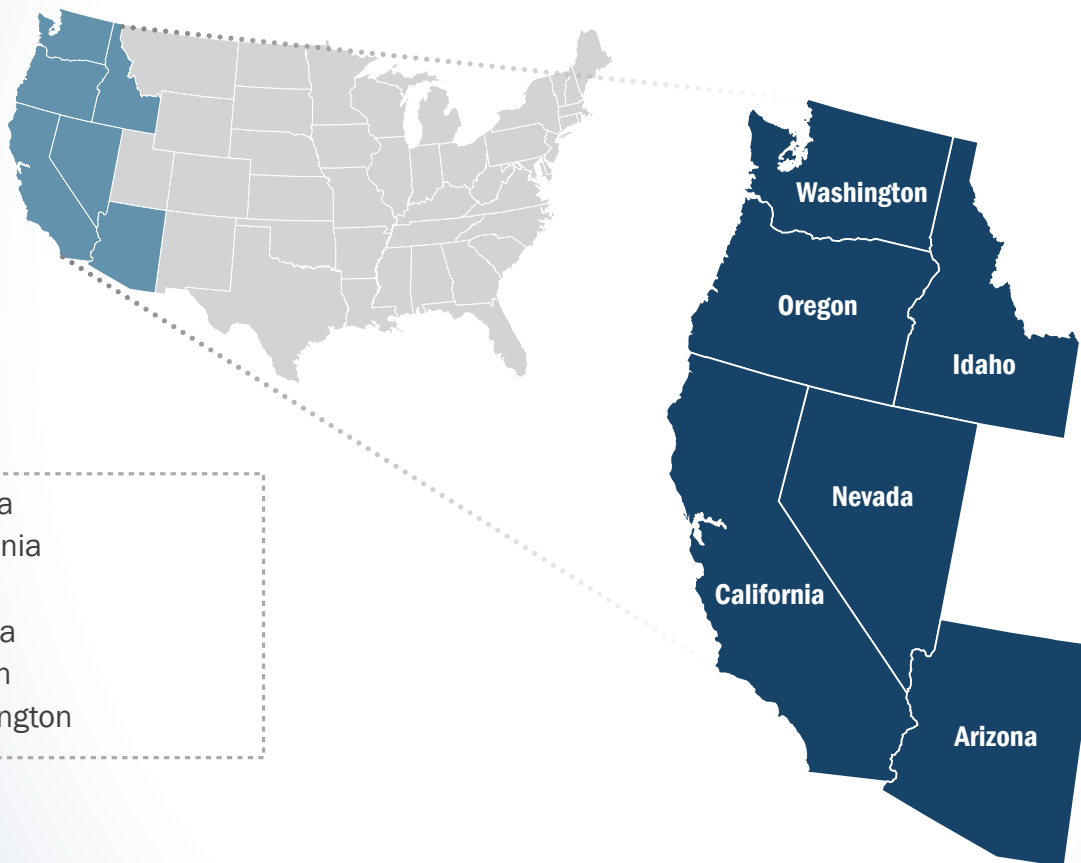




FirstNet[®]

Nationwide Public Safety Broadband Network
**Draft Programmatic Environmental Impact Statement
for the Western United States**

CHAPTER 11 - CUMULATIVE IMPACTS



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First Responder Network Authority



Nationwide Public Safety Broadband Network **Draft Programmatic Environmental Impact Statement for the Western United States**

CHAPTER 11 – CUMULATIVE IMPACTS

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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

September 2016

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11. CUMULATIVE IMPACTS

The Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) implementing regulations require an assessment of a proposed action's cumulative impacts (40 Code of Federal Regulations [CFR] Parts 1500-1508). A cumulative impact is defined as an "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions" (40 CFR § 1508.7).

Cumulative impacts can result from minor individual actions that collectively become major actions over time (40 CFR § 1508.7). CEQ's guidance for considering cumulative effects states that NEPA documents "should compare the cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant" (Council on Environmental Quality 1997b).

Section 11.1 presents the methodology used to evaluate cumulative impacts; Section 11.2 discusses other actions that may have cumulative effects when combined with the potential impacts from the proposed FirstNet deployment and operation activities. Section 11.3 identifies the cumulative impacts for the resource areas discussed in each state chapter.

11.1. CUMULATIVE IMPACTS METHODOLOGY

This section assesses the potential cumulative environmental impacts that may result from implementing the Proposed Action. FirstNet identified other projects that may be categorized as occurring in the past, present, and reasonably foreseeable future. Some of these projects were identified early based on FirstNet's awareness of the project, while others were discovered in the NEPA planning process through internet research.

Projects were selected projects using a number of different methods, such as:

- Reviewing actions recently proposed by other Federal agencies,
- Identifying relevant and current grant funding programs sponsored by the Federal government, and
- Reviewing projects recently proposed or implemented by public entities or private entities.

Cumulative impacts were assessed by resource area as impacts may arise from one or more actions, resulting in additive or interactive effects. CEQ reports that interactive effects may, in some cases, be countervailing (adverse cumulative effect is less than the sum of the individual effects) or synergistic (net adverse cumulative effect is greater than the sum of the individual effects) (Council on Environmental Quality 1997b).

It should be noted that while the direct impacts of some individual projects were considered, there is little quantitative data available for most of the projects listed in Table 11.2-1. An integral part of this analysis for potential cumulative impacts requires a review of whether impacts from the Proposed Action could contribute to ongoing or foreseeable resource trends. The cumulative impacts analyses assesses those impacts resulting from both an Action Alternative and other past, present, and reasonably foreseeable future actions for each resource

area. As a quantitative analysis cannot be formalized, FirstNet assessed the potential cumulative impacts qualitatively.

11.2. PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE PROJECTS

CEQ defines a cumulative effect as “an impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR § 1508.7). Direct and indirect effects of a Proposed Action are considered as part of cumulative effects, as are other past, present, or reasonably foreseeable (future) projects that are related in the sense that they may affect the same resource areas.

Table 11.2-1 lists projects that FirstNet identified that could result in incremental impacts to a number of resource areas when considering the Proposed Action. FirstNet identified projects initially in its review of recent NEPA documentation, during public scoping, and from internet research. Table 11.2-1 provides the project name, geographic location, sponsor, a brief project description, and the completion year, based upon readily available information.

Table 11.2-1: Past, Present, and Reasonably Foreseeable Future Projects

Name	Location	Sponsor	Brief Description	Completion Year
Public Safety Interoperable Communications (PSIC) Grant Program	Nationwide	Department of Commerce (DOC) National Telecommunications and Information Agency (NTIA) and Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA)	\$1 billion (B) grant program to U.S. states and territories for the acquisition of, deployment of, or training for the use of interoperable communications systems that use (or enable interoperability with communications systems that use) reallocated public safety spectrum in the 764-776 megahertz (MHz) and 794-806 MHz bands. Grants were awarded for 6,750 projects, including the installation of 133 new freestanding and 11 new guyed towers, collocation of equipment at 2,710 existing towers and 2,710 existing facilities, 112.9 miles of fiber optic cable, more than 350 training events, and acquisition of over 75,000 radios.	2012
Broadband Technology Opportunities Program (BTOP)	Nationwide	DOC NTIA	\$4.7B grant program to deploy broadband infrastructure in the U.S., expand public computer center capacity, and encourage sustainable adoption of broadband service. As of December 2015, 263 projects had completed their project activities, 17 projects remained in active status, and grant recipients had deployed more than 114,636 miles of new or upgraded network infrastructure.	Ongoing

Name	Location	Sponsor	Brief Description	Completion Year
Rural Utilities Service Broadband Initiatives Program (RUS/BIP)	Rural Areas Nationwide	U.S. Department of Agriculture (USDA)	\$2.5B grant and loan program to expand access to broadband services in rural America. Of the original 320 BIP projects, 297 were for infrastructure, 4 for satellite broadband service support, and 19 for technical assistance (the majority of which went to tribal communities). As of March 2014, RUS estimated that 61,047 fiber miles and 1,391 wireless access points were installed through BIP infrastructure projects.	2015
Northern Border Activities	U.S.-Canadian border	Customs and Border Patrol (CBP)	CBP is considering several program alternatives including (1) Facilities Development and Improvement (new permanent facilities, such as Border Patrol Stations, housing, and modifications to ports of entry); (2) Detection, Inspection, Surveillance, and Communications Technology Expansion (deployment of integrated remote video surveillance systems, upgraded surveillance and telecommunications systems (e.g., remote sensors, short-range radar, remote and mobile video surveillance and communications systems, new camera systems, and upgrades to stationary communications systems), and (3) Tactical Security Infrastructure Deployment (expanding access roads and related facilities and constructing barriers, such as fencing and vehicle barriers).	Undetermined
Integrated Public Alert & Warning System (IPAWS)	Nationwide	DHS FEMA	IPAWS is a federal modernization program of the Nation's alert and warning infrastructure to protect life and property. IPAWS provides public safety officials the means to alert the general public about serious emergencies using the Emergency Alert System (EAS), Wireless Emergency Alerts (WEA), the National Oceanic and Atmospheric Administration (NOAA) Weather Radio, and other public alerting systems from a single interface. Proposed infrastructure work includes facility resiliency upgrades to radio stations, and power generation, fuel storage, and other provisions necessary to operate and maintain transmitter facilities for extended periods without access to commercial electrical power.	Undetermined

Name	Location	Sponsor	Brief Description	Completion Year
Commercial Wireless Service Providers	Nationwide	Major Wireless Service Providers	Expansion plans of commercial wireless service providers is proprietary business information. However, publically available business forecasts from tower owners provide some information regarding the relative scale and expansion plans of wireless providers, compared to the current (November 2015) baseline. For example, in a recent market analysis (http://www.fiercewireless.com/story/america-tower-t-mobile-co-locating-gear-verizon-towers-we-bought/2015-08-12), it was reported that in February 2015 Verizon agreed to lease the rights to 11,324 of its towers and sell 165 additional towers to American Tower, and that the Verizon towers are, on average, 30% taller than other carrier towers that have been sold or leased over the last several years. Therefore, American Tower now has access to more space, to add network equipment from other carriers, such as T-Mobile, which is submitting co-location applications to deploy its 700 MHz A Block spectrum to increase its long term evolution footprint to 300 million points of presence (POP) by end of 2015 (an annual increase of 10 million). The recent ownership transfer of nearly 12% of FCC-registered towers of one major wireless service provider, and a 3% annual increase of POPs for another major provider is evidence of continued high demand for existing and new telecommunication towers.	Continuing

11.3. SUMMARY OF CUMULATIVE IMPACTS

Assessing cumulative impacts for resource areas on a regional basis for unknown deployment activities at undetermined locations would be purely speculative at the programmatic level of this analysis. Therefore, the cumulative impacts analysis of individual resource areas focuses solely on those resource areas identified as having potential cumulative impacts. Table 11.3-1 provides a summary of the potential cumulative impacts by resource area.

Table 11.3-1: Summary of Potential Cumulative Impacts of FirstNet West Region Projects with Past, Present, and Reasonably Foreseeable Projects

Resource Area	Cumulative Impacts
Infrastructure	⊙⊙+
Soils	⊙⊙
Geology	⊙⊙
Water Resources	⊙⊙
Wetlands	⊙⊙
Biological Resources	⊙⊙
T&E Species and Species of Conservation Concern	⊗⊙⊙
Land Use, Recreation, and Airspace	⊙⊙
Visual Resources	⊗⊙⊙
Socioeconomics	⊙⊙+
Environmental Justice	⊙⊙
Cultural Resources	⊙⊙
Air Quality	⊙⊙
Noise	⊙⊙
Climate Change	⊙⊙
Human Health and Safety	⊙⊙+

LEGEND

- ⊗ = Potentially Significant Impact
- ⊗ = Less than Significant Impact with BMPs and Mitigation Measures Incorporated
- ⊙ = Less than significant
- = No impact
- + = Beneficial impact

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