

Errata Sheet

FirstNet Nationwide Public Safety Broadband Network

Final Programmatic Environmental Impact Statement for the Non-Contiguous United States Region

May 2017

This document presents errata and clarifications to the Final Programmatic Environmental Impact Statement (Final PEIS) for the non-contiguous region of the FirstNet nationwide public safety broadband network (NPSBN) in response to new information received during the Final PEIS publication process. This new information includes changes to guidance from the Council on Environmental Quality (CEQ), changes to the status of a federally listed species, and additional comments received from the Federal Communications Commission (FCC) and the United States (U.S.) Fish and Wildlife Service (USFWS). In those responses that FirstNet acknowledges agreement with the comment or that additional information was received during final publication, this errata sheet serves in lieu of actual insertion of the corrected language and is incorporated by reference in the Final PEIS.

Changes to CEQ Guidance on Consideration of Greenhouse Gas Emissions

On August 5, 2016, the CEQ published its *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*. This guidance formed part of the basis for the climate change analysis in the Final PEIS. On March 28, 2017, an Executive Order entitled *Promoting Energy Independence and Economic Growth* was issued, directing the CEQ to rescind this guidance.

Changes to the Listing Status of the West Indian Manatee

The Final PEIS lists the West Indian Manatee (*Trichechus manatus*) as a federally endangered species with its range including Puerto Rico and the U.S. Virgin Islands. The USFWS issued a final rule on April 5, 2017 reclassifying the West Indian Manatee as threatened.

Additional Comments Received from the FCC

Additional comments were received from the FCC during the final production process of the Final PEIS regarding best management practices (BMPs) and mitigation measures for wildlife as well as threatened and endangered species and species of conservation concern found in Chapter 11, BMPs and Mitigation Measures. Although the comments could not be addressed directly in the Final PEIS due to the timing of their receipt, each comment is presented in Table 1.

Table 1: FCC Comments and Responses

BMP/Mitigation Measure	Comment	Response
<i>Wildlife</i>		
Minimize vehicular harm of animals migrating between seasonal habitats by locating activities, roads, and infrastructure away from these areas or installing barriers along roadsides.	Some areas with protected tortoises may require reduced speed limits on access roads.	FirstNet agrees that this BMP may be appropriate to protect listed tortoises where warranted as indicated by site-specific conditions and requirements.
Control the spread of invasive animals and plants by coordinating mowing schedules and assisting agencies and groups with ROW permits, washing mowers and equipment between sites, and educating staff.	I would like to see mowing height of 18 inches or higher to avoid fatalities to tortoises and snakes. This probably requires a separate bullet as it is not directly related to invasive species.	FirstNet agrees that this BMP may be appropriate to protect listed tortoises or snakes where warranted as indicated by site-specific conditions and requirements.
Develop “good housekeeping” procedures to ensure that sites are kept clean of debris, garbage, and or waste.	I suggest adding a sentence to specify the elimination of microtrash in California Condor range (small bits of trash that Condors pick up and ingest).	The range of the California Condor does not include the non-contiguous region of the U.S.
Turn off all unnecessary lighting at night.	Add: “If nighttime lighting is required, use motion sensor security lights that are activated as needed.”	FirstNet agrees with the recommended change and incorporates by reference.

BMP/Mitigation Measure	Comment	Response
<p>The following BMPs and mitigation measures are recommended by USFWS, including guidelines on communications tower siting (2012a, 2013b):</p> <p>“...2. If collocation is not feasible and a new tower or towers are to be constructed, it is strongly recommended that the new tower(s) should be not more than 199 feet above ground level (AGL), and that construction techniques should not require guy wires. Such towers should be unlighted if Federal Aviation Administration (FAA) regulations and lighting standards (<i>FAA 2007, Patterson 2012, FAA 2013 lighting circular anticipated update</i> [¹]) permit. Additionally, the Federal Communications Commission (FCC) through recent rulemaking now requires that new towers > 450 ft AGL contain no red-steady lights. FCC also recommends that new towers 350-450 ft AGL also contain no red-steady lights, and they will eventually recommend that new towers < 350 ft AGL convert non-flashing lights to flash with existing flashing lights. LED lights are being suggested as replacements for all new construction and for retrofits, with the intent of future synchronizing the flashes. Given these dynamics, the Service recommends using lattice tower or monopole structures for all towers < 200 ft AGL and for taller towers where feasible. The Service considers the less than 200 ft AGL option the ‘gold standard’ and suggests that this is the environmentally preferred industry standard for tower placement, construction and operation—i.e., towers that are unlit, unguyed, monopole or lattice, and less than 200 ft AGL...”</p>	<p>Delete: “they will eventually recommend that.” I understand that you are referencing text from the USFWS but my edits reflect the current situation.</p> <p>Inconsistent use of < vs. “less than”</p>	<p>FirstNet understands that the USFWS has updated their tower siting guidance, and has issued its <i>Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning</i> (USFWS 2016). See Table 2 for further discussion.</p>

¹ Current FAA guidance (*FAA 2016*) requires lighting for towers greater than 200 feet.

BMP/Mitigation Measure	Comment	Response
<p>... 6. If taller (> 199 ft AGL) towers requiring lights for aviation safety must be constructed, the minimum amount of pilot warning and obstruction avoidance lighting required by the FAA should be used.[] Unless otherwise required by the FAA, only white strobe or red strobe lights (red preferable since it is generally less displeasing to the human eye at night), or red flashing incandescent lights should be used at night, and these should be the minimum number, minimum intensity (< 2,000 candela), and minimum number of flashes per minute (i.e., longest duration between flashes/‘dark phase’) allowable by the FAA. The use of solid (non-flashing) warning lights at night should be avoided (Patterson 2012, Gehring et al. 2009)—see recommendation #2 above. Current research indicates that solid red lights attract night-migrating birds at a much higher rate than flashing lights (Gehring et al. 2009, Manville 2007, 2009). Recent research indicates that use of white strobe, red strobe, or red flashing lights alone provides significant reductions in bird fatalities (Patterson 2012, Gehring et al. 2009).</p>	<p>I prefer the more clarifying term “non-flashing” [in place of “solid”].</p>	<p>FirstNet agrees with the recommended change and incorporates by reference.</p>
<p>Additional tower lighting BMPs are described in Section 11.6.2.2, Project-Type Specific BMPs and Mitigation Measures.</p>	<p>Should nest exclusion devices be mentioned? Eagle and osprey nests on towers are an increasingly challenging issue for the industry. MBTA and BGEPA prevent access to the tower site when the nest has eggs or young. Nest exclusion devices can sometimes work to reduce nest construction and use. But the devices are not 100% effective. Certain regions of the country struggle with this issue more than other regions.</p>	<p>As stated in the FEIS, nest exclusion devices would be required where warranted as indicated by site-specific conditions and requirements.</p>
<p>Follow the FAA requirements to eliminate steady-burning flashing obstruction lights and use only flashing obstruction lights in accordance with FAA Advisory Circulars AC 70/7460-1L and AC 150/5345-43H (FAA 2016a; FAA 2016b; FCC 2017). [Note: this BMP is listed in two separate places in Chapter 11.]</p>	<p>I am very happy to see this in here. Actually it is an FCC document. Here is the link to the most current version.²</p>	<p>The guidance for using flashing obstruction lights is referenced in both FAA and FCC documentation.</p>

² https://www.fcc.gov/sites/default/files/Light_Changes_Information_Update_Jan_2017.pdf

BMP/Mitigation Measure	Comment	Response
<i>Threatened and Endangered Species and Species of Conservation Concern</i>		
Avoid removal or disturbance of forest to the maximum extent practicable and ensure that any unavoidable forest impacts do not result in the loss of listed snails, butterflies, bird breeding habitat, or bat roost sites or hibernacula.	I suggest replacing this [“forest”] with “native vegetation (forests, sagebrush, grassland, etc.)”.	The following sentence is added after the sentence quoted: “Avoid or minimize disturbance of other native vegetation habitat (such as sagebrush, grassland, etc.) as practicable or feasible.”
NA	The USFWS may have site-specific and species specific BMPs. Maybe you don’t want to include this in the more general PEIS BMPs, but a simple sentence stating that the project would follow USFWS BMPs for individual towers.	FirstNet and/or its partners would consult with the USFWS and other resource agencies as appropriate. Site-specific analysis may be required depending on the site conditions, the type of deployment, or any other permits or permissions necessary to perform the work to determine the potential impacts on listed species at specific proposed activity locations, once those locations are determined, and any additional BMPs or mitigation measures would be determined at that time.

BGEPA = Bald and Golden Eagle Protection Act; BMP = best management practice; MBTA = The Migratory Bird Treaty Act; NA = not applicable; not assessed; PEIS = Programmatic Environmental Impact Statement; USFWS = U.S. Fish and Wildlife Service

Additional Comments Received from the USFWS

Additional comments were received from the USFWS during the final production process of the Final PEIS; although the comments could not be addressed directly in the document due to the timing of their receipt, each comment is presented in Table 2. The comments have been individually addressed, and the relevant sections of the Final PEIS are identified.

Table 2: USFWS Comments and Responses

Comment Text	Response	Relevant Section(s) in Final PEIS
<i>Overall Comments</i>		
<p>There is a disconnect between how the PEIS will be implemented in the tiered NEPA process. The PEIS as we saw contains no guidance for how the tiered NEPA should be conducted. Nor does it include the standards that should apply for the tiered analyses. Federal agencies have responsibilities to ensure that all levels of NEPA are implemented appropriately, and retain the authority and legal liability for the decisions that are made (40 CFR § 1506.5). Therefore, ensuring the adequacy of any tiered NEPA is essential. The FEIS and Record of Decision (ROD) should make commitments to the following. Conduct a supplemental EIS that:</p> <ul style="list-style-type: none"> • Analyzes, using an eco-regional or landscape ecology framework, the potential impacts within each Region; • Provides specific guidance on how to conduct NEPA at the site-specific scale; and • Stipulates the roles and responsibilities and the management and oversight process that will be used by FirstNet to ensure that all applicable CEQ guidance is being incorporated into decision making. 	<p>Of necessity, the environmental review in the Final PEIS is presented at a regional and programmatic level, as site-specific projects have not yet been determined. Site-specific actions, once defined, would be evaluated against the analyses presented in the programmatic review for future NEPA compliance. In addition, site-specific analysis may be required depending on the site conditions, the type of deployment, or any other permits or permissions necessary to perform the work. FirstNet is still developing its site-specific review process, incorporating comments received from cooperating and consulting agencies. Once the process, including roles and responsibilities, has been determined, FirstNet will release a Supplemental PEIS. Agencies will also have the opportunity to provide input on the Supplemental PEIS, which will address, at a minimum, the following:</p> <ul style="list-style-type: none"> • An outline and/or process for conducting analyses of the potential impacts within each Region using a resource-appropriate framework (such as an ecoregional or landscape ecology framework for biological impacts), as practicable and feasible; • Specific guidance on how to conduct NEPA analysis at the site-specific scale; and • An explanation of the roles and responsibilities and the management and oversight process that will be used by FirstNet to ensure that all applicable CEQ guidance is incorporated into decision making. 	<p>Section 1.2</p>

Comment Text	Response	Relevant Section(s) in Final PEIS
Please update all citations to reflect new Eagle Rule, where applicable.	In December 2016, the USFWS issued revised regulations for non-purposeful take permits for eagles and their nests (81 FR 91494). Among other changes, revisions were made to permit application and permit issuing criteria, compensatory mitigation standards, and permit duration.	Specific Regulatory Considerations section of all Affected Environment Wildlife sections (3.1.6.4; 4.1.6.4; 5.1.6.4; 6.1.6.4; 7.1.6.4; 8.1.6.4; 9.1.6.4)

Comment Text	Response	Relevant Section(s) in Final PEIS
<p>Many times in the PEIS, activities are categorized as “temporary and isolated” but it’s unclear what this means or how it will apply to tiered analyses. I recommend being more specific or providing examples where you can when this phrase is used. It’s a bit overused in the document so it raised questions on what it means in each situation.</p>	<p>In the deployment or construction phase of the NPSBN, many activities would likely be short-term and localized, meaning that impacts would generally be of short duration and limited to individual locations in the regional context. An example of a short-term activity could include installing a simple piece of equipment on an existing tower.</p> <p>Both impact duration and geographic extent inform the significance of potential impacts at the programmatic level. Site-specific analysis may be required depending on the site conditions, the type of deployment, or any other permits or permissions necessary to perform the work; in these cases, both duration and extent would be re-evaluated to determine impact significance at the project level. As explained in the introductory text of each Environmental Consequences section (Sections 3.2, 4.2, 5.2, etc.) it is possible that, for some effect types, impact ratings could be <i>less than significant</i> at the programmatic level yet <i>potentially significant</i> at the site-specific level (although with BMPs and mitigation measures this is expected to be rare). For example, while potential impacts from a specific FirstNet project taking place in a single wetland may not rise to the level of significance at the programmatic level (based on the programmatic impact significance criteria), such impacts could be considered potentially significant at the site-specific level when applying site-specific significance criteria.</p> <p>As another example, if it is determined that the environmentally preferred location for a new wireless communication tower requires an access road that could impact an historic property, the impact to the particular property could be significant locally, but not at the programmatic level based on the established criteria. In these scenarios, site-specific BMPs may be needed in addition to those outlined in the Final PEIS. Any additional BMPs would be determined as part of the site-specific environmental review, as required, and likely in coordination with the appropriate resource agencies.</p>	<p>Various Environmental Consequences sections</p>

Comment Text	Response	Relevant Section(s) in Final PEIS
<p>Portions of the PEIS that we did not review but may help with some of our comments may come from any specification of significance criteria and how it will be used in tiered NEPA analyses, how cumulative impacts will be treated in the tiered NEPA stage, and a description of the proposed mitigation for all impacts (including RF emissions- monitoring for example?).</p>	<p>Description of the process by which site-specific NEPA analysis will be conducted will be provided in the Supplemental PEIS. This process will address, in part, both significance criteria at the site-specific level as well as how cumulative impacts will be considered. Proposed mitigation measures and BMPs, including those associated with RF emissions, are described in Chapter 11.</p>	<p>Section 1.2, Chapter 11, Section 11.6.2</p>
<p><i>Section 2.0: Proposed Action</i></p>		
<p>The proposed action references “use [of] existing infrastructure to the maximum extent economically desirable.” Examples would be extremely beneficial for use in tiered analyses.</p>	<p>It is anticipated that site-specific analyses will address, as needed, use of existing infrastructure as well as new installations. This process will be considered in the Supplemental PEIS. Some examples of the use of existing infrastructure could include:</p> <ul style="list-style-type: none"> • Collating an antenna on an existing cell tower; • Installing new fiber in an existing subsurface conduit; • Installing a point of presence or data center equipment within an existing building; and • Hanging a new aerial fiber line on existing poles. 	<p>Sections 1.2 and 2.1</p>
<p>In describing the proposed infrastructure, I would recommend including diagrams, if possible, so people can understand how the system will interface across different platforms.</p>	<p>Figure 1 below provides a diagram of FirstNet’s notional deployment approach. Please visit FirstNet’s website³ for additional informational materials on the system.</p>	<p>Section 2.1</p>

³ <https://firstnet.gov/>

Comment Text	Response	Relevant Section(s) in Final PEIS
<p>When describing deployable technologies, the PEIS states that they would be used to supplement areas where fixed infrastructure cannot be erected, due to “a variety of factors.” It would be helpful to describe those factors as they relate to the physical environment or events for which the deployable technologies would be used. This will help tie in the analyses within the tiered assessments.</p>	<p>The specific circumstances in which deployable technologies could be used, as well as the types of deployable technology, have not yet been determined. As discussed in Section 2.1 of the Final PEIS, the use of deployables may be preferred, for instance, over permanent, fixed infrastructure where physical limitations preclude permanent installations, such as where significant impacts to sensitive receptors cannot be mitigated or where existing coverage needs to be supplemented during a large-scale planned (such as the Super Bowl) or emergency event (such as Hurricane Katrina). Remote or inaccessible areas may also lend themselves to deployable technologies. Final selection of permanent and deployable technologies will involve a variety of technical, environmental, and economic factors as practical and feasible.</p>	<p>Section 2.1.2.3</p>
<p>Where generators would be used in deployable technologies, can you provide guidance on the type of fuel and any fuel spill minimization measures you would recommend in tiered assessments and mitigation?</p>	<p>For the analysis in the Final PEIS, it was assumed that diesel generators would be used, although this will be determined during later stages of project development and design. The Final PEIS includes BMPs to address the potential for spills, including preparing a Spill Prevention, Control, and Countermeasure Plan to prevent, contain, and report accidental spills; and inspecting and maintaining tanks and equipment containing oil, fuel, or chemicals for drips or leaks to prevent spills to the ground or directly into waterbodies.</p>	<p>Section 2.1, all Environmental Consequences Air sections (X.2.12.4, Y.2.12.4), and Chapter 11</p>

Comment Text	Response	Relevant Section(s) in Final PEIS
<p>In the RF emission section, the PEIS references USFWS reports and agency memoranda that state that RF emissions could be harmful to migratory birds. Can you provide references to the memoranda? (lines 587-589 in 2-18-2-19)</p>	<p>The Final PEIS cites three references by Dr. Manville (2007, 2009, and 2014), consisting of presentations and proceedings entitled <i>U.S. Fish & Wildlife Service Concerns Over Potential Radiation Impacts of Cellular Communication Towers on Migratory Birds and Other Wildlife – Research Opportunities, Towers, Turbines, Power Lines, and Buildings – Steps Being Taken by the U.S. Fish and Wildlife Service to Avoid or Minimize Take of Migratory Birds at These Structures</i>, and <i>Status of U.S. Fish and Wildlife Service Developments with Communication Towers with a Focus on Migratory Birds: Updates to Service Staff Involved with Tower Issues</i>, respectively. In addition, the Draft PEIS Public Comments chapter (Chapter 14) of the Final PEIS cites a comment letter from the Department of Interior dated October 11, 2016, which includes information on how RF emissions could be harmful to migratory birds. The October 11, 2016 letter also includes, as an enclosure, another letter from the Department of Interior dated February 7, 2014; this letter provides comments on the proposed implementing procedures for the NPSBN and includes information on RF emission and their potential effects to migratory birds.</p>	<p>Section 2.4</p>

Comment Text	Response	Relevant Section(s) in Final PEIS
<i>Section 3.0: Wildlife and Vegetation</i>		
<p>Regarding migratory birds and direct mortality, reference to causes of mortality should include those listed in the updated communication tower guidance from FWS. See page 1 of that guidance for reasons for mortality, which are a little more specific than those listed in the PEIS.</p>	<p>The USFWS’ <i>Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning (USFWS 2016)</i> elaborates on the specific causes of bird mortality as follows:</p> <p>“Given the height, structural engineering needs (i.e., guy wires), and obstruction lighting requirements, communication towers may cause direct and indirect bird mortality through:</p> <ol style="list-style-type: none"> 1. Collisions - Birds that are attracted to tower lights and aggregate in the lighting zone, circle the tower and collide with the tower, guy wires, other birds, or fall to the ground from exhaustion (Longcore et al. 2012b, Gauthreaux and Belser 2006, Erickson et al. 2005). 2. Construction, operation, and maintenance activities - Adults, eggs, or nestlings can experience direct mortality through: <ol style="list-style-type: none"> a. Trauma or death during vegetation removal; b. Trauma or death during tower maintenance; and c. Death of eggs or nestlings when actions or activities cause adults to abandon nests. 3. Significant loss of fat reserves in adults due to the energy expenditure of circling towers, leading to reduced survival during long migrations (Norris and Taylor 2006, Gehring and Walker 2012).” <p>In addition, the <i>Recommended Best Practices</i> provide updated avoidance and minimization measures. Those measures replace the USFWS guidelines on communications tower siting in Chapter 11.</p>	<p>All Environmental Consequences Wildlife sections (3.2.6.4; 4.2.6.4; 5.2.6.4; 6.2.6.4; 7.2.6.4; 8.2.6.4; 9.2.6.4) and Chapter 11 (Section 11.6.2)</p>

Comment Text	Response	Relevant Section(s) in Final PEIS
<p>There is no mention of lighting in causes of direct mortality to migratory birds on page 3.2.6-18. This information is crucial and is the focus of the new lighting standards issued in the 2015 FAA circular AC 70/7460-1L.</p>	<p>The discussion of bird collisions with towers during operations has been updated in the Final PEIS to include details on lighting as a cause of avian mortality. In addition, reference to the FAA lighting standards has been included in that discussion and added to the BMPs in Chapter 11.</p>	<p>All Environmental Consequences Wildlife sections (3.2.6.4; 4.2.6.4; 5.2.6.4; 6.2.6.4; 7.2.6.4; 8.2.6.4; 9.2.6.4) and Chapter 11 (Section 11.6.2)</p>
<p>This section also refers to the number of species listed under MBTA as “some” so I recommend listing the number since the word “some” is subjective. (I believe it’s 1,027)</p>	<p>Thank you for your comment. The estimated number of species listed under the MBTA is noted.</p>	<p>All Environmental Consequences Wildlife sections (3.2.6.4; 4.2.6.4; 5.2.6.4; 6.2.6.4; 7.2.6.4; 8.2.6.4; 9.2.6.4)</p>
<p>Please define “poor fliers”.</p>	<p>In this context, FirstNet considers poor flying birds as those that are more vulnerable to colliding with structures. In general, these birds have relatively short wings and have high ratios of body weight to wing area. In addition, some diving birds, for example, have relatively solid bones which make them less buoyant in the water. This makes it easier for them to dive underwater, but it also makes them relatively poor fliers in comparison to birds with lighter bone structures.</p>	<p>All Environmental Consequences Wildlife sections (3.2.6.4; 4.2.6.4; 5.2.6.4; 6.2.6.4; 7.2.6.4; 8.2.6.4; 9.2.6.4)</p>
<p>The PEIS states that “avian mortalities or injuries can also result from vehicle strikes and nest disturbance during construction activities, although they typically occur as isolated events.” Do you have information to support this statement? Car collisions and habitat disturbance is much more far reaching than isolated events. See Longcore et al 2013. Here is a graph below showing mortality from cars in that publication [see Figure 2 below].</p>	<p>In the deployment or construction phase of the NPSBN, construction vehicle traffic and ground disturbance would be generally short-term and localized, meaning that impacts would generally be of short duration and limited to individual locations in the regional context. Both impact duration and geographic extent inform the significance of impact at the programmatic level. The annual U.S. avian mortality from vehicle strikes is not expected to be significantly affected by the Preferred Alternative.</p>	<p>All Environmental Consequences Wildlife sections (3.2.6.4; 4.2.6.4; 5.2.6.4; 6.2.6.4; 7.2.6.4; 8.2.6.4; 9.2.6.4)</p>

Comment Text	Response	Relevant Section(s) in Final PEIS
<p>In addition, destruction of habitat can result in direct mortality at a larger scale due to land clearing for facilities and access roads. Therefore, with any new construction in this proposed action, direct mortality would likely be more than isolated events.</p>	<p>See response immediately above. It is anticipated that construction would not affect large land areas (at the programmatic level), and the use of existing infrastructure is preferred.</p>	<p>All Environmental Consequences Wildlife sections (3.2.6.4; 4.2.6.4; 5.2.6.4; 6.2.6.4; 7.2.6.4; 8.2.6.4; 9.2.6.4)</p>
<p>Under Effects to Migration or Migratory Patterns, the PEIS states that “project infrastructure and the temporary nature of the deployment activities would result in impacts to large populations of migratory birds, but more likely that individual birds could be impacted.” This might be described more in your cumulative impacts section, but if it’s not, I would recommend elaborating on this topic there. I’m also not sure it’s an accurate statement- see the mortality table above [see Figure 2 below].</p>	<p>The Final PEIS states, “It is unlikely that the limited amount of infrastructure, the amount of RF emissions generated by Project infrastructure, and the temporary nature of the deployment activities would result in impacts to large populations of migratory birds, but more likely that individual birds could be impacted.” As indicated above, deployment would be short-term and limited to specific locations, would not generally affect large land areas, and would preferentially use existing infrastructure. The Final PEIS further states that “implementation of BMPs and mitigation measures (described in Chapter 11, BMPs and Mitigation Measures) could further help to avoid or minimize potential impacts to migratory pathways.” The following are some examples of BMPs from Section 11.6.2):</p> <ul style="list-style-type: none"> • Avoid development in areas that contain high densities of breeding or wintering birds, in high wildlife use areas, migratory staging areas, woodlots, riparian corridors, Audubon Important Bird Areas, nature preserves, state and national parks, state forests, fish and wildlife areas, and other publicly owned properties. • Follow, as practicable or feasible, the suggested practices by the Avian Power Line Interaction Committee to minimize impacts to migratory birds through collision and electrocution. • Avoid activities within migratory bird flyways and in the immediate vicinity of bat roosts to the extent practicable. 	<p>All Environmental Consequences Wildlife sections (3.2.6.4; 4.2.6.4; 5.2.6.4; 6.2.6.4; 7.2.6.4; 8.2.6.4; 9.2.6.4) and Chapter 11(Section 11.6.2)</p>

Comment Text	Response	Relevant Section(s) in Final PEIS
<p>In the discussion of Effects from Invasive Species, I would recommend noting how invasive species impact vegetation around facilities and access roads, thus altering the landscape and resulting in impacts to habitat cumulatively and possibly on specific project locations where more specific analyses are performed.</p>	<p>The Final PEIS indicates that invasive species can impact vegetation in disturbed areas, which would include areas around facilities and access roads, although this impact is expected to be <i>less than significant</i> at the programmatic level. It also includes BMPs and mitigation measures to reduce impacts from invasive species. Once determined, the site-specific review process would provide means to further evaluate impacts to vegetative and wildlife resources.</p>	<p>All Environmental Consequences Vegetation sections (4.2.6.3; 5.2.6.3; 6.2.6.3; 7.2.6.3; 8.2.6.3; 9.2.6.3) and Chapter 11 (Sections 11.6.1 and 11.6.2)</p>
<p>Where the PEIS describes specific impacts from the different proposed projects (wired projects vs wireless projects), I would recommend cross walking these potential impacts to the diagrams or the same text descriptions found in section 2.0. I found I had to go back and forth between the two sections to figure out which facilities the PEIS was referring to and how they related to the proposed ones in section 2.0.</p>	<p>A detailed description of the Proposed Action is provided in Section 2.1, which provides the basis for the impact determinations for the resources listed in each of the various Environmental Consequences sections. While your comment is noted, it is not practical to repeat descriptions of the project types in the many instances they are mentioned throughout the Environmental Consequences sections.</p>	<p>Section 2.1</p>
<p>Under wireless projects, the PEIS states that for new wireless communication towers, deployment activities are expected to be temporary and isolated, but this is not the case if the new communication towers (or existing ones) use guy wires.</p>	<p>In the context of the Final PEIS, the term <i>deployment</i> refers to the construction of infrastructure, or the process staging deployable technologies for use. The Final PEIS includes a number of BMPs and mitigation measures designed to avoid the use of guy wires on communication towers, or where not avoidable, to reduce their avian impacts by other measures. Impacts to birds are considered to be less than significant for deployment or construction of the Preferred Alternative and less than significant with BMPs and mitigation measures incorporated for operations.</p>	<p>All Environmental Consequences Wildlife sections (3.2.6.4; 4.2.6.4; 5.2.6.4; 6.2.6.4; 7.2.6.4; 8.2.6.4; 9.2.6.4)</p>

BMP = best management practice; CEQ = Council on Environmental Quality; CFR = Code of Federal Regulations; MBTA = Migratory Bird Treaty Act; NEPA = National Environmental Policy Act; NPSBN = nationwide public safety broadband network; PEIS = Programmatic Environmental Impact Statement; RF = radio frequency; USFWS = U.S. Fish and Wildlife Service

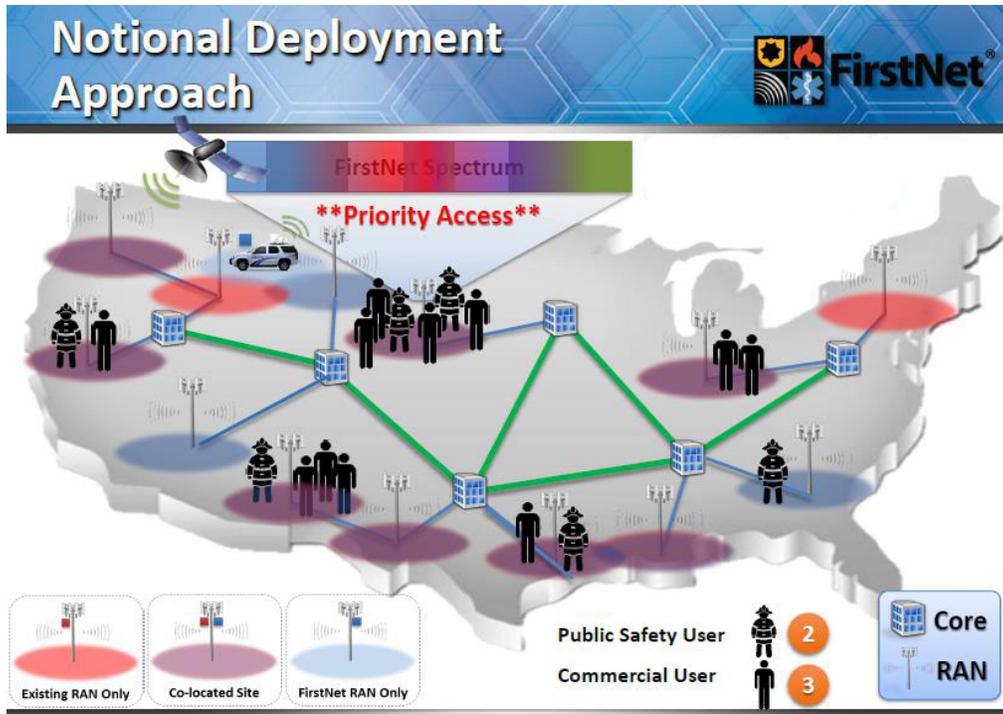


Figure 1: FirstNet’s Notional Deployment Approach

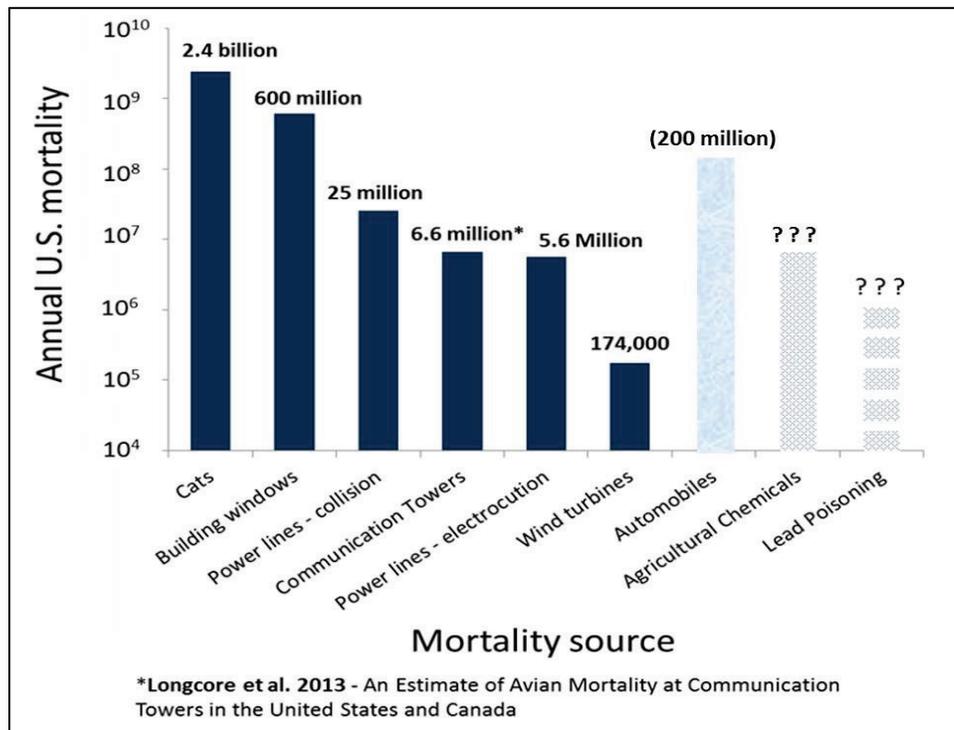


Figure 2: An Estimate of Avian Mortality at Communication Towers in the U.S. and Canada (Provided by the USFWS)

References

- FAA (Federal Aviation Administration). 2016. *Obstruction Marking and Lighting, Advisory Circular 70/7460-1L, Change 1*. October 8, 2016. U.S. Department of Transportation. Accessed: October 8, 2016. Retrieved from:
https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.current/documentNumber/70_7460-1
- USFWS (U.S. Fish and Wildlife Service). 2016. *Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning*. August 2016. Accessed: April 25, 2017. Retrieved from:
<https://www.fws.gov/migratorybirds/pdf/management/usfwscommtowerguidance2016update.pdf>
- Manville, A.M., II. 2007. *U.S. Fish & Wildlife Service Concerns Over Potential Radiation Impacts of Cellular Communication Towers on Migratory Birds and Other Wildlife – Research Opportunities*. May 10, 2007. Congressional Staff Briefing on the Environmental and Human Health Effects of Radiofrequency (RF) Radiation, Washington D.C. Accessed: December 2016. Retrieved from:
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0ahUKEwjCoq7mwYrRAhXCTCYKHVFqAhkQFgggMAE&url=http%3A%2F%2Fwww.emrpolicy.org%2Fpreview%2Fmanville_dc.ppt&usg=AFQjCNEqGd2rGYuWrMe4seS2pp0R5crUBg&sig2=MaQrmcjaU4314tawg8lcIw&bvm=bv.142059868,d.eWE&cad=rja
- _____. 2009. *Towers, Turbines, Power Lines, and Buildings—Steps Being Taken by the U.S. Fish and Wildlife Service to Avoid or Minimize Take of Migratory Birds at these Structures*. In T.D. Rich, C. Arizmendi, D. Demarest, and C. Thompson (eds.). *Tundra to Tropics: Connecting Habitats and People*. McAllen, TX: Proceedings 4th International Partners in Flight Conference. Pp. 262-272.
- _____. 2014. *Talking Points and Literature Citations, Available to the Public*. Status of U.S. Fish and Wildlife Service Developments with Communication Towers with a Focus on Migratory Birds: Updates to Services Staff Involved with Tower Issues – A Webinar, Washington D.C. Released to the public: March 7, 2014. Accessed: December 2016. Retrieved from:
<https://www.fws.gov/midwest/es/planning/pdf/usfws2013revisedguidancecommtowerstatusreportinginfo27sept.pdf>