BROADBANDUSA
CONNECTING AMERICA'S COMMUNITIES

Broadband Technology Opportunities Program

Environmental Assessment Guidance for BTOP Award Recipients

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Prepared for:

National Telecommunications and Information Administration

Broadband Technology Opportunities Program
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Washington, DC 20230

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1 Introduction to Guidance

This guide has been developed by the U.S. Department of Commerce (DOC) National Telecommunications and Information Administration (NTIA) to assist Broadband Technology Opportunities Program (BTOP) grant recipients with completing Environmental Assessments (EA) that are required by Special Award Conditions (SACs) attached to the grant award. The completed EA must meet the requirements of the National Environmental Policy Act (NEPA). NEPA is a law that applies to all Federal actions, including those funded by federal grants and matching funds.

The purpose of this guide is to provide recipients the required contents of a concise EA, and to provide an understanding of the type of analyses that are required to meet the requirements of NEPA. Potential resources for additional information are also provided.

2 Required Guidance

While each EA must be project-specific, there are standard areas of analysis and content that enable the Federal agency to ensure that the appropriate resource areas have been analyzed and that the project will be in compliance with applicable Federal environmental and historic preservation laws. EAs written for BTOP projects should be concise (target 50 pages or less, plus appendices), and have the following format:

2.1 Executive Summary

The Executive Summary should include a brief introduction and discussion of the purpose and need, description of the proposed action (focus on physically what would be done and avoid any extended discussion of benefits), a summary of the alternatives, and results of the impact analyses by resource area.

2.2 Chapter 1 – Purpose and Need

Include a brief introduction that describes the project background and history. The project "purpose" is a set of objectives that the project intends to meet, whereas the project "need" is the deficiency that the project is intended to address. For example, the "purpose" may be to connect fiber optic cable between points "A" and "B", while the "need" is to provide broadband service to the underserved community at point "B". The need for the project should be discussed and quantified to the extent possible. The purpose and need statements should be separate, and broad enough to allow for alternative solutions, but specific enough so that the range of reasonable alternatives can be limited.

The project purpose is used as a decision factor for comparing the reasonable alternatives and identifying/selecting the preferred alternative which in the context of the EA is the Proposed Action.

2.3 Chapter 2 – Description of Proposed Action and Alternatives

2.3.1 Proposed Action

Describe the Proposed Action (preferred alternative) by including the information necessary for the reader to fully understand the general geographic setting of the project and the project activities that have the potential to impact the environment. Be sure to include how the Proposed Action addresses the purpose and need described in Chapter 1. Maps illustrating the project location and vicinity are useful. Photographs are also helpful visual tools.

This section should primarily be a physical description of the Proposed Action, including topographic and physiographic features of the project area, and exclude any extended discussion of benefits. The text needs to provide the reader with a clear understanding of what activities will take place, the location and duration of those activities, and the equipment that will be used. It is not sufficient to simply state the activity, such as "replace an existing utility pole." The activity needs to be described in sufficient detail so that the effects of the activity on the surrounding environment can be clearly understood. Questions need to be addressed such as: How will the existing pole be removed and managed/disposed? What equipment will be needed to install the replacement? How long will it take to complete the replacement? Besides digging a hole, will there be any other ground disturbance associated with the replacement? This description presents the basis for understanding the potential interactions with the surrounding environment described in Chapter 3. Graphics, pictures, and tables can be useful visual tools in conveying the necessary understanding of what is being proposed.

2.3.2 No Action Alternative

The EA must also consider the effects of not implementing the Proposed Action or alternatives, which is the "No Action Alternative." The No Action Alternative serves as a baseline comparison for impacts associated with the Proposed Action and alternatives. Within this section, include a description of the no action alternative and any associated effects. For instance, an adverse effect may be the inability to meet the purpose and need for the project. This could result in a community without access to broadband, which may impact the ability of schools to provide appropriate educational content.

2.3.3 Alternatives

The range of alternatives that must be included in the EA are simply different ways to meet the purpose and need. If an alternative would not meet either the purpose or the need of the proposed action, then it is not considered a reasonable alternative and need not be identified or discussed. An example of reasonable alternatives would be presenting three possible sites on which to locate a facility that would provide equal functionality.

For the installation of broadband infrastructure, the three possible alternative technologies (underground, aerial, and wireless) need to be identified, discussed, analyzed and/or dispositioned as appropriate. Alternatives using partial components of these three also need to be identified to the extent appropriate to meet the purpose and need. For alternatives to be analyzed in the EA along with the preferred alternative, provide the same level of detail in the description as was done for the preferred alternative (Chapter 2.3.1).

2.3.4 Alternatives Considered but Eliminated from Further Discussion

As appropriate, this section describes those alternatives that were considered during development of the project but were eliminated before drafting the EA. Briefly describe the alternatives that were considered and explain why each was eliminated from further discussion.

2.4 Chapter 3 – Description of the Affected Environment

This section provides information on the existing environment, or baseline conditions for those resource areas that may be potentially affected by the Proposed Action or alternatives, including the No Action Alternative. Provide a brief and concise description of the physical setting for the Proposed Action.

Include concise descriptions of each resource area with levels of detail proportionate to the potential for impacts to that particular resource (i.e., areas with no, or low potential for impact should only be very briefly described). For example, neither the hanging of new fiber optic cable from existing poles nor the operation of that cable to provide data transmission would create any new sources of emissions. Therefore, this project would not have any impacts to air quality, and this resource area will not be analyzed further in this document. Also, avoid repetitive use of resource areas for project components that are in the same physical or biogeographic setting. Use maps, photographs, illustrations, and other graphics as appropriate.

Resource Areas:

- Noise – This section should include a description of ambient noise levels in the area and any sensitive receptors that may be affected by noise. Visit the Noise Pollution Clearinghouse (www.nonoise.org) for more information.
- Air Quality – This section should include a description of current air quality conditions, attainment status for the National Ambient Air Quality Standards (NAAQS) identified under the Clean Air Act, a discussion of greenhouse gases (GHG) and Executive Order (EO) 13514 (see Attachment A), and a discussion of any Air Quality Management Districts (AQMDs) or State Implementation Plans (SIPs) that may be in effect. See the U.S. Environmental Protection Agency (USEPA) Office of Air and Radiation (http://www.epa.gov/air/) for more information.
- Geology and Soils – This section should include a description of the physiographic region in which the project is proposed, as defined by the U.S. Geological Survey (http://tapestry.usgs.gov/physiogr/physio.html), soil types in the area,

and the presence of any prime or unique farmlands, as defined the Farmland Protection Policy Act, administered by the U.S. Department of Agriculture (http://www.nrcs.usda.gov/programs/fppa/).

- Water Resources – This section should include subsections on the conditions and occurrences of surface water, groundwater, a coastal zone, floodplains, and wild and scenic rivers in the proposed project area. Laws and Executive Orders that apply to this resource are administered by multiple agencies. Relevant regulations include the Clean Water Act (http://www.epa.gov/water/), administered by the USEPA; Executive Orders 11988 and 11990 regarding floodplain management and the protection of wetlands, respectively; and the Coastal Zone Management Act (CZMA) (http://coastalmanagement.noaa.gov/welcome.html) administered by the National Oceanic and Atmospheric Administration in cooperation with state environmental agencies (contact the state office).
    - In addition, permitting requirements may apply under the Clean Water Act. The U.S. Army Corps of Engineers (ACOE) is the permitting authority for any work proposed in wetlands or other waters of the United States. Recipients need to contact the appropriate ACOE District Office for information regarding Clean Water Act permits (http://www.usace.army.mil/ContactUs). A National Pollution Discharge Elimination System (NPDES) permit may be required for ground-disturbing work and is administered by an authorized state agency (e.g.,. Department of Natural Resources, Department of Environmental Quality) or the USEPA. Recipients need to contact the appropriate state agency regarding NPDES permits. For permitting or consistency determinations required under the CZMA, recipients need to contact the appropriate state Coastal Zone Management Office (http://coastalmanagement.noaa.gov/mystate).
- Biological Resources – This section should include subsections on the conditions and occurrences of wildlife, vegetation, threatened and endangered species, and wetland habitat within the proposed project area. This project area should include descriptions of the eco-region(s) in which the project is proposed (http://www.epa.gov/wed/pages/ecoregions.htm), including a list of characteristic plants and animals in the project area, with particular focus on any threatened and endangered species.
    - As with the Water Resources section, the laws and Executive Orders that apply to this diverse resource area are administered by multiple agencies. The primary law bearing on this resource area is the Endangered Species Act (http://www.fws.gov/endangered/), which is administered by two Federal agencies, namely, the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS), which manages marine species, and the U.S. Fish and Wildlife Service (USFWS), which manages freshwater fish and all other species. Recipients need to complete consultations with the USFWS under Section 7 of the Endangered Species Act with the appropriate regional USFWS and NMFS offices for their project (http://www.fws.gov/offices/). Chapter 3 should note that consultations were conducted, and the conclusions from those consultations should be discussed in Chapter 4.
    - The Migratory Bird Treaty Act (16 U.S.C. §703) and Executive Order 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds) both direct the federal government to protect migratory birds. The USFWS Division of Migratory Bird Management (http://www.fws.gov/migratorybirds/) should be consulted for any communication tower projects. The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) prohibits anyone without a permit from "taking" bald or golden eagles, including their parts, nests, and eggs. This Act includes disturbing eagles and, therefore, should be considered in all cases where the project may interfere with bald or golden eagle habitats. The Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. §1801) is the primary law that regulates fishery resources and fishing activities in Federal waters, also administered by NMFS. Projects that have the potential to impact essential fish habitat (http://www.nmfs.noaa.gov/habitat/habitatprotection/efh/) must coordinate with NMFS.
- Historic and Cultural Resources – This section should include subsections on the following three resource areas:
    - Archaeological resources – This includes prehistoric or historic sites where human activity has left physical evidence of that activity but few above ground structures remain standing. Note that the following language is required to be included in the EA as a best management practice:

For all ground disturbing activities that occur during project implementation in the vicinity of known archaeological sites or suspected or known burials, the grant recipient must ensure that an archaeologist who meets the Secretary of the Interior's Professional Qualification Standards monitors ground disturbance.

If earth disturbing activities during project construction uncover cultural materials (i.e. structural remains, historic artifacts, or prehistoric artifacts), all work shall cease and interested Tribes, the State Historic Preservation Office, and NTIA shall be notified immediately. Such construction activities may then only continue with the written approval of NTIA.

If earth disturbing activities during any area of the project uncover human remains, all work shall cease immediately in accordance with the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) and relevant state statutes. The area around the discovery shall be secured and the relevant law enforcement personnel (e.g. local police or County Coroner) and NTIA shall be notified immediately. Such construction activities may then only continue with the written approval of NTIA.

- Architectural resources – This includes buildings or other structures or groups of structures that are of historic or aesthetic significance.
- Native American resources – These include resources of traditional, cultural, or religious significance to a Native American tribe, Native Hawaiian, or Native Alaskan organization.
  - There are multiple Federal regulations that protect historic and cultural resources. The National Historic Preservation Act of 1966 (NHPA) (P.L. 89–665, 16 U.S.C. §470) directs the Federal Government to consider the effects of its actions on historic and cultural resources under Section 106 (http://www.achp.gov/nhpa.html). NTIA initiates consultation with the SHPO once the recipient provides a detailed project description and maps showing the proposed project. Recipients need to follow up and coordinate with the appropriate SHPO for their project. (http://www.ncshpo.org/find) Tribal Historic Preservation Offices (THPO) for federally-recognized tribes are notified of projects that have received BTOP grant awards by NTIA through the Federal Communication Commission's (FCC) automated Tower Construction Notification System (TCNS).
  - TCNS is a voluntary automated system developed by the FCC to facilitate licensees, applicants and private tower constructors' identification of and early communication with all federally-recognized tribes, including Alaska Native Villages, Native Hawaiian Organizations. NTIA has arranged to participate in the TCNS in order to facilitate and expedite outreach to the 565 federally recognized tribes and other Native American groups. Under TCNS, tribes identify their geographic area of interest and thereafter receive notices of projects that fall with that specified area. For NTIA BTOP projects, the project descriptions are entered by NTIA into the automated TCNS system. When a tribe is interested in receiving more information on a specific project, they respond via e-mail through the TCNS to NTIA. At that time, NTIA through established government to government protocol puts the grantee in touch with the tribe that requested more information in order to complete the consultation process.
  - A fact sheet providing a detailed description of the consultation processes with SHPO's and THPO's, and identifying recipient responsibilities, is included in, "Historic Preservation Section 106 Guidance for Recipients," which can be found on the BTOP website at: http://www2.ntia.doc.gov/compliance#environmental.

- Aesthetic and Visual Resources – This section should contain a description of the visual and aesthetics of the area, including natural features (water bodies, vegetation, etc.), architectural features, and any protected areas in the vicinity, such as national and state parks(that may have require consultation for potential impacts to visual resources).
- Land Use – This section should contain a description of existing land uses in the proposed project area and surrounding areas. The section should provide context for the area, and may include references to local zoning and any local master plans that may be in effect for the project area. The CZMA, discussed above, if applicable, should be discussed in this section, since there may be restrictions on development in coastal zones.

- Infrastructure – This section should discuss the availability and accessibility of utilities and waste disposal services in the project area. The availability of telecommunications in the project area should be particularly emphasized, as well as any factors that may affect the availability of communications infrastructure. This section should also describe the existing transportation network in the projects area, including the accessibility to major roadways.
- Socioeconomic Resources – This section should contain a demographic profile of the proposed project area, and should note the presence of any low-income or minority areas so that impacts under Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) can be addressed in Chapter 4. The U.S. Census Bureau (www.census.gov) provides demographic data that may be used to compile the profile.
- Human Health and Safety – This section should address worker health and safety, and public safety issues typically associated with the activities that are part of the Proposed Action and alternatives being analyzed. This section should also contain a description of any potentially hazardous materials or waste sites within the vicinity of the project area, including any sites that are on the National Priorities List (http://www.epa.gov/superfund/sites/npl/). Some contaminated sites are managed and cleaned up under the Resource Conservation and Recovery Act (RCRA), the Federal government's primary hazardous waste management statute, and the Toxic Substances Control Act (TSCA) (http://www.epa.gov/epawaste/hazard/index.htm). Some contaminated sites, known as brownfields, have the potential to be reused once the level of contamination and the planned future of the site have been identified. (http://epa.gov/brownfields).

2.5 Chapter 4 – Analysis of Environmental Impacts

This section is the heart of the EA and analyzes each resource area for the Proposed Action and each alternative, including the No Action Alternative. It should provide a comprehensive analysis of the potential direct and indirect effects and discuss the level of significance of each effect identified. The discussion of environmental consequences for each resource area should be concise. For areas with no or minimal potential for impact, the discussion should be very brief explaining the basis for this conclusion in a succinct manner.

The results of any consultation or coordination with resource agencies need to be discussed in the appropriate resource area section of this chapter. Note that consultations with the USFWS and SHPO must be completed and the conclusions discussed in the text before an EA may be finalized. Any ongoing or future permitting activities need to be discussed under the appropriate resource area.

Any mitigation measures that will be part of the Proposed Action need to be identified in the appropriate sections, along with the specific identification of best practices that will be used.

In addition to the discussion of resource areas, cumulative impacts need to be identified and analyzed in this section. Cumulative impacts take into consideration any Proposed Action activities that may be additive or that interact with existing conditions or planned activities not specifically related to the project and not addressed in other sections of Chapter 4. A few examples of the type of activities that would, if applicable, be analyzed in this section include, but are not limited to:

- Working along active roadways where other road construction activities are planned.
- Working in the vicinity of streams at times when unrelated work near the same streams might be expected.
- Building an access road that will encourage access that was not previously available.
- Providing broadband access in an area that will contribute to growth.

This section requires contacting state/municipal planning and permitting entities to understand what other activities might occur at the time of the project that could result in cumulative effects.

Include the same resource areas identified in Chapter 3 and add cumulative impacts at the end of the chapter:

- Noise.
- Air Quality.

- Geology and Soils.
- Water Resources.
- Biological Resources.
- Historic and Cultural Resources.
- Aesthetic and Visual Resources.
- Land Use.
- Infrastructure.
- Socioeconomic Resources.
- Human Health and Safety.
- Cumulative Impacts.

2.6 Chapter 5 – Applicable Environmental Permits and Regulatory Requirements

This chapter should provide a complete listing of the applicable permitting and regulatory requirements, provide a short description of the requirement, identify the cognizant federal, state, and local regulatory agency, and clearly state the status of project compliance.

2.7 Chapter 6 – List Agencies and Persons Consulted

This list identifies the agencies and individuals that were contacted in the process of developing the EA.

2.8 Chapter 7 – References

Only information sources used in the EA should appear in the reference list. The reference list should include the author's name, date and title of publication, communication type (if applicable), internet resource, etc. If data were gathered through personal communication, then the name of the persons involved and date of the communication should be included.

2.9 Chapter 8 – Submittal Requirements

For the draft version of the EA, recipients are required to submit one (1) hardcopy, preferably bound, of the EA and all its appendices, and two (2) electronic copies on separate CDs.

For the revised EA, recipients will need to submit:

- One (1) hardcopy, preferably bound, of the EA and all its appendices
- One (1) hardcopy, preferably bound, of the EA with no appendices
- Two (2) electronic copies (including both Word and PDF versions) on separate CDs

The submission of the final EA will not be accepted until a Word format version has been received.

Hardcopy documents and CDs should be sent by express mail services (FedEx or similar carrier), not through the regular U.S. Postal Service mail, to the address for Frank Monteferrante below. A copy in PDF format should also be e-mailed to fmonteferrante@ntia.doc.gov and gwalker@doc.gov.

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3 Acronym List

Acronym List	
Acronym	Description
ACOE	U.S. Army Corps of Engineers
BTOP	Broadband Technology Opportunities Program
CE	Categorical Exclusion
CFR	Code of Federal Regulations
DOC	Department of Commerce
EA	Environmental Assessment
EQ	Environmental Questionnaire
FONSI	Finding of No Significant Impact
NEPA	National Environmental Policy Act
NTIA	National Telecommunications and Information Administration
SAC	Special Award Conditions
SHPO	State Historic Preservation Office
THPO	Tribal Historic Preservation Office
USFWS	U.S. Fish and Wildlife Service

4 Attachment A

Suggested approach to analysis of greenhouse gases

4.1 Chapter 3 – Description of the Affected Environment

X.X.X Climate, Greenhouse Gases, and Global Warming

The proposed project area would be in ……*state and/or region of state*…….. The climate range is characterized by ……*describe climate*…….. Precipitation is ……*describe precipitation, amounts, snow, etc*……..*describe temperatures, range, etc*……..*provide reference for data source.*

Greenhouse gases (GHGs) are components of the atmosphere that trap heat relatively near the surface of the earth, and therefore, contribute to the greenhouse effect and global warming. Most GHGs occur naturally in the atmosphere, but increases in their concentration result from human activities such as the burning of fossil fuels. Global temperatures are expected to continue to rise as human activities continue to add carbon dioxide, methane, nitrous oxide, and other greenhouse (or heat-trapping) gases to the atmosphere. Since 1900, the Earth's average surface air temperature has increased by about 1.2 to 1.4ºF since. The warmest global average temperatures on record have all occurred within the past 10 years, with the warmest year being 2005 (USEPA, 2007b). Most of the U.S. is expected to experience an increase in average temperature. Precipitation changes, which are also very important to consider when assessing climate change effects, are more difficult to predict. Whether or not rainfall will increase or decrease remains difficult to project for specific regions (USEPA, 2010a; IPCC, 2007). The extent of climate change effects, and whether these effects prove harmful or beneficial, will vary by region, over time, and with the ability of different societal and environmental systems to adapt to or cope with the change. Human health, agriculture, natural ecosystems, coastal areas and heating and cooling requirements are examples of climate-sensitive systems. Rising average temperatures are already affecting the environment. Some observed changes include shrinking of glaciers, thawing of permafrost, later freezing and earlier break-up of ice on rivers and lakes, lengthening of growing seasons, shifts in plant and animal ranges and earlier flowering of trees (USEPA, 2010a; IPCC, 2007).

4.2 Chapter 4 – Analysis of Environmental Impacts

X.X.X Climate, Greenhouse Gases, and Global Warming

The Preferred Alternative would constitute a short-term minor increase in the use of fossil fuel and associated GHG emissions during construction. GHG emissions would be occur as a result of project construction. The Preferred Alternative would result in the release of approximately…*insert number based on project calculated emissions following instructions below*…. metric tons of equivalent of CO2 emissions. *Add a sentence(s) for total for other alternatives, and note zero for no action alternative.*

The Council on Environmental Quality (CEQ) has issued draft guidance on when and how federal agencies should consider GHG emissions and climate change in NEPA. The draft guidance includes a presumptive effects threshold of 25,000 metric tons of CO2 equivalent emissions from an action (CEQ, 2010). The GHG emissions associated with the Preferred Alternative are well below the CEQ threshold. Therefore, GHG emissions from the Preferred Alternative would not contribute appreciably to climate change or global warming.

Instructions for Calculating CO_2 Emissions Associated with Construction Activities

(DO NOT INCLUDE THESE INSTRUCTIONS IN THE EA TEXT)

Where construction activities are part of the proposed action, CO_2 emissions must be calculated for all pieces of power equipment to establish an estimate of the greenhouse gases emitted. These calculations are required for all alternatives as well as the proposed action.

- To calculate the CO_2 emissions from engines using gasoline as fuel the following number should be used: 8.8 kg/gallon. Multiply the given value (8.8 kg/gallon) by the number of gallons of gasoline anticipated to be used on the project.
- To calculate the CO_2 emissions using diesel fuel the following number should be used: 10.1 kg/gallon. Multiply the given value (10.1 kg/gallon) by the number of gallons of diesel fuel anticipated to be used on the project.
- The two kilogram emission numbers should be added together and the number of metric tons calculated. One metric ton is equal to 1000 kilograms. The resulting emissions number should be reported in the Climate, Greenhouse Gases, and Global Warming section of the EA.

References:

- (CEQ, 2010). Council on Environmental Quality. 2010. Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions. Accessed March 2010 at: www.whitehouse.gov/sites/default/files/microsites/ceq/20100218-nepa-consideration effects-ghg-draft-guidance.pdf.
- (USEPA, 2007b). U.S. Environmental Protection Agency. 2007. Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2005. EPA 430-R-07-002. April 15, 2007. U.S. Environmental Protection Agency. Washington, D.C.
- (USEPA, 2010a). U.S. Environmental Protection Agency. 2010. Climate Change — Health and Environmental Effects. Accessed April 2010 at: www.epa.gov/climatechange/effects/index.html.
- (IPCC, 2007). Intergovernmental Panel on Climate Change. 2007. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom, 1000 pp.