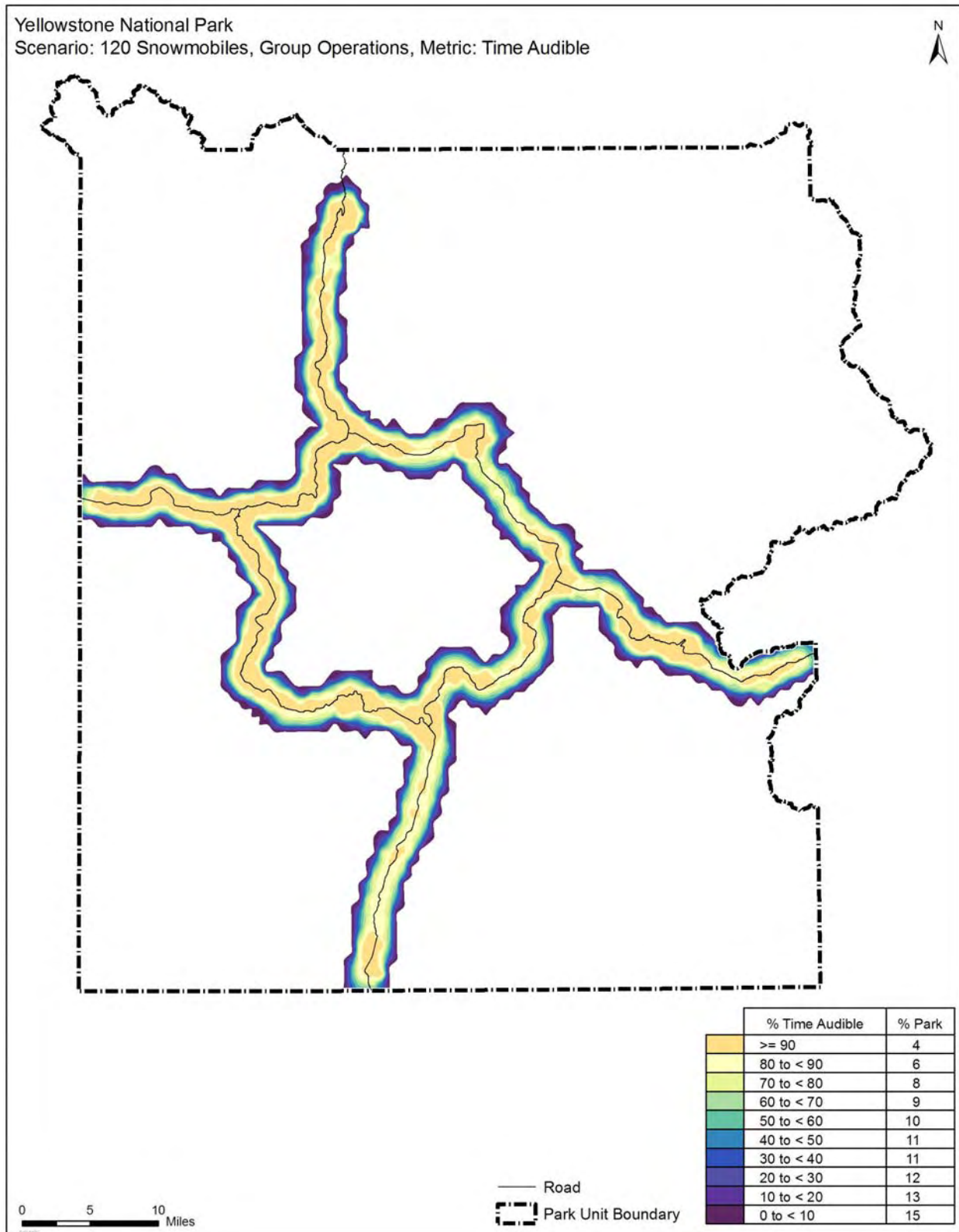


Figure 55: Group study case "G", 120 snowmobiles operated in groups of 10 on each road segment over a one-hour period.

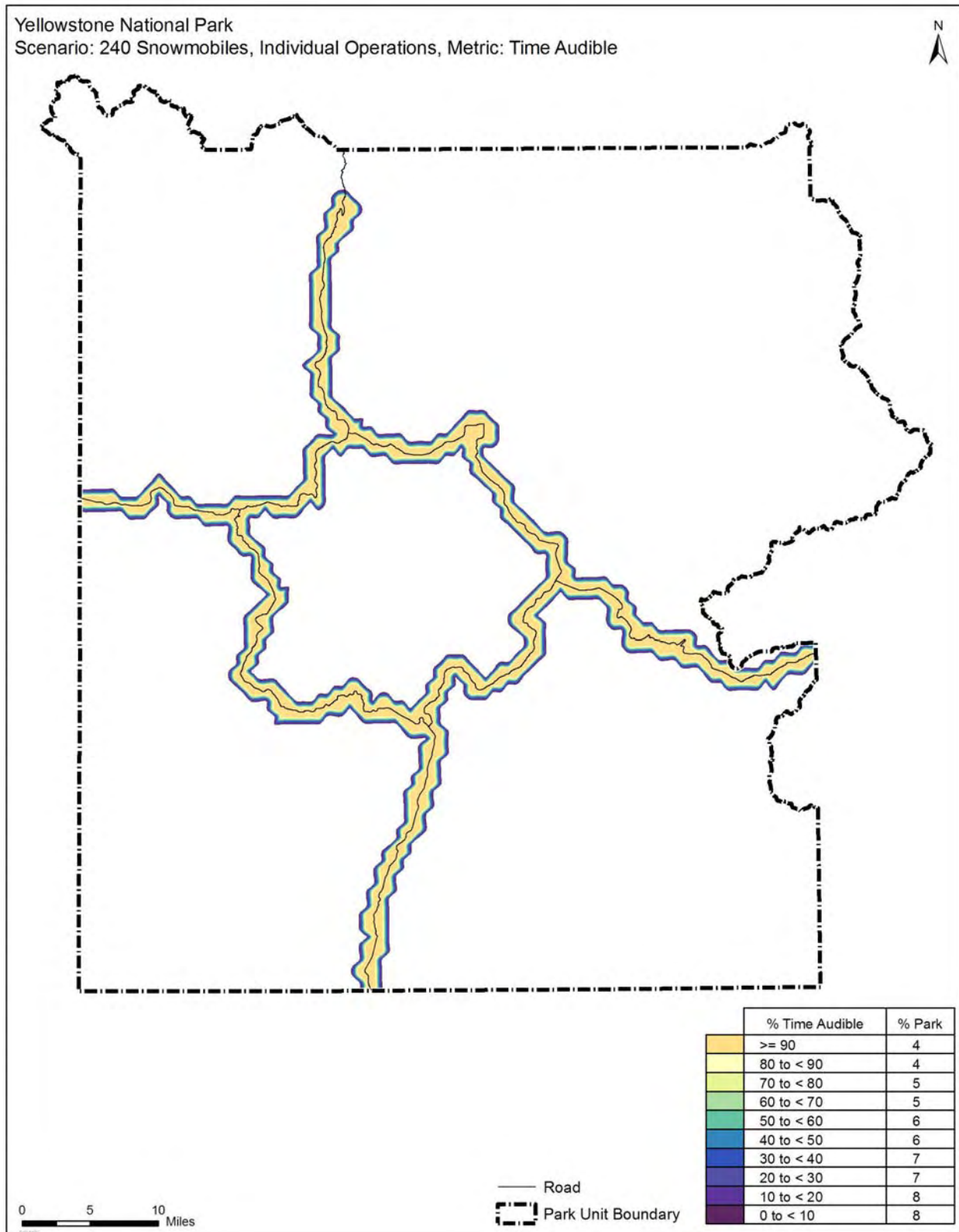


Figure 56: Group study case "I", 240 snowmobiles operated individually on each road segment over a one-hour period.

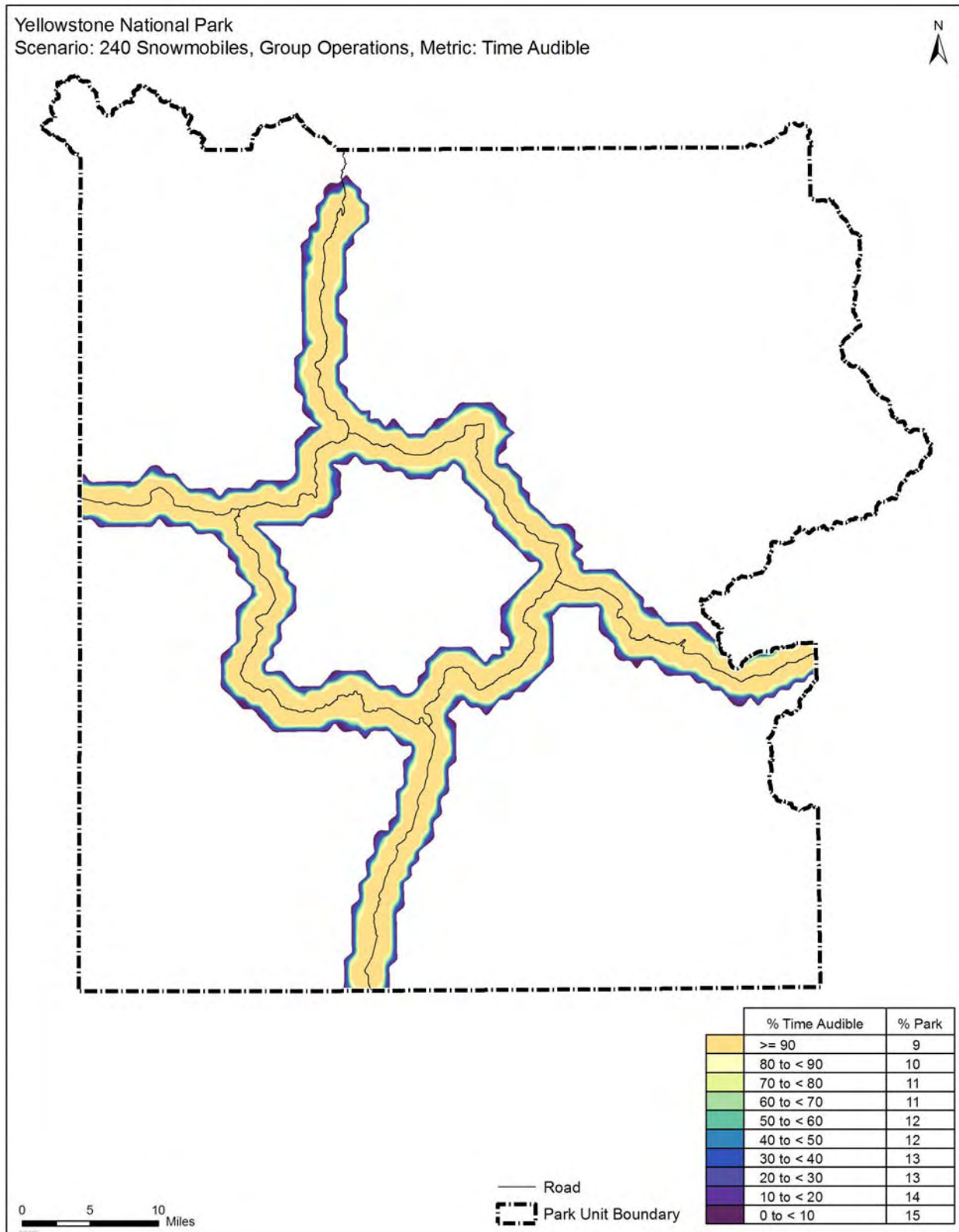


Figure 57: Group study case "G", 240 snowmobiles operated in groups of 10 on each road segment over a one-hour period.

**Appendix D. Detail Matrix for Vehicle Operations by Alternative and Park**

**D.1. Yellowstone**

In Yellowstone, the number of operations are dependent on whether the vehicles are guided, unguided, or a mix of both for peak and off-peak hours. Hours that represent all operation variations for a given alternative are highlighted in gray. Hours 09:00 to 10:00, 10:00 to 11:00, and 11:00 to 12:00 encompass all operation levels for alternatives that are wholly guided (Alternatives 1A, 1B, 1D, 1E, 2, 3, 6, and Current), refer to Section 3.4 for further details. Hours 08:00 to 09:00, 09:00 to 10:00, 13:00 to 14:00, 14:00 to 15:00, and 15:00 to 16:00 encompass all operation levels for alternatives that are wholly unguided (Historical). Hours 08:00 to 09:00, 09:00 to 10:00, 10:00 to 11:00, 11:00 to 12:00, 14:00 to 15:00, and 15:00 to 16:00 encompass all operation levels for alternatives that are mix of guided and unguided operations (Alternatives 4 and 5).

**Table 18: Alternative 1A<sup>a</sup>**

**Operations for BAT Snowmobiles in Groups of 8 for Alternative 1A**

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 4.539         | 4.539         | 4.539         | 4.539         | 4.539         | 4.539         | 4.539         | 4.539         | Ops |
| Madison to Old Faithful          | 4.148         | 4.148         | 4.148         | 20.739        | 20.739        | 20.739        | 4.148         | 4.148         | Ops |
| Fishing Bridge to East Entrance  | 1.184         | 1.184         | 1.184         | 1.184         | 1.184         | 1.184         | 1.184         | 1.184         | Ops |
| Fishing Bridge to West Thumb     | 2.346         | 2.346         | 2.346         | 2.346         | 2.346         | 2.346         | 2.346         | 2.346         | Ops |
| Madison to Norris                | 4.551         | 4.551         | 4.551         | 4.551         | 4.551         | 4.551         | 4.551         | 4.551         | Ops |
| West Entrance to Madison         | 5.580         | 25.110        | 5.580         | 5.580         | 5.580         | 5.580         | 5.580         | 25.110        | Ops |
| Norris to Canyon Village         | 3.274         | 3.274         | 3.274         | 3.274         | 3.274         | 3.274         | 3.274         | 3.274         | Ops |
| Mammoth to Norris                | 1.316         | 1.316         | 1.316         | 1.316         | 1.316         | 1.316         | 1.316         | 1.316         | Ops |
| West Thumb to Flagg Ranch        | 1.545         | 18.540        | 1.545         | 1.545         | 1.545         | 1.545         | 1.545         | 18.540        | Ops |
| Old Faithful to West Thumb       | 2.458         | 2.458         | 2.458         | 12.291        | 12.291        | 12.291        | 2.458         | 2.458         | Ops |

**Operations for BAT Snowmobiles in Groups of 17 for Alternative 1A**

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 0.237         | 0.237         | 0.237         | 0.237         | 0.237         | 0.237         | 0.237         | 0.237         | Ops |
| Madison to Old Faithful          | 0.217         | 0.217         | 0.217         | 1.084         | 1.084         | 1.084         | 0.217         | 0.217         | Ops |
| Fishing Bridge to East Entrance  | 0.062         | 0.062         | 0.062         | 0.062         | 0.062         | 0.062         | 0.062         | 0.062         | Ops |
| Fishing Bridge to West Thumb     | 0.123         | 0.123         | 0.123         | 0.123         | 0.123         | 0.123         | 0.123         | 0.123         | Ops |
| Madison to Norris                | 0.238         | 0.238         | 0.238         | 0.238         | 0.238         | 0.238         | 0.238         | 0.238         | Ops |
| West Entrance to Madison         | 0.292         | 1.313         | 0.292         | 0.292         | 0.292         | 0.292         | 0.292         | 1.313         | Ops |
| Norris to Canyon Village         | 0.171         | 0.171         | 0.171         | 0.171         | 0.171         | 0.171         | 0.171         | 0.171         | Ops |
| Mammoth to Norris                | 0.069         | 0.069         | 0.069         | 0.069         | 0.069         | 0.069         | 0.069         | 0.069         | Ops |
| West Thumb to Flagg Ranch        | 0.081         | 0.969         | 0.081         | 0.081         | 0.081         | 0.081         | 0.081         | 0.969         | Ops |
| Old Faithful to West Thumb       | 0.129         | 0.129         | 0.129         | 0.643         | 0.643         | 0.643         | 0.129         | 0.129         | Ops |

<sup>a</sup> Three decimal places are kept in these tables because the data are derived by dividing integer operations by segments; hours; and by guide, group, and BAT requirements.

Operations for BAT Snowcoaches for Alternative 1A

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 3.253         | 3.253         | 3.253         | 3.253         | 3.253         | 3.253         | 3.253         | 3.253         | Ops |
| Madison to Old Faithful          | 3.935         | 3.935         | 3.935         | 19.673        | 19.673        | 19.673        | 3.935         | 3.935         | Ops |
| Fishing Bridge to East Entrance  | 0.780         | 0.780         | 0.780         | 0.780         | 0.780         | 0.780         | 0.780         | 0.780         | Ops |
| Fishing Bridge to West Thumb     | 1.195         | 1.195         | 1.195         | 1.195         | 1.195         | 1.195         | 1.195         | 1.195         | Ops |
| Madison to Norris                | 4.730         | 4.730         | 4.730         | 4.730         | 4.730         | 4.730         | 4.730         | 4.730         | Ops |
| West Entrance to Madison         | 4.839         | 21.777        | 4.839         | 4.839         | 4.839         | 4.839         | 4.839         | 21.777        | Ops |
| Norris to Canyon Village         | 3.053         | 3.053         | 3.053         | 3.053         | 3.053         | 3.053         | 3.053         | 3.053         | Ops |
| Mammoth to Norris                | 3.213         | 3.213         | 3.213         | 3.213         | 3.213         | 3.213         | 3.213         | 3.213         | Ops |
| West Thumb to Flagg Ranch        | 1.380         | 16.556        | 1.380         | 1.380         | 1.380         | 1.380         | 1.380         | 16.556        | Ops |
| Old Faithful to West Thumb       | 2.367         | 2.367         | 2.367         | 11.833        | 11.833        | 11.833        | 2.367         | 2.367         | Ops |

Table 19: Alternative 1B

Operations for BAT Snowmobiles in Groups of 11 for Alternative 1B

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 3.188         | 3.188         | 3.188         | 3.188         | 3.188         | 3.188         | 3.188         | 3.188         | Ops |
| Madison to Old Faithful          | 3.464         | 3.464         | 3.464         | 17.322        | 17.322        | 17.322        | 3.464         | 3.464         | Ops |
| Fishing Bridge to East Entrance  | 0.251         | 0.251         | 0.251         | 0.251         | 0.251         | 0.251         | 0.251         | 0.251         | Ops |
| Fishing Bridge to West Thumb     | 1.887         | 1.887         | 1.887         | 1.887         | 1.887         | 1.887         | 1.887         | 1.887         | Ops |
| Madison to Norris                | 3.575         | 3.575         | 3.575         | 3.575         | 3.575         | 3.575         | 3.575         | 3.575         | Ops |
| West Entrance to Madison         | 4.739         | 21.327        | 4.739         | 4.739         | 4.739         | 4.739         | 4.739         | 21.327        | Ops |
| Norris to Canyon Village         | 2.552         | 2.552         | 2.552         | 2.552         | 2.552         | 2.552         | 2.552         | 2.552         | Ops |
| Mammoth to Norris                | 0.805         | 0.805         | 0.805         | 0.805         | 0.805         | 0.805         | 0.805         | 0.805         | Ops |
| West Thumb to Flagg Ranch        | 1.505         | 18.065        | 1.505         | 1.505         | 1.505         | 1.505         | 1.505         | 18.065        | Ops |
| Old Faithful to West Thumb       | 2.164         | 2.164         | 2.164         | 10.820        | 10.820        | 10.820        | 2.164         | 2.164         | Ops |

Operations for BAT Snowcoaches for Alternative 1B

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 2.896         | 2.896         | 2.896         | 2.896         | 2.896         | 2.896         | 2.896         | 2.896         | Ops |
| Madison to Old Faithful          | 3.990         | 3.990         | 3.990         | 19.950        | 19.950        | 19.950        | 3.990         | 3.990         | Ops |
| Fishing Bridge to East Entrance  | 0.199         | 0.199         | 0.199         | 0.199         | 0.199         | 0.199         | 0.199         | 0.199         | Ops |
| Fishing Bridge to West Thumb     | 1.255         | 1.255         | 1.255         | 1.255         | 1.255         | 1.255         | 1.255         | 1.255         | Ops |
| Madison to Norris                | 4.723         | 4.723         | 4.723         | 4.723         | 4.723         | 4.723         | 4.723         | 4.723         | Ops |
| West Entrance to Madison         | 4.829         | 21.732        | 4.829         | 4.829         | 4.829         | 4.829         | 4.829         | 21.732        | Ops |
| Norris to Canyon Village         | 2.996         | 2.996         | 2.996         | 2.996         | 2.996         | 2.996         | 2.996         | 2.996         | Ops |
| Mammoth to Norris                | 3.186         | 3.186         | 3.186         | 3.186         | 3.186         | 3.186         | 3.186         | 3.186         | Ops |
| West Thumb to Flagg Ranch        | 1.545         | 18.536        | 1.545         | 1.545         | 1.545         | 1.545         | 1.545         | 18.536        | Ops |
| Old Faithful to West Thumb       | 2.539         | 2.539         | 2.539         | 12.695        | 12.695        | 12.695        | 2.539         | 2.539         | Ops |

**Table 20: Alternative 1D**

**Operations for BAT Snowmobiles in Groups of 11 for Alternative 1D**

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 3.032         | 3.032         | 3.032         | 3.032         | 3.032         | 3.032         | 3.032         | 3.032         | Ops |
| Madison to Old Faithful          | 3.334         | 3.334         | 3.334         | 16.668        | 16.668        | 16.668        | 3.334         | 3.334         | Ops |
| Fishing Bridge to East Entrance  | 0.230         | 0.230         | 0.230         | 0.230         | 0.230         | 0.230         | 0.230         | 0.230         | Ops |
| Fishing Bridge to West Thumb     | 1.759         | 1.759         | 1.759         | 1.759         | 1.759         | 1.759         | 1.759         | 1.759         | Ops |
| Madison to Norris                | 3.632         | 3.632         | 3.632         | 3.632         | 3.632         | 3.632         | 3.632         | 3.632         | Ops |
| West Entrance to Madison         | 4.485         | 20.182        | 4.485         | 4.485         | 4.485         | 4.485         | 4.485         | 20.182        | Ops |
| Norris to Canyon Village         | 2.555         | 2.555         | 2.555         | 2.555         | 2.555         | 2.555         | 2.555         | 2.555         | Ops |
| Mammoth to Norris                | 1.018         | 1.018         | 1.018         | 1.018         | 1.018         | 1.018         | 1.018         | 1.018         | Ops |
| West Thumb to Flagg Ranch        | 1.303         | 15.636        | 1.303         | 1.303         | 1.303         | 1.303         | 1.303         | 15.636        | Ops |
| Old Faithful to West Thumb       | 1.950         | 1.950         | 1.950         | 9.750         | 9.750         | 9.750         | 1.950         | 1.950         | Ops |

**Operations for BAT Snowcoaches for Alternative 1D**

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 2.896         | 2.896         | 2.896         | 2.896         | 2.896         | 2.896         | 2.896         | 2.896         | Ops |
| Madison to Old Faithful          | 3.990         | 3.990         | 3.990         | 19.950        | 19.950        | 19.950        | 3.990         | 3.990         | Ops |
| Fishing Bridge to East Entrance  | 0.199         | 0.199         | 0.199         | 0.199         | 0.199         | 0.199         | 0.199         | 0.199         | Ops |
| Fishing Bridge to West Thumb     | 1.255         | 1.255         | 1.255         | 1.255         | 1.255         | 1.255         | 1.255         | 1.255         | Ops |
| Madison to Norris                | 4.723         | 4.723         | 4.723         | 4.723         | 4.723         | 4.723         | 4.723         | 4.723         | Ops |
| West Entrance to Madison         | 4.829         | 21.732        | 4.829         | 4.829         | 4.829         | 4.829         | 4.829         | 21.732        | Ops |
| Norris to Canyon Village         | 2.996         | 2.996         | 2.996         | 2.996         | 2.996         | 2.996         | 2.996         | 2.996         | Ops |
| Mammoth to Norris                | 3.186         | 3.186         | 3.186         | 3.186         | 3.186         | 3.186         | 3.186         | 3.186         | Ops |
| West Thumb to Flagg Ranch        | 1.545         | 18.536        | 1.545         | 1.545         | 1.545         | 1.545         | 1.545         | 18.536        | Ops |
| Old Faithful to West Thumb       | 2.539         | 2.539         | 2.539         | 12.695        | 12.695        | 12.695        | 2.539         | 2.539         | Ops |

**Table 21: Alternative 1E**

**Operations for BAT Snowmobiles in Groups of 11 for Alternative 1E**

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 1.868         | 1.868         | 1.868         | 1.868         | 1.868         | 1.868         | 1.868         | 1.868         | Ops |
| Madison to Old Faithful          | 3.830         | 3.830         | 3.830         | 19.150        | 19.150        | 19.150        | 3.830         | 3.830         | Ops |
| Fishing Bridge to East Entrance  | 0.230         | 0.230         | 0.230         | 0.230         | 0.230         | 0.230         | 0.230         | 0.230         | Ops |
| Fishing Bridge to West Thumb     | 2.234         | 2.234         | 2.234         | 2.234         | 2.234         | 2.234         | 2.234         | 2.234         | Ops |
| Madison to Norris                | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| West Entrance to Madison         | 4.555         | 20.498        | 4.555         | 4.555         | 4.555         | 4.555         | 4.555         | 20.498        | Ops |
| Norris to Canyon Village         | 0.780         | 0.780         | 0.780         | 0.780         | 0.780         | 0.780         | 0.780         | 0.780         | Ops |
| Mammoth to Norris                | 0.984         | 0.984         | 0.984         | 0.984         | 0.984         | 0.984         | 0.984         | 0.984         | Ops |
| West Thumb to Flagg Ranch        | 1.294         | 15.531        | 1.294         | 1.294         | 1.294         | 1.294         | 1.294         | 15.531        | Ops |
| Old Faithful to West Thumb       | 2.393         | 2.393         | 2.393         | 11.966        | 11.966        | 11.966        | 2.393         | 2.393         | Ops |



Operations for BAT Snowcoaches for Alternative 1E

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 5.008         | 5.008         | 5.008         | 5.008         | 5.008         | 5.008         | 5.008         | 5.008         | Ops |
| Madison to Old Faithful          | 3.758         | 3.758         | 3.758         | 18.790        | 18.790        | 18.790        | 3.758         | 3.758         | Ops |
| Fishing Bridge to East Entrance  | 0.199         | 0.199         | 0.199         | 0.199         | 0.199         | 0.199         | 0.199         | 0.199         | Ops |
| Fishing Bridge to West Thumb     | 4.393         | 4.393         | 4.393         | 4.393         | 4.393         | 4.393         | 4.393         | 4.393         | Ops |
| Madison to Norris                | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| West Entrance to Madison         | 4.544         | 20.448        | 4.544         | 4.544         | 4.544         | 4.544         | 4.544         | 20.448        | Ops |
| Norris to Canyon Village         | 2.630         | 2.630         | 2.630         | 2.630         | 2.630         | 2.630         | 2.630         | 2.630         | Ops |
| Mammoth to Norris                | 3.605         | 3.605         | 3.605         | 3.605         | 3.605         | 3.605         | 3.605         | 3.605         | Ops |
| West Thumb to Flagg Ranch        | 0.910         | 10.924        | 0.910         | 0.910         | 0.910         | 0.910         | 0.910         | 10.924        | Ops |
| Old Faithful to West Thumb       | 2.917         | 2.917         | 2.917         | 14.583        | 14.583        | 14.583        | 2.917         | 2.917         | Ops |

Table 22: Alternative 2

Operations for BAT Snowcoaches for Alternative 2

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 4.681         | 4.681         | 4.681         | 4.681         | 4.681         | 4.681         | 4.681         | 4.681         | Ops |
| Madison to Old Faithful          | 6.133         | 6.133         | 6.133         | 30.663        | 30.663        | 30.663        | 6.133         | 6.133         | Ops |
| Fishing Bridge to East Entrance  | 0.336         | 0.336         | 0.336         | 0.336         | 0.336         | 0.336         | 0.336         | 0.336         | Ops |
| Fishing Bridge to West Thumb     | 2.203         | 2.203         | 2.203         | 2.203         | 2.203         | 2.203         | 2.203         | 2.203         | Ops |
| Madison to Norris                | 7.029         | 7.029         | 7.029         | 7.029         | 7.029         | 7.029         | 7.029         | 7.029         | Ops |
| West Entrance to Madison         | 7.589         | 34.152        | 7.589         | 7.589         | 7.589         | 7.589         | 7.589         | 34.152        | Ops |
| Norris to Canyon Village         | 4.544         | 4.544         | 4.544         | 4.544         | 4.544         | 4.544         | 4.544         | 4.544         | Ops |
| Mammoth to Norris                | 4.263         | 4.263         | 4.263         | 4.263         | 4.263         | 4.263         | 4.263         | 4.263         | Ops |
| West Thumb to Flagg Ranch        | 2.483         | 29.796        | 2.483         | 2.483         | 2.483         | 2.483         | 2.483         | 29.796        | Ops |
| Old Faithful to West Thumb       | 3.968         | 3.968         | 3.968         | 19.838        | 19.838        | 19.838        | 3.968         | 3.968         | Ops |

Table 23: Alternative 3

Operations for BAT Snowmobiles in Groups of 11 for Alternative 3

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Madison to Old Faithful          | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Fishing Bridge to East Entrance  | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Fishing Bridge to West Thumb     | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Madison to Norris                | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| West Entrance to Madison         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Norris to Canyon Village         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Mammoth to Norris                | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| West Thumb to Flagg Ranch        | 1.515         | 18.182        | 1.515         | 1.515         | 1.515         | 1.515         | 1.515         | 18.182        | Ops |
| Old Faithful to West Thumb       | 2.273         | 2.273         | 2.273         | 11.364        | 11.364        | 11.364        | 2.273         | 2.273         | Ops |



Operations for BAT Snowcoaches for Alternative 3

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Madison to Old Faithful          | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Fishing Bridge to East Entrance  | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Fishing Bridge to West Thumb     | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Madison to Norris                | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| West Entrance to Madison         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Norris to Canyon Village         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Mammoth to Norris                | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| West Thumb to Flagg Ranch        | 1.333         | 16.000        | 1.333         | 1.333         | 1.333         | 1.333         | 1.333         | 16.000        | Ops |
| Old Faithful to West Thumb       | 2.000         | 2.000         | 2.000         | 10.000        | 10.000        | 10.000        | 2.000         | 2.000         | Ops |

Table 24: Alternative 4

Operations for BAT Snowmobiles in Groups of 11 for Alternative 4

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 4.266         | 4.266         | 4.266         | 4.266         | 4.266         | 4.266         | 4.266         | 4.266         | Ops |
| Madison to Old Faithful          | 3.596         | 3.596         | 3.596         | 17.979        | 17.979        | 17.979        | 3.596         | 3.596         | Ops |
| Fishing Bridge to East Entrance  | 1.585         | 1.585         | 1.585         | 1.585         | 1.585         | 1.585         | 1.585         | 1.585         | Ops |
| Fishing Bridge to West Thumb     | 1.947         | 1.947         | 1.947         | 1.947         | 1.947         | 1.947         | 1.947         | 1.947         | Ops |
| Madison to Norris                | 3.955         | 3.955         | 3.955         | 3.955         | 3.955         | 3.955         | 3.955         | 3.955         | Ops |
| West Entrance to Madison         | 5.063         | 22.781        | 5.063         | 5.063         | 5.063         | 5.063         | 5.063         | 22.781        | Ops |
| Norris to Canyon Village         | 2.945         | 2.945         | 2.945         | 2.945         | 2.945         | 2.945         | 2.945         | 2.945         | Ops |
| Mammoth to Norris                | 0.916         | 0.916         | 0.916         | 0.916         | 0.916         | 0.916         | 0.916         | 0.916         | Ops |
| West Thumb to Flagg Ranch        | 1.094         | 13.125        | 1.094         | 1.094         | 1.094         | 1.094         | 1.094         | 13.125        | Ops |
| Old Faithful to West Thumb       | 1.903         | 1.903         | 1.903         | 9.516         | 9.516         | 9.516         | 1.903         | 1.903         | Ops |

Operations for BAT Snowmobiles in Groups of 5 for Alternative 4

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 3.128         | 3.128         | 3.128         | 3.128         | 3.128         | 3.128         | 3.128         | 3.128         | Ops |
| Madison to Old Faithful          | 2.637         | 2.637         | 2.637         | 13.184        | 13.184        | 13.184        | 2.637         | 2.637         | Ops |
| Fishing Bridge to East Entrance  | 1.163         | 1.163         | 1.163         | 1.163         | 1.163         | 1.163         | 1.163         | 1.163         | Ops |
| Fishing Bridge to West Thumb     | 1.428         | 1.428         | 1.428         | 1.428         | 1.428         | 1.428         | 1.428         | 1.428         | Ops |
| Madison to Norris                | 2.900         | 2.900         | 2.900         | 2.900         | 2.900         | 2.900         | 2.900         | 2.900         | Ops |
| West Entrance to Madison         | 6.497         | 6.497         | 6.497         | 3.480         | 3.480         | 3.480         | 3.480         | 22.275        | Ops |
| Norris to Canyon Village         | 2.159         | 2.159         | 2.159         | 2.159         | 2.159         | 2.159         | 2.159         | 2.159         | Ops |
| Mammoth to Norris                | 0.672         | 0.672         | 0.672         | 0.672         | 0.672         | 0.672         | 0.672         | 0.672         | Ops |
| West Thumb to Flagg Ranch        | 1.684         | 3.609         | 3.609         | 1.684         | 1.684         | 1.684         | 1.684         | 8.422         | Ops |
| Old Faithful to West Thumb       | 1.396         | 1.396         | 1.396         | 6.978         | 6.978         | 6.978         | 1.396         | 1.396         | Ops |

Operations for BAT Snowcoaches for Alternative 4

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 5.014         | 5.014         | 5.014         | 5.014         | 5.014         | 5.014         | 5.014         | 5.014         | Ops |
| Madison to Old Faithful          | 5.694         | 5.694         | 5.694         | 28.470        | 28.470        | 28.470        | 5.694         | 5.694         | Ops |
| Fishing Bridge to East Entrance  | 1.286         | 1.286         | 1.286         | 1.286         | 1.286         | 1.286         | 1.286         | 1.286         | Ops |
| Fishing Bridge to West Thumb     | 2.003         | 2.003         | 2.003         | 2.003         | 2.003         | 2.003         | 2.003         | 2.003         | Ops |
| Madison to Norris                | 6.670         | 6.670         | 6.670         | 6.670         | 6.670         | 6.670         | 6.670         | 6.670         | Ops |
| West Entrance to Madison         | 7.035         | 31.656        | 7.035         | 7.035         | 7.035         | 7.035         | 7.035         | 31.656        | Ops |
| Norris to Canyon Village         | 4.364         | 4.364         | 4.364         | 4.364         | 4.364         | 4.364         | 4.364         | 4.364         | Ops |
| Mammoth to Norris                | 4.271         | 4.271         | 4.271         | 4.271         | 4.271         | 4.271         | 4.271         | 4.271         | Ops |
| West Thumb to Flagg Ranch        | 2.181         | 26.168        | 2.181         | 2.181         | 2.181         | 2.181         | 2.181         | 26.168        | Ops |
| Old Faithful to West Thumb       | 3.610         | 3.610         | 3.610         | 18.050        | 18.050        | 18.050        | 3.610         | 3.610         | Ops |

Table 25: Alternative 5

Operations for BAT Snowmobiles in Groups of 11 for Alternative 5

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 2.646         | 2.646         | 2.646         | 2.646         | 2.646         | 2.646         | 2.646         | 2.646         | Ops |
| Madison to Old Faithful          | 2.330         | 2.330         | 2.330         | 11.649        | 11.649        | 11.649        | 2.330         | 2.330         | Ops |
| Fishing Bridge to East Entrance  | 0.820         | 0.820         | 0.820         | 0.820         | 0.820         | 0.820         | 0.820         | 0.820         | Ops |
| Fishing Bridge to West Thumb     | 1.265         | 1.265         | 1.265         | 1.265         | 1.265         | 1.265         | 1.265         | 1.265         | Ops |
| Madison to Norris                | 2.732         | 2.732         | 2.732         | 2.732         | 2.732         | 2.732         | 2.732         | 2.732         | Ops |
| West Entrance to Madison         | 3.050         | 13.725        | 3.050         | 3.050         | 3.050         | 3.050         | 3.050         | 13.725        | Ops |
| Norris to Canyon Village         | 1.923         | 1.923         | 1.923         | 1.923         | 1.923         | 1.923         | 1.923         | 1.923         | Ops |
| Mammoth to Norris                | 1.072         | 1.072         | 1.072         | 1.072         | 1.072         | 1.072         | 1.072         | 1.072         | Ops |
| West Thumb to Flagg Ranch        | 0.774         | 9.284         | 0.774         | 0.774         | 0.774         | 0.774         | 0.774         | 9.284         | Ops |
| Old Faithful to West Thumb       | 1.276         | 1.276         | 1.276         | 6.378         | 6.378         | 6.378         | 1.276         | 1.276         | Ops |

Operations for BAT Snowmobiles in Groups of 5 for Alternative 5

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 1.456         | 1.456         | 1.456         | 1.456         | 1.456         | 1.456         | 1.456         | 1.456         | Ops |
| Madison to Old Faithful          | 1.281         | 1.281         | 1.281         | 6.407         | 6.407         | 6.407         | 1.281         | 1.281         | Ops |
| Fishing Bridge to East Entrance  | 0.451         | 0.451         | 0.451         | 0.451         | 0.451         | 0.451         | 0.451         | 0.451         | Ops |
| Fishing Bridge to West Thumb     | 0.696         | 0.696         | 0.696         | 0.696         | 0.696         | 0.696         | 0.696         | 0.696         | Ops |
| Madison to Norris                | 1.502         | 1.502         | 1.502         | 1.502         | 1.502         | 1.502         | 1.502         | 1.502         | Ops |
| West Entrance to Madison         | 2.936         | 2.936         | 2.936         | 1.573         | 1.573         | 1.573         | 1.573         | 10.065        | Ops |
| Norris to Canyon Village         | 1.058         | 1.058         | 1.058         | 1.058         | 1.058         | 1.058         | 1.058         | 1.058         | Ops |
| Mammoth to Norris                | 0.590         | 0.590         | 0.590         | 0.590         | 0.590         | 0.590         | 0.590         | 0.590         | Ops |
| West Thumb to Flagg Ranch        | 0.894         | 1.915         | 1.915         | 0.894         | 0.894         | 0.894         | 0.894         | 4.468         | Ops |
| Old Faithful to West Thumb       | 0.702         | 0.702         | 0.702         | 3.508         | 3.508         | 3.508         | 0.702         | 0.702         | Ops |

Operations for BAT Snowcoaches for Alternative 5

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 4.064         | 4.064         | 4.064         | 4.064         | 4.064         | 4.064         | 4.064         | 4.064         | Ops |
| Madison to Old Faithful          | 5.090         | 5.090         | 5.090         | 25.450        | 25.450        | 25.450        | 5.090         | 5.090         | Ops |
| Fishing Bridge to East Entrance  | 0.834         | 0.834         | 0.834         | 0.834         | 0.834         | 0.834         | 0.834         | 0.834         | Ops |
| Fishing Bridge to West Thumb     | 1.515         | 1.515         | 1.515         | 1.515         | 1.515         | 1.515         | 1.515         | 1.515         | Ops |
| Madison to Norris                | 6.135         | 6.135         | 6.135         | 6.135         | 6.135         | 6.135         | 6.135         | 6.135         | Ops |
| West Entrance to Madison         | 6.249         | 28.122        | 6.249         | 6.249         | 6.249         | 6.249         | 6.249         | 28.122        | Ops |
| Norris to Canyon Village         | 3.939         | 3.939         | 3.939         | 3.939         | 3.939         | 3.939         | 3.939         | 3.939         | Ops |
| Mammoth to Norris                | 4.186         | 4.186         | 4.186         | 4.186         | 4.186         | 4.186         | 4.186         | 4.186         | Ops |
| West Thumb to Flagg Ranch        | 1.775         | 21.296        | 1.775         | 1.775         | 1.775         | 1.775         | 1.775         | 21.296        | Ops |
| Old Faithful to West Thumb       | 3.039         | 3.039         | 3.039         | 15.195        | 15.195        | 15.195        | 3.039         | 3.039         | Ops |

Table 26: Alternative 6

Operations for BAT Snowmobiles in Groups of 8 for Alternative 6

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 3.727         | 3.727         | 3.727         | 3.727         | 3.727         | 3.727         | 3.727         | 3.727         | Ops |
| Madison to Old Faithful          | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Fishing Bridge to East Entrance  | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Fishing Bridge to West Thumb     | 3.938         | 3.938         | 3.938         | 3.938         | 3.938         | 3.938         | 3.938         | 3.938         | Ops |
| Madison to Norris                | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| West Entrance to Madison         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Norris to Canyon Village         | 0.211         | 0.211         | 0.211         | 0.211         | 0.211         | 0.211         | 0.211         | 0.211         | Ops |
| Mammoth to Norris                | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| West Thumb to Flagg Ranch        | 1.725         | 20.700        | 1.725         | 1.725         | 1.725         | 1.725         | 1.725         | 20.700        | Ops |
| Old Faithful to West Thumb       | 3.009         | 3.009         | 3.009         | 15.047        | 15.047        | 15.047        | 3.009         | 3.009         | Ops |

Operations for BAT Snowmobiles in Group of 17 for Alternative 6

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 0.195         | 0.195         | 0.195         | 0.195         | 0.195         | 0.195         | 0.195         | 0.195         | Ops |
| Madison to Old Faithful          | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Fishing Bridge to East Entrance  | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Fishing Bridge to West Thumb     | 0.206         | 0.206         | 0.206         | 0.206         | 0.206         | 0.206         | 0.206         | 0.206         | Ops |
| Madison to Norris                | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| West Entrance to Madison         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Norris to Canyon Village         | 0.011         | 0.011         | 0.011         | 0.011         | 0.011         | 0.011         | 0.011         | 0.011         | Ops |
| Mammoth to Norris                | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| West Thumb to Flagg Ranch        | 0.090         | 1.082         | 0.090         | 0.090         | 0.090         | 0.090         | 0.090         | 1.082         | Ops |
| Old Faithful to West Thumb       | 0.157         | 0.157         | 0.157         | 0.787         | 0.787         | 0.787         | 0.157         | 0.157         | Ops |

Operations for BAT Snowcoaches for Alternative 6

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 6.850         | 6.850         | 6.850         | 6.850         | 6.850         | 6.850         | 6.850         | 6.850         | Ops |
| Madison to Old Faithful          | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Fishing Bridge to East Entrance  | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Fishing Bridge to West Thumb     | 6.925         | 6.925         | 6.925         | 6.925         | 6.925         | 6.925         | 6.925         | 6.925         | Ops |
| Madison to Norris                | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| West Entrance to Madison         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Norris to Canyon Village         | 0.400         | 0.400         | 0.400         | 0.400         | 0.400         | 0.400         | 0.400         | 0.400         | Ops |
| Mammoth to Norris                | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| West Thumb to Flagg Ranch        | 0.700         | 8.400         | 0.700         | 0.700         | 0.700         | 0.700         | 0.700         | 8.400         | Ops |
| Old Faithful to West Thumb       | 3.410         | 3.410         | 3.410         | 17.050        | 17.050        | 17.050        | 3.410         | 3.410         | Ops |

Operations for Wheeled Vehicles for Alternative 6 - 1/2 Vans, 1/2 Buses

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Madison to Old Faithful          | 3.750         | 3.750         | 3.750         | 18.750        | 18.750        | 18.750        | 3.750         | 3.750         | Ops |
| Fishing Bridge to East Entrance  | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Fishing Bridge to West Thumb     | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Madison to Norris                | 4.297         | 4.297         | 4.297         | 4.297         | 4.297         | 4.297         | 4.297         | 4.297         | Ops |
| West Entrance to Madison         | 4.458         | 20.063        | 4.458         | 4.458         | 4.458         | 4.458         | 4.458         | 20.063        | Ops |
| Norris to Canyon Village         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Mammoth to Norris                | 4.219         | 4.219         | 4.219         | 4.219         | 4.219         | 4.219         | 4.219         | 4.219         | Ops |
| West Thumb to Flagg Ranch        | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |
| Old Faithful to West Thumb       | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |

Table 27: Current Condition

Operations for BAT Snowmobiles in Groups of 7 for Current

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 1.939         | 1.939         | 1.939         | 1.939         | 1.939         | 1.939         | 1.939         | 1.939         | Ops |
| Madison to Old Faithful          | 1.924         | 1.924         | 1.924         | 9.620         | 9.620         | 9.620         | 1.924         | 1.924         | Ops |
| Fishing Bridge to East Entrance  | 0.366         | 0.366         | 0.366         | 0.366         | 0.366         | 0.366         | 0.366         | 0.366         | Ops |
| Fishing Bridge to West Thumb     | 1.057         | 1.057         | 1.057         | 1.057         | 1.057         | 1.057         | 1.057         | 1.057         | Ops |
| Madison to Norris                | 1.950         | 1.950         | 1.950         | 1.950         | 1.950         | 1.950         | 1.950         | 1.950         | Ops |
| West Entrance to Madison         | 2.687         | 12.092        | 2.687         | 2.687         | 2.687         | 2.687         | 2.687         | 12.092        | Ops |
| Norris to Canyon Village         | 1.423         | 1.423         | 1.423         | 1.423         | 1.423         | 1.423         | 1.423         | 1.423         | Ops |
| Mammoth to Norris                | 0.386         | 0.386         | 0.386         | 0.386         | 0.386         | 0.386         | 0.386         | 0.386         | Ops |
| West Thumb to Flagg Ranch        | 0.784         | 9.411         | 0.784         | 0.784         | 0.784         | 0.784         | 0.784         | 9.411         | Ops |
| Old Faithful to West Thumb       | 1.193         | 1.193         | 1.193         | 5.966         | 5.966         | 5.966         | 1.193         | 1.193         | Ops |

Operations for BAT Snowcoaches for Current - 1/3 Bombardier, 1/3 Snowbuster, 1/3 Mattrack

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 0.448         | 0.448         | 0.448         | 0.448         | 0.448         | 0.448         | 0.448         | 0.448         | Ops |
| Madison to Old Faithful          | 0.515         | 0.515         | 0.515         | 2.574         | 2.574         | 2.574         | 0.515         | 0.515         | Ops |
| Fishing Bridge to East Entrance  | 0.094         | 0.094         | 0.094         | 0.094         | 0.094         | 0.094         | 0.094         | 0.094         | Ops |
| Fishing Bridge to West Thumb     | 0.168         | 0.168         | 0.168         | 0.168         | 0.168         | 0.168         | 0.168         | 0.168         | Ops |
| Madison to Norris                | 0.673         | 0.673         | 0.673         | 0.673         | 0.673         | 0.673         | 0.673         | 0.673         | Ops |
| West Entrance to Madison         | 0.620         | 2.789         | 0.620         | 0.620         | 0.620         | 0.620         | 0.620         | 2.789         | Ops |
| Norris to Canyon Village         | 0.423         | 0.423         | 0.423         | 0.423         | 0.423         | 0.423         | 0.423         | 0.423         | Ops |
| Mammoth to Norris                | 0.490         | 0.490         | 0.490         | 0.490         | 0.490         | 0.490         | 0.490         | 0.490         | Ops |
| West Thumb to Flagg Ranch        | 0.149         | 1.785         | 0.149         | 0.149         | 0.149         | 0.149         | 0.149         | 1.785         | Ops |
| Old Faithful to West Thumb       | 0.249         | 0.249         | 0.249         | 1.244         | 1.244         | 1.244         | 0.249         | 0.249         | Ops |

Table 28: Historical Condition

Operations for non-BAT Snowmobiles in Groups of 5 for Historical

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 14.887        | 14.887        | 14.887        | 14.887        | 14.887        | 14.887        | 14.887        | 14.887        | Ops |
| Madison to Old Faithful          | 15.750        | 15.750        | 15.750        | 78.751        | 78.751        | 78.751        | 15.750        | 15.750        | Ops |
| Fishing Bridge to East Entrance  | 3.382         | 3.382         | 3.382         | 3.382         | 3.382         | 3.382         | 3.382         | 3.382         | Ops |
| Fishing Bridge to West Thumb     | 6.866         | 6.866         | 6.866         | 6.866         | 6.866         | 6.866         | 6.866         | 6.866         | Ops |
| Madison to Norris                | 16.908        | 16.908        | 16.908        | 16.908        | 16.908        | 16.908        | 16.908        | 16.908        | Ops |
| West Entrance to Madison         | 40.564        | 40.564        | 40.564        | 21.731        | 21.731        | 21.731        | 21.731        | 139.076       | Ops |
| Norris to Canyon Village         | 12.434        | 12.434        | 12.434        | 12.434        | 12.434        | 12.434        | 12.434        | 12.434        | Ops |
| Mammoth to Norris                | 3.229         | 3.229         | 3.229         | 3.229         | 3.229         | 3.229         | 3.229         | 3.229         | Ops |
| West Thumb to Flagg Ranch        | 8.401         | 18.003        | 18.003        | 8.401         | 8.401         | 8.401         | 8.401         | 42.007        | Ops |
| Old Faithful to West Thumb       | 7.277         | 7.277         | 7.277         | 36.387        | 36.387        | 36.387        | 7.277         | 7.277         | Ops |

Operations for non-BAT Snowcoaches for Historical - 1/3 Bombardier, 1/3 Snowbuster, 1/3 Mattrack

| Road Segment                     | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Canyon Village to Fishing Bridge | 0.565         | 0.565         | 0.565         | 0.565         | 0.565         | 0.565         | 0.565         | 0.565         | Ops |
| Madison to Old Faithful          | 0.692         | 0.692         | 0.692         | 0.565         | 3.462         | 3.462         | 0.692         | 0.692         | Ops |
| Fishing Bridge to East Entrance  | 0.102         | 0.102         | 0.102         | 0.565         | 0.102         | 0.102         | 0.102         | 0.102         | Ops |
| Fishing Bridge to West Thumb     | 0.235         | 0.235         | 0.235         | 0.565         | 0.235         | 0.235         | 0.235         | 0.235         | Ops |
| Madison to Norris                | 0.787         | 0.787         | 0.787         | 0.565         | 0.787         | 0.787         | 0.787         | 0.787         | Ops |
| West Entrance to Madison         | 1.577         | 1.577         | 1.577         | 0.565         | 0.845         | 0.845         | 0.845         | 5.408         | Ops |
| Norris to Canyon Village         | 0.524         | 0.524         | 0.524         | 0.565         | 0.524         | 0.524         | 0.524         | 0.524         | Ops |
| Mammoth to Norris                | 0.430         | 0.430         | 0.430         | 0.565         | 0.430         | 0.430         | 0.430         | 0.430         | Ops |
| West Thumb to Flagg Ranch        | 0.510         | 1.093         | 1.093         | 0.565         | 0.510         | 0.510         | 0.510         | 2.550         | Ops |
| Old Faithful to West Thumb       | 0.407         | 0.407         | 0.407         | 0.565         | 2.033         | 2.033         | 0.407         | 0.407         | Ops |

**Modeling Sound due to Over-Snow Vehicles in  
Yellowstone and Grand Teton National Parks**

**Appendix D**

**D.2. Grand Teton**

Operations for all hours are modeled the same in Grand Teton, that is, there are no peak or off-peak hours. Therefore, any single hour can be used for modeling purposes.

**Table 29: Alternative 1**

**Operations for BAT Snowmobiles in Groups of 5 (Lake ungrouped) for Alternative 1**

| Road Segment                  | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Moran Junction to Flagg Ranch | 2.500         | 2.500         | 2.500         | 2.500         | 2.500         | 2.500         | 2.500         | 2.500         | Ops |
| Grassy Lake Road              | 0.475         | 0.475         | 0.475         | 0.475         | 0.475         | 0.475         | 0.475         | 0.475         | Ops |
| Jackson Lake fishing access   | 10.000        | 10.000        | 10.000        | 10.000        | 10.000        | 10.000        | 10.000        | 10.000        | Ops |

**Operations for non-BAT Snowmobiles in Groups of 5 for Alternative 1**

| Road Segment                  | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Moran Junction to Flagg Ranch | X             | X             | X             | X             | X             | X             | X             | X             | Ops |
| Grassy Lake Road              | 1.900         | 1.900         | 1.900         | 1.900         | 1.900         | 1.900         | 1.900         | 1.900         | Ops |
| Jackson Lake fishing access   | X             | X             | X             | X             | X             | X             | X             | X             | Ops |

**Table 30: Alternative 3**

**Operations for BAT Snowmobiles for Alternative 3**

| Road Segment                  | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Moran Junction to Flagg Ranch | X             | X             | X             | X             | X             | X             | X             | X             | Ops |
| Grassy Lake Road              | 0.500         | 0.500         | 0.500         | 0.500         | 0.500         | 0.500         | 0.500         | 0.500         | Ops |
| Jackson Lake fishing access   | X             | X             | X             | X             | X             | X             | X             | X             | Ops |

**Operations for non-BAT Snowmobiles for Alternative 3**

| Road Segment                  | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Moran Junction to Flagg Ranch | X             | X             | X             | X             | X             | X             | X             | X             | Ops |
| Grassy Lake Road              | 2.000         | 2.000         | 2.000         | 2.000         | 2.000         | 2.000         | 2.000         | 2.000         | Ops |
| Jackson Lake fishing access   | X             | X             | X             | X             | X             | X             | X             | X             | Ops |

**Table 31: Alternative 4**

**Operations for BAT Snowmobiles in Groups of 5 (Lake ungrouped) for Alternative 4**

| Road Segment                  | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Moran Junction to Flagg Ranch | 1.136         | 1.136         | 1.136         | 1.136         | 1.136         | 1.136         | 1.136         | 1.136         | Ops |
| Grassy Lake Road              | 1.188         | 1.188         | 1.188         | 1.188         | 1.188         | 1.188         | 1.188         | 1.188         | Ops |
| Jackson Lake fishing access   | 25.000        | 25.000        | 25.000        | 25.000        | 25.000        | 25.000        | 25.000        | 25.000        | Ops |

Operations for non-BAT Snowmobiles in Groups of 5 for Alternative 4

| Road Segment                  | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Moran Junction to Flagg Ranch | 1.250         | 1.250         | 1.250         | 1.250         | 1.250         | 1.250         | 1.250         | 1.250         | Ops |
| Grassy Lake Road              | 2.375         | 2.375         | 2.375         | 2.375         | 2.375         | 2.375         | 2.375         | 2.375         | Ops |
| Jackson Lake fishing access   | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | 0.000         | Ops |

Table 32: Alternative 5

Operations for BAT Snowmobiles in Groups of 5 (Lake ungrouped) for Alternative 5

| Road Segment                  | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Moran Junction to Flagg Ranch | 2.500         | 2.500         | 2.500         | 2.500         | 2.500         | 2.500         | 2.500         | 2.500         | Ops |
| Grassy Lake Road              | 0.475         | 0.475         | 0.475         | 0.475         | 0.475         | 0.475         | 0.475         | 0.475         | Ops |
| Jackson Lake fishing access   | 10.000        | 10.000        | 10.000        | 10.000        | 10.000        | 10.000        | 10.000        | 10.000        | Ops |

Operations for non-BAT Snowmobiles in Groups of 5 for Alternative 5

| Road Segment                  | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Moran Junction to Flagg Ranch | X             | X             | X             | X             | X             | X             | X             | X             | Ops |
| Grassy Lake Road              | 1.900         | 1.900         | 1.900         | 1.900         | 1.900         | 1.900         | 1.900         | 1.900         | Ops |
| Jackson Lake fishing access   | X             | X             | X             | X             | X             | X             | X             | X             | Ops |

Table 33: Alternative 6

Operations for BAT Snowmobiles in Groups of 5 (Lake ungrouped) for Alternative 6

| Road Segment                  | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Moran Junction to Flagg Ranch | X             | X             | X             | X             | X             | X             | X             | X             | Ops |
| Grassy Lake Road              | 0.475         | 0.475         | 0.475         | 0.475         | 0.475         | 0.475         | 0.475         | 0.475         | Ops |
| Jackson Lake fishing access   | 10.000        | 10.000        | 10.000        | 10.000        | 10.000        | 10.000        | 10.000        | 10.000        | Ops |

Operations for non-BAT Snowmobiles in Groups of 5 for Alternative 6

| Road Segment                  | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Moran Junction to Flagg Ranch | X             | X             | X             | X             | X             | X             | X             | X             | Ops |
| Grassy Lake Road              | 1.900         | 1.900         | 1.900         | 1.900         | 1.900         | 1.900         | 1.900         | 1.900         | Ops |
| Jackson Lake fishing access   | X             | X             | X             | X             | X             | X             | X             | X             | Ops |

Table 34: Current Condition

Operations for BAT Snowmobiles (ungrouped) for Current

| Road Segment                  | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Moran Junction to Flagg Ranch | X             | X             | X             | X             | X             | X             | X             | X             | Ops |
| Grassy Lake Road              | X             | X             | X             | X             | X             | X             | X             | X             | Ops |
| Jackson Lake fishing access   | 2.500         | 2.500         | 2.500         | 2.500         | 2.500         | 2.500         | 2.500         | 2.500         | Ops |

Operations for non-BAT Snowmobiles in Groups of 5 for Current

| Road Segment                  | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Moran Junction to Flagg Ranch | X             | X             | X             | X             | X             | X             | X             | X             | Ops |
| Grassy Lake Road              | 0.950         | 0.950         | 0.950         | 0.950         | 0.950         | 0.950         | 0.950         | 0.950         | Ops |
| Jackson Lake fishing access   | X             | X             | X             | X             | X             | X             | X             | X             | Ops |

Table 35: Historical Condition

Operations for non-BAT Snowmobiles in Groups of 5 (Lake ungrouped) for Historical

| Road Segment                  | 08:00 - 09:00 | 09:00 - 10:00 | 10:00 - 11:00 | 11:00 - 12:00 | 12:00 - 13:00 | 13:00 - 14:00 | 14:00 - 15:00 | 15:00 - 16:00 | Hr  |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Moran Junction to Flagg Ranch | 3.000         | 3.000         | 3.000         | 3.000         | 3.000         | 3.000         | 3.000         | 3.000         | Ops |
| Grassy Lake Road              | 2.138         | 2.138         | 2.138         | 2.138         | 2.138         | 2.138         | 2.138         | 2.138         | Ops |
| Jackson Lake fishing access   | 15.000        | 15.000        | 15.000        | 15.000        | 15.000        | 15.000        | 15.000        | 15.000        | Ops |



**Appendix E. Final Modeling Results – Grouping and Scheduling is Included**

Contours are shown for hours, which cover all hourly operation variations for each alternative. Other hours for a given alternative will be the same as one of contours that is presented. The park areas in Table 36 and Table 37 are based on a weighted sum of all hours of operation, 08:00 to 16:00.

Appendix E

E.1. Percent Time Audible, Yellowstone

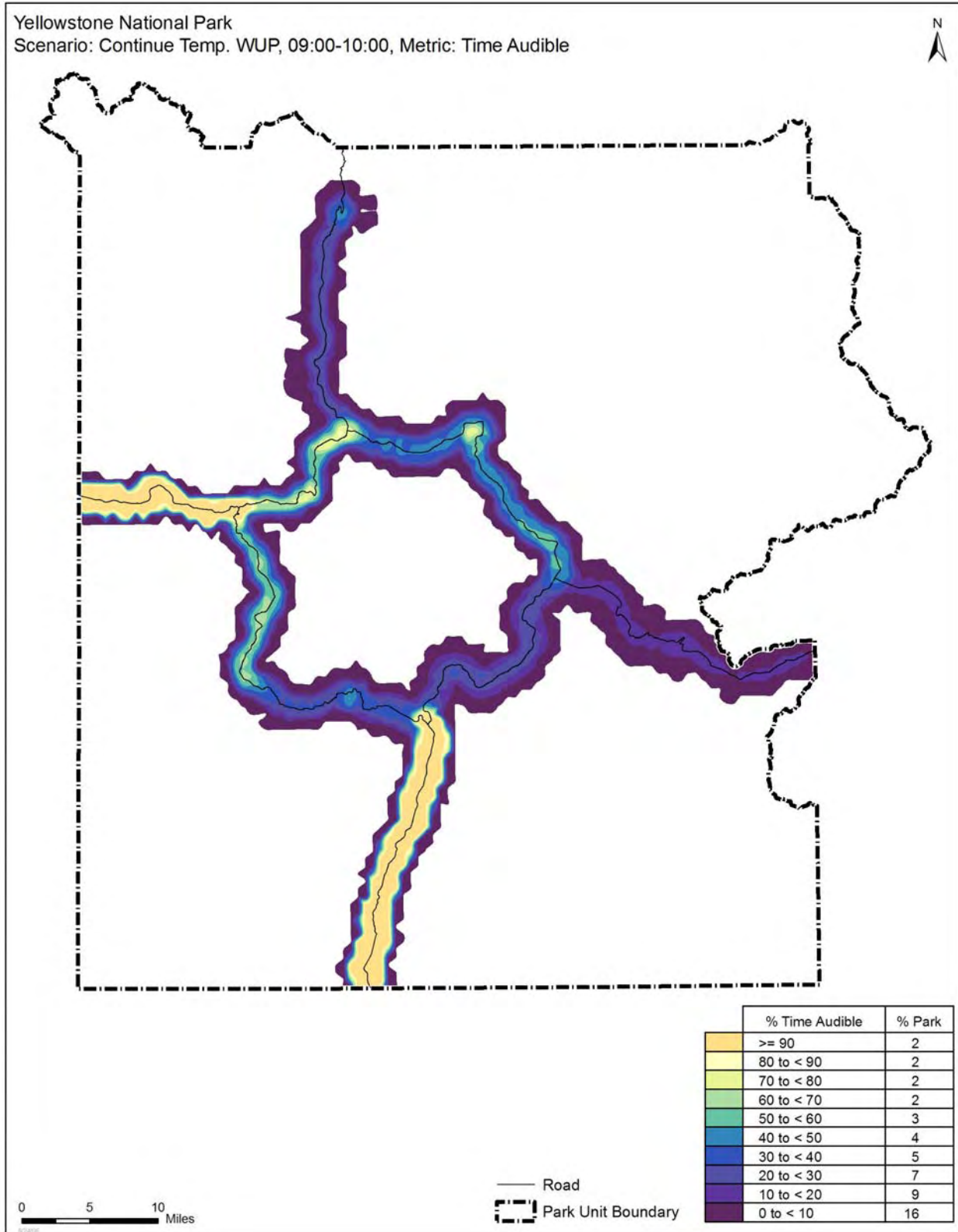


Figure 58: Yellowstone - Alternative 1A, 09:00 to 10:00 and 15:00 to 16:00

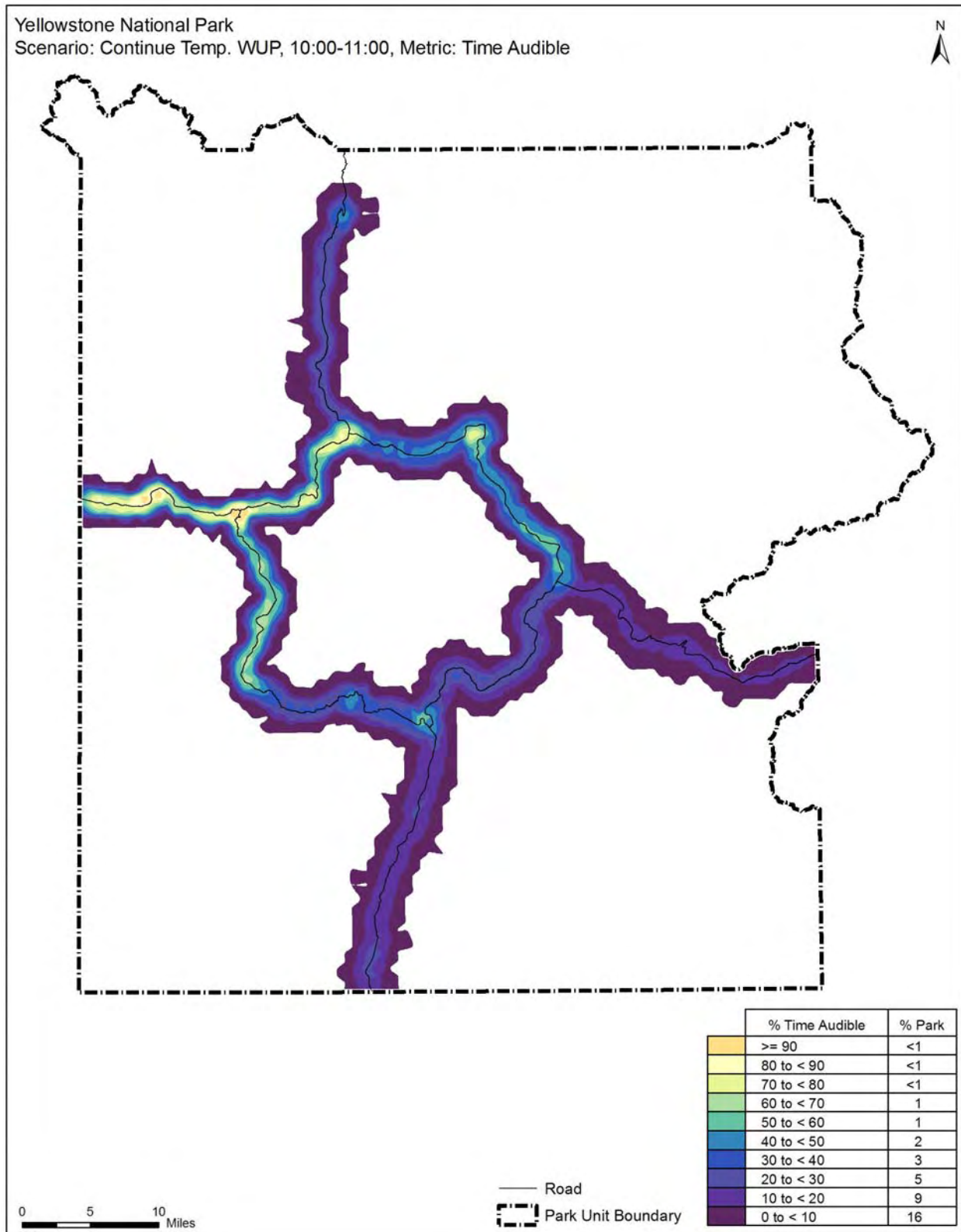


Figure 59: Yellowstone - Alternative 1A, 08:00 to 09:00, 10:00 to 11:00, and 14:00 to 15:00

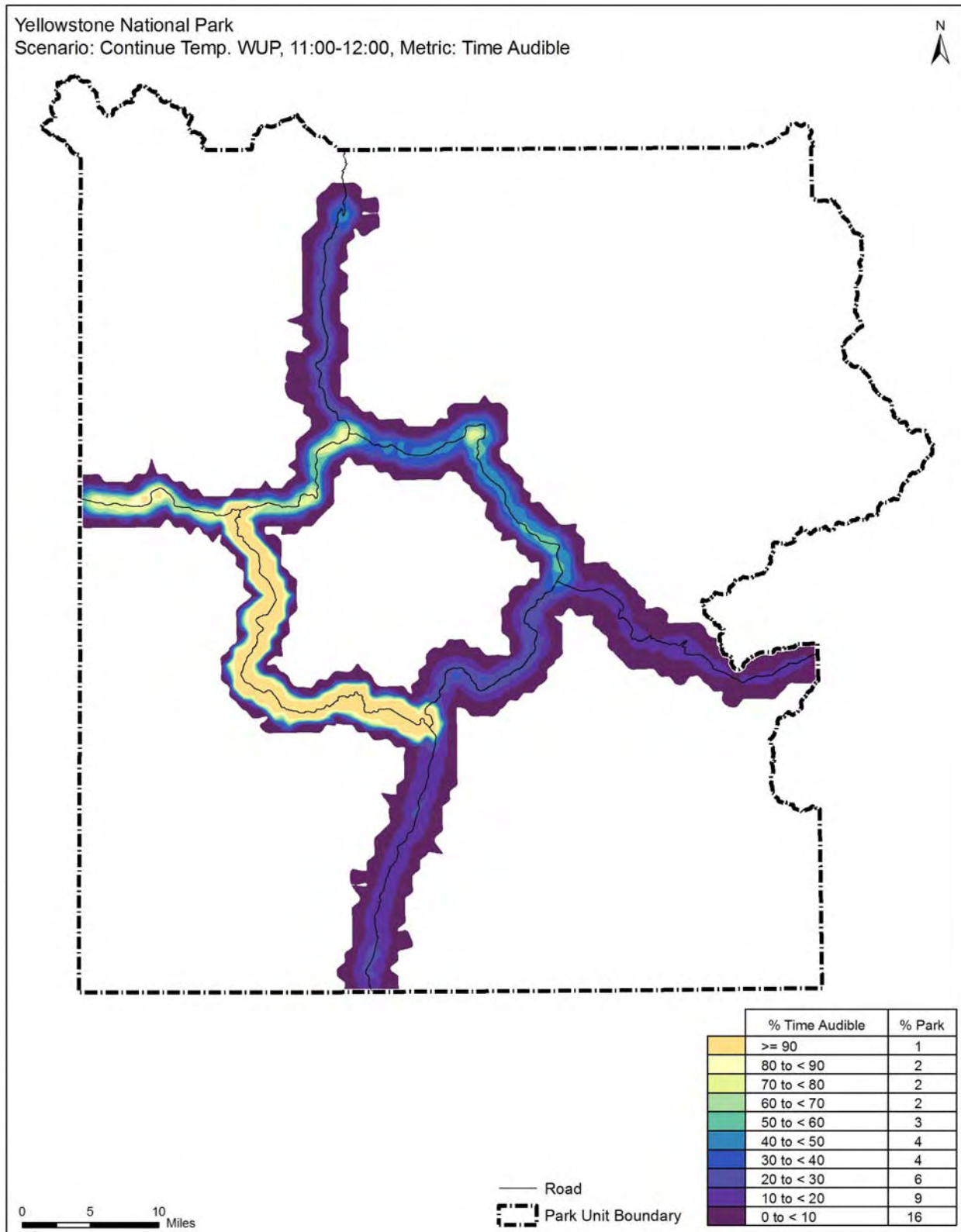


Figure 60: Yellowstone - Alternative 1A, 11:00 to 12:00, 12:00 to 13:00, and 13:00 to 14:00

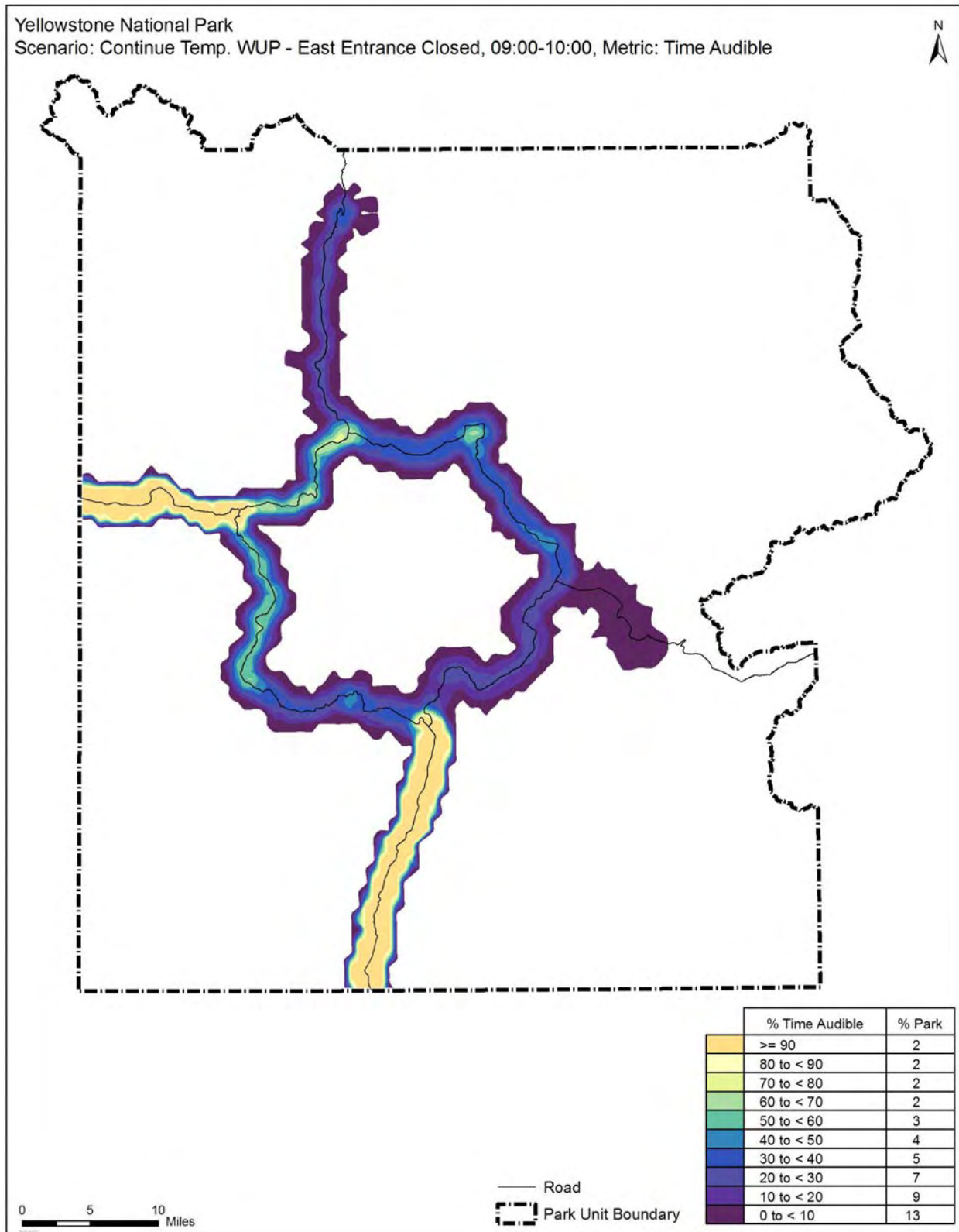


Figure 61: Yellowstone - Alternative 1B, 09:00 to 10:00 and 15:00 to 16:00



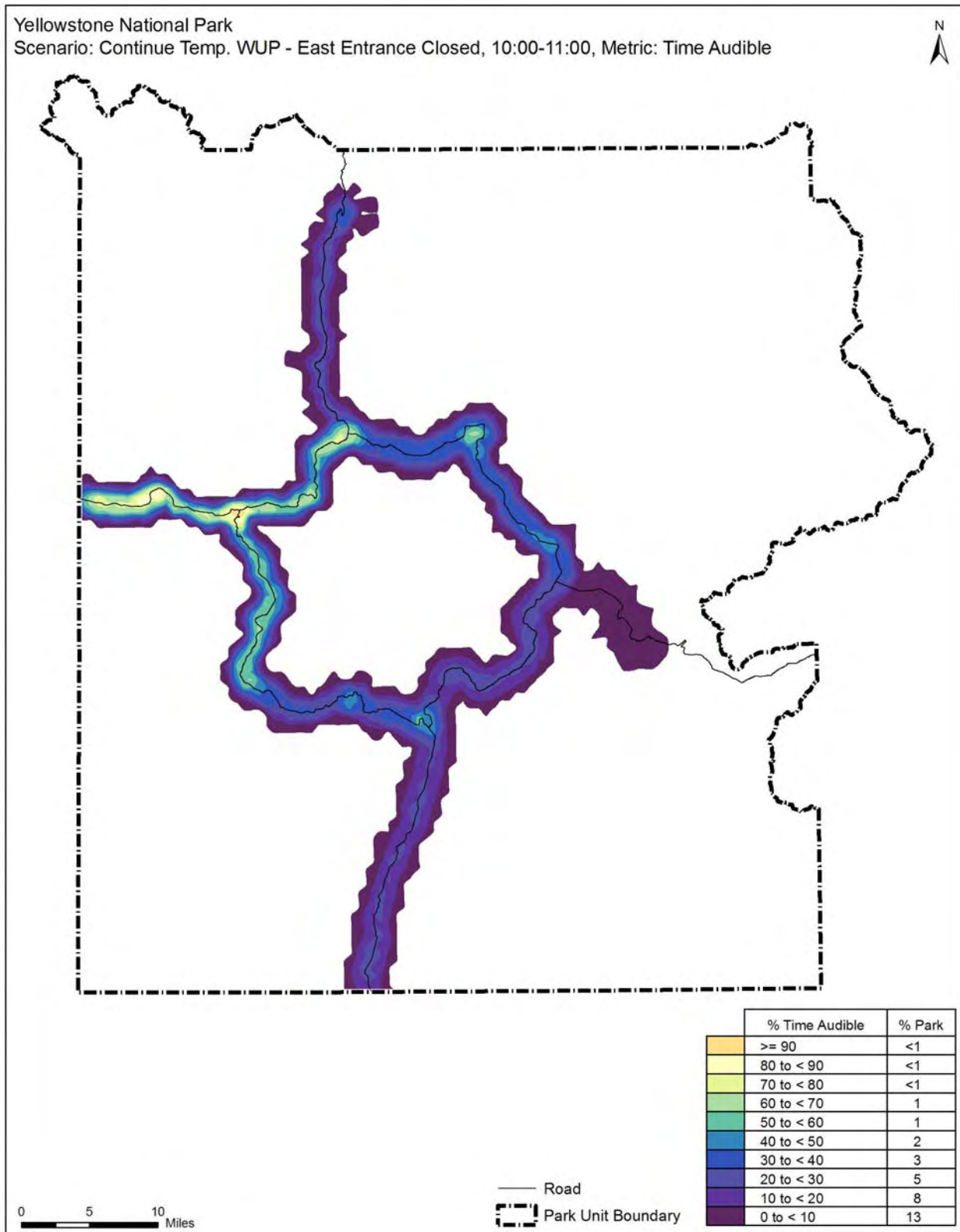


Figure 62: Yellowstone - Alternative 1B, 08:00 to 09:00, 10:00 to 11:00, and 14:00 to 15:00

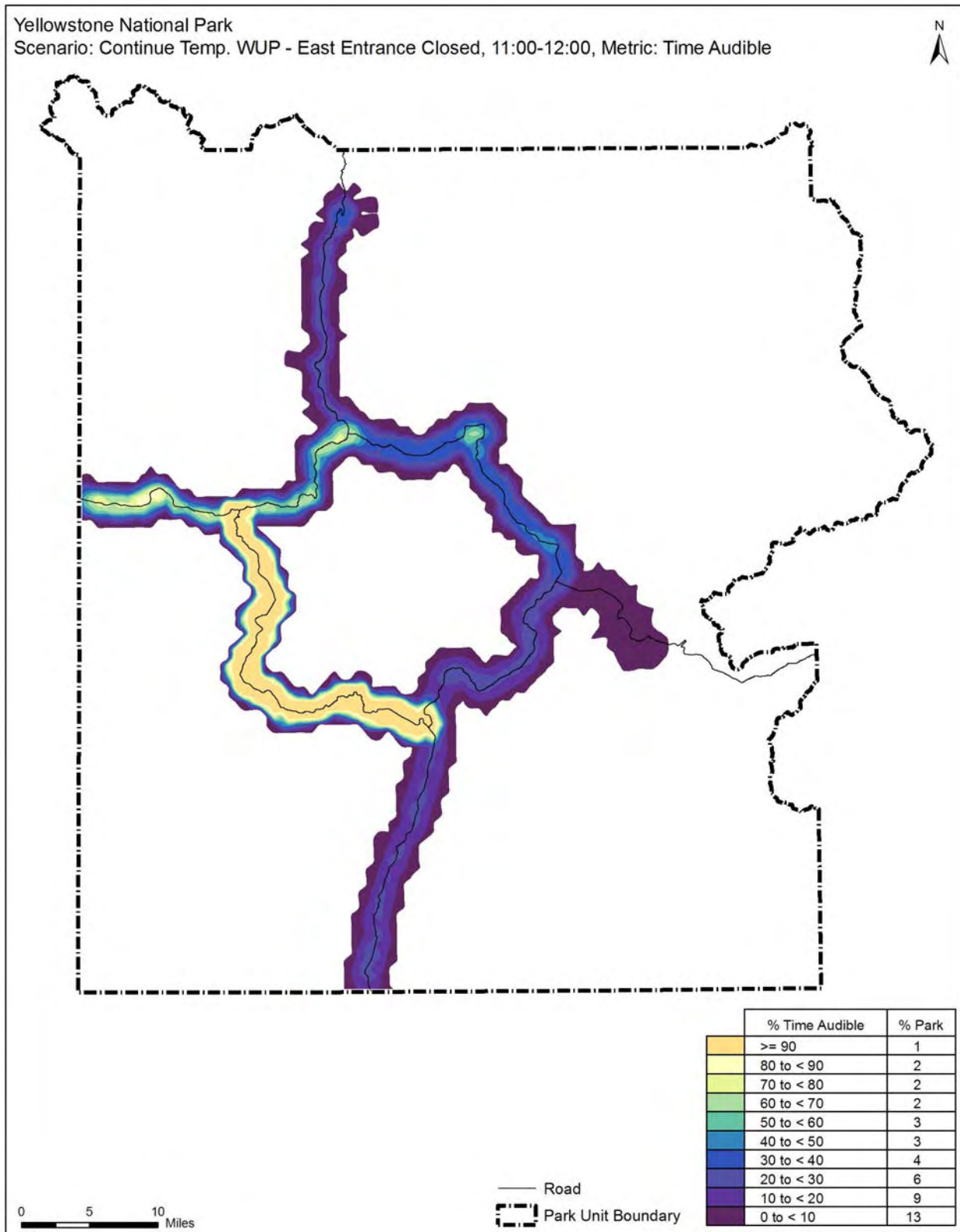


Figure 63: Yellowstone - Alternative 1B, 11:00 to 12:00, 12:00 to 13:00, and 13:00 to 14:00

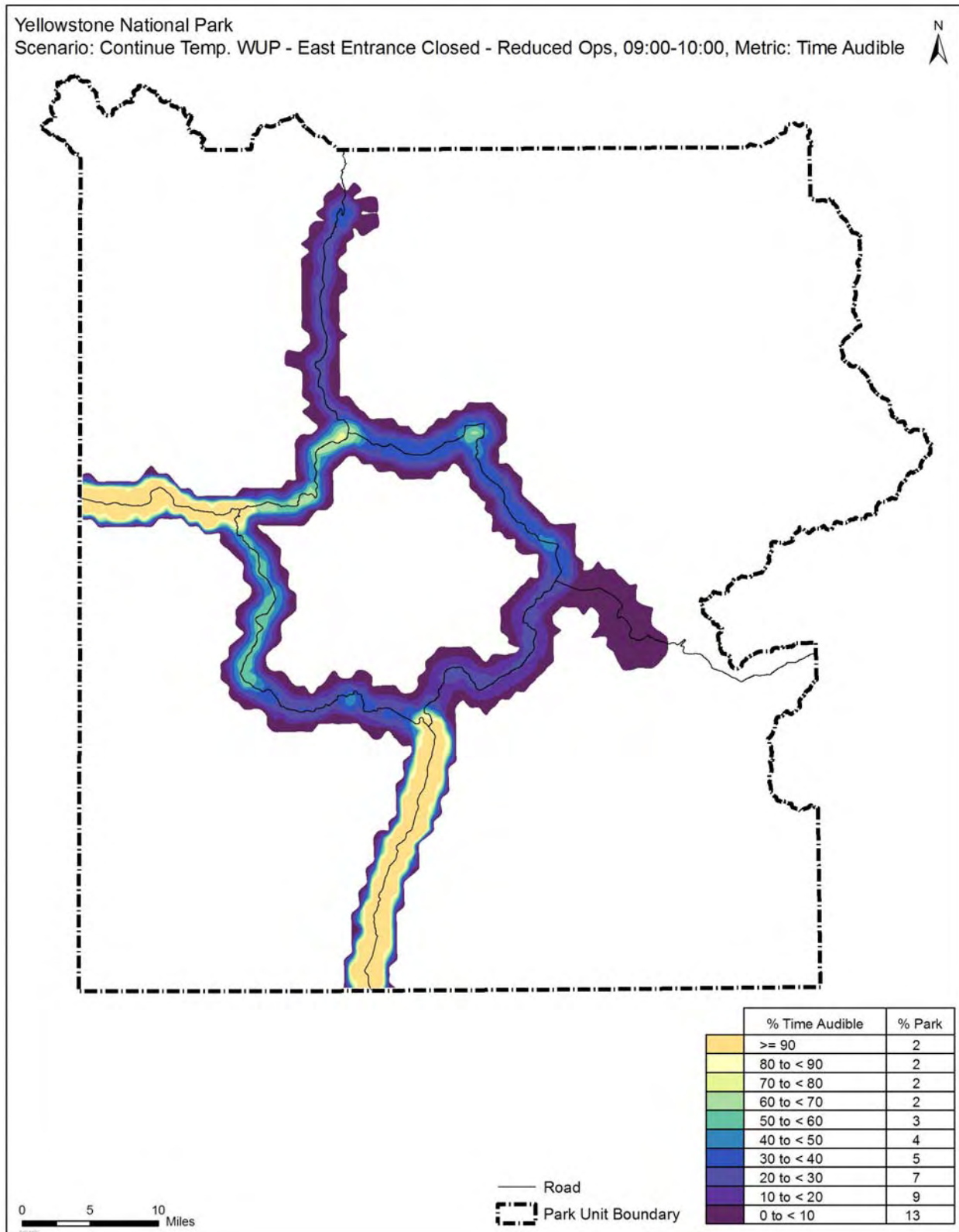


Figure 64: Yellowstone - Alternative 1D, 09:00 to 10:00 and 15:00 to 16:00



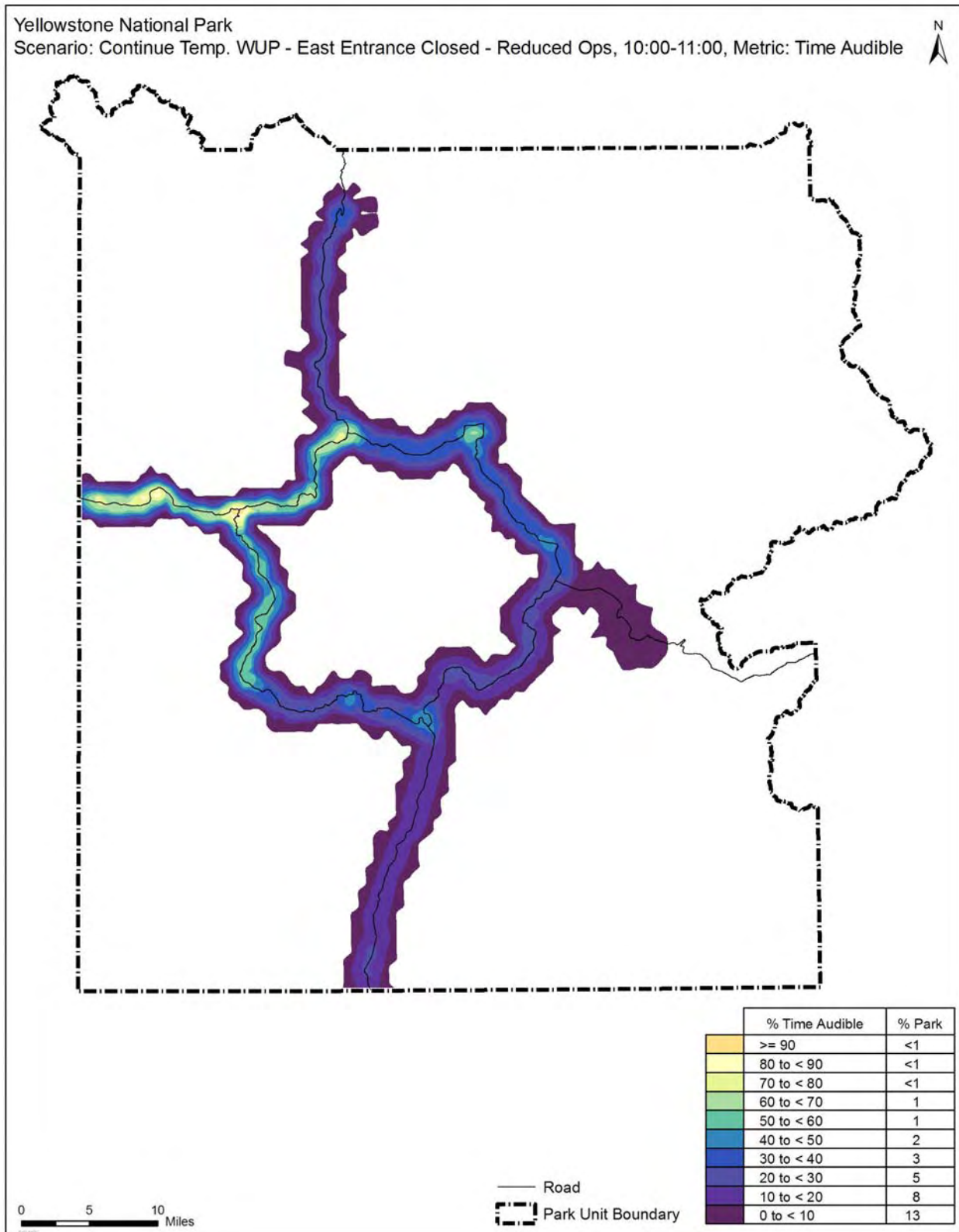


Figure 65: Yellowstone - Alternative 1D, 08:00 to 09:00, 10:00 to 11:00, and 14:00 to 15:00

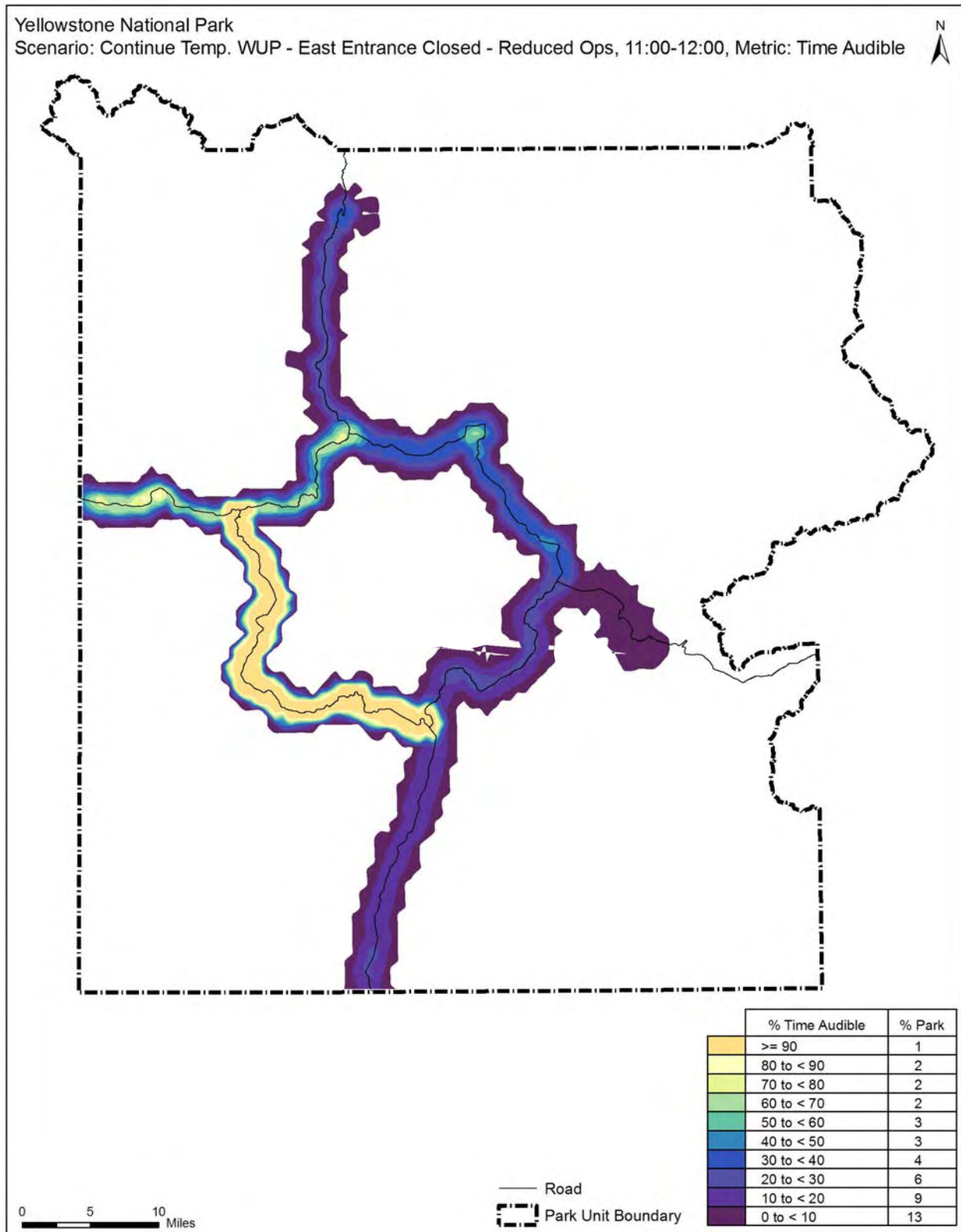


Figure 66: Yellowstone - Alternative 1D, 11:00 to 12:00, 12:00 to 13:00, and 13:00 to 14:00

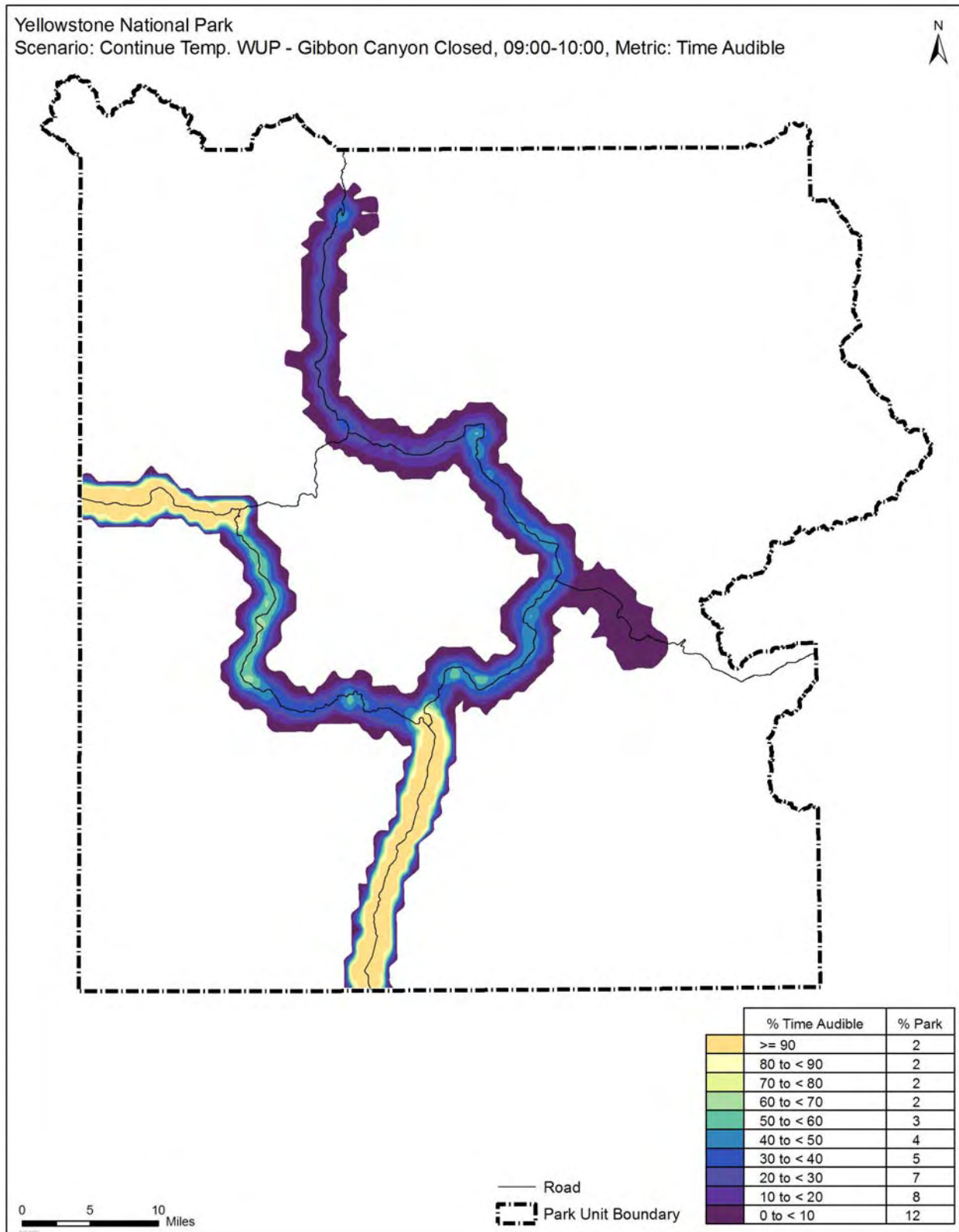


Figure 67: Yellowstone - Alternative 1E, 09:00 to 10:00 and 15:00 to 16:00

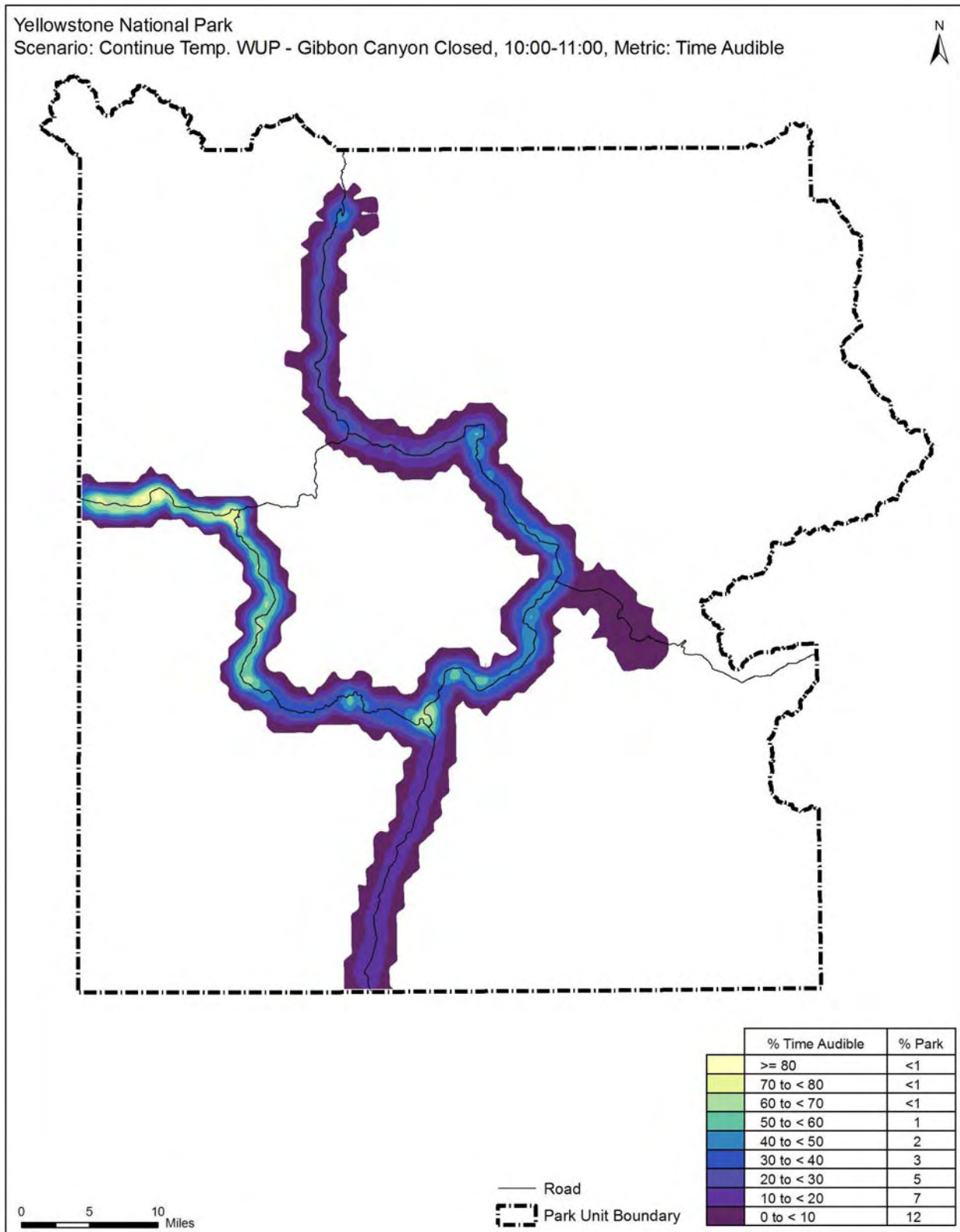


Figure 68: Yellowstone - Alternative 1E, 08:00 to 09:00, 10:00 to 11:00, and 14:00 to 15:00

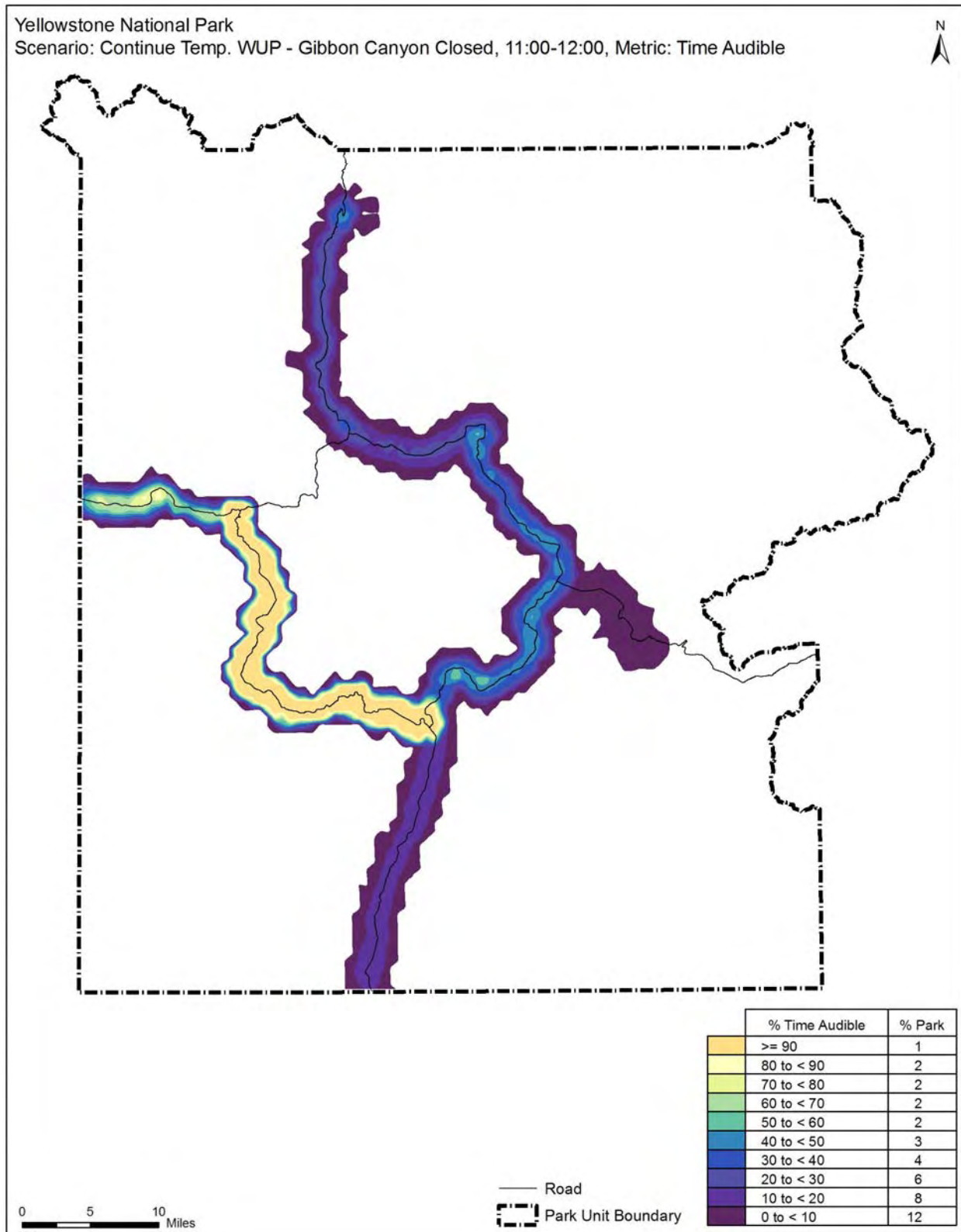


Figure 69: Yellowstone - Alternative 1E, 11:00 to 12:00, 12:00 to 13:00, and 13:00 to 14:00



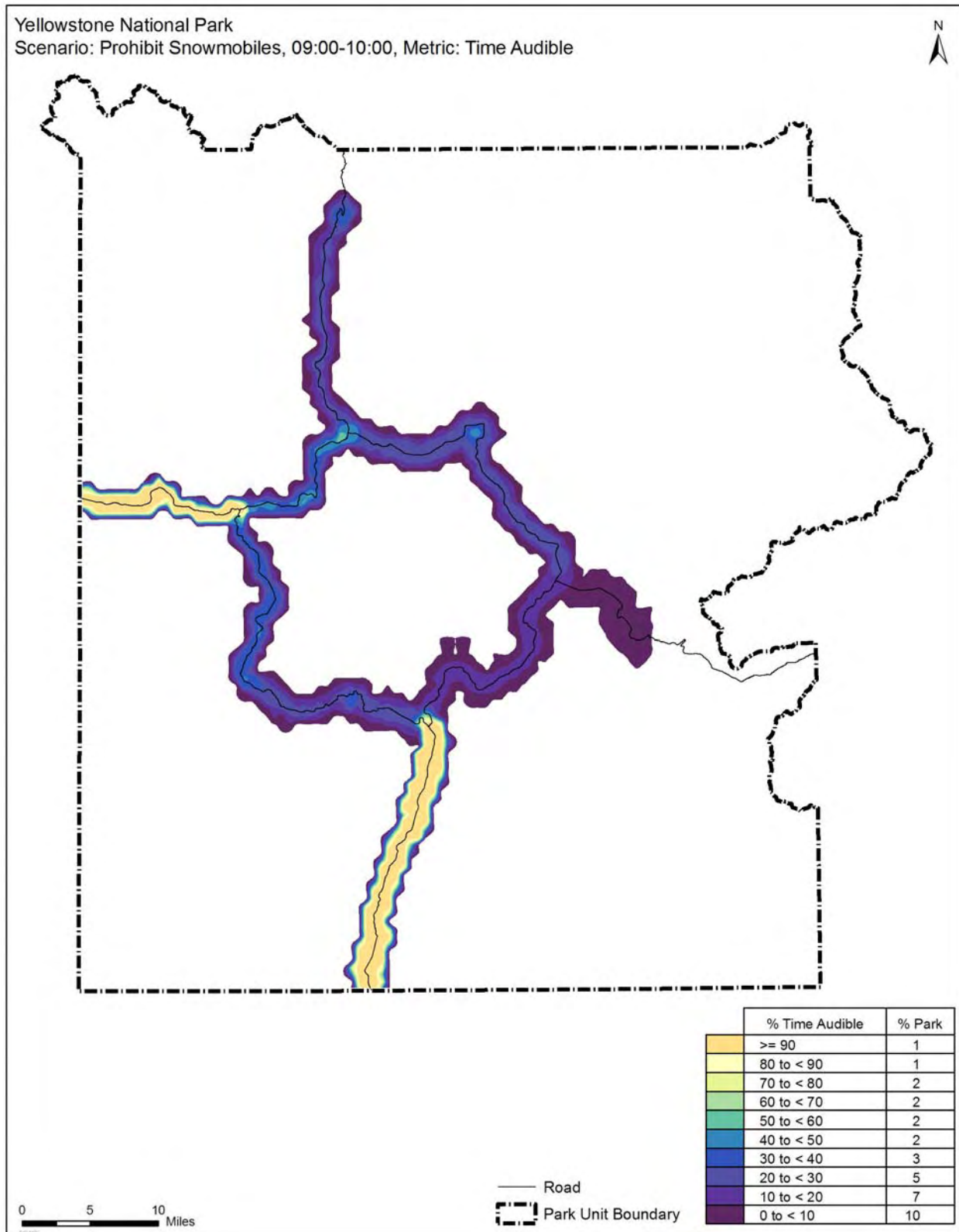


Figure 70: Yellowstone - Alternative 2, 09:00 to 10:00 and 15:00 to 16:00

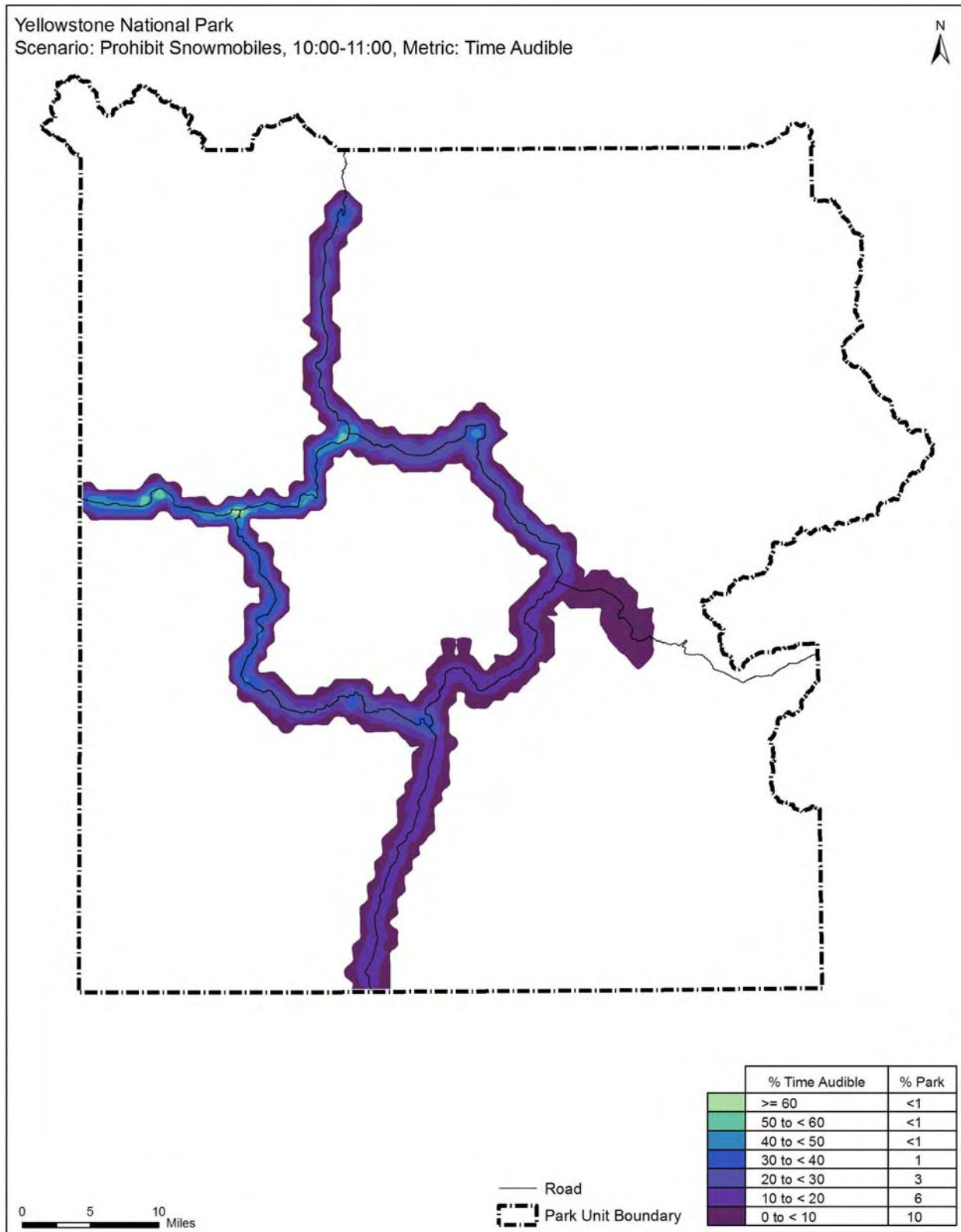


Figure 71: Yellowstone - Alternative 2, 08:00 to 09:00, 10:00 to 11:00, and 14:00 to 15:00

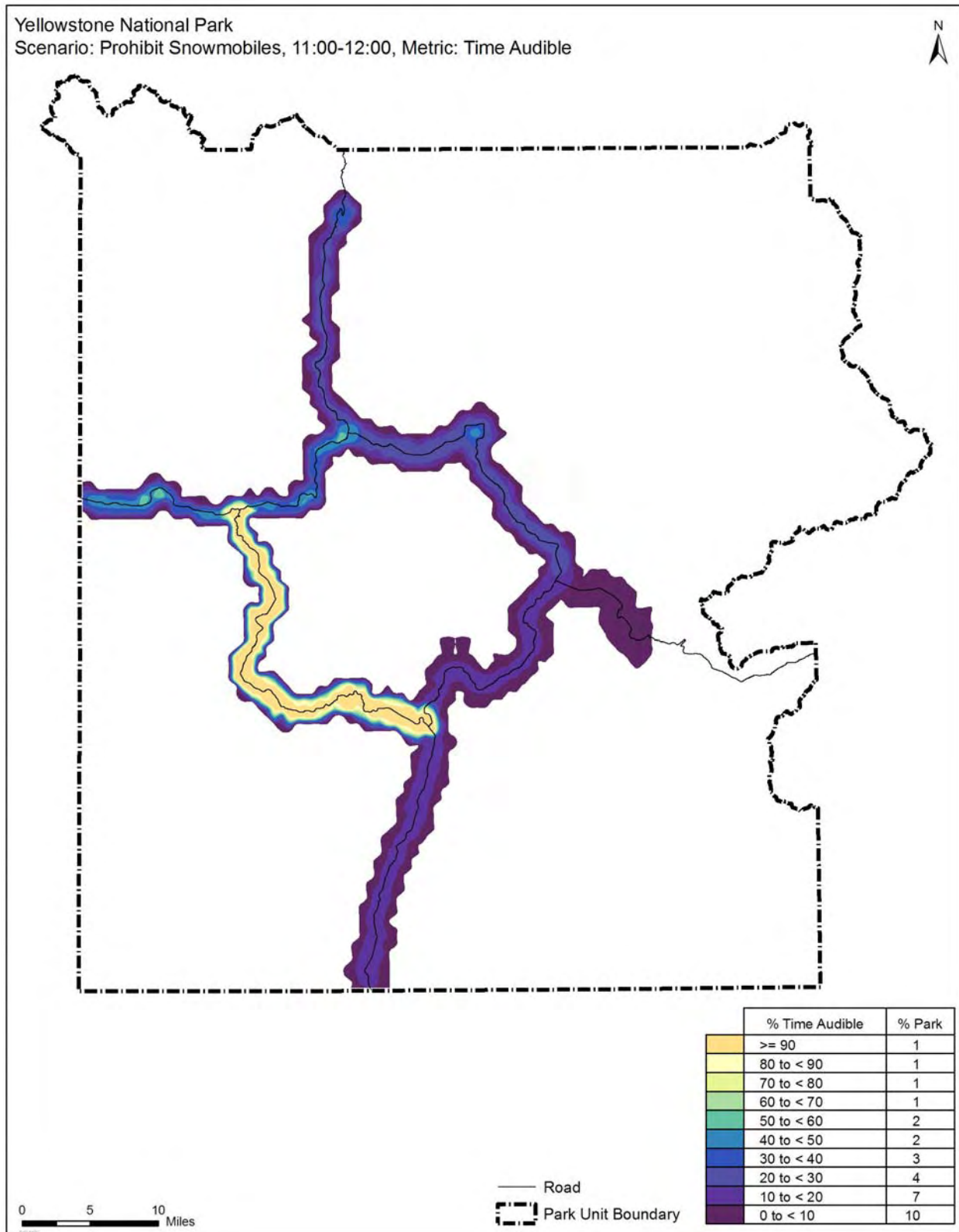


Figure 72: Yellowstone - Alternative 2, 11:00 to 12:00, 12:00 to 13:00, and 13:00 to 14:00



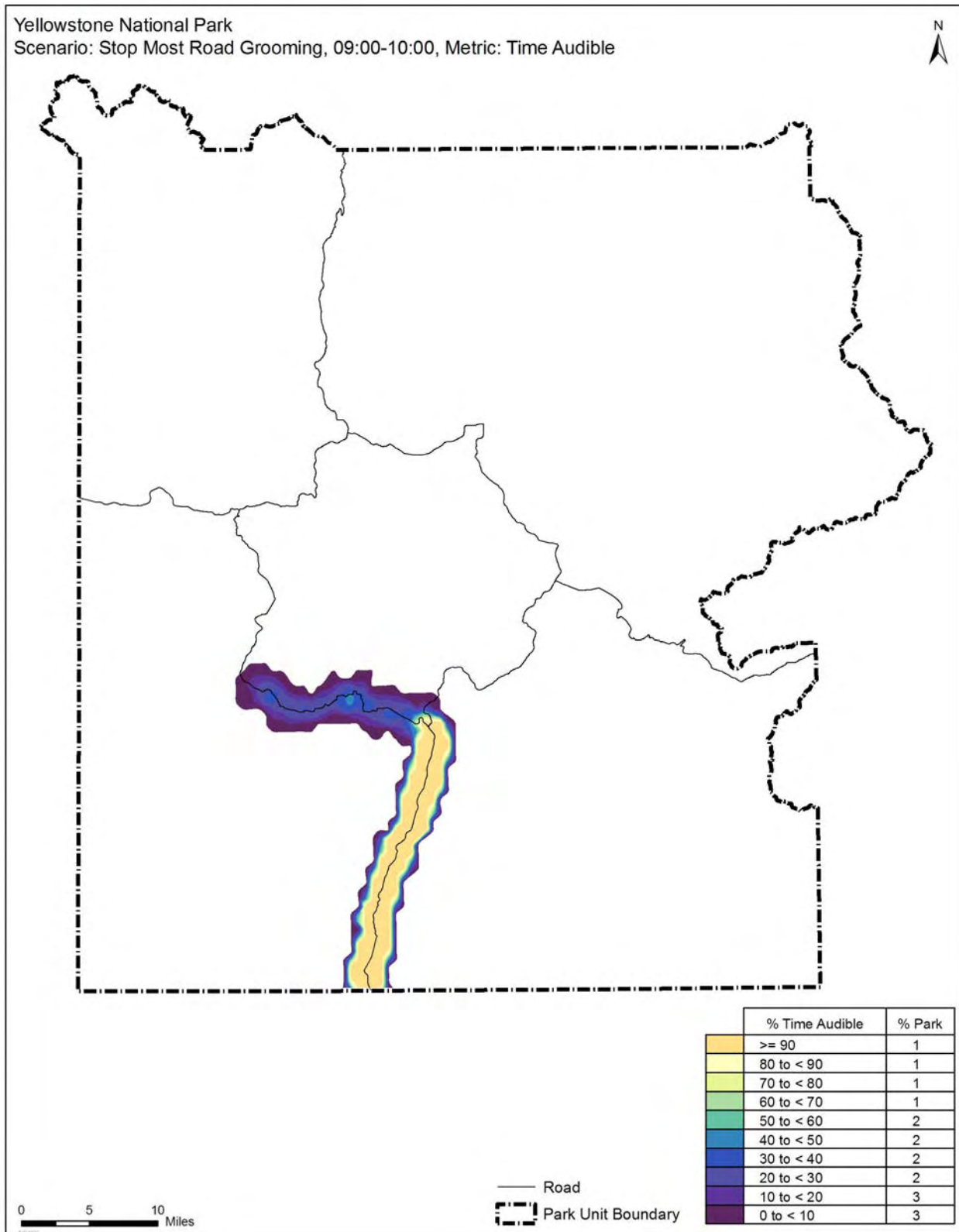


Figure 73: Yellowstone - Alternative 3, 09:00 to 10:00 and 15:00 to 16:00

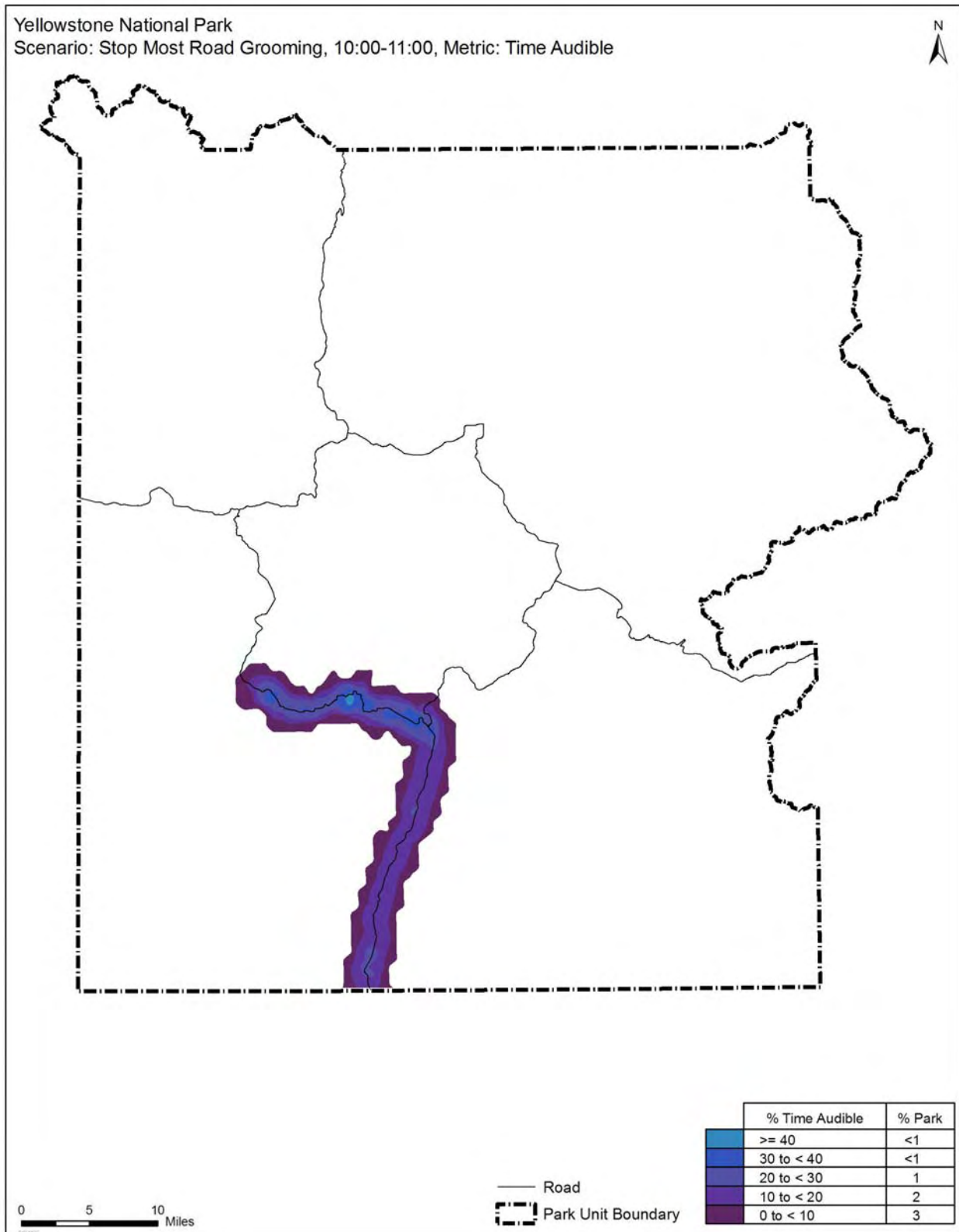


Figure 74: Yellowstone - Alternative 3, 08:00 to 09:00, 10:00 to 11:00, and 14:00 to 15:00

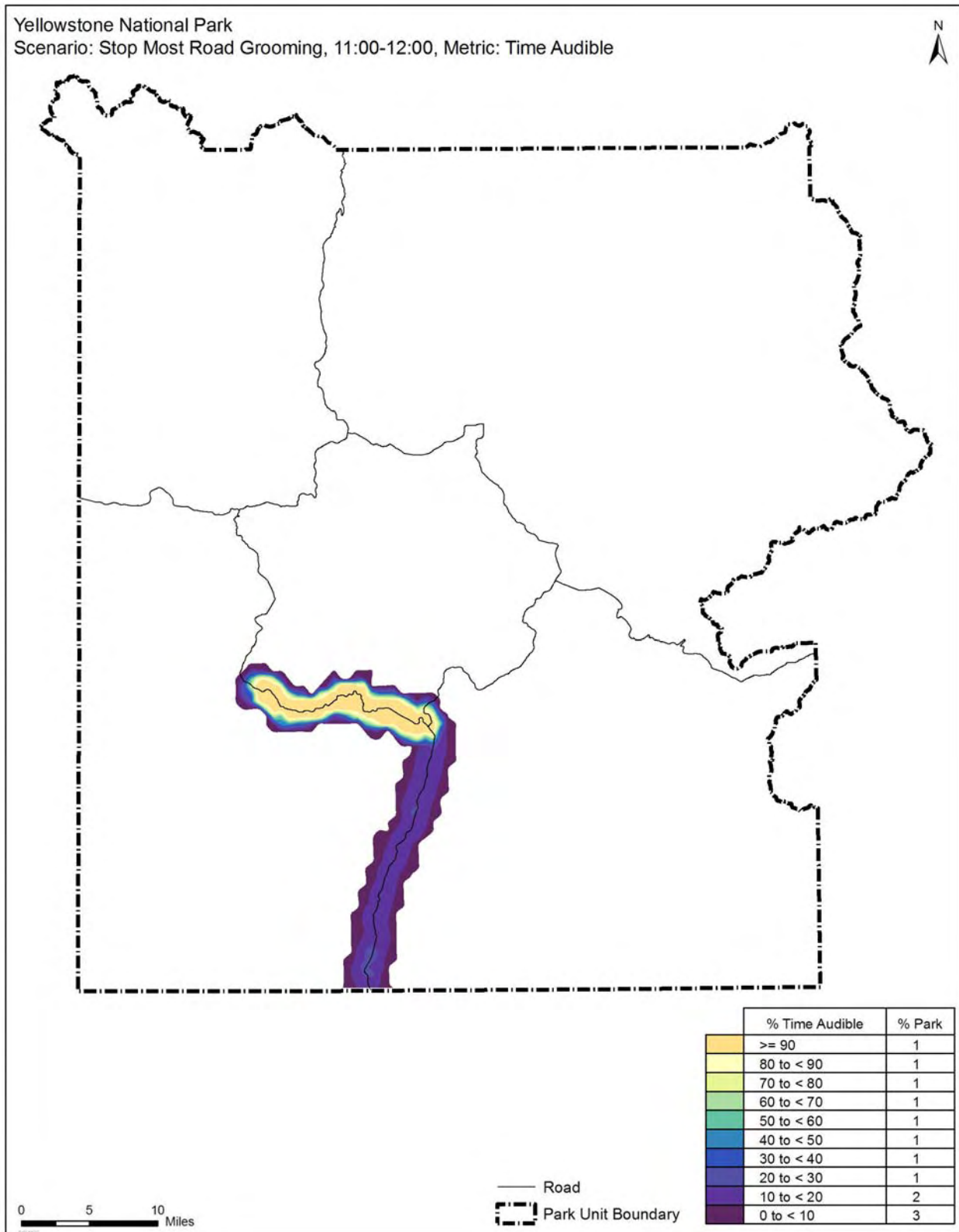


Figure 75: Yellowstone - Alternative 3, 11:00 to 12:00, 12:00 to 13:00, and 13:00 to 14:00

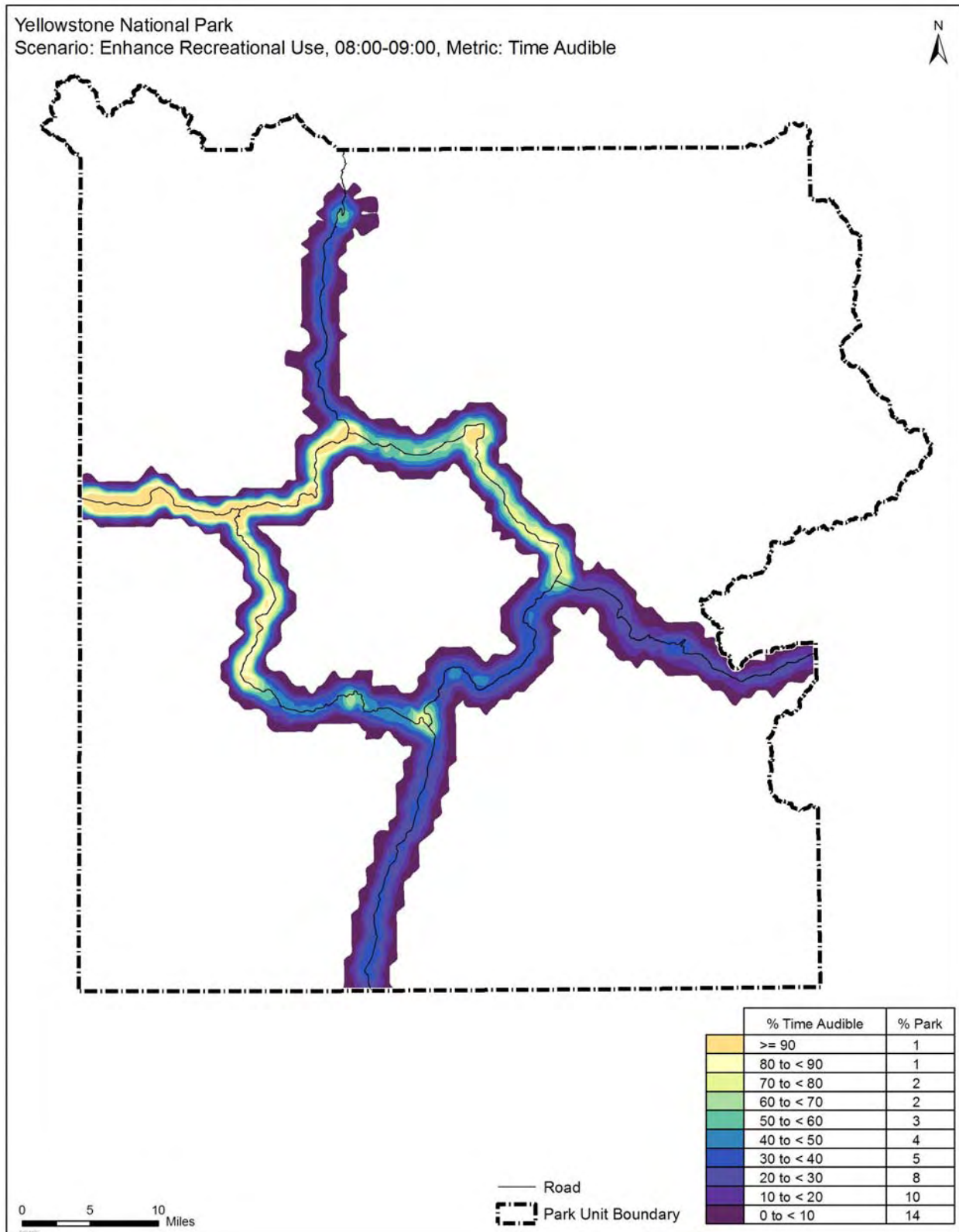


Figure 76: Yellowstone - Alternative 4, 08:00 to 09:00

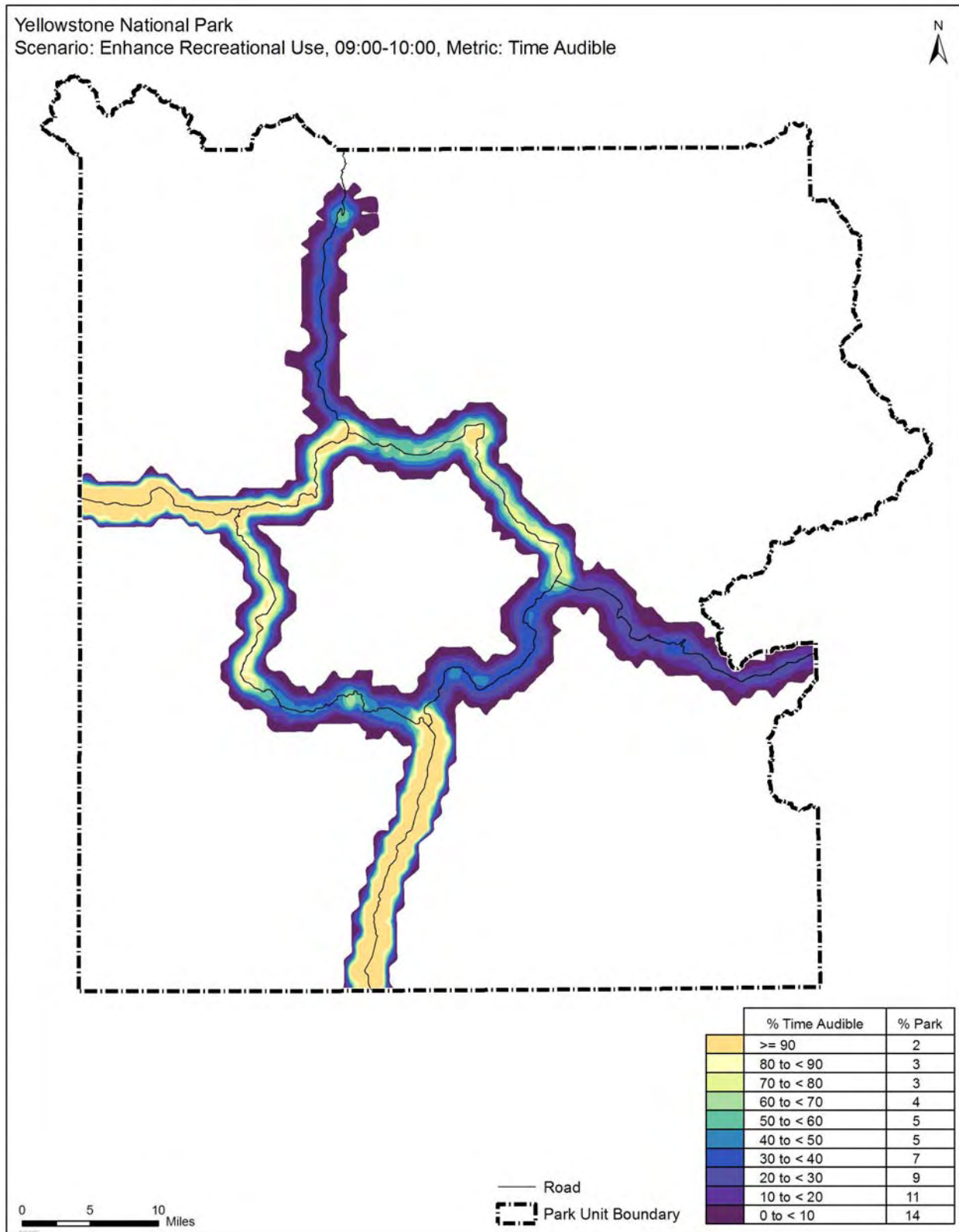


Figure 77: Yellowstone - Alternative 4, 09:00 to 10:00



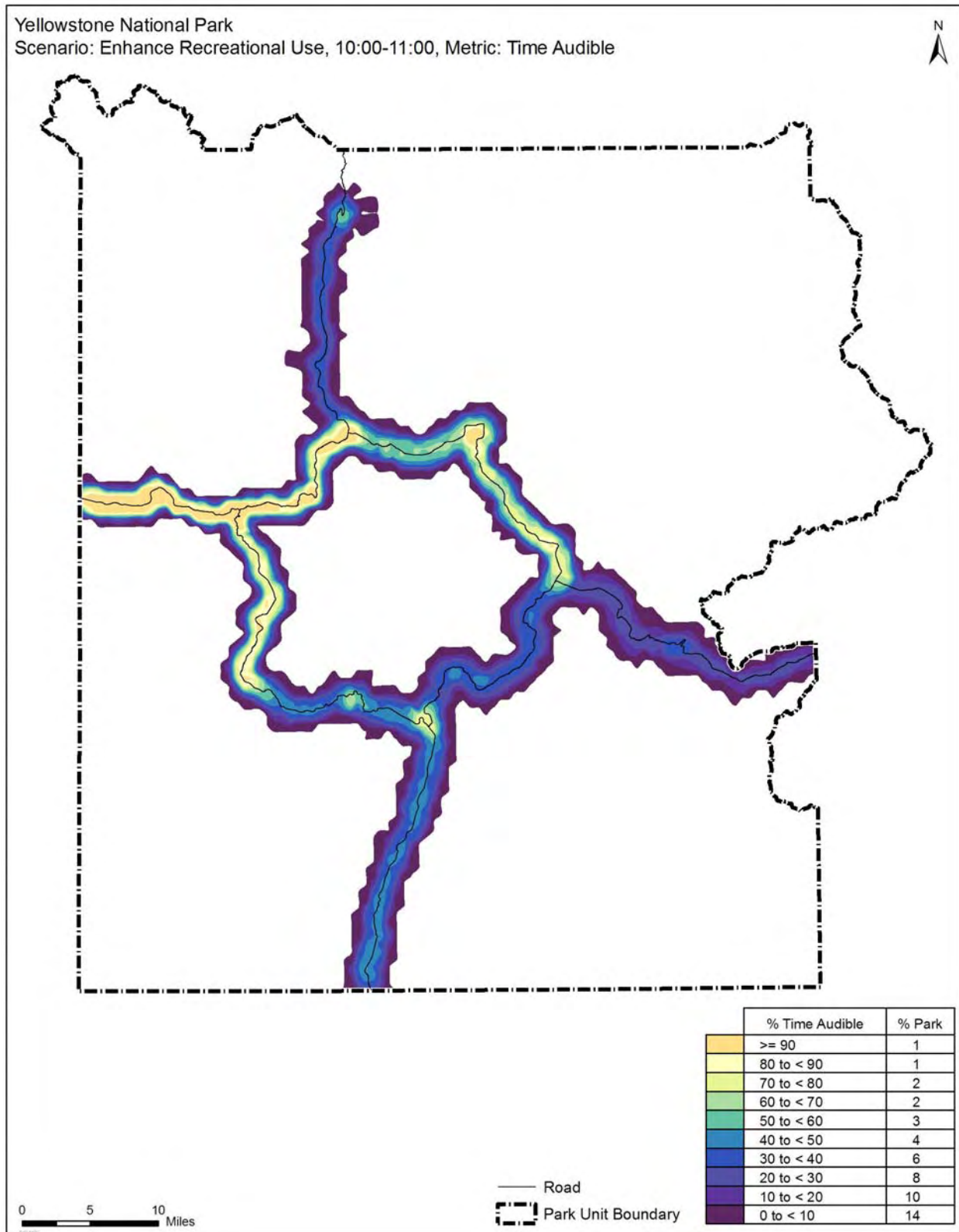


Figure 78: Yellowstone - Alternative 4, 10:00 to 11:00

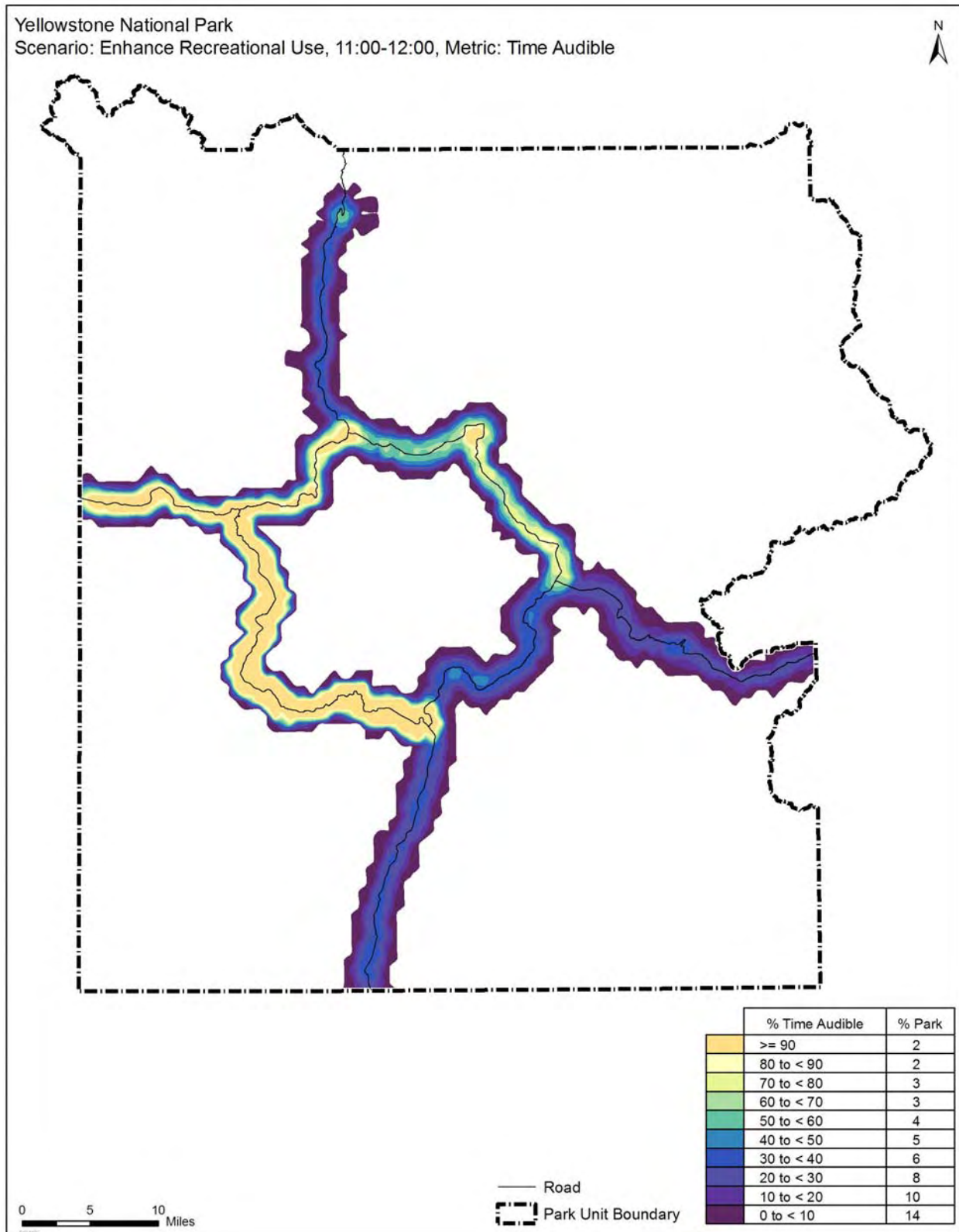


Figure 79: Yellowstone - Alternative 4, 11:00 to 12:00, 12:00 to 13:00, and 13:00 to 14:00

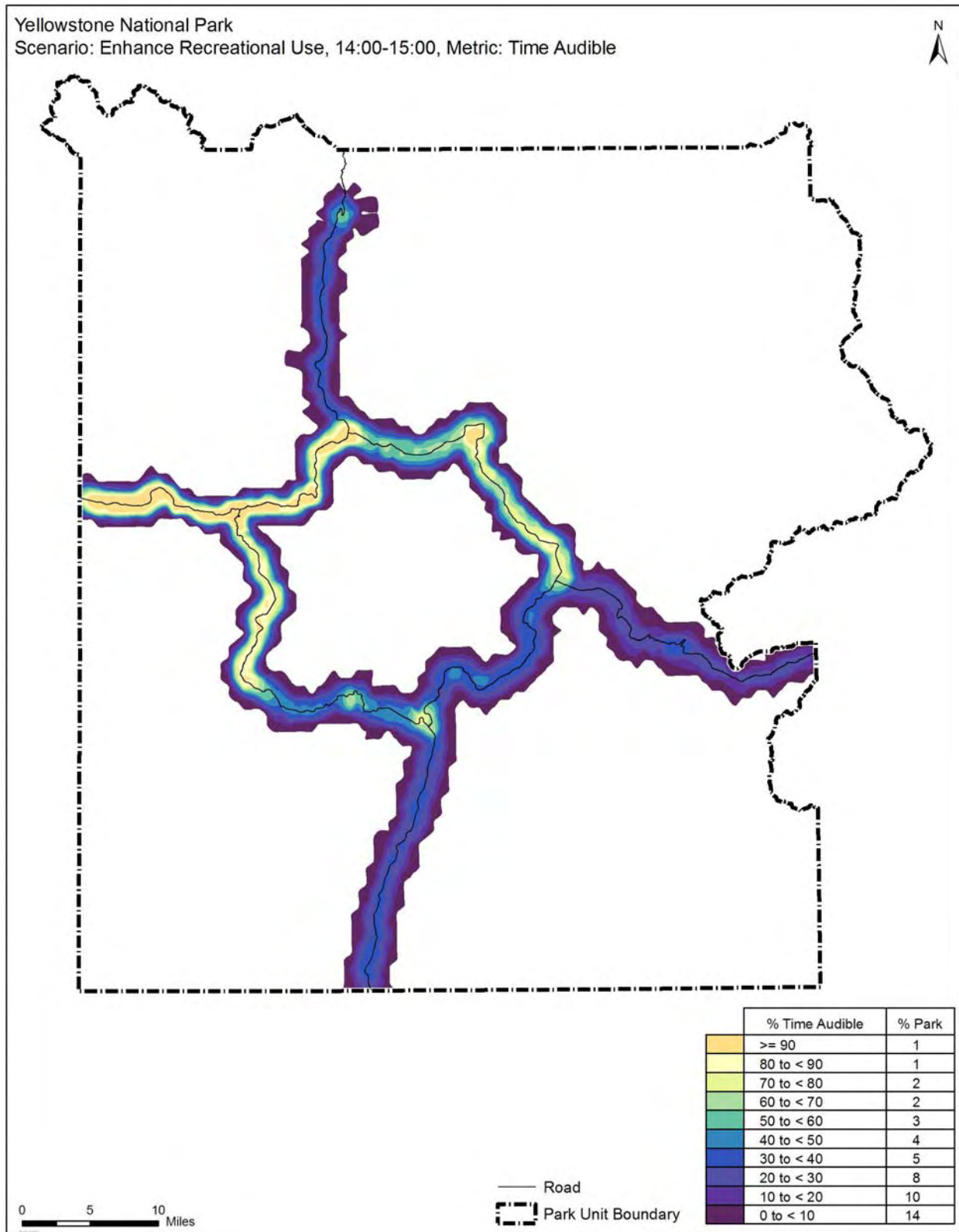


Figure 80: Yellowstone - Alternative 4, 14:00 to 15:00



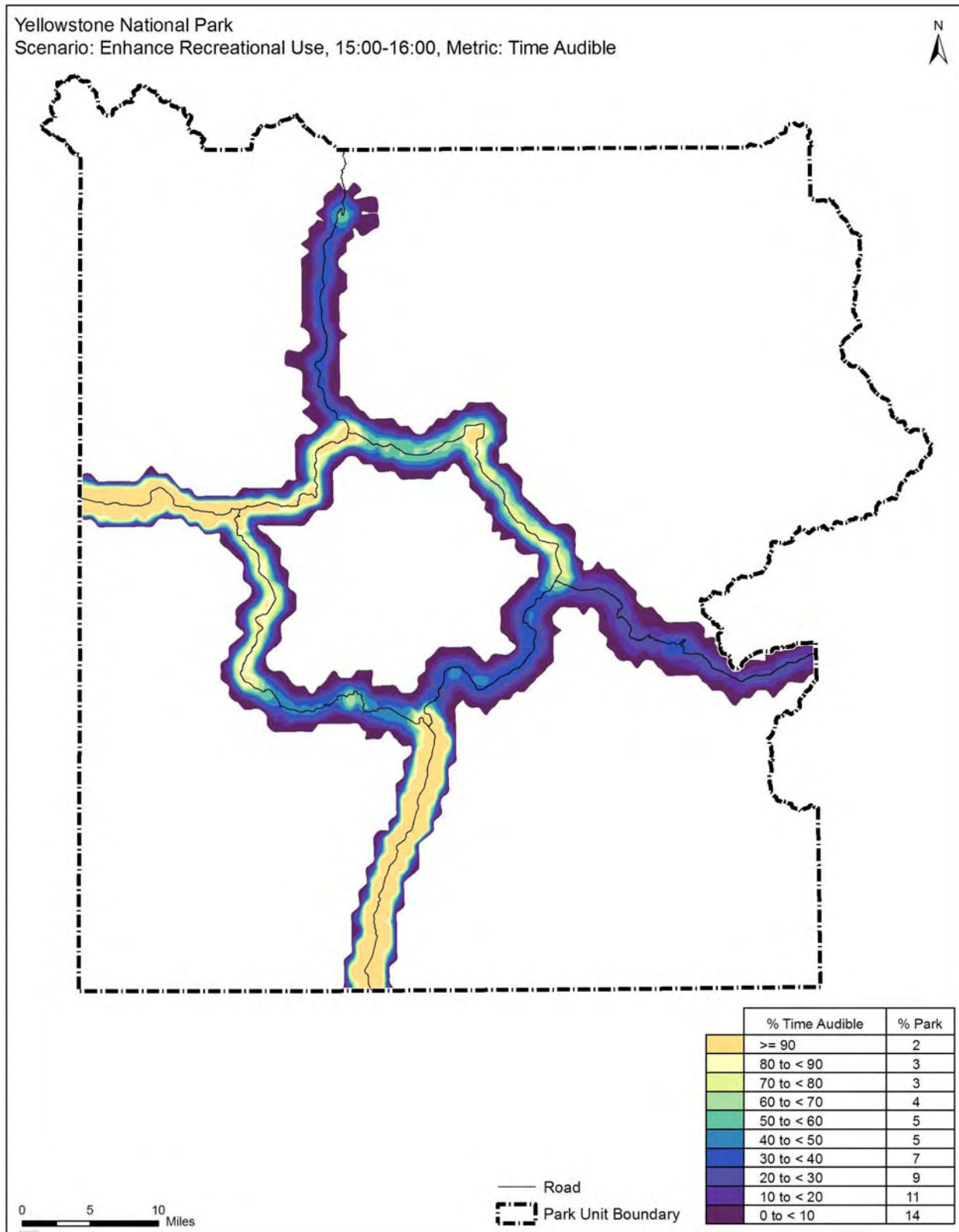


Figure 81: Yellowstone - Alternative 4, 15:00 to 16:00

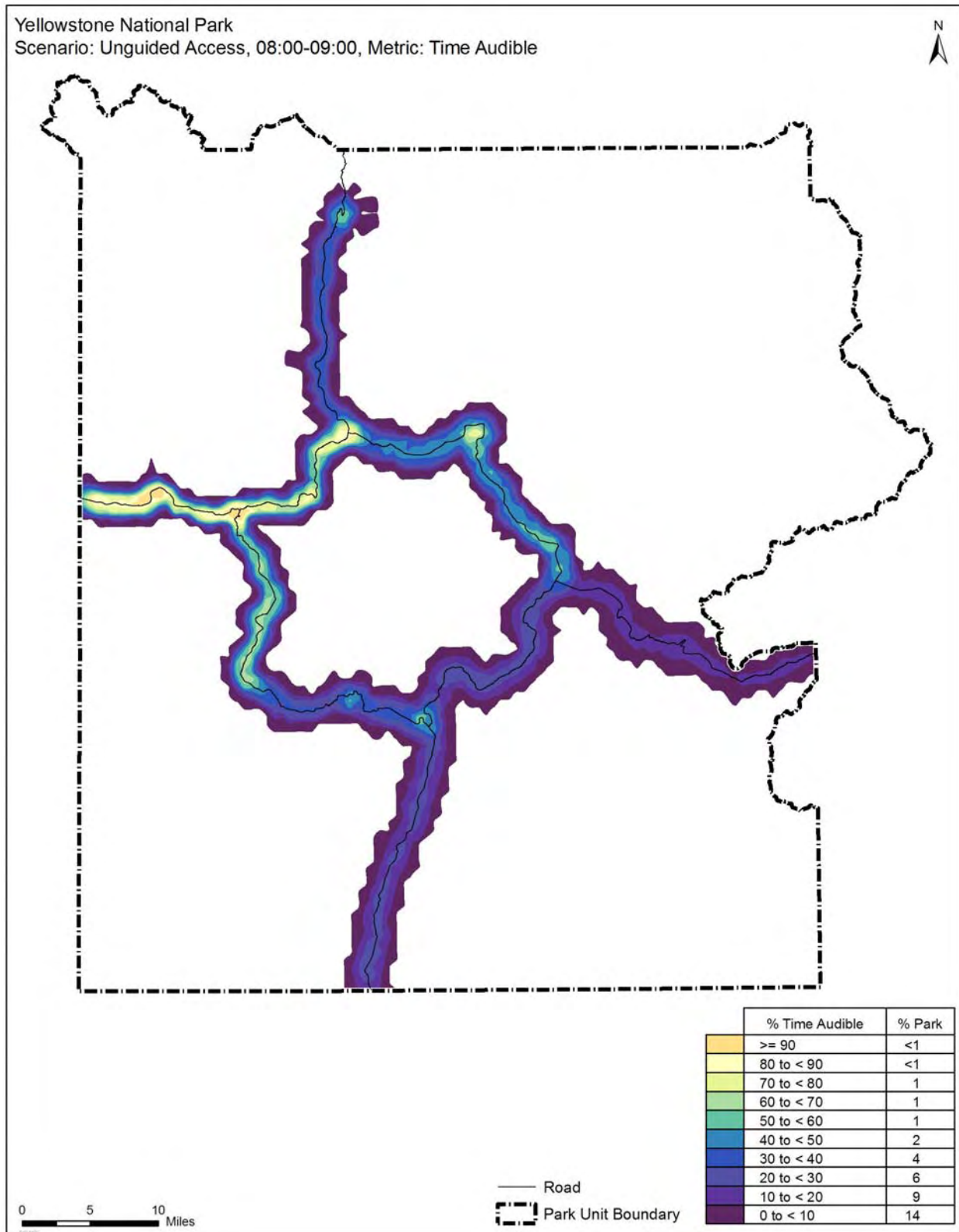


Figure 82: Yellowstone - Alternative 5, 08:00 to 09:00

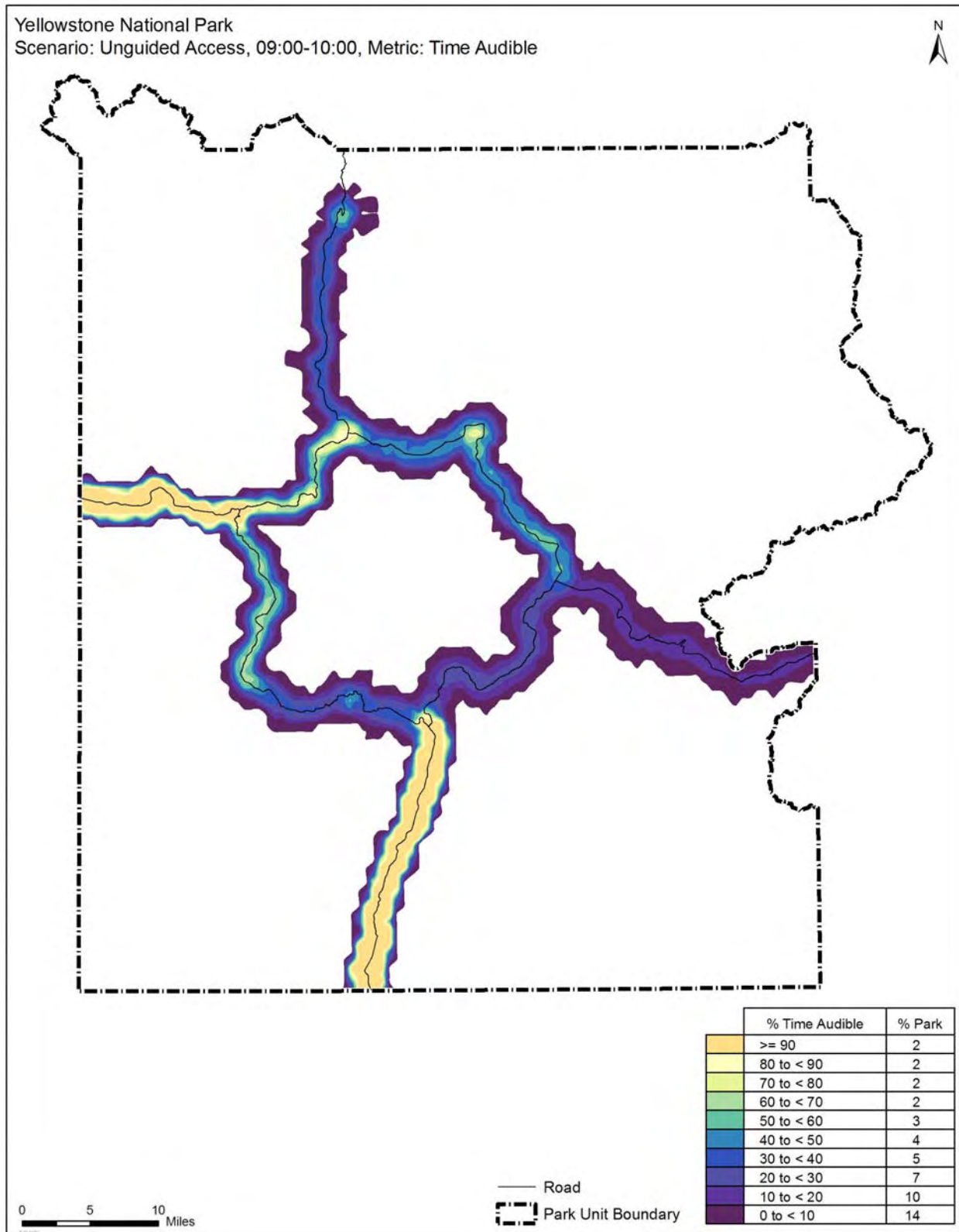


Figure 83: Yellowstone - Alternative 5, 09:00 to 10:00

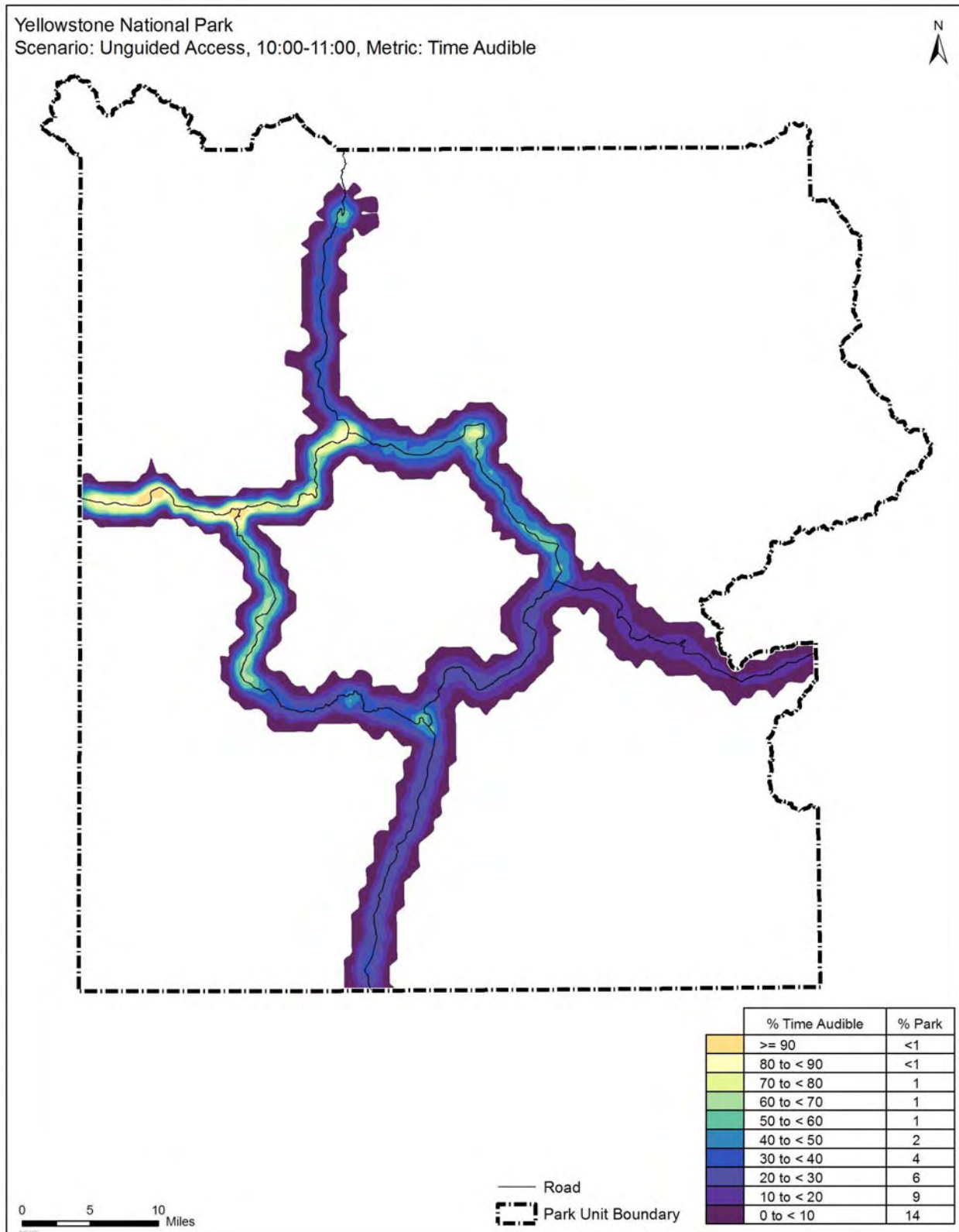


Figure 84: Yellowstone - Alternative 5, 10:00 to 11:00

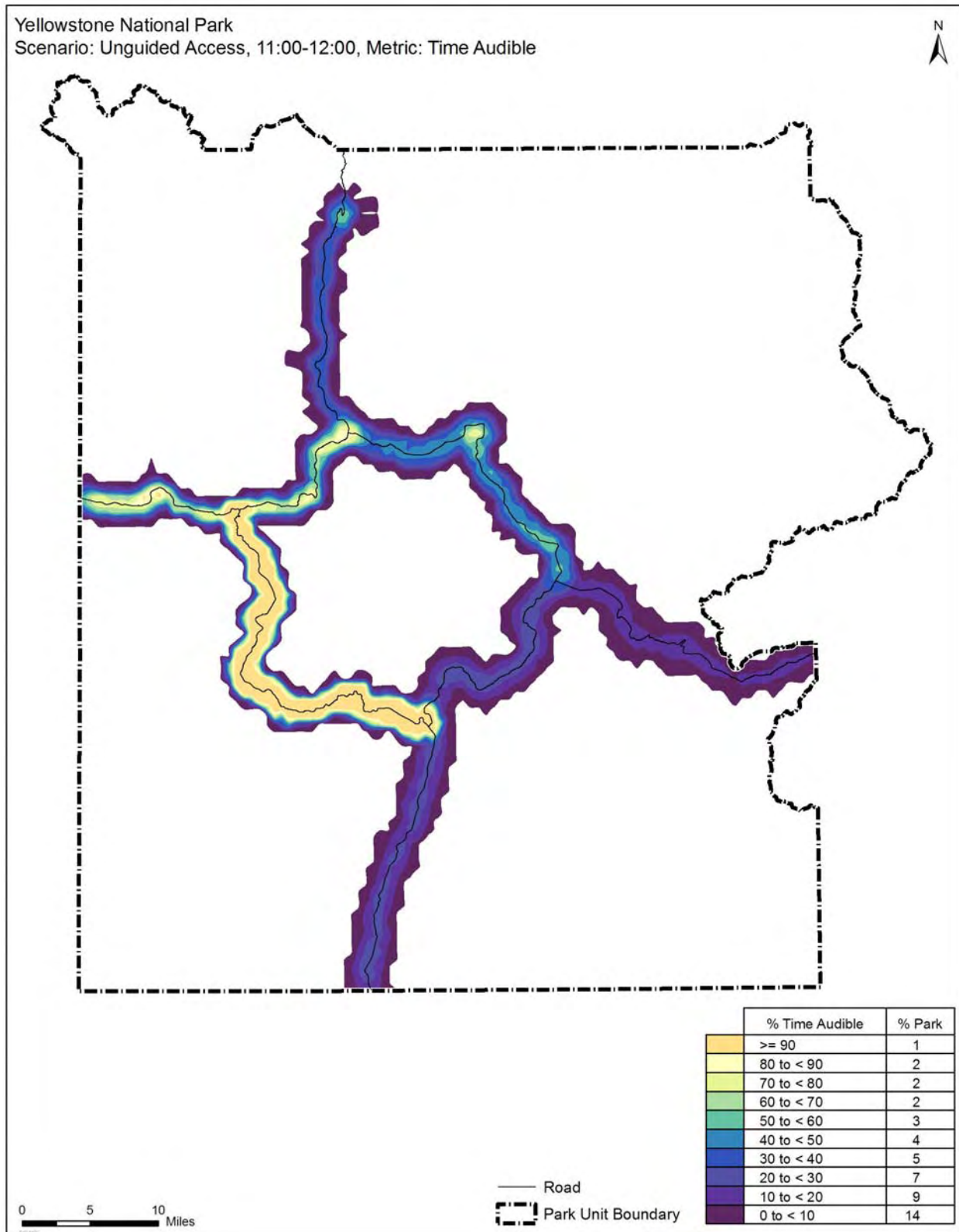


Figure 85: Yellowstone - Alternative 5, 11:00 to 12:00, 12:00 to 13:00, and 13:00 to 14:00



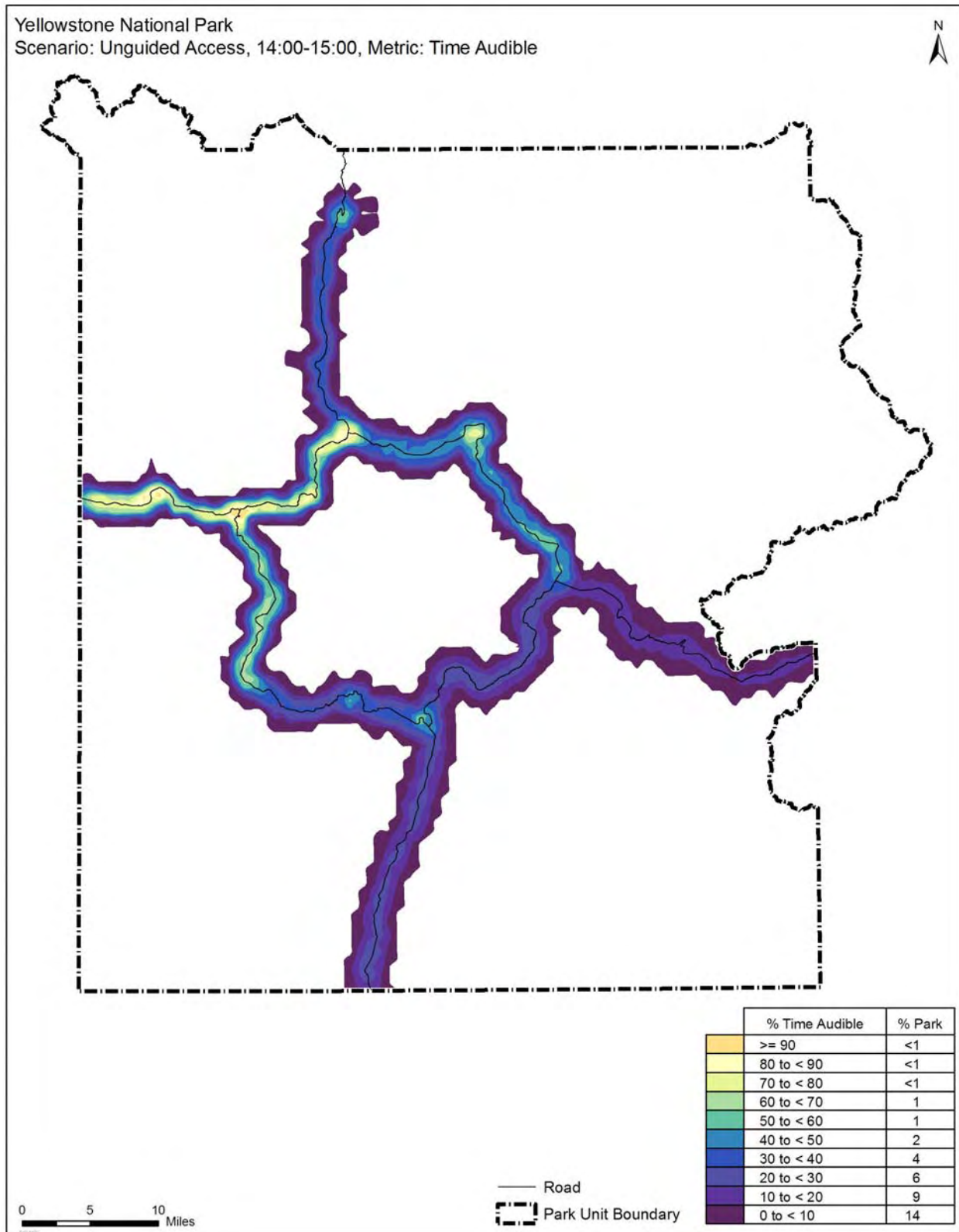


Figure 86: Yellowstone - Alternative 5, 14:00 to 15:00

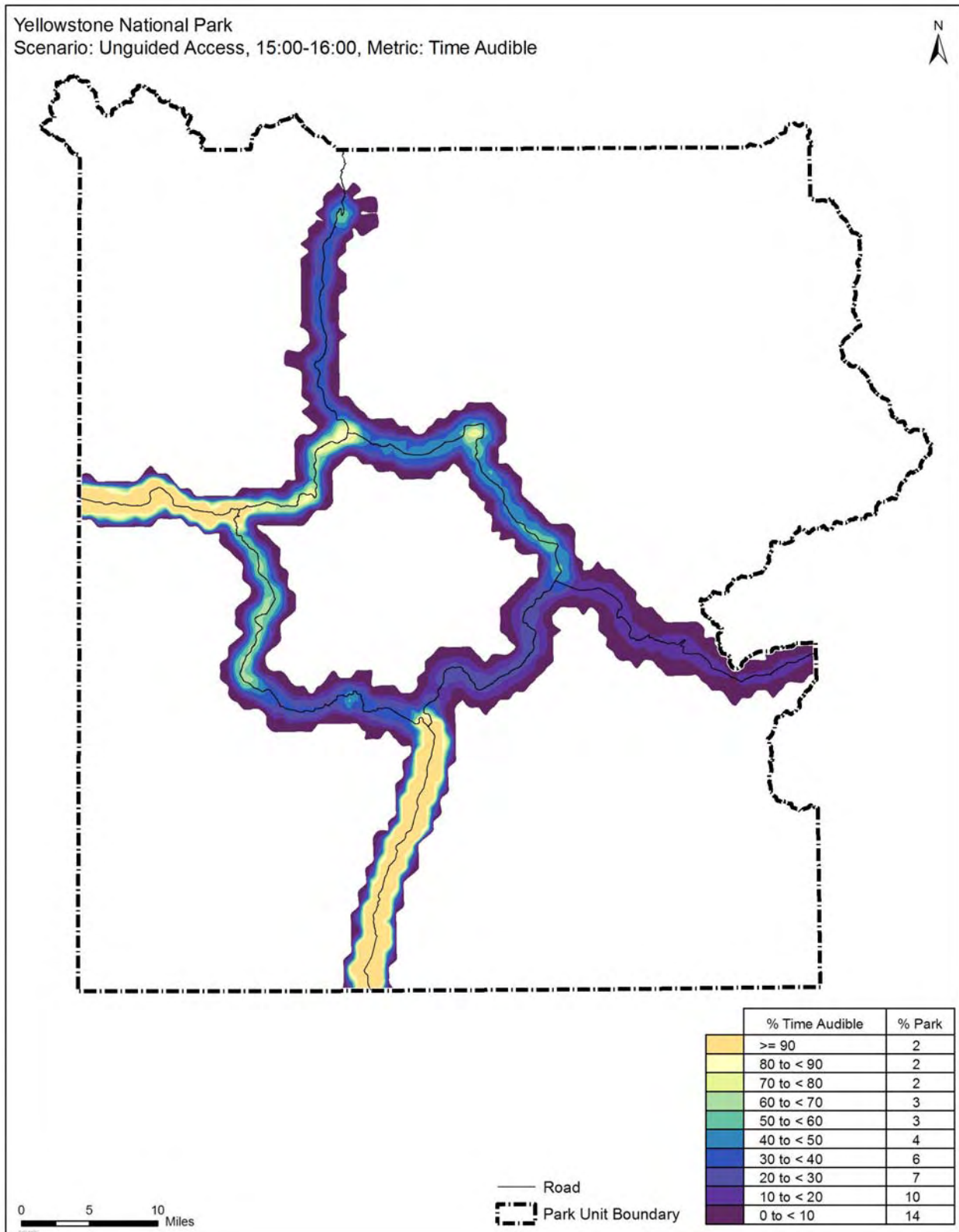


Figure 87: Yellowstone - Alternative 5, 15:00 to 16:00

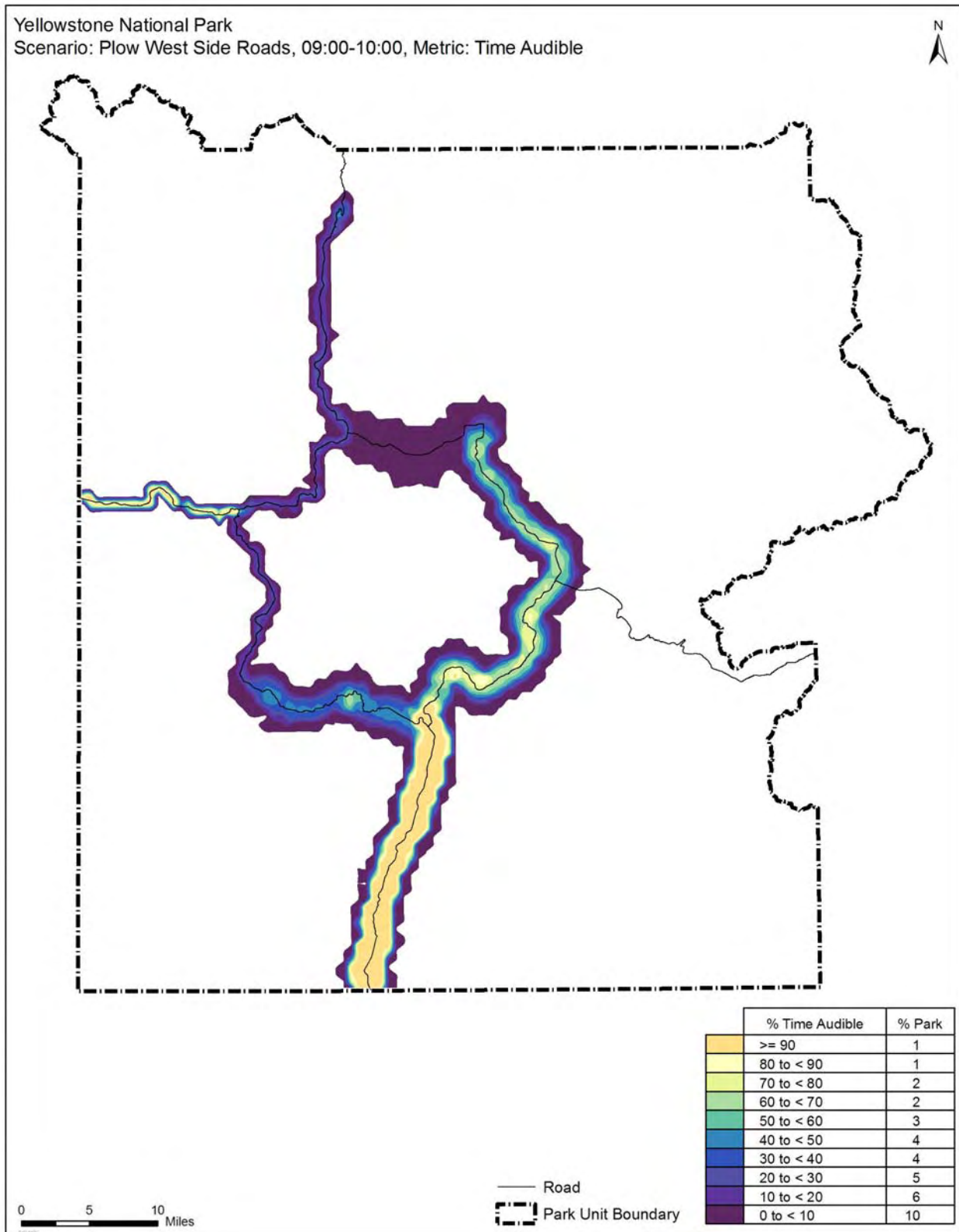


Figure 88: Yellowstone - Alternative 6, 09:00 to 10:00 and 15:00 to 16:00



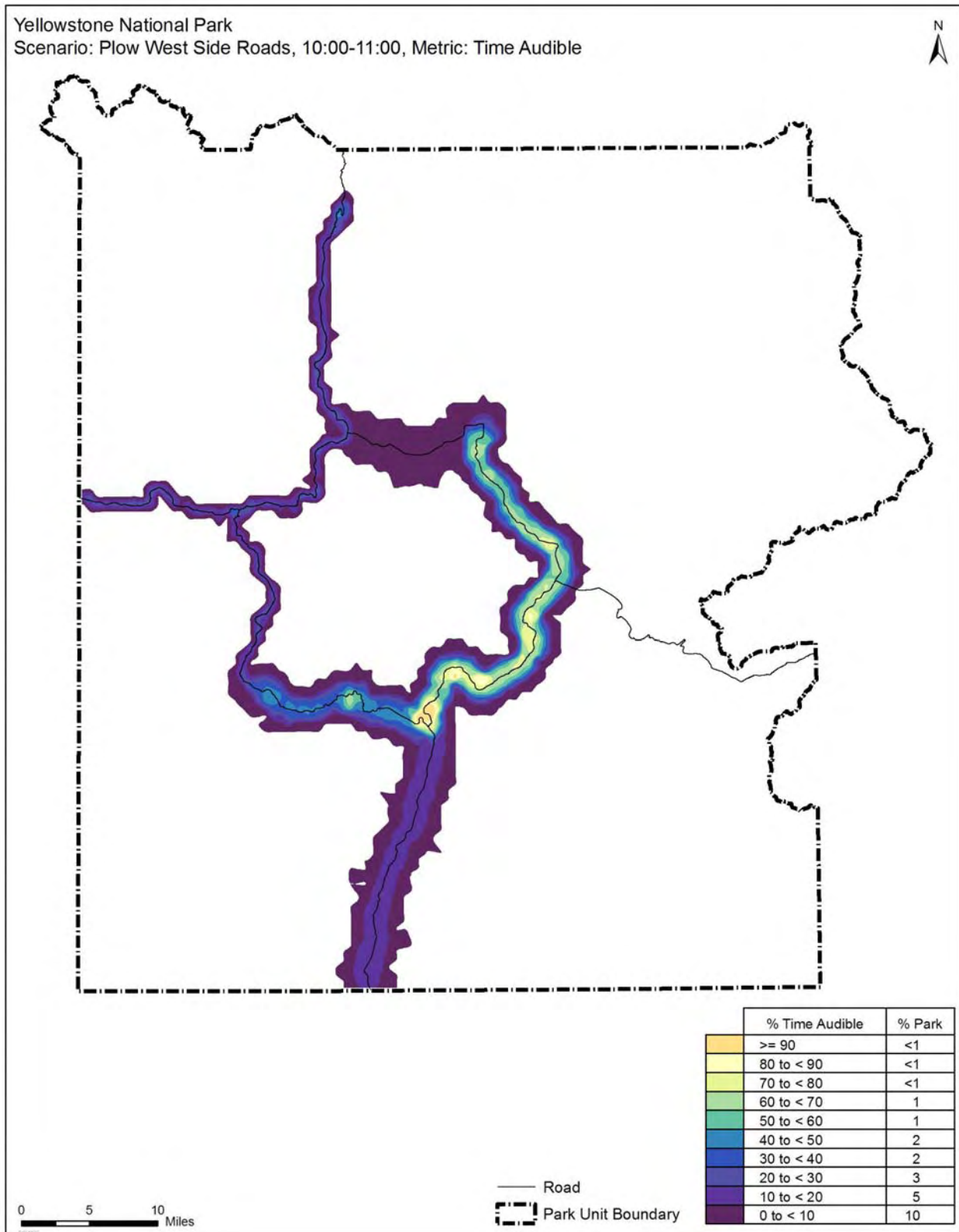


Figure 89: Yellowstone - Alternative 6, 08:00 to 09:00, 10:00 to 11:00, and 14:00 to 15:00

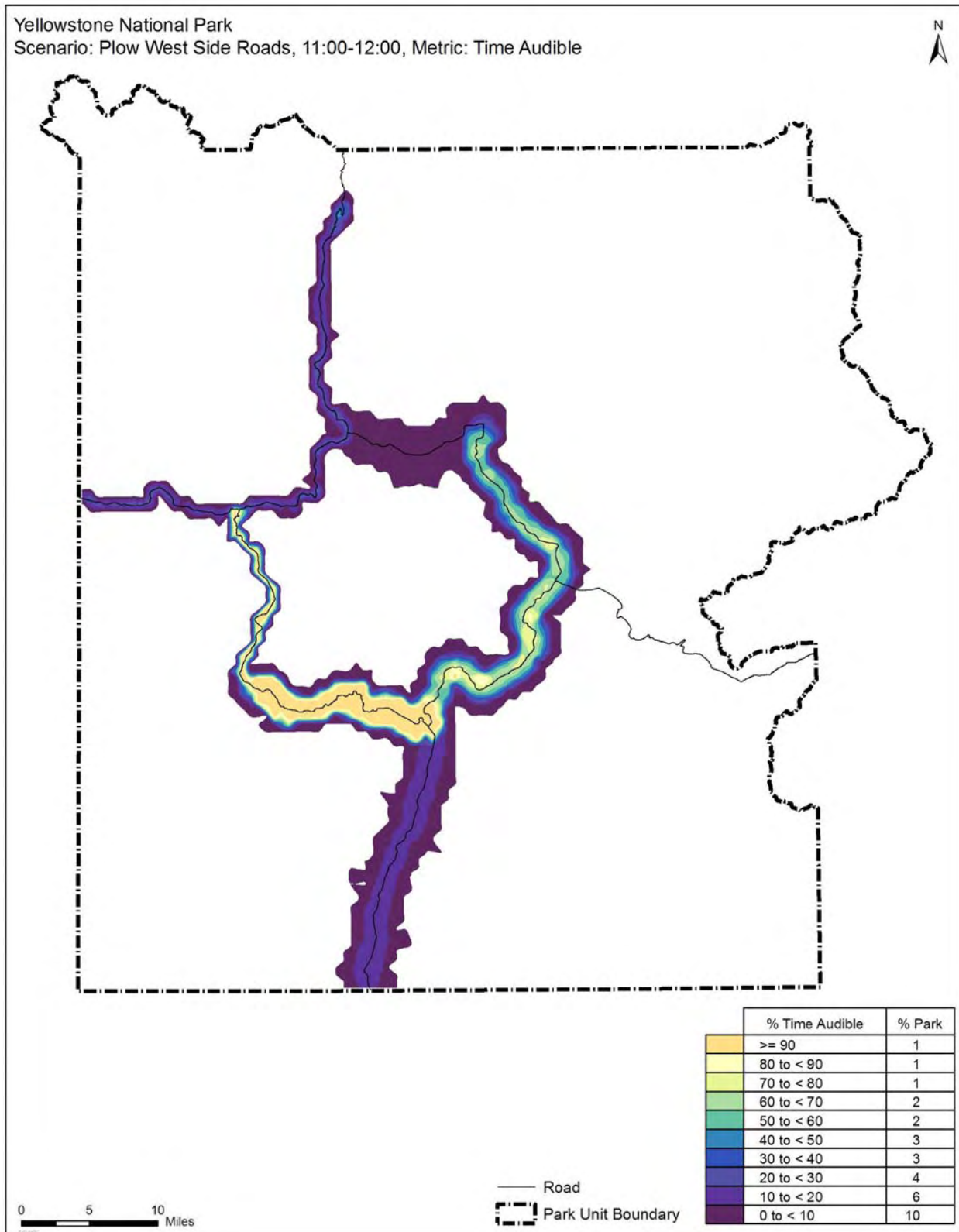


Figure 90: Yellowstone - Alternative 6, 11:00 to 12:00, 12:00 to 13:00, and 13:00 to 14:00

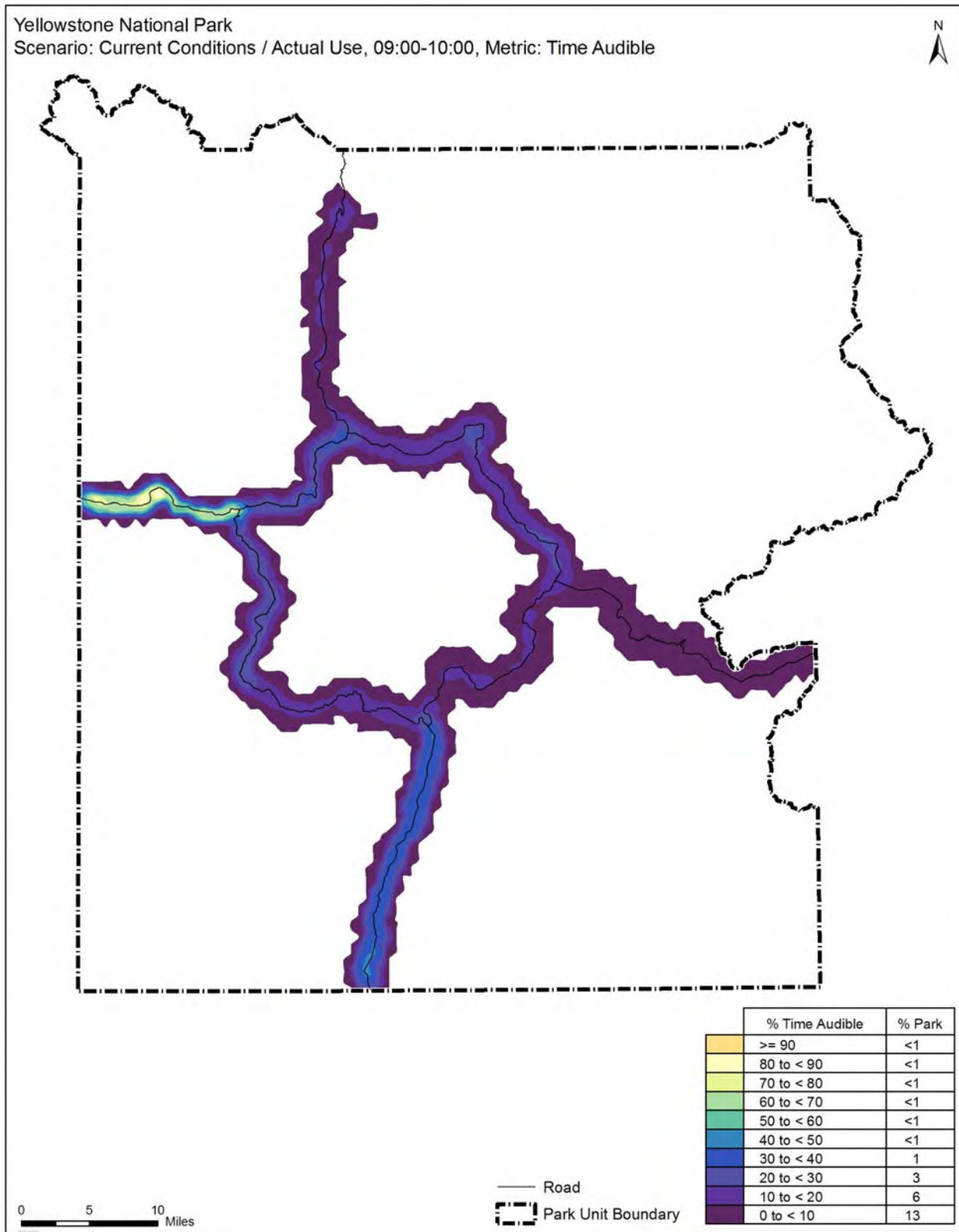


Figure 91: Yellowstone - Current, 09:00 to 10:00 and 15:00 to 16:00

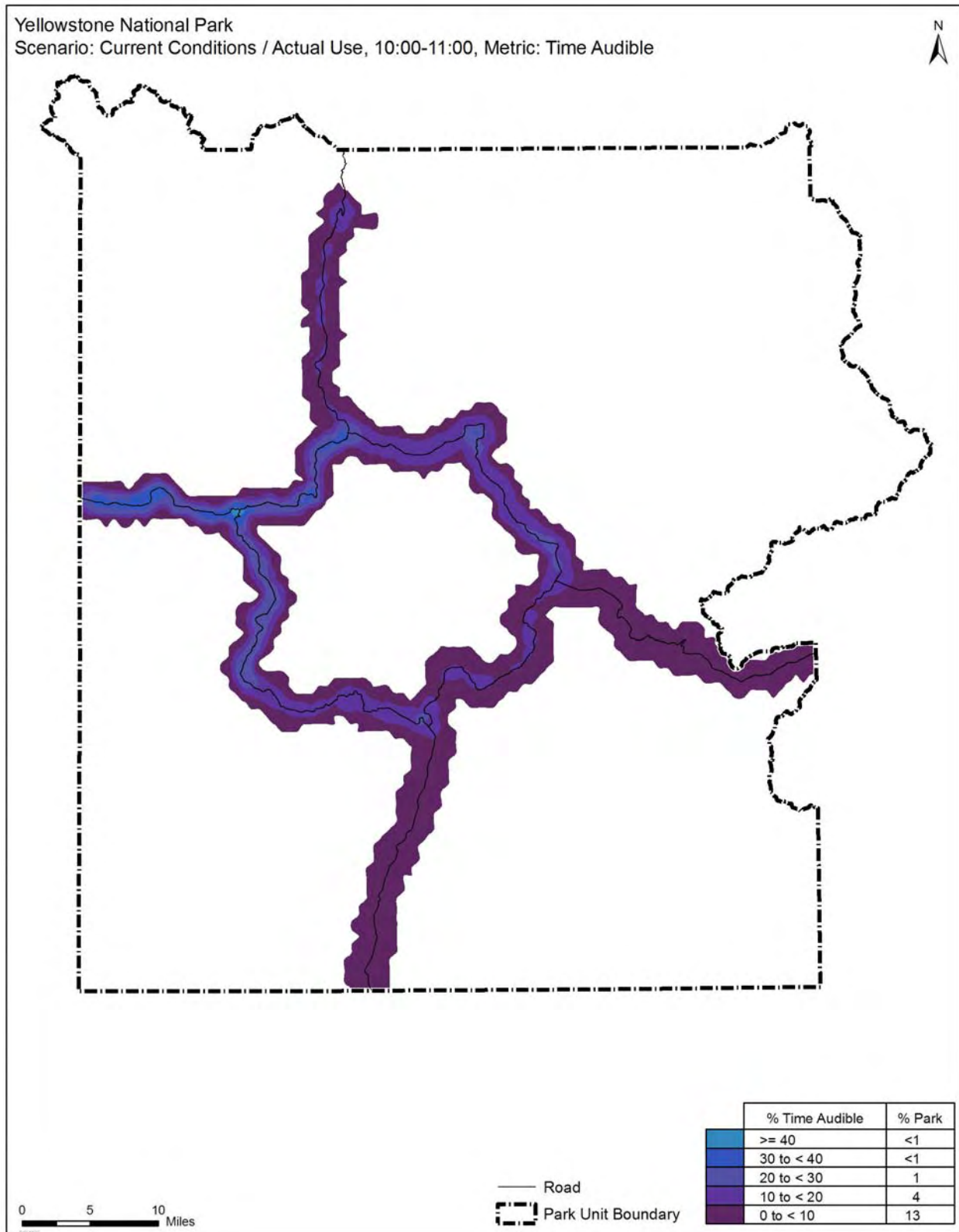


Figure 92: Yellowstone - Current, 08:00 to 09:00, 10:00 to 11:00, and 14:00 to 15:00

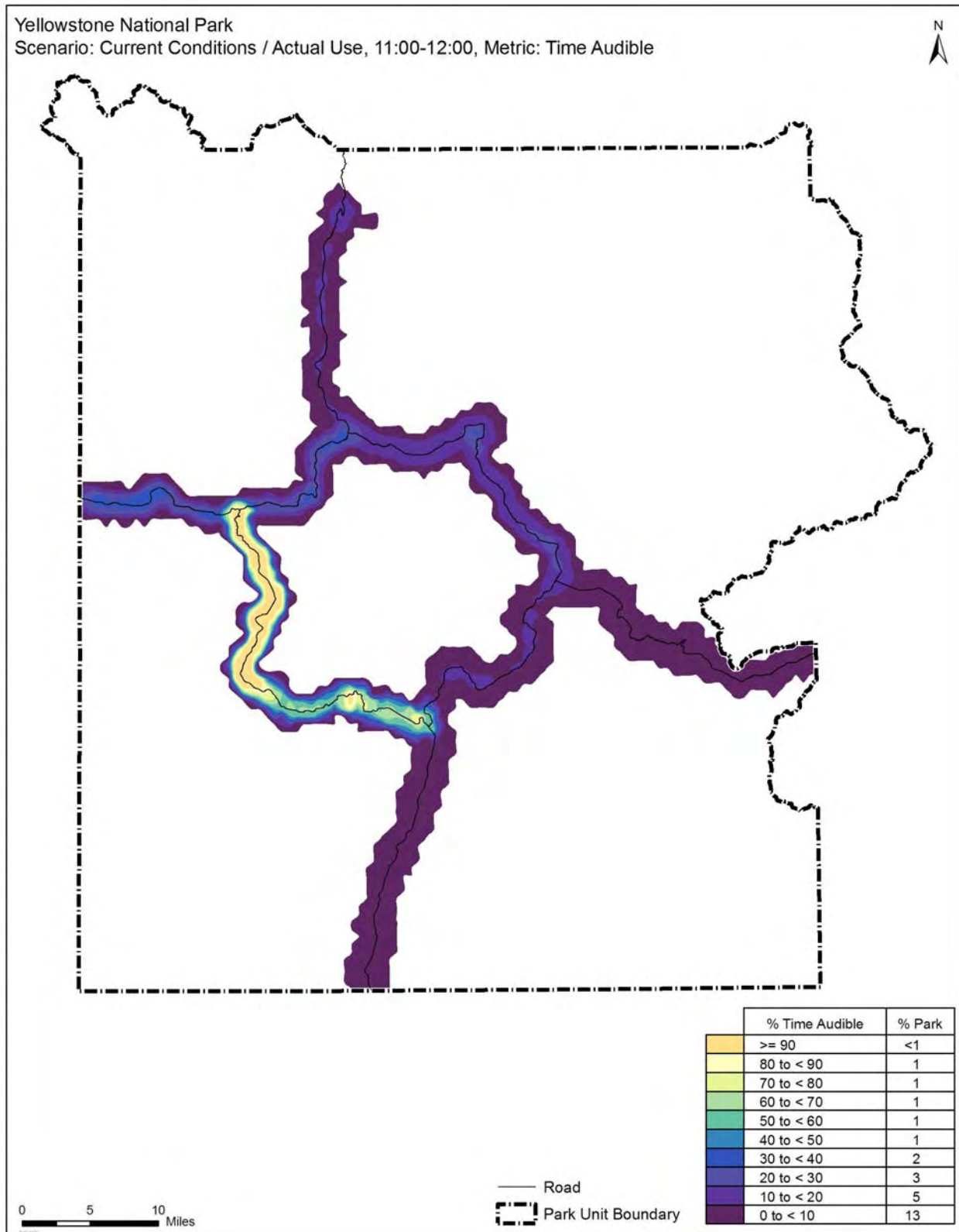


Figure 93: Yellowstone - Current, 11:00 to 12:00, 12:00 to 13:00, and 13:00 to 14:00



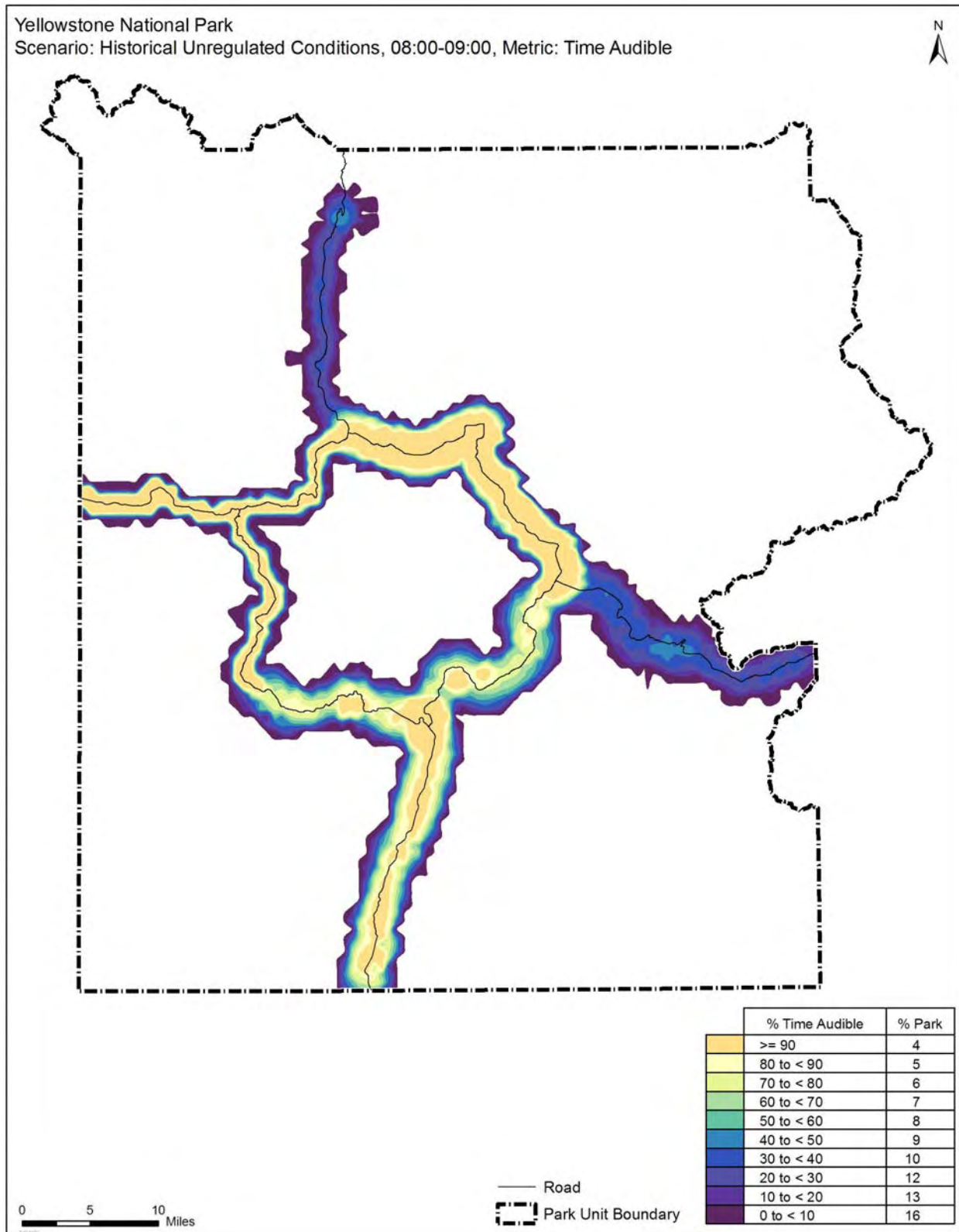


Figure 94: Yellowstone - Historical, 08:00 to 09:00

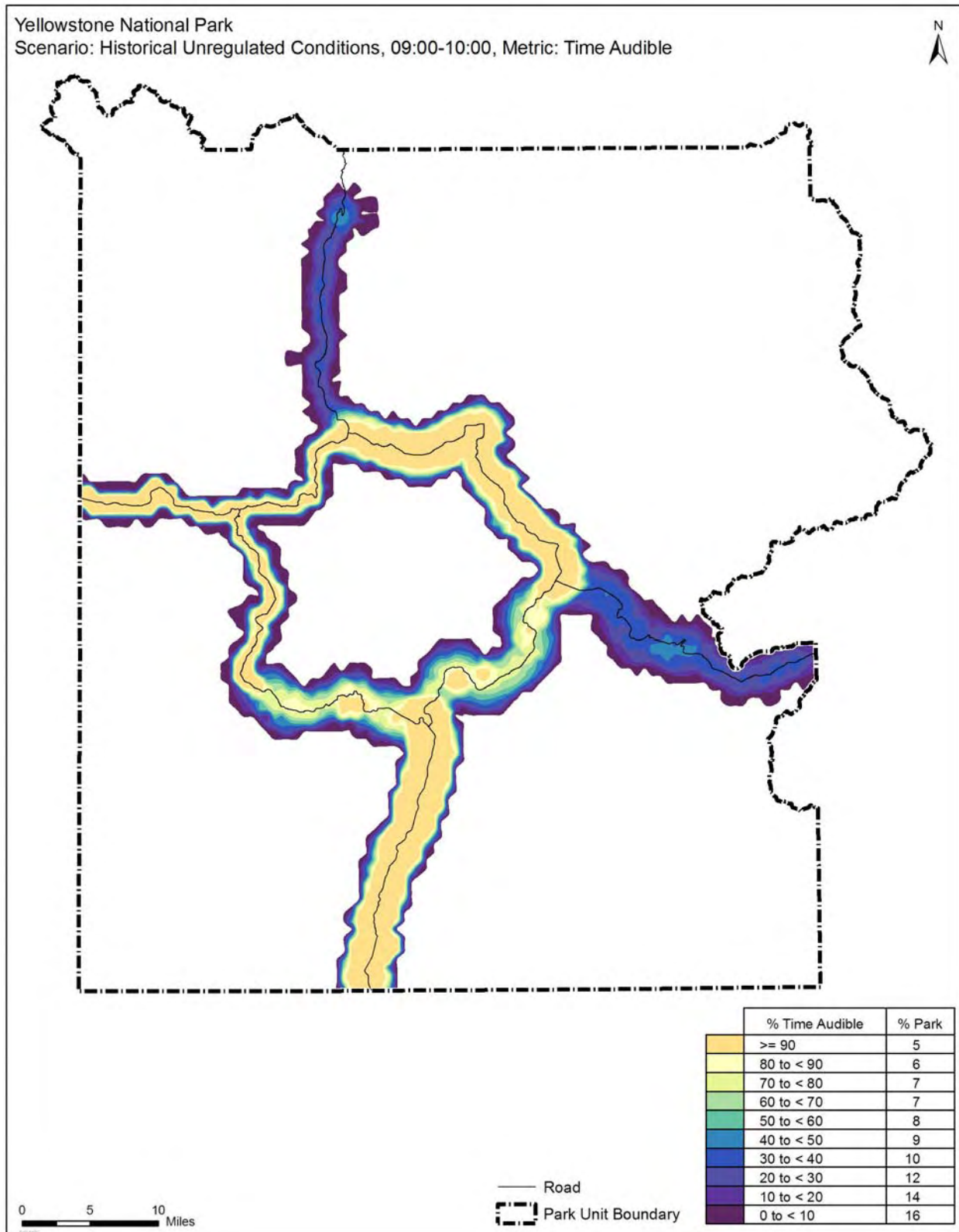


Figure 95: Yellowstone - Historical, 09:00 to 10:00 and 10:00 to 11:00



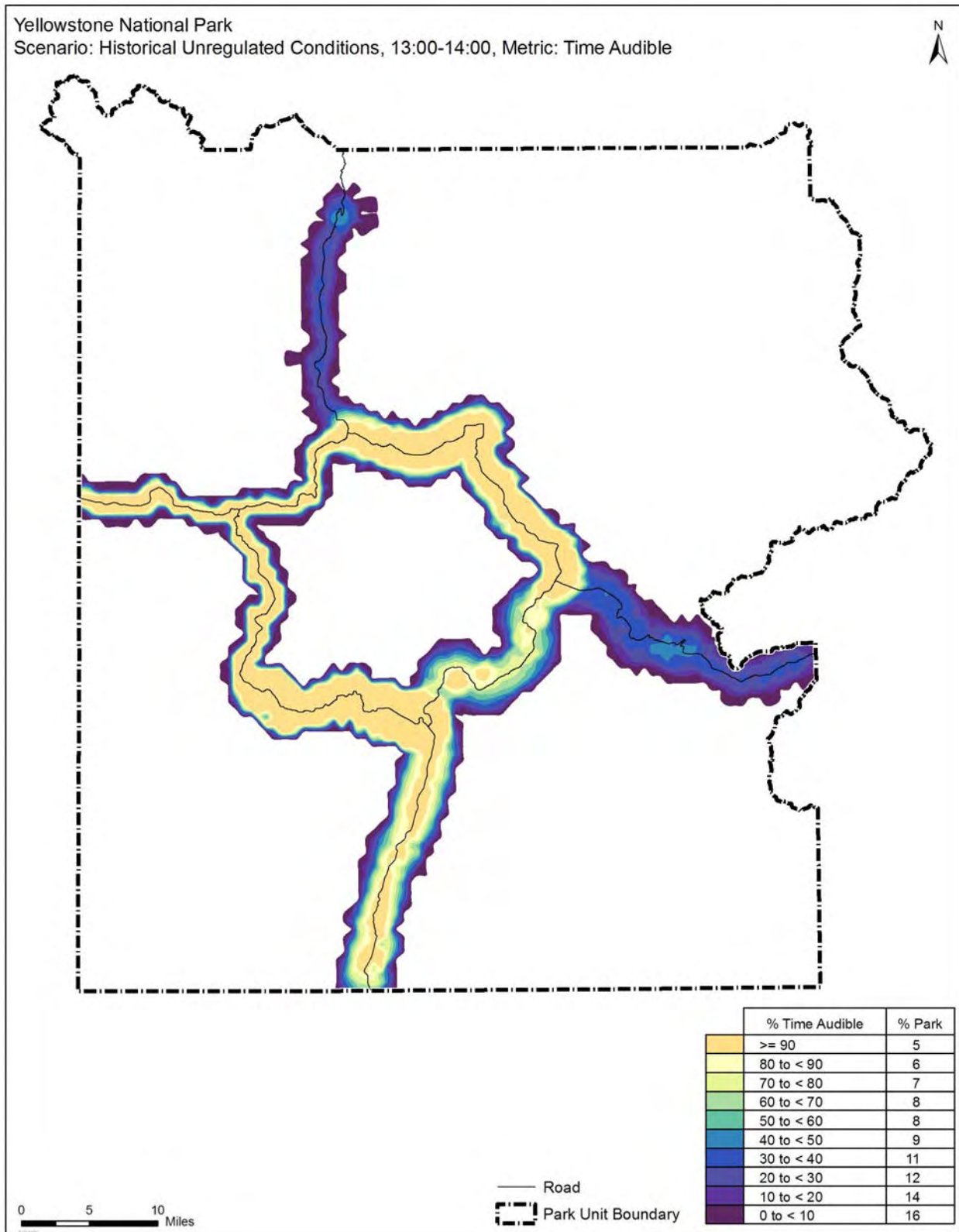


Figure 96: Yellowstone - Historical, 11:00 to 12:00, 12:00 to 13:00, and 13:00 to 14:00

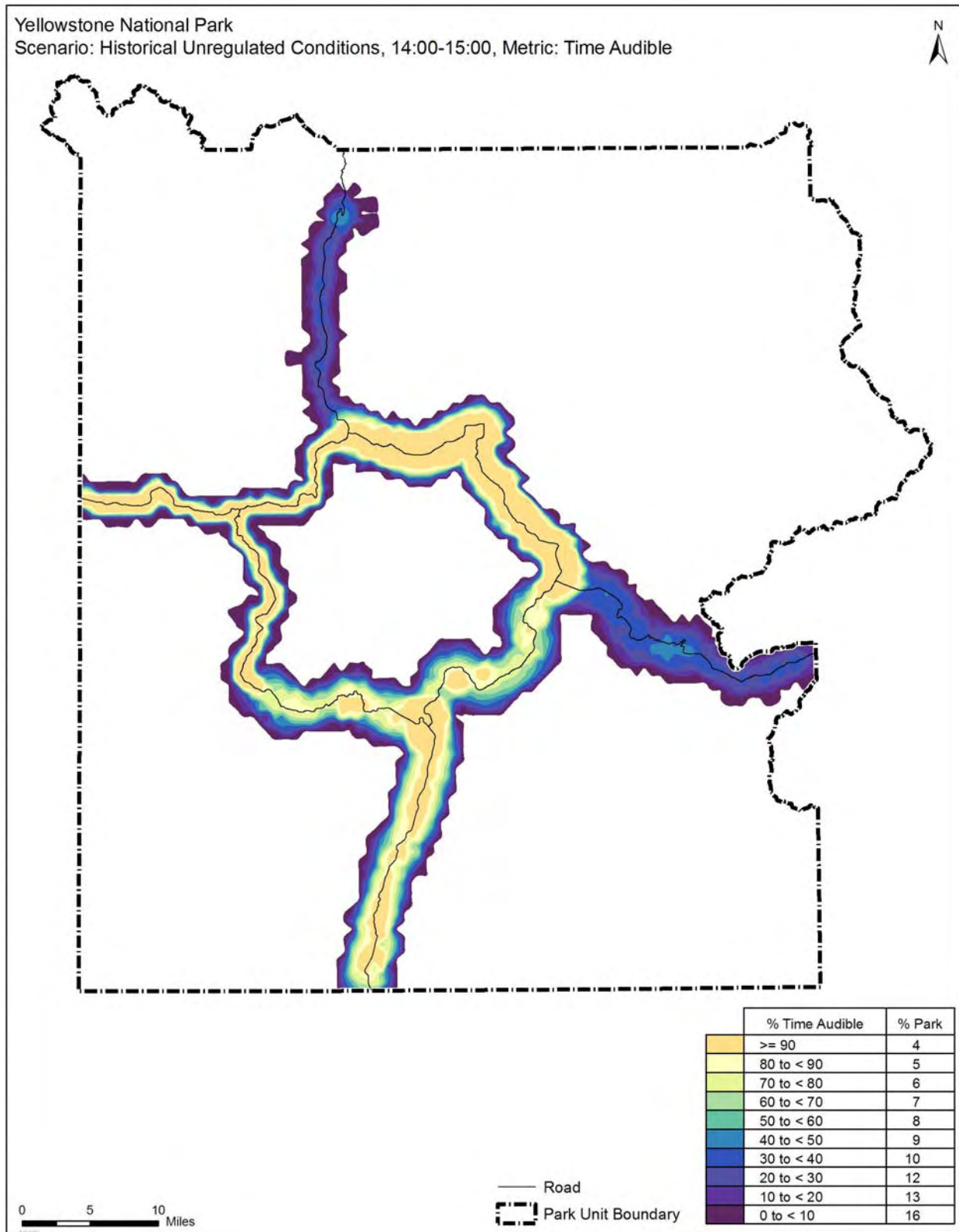


Figure 97: Yellowstone - Historical, 14:00 to 15:00

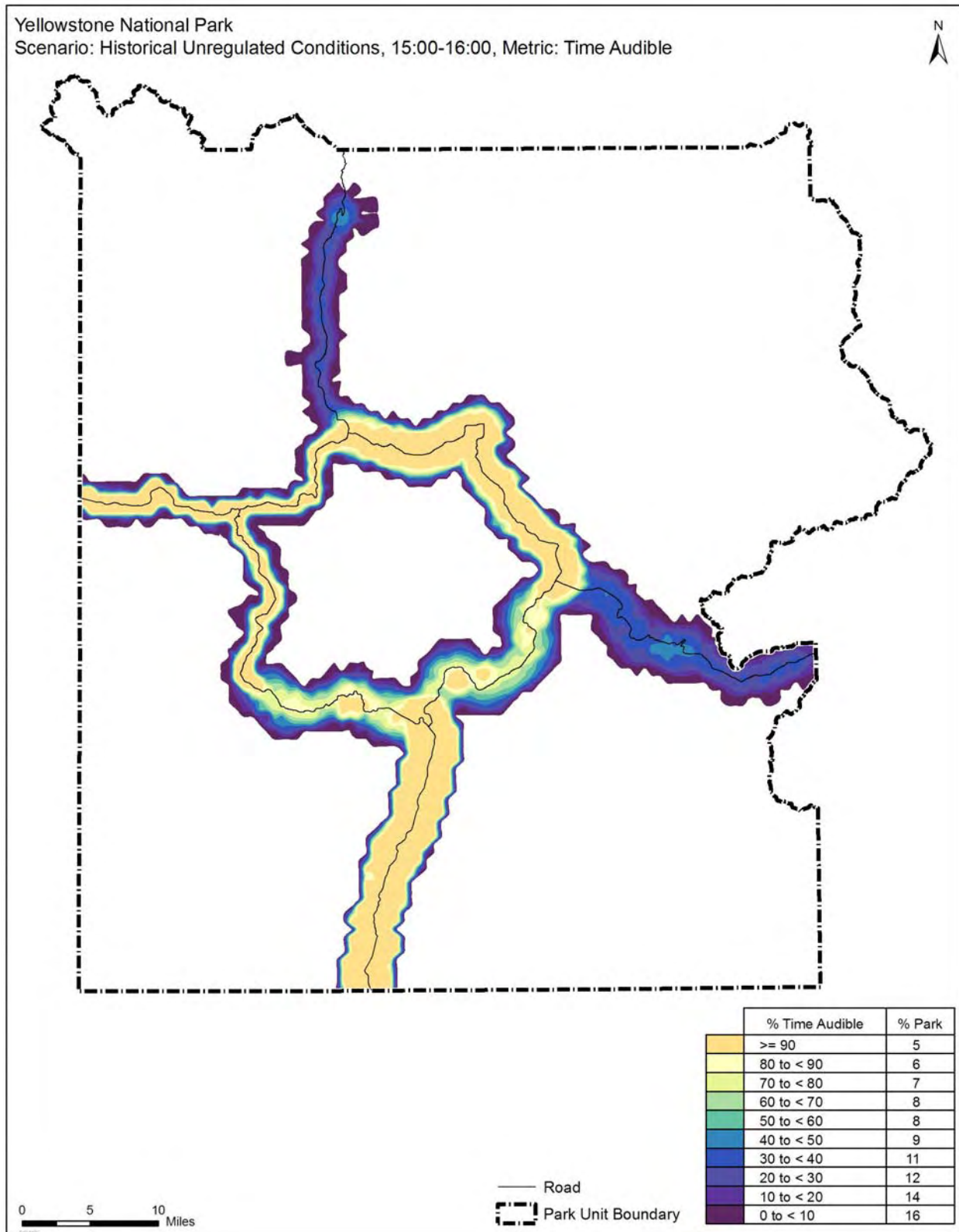


Figure 98: Yellowstone - Historical, 15:00 to 16:00

**Modeling Sound due to Over-Snow Vehicles in  
Yellowstone and Grand Teton National Parks**

**Appendix E**

**Table 36: Yellowstone: Percent of Park Area for 10% Increments of % Time Audible**

| % TAUD (8-hours) | Alt 1A | Alt 1B | Alt 1D | Alt 1E | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 6 | Current | Historical |
|------------------|--------|--------|--------|--------|-------|-------|-------|-------|-------|---------|------------|
| 0                | 16.0   | 12.9   | 13.0   | 12.1   | 10.2  | 3.5   | 13.9  | 13.9  | 10.4  | 12.6    | 16.2       |
| 10               | 9.5    | 8.6    | 8.5    | 7.8    | 6.5   | 2.4   | 10.2  | 9.1   | 5.8   | 4.9     | 13.6       |
| 20               | 6.5    | 6.1    | 5.9    | 5.6    | 3.9   | 1.4   | 8.3   | 6.5   | 3.9   | 2.2     | 12.1       |
| 30               | 4.6    | 4.1    | 4.0    | 4.1    | 2.1   | 1.0   | 6.2   | 4.6   | 3.1   | 1.1     | 10.4       |
| 40               | 3.6    | 2.8    | 2.7    | 2.9    | 1.4   | 0.8   | 4.5   | 3.4   | 2.6   | 0.7     | 9.0        |
| 50               | 2.6    | 2.2    | 2.2    | 2.0    | 1.0   | 0.8   | 3.8   | 2.4   | 2.1   | 0.6     | 8.1        |
| 60               | 2.0    | 1.7    | 1.6    | 1.5    | 0.9   | 0.7   | 3.1   | 1.8   | 1.6   | 0.4     | 7.4        |
| 70               | 1.5    | 1.3    | 1.3    | 1.3    | 0.8   | 0.6   | 2.5   | 1.4   | 1.0   | 0.3     | 6.6        |
| 80               | 1.2    | 1.1    | 1.1    | 1.1    | 0.8   | 0.6   | 1.9   | 1.1   | 0.7   | 0.2     | 5.6        |
| 90               | 1.0    | 1.0    | 0.9    | 1.0    | 0.6   | 0.5   | 1.5   | 0.9   | 0.6   | 0.2     | 4.6        |

**Table 37: Yellowstone: Square Miles of Park Area at a Specified Percent Time Audible**

| % TAUD (8-hours) | Alt 1A | Alt 1B | Alt 1D | Alt 1E | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 6 | Current | Historical |
|------------------|--------|--------|--------|--------|-------|-------|-------|-------|-------|---------|------------|
| 0                | 560.2  | 447.2  | 448.8  | 420.2  | 351.0 | 119.6 | 486.4 | 486.7 | 359.5 | 437.2   | 565.8      |
| 10               | 326.9  | 295.5  | 293.1  | 269.1  | 224.0 | 83.0  | 352.3 | 315.3 | 199.7 | 167.5   | 468.1      |
| 20               | 224.9  | 209.9  | 201.6  | 193.3  | 132.6 | 47.3  | 286.3 | 222.4 | 133.1 | 77.2    | 416.9      |
| 30               | 158.9  | 141.5  | 138.0  | 141.1  | 72.9  | 33.6  | 212.1 | 157.8 | 107.4 | 39.6    | 357.3      |
| 40               | 123.1  | 96.8   | 94.2   | 98.2   | 48.6  | 27.9  | 156.7 | 116.4 | 89.8  | 23.7    | 308.2      |
| 50               | 90.2   | 76.0   | 74.1   | 67.4   | 36.1  | 25.7  | 130.1 | 83.1  | 72.7  | 19.7    | 280.4      |
| 60               | 67.6   | 57.9   | 56.5   | 53.1   | 32.0  | 23.9  | 106.4 | 63.4  | 53.9  | 14.6    | 255.9      |
| 70               | 52.6   | 45.5   | 43.9   | 43.7   | 29.1  | 22.0  | 85.7  | 49.9  | 34.9  | 10.0    | 227.4      |
| 80               | 41.0   | 39.0   | 37.6   | 38.1   | 25.9  | 20.0  | 66.4  | 38.4  | 25.4  | 7.4     | 193.0      |
| 90               | 34.5   | 33.7   | 32.6   | 33.7   | 22.2  | 17.5  | 51.0  | 30.9  | 20.5  | 5.6     | 156.7      |

**E.2. Percent Time Audible, Grand Teton**

For the Grand Teton, all hours the same, so a single hour is representative of all hours. The park areas in Table 38 and Table 39 are based on a weighted sum of all hours of operation, 08:00 to 16:00.

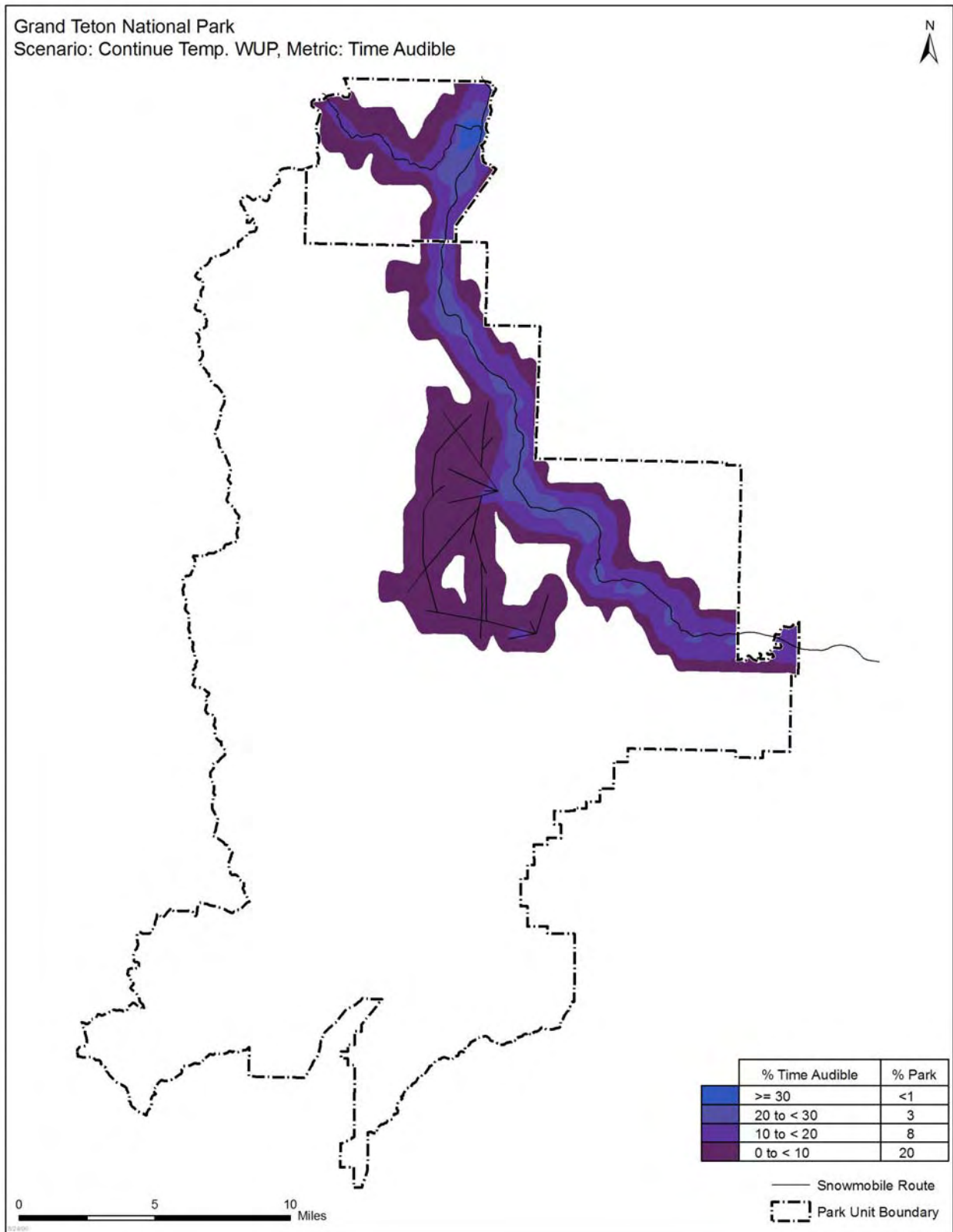


Figure 99: Grand Teton - Alternative 1

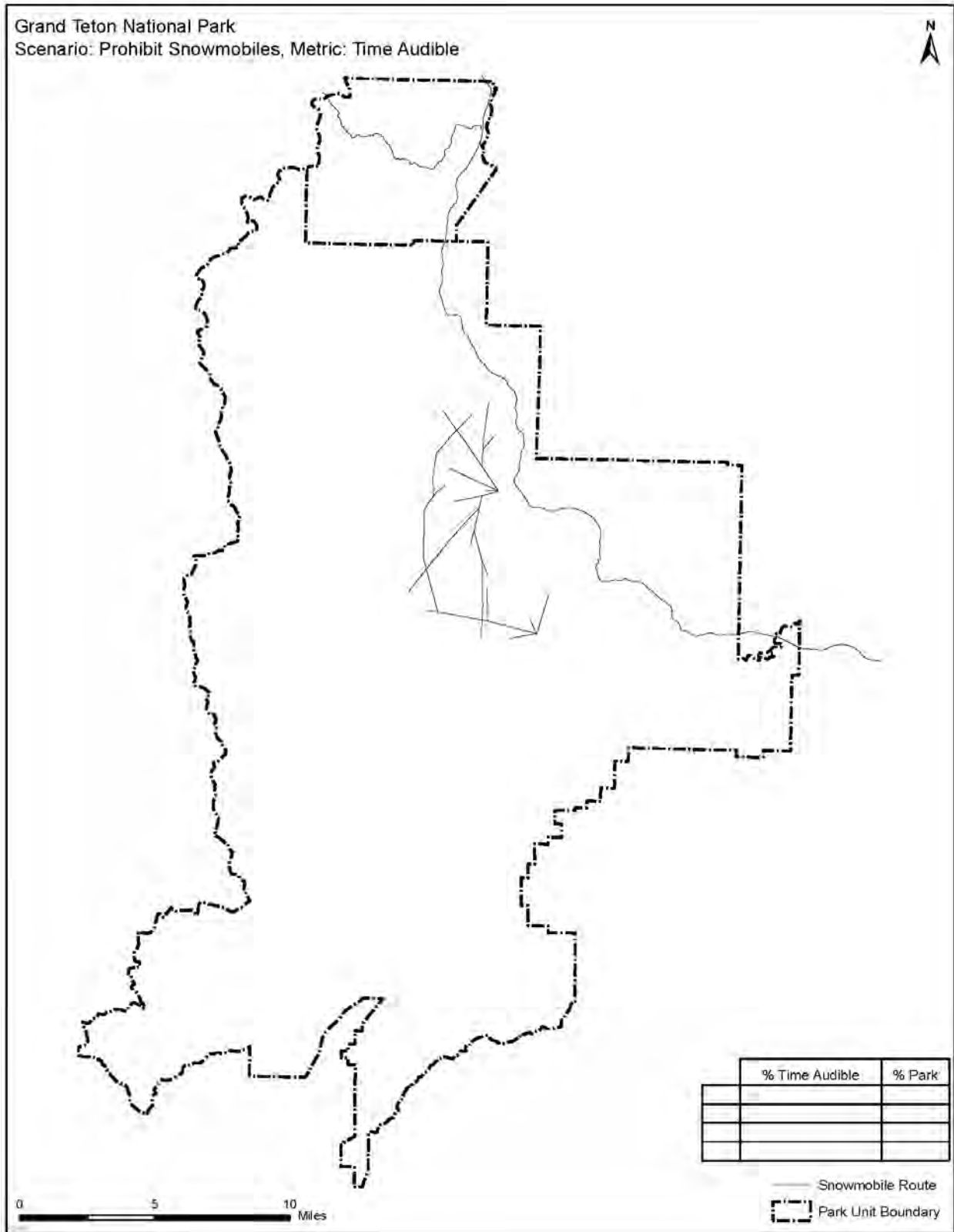


Figure 100: Grand Teton - Alternative 2 (No OSV Operations)



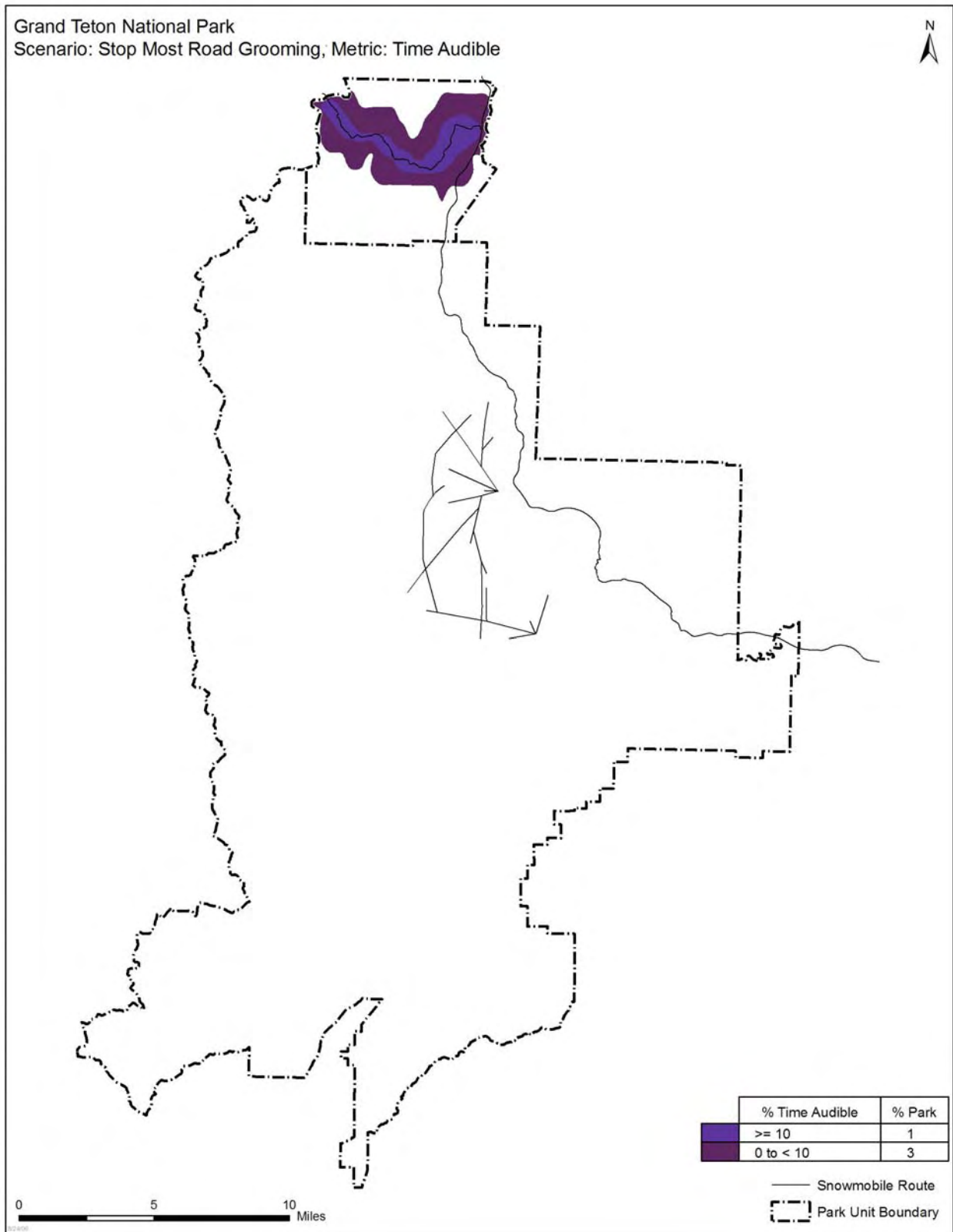


Figure 101: Grand Teton - Alternative 3



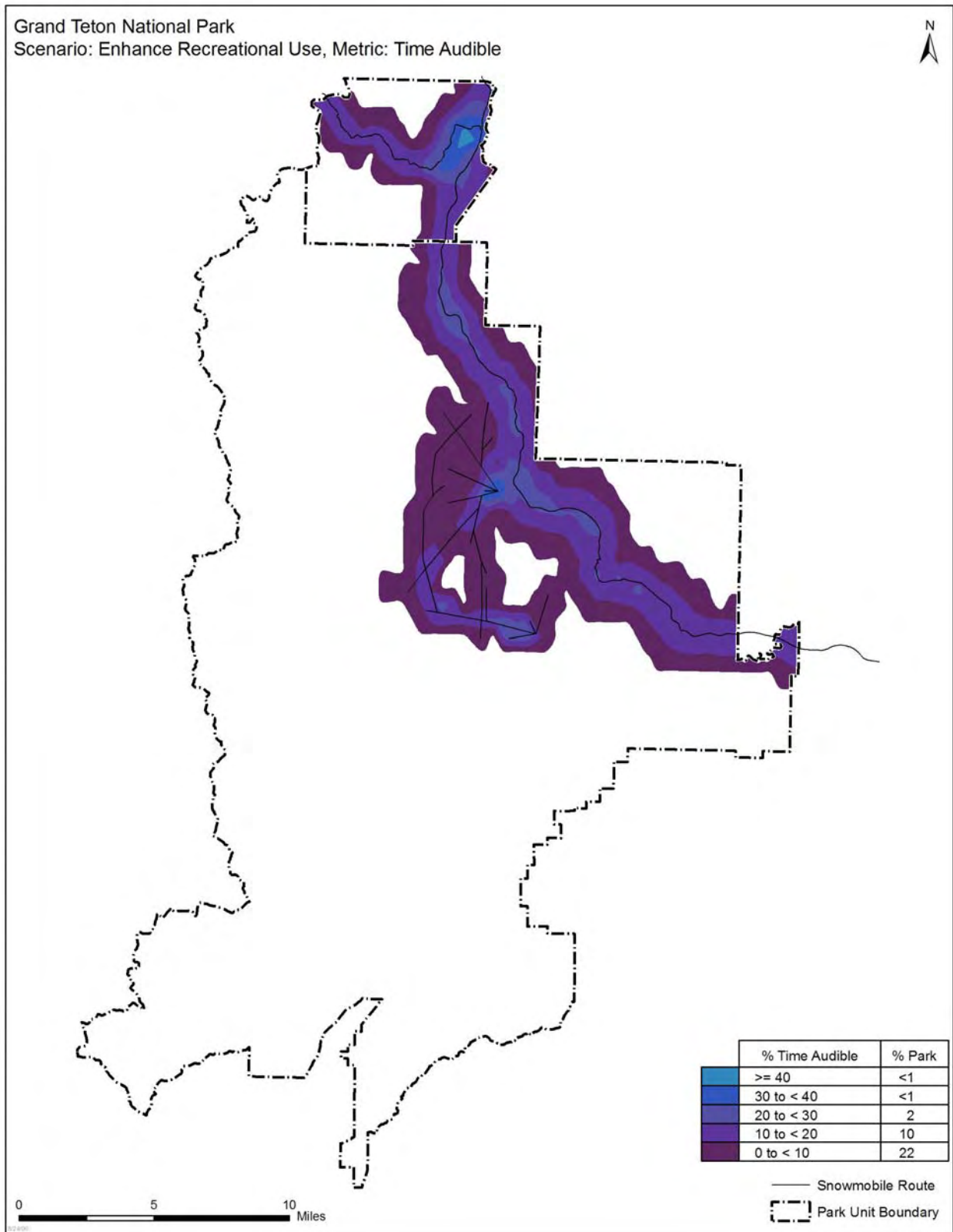


Figure 102: Grand Teton - Alternative 4

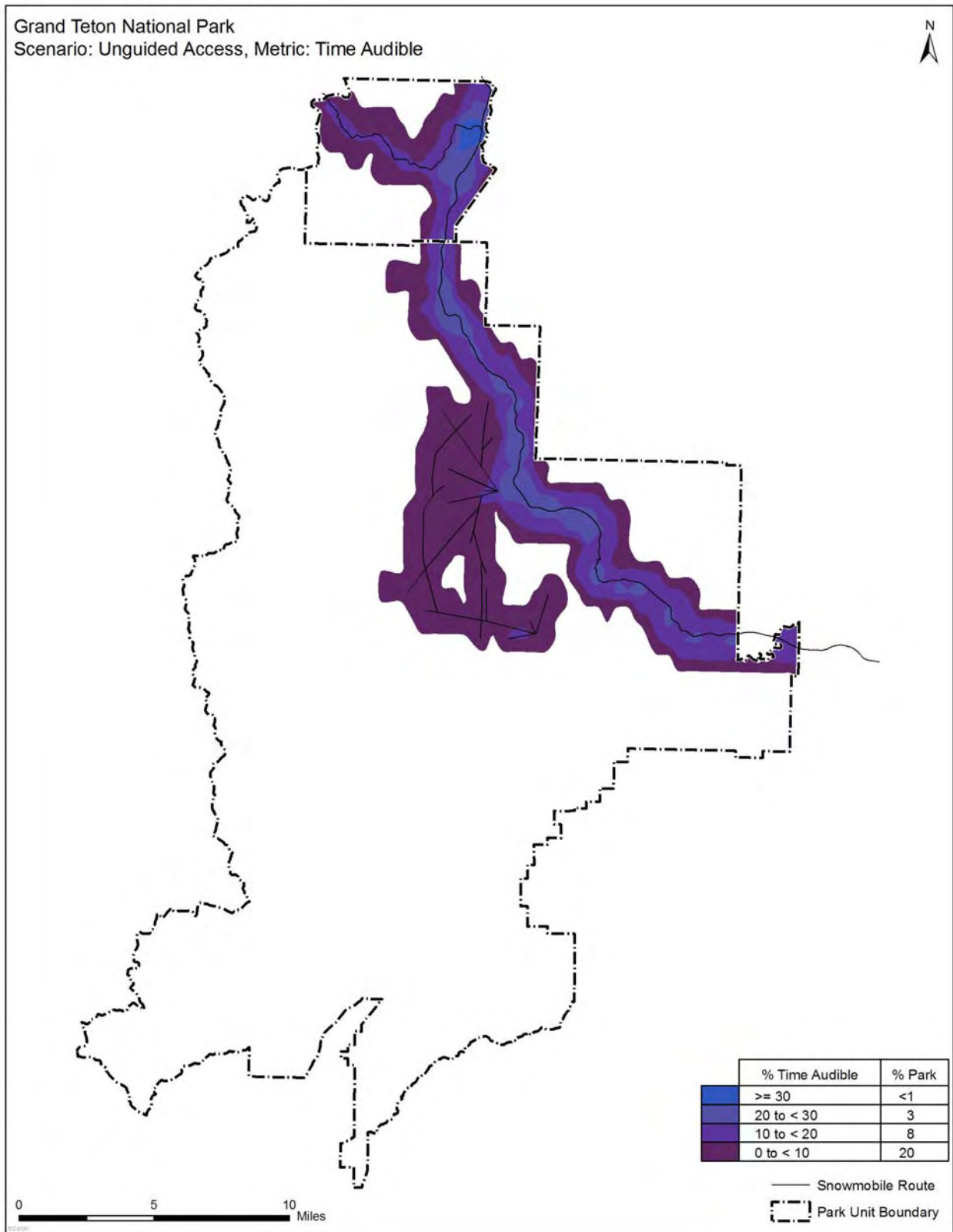


Figure 103: Grand Teton - Alternative 5

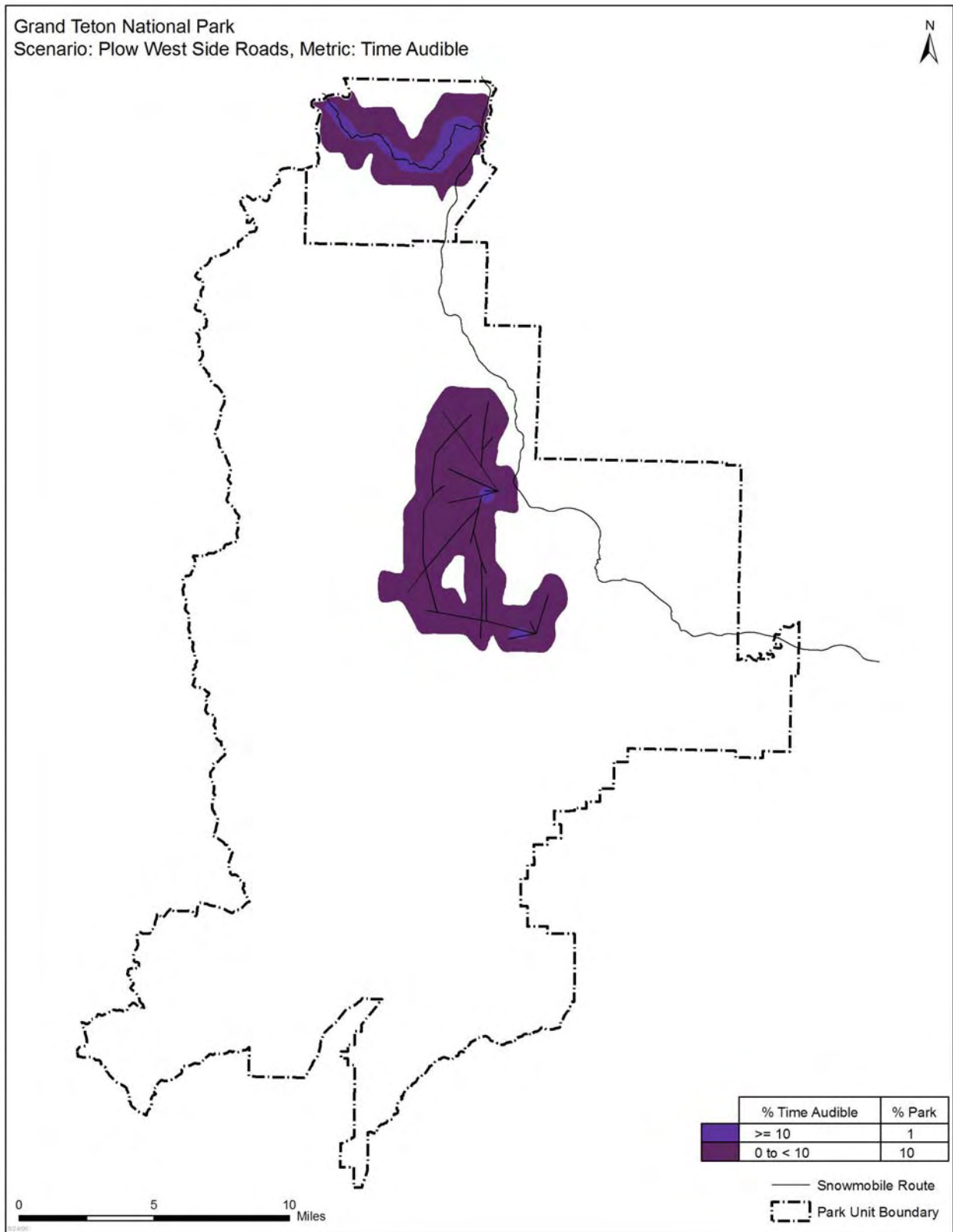


Figure 104: Grand Teton - Alternative 6

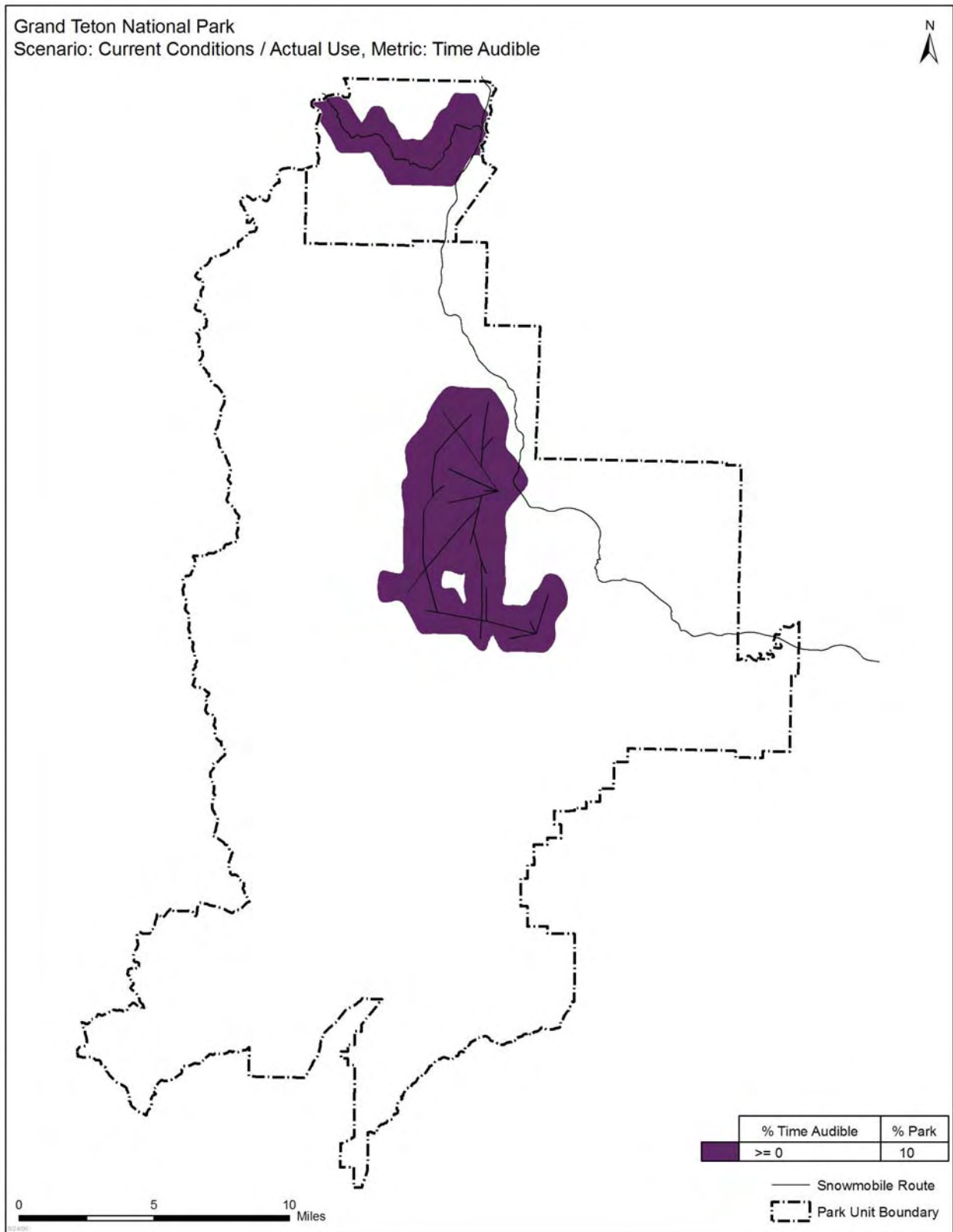


Figure 105: Grand Teton - Current

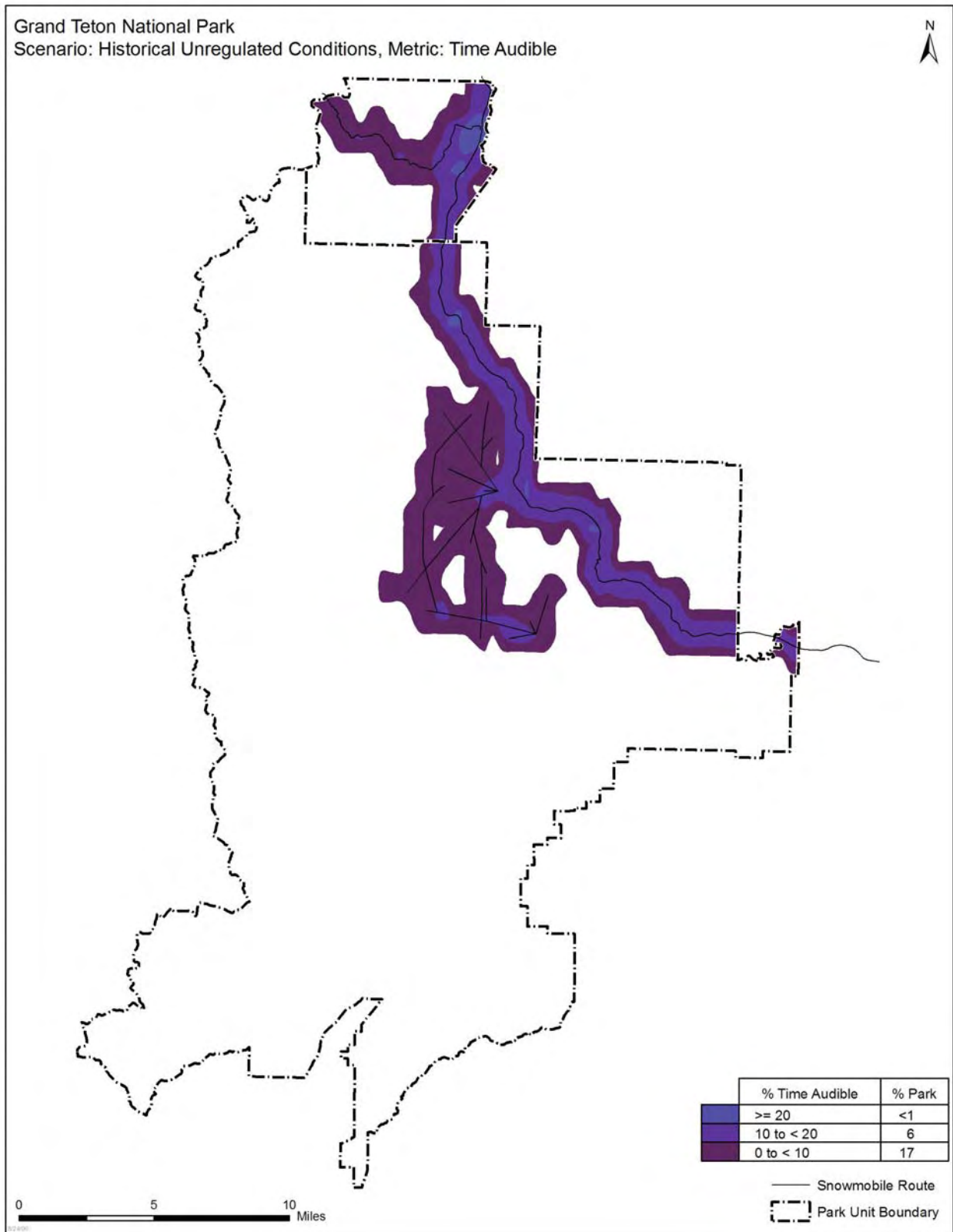


Figure 106: Grand Teton – Historical

**Modeling Sound due to Over-Snow Vehicles in  
Yellowstone and Grand Teton National Parks**

**Appendix E**

**Table 38: Grand Teton: Percent of Park Area at a Specified Percent Time Audible**

| % TAUD (8-hours) | Alt 1A | Alt 1B | Alt 1D | Alt 1E | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 6 | Current | Historical |
|------------------|--------|--------|--------|--------|-------|-------|-------|-------|-------|---------|------------|
| 0                | 19.8   | 19.8   | 19.8   | 19.8   | X     | 3.1   | 21.5  | 19.8  | 10.0  | 9.9     | 16.8       |
| 10               | 8.2    | 8.2    | 8.2    | 8.2    | X     | 0.9   | 10.1  | 8.2   | 0.9   | 0.0     | 5.9        |
| 20               | 2.5    | 2.5    | 2.5    | 2.5    | X     | 0.0   | 2.2   | 2.5   | 0.0   | 0.0     | 0.4        |
| 30               | 0.2    | 0.2    | 0.2    | 0.2    | X     | 0.0   | 0.5   | 0.2   | 0.0   | 0.0     | 0.0        |
| 40               | 0.0    | 0.0    | 0.0    | 0.0    | X     | 0.0   | 0.1   | 0.0   | 0.0   | 0.0     | 0.0        |
| 50               | 0.0    | 0.0    | 0.0    | 0.0    | X     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0        |
| 60               | 0.0    | 0.0    | 0.0    | 0.0    | X     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0        |
| 70               | 0.0    | 0.0    | 0.0    | 0.0    | X     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0        |
| 80               | 0.0    | 0.0    | 0.0    | 0.0    | X     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0        |
| 90               | 0.0    | 0.0    | 0.0    | 0.0    | X     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0        |

**Table 39: Grand Teton: Square Miles of Park Area at a Specified Percent Time Audible**

| % TAUD (8-hours) | Alt 1A | Alt 1B | Alt 1D | Alt 1E | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 6 | Current | Historical |
|------------------|--------|--------|--------|--------|-------|-------|-------|-------|-------|---------|------------|
| 0                | 114.6  | 114.6  | 114.6  | 114.6  | X     | 21.0  | 126.5 | 114.6 | 56.8  | 54.7    | 96.4       |
| 10               | 47.1   | 47.1   | 47.1   | 47.1   | X     | 5.0   | 58.1  | 47.1  | 4.8   | 0.0     | 33.2       |
| 20               | 13.5   | 13.5   | 13.5   | 13.5   | X     | 0.0   | 11.9  | 13.5  | 0.0   | 0.0     | 1.8        |
| 30               | 0.8    | 0.8    | 0.8    | 0.8    | X     | 0.0   | 2.5   | 0.8   | 0.0   | 0.0     | 0.0        |
| 40               | 0.0    | 0.0    | 0.0    | 0.0    | X     | 0.0   | 0.2   | 0.0   | 0.0   | 0.0     | 0.0        |
| 50               | 0.0    | 0.0    | 0.0    | 0.0    | X     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0        |
| 60               | 0.0    | 0.0    | 0.0    | 0.0    | X     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0        |
| 70               | 0.0    | 0.0    | 0.0    | 0.0    | X     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0        |
| 80               | 0.0    | 0.0    | 0.0    | 0.0    | X     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0        |
| 90               | 0.0    | 0.0    | 0.0    | 0.0    | X     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0        |



**Appendix F. A-weighted Level Distributions ( $\Delta$ TALA)**

The  $\Delta$ TALA results are given in this appendix. For Yellowstone, a single hour is representative of all hours with the same operations and groupings. Corresponding hours are indicated in Table 40 for alternatives where all snowmobiles must be guided, in Table 41 when snowmobiles are not required to be guided, and in Table 42 where some snowmobiles must be guided and some are not required to be guided. Hours listed under a column with the same group identification, e.g., G.1, have the same operations for a given alternative and thus the results for one of these hours is representative of all hours in the column. These tables are applicable for Yellowstone. Because Grand Teton did not have peak and off-peak hours modeled, all hours are the same for Grand Teton.

**F.1. Yellowstone Distributions Sorted by Alternative**

**Table 40: Guided Alternatives (1 ABDE, 2, 3, 6, and Current)**

|       | Group G.1      | Group G.2      | Group G.3      |
|-------|----------------|----------------|----------------|
| Hours | 08:00 to 09:00 | 09:00 to 10:00 | 11:00 to 12:00 |
|       | 10:00 to 11:00 | 15:00 to 16:00 | 12:00 to 13:00 |
|       | 14:00 to 15:00 |                | 13:00 to 14:00 |

**Table 41: Unguided Alternatives (Historical)**

|       | Group U.1      | Group U.2      | Group U.3      | Group U.4      | Group U.5      |
|-------|----------------|----------------|----------------|----------------|----------------|
| Hours | 08:00 to 09:00 | 09:00 to 10:00 | 11:00 to 12:00 | 14:00 to 15:00 | 15:00 to 16:00 |
|       |                | 10:00 to 11:00 | 12:00 to 13:00 |                |                |
|       |                |                | 13:00 to 14:00 |                |                |

**Table 42: Guided and Unguided Alternatives (4 and 5)**

|       | Group GU.1     | Group GU.2     | Group GU.3     | Group GU.4     | Group GU.5     | Group GU.6     |
|-------|----------------|----------------|----------------|----------------|----------------|----------------|
| Hours | 08:00 to 09:00 | 09:00 to 10:00 | 10:00 to 11:00 | 11:00 to 12:00 | 14:00 to 15:00 | 15:00 to 16:00 |
|       |                |                |                | 12:00 to 13:00 |                |                |
|       |                |                |                | 13:00 to 14:00 |                |                |

**Table 43: Yellowstone: Alternative 1A, 09:00 to 10:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 1A, 09:00 to 10:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                 | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 166   | 32           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 310   | 288          | 126           | 4             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0   | 0            | 0             | 0             | 353           | 1019          | 749           | 608           | 590           | 281           | 0             | 0             |
| Mary Mt. 4000'                                  | 842   | 576          | 317           | 79            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 515   | 90           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 806   | 500          | 346           | 274           | 270           | 119           | 4             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 641   | 464          | 356           | 288           | 230           | 176           | 47            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1253  | 778          | 580           | 306           | 7             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 108   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 180   | 137          | 104           | 68            | 50            | 36            | 25            | 22            | 14            | 14            | 11            | 0             |
| West Thumb                                      | 0   | 0            | 1004          | 1217          | 1051          | 292           | 36            | 0             | 0             | 0             | 0             | 0             |

**Table 44: Yellowstone: Alternative 1A, 10:00 to 11:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 1A, 10:00 to 11:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                 | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 166   | 32           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 310   | 288          | 126           | 4             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 774   | 810          | 569           | 414           | 313           | 223           | 169           | 133           | 133           | 61            | 0             | 0             |
| Mary Mt. 4000'                                  | 842   | 576          | 317           | 79            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 515   | 90           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 806   | 500          | 346           | 274           | 270           | 119           | 4             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 641   | 464          | 356           | 288           | 230           | 176           | 47            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1253  | 778          | 580           | 306           | 7             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 108   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 180   | 137          | 104           | 68            | 50            | 36            | 25            | 22            | 14            | 14            | 11            | 0             |
| West Thumb                                      | 745   | 569          | 407           | 288           | 184           | 86            | 36            | 0             | 0             | 0             | 0             | 0             |

**Table 45: Yellowstone: Alternative 1A, 11:00 to 12:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 1A, 11:00 to 12:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                 | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 824   | 166          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 1519  | 1429         | 641           | 11            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 760   | 824          | 763           | 220           | 313           | 223           | 169           | 133           | 133           | 61            | 0             | 0             |
| Mary Mt. 4000'                                  | 0   | 1624         | 1580          | 396           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 2567  | 450          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 0   | 0            | 396           | 1238          | 1354          | 598           | 14            | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 641   | 464          | 400           | 245           | 230           | 176           | 47            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 0   | 0            | 2030          | 1541          | 29            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 108   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 180   | 137          | 115           | 58            | 50            | 36            | 25            | 22            | 14            | 14            | 11            | 0             |
| West Thumb                                      | 0   | 1048         | 1228          | 788           | 378           | 122           | 36            | 0             | 0             | 0             | 0             | 0             |

**Table 46: Yellowstone: Alternative 1B, 09:00 to 10:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 1B, 09:00 to 10:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                 | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 180   | 50           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 299   | 277          | 144           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0   | 0            | 0             | 0             | 576           | 943           | 688           | 547           | 536           | 310           | 0             | 0             |
| Mary Mt. 4000'                                  | 767   | 526          | 292           | 104           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 493   | 130          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 749   | 472          | 320           | 248           | 248           | 122           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 522   | 367          | 274           | 227           | 169           | 140           | 50            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1138  | 767          | 540           | 310           | 25            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 115   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 0   | 0            | 878           | 1242          | 1040          | 400           | 40            | 0             | 0             | 0             | 0             | 0             |

**Table 47: Yellowstone: Alternative 1B, 10:00 to 11:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 1B, 10:00 to 11:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                 | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 180   | 50           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 299   | 277          | 144           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 976   | 752          | 526           | 385           | 288           | 212           | 151           | 122           | 119           | 68            | 0             | 0             |
| Mary Mt. 4000'                                  | 767   | 526          | 292           | 104           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 493   | 130          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 749   | 472          | 320           | 248           | 248           | 122           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 522   | 367          | 274           | 227           | 169           | 140           | 50            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1138  | 767          | 540           | 310           | 25            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 115   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 702   | 554          | 389           | 281           | 176           | 90            | 40            | 0             | 0             | 0             | 0             | 0             |

**Table 48: Yellowstone: Alternative 1B, 11:00 to 12:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 1B, 11:00 to 12:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                 | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 904   | 252          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 1494  | 1379         | 727           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 976   | 752          | 526           | 385           | 288           | 212           | 151           | 122           | 119           | 68            | 0             | 0             |
| Mary Mt. 4000'                                  | 0   | 1624         | 1447          | 529           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 2470  | 641          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 0   | 0            | 497           | 1253          | 1238          | 612           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 522   | 367          | 274           | 227           | 169           | 140           | 50            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 0   | 0            | 1930          | 1552          | 119           | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 115   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 0   | 1091         | 1159          | 799           | 367           | 144           | 40            | 0             | 0             | 0             | 0             | 0             |

**Table 49: Yellowstone: Alternative 1D, 09:00 to 10:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 1D, 09:00 to 10:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                 | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 173   | 50           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 284   | 263          | 133           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0   | 0            | 0             | 0             | 662           | 914           | 666           | 533           | 522           | 302           | 0             | 0             |
| Mary Mt. 4000'                                  | 752   | 511          | 284           | 101           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 479   | 122          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 731   | 464          | 310           | 248           | 241           | 119           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 504   | 356          | 266           | 220           | 166           | 133           | 50            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1105  | 742          | 526           | 292           | 22            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 144   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 0   | 0            | 1087          | 1156          | 968           | 353           | 36            | 0             | 0             | 0             | 0             | 0             |

**Table 50: Yellowstone: Alternative 1D, 10:00 to 11:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 1D, 10:00 to 11:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                 | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 173   | 50           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 284   | 263          | 133           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 1051  | 731          | 511           | 374           | 281           | 202           | 148           | 119           | 115           | 68            | 0             | 0             |
| Mary Mt. 4000'                                  | 752   | 511          | 284           | 101           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 479   | 122          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 731   | 464          | 310           | 248           | 241           | 119           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 504   | 356          | 266           | 220           | 166           | 133           | 50            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1105  | 742          | 526           | 292           | 22            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 144   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 662   | 522          | 367           | 266           | 166           | 83            | 36            | 0             | 0             | 0             | 0             | 0             |

**Table 51: Yellowstone: Alternative 1D, 11:00 to 12:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 1D, 11:00 to 12:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                 | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 875   | 245          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 1422  | 1318         | 670           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 1051  | 731          | 511           | 374           | 281           | 202           | 148           | 119           | 115           | 68            | 0             | 0             |
| Mary Mt. 4000'                                  | 0   | 1681         | 1411          | 508           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 2398  | 616          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 0   | 0            | 565           | 1228          | 1217          | 590           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 504   | 356          | 266           | 220           | 166           | 133           | 50            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 0   | 0            | 2027          | 1465          | 108           | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 144   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 0   | 1231         | 1105          | 749           | 346           | 133           | 36            | 0             | 0             | 0             | 0             | 0             |

**Table 52: Yellowstone: Alternative 1E, 09:00 to 10:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 1E, 09:00 to 10:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                 | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 191   | 58           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 338   | 310          | 162           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0   | 0            | 0             | 0             | 724           | 896           | 652           | 522           | 511           | 295           | 0             | 0             |
| Mary Mt. 4000'                                  | 792   | 547          | 306           | 115           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 529   | 140          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 774   | 493          | 328           | 259           | 248           | 137           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 536   | 389          | 295           | 245           | 180           | 155           | 29            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1210  | 828          | 583           | 346           | 25            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 137   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 0   | 0            | 1249          | 1030          | 853           | 403           | 65            | 0             | 0             | 0             | 0             | 0             |



**Table 53: Yellowstone: Alternative 1E, 10:00 to 11:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 1E, 10:00 to 11:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                 | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 191   | 58           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 338   | 310          | 162           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 1102  | 720          | 497           | 367           | 274           | 202           | 439           | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 4000'                                  | 792   | 547          | 306           | 115           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 529   | 140          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 774   | 493          | 328           | 259           | 248           | 137           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 536   | 389          | 295           | 245           | 180           | 155           | 29            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1210  | 828          | 583           | 346           | 25            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 137   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 986   | 727          | 479           | 338           | 212           | 137           | 65            | 0             | 0             | 0             | 0             | 0             |

**Table 54: Yellowstone: Alternative 1E, 11:00 to 12:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 1E, 11:00 to 12:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                 | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 738   | 281          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 1231  | 1559         | 810           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 1102  | 720          | 497           | 367           | 274           | 202           | 144           | 115           | 115           | 65            | 0             | 0             |
| Mary Mt. 4000'                                  | 0   | 1498         | 1519          | 583           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 2218  | 709          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 0   | 0            | 385           | 1285          | 1253          | 677           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 522   | 389          | 295           | 245           | 180           | 155           | 29            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 0   | 0            | 1742          | 1724          | 133           | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 97  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 0   | 644          | 1350          | 914           | 428           | 198           | 65            | 0             | 0             | 0             | 0             | 0             |

**Table 55: Yellowstone: Alternative 2, 09:00 to 10:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 2, 09:00 to 10:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 4  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 83   | 32           | 47            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0  | 0            | 0             | 364           | 990           | 662           | 518           | 1066          | 0             | 0             | 0             | 0             |
| Mary Mt. 4000'                                  | 421  | 313          | 155           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 486  | 292          | 234           | 184           | 220           | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 328  | 245          | 191           | 162           | 112           | 101           | 0             | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 583  | 461          | 436           | 83            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 0  | 763          | 1102          | 940           | 749           | 32            | 14            | 0             | 0             | 0             | 0             | 0             |

**Table 56: Yellowstone: Alternative 2, 10:00 to 11:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 2, 10:00 to 11:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 4  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 83   | 32           | 47            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 774  | 529          | 389           | 284           | 220           | 148           | 115           | 97            | 90            | 50            | 0             | 0             |
| Mary Mt. 4000'                                  | 421  | 313          | 155           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 486  | 292          | 234           | 184           | 220           | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 328  | 245          | 191           | 162           | 112           | 101           | 0             | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 583  | 461          | 436           | 83            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 418  | 331          | 299           | 176           | 119           | 32            | 14            | 0             | 0             | 0             | 0             | 0             |

**Table 57: Yellowstone: Alternative 2, 11:00 to 12:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 2, 11:00 to 12:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 14   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 403  | 162          | 238           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 774  | 529          | 389           | 284           | 220           | 148           | 115           | 97            | 90            | 50            | 0             | 0             |
| Mary Mt. 4000'                                  | 1260                                       | 1570         | 770           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 0  | 418          | 1174          | 918           | 1091          | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 328  | 245          | 191           | 162           | 112           | 101           | 0             | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 0  | 1001         | 2178          | 421           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 925  | 968          | 965           | 450           | 245           | 32            | 14            | 0             | 0             | 0             | 0             | 0             |

**Table 58: Yellowstone: Alternative 3, 09:00 to 10:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 3, 09:00 to 10:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 274  | 252          | 144           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 4000'                                  | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 299  | 238          | 230           | 173           | 25            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 0  | 0            | 1210          | 1102          | 932           | 356           | 0             | 0             | 0             | 0             | 0             | 0             |

**Table 59: Yellowstone: Alternative 3, 10:00 to 11:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 3, 10:00 to 11:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 274  | 252          | 144           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 4000'                                  | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 299  | 238          | 230           | 173           | 25            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 396  | 310          | 266           | 205           | 119           | 43            | 0             | 0             | 0             | 0             | 0             | 0             |

**Table 60: Yellowstone: Alternative 3, 11:00 to 12:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 3, 11:00 to 12:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 1375                                       | 1249         | 724           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 4000'                                  | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 277  | 1181         | 1148          | 868           | 126           | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 464  | 1073         | 961           | 698           | 302           | 101           | 0             | 0             | 0             | 0             | 0             | 0             |

**Table 61: Yellowstone: Alternative 4, 08:00 to 09:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 4, 08:00 to 09:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 259  | 54           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 428  | 407          | 162           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0  | 180          | 965           | 706           | 529           | 389           | 281           | 245           | 220           | 86            | 0             | 0             |
| Mary Mt. 4000'                                  | 1195                                       | 814          | 457           | 108           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 720  | 133          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 1148                                       | 713          | 493           | 392           | 400           | 158           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 1008                                       | 720          | 544           | 446           | 342           | 281           | 68            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1256                                       | 1098         | 853           | 371           | 22            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 130  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 371  | 277          | 205           | 140           | 101           | 72            | 58            | 40            | 29            | 25            | 22            | 4             |
| West Thumb                                      | 1094                                       | 817          | 598           | 410           | 281           | 112           | 54            | 0             | 0             | 0             | 0             | 0             |

**Table 62: Yellowstone: Alternative 4, 09:00 to 10:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 4, 09:00 to 10:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 259  | 54           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 428  | 407          | 162           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0  | 0            | 0             | 0             | 0             | 734           | 950           | 785           | 745           | 385           | 0             | 0             |
| Mary Mt. 4000'                                  | 1195                                       | 814          | 457           | 108           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 720  | 133          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 1148                                       | 713          | 493           | 392           | 400           | 158           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 1008                                       | 720          | 544           | 446           | 342           | 281           | 68            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1256                                       | 1098         | 853           | 371           | 22            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 130  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 371  | 277          | 205           | 140           | 101           | 72            | 58            | 40            | 29            | 25            | 22            | 4             |
| West Thumb                                      | 0  | 0            | 493           | 1483          | 1231          | 338           | 54            | 0             | 0             | 0             | 0             | 0             |

**Table 63: Yellowstone: Alternative 4, 10:00 to 11:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 4, 10:00 to 11:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 259  | 54           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 428  | 407          | 162           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0  | 180          | 965           | 706           | 529           | 389           | 281           | 245           | 220           | 86            | 0             | 0             |
| Mary Mt. 4000'                                  | 1195                                       | 814          | 457           | 108           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 720  | 133          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 1148                                       | 713          | 493           | 392           | 400           | 158           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 1008                                       | 720          | 544           | 446           | 342           | 281           | 68            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1256                                       | 1098         | 853           | 371           | 22            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 130  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 371  | 277          | 205           | 140           | 101           | 72            | 58            | 40            | 29            | 25            | 22            | 4             |
| West Thumb                                      | 1084                                       | 893          | 659           | 464           | 335           | 112           | 54            | 0             | 0             | 0             | 0             | 0             |

**Table 64: Yellowstone: Alternative 4, 11:00 to 12:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 4, 11:00 to 12:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 1310                                       | 263          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 756  | 2038         | 806           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0  | 680          | 824           | 598           | 454           | 328           | 241           | 202           | 187           | 86            | 0             | 0             |
| Mary Mt. 4000'                                  | 0  | 781          | 2272          | 547           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 2934                                       | 666          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 0  | 0            | 0             | 814           | 2002          | 785           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 1008                                       | 720          | 544           | 446           | 342           | 281           | 68            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 0  | 0            | 1631          | 1865          | 104           | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 130  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 371  | 277          | 205           | 140           | 101           | 72            | 58            | 40            | 29            | 25            | 22            | 4             |
| West Thumb                                      | 0  | 29           | 1746          | 1062          | 547           | 162           | 54            | 0             | 0             | 0             | 0             | 0             |

**Table 65: Yellowstone: Alternative 4, 14:00 to 15:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 4, 14:00 to 15:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 259  | 54           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 429  | 407          | 162           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0  | 680          | 824           | 598           | 454           | 328           | 378           | 65            | 187           | 86            | 0             | 0             |
| Mary Mt. 4000'                                  | 1195                                       | 814          | 457           | 108           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 720  | 133          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 1148                                       | 713          | 493           | 392           | 400           | 158           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 1008                                       | 720          | 544           | 446           | 342           | 281           | 68            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1256                                       | 1098         | 853           | 371           | 22            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 130  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 371  | 277          | 205           | 140           | 101           | 72            | 90            | 7             | 29            | 25            | 22            | 4             |
| West Thumb                                      | 1094                                       | 817          | 598           | 410           | 281           | 112           | 54            | 0             | 0             | 0             | 0             | 0             |

**Table 66: Yellowstone: Alternative 4, 15:00 to 16:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 4, 15:00 to 16:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 259  | 54           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 428  | 407          | 162           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0  | 0            | 0             | 0             | 0             | 119           | 1177          | 1001          | 918           | 385           | 0             | 0             |
| Mary Mt. 4000'                                  | 1195                                       | 814          | 457           | 108           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 720  | 133          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 1148                                       | 713          | 493           | 392           | 400           | 158           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 1008                                       | 720          | 544           | 446           | 342           | 281           | 68            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1256                                       | 1098         | 853           | 371           | 22            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 130  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 371  | 277          | 205           | 140           | 101           | 72            | 58            | 40            | 29            | 25            | 22            | 4             |
| West Thumb                                      | 0  | 0            | 223           | 1613          | 1372          | 335           | 58            | 0             | 0             | 0             | 0             | 0             |



**Table 67: Yellowstone: Alternative 5, 08:00 to 09:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 5, 08:00 to 09:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 176  | 32           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 310  | 299          | 112           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 752  | 806          | 576           | 418           | 317           | 227           | 169           | 122           | 148           | 65            | 0             | 0             |
| Mary Mt. 4000'                                  | 853  | 569          | 310           | 72            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 479  | 86           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 810  | 508          | 356           | 281           | 295           | 97            | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 655  | 472          | 356           | 295           | 310           | 94            | 43            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1246                                       | 774          | 612           | 252           | 14            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 151  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 191  | 144          | 108           | 72            | 54            | 36            | 29            | 22            | 14            | 14            | 7             | 4             |
| West Thumb                                      | 749  | 562          | 418           | 281           | 220           | 43            | 36            | 0             | 0             | 0             | 0             | 0             |

**Table 68: Yellowstone: Alternative 5, 09:00 to 10:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 5, 09:00 to 10:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 176  | 32           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 310  | 299          | 112           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0  | 0            | 0             | 0             | 558           | 936           | 695           | 572           | 547           | 292           | 0             | 0             |
| Mary Mt. 4000'                                  | 853  | 569          | 310           | 72            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 479  | 86           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 810  | 508          | 356           | 281           | 295           | 97            | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 655  | 472          | 356           | 295           | 310           | 94            | 43            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1246                                       | 774          | 612           | 252           | 14            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 151  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 191  | 144          | 108           | 72            | 54            | 36            | 29            | 22            | 14            | 14            | 7             | 4             |
| West Thumb                                      | 0  | 0            | 1318          | 1102          | 943           | 202           | 36            | 0             | 0             | 0             | 0             | 0             |

**Table 69: Yellowstone: Alternative 5, 10:00 to 11:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 5, 10:00 to 11:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 176  | 32           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 310  | 299          | 112           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 436  | 896          | 637           | 468           | 353           | 252           | 187           | 277           | 29            | 65            | 0             | 0             |
| Mary Mt. 4000'                                  | 853  | 569          | 310           | 72            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 479  | 86           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 810  | 508          | 356           | 281           | 295           | 97            | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 655  | 472          | 356           | 295           | 310           | 94            | 43            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1246                                       | 774          | 612           | 252           | 14            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 151  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 191  | 144          | 108           | 72            | 54            | 36            | 29            | 32            | 4             | 14            | 7             | 4             |
| West Thumb                                      | 799  | 601          | 450           | 310           | 248           | 43            | 36            | 0             | 0             | 0             | 0             | 0             |

**Table 70: Yellowstone: Alternative 5, 11:00 to 12:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 5, 11:00 to 12:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 878  | 169          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 1552                                       | 1475         | 567           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 752  | 806          | 576           | 418           | 317           | 227           | 169           | 256           | 14            | 65            | 0             | 0             |
| Mary Mt. 4000'                                  | 0  | 1692         | 1552          | 356           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 2401                                       | 432          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 0  | 0            | 227           | 1415          | 1472          | 486           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 655  | 472          | 356           | 295           | 310           | 94            | 43            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 0  | 0            | 2272          | 1256          | 72            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 151  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 191  | 144          | 108           | 72            | 54            | 36            | 29            | 32            | 4             | 14            | 7             | 4             |
| West Thumb                                      | 0  | 1084         | 1249          | 745           | 410           | 76            | 36            | 0             | 0             | 0             | 0             | 0             |

**Table 71: Yellowstone: Alternative 5, 14:00 to 15:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 5, 14:00 to 15:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 176  | 32           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 310  | 299          | 112           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 752  | 806          | 576           | 418           | 317           | 227           | 169           | 137           | 133           | 65            | 0             | 0             |
| Mary Mt. 4000'                                  | 853  | 569          | 310           | 72            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 479  | 86           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 810  | 508          | 356           | 281           | 295           | 97            | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 655  | 472          | 356           | 295           | 310           | 94            | 43            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1246                                       | 774          | 612           | 252           | 14            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 151  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 191  | 144          | 108           | 72            | 54            | 36            | 29            | 22            | 14            | 14            | 7             | 4             |
| West Thumb                                      | 749  | 562          | 418           | 281           | 220           | 43            | 36            | 0             | 0             | 0             | 0             | 0             |

**Table 72: Yellowstone: Alternative 5, 15:00 to 16:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 5, 15:00 to 16:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 176  | 32           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 310  | 299          | 112           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0  | 0            | 0             | 0             | 137           | 1080          | 796           | 673           | 623           | 292           | 0             | 0             |
| Mary Mt. 4000'                                  | 853  | 569          | 310           | 72            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 479  | 86           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 810  | 508          | 356           | 281           | 295           | 97            | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 655  | 472          | 356           | 295           | 220           | 184           | 43            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1246                                       | 774          | 612           | 252           | 14            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 151  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 191  | 144          | 108           | 72            | 54            | 36            | 29            | 22            | 14            | 14            | 7             | 4             |
| West Thumb                                      | 0  | 0            | 1174          | 1170          | 986           | 234           | 36            | 0             | 0             | 0             | 0             | 0             |

**Table 73: Yellowstone: Alternative 6, 9:00 to 10:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 6, 9:00 to 10:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                               | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 410                                       | 382          | 162           | 4             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0   | 0            | 403           | 968           | 706           | 533           | 544           | 446           | 0             | 0             | 0             | 0             |
| Mary Mt. 4000'                                  | 223                                       | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 317                                       | 241          | 245           | 83            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 821                                       | 601          | 461           | 382           | 288           | 234           | 40            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 727                                       | 349          | 356           | 248           | 4             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 0   | 0            | 796           | 1228          | 1055          | 432           | 90            | 0             | 0             | 0             | 0             | 0             |

**Table 74: Yellowstone: Alternative 6, 10:00 to 11:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 6, 10:00 to 11:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 176  | 32           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 310  | 299          | 112           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 436  | 896          | 637           | 468           | 353           | 252           | 187           | 277           | 29            | 65            | 0             | 0             |
| Mary Mt. 4000'                                  | 853  | 569          | 310           | 72            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 479  | 86           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 810  | 508          | 356           | 281           | 295           | 97            | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 655  | 472          | 356           | 295           | 310           | 94            | 43            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1246                                       | 774          | 612           | 252           | 14            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 151  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 191  | 144          | 108           | 72            | 54            | 36            | 29            | 32            | 4             | 14            | 7             | 4             |
| West Thumb                                      | 799  | 601          | 450           | 310           | 248           | 43            | 36            | 0             | 0             | 0             | 0             | 0             |

**Table 75: Yellowstone: Alternative 6, 11:00 to 12:00**

| Entries indicate time, secs, within given range | Yellowstone: Alternative 6, 11:00 to 12:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 868  | 1904         | 814           | 14            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 536  | 396          | 281           | 216           | 158           | 119           | 119           | 101           | 0             | 0             | 0             | 0             |
| Mary Mt. 4000'                                  | 1112                                       | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 749  | 1217         | 1220          | 414           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 821  | 601          | 461           | 382           | 288           | 234           | 40            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 0  | 569          | 1778          | 1228          | 25            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West Thumb                                      | 0  | 0            | 1598          | 1109          | 558           | 245           | 90            | 0             | 0             | 0             | 0             | 0             |

**Table 76: Yellowstone: Current Condition, 09:00 to 10:00**

| Entries indicate time, secs, within given range | Yellowstone: Current Condition, 09:00 to 10:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                    | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 76   | 11           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 126  | 112          | 58            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 482  | 882          | 626           | 457           | 342           | 248           | 180           | 144           | 140           | 83            | 14            | 0             |
| Mary Mt. 4000'                                  | 360  | 252          | 137           | 29            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 241  | 32           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 349  | 212          | 144           | 115           | 112           | 61            | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 274  | 194          | 148           | 119           | 97            | 72            | 22            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 529  | 328          | 227           | 137           | 4             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 112  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 65   | 43           | 36            | 22            | 18            | 11            | 7             | 7             | 7             | 4             | 4             | 0             |
| West Thumb                                      | 562  | 432          | 320           | 263           | 198           | 65            | 14            | 0             | 0             | 0             | 0             | 0             |

**Table 77: Yellowstone: Current Condition, 10:00 to 11:00**

| Entries indicate time, secs, within given range | Yellowstone: Current Condition, 10:00 to 11:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                    | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 76   | 11           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 126  | 112          | 58            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 569  | 353          | 248           | 180           | 137           | 101           | 72            | 58            | 68            | 14            | 4             | 0             |
| Mary Mt. 4000'                                  | 360  | 252          | 137           | 29            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 241  | 32           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 349  | 212          | 144           | 115           | 112           | 61            | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 274  | 194          | 148           | 119           | 97            | 72            | 22            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 529  | 328          | 227           | 137           | 4             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 112  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 65   | 43           | 36            | 22            | 18            | 11            | 7             | 7             | 7             | 4             | 4             | 0             |
| West Thumb                                      | 310  | 234          | 166           | 122           | 79            | 36            | 14            | 0             | 0             | 0             | 0             | 0             |

**Table 78: Yellowstone: Current Condition, 11:00 to 12:00**

| Entries indicate time, secs, within given range | Yellowstone: Current Condition, 11:00 to 12:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                    | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 367  | 61           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 626  | 554          | 292           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 893  | 353          | 248           | 180           | 137           | 101           | 72            | 58            | 58            | 25            | 4             | 0             |
| Mary Mt. 4000'                                  | 1505   | 1267         | 713           | 115           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 1220   | 155          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 371  | 1062         | 727           | 583           | 551           | 306           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 274  | 194          | 148           | 119           | 97            | 72            | 22            | 0             | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 126  | 1631         | 1148          | 680           | 14            | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 112  | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 65   | 43           | 36            | 22            | 18            | 11            | 7             | 7             | 7             | 4             | 4             | 0             |
| West Thumb                                      | 727  | 576          | 511           | 302           | 166           | 50            | 14            | 0             | 0             | 0             | 0             | 0             |

**Table 79: Yellowstone: Historical Condition, 08:00 to 09:00**

| Entries indicate time, secs, within given range | Yellowstone: Historical Condition, 08:00 to 09:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                       | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 180   | 7            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 860   | 536          | 428           | 288           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0   | 0            | 0             | 0             | 0             | 882           | 846           | 662           | 587           | 554           | 68            | 0             |
| Mary Mt. 4000'                                  | 1663  | 1004         | 572           | 11            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 464   | 22           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 0   | 760          | 954           | 731           | 576           | 580           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 0   | 342          | 972           | 745           | 587           | 518           | 320           | 115           | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 198   | 1404         | 1213          | 421           | 364           | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 364   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 709   | 342          | 256           | 194           | 130           | 97            | 65            | 54            | 36            | 25            | 25            | 25            |
| West Thumb                                      | 0   | 43           | 1296          | 860           | 673           | 482           | 169           | 76            | 0             | 0             | 0             | 0             |

**Table 80: Yellowstone: Historical Condition, 09:00 to 10:00**

| Entries indicate time, secs, within given range | Yellowstone: Historical Condition, 09:00 to 10:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                       | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 180   | 7            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 860   | 536          | 428           | 288           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0   | 0            | 0             | 0             | 0             | 882           | 846           | 662           | 587           | 554           | 68            | 0             |
| Mary Mt. 4000'                                  | 1663  | 1004         | 572           | 11            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 464   | 22           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 0   | 760          | 954           | 731           | 576           | 580           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 0   | 342          | 972           | 745           | 587           | 518           | 320           | 115           | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 198   | 1404         | 1213          | 421           | 364           | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 364   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 709   | 342          | 256           | 194           | 130           | 97            | 65            | 54            | 36            | 25            | 25            | 25            |
| West Thumb                                      | 0   | 0            | 299           | 1228          | 983           | 796           | 220           | 76            | 0             | 0             | 0             | 0             |



**Table 81: Yellowstone: Historical Condition, 10:00 to 11:00**

| Entries indicate time, secs, within given range | Yellowstone: Historical Condition, 10:00 to 11:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                       | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 180   | 7            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 860   | 536          | 428           | 288           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0   | 0            | 0             | 0             | 0             | 882           | 846           | 662           | 587           | 554           | 68            | 0             |
| Mary Mt. 4000'                                  | 1663  | 1004         | 572           | 11            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 464   | 22           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 0   | 760          | 954           | 731           | 576           | 580           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 0   | 342          | 972           | 745           | 587           | 518           | 320           | 115           | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 198   | 1404         | 1213          | 421           | 364           | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 364   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 709   | 342          | 256           | 194           | 130           | 97            | 65            | 54            | 36            | 25            | 25            | 25            |
| West Thumb                                      | 0   | 0            | 299           | 1228          | 983           | 796           | 220           | 76            | 0             | 0             | 0             | 0             |

**Table 82: Yellowstone: Historical Condition, 11:00 to 12:00**

| Entries indicate time, secs, within given range | Yellowstone: Historical Condition, 11:00 to 12:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                       | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 900   | 40           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 0   | 11           | 2153          | 1436          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0   | 0            | 0             | 547           | 907           | 691           | 450           | 356           | 313           | 299           | 36            | 0             |
| Mary Mt. 4000'                                  | 0   | 677          | 2869          | 54            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 2336  | 101          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 0   | 0            | 0             | 0             | 695           | 2905          | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 0   | 342          | 972           | 745           | 587           | 518           | 320           | 115           | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 0   | 0            | 0             | 1782          | 1818          | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 364   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 709   | 342          | 256           | 194           | 130           | 97            | 65            | 54            | 36            | 25            | 25            | 25            |
| West Thumb                                      | 0   | 0            | 0             | 821           | 1660          | 832           | 212           | 76            | 0             | 0             | 0             | 0             |

**Table 83: Yellowstone: Historical Condition, 14:00 to 15:00**

| Entries indicate time, secs, within given range | Yellowstone: Historical Condition, 14:00 to 15:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                       | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 180   | 7            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 860   | 536          | 428           | 288           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0   | 0            | 0             | 547           | 907           | 691           | 450           | 356           | 313           | 299           | 36            | 0             |
| Mary Mt. 4000'                                  | 1663  | 1004         | 572           | 11            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 464   | 22           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 0   | 760          | 954           | 731           | 576           | 580           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 0   | 342          | 972           | 745           | 587           | 518           | 320           | 115           | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 1278  | 324          | 1213          | 421           | 364           | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 364   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 709   | 342          | 256           | 194           | 130           | 97            | 65            | 54            | 36            | 25            | 25            | 25            |
| West Thumb                                      | 0   | 43           | 1296          | 860           | 673           | 482           | 169           | 76            | 0             | 0             | 0             | 0             |

**Table 84: Yellowstone: Historical Condition, 15:00 to 16:00**

| Entries indicate time, secs, within given range | Yellowstone: Historical Condition, 15:00 to 16:00 |              |               |               |               |               |               |               |               |               |               |               |
|---|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 0 to < 5 dB                                       | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB |
| Fairy Falls                                     | 180   | 7            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Heart Lake                                      | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Lone Star G.                                    | 860   | 536          | 428           | 288           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mad. Jct. 2.3                                   | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 1458          | 1908          | 234           | 0             |
| Mary Mt. 4000'                                  | 1663  | 1004         | 572           | 11            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. 8000'                                  | 464   | 22           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Mary Mt. Trhd.                                  | 0   | 760          | 954           | 731           | 576           | 580           | 0             | 0             | 0             | 0             | 0             | 0             |
| Mud Volcano                                     | 0   | 342          | 972           | 745           | 587           | 518           | 320           | 115           | 0             | 0             | 0             | 0             |
| Old Faithful                                    | 198   | 1404         | 1213          | 421           | 364           | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Shoshone G.                                     | 0   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Snow Pass                                       | 364   | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Sylvan Lake                                     | 709   | 342          | 256           | 194           | 130           | 97            | 65            | 54            | 36            | 25            | 25            | 25            |
| West Thumb                                      | 0   | 0            | 0             | 0             | 1595          | 1580          | 349           | 76            | 0             | 0             | 0             | 0             |

**F.2. Yellowstone Distributions Sorted by Location**

For convenience, hourly reference tables are repeated here from Section F.1.

**Table 85: Guided Alternatives (1 ABDE, 2, 3, 6, and Current)**

|       | Group G.1      | Group G.2      | Group G.3      |
|-------|----------------|----------------|----------------|
| Hours | 08:00 to 09:00 | 09:00 to 10:00 | 11:00 to 12:00 |
|       | 10:00 to 11:00 | 15:00 to 16:00 | 12:00 to 13:00 |
|       | 14:00 to 15:00 |                | 13:00 to 14:00 |

**Table 86: Unguided Alternatives (Historical)**

|       | Group U.1      | Group U.2      | Group U.3      | Group U.4      | Group U.5      |
|-------|----------------|----------------|----------------|----------------|----------------|
| Hours | 08:00 to 09:00 | 09:00 to 10:00 | 11:00 to 12:00 | 14:00 to 15:00 | 15:00 to 16:00 |
|       |                | 10:00 to 11:00 | 12:00 to 13:00 |                |                |
|       |                |                | 13:00 to 14:00 |                |                |

**Table 87: Guided and Unguided Alternatives (4 and 5)**

|       | Group GU.1     | Group GU.2     | Group GU.3     | Group GU.4     | Group GU.5     | Group GU.6     |
|-------|----------------|----------------|----------------|----------------|----------------|----------------|
| Hours | 08:00 to 09:00 | 09:00 to 10:00 | 10:00 to 11:00 | 11:00 to 12:00 | 14:00 to 15:00 | 15:00 to 16:00 |
|       |                |                |                | 12:00 to 13:00 |                |                |
|       |                |                |                | 13:00 to 14:00 |                |                |

Table 88: Yellowstone - Fairy Falls

| Entries indicate time, secs,<br>within given range | Fairy Falls    |                 |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--|----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|  | 0 to <<br>5 dB | 5 to <<br>10 dB | 10 to <<br>15 dB | 15 to <<br>20 dB | 20 to <<br>25 dB | 25 to <<br>30 dB | 30 to <<br>35 dB | 35 to <<br>40 dB | 40 to <<br>45 dB | 45 to <<br>50 dB | 50 to <<br>55 dB | 55 to <<br>60 dB |
| Alt 1A – 9:00 to 10:00                             | 166            | 32              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 10:00 to 11:00                            | 166            | 32              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 11:00 to 12:00                            | 824            | 166             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 9:00 to 10:00                             | 180            | 50              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 10:00 to 11:00                            | 180            | 50              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 11:00 to 12:00                            | 904            | 252             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 9:00 to 10:00                             | 173            | 50              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 10:00 to 11:00                            | 173            | 50              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 11:00 to 12:00                            | 875            | 245             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 9:00 to 10:00                             | 191            | 58              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 10:00 to 11:00                            | 191            | 58              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 11:00 to 12:00                            | 738            | 281             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 9:00 to 10:00                              | 4              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 10:00 to 11:00                             | 4              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 11:00 to 12:00                             | 14             | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 10:00 to 11:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 8:00 to 9:00                               | 259            | 54              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 9:00 to 10:00                              | 259            | 54              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 10:00 to 11:00                             | 259            | 54              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 11:00 to 12:00                             | 1310           | 263             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 14:00 to 15:00                             | 259            | 54              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 15:00 to 16:00                             | 259            | 54              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 8:00 to 9:00                               | 176            | 32              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 9:00 to 10:00                              | 176            | 32              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 10:00 to 11:00                             | 176            | 32              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 11:00 to 12:00                             | 878            | 169             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 14:00 to 15:00                             | 176            | 32              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 15:00 to 16:00                             | 176            | 32              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 10:00 to 11:00                             | 176            | 32              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 9:00 to 10:00                            | 76             | 11              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 10:00 to 11:00                           | 76             | 11              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 11:00 to 12:00                           | 367            | 61              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 8:00 to 9:00                          | 180            | 7               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 9:00 to 10:00                         | 180            | 7               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 10:00 to 11:00                        | 180            | 7               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 11:00 to 12:00                        | 900            | 40              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 14:00 to 15:00                        | 180            | 7               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 15:00 to 16:00                        | 180            | 7               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |

Table 89: Yellowstone - Heart Lake

| Entries indicate time, secs,<br>within given range | Heart Lake     |                 |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--|----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|  | 0 to <<br>5 dB | 5 to <<br>10 dB | 10 to <<br>15 dB | 15 to <<br>20 dB | 20 to <<br>25 dB | 25 to <<br>30 dB | 30 to <<br>35 dB | 35 to <<br>40 dB | 40 to <<br>45 dB | 45 to <<br>50 dB | 50 to <<br>55 dB | 55 to <<br>60 dB |
| Alt 1A – 9:00 to 10:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 10:00 to 11:00                            | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 11:00 to 12:00                            | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 9:00 to 10:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 10:00 to 11:00                            | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 11:00 to 12:00                            | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 9:00 to 10:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 10:00 to 11:00                            | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 11:00 to 12:00                            | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 9:00 to 10:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 10:00 to 11:00                            | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 11:00 to 12:00                            | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 10:00 to 11:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 10:00 to 11:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 8:00 to 9:00                               | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 10:00 to 11:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 14:00 to 15:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 15:00 to 16:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 8:00 to 9:00                               | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 10:00 to 11:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 14:00 to 15:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 15:00 to 16:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 10:00 to 11:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 9:00 to 10:00                            | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 10:00 to 11:00                           | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 11:00 to 12:00                           | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 8:00 to 9:00                          | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 9:00 to 10:00                         | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 10:00 to 11:00                        | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 11:00 to 12:00                        | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 14:00 to 15:00                        | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 15:00 to 16:00                        | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |

Table 90: Yellowstone - Lone Star Geyser

| Entries indicate time, secs,<br>within given range | Lone Star Geyser |                 |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--|------------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|  | 0 to <<br>5 dB   | 5 to <<br>10 dB | 10 to <<br>15 dB | 15 to <<br>20 dB | 20 to <<br>25 dB | 25 to <<br>30 dB | 30 to <<br>35 dB | 35 to <<br>40 dB | 40 to <<br>45 dB | 45 to <<br>50 dB | 50 to <<br>55 dB | 55 to <<br>60 dB |
| Alt 1A – 9:00 to 10:00                             | 310              | 288             | 126              | 4                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 10:00 to 11:00                            | 310              | 288             | 126              | 4                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 11:00 to 12:00                            | 1519             | 1429            | 641              | 11               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 9:00 to 10:00                             | 299              | 277             | 144              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 10:00 to 11:00                            | 299              | 277             | 144              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 11:00 to 12:00                            | 1494             | 1379            | 727              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 9:00 to 10:00                             | 284              | 263             | 133              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 10:00 to 11:00                            | 284              | 263             | 133              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 11:00 to 12:00                            | 1422             | 1318            | 670              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 9:00 to 10:00                             | 338              | 310             | 162              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 10:00 to 11:00                            | 338              | 310             | 162              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 11:00 to 12:00                            | 1231             | 1559            | 810              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 9:00 to 10:00                              | 83               | 32              | 47               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 10:00 to 11:00                             | 83               | 32              | 47               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 11:00 to 12:00                             | 403              | 162             | 238              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 9:00 to 10:00                              | 274              | 252             | 144              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 10:00 to 11:00                             | 274              | 252             | 144              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 11:00 to 12:00                             | 1375             | 1249            | 724              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 8:00 to 9:00                               | 428              | 407             | 162              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 9:00 to 10:00                              | 428              | 407             | 162              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 10:00 to 11:00                             | 428              | 407             | 162              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 11:00 to 12:00                             | 756              | 2038            | 806              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 14:00 to 15:00                             | 429              | 407             | 162              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 15:00 to 16:00                             | 428              | 407             | 162              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 8:00 to 9:00                               | 310              | 299             | 112              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 9:00 to 10:00                              | 310              | 299             | 112              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 10:00 to 11:00                             | 310              | 299             | 112              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 11:00 to 12:00                             | 1552             | 1475            | 567              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 14:00 to 15:00                             | 310              | 299             | 112              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 15:00 to 16:00                             | 310              | 299             | 112              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 9:00 to 10:00                              | 410              | 382             | 162              | 4                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 10:00 to 11:00                             | 310              | 299             | 112              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 11:00 to 12:00                             | 868              | 1904            | 814              | 14               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 9:00 to 10:00                            | 126              | 112             | 58               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 10:00 to 11:00                           | 126              | 112             | 58               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 11:00 to 12:00                           | 626              | 554             | 292              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 8:00 to 9:00                          | 860              | 536             | 428              | 288              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 9:00 to 10:00                         | 860              | 536             | 428              | 288              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 10:00 to 11:00                        | 860              | 536             | 428              | 288              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 11:00 to 12:00                        | 0                | 11              | 2153             | 1436             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 14:00 to 15:00                        | 860              | 536             | 428              | 288              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 15:00 to 16:00                        | 860              | 536             | 428              | 288              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |

**Table 91: Yellowstone - Madison Jct. 2.3**

| Entries indicate time, secs,<br>within given range | Madison Jct. 2.3 |                 |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--|------------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|  | 0 to <<br>5 dB   | 5 to <<br>10 dB | 10 to <<br>15 dB | 15 to <<br>20 dB | 20 to <<br>25 dB | 25 to <<br>30 dB | 30 to <<br>35 dB | 35 to <<br>40 dB | 40 to <<br>45 dB | 45 to <<br>50 dB | 50 to <<br>55 dB | 55 to <<br>60 dB |
| Alt 1A – 9:00 to 10:00                             | 0                | 0               | 0                | 0                | 353              | 1019             | 749              | 608              | 590              | 281              | 0                | 0                |
| Alt 1A – 10:00 to 11:00                            | 774              | 810             | 569              | 414              | 313              | 223              | 169              | 133              | 133              | 61               | 0                | 0                |
| Alt 1A – 11:00 to 12:00                            | 760              | 824             | 763              | 220              | 313              | 223              | 169              | 133              | 133              | 61               | 0                | 0                |
| Alt 1B – 9:00 to 10:00                             | 0                | 0               | 0                | 0                | 576              | 943              | 688              | 547              | 536              | 310              | 0                | 0                |
| Alt 1B – 10:00 to 11:00                            | 976              | 752             | 526              | 385              | 288              | 212              | 151              | 122              | 119              | 68               | 0                | 0                |
| Alt 1B – 11:00 to 12:00                            | 976              | 752             | 526              | 385              | 288              | 212              | 151              | 122              | 119              | 68               | 0                | 0                |
| Alt 1D – 9:00 to 10:00                             | 0                | 0               | 0                | 0                | 662              | 914              | 666              | 533              | 522              | 302              | 0                | 0                |
| Alt 1D – 10:00 to 11:00                            | 1051             | 731             | 511              | 374              | 281              | 202              | 148              | 119              | 115              | 68               | 0                | 0                |
| Alt 1D – 11:00 to 12:00                            | 1051             | 731             | 511              | 374              | 281              | 202              | 148              | 119              | 115              | 68               | 0                | 0                |
| Alt 1E – 9:00 to 10:00                             | 0                | 0               | 0                | 0                | 724              | 896              | 652              | 522              | 511              | 295              | 0                | 0                |
| Alt 1E – 10:00 to 11:00                            | 1102             | 720             | 497              | 367              | 274              | 202              | 439              | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 11:00 to 12:00                            | 1102             | 720             | 497              | 367              | 274              | 202              | 144              | 115              | 115              | 65               | 0                | 0                |
| Alt 2 – 9:00 to 10:00                              | 0                | 0               | 0                | 364              | 990              | 662              | 518              | 1066             | 0                | 0                | 0                | 0                |
| Alt 2 – 10:00 to 11:00                             | 774              | 529             | 389              | 284              | 220              | 148              | 115              | 97               | 90               | 50               | 0                | 0                |
| Alt 2 – 11:00 to 12:00                             | 774              | 529             | 389              | 284              | 220              | 148              | 115              | 97               | 90               | 50               | 0                | 0                |
| Alt 3 – 9:00 to 10:00                              | 0                | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 10:00 to 11:00                             | 0                | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 11:00 to 12:00                             | 0                | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 8:00 to 9:00                               | 0                | 180             | 965              | 706              | 529              | 389              | 281              | 245              | 220              | 86               | 0                | 0                |
| Alt 4 – 9:00 to 10:00                              | 0                | 0               | 0                | 0                | 0                | 734              | 950              | 785              | 745              | 385              | 0                | 0                |
| Alt 4 – 10:00 to 11:00                             | 0                | 180             | 965              | 706              | 529              | 389              | 281              | 245              | 220              | 86               | 0                | 0                |
| Alt 4 – 11:00 to 12:00                             | 0                | 680             | 824              | 598              | 454              | 328              | 241              | 202              | 187              | 86               | 0                | 0                |
| Alt 4 – 14:00 to 15:00                             | 0                | 680             | 824              | 598              | 454              | 328              | 378              | 65               | 187              | 86               | 0                | 0                |
| Alt 4 – 15:00 to 16:00                             | 0                | 0               | 0                | 0                | 0                | 119              | 1177             | 1001             | 918              | 385              | 0                | 0                |
| Alt 5 – 8:00 to 9:00                               | 752              | 806             | 576              | 418              | 317              | 227              | 169              | 122              | 148              | 65               | 0                | 0                |
| Alt 5 – 9:00 to 10:00                              | 0                | 0               | 0                | 0                | 558              | 936              | 695              | 572              | 547              | 292              | 0                | 0                |
| Alt 5 – 10:00 to 11:00                             | 436              | 896             | 637              | 468              | 353              | 252              | 187              | 277              | 29               | 65               | 0                | 0                |
| Alt 5 – 11:00 to 12:00                             | 752              | 806             | 576              | 418              | 317              | 227              | 169              | 256              | 14               | 65               | 0                | 0                |
| Alt 5 – 14:00 to 15:00                             | 752              | 806             | 576              | 418              | 317              | 227              | 169              | 137              | 133              | 65               | 0                | 0                |
| Alt 5 – 15:00 to 16:00                             | 0                | 0               | 0                | 0                | 137              | 1080             | 796              | 673              | 623              | 292              | 0                | 0                |
| Alt 6 – 9:00 to 10:00                              | 0                | 0               | 403              | 968              | 706              | 533              | 544              | 446              | 0                | 0                | 0                | 0                |
| Alt 6 – 10:00 to 11:00                             | 436              | 896             | 637              | 468              | 353              | 252              | 187              | 277              | 29               | 65               | 0                | 0                |
| Alt 6 – 11:00 to 12:00                             | 536              | 396             | 281              | 216              | 158              | 119              | 119              | 101              | 0                | 0                | 0                | 0                |
| Current – 9:00 to 10:00                            | 482              | 882             | 626              | 457              | 342              | 248              | 180              | 144              | 140              | 83               | 14               | 0                |
| Current – 10:00 to 11:00                           | 569              | 353             | 248              | 180              | 137              | 101              | 72               | 58               | 68               | 14               | 4                | 0                |
| Current – 11:00 to 12:00                           | 893              | 353             | 248              | 180              | 137              | 101              | 72               | 58               | 58               | 25               | 4                | 0                |
| Historical – 8:00 to 9:00                          | 0                | 0               | 0                | 0                | 0                | 882              | 846              | 662              | 587              | 554              | 68               | 0                |
| Historical – 9:00 to 10:00                         | 0                | 0               | 0                | 0                | 0                | 882              | 846              | 662              | 587              | 554              | 68               | 0                |
| Historical – 10:00 to 11:00                        | 0                | 0               | 0                | 0                | 0                | 882              | 846              | 662              | 587              | 554              | 68               | 0                |
| Historical – 11:00 to 12:00                        | 0                | 0               | 0                | 547              | 907              | 691              | 450              | 356              | 313              | 299              | 36               | 0                |
| Historical – 14:00 to 15:00                        | 0                | 0               | 0                | 547              | 907              | 691              | 450              | 356              | 313              | 299              | 36               | 0                |
| Historical – 15:00 to 16:00                        | 0                | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 1458             | 1908             | 234              | 0                |



Table 92: Yellowstone - Mary Mt. 4000'

| Entries indicate time, secs,<br>within given range | Mary Mt. 4000' |                 |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--|----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|  | 0 to <<br>5 dB | 5 to <<br>10 dB | 10 to <<br>15 dB | 15 to <<br>20 dB | 20 to <<br>25 dB | 25 to <<br>30 dB | 30 to <<br>35 dB | 35 to <<br>40 dB | 40 to <<br>45 dB | 45 to <<br>50 dB | 50 to <<br>55 dB | 55 to <<br>60 dB |
| Alt 1A – 9:00 to 10:00                             | 842            | 576             | 317              | 79               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 10:00 to 11:00                            | 842            | 576             | 317              | 79               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 11:00 to 12:00                            | 0              | 1624            | 1580             | 396              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 9:00 to 10:00                             | 767            | 526             | 292              | 104              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 10:00 to 11:00                            | 767            | 526             | 292              | 104              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 11:00 to 12:00                            | 0              | 1624            | 1447             | 529              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 9:00 to 10:00                             | 752            | 511             | 284              | 101              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 10:00 to 11:00                            | 752            | 511             | 284              | 101              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 11:00 to 12:00                            | 0              | 1681            | 1411             | 508              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 9:00 to 10:00                             | 792            | 547             | 306              | 115              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 10:00 to 11:00                            | 792            | 547             | 306              | 115              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 11:00 to 12:00                            | 0              | 1498            | 1519             | 583              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 9:00 to 10:00                              | 421            | 313             | 155              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 10:00 to 11:00                             | 421            | 313             | 155              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 11:00 to 12:00                             | 1260           | 1570            | 770              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 10:00 to 11:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 8:00 to 9:00                               | 1195           | 814             | 457              | 108              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 9:00 to 10:00                              | 1195           | 814             | 457              | 108              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 10:00 to 11:00                             | 1195           | 814             | 457              | 108              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 11:00 to 12:00                             | 0              | 781             | 2272             | 547              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 14:00 to 15:00                             | 1195           | 814             | 457              | 108              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 15:00 to 16:00                             | 1195           | 814             | 457              | 108              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 8:00 to 9:00                               | 853            | 569             | 310              | 72               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 9:00 to 10:00                              | 853            | 569             | 310              | 72               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 10:00 to 11:00                             | 853            | 569             | 310              | 72               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 11:00 to 12:00                             | 0              | 1692            | 1552             | 356              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 14:00 to 15:00                             | 853            | 569             | 310              | 72               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 15:00 to 16:00                             | 853            | 569             | 310              | 72               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 9:00 to 10:00                              | 223            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 10:00 to 11:00                             | 853            | 569             | 310              | 72               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 11:00 to 12:00                             | 1112           | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 9:00 to 10:00                            | 360            | 252             | 137              | 29               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 10:00 to 11:00                           | 360            | 252             | 137              | 29               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 11:00 to 12:00                           | 1505           | 1267            | 713              | 115              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 8:00 to 9:00                          | 1663           | 1004            | 572              | 11               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 9:00 to 10:00                         | 1663           | 1004            | 572              | 11               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 10:00 to 11:00                        | 1663           | 1004            | 572              | 11               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 11:00 to 12:00                        | 0              | 677             | 2869             | 54               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 14:00 to 15:00                        | 1663           | 1004            | 572              | 11               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 15:00 to 16:00                        | 1663           | 1004            | 572              | 11               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |

Table 93: Yellowstone - Mary Mt. 8000'

| Entries indicate time, secs,<br>within given range | Mary Mt. 8000' |                 |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--|----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|  | 0 to <<br>5 dB | 5 to <<br>10 dB | 10 to <<br>15 dB | 15 to <<br>20 dB | 20 to <<br>25 dB | 25 to <<br>30 dB | 30 to <<br>35 dB | 35 to <<br>40 dB | 40 to <<br>45 dB | 45 to <<br>50 dB | 50 to <<br>55 dB | 55 to <<br>60 dB |
| Alt 1A – 9:00 to 10:00                             | 515            | 90              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 10:00 to 11:00                            | 515            | 90              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 11:00 to 12:00                            | 2567           | 450             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 9:00 to 10:00                             | 493            | 130             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 10:00 to 11:00                            | 493            | 130             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 11:00 to 12:00                            | 2470           | 641             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 9:00 to 10:00                             | 479            | 122             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 10:00 to 11:00                            | 479            | 122             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 11:00 to 12:00                            | 2398           | 616             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 9:00 to 10:00                             | 529            | 140             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 10:00 to 11:00                            | 529            | 140             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 11:00 to 12:00                            | 2218           | 709             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 10:00 to 11:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 10:00 to 11:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 8:00 to 9:00                               | 720            | 133             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 9:00 to 10:00                              | 720            | 133             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 10:00 to 11:00                             | 720            | 133             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 11:00 to 12:00                             | 2934           | 666             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 14:00 to 15:00                             | 720            | 133             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 15:00 to 16:00                             | 720            | 133             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 8:00 to 9:00                               | 479            | 86              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 9:00 to 10:00                              | 479            | 86              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 10:00 to 11:00                             | 479            | 86              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 11:00 to 12:00                             | 2401           | 432             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 14:00 to 15:00                             | 479            | 86              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 15:00 to 16:00                             | 479            | 86              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 10:00 to 11:00                             | 479            | 86              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 9:00 to 10:00                            | 241            | 32              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 10:00 to 11:00                           | 241            | 32              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 11:00 to 12:00                           | 1220           | 155             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 8:00 to 9:00                          | 464            | 22              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 9:00 to 10:00                         | 464            | 22              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 10:00 to 11:00                        | 464            | 22              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 11:00 to 12:00                        | 2336           | 101             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 14:00 to 15:00                        | 464            | 22              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 15:00 to 16:00                        | 464            | 22              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |

**Table 94: Yellowstone - Mary Mt. Trailhead**

| Entries indicate time, secs,<br>within given range | Mary Mt. Trailhead |                 |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--|--------------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|  | 0 to <<br>5 dB     | 5 to <<br>10 dB | 10 to <<br>15 dB | 15 to <<br>20 dB | 20 to <<br>25 dB | 25 to <<br>30 dB | 30 to <<br>35 dB | 35 to <<br>40 dB | 40 to <<br>45 dB | 45 to <<br>50 dB | 50 to <<br>55 dB | 55 to <<br>60 dB |
| Alt 1A – 9:00 to 10:00                             | 806                | 500             | 346              | 274              | 270              | 119              | 4                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 10:00 to 11:00                            | 806                | 500             | 346              | 274              | 270              | 119              | 4                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 11:00 to 12:00                            | 0                  | 0               | 396              | 1238             | 1354             | 598              | 14               | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 9:00 to 10:00                             | 749                | 472             | 320              | 248              | 248              | 122              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 10:00 to 11:00                            | 749                | 472             | 320              | 248              | 248              | 122              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 11:00 to 12:00                            | 0                  | 0               | 497              | 1253             | 1238             | 612              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 9:00 to 10:00                             | 731                | 464             | 310              | 248              | 241              | 119              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 10:00 to 11:00                            | 731                | 464             | 310              | 248              | 241              | 119              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 11:00 to 12:00                            | 0                  | 0               | 565              | 1228             | 1217             | 590              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 9:00 to 10:00                             | 774                | 493             | 328              | 259              | 248              | 137              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 10:00 to 11:00                            | 774                | 493             | 328              | 259              | 248              | 137              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 11:00 to 12:00                            | 0                  | 0               | 385              | 1285             | 1253             | 677              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 9:00 to 10:00                              | 486                | 292             | 234              | 184              | 220              | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 10:00 to 11:00                             | 486                | 292             | 234              | 184              | 220              | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 11:00 to 12:00                             | 0                  | 418             | 1174             | 918              | 1091             | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 9:00 to 10:00                              | 0                  | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 10:00 to 11:00                             | 0                  | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 11:00 to 12:00                             | 0                  | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 8:00 to 9:00                               | 1148               | 713             | 493              | 392              | 400              | 158              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 9:00 to 10:00                              | 1148               | 713             | 493              | 392              | 400              | 158              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 10:00 to 11:00                             | 1148               | 713             | 493              | 392              | 400              | 158              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 11:00 to 12:00                             | 0                  | 0               | 0                | 814              | 2002             | 785              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 14:00 to 15:00                             | 1148               | 713             | 493              | 392              | 400              | 158              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 15:00 to 16:00                             | 1148               | 713             | 493              | 392              | 400              | 158              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 8:00 to 9:00                               | 810                | 508             | 356              | 281              | 295              | 97               | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 9:00 to 10:00                              | 810                | 508             | 356              | 281              | 295              | 97               | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 10:00 to 11:00                             | 810                | 508             | 356              | 281              | 295              | 97               | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 11:00 to 12:00                             | 0                  | 0               | 227              | 1415             | 1472             | 486              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 14:00 to 15:00                             | 810                | 508             | 356              | 281              | 295              | 97               | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 15:00 to 16:00                             | 810                | 508             | 356              | 281              | 295              | 97               | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 9:00 to 10:00                              | 317                | 241             | 245              | 83               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 10:00 to 11:00                             | 810                | 508             | 356              | 281              | 295              | 97               | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 11:00 to 12:00                             | 749                | 1217            | 1220             | 414              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 9:00 to 10:00                            | 349                | 212             | 144              | 115              | 112              | 61               | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 10:00 to 11:00                           | 349                | 212             | 144              | 115              | 112              | 61               | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 11:00 to 12:00                           | 371                | 1062            | 727              | 583              | 551              | 306              | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 8:00 to 9:00                          | 0                  | 760             | 954              | 731              | 576              | 580              | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 9:00 to 10:00                         | 0                  | 760             | 954              | 731              | 576              | 580              | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 10:00 to 11:00                        | 0                  | 760             | 954              | 731              | 576              | 580              | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 11:00 to 12:00                        | 0                  | 0               | 0                | 0                | 695              | 2905             | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 14:00 to 15:00                        | 0                  | 760             | 954              | 731              | 576              | 580              | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 15:00 to 16:00                        | 0                  | 760             | 954              | 731              | 576              | 580              | 0                | 0                | 0                | 0                | 0                | 0                |

Table 95: Yellowstone - Mud Volcano

| Entries indicate time, secs,<br>within given range | Mud Volcano    |                 |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--|----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|  | 0 to <<br>5 dB | 5 to <<br>10 dB | 10 to <<br>15 dB | 15 to <<br>20 dB | 20 to <<br>25 dB | 25 to <<br>30 dB | 30 to <<br>35 dB | 35 to <<br>40 dB | 40 to <<br>45 dB | 45 to <<br>50 dB | 50 to <<br>55 dB | 55 to <<br>60 dB |
| Alt 1A – 9:00 to 10:00                             | 641            | 464             | 356              | 288              | 230              | 176              | 47               | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 10:00 to 11:00                            | 641            | 464             | 356              | 288              | 230              | 176              | 47               | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 11:00 to 12:00                            | 641            | 464             | 400              | 245              | 230              | 176              | 47               | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 9:00 to 10:00                             | 522            | 367             | 274              | 227              | 169              | 140              | 50               | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 10:00 to 11:00                            | 522            | 367             | 274              | 227              | 169              | 140              | 50               | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 11:00 to 12:00                            | 522            | 367             | 274              | 227              | 169              | 140              | 50               | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 9:00 to 10:00                             | 504            | 356             | 266              | 220              | 166              | 133              | 50               | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 10:00 to 11:00                            | 504            | 356             | 266              | 220              | 166              | 133              | 50               | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 11:00 to 12:00                            | 504            | 356             | 266              | 220              | 166              | 133              | 50               | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 9:00 to 10:00                             | 536            | 389             | 295              | 245              | 180              | 155              | 29               | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 10:00 to 11:00                            | 536            | 389             | 295              | 245              | 180              | 155              | 29               | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 11:00 to 12:00                            | 522            | 389             | 295              | 245              | 180              | 155              | 29               | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 9:00 to 10:00                              | 328            | 245             | 191              | 162              | 112              | 101              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 10:00 to 11:00                             | 328            | 245             | 191              | 162              | 112              | 101              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 11:00 to 12:00                             | 328            | 245             | 191              | 162              | 112              | 101              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 10:00 to 11:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 8:00 to 9:00                               | 1008           | 720             | 544              | 446              | 342              | 281              | 68               | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 9:00 to 10:00                              | 1008           | 720             | 544              | 446              | 342              | 281              | 68               | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 10:00 to 11:00                             | 1008           | 720             | 544              | 446              | 342              | 281              | 68               | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 11:00 to 12:00                             | 1008           | 720             | 544              | 446              | 342              | 281              | 68               | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 14:00 to 15:00                             | 1008           | 720             | 544              | 446              | 342              | 281              | 68               | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 15:00 to 16:00                             | 1008           | 720             | 544              | 446              | 342              | 281              | 68               | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 8:00 to 9:00                               | 655            | 472             | 356              | 295              | 310              | 94               | 43               | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 9:00 to 10:00                              | 655            | 472             | 356              | 295              | 310              | 94               | 43               | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 10:00 to 11:00                             | 655            | 472             | 356              | 295              | 310              | 94               | 43               | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 11:00 to 12:00                             | 655            | 472             | 356              | 295              | 310              | 94               | 43               | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 14:00 to 15:00                             | 655            | 472             | 356              | 295              | 310              | 94               | 43               | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 15:00 to 16:00                             | 655            | 472             | 356              | 295              | 220              | 184              | 43               | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 9:00 to 10:00                              | 821            | 601             | 461              | 382              | 288              | 234              | 40               | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 10:00 to 11:00                             | 655            | 472             | 356              | 295              | 310              | 94               | 43               | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 11:00 to 12:00                             | 821            | 601             | 461              | 382              | 288              | 234              | 40               | 0                | 0                | 0                | 0                | 0                |
| Current – 9:00 to 10:00                            | 274            | 194             | 148              | 119              | 97               | 72               | 22               | 0                | 0                | 0                | 0                | 0                |
| Current – 10:00 to 11:00                           | 274            | 194             | 148              | 119              | 97               | 72               | 22               | 0                | 0                | 0                | 0                | 0                |
| Current – 11:00 to 12:00                           | 274            | 194             | 148              | 119              | 97               | 72               | 22               | 0                | 0                | 0                | 0                | 0                |
| Historical – 8:00 to 9:00                          | 0              | 342             | 972              | 745              | 587              | 518              | 320              | 115              | 0                | 0                | 0                | 0                |
| Historical – 9:00 to 10:00                         | 0              | 342             | 972              | 745              | 587              | 518              | 320              | 115              | 0                | 0                | 0                | 0                |
| Historical – 10:00 to 11:00                        | 0              | 342             | 972              | 745              | 587              | 518              | 320              | 115              | 0                | 0                | 0                | 0                |
| Historical – 11:00 to 12:00                        | 0              | 342             | 972              | 745              | 587              | 518              | 320              | 115              | 0                | 0                | 0                | 0                |
| Historical – 14:00 to 15:00                        | 0              | 342             | 972              | 745              | 587              | 518              | 320              | 115              | 0                | 0                | 0                | 0                |
| Historical – 15:00 to 16:00                        | 0              | 342             | 972              | 745              | 587              | 518              | 320              | 115              | 0                | 0                | 0                | 0                |

Table 96: Yellowstone - Old Faithful

| Entries indicate time, secs,<br>within given range | Old Faithful   |                 |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--|----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|  | 0 to <<br>5 dB | 5 to <<br>10 dB | 10 to <<br>15 dB | 15 to <<br>20 dB | 20 to <<br>25 dB | 25 to <<br>30 dB | 30 to <<br>35 dB | 35 to <<br>40 dB | 40 to <<br>45 dB | 45 to <<br>50 dB | 50 to <<br>55 dB | 55 to <<br>60 dB |
| Alt 1A – 9:00 to 10:00                             | 1253           | 778             | 580              | 306              | 7                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 10:00 to 11:00                            | 1253           | 778             | 580              | 306              | 7                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 11:00 to 12:00                            | 0              | 0               | 2030             | 1541             | 29               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 9:00 to 10:00                             | 1138           | 767             | 540              | 310              | 25               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 10:00 to 11:00                            | 1138           | 767             | 540              | 310              | 25               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 11:00 to 12:00                            | 0              | 0               | 1930             | 1552             | 119              | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 9:00 to 10:00                             | 1105           | 742             | 526              | 292              | 22               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 10:00 to 11:00                            | 1105           | 742             | 526              | 292              | 22               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 11:00 to 12:00                            | 0              | 0               | 2027             | 1465             | 108              | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 9:00 to 10:00                             | 1210           | 828             | 583              | 346              | 25               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 10:00 to 11:00                            | 1210           | 828             | 583              | 346              | 25               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 11:00 to 12:00                            | 0              | 0               | 1742             | 1724             | 133              | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 9:00 to 10:00                              | 583            | 461             | 436              | 83               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 10:00 to 11:00                             | 583            | 461             | 436              | 83               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 11:00 to 12:00                             | 0              | 1001            | 2178             | 421              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 9:00 to 10:00                              | 299            | 238             | 230              | 173              | 25               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 10:00 to 11:00                             | 299            | 238             | 230              | 173              | 25               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 11:00 to 12:00                             | 277            | 1181            | 1148             | 868              | 126              | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 8:00 to 9:00                               | 1256           | 1098            | 853              | 371              | 22               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 9:00 to 10:00                              | 1256           | 1098            | 853              | 371              | 22               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 10:00 to 11:00                             | 1256           | 1098            | 853              | 371              | 22               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 11:00 to 12:00                             | 0              | 0               | 1631             | 1865             | 104              | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 14:00 to 15:00                             | 1256           | 1098            | 853              | 371              | 22               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 15:00 to 16:00                             | 1256           | 1098            | 853              | 371              | 22               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 8:00 to 9:00                               | 1246           | 774             | 612              | 252              | 14               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 9:00 to 10:00                              | 1246           | 774             | 612              | 252              | 14               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 10:00 to 11:00                             | 1246           | 774             | 612              | 252              | 14               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 11:00 to 12:00                             | 0              | 0               | 2272             | 1256             | 72               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 14:00 to 15:00                             | 1246           | 774             | 612              | 252              | 14               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 15:00 to 16:00                             | 1246           | 774             | 612              | 252              | 14               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 9:00 to 10:00                              | 727            | 349             | 356              | 248              | 4                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 10:00 to 11:00                             | 1246           | 774             | 612              | 252              | 14               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 11:00 to 12:00                             | 0              | 569             | 1778             | 1228             | 25               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 9:00 to 10:00                            | 529            | 328             | 227              | 137              | 4                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 10:00 to 11:00                           | 529            | 328             | 227              | 137              | 4                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 11:00 to 12:00                           | 126            | 1631            | 1148             | 680              | 14               | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 8:00 to 9:00                          | 198            | 1404            | 1213             | 421              | 364              | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 9:00 to 10:00                         | 198            | 1404            | 1213             | 421              | 364              | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 10:00 to 11:00                        | 198            | 1404            | 1213             | 421              | 364              | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 11:00 to 12:00                        | 0              | 0               | 0                | 1782             | 1818             | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 14:00 to 15:00                        | 1278           | 324             | 1213             | 421              | 364              | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 15:00 to 16:00                        | 198            | 1404            | 1213             | 421              | 364              | 0                | 0                | 0                | 0                | 0                | 0                | 0                |

Table 97: Yellowstone - Shoshone Geyser

| Entries indicate time, secs,<br>within given range | Shoshone Geyser |                 |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--|-----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|  | 0 to <<br>5 dB  | 5 to <<br>10 dB | 10 to <<br>15 dB | 15 to <<br>20 dB | 20 to <<br>25 dB | 25 to <<br>30 dB | 30 to <<br>35 dB | 35 to <<br>40 dB | 40 to <<br>45 dB | 45 to <<br>50 dB | 50 to <<br>55 dB | 55 to <<br>60 dB |
| Alt 1A – 9:00 to 10:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 10:00 to 11:00                            | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 11:00 to 12:00                            | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 9:00 to 10:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 10:00 to 11:00                            | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 11:00 to 12:00                            | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 9:00 to 10:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 10:00 to 11:00                            | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 11:00 to 12:00                            | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 9:00 to 10:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 10:00 to 11:00                            | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 11:00 to 12:00                            | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 9:00 to 10:00                              | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 10:00 to 11:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 11:00 to 12:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 9:00 to 10:00                              | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 10:00 to 11:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 11:00 to 12:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 8:00 to 9:00                               | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 9:00 to 10:00                              | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 10:00 to 11:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 11:00 to 12:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 14:00 to 15:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 15:00 to 16:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 8:00 to 9:00                               | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 9:00 to 10:00                              | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 10:00 to 11:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 11:00 to 12:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 14:00 to 15:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 15:00 to 16:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 9:00 to 10:00                              | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 10:00 to 11:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 11:00 to 12:00                             | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 9:00 to 10:00                            | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 10:00 to 11:00                           | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 11:00 to 12:00                           | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 8:00 to 9:00                          | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 9:00 to 10:00                         | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 10:00 to 11:00                        | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 11:00 to 12:00                        | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 14:00 to 15:00                        | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 15:00 to 16:00                        | 0               | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |

Table 98: Yellowstone - Snow Pass

| Entries indicate time, secs,<br>within given range | Snow Pass      |                 |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--|----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|  | 0 to <<br>5 dB | 5 to <<br>10 dB | 10 to <<br>15 dB | 15 to <<br>20 dB | 20 to <<br>25 dB | 25 to <<br>30 dB | 30 to <<br>35 dB | 35 to <<br>40 dB | 40 to <<br>45 dB | 45 to <<br>50 dB | 50 to <<br>55 dB | 55 to <<br>60 dB |
| Alt 1A – 9:00 to 10:00                             | 108            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 10:00 to 11:00                            | 108            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 11:00 to 12:00                            | 108            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 9:00 to 10:00                             | 115            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 10:00 to 11:00                            | 115            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 11:00 to 12:00                            | 115            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 9:00 to 10:00                             | 144            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 10:00 to 11:00                            | 144            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 11:00 to 12:00                            | 144            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 9:00 to 10:00                             | 137            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 10:00 to 11:00                            | 137            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 11:00 to 12:00                            | 97             | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 10:00 to 11:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 10:00 to 11:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 8:00 to 9:00                               | 130            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 9:00 to 10:00                              | 130            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 10:00 to 11:00                             | 130            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 11:00 to 12:00                             | 130            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 14:00 to 15:00                             | 130            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 15:00 to 16:00                             | 130            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 8:00 to 9:00                               | 151            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 9:00 to 10:00                              | 151            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 10:00 to 11:00                             | 151            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 11:00 to 12:00                             | 151            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 14:00 to 15:00                             | 151            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 15:00 to 16:00                             | 151            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 10:00 to 11:00                             | 151            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 9:00 to 10:00                            | 112            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 10:00 to 11:00                           | 112            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 11:00 to 12:00                           | 112            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 8:00 to 9:00                          | 364            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 9:00 to 10:00                         | 364            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 10:00 to 11:00                        | 364            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 11:00 to 12:00                        | 364            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 14:00 to 15:00                        | 364            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Historical – 15:00 to 16:00                        | 364            | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |



Table 99: Yellowstone - Sylvan Lake

| Entries indicate time, secs,<br>within given range | Sylvan Lake    |                 |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--|----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|  | 0 to <<br>5 dB | 5 to <<br>10 dB | 10 to <<br>15 dB | 15 to <<br>20 dB | 20 to <<br>25 dB | 25 to <<br>30 dB | 30 to <<br>35 dB | 35 to <<br>40 dB | 40 to <<br>45 dB | 45 to <<br>50 dB | 50 to <<br>55 dB | 55 to <<br>60 dB |
| Alt 1A – 9:00 to 10:00                             | 180            | 137             | 104              | 68               | 50               | 36               | 25               | 22               | 14               | 14               | 11               | 0                |
| Alt 1A – 10:00 to 11:00                            | 180            | 137             | 104              | 68               | 50               | 36               | 25               | 22               | 14               | 14               | 11               | 0                |
| Alt 1A – 11:00 to 12:00                            | 180            | 137             | 115              | 58               | 50               | 36               | 25               | 22               | 14               | 14               | 11               | 0                |
| Alt 1B – 9:00 to 10:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 10:00 to 11:00                            | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 11:00 to 12:00                            | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 9:00 to 10:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 10:00 to 11:00                            | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 11:00 to 12:00                            | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 9:00 to 10:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 10:00 to 11:00                            | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 11:00 to 12:00                            | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 10:00 to 11:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 10:00 to 11:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 8:00 to 9:00                               | 371            | 277             | 205              | 140              | 101              | 72               | 58               | 40               | 29               | 25               | 22               | 4                |
| Alt 4 – 9:00 to 10:00                              | 371            | 277             | 205              | 140              | 101              | 72               | 58               | 40               | 29               | 25               | 22               | 4                |
| Alt 4 – 10:00 to 11:00                             | 371            | 277             | 205              | 140              | 101              | 72               | 58               | 40               | 29               | 25               | 22               | 4                |
| Alt 4 – 11:00 to 12:00                             | 371            | 277             | 205              | 140              | 101              | 72               | 58               | 40               | 29               | 25               | 22               | 4                |
| Alt 4 – 14:00 to 15:00                             | 371            | 277             | 205              | 140              | 101              | 72               | 90               | 7                | 29               | 25               | 22               | 4                |
| Alt 4 – 15:00 to 16:00                             | 371            | 277             | 205              | 140              | 101              | 72               | 58               | 40               | 29               | 25               | 22               | 4                |
| Alt 5 – 8:00 to 9:00                               | 191            | 144             | 108              | 72               | 54               | 36               | 29               | 22               | 14               | 14               | 7                | 4                |
| Alt 5 – 9:00 to 10:00                              | 191            | 144             | 108              | 72               | 54               | 36               | 29               | 22               | 14               | 14               | 7                | 4                |
| Alt 5 – 10:00 to 11:00                             | 191            | 144             | 108              | 72               | 54               | 36               | 29               | 32               | 4                | 14               | 7                | 4                |
| Alt 5 – 11:00 to 12:00                             | 191            | 144             | 108              | 72               | 54               | 36               | 29               | 32               | 4                | 14               | 7                | 4                |
| Alt 5 – 14:00 to 15:00                             | 191            | 144             | 108              | 72               | 54               | 36               | 29               | 22               | 14               | 14               | 7                | 4                |
| Alt 5 – 15:00 to 16:00                             | 191            | 144             | 108              | 72               | 54               | 36               | 29               | 22               | 14               | 14               | 7                | 4                |
| Alt 6 – 9:00 to 10:00                              | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 10:00 to 11:00                             | 191            | 144             | 108              | 72               | 54               | 36               | 29               | 32               | 4                | 14               | 7                | 4                |
| Alt 6 – 11:00 to 12:00                             | 0              | 0               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| Current – 9:00 to 10:00                            | 65             | 43              | 36               | 22               | 18               | 11               | 7                | 7                | 7                | 4                | 4                | 0                |
| Current – 10:00 to 11:00                           | 65             | 43              | 36               | 22               | 18               | 11               | 7                | 7                | 7                | 4                | 4                | 0                |
| Current – 11:00 to 12:00                           | 65             | 43              | 36               | 22               | 18               | 11               | 7                | 7                | 7                | 4                | 4                | 0                |
| Historical – 8:00 to 9:00                          | 709            | 342             | 256              | 194              | 130              | 97               | 65               | 54               | 36               | 25               | 25               | 25               |
| Historical – 9:00 to 10:00                         | 709            | 342             | 256              | 194              | 130              | 97               | 65               | 54               | 36               | 25               | 25               | 25               |
| Historical – 10:00 to 11:00                        | 709            | 342             | 256              | 194              | 130              | 97               | 65               | 54               | 36               | 25               | 25               | 25               |
| Historical – 11:00 to 12:00                        | 709            | 342             | 256              | 194              | 130              | 97               | 65               | 54               | 36               | 25               | 25               | 25               |
| Historical – 14:00 to 15:00                        | 709            | 342             | 256              | 194              | 130              | 97               | 65               | 54               | 36               | 25               | 25               | 25               |
| Historical – 15:00 to 16:00                        | 709            | 342             | 256              | 194              | 130              | 97               | 65               | 54               | 36               | 25               | 25               | 25               |

Table 100: Yellowstone - West Thumb

| Entries indicate time, secs,<br>within given range | West Thumb     |                 |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--|----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|  | 0 to <<br>5 dB | 5 to <<br>10 dB | 10 to <<br>15 dB | 15 to <<br>20 dB | 20 to <<br>25 dB | 25 to <<br>30 dB | 30 to <<br>35 dB | 35 to <<br>40 dB | 40 to <<br>45 dB | 45 to <<br>50 dB | 50 to <<br>55 dB | 55 to <<br>60 dB |
| Alt 1A – 9:00 to 10:00                             | 0              | 0               | 1004             | 1217             | 1051             | 292              | 36               | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 10:00 to 11:00                            | 745            | 569             | 407              | 288              | 184              | 86               | 36               | 0                | 0                | 0                | 0                | 0                |
| Alt 1A – 11:00 to 12:00                            | 0              | 1048            | 1228             | 788              | 378              | 122              | 36               | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 9:00 to 10:00                             | 0              | 0               | 878              | 1242             | 1040             | 400              | 40               | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 10:00 to 11:00                            | 702            | 554             | 389              | 281              | 176              | 90               | 40               | 0                | 0                | 0                | 0                | 0                |
| Alt 1B – 11:00 to 12:00                            | 0              | 1091            | 1159             | 799              | 367              | 144              | 40               | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 9:00 to 10:00                             | 0              | 0               | 1087             | 1156             | 968              | 353              | 36               | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 10:00 to 11:00                            | 662            | 522             | 367              | 266              | 166              | 83               | 36               | 0                | 0                | 0                | 0                | 0                |
| Alt 1D – 11:00 to 12:00                            | 0              | 1231            | 1105             | 749              | 346              | 133              | 36               | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 9:00 to 10:00                             | 0              | 0               | 1249             | 1030             | 853              | 403              | 65               | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 10:00 to 11:00                            | 986            | 727             | 479              | 338              | 212              | 137              | 65               | 0                | 0                | 0                | 0                | 0                |
| Alt 1E – 11:00 to 12:00                            | 0              | 644             | 1350             | 914              | 428              | 198              | 65               | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 9:00 to 10:00                              | 0              | 763             | 1102             | 940              | 749              | 32               | 14               | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 10:00 to 11:00                             | 418            | 331             | 299              | 176              | 119              | 32               | 14               | 0                | 0                | 0                | 0                | 0                |
| Alt 2 – 11:00 to 12:00                             | 925            | 968             | 965              | 450              | 245              | 32               | 14               | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 9:00 to 10:00                              | 0              | 0               | 1210             | 1102             | 932              | 356              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 10:00 to 11:00                             | 396            | 310             | 266              | 205              | 119              | 43               | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 3 – 11:00 to 12:00                             | 464            | 1073            | 961              | 698              | 302              | 101              | 0                | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 8:00 to 9:00                               | 1094           | 817             | 598              | 410              | 281              | 112              | 54               | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 9:00 to 10:00                              | 0              | 0               | 493              | 1483             | 1231             | 338              | 54               | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 10:00 to 11:00                             | 1084           | 893             | 659              | 464              | 335              | 112              | 54               | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 11:00 to 12:00                             | 0              | 29              | 1746             | 1062             | 547              | 162              | 54               | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 14:00 to 15:00                             | 1094           | 817             | 598              | 410              | 281              | 112              | 54               | 0                | 0                | 0                | 0                | 0                |
| Alt 4 – 15:00 to 16:00                             | 0              | 0               | 223              | 1613             | 1372             | 335              | 58               | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 8:00 to 9:00                               | 749            | 562             | 418              | 281              | 220              | 43               | 36               | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 9:00 to 10:00                              | 0              | 0               | 1318             | 1102             | 943              | 202              | 36               | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 10:00 to 11:00                             | 799            | 601             | 450              | 310              | 248              | 43               | 36               | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 11:00 to 12:00                             | 0              | 1084            | 1249             | 745              | 410              | 76               | 36               | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 14:00 to 15:00                             | 749            | 562             | 418              | 281              | 220              | 43               | 36               | 0                | 0                | 0                | 0                | 0                |
| Alt 5 – 15:00 to 16:00                             | 0              | 0               | 1174             | 1170             | 986              | 234              | 36               | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 9:00 to 10:00                              | 0              | 0               | 796              | 1228             | 1055             | 432              | 90               | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 10:00 to 11:00                             | 799            | 601             | 450              | 310              | 248              | 43               | 36               | 0                | 0                | 0                | 0                | 0                |
| Alt 6 – 11:00 to 12:00                             | 0              | 0               | 1598             | 1109             | 558              | 245              | 90               | 0                | 0                | 0                | 0                | 0                |
| Current – 9:00 to 10:00                            | 562            | 432             | 320              | 263              | 198              | 65               | 14               | 0                | 0                | 0                | 0                | 0                |
| Current – 10:00 to 11:00                           | 310            | 234             | 166              | 122              | 79               | 36               | 14               | 0                | 0                | 0                | 0                | 0                |
| Current – 11:00 to 12:00                           | 727            | 576             | 511              | 302              | 166              | 50               | 14               | 0                | 0                | 0                | 0                | 0                |
| Historical – 8:00 to 9:00                          | 0              | 43              | 1296             | 860              | 673              | 482              | 169              | 76               | 0                | 0                | 0                | 0                |
| Historical – 9:00 to 10:00                         | 0              | 0               | 299              | 1228             | 983              | 796              | 220              | 76               | 0                | 0                | 0                | 0                |
| Historical – 10:00 to 11:00                        | 0              | 0               | 299              | 1228             | 983              | 796              | 220              | 76               | 0                | 0                | 0                | 0                |
| Historical – 11:00 to 12:00                        | 0              | 0               | 0                | 821              | 1660             | 832              | 212              | 76               | 0                | 0                | 0                | 0                |
| Historical – 14:00 to 15:00                        | 0              | 43              | 1296             | 860              | 673              | 482              | 169              | 76               | 0                | 0                | 0                | 0                |
| Historical – 15:00 to 16:00                        | 0              | 0               | 0                | 0                | 1595             | 1580             | 349              | 76               | 0                | 0                | 0                | 0                |

F.3. Grand Teton Distributions Sorted by Alternative

Table 101: Grand Teton: Alternative 1

| Entries, secs w/in range | Grand Teton: Alternative 1 |              |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
|--------------------------|----------------------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                          | 0 to < 5 dB                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB | 60 to < 65 dB | 65 to < 70 dB | 70 to < 75 dB | 75 to < 80 dB | 80 to < 85 dB |
| Catholic                 | 112                        | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Colter                   | 850                        | 608          | 198           | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Grassy                   | 961                        | 720          | 371           | 151           | 115           | 86            | 65            | 32            | 32            | 25            | 18            | 14            | 0             | 0             | 0             | 0             | 0             |
| Jackson                  | 644                        | 454          | 281           | 90            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Oxbow                    | 317                        | 140          | 76            | 50            | 32            | 25            | 22            | 11            | 7             | 7             | 4             | 4             | 4             | 4             | 4             | 0             | 0             |
| Signal                   | 162                        | 119          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Spalding                 | 0                          | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West                     | 277                        | 97           | 18            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |

Table 102: Grand Teton: Alternative 2

| Entries, secs w/in range | Grand Teton: Alternative 2 |              |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
|--------------------------|----------------------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                          | 0 to < 5 dB                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB | 60 to < 65 dB | 65 to < 70 dB | 70 to < 75 dB | 75 to < 80 dB | 80 to < 85 dB |
| Catholic                 | 0                          | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Colter                   | 0                          | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Grassy                   | 0                          | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Jackson                  | 0                          | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Oxbow                    | 0                          | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Signal                   | 0                          | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Spalding                 | 0                          | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West                     | 0                          | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |

Table 103: Grand Teton: Alternative 3

| Entries, secs w/in range | Grand Teton: Alternative 3 |              |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
|--------------------------|----------------------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                          | 0 to < 5 dB                | 5 to < 10 dB | 10 to < 15 dB | 15 to < 20 dB | 20 to < 25 dB | 25 to < 30 dB | 30 to < 35 dB | 35 to < 40 dB | 40 to < 45 dB | 45 to < 50 dB | 50 to < 55 dB | 55 to < 60 dB | 60 to < 65 dB | 65 to < 70 dB | 70 to < 75 dB | 75 to < 80 dB | 80 to < 85 dB |
| Catholic                 | 0                          | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Colter                   | 0                          | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Grassy                   | 572                        | 346          | 230           | 158           | 122           | 94            | 65            | 36            | 32            | 25            | 22            | 14            | 0             | 0             | 0             | 0             | 0             |
| Jackson                  | 0                          | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Oxbow                    | 0                          | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Signal                   | 0                          | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| Spalding                 | 0                          | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| West                     | 0                          | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |

**Table 104: Grand Teton: Alternative 4**

| Entries,<br>secs w/in<br>range | Grand Teton: Alternative 4 |                    |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|--------------------------------|----------------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                | 0 to<br>< 5<br>dB          | 5 to<br>< 10<br>dB | 10 to<br>< 15<br>dB | 15 to<br>< 20<br>dB | 20 to<br>< 25<br>dB | 25 to<br>< 30<br>dB | 30 to<br>< 35<br>dB | 35 to<br>< 40<br>dB | 40 to<br>< 45<br>dB | 45 to<br>< 50<br>dB | 50 to<br>< 55<br>dB | 55 to<br>< 60<br>dB | 60 to<br>< 65<br>dB | 65 to<br>< 70<br>dB | 70 to<br>< 75<br>dB | 75 to<br>< 80<br>dB | 80 to<br>< 85<br>dB |
| Catholic                       | 187                        | 4                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Colter                         | 1793                       | 1127               | 180                 | 36                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Grassy                         | 1210                       | 695                | 500                 | 220                 | 166                 | 122                 | 90                  | 50                  | 43                  | 36                  | 29                  | 18                  | 0                   | 0                   | 0                   | 0                   | 0                   |
| Jackson                        | 1022                       | 486                | 205                 | 126                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Oxbow                          | 328                        | 205                | 119                 | 68                  | 43                  | 32                  | 25                  | 22                  | 11                  | 7                   | 4                   | 7                   | 4                   | 0                   | 4                   | 0                   | 0                   |
| Signal                         | 119                        | 72                 | 32                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Spalding                       | 0                          | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| West                           | 688                        | 241                | 50                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |

**Table 105: Grand Teton: Alternative 5**

| Entries,<br>secs w/in<br>range | Grand Teton: Alternative 5 |                    |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|--------------------------------|----------------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                | 0 to<br>< 5<br>dB          | 5 to<br>< 10<br>dB | 10 to<br>< 15<br>dB | 15 to<br>< 20<br>dB | 20 to<br>< 25<br>dB | 25 to<br>< 30<br>dB | 30 to<br>< 35<br>dB | 35 to<br>< 40<br>dB | 40 to<br>< 45<br>dB | 45 to<br>< 50<br>dB | 50 to<br>< 55<br>dB | 55 to<br>< 60<br>dB | 60 to<br>< 65<br>dB | 65 to<br>< 70<br>dB | 70 to<br>< 75<br>dB | 75 to<br>< 80<br>dB | 80 to<br>< 85<br>dB |
| Catholic                       | 112                        | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Colter                         | 850                        | 608                | 198                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Grassy                         | 961                        | 720                | 371                 | 151                 | 115                 | 86                  | 65                  | 32                  | 32                  | 25                  | 18                  | 14                  | 0                   | 0                   | 0                   | 0                   | 0                   |
| Jackson                        | 644                        | 454                | 281                 | 90                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Oxbow                          | 317                        | 140                | 76                  | 50                  | 32                  | 25                  | 22                  | 11                  | 7                   | 7                   | 4                   | 4                   | 4                   | 4                   | 4                   | 0                   | 0                   |
| Signal                         | 162                        | 119                | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Spalding                       | 0                          | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| West                           | 277                        | 97                 | 18                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |

**Table 106: Grand Teton: Alternative 6**

| Entries,<br>secs w/in<br>range | Grand Teton: Alternative 6 |                    |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|--------------------------------|----------------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                | 0 to<br>< 5<br>dB          | 5 to<br>< 10<br>dB | 10 to<br>< 15<br>dB | 15 to<br>< 20<br>dB | 20 to<br>< 25<br>dB | 25 to<br>< 30<br>dB | 30 to<br>< 35<br>dB | 35 to<br>< 40<br>dB | 40 to<br>< 45<br>dB | 45 to<br>< 50<br>dB | 50 to<br>< 55<br>dB | 55 to<br>< 60<br>dB | 60 to<br>< 65<br>dB | 65 to<br>< 70<br>dB | 70 to<br>< 75<br>dB | 75 to<br>< 80<br>dB | 80 to<br>< 85<br>dB |
| Catholic                       | 47                         | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Colter                         | 608                        | 389                | 29                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Grassy                         | 544                        | 328                | 220                 | 151                 | 115                 | 86                  | 65                  | 32                  | 32                  | 25                  | 18                  | 14                  | 0                   | 0                   | 0                   | 0                   | 0                   |
| Jackson                        | 234                        | 72                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Oxbow                          | 0                          | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Signal                         | 0                          | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Spalding                       | 0                          | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| West                           | 277                        | 97                 | 18                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |

**Table 107: Grand Teton: Current Conditions**

| Entries,<br>secs w/in<br>range | Grand Teton: Current Conditions |                    |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|--------------------------------|---------------------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                | 0 to<br>< 5<br>dB               | 5 to<br>< 10<br>dB | 10 to<br>< 15<br>dB | 15 to<br>< 20<br>dB | 20 to<br>< 25<br>dB | 25 to<br>< 30<br>dB | 30 to<br>< 35<br>dB | 35 to<br>< 40<br>dB | 40 to<br>< 45<br>dB | 45 to<br>< 50<br>dB | 50 to<br>< 55<br>dB | 55 to<br>< 60<br>dB | 60 to<br>< 65<br>dB | 65 to<br>< 70<br>dB | 70 to<br>< 75<br>dB | 75 to<br>< 80<br>dB | 80 to<br>< 85<br>dB |
| Catholic                       | 11                              | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Colter                         | 151                             | 97                 | 7                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Grassy                         | 223                             | 126                | 94                  | 68                  | 47                  | 40                  | 25                  | 14                  | 14                  | 11                  | 7                   | 7                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Jackson                        | 58                              | 18                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Oxbow                          | 0                               | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Signal                         | 0                               | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Spalding                       | 0                               | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| West                           | 68                              | 25                 | 4                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |

**Table 108: Grand Teton: Historical Conditions**

| Entries,<br>secs w/in<br>range | Grand Teton: Historical Conditions |                    |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|--------------------------------|------------------------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                | 0 to<br>< 5<br>dB                  | 5 to<br>< 10<br>dB | 10 to<br>< 15<br>dB | 15 to<br>< 20<br>dB | 20 to<br>< 25<br>dB | 25 to<br>< 30<br>dB | 30 to<br>< 35<br>dB | 35 to<br>< 40<br>dB | 40 to<br>< 45<br>dB | 45 to<br>< 50<br>dB | 50 to<br>< 55<br>dB | 55 to<br>< 60<br>dB | 60 to<br>< 65<br>dB | 65 to<br>< 70<br>dB | 70 to<br>< 75<br>dB | 75 to<br>< 80<br>dB | 80 to<br>< 85<br>dB |
| Catholic                       | 0                                  | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Colter                         | 860                                | 274                | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Grassy                         | 979                                | 310                | 212                 | 144                 | 112                 | 86                  | 61                  | 32                  | 29                  | 22                  | 18                  | 18                  | 0                   | 0                   | 0                   | 0                   | 0                   |
| Jackson                        | 562                                | 317                | 104                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Oxbow                          | 353                                | 230                | 151                 | 90                  | 61                  | 43                  | 36                  | 25                  | 18                  | 11                  | 7                   | 4                   | 7                   | 4                   | 0                   | 4                   | 4                   |
| Signal                         | 68                                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Spalding                       | 0                                  | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| West                           | 133                                | 97                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |

F.4. Grand Teton Distributions Sorted by Location

Table 109: Grand Teton - Catholic

| Entries,<br>secs w/in<br>range | Catholic          |                    |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|--------------------------------|-------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                | 0 to<br>< 5<br>dB | 5 to<br>< 10<br>dB | 10 to<br>< 15<br>dB | 15 to<br>< 20<br>dB | 20 to<br>< 25<br>dB | 25 to<br>< 30<br>dB | 30 to<br>< 35<br>dB | 35 to<br>< 40<br>dB | 40 to<br>< 45<br>dB | 45 to<br>< 50<br>dB | 50 to<br>< 55<br>dB | 55 to<br>< 60<br>dB | 60 to<br>< 65<br>dB | 65 to<br>< 70<br>dB | 70 to<br>< 75<br>dB | 75 to<br>< 80<br>dB | 80 to<br>< 85<br>dB |
| Alt 1                          | 112               | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 2                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 3                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 4                          | 187               | 4                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 5                          | 112               | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 6                          | 47                | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Current                        | 11                | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Historical                     | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |

Table 110: Grand Teton - Colter

| Entries,<br>secs w/in<br>range | Colter            |                    |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|--------------------------------|-------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                | 0 to<br>< 5<br>dB | 5 to<br>< 10<br>dB | 10 to<br>< 15<br>dB | 15 to<br>< 20<br>dB | 20 to<br>< 25<br>dB | 25 to<br>< 30<br>dB | 30 to<br>< 35<br>dB | 35 to<br>< 40<br>dB | 40 to<br>< 45<br>dB | 45 to<br>< 50<br>dB | 50 to<br>< 55<br>dB | 55 to<br>< 60<br>dB | 60 to<br>< 65<br>dB | 65 to<br>< 70<br>dB | 70 to<br>< 75<br>dB | 75 to<br>< 80<br>dB | 80 to<br>< 85<br>dB |
| Alt 1                          | 850               | 608                | 198                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 2                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 3                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 4                          | 1793              | 1127               | 180                 | 36                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 5                          | 850               | 608                | 198                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 6                          | 608               | 389                | 29                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Current                        | 151               | 97                 | 7                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Historical                     | 860               | 274                | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |

Table 111: Grand Teton - Grassy

| Entries,<br>secs w/in<br>range | Grassy            |                    |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|--------------------------------|-------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                | 0 to<br>< 5<br>dB | 5 to<br>< 10<br>dB | 10 to<br>< 15<br>dB | 15 to<br>< 20<br>dB | 20 to<br>< 25<br>dB | 25 to<br>< 30<br>dB | 30 to<br>< 35<br>dB | 35 to<br>< 40<br>dB | 40 to<br>< 45<br>dB | 45 to<br>< 50<br>dB | 50 to<br>< 55<br>dB | 55 to<br>< 60<br>dB | 60 to<br>< 65<br>dB | 65 to<br>< 70<br>dB | 70 to<br>< 75<br>dB | 75 to<br>< 80<br>dB | 80 to<br>< 85<br>dB |
| Alt 1                          | 961               | 720                | 371                 | 151                 | 115                 | 86                  | 65                  | 32                  | 32                  | 25                  | 18                  | 14                  | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 2                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 3                          | 572               | 346                | 230                 | 158                 | 122                 | 94                  | 65                  | 36                  | 32                  | 25                  | 22                  | 14                  | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 4                          | 1210              | 695                | 500                 | 220                 | 166                 | 122                 | 90                  | 50                  | 43                  | 36                  | 29                  | 18                  | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 5                          | 961               | 720                | 371                 | 151                 | 115                 | 86                  | 65                  | 32                  | 32                  | 25                  | 18                  | 14                  | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 6                          | 544               | 328                | 220                 | 151                 | 115                 | 86                  | 65                  | 32                  | 32                  | 25                  | 18                  | 14                  | 0                   | 0                   | 0                   | 0                   | 0                   |
| Current                        | 223               | 126                | 94                  | 68                  | 47                  | 40                  | 25                  | 14                  | 14                  | 11                  | 7                   | 7                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Historical                     | 979               | 310                | 212                 | 144                 | 112                 | 86                  | 61                  | 32                  | 29                  | 22                  | 18                  | 18                  | 0                   | 0                   | 0                   | 0                   | 0                   |

**Table 112: Grand Teton - Jackson**

| Entries,<br>secs w/in<br>range | Jackson           |                    |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|--------------------------------|-------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                | 0 to<br>< 5<br>dB | 5 to<br>< 10<br>dB | 10 to<br>< 15<br>dB | 15 to<br>< 20<br>dB | 20 to<br>< 25<br>dB | 25 to<br>< 30<br>dB | 30 to<br>< 35<br>dB | 35 to<br>< 40<br>dB | 40 to<br>< 45<br>dB | 45 to<br>< 50<br>dB | 50 to<br>< 55<br>dB | 55 to<br>< 60<br>dB | 60 to<br>< 65<br>dB | 65 to<br>< 70<br>dB | 70 to<br>< 75<br>dB | 75 to<br>< 80<br>dB | 80 to<br>< 85<br>dB |
| Alt 1                          | 644               | 454                | 281                 | 90                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 2                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 3                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 4                          | 1022              | 486                | 205                 | 126                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 5                          | 644               | 454                | 281                 | 90                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 6                          | 234               | 72                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Current                        | 58                | 18                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Historical                     | 562               | 317                | 104                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |

**Table 113: Grand Teton - Oxbow**

| Entries,<br>secs w/in<br>range | Oxbow             |                    |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|--------------------------------|-------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                | 0 to<br>< 5<br>dB | 5 to<br>< 10<br>dB | 10 to<br>< 15<br>dB | 15 to<br>< 20<br>dB | 20 to<br>< 25<br>dB | 25 to<br>< 30<br>dB | 30 to<br>< 35<br>dB | 35 to<br>< 40<br>dB | 40 to<br>< 45<br>dB | 45 to<br>< 50<br>dB | 50 to<br>< 55<br>dB | 55 to<br>< 60<br>dB | 60 to<br>< 65<br>dB | 65 to<br>< 70<br>dB | 70 to<br>< 75<br>dB | 75 to<br>< 80<br>dB | 80 to<br>< 85<br>dB |
| Alt 1                          | 317               | 140                | 76                  | 50                  | 32                  | 25                  | 22                  | 11                  | 7                   | 7                   | 4                   | 4                   | 4                   | 4                   | 4                   | 0                   | 0                   |
| Alt 2                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 3                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 4                          | 328               | 205                | 119                 | 68                  | 43                  | 32                  | 25                  | 22                  | 11                  | 7                   | 4                   | 7                   | 4                   | 0                   | 4                   | 0                   | 0                   |
| Alt 5                          | 317               | 140                | 76                  | 50                  | 32                  | 25                  | 22                  | 11                  | 7                   | 7                   | 4                   | 4                   | 4                   | 4                   | 4                   | 0                   | 0                   |
| Alt 6                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Current                        | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Historical                     | 353               | 230                | 151                 | 90                  | 61                  | 43                  | 36                  | 25                  | 18                  | 11                  | 7                   | 4                   | 7                   | 4                   | 0                   | 4                   | 4                   |

**Table 114: Grand Teton - Signal**

| Entries,<br>secs w/in<br>range | Signal            |                    |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|--------------------------------|-------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                | 0 to<br>< 5<br>dB | 5 to<br>< 10<br>dB | 10 to<br>< 15<br>dB | 15 to<br>< 20<br>dB | 20 to<br>< 25<br>dB | 25 to<br>< 30<br>dB | 30 to<br>< 35<br>dB | 35 to<br>< 40<br>dB | 40 to<br>< 45<br>dB | 45 to<br>< 50<br>dB | 50 to<br>< 55<br>dB | 55 to<br>< 60<br>dB | 60 to<br>< 65<br>dB | 65 to<br>< 70<br>dB | 70 to<br>< 75<br>dB | 75 to<br>< 80<br>dB | 80 to<br>< 85<br>dB |
| Alt 1                          | 162               | 119                | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 2                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 3                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 4                          | 119               | 72                 | 32                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 5                          | 162               | 119                | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 6                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Current                        | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Historical                     | 68                | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |



**Table 115: Grand Teton - Spalding**

| Entries,<br>secs w/in<br>range | Spalding          |                    |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|--------------------------------|-------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                | 0 to<br>< 5<br>dB | 5 to<br>< 10<br>dB | 10 to<br>< 15<br>dB | 15 to<br>< 20<br>dB | 20 to<br>< 25<br>dB | 25 to<br>< 30<br>dB | 30 to<br>< 35<br>dB | 35 to<br>< 40<br>dB | 40 to<br>< 45<br>dB | 45 to<br>< 50<br>dB | 50 to<br>< 55<br>dB | 55 to<br>< 60<br>dB | 60 to<br>< 65<br>dB | 65 to<br>< 70<br>dB | 70 to<br>< 75<br>dB | 75 to<br>< 80<br>dB | 80 to<br>< 85<br>dB |
| Alt 1                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 2                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 3                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 4                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 5                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 6                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Current                        | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Historical                     | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |

**Table 116: Grand Teton - West**

| Entries,<br>secs w/in<br>range | West              |                    |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|--------------------------------|-------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                | 0 to<br>< 5<br>dB | 5 to<br>< 10<br>dB | 10 to<br>< 15<br>dB | 15 to<br>< 20<br>dB | 20 to<br>< 25<br>dB | 25 to<br>< 30<br>dB | 30 to<br>< 35<br>dB | 35 to<br>< 40<br>dB | 40 to<br>< 45<br>dB | 45 to<br>< 50<br>dB | 50 to<br>< 55<br>dB | 55 to<br>< 60<br>dB | 60 to<br>< 65<br>dB | 65 to<br>< 70<br>dB | 70 to<br>< 75<br>dB | 75 to<br>< 80<br>dB | 80 to<br>< 85<br>dB |
| Alt 1                          | 277               | 97                 | 18                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 2                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 3                          | 0                 | 0                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 4                          | 688               | 241                | 50                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 5                          | 277               | 97                 | 18                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Alt 6                          | 277               | 97                 | 18                  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Current                        | 68                | 25                 | 4                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Historical                     | 133               | 97                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |