

Nationwide Public Safety Broadband Network

Final Programmatic Environmental Impact Statement

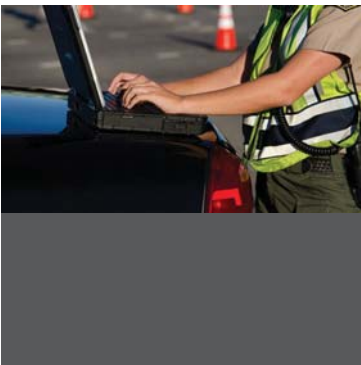
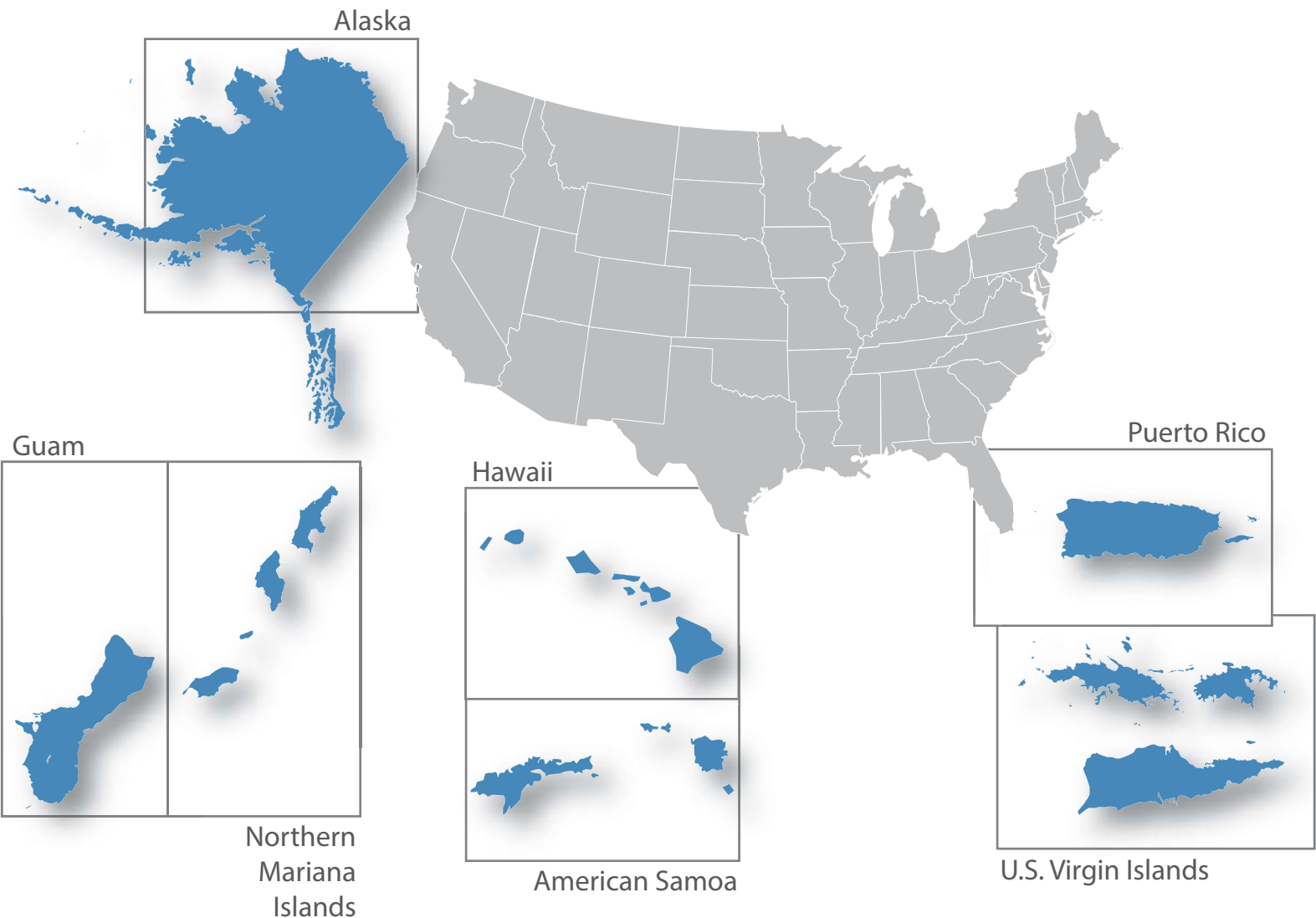
for the Non-Contiguous United States



First Responder Network Authority

Volume 8 - Chapters 10-18 & Appendices

- Alaska
- Hawaii
- American Samoa
- Guam
- Northern Mariana Islands
- Puerto Rico
- U.S. Virgin Islands



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First Responder Network Authority



Nationwide Public Safety Broadband Network Final Programmatic Environmental Impact Statement for the Non-Contiguous United States

Volume 8

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Cooperating Agencies

Federal Communications Commission
General Services Administration
U.S. Department of Agriculture—Natural Resource Conservation Service
U.S. Department of Agriculture—Rural Utilities Service
U.S. Department of Agriculture—U.S. Forest Service
U.S. Department of Commerce—National Telecommunications and
Information Administration
U.S. Department of Defense—Department of the Air Force
U.S. Department of Energy
U.S. Department of Homeland Security

May 2017

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ACRONYMS AND ABBREVIATIONS

| | | | |
|-------------------|--|-------------------|---|
| °F | degree Fahrenheit | ASPA | American Samoa Power Authority |
| °N | degrees north | ATO | Air Traffic Organization |
| µg/m ³ | microgram(s) per cubic meter | ATWC | Alaska Tsunami Warning Center |
| µPa | micro Pascal | AURORA | Alaska Uniform Response Online Reporting Access |
| % | percent | BACT | best available control technology |
| A | attained | BCE | before Common Era |
| AAC | Alaska Administrative Code | BCR | Bird Conservation Regions |
| AAFIS | Alaska Public Safety Identification System | BGEPA | Bald and Golden Eagle Protection Act |
| AAQS | Ambient Air Quality Standards | BLM | Bureau of Land Management |
| ACHP | Advisory Council on Historic Preservation | BLS | U.S. Bureau of Labor Statistics |
| ACS | American Community Survey (U.S. Census Bureau) | BMP | best management practice |
| ADEC | Alaska Department of Environmental Conservation | BRFSS | Behavioral Risk Factor Surveillance System |
| ADFG | Alaska Department of Fish and Game | BSAI | Bering Sea/Aleutian Island |
| AGL | above ground level | BWG | BioInitiative Working Group |
| AIRFA | American Indian Religious Freedom Act | CAA | Clean Air Act |
| AJRCCM | American Journal of Respiratory and Critical Care Medicine | CAB | Clean Air Branch |
| AKNHP | Alaska National Heritage Program | CARB | California Air Resources Board |
| AKOSH | Alaska Occupational Safety and Health | CBIA | Coastal Barrier Improvement Act of 1990 |
| AKWAS | Alaska Warning System | CBRA | Coastal Barrier Resources Act of 1982 |
| ALMR | Alaska Land Mobile Radio | CCP | Comprehensive Conservation Plan |
| ANCSA | Alaska Native Claims Settlement Act | CDC | Center for Disease Control |
| ANFIRS | Alaska Fire Incident Reporting System | CDLNR | Commonwealth Department of Lands and Natural Resources |
| ANSI | American National Standards Institute | CE | Common Era |
| APE | Area of Potential Effect | CELCP | Coastal and Estuarine Land Conservation Program |
| APLIC | Avian Power Line Interaction Committee | CEPD | Caribbean Environmental Protection Division |
| APSIN | Alaska Public Safety Information Network | CEQ | Council on Environmental Quality |
| AQCR | air quality control region | CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| ARFF | Aircraft Rescue and Firefighting | CFMC | Caribbean Fisheries Management Council |
| ARMS | Alaska Records Management System | CFR | Code of Federal Regulations |
| ARPA | Archaeological Resources Protection Act of 1979 | cfs | cubic feet per second |
| AS | Alaska Statute | CH ₄ | methane |
| ASAC | American Samoa Administrative Code | CHC | Commonwealth Health Center |
| ASCA | American Samoa Code Annotated | CIA | Central Intelligence Agency |
| ASCMP | American Samoa Coastal Management Program | CMIP3 | Coupled Model Intercomparison Project phase 3 |
| ASDHS | American Samoa Department of Homeland Security | CNMI | Commonwealth of Northern Mariana Islands |
| ASDMWR | American Samoa Department of Marine and Wildlife Resources | CNMIAC | Commonwealth of Northern Mariana Islands Administrative Code |
| ASEPA | American Samoa Environmental Protection Agency | CO | carbon monoxide |
| ASHPO | American Samoa Historic Preservation Office | CO ₂ | carbon dioxide |
| | | CO ₂ e | carbon dioxide equivalents |
| | | COMAR | Committee on Man and Radiation |

| | | | |
|---------|--|------------------|---|
| CPA | Commonwealth Ports Authority | FirstNet | First Responder Network Authority |
| CRMP | Coastal Resources Management Program | FMP | Fishery Management Plan |
| CSP | Central South Pacific | FPPA | Farmland Protection Policy Act of 1981 |
| CUC | Commonwealth Utilities Corporation | FR | Federal Register |
| CWA | Clean Water Act | ft | feet |
| CZMA | Coastal Zone Management Act | g/hp-hr | grams per horsepower-hour |
| CZMP | Coastal Zone Management Program | g/mi | grams per mile |
| DACA | Deployable Airborne Communications Architecture | GAP | Gap Analysis Program |
| DAR | Division of Aquatic Resources (Hawaii) | GCA | Guam Code Annotated |
| DAWR | Division of Aquatic and Wildlife Resources (Guam) | GDA | Guam Department of Agriculture |
| dB | decibel(s) | GEPA | Guam Environmental Protection Agency |
| dba | A-weighted decibel(s) | GHG | greenhouse gas |
| DBCP | 1,2-dibromo-3-chloropropane | GIS | geographic information system |
| dBZ | Z-weighted decibel(s) | GMP | General Management Plan |
| DCP | 1,2-dichloropropane | GOA | Gulf of Alaska |
| DEC | Department of Environmental Conservation | GRHP | Guam Register of Historic Places |
| DHHL | Department of Hawaiian Homelands | GWP | global warming potential |
| DLNR | Department of Land and Natural Resources (Hawaii) | H ₂ S | hydrogen sulfide |
| DMA | Disaster Mitigation Act of 2000 | HDOH | Hawaii Department of Health |
| DNER | Department of Natural and Environmental Resources of Puerto Rico | HEI | Health Effects Institute |
| DOA | Department of Agriculture | HHCA | Hawaiian Homes Commission Act of 1920 |
| DOD | Department of Defense | HI-EMA | Hawaii Emergency Management Agency |
| DOE | U.S. Department of Energy | HIANG | Hawaii Air National Guard |
| DOH | Department of Health | HIARNG | Hawaii Army National Guard |
| DOH-CAB | Hawaii Department of Health, Clean Air Branch | HIHWNMS | Hawaiian Islands Humpback Whale National Marine Sanctuary |
| DOT | U.S. Department of Transportation | HIOSH | Hawaii Occupational Safety and Health Division |
| DPNR | Department of Planning and Natural Resources (U.S. Virgin Islands) | hp | horsepower |
| DPS | Department of Public Safety | HRD | (Guam) Historic Resources Division |
| EA | Environmental Assessment | HRHP | Hawaii Register of Historic Places |
| EAS | Emergency Alert System | HRS | Hawaii Administrative Rules, Revised Statute |
| EBS | Emergency Broadcast System | HTA | Hawai'i Tourism Authority |
| EDB | ethylene dibromide | HUC | hydrologic unit code |
| EFH | essential fish habitat | I/M | Inspection/Maintenance |
| EMS | emergency medical services | IARC | International Agency for Research on Cancer |
| ENSO | El Niño/Southern Oscillation | IBA | Important Bird Area |
| EO | Executive Order | IEEE | Institute of Electrical and Electronics Engineers |
| EPCRA | Emergency Planning and Community Right-to-Know Act | IFC | International Finance Corporation |
| ERP | effective radiated power | in | inches |
| ESA | Endangered Species Act | IPCC | Intergovernmental Panel on Climate Change |
| ESI | Environmental Sensitivity Index | IR | ionizing radiation |
| FAA | Federal Aviation Administration | ITCZ | Intertropical Convergence Zone |
| FAD | Fish Aggregating Device | IUCN | International Union for Conservation of Nature |
| FCC | Federal Communications Commission | kg/gal | kilograms per gallon |
| FEMA | Federal Emergency Management Agency | KIRC | Kaho'olawe Island Reserve Commission |

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|--------------------|---|-------------------|---|
| LAER | lowest achievable emission rate | NOAA | National Oceanic and Atmospheric Administration |
| lb/day | pounds per day | NOx | nitrogen oxides |
| lb/hp-hr | pounds per horsepower-hour | NP | National Park |
| LBJ | Lyndon B. Johnson | NPDES | National Pollutant Discharge Elimination System |
| Ldn | day-night average sound level | NPL | National Priorities List |
| Leq | equivalent noise levels | NPS | National Park Service |
| LNG | liquefied natural gas | NPSBN | nationwide public safety broadband network |
| LTE | Long Term Evolution | NRCS | Natural Resources Conservation Service |
| µg/m ³ | microgram(s) per cubic meter | NRHP | National Register of Historic Places |
| µPa | micro Pascal | NSPS | New Source Performance Standards |
| m/s | meter per second | NTIA | National Telecommunications and Information Administration |
| MBTA | Migratory Bird Treaty Act | NVSR | National Vital Statistics Report |
| mg/m ³ | Milligram(s) per cubic meter | NWI | National Wetland Inventory |
| mgd | million gallons per day | NWR | National Wildlife Refuge |
| MHz | megahertz | NWWS | National Weather Wire Satellite System |
| MLRA | Major Land Resource Area | OHA | Office of History and Archaeology |
| mm/s | millimeters per second | OIA | Office of Insular Affairs (USDI) |
| MMPA | Marine Mammal Protection Act | OSHA | Occupational Safety and Health Administration |
| MOA | Memorandum of Agreement | PA | Programmatic Agreement |
| MPA | Marine Protected Area | PAG | Port Authority of Guam |
| mph | miles per hour | PAHO | Pan American Health Organization |
| MSA | Magnuson-Stevens Fishery Conservation and Management Act | PCB | polychlorinated biphenyl |
| MTR | Military Training Route | PCP | pentachlorophenol |
| MUID | Map Unit Identification Data | PCS | Personal Communications Service |
| MW | megawatt | PDO | Pacific Decadal Oscillation |
| mW/cm ² | milliwatts per centimeter squared | PEIS | Programmatic Environmental Impact Statement |
| N | north; not attained | PL | Public Law |
| N ₂ O | nitrous oxide | PM | particulate matter |
| NA | not applicable; not assessed | PM ₁₀ | particulate matter up to 10 micrometers in diameter |
| NAAQS | National Ambient Air Quality Standards | PM _{2.5} | particulate matter up to 2.5 micrometers in diameter |
| NAGPRA | Native American Graves Protection and Repatriation Act | POPs | points of presence |
| NANSR | Nonattainment New Source Review | ppm | parts per million |
| NAWAS | National Warning System | PRDNER | Puerto Rico Department of Natural and Environmental Resources |
| NCA | National Climate Assessment | PREQB | Puerto Rico Environmental Quality Board |
| NCD | non-communicable disease | PR OSHA | The Puerto Rico Occupational Safety and Health Administration |
| NCDC | National Climatic Data Center | PRASA | Puerto Rico Aqueduct and Sewer Authority |
| NCN | no common name | PREPA | Puerto Rico Electric Power Authority |
| NCRP | National Council on Radiation Protection and Measurements | PRSHPO | Puerto Rico State Historic Preservation Office |
| ND | no data | PSD | Prevention of Significant Deterioration |
| NE | northeast | PUAG | Public Utility Agency of Guam |
| NEPA | National Environmental Policy Act | Pub. L. | Public Law |
| NESHAP | National Emission Standards for Hazardous Air Pollutants | | |
| NFIP | National Flood Insurance Program | | |
| NFIRS | National Fire Incident Reporting System | | |
| NHPA | National Historic Preservation Act | | |
| NIR | non-ionizing radiation | | |
| NMFS | National Marine Fisheries Service | | |
| NMHC | non-methane hydrocarbon compounds | | |
| NMOG | non-methane organic compounds | | |
| NNE | north-northeast | | |

| | | | |
|-----------------|--|------------------|---|
| PV | photovoltaic | UVA | University of Virginia |
| RAN | radio access network | VdB | vibration decibel(s) |
| RCP | Representative Concentration Pathway | VIC | Virgin Islands Code |
| RCRA | Resource Conservation and Recovery Act | VIPA | Virgin Islands Port Authority |
| RF | radio frequency | VISHPO | Virgin Islands State Historic Preservation Office |
| RIN | Regulation Identification Number | VOC | volatile organic compound |
| rms | root mean square | vog | volcanic smog |
| ROW | right-of-way | VRM | Visual Resource Management |
| SAAQS | State Air Quality Standards | W | watt(s) |
| SAFETEA-LU | Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users | W/m ² | watts per meters squared |
| SARA | Superfund Amendments and Reauthorization Act of 1986 | WAPA | Water and Power Authority |
| SE | Standard of Error | WHO | World Health Organization |
| SHPO | State Historic Preservation Office | WIMARCS | West Indies Marine Animal Research and Conservation Science |
| SIP | State Implementation Plan | WNP | Western North Pacific |
| SLR | sea level rise | WNW | west-northwest |
| SMA | Special Management Area | WPC | watts per channel |
| SMS | Scenery Management System | WPRFMC | Western Pacific Regional Fishery Management Council |
| SO ₂ | sulfur dioxide | | |
| SO _x | sulfur oxides | | |
| SPCC | Spill Prevention, Control, and Countermeasure | | |
| SPCZ | South Pacific Convergence Zone | | |
| SPOC | State Single Point of Contact | | |
| SRES | Special Report on Emission Scenarios | | |
| SSA | sole source aquifer | | |
| STATSGO2 | State Soil Geographic [Database] | | |
| SW | southwest | | |
| TAAQS | Territory Ambient Air Quality Standards | | |
| TCP | traditional cultural property | | |
| TEMCO | Territorial Emergency Management Coordinating Office | | |
| TMDL | Total Maximum Daily Load | | |
| TOC | total organic compound | | |
| tpy | tons per year | | |
| TRI | Toxic Release Inventory | | |
| TSCA | Toxic Substances Control Act | | |
| U.S. | United States | | |
| UAMES | University of Alaska Museum Earth Sciences | | |
| USACE | U.S. Army Corps of Engineers | | |
| USC | United States Code | | |
| USDA | U.S. Department of Agriculture | | |
| USDI | U.S. Department of the Interior | | |
| USEPA | U.S. Environmental Protection Agency | | |
| USFWS | U.S. Fish and Wildlife Service | | |
| USGCRP | U.S. Global Climate Change Research Program | | |
| USGS | U.S. Geological Survey | | |
| USVIDOH | U.S. Virgin Islands Department of Health | | |
| USVIPD | U.S. Virgin Islands Police Department | | |

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13. OTHER REQUIRED ANALYSES

In addition to the analyses discussed in the previous state/territory chapters, the National Environmental Policy Act (NEPA) requires an additional evaluation of the potential impacts from the Proposed Action related to unavoidable adverse impacts, any irreversible or irretrievable commitment of resources, and the relationship between local short-term and long-term productivity.

13.1. UNAVOIDABLE ADVERSE IMPACTS

The Council on Environmental Quality's (CEQ) NEPA implementing regulations (*40 CFR § 1502.16*) require that an Environmental Impact Statement (EIS) evaluate the unavoidable adverse impacts from implementation of the Proposed Action. For this Proposed Action, the analysis indicates that no significant or unavoidable adverse impacts are anticipated at the programmatic level. Once site-specific project information is known, the potential for adverse impacts would be analyzed, as appropriate, in NEPA documentation tiered from this Final Programmatic EIS (PEIS). 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.

13.2. IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES

CEQ's NEPA implementing regulations (*40 CFR § 1502.16*) require that an EIS review the potential impacts to irreversible or irretrievable commitments of resources resulting from implementation of the Proposed Action. An irreversible commitment of resources refers to the loss of resource use in the future, whereas irretrievable refers to the loss of a natural resource for harvest,¹ production, or use. These resources are irretrievable in that they would be used for a single project instead of being used for multiple purposes. An irretrievable commitment of resources is the loss of resources that cannot be replaced, recovered, or reversed. An example of irreversible commitments of resources could be the loss of a protected species or a cultural resource that would be considered permanent losses. An example of irretrievable commitment of resources could include the use of local contractors during deployment construction activities, during which the contractors supporting FirstNet deployment would be unable to work on other projects, and may cause temporary increases in the cost of local labor, equipment, or materials.

The potential impacts at the programmatic level addressed in each Environmental Consequences section of the preceding chapters were determined based on the resource-specific impact significance criteria developed by FirstNet. As a result, the impact significance ratings² of the specific types of effects analyzed in this Final PEIS cannot be directly related to the generalized discussion of irreversible or irretrievable commitments of resources in this section. However, any potential impacts that could create perceptible resource commitments that would be

¹ Harvesting is the act or process to take or kill wildlife for food, sport, or population control; to gather crops for consumption.

² As discussed in the Environmental Consequences sections, types of effects were rated as *potentially significant, less than significant with BMPs and mitigation measures incorporated, less than significant*, and *no impact* at the programmatic level based on the characteristics of the potential effects. BMPs are best management practices.

irreversible or irretrievable are assumed to result in some level of impact to a particular resource. Potential resource commitments are shown on Table 13.2-1.

Table 13.2-1: Summary of Irreversible and Irretrievable Commitment of Resources by Resource Area

| Resource Area | Irreversible Impacts | Irretrievable Impacts | Explanation |
|------------------------------|----------------------|-----------------------|---|
| Infrastructure | No | No | Short-term obstruction or temporary disruption to local infrastructure could occur during construction of deployment activities. There would be no long-term impacts to infrastructure. |
| Soils | Yes | Yes | If an undisturbed land area is selected for deployment and operation activities, there could be an irreversible resources commitment. Irretrievable impacts could occur if, for example, deployment/construction activities affect a planting or harvesting schedule or crop yields. |
| Geology | Yes | Yes | Removal or disturbance of paleontological resources (fossils) could potentially create irreversible and irretrievable impacts. |
| Water Resources and Wetlands | No | No | Deployment activities are not expected to cause irretrievable loss of existing waterbodies or wetlands, or exceed water quality standards. |
| Biological Resources | Yes | Yes | Removal or disturbance of habitat could potentially create minor irreversible and irretrievable impacts. |
| Land Use and Recreation | Yes | Yes | Land use required for the deployment activities could potentially be a minor irreversible impact. Deployment of buried fiber, for example, could result in minor irretrievable impacts due to temporary loss of land use for other purposes. |
| Visual Resources | Yes | Yes | Irreversible and irretrievable impacts associated with obstruction of scenic areas could occur from some angles, and new light sources associated with project activities could impact enjoyment of the night sky. |
| Socioeconomic Resources | No | Yes | There could be a temporary increase in use of local contractors during construction activities, representing increased employment and an irretrievable loss of workers for other projects during construction. |
| Environmental Justice | No | No | In general, Environmental Justice impacts across each state or territory would not include irreversible or irretrievable effects. Analyses of individual proposed projects should assess whether potential impacts to specific environmental justice communities include irreversible and/or irretrievable effects. 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. |
| Cultural Resources | Yes | Yes | Removal or disturbance of previously unidentified cultural resources could potentially result in irretrievable and irreversible impacts. |
| Air Quality | No | No | Project emissions are not expected to exceed federal or state air quality standards. Air quality would return to existing conditions after completion of deployment activities. |
| Noise and Vibrations | No | Yes | Potential short-term, temporary noise impacts may result during construction activities for deployment. There would be no long-term impacts from noise and vibrations. |

| Resource Area | Irreversible Impacts | Irretrievable Impacts | Explanation |
|-------------------------|----------------------|-----------------------|---|
| Climate Change | No | No | Greenhouse gas emissions are not expected to be significant at the programmatic level. |
| Human Health and Safety | No | Yes | Construction activities during deployment may present relatively minor human health and safety concerns. Any hazardous wastes would be disposed of properly. Conditions would return to normal after completion of deployment activities. |

Where any potential irreversible or irretrievable commitments of resources are identified, they would be addressed in project-specific environmental compliance documentation. Project- or 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. BMPs and mitigation measures would be implemented where practicable and feasible to help reduce irreversible and irretrievable impacts.

13.3. RELATIONSHIP BETWEEN SHORT-TERM AND LONG-TERM PRODUCTIVITY

CEQ's NEPA implementing regulations (*40 CFR § 1502.16*) require that an EIS address the relationship between short-term use of the environment and the potential impacts of such use on the maintenance and enhancement of long-term productivity, particularly for beneficial uses. Such impacts can arise from choosing one action that could reduce the flexibility of pursuing other options in the future, or from selecting a specific parcel of land or other resource to a certain use that would not allow other uses to occur at the site. At the programmatic level, it is anticipated that implementation of the Proposed Action would not result in any impacts that would narrow the range of future beneficial uses of the environment because it would not pose any long-term risks to the health, safety, or the general welfare of public communities and would, in fact, provide significant public welfare benefits in terms of increased public safety and security. Deployment activities would follow, as practicable and feasible, the BMPs and mitigation measures outlined in this Final PEIS, as appropriate.

FirstNet does not intend to alter the current uses of the environment. Project- or 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. During those analyses, each project element and activity would be evaluated, and the potential long-term effects on productivity of each environmental resource area would be evaluated relative to potential trade-offs.

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