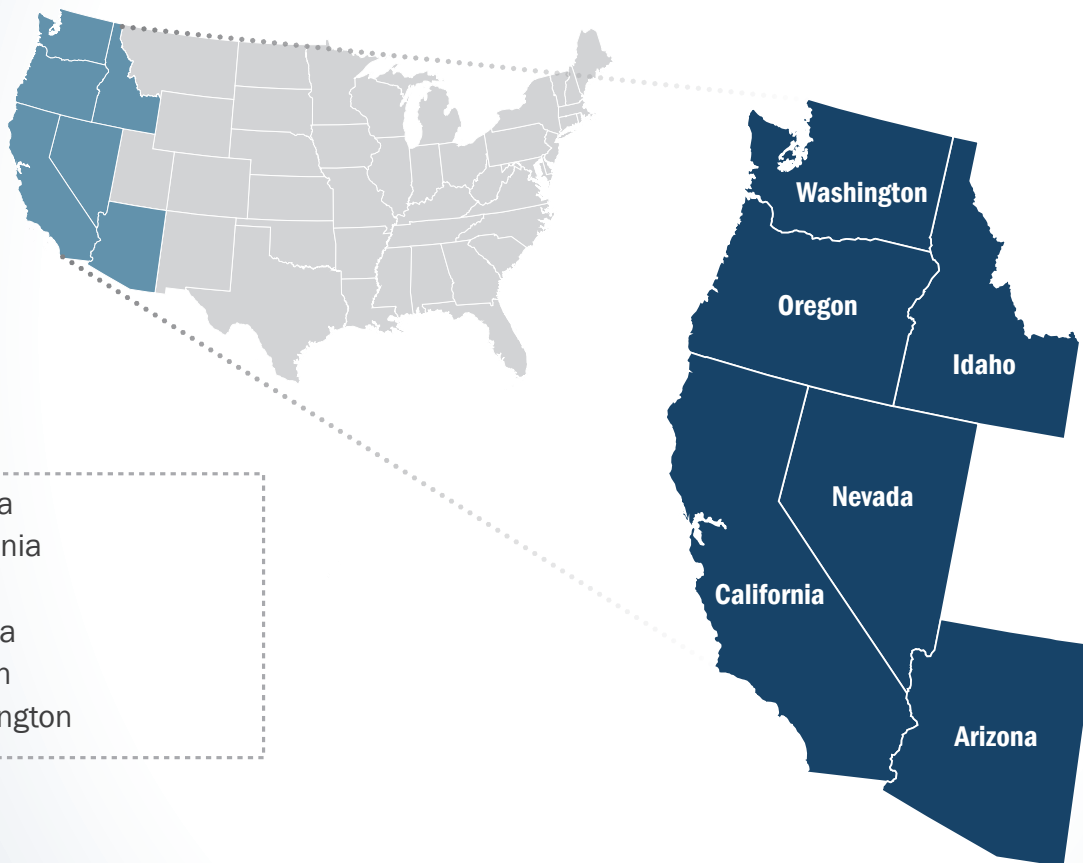




FirstNet[®]

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

APPENDIX C - APPLICABLE LAWS AND REGULATIONS, EXECUTIVE ORDERS, AND GUIDANCE



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First Responder Network Authority



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

APPENDIX C – APPLICABLE LAWS AND REGULATIONS, EXECUTIVE ORDERS, AND GUIDANCE

Amanda Goebel Pereira, AICP
NEPA Coordinator
First Responder Network Authority
U.S. Department of Commerce
12201 Sunrise Valley Dr. M/S 243
Reston, VA 20192

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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APPENDIX C – ENVIRONMENTAL LAWS AND REGULATIONS

The proposed implementation of the Proposed Action must meet the requirements of the National Environmental Policy Act and other applicable federal laws and regulations, Executive Orders, and implementing guidance for the resource areas evaluated in the Programmatic Environmental Impact Statement. Titles are listed alphabetically.

Table C-1: Applicable Laws and Regulations, Executive Orders, and Guidance

Title	Description
Laws and Regulations	
American Indian Religious Freedom Act (AIRFA) (42 United States Code [U.S.C.] §1996)	Protects and preserves for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Alaska Native, and Native Hawaiians, including access to culturally significant sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.
Archaeological Resources Protection Act of 1979 (ARPA) (16 U.S.C. §§470aa-470mm; Public Law [Pub. L.] 96-95)	Establishes requirements to protect archaeological resources and sites on public lands and Indian lands, including civil and criminal penalties for the destruction or alteration of cultural resources.
Bald and Golden Eagle Protection Act (16 U.S.C. §668 et seq.)	Prohibits the taking, possession, sale, purchase, barter, or offer to sell, purchase, or barter, export, or import of any part of a bald eagle or golden eagle.
Clean Air Act (CAA) (42 U.S.C. §§7401-7671g)	Protects air quality; authorizes the U.S. Environmental Protection Agency (USEPA) to establish National Ambient Air Quality Standards for six criteria pollutants that threaten human health and welfare: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO ₂), ozone (O ₃), sulfur dioxide (SO ₂), and particulate matter with a diameter equal to or less than 10 microns (PM ₁₀) or less than 2.5 microns (fine particles) (PM _{2.5}). Includes provisions for reducing soil erosion to preserve air quality.
Coastal Barrier Improvement Act of 1990 (CBIA) (Pub. L., 101-591)	Adds additional areas to the Coastal Barrier Resources System and secondary barriers within large embayments (coastline indentations that form a bay), and establishes a process to transfer interests in land to public or non-profit conservation organizations.
Coastal Barrier Resources Act of 1982 (CBRA) (Pub. L. 97-348)	Established the John H Chafee Coastal Barrier Resource System to protect sensitive and vulnerable barrier islands found along the U.S. Atlantic, Gulf, and Great Lakes coastlines, as well as Puerto Rico and the U.S. Virgin Islands.
Coastal Zone Management Act (CZMA) (16 U.S.C. § 1451 et seq.)	Enacted to protect the coastal environment from growing demands associated with residential, recreational, commercial, and industrial uses. Coastal states with an approved Coastal Zone Management Plan identifying permissible land and water use within the state’s coastal zone can review federal actions for federal consistency to determine if the actions are consistent with the state program’s enforceable policies.
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA - Superfund Law) (42 U.S.C. §9601)	Authorizes the USEPA to respond to releases, or threatened releases, of hazardous substances that may endanger public health, welfare, or the environment. Requires the USEPA to establish criteria for determining priorities among releases (or threatened releases) of hazardous substances for the purpose of taking remedial action.
Construction, Marking, and Lighting of Antenna Structures of	Governs communications infrastructure under Part 17, which prescribes procedures for antenna structure registration and requires the Federal Aviation Administration (FAA) to conduct an aeronautical study of the

Title	Description
the Federal Communications Commission regulations, Part 17 (47 Code of Federal Regulations [CFR] Chapter 1)	navigation airspace to determine appropriate tower marking and lighting requirements for safe airspace. Before the Federal Communications Commission authorizes the construction of new antennae or alteration of existing antennae structures, an FAA determination of “no hazard” may be required. FAA notification is required for new any construction greater than 200 feet above the ground, and near an airport runway (taller than 100:1 for a horizontal distance of 20,000 feet, 50:1 for a horizontal distance of 10,000 feet, and 25:1 for a horizontal distance of 5,000 feet of a heliport). The FAA can vary marking and lighting when requested if aviation safety is not compromised.
Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) (40 CFR Parts 1500-1508)	Provides direction to ensure compliance with procedures to achieve the goals of NEPA. Public officials are able to make decisions based on understanding of environmental consequences and take actions to protect, restore, and enhance the environment.
Critical Infrastructure Protection Act of 2001 (42 U.S.C. 5195)	Defines critical infrastructure as the assets, systems, and networks (physical or virtual) vital to the U.S., which if incapacitated or destroyed, would have a debilitating effect on security, national economic security, public health or safety, or a combination of these.
Disaster Mitigation Act of 2000 (DMA 2000) (Pub. L. 106-390)	Establishes the basis for Federal Environmental Management Agency disaster mitigation planning requirements as a condition of mitigation grant assistance to states, tribes, and local governments. Mitigation planning may be incorporated into a comprehensive master plan identifying hazards, analyzing risks, establishing priorities, and describing specific actions to address those risks.
Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. §§11004-11049)	Improves community access to information about chemical hazards and facilitates the development of chemical emergency response plans by states, tribes, and local governments. Establishes the Toxic Release Inventory to inform the public about potentially dangerous chemicals in their community.
Endangered Species Act (ESA) of 1973 (16 U.S.C. §1531 et seq.)	Ensures the protection and recovery of imperiled species and the habitats upon which they depend. Prohibits take, which is defined as harming, up to and including killing, or harassing a listed species. Section 7 of the ESA requires federal agencies to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the threatened or endangered species or result in destruction or adverse modification of critical habitat.
Energy Independence and Security Act of 2007 (Pub. L. 110-140)	Expands the production of renewable fuels and contains provisions for energy efficiency, smart grid, and carbon dioxide and incentives for plug-in hybrid electric vehicles to assist the electric power industry’s efforts to reduce greenhouse gas emissions.
Energy Policy Act of 2005 (Pub. L. 109-58)	Provides tax incentives and loan guarantees for energy production of various types.
Farmland Protection Policy Act of 1981 (FPPA) (Pub. L. 97-98, 7 U.S.C. §4201)	Requires federal agencies to examine the potentially adverse effects to “prime” and “unique” farmland resources before approving any action that would irreversibly convert farmlands to non-farm uses.
Federal Facility Compliance Act of 1992 (Pub. L. 102-386)	Amends the Solid Waste Disposal Act and expands the enforcement authority of federal and state regulators with respect to solid and hazardous waste management at federal facilities. Requires federal facilities to pay any nondiscriminatory fees or service charges assessed in connection with a federal, state, interstate, or local solid or hazardous waste regulatory program. Waives immunity for federal facilities under solid and hazardous waste laws by allowing states to fine and penalize for violations.

Title	Description
Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 U.S.C. §136 et seq.)	Provides for federal regulation of pesticide distribution, sale, and use.
Federal Land Policy and Management Act of 1976 (43 U.S.C. §1701 et seq.)	Directs management of public lands, administered by the Bureau of Land Management, to protect the quality of the land and preserve certain public lands in their natural conditions.
Federal Telecommunications Act of 1996	Establishes general criteria for the siting of telecommunication facilities.
Federal Water Pollution Control Act (Clean Water Act – CWA) (33 U.S.C. §1251 et seq.)	Protects water quality and aims to restore and maintain the chemical, physical, and biological integrity of “waters of the United States.” Section 303(d) requires states and USEPA to identify waters not meeting state water quality standards and to develop total maximum daily loads, defined as the maximum amount of a pollutant a waterbody can receive and still meet water quality standards. After determining total maximum daily loads for impaired waters, states are required to identify all point and nonpoint sources (runoff) of pollution in a watershed that are contributing to the impairment and to develop an implementation plan that will allocate reductions to each source in order to meet the state standards. Section 320 establishes the National Estuary Program, which identifies nationally significant estuaries threatened by pollution, and requires federal grants to states, interstate, and regional water pollution control agencies to prepare and implement conservation and management plans. Section 404 addresses prohibition and permitting for dredged materials and fill material into waters of the United States.
Fish and Wildlife Conservation Act of 1980 (16 U.S.C. §§2901-2911)	Declares that fish and wildlife are of ecological, educational, aesthetic, cultural, recreational, economic, and scientific value to the nation, and encourages all federal agencies to conserve and promote conservation of non-game fish and wildlife and their habitats.
Fish and Wildlife Coordination Act of 1934 (16 U.S.C. §§661-667e)	Mandates that fish and wildlife resources receive adequate and equal consideration in conjunction with other values during the planning of water resources development projects that may conflict with the goal of conserving fish and wildlife resources.
Flood Plain Management Criteria for Flood-prone Areas (44 CFR Part 60.3)	Provides guidance on Federal Emergency Management Agency floodplain management criteria for land management and use.
Intermodal Surface Transportation Efficiency Act of 1991 (23 U.S.C. §101 [note])	Establishes new U.S. transportation planning and policy for highway construction, highway safety, and mass transit funding. Provides funds for the Bridge Replacement and Rehabilitation Program, Scenic Byways Program, pedestrian and bicycle facilities (such as pedestrian bridges), and designation of high-speed rail corridors.
Landownership Adjustments (36 CFR Part 254)	Sets procedures for conducting exchanges of National Forest System lands and requires consideration of the public interest, including protection of fish and wildlife habitats, cultural resources, watersheds, and wilderness and aesthetic values, as well as enhancement of recreation opportunities and public access.
Magnuson-Stevens Fishery Conservation and Management Act of 1976 (16 U.S.C. §§1801-1882)	Requires conservation and management of U.S. fishery resources through implementation of fishery management plans and Regional Fishery Management Councils. Fishery management plans enable stakeholders to participate in the administration of fisheries, consider social and economic needs of states, develop underutilized fisheries, and protect essential fish habitats.
Marine Mammal Protection Act of 1972 (MMPA)	Prohibits the taking of marine mammals and enacts moratoriums on imports, exports, and sales of marine mammals and marine mammal parts or products within the United States. Defines “take” as “the act of

Title	Description
	hunting, killing, capture, and/or harassment of any marine mammal; or, the attempt at such.” Defines “harassment” as “any act of pursuit, torment or annoyance” that has potential to injure or disturb a marine mammal.
Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. §§1401–1445)	Establishes the marine sanctuaries program and provides a permitting process for the dumping of materials, including dredged materials, into U.S. ocean water.
Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§703-712)	Regulates the taking, possession, import, export, transport, sale, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit.
National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.)	Requires federal agencies to integrate environmental values into their decision-making processes by considering the environmental impacts of their Proposed Actions and reasonable alternatives to those actions. Established CEQ; CEQ promulgated regulations implementing NEPA, which are binding on all federal agencies, to address the procedural provisions of NEPA and the administration of the NEPA process, including preparation of Environmental Impact Statements.
National Forest Management Act of 1976 (Pub. L. 94-588) National Forest System Land and Resource Management Planning (36 CFR Part 219)	Governs the administration of national forests and removal of trees. Includes requirements for consideration, treatment, and protection of intangible resources such as scenery and aesthetics.
National Historic Preservation Act (NHPA) (formerly 16 U.S.C. § 470 et seq., now 54 U.S.C. § 100101 et seq.)	Ensures protection of cultural resources and historic properties. Established the Advisory Council on Historic Preservation (ACHP) to promote the preservation, enhancement, and productive use of our nation’s historic resources. Authorizes the Secretary of the Interior to maintain a National Register of Historic Places composed of districts, sites, buildings, structures, and objects significant in American history and culture. Section 106 of the NHPA requires federal agencies to identify the effects of proposed actions on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. Under Section 106, the NHPA requires that federal agencies consult with federally-recognized Indian tribes and Native Hawaiian Organizations that attach traditional religious and cultural significance to eligible or listed historic properties that may be affected by the agency’s actions.
National Marine Sanctuaries Act (16 U.S.C. §1431 et seq.)	Authorizes the Secretary of Commerce to designate national marine sanctuaries based on statutory criteria and specifies consultation requirements.
National Trails System Act of 1968 (16 U.S.C. §1241)	Authorizes the Secretary of Agriculture to administer and manage national scenic trails for conservation and enjoyment.
Native American Graves Protection and Repatriation Act (NAGPRA) (Pub. L. 101–601, 104 Stat. 3048)	Establishes a process for museums and federal agencies to manage certain Native American cultural items in their possession or inadvertently discovered during a project; establishes the rights of Native American lineal descendants, American Indian tribes, and Native Hawaiian organizations with respect to the treatment, repatriation, and disposition of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony (referred to collectively in the statute as cultural items), with which they can show a relationship of lineal descent or cultural affiliation.
North American Wetlands Conservation Act of 1989 (Pub. L. 101-233)	Recognizes the aesthetic values of fish, shellfish, and other wildlife, and recognizes that wetlands provide aquatic areas important for recreational and aesthetic purposes. Federal agencies (to the extent possible) should cooperate to restore, protect, and enhance wetlands and other habitats for migratory birds, fish, and wildlife.

Title	Description
Occupational Safety and Health Act (OSHA) of 1970 (Pub. L. 91-596)	Mandates that employers provide a safe place of employment, free from hazards to safety and health.
Plant Protection Act (7 U.S.C. §7701 et seq.)	Establishes a program to control the spread of noxious weeds.
Procedures for Abatement of Highway Traffic Noise and Construction Noise (23 CFR 772)	Establishes procedures for conducting noise studies and implementing noise abatement measures, and provides guidelines to plan and design highway projects.
Resource Conservation and Recovery Act of 1976 (40 CFR Parts 239-282)	Amends the Solid Waste Disposal Act of 1965 to address how to safely manage and dispose of municipal and industrial waste generated nationwide. Identifies more stringent hazardous waste management standards, and a comprehensive regulatory program for underground storage tanks that store petroleum or certain hazardous materials.
Rivers and Harbors Act of 1899 (33 U.S.C. §403)	Addresses projects and activities in navigable waters and harbor and river improvements and prohibits the unauthorized obstruction or alteration of any navigable water of the United States, including altering any port, harbor, or channel.
Safe Drinking Water Act (42 U.S.C. §§300d-300j-9, as amended by Pub. L. 93-523)	Protects public health by regulating the nation’s public drinking water and its sources, including protection of surface water and groundwater. Section 1424(e) of the Safe Drinking Water Act authorizes the Sole Source Aquifer Protection Program. Sole source aquifers are the sole or principal source of drinking water for an area, defined as providing 50 percent or more an area’s drinking water supply. Any federally funded proposed project with the potential to contaminate a designated sole source aquifer is subject to USEPA review.
Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) (Pub. L. 109–59)	Addresses maintenance and growth challenges of the U.S. transportation system (e.g., improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment). Regulates efforts to address national transportation problems and provides state and local decision makers the flexibility to solve transportation problems at the regional and local levels.
Superfund Amendments and Reauthorization Act of 1986 (SARA) (Pub. L. 99-499)	Amends the Comprehensive Environmental Response, Compensation, and Liability Act as a result of lessons learned from managing the Superfund program. Stresses the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites, encourages greater citizen participation in cleanup decisions, and increases the size of the trust fund.
Toxic Substances Control Act of 1976 (TSCA) (15 U.S.C. Chapter 53)	Gives the USEPA the authority to require reporting, record-keeping, and testing relating to toxic chemical substances or mixtures.
Wild and Scenic Rivers Act (16 U.S.C. §§1271–1287) Wild and Scenic Rivers (36 CFR Part 297)	Provides for a Wild and Scenic River System by recognizing the remarkable values (scenic, recreational, geologic, fish and wildlife, historic, cultural, or other values) of specific rivers of the United States. The Wild and Scenic Rivers designation includes requirements for the protection of scenic and natural values from the effects of any water resources project.
Wilderness Act of 1964 (16 U.S.C. §1131)	Provides for the preservation of wilderness character and protects and manages the natural conditions of wilderness areas to negate the impact of humankind.
Executive Orders	
Executive Order 11988 Floodplain Management	Requires federal agencies to avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

Title	Description
Executive Order 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations	Ensures that federal agencies avoid taking actions that have a disproportionately high and adverse impact on low-income populations or minority populations. Emphasizes the importance of NEPA's public participation process, directing that each federal agency shall provide opportunities for community input in the NEPA process.
Executive Order 13007 Indian Sacred Sites	Directs federal agencies to accommodate access to and avoid adversely affecting American Indian sacred sites.
Executive Order 13089 Coral Reef Protection	Directs federal agencies to avoid degradation of coral reef ecosystems and implement measures to restore affected ecosystems.
Executive Order 13112 Invasive Species	Directs federal agencies to prevent the introduction of plant, animal, and microorganism invasive species, and control and minimize the economic, ecologic, and human health impacts that invasive species may cause.
Executive Order 13340 Great Lakes Interagency Task Force and Promotion of a Regional Collaboration of National Significance for the Great Lakes	Specifies 11 federal agency and Cabinet-level departments to provide strategic direction on federal Great Lakes policies, priorities, and programs.
Executive Order 13547 Stewardship of the Ocean, Our Coasts, and the Great Lakes	Provides national policy to ensure the protection, maintenance, and restoration of the health of ocean, coastal, and Great Lakes ecosystems and resources.
Executive Order 13653 Preparing the United States for the Impacts of Climate Change	Directs federal agencies to take steps that will make it easier for American communities to strengthen their resilience to climate change impacts.
Executive Order 13690 Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input	Implements the Federal Flood Risk Management Standard as part of a national policy on resilience and risk reduction, consistent with the President's Climate Action Plan. Amends EO 11988, and emphasizes consideration by agencies of ecosystem-based alternatives and long-term resilience and risk reduction when managing flood risks.
Executive Order 13693 Planning for Federal Sustainability in the Next Decade	Establishes target of 40 percent greenhouse gas emission reduction for federal operations by 2025, relative to a fiscal year 2008 baseline. Primary emphasis is on increasing energy efficiency before considering renewable energy and alternative fuels. Federal agencies will continue to prepare annual Strategic Sustainability Performance Plans for Council on Environmental Quality review.
Guidance	
Council on Environmental Quality Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions	Provides guidance on how to incorporate the environmental effects of greenhouse gas emissions and the relationship of climate change in NEPA documentation.

APPENDIX D – ENVIRONMENTAL JUSTICE METHODOLOGY

FirstNet Methodology to Screen for Potential Environmental Justice Populations

This appendix explains the methodology used in this Programmatic Environmental Impact Statement (PEIS) to screen for the presence of potential environmental justice populations. The PEIS applies this methodology to every state and territory. Future analyses for site-specific actions may tier-off the results and methodology of this PEIS (see Section 1.2).

The first step in developing a screening methodology is to determine the types of communities that are relevant. The Council on Environmental Quality (CEQ) defines both place-based and non-place based communities for environmental justice consideration. Specifically, “agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect.” (CEQ, 1997)

Telecommunications projects could have effects on place-based minority or low-income populations, meaning populations of individuals “living in geographic proximity” to one another and to an action such as placement of a telecommunications tower. Potentially, such projects could affect place-based environmental justice communities disproportionately due to localized human health or environmental effects. (The focus in environmental justice assessments is always on adverse effects, but telecommunications projects could also have beneficial effects such as improvements in police, fire, and emergency medical services. The Environmental Consequences section for infrastructure addresses such effects.) Telecommunications projects would be very unlikely to affect disproportionately any populations that are not place-based. Because FirstNet is such a broad program, it would affect at the same rate and intensity the general population and groups not defined by where they live, such as migrant workers, other types of workers that disproportionately fall into particular minority categories, racial and ethnic groups in general, and Native American Tribes as dispersed entities.

Identifying potential place-based environmental justice communities involves screening geographic areas for minority and low-income populations. This requires choosing the appropriate geographic units of analysis, the appropriate general population comparison group, and the appropriate metrics for classifying populations according to the CEQ definitions. The following paragraphs address each consideration in turn.

Any adverse effects of FirstNet projects are most likely to manifest at a local level. For example, dust and noise exposure from construction of communication towers, changes in property values, and any adverse radiation from operation of communications equipment – should these be actual impacts – would affect people in proximity to those activities. Therefore, the environmental justice population screening analysis in this PEIS uses the smallest geographic unit for which regularly updated socioeconomic data are readily available, the census block group (BG).

The Census Bureau defines this unit as follows:

“Block Groups are statistical divisions of census tracts, [and] are generally defined to contain between 600 and 3,000 people. ... A BG usually covers a contiguous area. ... BGs never cross state, county, or census tract boundaries but may cross the boundaries of any other geographic entity.”
(U.S. Census Bureau, 2015a)

In dense inner city areas, a BG may only encompass a few city blocks. In rural areas, a BG may cover many square miles.

Regarding the choice of general population comparison group, this PEIS uses each state’s population as the comparison group, hereafter called the reference population. This is because: a) states are the fundamental analysis units for the PEIS as a whole, and b) states vary considerably in their demographic and economic conditions, thus it would not be appropriate to compare BG figures to national figures on population by minority group or poverty status.

The choice of appropriate metrics for identifying minority populations and low-income populations is somewhat complicated. The CEQ provides some basic guidance. Additional aspects are discretionary and are matters of precedent and best practice within particular agencies and among socioeconomic analysts.

The CEQ provides the following direction on minority populations:

“Minority populations should be identified where either: (a) the minority population of the affected area exceeds 50% or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.” (CEQ, 1997)

The CEQ does not define “meaningfully greater.” In practice, many analysts use varying percentages above the reference population’s percentage of individual minority groups (e.g., Asian or Hispanic) or combined minority groups.

The CEQ also directs that “Low-income populations in an affected area should be identified with the annual statistical poverty thresholds from the Bureau of the Census’ Current Population Reports, Series P-60 on Income and Poverty” (CEQ, 1997). Poverty thresholds are specific income levels that take into account factors such as family size and the ages of family members. The federal government defines these levels annually for the nation. The CEQ does not provide additional direction on applying poverty thresholds. In practice, many analysts use varying percentages above the reference population’s percentage of people with incomes at or below the poverty level.

Minority and low-income populations are each of concern in environmental justice assessments. If a block group meets either the minority criteria or the low-income criteria, it is considered a potential environmental justice population.

This PEIS uses several different criteria (thresholds) in a screening methodology designed to identify degrees of likelihood that a BG contains a potential environmental justice population.

These thresholds are:

- a) An absolute threshold of over 50 percent of the BG's population being of minority status. This is a CEQ-defined threshold as noted above (CEQ, 1997).
- b) An absolute threshold of 20 percent or more of the BG's population living in poverty. This is the Census Bureau's definition of a "poverty area" (Bishaw, 2014).
- c) A meaningfully greater threshold of 20 percentage points greater than the reference population's minority population, whether an individual minority population or combined minority population. For example, if the combined minority population in the reference population is 10 percent, the threshold applied to each BG is 30 percent. This is the U.S. Department of Housing and Urban Development's definition of a "minority neighborhood" (U.S. Department of Housing and Urban Development, 2015). An example of a recent, multi-state PEIS that used this threshold is the *Approved Resource Management Plan Amendments/Record of Decision (ROD) for Solar Energy Development in Six Southwestern States* (U.S. Bureau of Land Management, 2012). Its *Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States* (U.S. Bureau of Land Management and U.S. Department of Energy, 2010) provides the environmental justice screening analysis (see Chapter 4, Affected Environment, and the individual state affected environment and impact assessment chapters).
- d) A meaningfully greater threshold of 120 percent of the reference population's minority population (individual minority or combined minority population). For example, if the minority population in the reference population is 10 percent, the threshold applied to each BG is 12 percent. However, using this as the sole criterion at the BG level would be problematic because it may mis-identify the environmental justice potential of many BGs.¹
- e) A meaningfully greater threshold of 120 percent of the reference population's percentage of individuals living with incomes below 200 percent of the federal poverty level. For example, if 25 percent of the reference population is below 200 percent of the poverty level, the threshold applied to each BG is 30 percent. This approach aligns with the U.S. Environmental Protection Agency's (USEPA) approach to defining "low income" in its recently released environmental justice screening tool, EJSCREEN. EPA's rationale for this threshold cites literature indicating that the "effects of income on baseline health and probably on other aspects of susceptibility are not limited to those [people] below the poverty thresholds," and the view of some socioeconomic analysts that "today's poverty thresholds are too low to adequately capture the populations adversely affected by low income levels."

¹ For instance, if the reference population percentage for a specific minority is 1 percent, the threshold for defining a potential environmental justice population is 1.2 percent. If a BG has a total population of 1,000, the specific minority population equivalent to the reference population percentage is 10, and the threshold for defining an environmental justice population is 12. The difference of only two persons categorizes this BG as a potential environmental justice population. This is a questionable conclusion in terms of data fidelity (census and sampling errors), and whether such small differences truly are meaningful in the environmental justice context. The 120 percent approach to "meaningfully greater" can lead to identifying many BGs as potential environmental justice populations based on very small differences, and where the individuals do not constitute a community according to the CEQ definition noted above—"a group of individuals living in geographic proximity to one another." Therefore, this EIS uses this threshold to identify moderate potential for environmental justice populations, and other, higher thresholds to identify high potential for environmental justice populations.

(USEPA, 2015c) However, this definition broadens the definition of low-income provided by the CEQ (CEQ, 1997) and considerably increases the number of BGs identified as having environmental justice potential.

For this PEIS, combinations of these thresholds define three degrees of likelihood that a BG contains a potential environmental justice population:

High Potential for Environmental Justice Populations:

- Greater than 50% combined minority population
- Or greater than 20% of the total population living in poverty
- Or greater than the reference percentage plus 20 percentage points for at least one minority population
- Or greater than 120% of the reference percentage for combined minority population

Moderate Potential for Environmental Justice Populations

- Does not meet any of the above thresholds
- And greater than 120% of the reference percentage for at least one minority population
- Or greater than 120% of the reference percentage for individuals living with incomes below 200 percent of the federal poverty level

Low Potential for Environmental Justice Populations

- Does not meet any of the above thresholds

The thresholds specific to the Moderate Potential category are much broader than those of the High Potential category. The Moderate Potential category casts a wide net – it was defined to err on the side of including an area as a potential environmental justice population. During FirstNet deployment, further analysis to verify the presence of specific, localized environmental justice populations would be particularly warranted for the Moderate Potential category.

This PEIS applies this methodology to all BGs in a state, using data from the Census Bureau's American Community Survey (ACS) 2009-2013 5-Year Estimates (U.S. Census Bureau, 2015b; U.S. Census Bureau, 2015c; U.S. Census Bureau, 2015d; U.S. Census Bureau, 2015e) and Census Bureau urban classification data (U.S. Census Bureau, 2010a; U.S. Census Bureau, 2010b). The ACS is the Census Bureau's flagship demographic estimates program for years between the decennial censuses. The 5-Year Estimates use sample data taken over a five-year period; this is the only nationally consistent source of the necessary data at the BG level.

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APPENDIX E – AIR QUALITY

Table E-1: National Ambient Air Quality Standards (NAAQS)

Pollutant	Averaging Time	Primary Standard ^a		Secondary Standard		Notes
		µg/m ³	ppm	µg/m ³	ppm	
CO	8-hour	10,000	9	-	-	Standard is not to be exceeded more than once per year
	1-hour	40,000	35	-	-	
Lead	3-month	0.15 ^b	-	Same as Primary		Rolling average. Not to be exceeded
NO ₂	1-hour	188	0.100	-	-	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Annual	100	0.053	Same as Primary		Annual Mean
PM ₁₀	24-hour	150	-	-	-	Not to be exceeded more than once per year on average over 3 years
PM _{2.5}	Annual	12	-	15	-	Annual mean, averaged over 3 years
	24-hour	35	-	Same as Primary		98th percentile, averaged over 3 years
O ₃	8-hour	147	0.075 ^c	Same as Primary		Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
SO ₂	1-hour	196	0.075 ^d	-	-	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	3-hour	-	-	1,300	0.5	Not to be exceeded more than once per year

Source: (USEPA, 2014)

^a The standard may be expressed both sets of units. A blank cell, containing a dash, indicates that there is no primary or secondary standard for the specific pollutant and averaging time.

^b “Final Rule signed October 15, 2008. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

^c Final Rule signed March 12, 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, USEPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard (“anti-backsliding”). The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.

^d Final Rule signed June 2, 2010. The 1971 annual and 24-hour SO₂ standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.”

Table E-2: Federally Regulated Hazardous Air Pollutants (HAPs)

POLLUTANT ^a	CAS#	POLLUTANT ^a	CAS#
Acetaldehyde	75070	Chloroform	67663
Acetamide	60355	Chloromethyl methyl ether	107302
Acetonitrile	75058	Chloroprene	126998
Acetophenone	98862	Cresols/Cresylic acid (isomers and mixture)	1319773
2-Acetylaminofluorene	53963	o-Cresol	95487
Acrolein	107028	m-Cresol	108394
Acrylamide	79061	p-Cresol	106445
Acrylic acid	79107	Cumene	98828
Acrylonitrile	107131	2,4-D, salts and esters	94757
Allyl chloride	107051	DDE	3547044
4-Aminobiphenyl	92671	Diazomethane	334883
Aniline	62533	Dibenzofurans	132649
o-Anisidine	90040	1,2-Dibromo-3-chloropropane	96128
Asbestos	1332214	Dibutylphthalate	84742
Benzene (including benzene from gasoline)	71432	1,4-Dichlorobenzene(p)	106467
Benzidine	92875	3,3-Dichlorobenzidine	91941
Benzotrichloride	98077	Dichloroethyl ether (Bis(2-chloroethyl)ether)	111444
Benzyl chloride	100447	1,3-Dichloropropene	542756
Biphenyl	92524	Dichlorvos	62737
Bis(2-ethylhexyl)phthalate (DEHP)	117817	Diethanolamine	111422
Bis(chloromethyl)ether	542881	N,N-Diethyl aniline (N,N-Dimethylaniline)	121697
Bromoform	75252	Diethyl sulfate	64675
1,3-Butadiene	106990	3,3-Dimethoxybenzidine	119904
Calcium cyanamide	156627	Dimethyl aminoazobenzene	60117
Caprolactam	105602	3,3'-Dimethyl benzidine	119937
Captan	133062	Dimethyl carbamoyl chloride	79447
Carbaryl	63252	Dimethyl formamide	68122
Carbon disulfide	75150	1,1-Dimethyl hydrazine	57147
Carbon tetrachloride	56235	Dimethyl phthalate	131113
Carbonyl sulfide	463581	Dimethyl sulfate	77781
Catechol	120809	4,6-Dinitro-o-cresol, and salts	534521
Chloramben	133904	2,4-Dinitrophenol	51285
Chlordane	57749	2,4-Dinitrotoluene	121142
Chlorine	7782505	1,4-Dioxane (1,4-Diethyleneoxide)	123911
Chloroacetic acid	79118	1,2-Diphenylhydrazine	122667
2-Chloroacetophenone	532274	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106898
Chlorobenzene	108907	1,2-Epoxybutane	106887
Chlorobenzilate	510156		

POLLUTANT^a	CAS#	POLLUTANT^a	CAS#
Ethyl acrylate	140885	Methyl tert butyl ether	1634044
Ethyl benzene	100414	4,4-Methylene bis(2-chloroaniline)	101144
Ethyl carbamate (Urethane)	51796	Methylene chloride (Dichloromethane)	75092
Ethyl chloride (Chloroethane)	75003	Methylene diphenyl diisocyanate (MDI)	101688
Ethylene dibromide (Dibromoethane)	106934	4,4'-Methylenedianiline	101779
Ethylene dichloride (1,2-Dichloroethane)	107062	Naphthalene	91203
Ethylene glycol	107211	Nitrobenzene	98953
Ethylene imine (Aziridine)	151564	4-Nitrobiphenyl	92933
Ethylene oxide	75218	4-Nitrophenol	100027
Ethylene thiourea	96457	2-Nitropropane	79469
Ethylidene dichloride (1,1-Dichloroethane)	75343	N-Nitroso-N-methylurea	684935
Formaldehyde	50000	N-Nitrosodimethylamine	62759
Heptachlor	76448	N-Nitrosomorpholine	59892
Hexachlorobenzene	118741	Parathion	56382
Hexachlorobutadiene	87683	Pentachloronitrobenzene (Quintobenzene)	82688
Hexachlorocyclopentadiene	77474	Pentachlorophenol	87865
Hexachloroethane	67721	Phenol	108952
Hexamethylene-1,6-diisocyanate	822060	p-Phenylenediamine	106503
Hexamethylphosphoramide	680319	Phosgene	75445
Hexane	110543	Phosphine	7803512
Hydrazine	302012	Phosphorus	7723140
Hydrochloric acid	7647010	Phthalic anhydride	85449
Hydrogen fluoride (Hydrofluoric acid)	7664393	Polychlorinated biphenyls (Aroclors)	1336363
Hydrogen sulfide	7783064	1,3-Propane sultone	1120714
Hydroquinone	123319	beta-Propiolactone	57578
Isophorone	78591	Propionaldehyde	123386
Lindane (all isomers)	58899	Propoxur (Baygon)	114261
Maleic anhydride	108316	Propylene dichloride (1,2-Dichloropropane)	78875
Methanol	67561	Propylene oxide	75569
Methoxychlor	72435	1,2-Propylenimine (2-Methyl aziridine)	75558
Methyl bromide (Bromomethane)	74839	Quinoline	91225
Methyl chloride (Chloromethane)	74873	Quinone	106514
Methyl chloroform (1,1,1-Trichloroethane)	71556	Styrene	100425
Methyl ethyl ketone (2-Butanone)	78933	Styrene oxide	96093
Methyl hydrazine	60344	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016
Methyl iodide (Iodomethane)	74884	1,1,2,2-Tetrachloroethane	79345
Methyl isobutyl ketone (Hexone)	108101	Tetrachloroethylene (Perchloroethylene)	127184
Methyl isocyanate	624839	Titanium tetrachloride	7550450
Methyl methacrylate	80626	Toluene	108883

POLLUTANT ^a	CAS#	POLLUTANT ^a	CAS#
2,4-Toluene diamine	95807	p-Xylenes	106423
2,4-Toluene diisocyanate	584849	Antimony Compounds	-
o-Toluidine	95534	Arsenic Compounds (inorganic including arsine)	-
Toxaphene (chlorinated camphene)	8001352	Beryllium Compounds	-
1,2,4-Trichlorobenzene	120821	Cadmium Compounds	-
1,1,2-Trichloroethane	79005	Chromium Compounds	-
Trichloroethylene	79016	Cobalt Compounds	-
2,4,5-Trichlorophenol	95954	Coke Oven Emissions	-
2,4,6-Trichlorophenol	88062	Cyanide Compounds ^b	-
Triethylamine	121448	Glycol ethers ^c	-
Trifluralin	1582098	Lead Compounds	-
2,2,4-Trimethylpentane	540841	Manganese Compounds	-
Vinyl acetate	108054	Mercury Compounds	-
Vinyl bromide	593602	Fine mineral fibers ^d	-
Vinyl chloride	75014	Nickel Compounds	-
Vinylidene chloride (1,1-Dichloroethylene)	75354	Polycyclic Organic Matter ^e	-
Xylenes (isomers and mixture)	1330207	Radionuclides (including radon) ^f	-
o-Xylenes	95476	Selenium Compounds	-
m-Xylenes	108383		

Source: (USEPA, 2013)

^a For all listings above which contain the word “compounds” and for glycol ethers, the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic, etc.) as part of that chemical's infrastructure.

^b X'CN where X = H' or any other group where a formal dissociation may occur. For example KCN or Ca(CN)₂

^c Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH₂CH₂)_n-OR' where:

n = 1, 2, or 3;

R = alkyl C7 or less; or

R = phenyl or alkyl substituted phenyl;

R' = H or alkyl C7 or less; or

OR' consists of carboxylic acid ester, sulfate, phosphate, nitrate, or sulfonate.

^d Includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less.

^e Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100 ° C.

^f A type of atom which spontaneously undergoes radioactive decay.

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