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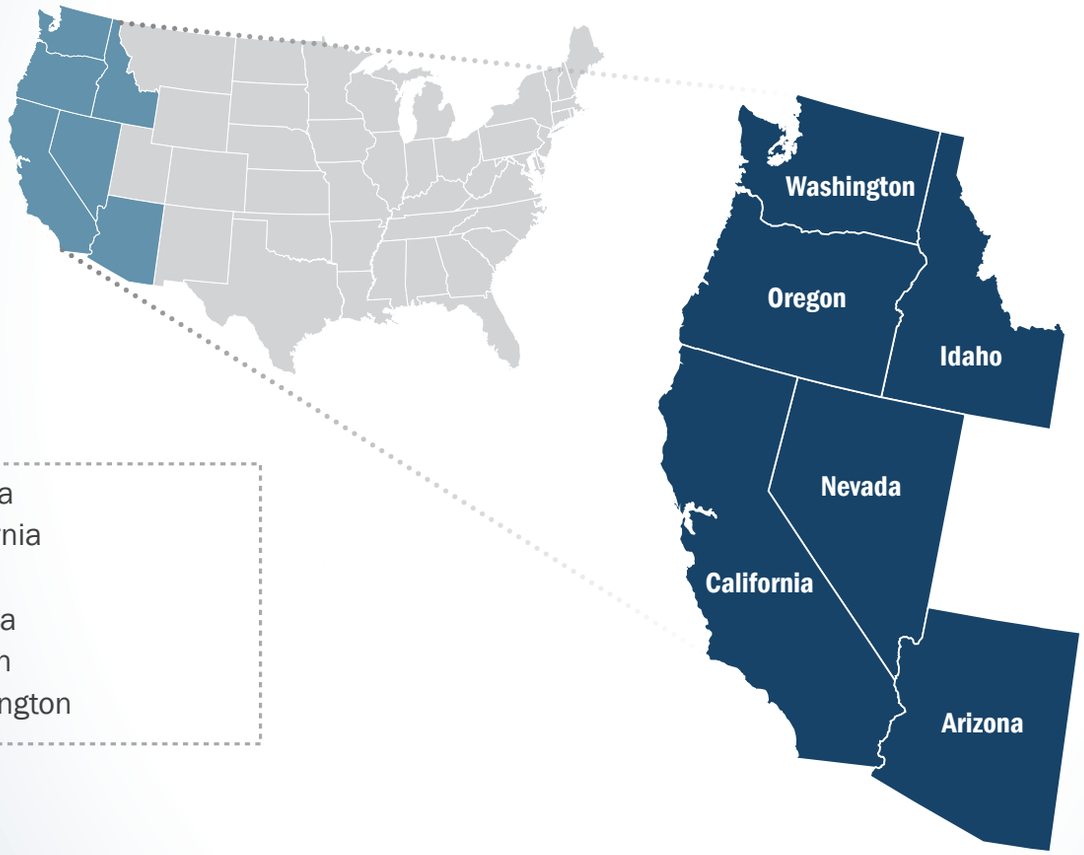
Nationwide Public Safety Broadband Network

# Draft Programmatic Environmental Impact Statement for the Western United States

## CHAPTER 10 - COMPARISON OF ALTERNATIVES

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First Responder Network Authority

Nationwide Public Safety Broadband Network

# Draft Programmatic Environmental Impact Statement for the Western United States

## CHAPTER 10 – COMPARISON OF ALTERNATIVES

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**Cooperating Agencies**
Federal Communications Commission
General Services Administration
U.S. Department of Agriculture—Rural Utilities Service
U.S. Department of Agriculture—U.S. Forest Service
U.S. Department of Agriculture—Natural Resource Conservation Service
U.S. Department of Defense—Department of the Air Force
U.S. Department of Energy
U.S. Department of Homeland Security

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# 10. COMPARISON OF ALTERNATIVES

## 10.1. INTRODUCTION

This chapter presents in summary form impact ratings for the Preferred Alternative, as well as each of the remaining alternatives outlined in Section 2.2, Description of Alternatives.

Under the Preferred Alternative, FirstNet and its partner(s) would construct a nationwide broadband long term evolution (LTE) network using a combination of the wired, wireless, deployable, and satellite technologies. There is currently a wide range of technologies that FirstNet may use to implement and deploy the Nationwide Public Safety Broadband Network (NPSBN). Full descriptions of wired, wireless, and deployable projects that FirstNet may consider are explained in Section 2.1.2, Proposed Action Infrastructure.

Under the Deployable Technologies Alternative, FirstNet would procure, deploy, and maintain a nationwide fleet of mobile communications systems, including ground-based and aerial deployable technologies, to provide temporary coverage in areas not covered by existing, usable infrastructure. Generally, these units would be deployed at times of an incident to the affected area for either planned or unplanned incidents or events. Equipment would be stationed in every state and territory, often at multiple locations in each state or territory, to facilitate suitable response. These mobile communication units would be temporarily installed and may use existing satellite, microwave, or radio systems for backhaul.

Under the No Action Alternative, the NPSBN would not be constructed; there would be no nationwide, coordinated system dedicated to public safety interoperable communications. The existing multiplicity of communications networks would remain in place, as would the current, known limitations and problems of existing communication networks during times of emergency or disaster. This alternative would require an act of Congress to revise the Act, which currently requires the NPSBN.

This Draft Programmatic Environmental Impact Statement (PEIS) contains 15 stand-alone chapters, several of which are devoted to 1 of 6 states located in the U.S. West region. Each of these state chapters describes the Affected Environment for 15 separate resource areas, such as biological resources, land use, air quality, etc., and discusses the potential impacts of the Proposed Action in an Environmental Consequences section.

Through the programmatic approach, FirstNet has identified four categories of potential impacts on these resources:

1. Potentially significant,
2. Less than significant with Best Management Practices (BMPs) and mitigation measures incorporated,
3. Less than significant, or
4. No impact.

Two exceptions exist to this categorization of impacts based on applicable, resource-specific regulations.

For threatened and endangered species and species of conservation concern, categories of impacts are defined as: *may affect, likely to adversely affect; may affect, not likely to adversely affect;* and *no effect*. These impact categories are comparable to those defined in the *Endangered Species Consultation Handbook* (USFWS and NMFS, 1998). In Table 10.2-1, the following numeric values have been assigned for the purpose of equivalency:

1. *May affect, likely to adversely affect;*[1]
2. *May affect, not likely to adversely affect; or*
3. *No effect.*

For cultural resources, categories of impacts are defined as an *adverse effect; mitigated adverse effect; effect, but not adverse; and no effect*. These impact categories are comparable to those defined in *36 Code of Federal Regulations (CFR) 800, Secretary of Interior's Standards and Guidelines for Archaeology and Historic Preservation* (NPS, 1983), and the U.S. National Park Service's *National Register Bulletin: How to Apply the National Register Criteria for Evaluation* (NPS, 1995). In Table 10.2-1, the following numeric values have been assigned for the purpose of equivalency:

1. *Adverse effect;*
2. *Mitigated adverse effect;*
3. *Effect, but not adverse; or*
4. *No effect*

## 10.2. COMPARISON OF ALTERNATIVES

Table 10.2-1 presents impact ratings of the Preferred Action and Action Alternatives. Numerical ratings represent whole number averages of ratings across the states in the West region, rounded conservatively to err on the side of greater potential impact significance.

Evaluation of impacts was determined by the nature of both the deployment and operation of the infrastructure associated with each Alternative considered: the Preferred Alternative and the Deployable Technologies Alternative. The specific infrastructure associated with the Deployable Technologies Alternative would be the same as the deployable technologies implemented as part of the Preferred Alternative but would likely be implemented in greater numbers, over a larger geographic extent, and used with greater frequency and duration. The Deployable Technologies Alternative would not include fixed infrastructure, such as towers or buried or aerial fiber.

As a result, impacts associated with the Project Alternatives are generally similar. Both alternatives have impacts whose significance ranges from *no impacts* to *less than significant with*

[1] For all impact ratings where potential affect is found, full and effective implementation of mitigation is assumed.

*BMPs and mitigation measures incorporated*; neither alternative has potentially significant impacts. For many resources, impact ratings are identical, although some differences exist for some resource areas. For example, the Preferred Alternative would have somewhat greater impacts than the Deployable Technologies Alternative to water resources, wetlands, and visual resources. Conversely, the Deployable Technologies Alternative would have somewhat greater impacts than the Preferred Alternative to air resources. Again, neither alternative would have impacts that would be considered potentially significant.

The No Action Alternative would have no impacts, since by definition, the NPSBN would be deployed and existing conditions would not change. As required by the National Environmental Policy Act, the No Action alternative is used as a baseline against which the impacts of the Action Alternatives are compared. However, the No Action Alternative would not achieve the project's stated purpose or meet the project need as required by Title VI of the Middle Class Tax Relief and Job Creation Act of 2012 (Public Law [Pub. L.] No. 112-96, 126 Statute [Stat. 156 (2012)) (codified at 47 United States Code [U.S.C.] § 1401 et seq.); as such, it would require an act of Congress in order for the No Action Alternative to take place.

## Table 10.2-1: Comparison of Alternatives by Resource Area and Type of Effect[a]

| Resource Area/Type of Effect | Preferred Alternative | | Deployable Technologies Alternative | | No Action Alternative |
|---|---|---|---|---|---|
| | Deployment | Operations | Deployment | Operations | |
| ***Infrastructure*** | | | | | |
| • Transportation system capacity and safety | 3 | 3 | 3 | 3 | 4 |
| • Strain on capacity of local health, public safety, and emergency response services | 3 | 3 | 3 | 3 | 4 |
| • Modifies existing public safety response telecommunication practices, physical infrastructure, or level of service in a manner that directly affects public safety communication capabilities and response times | 3 | 3 | 3 | 3 | 4 |
| • Effects to commercial telecommunication systems, communications, or level of service | 3 | 3 | 3 | 3 | 4 |
| • Effects to utilities | 3 | 3 | 3 | 3 | 4 |
| ***Soils*** | | | | | |
| • Soil erosion | 3 | 3 | 3 | 3 | 4 |
| • Topsoil mixing | 3 | 3 | 3 | 3 | 4 |
| • Soil compaction and rutting | 3 | 3 | 3 | 3 | 4 |
| ***Geology*** | | | | | |
| • Seismic hazard | 3 | 3 | 3 | 3 | 4 |
| • Volcanic activity | 3 | 3 | 3 | 3 | 4 |
| • Landslide | 3 | 3 | 3 | 3 | 4 |
| • Land subsidence | 3 | 3 | 3 | 3 | 4 |
| • Mineral and fossil fuel resource impacts | 3 | 3 | 3 | 3 | 4 |
| • Paleontological resources impacts | 3 | 3 | 3 | 3 | 4 |
| • Surface geology, bedrock, topography, physiography, and geomorphology | 3 | 3 | 3 | 3 | 4 |
| ***Water Resources*** | | | | | |
| • Water Quality (groundwater and surface water) | 3 | 3 | 3 | 3 | 4 |
| • Floodplain degradation[b] | 3 | 3 | 3 | 4 | 4 |
| • Drainage pattern alteration | 3 | 3 | 3 | 4 | 4 |
| • Flow alteration | 4 | 4 | 4 | 4 | 4 |
| • Changes in groundwater or aquifer characteristics | 3 | 3 | 3 | 4 | 4 |
| ***Wetlands*** | | | | | |
| • Direct wetland loss (fill or conversion to non-wetland), other direct and indirect[c] effects[d] | 3 | 3 | 3 | 3 | 4 |

| Resource Area/Type of Effect | Preferred Alternative | | Deployable Technologies Alternative | | No Action Alternative |
|---|---|---|---|---|---|
| | Deployment | Operations | Deployment | Operations | |
| ***Biological Resources*** | | | | | |
| • Terrestrial Vegetation | 3 | 3 | 3 | 3 | 4 |
| • Mammals | 3 | 3 | 3 | 3 | 4 |
| • Marine Mammals | 3 | 3 | 3 | 3 | 4 |
| • Birds | 3 | 3[e] | 3 | 3 | 4 |
| • Amphibians and Reptiles | 3 | 3 | 3 | 3 | 4 |
| • Invasive species effects | 3 | 3 | 3 | 3 | 4 |
| • Terrestrial Invertebrates | 3 | 3 | 3 | 3 | 4 |
| • Fisheries and Aquatic Habitat | 3 | 3 | 3 | 3 | 4 |
| ***Threatened and Endangered Species and Species of Conservation Concern***[f] | | | | | |
| • Terrestrial Vegetation | 2 | 2 | 2 | 2 | 4 |
| • Mammals | 2 | 2 | 2 | 2 | 4 |
| • Marine Mammals | 2 | 2 | 2 | 2 | 4 |
| • Birds | 2 | 2 | 2 | 2 | 4 |
| • Amphibians and Reptiles | 2 | 2 | 2 | 2 | 4 |
| • Fisheries and Aquatic Habitat | 2 | 2 | 2 | 2 | 4 |
| ***Land Use, Airspace, and Recreation*** | | | | | |
| • Direct land use change | 3 | 3 | 4 | 3 | 4 |
| • Indirect land use change | 3 | 3 | 4 | 3 | 4 |
| • Use of airspace (at and near site of FirstNet facility installation or deployable base) | 3 | 3 | 3 | 3 | 4 |
| • Loss of access to public or private recreation land | 3 | 3 | 4 | 3 | 4 |
| • Loss of enjoyment of public or private recreation land | 3 | 3 | 4 | 3 | 4 |
| ***Visual Resources*** | | | | | |
| • Adverse change in aesthetic character | 3 | 3[g] | 3 | 3 | 4 |
| • Nighttime lighting (overall) | 3 | 3 | 3 | 3 | 4 |
| • Nighttime lighting (isolated rural areas) | 3 | 2 | 3 | 3 | 4 |
| ***Socioeconomics*** | | | | | |
| • Impacts to real estate | 3 | 3 | 4 | 4 | 4 |
| • Economic benefits or adverse impacts related to changes in tax revenues, wages, or direct spending (positive or negative) | 3 | 3 | 3 | 3 | 4 |
| • Employment | 3 | 3 | 3 | 3 | 4 |
| • Increased pressure on existing public services | 3 | 4 | 4 | 4 | 4 |

| Resource Area/Type of Effect | Preferred Alternative | | Deployable Technologies Alternative | | No Action Alternative |
|---|---|---|---|---|---|
| | Deployment | Operations | Deployment | Operations | |
| • Diminished social cohesion/disruption related to influx | 3 | 4 | 4 | 4 | 4 |
| • Reduced opportunities for subsistence practices | 3 | 4 | 4 | 3 | 4 |
| ***Environmental Justice*** | | | | | |
| • Effects associated with other resource areas (e.g., cultural resources) that have environmental justice implications due to the affected parties (as defined by EO 12898)[h] | 3[i] | 3 | 3 | 3 | 4 |
| ***Cultural Resources***[j] | | | | | |
| • Direct effects to historic properties[k] | 3 | 3 | 3 | 3 | 4 |
| • Indirect effects to historic properties | 3 | 3 | 3 | 3 | 4 |
| • Loss of access to historic properties | 3 | 3 | 3 | 3 | 4 |
| ***Air Quality*** | | | | | |
| • Increased air emissions | 3 | 3 | 3 | 3 | 4 |
| ***Noise*** | | | | | |
| • Increased noise levels | 3 | 3 | 3 | 3 | 4 |
| ***Climate Change*** | | | | | |
| • Contribution to climate change by greenhouse gas emissions | 3 | 3 | 3 | 3 | 4 |
| • Effect of climate change on Proposed Action-related impacts | 3 | 3 | 3 | 3 | 4 |
| ***Human Health and Safety*** | | | | | |
| • Potential exposure to hazardous materials | 3 | 4 | 3 | 4 | 4 |
| • Accidents and Injuries | 3 | 3 | 3 | 3 | 4 |
| • Exposure to Noise | 3 | 3 | 3 | 3 | 4 |
| • Communicable Disease | 3 | 3 | 3 | 3 | 4 |

[a] While the analysis indicates that certain discrete locations could have higher impact ratings, this table is evaluating the potential regional impacts associated with the Proposed Action. Those potential impacts will be evaluated by FirstNet once the specific deployment locations are identified.
[b] Because public safety infrastructure is considered a critical facility, Proposed Action activities should avoid the 500-year floodplain wherever practicable per (EO 11988 and EO 13690).
[c] Indirect effects are those resulting from direct effects, but they occur elsewhere in space and/or time.
[d] Wetland functions include hydrologic, ecological, geomorphic, and social functions typically assessed for wetlands as part of USACE compensatory mitigation planning. Typical functions assessed may include flood attenuation, bank stabilization, water quality, organic matter input/transport, nutrient processing, wildlife habitat, threatened and endangered.
[e] Additional BMPs and mitigation measures may be required to further reduce potential impacts to migratory birds.
[f] Categories of impacts are defined as: *may affect, likely to adversely affect; may affect, not likely to adversely affect;* and *no effect*. These impact categories are comparable to those defined in the *Endangered Species Consultation Handbook* (USFWS and NMFS, 1998).
[g] Additional BMPs and mitigation measures may be required for towers.

[h] EO = Executive Order.
[i] BMPs and mitigation measures may be required to address potential impacts to environmental justice communities at the site-specific level.
[j] Categories of impacts defined as an *adverse effect; mitigated adverse effect; effect, but not adverse; and no effect* are comparable to those defined in *36 Code of Federal Regulations (CFR) 800*, *Secretary of Interior's Standards and Guidelines for Archaeology and Historic Preservation* (NPS, 1983), and the U.S. National Park Service's *National Register Bulletin: How to Apply the National Register Criteria for Evaluation* (NPS, 1995).
[k] Per the National Historic Preservation Act, a "historic property" is defined as any district, archaeological site, building, structure, or object that is either listed or eligible for listing in the National Register of Historic Places (NRHP). Cultural resources present within a project's Area of Potential Effect are not historic properties if they do not meet the eligibility requirements for listing in the NRHP. Sites of religious and/or cultural significance refer to areas of concern to Indian tribes and other consulting parties that, in consultation with the respective party(ies), may or may not be eligible for listing in the NRHP. These sites may also be considered traditional cultural properties (TCPs). Therefore, by definition, these significance criteria only apply to cultural resources that are historic properties, significant sites of religious and/or cultural significance, or TCPs. For the purposes of brevity, the term historic property is used here to refer to either historic properties, significant sites of religious and/or cultural significance, or TCPs.

# REFERENCES

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