FEDERAL ENERGY REGULATORY COMMISSION

Office of Energy Projects

GUIDANCE MANUAL
FOR
ENVIRONMENTAL REPORT
PREPARATION

For Applications Filed Under the
Natural Gas Act

Volume I

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GUIDANCE MANUAL FOR ENVIRONMENTAL REPORT PREPARATION

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ACRONYMS AND ABBREVIATIONS

APE	Area of Potential Effect
ATWS	additional temporary workspace
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
Coast Guard	U.S. Coast Guard
COE	U.S. Army Corps of Engineers
Commission	Federal Energy Regulatory Commission
CZMA	Coastal Zone Management Act of 1972
dBA	decibels on the A-weighted scale
DOT	U.S. Department of Transportation
EA	environmental assessment
EFH	essential fish habitat
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act of 1973
FERC	Federal Energy Regulatory Commission
FWS	U.S. Fish and Wildlife Service, U.S. Department of the Interior
GHG	greenhouse gas
HAP	hazardous air pollutant
HDD	horizontal directional drill
IPaC	Information Planning and Conservation
L_d	daytime ambient equivalent sound level
L_{dn}	day-night sound level
L_{eq}	24-hour equivalent sound level
LiDAR	Light Detection and Ranging
L_n	nighttime ambient equivalent sound level
LNG	liquefied natural gas
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NGA	Natural Gas Act of 1938
NGPA	Natural Gas Policy Act of 1978

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NHPA	National Historic Preservation Act of 1966
NO_2	nitrogen dioxide
NOAA Fisheries	National Marine Fisheries Service, National Oceanic and Atmospheric Administration
NO_X	nitrogen oxides
NRCS	Natural Resources Conservation Service, U.S. Department of Agriculture
NRHP	National Register of Historic Places
NSA	noise-sensitive area
NWI	National Wetlands Inventory, U.S. Fish and Wildlife Service
OEP	Office of Energy Projects, Federal Energy Regulatory Commission
PCB	polychlorinated biphenyl
Plan	Upland Erosion Control, Revegetation, and Maintenance Plan
Procedures	Wetland and Waterbody Construction and Mitigation Procedures
PSD	Prevention of Significant Deterioration
SHPO	State Historic Preservation Office
SSURGO	Soil Survey Geographic Database
THPO	Tribal Historic Preservation Officer
USGS	U.S. Geological Survey
VOC	volatile organic compound

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KEY TO DATA SOURCES

A Aerial Photographs
B Agency Consultation
C Agricultural Extension Agents
D Applicant
E State or county groundwater databases (e.g., Board of Health, Department of Natural Resource water divisions)
F U.S. Army Corps of Engineers
G Community Noise, U.S. Environmental Protection Agency 1971
H Comprehensive Plans, County or Land Management Agencies
I County/Municipal Agencies
J U.S. Environmental Protection Agency
K Erosion Control and Drainage Plan Handbooks, State and County
L Field Surveys
M Fishery Biologist, State or Regional
N U.S. Fish and Wildlife Service
O National Wetlands Inventory Maps
P Geological Survey Personnel, Federal, State, and Local
Q Landowners
R Manufacturer's Data
S Mineral Resource Maps, Federal and State
T National Marine Fisheries Service, National Oceanic and Atmospheric Administration
U Noise Surveys
V National Park Service
W Natural Resources Conservation Service
X Natural Resources Conservation Service Soil Surveys or Soil Survey Geographic Database (SSURGO)
Y Upland Erosion Control, Revegetation, and Maintenance Plan
Z Wetland and Waterbody Construction and Mitigation Procedures
AA Resource Reports 2, 3, and 4
BB Resource Report 8
CC Soil Authorities, Other than Natural Resources Conservation Service
DD State Agencies
EE State Air Quality Agency

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1.0 INTRODUCTION

1.1 PURPOSE OF THE MANUAL

To facilitate our[1] environmental review process, we provide this manual as guidance to sponsors of natural gas projects. The purpose is to improve the overall quality and consistency of data analyses and formatting in the resource reports that comprise the Environmental Report to be filed under the Federal Energy Regulatory Commission's (FERC or Commission) regulations that implement the *National Environmental Policy Act of 1969* (NEPA).[2] While the regulatory requirements and definitions provided here are current as of the time this manual is being prepared, regulations are periodically revised. You should refer directly to the regulations in effect at the time you prepare your filings.

The purpose of NEPA is to ensure that an agency carefully considers the environmental impacts of a proposed action and reasonable alternatives. NEPA guarantees that the relevant information will be made available to the larger audiences that may also play a role in both the decision-making process and the implementation of that decision. We intend that this manual will help project sponsors prepare complete filings that cover topics in a uniform fashion and that allow for the most efficient environmental review.

Environmental issues and concerns evolve over time because of ongoing research and experience, and public input drives a large part of the NEPA process. To address this evolution, the 2016 version of the manual (which replaces the original 2002 version) identifies certain information that is not required by regulation but that Commission staff

[1] "We," "us," and "our" refer to the environmental staff of the Federal Energy Regulatory Commission's Office of Energy Projects. "You," whether explicit or implied, refers to the applicant proposing a natural gas project or to the applicant's agent(s) who prepares, uses, or reviews these types of environmental documents.

[2] The Commission's regulations, which appear in Title 18, Chapter I of the Code of Federal Regulations (CFR), are noted in this document only by part or section, for instance part 380 or section 2.55, with no reference to title, chapter, or code. The Commission's regulations in part 380 implement NEPA, with section 380.12 specifically addressing Environmental Reports for Natural Gas Act applications. Where we refer to other agencies' regulations we include a full citation. For instance, our regulations supplement the Council on Environmental Quality's regulations that implement NEPA. 40 CFR §§ 1500.1 to 1508.28 (2015). NEPA itself appears in Title 42 of the United States Code in sections 4321 to 4370h.

requests for some proposals to address scoping comments, concerns from cooperating agencies, and issues that have emerged or become more relevant since the current regulations were promulgated. Often we need this information to document compliance with other federal statutes, such as the *Migratory Bird Treaty Act* or consultations under section 7 of the *Endangered Species Act of 1973* (ESA) or section 305(b) of the *Magnuson-Stevens Fishery Conservation and Management Act*. To the extent that such information is applicable and available, we recommend that applicants provide it to facilitate the environmental review process. Omissions can cause delays in our processing of applications and increase the need for supplemental data requests.

We intend only to provide guidance to the industry. This manual does not substitute for, amend, or supersede the Commission's regulations under the *Natural Gas Act of 1938* (NGA) or the Commission's and Council on Environmental Quality's (CEQ) regulations under NEPA. It imposes no new legal obligations and grants no additional rights. We use non-mandatory language such as "recommend," "encourage," and "may" to describe Commission staff's recommendations that will help the Commission meet its obligations under NEPA. We use mandatory language such as "required," "must," and "must not" to describe controlling requirements under the terms of statutes and regulations. The manual discusses our preferred format for certain documents and data presentation. However, you can use an alternative approach if it satisfies the requirements of the applicable statutes and regulations.

We composed this manual to be useful to all applicants proposing natural gas projects. But because each project is unique, it is not possible to provide guidance that applies to all possible scenarios. Some of the guidance may not be appropriate for the scope of a proposed project or may not apply at all. As indicated later in the manual, applicants should evaluate the specific issues, impacts, and public and agency comments relevant to their individual projects and adjust the content of their resource reports and analyses accordingly, while also meeting the existing regulatory filing requirements. The level of detail and scope of the Environmental Report should be proportional to the complexity of the proposed project. If the information is not applicable and is not an existing requirement under the Commission's regulations, then there is no need to address that information.

Additionally, we recommend that applicants refer to other recent environmental assessments (EA), environmental impact statements (EIS), and Commission orders regarding similar projects (available on the Commission's website, www.ferc.gov, and eLibrary) to see how various issues have been addressed.

1.2 PUBLIC COMMENTS

On December 18, 2015, we issued a *Notice of Availability of the Draft Guidance Manual for Environmental Report Preparation and Request for Comments*.[3] We received comments from a variety of industry representatives, trade associations, federal and state agencies, non-governmental organizations, public interest groups, consultants, and other interested parties. We reviewed and considered each comment and modified several portions of the document in response. We declined to modify the document where comments either were too project- or location-specific to be included in general guidance, regarded topics that we concluded are adequately or more accurately addressed as written, or were not specific to the guidance manual.

Additionally, multiple commenters raised general concerns discussed below:

- *The guidance manual cannot substitute for, amend, or supersede regulations.* Several commenters worried that the guidance provided in this manual might be viewed as binding by other agencies or the public. Some objected that the guidance manual has the effect of changing the substantive requirements for applications without notice-and-comment rulemaking. To the extent that these comments were made in the context of specific resource reports (e.g., Resource Reports 9 and 13), we address them in the relevant sections of the manual. We emphasize again that the manual's identification of certain "recommended" information, beyond the information required by regulation, does not alter the minimum filing requirements that an applicant must meet to avoid the rejection of an application. We have modified the manual throughout and incorporated commenters' recommended language in some sections to convey more clearly that the guidance provided in this manual does not alter existing regulations.

- *The guidance manual should not take a one-size-fits-all approach:* Commenters worried that the manual would not apply equally to all projects and that an applicant's failure to provide all of the manual's recommended information could delay issuance of environmental documents. However, the manual recognizes that each project is unique and that the information required to develop a complete application will vary by project. We agree with commenters that not all of the recommended information identified in the manual will apply uniformly to

[3] Docket No. AD16-3-000; *see* 80 Fed. Reg. 80,353 (Dec. 24, 2015). On January 14, 2016, we issued a notice extending the deadline for comments from January 19 to January 29, 2016.

all projects. Commission staff evaluates projects on an individual basis, and if information necessary for the environmental review is not provided, staff identifies that information in comments on draft resource reports, if applicable, or in data requests. As noted above, following the guidance where applicable may reduce the number of data requests. Note, however, that the regulations are clear for projects using the pre-filing process (see section 157.21), that the application must contain all of the information we have specified in our comments after our review of the prospective applicant's draft materials filed during the pre-filing process. Also note that an applicant's failure to respond to our data requests within the specified timeframe during the application process may result in delays because we consider this requested information necessary to continue preparing the environmental document.

- *Suggested information may not be available at the time an application is filed:* Several commenters noted that some of the recommended information identified in the manual might not be available in time to be included in draft resource reports or in the application. However, we note that some of this information may be necessary to complete consultation with other agencies or to complete the necessary impact analyses. We suggest that applicants provide the best available scientific information, citing the source, at the time of filing (and identify it as preliminary, anticipated, estimated, etc., as applicable), including information for areas that lack permission for access. We recommended that you provide an estimated date for the submittal of information that is not yet available.

1.3 OVERVIEW OF THE MANUAL

This guidance manual is divided into two volumes. Volume I describes the information that is required or recommended for natural gas projects and includes the sections described below. Volume II specifically addresses additional information required or recommended for liquefied natural gas (LNG) facilities, including the LNG-related sections of Resource Reports 6, 11, and 13.

Section 2.0 of Volume I describes the requirements to notify affected landowners about applications under sections 3, 7(b), and 7(c) of the NGA and about activities under the blanket certificate program, as implemented in part 153 and in subparts A and F of part 157 of the Commission's regulations, respectively. Section 2.0 also broadly addresses overall stakeholder outreach.

Section 3.0 addresses activities and environmental documents required during the pre-filing process described in section 157.21 of the Commission's regulations.

Section 4.0 covers environmental documentation for applications prepared under sections 7(b) and 7(c) of the NGA, as implemented in subpart A of part 157 of the Commission's regulations as well as some of the additional information for LNG facilities proposed under section 3 of the NGA, as implemented in subpart B of part 153 of the Commission's regulations (see Volume II of this manual for additional details regarding applications involving LNG facilities). Section 4.0 also discusses some key principles that you should follow when preparing resource reports, provides guidance on addressing cumulative impacts, and describes in detail the basis, content, and format for the resource reports to satisfy current Commission and NEPA requirements and to facilitate our environmental review.

Section 5.0 describes the process by which you can submit an applicant-prepared draft EA with your application.

Section 6.0 describes the option for you to engage a third-party contractor to assist us in the development of an EA and or EIS.

Section 7.0 outlines the environmental information required or recommended for activities under a blanket certificate (subpart F of part 157); under section 311 of the *Natural Gas Policy Act of 1978* (NGPA) (implemented in subparts A, B, and C of part 284); or under the certificate exclusions for auxiliary installations and for replacement of deteriorated or obsolete facilities (section 2.55 of part 2).

2.0 LANDOWNER NOTIFICATION AND STAKEHOLDER OUTREACH

2.1 LANDOWNER NOTIFICATION

This section describes requirements and recommendations for notification of all affected landowners regarding applications prepared under sections 3, 7(b), and 7(c) of the NGA; and about activities under the blanket certificate program, as implemented in part 153 and in subparts A and F of part 157 of the Commission's regulations, respectively.[4]

You must make a **good faith effort** to notify all affected landowners; towns and communities; and local, state, and federal governments and agencies involved in the project. You should also make an effort to include other stakeholders, such as environmental organizations, with an interest in the project in your outreach efforts (see section 2.2 of this manual). "All affected landowners" (as defined in section 157.6(d)(2)) includes owners of property interests, as noted in the most recent county/city tax records as receiving the tax notice, whose property:

- is directly affected (that is, crossed or used) by the proposed activity, including all facility sites, rights-of-way, access roads, pipe and contractor yards, and temporary workspaces;
- abuts either side of an existing right-of-way or facility site owned in fee by any utility company, or abuts the edge of a proposed facility site or right-of-way that runs along a property line in the area in which the facilities would be constructed, or contains a residence within 50 feet of the proposed construction work area;
- is within 0.5 mile of proposed compressors or their enclosures (or LNG facilities); or
- is within the area of proposed new storage fields or proposed expansions of storage fields, including any applicable buffer zone.

[4] Sections 153.3, 157.6(d), and 157.203(d).

Failure to make the required landowner notifications can cause delays in the environmental review process and potentially affect the project schedule. You should review the landowner notification requirements in section 157.6(d) early in the process to allow time to identify landowners and prepare the notification materials. If you are using the Commission's pre-filing process, also review section 157.21, which addresses landowner notifications and other stakeholder outreach to be conducted during the pre-filing period.

While the landowner notification requirements provided here are current as of the time this manual is being prepared, regulations are periodically revised. Therefore, you should refer directly to the regulations in effect at the time you are preparing your notifications.

Landowner Notifications for Section 3 and Sections 7(b) and 7(c) Projects

If you are using the Commission's pre-filing process (discussed in section 3.0 of this manual), you must contact all affected landowners and other stakeholders who have not already been informed about the project within 14 days of the Director of the Office of Energy Projects' (OEP) issuance of a notice commencing the pre-filing process.

Once an application is filed under section 3, 7(b)[5], or 7(c) of the NGA, good faith efforts to notify affected landowners and local, state, or federal jurisdictions must be made:

- by certified or first class mail sent within 3 business days following the date the Commission issues a notice of the application; or
- by hand, within the same time period; and
- by publishing notice twice of the filing of the application, no later than 14 days after the date that a docket number is assigned to the application, in a daily or weekly newspaper of general circulation in each county in which the project is located.

[5] The referenced notifications are not required for abandonment of facilities by sale or transfer where the easement will continue to be used for transportation of natural gas. Section 157.6(d)(1). These notifications are also not required for abandonment by leased capacity.

Notifications to affected landowners must include:

- the docket number of the filing;

- the most recent edition of the Commission's pamphlet *An Interstate Natural Gas Facility on My Land? What Do I Need to Know?* explaining the Commission's certificate process and addressing the basic concerns of landowners. However, the pamphlet need not be included for pipeline notifications of abandonment, or published in newspaper notices. Instead, the regulations state that you must provide the title of the pamphlet and indicate its availability at the Commission's internet address;

- a description of the applicant and the proposed project, its location (including a general location map), its purpose, and the timing of the project;

- a general description of what you will need from the landowner if the project is approved and how the landowner may contact you, including a local or toll-free phone number and a name of a specific person to contact who is knowledgeable about the project;

- a brief summary of the landowner's rights before the Commission and in proceedings under the eminent domain rules of the relevant state. You need not include the latter information in the published newspaper notice, but the regulations state that the newspaper notice must provide the Commission's internet address and the telephone number for the Commission's Office of External Affairs;

- information on how the landowner can get a copy of the application from the company or the location(s) where a copy of the application can be found; and

- a copy of the Commission's notice of application, specifically stating the date by which timely motions to intervene are due, together with the Commission's information sheet on how to intervene in Commission proceedings. However, you need not include the notice of application and information sheet in the published newspaper notice. Instead, the regulations state that the newspaper notice must indicate that a separate notice is to be mailed to landowners and government entities.

If any notice is returned as undeliverable, you must make a **reasonable attempt** to find the correct address and notify the landowner. You must file an updated list of landowners within 30 days of the date the application was filed, including information concerning any notices that were returned as undeliverable.

Subpart F Blanket Certificates

For automatic authorizations under the blanket certificate program (section 157.203(b)), you must make a good faith effort to notify all affected landowners in writing at least 45 days prior to commencing construction or at the time that you initiate easement negotiations, whichever is earlier.[6] A landowner may waive the 45-day prior notice requirement in writing as long as the notice has been provided. The notifications must include at least:

- a brief description of the facilities to be constructed or replaced and the effect the construction activity will have on the landowner's property;
- the name and phone number of your representative who is knowledgeable about the project; and
- a description of your environmental complaint resolution procedure, which must:
    - provide clear and simple directions for identifying and resolving environmental mitigation problems and concerns during project construction and restoration of the right-of-way;
    - provide a local or toll-free phone number and name of a specific person responsible for responding to landowner problems and concerns;
    - instruct landowners that if they are not satisfied with the response, they may call your Hotline; and
    - instruct landowners that if they are still not satisfied with the response, they may contact the Commission's Landowner Helpline at the current telephone number and email address, which must be provided in the notification.

For projects for which the Commission must receive prior notification,[7] you must make a good faith effort to notify affected landowners in writing within at least 3 business days following the date that a docket number is assigned to the application or

[6] Section 157.203(d)(1).

[7] Section 157.203(c).

at the time that you initiate easement negotiations, whichever is earlier. The notifications must include at least:

- a brief description of the applicant and the proposed project, including the facilities to be constructed or replaced and the location (including a general location map), project purpose, project timing, and the effect the construction activity will have on the landowner's property;

- a general description of what you will need from the landowner if the project is approved, and how the landowner may contact you, including a local or toll-free phone number and a name of a specific person to contact who is knowledgeable about your project;

- the docket number (if assigned) for your application;

- a general description of the blanket certificate program and procedures, as posted on the Commission's website at the time the landowner notification is prepared, and the link to the information on the Commission's website;

- a brief summary of the landowner's rights in Commission proceedings and in proceedings under the relevant eminent domain rules;

- the following paragraph[8]:

  This project is being proposed under the prior notice requirements of the blanket certificate program administered by the Federal Energy Regulatory Commission. Under the Commission's regulations, you have the right to protest this project within 60 days of the date the Commission issues a notice of the pipeline's filing. If you file a protest, you should include the docket number listed in this letter and provide the specific reasons for your protest. The protest should be mailed to the Secretary of the Federal Energy Regulatory Commission, 888 First St. NE., Room 1A, Washington, DC 20426. A copy of the protest should be mailed to the pipeline at [pipeline address]. If you have any questions concerning these procedures you can call the Commission's Office of External Affairs at (202) 502-6088;[9] and

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[8] We recommend you also explain the option to electronically file information with the Commission.

[9] The Commission's Office of External Affairs can also be reached at the toll-free number (866) 208-3372, and by TTY at: (202) 502-8659.

- a description of your environmental complaint resolution procedure as described above for automatic authorizations.

No landowner notice is required under the blanket certificate program if any of the four exceptions listed in section 157.203(d)(3) apply. The four exceptions are:

- replacements that would have been done under section 2.55 of the Commission's regulations but are not of the same capacity (as long as they are in the same location as the replaced facilities) and do not cause any ground disturbance, or any replacement done for safety, U.S. Department of Transportation (DOT) compliance, environmental, or unplanned maintenance reasons that are unforeseen and require immediate attention;

- abandonments that involve only the sale or transfer of the facilities, and where the easement will continue to be used for transportation of natural gas;

- services or facilities requested by the landowner if that is the only landowner affected; or

- activities that do not involve ground disturbance or changes to operating air or noise emissions.

2.2 STAKEHOLDER OUTREACH

We have developed a document entitled *Suggested Best Practices for Industry Outreach Programs to Stakeholders*, which is available on the Commission website. This document presents common practices and highlights the tools that we believe should be implemented by Commission-regulated entities to effectively engage stakeholders in the siting, construction, and operation of interstate natural gas facilities and LNG facilities.

3.0 FERC'S PRE-FILING PROCESS

The pre-filing process is required for LNG terminal facilities and related jurisdictional natural gas facilities. For other natural gas projects, you, as the prospective applicant, may voluntarily request approval to use the pre-filing process. We particularly recommend the pre-filing process for complex projects or those anticipated to involve significant public interest, as well as projects for which you propose to submit an applicant-prepared draft EA. The pre-filing process is meant to increase predictability and reduce risk by allowing proactive interaction between the prospective applicant, Commission staff, other agencies, landowners, and other stakeholders and by identifying and addressing issues during the planning phase before an application is submitted. From our perspective, the pre-filing process typically requires a larger investment of time and resources by Commission staff and other agencies, so we expect that you will produce a more complete application at the time of filing to reflect this increased investment.

The procedures before and during pre-filing are described in section 157.21, which identifies initial consultation with the Commission, content required in your initial filing to request to use the pre-filing process, and other pre-filing activities and submittals. Section 157.21 also lists some of the activities that we undertake, with the third-party contractor if one is used, during the pre-filing period.

As indicated in section 157.21, an application should not be filed until at least 180 days after the Director of OEP issues a notice commencing the pre-filing process. While this establishes a typical minimum period of 6 months, the actual duration of the pre-filing period varies by project. We encourage you to work with the Director of OEP or the Director's designee during the initial consultation (discussed in section 3.1) regarding the pre-filing schedule.

3.1 INITIAL FERC CONSULTATION

You must consult with the Director of OEP before submitting a request to use the pre-filing process. The initial consultation, or "pre-filing meeting," typically occurs at the Commission's office in Washington, D.C. During the consultation, you should be prepared to introduce the project to Commission staff, describe (for non-LNG projects) the benefits of using the pre-filing process, present the proposed schedule for both pre-filing and post-filing activities, and discuss the status of efforts to obtain the information required for the pre-filing request. While not specifically required in the regulations, we recommend that you bring an initial draft of the pre-filing request to the pre-filing meeting. During this meeting, we consider what regulatory path and NEPA document will be most appropriate for the project and whether a third-party contractor will be

needed. If you anticipate that a third-party contractor may be needed, we also strongly recommend that you bring a draft Request for Proposal for our review.[10]

3.2 INITIAL FILING/REQUEST TO USE PRE-FILING PROCESS

The required contents of the initial filing (for LNG projects) or pre-filing request letter (for other natural gas facilities) are listed in section 157.21(d). We do not reiterate the requirements here because the regulations may be revised over time and you should consult the regulations directly. However, it is important to note that several of the items listed require significant advance planning and actions. If you do not build sufficient lead time into the schedule to conduct these activities before initiating pre-filing discussions with the Commission, the project schedule could be at risk. Examples of some of the longer lead-time items include, but are not limited to:

- a list of relevant federal and state agencies in the project area with applicable permitting requirements, including:
    - a statement that those agencies are aware of your intention to use the pre-filing process;
    - names and telephone numbers (we also recommend email addresses) of the agency personnel contacted;
    - whether the agencies have agreed to participate in the pre-filing process;
    - how you have accounted for agency schedules for issuance of federal authorizations; and
    - when you propose to file applications with those agencies;
- a list and description of the interest of other persons and organizations who have been contacted about the project, including contact names and telephone numbers (we also recommend email addresses);
- a description of work that has already been done (e.g., contacting stakeholders [including Indian tribes], agency consultations, project engineering, route planning, environmental and engineering contractor engagement, environmental surveys/studies, and open houses); and identification of the environmental firms, engineering firms, and sub-contractors under contract to develop the project;

[10] Refer to the Commission's *Handbook for Using Third-Party Contractors to Prepare Environmental Documents For Natural Gas Facilities and Hydropower Projects* for more information on the third-party contracting program and guidelines for preparing Requests for Proposals.

- either all proposals from potential third-party contractors that responded to the Request for Proposal, if applicable, from which we may select one to help prepare the requisite NEPA documents, or a proposal to submit an applicant-prepared draft EA if approved by the Director of OEP;
- a description of a *Public Participation Plan* that identifies specific tools and actions to facilitate stakeholder communications and public information, including a project website and a single point of contact as well as other information; and
- for LNG terminal projects, certification either that a Letter of Intent and a Preliminary Waterway Suitability Assessment have been submitted to the U.S. Coast Guard (Coast Guard) or, for modifications to an existing or approved LNG terminal, that the Coast Guard did not require such information.

3.3 PRE-FILING ACTIVITIES AND SUBMITTALS

Once the Director of OEP issues a notice approving the use of pre-filing, you must complete activities and file certain documents and reports in accordance with the timeframes specified in section 157.21(f). Please refer directly to the regulations when planning and preparing these activities and documents. Note that the prescribed timeframes may be modified by a project-specific schedule agreed upon with Commission staff if project-specific issues warrant a different schedule.

While carrying out the pre-filing activities, we encourage you to communicate regularly with us to address project-specific questions, coordinate meetings and site visits, and keep us apprised of project developments. In addition to the monthly status reports required under section 157.21(f)(6), Commission project managers may establish a schedule of regular conference calls (e.g., weekly or bi-weekly).

The following paragraphs do not address all of the items required under section 157.21(f), but provide guidance for certain key activities.

Open Houses

Within 7 days of the Director's notice commencing the pre-filing process and after consulting the Commission staff's project manager assigned to your project, you must establish dates and locations of applicant-sponsored open houses and other meetings with stakeholders (including federal and state agencies). We or our third-party contractor, or both, generally attend the open houses to respond to questions regarding our environmental review process; therefore, it is necessary that you coordinate with us regarding meeting dates and logistics. Keep in mind that third-party contracts must be executed within 14 days of the commencement of pre-filing and prior to the open houses to allow for the contractor's participation. You should account for this timeframe in planning the open house dates. Your published notice of the open houses should reflect

our attendance and role, and we should review this description prior to issuance. We may also elect to conduct site visits or agency meetings in conjunction with travel for open houses.

Although the general discussions that take place at open houses are not part of the public record, we encourage you to file comments received at these events to help identify project-specific issues.

Landowner and Stakeholder Contacts

Within 14 days of the Director's notice commencing the pre-filing process, you must contact all stakeholders that had not already been informed about the project, including all affected landowners as defined in section 157.6(d)(2). You must submit a stakeholder mailing list to us within 30 days. You should consult with us on the format of the mailing list to ensure that it conforms to our publication requirements. See section 2.0 of this manual for further discussion of landowner notification and stakeholder outreach.

Initial Draft Resource Report 1 and Summary of Alternatives

Within 30 days of the Director's notice commencing the pre-filing process, you must file a first draft of Resource Report 1 and a summary of alternatives considered for the project. We recognize that information available at this point in the process may not be complete or fully refined. However, at a minimum, these early drafts should provide sufficient information for us to issue a Notice of Intent to prepare a NEPA document. Such information includes, but is not limited to, a clear description of the proposed project, location map(s), purpose and need, schedule, land requirements, applicable permits, and construction methods. Draft Resource Report 1 should reflect the overall format and structure planned for future drafts and should indicate where information will be provided in a later draft. Although the summary of alternatives is not referred to at this point as a draft Resource Report 10, we recommend a similar approach. The alternatives summary should, at a minimum, identify major system and route alternatives that you considered as well as alternative sites that you considered for aboveground facilities.

Scoping

The Commission's issuance of the Notice of Intent to prepare a NEPA document formally starts the NEPA process and scoping period. The Notice of Intent announces the dates and locations of scoping sessions, if applicable, that we will host. Public comments provided at the scoping session become part of the public record. Although the scoping sessions are Commission staff-led sessions, our project manager may ask you to provide an overview of your project and/or provide alignment sheets for public viewing.

The Notice of Intent to prepare a NEPA document also identifies the closing date of the official scoping period during which interested persons/participants should submit comments on the project. The purpose of specifying a closing date for the scoping period is to provide time for you to address comments in the draft resource reports. It is important to note, however, that we will continue to accept and respond to comments at any time during and after the pre-filing period until it is no longer practical as we prepare to issue the NEPA document.

Within 14 days of the close of the scoping period, you must respond to issues raised during the scoping period as required by section 157.21(f)(9). For projects with significant public interest, scoping comments may be voluminous, and it is not unusual for scoping comments to be filed after the end of the comment period. If you find that 14 days is not sufficient to develop responses, you should file a statement by the 14-day deadline indicating when you plan to file a complete response. Additionally, because the purpose of scoping is to identify issues to be addressed in the NEPA document, scoping comments raising similar issues can be grouped together for the purpose of preparing responses.

Draft Resource Reports

Unless a different schedule has been agreed upon, you must submit draft Resource Reports 1 through 12 within 60 days of the end of the scoping period. Note that this includes a second draft Resource Report 1 that should be further developed than the initial draft submitted at the 30-day point. Where you plan to provide certain information at a later date, you should clearly indicate at the appropriate locations within the draft resource reports what information will be provided at what date. Clearly acknowledging such planned information facilitates our review and assures us that you are aware that the information is needed and that you plan to provide it. We recommend that you create a table, similar to table 3.3-1, of outstanding information and when you plan to provide that data. This may reduce the likelihood that we will request revised draft resource reports during the pre-filing period. If we do request revised draft resource reports, you must submit them at least 60 days prior to filing the application unless a different schedule has been agreed upon with us. For LNG projects, you must submit a draft of Resource Report 13 at least 90 days prior to filing the application. Section 4.0 of this manual discusses the technical content requirements and other recommendations for each resource report at the time of filing the application. Volume II of this manual specifically addresses additional information to be provided for LNG facilities.

TABLE 3.3-1

Information Outstanding for Draft Resource Reports

Information	Resource Report Location	Anticipated Submittal Date
Draft Plan X	Section x.x.x	Date
Numbers to support table x.x-x	Section x.x.x	With application
Species survey results for site Z	Section x.x.x	Date

Certification of Follow-on Waterway Suitability Assessment Submittal

Upon the Director's notice commencing the pre-filing process for LNG projects, you must certify that you will submit a Follow-on Waterway Suitability Assessment to the Coast Guard no later than the filing of an application with the Commission. If a Follow-on Waterway Suitability Assessment is not required for modifications to an existing or approved LNG terminal, you must certify that the Coast Guard has indicated that a Follow-on Waterway Suitability Assessment is not required.

4.0 PREPARING ENVIRONMENTAL REPORTS FOR NATURAL GAS ACT SECTION 7 APPLICATIONS

This guidance manual does not change or substitute for any law, regulation, or any other legally binding requirement. Where practical, we have distinguished between legal obligations and Commission staff's interpretations or recommendations. We use mandatory language such as "required," "must," and "must not" to describe controlling requirements under statutes and regulations. We use non-mandatory language such as "recommend," "encourage," and "may" to describe Commission staff's recommendations that will help the Commission meet its obligations under NEPA. However, because clear distinctions are not always practical, a reader should consult the regulations directly to determine the information legally required in order to meet the filing requirements of 18 CFR 380.12.

Applicants who do not use the pre-filing process instead initiate the environmental review process by filing an application. The application must include resource reports as specified in sections 157.14(a)(6-a), 380.3, and 380.12 (as discussed in section 3.0, applicants using the pre-filing process must submit draft resource reports before filing an application). This section addresses the preparation of resource reports in detail. The information in this guidance manual regarding the format and content of resource reports is based on our needs and preferences to facilitate the creation of a thorough NEPA document that will be useful to the Commission. If other federal agencies will use your resource reports (and/or the Commission's NEPA document) to fulfill their NEPA responsibilities, you may need to include additional information in the resource reports. You should discuss this with Commission staff and the appropriate agency staff as early as possible.

You may also propose to file an applicant-prepared draft EA (upon coordination with the Director of OEP), or to retain a third-party contractor to assist us in preparing an EA or EIS. Neither of these options takes the place of your resource reports, which are a required part of the application. Sections 5 and 6 of this manual address the preparation of an applicant-prepared draft EA and the use of a third-party contractor, respectively.

The purpose of this section is to clearly identify the technical content requirements for each resource report that will allow us to efficiently review an application and conduct the environmental review process. We also identify information that is not specifically required in the regulations, but is often needed to allow for a complete and thorough environmental review. Note that the information required to develop a complete application for one project may not be the same for another project, even of similar scope. In this section, we attempt to be inclusive about the information required for most projects, but you should evaluate the specific issues, impacts, and comments

relevant to your own project and adjust the content of your resource reports accordingly while also meeting the filing requirements in section 380.12. This section also provides guidance on how to collect required data, which agencies to contact, what data sources have been reliable in the past, and what presentation techniques are recommended. In many cases, we provide sample templates for presenting information in tabular formats, some of which include illustrative sample content and/or footnotes. The templates are effective presentation formats based on our experience, but they are not mandatory and you should modify them (including the use of footnotes where necessary for clarification), as appropriate, for your individual project.

We provide guidance on all of the resource reports identified in section 380.12 as follows:

Volume I

Resource Report 1 – General Project Description
Resource Report 2 – Water Use and Quality
Resource Report 3 – Fish, Wildlife, and Vegetation
Resource Report 4 – Cultural Resources
Resource Report 5 – Socioeconomics
Resource Report 6 – Geological Resources
Resource Report 7 – Soils
Resource Report 8 – Land Use, Recreation, and Aesthetics
Resource Report 9 – Air Quality and Noise
Resource Report 10 – Alternatives
Resource Report 11 – Reliability and Safety (Pipeline Facilities)
Resource Report 12 – PCB Contamination

Volume II

Resource Report 11 – Reliability and Safety (LNG facilities)
Resource Report 13 – Engineering and Design Material

Note that material filed under another docket may be incorporated by reference. You should clearly identify where the information is contained (for example, the docket number and filing date, or eLibrary accession number). This incorporation by reference should be limited to items and issues that are not project-specific. However, to facilitate our review, we recommend that you incorporate the material directly into the current filing rather than only incorporating it by reference.

KEY PRINCIPLES OF RESOURCE REPORT PREPARATION

You should follow certain general principles throughout the preparation of the resource reports. Following these principles should reduce the amount of information that must be verified through data requests or independent research by Commission staff. These principles are summarized below:

- **Provide concise, specific statements of environmental impacts and proposed mitigation.** The detail provided in each resource report should be commensurate with the complexity of the action and the potential for environmental impact. Each resource report must address:

    - existing conditions or resources that may be directly or indirectly affected by the project or that may affect the project;

    - effects on the resource as a result of construction, operation, maintenance, or abandonment of the project;

    - any proposed measures to enhance the environment;

    - any proposed measures to avoid, minimize, or otherwise mitigate adverse effects;

    - a discussion of the cumulative impact that may result from the combination of impacts from the proposed project and from other past, present, and reasonably foreseeable actions that mutually affect one or more resources (further discussion of cumulative impact is provided below);

    - a list of references/data sources (publications, reports, other literature, and communications, including agency contacts) that you used to prepare the resource reports, and appropriate citations to those references within the text; and

    - evidence of agency consultation used to identify existing resources, potential impacts, and appropriate mitigation measures. You should also clearly identify which agency-recommended mitigation measures you will adopt.

    Although there is no required format for presenting information in resource reports, we have found that organizing each resource report to first discuss the existing environment with respect to a given resource, and to then discuss potential project impacts and proposed mitigation measures related to that resource, facilitates our review. For example, the preferred format for addressing waterbody and wetland resources in Resource Report 2

would be as follows for a simple project involving a pipeline and a new compressor station located at a separate and distinct location (assume that omitted section 2.1 addresses groundwater):

2.2 Surface Waters
- 2.2.1 Proposed Pipeline
  - 2.2.1.1 Existing Environment
  - 2.2.1.2 Potential Impacts and Proposed Mitigation
- 2.2.2 Compressor Station
  - 2.2.2.1 Existing Environment
  - 2.2.2.2 Potential Impacts and Proposed Mitigation

2.3 Wetlands
- 2.3.1 Proposed Pipeline
  - 2.3.1.1 Existing Environment
  - 2.3.1.2 Potential Impacts and Proposed Mitigation
- 2.3.2 Compressor Station
  - 2.3.2.1 Existing Environment
  - 2.3.2.2 Potential Impacts and Proposed Mitigation

This basic organizational approach can be adapted as needed to more complex projects involving multiple types of facilities and/or multiple states.

- **Clearly identify the facilities analyzed in the resource reports and ensure that the analysis addresses *all* facilities currently proposed**. Often applicants will initiate environmental studies on one set of project facilities, but will then change the facilities, or the design or locations of the facilities, before the application is filed with the Commission. Not infrequently we find either that resource reports include information on facilities or facility locations that are different from those proposed in the application, or that the supporting documentation for a resource report (e.g., U.S. Fish and Wildlife Services [FWS] consultation letters and cultural resource survey reports) does not cover the facilities actually proposed in the application. Each resource report and the supporting agency documentation should clearly identify the facilities being evaluated and should evaluate *all* currently proposed facilities.

- **At a minimum, each resource report must provide the information required by the applicable subsection under section 380.12. If any of this information is not provided, identify the reason why it is not addressed or not applicable.** Attachment 1 to this manual provides the full filing requirements in section 380.12, as well as a copy of Appendix A to part 380, which lists the minimum filing requirements that must be included for application acceptance. For projects using the pre-filing

process, in which draft resource reports are submitted and reviewed by Commission staff before the application is filed, the resource reports in the application should cover all of the available information required by section 380.12, as well as address our comments on the draft resource reports and comments made by stakeholders during pre-filing. We recommend that you include a matrix with the filing that identifies where each of our comments on the draft resource reports has been addressed. For projects that do not use the pre-filing process, an applicant who includes information beyond the minimum filing requirements allows a more efficient review process, reducing the need for supplemental filings and reducing the number of data requests we may need to issue in order to obtain sufficient information. In addition to attachment 1 providing the full and minimum filing requirements, we have also included a list at the beginning of each of the following subsections identifying additional information that we recommend be included in each resource report if applicable to your project, as well as to note information that applicants often omit or misinterpret from the regulations. Excluding this additional information from the resource reports may result in a larger number of data requests.

Failure to include any of the information specified in the minimum filing requirements of the regulations can result in rejection of an application, unless the Director of OEP determines that you have provided an acceptable reason for the item's absence and an acceptable schedule for filing it. Failure to file within that accepted schedule may also result in rejection of the application.

- **If the project is exempt from certain filing or reporting requirements, clearly provide the basis for such an exemption in the appropriate resource reports.** It is frequently unclear whether missing information is not applicable to a project or whether the topic was inadvertently missed in the analysis. If you believe that a particular resource report is not required for the project, we recommend that you include a cover sheet for that resource report with a brief explanation why. The resource reports should clearly identify issues or topics that have not yet been adequately addressed, and studies or surveys that have not been completed at the time of filing (identified by milepost/location and percentage of total required survey), including the reason for the delay in providing this information. In each case, you should provide the anticipated schedule to complete all outstanding issues or studies and the anticipated filing date.

- **Ensure that all data are accurate and consistent throughout the resource reports.** Common data are often referred to in several different resource reports. Examples include the length of the pipeline or size of the

aboveground facilities, acres required for construction and new permanent rights-of-way or extra work areas, acres of forest clearing, acres of wetlands affected, acres of land use types affected, and numbers and dimensions of temporary and permanent access roads.

These data are fundamental to the assessment of impacts and should be consistent between different resource reports. For presented acreages, clearly identify their mathematical basis and use the values consistently throughout the resource reports. Note there are instances when desktop data may be used instead of survey data, for example in an alternatives comparison, and potential data discrepancies should be explained.

- **Use consistent project terminology throughout the resource reports.** Similar to the above bullet regarding quantitative data, it is important to establish and define common terminology and to use it consistently throughout all resource reports. This applies to terminology such as the names of the proposed facilities, names and abbreviations for applicants and other entities referred to in the resource reports, types of workspaces, and referenced construction methods.

- **Provide documentation of consultation to date with federal, state, and local agencies and other individuals.** We must verify the data and conclusions presented in the resource reports as part of our environmental review and preparation of EAs and EISs. Each resource report should include a list of all publications, reports, and other literature or communications cited or used for analysis, including the name, title, and telephone number of each person or agency contacted. Note that records of communication should show both directions of correspondence (i.e., what information was sent to the agency and the agency's response). You should include all mapping to document that the agency reviewed the same project as that presented in the application to the Commission. Agency correspondence is best divided by resource area and included in the respective resource report to facilitate review by each Commission staff specialist. For large or complex projects requiring extensive agency consultation and coordination, it is helpful to Commission staff if you include an index of agency correspondence identifying where each item can be found within the filing.

- **Ensure that the application includes Exhibit J (for interstate facilities) or Exhibit H (for import/export facilities).**[11] Exhibits J and H provide

[11] 18 CFR §157.14(a)(12) (2015) (under section 7 of the NGA); *id.* §153.8(9) (2015) (under section 3 of the NGA).

information about federal authorizations required for the project. Although not part of the Environmental Report, these required application exhibits are often prepared in coordination with the applicant's environmental staff. We find that applicants sometimes overlook these exhibits, which can result in an application being found incomplete. Ensure that the information provided in Exhibits J and/or H is consistent with the information provided in the resource reports.

CUMULATIVE IMPACTS

NEPA requires the lead federal agency to consider the potential cumulative impact of a proposal under its review. The CEQ regulations define cumulative impact as "the impact on the environment which results from the incremental impact of the action [being studied] when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time."[12] Conducting the cumulative analysis should "focus on important cumulative issues, recognizing that a better decision, rather than a perfect cumulative effects analysis, is the goal of NEPA…"[13]

In accordance with section 380.12(b)(3), you must identify the cumulative effects on the relevant resource in each resource report. We have seen that some applicants prefer to provide this information in one place (e.g., as a subsection of Resource Report 1) rather than to separately address cumulative impact for each resource in the applicable resource report. This is acceptable as long as you address all of the resources, and you provide an appropriate cross-reference in each resource report. The guidance below is meant to assist you in identifying potential cumulative effects in a manner that will allow us to prepare a complete cumulative impact analysis. Each project is unique, and the appropriate cumulative impact analysis will be determined by many factors, including the scope and magnitude of the proposed action.

Discuss how the impacts from your project may contribute incrementally to impacts on these resources from other past, present, and reasonably foreseeable actions. For each affected resource, the geographical area to be considered will vary to reflect the general area in which the project and other development activities could contribute to cumulative impacts. This area is sometimes referred to as the geographic scope of the cumulative impacts analysis (geographic scope). Thus, an important first step in approaching the cumulative impacts analysis is to define the geographic scope for each resource. Typically, this depends in part on the type, extent, and location of the proposed project. As stated in CEQ guidance, the scope of the cumulative impact analysis is

[12] 40 CFR § 1508.7 (2015).

[13] CEQ, *Considering Cumulative Effects Under the National Environmental Policy Act* at 7 (January 1997).

related to the magnitude of the environmental impacts of the proposed action.[14] Proposed actions of limited scope typically do not require as comprehensive an assessment of cumulative impact as proposed actions that have significant environmental impacts over a large area. But given that individually minor actions can be collectively significant, you should not completely dismiss actions resulting in temporary or localized impacts (for example, air impacts from construction of pipelines). The geographic scope also depends on the type of resource being affected. For example, the geographic scope for buried cultural resources may extend just beyond the limits of the disturbed construction area, while the geographic scope for air quality could extend well beyond the immediate limits of the project.

In determining whether the project contributes to cumulative impacts on resources within the geographic scope, consider the spatial and temporal migration of impacts away from construction and/or operation work areas. For example, robust erosion control mechanisms and swift stabilization of a right-of-way would limit the migration of disturbed soils from the disturbed right-of-way. An open-cut stream crossing, however, would generate turbidity and sedimentation impacts that would travel for some distance from the actual work areas.

For construction, the temporal migration of impacts is linked to the duration of time for stabilization and full restoration. Tree clearing, for example, is either a permanent or long-term impact. Consequently, it may make sense to consider potential cumulative effects of other actions across a longer span of time or across a larger geographic area. In all cases you should provide ample justification for the time span and geographic scope used. For operation, the temporal migration of impacts extends across the project's entire useful life.

We recommend that considerations for developing the cumulative impact analysis include the items identified below.

- Determine the resources on which your project would have a direct and indirect impact. If a resource is not directly or indirectly affected by your project, it does not need to be considered for cumulative impacts; however, you should state this.

- Establish the geographic scope. This should include a discussion of the extent to which you would anticipate your project's direct and indirect impacts would occur (i.e., project impact zone). Note that other past, present, or reasonably foreseeable actions could be located outside of your project's project impact zone. The impacts from these other actions could

[14] CEQ *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis*. June 24, 2005 (CEQ 1995 Guidance).

be additive with your project impact and, therefore, may result in a cumulative impact.

- CEQ guidance for identifying the geographic scope recommends the use of natural boundaries: e.g., watersheds, mountain ranges. Natural factors, such as prevalent wind direction, elevation, topography, etc., may also influence the geographic scope. Resources that might be interdependent within larger natural boundaries may include soils that support vegetation that supports wildlife. Socioeconomic impacts, which do not lend themselves to natural boundaries, are better considered using administrative boundaries.

- In determining the appropriate geographic scope, consider:

    - the type of resource impact, i.e., whether the impact would be confined and unlikely to affect off-right-of-way areas other than potentially those abutting the construction workspace (e.g., disturbing buried cultural resources or soils) or whether the impact would extend beyond the immediate area (e.g., emitting air[15] and noise pollution, fragmenting animal habitat);

    - the appropriate way to describe the geographic scope, which may be a defined distance from the project activities (e.g., x feet or x miles from construction areas), a natural resource boundary (e.g., watershed), an administrative boundary (e.g., county), or a distance determined by modeling or measurement resulting in impacts (e.g., air quality receptors, noise-sensitive area [NSA], visual impact area); and

    - cumulative analyses performed for other permitting processes which may determine specific facilities or distances to be considered (e.g., cumulative air modeling for a Prevention of Significant Deterioration [PSD] permit).

- Consider and explain in the supporting analysis the duration of the impact and whether it is temporary or permanent (e.g., noise from construction would be short term and temporary, impacts from forest clearing in the

[15] Although climate change is a global concern, the CEQ has indicated that NEPA analyses regarding climate change should focus locally or regionally. You should provide the data needed to support our NEPA analysis (e.g., the project's contribution to GHG emissions; local or state GHG emissions; and any local, state, or regional goals for GHG emissions or climate change).

right-of-way would be long term, and air quality impacts due to emissions from new LNG or compressor facilities would be permanent).

- Explain the rationale for the geographic and temporal scopes determined for each resource. For projects using the pre-filing process, we recommend that you discuss your determinations and the rationale with Commission staff prior to proceeding with data collection.

Once you have determined the geographic and temporal scopes for each resource potentially affected by the project, you should identify other past, present, and reasonably foreseeable actions (federal, non-federal, and private) that could contribute to cumulative impacts on each resource. The simple test is to determine if the other action has direct or indirect impacts that need to be considered in conjunction with the direct and indirect impacts of your project to adequately disclose the additive impact to a resource within the geographic scope considered. You should not just provide an extensive list of projects within a very large region. You need to identify the resources affected by the other developmental activities in the geographic scope. Remember that you are only looking for effects on the resources that your project affects.

Where past actions have become part of the existing nature of an area, it may be appropriate to include them as part of the baseline for examining cumulative impacts (e.g., the forest clearing in the 1800s that has been consistently farmed, lands subject to ongoing grazing). Consider whether the past action continues to contribute to discernable impacts on a resource. If not, then it should not be included (however, some historical context may prove useful). If it does, include the present effects of the past actions in the analysis.[16]

To facilitate research and to identify the appropriate information sources, it may be helpful to divide other actions into categories that have similar impacts on resources. For example, other linear projects such as jurisdictional and nonjurisdictional pipelines and electric transmission rights-of-way may share certain characteristics that would allow a more concise discussion. Sources of information may include, but are not limited to, federal and state agencies, local and regional planning and zoning departments, chambers of commerce, and economic development organizations. You should provide citations for the information sources used to identify other projects within the geographic scope. You should also include nonjurisdictional facilities associated with the proposed project, such as electrical transmission lines and water pipelines, as well as facilities proposed for

[16] CEQ advises that agencies can "generally conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions." (CEQ 1995 Guidance at 2).

the customer, if applicable. For each other action identified, we recommend that you provide[17]:

- the project name and sponsor;
- a description of the project;
- the county and state;
- the distance from the proposed project;
- the milepost location where it crosses the proposed facilities or the nearest proposed project facility milepost;
- quantitative impacts on specific resources, if available (e.g., 5 acres of temporary impact on wetlands and 8 acres of forest clearing);
- any known permits/authorizations or environmental review required; and
- the current status and schedule of the project (e.g., proposed for October 2016, under construction, completed).

A map showing the identified actions in relation to the proposed project could also be useful to visualize the potential for cumulative effects. It may also be helpful to provide layouts of the facilities, if known.

The available information about the environmental impacts of other actions varies depending on the type of action and the applicable permitting processes. For example, specific and quantitative information for other Commission-regulated projects may be accessible through our eLibrary system, while available information for certain commercial developments may be more limited. Consequently, the cumulative impact analysis is generally based on a combination of qualitative and quantitative information. As the cumulative impact analysis is fundamentally an additive analysis, quantitative information is far more meaningful and should be provided where available (e.g., acres of each resource impact such as vegetation, land use, or wetland areas). Where quantitative information is not available, the text should include a discussion based on qualitative impacts. Remember that the CEQ guidance indicates that the focus should be on "truly meaningful effects."

We recommend that applicants use a tabular format to present the geographic scope for each resource; the other past, present, and reasonably foreseeable actions considered in the cumulative impact analysis for each resource; and the impacts of other actions on those resources. The format of the table(s) will depend on the size and

[17] It is often helpful to include this information in table format.

complexity of the project and the number of other actions to be considered in the analysis. Attachment 2 provides two sample tables that could be adapted for use based on project-specific situations.

Table 1 in attachment 2 illustrates how you might identify the other actions considered in the cumulative impact analysis and how you might quantify the impacts of those actions on affected resources where available.

Table 2 in attachment 2 provides examples from CEQ guidance of geographic areas that could be used for the cumulative impact analysis. Understanding the specific characteristics of a project area will dictate the geographic scope. We recommend that you consider those characteristics and provide rationale as to how you selected your geographic scope, for each resource.

4.1 RESOURCE REPORT 1 – GENERAL PROJECT DESCRIPTION

INFORMATION OFTEN MISSING AND RESULTING IN DATA REQUESTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ Describe all authorizations required to complete the proposed action and the status of applications for such authorizations, including actual or anticipated submittal and receipt dates.	D
☐ Provide plot/site plans of all aboveground facilities that are not completely within the right-of-way.	D
☐ Provide detailed typical construction right-of-way cross-section diagrams for each proposed right-of-way configuration showing information such as widths and relative locations of existing rights-of-way, new permanent rights-of-way, and temporary construction rights-of-way. Clearly identify any overlap of existing rights-of-way for projects involving collocation. Identify by pipeline facility and milepost where each right-of-way configuration would apply.	BB
☐ Summarize the total acreage of land affected by construction and operation of the project.	BB
☐ Describe the cathodic protection system; include associated land requirements as appropriate.	D
☐ Describe construction and restoration methods for offshore facilities as well as onshore facilities.	D
☐ For proposed abandonments, describe how the right-of-way would be restored, who would own the site or right-of-way after abandonment, who would be responsible for facilities that would be abandoned in place, and whether landowners were given the opportunity to request removal.	D
☐ If Resource Report 5 – Socioeconomics is not provided, provide the start and end dates of construction, the anticipated number of pipeline spreads that would be used, and the estimated workforce per spread.	D
☐ If the project includes construction in the federal offshore area, include in the discussion of required authorizations and clearances the status of consultations with the Bureau of Ocean Energy Management, Regulation and Enforcement. File with the Bureau of Ocean Energy Management, Regulation and Enforcement for right-of-way grants at the same time or before filing your application with the Commission.	D
☐ For project involving the import or export of natural gas/liquefied natural gas and construction of liquefied natural gas facilities, include in the discussion of required authorizations and clearances the status of consultations and authorizations required from the U.S. Department of Energy, U.S. Coast Guard, and the Federal Aviation Administration, as applicable.	D
☐ Send two (2) additional copies of topographic maps and aerial images/photographs directly to the environmental staff of the Office of Energy Projects.	D
☐ Provide an electronic copy of the landowner list directly to Commission environmental staff. Check with Commission staff for required format.	D
[a] D Applicant BB Resource Report 8	

This guidance manual does not change or substitute for any law, regulation, or any other legally binding requirement. Where practical, we have distinguished between legal obligations and Commission staff's interpretations or recommendations. We use mandatory language such as "required," "must," and "must not" to describe controlling requirements under statutes and regulations. We use non-mandatory language such as "recommend," "encourage," and "may" to describe Commission staff's recommendations that will help the Commission meet its obligations under NEPA. However, because clear distinctions are not always practical, a reader should consult the regulations directly to determine the information legally required in order to meet the filing requirements of 18 CFR 380.12.

Resource Report 1 is required for all applications and lays the groundwork for the other resource reports. This resource report describes the facilities associated with the project; the purpose of and need for the project; procedures for construction, restoration, and operation of the facilities; timetables for construction; future plans for related construction; compliance with regulations and codes; and permits and consultations required for the project. Resource Report 1 also establishes the terminology for the various project components and the entities involved, which should be used consistently through all of the resource reports.

4.1.1 Proposed Facilities

4.1.1.1 Purpose and Need

Describe the purpose of and need for the proposed facilities. We recommend that you include the specific geographic market(s) to be served, total volume of gas to be delivered by the facilities in cubic feet per day, the location of the gas receipt and delivery points, a listing of each customer, the status of precedent agreements with customers, and the volume of gas delivery to each customer. As noted in section 4.10 of this manual (Resource Report 10 – Alternatives), the statement of purpose and need in Resource Report 1 should provide sufficient detail to support the analysis of alternatives to the proposed project.

4.1.1.2 Location and Description of Facilities

Provide a detailed description of the length, number, type, and size of all facilities to be constructed, modified, abandoned, replaced, or removed. Include the following information in the description:

- For each pipeline segment (new pipeline or loop), provide:
    - the name or segment designation;
    - the pipeline diameter in inches;
    - the existing and/or proposed maximum allowable operating pressure;
    - the approximate length in miles;
    - the beginning and ending mileposts[18];

[18] Although mileposts are referenced throughout this manual, station numbers are also acceptable. You may use existing mileposts or surveyed station numbers for loops or abandonments. However, whatever method you choose should be used consistently throughout the resource reports. Additionally, if you incorporate route modifications into the project during the environmental review period, we recommend that you provide a clear explanation of any renaming or renumbering of mileposts. Generally, we find that a renaming or coding convention (e.g., placing an "R" in front of

- the type of activity (loop, new, replacement, or abandonment); and
- the location by county and state.

- For abandonments, indicate:
  - whether facilities would be abandoned "in place" or removed (identify abandonment method by milepost if multiple methods are proposed);
  - the length of each segment to be abandoned; and
  - the beginning and ending milepost of each segment to be abandoned.
- For replacements, indicate:
  - whether pipelines would be replaced in the same trench;
  - the length of each segment to be replaced; and
  - the beginning and ending milepost of each segment to be replaced.
- For each aboveground facility (compressor or meter station,[19] well, or LNG facility), provide:
  - the name or facility designation;
  - the type of facility;
  - the type of activity (modification, new, abandonment, replacement, or removal);
  - the amount of horsepower and source of power (gas or electric), if applicable;
  - the milepost location, if appropriate;
  - the location by county and state;

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mileposts for those that occur along reroutes, while retaining the previously established mileposts for unchanged portions of the route) is more efficient than renumbering all of the project mileposts. However, if you decide to revise all of the mileposts, you should update all milepost references in the text and tables throughout the Environmental Report.

[19] The term "meter station," used throughout the document, might imply an independent meter station, a combined meter and regulating station, or an independent regulating station.

- the amount of overlap with existing facilities versus new disturbance for facilities proposed to be modified; and
- whether facilities proposed to be abandoned would be abandoned in-place or removed.

- For each associated facility (block valve, drip tank, regulator, pig launcher/receiver, etc.) that would be placed within existing or new permanent right-of-way or aboveground facility sites, you should provide:
  - the name or facility designation;
  - the type of facility (for valves, we recommend that you indicate whether it is automatic, remote, or manually operated);
  - the type of activity (modification, new, abandonment, replacement, or removal);
  - the milepost location;
  - the location by county and state;
  - the amount of overlap with existing facilities versus new disturbances for facilities proposed to be modified; and
  - whether facilities proposed to be abandoned would be abandoned in place or removed.

For projects that involve multiple facilities, we recommend that you summarize the above information as shown in example tables 4.1.1-1 and 4.1.1-2.

Identify all jurisdictional facilities related to the project, including blanket certificate activities (subpart F of part 157) and auxiliary and replacement activities (section 2.55). Also identify jurisdictional facilities that would be constructed by other companies. Identify the other companies and describe where the facilities would be located and the status of the Commission's approval process. If an application has been filed, include the docket number.

TABLE 4.1.1-1

Pipeline Facilities

Pipeline Diameter/Type	County, State	Mileposts [a] Begin	Mileposts [a] End	Length (miles)
New Pipelines				
xx-inch-diameter Mainline Pipeline				
Subtotal				
xx-inch-diameter Loop A				
Subtotal				
Pipeline Replacement				
xx-inch-diameter Replacement Segment A[b]				
Subtotal				
TOTAL PIPELINES				

[a] Mileposts are reference points and may not equal total length due to rounding.

[b] Old pipe to be removed and replaced in same trench.

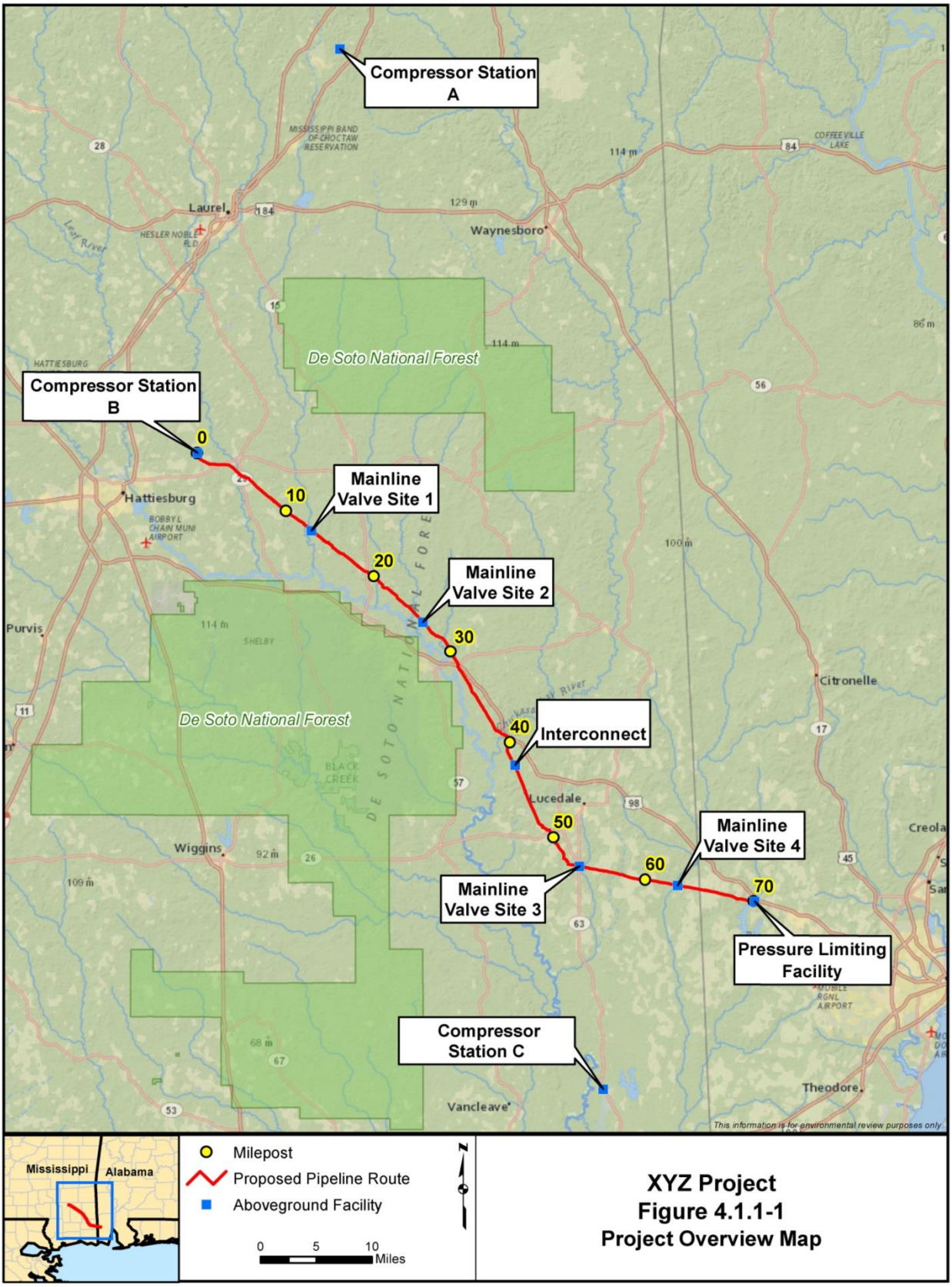
TABLE 4.1.1-2

Aboveground Facilities

Facility Type and Name	Approximate Milepost	County, State	Description
Compressor Stations			
Compressor Station A	x.x	County, ST	Install [describe compressor units] with a total of xxx horsepower of compression
Compressor Station B	x.x	County, ST	Retire one [describe compressor unit] and install a new xxx horsepower [describe compressor unit]
Meter and Regulation Facilities			
Meter Station A	x.x	County, ST	Install new meter and regulation facilities and tie-in with Company X pipeline.
Meter Station B	x.x	County, ST	Install new meter and regulation facilities
Pig Launchers and Receivers			
Pig Launcher	x.x	County, ST	Install pig launcher within Compressor Station A fenceline
Pig Receiver	x.x	County, ST	Install pig receiver within permanent pipeline right-of-way

4.1.1.3 Location Maps, Detailed Route Maps, and Plot/Site Plans

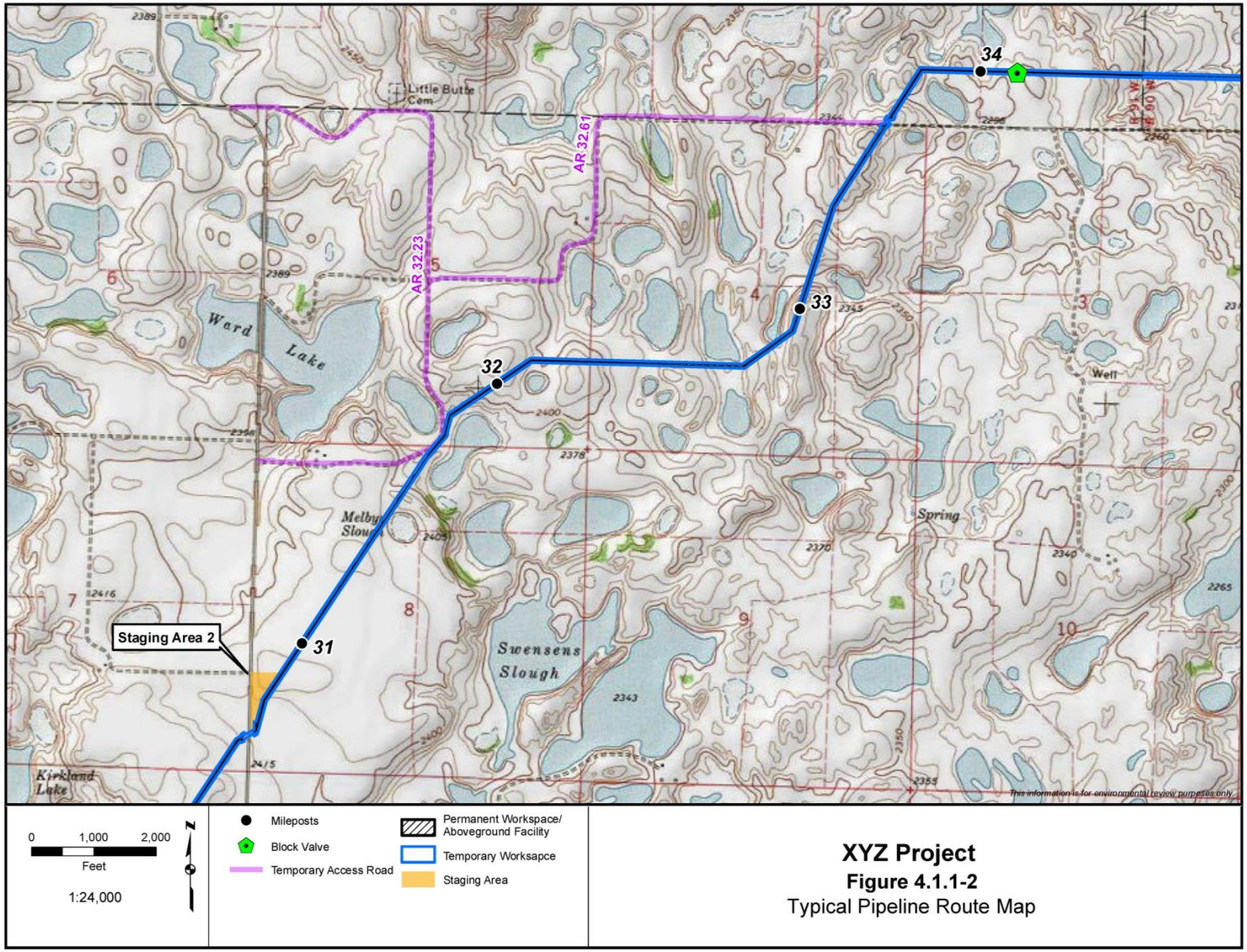
You must provide a map(s) showing the location of all proposed pipeline and aboveground facilities in relationship to existing pipeline facilities (see figure 4.1.1-1).


Compressor Station A
Compressor Station B
Mainline Valve Site 1
Mainline Valve Site 2
Interconnect
Mainline Valve Site 3
Mainline Valve Site 4
Pressure Limiting Facility
Compressor Station C
0
10
20
30
40
50
60
70
De Soto National Forest
Laurel
Waynesboro
Hattiesburg
Purvis
Lucedale
Wiggins
Citronelle
Vancleave
Theodore
Mississippi
Alabama
Milepost
Proposed Pipeline Route
Aboveground Facility
0 5 10 Miles
This information is for environmental review purposes only.
XYZ Project
Figure 4.1.1-1
Project Overview Map

Clearly and accurately show all proposed pipeline segments, aboveground facilities (including block valves, drip tanks, communications towers, etc.), pipe storage yards, extra work/staging areas, contractor yards, and access roads on current original 1:24,000/1:25,000 scale U.S. Geological Survey (USGS) 7.5-minute series topographic maps or maps of equivalent detail, and 1:6,000 or greater scale aerial photographs or photo-based alignment sheets that are preferably not more than 1 year old. If you use older aerial photography, it must accurately depict current land use and development. Aerial photography or photo-based alignment sheets should be provided in D-size (22-inch by 34-inch, preferably in a bound roll rather than as individually folded sheets) or other size format acceptable to the Commission Project Manager. We recommend that each map sheet and alignment sheet includes a north direction arrow. In addition to the full-size maps, we also encourage you to provide working copies of topographic maps (in color) and aerial photography/alignment sheets in 17-inch by 11-inch format. In addition to the information required to be filed as part of the application, for projects in pre-filing, you should consult with the Commission Project Manager to determine the number of copies of topographic maps and aerial photographs that should be provided directly to us and to the Commission third-party contractor.

Pipeline alignment sheets and topographic maps must cover at least a 0.5-mile-wide corridor centered on the pipeline and clearly show the pipeline centerline with integer mileposts identified. You should show milepost markers clearly and accurately on the maps and photos because mileposts are used to locate and describe site-specific impacts, mitigation measures, and recommendations. In some cases it may be helpful to identify mileposts at smaller intervals (e.g., 0.1-mile or 0.5-mile), especially if there are numerous features of concern along the route or if the maps are of a scale that necessitates smaller intervals for reference points.

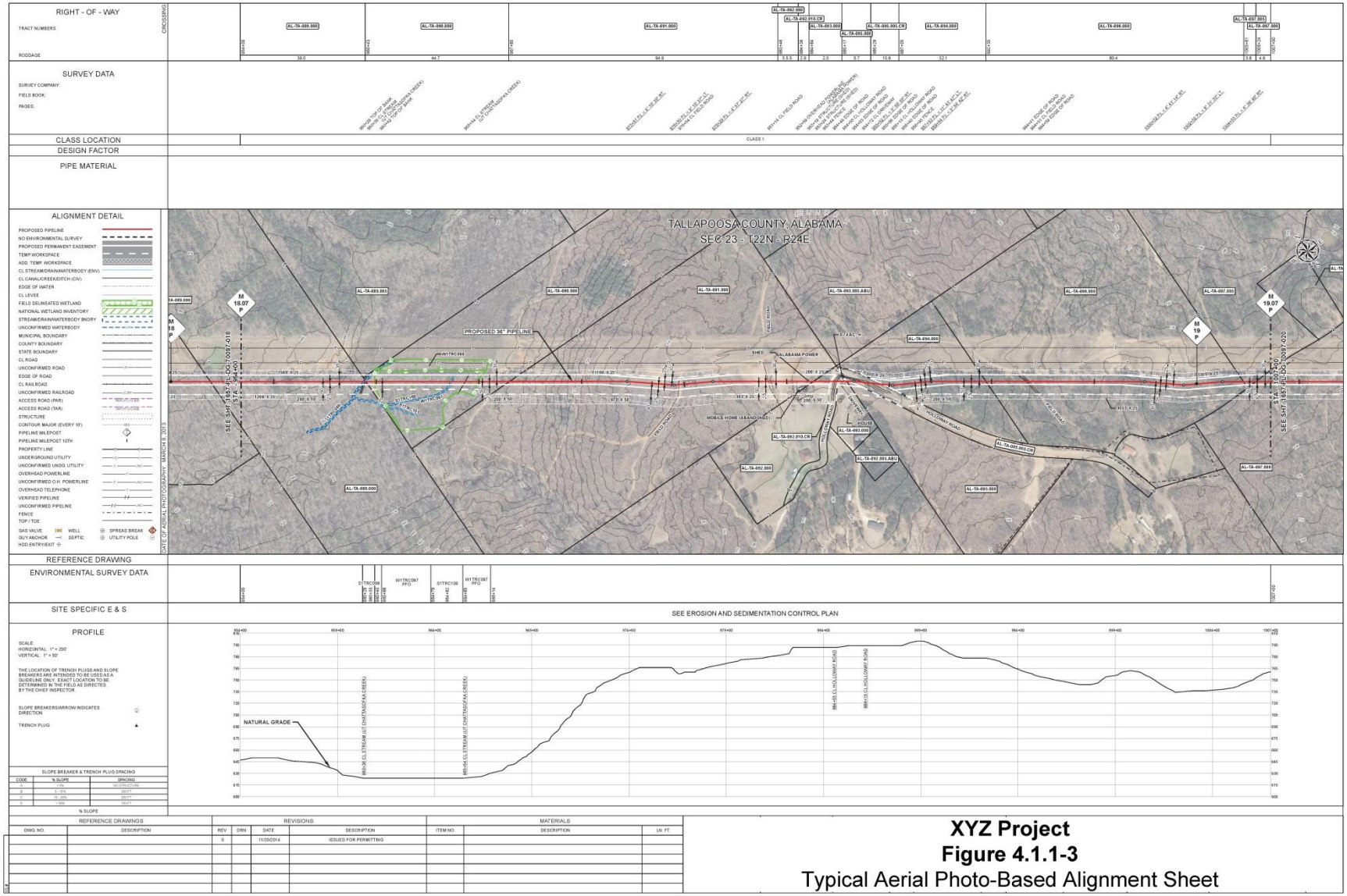
We recommend that the alignment sheets also show the location and widths of the proposed temporary and permanent rights-of-way, proposed locations and dimensions of additional temporary workspaces (ATWS), property boundaries and tract numbers, proposed temporary and permanent access roads, proposed horizontal directional drill (HDD) entry and exit locations, and, if available, sensitive environmental resources such as streams and wetlands (using different color shading or lines can assist us in identifying these sensitive resources) (see figures 4.1.1-2 and 4.1.1-3). Although not required, it is extremely helpful if you provide a means for Commission staff and our contractors to match landowners to property tracts shown on the alignment sheets, as this allows us to better understand and address issues raised during scoping or in correspondence we receive from landowners. You can accomplish this by filing separate copies of alignment sheets (full-size or 17-inch by 11-inch format) that include landowner names in addition to property boundaries. Another approach is to provide a separate reference table listing the landowner of each property tract. Alignment sheets that include landowner names or tables with names, if provided, should be filed as "**Privileged**" to maintain landowner privacy; however, a copy of the alignment sheets without landowner names is still required to be filed as public within the docket.



XYZ Project

Figure 4.1.1-2

Typical Pipeline Route Map


RIGHT - OF - WAY
SURVEY DATA
CLASS LOCATION
DESIGN FACTOR
PIPE MATERIAL
ALIGNMENT DETAIL
TALLAPOOSA COUNTY, ALABAMA
SEC 23 - T22N - R24E
PROPOSED 36" PIPELINE
REFERENCE DRAWING
ENVIRONMENTAL SURVEY DATA
SITE SPECIFIC E & S
SEE EROSION AND SEDIMENTATION CONTROL PLAN
PROFILE
NATURAL GRADE
REFERENCE DRAWINGS
REVISIONS
MATERIALS
XYZ Project
Figure 4.1.1-3
Typical Aerial Photo-Based Alignment Sheet

For looping projects or projects that would follow an existing utility corridor, the aerial photographs or photo-based alignment sheets should clearly show on which side of the existing pipeline or other utility corridor the proposed pipeline would be placed.

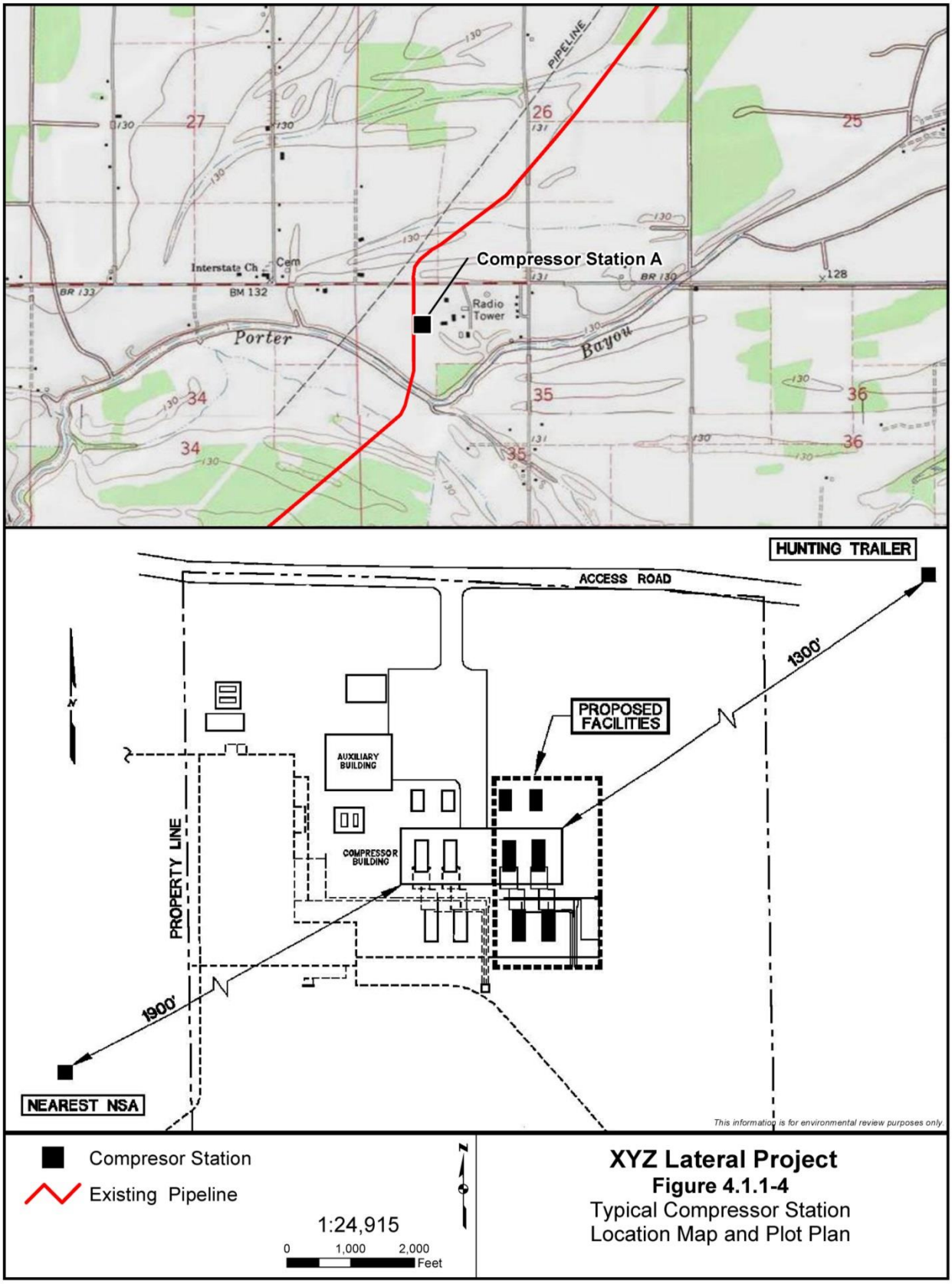
Show new or additional compressor stations, meter stations, and other nonlinear construction areas on the 1:24,000/1:25,000 scale topographic maps and aerial photography. Identify the boundaries of the compressor or meter station property and, for compressor stations, the location of nearby NSAs (e.g., residences, churches, schools). For compressor stations, provide a plot/site plan at a 1:3,600 or greater scale showing: the property boundary; existing and proposed compressor station facilities including buildings and other aboveground facilities; the area to be disturbed during construction and operation of the station (use of different color shading can assist us in distinguishing these impacts); compressor station fence line; existing and proposed pipelines, roads, and nonjurisdictional facilities; and the distance and direction to the nearby NSAs. If there are no NSAs within 1 mile of the site, it is helpful if you note this on the plot plan or in the accompanying text and state the distance and direction to the nearest NSA. Figure 4.1.1-4 is an example of a compressor station location map and plot plan. We also recommend that you provide plot plans for proposed new or modified meter stations.

4.1.2 Land Requirements

You must identify in Resource Report 1 the land requirements associated with the proposed facilities. The extent of land requirements/disturbance must be clearly defined to determine the impacts associated with a project. You should distinguish between land requirements for construction and operation of the project facilities. The construction impact should include both the construction (temporary) work areas and the operating (permanent) right-of-way. Additional guidance for calculating land requirements for the right-of-way, ATWS, staging areas, access roads, and contractor yards appears in section 4.8 of this manual. Make sure that all calculations and numbers are consistent with those in other resource reports.

4.1.2.1 Pipeline Facilities

Describe the widths of the construction right-of-way and permanent right-of-way for each proposed pipeline. Although typical right-of-way cross section diagrams are required in Resource Report 8, many applicants include them in Resource Report 1, which we find helpful. Either location is acceptable as long as you include the appropriate cross-references. Provide the typical right-of-way cross-section diagrams for each proposed configuration (e.g., greenfield, construction adjacent to or overlapping other pipelines or utilities, reduced right-of-way width in wetlands, various topsoil segregation methods). Identify the pipeline segment(s) and mileposts where each cross-section diagram applies. We recommend that you include a table that identifies by milepost where the proposed pipeline would be adjacent to existing rights-of-way and quantify the overlap (width and acreage) of the construction and permanent rights-of-way where applicable.


PIPELINE
Compressor Station A
Interstate Ch
Cem
BM 132
BR 133
BR 130
Radio Tower
Porter
Bayou
HUNTING TRAILER
ACCESS ROAD
1300'
PROPOSED FACILITIES
AUXILIARY BUILDING
COMPRESSOR BUILDING
PROPERTY LINE
1900'
NEAREST NSA
This information is for environmental review purposes only
Compresor Station
Existing Pipeline
1:24,915
0 1,000 2,000 Feet
XYZ Lateral Project
Figure 4.1.1-4
Typical Compressor Station
Location Map and Plot Plan

Each typical diagram should identify the pipeline it pertains to and should show:

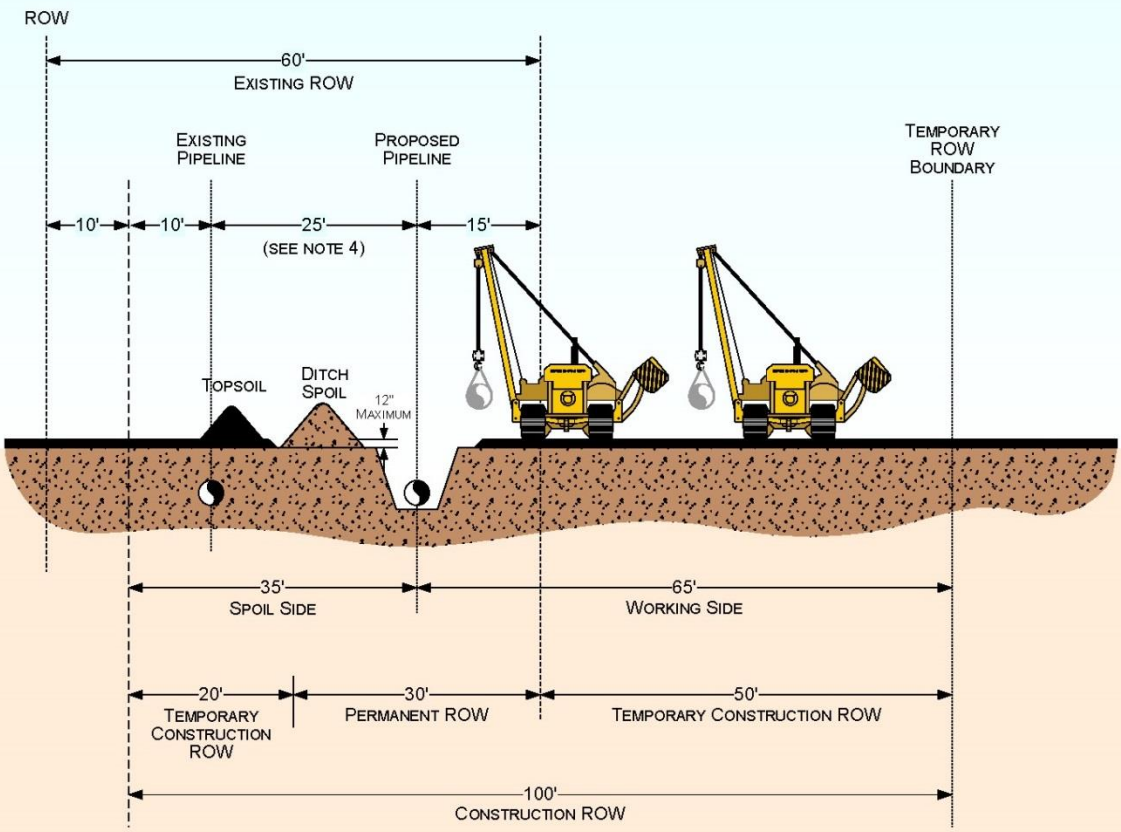
- the width of the total construction right-of-way;
- the width of the new permanent right-of-way;
- the width of the temporary construction right-of-way;
- the width of the existing right-of-way used for part of the construction right-of-way, if applicable;
- the location of existing and proposed pipelines; and
- the distance of the proposed pipeline from the nearest existing pipeline or other collocated facilities (e.g., power poles, roads) to the extent known and practicable.

If the temporary construction right-of-way or new permanent pipeline right-of-way would overlap existing utility or transportation corridor rights-of-way, you should identify the type of facilities within the existing corridor and provide a table indicating where each diagram applies by milepost. Include the following in each typical diagram:

- the width of the existing utility or transportation right-of-way;
- the width of the existing utility or transportation right-of-way overlapped by the proposed temporary construction right-of-way;
- the width of the existing utility or transportation right-of-way overlapped by the proposed new permanent right-of-way or existing permanent right-of-way; and
- an estimate of the number of acres within the overlapped temporary and permanent rights-of-way.

Figure 4.1.2-1 is an example of a typical pipeline project right-of-way cross section for locations where the applicant would install a new pipeline adjacent to an existing pipeline.

In addition to the construction and permanent right-of-way requirements, include land requirements for ATWS, staging areas for the project (e.g., as required for road, railroad, waterbody, and wetland crossings; areas of steep side slope; areas at the beginning and end of each pipeline segment for contractor mobilization/demobilization; pipe and contractor storage yards, new or modified access roads; staging and pull-back areas for HDDs). We recommend that you summarize the land requirements for the pipeline facilities as shown in example table 4.1.2-1.



PROFILE

NOTES:

1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 100' WIDE. THE PERMANENT RIGHT-OF-WAY WILL BE 30' WIDE AND ENTIRELY WITHIN EXISTING PERMANENT EASEMENT. ADDITIONAL TEMPORARY WORKSPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL, RIVER CROSSINGS, SIDESLOPES, WHERE FULL RIGHT-OF-WAY TOPSOIL STRIPPING IS CONDUCTED, AND OTHER SPECIAL CIRCUMSTANCES AS REQUIRED.
2. THIS DRAWING REFLECTS "TRENCH AND SPOIL SIDE" TOPSOIL STRIPPING PROCEDURE.
3. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL AS SHOWN OR IN ANY CONFIGURATION APPROVED BY THE INSPECTOR.
4. THE OFFSET FROM ACTIVE PIPELINE, WHERE APPLICABLE, WILL BE 25'.

For environmental review purposes only.

XYZ Pipeline Project

Figure 4.1.2-1

Typical Construction Right-of-Way Adjacent to Existing Pipeline

TABLE 4.1.2-1

Summary of Land Requirements for Pipeline Facilities [a]

Facility	County, State	Land Affected During Construction (acres)[c]	Land Affected During Operation (acres)
Pipeline Right-of-Way [b]			
Subtotal			
Additional Temporary Workspaces			
Subtotal			
Staging Areas			
Subtotal			
Other Work Areas			
Temporary Access Roads			
Permanent Access Roads			
Contractor Yard			
Subtotal			
TOTAL LAND REQUIREMENTS FOR PIPELINES			

[a] The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.

[b] Based on a x-foot-wide construction right-of-way and a x-foot-wide permanent right-of-way.

[c] Land affected during construction includes both temporary and permanent work areas.

4.1.2.2 Aboveground Facilities

For each aboveground facility, provide the following information:

- total site area in acres (property size);
- amount of land required for construction, including access roads, laydown areas, and other areas (disturbed during construction);
- amount of land required for facility operation, including access roads, communication facilities, parking, and other areas (permanently disturbed); and
- amount of land to be fenced on the site.

We recommend that you summarize the above information as shown in example Table 4.1.2-2.

TABLE 4.1.2-2

Summary of Land Requirements for Aboveground Facilities [a]

Facility	County, State	Land Affected During Construction (acres)[b]	Land Required During Operation (acres)
Compressor/Meter Station, MP x.x			
Pressure Regulating Station, MP x.x			
Block Valves [c]			
Block Valve, MP x.x			
Block Valve, MP x.x			
Block Valve, MP x.x			
Block Valve, MP x.x			
Pig Launcher [d]			
Pig Receiver [d]			
TOTAL LAND REQUIREMENTS FOR ABOVEGROUND FACILITIES			

[a] The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.

[b] Land affected during construction includes both temporary and permanent work areas.

[c] Each block valve will be constructed within the x-foot-wide construction right-of-way and operated within the x-foot-wide permanent easement. No additional land will be required for construction or operation of these facilities.

[d] The pig launcher and pig receiver sites will be constructed and operated within the compressor/meter station site at MP x.x and within the pressure regulating station site at MP x.x, respectively. No additional land will be required for construction and operation of these facilities.

4.1.3 Construction Procedures

Describe the procedures and personnel training that would be implemented to ensure that project construction would comply with the mitigation measures identified in the filed application and the requirements of other federal and state permits.

State the anticipated number of environmental inspectors that would be assigned to each construction spread, and describe the role of the environmental inspector(s), which, at a minimum, must include the responsibilities described in our current *Upland Erosion Control, Revegetation, and Maintenance Plan* (*Plan*).

If you do not provide Resource Report 5 – Socioeconomics, then include the following estimated workforce requirements information of Resource Report 1:

- number of construction spreads and their milepost boundaries;
- average and peak workforce in each construction spread;
- duration of construction (e.g., days, months) from initial clearing to final restoration; and
- number of new permanent employment positions created for project operations and where these employees would be located.

We also recommend that you include the anticipated percentage of the workforce that would be local hires and the anticipated months and year(s) of construction.

4.1.3.1 Pipeline

Summarize the construction and restoration techniques to be used for the project. For pipelines, we recommend that you describe:

- procedures for marking (e.g., flagging) the construction right-of-way, access roads, extra work/staging areas, and sensitive resource or restriction areas (e.g., wetlands, no-fueling zones);
- procedures for clearing, grading, trenching, stringing, bending, welding, x-ray or radiographic inspection, hydrostatic testing, pipeline coating and coating repair, backfilling, and restoration;
- procedures associated with installation of cathodic protection systems and locations of any cathodic protection systems that would be installed outside the temporary or permanent construction area[20];
- procedures and locations to be used for disposing of timber, slash, and rock;
- excavation depths, range of estimated trench width, and depth of cover over the pipeline, including identification of any areas where the pipeline would be buried deeper than usual (e.g., streams, agricultural fields with drain tiles) and the burial depths at these locations; and
- pipeline construction schedule by segment/facility, including approximate start date and duration for overall construction/restoration.

In addition to the standard construction methods, describe the construction and restoration techniques to be used in the following areas or times:

- Rugged topography – Describe side slope construction techniques, width of the construction right-of-way, erosion control and revegetation procedures, and the milepost locations where the construction technique would be used (see sections 4.6 and 4.7 of this manual, which address Geological Resources and Soils, respectively).

[20] If the locations of cathodic protection systems are not known at the time of filing, you should describe the applicable process for regulatory approval to install these facilities.

- Residential areas – Describe the specific construction mitigation techniques (e.g., reduced construction right-of-way, stove-pipe or drag-section techniques) that would be used in residential areas (see section 4.8.1 of this manual).

- Active croplands – Describe how drain tiles would be identified and repaired if damaged during construction. Also describe the methods of topsoil segregation, procedures for minimizing soil compaction and removing rock, and special construction techniques that would be used for orchards or other specialty crops (see sections 4.7 and 4.8.1 of this manual).

- Road crossings (we also recommend including similar information for railroad crossings) – Describe the methods for crossing federal, state, and local roads. Include a crossing table indicating milepost locations and the anticipated methods to be used at each road/railroad crossing. If roads would be open cut, describe the duration of construction, how access would be maintained along/across each road, and what safety controls (e.g., establishment of a detour, use of flagmen) would be implemented.

- Blasting – Describe blasting procedures including methods to reduce the amount of blasting needed (e.g., use of rock rippers), handling of explosives, measures to control each blast, and monitoring and mitigation measures to minimize impacts (e.g., use of mats to control fly rock, vibration monitoring at nearby structures, notification of landowners prior to blasting, testing pre- and post-construction well water yield). As appropriate, provide cross-references to relevant sections of Resource Reports 2, 3, 4, and/or 6.

In addition to the above, we also encourage you to describe construction and restoration methods for the following:

- Utility crossings – Describe the methods to be used for crossing existing pipelines or other utilities, including safety controls and coordination with utility owners/managers.

- Wetlands – Describe each construction technique (e.g., standard, push/pull, boring, HDD, direct pipe) that would be used and the conditions in which each would be used. Also see section 4.2.3 of this manual, and provide cross-references if appropriate.

- Waterbodies – Describe each construction technique that would be used for waterbody crossings, including major or sensitive waterbodies, and the conditions in which each method would be used. Also see section 4.2.2 of this manual, and provide cross-references if appropriate.

- Winter Construction – If construction would occur through winter months and construction or restoration methods would be modified during this timeframe, develop and file a winter construction plan in accordance with our *Plan* (section III.I).

For abandonment or replacement projects, explain, as appropriate, the sequence of steps to be followed to abandon facilities in place or to abandon and remove facilities. For facilities to be abandoned in place, you must identify who would own and be responsible for the site after abandonment and whether landowners had the opportunity to request removal. You must indicate whether landowners' requests for removal of abandoned facilities would be honored, and provide explanations if they would not. For facilities to be abandoned and removed, describe how the pipeline would be cleaned and how the resulting materials would be handled and disposed. If facilities to be abandoned or replaced may have been exposed to polychlorinated biphenyl (PCB) contamination, provide a cross-reference to Resource Report 12, which describes requirements related to potential PCB contamination. If asbestos may be present, provide a cross-reference to the appropriate resource report in which this issue is discussed (see section 4.8.1.3 of this guidance manual for further discussion). Also specify whether replacement pipeline would be placed adjacent to the existing pipeline or in the same trench as the existing pipeline after the existing pipeline is removed. If the existing pipeline would be removed, but same-trench replacement is not proposed, you should explain why and describe the sequence of removal and replacement activities.

You must specify whether the project would be constructed using our *Plan* and *Wetland and Waterbody Construction and Mitigation Procedures* (*Procedures*). If you propose any modifications/alternative measures to our *Plan* and *Procedures* or propose to use your own erosion control and mitigation plan during construction and restoration, compare the proposed measures with the respective measures in the *Plan* and *Procedures* and indicate how they would provide equal or greater protection of environmental resources. Any proposed modifications/alternative measures to the *Plan* and *Procedures* must be identified and discussed further in the appropriate resource report; you should describe and justify them on a project- or site-specific basis, as appropriate. Note that the term "variance" does not apply until after the Commission issues an Order authorizing the project.

With the exceptions of Resource Reports 6 and 13, the section 380.12 filing requirements do not specifically identify information uniquely applicable to LNG projects or projects involving offshore pipelines; however, many such projects have been proposed in recent years. Therefore, where applicable, we provide guidance about information that we find helpful in conducting our environmental review of projects that involve these types of facilities. Our guidance is based on our experience reviewing many such projects and the issues that are often raised during the scoping process. Additionally, some of this information may be necessary for other agency consultations

that we have responsibility to oversee. If the information is not available at the time of application, you should provide the best available information or estimates, and an estimated timeframe for when the information will be provided. For projects that require offshore construction or dredging, jetting, or plowing for the installation of offshore pipelines or shipping facilities, we recommend that you provide the following in Resource Report 1 or provide a cross-reference to where the information can be found in another resource report:

- the volume in cubic yards of material to be excavated in total and for each component of the project including, as appropriate, the ship berth, turning basin, shipping channel improvements, and/or pipeline installation;
- aerial photography or alignment sheets showing the areas to be excavated;
- the area of seabed directly affected by excavation, spoil placement, and anchor placement;
- a description of each excavation method to be used (e.g., clamshell bucket, suction dredge jetting, plow);
- the days/weeks/months of anticipated construction and anticipated construction hours associated with each activity (including each dredging or trenching method; the pipe fabrication and lay method; and the trench backfilling method);
- if dredging is planned, indicate whether the dredge material would be sidecast onto the seabed or temporarily stored in barges;
- indicate whether the trench would be backfilled and the material that would be used as backfill (e.g., whether it would be the excavated native material or imported material); if imported material would be used, include the volume and source of material required;
- the location where excess dredge material would be disposed of and the process used for dewatering the dredge material prior to disposal;
- the name, location, size, availability, and necessary federal and/or state permits for any dredged material placement areas to be used;
- a list of each type of equipment and vessel anticipated to be used and the numbers of each type that would be deployed during construction;

- the anticipated daily or weekly movements of vessels (i.e., vessel traffic), including the number of round trips to and from shore and the anticipated operating speed of each vessel;

- a discussion of the anchoring systems or dynamic positioning systems to be used to station and move the vessels during construction;

- a discussion of any piles that are proposed including the anticipated number and location of the piles; the pile material, diameter, length, and installation depth; the method used to install the piles; and the duration of time to install the piles; and

- a description of procedures to be implemented to minimize sedimentation, turbidity, noise, and spills.

For LNG projects that involve shipping you should provide:

- the anticipated number of ships that would call on the facility weekly and annually;

- the anticipated size of the ships including draft, length, width, carrying capacity, and height when loaded and unloaded;

- the duration of the transit from the outer boundary of the Exclusive Economic Zone to the port;

- the ship route out to the outer boundary of the Exclusive Economic Zone;

- the size of any anticipated security zones while the ship is transiting and moored at the facility;

- the length of time each ship would be at the terminal for unloading and loading;

- a list and description of the engines and other equipment that you anticipate would be operating during transit and while at the port; and

- a description of the use of tugs, harbor pilots, etc. to guide and maneuver the LNG ship.

4.1.3.2 Aboveground Facilities

You should describe the stages and sequence of construction procedures for aboveground facilities. For LNG plants and compressor stations, include the approximate duration of construction of each facility, the estimated number of construction workers for each facility, foundation excavation depths, number and depths of pilings, and associated facilities (e.g., access roads, office building). For sites that would be abandoned, describe the procedures for dismantling and disposing of buildings, foundations, and equipment, and for restoring the site. You must indicate whether landowners' requests for removal of abandoned facilities would or would not be honored, and provide explanations if they would not.

You should describe the aboveground facilities to be abandoned or removed would be cleaned and how the resulting materials would be handled and disposed. If any of the facilities or sites are potentially contaminated (e.g., with PCBs, asbestos, hydrocarbons [including natural gas liquids, oils, lubricants, or fuels], or other regulated contaminants), briefly describe how you would use contaminated site management, as well as the status of any necessary permits and approvals. Alternatively, include a cross-reference(s) to the resource report(s) in which this information is provided.

4.1.4 Operation and Maintenance

You should provide a general description of the operation and maintenance practices for the project, including federal, state, and local regulations and guidelines that would be followed.

For pipelines, we recommend that you include a description of the type and frequency of gas leak and cathodic protection surveys, aerial inspections, and right-of-way maintenance. For right-of-way maintenance practices, you should include the time of year for maintenance activities, the permanent right-of-way width that would be maintained in an herbaceous condition, and whether herbicides would be used.

For aboveground facilities, describe normal operation and maintenance procedures. We recommend that you describe whether the facilities would be staffed 24 hours a day or maintained from a central operation center and include a description of new operations or district offices that the project would require.

4.1.5 Future Plans and Abandonment

You must provide information on the existing or reasonably foreseeable plans to expand or abandon the currently proposed facilities at a later time. You should also include plans for other projects that are or will be functionally or financially interdependent with the currently proposed facilities. Describe the type, size, and location of planned future facilities, extended schedule for construction or abandonment

and the anticipated regulatory approvals that would be required, approximate volume of gas to be transported, and a description of how the current project affects these future plans.

4.1.6 Permits and Approvals

You must identify all authorizations required[21] for the project (in addition to the Commission's Certificate of Public Convenience and Necessity or Authorization). You should provide the following information:

- the name of the permitting/approval agency and the name and telephone number of the person contacted;
- type of permits/approvals or consultation;
- the current status of the permits/approvals filings (e.g., estimated schedule for permit filing, date of actual filing, and date that permit/approval was granted or is anticipated); and
- the environmental mitigation requirements specified in any permit or proposed in any permit application not described elsewhere in the resource reports.

We recommend that you summarize the above information as shown in example table 4.1.6-1. Note that the information regarding federal permits should be consistent with that provided in Exhibit J of the application under section 7 of the NGA (or Exhibit H, for applications under section 3 of the NGA), which must identify federal authorizations required for the project; the federal agency or officer, or state agency or officer acting pursuant to delegated federal authority, who would issue each required authorization; the date that each request for authorization was submitted; why any request was not submitted and the date that submission is expected; and the date by which final action on each federal authorization has been requested or is expected. We encourage applicants to begin consulting with permitting agencies early in order to determine the appropriate permitting processes and associated timeframes.

[21] You should include all known permits that you plan to apply for and obtain.

TABLE 4.1.6-1

Environmental Permits, Approvals, and Consultations

Agency	Permit/Approval/Consultation	Submittal Date (Anticipated)	Approval Date (Anticipated)
Federal			
Federal Energy Regulatory Commission	Certificate of Public Convenience and Necessity under section 7(c) of the Natural Gas Act	DATE	(DATE)
U.S. Army Corps of Engineers –[District]	Permit for the discharge of dredge or fill material into waters of the U.S. under section 404 of the Clean Water Act, for activities affecting navigable waters under section 10 of the Rivers and Harbors Act, and crossing of federal levees under Title 33 United States Code section 408 (Navigation and Navigable Waters).	DATE	(DATE)
U.S. Fish and Wildlife Service – [Region/Field Office]	Consultations for impacts on federally listed threatened and endangered species and critical habitat under section 7 of the Endangered Species Act, the Migratory Bird Treaty Act, the Bald and Gold Eagle Protection Act, and the Fish and Wildlife Coordination Act	DATE	(DATE)
U.S. Department of Agriculture, Natural Resources Conservation Service	Recommendations for seed mixes	DATE	DATE
	Consultation regarding lands enrolled in the Wetland Reserve Program, Wetland Reserve Easements Program, or other Agricultural Conservation Easement Programs	DATE	DATE
U.S. Department of Agriculture, Farm Service Agency	Consultation on lands enrolled in the Conservation Reserve Program	DATE	DATE
State			
[Applicable state agency]	Minor source operating permit	(DATE)	(DATE)
[Applicable state agency]	General Permit for Construction Stormwater Discharge under the National Pollution Discharge Elimination System	(DATE)	(DATE)
	General Permit for Construction Dewatering and Discharge of Hydrostatic Test Water under the National Pollution Discharge Elimination System	(DATE)	(DATE)
	Water Quality Certificate under section 401 of the Clean Water Act	DATE	(DATE)
[Applicable state agency]	State Water Crossing Permit	(DATE)	(DATE)
[Applicable state agency]	Water appropriation permit	(DATE)	(DATE)
[Applicable state agency]	Consultation for impacts on fisheries, wildlife, and state-listed species	DATE	DATE
[Applicable state agency]	Consultation for impacts on historic properties under section 106 of the National Historic Preservation Act	DATE	DATE
[Applicable state agency]	Right-of-Way Grant to cross state lands	(DATE)	(DATE)
Local			
[Applicable local agency]	Levee/Ditch Crossing Permits	(DATE)	(DATE)

4.1.7 Affected Landowners

You must provide the names and addresses of all affected landowners and you should also include the addresses of towns, communities, and local, state, and federal governments and agencies involved with the project. Affected landowners as defined in section 157.6(d)(2) include property owners directly affected (i.e., property crossed or used) by the proposed activity, adjacent landowners (landowners not directly affected but whose properties abut the edge of a proposed facility site or right-of-way that runs along

a property line in the area in which the facilities would be constructed, or contains a residence within 50 feet of the proposed construction work area), landowners with property within 0.5 mile of proposed compressor stations or LNG terminals, tanks, and other facilities, and property owners within the area of proposed storage fields. You must make a good faith effort to notify all affected landowners. We recommend that you provide a list to the Commission including all the addresses used for the landowner notifications. To facilitate use by Commission staff in mailing notices (e.g., Notice of Intent to prepare an EA or EIS, or Notice of Availability of a draft or final EIS), we recommend checking with the Commission Project Manager regarding the preferred format for the mailing list, and provide updated lists as warranted based on route modifications, returned mailings, or other new information. Landowner mailing lists should be filed as "Privileged" to protect landowner privacy.

Additional information on landowner notification requirements is included in section 2.0 of this guidance manual.

4.1.8 Nonjurisdictional Facilities

Under NEPA, the Commission may need to consider the environmental impact of related nonjurisdictional facilities that would be constructed for the purpose of delivering, receiving, or using the proposed gas volumes. Examples of nonjurisdictional facilities could include major power facilities, such as cogeneration plants, as well as less significant facilities, such as lateral pipeline connections built by local distribution companies or utility services for compressor stations.

Applicants are required to address four factors for nonjurisdictional facilities, as listed in section 380.12(c)(2)(ii). Commission staff typically evaluate related nonjurisdictional facilities in our cumulative impact analysis. Therefore, you must provide the following information, to the extent available, regarding the identified nonjurisdictional facilities, including auxiliary facilities and facilities built by other companies:

- a brief description of each facility, including its owner or sponsor;
- gas consumption or megawatt size, as appropriate;
- the length and diameter of any interconnecting pipeline or power line to be constructed;
- land requirements;
- required permits, including any applicable regulatory siting process;
- the latest status of federal, state, and local permits/approvals;

- construction status;

- current 1:24,000/1:25,000 scale topographic maps showing the location of the facilities relative to the proposed jurisdictional facilities;

- documentation that the appropriate State Historic Preservation Office (SHPO) or duly authorized Tribal Historic Preservation Office (THPO) has been contacted regarding whether properties eligible for listing on the National Register of Historic Places (NRHP) would be affected, or on the need to perform cultural resources surveys to support such a determination;

- documentation of consultation with the FWS (and the National Oceanic and Atmospheric Administration, National Marine Fisheries Service [NOAA Fisheries], if appropriate) regarding potential impacts of the proposed facility on federally listed threatened and endangered species; and

- for facilities within a designated coastal management zone, a determination from the state agency of consistency with the coastal zone management program or evidence that the owner has requested such a determination.

If available, evidence that adequate comment or consultation has taken place should be in the form of a letter from the responsible state agency.

4.2 RESOURCE REPORT 2 – WATER USE AND QUALITY

INFORMATION OFTEN MISSING AND RESULTING IN DATA REQUESTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ Identify proposed mitigation for impacts on groundwater resources.	D
☐ Discuss the potential for blasting to affect water wells, springs, and wetlands, and associated mitigation.	D
☐ Identify all sources of water required for construction (e.g. hydrostatic testing, dust suppression, horizontal directional drills [HDD]), the quantity of water required, and methods for withdrawal. Identify the treatment of discharge, discharge volumes, rates, and locations, and any waste products generated.	D
☐ Identify operating water requirements for proposed liquefied natural gas facilities, including the water use, source(s), and volumes.	D
☐ If underground storage of natural gas is proposed, identify how water produced from the storage field will be disposed.	D
☐ If salt caverns are proposed for storage of natural gas, identify the source locations, the quantity of water required, the method and rate of water withdrawal, and disposal locations and methods.	D
☐ Provide a site-specific construction plan for each proposed HDD crossing in accordance with section V.B.6.d of the Federal Energy Regulatory Commission's *Wetland and Waterbody Construction and Mitigation Procedures*.	
☐ Provide a site-specific construction plan for crossing each waterbody greater than 100 feet wide. Include a discussion on the feasibility of a trenchless crossing method.	D
☐ Identify mitigation measures to avoid impacts on springs; especially those used for drinking water or livestock.	D
☐ Identify mitigation measures to ensure that public or private water supplies are returned to their former capacity or replaced in the event of damage resulting from construction.	
☐ In addition to identifying perennial surface waterbodies crossed or affected by the project, also identify intermittent and ephemeral waterbodies.	
☐ Show the locations of wetlands and waterbodies relative to the construction and permanent rights-of-way and additional temporary workspaces on mileposted alignment sheets or aerial photography.	D
☐ If wetlands would be filled or permanently lost or altered, describe proposed measures to compensate for permanent wetland losses. Include copies of any compensatory mitigation plans and discuss the status of agency consultations/approvals.	F, L, N, T, DD
☐ Describe measures to avoid or minimize impacts on forested wetlands. If impacts are unavoidable, describe proposed measures to restore forested wetlands following construction.	F, L, N, T, DD
☐ Describe techniques to be used to minimize turbidity and sedimentation impacts associated with offshore trenching, if applicable.	D

[a] D Applicant; F U.S. Army Corps of Engineers; L Field Surveys; N U.S. Fish and Wildlife Service; T National Marine Fisheries Service, National Oceanic and Atmospheric Administration; DD State Agencies

This guidance manual does not change or substitute for any law, regulation, or any other legally binding requirement. Where practical, we have distinguished between legal obligations and Commission staff's interpretations or recommendations. We use mandatory language such as "required," "must," and "must not" to describe controlling requirements under statutes and regulations. We use non-mandatory language such as "recommend," "encourage," and "may" to describe Commission staff's recommendations that will help the Commission meet its obligations under NEPA. However, because clear distinctions are not always practical, a reader should consult the regulations directly to determine the information legally required in order to meet the filing requirements of 18 CFR 380.12.

Resource Report 2 is required for all applications, except for projects that involve only facilities constructed within previously disturbed areas of existing aboveground facilities where no wetlands or waterbodies exist on or abut the site and where there would be no significant increase in water use. The report must describe water quality and provide data sufficient to determine the project's expected impact on water quality and the effectiveness of mitigation, enhancement, or protective measures.

In text and tabular form, this report should present the sources used to identify and quantify impacts of construction on water use and quality. Be sure to cite the sources of provided information and include copies of relevant agency correspondence, as appropriate. It should also discuss special techniques that you would use to avoid, minimize, or otherwise mitigate impacts during construction across water resources.

4.2.1 Groundwater Resources

Provide a brief description of the existing groundwater resources and use in the project area. You should identify:

- information on each aquifer underlying the project area, including aquifer type (i.e., confined, semi-confined, or unconfined), depth and thickness, depth to water from ground level, current and projected uses, average yield, seasonal fluctuations, known or suspected contamination problems, and water quality;

- wells and springs within 150 feet of the project, including but not limited to public, residential, agricultural, industrial, and livestock wells, their capacity and water quality; and

- large-capacity groundwater withdrawals in proximity to the project, including municipal, industrial, and mining withdrawals.

This type of information is typically available from state and federal hydrologic publications, and databases maintained by the applicable state or county agency, (e.g., Board of Health, a water division within the agency that manages natural resources). If groundwater is not the main source of drinking water, you should indicate in the surface water section of the resource report the water supplier/company supplying water for residents in the area and the surface water source(s).

You must identify segments of the pipeline and other aboveground facilities that overlie U.S. Environmental Protection Agency (EPA)-designated or state-designated sole source aquifers and state or local wellhead protection areas. Describe any restrictions associated with working within these areas. Information regarding sole source aquifers can be obtained from the regional EPA Groundwater Divisions. You should also identify areas of contaminated soil or groundwater from computer databases and/or by contacting the appropriate state Waste Management Division or Groundwater Division.

In order to conduct our analysis, we may request additional information if any areas of karst would be affected by construction and/or operation of the project (which should be identified in Resource Report 6). We recommend that you describe specialized techniques to protect groundwater resources in these areas and identify how the internal drainage/runoff towards karst features within project work areas would be addressed. If any HDD operations are proposed in karst areas, we recommend that you identify all wells and springs within 1,000 feet of the work areas and describe the degree of karst through desktop assessments, lineament/fracture trace analysis using aerial photographs in stereo pair with 60 percent overlap or Light Detection and Ranging (LiDAR) imagery analysis, field reconnaissance, and site surveys including results of geophysical investigations that were conducted. (See also section 4.6.4 of this guidance manual.)

If a large quantity of groundwater would be used for the project (e.g., for hydrostatic testing or solution mining storage caverns) you should provide a detailed groundwater resource and aquifer pumping test analysis to describe aquifer coefficients and use these data to predict water-level drawdown impacts on other groundwater uses within the pumping zone of influence. Also, we recommend that you describe in detail the proposed wastewater disposal methods and identify all regulatory requirements for the groundwater withdrawal/disposal and the status of approvals.

4.2.1.1 Water Supply Wells

While there are few requirements in the regulations for disclosure of groundwater impacts and mitigation, in order to fulfill our NEPA responsibility, we recommend that you provide all of the information in this section.

You must identify by milepost all water supply wells, including private, community, irrigation, livestock, and municipal/public wells, and springs within 150 feet of any area that would be disturbed by construction. This includes the construction right-of-way, extra work areas, new access roads, pipe storage and contractor yards, and sites for new or modified aboveground facilities (see example table 4.2.1-1). Public supply well information can generally be obtained from the local municipalities or county and/or state agencies that compile information on drinking water supplies. Information on private wells and springs will likely need to be obtained through field surveys or discussions with affected landowners. Note that although the regulations only require you to identify water wells within 150 feet of work areas, prior to construction you will need to identify wells beyond this distance in order to implement the refueling restrictions discussed in section 4.2.1.2).

Contact the municipal or public well owners/operators and the state drinking water division for the counties crossed to determine whether the pipeline crosses a protected watershed area associated with a supply well. We recommend that you provide correspondence with these groups/individuals. Additionally, we recommend that you present the information, including the crossed length of the protected watershed by milepost, in the text of the report or in tabular form (see example table 4.2.1-2).

TABLE 4.2.1-1

Water Supply Wells and Springs Within 150 Feet of Project Construction Areas

Facility	County, State	Approximate Milepost	Water Supply Type	Distance and Direction
Pipelines				
Mainline	County, ST	x.x	Domestic well	xx feet east
	County, ST	x.x	Rural water supply	xx feet west
	County, ST	x.x	Spring	xx feet east
Loop A	County, ST	x.x	Municipal well	xx feet northeast
	County, ST	x.x	Spring	xx feet west
Loop B	County, ST	x.x	Domestic well	xx feet southeast
	County, ST	x.x	Spring	xx feet west
Aboveground Facilities				
Compressor Station A	County, ST	N/A	Spring	xx feet southeast

TABLE 4.2.1-2

Locally Zoned Aquifer Protection Areas Crossed by the Pipeline Route

Facility	Town, State	Approximate Mileposts	Water Supply	Length of Crossing of Protection Area
Mainline	Town, ST	x.x to y.y	ABC Water District	xxx
	Town, ST	x.x to y.y	DEF Water District	xxx
Loop A	Town, ST	x.x to y.y	GHI Water District	xxx

Where blasting would be required, discuss both the potential for blasting to affect water wells and springs and the measures you will take to detect and remedy such effects. (See also section 4.6 of this manual.)

4.2.1.2 Groundwater Impacts and Mitigation

Discuss potential impacts on groundwater, including fluctuations in groundwater levels, potential effects on yields and/or water quality, and risks associated with encountering contaminated groundwater, encountering contaminated soil with potential for cross-contamination, and spilling hazardous materials during construction.

Describe measures to minimize and mitigate the impact on groundwater by using special blasting techniques, trench breakers, groundwater interceptor drains, dewatering methods, and restrictions on refueling and storage of hazardous substances (generally prohibit refueling and storage of hazardous materials within a 200-foot radius of private wells, and 400-foot radius of community and municipal wells). Include a plan for monitoring groundwater quality and yield for all public and private supply wells within at least 150 feet of construction, with the owner's permission, before and after construction to determine whether water supplies have been affected by pipeline construction activities. Also indicate what types of mitigation measures would be undertaken to ensure that the water supply is returned to its former capacity in the event of damage resulting from construction (e.g., providing temporary sources of potable water, restoration, repair, or replacement of water supplies).

If contaminated soil or groundwater is present, describe its specific location, type of contaminant, and mitigation measures to avoid, minimize, or otherwise mitigate impacts.

If you propose to create underground storage of natural gas, you must identify how water produced from the storage field would be disposed. For salt caverns, you must identify the source locations, the quantity required, and the method and rate of withdrawal of water for solution mining, as well as the means of disposal of resulting brine. You should discuss the depths of the caverns and disposal wells and how the wells would be cased.

4.2.2 Surface Water Resources

Identify all waterbodies[22] crossed by the pipeline based on field surveys and 1:24,000/1:25,000 scale USGS topographic maps. You should provide relevant information about dry swales or dry washes, if applicable to the area; these features may require additional planning and/or protections than typically afforded (e.g., if there is a high likelihood they would flow during construction or they provide habitat for federally listed species). Provide a table listing by milepost all of the waterbodies that would be crossed including a unique identifier from field delineations (where applicable), name, type (e.g., perennial, intermittent, ephemeral, canal), the water's edge to water's edge width at the crossing location, the associated state water quality classification, and the proposed crossing method. If not provided in a separate table in Resource Report 3, also include the general fishery type (e.g., coldwater, coolwater, warmwater). This information can be obtained from the state water quality and fisheries departments. We recommend that you summarize the above information as shown in example table 4.2.2-1.

If field data are not available due to lack of access permission or seasonal conditions, it is acceptable to use data obtained from desktop resources such as the FWS National Wetlands Inventory (NWI), the National Hydrography Dataset, and USGS topographic maps until field surveys are completed. Features identified using desktop data should be clearly identified in the waterbody table. Identify, either within the waterbody crossing table or within the text discussion, any potable water intake sources within 3 miles downstream of any waterbody crossing locations (see section 4.2.2.5 below). Additionally, identify any waterbodies that would be crossed that are listed on the state's Clean Water Act (CWA) section 303(d) List of Impaired Waters, including the cause of the impairment.

[22] Note that for the purposes of natural gas projects, the Commission's definition of a "waterbody" differs from the EPA and the COE definitions of "waters of the United States." As defined in the *Procedures*, a "waterbody" includes any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes.

TABLE 4.2.2-1

Waterbodies Crossed by the Project

Milepost	Feature ID [a]	Waterbody Name	Flow Regime [b]	Water's Edge to Water's Edge Crossing Width (feet)	State Water Quality Classification	County	Fishery Type	Crossing Method
Mainline Pipeline								
Loop A								

[a] Feature ID is unique code designated to waterbodies identified during field surveys.
[b] Flow regime based on USGS topographic mapping. IT = Intermittent; PN = Perennial; E=Ephemeral

Provide a site-specific crossing plan for each crossing of a major waterbody (i.e., greater than 100 feet wide at the water's edge), including offshore construction. Each crossing plan should include:

- the method to be used to excavate the trench underwater (e.g., dredging, HDD, direct pipe, plowing, jetting, redirecting flow);
- the planned depth below the river or seabed, including, for HDD crossings, a drawing with a plan and profile view showing the drill entry and exit locations;
- the location of the construction and permanent right-of-way and ATWS, including pipe fabrication and pullback areas, any areas disturbed between the entry and exit locations, and onshore and offshore equipment staging areas;
- for offshore construction, identify both the surface area to be occupied by equipment and the area of the bed to be disturbed by dredging, trenching, anchors (including anchor cable sweep), piles, etc.;
- the location of the spoil storage (e.g., on the river or seabed, on barges, and/or onshore) and the mitigation measures that would be used to control and store the spoil;
- the method to pull the pipeline across the waterbody, including the amount of time required for the pull;
- the method to backfill the trench underwater (such as natural redeposition, mechanical placement, or backfill plow);
- a description of the sequence and duration of each stage of construction and the total length of time to conduct the crossing (including estimated start date);
- a discussion of any special mitigation to minimize impact on riparian vegetation; and
- for navigable streams or waterbodies used for recreation, a discussion of how boat traffic through the construction area would be managed, and how the interruption of boat traffic would be minimized.

If you propose an HDD or direct pipe crossing, provide the following additional information:

- size and location of staging areas for the entry and exit pits;
- the source of water for both the drilling mud and hydrostatic testing of the pipe section;
- how the drilling operation would be monitored for inadvertent releases of drilling mud;
- any drilling fluid additives proposed to be used;
- the steps that would be followed to stop or minimize the size of an inadvertent release of drilling mud;
- the procedures that would be used to contain and clean up any inadvertent releases (include response procedures if the release occurs in an upland, wetland, or flowing stream, as applicable);
- the conditions under which a drilling operation would be abandoned and how an abandoned drill hole would be sealed, if necessary;
- the type and extent of any disturbance proposed to occur along the drill path (e.g., minimal hand clearing for tracking wires, clearing of an access path for equipment and water appropriation); and
- if there is a potential to encounter contaminated sediments during drilling, the measures that would be implemented, such as the use of casings, to avoid the migration of contaminants along the drill path.

You should indicate whether there is any contingency plan for the waterbody crossing in the event that the drill is unsuccessful or proves infeasible. If so, we recommend that you provide site-specific plans that include a scaled drawing identifying all areas to be disturbed by construction and a copy of any permits issued. We also recommend that you conduct geotechnical studies as early in the planning process as practicable to determine whether HDD is a suitable method for the specific crossing location and to facilitate the development of appropriate crossing plans.

If you propose an in-stream crossing method (e.g., clamshell dredging) for a major waterbody rather than HDD, direct pipe, or a similar trenchless technique, we recommend that you:

- describe why an HDD or similar technique is not practicable (e.g., due to results of the geotechnical feasibility study or impact on another resource outside of the waterbody);

- indicate how the proposed crossing method sufficiently avoids and minimizes impacts on aquatic resources in and downstream of the project area; and

- describe the riverbed material and characterize the intensity and duration of turbidity and sedimentation impacts including downstream impacts (distance/duration) from the proposed crossing method.

Additionally, you should describe how you chose the proposed crossing method from among alternative in-stream construction methods (e.g., coffer dam, open and closed bucket dredges, drag line, excavator, hydraulic dredge).

For proposals that involve offshore construction (including dredging at LNG dock facilities), you should describe the seabed material, and provide the results of any sediment modeling indicating the predicted fate and transport of excavated or dredged sediments. Describe the models that were used; the assumed ambient average and range of total suspended sediments in the waterbody; the anticipated direction, duration, and concentration of sediment plumes during construction; and the anticipated extent and depths of redeposited sediments on the riverbed or seabed. If you propose dredging, provide a detailed discussion of the dredge material disposal location and method and the associated coordination with the appropriate federal and state agencies.

4.2.2.1 Contaminated Sediments

Identify all waterbody crossings that may have sediments contaminated with toxic chemicals along with a description of the type of contamination (e.g., agricultural, industrial). For offshore sediment analysis, identify the type and concentration of any sediment contaminants, if applicable. Contact state water quality agencies for this information. For surface water crossings involving contaminated sediments, provide a copy of any approved sediment sampling plan(s) used and summarize the results of any physical or chemical analyses conducted. Discuss the potential impacts on water quality associated with disturbing the contaminated sediments and describe measures to prevent or minimize resuspension of sediments during construction. The proposed mitigation measures should include comments and recommendations from the appropriate federal or state agency(ies). Provide the name and phone number of the agency contact and include copies of all related correspondence.

4.2.2.2 Public Watershed Areas

Identify municipal watershed areas and associated reservoirs, if any, and any state/locally designated surface water protection areas that would be crossed by the pipeline or in which aboveground facilities would be located. State drinking water agencies typically have maps or reports that list public surface water supplies. Once these are identified, you should contact the appropriate local agencies regarding the

presence of designated protection areas. In a table summarizing such areas, you should include the length by milepost of each area crossed by pipeline or by or near aboveground facilities, the distance and direction of the water supply from the project facilities, and whether the project would cross the water supply upstream or downstream of where water is withdrawn (see example table 4.2.2-2). If the project would affect surface water protection areas, you should explain why these areas were not avoided, and include a discussion of potential impacts and proposed mitigation measures. Proposed mitigation, if necessary, should include written comments and recommendations of the appropriate state or local agencies and a clear indication of whether those recommendations would be adopted.

TABLE 4.2.2-2

Public Water Supply Watershed Areas Crossed by the Pipeline Route or in Proximity to Aboveground Facilities

Facility	County, State	Approximate Milepost(s)	Surface Water Supply	Distance/Direction of Water Supply from Project Facilities	Project Facilities Upstream/ Downstream of Withdrawals
Pipelines					
Mainline	County, ST	x.x to y.y	ABC Reservoir	0.5 mile east	Downstream
Loop A					
Aboveground Facilities					
Compressor Station A					

4.2.2.3 Floodplains

Executive Order No. 11988[23] requires federal agencies under the Executive Branch to avoid (to the extent possible) long- and short-term adverse impacts associated with occupancy and modification of floodplains. If the project would require placing facilities within floodplains, you should identify the applicable facilities and locations. For each facility, we recommend that you describe the volume of lost flood storage capacity within the applicable floodplain. Additionally, you should describe efforts to avoid, minimize, and otherwise mitigate impacts within floodplains and justify why the facilities must be placed within floodplains.

4.2.2.4 Hydrostatic Test Water and Water for Dust Suppression

Identify all sources of water and the proposed quantity of water required from each source for hydrostatic testing of each pipeline segment (including HDD segments prior to installation) and of aboveground facilities such as LNG facilities and tanks, as

[23] 42 Fed. Reg. 26,951 (May 24, 1977).

well as for dust suppression. Describe the withdrawal and discharge methods, how you would obtain access to the withdrawal location, the anticipated withdrawal and discharge rates, and the discharge locations by milepost. Indicate whether the test water would be discharged in upland areas or into a waterbody channel. If you plan to discharge water into a different watershed than its source, provide documentation of any associated communication with appropriate agencies. Describe measures to minimize impacts from withdrawal or discharge, such as by sequential reuse of test water for multiple segments or for dust suppression. If the project will be within karst areas, we recommend that you address how you would manage hydrostatic water discharges to avoid triggering surficial collapse and raveling of soils through karst features or within areas underlain by karst. State whether you would adopt the hydrostatic testing procedures identified in section VII of our *Procedures*, including but not limited to screening the intakes, placing energy dissipation devices at the discharge locations, and maintaining adequate flow rates to protect aquatic life and provide for downstream withdrawals by existing users.

Contact appropriate state and federal agencies to determine whether any significant fisheries or designated exceptional quality waters would be affected and whether a permit is needed for water withdrawal and discharge activities. Identify the applicable appropriation and discharge permits and the administering agency(ies). If sensitive surface waters would be used for withdrawal or discharge, provide comments and recommendations from the appropriate agency and indicate whether you would adopt the recommendations.

Discuss the quality of discharge water resulting from contact with the pipeline, particularly if an existing pipeline is being retested, and identify any physical or chemical testing of the discharge. Describe any chemical or physical treatment of the pipeline or hydrostatic test water and, if applicable, provide copies of correspondence with the appropriate agencies concurring that the use of such treatment is acceptable. Discuss waste products generated and disposal methods.

4.2.2.5 Construction Permits

Contact state water resources agencies to identify the permits required for construction across surface waters, including but not limited to water quality certification under section 401 of the CWA. In addition, contact the appropriate office of the U.S. Army Corps of Engineers (COE) regarding the CWA section 404 evaluation and indicate whether the COE believes that the project would meet the requirements of a nationwide permit (specify which one(s)), or would require a regional permit or an individual permit.

Identify navigable waterways that would be crossed and the associated need for COE authorization under section 10 of the Rivers and Harbors Act of 1899. Construction across a navigable waterway may require an individual permit. Provide a copy of all correspondence with the COE regarding permit determination.

4.2.2.6 Sensitive Surface Waters

Identify sensitive waterbodies that may be affected by the project; consult with state agencies as needed to identify those waterbodies and potential mitigation measures that may be required during construction. Sensitive surface waters include but are not limited to the following:

- waters that do not meet the water quality standards associated with the waters' designated beneficial uses;
- surface waters that have been designated for intensified water quality management and improvement;
- waterbodies that contain threatened or endangered species or critical habitat;
- waterbodies that are crossed less than 3 miles upstream of potable water intake structures (provide the distance from the crossing to the supply intake should be provided along with the name of the intake owner);
- outstanding or exceptional quality waterbodies;
- waters of particular ecological and recreational importance;
- waterbodies located in sensitive and protected watershed areas;
- waterbodies and intermittent drainages that have steep banks, potentially unstable soils, high volume flows, and actively eroding banks;
- surface waters that have important riparian areas; and
- rivers on or designated to be added to the Nationwide Rivers Inventory or a state river inventory (see section 4.8 of this manual).

Describe the effects of construction and operation of the pipeline on designated sensitive waterbodies and proposed mitigation. Describe in appropriate detail the construction methods, the location of staging areas, recommendations from federal, state, and local agencies, and how you would implement the recommendations. If you propose not to carry out any of these recommendations, you should provide specific reason(s) and identify whether you propose other mitigation.

4.2.2.7 Waterbody Construction and Mitigation Procedures

Describe proposed waterbody crossing methods (or cross-reference the appropriate sections in Resource Report 1), including typical workspace and staging area

requirements at waterbody crossings. Also, identify and describe waterbodies where staging areas are likely to be more extensive. Commission staff considers dry swales and dry washes to be waterbodies if there is water flowing in them at the time of construction. Therefore, you should include these features in the discussion of waterbody construction and mitigation procedures, and be prepared to cross these features in accordance with the *Procedures* in the event of unforeseen water flow at the time of construction.

Discuss potential project impacts on surface waters, including water quality impacts (both physical and chemical); increased potential for runoff, bank erosion, and sedimentation; effects of vegetation removal (including permanent loss of trees); and the potential for spills of hazardous materials. Identify measures for minimizing impacts on surface waters. Describe specific crossing and restoration procedures; erosion and sediment controls; dewatering methods; and restrictions on refueling and storage of hazardous substances.

Indicate whether you would adopt our current *Procedures* for the project. If not, include your proposed procedures for waterbody construction methods, compare them with our *Procedures*, and explain any differences. For any individual provisions that, due to site-specific conditions, you consider unnecessary, technically infeasible, or unsuitable, identify the location by milepost, describe the site-specific conditions that preclude use of the *Procedures*, and propose alternative measures, explaining how the proposed alternative measures would provide equal or greater protection to the resource. For any ATWS that would be within 50 feet of a waterbody, provide a site-specific explanation of the circumstances and a detailed justification why a 50-foot buffer cannot be maintained. Include documentation of consultation with state agencies where appropriate to support proposed alternative measures.

4.2.3 Wetlands

4.2.3.1 Existing Resources

On all accessible property tracts, identify wetlands that would be affected by the project based on field-based wetland delineations of all accessible areas using the current federal manual and applicable regional supplements. Include a summary of the wetland delineation report(s) as an attachment to this resource report.

On inaccessible property tracts,[24] use FWS NWI maps, where available, to determine the locations and types of wetlands that would be affected by construction and operation of the facilities. If NWI maps have not been prepared for all or parts of the project area, identify wetlands using information from other available sources, which

[24] We consider "inaccessible" to primarily include tracts for which landowner permission has not been secured for survey purposes.

may include state wetland maps; county soil maps from the Natural Resources Conservation Service (NRCS) of the U.S. Department of Agriculture; USGS topographic maps; and aerial photographs. Identify the information source and classify wetlands according to the NWI classification system. Include with the application labeled and mileposted alignment sheets or aerial photography showing the locations of the field delineated and mapped wetlands. We may also request copies of NWI maps with the facilities and mileposts clearly marked if field delineations have not been completed for most of the project. As a rule of thumb, provide project mapping of wetland impacts using the best available resolution.

We recommend that you identify and discuss major wetland complexes or significant wetlands, as identified by field review and/or by state or federal agencies. Also, you should identify acres of wetland affected by agriculture, silviculture, or rangeland, if any.

We recommend that you provide a table of wetlands that would be affected by the project, including those affected by ATWS and staging areas, access roads, and contractor and pipe storage yards. This table should include a list of facilities and milepost locations of each wetland and how the wetland was identified (e.g., field delineated, NWI maps). For delineated wetlands you should provide a unique identifier that can be used to locate the wetland on the alignment sheets. Also, you should list the classification of each wetland according to the NWI classification system, the crossing length, anticipated crossing method, and the acreage of construction and operation impacts. An explanation in a table footnote or in the text of how you calculated the impact acreages is also helpful (e.g. using GIS to measure the area of the wetland polygon within the construction work area; calculating based on crossing length and right-of-way width). We recommend that you summarize the above information as shown in example table 4.2.3-1.

4.2.3.2 Construction and Operation Impacts

Discuss impacts on wetlands that would result from construction and operation of the proposed facilities. We recommend that you provide a summary table listing the total length crossed and total area affected, separated by wetland type and by facility (see example table 4.2.3-2). For pipelines, the table should calculate the acreage of forested and scrub-shrub wetlands that would sit within the proposed vegetation maintenance corridor in the permanent right-of-way and so be converted to non-forested or non-woody wetland types. Additionally, you should identify any wetland areas that would be filled or otherwise permanently lost and quantify the associated acreage. For wetland impacts that would be limited to construction, you should indicate the expected duration of restoration to pre-existing conditions; specifically estimating the time required to reestablish the vegetation community.

TABLE 4.2.3-1

Wetlands Crossed by the Pipeline Route

Approx. Milepost	Wetland I.D.	National Wetlands Inventory Classification [a]	Source [b]	Approximate Crossing Length (feet) [c]	Acreage Affected During Construction [d]	Acreage Affected During Operation [e]	Crossing Method
Mainline							
Subtotal							
Loop A							
Subtotal							
Project Total							

[a] PEM – Palustrine, Emergent, may be Temporarily, Seasonally, or Semi-permanently Flooded
PSS – Palustrine, Scrub/Shrub, may be Temporarily or Seasonally Flooded
PFO – Palustrine, Forested

[b] FD = Field Delineation. NWI = National Wetlands Inventory, used where field delineations not conducted due to lack of access permission.

[c] Length of centerline crossing calculated from field delineated or NWI polygons, rounded to the nearest foot. Zeroes indicate wetlands not crossed by the project centerline, but still located within the construction workspace.

[d] Based on a x-foot wide construction corridor; acreage determined by geographic information system polygon measurements. Construction impacts for wetlands crossed by horizontal directional drill (HDD) would be minimal, consisting only of hand-clearing of a narrow path for the HDD guide wires.

[e] In accordance with right-of-way maintenance practices specified in the Federal Energy Regulatory Commission's *Wetland and Waterbody Construction and Mitigation Procedures*, the company would maintain a 10-foot-wide strip over the pipeline in an herbaceous condition. Trees within 15 feet of the pipeline with roots that could compromise the integrity of the pipeline coating may be selectively cut. Values rounded to nearest hundredth of an acre. For HDD crossings, the company would not maintain the permanent right-of-way between the HDD entry and exit points.

TABLE 4.2.3-2

Summary of Wetland Types Crossed by the Pipeline Route

National Wetlands Inventory Classification [a]	Approximate Crossing Length (feet) [b]	Acreage Affected During Construction [c]	Acreage Affected During Operation [d]
Mainline			
PEM			
PSS			
PFO			
Subtotal			
Loop A			
PEM			
PSS			
PFO			
Subtotal			
Project Total			

[a] PEM – Palustrine, Emergent, may be Temporarily, Seasonally, or Semi-permanently Flooded
PSS – Palustrine, Scrub/Shrub, may be Temporarily or Seasonally Flooded
PFO – Palustrine, Forested

[b] The length of centerline crossing was calculated from field delineated or National Wetlands Inventory polygons, rounded to the nearest foot.

[c] Based on a x-foot-wide construction corridor; acreage determined by geographic information system polygon measurements.

[d] No wetlands would be permanently filled as a result of construction or operation of the pipeline. In accordance with right-of-way maintenance practices specified in Federal Energy Regulatory Commission's *Wetland and Waterbody Construction and Mitigation Procedures*, company will maintain a 10-foot-wide strip over the pipeline in an herbaceous condition. Trees within 15 feet of the pipeline with roots that could compromise the integrity of the pipeline coating may be selectively cut. Values rounded to nearest hundredth of an acre.

Indicate whether you would adopt our current *Procedures* for the project. If not, include your proposed procedures for wetland construction methods, compare them with our *Procedures*, and explain any differences. For any individual provisions that, due to site-specific conditions, you consider to be unnecessary, technically infeasible, or unsuitable, identify the location by milepost, describe the site-specific conditions that preclude the use of the *Procedures*, propose alternative measures, and explain how the proposed alternative measures would provide equal or greater protection to the resource. For each workspace that would be in or within 50 feet of a wetland, provide a detailed site-specific explanation of the circumstances and a detailed justification as to why a 50-foot buffer cannot be maintained. Provide similar site-specific information and justification at locations where a construction right-of-way greater than 75 feet wide is proposed in a wetland. Include documentation of consultation with state agencies where appropriate to support alternative measures. Where required by the *Procedures* (i.e., section II.B.), include site-specific plans for proposed exceptions to the *Procedures*.

You should discuss potential construction impacts on vernal pools or other shallow wetlands, including the potential for these areas to be drained. Discuss the potential for blasting to affect wetlands, including the potential to drain perched wetlands, and measures to be taken to detect and remedy such effects (e.g., trench breakers, sealing the trench).

Describe typical ATWS and staging area requirements at wetland crossings. Also, identify and describe wetlands where staging areas are likely to be more extensive. Alignment sheets should clearly depict wetland boundaries and associated construction workspace (including the construction right-of-way and ATWS) and the boundaries of the permanent right-of-way as shown on figure 4.1.1-3).

Describe all efforts to avoid or minimize impacts on forested wetlands (note that section 380.15 states that when siting pipeline facilities, project sponsors should avoid wetlands and forested areas, among other resources, where practicable). If forested wetlands would be affected, describe proposed measures to restore these areas following construction, including planting of wetland trees or shrubs as appropriate. Restoration plans should include post-construction monitoring, and the development and application of criteria to determine restoration success in accordance with our *Procedures*. Consult with appropriate agencies such as the COE and land management agencies to develop restoration plans, and provide copies of agencies' written recommendations.

If the project would result in permanent wetland losses or the permanent conversion of woody wetland types to other wetland cover types, you should describe efforts that have been or will be taken to avoid, minimize, and otherwise mitigate these

losses or conversions. Include any proposals to compensate for these losses (e.g., wetland banking, in-lieu fee programs, or permittee responsible mitigation).[25] When available, include copies of proposed compensatory mitigation plans submitted to the COE or appropriate state agency, and any correspondence with respective agencies regarding the plans. Typically, compensation plans identify the location of the mitigation site(s), describe the proposed mitigation, identify the party(ies) responsible for the mitigation, and identify the criteria to determine mitigation success.

We recommend that you identify any special permits required for construction within wetlands, comments from respective permitting agencies, and if known, special permit conditions. For major projects, you should arrange for pre-application meetings with the EPA, COE, and appropriate tribal, state, and local authorities to determine wetland permitting requirements. Describe the results of any such meetings and file associated correspondence.

[25] Compensatory mitigation should comply with the Clean Water Act section 404(b)1 Guidelines, 40 CFR pt. 230, subpt. J; the Memorandum of Agreement between COE and EPA Concerning the Determination of Mitigation Under CWA Section 404(b)(1) Guidelines (Feb. 6, 1990); and the White House Office on Environmental Policy, *Protecting America's Wetlands: A Fair, Flexible, and Effective Approach* (Aug. 24, 1993).

4.3 RESOURCE REPORT 3 – FISH, WILDLIFE, AND VEGETATION

INFORMATION OFTEN MISSING AND RESULTING IN DATA REQUESTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ Provide copies of correspondence from federal and state fish and wildlife agencies along with responses to their recommendations to avoid or minimize impacts on fisheries, wildlife, and vegetation.	M, N, T, DD, D
☐ Provide a list of significant wildlife habitats crossed by the project. Specify locations by milepost, and include length and width of crossing at each significant wildlife habitat.	L, M, N, DD
☐ Provide a description of project-specific measures that would be implemented during construction and operation of the project to avoid or minimize impacts on migratory birds. Include comments from the U.S. Fish and Wildlife Service on the proposed measures.	D, N
☐ For aquatic and marine species, be sure to include effects of sedimentation, changes to substrate, effects of blasting, etc. This information may be needed on a location-specific (i.e., milepost) basis and may require geophysical and other surveys. Results of such surveys and analyses should be included in the application.	D, M, N, T

[a] D Applicant; L Field Surveys; M Fishery Biologist, State or Regional; N U.S. Fish and Wildlife Service; T National Marine Fisheries Service, National Oceanic and Atmospheric Administration, DD State Agencies

This guidance manual does not change or substitute for any law, regulation, or any other legally binding requirement. Where practical, we have distinguished between legal obligations and Commission staff's interpretations or recommendations. We use mandatory language such as "required," "must," and "must not" to describe controlling requirements under statutes and regulations. We use non-mandatory language such as "recommend," "encourage," and "may" to describe Commission staff's recommendations that will help the Commission meet its obligations under NEPA. However, because clear distinctions are not always practical, a reader should consult the regulations directly to determine the information legally required in order to meet the filing requirements of 18 CFR 380.12.

Resource Report 3 is required for all applications, except those involving only facilities within the improved area of an existing compressor, meter, or regulating station. You should also provide Resource Report 3 if the proposed activities within the improved area of an existing compressor, meter, or regulating station would affect wildlife due to increased noise or lighting. This resource report describes existing fish, wildlife, and vegetation resources that would be directly and indirectly affected by the project. The report must describe the existing resources; the expected impacts on these resources, including potential effects on biodiversity, from construction and operation of the proposed facilities; and the measures proposed to avoid, minimize, or otherwise mitigate these impacts. Also describe all consultation with state fish and wildlife or land management agencies, the FWS, and NOAA Fisheries for projects potentially affecting marine species. Additionally, describe relevant consultations with federal land management agencies, Native American tribes, or private conservation organizations if

the project would be within lands managed by these entities. The report must include as appendices or attachments copies of all correspondence with appropriate agencies. For large or complex projects, we recommend that you provide an index of agency correspondence identifying where each item can be found. Also include copies of any studies or reports on field surveys that have been completed for the project. You need not include extensive lists of all species known or suspected of inhabiting the project area.

For LNG projects or projects involving offshore pipelines, Resource Report 3 should address all aquatic/marine resources (e.g., marine mammals, sea turtles, benthic organisms, and submerged aquatic vegetation) that could potentially be affected in addition to fisheries.

4.3.1 Fisheries and Other Aquatic Resources

4.3.1.1 Fishery Classification

Classify the fishery type supported by each surface waterbody that would be crossed or otherwise affected by the project. Where available, use the state fishery classification (e.g., warmwater, coldwater, saltwater, or anadromous).

You may include the classification information as a separate column on the surface water table (see table 4.2.1-1 in section 4.2 of this manual), or include it in a separate table. You should identify the surface waters disturbed by each facility segment, the corresponding milepost at the crossing location, the county and state for each crossing, and the type of fishery the surface water supports.

If a state fishery classification is unavailable, you should contact the regional or local state fishery biologist to determine what type of fishery occurs in the general vicinity of each crossing location. Also provide, in tabular format, a list of representative fish species known to occur in the project vicinity, separated by fishery type (see example table 4.3.1-1).

TABLE 4.3.1-1

Representative Fish Species in Waterbodies Crossed by the Project

Freshwater
Coldwater
Anadromous
Catadromous
Estuarine
Marine

4.3.1.2 Fisheries of Special Concern

Describe any surface waters that support fisheries of special concern in the vicinity of the crossing location. These may include surface waters containing fisheries of exceptional recreational value, such as waters that support coldwater fisheries through natural reproduction, provide habitat for protected species, are assigned special state fishery management regulations, or are designated as essential fish habitat (EFH).[26] Other special-concern fisheries may include those where economic investments have been implemented, such as clean-up or stocking programs, or those that support commercial or tribal harvests.

Provide documentation of coordination with the following agencies, as applicable:

- NOAA Fisheries, Protected Resources Division – federally listed species and critical habitats (also see section 4.3.4 below);
- NOAA Fisheries, Habitat Conservation Division – EFH;
- state wildlife agencies or special interest groups – trout-stocking or other sports fisheries programs; and
- other federal and state agencies and Native American tribes – surface waters supporting fisheries of special concern in the vicinity of the project.

Identify the project components and corresponding milepost or location for each special-concern fishery, the name of the waterbody, and the fishery issue associated with that waterbody. We recommend that you summarize the above information as shown in example table 4.3.1-2. Include threatened and endangered species and their critical habitat in this table if applicable.

[26] The regional Fishery Management Councils designate EFH as part of their fishery management plans under the Magnuson-Stevens Fishery Conservation Management Act of 1976, as amended.

TABLE 4.3.1-2

Fisheries of Special Concern in the Vicinity of the Project

Facility/Waterbody Name	Milepost	County	State	Fishery Concern [a, b]
Loop 1				
Loop 2				

[a] Threatened and endangered species are federally or state-listed threatened, endangered, or proposed species.

[b] Trout stocked waters are waters where trout are stocked for recreational fishing. Trout spawning habitat includes waters with naturally occurring spawning populations of trout.

4.3.1.3 Construction and Operation Impacts

Based on the proposed construction and operation procedures, determine and describe the effects of construction and operation of the project on fishery resources. Where you propose special construction or operation techniques or procedures for site-specific areas, describe the impacts based on using these techniques. As you evaluate and discuss impacts on fishery resources, consider the time of year when construction within or across surface waters would occur; the site-specific need for underwater blasting, pile-driving, or dredging if applicable; and the potential for habitat loss, including shoreline and in-stream cover loss and loss or sedimentation of critical spawning habitat. Also address the potential for impacts caused by interruption of fish spawning migrations both upstream and downstream of in-water activities (where applicable), turbidity, water intake or discharge, and potential fish mortality from toxic substance spills or blasting activity.

To allow us to conduct our environmental review for LNG projects or projects involving offshore pipelines, we recommend that you also analyze (A) aquatic resource impacts associated with suspension and redeposition of sediments and potential disturbance of contaminated sediments; (B) impacts on fish (including ichthyoplankton) and benthic organisms arising from ship hoteling requirements like intake or discharge of ballast water or cooling water (e.g., impingement/entrainment; changes in temperature, pH, dissolved oxygen levels and salinity; and introduction of nonindigenous species); and (C) potential aquatic resource impacts associated with shipping, pile driving, dredging, plowing, and/or jetting (e.g., ship strike, impingement, lighting, underwater noise due to pressure waves measured in decibels re 1 microPascal at 1 meter, and turbidity and sedimentation impacts on food/prey). Depending on the species affected (e.g., marine mammals or sea turtles), some of this information may be more appropriately included in the Threatened, Endangered, and Special Status Species section discussed below.

In the discussion of proposed mitigation, you should address those construction procedures or changes in operation, beyond the typical construction and operation procedures, that are proposed to reduce the impact on fishery resources. If not described in Resource Report 2, you should include proposed measures to avoid or minimize impacts on macroinvertebrates and aquatic life during water withdrawals associated with construction or hydrostatic testing. Mitigation to reduce impacts on fisheries may include scheduling waterbody crossings to avoid sensitive spawning or migration periods, or the use of specialized construction procedures, such as direct pipe, HDD, fluming, scare charges, bubble curtains, use of screens on water intakes, or use of portable construction bridges to avoid in-stream construction and reduce the levels of turbidity or downstream sedimentation. If you propose screening, you should describe the mesh size as well as the fishery resource(s) that you intend to protect by screening.

If fisheries of special concern would be affected by construction or operation of the project you should describe site-specific measures that you would implement to avoid or minimize impacts. Provide complete copies of written correspondence to and from state and federal agencies. If the project would affect EFH, you should prepare and submit a draft EFH Assessment with your Commission application describing EFH present in the vicinity of the project and managed species potentially occurring in the area, analyzing potential effects on EFH and managed species, proposing mitigation that would eliminate or minimize these potential impacts, and documenting your responses to all comments and recommendations from the NOAA Fisheries Habitat Conservation Division regarding EFH. Regulations regarding EFH consultation can be found at Title 50 of the Code of Federal Regulations (CFR), Part 600, Subpart K.

4.3.2 Wildlife

4.3.2.1 Existing Resources

Describe the various types of terrestrial and wetland habitats that would be affected by the project. Describe habitat types by vegetation cover types and ensure that they are consistent with vegetation cover types described in the vegetation section of Resource Report 3, wetlands described in Resource Report 2, and, where applicable, land use types used in Resource Report 8. List representative wildlife species for each of the described habitat types. Identify any species with significant recreational, aesthetic, or commercial value.

4.3.2.2 Construction and Operation Impacts

Describe short-term, long-term, and permanent impacts on wildlife resources caused by construction and operation of the proposed project. Calculate the loss of forested habitats and other habitats, and distinguish between temporary impacts (i.e., the

portion of the construction right-of-way and all ATWS that would be allowed to revert to preconstruction condition after construction is complete) and permanent impacts (i.e., the portion of the right-of-way that would be permanently maintained in a cleared condition or aboveground facility sites that would be converted to non-vegetated surfaces or to other vegetation types such as grass). As relevant, discuss impacts from fragmentation of forested areas and related edge impacts/effects.

If you propose to construct facilities at night or to operate large aboveground facilities such as LNG facilities or large compressor stations, we recommend that you analyze potential impacts on wildlife due to increased lighting, noise, or gas flaring. Describe proposed mitigation to avoid or minimize impacts on wildlife, especially significant habitats or habitat within wildlife management areas or preserves. Identify any mitigation measures recommended by state or federal agencies, including measures to allow for wildlife movement and protection during construction activities, and indicate whether you would implement those measures.

4.3.2.3 Unique and Sensitive Wildlife and Habitat

Significant and Sensitive Habitat

Identify and describe significant or sensitive habitats. These may include habitats that provide breeding, rearing, nesting, or calving areas; migration routes; or high-quality cover or forage areas (e.g., large tracts of contiguous forest, mature cypress swamp, established wildlife movement corridors). Sensitive wildlife habitat typically includes, but is not limited to, existing or proposed National Wildlife Refuges, state wildlife management areas, or privately owned management areas or preserves. Depending on the project area, examples of sensitive or significant wildlife habitat could also include big game winter ranges, wild horse or wild burro areas, elk ranges, and others. For each sensitive habitat, describe how and by whom it is managed.

Tabulate the sensitive wildlife habitats within the project area, indicating the pipeline segment or aboveground facility that would affect the habitat, the beginning and ending milepost locations, the habitat type or name, the length of the crossing in feet, and the width of the proposed construction right-of-way at the crossing location (see example table 4.3.2-1). Provide timing windows, if applicable, and describe specific restoration plans for sensitive habitats as well as applicable resource agency comments.

TABLE 4.3.2-1

Sensitive Wildlife Habitat Types Affected by Construction and Operation of the Project

Facility	Milepost (Entry)	Milepost (Exit)	Crossing Length (feet)	Crossing Width (feet)	Acreage Affected		Habitat Type / Name
					Constr.	Oper.	
Mainline 200							
	x.x	x.x	xxx	xx	x.x	x.x	ABC Wildlife Management Area
	x.x	x.x	xxx	xx	x.x	x.x	Mature pine forest
	x.x	x.x	xxx	xx	x.x	x.x	Cypress swamp
Mainline 300							
	x.x	x.x	xxx	xx	x.x	x.x	DEF National Wildlife Refuge
	x.x	x.x	xxx	xx	x.x	x.x	Cypress swamp
Meter Station A	NA	NA	NA	NA	x.x	x.x	Mature pine forest

Note: NA = Not applicable

Migratory Birds

Migratory birds are protected under the Migratory Bird Treaty Act, and bald and golden eagles are additionally protected under the Bald and Golden Eagle Protection Act. Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds* directs federal agencies under the Executive Branch to work with the FWS to promote the conservation of migratory bird populations.[27] To implement this order, the FWS and the Commission entered into a Memorandum of Understanding (March 30, 2011) that focuses on avoiding or minimizing adverse impacts on migratory birds and strengthening migratory bird conservation through enhanced collaboration between our two agencies.

To assist us in evaluating impacts on migratory birds, you should identify the Bird Conservation Region(s) that would be crossed by the project and the corresponding Birds of Conservation Concern[28] potentially occurring within the project area. For each species, indicate seasonal occurrence within the region (i.e., breeding, wintering, migratory), nesting habitat if relevant, and potential occurrence within the project area. We recommend that you summarize the above information as shown in example table 4.3.2-2. Due to their sensitivity to human activity, identify colonial waterbird rookeries documented or observed within 1 mile of the project area.

[27] 66 Fed. Reg. 3853 (Jan. 17, 2001).

[28] The list of *Birds of Conservation Concern* is published and updated periodically by the Division of Migratory Bird Management within the FWS.

TABLE 4.3.2-2

Birds of Conservation Concern Potentially Occurring in the Vicinity of the Project

Common Name	Scientific Name	Colonial Waterbird	Breeds in Region	Nesting Habitat [a]		
				Ground	Shrub	Tree
American bittern	*Botaurus lentiginosus*	X	X	X	o	o

Note: "–" = not applicable; "o" = does not nest in habitat type

[a] Nesting habitat type is only provided for those species that breed in Bird Conservation Region XX. B=Breeding.

Sources: U.S. Fish and Wildlife Service, 2008; Cornell Lab of Ornithology, 2015.

You should describe potential impacts on migratory birds due to construction and operation of the project. This discussion may refer to the analysis in the wildlife section, but should provide a more detailed analysis that is specific to impacts on birds and their habitats that could be affected by the project. Your discussion should address compliance with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The level of analysis should be commensurate with the scope of potential impacts on migratory birds and their habitat and should include a discussion of flyways, timing in relation to seasonal movement, and potential impacts from clearing, habitat conversion, artificial lighting, and flaring. If forest fragmentation or edge effects would occur, you should analyze potential impacts on both interior- and edge-dwelling species.

Describe project-specific conservation measures that you would implement during construction and operation to avoid or minimize impacts on migratory birds, including, but not limited to, establishment of buffer zones or any timing restrictions for construction activities. Include documentation of coordination with the FWS and the agency's comments on the proposed mitigation measures.

4.3.3 Vegetation

4.3.3.1 Existing Resources

Describe the vegetation cover types that would be crossed or otherwise affected by the proposed project. Each description should include characteristic plant species. Also describe the vegetation within the existing rights-of-way (for a looping project or other project with construction within or adjacent to existing rights-of-way) and within station yards or off-right-of-way workspaces that would be disturbed. If looping or replacing an existing pipeline, describe vegetation maintenance practices on the existing rights-of-way, including normal frequency and average width of the maintained right-of-way.

Note that non-vegetated areas (e.g., commercial/industrial land, open water) should not be included as vegetation cover types.

Describe and identify by beginning and ending milepost and length of crossing (in feet) any affected vegetation types, plant communities, or individual trees that are unique, sensitive, or protected (e.g., mature forest, large stands of contiguous forest, native prairie, mima mounds, sagebrush steppe community, state specimen trees). Federally or state-listed endangered or threatened plants should be discussed in the section of Resource Report 3 that addresses Threatened, Endangered, and Special Status Species (see section 4.3.4).

4.3.3.2 Construction and Operation Impacts

Provide the total acreage of vegetation, by cover type, that would be affected during both construction and operation. Base acreage calculations on the dimensions of the construction and permanent rights-of-way as shown on the cross-section diagrams submitted in Resource Report 1. Describe maintenance practices as they would affect vegetation (e.g., converting forest vegetation within the maintained permanent right-of-way, maintaining any areas within HDD paths during operations). Include all ATWS, staging areas, and contractor and pipe storage yards. The total acreage of vegetation affected should equal the total area affected by the project facilities as reported in Resource Reports 1 and 8 minus any non-vegetated areas; if not, then explain the difference quantitatively. If applicable, you should describe any restoration or monitoring activities required or recommended by other agencies in addition to those in our *Plan*, and identify which of those you propose to implement.

You may determine the acreage of affected vegetation types by review of aerial photographs supplemented with ground truthing, as necessary. Emphasize forest and sensitive vegetation, or other vegetation types for which clearing or operating maintenance practices would result in a long-term or permanent impact. For large projects, we recommend that you summarize vegetation clearing information as shown in example table 4.3.3-1.

Calculate the area of unique or sensitive vegetation types or communities that would be affected by construction and the area of these types that would be within the permanent right-of-way. Provide copies of correspondence with federal, state, and local agencies, and describe measures proposed to avoid, minimize, or otherwise mitigate the impact on sensitive vegetation types.

TABLE 4.3.3-1

Vegetation Communities Affected by Construction and Operation of the Project (in acres) [a]

	Agricultural		Upland Herbaceous		Upland Shrub		Mixed Hardwood Loblolly Forest		Estuarine Wetland		Palustrine Wetland		Total	
Facilities	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.[b]	Oper.[c]
Pipeline Facilities														
Mainline 1														
Mainline 2 Loop														
Subtotal														
Aboveground Facilities														
Compressor Station 1														
Meter Station 1														
Meter Station 2														
Subtotal														
TOTAL														

[a] The totals shown in this table may not equal the sum of the addends due to rounding.
[b] Total construction impacts include both temporary and permanent work areas.
[c] Operation impacts include only new permanent easement or facility footprint (i.e., land within the existing meter stations is not included).

4.3.3.3 Noxious Weeds and Invasive Species

You should describe noxious weeds and invasive species identified within the project area during surveys, including aquatic, wetland, and upland species. Describe measures that you have developed in coordination with the appropriate agencies to prevent the introduction or spread of invasive species, noxious weeds, and/or soil pests resulting from construction and operation.[29] If you propose equipment cleaning, describe the timing, frequency, and procedures that you would use, as well as how you would

[29] *See* NRCS, USDA, General Manual tit. 190, pt. 414, *Invasive Species Policy* (July 2010). "Noxious weeds" are plant species designated by the Secretary of Agriculture, Secretary of the Interior, or by state law or regulation, that generally "possess one or more of the characteristics of being aggressive and difficult to manage, parasitic, a carrier or host of deleterious insects or disease, and being non-native, new to, or not common to the United States." *Id.* § 414.3(G). "Invasive species are those species whose introduction causes or is likely to cause "economic or environmental harm or harm to human health." A plant species is considered "invasive" only when it occurs on the federal or state-specific noxious weed list or a list developed by the state-specific Department of Agriculture with their partners and approved by the State Technical Committee which prohibits or cautions its use due to invasive qualities. *Id.* § 414.3(D).

remove invasive plants from the site without increasing dispersion. If you propose to use water at cleaning stations, describe the source of the water, water volumes, and how you would withdraw and dispose of the water.

4.3.4 Endangered, Threatened, and Special Status Species

In accordance with section 380.13, the project sponsor, acting as the Commission's non-federal representative, must initiate informal consultation with the FWS's Ecological Services field office and/or NOAA Fisheries' Protected Resources Division, as appropriate, to determine whether any federally listed or proposed endangered or threatened species or designated or proposed critical habitat potentially occur in the vicinity of the proposed project. We also recommend consulting with state wildlife agencies as these agencies often maintain records of federally listed species occurrences. If federal, state, or tribal lands occur within the proposed project area, determine during early project coordination whether any additional sensitive species may be present in the vicinity of the project. Documentation of early coordination is particularly important if other agencies will adopt the Commission's NEPA document in their own permit review processes. Regulations regarding consultation under the ESA can be found in 50 CFR 402, Subparts A and B.

Include in your Commission application recent copies of species lists from the relevant agencies and tribes. In particular, we recommend that you provide either a current copy of the FWS' Information Planning and Conservation (IPaC) Trust Resource Report, the current and applicable official species list for the project area from the FWS's Ecological Services Field Office, or a clearance letter signed or stamped by the FWS.

Include in your Commission application complete copies of written correspondence to and from the FWS, NOAA Fisheries, and/or other applicable agencies. Correspondence should clearly reflect the project description, project area, and any buffer zones reviewed by the FWS and/or NOAA Fisheries. If the FWS and/or NOAA Fisheries have issued clearance letters stating that no listed or proposed species would be affected, but you have since modified the project (e.g., pipeline reroute, modifications to the project footprint or area of affect) or your clearance letters are more than 1 year old (unless otherwise noted in the clearance letter), contact the FWS and/or NOAA Fisheries to determine whether updated letters are required and provide copies of the updated documentation. Although not required, the applicant may request written concurrence from the FWS and/or NOAA Fisheries if the project would have no effect on listed species or critical habitat. However, concurrence with no-effect findings is not required by section 7 of the ESA, so the FWS and/or NOAA Fisheries may not respond to such requests. In these instances, you should submit documentation of agency coordination (via a telephone conversation or meeting) with your Commission application as part of the informal consultation, including information on how you came to a no-effect finding

for each species. If you use the IPaC system to reach a conclusion of no effect, the results of this search should be filed with the Commission.

4.3.4.1 Existing Resources

We recommend that you prepare a table that identifies the endangered and threatened species, both proposed or listed by federal or state agencies, that potentially occur in the vicinity of the project (see example table 4.3.4-1). While candidate species have no legal protection under the ESA, we recommend that you include them to avoid future potential conflicts if the species are later proposed for listing. The table should include the common and scientific name of the species, its federal and state status designations (including critical habitat), and the project component where the species or suitable habitat may occur. Also include in the table a brief description of the potentially suitable habitat for each species and anticipated project impacts on that species.

TABLE 4.3.4-1

Federally and State-listed Species Potentially Occurring in the Vicinity of the Project

Common Name *Scientific Name*	Federal Status	State Status	County, State	Project Components	Anticipated Project Impacts and Habitat Assessment
Birds					
Piping plover *Charadrius melodus*	Threatened, Critical Habitat	Threatened/ Endangered	County, ST	Mainline Lateral 1	*Impacts are not anticipated* The species breeds in the northern United States and Canada and overwinters along the coast of the Gulf of Mexico. Wintering habitat includes sandy beaches along the shoreline of the Gulf of Mexico. No suitable wintering habitat would be affected by Lateral 1. *No destruction or adverse modification of critical habitat* The nearest designated critical habitat is over 20 miles south of Lateral 1 and includes the shoreline on either side of the entrance to the Calcasieu Ship Channel. Therefore, no impacts on designated critical habitat are anticipated.
Reptiles/Amphibians					
Insects					
Mammals					
Plants					

We find it helpful when you also provide figures for listed species showing the locations of designated critical habitat or areas of potential habitat in relation to the locations of project facilities.

If the FWS and/or NOAA Fisheries recommend that you conduct project-specific field surveys for one or more federally listed or proposed species, you must complete these surveys for all accessible project areas and file the results with the application. For those areas not accessible due to lack of landowner permission or where you could not conduct surveys prior to filing due to seasonal survey restrictions, provide a timetable for completing the surveys and filing survey reports. Surveys should be conducted by qualified biologists using methodology approved by the FWS and/or NOAA Fisheries. Provide copies of survey reports and FWS and/or NOAA Fisheries comments on the reports. Consult with the FWS and/or NOAA Fisheries to determine whether these documents should be filed with the Commission as public or privileged. Survey reports should include the following information:

- name(s) and qualifications of person(s) conducting survey;
- methods and date(s) of the survey;
- locations and sizes of areas surveyed, including milepost locations for pipeline routes;
- areas where species or potential habitats were located, including milepost locations for pipeline routes;
- potential impact on the species or habitat, both positive and negative, that could result from construction and operation of the proposed project; and
- proposed measures that would avoid, minimize, or otherwise mitigate potential negative impact.

You should prepare a brief description of each federally listed or proposed endangered or threatened species that potentially occurs in the vicinity of the project. The description should include general background information that is appropriate to the project area (e.g., regional distribution, habitat preference, and important dates such as for breeding, nesting, calving, migration, or overwintering), as well as project-specific information such as known locations of designated or proposed critical habitat, suitable habitat, or occupied habitat. Identify any specific recommendations made by the FWS or NOAA Fisheries and indicate whether you would implement those recommendations.

Coordinate with the appropriate state agencies to determine state-listed endangered or threatened species that potentially occur in the vicinity of the project. We recommend that you provide the same information for state-listed species as described above for federally listed or proposed species.

If nonjurisdictional facilities would be constructed in conjunction with the proposed project and if warranted based on the information provided in Resource Report 1 (see section 4.1.8 of this manual), you should work with the nonjurisdictional company and provide the same information for the nonjurisdictional facilities, if available, as described above for the proposed facilities.

4.3.4.2 Construction and Operation Impacts

Describe the impacts on each species identified in section 4.3.4.1 that would result from construction and operation of the project. If you could not conduct surveys for a species because of timing or lack of landowner permission, and the species potentially occurs within the project area, you may assume it is present and provide the information below (including mitigation) to facilitate a timely consultation process. The impacts analysis should address all comments and recommendations provided by federal and state agencies and describe mitigation measures that you would implement. In accordance with section 380.13(b), if the project may affect federally listed or proposed species or designated or proposed critical habitat, then you must prepare and submit with your Commission application a draft Biological Assessment containing the following information for the relevant species:[30]

- life history and habitat requirements;
- existing land uses of the different habitats;
- results of detailed surveys (if warranted or requested by the agency) to determine whether individuals, populations, or suitable unoccupied habitat exists in the proposed project's area of effect;
- species occurrence by facility;
- potential impacts, both beneficial and negative, that could result from the construction and operation of the proposed project, or disturbance associated with the abandonment, if applicable;
- proposed measures that would avoid, minimize, or otherwise mitigate these potential impacts; and
- responses to all FWS and NOAA Fisheries comments and recommendations for federally listed or proposed species.

[30] Do not submit the draft Biological Assessment directly to the FWS or NOAA Fisheries.

4.4 RESOURCE REPORT 4 – CULTURAL RESOURCES

INFORMATION OFTEN MISSING AND RESULTING IN DATA REQUESTS	
INFORMATION	POTENTIAL DATA SOURCE [a]
☐ Identify the project area and the project's impacts in terms of direct and indirect effects on cultural resources.	D
☐ Provide a project map with mileposts clearly showing boundaries of all survey areas (right-of-way, extra work areas, access roads, etc.). Ensure that you mark mileposts, clearly specify survey corridor widths, and clearly indicate where you have not completed surveys.	D
☐ Provide documentation of consultation with applicable State Historic Preservation Offices (SHPO), Tribal Historic Preservation Offices (THPO), [b] and land-managing agencies regarding the need for and required extent of cultural resource surveys.	D
☐ Provide a narrative summary of overview results, cultural resource surveys completed, identified cultural resources and any cultural resource issues.	D
☐ Provide a project specific Ethnographic Analysis (can be part of Overview/Survey Report).	D
☐ Identify by mileposts any areas requiring survey where the landowner denied access.	D
☐ Provide written comments on the Overview and Survey Reports from the applicable SHPOs, THPOs, and land-managing agencies, if available.	D
☐ Provide a Summary Table of completion status of cultural resource surveys, and applicable SHPO or THPO and land-managing agency comments on the reports.	D
☐ Provide a Summary Table of identified cultural resources, and applicable SHPO or THPO and land-managing agency comments on the eligibility recommendations for those resources.	D
☐ Provide a brief summary of the status of contact with federally recognized Indian tribes, including copies of all related correspondence and records of verbal communications.	D
☐ Provide a brief summary of comments received from stakeholders regarding cultural resources.	D
☐ Provide a schedule for completing any outstanding cultural resource studies.	D
☐ Provide an Unanticipated Discoveries Plan for the project area, referencing appropriate state statues.	D

[a] D Applicant

[b] As defined by the Advisory Council on Historic Preservation at Title 36 Code of Federal Regulations Part 800.16(w), THPO means the tribal official appointed by the tribe's chief governing authority or designated by a tribal ordinance or preservation program who has assumed the responsibilities of the SHPO for purposes of complying with section 106 of the National Historic Preservation Act on tribal lands, in accordance with section 101(d)(2) of the act.

This guidance manual does not change or substitute for any law, regulation, or any other legally binding requirement. Where practical, we have distinguished between legal obligations and Commission staff's interpretations or recommendations. We use mandatory language such as "required," "must," and "must not" to describe controlling requirements under statutes and regulations. We use non-mandatory language such as "recommend," "encourage," and "may" to describe Commission staff's recommendations that will help the Commission meet its obligations under NEPA. However, because clear distinctions are not always practical, a reader should consult the regulations directly to determine the information legally required in order to meet the filing requirements of 18 CFR 380.12.

Resource Report 4 is required for all applications. This report addresses the nature (description) and significance of cultural resources within the project's Area of Potential Effect (APE), including any "historic properties" (districts, buildings, structures, sites, and/or objects listed on or eligible for listing on the NRHP) or any traditional cultural properties. The APE includes the area that may be directly or indirectly affected by construction, operation, and maintenance of proposed facilities, and associated activities. It may extend beyond the spatial limits of the project's construction and permanent right-of-way.

4.4.1 Application

Resource Report 4 should include:

- a description of the project's APE referencing both potential direct and indirect effects to cultural resources. This may differ from the construction and permanent rights-of-way as indirect effects could include visual, auditory, or physical effects, such as emissions or vibration arising from construction;

- documentation of the need for a cultural resource survey, and the level of survey required, based on consultation with the applicable SHPO(s) or THPO(s), and land-managing agencies. If surveys are necessary, you must file the Survey Report(s) with the application;

- documentation of initial cultural resources consultation/contact with the applicable SHPO(s), THPO(s), federally recognized Indian tribes, land-managing agencies, and, as appropriate, organizations and other stakeholders. Documentation includes copies of pertinent meeting notes, emails, phone logs, and correspondence (including any attachments, in color if originally provided in color). Documentation should clearly show that the facilities reviewed by the agencies, tribes, and other parties are the same as those proposed in the application;

- a summary (tabular, if appropriate) of the status of cultural resources investigations undertaken to date. See example tables 4.4.1-1, 4.4.1-2, and 4.4.1-3. Identify by milepost any areas that could not be surveyed because the landowner denied access;

- a narrative summary of the completed Overview and Survey Reports, identifying any cultural resources issues. The summary should not identify specific property locations or sensitive information about cultural resource sites;

- copies of all completed Cultural Resource Overview and Survey Reports, as appropriate. The Survey Report(s) must include a brief management summary, including a statement of the number of acres surveyed. You may combine the Overview and Survey Reports;

- a project map clearly showing the boundaries of all areas that have been surveyed and that are to be investigated, with the survey corridor widths clearly specified;

- an Ethnographic Analysis specific to the project area included with or separate from the Survey Report(s). An Ethnographic Analysis may include one or more types of analyses that facilitate the identification of ethnographic resources such as traditional cultural properties, cultural or ethnographic landscapes, oral history, or studies of traditional ecological knowledge. The general objective of an Ethnographic Analysis is to identify any Native American groups or other groups with ties to the project area as a first step to then identify properties of traditional religious or cultural importance to the tribes, interested persons, and ethnic groups. The Ethnographic Analysis may include, but is not limited to, archival research, tribal interviews, questionnaires, participant observation, or field investigations, to be conducted by qualified people;

- a list identifying by milepost any areas requiring survey where the landowner has denied access;

- written comments on the Overview and Survey Reports, if available, from the applicable SHPOs, THPOs, and land-managing agencies, as appropriate;

- applicable SHPO, THPO, and land-managing agency comments on the eligibility recommendations for identified cultural resources;

- a brief summary of the status of contact with federally recognized Indian tribes regarding traditional cultural properties and concerns. Include copies of all related correspondence;

- information necessary to address comments filed in the public record, received from the public during open houses and scoping sessions;

- a plan for dealing with the unanticipated discovery of historic properties or human remains, referencing the appropriate state statutes; and

- a schedule for completing any outstanding cultural resource studies.

TABLE 4.4.1-1

Survey Status of Pipeline Route (current as of [DATE])

Facility	County, State	Milepost Start	Milepost End	Survey Status
Mainline Pipeline				Surveyed
				Pending survey completion [a]
				Surveyed
				Pending survey completion [b]
Lateral A				
Lateral B				

[a] Landowner denied access permission
[b] Flooded at time of survey
Note: Block valve and pig launcher/receiver locations are included within the survey corridor for the pipeline.

TABLE 4.4.1-2

Survey Status of Aboveground Facilities (current as of [DATE])

Facility	Approximate Milepost	County, State	Area (acres)	Survey Status
Compressor Stations				
Compressor Station 1				
Compressor Station 2				
Meter Stations				
Meter Station 1				
Meter Station 2				

TABLE 4.4.1-3

Cultural Resources Identified in Survey Corridor

Facility/County/ Resource Number	Resource Type	Applicant NRHP Assessment	Applicant Recommendations	SHPO Comments (if available)
MAINLINE				
Walworth/WI				
[Resource ID No]	Historic rock alignment	Not eligible	No further investigation	Concur, not eligible
[Resource ID No]	Precontact lithic scatter and historic rock cairn	Unevaluated	Avoid or additional testing	Avoid or additional testing
[Resource ID No]	Historic railroad (active)	Eligible/contributing	No further investigation; to be avoided by conventional boring	Concur, eligible/ contributing; cultural resource monitor; maintain 50-foot setback for bore entry and exit
LATERAL A				
McHenry/IL				
[Resource ID No]	Historic wagon road	Eligible	Avoid or develop mitigation plan	Concur, eligible; mitigation if avoidance is not possible
[Resource ID No]	Precontact lithic scatter	Not eligible	Evaluative testing completed; no further investigation	Concur; not eligible
[Resource ID No]	Historic road	Not eligible	No further investigation	Concur; not eligible

You should provide copies of Overview/Survey Reports, Evaluation Reports (if required), Unanticipated Discoveries Plans, and documentation of consultation/contact as appendices to Resource Report 4. Do not include specific information about cultural resources site location and ownership in the main body of Resource Report 4. Confine such information to appended reports. Request privileged treatment for all material filed with the Commission containing **location, character, and ownership information** about cultural resources. You must clearly label the cover pages and all relevant pages or portions of the appended reports in bold lettering "**CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE**."

4.4.2 Post-filing, Pre-Certificate/Authorization Requirements

After filing your application with the Commission, file the following additional information, which we need before we can complete the environmental analysis and issue a certificate or authorization:

- if not filed with the application, any applicable SHPO, THPO, or land-managing agency comments on reports;
- any Evaluation Report(s) required by the applicable SHPO, THPO, or land-managing agencies. If a required evaluation entails extensive subsurface testing, substantial excavation, or other procedures that affect the integrity of a cultural resource, prepare a testing plan in consultation with us and the applicable SHPO, THPO, or land-managing agencies;
- any applicable SHPO, THPO, or land-managing agency comments on Evaluation Report(s);
- written comments from the applicable SHPO, THPO, and land-managing agencies on the NRHP eligibility of all identified cultural resources in the project's APE; and
- any Treatment Plan(s), if required, addressing how effects on historic properties that cannot be avoided would be mitigated. Prepare the Treatment Plan(s) in consultation/contact with us and the applicable SHPO, THPO, land-managing agencies, and federally recognized Indian tribes, as appropriate. We will not authorize you to implement the approved Treatment Plan(s) until after we have issued the certificate or authorization.

4.4.3 Preconstruction Requirements

Prior to construction in any area, you must file all additional reports of cultural resource investigations, except monitoring during construction, and all additional documentation of consultation/contact. This could include:

- any of the items in section 4.4.2 not already provided;
- Survey Reports for areas of the APE not previously identified or where the landowners had denied access;
- written comments from the applicable SHPO, THPO, and land-managing agencies for all remaining reports; and
- notification of completion of any implemented Treatment Plans.

Commission staff provides additional guidance on preparing cultural resources documents in the most recent version of *Guidelines for Reporting on Cultural Resources Investigations for Pipeline Projects* issued by the OEP, which is available on the Commission's website.

4.5 RESOURCE REPORT 5 – SOCIOECONOMICS

INFORMATION OFTEN MISSING AND RESULTING IN DATA REQUESTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ Evaluate the impact of any substantial immigration of people on governmental facilities and services and describe plans to reduce the impact on local infrastructure.	D
☐ Describe on-site workforce requirements, including the number of construction personnel who currently reside within the impact area, who would commute daily to the site from outside the impact area, or who would relocate temporarily and permanently within the impact area.	D
☐ Estimate total worker payroll and material purchases during construction and operation.	D
☐ Estimate project-related ad valorem and local tax revenues.	D
☐ Determine whether existing housing within the project area is sufficient to meet the needs of the additional population.	I
☐ Describe the number and types of residences and businesses that would be displaced by the project, procedures to be used to acquire these properties, and types and amounts of relocation assistance payments.	D, I
☐ Describe impacts on local traffic due to construction- and operation-related traffic and worker commuting. Address impacts on marine traffic where applicable (e.g., LNG import/export facilities).	D, I, DD
☐ Evaluate the effects of the project on minority and low income populations in consideration of Executive Order 12898. [b]	J, KK, NN
☐ Conduct a fiscal impact analysis evaluating incremental local government expenditures in relation to incremental local government revenues that would result from construction of the project. Incremental expenditures include, but are not limited to, school operating costs, road maintenance and repair, public safety, and public utility costs.	D, I, JJ

a D Applicant; I County/Municipal Agencies; DD State Agencies; JJ U.S. Department of Labor; KK U.S. Bureau of the Census; NN U.S. Environmental Protection Agency Environmental Justice Screening and Mapping Tool

b 59 Fed. Reg. 7629 (Feb. 16, 1994).

This guidance manual does not change or substitute for any law, regulation, or any other legally binding requirement. Where practical, we have distinguished between legal obligations and Commission staff's interpretations or recommendations. We use mandatory language such as "required," "must," and "must not" to describe controlling requirements under statutes and regulations. We use non-mandatory language such as "recommend," "encourage," and "may" to describe Commission staff's recommendations that will help the Commission meet its obligations under NEPA. However, because clear distinctions are not always practical, a reader should consult the regulations directly to determine the information legally required in order to meet the filing requirements of 18 CFR 380.12.

Resource Report 5 is required if the applicant proposes significant aboveground facilities, such as conditioning or LNG facilities or large new compressor stations. This resource report is not required under section 380.12(g) for projects that only involve pipeline(s), expansion or modifications to existing compressor stations, or other associated facilities; however, many applicants elect to prepare Resource Report 5 for

major pipeline projects (and we recommend that you do). Additionally, Commission staff may recommend that applicants provide this resource report for minor projects or those with only below-ground facilities, in instances where concerns are raised during project coordination or as a result of public or agency comments. Furthermore, federal, state, or local land managing agencies may require that the applicant analyze the socioeconomic impact of pipeline construction as part of their review process to grant rights-of-way.

4.5.1 Existing Socioeconomic Conditions

Summarize the existing socioeconomic conditions in the socioeconomic impact area (section 380.12(g)(l)). The socioeconomic impact area generally comprises the municipalities or counties where the facilities would be located or which might be affected by construction and operation of the project.

Depending on the specific agency/public concerns, describe the following existing socioeconomic conditions within the project area (in text and/or tables):

- current population and population density statistics;
- per capita income;
- minority populations and poverty rates;
- number and composition of workforce (e.g., manufacturing; transportation and public utilities; wholesale trade; retail trade; finance, insurance, and real estate; and services);
- current unemployment rate (latest year of record);
- number of units and vacancy rates for temporary housing (e.g., apartment rentals, hotels/motels, and campgrounds) and proximity to the construction area;
- location and availability of local government public services (e.g., police, fire protection, medical services, and schools);
- local tax revenues and sources of funding (e.g., personal property, sales, hotel/motel occupancy); and
- other relevant factors, such as condition and proximity of major transportation routes and typical traffic loads within the project area.

We recommend that for a pipeline project you summarize the above information as shown in example tables 4.5.1-1, 4.5.1-2, 4.5.1-3, 4.5.1-4, and 4.5.1-5. For an LNG facility, a greater level of detail may be required because the project may have a greater impact on a more limited area.

Population statistics are available from the Bureau of the Census. Labor statistics are available from the Bureau of the Census, the Bureau of Labor Statistics within the U.S. Department of Labor, or the affected states' departments of employment. All provided employment data should be for the most recent year of record. Additional data including demographic and environmental indicators are available from the EPA, including the EPA's Environmental Justice Screening and Mapping Tool which can be used to consider potential impacts on minority and low-income populations. Detailed information on housing, transportation networks, and public services is generally available from county or regional planning offices or local municipalities and should also be based on the most recent available information. Remember to include citations for all data.

TABLE 4.5.1-1

Existing Socioeconomic Conditions in the Project Area

State/County	Population 2012[a]	Population Density (per square mile) 2012[a]	Per Capita Income 2012[a]	Civilian Labor Force 2012[b]	Unemployment Rate 2012[b]	Top Two Major Industries 2013[c]
State						
County A						
County B						
County C						

[a] U.S. Census Bureau, 2014a
[b] [State] Workforce Commission, 2013
[c] City-Data, 2013

TABLE 4.5.1-2

Housing Characteristics in the Project Area

State/County	Housing Units[a]	Vacant Housing Units[a]	Vacant Housing Units for Rent[a]	For Seasonal, Recreational, or Occasional Use[a]	Rental Vacancy Rate (percent)[a]	Number of Hotels and Motels[b]
State						
County A						
County B						
County C						

[a] U.S. Census Bureau, 2014b
[b] Yellowbook, 2013 (number of "Hotels and Motels" as advertised on www.yellowbook.com). Some of these hotels and motels may be located in adjacent parishes.

TABLE 4.5.1-3

Public Services in the Project Area

County, State	Number of Public Schools[a]	Number of Sheriff's Departments[b]	Number of Police Departments[b]	Number of Fire and Rescue Departments[c]	Number of Hospitals/Beds[d]
County, ST					
County, ST					
County, ST					

[a] Public Schools K12, 2014
[b] USA Cops, 2013
[c] USA Fire & Rescue, 2013
[d] [State] Hospital Inform, 2013

TABLE 4.5.1-4

Demographic Statistics for Counties Crossed by the Project Facilities

State/ County	Total Population	White (percent)	African American (percent)	Native American and Alaskan Native (percent)	Asian (percent)	Native Hawaiian and Pacific Islander (percent)	Other Race (percent)	Hispanic or Latino Origin (percent)	Total Minority[a] (percent)
State									
County									
County									
County									
State									
County									
County									
County									
State									
County									
County									
County									

Sources: U.S. Census Bureau, 201X, 201X
[a] "Minority" refers to people who reported their ethnicity and race as something other than non-Hispanic White.

TABLE 4.5.1-5

Economic Statistics for Counties Crossed by the Project Facilities

State/County	Median Household Income (2009 to 2013)	Persons Below Poverty (2009 to 2013) (percent)
State		
County		
County		
County		
State		
County		
County		
County		
State		
County		
County		

Source: 2009–2013 American Community Survey 5-Year Estimates

4.5.2 Impacts of Project Construction and Operation

Address the socioeconomic impact of constructing and operating the proposed project. This analysis should include the following:

- Population – Estimate the total number of construction workers who reside within the project area, who would commute daily to the construction site from places outside the project area, and who would temporarily or permanently relocate to the municipality or county area. For relocating workers, estimate the duration of their stay.

- Employment – Estimate the effect of construction and operation on unemployment rates for the region, including on-site workforce requirements and payroll. If known, identify the number or percent of the workforce that would be hired locally.

- Housing – Assess the effect of construction worker immigration on the availability of housing. Most construction workers prefer temporary housing; therefore, in areas that support seasonal tourism and where construction is scheduled for the peak season, construction workers may displace tourists. This may be a concern for motel and campground operators who are dependent on repeat business and may be reluctant to provide housing for construction workers because seasonal trade could potentially be turned away and lost. If there is a potential for a housing shortage, identify mitigation measures. These may include providing temporary camp sites or busing workers from more distant areas where temporary lodging is available.

- Displacement of residences or businesses – Identify the number of residences or businesses that would be removed by construction and operation of project facilities. The discussion should include procedures to acquire properties, payments that would be made to affected landowners for relocation assistance and for loss of the property, and the status of negotiations.

- Infrastructure – Assess the effect of immigration on municipal services, such as police, fire protection, medical facilities, and schools. If estimated immigration would potentially burden existing municipal services, identify proposed plans to alleviate this impact. These plans may include providing funds for hiring additional policemen, fire fighters, or medical personnel during the period of construction. For schools, determine whether an influx of construction workers' school-age children would significantly alter teacher-pupil ratios. Assess the incremental costs to the local community versus the incremental increase in revenues that would result from the construction of the project.

- Construction payroll and material purchases – Estimate the dollar value of construction payroll and material purchases that would affect the local economy. You should discuss related payroll, sales taxes, and other local revenue.

- Tax revenues – Estimate the dollar value of ad valorem and other tax revenues to be paid to each municipality affected by operation of the facility.

- Transportation – Determine the effect of the movement of construction equipment, materials, and workers on the local road network. This may require estimates of construction-related traffic trips to and from the work site, frequency of the trips over the construction period, potential road closures, and times of peak traffic volumes. Mitigation could include constructing new roads, repairing roads to preconstruction conditions, or avoiding existing peak traffic periods. For larger projects, a Traffic Management Plan may be warranted, including how the applicant would maintain an acceptable DOT Level of Service on the local/regional transportation network during peak hours.

  Resource Report 5 should also address marine transportation if applicable (e.g., for projects involving LNG import/export facilities). You should include information about existing marine traffic in shipping channels and other waterways to be used by project-related vessels, estimated marine traffic required for construction and operation of the project (including

types of vessels and frequency), impacts of project-related marine traffic, and proposed mitigation as appropriate.

Provide impacts on transportation from project operation (e.g., adjacent to aboveground facilities with gated entrances and along the waterway for LNG and support vessels) and mitigation measures to minimize those impacts.

- Economic impacts due to loss of production in agricultural/pasture land or timberland – Determine the economic effect of construction and operation of the proposed project on land resources. Identify acreage that would be temporarily and permanently removed from production during construction and operation of the facilities. Discuss the effect on the local or regional economy and compensation to be paid for lost production until the land regains former production or for the life of the facility.

- Economic impacts on commercial fishing – For LNG facilities or other projects involving offshore disturbance, determine the economic effect of construction and operation of the project on commercial fishery resources. Identify the type of fishery resources affected, describe the type and duration of impacts, and discuss the effect on the local or regional economy and compensation to be paid for lost income.

- Environmental Justice (Executive Order 12898[31]) – Address the environmental effects, including human health, social, and economic effects, of the project on minority and low-income communities or Native American programs. Identify any non-English speaking groups that would be affected by the project. Describe the efforts to identify and communicate with these groups and individuals and the measures used to avoid and minimize project impacts. If the project would affect environmental justice populations, we may request more detailed demographic information.

- Other issues as warranted – Issues addressed based on project-specific circumstances or public or agency comments may include, but not necessarily be limited to, training of emergency response personnel, and effects on local tourism as it relates to the economy. If tourism (seasonal or year-round) is an important industry in the project area or is identified as an issue during scoping, you should identify the particular tourist attractions, events and time of year of the events, and the potential project-related impacts.

[31] 59 Fed. Reg. 7629 (Feb. 16, 1994).

4.6 RESOURCE REPORT 6 – GEOLOGICAL RESOURCES

INFORMATION OFTEN MISSING AND RESULTING IN DATA REQUESTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ Identify any sensitive paleontological resource areas crossed by the proposed facilities. (Usually only if raised in scoping or if the project affects federal lands.)	B
☐ Briefly summarize the physiography and bedrock geology of the project.	D
☐ If proposed pipeline crosses active drilling areas, describe plan for coordinating with drillers to ensure early identification of other companies' planned new wells, gathering lines, and aboveground facilities.	D
☐ If the application is for underground storage facilities:	D
☐ Describe monitoring of potential effects of the operation of adjacent storage or production facilities on the proposed facility, and vice versa;	D
☐ Describe measures taken to locate and determine the condition of old wells within the field and buffer zone and how the applicant would reduce risk from failure of known and undiscovered wells; and	D
☐ Identify and discuss safety and environmental safeguards required by state and federal drilling regulations.	D
[a] B Agency Consultation D Applicant	

This guidance manual does not change or substitute for any law, regulation, or any other legally binding requirement. Where practical, we have distinguished between legal obligations and Commission staff's interpretations or recommendations. We use mandatory language such as "required," "must," and "must not" to describe controlling requirements under statutes and regulations. We use non-mandatory language such as "recommend," "encourage," and "may" to describe Commission staff's recommendations that will help the Commission meet its obligations under NEPA. However, because clear distinctions are not always practical, a reader should consult the regulations directly to determine the information legally required in order to meet the filing requirements of 18 CFR 380.12.

Resource Report 6 is required for all applications involving LNG facilities and other applications except those involving only facilities within the boundaries of existing aboveground facilities, such as a compressor, meter, or regulating station. The report must describe geological resources and hazards in the project area that might be directly or indirectly affected by the proposed action or that could place the proposed facilities at risk, the potential effects of those hazards on the facility, and the methods proposed to reduce the effects or risks. For natural gas storage projects that involve commercially sensitive cavern designs, the sensitive design information should be filed separately as "Privileged and Confidential." However, the applicant should also file a "Public" version of Resource Report 6 to allow Commission staff to accurately describe geologic conditions, potential project impacts, and proposed mitigation in the NEPA document.

4.6.1 Geologic Setting

Describe the physiographic provinces and sub-provinces and the topography of the project area, including any distinguishing landforms. Describe relative relief with ranges in feet and elevations relative to mean sea level identified from USGS quadrangle maps. If the application includes many pipeline segments in a wide variety of geologic settings, a table may be useful in presenting these data. You should also describe the surficial geology and bedrock geology that would be within the area affected by the project (e.g., by trench excavation, foundation work, storage field development, or HDD). This summary should identify the milepost locations where the bedrock is likely to be near (less than 5 feet below) the surface.

If you propose a storage field, describe the bedrock stratigraphy of the area, including the depth and thickness of the storage formation as well as the overlying cap rock. Also discuss well/lithologic logs and address the design of the wells, including borehole diameters, and the number, length, and type of well casings to be used. Address the ability of the cap rock to contain the storage gas at full operating pressures, to prevent the fracturing of bedrock/subformations, and to prevent the migration of gas out of the storage formation. If you propose salt solution mining to create the storage caverns, provide information regarding the size and dimension of the caverns, cap rock integrity, water appropriation, brine handling, and disposal plans.

4.6.2 Blasting

List any applicable federal, state, and local blasting regulations, including the responsible agency and necessary permits. Summarize the requirements of the regulations and verify that you would conduct blasting in accordance with applicable regulations. State and local fire marshals can usually provide information and guidelines regarding blasting regulations.

Identify by facility and milepost all locations where blasting may be required using sources such as surficial geologic maps, Soil Survey Geographic Database (SSURGO) data or NRCS soil surveys, and field surveys. Discuss the peak particle velocities expected and analyze potential impacts on all wells within 150 feet of proposed construction areas including water, oil and gas, observation, and monitoring wells, and on springs, wetlands, slopes, structures, historic properties, and adjacent pipelines. Include a blasting plan that describes the mitigation measures that would be used to monitor and control adverse impacts, including the handling of explosives and measures to minimize the magnitude of the charges, vibrations, and flyrock. Also discuss measures that address safety concerns. Specifically describe the procedures for pre- and post-blast inspections of structures. Additionally, describe the procedures for pre- and post-blast inspections/monitoring of wells within 150 feet of proposed construction areas or provide a cross-reference to where this information is provided in Resource Report 2, if applicable. Include specifications for monitoring vibration and for testing well yield and water quality to be done before, during, or after blasting. Identify measures that you

would take to rectify any damage caused by blasting, such as replacing or repairing damaged water supplies or structures.

4.6.3 Mineral Resources

Describe mineral resources currently exploited or potentially exploitable in the project area. Examples of information that may be used to identify surface and subsurface mines or oil and gas fields on or within about 0.25 mile of the construction right-of-way include aerial photographs, USGS topographic maps, mineral resource maps and listings; and other published information, field surveys, and consultation with the gas company, property owners, and state and local agencies. Prepare a table that identifies by milepost all active, inactive, and planned mining operations crossed by (or adjacent to) the pipeline or directly affected by associated facilities (see example table 4.6.3-1). Specify the sources used to identify these areas. If any active surface mines or land that is leased for future surface mining would be crossed, include the name, address, and phone number of the owner/operator, which could be filed as Privileged and Confidential, and describe any negotiations that you have undertaken or will undertake to secure the pipeline right-of-way through the mines. Describe the buffer zone between the proposed construction areas and current and future mine areas. Identify any landowner or operator concerns about the proposed facilities and identify the proposed measures to address these concerns. State whether a route alternative will be required. Also address the potential for the project to hinder mine reclamation or expansion efforts.

TABLE 4.6.3-1

Mineral Resources in the Vicinity of the Pipelines

Facility	Approximate Milepost	County, State	Mineral Resource	Distance/Direction from Construction Work Area (feet)
Mainline				
Loop A				
Loop B				

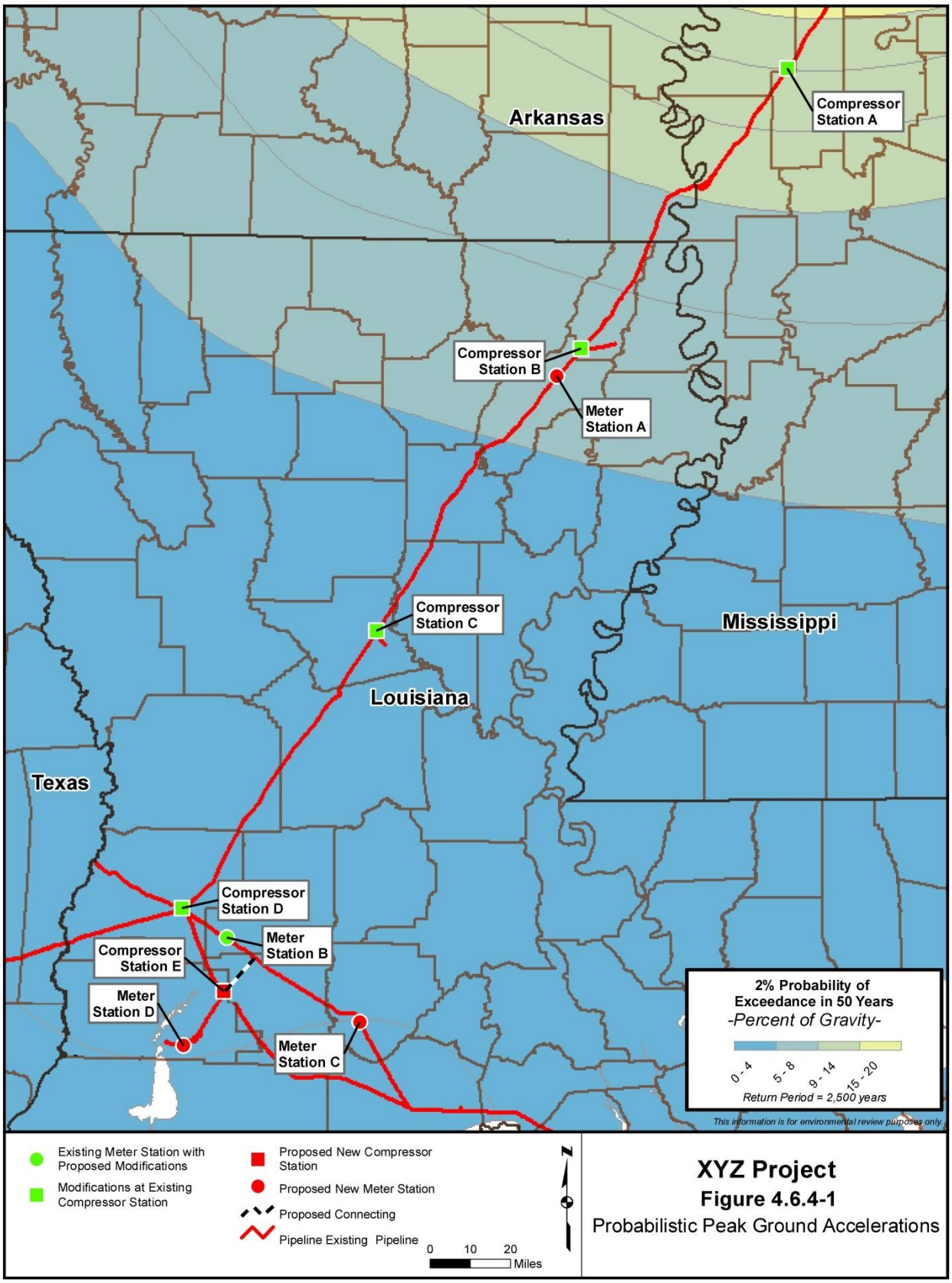
Specify methods to prevent project-induced contamination from surface mines or from mine tailings along the right-of-way. If runoff from the mine tailings is a potential hazard, describe the hazard and specific methods that you would use to control the problem.

4.6.4 Geologic and Other Natural Hazards

Potential geologic hazards include earthquakes, active faults, growth faults, areas susceptible to soil liquefaction, areas susceptible to landsliding or slumping, and ground subsidence due to karst terrain, fluid extraction (water or hydrocarbons), earthquakes, and underground mining. Other natural hazards include volcanism, extreme winds and flooding (including scour effects) associated with hurricanes, flashfloods, storm surge, tsunami, or sea level rise due to climate change. Identify by milepost and describe the geologic hazards and concerns that exist or have the potential to develop in or near the project area. Use sources such as bedrock, surficial, and structural geologic maps; contacts with the USGS, state geologic surveys, and local sources; LiDAR analysis; comprehensive plans and other published information; aerial photographs; or field surveys. Provide topographic maps showing locations of the various geologic hazards with respect to the proposed pipeline or aboveground structures. Include the criteria and sources of information used to identify these areas. Describe the impact that the geologic hazard could have on the construction and operation of the facility. Describe how you would site or design the project to avoid or minimize the effects from the identified hazards. Identify areas that you recommend for slope remediation prior to pipeline installation. Include all geotechnical investigations and any past experience with slope instability in the project area. Describe in detail any monitoring that you would conduct before, during, and after constructing the pipeline and associated facilities, including any proposed slope stability monitoring and any use of slope retention devices such as rock bolts, retaining walls, or nets.

Discuss the seismic risk across the project area. Identify the site seismicity areas for potential soil liquefaction, and areas for potential surficial fault rupture for all pipeline and aboveground facilities. Consult state and USGS seismicity maps for these data (see example shown on figure 4.6.4-1). Identify past and recent seismic events, and characterize the potential ground shaking from future earthquakes using the USGS seismic hazard mapping model or other models that allow for the calculation of peak ground acceleration for various return periods, including 10 percent (top) and 2 percent (bottom) probabilities of exceedance in 50 years, and for specific locations for soft rock site conditions.[32] For LNG facilities, use the same return periods to also provide the peak ground acceleration and spectral accelerations values for 0.2 and 1.0 second periods for site soil conditions based on the site-specific hazard study. If structures and pipelines would cross faults, identify the locations of the faults on site plans and perform a subsurface investigation to characterize the age of the fault movement. Consult Volume II of this manual for additional guidance related to LNG facilities.

[32] Examples of soft rock include sand, silt, clay, typically soft alluvial sediments, or dredge fill. Hard rock includes well lithified bedrock, sandstone, shale, or igneous or metamorphic rocks such as basalt, granite, or schist.


Arkansas
Compressor Station A
Compressor Station B
Meter Station A
Compressor Station C
Mississippi
Louisiana
Texas
Compressor Station D
Meter Station B
Compressor Station E
Meter Station D
Meter Station C
2% Probability of Exceedance in 50 Years
-Percent of Gravity-
0 - 4
5 - 8
9 - 14
15 - 20
Return Period = 2,500 years
This information is for environmental review purposes only.
Existing Meter Station with Proposed Modifications
Modifications at Existing Compressor Station
Proposed New Compressor Station
Proposed New Meter Station
Proposed Connecting Pipeline
Existing Pipeline
0 10 20
Miles
N
XYZ Project
Figure 4.6.4-1
Probabilistic Peak Ground Accelerations

4.6.4.1 Landslides

Identify by milepost areas susceptible to slope failures including any areas along an existing pipeline system where landslides have previously occurred. Site-specific information should be obtained from state or county geologic publications, USGS topographic maps, LiDAR analysis, and field reconnaissance. A site-specific investigation by an independent geotechnical consultant may prove necessary on a case-by-case basis to identify slope instability hazard areas. Where there are recommendations by the independent geotechnical consultant, you should make clear which ones you agree to adopt. For aboveground facilities, describe the slope conditions surrounding each facility and identify any nearby, upslope springs or seeps bordering the facility. Include maps showing the locations of landslide susceptibility and provide copies of any specific studies conducted to identify these areas. Rank the relative hazard of each area in terms of its potential to damage the pipeline or aboveground facilities and identify proposed measures to monitor conditions and/or minimize risks, including use of non-native backfill, slope and trench breakers, groundwater interceptor drains, and other measures to stabilize the slopes or divert water away from the right-of-way. In areas where slope instability may affect the pipeline or facility, identify the location, length, and angle of the slope. In areas of known or suspected bedrock controlled landslides, provide the expected strike and dip of the bedrock with respect to the slope face and anticipated depth of the slide surface. Describe the methods that you would use to mitigate, backfill, and restore these areas; the material you would use as backfill; and any special measures that you would employ to stabilize these slopes prior to revegetation.

4.6.4.2 Karst

In areas where karst terrain is present, and ground subsidence is a potential hazard, include maps showing the locations of karst and provide a table showing the locations and types of karst terrain present by milepost or facility. Identify the sources used to determine the locations of karst terrain. If areas of moderate to high potential for karst are crossed, submit a report that includes the results of any desktop assessments, lineament/fracture trace and LiDAR analysis, field reconnaissance, and site surveys. Include results of geophysical investigations that you conducted. Rank the relative hazard of each area in terms of its potential to damage the pipeline or aboveground facilities and describe measures that you would use to mitigate karst risks. Also describe the catchment basins that contribute to major springs in karst areas.

4.6.4.3 Flooding and Scour

Evaluate the potential for flash flooding or scouring that could expose the pipeline or affect aboveground facilities. Identify where this may occur and describe measures to protect the facilities from flood or scour damage. If the potential for deep scouring exists, provide a study that models the possible effects and identifies mitigation to counter these effects. In coastal areas, discuss the potential for storm surge impacts

associated with hurricanes and other high energy storms and identify measures such as increased burial depth, armoring, protective berms, and the like that you would employ to protect the pipeline and aboveground facilities from these effects. For aboveground facilities, identify existing site elevations and whether the facilities would be in a 100-year or 500-year Federal Emergency Management Agency floodplain. If within a floodplain, also, provide elevations for water both while still and with wind and wave effects during the 100- and 500-year return period floods for the site. Indicate the planned elevations following construction, evaluate the effect of the facility in reducing flood storage (if within a floodplain), and discuss proposed measures to reduce potential storm surge or flooding impacts. Additionally, assess the proposed design in the context of climate change and anticipated sea level rise or storm surge flooding. Specifically, describe the predicted rise in sea levels or flood elevations at the site, evaluate the associated risk to the facility, and discuss the measures that you incorporated into the design to mitigate for higher sea or flood levels. In addition, for LNG facilities and any aboveground facilities that could be affected by a tsunami, provide the estimated inundation elevation levels for the Design Tsunami used to evaluate the potential risk and develop the site design.

4.6.5 LNG Facilities in Seismic Risk Areas

If the application involves an LNG facility, you will need to prepare a site-specific seismic hazard report on earthquake hazards along with engineering specifically for the LNG facility portion of the project. See Volume II of this guidance manual for additional information.

4.6.6 Paleontology

If the project is in an area known to contain sensitive paleontological resources (either based on published information, field surveys, or stakeholder comments), or if requested by applicable land managing agencies, you should address these issues and conduct appropriate paleontological studies, where appropriate. You should also address paleontology if the project crosses federal lands or lands managed by other land-managing agencies that require paleontological studies as part of the review process to grant rights-of-way. Summarize the results of any desktop reviews, field investigations, and agency consultations related to paleontological resources and provide references for any identified paleontological resources. Describe proposed measures to avoid or minimize impacts, and provide an unanticipated discovery plan, developed in coordination with the appropriate agency, that you would implement in the event of a discovery of paleontological resources during construction.

4.6.7 Geotechnical Investigations

If the project involves one or more HDDs, an LNG facility, storage field, or compressor station with known geologic hazards, provide additional details regarding the

geological conditions along the drill path or at the storage field, compressor station, or LNG facility. We would use these additional details to prepare the environmental document. Consult Volume II of this manual for additional guidance related to geotechnical investigations for LNG facilities. The additional details for HDDs may include, but are not limited to:

- geotechnical logs for test borings conducted along the planned drill path;
- a description of the subsurface lithology along the drill path including the results of standard penetration tests, and bedrock coring including core recovery and rock quality designation results for each core run;
- an HDD feasibility study conducted by a qualified contractor to evaluate the potential for a successful drill and inadvertent releases of drilling fluids; and
- cross section/profiles which depict the pipeline alignment depth, each geotechnical boring results (lithology, standard penetration tests, core recovery, and rock quality designation values), and the top of the zone of saturation (water table).

Provide copies of geotechnical investigations that have been conducted and summarize the results of these studies. If you plan to conduct future geotechnical investigations, identify the types of studies planned and indicate when you will complete them and provide them to the Commission. Provide any proposed ground improvement and type of foundation including details of deep foundations if used e.g., proposed pile type and their depth.

For each HDD, describe any subsurface conditions identified by geotechnical investigations that may increase the risk of drill complications (e.g., unplanned inadvertent returns, drill hole collapse, contamination) and describe the measures that would be implemented to minimize these risks. Describe the criteria for identifying a drill failure, discuss how the drill hole would be abandoned and plugged in the event of such a failure, and identify applicable state regulations or requirements. For salt dome storage projects, describe pre- and post-construction geologic conditions within the salt dome and the proposed method for mining and disposing of the salt. If brine disposal would include reinjection of the brine, describe the geologic conditions of the layers that would receive the brine and the separation of these layers from aquifers. Also describe how aquifers would be isolated from the brine and protected from brine migration. Include studies conducted to support these conclusions.

4.7 RESOURCE REPORT 7 – SOILS

INFORMATION OFTEN MISSING AND RESULTING IN DATA REQUESTS		
INFORMATION		POTENTIAL DATA SOURCES [a]
☐	If the applicant generally proposes to adopt the Federal Energy Regulatory Commission staff's *Upland Erosion Control, Revegetation, and Maintenance Plan* except at certain locations, identify on a site-specific basis locations where alternative measures are proposed, and describe the alternative measures that will ensure an equal or greater level of protection.	D
☐	Identify invasive species and/or noxious weeds that occur in the area and measure to prevent the introduction and/or spread of these species (if not addressed in Resource Report 3).	D, W
☐	Provide documentation of consultation with the U.S. Department of Agriculture's Natural Resources Conservation Service or other applicable agencies regarding seed mixes, erosion control, and invasive species/noxious weeds.	D, W, CC
[a]	D Applicant W Natural Resources Conservation Service CC Soil authorities other than Natural Resources Conservation Service	

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Resource Report 7 is required for all applications except those not involving soil disturbance. It must describe the soils that would be affected by the proposed project, the effect on those soils, and measures proposed to avoid or minimize impact. The report should identify the resources used to assess the impact of construction on soils. It should summarize findings in tabular and text form.

4.7.1 Pipeline

Use SSURGO data or NRCS county soil surveys to identify the soils that would be affected by the pipeline installation and operation. Appropriate land management or other soil management agencies may also have information. If published soil surveys are unavailable, substitute the best available soils data. Generally, unpublished soils information can be obtained by providing the county NRCS office with maps of the facilities (check the NRCS website or consult with the appropriate NRCS state offices to determine the names and phone numbers of the appropriate NRCS districts in the project

area). Other sources of information include state and county soil maps and other environmental reports in the same general area.

Include a table that lists the physical and interpretive characteristics of each map unit. To support your analysis of soil impacts, we recommend that you include the map unit symbol and unit name, component name and percentage of unit, percent slope, surface texture, drainage class, permeability, coarse fragment content and depth to bedrock, taxonomic classification, parent material, landform(s), and any other relevant attributes. We recommend that you summarize the above information as shown in example table 4.7.1-1.

The regulatory filing requirements for Resource Report 7 do not specifically address offshore pipelines; however, projects involving offshore pipelines have become more common in recent years. For such projects, we recommend that you describe by segment and milepost the physical and chemical characteristics of the sediments that would be disturbed. Specify the data sources used, including any vibracoring or other field sampling that you conducted.

4.7.2 Aboveground Facilities

Use photo-based detailed soil unit maps published by SSURGO or other sources to identify and describe the soils at each aboveground facility site. At a minimum, provide this information for sites greater than 5 acres as required by section 380.12(i)(2). However, we recommend that you provide the information for sites greater than 0.5 acre to assist us in conducting our environmental review. You must include the following:

- a list of the soil series within the property and the percentage of the property composed of each series;
- a list of the percentage of each series that could be permanently disturbed;
- a description of the characteristic of each soil series; and
- an indication of which are classified as prime or unique farmland by the NRCS.

It may be helpful to provide a plot plan showing the area of each soil unit within the boundaries of the site.

TABLE 4.7.1-1

Selected Physical and Interpretive Characteristics of the Soil Map Units Within the Project Area

County/Map Unit Symbol	Map Unit Name	Component Name	Component Percent	Percent Slope		Surface Texture [a]	Drainage Class [b]	Permea-bility [c]	Taxonomic Classification	Parent Material	Landforms
				Low	High						
County A											
2015	Williams-Bowbells loams, 3 to 6 percent slopes	Williams	xx%	x	y	L	W	M	Fine-loamy, mixed, superactive, frigid Typic Argiustolls	Fine-loamy till	Rises/Till Plains
		Bowbells	xx%	x	y	L	MW	M	Fine-loamy, mixed, superactive, frigid Pachic Argiustolls	Fine-loamy till	Rises/Till Plains
2032	Williams-Zahl loams, 6 to 9 percent slopes	Williams	xx%	x	y	L	W	M	Fine-loamy, mixed, superactive, frigid Typic Argiustolls	Fine-loamy till	Knolls/Till Plains
County B											

[a] Surface textures include: silty clay (SIC), clay loam (CL), silty clay loam (SICL), silt loam (SIL), loam (L), fine sandy loam (FSL), sandy loam (SL), gravelly sandy loam (GR-SL), loamy fine sand (LFS), and extremely gravelly loamy coarse sand (GRX-LCOS).

[b] Drainage classes include: very poorly (VP), poorly (P), somewhat poorly (SP), moderately well (MW), well (W), somewhat excessively (SE), and excessively (E) drained.

[c] Permeability rates include: very rapid (VR), rapid (R), moderately rapid (MR), moderate (M), moderately slow (MS), and slow (S).

4.7.3 Impacts of Project Construction and Operation

Pipelines

In tabular format, identify and list by segment the mileposts and crossing lengths of each soil unit that would be crossed (see example table 4.7.3-1). For each unit on the table, indicate whether it is prime or unique farmland, or farmland of statewide importance. Also identify for each soil unit whether it:

- has highly erodible soils due to water and/or wind;
- is prone to soil compaction and damage to soil structure;
- has poor revegetation potential;
- has potential for the introduction of stones or rock into the topsoil; and
- is prone to other types of impacts (if so, specify each impact).

Describe the impact on soils and identify soil hazards.

Some factors that should be considered in determining where there is a severe hazard of erosion include: the capability classification of the soil; slope; runoff factor; permeability; soil texture; and erodibility. The analysis of soil erosion potential should also take into account the proposed season of construction, as well as seasonal weather patterns in the project area that might increase the potential for erosion (e.g., monsoon season in the southwest or hurricane season in southeastern coastal areas).

The potential for soil compaction is affected by several factors. Some factors that should be considered in determining the areas that are most prone to compaction include the capability classification of the soil, soil hydrology, soil texture, soil drainage, season of construction, flooding frequency and duration, permeability, and the presence and duration of a seasonally high water table.

Rock can be introduced into the topsoil during various construction activities, especially blasting and trenching. Some factors that should be considered in determining where the introduction of rock into the topsoil is likely to be a problem include the capability classification of the soil, depth to bedrock relative to trench depth, the need for blasting versus ripping of bedrock, and the percent of coarse fragments in the soil within the trench depth.

Poor revegetation can result from numerous causes. Some factors that should be considered in determining where there is a potential for poor revegetation include capability classification of the soil; topsoil quality; available water capacity; salinity; acidity; and the potential for the project to affect existing soil drainage (including drainage systems).

TABLE 4.7.3-1

Soil Characteristics by Milepost Segment for Each Soil Map Unit Along the Proposed Pipeline Route

Milepost		Map Unit Symbol	Component Name	Component Percent	Crossing Length (miles)	Prime Farmland [a] (Y/N)	Hydric Soils [a] (Y/N)	Compaction Prone [b] (Y/N)	Highly Erodible		Revegetation Concerns [e] (Y/N)	Stony/ Rocky [f] (Y/N)	Shallow to Bedrock [g] (Y/N)
Begin	End								Water [c] (Y/N)	Wind [d] (Y/N)			
County A													
County B													

[a] As designated by the NRCS.

[b] Includes soils that have clay loam or finer textures in somewhat poor, poor, and very poor drainage classes.

[c] Includes land in capability subclasses 4E through 8E and soils with an average slope greater than or equal to 9 percent.

[d] Includes soils with Wind Erodibility Group classification of one or two.

[e] Includes coarse-textured soils (sandy loams and coarser) that are moderately well to excessively drained and soils with an average slope greater than or equal to 9 percent.

[f] Includes soils that have either: 1) a very gravelly, extremely gravelly, cobbley, stony, bouldery, flaggy, or channery modifier to the textural class, or 2) have >5 percent (weight basis) of rock fragments larger than 3 inches in any layer within the profile.

[g] Includes soils that have bedrock within 60 inches of the soil surface. Paralithic refers to "soft" bedrock that will not likely require blasting during construction. Lithic refers to "hard" bedrock that may require blasting or other special construction techniques during installation of the proposed pipeline segments.

Note: Y = Yes; N = No

We recommend that you summarize the acres of each impact by facility and county as shown in example table 4.7.3-2.

TABLE 4.7.3-2

Acres of Soil Characteristics Affected by the Proposed Pipeline [a,b,c]

Facility/County	Total Acres in County	Prime Farmland [d]	Hydric Soils [d]	Compaction Prone [e]	Highly Erodible		Revegetation Concerns [h]	Stony/ Rocky [i]	Shallow to Bedrock [j]
					Water [f]	Wind [g]			
Mainline									
County A									
County B									
Loop A									
County C									
County D									
Total									

[a] The area affected includes the permanent pipeline right-of-way, temporary pipeline right-of-way, and additional temporary workspace. The soils data in the table does not include areas of open water.

[b] The numbers in this table have been rounded for presentation purposes.

[c] The values in each row do not add up to the total acreage for each county because soils may occur in more than one characteristic class or may not occur in any class listed in the table.

[d] As designated by the NRCS. Prime farmland does not include those soils that are considered prime if artificial drainage is implemented due to the lack of drain tile use in the project area.

[e] Includes soils in somewhat poor to very poor drainage classes with surface textures of sandy clay loam and finer.

[f] Land in capability subclasses 4E through 8E and soils with an average slope greater than or equal to 9 percent.

[g] Soils with a wind erodibility group (WEG) classification of 1 or 2. Only a single map unit with WEG 2 designation is crossed by the route.

[h] Soils with a surface texture of sandy loam or coarser that are moderately well to excessively drained, and soils with an average slope greater than or equal to 9 percent.

[i] This group includes soils with a cobbley, stony, bouldery, shaly, very gravelly, or extremely gravelly modifier to the textural class of the surface layer, with a surface layer that contains greater than 5 percent by weight stones larger than 3 inches, and/or with a layer in the subsoil that meets one of the preceding criteria.

[j] Soils identified as containing bedrock at a depth of 5 feet or less from the surface, all of which is paralithic and rippable with standard construction equipment.

Aboveground Facilities

Discuss any soil attributes that may be pertinent to impacts including erodibility, compaction potential, poor revegetation potential, or rock. Quantify the acres of each soil impact with the temporary and permanent footprint of the facility. Indicate which soils on the site are classified as prime farmland, unique farmland, and/or farmland of statewide importance, specify whether these soils are currently being used for agricultural purposes, and specify the acreage of prime farmland, unique farmland, and/or farmland of statewide importance that would be temporarily and permanently disturbed on each site by construction and operation of the facility. Any soils within the fence line of the site should be considered to be precluded from future agricultural use and therefore permanently disturbed.

4.7.4 Consultations

You should describe consultations with the local soil conservation authorities and recommendations for seed mixes, seeding dates, application rates for fertilizer and lime, erosion controls, and noxious weed controls.

Include copies of Erosion and Sedimentation Control Plans, Agricultural Impact Mitigation Agreements, and other plans required or recommended by government land management agencies. Also specify special restoration and seeding requirements of government land management agencies.

4.7.5 Mitigation

You must provide a copy of the erosion and sediment control and revegetation plan that you would use to construct and operate the facilities. Include a statement that you propose to adopt the measures contained in our *Plan*, or specify each measure of the *Plan* that is not recommended or is unnecessary for the project and indicate the alternative measure(s) that you would implement for each. For any alternative measures proposed, discuss how they would provide a level of protection to the soil equal to or better than our *Plan*. Provide a cross reference to this discussion if it is in another resource report.

You must describe the proposed measures to reduce impact on soils. Discuss proposed temporary and permanent erosion and sediment controls such as trench breakers, slope breakers, use of silt fence and straw mulch; topsoil segregation methods such as ditch and spoil side, full right-of-way, or ditch only; measures to avoid compaction such as avoiding working when the soils are excessively wet; measures to restore compacted or rutted soils, particularly in cropland and residential areas; measures to prevent or minimize the introduction of excess rock and/or to remove excess rock from soils; measures to improve soil fertility or structure; and measures for the identification, marking, and repair of damaged agricultural irrigation systems and drain tiles. For those projects that would affect highly wind-erodible soils, include measures to reduce wind erosion during construction and restoration, measures to prevent the loss of soil from spoil piles, and measures to prevent the mixing of topsoil and subsoil while stored in piles. Also identify measures to control and minimize the spread of invasive species, noxious weeds, and soil pests (or cross-reference to the appropriate section of Resource Report 3 if invasive species or noxious weeds are discussed in that resource report).

If there is a potential for encountering contaminated soils (see section 4.2.2.1 for further discussion about the characterization of contaminated sediments), discuss the procedures that you would follow to identify, handle, temporarily store, and properly dispose of these soils, including dewatering, any additional on-site characterization that you would perform, and precautions for minimizing the exposure of workers and the public. Include any plans developed in consultation with other agencies for handling, treatment, and/or proper disposal of contaminated soils. If contaminated soils are addressed in Resource Report 8, provide the appropriate cross reference.

4.8 RESOURCE REPORT 8 – LAND USE, RECREATION AND AESTHETICS

INFORMATION OFTEN MISSING AND RESULTING IN DATA REQUESTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ Identify all buildings within 50 feet of the construction right-of-way or extra work areas.	A
☐ Describe the management and use of all public lands that would be crossed.	B
☐ Provide a list of landowners by milepost or tract number that corresponds to information on alignment sheets.	I
☐ Provide a site-specific construction plan for residences within 25 feet of construction or as requested by Federal Energy Regulatory Commission staff.	D

[a] A Aerial Photographs; B Agency Consultation; D Applicant; I County/Municipal Agencies

This guidance manual does not change or substitute for any law, regulation, or any other legally binding requirement. Where practical, we have distinguished between legal obligations and Commission staff's interpretations or recommendations. We use mandatory language such as "required," "must," and "must not" to describe controlling requirements under statutes and regulations. We use non-mandatory language such as "recommend," "encourage," and "may" to describe Commission staff's recommendations that will help the Commission meet its obligations under NEPA. However, because clear distinctions are not always practical, a reader should consult the regulations directly to determine the information legally required in order to meet the filing requirements of 18 CFR 380.12.

Resource Report 8 is required for all applications except for those proposals involving only facilities of comparable use at existing compressor, meter, and regulating stations. This resource report addresses the use of all land that would be affected by construction and operation of the project. The report should characterize and quantify affected land; identify affected public lands and designated recreation or other special use areas; summarize consultations with federal, state, and applicable land management agencies; and discuss special construction techniques or other forms of mitigation that would be used to reduce impact during construction and operation of the facilities. In addition, the report should discuss potential visual impacts of constructing and operating the project, including the pipeline corridor and aboveground facilities, on designated scenic rivers, areas, or roads; on recreation areas and public lands; and on residential areas.

4.8.1 Land Use

For all land affected by construction and operation of the proposed facilities, characterize the land based on predominant land use type or vegetation cover type as applicable. You must quantify impacts on each land use type for each proposed facility. If you use digital land cover data sources (e.g., the Gap Analysis Projects or the National

Land Cover Database) to identify land use types, you should verify these data based on aerial photographs or field reconnaissance. If the land use is characterized by vegetation cover type, coordinate the classification of land use types with wetland impacts presented in Resource Report 2 and vegetation impacts described in Resource Report 3 to ensure consistency. Explain the reason for any differences. Include land affected by the pipeline right-of-way, the aboveground facilities (e.g., LNG facilities, compressor stations, meter stations, pig launchers/receivers, valves, storage wells, or other related facilities), ATWS, staging areas, and pipe or contractor yards. Clearly identify construction and operation impacts.

Land use types may vary depending on the specific project area and should be defined as appropriate.

Typical categories include:

- Agricultural Land – Cultivated or rotated cropland, orchards, vineyards, or hay fields;
- Forest/Woodland – wooded lands not being used for specific commercial purposes, consisting of deciduous and coniferous types, including but not limited to forested wetland areas and state forest lands;
- Silviculture – wooded lands being managed for forest products, e.g., pine plantations, sugar maple stands, or tree nurseries;
- Rangeland – Non-forested lands used primarily for grazing;
- Open Land – Non-forested lands and scrub-shrub wetlands used for open space or pasture;
- Residential Land – Residential yards, residential subdivisions, and planned new residential developments;
- Industrial/Commercial Land – Electric power or gas utility stations, manufacturing or industrial plants, landfills, mines, quarries, commercial or retail facilities, and roads; and
- Open Water – Water crossings greater than 100 feet.

4.8.1.1 Pipeline Facilities

Construction and Permanent Rights-of-Way

Clearly define each land use type as it applies to the project under consideration. Identify by milepost the existing land use types crossed by each pipeline segment and measure the length of each land use type crossed by the pipeline construction right-of-way. Provide a summary table showing the results by pipeline segment, county, and state (see example table 4.8.1-1). Ensure that the sum of the land use crossings for each pipeline segment equals the total length of that pipeline segment.

All pipelines and rights-of-way should also be shown on the USGS topographic maps, aerial photographs, or alignment sheets submitted with the application (see section 4.1.1.3 of this manual). Identify by milepost the area of direct effect of each proposed facility and operating site on special land uses. Also identify any public lands or special use areas within 0.25 mile of any proposed facility.

Use the proposed widths of the construction and permanent rights-of-way for each pipeline segment to quantify the acreage of land affected, separated by land use type. These widths should be consistent with the right-of-way configuration(s) presented in the right-of-way cross-section diagram(s) in Resource Report 1 or 8. Explain any deviations.

Where the construction right-of-way would be wider than 75 feet, justify the proposed width (e.g., topsoil segregation, steep side slope). Similarly if the permanent right-of-way would be wider than 50 feet to operate a new pipeline or more than 25 feet to operate a pipeline loop, justify the wider widths.

Table 4.8.1-2 is an example of a summary presentation of acreage affected by construction and operation of project facilities. Depending on the project, it may be appropriate to provide separate tables for different project components. For example, if the project involves numerous or large aboveground facilities, a separate land use table for each aboveground facility may present the information more clearly or allow a more suitable organization. Be sure to explain your calculations in accompanying text or in footnotes to the table. For example, a segment of a loop may depart from the existing right-of-way and require additional permanent right-of-way. The additional acreage affected by the construction and permanent rights-of-way must be included in the total land requirements section of Resource Report 1. Construction impacts should include all areas of disturbance, including contractor yards, access roads, ATWS, and the operating (permanent) right-of-way. Be sure to identify any land required for cathodic protection systems and to include it in the table.

TABLE 4.8.1-1

Land Uses Crossed by the Pipelines

Facility/ County, State	Agricultural [a]		Open Land [b]		Forest [c]		Pine Plantation		Developed [d]		Open Water [e]		Total	
	(mi)	(%)	(mi)	(%)	(mi)	(%)	(mi)	(%)	(mi)	(%)	(mi)	(%)	(mi)	(%)
Mainline														
County A, ST														
County B, ST														
County C, ST														
Subtotal														
Loop A														
County E, ST														
County F, ST														
Subtotal														
Loop B														
County G, ST														
County H, ST														
Subtotal														
TOTAL														

[a] Active cropland.
[b] Herbaceous upland, emergent and scrub-shrub wetland, golf course.
[c] Upland and wetland forest.
[d] Commercial/industrial and residential land.
[e] Water crossings greater than 100 feet wide.

TABLE 4.8.1-2

Land Uses Affected by Construction and Operation of the Project (in acres) [a,b]

	Agricultural		Open Land		Forest		Pine Plantation		Developed		Open Water		Total	
Facility/County, State	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
Pipeline Right-of-Way [c]														
County A, ST														
County B, ST														
County C, ST														
County D, ST														
Subtotal														
Additional Temporary Workspaces														
County A, ST														
County B, ST														
County C, ST														
County D, ST														
Subtotal														
Staging Areas														
Staging Area 1														
Staging Areas 2														
Staging Area 3														
Subtotal														
Other Work Areas														
Temporary Access Roads														
Permanent Access Roads														
Subtotal														
Aboveground Facilities														
Compressor Station														
Meter Station														
Block Valve [d]														
Subtotal														
PROJECT TOTAL														

[a] The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends in all cases.

[b] Construction and operation impacts are based on a xx-foot-wide construction right-of-way and a xx-foot-wide permanent right-of-way, respectively.

[c] Construction impacts include all impacts during construction, including those within the proposed permanent right-of-way.

[d] The block valve will be constructed within the xx-foot-wide construction right-of-way and operated within the xx-foot-wide permanent right-of-way. No additional land will be required for construction or operation of these facilities. However, operation of the block valve will result in a permanent conversion in land use from agricultural to developed land.

The text should further describe the land affected and identify the mitigation measures that you would use to reduce impacts from construction and operation of the pipeline, including but not limited to implementing our *Plan* and *Procedures*, if applicable. We provide examples below of additional information and mitigation measures typically included for each land use type. Adapt them as appropriate for project-specific conditions.

- Agricultural Land – Identify typical crops (e.g., corn, wheat, rice) and specialty crops (e.g., orchards, vineyards, hop fields, rice/crawfish fields). Identify by milepost and by length of crossing all specialty crops as well as organic farms and land subject to special techniques such as no-till farming. If organic farms would be affected, discuss how the project would affect compliance with and participation in the U.S. Department of Agriculture's National Organic Program. Mitigation of impacts on agricultural land or hay fields may include segregating topsoil or replacing drainage tiles or other structures. Describe the expected typical depth of topsoil segregation through agricultural lands and associated comments from any agencies consulted regarding construction and mitigation in agricultural land. Mitigation for specialty crops may include avoiding them by a route deviation, placing pipe along the edge of orchards and vineyards, reducing the width of the construction right-of-way, or replacing orchard trees or vines. State whether you would compensate landowners for crop loss due to construction activities and/or for reduced yields following construction, if applicable.

- Forest/Woodland – Identify by milepost and length of crossing all forested areas not categorized as silviculture, such as old growth forest, forested wetland areas, and state forest lands. Mitigation of impacts on forests or woodlands may include avoiding these areas by a route deviation, reducing the width of the construction right-of-way, or replanting.

- Silviculture – Identify type of silviculture practice(s) by milepost and length, including pine plantations, and forests used for timber, maple sugar, Christmas trees, or other forest production. Mitigation of impacts on silviculture may include avoiding these areas by a route deviation, reducing the width of the construction right-of-way, or replanting. State whether you would compensate landowners for crop loss, if applicable.

- Rangeland – Identify typical use of rangeland including the location by milepost of any sensitive lands (e.g., remnant prairie) or public land used for grazing allotments. Mitigation of impacts on rangeland may include segregating topsoil in arid lands, maintaining fencing or natural barriers along the construction right-of-way during construction, repairing

and replacing water supply lines and other structures, or fencing of the right-of-way until revegetation is complete (grazing deferment).

- Open Land – Identify typical use of affected open land (e.g., pasture, open space, herbaceous wetlands). Describe mitigation measures you would implement for each type of open space land use. Mitigation of impacts on managed pastures should include topsoil segregation in accordance with our *Plan;* see section 4.8.3.1 regarding conservation lands.

- Residential Land – Identify residential yards, residential subdivisions, and planned new residential developments. See section 4.8.2 for discussion of residences and residential land and associated mitigation.

- Industrial/Commercial Land – Identify typical use of the industrial or commercial land. Identify by milepost all commercial, industrial, or retail buildings that are within 50 feet of the construction right-of-way. Mitigation of impacts on industrial or commercial areas may include limiting the hours of construction or providing alternate access. Mitigation during construction across roads may include timing to avoid hours of peak use, providing alternate access, or boring under the road. Mitigation for impacts on other industrial land such as landfills, mines, or quarries should be discussed in Resource Report 6.

- Open Water – Waterbody crossings and associated mitigation should be discussed in detail in Resource Report 2 (see section 4.4.2.2 of this manual). Summarize them briefly here, and cross-reference to the appropriate sections of Resource Report 2. For offshore facilities, see additional discussion in section 4.8.3.5.

Existing Rights-of-Way

For all new pipeline right-of-way that would at least partially coincide with or be adjacent to existing utility rights-of-way (e.g., pipeline, power line, road), identify these shared locations by milepost, county, state, and type of right-of-way. Indicate whether these utility rights-of-way are held in easements or owned in fee. Also provide the width of each existing right-of-way if available, the portions of the width overlapped by the proposed pipeline's construction and new permanent rights-of-way, the position of the existing right-of-way in relation to the proposed pipeline right-of-way (e.g., east or west side), and the existing land use type. This information can be summarized as shown in example table 4.8.1-3. If applicable, also provide a cross-reference to the corresponding right-of-way cross section drawing(s) in this resource report or in Resource Report 1. In addition, provide either in the table or in text the status of negotiations to use the existing utility rights-of-way.

TABLE 4.8.1-3

Existing Rights-of-Way Adjacent to the Pipelines

Milepost Begin	Milepost End	County, State	Type of Right-of-Way	Position related to proposed pipeline	Width of Existing Right-of-Way (feet)	Width used for Construction Right-of-Way (feet)	Width Used for Permanent Right-of-Way (feet)
Mainline							
Loop A							

For looping pipeline, identify by beginning and ending milepost each location where the loop would leave the existing right-of-way. Also identify by beginning and ending milepost any locations where the loop would be more or less than 25 feet from the existing pipeline and explain any such deviation. This information can be summarized as shown in example table 4.8.1-4.

TABLE 4.8.1-4

Locations Where Loop Would Be More or Less than 25 Feet from the Existing Pipeline

County, State	Mileposts	Total Length (feet)	Maximum Distance between Existing Pipeline and Loop (feet)	Explanation
Loop A				
County A, ST				
County B, ST				
Loop B				
County C, ST				
County D, ST				

Additional Temporary Workspaces (ATWS) and Staging Areas

Identify by milepost and size all other ATWS or staging areas required in addition to the construction right-of-way. These may include ATWS or staging areas at crossings of roads, railroads, waterbodies, or wetlands; in areas of steep slope or where blasting is required; or at the beginning and end of a pipeline segment for contractor mobilization/demobilization. Identify the land use type for each ATWS or staging area. Typically, ATWS and staging areas are only affected during construction; however, if you would retain any of these areas for project operation, clearly identify those areas in the text, explain how they would be used during project operation, and include the

appropriate acreage in the operation impacts. Show all ATWS or staging areas on the alignment sheets and aerial photographs submitted with the application.

Calculate the acreage affected in these areas in excess of the typical construction right-of-way (i.e., do not double-count impacts). For example, a road crossing may require a total work area of 200 feet by 200 feet on each side of the road. If the typical construction right-of-way is 75 feet wide, the ATWS would be 125 feet by 200 feet (0.6 acre on each side of the road or a total of 1.2 acres for the crossing). These data can be summarized as shown in example table 4.8.1-5. The total acreage required for ATWS or staging areas for each pipeline segment must be included in the total land requirements section of Resource Report 1.

TABLE 4.8.1-5

Additional Temporary Workspaces or Staging Areas

Milepost	County, State	Reason Needed	Number of ATWS and Dimensions (feet)	Area (acres)	Existing Land Use
Mainline					
Subtotal					
Loop A					
Subtotal					
TOTAL					

Access Roads

Identify all temporary access roads that would be used to obtain access to the right-of-way during construction and all permanent access roads that would be retained for project operation. Include farm lanes, private drives, logging roads, jeep trails, or other roads. Indicate their current condition (e.g., graveled, paved, dirt) and state whether they would need to be modified or improved. Describe the types of modifications to be made at existing roads (e.g., widening, grading). Do not include existing interstate, state, county, or local roads unless they would need to be modified or improved for project use or if the road fords a stream or wetland. In the latter case, you should discuss how you would conduct the crossing and what measures you would implement to protect the stream or wetland. Also include new roads that you would create to obtain access to the right-of-way. Identify the location of each of these roads on USGS topographic maps, alignment sheets, and aerial photographs. If not visible on alignment sheets due to the

scale and distance, we recommend that you provide separate topographic maps that show the extent of the access roads from where they connect with the right-of-way to their intersection with an interstate, state, county, or local road. Specify the land use affected by the widening of existing roads or crossed by new access roads.

Identify the width of existing access roads after any proposed modifications as well as the length and width of new access roads. State whether you would leave the modifications or the new access roads after construction is complete and, if not, how you would restore the area. If any new permanent access roads would cross wetlands or waterbodies, describe how the roads would be constructed and maintained to avoid or minimize impacts on the feature crossed. The access road information can be summarized as shown in example table 4.8.1-6.

TABLE 4.8.1-6

Access Roads

Milepost or Facility	Access Road Name	County, State	Existing Land Use	Width x Length (feet)	Proposed Modification	Construction Requirements (acres)	Operation Requirements (acres)
Temporary Access Roads							
25.0	TAR-001	County, ST	Existing dirt field road	25 x 790	Add gravel, side trimming	0.5	0.0
42.5	TAR-002	County, ST	Agricultural land	25 x 1,200	Grade, add gravel	0.7	0.0
Permanent Access Roads							
32.4	PAR-001	County, ST	Open land	25 x 800	Grade, add gravel	0.5	0.5
51.7	PAR-002	County, ST	Existing dirt field road	25 x 1,000	Widen by 10 feet, add gravel	0.6	0.6

Pipe and Contractor Yards

Identify the location, size, and land use of all known pipe and contractor yards and show each yard on USGS topographic maps, alignment sheets, or aerial photographs. Include the distance and direction to the nearest pipeline milepost and the county and state in which each yard is located. Describe the extent of ground disturbance that would take place. Be sure to include total acreage requirements for all pipe and contractor yards in the land requirements section of Resource Report 1.

Estimate the number and size of any pipe and contractor yards if you have not yet determined them at the time you file the application. For example, a project consisting of three loops in three locations could be estimated to require three pipe/contractor yards of

approximately 5 acres each. Provide this estimated information as part of the initial filing and update it once you determine the location and size of each yard. Also complete the appropriate biological and culture resource surveys on these areas once they are known, and provide the results of those surveys.

4.8.1.2 Aboveground Facilities

Clearly show the location of each new or modified aboveground facility (e.g., LNG facility, compressor station, pig launcher/receiver, block valve, meter station, storage well) on USGS topographic maps, alignment sheets, and aerial photographs. Include mileposts for all facilities along the right-of-way.

Specify the amount of land required for all aboveground facilities, excluding those that would be entirely within the permanent pipeline right-of-way such as block valves or pig launchers/receivers, and state whether you presently own the land. If you plan to acquire the land, state whether the landowner is agreeable to the sale or lease of the property.

For each aboveground facility, identify the acreage of each land use type (e.g., agriculture, open land, forest, industrial) that would be affected by construction and operation. For aboveground facilities that would be entirely within the permanent right-of-way, identify those that would result in a permanent conversion in land use (for example, a block valve within the permanent right-of-way might permanently convert the land use from agricultural to developed land without increasing the total amount of land affected). If a large parcel of land is associated with a facility (e.g., a compressor station), identify the total size of the parcel. For land within this parcel that would not be directly or indirectly affected by construction and operation of the facility, you should identify the land use type (e.g., agriculture, open space) of that unaffected land during operation. For a compressor station site, identify how much land surrounding the site would be held as a buffer and what the land use would be for the buffer following construction.

Land use affected by aboveground facilities can be summarized as shown in example table 4.8.1-2 above. Additionally, be sure to include the total acreage of land disturbed for each aboveground facility in the land requirements section of Resource Report 1.

4.8.1.3 Facility Abandonment/Replacement

Describe the approximate age of pipeline that you propose to abandon, and identify by milepost the segments that would be abandoned in place and the segments that would be removed and why you chose the particular method. Also describe any segments that would be abandoned by sale (i.e., being sold to another entity for use either as a continued natural gas pipeline or for transport of other materials, or for salvage). If applicable, it would be helpful to cross-reference to the section of Resource Report 1 that

describes any nonjurisdictional activities or facilities associated with abandonment by sale.

Identify by milepost the locations that would be disturbed to remove, cut, or cap the pipe. Also, discuss the feasibility of removing segments of the abandoned pipeline at waterbodies, wetlands, and residential areas. In residential areas, consult with the landowners to determine whether they prefer removal or abandonment in place. Explain whether the right-of-way easement would revert to the landowner or continue to be maintained by the applicant.

For pipelines that would be removed and replaced, specify whether the replacement pipeline would be placed in the same trench as the abandoned pipeline. If not, explain why and describe the sequence of removal and replacement activities.

For aboveground facilities (e.g., block valves, compressors, buildings, tanks), describe how the facilities and other structures on the site would be abandoned or removed and how the disturbed areas would be restored to previous land use. If there are hazardous materials at the site, discuss how these would be handled and disposed of.

For all facilities that would be abandoned or replaced, quantify the amount and type of land use affected. Indicate whether you anticipate that facilities to be abandoned or replaced may contain asbestos. If so, describe the protocols for testing, treatment, and disposal, and identify applicable regulations regarding removal and disposal of these materials. Also see section 4.12 of this manual regarding Resource Report 12, which addresses requirements related to potential PCB contamination.

4.8.2 Residential Areas

4.8.2.1 Planned Residential and Commercial Areas

Consult with county and local planning agencies to identify all planned residential or commercial/business developments and subdivisions that would be crossed by or within 0.25 mile of the construction right-of-way, ATWS, or staging area(s) (i.e., the construction work area). Planned development means any development that is included in a master plan or is on file with the local planning board or the county. For each planned residential or commercial/business development, provide the distance and direction from the project, status of permitting (i.e., whether approved or under review by the local municipality), the timeframe for development and start of construction, and your proposed coordination with the developer or other appropriate parties to avoid impact on plotted land parcels. Mitigation measures may include avoiding a planned development by a route deviation, placing the pipeline along property lines, or purchasing lot(s).

4.8.2.2 Existing Residences and Buildings

You must identify by milepost each residence or building within 50 feet of the edge of the proposed construction work area. Provide the distance in feet between the

residence and the construction work area and the distance in feet between the residence and the pipeline centerline. Describe proposed measures to minimize construction impacts in residential areas. In addition to the measures identified in the filing requirements, we recommend that you include:

- how and when you would notify landowners of construction activities;
- how you would maintain access and traffic flow during construction activities, particularly for emergency vehicles;
- how you would minimize the hazard of open trenches when construction activities are not in progress;
- how you would minimize noise impacts on the residents (e.g., limiting speeds and hours of construction); and
- how you would minimize fugitive dust from construction activities (this can be a brief summary, with a cross reference to the appropriate section of Resource Report 9).

In addition, you should adopt the mitigation measures below, or discuss why they are not necessary, for all residences within 50 feet of the construction work area:

- Do not remove mature trees and landscaping from within the edge of the construction work area unless necessary to safely operate construction equipment or as specified in landowner agreements.
- Restore all lawn areas and landscaping within the construction work area immediately after cleanup operations, or as specified in landowner agreements, consistent with the requirements of the *Plan*.
- Install safety fence along the edge of the construction work area adjacent to the residence for a distance of 100 feet on either side of the residence to ensure that construction equipment and materials, including the spoil pile, remain within the construction work area.
- Maintain fencing, at a minimum, throughout active construction in the area.
- Maintain a minimum of 25 feet between the residence and the construction work area for a distance of 100 feet on either side of the residence (i.e., reduce the construction work area as necessary to maintain the minimum distance).

If you cannot maintain a minimum of 25 feet between a residence and the construction work area, or if a residence is within the construction work area, you should include a site-specific plan. In some cases, we may request additional site-specific residential construction plans for residences farther from the construction area. Each site-specific plan should describe the construction techniques to be used (e.g., reduced

pipeline separation, centerline adjustment, use of stove-pipe or drag-section techniques, working over existing pipelines, pipeline crossover, bore) and include a dimensional site plan showing, at a minimum, the location and distance of the residence in relation to:

- the new pipeline and, where appropriate, the existing pipelines or other utilities;
- the boundaries of the construction work areas;
- the edge of the new permanent right-of-way; and
- other nearby residences, structures, roads, wetlands, waterbodies, or residential features (e.g., specimen trees, gardens, decks, pools, swing sets, fences, driveways).

We also recommend that you describe, either in text or in the site-specific plan, whether you would remove any existing structures (e.g., fences, outbuildings, stone walls) during construction, and if so, whether you would replace or relocate them.

If the pipeline centerline would be within 25 feet of a residence, explain how you would ensure that the trench is not excavated until the pipe is ready for installation and that the trench is backfilled immediately after pipe installation. If the construction work area is within 10 feet of a residence, provide evidence of landowner concurrence unless the construction work area is part of the existing maintained right-of-way.

Table 4.8.2-1 is an example of a listing of residences within 50 feet of the construction work area and identified mitigation techniques. Figure 4.8.2-1 is an example of a site-specific plan. If the proposed mitigation for residences within 50 feet of the construction work area would not include the measures listed above, then identify alternative mitigation that would provide an equal level of protection from construction disturbance.

TABLE 4.8.2-1

Residences Within 50 Feet of Construction Work Area and Proposed Mitigation

Milepost	County, State	Distance from Construction Work Area (feet)	Distance from Pipeline Centerline (feet)	Proposed Mitigation
Mainline				
Loop A				

NOTES:

1. XYZ GAS PIPELINE COMPANY, LLC (XYZ) HAS PREPARED THIS RESIDENTIAL CONSTRUCTION PLAN TO INCLUDE DIMENSIONED SITE PLANS FOR EACH RESIDENCE LOCATED WITHIN 50 FEET OF CONSTRUCTION WORK AREAS. THE SITE PLANS SHOW THE LOCATION OF EACH OF THESE RESIDENCES IN RELATION TO THE NEW PIPELINE AND CONSTRUCTION WORK AREAS PROPOSED FOR THE HILLABEE EXPANSION PROJECT.

2. OTHER KNOWN UTILITIES ARE ALSO DEPICTED ON THE SITE PLANS. PRIOR TO CONSTRUCTION, THE STATE ONE CALL CENTER WILL BE NOTIFIED TO VERIFY THE LOCATION OF THESE UTILITIES AND IDENTIFY ANY UNKNOWN UTILITIES WHICH MIGHT EXIST WITHIN THE CONSTRUCTION RIGHT OF WAY. XYZ WILL ALSO CONTACT INDIVIDUAL PROPERTY OWNER(S) TO IDENTIFY AND LOCATE ANY OTHER UTILITIES THAT MIGHT EXIST WITHIN THE CONSTRUCTION RIGHT OF WAY. THESE UTILITIES WILL BE IDENTIFIED AND MARKED BY THE RESPECTIVE UTILITY COMPANIES PRIOR TO CONSTRUCTION.

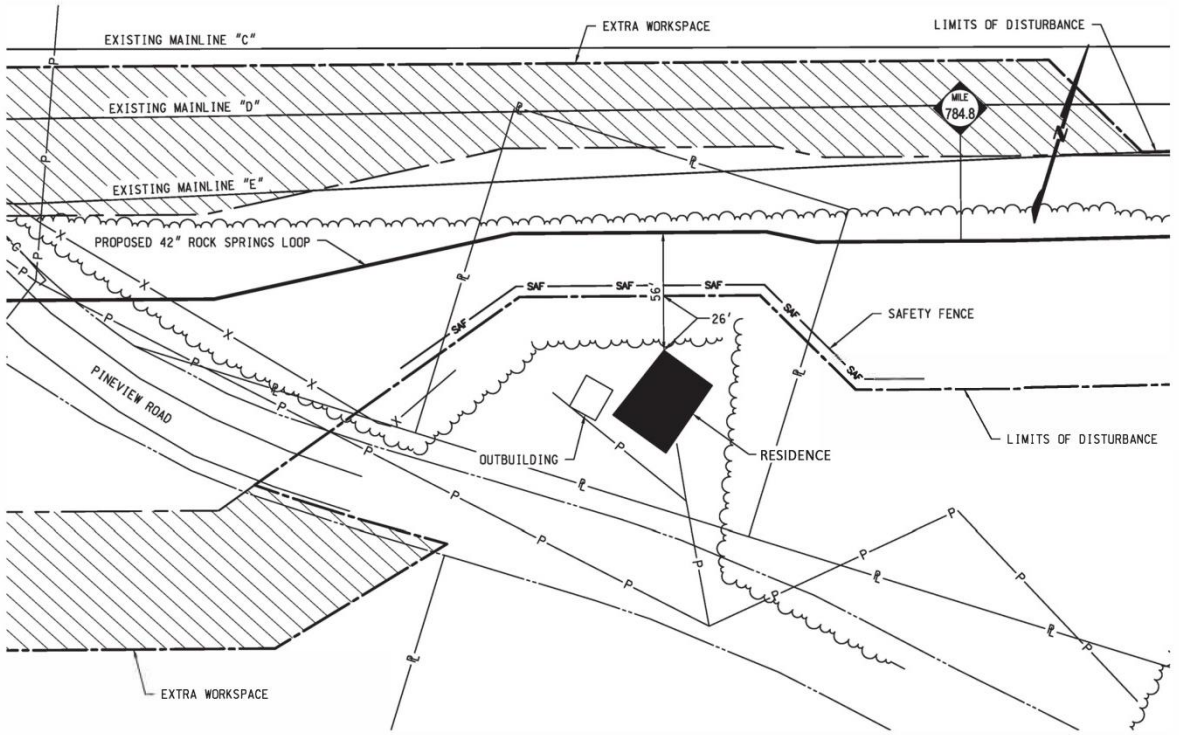
3. ANY NEARBY STRUCTURES, RESIDENTIAL FEATURES AND TREES LOCATED WITHIN THE CONSTRUCTION WORK AREAS WHICH WILL NOT BE REMOVED DURING CONSTRUCTION ARE NOTED ON THE SITE PLAN.

4. TO MINIMIZE IMPACTS TO RESIDENCES, THE FOLLOWING CONSTRUCTION TECHNIQUES SHALL BE UTILIZED: DRAG SECTION OR STOVE PIPE (IF NEEDED). EXCAVATION OF THE TRENCH WILL NOT BE INITIATED UNTIL THE PIPE IS READY FOR INSTALLATION. THE PIPE TRENCH SHALL BE BACKFILLED IMMEDIATELY UPON COMPLETION OF THE PIPELINE INSTALLATION. DETAILS OF THESE CONSTRUCTION TECHNIQUES ARE DESCRIBED BELOW.
   a. DRAG SECTION: THE DRAG SECTION TECHNIQUE INVOLVES THE INSTALLATION OF SHORT SECTIONS (TWO OR MORE JOINTS) OF PIPE CALLED DRAG SECTIONS. THE CONTRACTOR WILL BEGIN THE DRAG SECTION INSTALLATION BY CLEARING AND GRADING A SHORT SECTION OF THE RIGHT OF WAY. INDIVIDUAL JOINTS OF PIPE WILL THEN BE HAULED TO THE WORK AREA AND LAID OUT FOR FABRICATION. THE CONTRACTOR WILL THEN FABRICATE THE DRAG SECTION BY WELDING TOGETHER TWO OR MORE PIPE JOINTS. THE CONTRACTOR WILL EXCAVATE THE TRENCH. THE AMOUNT OR LENGTH OF TRENCH EXCAVATED AT ANY GIVEN TIME WILL BE LIMITED TO THE MINIMUM NECESSARY TO INSTALL THE DRAG SECTION. THE PIPE SECTION WILL THEN BE LOWERED INTO THE TRENCH, THE TIE-IN WELD WILL BE PERFORMED, X-RAYED AND COATED, AND THEN THE PIPE SECTION IS BACKFILLED.
   b. STOVE PIPE (IF NEEDED): THE STOVE PIPE INSTALLATION TECHNIQUE IS SIMILAR TO THE DRAG SECTION TECHNIQUE DESCRIBED ABOVE, EXCEPT IT IS LIMITED TO THE INSTALLATION OF ONE JOINT OF PIPE AT A TIME. THE TYPICAL SEQUENCE OF ACTIVITIES FOR STOVE PIPE INSTALLATION IS AS FOLLOWS: THE RIGHT OF WAY IS CLEARED AND GRADED, THE PIPE JOINT IS HAULED TO THE WORK AREA, THE TRENCH IS EXCAVATED, THE PIPE JOINT IS INSTALLED, WELDED (TIED-IN), X-RAYED, COATED, AND THEN THE TRENCH IS BACKFILLED. THIS PROCESS WILL BE REPEATED UNTIL THE WORK HAS BEEN COMPLETED IN THE AREA OF CONCERN.

5. XYZ WILL NOTIFY LANDOWNERS, IN WRITING, AT LEAST TWO (2) WEEKS PRIOR TO THE START OF CONSTRUCTION. XYZ'S LAND AGENT WILL THEN FOLLOW-UP WITH EACH LANDOWNER AT LEAST ONE (1) WEEK PRIOR TO THE START OF CONSTRUCTION.

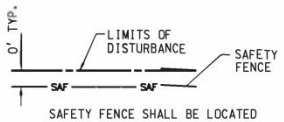
6. AFTER COMPLETION THE CONSTRUCTION WORK AREAS WILL BE RESTORED IN ACCORDANCE WITH APPLICABLE PERMIT REQUIREMENTS, THE PROJECT-SPECIFIC VERSION OF FERC'S UPLAND EROSION CONTROL REVEGETATION AND MAINTENANCE PLAN AND THE SOIL EROSION AND SEDIMENT CONTROL PLAN.

7. LAND REPRESENTATIVE WILL DISCUSS ACCESS TO RESIDENCES PRIOR TO CONSTRUCTION AND INCLUDE THAT INFORMATION IN THE CONSTRUCTION LINE LIST. THE CONSTRUCTION LINE LIST WILL BE INCLUDED IN THE CONSTRUCTION CONTRACT . ADDITIONALLY, INSPECTORS ASSIGNED TO THE PROJECT WILL ENSURE THAT THE REQUIREMENTS IN THE LINE LIST ARE FOLLOWED.



8. AT A MINIMUM, CONSTRUCTION SAFETY PERIMETER FENCING SHALL BE INSTALLED AND MAINTAINED ALONG THE WORK AREA AS SHOWN ON THE SITE PLAN.

9. UTILIZE CONTROLS AS NECESSARY TO MITIGATE DUST, NOISE, AND VIBRATIONS DURING CONSTRUCTION.



SAFETY FENCE SHALL BE LOCATED ON THE LIMITS OF DISTURBANCE.

0 50 100 150
SCALE IN FEET

PROJECT NO: 103798

XYZ Project
Figure 4.8.2-1
Site-specific Residential Plan

NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.
A						
B						

DRAWN BY: DATE:
CHECKED BY: DATE:
APPROVED BY: DATE:
SCALE: 1"=60'
DRAWING NUMBER: 26-0100-35-26-F/784.80
SHEET 1

4.8.3 Public Land, Recreation, and Other Designated or Special Use Areas

4.8.3.1 Public or Conservation Land

Identify by beginning and ending mileposts and length of crossing all land administered by federal, state, county, or local agencies, or private conservation organizations. These may include national or state parks and forests, Indian reservations, wilderness areas, wildlife management areas, nature preserves, national trails, registered natural landmarks, flood control land, levee crossings, etc. For each area affected, identify the primary uses, peak use periods, and any seasonal restrictions. If appropriate for the project, it may be helpful to provide a table listing public lands crossed or affected, including the location (by milepost or facility site), the owning or managing public entity, and the temporary and permanent impacts.

For public lands, including national forests, state forests, and other lands owned or managed by federal or state agencies, summarize the status of applicable special-use permits or right-of-way grants and describe your proposed mitigation measures, or those identified by the land management agency, to resolve specific agency concerns. If the project would affect land administered by two or more federal agencies (with the exception of lands held in trust for a Native American tribe, lands on the Outer Continental Shelf, and lands owned by the National Park Service, for which a right-of-way requires Congressional approval), you should discuss the status of coordination with the U.S. Department of the Interior – Bureau of Land Management to obtain a right-of-way grant under the Mineral Leasing Act.[33] Address mitigation for public land that may include avoiding especially sensitive areas by route deviations, reducing construction and permanent right-of-way requirements, selectively removing trees, replanting trees or shrubs within the temporary construction right-of-way, timing construction to occur during low use or low impact periods, or using special restoration practices. In forested areas or areas where off-road vehicle traffic is a concern, address whether you would install and maintain off-road vehicle controls.

If you propose levee crossings, identify the locations of these crossings and describe the proposed construction methods and mitigation measures. Identify the agencies or entities from which permits or authorizations would be required for levee crossings (e.g., levee districts, levee boards, COE, or others as applicable).

For any conservation lands crossed, such as FWS conservation easements or lands enrolled in the Conservation Reserve Program, Wetland Reserve Program, Wetland Reserve Easements, or other Agricultural Conservation Easement Program, describe consultations with the appropriate federal and state agencies and the landowner to determine whether construction would affect the program status of the land and whether special construction or revegetation techniques should be used. Also use this

[33] 30 United States Code § 185 (2012).

consultation to identify applicable permits or agreements required to construct the project facilities across these lands (e.g., compatible use permits, subordination agreements). If any conservation easements exclude or restrict the installation of pipelines or other facilities proposed as part of the project, describe these restrictions and the status of any negotiations or procedures to obtain the necessary approvals to construct the project facilities on this land. Provide copies of all relevant correspondence, and include in the permit table provided in Resource Report 1 the permits and authorizations required for crossing conservation easements.

4.8.3.2 Natural, Recreational, or Scenic Areas

Identify by beginning and ending mileposts and length of crossing all natural, recreational, or scenic areas; all registered natural landmarks; and other special use areas (e.g., wetland mitigation banks) crossed by the project. Identify any areas crossed by or within 0.25 mile of the proposed pipeline or aboveground facility sites that are included in or designated for study for inclusion in the National Wild and Scenic Rivers System, the National Trails System, or wilderness areas designated under the Wilderness Act. Consult with the National Park Service or other applicable federal agency and provide copies of relevant correspondence. Also identify land of local historical or cultural significance (e.g., religious sites, historic districts) and cross-reference as appropriate to Resource Report 4.

4.8.3.3 Agency and Landowner Consultation

Identify public, recreation, or other designated special use areas during your map and field review and through consultations with federal, state, county, and local agencies.

Consulting agencies early is essential to accurately identify use, concerns, and potential impact on these lands from pipeline or aboveground facility construction. Also contact landowners of campgrounds, golf courses, race tracks, and other recreational or special use areas. Use agency and landowner contacts to determine or confirm the exact location of land directly affected by construction of the facilities, as well as any special concerns or constraints that may be associated with construction.

Table 4.8.3-1 is a checklist of typical agency/landowner contacts applicants may consult to identify potential constraints associated with pipeline construction across public or special use areas. This general list of jurisdictional entities does not represent the varying land management structures from state to state.

Include a record of agency and landowner communications, by letter and/or telephone/conference memoranda, with the application. Include a list of each agency and department contacted, the name and title of the person contacted, the telephone number, and the date on which the contact was made.

Summaries of meetings with agencies and open houses held with landowners are also useful to assist Commission staff in conducting our review.

TABLE 4.8.3-1

Agency/Landowner Contacts

Jurisdiction	Agency/Landowner	Land Affected
Federal	U.S. Army Corps of Engineers	-Flood control and flood storage land
	U.S. Environmental Protection Agency	-Hazardous waste sites
	U.S. Department of the Interior	-National Wildlife Refuges
	U.S. Fish and Wildlife Service	-Designated critical habitat -Conservation easements
	Bureau of Land Management	-Public land -National monuments -National conservation areas -Wilderness and wilderness study areas -Area of Critical Environmental Concern -Research natural areas -National recreation areas -Other management units/areas identified in an applicable Resource Management Plan
	Bureau of Indian Affairs	-Indian Reservation lands
	National Park Service	-National parks -National Wild and Scenic Rivers (designated or proposed) -National Trail system (including Appalachian Trail) -National Natural landmarks -National monuments -National preserves and reserves -National lakeshores and seashores -National historic sites -National recreation areas -Wilderness and wilderness study areas
	Natural Resources Conservation Service, U.S. Department of Agriculture	-Conservation Reserve Program lands -Agricultural Conservation Easement Program lands -Wetland Reserve Program lands -Wetland Reserve Easements
	U.S. Forest Service	-National forests -National recreation areas -National monuments -Wilderness and wilderness study areas -National scenic areas -National scenic research areas -National management emphasis areas -Other management units/areas identified in an applicable Land and Resource Management Plan
	National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce	-Essential fish habitat -Designated critical habitat
State	Department of Environmental Management /Division of Natural Resources, or equivalent	-State forests and parks -Coastal Zone Management compliance -Designated recreation areas/trails -Scenic roads -State wild and scenic rivers -Designated open land
	Game and Fish Commissions	-Game management areas

TABLE 4.8.3-1 (cont'd)

Agency/Landowner Contacts

Jurisdiction	Agency/Landowner	Land Affected
County/Town	Planning Commissions	-Proposed residential/commercial developments -Open space/natural areas -Locally significant roads, scenic areas, or rivers -Schools, parks, ballfields, trails
	Levee Commission	-Flood control levees and structures
Other	Landowners	-Campgrounds -Landfills -Golf courses -Race tracks -Airfields -Homeowner associations

4.8.3.4 Impact and Mitigation

List each identified public, recreation, or other designated special use area by milepost, crossing length, and acreage affected (see example table 4.8.3-2). Also provide maps depicting these areas in relation to the project. Describe each area and exactly what portion of that area would be directly affected by construction. For example, if the proposed facilities would cross a state forest, identify the agency that administers the forest, the total acreage of land encompassed, and the predominant use of the land (e.g., wildlife management, wilderness, timber, recreation). Then, identify the specific resource area within the state forest that construction would affect (for example, the area adjacent to existing right-of-way within a wildlife management area). In some cases, we and/or the administering agencies may require site-specific construction plans for construction within or near public, recreational, or designated special use areas.

TABLE 4.8.3-2

Public Land and Designated Recreation Areas, Scenic Areas, or Other Special Use Areas Crossed by Construction Right-of-Way

Facility/Mileposts	County, State	Name	Crossing Length	Acreage Affected by Construction
Mainline				
Loop A				

Crossings of scenic rivers and national trails should be avoided if practicable. Where crossings are proposed, you should consult early with the National Park Service or other appropriate agency and provide associated documentation. Address avoidance, minimization, and/or other mitigation measures developed in coordination with the

appropriate agency, which may include special construction techniques (e.g., boring, HDD), visual screen plantings, installing off-road vehicle barriers, timing construction to minimize impacts on users, and maintaining access throughout the construction period. As appropriate, identify plans for notifying the public, posting signage, identifying portage routes, etc.

Also address mitigation measures for other designated areas such as campgrounds, golf courses, race tracks, etc. Such measures may include construction during the off season or completing activities within the area as expeditiously as possible. Avoid construction through landfills and hazardous waste sites. Where construction would occur within or immediately adjacent to a landfill or hazardous waste site, provide documentation that construction would not occur within contaminated areas or contaminated groundwater plumes.

For offshore facilities, identify shipping channels, shellfish beds, or other specific uses that may be affected by construction and operation of the facilities. Provide documentation of your consultation with the Bureau of Ocean Energy Management, Regulation and Enforcement; the Coast Guard, and NOAA Fisheries. Provide your measures to avoid, minimize, or otherwise mitigate impacts in accord with these agencies' concerns.

4.8.4 Contaminated or Hazardous Waste Sites

Identify and describe lands crossed or within 0.25 mile of project facilities that are known contaminated areas or are used for landfills, hazardous waste sites, quarries, mines, or other special use areas. Describe any discussions with landowners and agencies to identify special construction techniques and mitigation measures to be implemented in these areas. To the extent that some of these areas are discussed in more detail in Resource Reports 2, 6, 7, or 12, cross-reference to the appropriate sections of those resource reports.

4.8.5 Coastal Zone Management Areas

You must identify all facilities that would be within designated coastal zone management areas. You must provide a consistency determination or evidence that a request for a consistency determination has been filed with the state's coastal zone management program. This evidence is required at the time of filing the application. If the state wants you to defer the filing of the request until a later date, provide correspondence between your company and the state to that effect and name a state contact with whom we can consult. The coastal zone consistency determination process requires adequate lead time and, in our experience, can be confusing for applicants. Therefore, we advise early consultation with us and the applicable state agency.

4.8.6 Visual Resources

The extent of the discussion on visual resources depends on the proximity of the project facilities to visually sensitive areas and residential areas. Visually sensitive areas, which may include scenic roads, rivers, and trails, may be designated at the federal, state, or local level and should be identified during agency consultations. Visual classification systems have been developed by the federal Bureau of Land Management and U.S. Forest Service and by some states to rank the scenic quality of various landscapes. Use these systems where appropriate to quantify the potential visual impact of pipeline or aboveground facility construction on a given scenic area. Visual impacts on areas such as historic districts, traditional cultural properties, and places listed on, or eligible for listing on, the NRHP should be addressed in Resource Report 4.

For all designated or sensitive scenic areas, describe mitigation proposed to reduce visual impact. Mitigation for pipeline construction may include avoiding areas of high visibility with route deviations, clearing the right-of-way in forested areas in a feathered pattern (i.e., not in a straight line), and planting shrubs and small trees within the right-of-way. Mitigation for aboveground facilities, such as compressor stations, may include siting the facility to avoid proximity to visually sensitive areas, painting the facility with colors that would harmonize with the landscape, building facades consistent with agricultural buildings in the area, or effectively restoring the landscape, including screening the facility with shrubs and trees. Part (e) of section 380.15 (siting and maintenance requirements) provides additional information about avoiding and minimizing impacts on visually sensitive resources.

In considering visual impacts for LNG facilities, we recommend that you also identify impacts associated with LNG vessels transiting to and from the facility, as well as flares and lighting. While it may be impossible to mitigate visual impacts from LNG vessels, identify the impacts on surrounding recreational or residential areas to allow for a complete environmental review. If necessary, additional details on visual impact (such as visual simulations) and mitigation (such as screening plans) may be requested.

4.8.7 Applications for Rights-of-Way and Other Land Use

Document that applications for rights-of-way or other proposed land use have been or will soon be filed with federal land-managing agencies with jurisdiction over land that would be affected by the project. File these related applications by the time of filing an application with the Commission. If the other applications have not been filed, the Commission application must identify the timeframe in which you will file the related applications with the appropriate agencies and a justification why they were not filed by this date. Failure to file the related applications shortly after filing your primary application with the Commission, or an adequate justification for delay, could result in rejection of the application.

4.9 RESOURCE REPORT 9 – AIR AND NOISE QUALITY

INFORMATION OFTEN MISSING AND RESULTING IN DATA REQUESTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
Air Quality Information (see further discussion below)	
☐ Include climate information as part of the air quality information provided for the project area.	D, EE
☐ Identify potentially applicable federal and state air quality regulations.	J, EE
☐ Provide construction emissions (criteria pollutants, hazardous air pollutants, greenhouse gases) for proposed pipelines and aboveground facilities.	D, R
☐ Provide copies of state and federal applications for air permits.	D
☐ Provide operation and fugitive emissions (criteria pollutants, hazardous air pollutants, greenhouse gases) for pipelines and aboveground facilities.	D, R
☐ Provide air quality modeling for entire compressor stations.	D
☐ Identify temporary and permanent emissions sources that may have cumulative air quality effects in addition to those resulting from the project.	D
Noise and Vibration (see further discussion below)	
☐ Describe the existing noise environment and ambient noise surveys for compressor stations, liquefied natural gas facilities, meter and regulation facilities, and drilling locations.	D, U
☐ Identify any state or local noise regulations applicable to construction and operation of the project.	D, EE
☐ Indicate whether construction activities would occur over 24-hour periods.	D
☐ Discuss construction noise impacts and quantify construction noise impacts from drilling, pile driving, dredging, etc.	D, R
☐ Quantify operation noise from aboveground facilities, including blowdowns.	D, R
☐ Describe the potential for the operation of the proposed facilities to result in an increase in perceptible vibration and how this would be prevented.	D, R
☐ Identify temporary and permanent noise sources that may have cumulative noise effects in addition to those resulting from the project.	D, R

[a] D Applicant; J U.S. Environmental Protection Agency; R Manufacturer's Data; U Noise Survey; EE State Air Quality Agency

This guidance manual does not change or substitute for any law, regulation, or any other legally binding requirement. Where practical, we have distinguished between legal obligations and Commission staff's interpretations or recommendations. We use mandatory language such as "required," "must," and "must not" to describe controlling requirements under statutes and regulations. We use non-mandatory language such as "recommend," "encourage," and "may" to describe Commission staff's recommendations that will help the Commission meet its obligations under NEPA. However, because clear distinctions are not always practical, a reader should consult the regulations directly to determine the information legally required in order to meet the filing requirements of 18 CFR 380.12.

Resource Report 9 is required for applications involving compressor facilities or new LNG facilities. However, because of our responsibilities under the EPA's General Conformity regulations implementing the Clean Air Act, you should file this resource report for all projects. This report should include an assessment of air, noise, and vibration impacts both from construction activities (e.g., air emissions from construction equipment exhaust, fugitive dust emissions, General Conformity applicability, noise from construction equipment, HDD/drilling operations) and from operation activities (e.g., stationary source, marine vessel transit, and fugitive gas emissions; noise from operating compressor or meter stations).

This report should quantify the impacts of the project on the existing air and noise environment and describe any proposed measures to mitigate those impacts. The resource report should present short-term (acute) and/or long-term (chronic) air quality and noise impacts, as applicable, from constructing and operating any new facilities or adding to or modifying existing facilities.

4.9.1 Air Quality

4.9.1.1 Existing Air Quality

To identify factors that may affect air quality, you should provide a general description of climate conditions in the project area. Representative climate data should include average low and high temperatures during various seasons, average precipitation and type, and wind conditions and directions.

You should identify all applicable air quality control regions and describe the existing air quality in the vicinity of the project, including attainment/nonattainment/ maintenance status for all criteria pollutants.[34] For compressor stations or LNG facilities, you must provide the background levels (e.g., ambient monitoring data) of nitrogen dioxide (NO_2) and other criteria pollutants. You should identify monitoring stations from which you obtained information and identify each station's monitored criteria pollutant(s), the owner/controller, station number, location, and nearby land use (rural, suburban, urban). You may provide any other relevant information to justify your use of the monitoring station.

[34] Criteria air pollutants as identified by the EPA are: carbon monoxide (CO), oxides of nitrogen (NO_2 and NO_X), sulfur dioxide (SO_2), respirable and fine particulate matter (particulate matter with an aerodynamic diameter less than or equal 10 microns [PM_{10}] and less than or equal to 2.5 microns [$PM_{2.5}$]), airborne lead (Pb), and ozone (O_3) (which results indirectly from emitted precursors nitrogen oxide [NO_X] and volatile organic compounds [VOCs]).

4.9.1.2 Regulatory Requirements

The Clean Air Act contains numerous provisions to protect air quality. For compressor station and LNG facilities, you must explain how you would meet existing regulatory standards.

You should identify and describe federal, state, and local air quality regulations and air quality permits that may apply or be required for a project's construction activities or operation emission sources. It is useful if you explain why the proposed project facilities would or would not be subject to each regulation and, if subject, how the project facilities would comply with the regulation. Example regulations include, but are not limited to: New Source Review permits; Title V permits; minor source air permits; New Source Performance Standards; National Emission Standards for Hazardous Air Pollutants; General Conformity; the Greenhouse Gas (GHG) Reporting Rule; open burning restrictions; opacity limitations; idling limitations; and use of low-sulfur diesel fuel.

You must file copies of air permit applications for major sources (New Source Review or Title V) for compressor station or LNG facilities.[35] To reduce the duplication of efforts and to ensure consistency, you should also consider filing copies of minor source permit applications and the final permit when it is available.

You should identify Class I areas within 100 kilometers of aboveground facility stationary sources. If a project facility would be subject to Prevention of Significant Deterioration (PSD) review or if you have received or anticipate comments (e.g., from the public or land managing agencies) regarding impacts on Class I areas, we recommend that you provide an analysis of the impacts of the project facility on the Class I area.[36] Also, you should include any copies of correspondence with the federal land manager regarding air quality impacts from the facilities.

General Conformity

As the lead federal agency, we must perform a General Conformity applicability test and Determination (as required) for projects in nonattainment or maintenance areas. In order to fulfill this obligation, we must receive the information needed to perform the applicability test and Determination (as appropriate), and this information is considered mandatory. Therefore, if any portion of the project would be within a designated nonattainment or maintenance area, you must provide the project-related direct and

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[35] 18 CFR § 380.12(k)(3)(ii) (2015).

[36] To minimize duplicative efforts, you may file a copy of analyses performed under the PSD Permitting Program.

indirect emissions for comparison with General Conformity applicability thresholds.[37] Include all applicable construction and operation emissions.[38] The considered emissions must include construction equipment, marine vessels, vehicle emissions on paved and unpaved roads, fugitive dust, commuter emissions, pipeline fugitives (VOCs), non-permitted stationary sources, etc., as applicable. If the project would impact multiple designated nonattainment or maintenance areas, each designated area for each pollutant must be considered separately. However, you must combine emission estimates for all counties identified within the same designated area. It is most useful if you provide a separate table(s) identifying emissions for each nonattainment or maintenance area.

If the project would exceed the General Conformity applicability thresholds, emission estimates for motor vehicle emissions must be based on the most current version of the motor vehicle emissions model specified by the EPA and emission estimates for non-motor vehicle emissions must be based on the most current emission factors specified by the EPA in the "Compilation of Air Pollutant Emission Factors" (AP-42),[39] unless more accurate emission data are available. You must indicate how you would demonstrate conformance with the applicable state implementation plans in accordance with the General Conformity regulations.[40] You must address each criterion of the General Conformity regulations, explain in detail whether the project would meet each requirement, and for each criterion being satisfied, provide supporting information on how the project would comply. Also, you should include any correspondence with the state or EPA Regional Office.

4.9.1.3 Air Quality Impacts

Air quality may be affected by construction and/or operation of project facilities. Therefore, to develop a complete understanding of a project's impacts on local and regional air quality, you should provide emission estimates, mitigation measures, and impact analyses.

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37 40 CFR § 93.153(b)(1)-(b)(2) (2015) (emissions thresholds in tons per year).

38 Any emission sources that are subject to a major or minor New Source Review permit are exempt from General Conformity.

39 The EPA's regulations provide a full list of methodologies and exceptions. 40 CFR § 93.159 (2015). You should also consult with applicable state air pollution control agencies about suggested methodologies or emission categories for estimated construction emissions.

40 40 CFR § 93.158 (2015).

Construction Impacts and Mitigation

You should provide estimated direct emissions of criteria pollutants, VOCs, total hazardous air pollutants (HAP), and GHGs[41] in tons per year resulting from the construction of the proposed project. This includes pipelines greater than 5 miles in length[42] (or any length in designated nonattainment/maintenance areas), compressor stations, LNG facilities, and other aboveground facilities. You should include emissions from activities such as site grading, excavation, trenching, pile-driving, HDD operations, filling, demolition, pipe removal, drilling activities, delivery vehicles, delivery barge emissions, dredging, fugitive dust, clean/pigging activities, open burning, and tailpipe emissions from construction equipment and workers commuting. The information is most useful if the emissions are broken down by calendar year based on the construction schedule. You should support your emission estimates with detailed calculations, emission factors, fuel consumption rates, vehicle power ratings, utilization rates, and hours of operation. The detailed construction emissions calculations may be provided in an appendix to Resource Report 9; however, you should include a summary table in the text portion of the resource report, similar to example table 4.9.1-1, adapted as appropriate to the project.

You should calculate construction emissions based on the current version of one of the following EPA-developed methodologies:

- Motor Vehicle Emission Simulator (MOVES), or other EPA-developed motor vehicle emissions model;
- NONROAD model; or
- AP-42, Compilation of Air Pollutant Emission Factors.

Guidance for using each of these models is available on the EPA website. Other publicly available methodologies or reference material may be appropriate, particularly for calculating fugitive dust emissions. You should provide justification for the use of other reference material or methods.

[41] GHG emissions should include the emission categories and/or methodologies described in the most current version of the CEQ's guidance on GHG emissions and climate change, as applicable.

[42] This distance is based on FERC staff's historical project experience, which has demonstrated that pipeline construction under 5 miles in length does not result in significant impacts.

TABLE 4.9.1-1

Construction Emissions (Year 1–Year 2)
(tons per year)

Construction Activity	NO_X	SO_2	CO	PM_{10}	$PM_{2.5}$	VOC	CO_2e	Total HAPs
Pipeline Construction								
Commuter transit								
On-road vehicles								
Off-road equipment								
Open burning								
Fugitive dust								
Subtotal								
Compressor Station Construction								
Commuter transit								
On-road vehicles								
Off-road equipment								
Open burning								
Fugitive dust								
Subtotal								
Project Total								

Notes:

CO = carbon monoxide
CO_2e = carbon dioxide equivalent
HAPs = hazardous air pollutants
NO_X = nitrogen oxides
$PM_{2.5}$ = fine particulate matter with an aerodynamic diameter less than or equal 2.5 microns
PM_{10} = fine particulate matter with an aerodynamic diameter less than or equal 10 microns
SO_2 = sulfur dioxide
VOCs = volatile organic compounds

You should describe proposed mitigation measures that you commit to implementing to minimize construction emissions of criteria pollutants, HAPs, and/or GHGs. Examples of measures to minimize emissions from construction equipment include using low-sulfur diesel fuel, limiting equipment idling, using newer fleets, maintaining equipment, and complying with EPA mobile source emissions performance standards.

You should also identify your procedures to mitigate fugitive dust emissions, including measures to reduce emissions of particulate matter with an aerodynamic diameter less than or equal to 10 microns and less than or equal to 2.5 microns. For larger projects, or projects in particulate matter nonattainment or maintenance areas, you should provide a fugitive dust control plan. This plan should identify the mitigation measures that you commit to implement, for example: spraying water on disturbed areas; stabilizing unpaved access roads with non-toxic soil stabilizers or weighting agents; limiting vehicle speeds on unpaved roads; covering, seeding, or treating spoil piles with dust suppressant if they will remain inactive for extended periods of time or are subject to windy conditions; using rock access pads to prevent vehicle tires from tracking soil onto paved roads; and street cleaning to remove mud/trackout. Be specific when describing these measures (for example, identify the speed limit, size/location of gravel pads, and other details).

Operation Impacts and Mitigation

The goal of this section is to ensure that all direct operation emissions of criteria pollutants (except lead), speciated HAPs, and GHGs are quantified, and concentrations of criteria pollutants are identified and compared with the National Ambient Air Quality Standards (NAAQS).

Aboveground Facilities

You should describe all emission-generating equipment to be installed at new or modified compressor stations, LNG facilities, meter stations, or other facilities. Sources may include heaters, boilers, turbines, generators, reciprocating engines, dehydrators, relief valves, flares, oxidizers, submerged combustion vaporizers, firewater pumps, tank emissions, other fugitive emissions, and unloading/loading emissions.

For each new equipment source at the facility you should indicate the make, model number, fuel type, fuel consumption rate, load factor, hours of operation, and emission factors (for criteria pollutants, HAPs, and GHGs). For existing facilities, you should identify the number and type of each emission source, and the total existing emissions from the facility (as permitted or based on the facility's potential to emit). Emissions of criteria pollutants (except lead), HAPs, and GHGs from each source should be provided in tons per year and grams per second under maximum operating conditions. You should also provide the above-referenced information for mobile marine operating emissions, including marine vessel equipment and propulsion. Marine vessel emissions should account for all transit, maneuvering, escorting, or hotelling within state-designated waters. In addition, the fugitive gas emissions from each compressor station or LNG facility should be quantified in tons per year for methane, VOCs, and HAPs. To facilitate review of this information, you should provide detailed information in an appendix, and summarize this information in the main text of Resource Report 9 similar to example table 4.9.1-2, as appropriate for the project. Speciated HAPs should appear in a separate table. Emission tables should clearly show the emission rates from any existing equipment at the compressor station and the proposed new or modified equipment at the compressor station.

You should indicate whether you would install any blowdown facilities. If so, you should describe the expected types (e.g., individual unit, full station, capped), estimate the average number of yearly blowdowns by type, and the amount of gas released per event type, quantified as methane in tons and as GHG in tons of carbon dioxide equivalent (CO_2e).

TABLE 4.9.1-2

Operation Emissions Summary
(tons per year)

Facility	NO_X	SO_2	CO	PM_{10}	$PM_{2.5}$	VOCs	Total HAPs	CO_2e
Compressor Station 1								
Compressor Station 2								
Meter Station 1 (with heaters)								
Meter Station 2 (no heaters)								
Pipeline (including valves)								

Notes:

CO = carbon monoxide
CO_2e = carbon dioxide equivalent
HAPs = hazardous air pollutants
NO_X = nitrogen oxides
$PM_{2.5}$ = fine particulate matter with an aerodynamic diameter less than or equal 2.5 microns
PM_{10} = fine particulate matter with an aerodynamic diameter less than or equal 10 microns
SO_2 = sulfur dioxide
VOCs = volatile organic compounds

All GHG emissions should be given as carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), and combined as CO_2e. The Global Warming Potential used should be the most recent value used by the EPA for its GHG Reporting rule.

Emission Factors should be based on one of the following methodologies (with citation):

- EPA-certified emission standards;
- manufacturer data;
- EPA's current AP-42 emission factors; or
- peer reviewed studies for the equipment.

For compressor stations or LNG facilities, you must describe any manufacturer's specifications or equipment that you commit to implementing (through air permitting or voluntarily) to mitigate air impacts from criteria pollutants, HAPs, and/or GHGs. You should also indicate whether you are a partner in the EPA's Natural Gas STAR Program or Methane Challenge Program, and any recommended measures from those programs or other state programs that you would implement on aboveground facilities to reduce methane emissions. For any air pollution control equipment or mitigation measures, you should identify the control efficiency.

For new or modified compressor stations or LNG facilities, you must estimate the impact of the project on air quality. To do this we recommend that you provide an air quality analysis (screening or refined dispersion model) identifying the impact of the facility in comparison with the NAAQS or applicable state standards. The modeling level (i.e., screening or refined dispersion modeling) should be consistent with the scope of the project. Comparisons should be based on the statistical basis developed for each

NAAQS. You should include all source input parameters (emission rate, stack height, stack temperature, exit velocity, etc.) and justify the bases for any assumptions. For any analysis using refined modeling (AERMOD or another EPA-accepted model), you should provide a description of how you performed the modeling (for example, identify the specific model number, meteorological and terrain data and source, NO_2/NO_X conversion rate, source parameters, building information, receptor grids, etc.). You should also file the input and output files in a format compatible with eLibrary (e.g. as text files). You should also consider providing electronic files to staff for verification.

If the project involves modification of an existing compressor station or LNG facility (e.g., adding or replacing compressor units), the air quality analysis should identify the *incremental* increase in air quality impact of criteria pollutants from the entire facility in comparison with the NAAQS and/or applicable state standards. To accomplish this, you should: (1) model the existing compressor station with modifications, add background concentrations, and compare with the NAAQS; or (2) collect 1 year of on-site ambient monitoring to add to modeling of the modifications for comparison with the NAAQS. For any alternative monitoring timeframes, you should provide justification, based on site- and/or project-specific reasons. For new or modified LNG facilities, the air quality analysis should include mobile ship emissions (LNG carrier, tugs, escort vessels) that would occur within the moored safety zone, including these possible scenarios:

- transiting through the moored safety zone;
- hotelling within the moored safety zone; and
- unloading/loading within the moored safety zone.

To the extent that air modeling performed for any facility as part of an air permitting process includes the emission sources and pollutants identified above, you may file that modeling effort to avoid duplicative efforts.

In addition to providing the results of the air quality analyses (typically provided as appendices to Resource Report 9 due to their length), you should summarize the results of the air quality analyses in tables within the text (see example table 4.9.1-3).

Pipeline Facilities Operation Emissions

You should provide estimates of operation emissions of methane, GHGs as CO_2e, VOCs, and HAPs associated with fugitive gas releases from the pipeline, valves, meter stations, regulation facilities, and pig launcher/receivers along the pipeline, quantified in tons per year. You should include supporting calculations and describe all assumptions. You should also indicate whether you are a partner in the EPA's Natural Gas STAR Program or Methane Challenge Program, and any recommended measures from those programs or other state programs that you would implement on pipeline facilities.

TABLE 4.9.1-3

Compressor Station ABC AERSCREEN Modeling Results

Pollutant	Averaging Period	Combined Model Concentration (µg/m^3)	Ambient Background (µg/m^3)	Total Concentration (µg/m^3)	NAAQS (µg/m^3)
CO	1-Hour				
	8-Hour				
NO_2	1-Hour				
	Annual				
$PM_{2.5}$	24-Hour				
	Annual				
PM_{10}	24-Hour				
SO_2	1-Hour				

Notes:

µg/m^3 = microgram per cubic meter
CO = carbon monoxide
NO_2 = nitrogen dioxide
$PM_{2.5}$ = fine particulate matter with an aerodynamic diameter less than or equal 2.5 microns
PM_{10} = fine particulate matter with an aerodynamic diameter less than or equal 10 microns
SO_2 = sulfur dioxide

4.9.2 Noise and Vibration

Impacts on the noise environment can result from both construction and operation of natural gas pipeline facilities and LNG facilities. Two measures to relate the time-varying quality of environmental noise to its known effect on people are the 24-hour-equivalent sound level (L_{eq}) and day-night sound level (L_{dn}). The L_{eq} is the level of steady sound with the same total (equivalent) energy as the time-varying sound of interest, averaged over a 24-hour period. The L_{dn} is the L_{eq} plus 10 decibels on the A-weighted scale (dBA) added to nighttime levels to account for people's greater sensitivity to nighttime sound levels (between the hours of 10 p.m. and 7 a.m.). The A-weighted scale is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. The human ear's threshold of perception for noise change is considered to be 3 dBA; 6 dBA is clearly noticeable to the human ear; and 10 dBA is perceived as a doubling of noise.

In 1974, the EPA published its *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. This document provides information for state and local governments to use in developing their own ambient noise standards. The EPA determined that an L_{dn} of 55 dBA protects the public from indoor and outdoor activity noise interference. An L_{dn} of 55 dBA is equivalent to a continuous noise level of 48.6 dBA. New or modified compressor equipment or LNG equipment should not exceed this level at receptors known as NSAs.

Examples of NSAs include residences, schools and day-care facilities, hospitals, long-term care facilities, places of worship, and libraries. NSAs may also include campgrounds, parks, and wilderness areas valued specifically for their solitude and tranquility.

4.9.2.1 Existing Noise Levels

Mapping

For each new or modified compressor station, you must provide a plot plan (scale 1:3,600 or greater) in Resource Report 1 or in separate graphics provided with this resource report (preferably USGS topographic maps or aerial photos at a scale that clearly depicts the relevant features) that depicts any NSAs within 1 mile of the new or modified compressor station. Aerial images must not be more than 1 year old (unless older ones accurately depict current land use and development). Similarly, you should provide a plot plan of any proposed new or modified LNG facility and NSAs within 1 mile. These plot plans should include compressor buildings, cooling fans, blowdown stacks, LNG equipment, station/facility fencing, and property lines.

You should also provide map(s) of proposed or modified meter stations, HDD entry and exit sites, Direct Pipe activities, or locations for well drilling or pile driving. These maps should identify NSAs within 0.5 mile of the facility or activity. NSAs should be provided in all directions and the maps should identify the distance between the noise-generating facilities, the NSAs, and ambient noise measurement positions.

The text or tables in Resource Report 9 should describe the land use as well as each type of NSA and the distance and direction from the compressor station, LNG facility, meter station, or nighttime construction activity.

Ambient Noise Estimates

For new or modified compressor stations or LNG facilities, you must quantitatively describe the existing noise levels at NSAs. In accordance with section 380.12(k)(2), for existing compressor stations and LNG facilities you must conduct an ambient sound survey for the NSAs and provide a copy of the report describing the methodology and results. You must conduct the noise survey at the site property line and nearby NSAs when the facility is operating at full load. Provide the results of the noise survey of the existing facilities as L_{eq} (day) from 7 a.m. to 10 p.m., L_{eq} (night) from 10 p.m. to 7 a.m., and the calculated L_{dn}.

For new compressor stations or LNG facilities, you must provide estimates of the existing sound environment based on current land uses or measured sound surveys; however, we recommend that you perform an ambient sound survey to quantitatively describe the existing noise environment. You should provide the existing daytime (L_d) and nighttime (L_n) ambient equivalent sound level and the calculated L_{dn} for each NSA.

We have also found that meter stations and certain construction activities (e.g., HDDs, Direct Pipe, well drilling, and pile driving) can contribute noise at NSAs within 0.5 mile. Further, many 24-hour-per-day construction activities (e.g., HDDs, Direct Pipe,

well drilling, and pile driving) often require several weeks or months to complete. Therefore, you should also quantitatively describe ambient noise levels at NSAs within 0.5 mile of meter stations or these construction activities based on current land uses or measured sound surveys. You should provide the existing day and night L_{eq} ambient noise levels and the calculated L_{dn} for each NSA.

L_{dn} is calculated using the formula:

$$L_{dn} = 10\log_{10}((15/24)10^{Leq\ (day)/10} + (9/24)10^{(Leq\ (night)+10)/10})$$

You should describe conditions during noise surveys, including:

- date and time for each measurement;
- the physical and ambient environment;
- state of vegetation cover;
- duration of measurements (periodic, 24-hour, etc.);
- weather conditions;
- wind speed and direction;
- engine load; and
- other sources of noise present during noise measurement at each location.

During periodic sound level measurement, you should avoid times when unusual or extraneous noise that is not typical of station operation is occurring, such as noise from traffic, pets, lawnmowers, insects, or nearby construction activity. If wind, rain, or other intermittent conditions elevate the background noise levels by more than 10 decibels, you should postpone the survey until conditions improve (American National Standards Institute/Acoustical Society of America S.1.13-2005). The survey report should provide information on the existing facility noise-generating equipment, including types, year of installation, etc., as appropriate.

4.9.2.2 Regulatory Requirements

You should identify any potentially applicable state or local noise regulations or ordinances. Describe how they would or would not apply to the project and identify whether you commit to comply.

4.9.2.3 Noise Impacts

Construction Noise Impacts and Mitigation

You should provide a general description of noise sources for pipeline and/or aboveground facility construction and indicate whether construction would occur during nighttime hours (10 p.m. to 7 a.m.).

HDD, Direct Pipe Installation, Well Drilling, and Nighttime Construction

For each entry or exit location for HDD/Direct Pipe installation, each site for well drilling, or each site of nighttime construction with NSAs within 0.5 mile, Resource Report 9 should include an estimate of the number of days that drilling would be required and state whether drilling would be conducted for 24 hours per day or for some period during nighttime hours. If construction activity would or may occur during nighttime hours, you should provide the L_{dn} of existing noise levels at all NSAs within 0.5 mile, the estimated noise impacts at those NSAs from the construction activity, and the estimated increase in background noise. Construction activity that would or may occur during nighttime hours should be performed with the goal that the activity contribute noise levels below 55 dBA L_{dn} and 48.6 L_{eq}, or no more than 10 dBA over background if ambient noise levels are above 55 dBA L_{dn}. You should describe all reasonable noise mitigation that you commit to implementing during the construction activity to reduce noise impacts at the NSAs to meet the goal. Also, for short-duration nighttime construction (under 1 week), describe any alternative measures, such as temporary relocation or compensation, proposed to minimize noise impacts on area residents.[43] If you retain a noise consultant for the acoustical analysis who recommends noise mitigation measures, be sure to state clearly and affirmatively which of the recommended measures you commit to implement.

Pile Driving and Dredging

Pile driving can result in an intense, high impact sound level. When applicable, in Resource Report 9 you should evaluate and quantify noise impacts transmitted through air from pile driving operations at NSAs within 1 mile and underwater on aquatic species. For impacts on NSAs, report impacts in L_{peak} (peak of sound pressure wave with no time weighting) or L_{max} (highest sound measured by the sound level meter over a given period of time). You should identify whether these operations would occur over 24 hours, how many pile-driving units would be operating at one time, the type and number of piles, installation method, equipment, and the length of time that pile driving would occur. You should provide supporting documents, calculations, and all assumptions used to estimate the noise impacts.

Dredging may occur over a 24-hour-per-day schedule and may be close to coastal communities and impact aquatic species. If a project involves dredging, you should evaluate and quantify noise impacts transmitted through air at all NSAs within 0.5 mile and underwater on aquatic species. Resource Report 9 should identify the dredge type,

[43] We have routinely found that temporary relocation or compensation for relocation for nighttime construction activities lasting over 1 week presents an unreasonable burden on NSAs and is unacceptable.

whether these operations would occur over a 24–hour-per-day schedule, how long the dredging would occur, and how many dredge units would be operating simultaneously. You should provide supporting documents, calculations, and all assumptions used to estimate the noise impacts.

If you provide the underwater noise analyses for pile driving and/or dredging in Resource Report 2 or 3, give an appropriate cross–reference in Resource Report 9.

Blasting

If blasting would be required, you should provide a plan, or include methods in the proposed blasting plan prepared in accordance with section III.F.4 of our *Plan*, to mitigate noise and vibration impacts on NSAs during blasting operations. If blasting near water, you should include the underwater noise impact on aquatic species.

Operation Noise Impacts and Mitigation

You must provide an acoustical analysis identifying noise impacts from each new or modified compressor station or LNG facility on NSAs within 1 mile of the compressor station or LNG facility. Similarly, you should provide an acoustical analysis identifying noise impacts from each new or modified meter station on NSAs within 0.5 mile.

Noise sources should include all predominant noise producing equipment at the facility including engines, turbines, electric motors, compressors, boilers, gas coolers, oil coolers, vent fans, liquefaction equipment, vaporization equipment, flares, pumps, ship noise, intake and exhaust noise, and all appurtenant equipment. The noise impact from compressor station or LNG facility equipment must be based on far-field sound data provided by the manufacturer, or on sound level measurements of similar equipment in service elsewhere. You should identify and quantify mitigation measures, including specific noise control equipment and propagate the resultant noise (L_{eq} and L_{dn} in A-weighted decibels) at the nearest NSAs. The data should represent the maximum load/noise of the proposed equipment and identify the equipment manufacturer and model for all major noise sources. You should provide octave band noise data for each source.

For a new or modified compressor station or LNG facility you must provide a description and specifications of proposed noise control measures to reduce the facility's noise contribution to below 55 dBA L_{dn} (such as intake and exhaust silencers, and/or building and pipe insulation). You should also provide the same information for new or modified meter stations. You should describe the construction of the proposed compressor building and the acoustic insulation specifications/insertion loss for the building's walls and ceiling. Include a narrative discussing data sources and a basis for any calculations or noise models used to generate the noise estimates. You should provide octave band noise data for each noise control measure.

You should summarize the noise impacts on NSAs from the compressor stations, LNG facilities, and meter stations in tables. Table 4.9.2-1 is an example for a new compressor station.

TABLE 4.9.2-1

Noise Quality Analysis for the ABC Compressor Station

NSAs	Distance and Direction of NSA to Site Center	Ambient Sound Level (L_{dn})	Estimated Sound Level (L_{dn}) of the Station at Full Load	L_{dn} of Station Noise plus Ambient Noise	Potential Noise Increase
NSA 1					
NSA 2					
NSA 3					

You must also include step-by-step supporting calculations or, if you used a computer program to model the noise levels, identify the program and include the input and raw output data and all assumptions made when running the model. Also include far-field sound level data for maximum facility operation, and the source of the data. If you have not chosen specific noise control equipment, you must include a schedule for submitting the data prior to certification.

If the noise generated by an existing compressor station or LNG facility already affects any NSAs with an L_{dn} greater than 55 dBA, you should identify the year of installation (or latest modification) for all equipment and docket numbers associated with the installation or latest modification to the equipment. Also, you should identify any voluntary mitigation measures, including specific noise control equipment, that you would implement to reduce the noise level(s) from the unit(s). At a minimum, you should demonstrate that noise levels would not increase above current levels after installing the new project equipment.

Blowdown Noise

You should indicate whether you would install blowdown facilities at the proposed new or modified compressor station(s), LNG facilities, or other facilities. If so, you should describe the expected types (e.g., individual unit, full station, capped), estimate the average number of yearly blowdowns by type, and whether you would install silencers on the blowdown vent(s). You should also estimate the noise impact (L_{eq}) at the NSAs within 1 mile of the blowdown vent(s).

Vibration

You should indicate how you would design the new or modified compressor stations to avoid vibration impacts at NSAs or other receptors (commercial, recreational, industrial facilities, etc.).

4.10 RESOURCE REPORT 10 – ALTERNATIVES

INFORMATION OFTEN MISSING AND RESULTING IN DATA REQUESTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ Ensure that project objectives that serve as the basis for evaluating alternatives are consistent with the purpose and need discussion in Resource Report 1.	D
☐ Identify and evaluate alternatives identified by stakeholders.	D
☐ Clearly identify and compare the corresponding segments of route alternatives and route variations with the segments of the proposed route that they would replace if adopted.	D
[a] D Applicant	

This guidance manual does not change or substitute for any law, regulation, or any other legally binding requirement. Where practical, we have distinguished between legal obligations and Commission staff's interpretations or recommendations. We use mandatory language such as "required," "must," and "must not" to describe controlling requirements under statutes and regulations. We use non-mandatory language such as "recommend," "encourage," and "may" to describe Commission staff's recommendations that will help the Commission meet its obligations under NEPA. However, because clear distinctions are not always practical, a reader should consult the regulations directly to determine the information legally required in order to meet the filing requirements of 18 CFR 380.12.

Resource Report 10 is required for all applications. It must describe alternatives that were considered during the identification and design of the project and compare the environmental impacts of such alternatives with those of the proposed project. Resource Report 10 should describe the systematic procedure used to arrive at the proposed project, starting with the broadest feasible range of alternatives and narrowing the alternatives to a specific action on a specific site or right-of-way. The description of this procedure should include the decision criteria used, the information weighed, and an explanation of the conclusion at each decision point. The decision criteria must show how environmental benefits and costs, even if not quantifiable, were weighed against economic benefits and costs, and technological and procedural constraints. The alternatives analysis should be based on, and consistent with, the purpose and need statement provided in Resource Report 1. A clearly articulated purpose and need statement facilitates the preparation of Resource Report 10 and the applicant's ability to demonstrate why an alternative may or may not function as a suitable replacement for the proposed project.

At a minimum, Resource Report 10 must address the no-action alternative and the potential for accomplishing the same objectives through the use of other natural gas systems and/or energy conservation. The alternative analysis beyond the no-action alternative should be driven by the extent and type of resource impacts and by public or

agency comments. Depending on the project, it may also be appropriate for the alternatives analysis to address system alternatives, route alternatives, and aboveground facility site alternatives. Further, in some cases, it may be appropriate to address alternatives to other aspects of the project, such as alternative construction technologies, dock locations or configurations for LNG facilities, power and water sources for LNG or compressor facilities, or process alternatives to specialized technologies such as natural gas liquefaction. We might identify such additional analysis, or it may be warranted based on agency or public input.

4.10.1 General Guidance

- Resource Report 10 should provide a brief summary of project modifications that you adopted prior to filing the application to minimize environmental impact or to respond to a stakeholder issue, especially those modifications suggested during pre-filing. There is no need to itemize modifications that you adopted for engineering reasons.

- For each of the applicable alternative types discussed below, provide environmental comparison tables that include all of the resource data that is pertinent and useful for comparing the alternatives at the specific location. For instance, the project area may include unique features, such as karst features, prime farmland, sensitive species habitat, old growth forest, special crops, conservation easements, waterbodies, wetlands, residential developments, etc., that should be included in the comparison tables.

- Data sources used to compare the impacts of an alternative with the impacts of the corresponding portion(s) of the proposal should be consistent, based on either field data for both or desktop data for both (e.g., aerial interpretation, NWI maps, USGS topographic maps), in order to allow for an objective comparison. In practice, this will usually mean that you generate desktop data for the segments of the proposed alignment that are subject to an alternatives review. However, alternatives selected for more detailed study may also require field data. We may also request landowner address lists for alternative routes that are under more detailed study.

4.10.2 No-Action Alternative

Address the consequences of not constructing the project. In addition to avoiding the impacts directly associated with the construction of the project (e.g., disturbance of wetlands, air quality impacts, clearing of vegetation) the no-action alternative discussion should discuss what other options may be pursued by customers of the proposed project to satisfy the need for the proposed project. For example, if the proposed project were not constructed, describe the alternatives to meet the project objectives and, if known, the likely environmental effects and costs of pursuing these options. These options should

include the use of other natural gas systems, non-gas energy alternatives, and/or energy conservation or efficiency, as applicable.

4.10.3 System Alternatives

System alternatives are those that would meet the objectives of the project, but would use a different (and often existing) natural gas facility/pipeline system or a different configuration of facilities that would eliminate the need to construct all or part of the project. If modifications or additions to the existing facilities/systems would be required to meet the project objectives, you should quantify the environmental impact of these modifications for comparison with those of the proposed project. The modifications could include constructing additional compression facilities, either at new or existing compressor stations, constructing additional pipeline loops, or constructing new segments of pipeline to interconnect existing pipeline systems.

System alternatives should include alternative configurations both on your own system and on one or more other companies' facilities. Examples of the former could include alternative placement of pipeline loop or compressor stations that may avoid sensitive resource areas or alternative pipe diameters or compression scenarios to reduce pipeline or compression requirements while still meeting the requirements of the proposed project. The descriptions of these examples should clearly identify and compare the alternative(s) considered with the corresponding segment of the project.

Examples of the latter, alternatives using other companies' facilities, should include an examination of the current capacities of existing systems, to the extent this information is available, and an assessment of these systems' ability to individually or in combination meet the objectives of the proposed project. If the existing systems are inadequate, you should examine whether any recently proposed facilities are able to individually or in combination meet the objectives of the proposed project. If these recently proposed facilities are also inadequate, you should examine what new facilities one or more companies would likely need to construct to achieve the objectives of the proposed project.

The description of each system alternative should include a map identifying the location both of existing pipeline systems (pipelines and compressor stations) that could be used and of any new pipeline and/or new or additional compression facilities that would be required. The map should be of a scale that also provides coverage of the corresponding segment of the project. Figure 4.10.3-1 shows a typical map of a proposed project and a system alternative that could each meet the project need with additional facilities.

The analysis of system alternatives should include a comparative table that presents the characteristics and environmental factors of the system alternative(s) and of the corresponding segment of the proposed project (see example table 4.10.3-1).

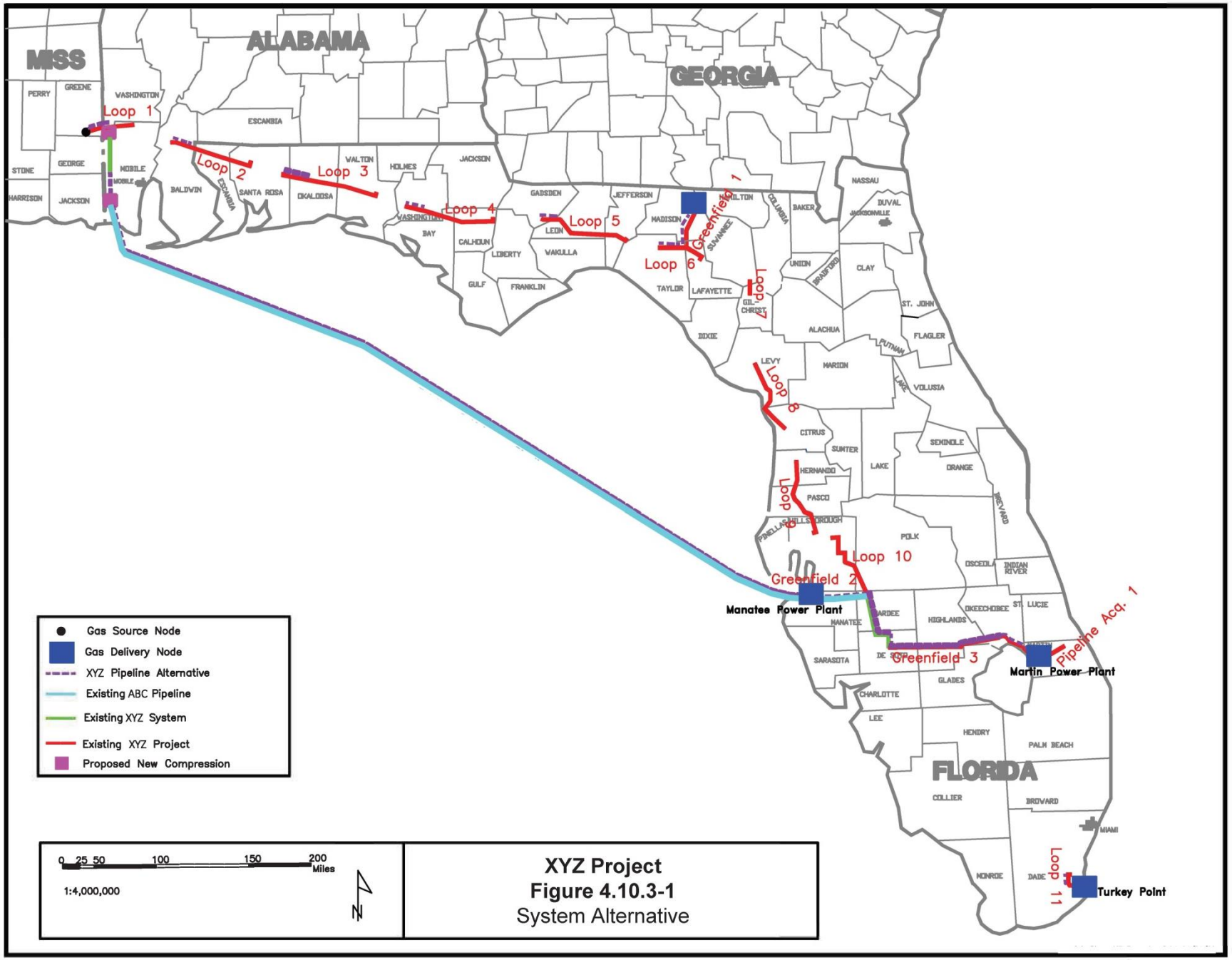

MISS
ALABAMA
GEORGIA
FLORIDA
Loop 1
Loop 2
Loop 3
Loop 4
Loop 5
Loop 6
Loop 7
Loop 8
Loop 9
Loop 10
Loop 11
Greenfield 1
Greenfield 2
Greenfield 3
Pipeline Acq. 1
Manatee Power Plant
Martin Power Plant
Turkey Point
Gas Source Node
Gas Delivery Node
XYZ Pipeline Alternative
Existing ABC Pipeline
Existing XYZ System
Existing XYZ Project
Proposed New Compression
0 25 50 100 150 200 Miles
1:4,000,000
N
XYZ Project
Figure 4.10.3-1
System Alternative

TABLE 4.10.3-1

Comparison of System Alternatives

Characteristics or Resources	Unit	Proposed Project	Lateral System Alternative	Mainline System Alternative
Pipeline and Compression Facilities				
Total length	(mi)			
New pipeline	(mi)			
Loop pipeline				
36-inch-diameter pipe	(mi)			
30-inch-diameter pipe	(mi)			
Total compressor stations				
Upgraded	(no.)			
New	(no.)			
Total compression				
Upgraded	(hp)			
New	(hp)			
Environmental Factors				
Construction right-of-way [a]	(acres)			
Permanent right-of-way [b]	(acres)			
Length adjacent to existing right-of-way or corridor	(percent)			
Total wetlands affected [c]	(acres)			
Forested wetlands	(acres)			
Scrub-Shrub wetlands	(acres)			
Total perennial waterbodies crossed	(no.)			
Major waterbody crossings (>100 feet)	(no.)			
Natural and scenic rivers	(no.)			
Endangered or threatened species habitat	(no.)			
Known cultural resources	(no. or miles)			
Federal land crossed	(mi)			
State land crossed	(mi)			
Other recreation/designated land use areas	(no.)			
Length of crossing	(mi)			
Existing residences within 50 feet of construction work area	(no.)			

[a] Based on a xx-foot-wide construction right-of-way.

[b] Based on a xx-foot-wide right-of-way for the proposed project; a xx-foot-wide right-of-way for the Lateral System Alternative; and a xx-foot-wide right-of-way for the Mainline System Alternative.

[c] All wetland information is based on National Wetlands Inventory mapping.

The text should similarly present a comparative analysis describing the characteristics and environmental factors of the system alternative(s) and of the corresponding segment of the proposed project. It should also include a clear statement of the advantages of the proposed project, including economic, environmental, technical, and scheduling advantages that led to the rejection of each system alternative.

4.10.4 Route Alternatives

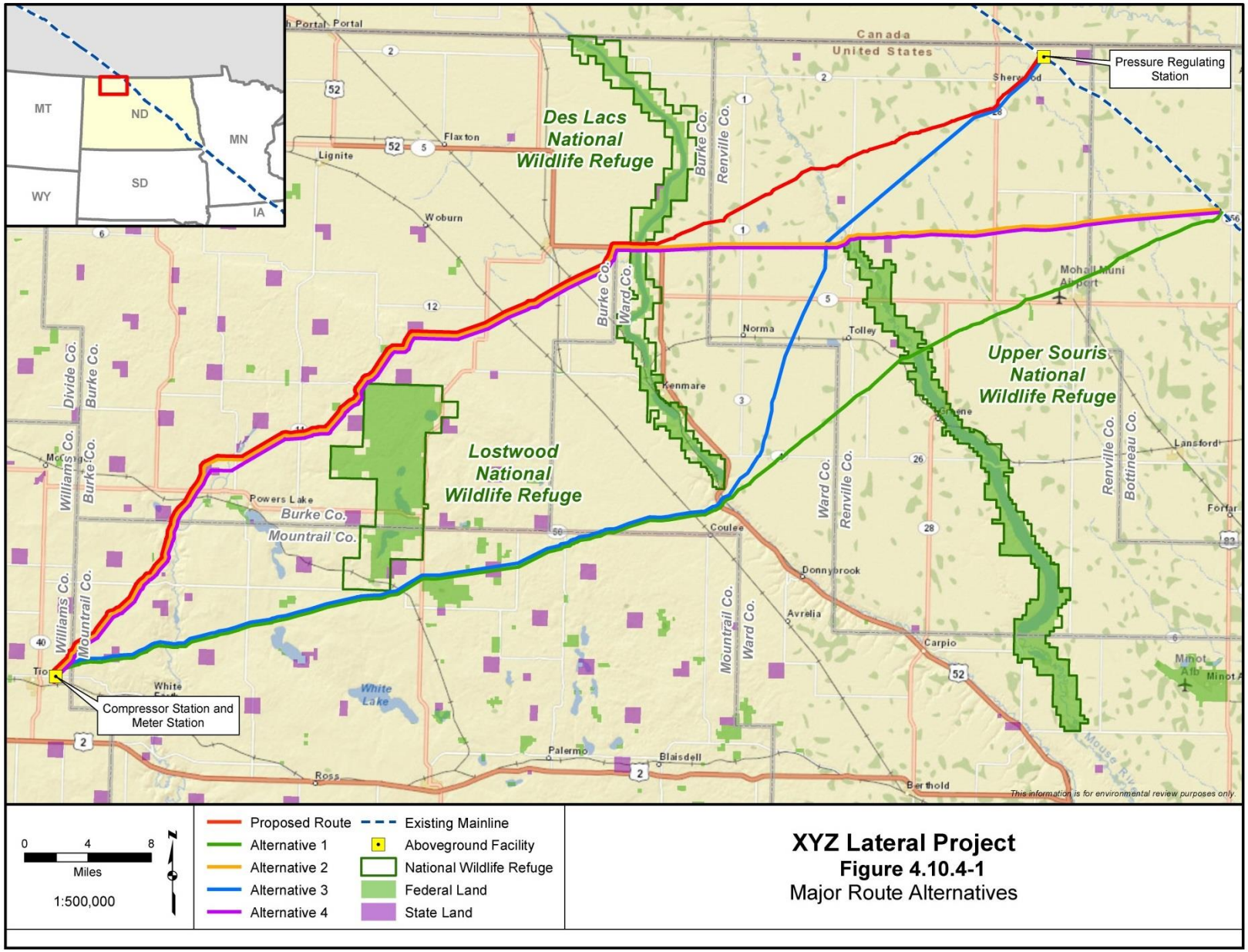
Route alternatives include pipeline alignments that differ from those of the proposed project. You must discuss routes that were considered during the selection of your proposed route but were rejected for environmental reasons. We recommend that you also discuss economic or technical factors. The discussion should address alternative routes that were determined to be viable means of accomplishing the same objectives as the proposed route.

In general, the discussion of each route alternative should begin with a statement explaining why you considered the alternative (e.g., landowner or resource agency concerns, constructability, avoidance of an impact, shortening the route) and the criteria you used to evaluate it. If you did not adopt the alternative, specifically state the reason that you dismissed it from further consideration. If you, we, or another stakeholder identifies a viable alternative prior to or during the environmental review process, we may request a landowner mailing list for that alternative.

Route alternatives may include "major route alternatives" or "route variations or deviations." "Major route alternatives" deviate from the proposed route for an extended distance (e.g., for several miles) or are several miles away from the proposed route. Major route alternatives typically are geographically different routes and are primarily considered for new pipeline projects. They may also be considered for expansion loops where construction adjacent to an existing pipeline is precluded (e.g., substantial development along the route). "Route variations or deviations" often include realignments that are identified to avoid or resolve localized resource issues (e.g., cultural resource sites, wetlands, residential areas, or to accommodate landowner requests). While route variations or deviations may be a number of miles in length, they are more typically short and relatively close to the proposed route. Route variations or deviations are typically considered for both new and looping pipeline projects.

4.10.4.1 Major Route Alternatives

Major route alternatives should be addressed in sufficient detail to justify the decision whether to eliminate them from further consideration. You must present the location of each major route alternative on a map of a scale that covers both the alternative route and the corresponding route segment of the proposed route. Figure 4.10.4-1 is an example.



XYZ Lateral Project
Figure 4.10.4-1
Major Route Alternatives

The text should generally describe the location of the major route alternative, including the mileposts (of the proposed route) at which the major route alternative deviates from and rejoins the proposed route, and the environmental characteristics of the major route alternative compared with the corresponding segment of the proposed route. The environmental characteristics should include as many of the relevant factors listed on table 4.10.4-1 as you can reasonably calculate or obtain from published sources, such as USGS or NWI maps, or from consultations with federal, state, or county agencies. If a factor is not relevant to any of the major route alternatives and the proposed route (e.g., if none of the routes cross federal land), you can reduce the level of detail in the table (e.g., omit specific types of federal land). You should also compare technical and economic characteristics and include in the table any data that may have been pertinent in making your routing decision (e.g., miles of karst, steep slopes, groundwater protection areas, etc.). As noted above, the data sources used to determine the potential resources along the alternative and the corresponding segment of the proposed route should be the same to allow for objective comparisons.

If multiple major route alternatives are being considered for a particular segment of the proposed route, the analysis should present all of the alternatives considered in the area based on a common beginning and ending point, and should compare the alternatives with the corresponding segment of the proposed route in one table. Generally, agency contacts to collect data about major route alternatives can be limited to those necessary to identify regional resources (e.g., endangered and threatened species habitat, location of historic districts or documented cultural resource sites, public lands).

Finally, you should provide clear statements regarding the relative advantages and disadvantages of the major route alternative(s) and the proposed route, including the reasoning behind the route selection.

4.10.4.2 Route Variations or Deviations

Typically, route variations or deviations are the result of more detailed field review. Route variations may also be identified during landowner discussions (usually localized) or as a result of agency or public input. They should be identified prior to filing the application, if at all possible, or as early as practicable. However, the need for route variations might arise at any time during the review process, from the initial filing up to construction, as localized resource issues are identified.

TABLE 4.10.4-1

Environmental Factors That May Be Considered for Analysis of Route Alternatives/Variations

Environmental Factor	Unit [a]	Proposed Route	Route Alternative/Variation
Total Length	(mi)		
Type of right-of-way:			
New right-of-way	(mi)		
Adjacent to existing pipeline right-of-way (e.g., loop)	(mi)		
Adjacent to other existing rights-of-way/corridors (e.g., powerline, road)	(mi)		
Right-of-way requirements:			
Construction right-of-way	(acres)		
Permanent right-of-way	(acres)		
Wetlands:			
Forested wetlands	(acres)		
Scrub-shrub wetlands	(acres)		
Total wetland impacts	(acres)		
Waterbodies:			
Total perennial waterbodies crossed	(no.)		
Major waterbody crossings (>100 feet)	(no.)		
Designated natural and scenic rivers	(no.)		
Significant fisheries	(no.)		
Ponds/lakes	(no.)		
Federally listed endangered or threatened species:			
Habitat	(mi)		
Species or critical habitat	(no.)		
Cultural resources:			
National Historic Landmarks	(no.)		
National Register of Historic Places-listed properties	(no.)		
Unlisted/potentially eligible properties	(no.)		
Land use:			
Forest	(mi)		
Agricultural	(mi)		
Open (e.g., recreation, historic districts)	(mi)		
Residential	(mi)		
Commercial/Industrial	(mi)		
Other (e.g., recreation, historic districts, conservation lands)	(mi)		
Residences and other structures:			
Within 50 feet of construction work area [b]	(no.)		
Federal land:			
National Forests	(mi)		
National Parks	(mi)		
Bureau of Land Management	(mi)		
Indian reservations	(mi)		
Other (e.g., wilderness areas, parks, flood storage control land)	(mi)		
State land:			
State forest/parks	(mi)		
Wildlife management areas	(mi)		
Other (e.g., parks, open space)	(mi)		

TABLE 4.10.4-1 (cont'd)

Environmental Factors That May Be Considered for Analysis of Route Alternatives/Variations

Environmental Factor	Unit [a]	Proposed Route	Route Alternative/Variation
Trails:			
National Trails (e.g., Appalachian Trail)	(no.)		
Other (e.g., snowmobile, hiking, biking)	(no.)		
Recreation or other designated land use areas:			
Ballfields, campgrounds, landfills, quarries, etc.	(mi)		
Paleontological resource sites	(no.)		

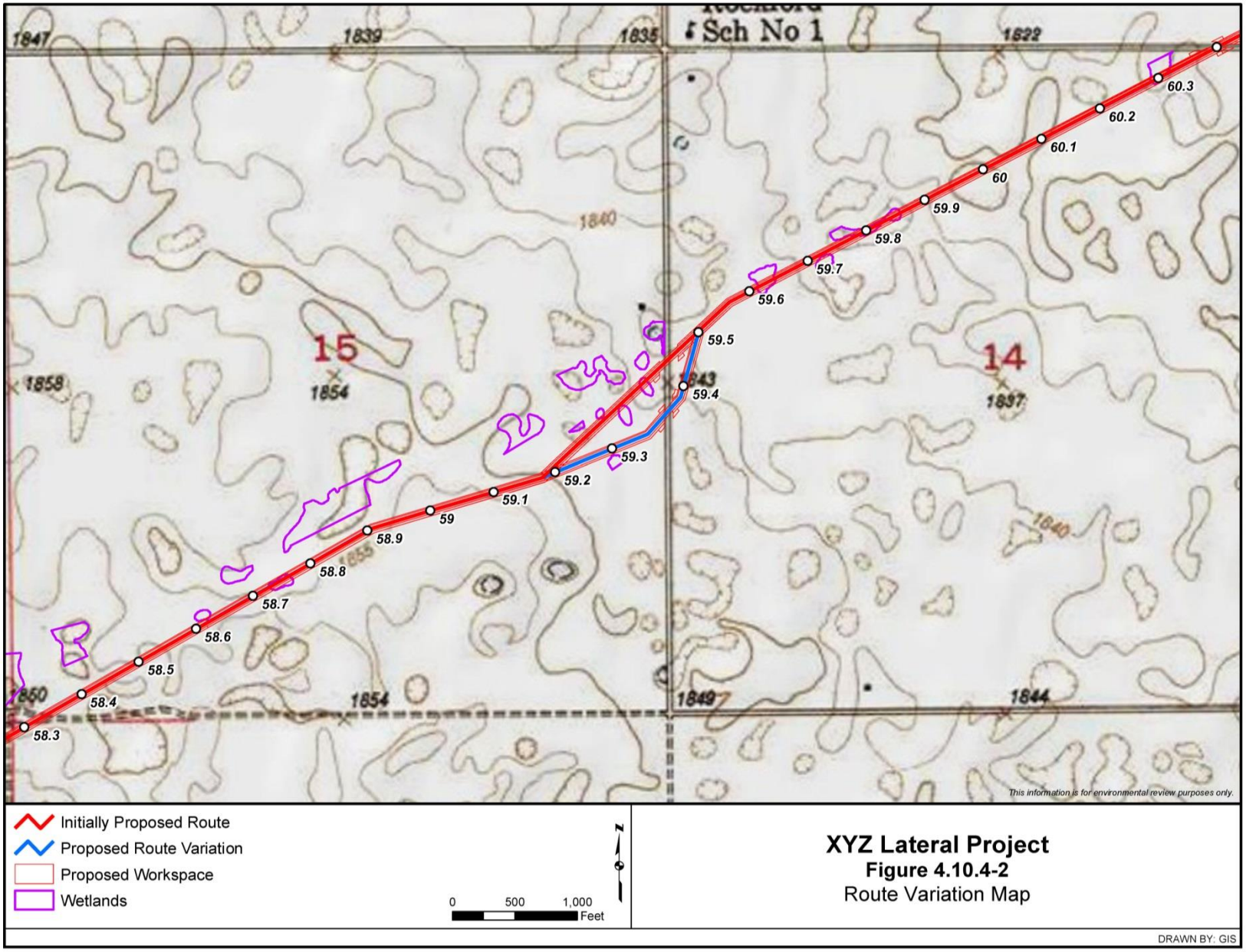
[a] Unit of length may be miles or feet depending on the length of the alternative considered.

[b] In some cases, the distance considered should be expanded to accurately reflect the conditions. For example, an alternative may contain no residences within 50 feet, but may have a dense residential development that is 65 feet from the construction right-of-way. Under this scenario, it is more informative to expand the area considered.

In one example, on a looping project, the application may show a proposed route that deviates from the existing pipeline right-of-way to avoid a sensitive resource. In this case, the application would include a comparison of the proposed route that avoids the sensitive resource and a route variation that follows the existing pipeline right-of-way. In another example, the application may show a proposed route that follows the existing pipeline right-of-way, but then further field review identifies a sensitive resource within the construction work area. To avoid the resource, a superior route variation is identified that would not significantly affect other environmental resources. In this case, the applicant should file the route variation as the revised proposed route and compare it with the original route.

Because route variations are considered to resolve localized resource issues (e.g., wetlands, residence, cultural resource sites), they are normally much shorter than major route alternatives and should receive a greater level of detailed analysis. This may include more contact with governmental agencies and private entities, more field review, more detailed map analysis, and a comparison of the pertinent environmental factors listed in table 4.10.4-1.

Each route variation should be presented on at least 7.5-minute-series USGS topographic maps or alignment sheets that include both the route variation and the corresponding segment of the proposed route (see figure 4.10.4-2). The text should describe the localized resource issue, compare the environmental characteristics of the route variation with the proposed route, and clearly state the relative advantages and disadvantages of the route variation and the proposed route.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This information is for environmental review purposes only.
Initially Proposed Route
Proposed Route Variation
Proposed Workspace
Wetlands
0
500
1,000
Feet
N
XYZ Lateral Project
Figure 4.10.4-2
Route Variation Map
DRAWN BY: GIS

As with system and major route alternatives, the data sources used to determine the potential resources along the route variation and corresponding segment of the proposed route should be the same to allow for objective comparisons. If multiple route variations are being considered for a particular segment of the route, the analysis should present all of the variations considered in this area based on a common beginning and ending point, and should compare the variations with the corresponding segment of the proposed route in one table.

4.10.5 Alternative Sites for Aboveground Facilities

Alternative sites should generally be considered and discussed for all new major aboveground facilities, particularly LNG facilities and compressor stations. This consideration is especially necessary if specific problems or issues with a new site are identified, such as environmental justice communities, the loss of over 5 acres of prime farmland soils, land use incompatibility, location within designated flood storage land, proximity to NSAs, contaminated soils, inability to reach an agreement with the landowner to acquire the property, or presence of wetlands, critical habitat, endangered or threatened species, or NRHP-eligible cultural resources.

The factors to consider for evaluating aboveground facility sites are different from those to consider for pipeline routes because each site is a fixed location rather than a linear corridor and because, unlike a pipeline, an aboveground facility is visible during operation and, in most cases, generates visual impacts, air emissions, and noise. The evaluation of alternative sites should consider:

- Footprint – The site's size needs to be adequate for constructing and operating the facilities. Larger sites may let you set the facility back from surrounding properties.

- Site Use – Vacant land may present fewer obstacles to securing control.

- Availability – Although section 7(h) of the NGA grants a Certificate holder the right of eminent domain, we prefer that the site be available (such as by purchase, lease, or restrictive easement).

- Access Road and Lateral Pipeline Length – The location of the site relative to existing roads and the associated mainline pipeline is important because the location will determine the length of the permanent access road and whether a pipeline lateral is required.

- Engineering Constraints – The general location of a compressor station is determined in large part by hydraulic modeling of the natural gas flow in the pipeline. A compressor station must be sited within a specific milepost

range determined by the gas flow modeling to sustain the pressure needed to deliver the gas.

- Environmental – You should consider environmental impacts on resources that may include, but are not limited to, noise receptors, prime farmland, wetlands and water resources, vegetation, critical habitat, threatened and endangered species, cultural resources, visual resources, geologic hazards, and surrounding land use.

You should describe the procedures used to identify your proposed site. Identify and discuss the decision criteria and weighting used at each decision point and clearly state the basis for each decision. Summarize, as appropriate, the results of hydraulic flow modeling and indicate the ideal milepost range for siting the facility. Provide maps of the locations of the proposed and most viable alternative sites. The analysis and comparison of environmental characteristics of the alternative sites should include a discussion of the following factors:

- new stations versus additional compression at existing station(s);
- area (acres) required;
- land use types (e.g., agriculture, pasture, forest, industrial);
- land availability;
- visual impact (including lighting);
- designated land uses (e.g., flood storage);
- area (acres) of prime farmland soils;
- presence of wetlands;
- presence of critical habitat or federally endangered or threatened species;
- presence of NRHP-eligible sites;
- zoning (e.g., industrial, residential, agriculture);
- miles of pipeline required to reach the site;
- length of access road required to reach the site and name and type of public road from which access to the site would be obtained;
- number of NSAs within 1 mile of the site;
- location of nearby NSAs and distance from the site;
- feasibility/existence of natural screening of the site;
- air quality considerations;
- noise considerations;
- access to electric power and/or additional facilities required;
- technical considerations; and
- economic considerations.

As with alternative routes, we recommend that you discuss the technical and economic characteristics of the alternative sites and compare them with the proposed site. You should include a table of these factors based on common data sources that compares each of the considered alternative sites with its related proposed site, and clearly state why each alternative site was considered less preferable or rejected.

4.10.6 Alternative Layouts/Design

For major aboveground facilities (e.g. compressor stations or LNG facilities), you should consider alternative layouts/design for the facility. Different layouts may offer improved efficiency or may result in lower air and/or noise impacts by moving exhaust stack locations. You should clearly describe the criteria used to select the proposed layout and compare its environmental impacts with those of alternative layouts.

For projects involving the construction of new compressor stations or LNG facilities that would include gas-fired compressors, particularly in designated nonattainment or maintenance areas, you should discuss the feasibility of using electric-motor-driven compressors. As part of this discussion, you should identify the power required and the number of required electric motors. If known, you should identify whether the electric power supplier can currently accommodate the facility's power needs or if the supplier would need to expand existing power generation infrastructure. Also, compare the size of the electric transmission line required under the current proposal with the size that the electric motors would require.

For LNG projects, we recommend that you discuss the feasibility of implementing waste heat recovery on large turbine equipment (e.g., units greater than 15,000 hp).

4.11 RESOURCE REPORT 11 – RELIABILITY AND SAFETY

INFORMATION OFTEN MISSING AND RESULTING IN DATA REQUESTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ Identify by milepost and in table form, all U.S. Department of Transportation class locations and areas of concern (for example, high consequence areas) as defined in Title 49 of the Code of Federal Regulations, Section 192.903 for the proposed route, alternative routes, and compressor stations and explain the basis for high consequence area identification.	D, LL
☐ Discuss the outcome of the consultations with local fire departments and emergency response agencies relative to whether additional equipment, training, and support are needed in the project area.	D
[a] D Applicant LL U.S. Department of Transportation	

This guidance manual does not change or substitute for any law, regulation, or any other legally binding requirement. Where practical, we have distinguished between legal obligations and Commission staff's interpretations or recommendations. We use mandatory language such as "required," "must," and "must not" to describe controlling requirements under statutes and regulations. We use non-mandatory language such as "recommend," "encourage," and "may" to describe Commission staff's recommendations that will help the Commission meet its obligations under NEPA. However, because clear distinctions are not always practical, a reader should consult the regulations directly to determine the information legally required in order to meet the filing requirements of 18 CFR 380.12.

4.11.1 LNG Facilities

Resource Report 11 is required for construction of new LNG facilities or the recommissioning of existing LNG facilities. **See Volume II of this guidance manual for a detailed discussion of information required to be filed in Resource Report 11 for projects involving new or recommissioned LNG facilities.**

4.11.2 Pipeline Facilities

Pipeline safety is a topic about which stakeholders routinely comment. Therefore, we recommend that you: (1) characterize the existing environment and applicable safety regulations that you would comply with to minimize potential hazards; and (2) provide a table identifying all DOT class locations[44] by milepost along the route.

[44] Class locations are based on population density in the vicinity of the pipeline. 49 CFR § 192.5 (2015).

4.11.2.1 Pipeline Safety Regulations

You should identify how the project would comply with the DOT Minimum Federal Safety Standards[45] and any voluntary additional measures that are more stringent than the DOT standards. Specifically, you should address the DOT standards that require each pipeline operator to:

- develop an emergency plan with local fire departments and other agencies to identify personnel to be contacted, equipment to be mobilized, and procedures to be followed to respond to a hazardous condition caused by the pipeline;
- establish and maintain liaison with the appropriate fire, police, and public officials to coordinate mutual assistance during emergencies; and
- establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation to recognize a natural gas pipeline emergency and report it to appropriate public officials and the company.

4.11.2.2 Class Locations

Identify by milepost each class location crossed by the pipeline, and explain the approach for addressing potential future changes in class location (i.e., as a result of future development). Additionally, you should identify high consequence areas[46] or DOT areas of concern. It is helpful if you identify the potential impact radius for all project components.[47] Discuss procedures for aerial surveillance flights, on-ground leak detection surveys, internal pipeline inspection with pigging equipment, and cathodic protection. Also discuss programs to monitor and certify reservoir pressure and storage wells if appropriate.

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[45] 49 CFR § 192 (2015). These regulations specify more rigorous safety requirements for populated areas.

[46] High consequence areas include: Class 3 and 4 locations; any area in a Class 1 or 2 location where the potential impact radius is greater than 660 feet and within this circle there are 20 or more buildings intended for human occupancy; and any area in a Class 1 or 2 location where the potential impact radius includes an *identified site*. Alternatively, high consequence areas include 20 or more buildings intended for human occupancy or an identified site within a potential impact circle. 49 CFR § 192.903 (2015) (defining both "high consequence area" and "identified site"); *see also id.* § 192.905 and *id.* pt. 192, app. E (explaining how to identify high consequence areas).

[47] The potential impact radius is described in 49 CFR § 192.903 (2015).

4.12 RESOURCE REPORT 12 – PCB CONTAMINATION

This guidance manual does not change or substitute for any law, regulation, or any other legally binding requirement. Where practical, we have distinguished between legal obligations and Commission staff's interpretations or recommendations. We use mandatory language such as "required," "must," and "must not" to describe controlling requirements under statutes and regulations. We use non-mandatory language such as "recommend," "encourage," and "may" to describe Commission staff's recommendations that will help the Commission meet its obligations under NEPA. However, because clear distinctions are not always practical, a reader should consult the regulations directly to determine the information legally required in order to meet the filing requirements of 18 CFR 380.12.

Resource Report 12 is required for applications involving the replacement, abandonment by removal, or abandonment in place of pipeline facilities determined to have PCBs in excess of 50 parts per million in pipeline liquids. Resource Report 12 must contain a statement that the proposed activities would comply with an "Approval to Remove Natural Gas Pipeline Contaminated with PCBs and Dispose of PCBs" permit from the EPA or with the PCB requirements of the Toxic Substances Control Act.[48] If you have received an EPA disposal permit, identify the date of the EPA approval and the permit expiration date. We recommend that if you have confirmed the presence of PCBs in the pipeline liquids, the pipeline, or other facilities being abandoned you should describe how these liquids, pipeline, or other facilities containing PCBs above 50 parts per million would be disposed.

For compressor station modifications on sites that have been determined to have soils contaminated with PCBs, describe the status of remediation efforts completed to date. You can see whether the site has been listed on the EPA's Comprehensive Environmental Response, Compensation, and Liability Information System because of soils contaminated with PCBs. If no remediation has been completed, we recommend that you provide the plans and schedule for future remediation work. If applicable, we recommend that you provide copies of correspondence documenting investigations, work plan approvals, submittal of closure reports, and the EPA determinations.

[48] 15 United States Code §§ 2602 to 2695d (2012). EPA's regulations broadly address the disposal of any PBC-contaminated component of a natural gas pipeline system, 40 CFR § 761.60(b)(5) (2015), and specify the methods to determine PCB concentrations, *id*. subpt. M.

4.13 RESOURCE REPORT 13 – ADDITIONAL INFORMATION RELATED TO LNG PLANTS

Resource Report 13 is required for construction of new LNG facilities, or the recommissioning of existing LNG facilities. **See Volume II of this guidance manual for a detailed discussion of information required or recommended to be filed in Resource Report 13.**

5.0 APPLICANT-PREPARED DRAFT ENVIRONMENTAL ASSESSMENTS FOR NATURAL GAS ACT APPLICATIONS

Applicants may prepare their own ("applicant-prepared") draft EA if approved to do so by Commission staff. If you are interested in preparing an applicant-prepared draft EA, we recommend that you use the pre-filing process, discuss this option with the Director of OEP during the initial pre-filing meeting, and indicate the intent to prepare a draft EA in your pre-filing request letter. When using this approach, you should submit the applicant-prepared draft EA concurrently with the Environmental Report as part of your application. For minor projects, where environmental issues are known and scoping is not likely to identify new issues or concerns, we may allow for a submittal of an applicant-prepared draft EA without utilizing the pre-filing process; however, this should be coordinated with our office prior to filing an application and does not guarantee any processing timeframes.

If well-prepared and supported by resource reports that are complete, accurate, and fully in compliance with the regulatory requirements, an applicant-prepared draft EA can accelerate our review and finalization of the EA, resulting in time and cost savings. We will analyze and verify the data in the resource reports to ensure that they support the draft EA, make appropriate adjustments and revisions, and develop recommendations as necessary to prepare an EA for the Commission's use. This option involves close coordination with us to establish a realistic schedule and maximize the likelihood that the draft EA will meet our needs. If using the pre-filing process, you should submit sections of the applicant-prepared draft EA early enough during the pre-filing period to allow us to review and provide comments, and for you to incorporate those edits and changes in the formal filing.

The Commission has issued a document entitled *Guidance for Applicant-prepared Draft Environmental Assessments for Certain Proposed Natural Gas Projects*, which is available on the Commission's website. This document provides additional detail about the applicant-prepared draft EA process and content.

6.0 PROVIDING A THIRD-PARTY CONTRACTOR TO ASSIST FERC IN DEVELOPING ENVIRONMENTAL DOCUMENTS FOR NATURAL GAS ACT APPLICATIONS

The Commission's voluntary third-party contracting program enables applicants seeking authority to construct and operate natural gas facilities to fund an independent third-party contractor to assist us in reviewing and analyzing the environmental aspects of an application and preparing the environmental documents required by NEPA.[49] Under this voluntary program, the independent contractor is:

- selected by and works solely under our direct supervision and control;
- responsible for conducting environmental analyses and preparing documentation, including EAs and EISs; and
- paid by the project applicant(s).

Third-party contracting provides you and us with additional flexibility in satisfying the Commission's NEPA responsibilities. As with the applicant-prepared draft EA process, you should contact us early in the process to discuss the applicability of the program to your specific project.

The *Handbook for Using Third-party Contractors to Prepare Environmental Documents* is available on the Commission's website. This document provides further description of the third-party contracting program, as well as detailed information about the third-party contractor selection process and solicitation of prospective contractor proposals, including samples of the Request for Proposals.

[49] The Commission announced the beginning of a voluntary third-party contracting program in February 1994. See News Release issued February 9, 1994. Subsequent announcements were published in the Commerce Business Daily (March 25, 1994) and the *Federal Register* (April 20, 1994).

7.0 PREPARING OTHER NATURAL GAS ACT AND NATURAL GAS POLICY ACT FILINGS

This section describes the environmental requirements for filings submitted under a part 157 blanket certificate;[50] under part 284 authorizations, which implement section 311 of the NGPA;[51] or under the section 2.55 certificate exclusions for auxiliary installations, replacements, and abandonments and for replacement of deteriorated or obsolete facilities.[52] The information provided in this section is current at the time of this manual's release. However, you should refer directly to the regulations to ensure that you comply with the most current requirements.

Because the environmental requirements of section 157.206(b) of our regulations are common to filings under the first two categories, section 7.1 summarizes these requirements. The following sections identify the environmental reporting requirements and recommendations for projects filed under each of the categories above.

7.1 STANDARD ENVIRONMENTAL CONDITIONS UNDER BLANKET CERTIFICATES – SECTION 157.206(b)

The standard conditions of section 157.206(b) apply to any project under the part 157 blanket certificate program (subpart F) or under the part 284 authorizations under the NGPA (subparts A, B, and C)[53] that involves ground disturbance or changes to operation air or noise emissions. Under section 157.206(b) the project sponsor must adopt the siting and maintenance requirements set forth in section 380.15 "and shall issue the relevant portions thereof to construction personnel, with instructions to use them." In addition, all activities must be consistent with all applicable law and the provisions of the following statutes, as amended, and the regulations or compliance plans developed to implement them:

- Clean Water Act, including the National Pollutant Discharge Elimination System;
- Clean Air Act, and air quality regulations and state implementation plans;

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[50] 18 CFR pt. 157, subpt. F; *see id.* §§ 157.202(b)(2)-157.218 (possible activities under the blanket certificate program).

[51] 18 CFR pt. 284, subpts. A, B, C (implementing section 311 of the NGPA, 15 USC § 3371); *id.* § 284.11 (environmental compliance for constructing an authorized facility or abandoning one with removal).

[52] 18 CFR § 2.55.

[53] 18 CFR § 284.11(a) (cross-referencing section 157.206(b)).

- National Historic Preservation Act of 1966 (NHPA);
- Archeological and Historic Preservation Act of 1974;
- Coastal Zone Management Act of 1972 (CZMA);
- Endangered Species Act of 1973 (ESA);
- Executive Order 11988 (May 24, 1977) requiring federal agencies to evaluate the potential effects of any actions it may take on a floodplain;
- Executive Order 11990 (May 24, 1977) requiring an evaluation of the potential effects of construction on wetlands;
- Wild and Scenic Rivers Act;
- National Wilderness Act;
- National Parks and Recreation Act of 1978; and
- Magnuson-Stevens Fishery Conservation and Management Act.

In order to be deemed in compliance with these statutes, the project sponsor acting under a blanket certificate or part 284 authorization must fulfill the following requirements.

- Comply with the ESA-implementing procedures in Appendix I of subpart F, involving consultation with the FWS and/or NOAA Fisheries, as appropriate. The project may go forward only if the FWS and/or NOAA Fisheries determine, pursuant to informal consultation, that:
    - there are no listed or proposed species or their critical habitat in the project area; or
    - there are listed or proposed species or their critical habitat in the project area, but the project, with appropriate mitigation measures to be implemented by the blanket certificate holder, is *not likely to adversely affect* a listed or proposed species or its critical habitat; or
    - there is no need for further consultation.[54]

[54] Concurrence with no-effect findings is not required by section 7 of the ESA, so the FWS and/or NOAA Fisheries may not respond to such requests. In these instances, you should document any coordination with the agency (e.g., a telephone conversation, meeting, or use of the IPaC system) to determine that no listed or

- Comply with the NHPA-implementing procedures in Appendix II of subpart F, involving review of the NRHP and consultation with the SHPO and/or the THPO, as appropriate.[55] The project may go forward only if this consultation results in the agency(ies) agreeing with the project sponsor that:

    - surveys are *not* required, and no listed properties[56] occur in the area of the project's potential environmental impact; or

    - surveys *are* required and survey results show that *no* listed properties and *no* unlisted properties that satisfy the National Register Criteria for Evaluation occur in the area of the project's potential environmental impact; or

    - there are listed or unlisted Criteria-satisfying properties in the area of the project's potential environmental impact, but the project will have no effect on these properties.[57,58]

- If applicable, obtain a determination from the administering state agency that the project will comply with the state's coastal zone management plan unless the state agency waives its right of review.

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proposed species or critical habitat occur in the project area. If you use the IPaC system to reach a conclusion of no effect, note the date of the IPaC system response as the date of the no effect determination. Your effort to maintain these records is critical to adequately support your no-effect determination acting as the Commission's non-federal representative for consultation under section 7 of the ESA.

[55] While THPOs must be consulted, as appropriate, there is no requirement for tribal consultations for blanket certificate projects generally.

[56] For purposes of this section, a "listed property" includes any district, site, building, structure, or object that is listed on the NRHP or is identified in the *Federal Register* as a property determined to be eligible for inclusion on the NRHP. 18 CFR pt. 157, subpt. F, app. II(a).

[57] A project that the project sponsor, the SHPO, or the THPO (as appropriate) determines may affect a listed or Criteria-satisfying property, even if the effect is minor (i.e., deemed to have "no adverse effect"), would not qualify to be constructed under a blanket certificate or part 284 authorization unless the project can be relocated to avoid all such properties, as agreed by the SHPO and/or THPO. **We acknowledge that the Advisory Council on Historic Preservation's revised regulations use the phrase "no historic properties affected." 36 CFR pt. 800**.

- Adhere to our current *Plan* and *Procedures*, or obtain our written approval to use project-specific alternative measures to the *Plan* and *Procedures* in accordance with section 1.A. of the *Plan* and *Procedures*.[59]

- Ensure that the project, including any project-specific alternative measures to our *Plan* and *Procedures*, will not have a significant adverse impact on a sensitive environmental resource or area. See table 7.1-1 for the list of sensitive environmental resources and areas.

- Ensure that the noise attributable to any new or modified compressor station does not exceed an L_{dn} of 55 dBA at any pre-existing NSA (such as schools, hospitals, or residences) when operating at full load.

- Ensure that no increase in noise at NSAs results from additions or modifications to existing compressor stations that already exceed an L_{dn} of 55 dBA at any pre-existing NSAs when operating at full load.[60]

- Conduct any HDDs or drilling of wells that will occur between 10 p.m. and 7 a.m. with a goal of keeping the perceived noise at any pre-existing NSA at or below an L_n of 55dBA.

TABLE 7.1-1

Sensitive Environmental Areas [a]

- The habitats of species which have been identified as endangered or threatened under the Endangered Species Act and
- Essential fish habitat as identified under the Magnuson-Stevens Fishery Conservation and Management Act
- National or State Forests or Parks
- Properties listed on, or eligible for inclusion in, the National Register of Historic Places, or the National Register of Historic Landmarks
- Floodplains and wetlands
- Designated or proposed wilderness areas, national or state wild and scenic rivers, wildlife refuges and management areas and sanctuaries
- Prime agricultural lands, designated by the Department of Agriculture
- Sites which are subject to use by American Indians and other Native Americans for religious purposes

[a] Section 157.202(b)(11).

59 To request a variance for projects constructed under the automatic authorization provisions in the Commission's regulations, you must file a request with us in advance of construction and get our written approval. For prior notices, you should indicate what alternative measures you are proposing in your environmental report, and after construction commences on these projects, you must file a variance request and get our written approval.

60 In accordance with 157.206(b)(5)(ii)(A), (B), and (C), you have 1 year to achieve compliance if the noise attributable to your new compressor station at full load is above an L_{dn} of 55 dBA or if the noise attributable to your addition to a grandfathered existing compressor (already above an L_{dn} of 55 dBA) would increase the operating noise. You must file a subsequent noise survey within 60 days of remediation.

If a project fails to meet all of the above conditions, then it cannot proceed under a subpart F blanket certificate or a part 284 authorization. If it is to proceed, the project sponsor must file an application for a certificate under the NGA.

Activity involving "eligible facilities" (section 157.208) or underground storage testing and development (section 157.215) cannot proceed under a subpart F blanket certificate if the activity is within 0.5 mile or 2.0 miles, respectively, of a nuclear power plant that is operating, under construction, or for which a construction permit has been filed with the Nuclear Regulatory Commission.[61]

7.2 BLANKET CERTIFICATE – PART 157, SUBPART F

This section covers possible activities under a Subpart F blanket certificate. You may use the NGA blanket certificate program to acquire, construct, develop, install, modify, replace, operate, or abandon natural gas facilities as described under the following sections:

- section 157.208: construction, acquisition, operation, and replacement of "eligible facilities," and miscellaneous rearrangement of any facilities;
- section 157.209: temporary compression facilities;
- section 157.210: mainline natural gas facilities;
- section 157.211: delivery points;
- section 157.212: synthetic gas and revaporized LNG facilities;
- section 157.213: underground storage field facilities;
- section 157.214: increase in storage capacity;
- section 157.215: underground storage testing and development; or
- section 157.216: abandonment.

The blanket certificate program requires that all projects must be completed in compliance with the standard conditions of section 157.206(b), described above.

[61] Section 157.206(b)(6)(ii).

You may automatically undertake activities related to the following facilities, subject to the requirements (e.g., landowner requirements) and cost limits of the relevant sections: minor eligible facilities (section 157.208(a)), all temporary compression facilities (section 157.209(a)), some delivery points (section 157.211(a)(1)), minor underground storage facilities (section 157.213(a)), all underground storage testing and development (section 157.215), and some abandonments (section 157.216(a)).[62]

You must be authorized under the prior notice provisions of the relevant sections to undertake activities related to the following facilities: major eligible facilities (section 157.208(b)), all mainline natural gas facilities (section 157.210), some delivery points (section 157.211(a)(2)), all synthetic gas and revaporized LNG facilities (section 157.212); major underground storage facilities (section 157.213(b)), all increases in storage capacity (section 157.214), and some abandonments (section 157.216(b)).

Table I under section 157.208(d) specifies project cost limits for automatic authorization and prior notice provisions for applicable blanket projects. Table II under section 157.215(a) specifies project cost limits for automatic authorization for underground storage testing and development. **Note that cost limits are subject to change each year; therefore, project sponsors should check the regulations for current cost limits.**

The following sections describe only the *environmental* information required for the annual reports or the prior notice filings. In most cases, those filings require significant additional data. Increases in storage capacity, changes to rate schedules, and changes to customer names do not involve any construction and are therefore not covered by the environmental regulations. However, annual reporting may still be required; consult sections 157.214, 157.217, and 157.218, respectively.

7.2.1 Annual Reporting

By May 1 of each year, you must file an annual report (as specified by section 157.207) of all activities completed under the blanket certificate during the previous calendar year. The only exceptions are increases in storage capacity, which must be reported semi-annually (section 157.214(c)); the testing and development of an aquifer-type storage reservoir, which must be reported quarterly (section 157.215(b)(2)); and some abandonments (section 157.216(b)), for which there are no annual reporting requirements.

[62] You may also use the blanket certificate program to make changes to an existing customer's rate schedule (section 157.217) or name (section 157.218).

Consult the applicable regulations for the full annual reporting requirements.[63] Examples of the environmental reporting requirements include:

- a description of the facilities including (as appropriate) the length and size of pipelines, compression including horsepower, size, type, and number of compressor units;

- the specific purpose, location, and beginning and completion dates for the construction or installation of the facilities, and the in-service date; and

- a description of the contacts made, reports produced, and results of consultations completed to comply with the ESA, NHPA, and CZMA before construction. This should include the date and the name of the relevant agency. Actual documentation is not required, although it is helpful to include the "clearance" from the agency.

You should provide, in addition to the items listed above and in the regulations, a map showing the location of the facility in sufficient detail to allow us to visit the site if necessary.

For minor eligible facilities (section 157.208(a)) and minor underground storage field facilities (section 157.213(a)), the annual report required by 157.208(e) must also include documentation, including photographs, that the restoration of disturbed areas is progressing appropriately, and discuss problems or unusual construction issues, including those identified by affected landowners, and corrective actions taken or planned to address these problems and issues.[64]

For major eligible facilities (section 157.208(b)), mainline natural gas facilities (section 157.210), synthetic gas and revaporized LNG facilities (section 157.212), and major underground storage field facilities (section 157.213(b)), for which you will have provided environmental information in the prior notice before construction and in environmental inspector reports during construction, the annual report required by section 157.208(e) must only include the actual installed cost of each facility item.

[63] See section 157.207 for an overview with cross-references for each type of facility.

[64] Section 157.208(e)(4)(ii).

For other types of facilities, the annual reports described in the separate regulations require only limited environmental information, for example dates of agreements with consulted resource agencies,[65] or no environmental information at all.[66]

7.2.2 Prior Notice to the Federal Energy Regulatory Commission

For prior notice activities you must file a request that includes a form of notice and other information described in section 157.205(b) with the Secretary of the Commission before beginning any activities. The content of the filing will vary by activity, as discussed below. Within 10 calendar days of receiving this information, the Secretary will either notify you that she rejects the request as patently deficient or will publish a notice of the request in the Federal Register. The notice in the Federal Register will specify a 60-day deadline for filing protests or interventions. During this period any person (and Commission staff) may file a protest. If no protest is filed, you may begin the activity on the day after the 60-day period expires. If a protest is filed, the activity may not go forward under the blanket regulations unless the Director of OEP dismisses the protest within 10 days[67] or the protestor withdraws it no later than 30 days after the 60-day period expires.[68] If the 60-day period has run and all protests are withdrawn, the activity may proceed on the day after the withdrawal of the last protest.

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[65] *See, e.g.*, sections 157.209(b) (temporary compression facilities), 157.211(c) (delivery points), 157.215(b)(1) (underground storage testing and development), and 157.216(d) (automatic abandonments).

[66] *See, e.g.*, sections 157.214(c) (increase in storage capacity), 157.217 (changes in rate schedules), 157.218 (changes in customer name).

[67] The Director of OEP may dismiss a protest if the Director determines that it does not raise substantive issue and fails to provide any specific detailed reason or rationale for the objection. A dismissal adds another 30 days to the 60-day deadline.

[68] If a protest is not withdrawn or dismissed, the activity proposed by the blanket certificate holder will be treated as an application for section 7 (NGA) authorization.

7.2.3 Prior Notice Filings for Major Eligible Facilities (Section 157.208(b)) and Others

According to table I in section 157.208(d), you must fulfill prior notice requirements under sections 157.208(b) and (c) for major eligible facilities, which cost more than the cost limits in column 1 but less than the cost limits in column 2. Consult section 157.208(c) for a full description of the information required in a prior notice filing. This same information is required in prior notices for *all* mainline facilities, including compression and looping projects (section 157.210); *all* synthetic gas and revaporized LNG facilities (section 157.212); and major underground storage field facilities (section 157.213(b)). Below is a summary of the *environmental* information that you must include for each project:

- a description of the facilities, including the length, diameter, wall thickness, and maximum allowable operating pressure of pipelines; for compressors, the size, type and number of compressor units, horsepower required, horsepower existing and proposed, volume of fuel gas, suction and discharge pressure and compression ratios; metering facilities, taps, valves, etc.;

- the specific purpose of the facilities and relationship to other existing and planned facilities;

- a general location map (showing the proposed facilities in relation to existing facilities);

- USGS 7.5-minute-series topographic maps or maps of equivalent detail (showing the location of each proposed facility) and any sensitive environmental area within 0.25 mile of construction;

- a concise environmental report addressing relevant issues outlined in section 380.12 that describes the existing environmental conditions and resources, the anticipated impacts of facility construction on the quality of the human environment, including impacts on sensitive environmental areas, as offset by proposed mitigation measures;

- a description of how proposed compression facilities (as applicable) will comply with applicable state implementation plans developed under the Clean Air Act;

- a statement (as applicable) describing how drilling for wells or horizontal directional drilling would be designed to meet the goal of limiting the noise

of these activities at NSAs to an L_{dn} of 55 dBA, or what mitigation would be offered to landowners;

- copies of correspondence or documentation of consultation, as appropriate, with the FWS, NOAA Fisheries, SHPO, THPO, and state coastal zone management agency as described in "Standard Environmental Conditions" in section 7.1 above;

- copies of all agreements received to comply with the ESA, the NHPA, and the CZMA; and

- a commitment to having the environmental inspector's report filed every week.

We also recommend that you provide the anticipated start and end dates of construction and an analysis describing how the project will comply with the standard conditions of section 157.206(b) including, for compression facilities, the Clean Air Act and the L_{dn} of 55 dBA at any NSA.

7.2.4 Prior Notice Filings for Delivery Points (Section 157.211(a)(2)) and Abandonments (Section 157.216(b))

Although the regulations do not specifically require that you file environmental information to construct or abandon facilities under these sections (other than earth-disturbing abandonments, which require USGS maps), the standard environmental conditions of section 157.206(b) apply to these projects. We also recommend that you provide the following environmental information to assist us in our review even if not specifically required by regulation:

- a description of the facilities/activity and its purpose;

- the anticipated start and end dates of the activity;

- the county and state where the activity will take place;

- a general location map of where the activity will take place (copies of pipeline system maps are acceptable if detailed enough to allow us to locate the facilities in the field);

- USGS 7.5-minute-series topographic maps, or maps of equivalent detail, showing the location of each facility and any sensitive environmental area within 0.25 mile of construction;

- a statement that the project will comply with the requirements of section 157.206(b) before construction;
- a concise analysis discussing the relevant issues outlined in section 380.12; and
- copies of correspondence or documentation of consultation (e.g., telephone conversations or meetings) with the:
    - FWS and NOAA Fisheries (see Appendix I of Part 157, Subpart F, referenced at section 157.206(b)(3)(i));
    - SHPO and THPO (see Appendix II of Part 157, Subpart F, referenced at section 157.206(b)(3)(ii)); and
    - state coastal zone management agency, if applicable, including the consistency determination.

7.2.5 Prior Notice Filings for Underground Storage Field Facilities (Section 157.213(b)) and Increases in Storage Capacity (Section 157.214)

You may acquire, construct, modify, replace, or operate underground storage facilities under prior notice procedures only if your activities will not change the facilities' certificated physical parameters and compliance with environmental provisions. You may increase storage capacity under prior notice procedures only if you can accomplish the increase without constructing additional facilities. Such an increase must be supportable by geological data and operating experience. In addition to the requirements of 157.206(b), prior notice requests for underground storage field facilities must include additional non-environmental information that is fully detailed in section 157.213(c).

7.2.6 Landowner Notification

With four exceptions,[69] you must notify landowners prior to any construction under the subpart F blanket certificate program. "Landowners" who must be notified are

[69] No landowner notification is required for: (1) replacements that would have been done under section 2.55 of the Commission regulations but for the fact that the replacement facilities do not have the same capacity and as long as they meet the location requirements of section 2.55(b)(1)(ii) and do not cause any ground disturbance, or any replacement done for safety, DOT compliance, or unplanned environmental or maintenance reasons requiring immediate action by the certificate holder; (2) abandonments that involve only the sale or transfer of facilities, and where

defined in section 157.6(d)(2). See section 157.203(d) for the specific requirements for the contents of the landowner notice, which we describe in section 2.0 of this manual above.

For automatically authorized projects, you must notify landowners at least 45 days prior to commencing construction or at the time that you initiate easement negotiations, whichever is earlier. A landowner may waive the 45-day waiting period in writing as long as you have actually provided the notice.

For projects authorized under prior notice procedures, you must make a good faith effort to notify landowners within at least 3 business days following the date that the Commission assigns a docket number to the application or at the time that you initiate easement negotiations, whichever is earlier.

7.3 NATURAL GAS POLICY ACT SECTION 311 PROJECTS – PART 284, SUBPART A

This section covers possible activities under the authorization of Part 284, Subpart A. Under this authorization you may construct facilities or abandon facilities by removal if they will be used or have been used solely to provide transportation under section 311 of the NGPA. All activities must comply with the standard conditions of section 157.206(b). You may proceed automatically with activities that do not exceed the cost limit in column 1 of Table I of section 157.208(d). For activities of greater cost you must notify the Commission at least 30 days before starting construction. You must report all activities either in an annual report or a 30-day advance notification.

7.3.1 Annual Report

By May 1 of each year, you must file an annual report of all activities completed during the previous calendar year that do not exceed the cost limit specified in column 1 of table I of section 157.208(d). You must include the following environmental information, as specified in section 284.11(c):

- a description of the facilities that were constructed or abandoned with removal including pipeline size and length, compressor horsepower, capacity, and cost of construction;

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the easement will continue to be used for the transportation of natural gas; (3) if there is only one landowner and that landowner has requested the service or facilities; and (4) for activities that do not involve ground disturbance or changes to operation air and/or noise emissions.

- current USGS 7.5-minute-series topographic maps showing the location of each facility;

- evidence of compliance with each provision of section 157.206(b), (this should include copies of agency concurrence documenting compliance with the ESA, NHPA, and CZMA (see section 7.1 above)); and

- a description of the procedures to be used for erosion control, revegetation and maintenance, and stream and wetland crossings (these procedures should be consistent with our *Plan* and *Procedures*).

7.3.2 Advance Notifications

For activities that exceed the cost limit in column 1 of table I in section 157.208(d), you must notify the Commission at least 30 days before beginning construction. In the advance notification, file the same environmental information identified in section 7.3.1 above. These activities are not included in the annual report.

7.4 AUXILIARY INSTALLATIONS AND REPLACEMENT PROJECTS – SECTION 2.55

This section covers the certificate exclusions for auxiliary installations, replacements, and abandonments under section 2.55(a) and replacements of deteriorated or obsolete facilities under section 2.55(b). In most cases you must provide advance notification to affected landowners, the Commission, or both, before you may proceed under section 2.55.

Activities associated with the construction, replacement, or abandonment of section 2.55 facilities must conform to the conditions of the case-specific or part 157 blanket certificate authorization of the affected transmission facilities, including all required mitigation measures, such as erosion control or revegetation protocols, that applied when the facilities were constructed. All section 2.55 installations and replacements, including all workspace associated with cathodic protection installations, must be installed within the same permanent right-of-way or same compressor station or other aboveground facility site as the affected transmission facility. Similarly, all section 2.55(a) and 2.55(b) construction activities must be confined to areas used to construct the existing certificated facilities. If you do not know the location and width of the temporary and permanent rights-of-way and associated workspaces used to construct the original facility, you should limit construction to no more than a 75-foot-wide right-of-way for pipelines larger than 12 inches in diameter and no more than a 50-foot-wide right-of-way for pipelines 12 inches in diameter and smaller. Additional guidance for determining the acceptable construction area, including ATWS, appears in Appendix A to part 2 of our regulations.

Landowner Notification. You must make a good faith effort to notify affected landowners at least 5 days in advance of commencing a section 2.55(a) or section 2.55(b) activity. In this case, an "affected landowner" is defined as any owner whose property will be directly affected (i.e., used) and subject to ground disturbance. A landowner may waive the 5-day prior notice requirement so long as you have actually provided the notice. The requirement for landowner notification does not apply to activities with no ground disturbance or for which ground disturbance will be confined within the aboveground site of your facilities, or to activities for unforeseen safety, DOT compliance, or unplanned maintenance reasons that require your immediate attention.

Annual Report. With the exception of aboveground replacements that do not involve compression facilities or the use of earthmoving equipment, an annual report must be filed by May 1 for all section 2.55(b) replacement projects completed during the previous calendar year that cost less than the limit specified in column 1 of table I of section 157.208(d) or that require immediate replacement to comply with DOT safety regulations. If a project exceeds the cost limitation, an advance notification must be filed at least 30 days before beginning construction.

For both the annual report and advance notification, the following information is either required or recommended to assist us in our review of each project:

- a description of the facilities, including the pipeline length and diameter, capacity and cost, compressor horsepower, metering facilities, taps, valves, etc.;
- a current USGS 7.5-minute-series topographic map (showing the location of each facility);
- a description of the procedures to be used for erosion control, revegetation and maintenance, and stream and wetland crossings (should be consistent with the procedures approved when the original facility was certificated, or in its absence, a plan that meets the baseline standards of our *Plan* and *Procedures*);
- the specific reason for replacing the facilities;
- for 30-day advance notifications, a general location map (showing the facilities in relation to existing facilities); and
- the actual (or anticipated) start and end dates of construction.

Additionally, although not required, a brief description of impacts (including acreage affected and impacts on any sensitive environmental resources) and photographic

documentation of the restored work area (annual report only) will help us decide whether a project should have restoration inspections.

Advance Notification. To install auxiliary facilities on existing transmission facilities, you are not required to notify the Commission beforehand. To install auxiliary facilities on, or at the same time as, certificated facilities that are not yet in service, you must notify the Commission at least 30 days before beginning construction. To install auxiliary facilities on, or at the same time as, proposed facilities (not authorized) before the Commission, you must describe auxiliary facilities in the section 380.12 environmental report or in a supplemental filing to the Commission.

To replace facilities, you must notify the Commission at least 30 days before beginning construction, except when the cost does not exceed the cost limit in column 1 of table I of section 157.208(d) or when you must act immediately under DOT safety regulations.

ATTACHMENT 1

MINIMUM AND FULL FILING REQUIREMENTS FOR ENVIRONMENTAL REPORTS

KEY TO DATA SOURCES

A	Aerial Photographs
B	Agency Consultation
C	Agricultural Extension Agents
D	Applicant
E	State or county groundwater databases (e.g., Board of Health, Department of Natural Resource water divisions)
F	U.S. Army Corps of Engineers
G	Community Noise, U.S. Environmental Protection Agency 1971
H	Comprehensive Plans, County or Land Management Agencies
I	County/Municipal Agencies
J	U.S. Environmental Protection Agency
K	Erosion Control and Drainage Plan Handbooks, State and County
L	Field Surveys
M	Fishery Biologist, State or Regional
N	U.S. Fish and Wildlife Service
O	National Wetlands Inventory Maps
P	Geological Survey Personnel, Federal, State, and Local
Q	Landowners
R	Manufacturer's Data
S	Mineral Resource Maps, Federal and State
T	National Oceanic and Atmospheric Administration, National Marine Fisheries Service
U	Noise Surveys
V	National Park Service
W	Natural Resources Conservation Service
X	Natural Resources Conservation Service Soil Surveys or Soil Survey Geographic Database (SSURGO)
Y	Upland Erosion Control, Revegetation, and Maintenance Plan
Z	Wetland and Waterbody Construction and Mitigation Procedures
AA	Resource Reports 2, 3, and 4
BB	Resource Report 8
CC	Soil Authorities, Other than Natural Resources Conservation Service
DD	State Agencies
EE	State Air Quality Agency
FF	State Drinking Water Division
GG	State Water Quality Division
HH	State Wetland Maps
II	Surficial Geologic and Bedrock Geologic Maps
JJ	U.S. Department of Labor
KK	U.S. Bureau of the Census
LL	U.S. Department of Transportation
MM	U.S. Geological Survey Topographic Maps

ENVIRONMENTAL REPORTS FOR NATURAL GAS ACT APPLICATION MINIMUM FILING REQUIREMENTS

(TITLE 18 CODE OF FEDERAL REGULATIONS SECTION 380 APPENDIX A)

Environmental Reports for Natural Gas Act Application
Minimum Filing Requirements
(Title 18 Code of Federal Regulations Section 380 Appendix A)

Resource Report 1 – General Project Description	
MINIMUM FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ 1. Provide a detailed description and location map of the project facilities – Title 18 Code of Federal Regulations (CFR) part (§) 380.12 (c)(1)	D
☐ 2. Describe any non-jurisdictional facilities that would be built in association with the project – 18 CFR § 380.12 (c)(2)	D
☐ 3. Provide current original U.S. Geological Survey 7.5-minute-series topographic maps with mileposts showing the project facilities – 18 CFR § 380.12 (c)(3)	D
☐ 4. Provide aerial images or photographs or alignment sheets based on these sources with mileposts showing the project facilities – 18 CFR § 380.12 (c)(3)	D
☐ 5. Provide plot/site plans of compressor stations showing the locations of the nearest noise sensitive areas within 1 mile – 18 CFR § 380.12 (c)(3,4)	D
☐ 6. Describe construction and restoration methods – 18 CFR § 380.12 (c)(6)	D
☐ 7. Identify the permits required for construction across surface waters – 18 CFR § 380.12 (c)(9)	D
☐ 8. Provide the names and address of all affected landowners and certify that all affected landowners will be notified as required in § 157.6(d) – 18 CFR § 380.12 (c)(10)	D
[a] D Applicant	

Environmental Reports for Natural Gas Act Application
Minimum Filing Requirements
(Title 18 Code of Federal Regulations Section 380 Appendix A)

Resource Report 2 – Water Use and Quality	
MINIMUM FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ 1. Identify all perennial surface waterbodies crossed by the proposed project and their water quality classification – Title 18 Code of Federal Regulations (CFR) part (§) 380.12(d)(1)	L, GG, LL
☐ 2. Identify all waterbody crossings that may have contaminated waters or sediments – 18 CFR § 380.12(d)(1)	GG
☐ 3. Identify watershed areas, designated surface water protection areas, and sensitive waterbodies crossed by the proposed project – 18 CFR § 380.12(d)(1)	GG, GG
☐ 4. Provide a table (based on National Wetlands Inventory [NWI] maps if delineations have not been done) identifying all wetlands, by milepost and length, crossed by the proposed project (including abandoned pipeline), and the total acreage and acreage of each wetland type that would be affected by construction – 18 CFR § 380.12(d)(1,4)	A, D, L, O, HH
☐ 5. Discuss construction and restoration methods proposed for crossing wetlands, and compare them to staff's Wetland and Waterbody Construction and Mitigation Procedures – 18 CFR § 380.12(d)(2)	D, Z
☐ 6. Describe the proposed waterbody construction, impact mitigation, and restoration methods to be used to cross surface waters and compare to the staff's Wetland and Waterbody Construction and Mitigation Procedures – 18 CFR § 380.12(d)(2)	D, Z
☐ 7. Provide original NWI maps or the appropriate state wetland maps, if NWI maps are not available, that show all proposed facilities and include milepost locations for proposed pipeline routes – 18 CFR § 380.12(d)(4)	D, O, HH
☐ 8. Identify all U.S. Environmental Protection Agency – or state-designated aquifers crossed – 18 CFR § 380.12(d)(9)	E, J, FF, GG

[a]

A	Aerial Photographs	O	National Wetlands Inventory Maps
D	Applicant	Z	Wetland and Waterbody Construction and Mitigation Procedures
E	State or county groundwater databases (e.g., Board of Health, Department of Natural Resource water divisions)	FF	State Drinking Water Division
		GG	State Water Quality Division
J	U.S. Environmental Protection Agency	HH	State Wetland Maps
L	Field Surveys	LL	U.S. Department of Transportation

Environmental Reports for Natural Gas Act Application
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(Title 18 Code of Federal Regulations Section 380 Appendix A)

Resource Report 3 – Fish, Wildlife, and Vegetation	
MINIMUM FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ 1. Classify the fishery type of each surface waterbody that would be crossed, including fisheries of special concern – Title 18 Code of Federal Regulations (CFR) part (§) 380.12(e)(1)	M
☐ 2. Describe terrestrial and wetland wildlife and habitats that would be affected by the project – 18 CFR § 380.12(e)(2)	L, DD
☐ 3. Describe the major vegetative cover types that would be crossed and provide the acreage of each vegetative cover type that would be affected by construction – 18 CFR § 380.12(e)(3)	A, L
☐ 4. Describe the effects of construction and operation procedures on the fishery resources and proposed mitigation measures – 18 CFR § 380.12(e)(4)	D, M
☐ 5. Evaluate the potential for short-term, long-term, and permanent impact on the wildlife resources and state-listed endangered or threatened species caused by construction and operation of the project and proposed mitigation measures – 18 CFR § 380.12(e)(4)	D, DD
☐ 6. Identify all federally listed or proposed endangered or threatened species that potentially occur in the vicinity of the project and discuss the results of the consultations with other agencies. Include survey reports as specified in 18 CFR § 380.12(e)(5)	L, N, T, DD
☐ 7. Identify all federally listed essential fish habitat that potentially occurs in the vicinity of the project and the results of abbreviated consultations with the National Oceanic and Atmospheric Administration's National Marine Fisheries Service, and any resulting essential fish habitat assessment – 18 CFR § 380.12(e)(6)	N, M, T
☐ 8. Describe any significant biological resources that would be affected. Describe impact and any mitigation proposed to avoid or minimize that impact – 18 CFR § 380.12(e)(4,7)	A, D, L, N, T, DD

[a]
A Aerial Photographs
D Applicant
L Field Surveys
M Fishery Biologist, State or Regional
N U.S. Fish and Wildlife Service
T National Oceanic and Atmospheric Administration, National Marine Fisheries Service
DD State Agencies

Environmental Reports for Natural Gas Act Application
Minimum Filing Requirements
(Title 18 Code of Federal Regulations Section 380 Appendix A)

Resource Report 4 – Cultural Resources	
MINIMUM FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ 1. Initial cultural resources consultation and documentation, and documentation of consultation with Native Americans – Title 18 Code of Federal Regulations (CFR) part (§) 380.12(f)(1)(i) & (2)	D
☐ 2. Overview/Survey Report(s) – 18 CFR § 380.12(f)(1)(ii) & (2)	D
[a] D Applicant	

Environmental Reports for Natural Gas Act Application
Minimum Filing Requirements
(Title 18 Code of Federal Regulations Section 380 Appendix A)

Resource Report 5 – Socioeconomics	
MINIMUM FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ 1. For major aboveground facilities and major pipeline projects that require an environmental impact statement, describe existing socioeconomic conditions within the project area – Title 18 Code of Federal Regulations (CFR) part (§) 380.12 (g)(1)	I, JJ, KK
☐ 2. For major aboveground facilities, quantify impact on employment, housing, local government services, local tax revenues, transportation, and other relevant factors within the project area – 18 CFR § 380.12 (g)(2-6)	D, I

[a] D Applicant; I County/Municipal Agencies; JJ U.S. Department of Labor; KK U.S. Bureau of the Census

Environmental Reports for Natural Gas Act Application
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Resource Report 6 – Geological Resources	
MINIMUM FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ 1. Identify the location (by milepost) of mineral resources and any planned or active surface mines crossed by the proposed facilities – Title 18 Code of Federal Regulations (CFR) part (§) 380.12 (h)(1 & 2)	A, L, S, LL
☐ 2. Identify any geologic hazards to the proposed facilities – 18 CFR § 380.12 (h)(2)	H, L, P, X, II, LL
☐ 3. Discuss the need for and locations where blasting may be necessary in order to construct the proposed facilities – 18 CFR § 380.12 (h)(3)	L, X, II
☐ 4. For liquefied natural gas (LNG) projects in seismic areas, the materials required by "Data Requirements for the Seismic Review of LNG Facilities," National Bureau of Standards Information Report 84-2833 – 18 CFR § 380.12 (h)(5)	D
☐ 5. For underground storage facilities, how drilling activity by others within or adjacent to the facilities would be monitored, and how old wells would be located and monitored within the facility boundaries – 18 CFR § 380.12 (h)(6)	D

[a]

A	Aerial Photographs	S	Mineral Resource Maps, Federal and State
D	Applicant	X	Natural Resources Conservation Service Soil Surveys or Soil Survey Geographic Database (SSURGO)
H	Comprehensive Plans, County or Land Management Agencies	II	Surficial Geologic and Bedrock Geologic Maps
L	Field Surveys	LL	U.S. Department of Transportation
P	Geological Survey Personnel, Federal, State, and Local		

Environmental Reports for Natural Gas Act Application
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Resource Report 7 – Soils	
MINIMUM FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ 1. Identify, describe, and group by milepost the soils affected by the proposed pipeline and aboveground facilities – Title 18 Code of Federal Regulations (CFR) part (§) 380.12(I)(1)	L, W, X, CC
☐ 2. For aboveground facilities that would occupy sites over 5 acres, determine the acreage of prime farmland soils that would be affected by construction and operation – 18 CFR § 380.12(I)(2)	C, H, L, W, X, CC
☐ 3. Describe by milepost potential impacts on soils – 18 CFR § 380.12(I)(3,4)	C, K, W, Y, CC
☐ 4. Identify proposed mitigation to minimize impact on soils and compare with the staff's Upland Erosion Control, Revegetation, and Maintenance Plan – 18 CFR § 380.12(I)(5)	C, D, H, K, W, Y, CC

[a]

C	Agricultural Extension Agents
D	Applicant
H	Comprehensive Plans, County or Land Management Agencies
K	Erosion Control and Drainage Plan Handbooks, State and County
L	Field Surveys
W	Natural Resources Conservation Service
X	Natural Resources Conservation Service Soil Surveys or Soil Survey Geographic Database (SSURGO)
Y	Upland Erosion Control, Revegetation, and Maintenance Plan
CC	Soil Authorities, Other than Natural Resources Conservation Service

Environmental Reports for Natural Gas Act Application
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Resource Report 8 – Land Use, Recreation, and Aesthetics	
MINIMUM FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ 1. Classify and quantify land use affected by: Title 18 Code of Federal Regulations (CFR) part (§) 380.12 (j) (1) a. Pipeline construction and permanent rights-of-way; b. Extra work/staging areas; c. Access roads; d. Pipe and contractor yards; and e. Aboveground facilities.	A, L, X
☐ 2. Identify by milepost all locations where the pipeline right-of-way would at least partially coincide with existing right-of-way, where it would be adjacent to existing rights-of-way, and where it would be outside of existing right-of-way – 18 CFR § 380.12 (j) (1)	A, D, L, LL
☐ 3. Provide detailed typical construction right-of-way cross section diagrams showing information such as widths and relative locations of existing rights-of-way, new permanent right-of-way and temporary construction right-of-way – 18 CFR – § 380.12 (j) (1)	D
☐ 4. Summarize the total acreage of land affected by construction and operation of the project – 18 CFR § 380.12 (j) (1)	D
☐ 5. Identify by milepost all planned residential or commercial/business development and the timeframe for construction – 19 CFR § 380.12 (j) (4)	I
☐ 6. Identify by milepost special land uses (e.g., maple sugar stands, specialty crops, natural areas, national and state forests, conservation land, etc.) – 18 CFR § 380.12 (j) (4)	A, B, O, I, L, DD
☐ 7. Identify by beginning milepost and length of crossing all land administered by federal, state, or local agencies, or private conservation organizations – 18 CFR § 380.12 (j) (4)	B, I, DD, LL
☐ 8. Identify by milepost all natural, recreational, or scenic areas, and all registered natural landmarks crossed by the project – 18 CFR § 380.12 (j) (4 & 6)	V, B, I, DD, LL
☐ 9. Identify all facilities that would be within designated coastal zone management areas – 18 CFR § 380.12 (j) (4))	DD
☐ 10. Identify by milepost all residences that would be within 50 feet of the construction right-of-way or extra work area – 18 CFR § 380.12 (j) (5)	I, L
☐ 11. Identify all designated or proposed candidate National or State Wild and Scenic Rivers crossed by the project – 18 CFR – § 380.12 (j) (6)	B
☐ 12. Describe any measures to visually screen aboveground facilities, such as compressor stations – 18 CFR § 380.12 (j) (11)	D
☐ 13. Demonstrate that applications for rights-of-way or other proposed land use have been or soon will be filed with federal land-managing agencies with jurisdiction over land that would be affected by the project – 18 CFR § 380.12 (j) (12)	D

[a]

A	Aerial Photographs	V	National Park Service
B	Agency Consultation	X	Natural Resources Conservation Service Soil Surveys or Soil Survey Geographic Database (SSURGO)
D	Applicant		
I	County/Municipal Agencies	DD	State Agencies
L	Field Surveys	LL	U.S. Department of Transportation
O	National Wetlands Inventory Maps		

Environmental Reports for Natural Gas Act Application
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Resource Report 9 – Air and Noise Quality	
MINIMUM FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ 1. Describe existing air quality in the vicinity of the project – Title 18 Code of Federal Regulations (CFR) part (§) 380.12 (k) (1).	EE
☐ 2. Quantify the existing noise levels (day-night sound level (L_{dn}) and other applicable noise parameters) at noise sensitive areas and at other areas covered by relevant state and local noise ordinances – 18 CFR § 380.12 (k) (2)	R
☐ 3. Quantify existing and proposed emissions of compressor equipment, plus construction emissions, including nitrogen oxides (NO_x) and carbon monoxide (CO), and the basis for these calculations. Summarize anticipated air quality impacts for the project – 18 CFR § 380.12 (k) (3)	R
☐ 4. Describe the existing compressor units at each station where new, additional, or modified compression units are proposed, including the manufacturer, model number, and horsepower of the compressor units. For proposed, new, additional, or modified compressor units, include horsepower, type, and energy source – 18 CFR § 380.12 (k) (4)	D, R
☐ 5. Identify any nearby noise-sensitive area by distance and direction from the proposed compressor unit building/enclosure – 18 CFR § 380.12 (k) (4)	G, U, EE
☐ 6. Identify any applicable state or local noise regulations – 18 CFR § 380.12 (k) (4).	EE
☐ 7. Calculate the noise impact at noise-sensitive areas of the proposed compressor unit modifications or additions, specifying how the impact was calculated, including manufacturer's data and proposed noise control equipment – 18 CFR § 380.12 (k) (4)	R

[a] D Applicant; G Community Noise, U.S. Environmental Protection Agency 1971; R Manufacturer's Data; U Noise Surveys; EE State Air Quality Agency

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(Title 18 Code of Federal Regulations Section 380 Appendix A)

Resource Report 10 – Alternatives	
MINIMUM FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ 1. Address the "no action" alternative – Title 18 Code of Federal Regulations (CFR) part (§) 380.12(1)(1)	D
☐ 2. For large projects, address the effect of energy conservation or energy alternatives to the project – 18 CFR § 380.12(1)(1)	D
☐ 3. Identify system alternatives considered during the identification of the project and provide the rationale for rejecting each alternative – 18 CFR § 380.12(1)(1)	D
☐ 4. Identify major and minor route alternatives considered to avoid impact on sensitive environmental areas (e.g., wetlands, parks, or residences) and provide sufficient comparative data to justify the selection of the proposed route – 18 CFR § 380.12(1)(2)(ii)	A, B, L, LL
☐ 5. Identify alternative sites considered for the location of major new aboveground facilities and provide sufficient comparative data to justify the selection of the proposed site – 18 CFR § 380.12(1)(2)(ii)	A, I, L, W, X, LL

[a]

A	Aerial Photographs	W	Natural Resources Conservation Service
B	Agency Consultation	X	Natural Resources Conservation Service Soil Surveys or Soil Survey Geographic Database (SSURGO)
D	Applicant		
I	County/Municipal Agencies		
L	Field Surveys	LL	U.S. Department of Transportation

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(Title 18 Code of Federal Regulations Section 380 Appendix A)

Resource Report 11 – Reliability and Safety	
MINIMUM FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ 1. Describe how the project facilities would be designed, constructed, operated, and maintained to minimize potential hazard to the public from the failure of project components as a result of accidents or natural catastrophes – Title 18 Code of Federal Regulations part 380.12 (m).	D
[a] D Applicant	

Environmental Reports for Natural Gas Act Application
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(Title 18 Code of Federal Regulations Section 380 Appendix A)

Resource Report 12 – Polychlorinated Biphenyl (PCB) Contamination	
MINIMUM FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ 1. For projects involving the replacement or abandonment of facilities determined to have polychlorinated biphenyls (PCBs), provide a statement that activities would comply with an approved U.S. Environmental Protection Agency disposal permit or with the requirements of the Toxic Substances Control Act – Title 18 Code of Federal Regulations (CFR) part (§) 380.12 (n)(1)	J
☐ 2. For compressor station modification on sites that have been determined to have soils contaminated with PCBs, describe the status of remediation efforts completed to date – 18 CFR § 380.12 (n)(2)	J
[a] J U.S. Environmental Protection Agency	

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(Title 18 Code of Federal Regulations Section 380 Appendix A)

Resource Report 13 – Additional Information Related to Liquefied Natural Gas (LNG) Plants	
MINIMUM FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ 1. Provide all the listed detailed engineering materials – Title 18 Code of Federal Regulations (CFR) Part 380.12(o))	D
[a] D Applicant	

ENVIRONMENTAL REPORTS FOR NATURAL GAS ACT APPLICATION FULL FILING REQUIREMENTS

(TITLE 18 CODE OF FEDERAL REGULATIONS SECTION 380.12)

Title 18 Code of Federal Regulations Section 380.12
Environmental Reports for Natural Gas Act Application
Full Filing Requirements

380.12 (c) Resource Report 1 – General Project Description	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
This report is required for all applications. It will describe facilities associated with the project, special construction and operation procedures, construction timetables, future plans for related construction, compliance with regulations and codes, and permits that must be obtained. Resource Report 1 must:	
☐ (1) Describe and provide location maps of all jurisdictional facilities, including all aboveground facilities associated with the project (such as: meter stations, pig launchers/receivers, valves), to be constructed, modified, abandoned, replaced, or removed, including related construction and operational support activities and areas such as maintenance bases, staging areas, communications towers, power lines, and new access roads (roads to be built or modified). As relevant, the report must describe the length and diameter of the pipeline, the types of aboveground facilities that would be installed, and associated land requirements. It must also identify other companies that must construct jurisdictional facilities related to the project, where the facilities would be located, and where they are in the Commission's approval process.	D
☐ (2) Identify and describe all nonjurisdictional facilities, including auxiliary facilities, that will be built in association with the project, including facilities to be built by other companies. (i) Provide the following information: - (A) A brief description of each facility, including as appropriate: Ownership, land requirements, gas consumption, megawatt size, construction status, and an update of the latest status of federal, state, and local permits/approvals; - (B) The length and diameter of any interconnecting pipeline; - (C) Current 1:24,000/1:25,000 scale topographic maps showing the location of the facilities; - (D) Correspondence with the appropriate State Historic Preservation Officer (SHPO) or duly authorized Tribal Historic Preservation Officer (THPO) for tribal lands regarding whether properties eligible for listing on the National Register of Historic Places (NRHP) would be affected; - (E) Correspondence with the U.S. Fish and Wildlife Service (and National Marine Fisheries Service, if appropriate) regarding potential impacts of the proposed facility on federally listed threatened and endangered species; and - (F) For facilities within a designated coastal zone management area, a consistency determination or evidence that the owner has requested a consistency determination from the state's coastal zone management program. (ii) Address each of the following factors and indicate which ones, if any, appear to indicate the need for the Commission to do an environmental review of project-related nonjurisdictional facilities. - (A) Whether or not the regulated activity comprises "merely a link" in a corridor type project (e.g., a transportation or utility transmission project). - (B) Whether there are aspects of the nonjurisdictional facility in the immediate vicinity of the regulated activity which uniquely determine the location and configuration of the regulated activity. - (C) The extent to which the entire project will be within the Commission's jurisdiction. - (D) The extent of cumulative federal control and responsibility.	D
☐ (3) Provide the following maps and photos: - (i) Current, original United States Geological Survey (USGS) 7.5-minute series topographic maps or maps of equivalent detail, covering at least a 0.5-mile-wide corridor centered on the pipeline, with integer mileposts identified, showing the location of rights-	D

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(Title 18 Code of Federal Regulations Section 380.12)

380.12 (c) Resource Report 1 – General Project Description	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
of-way, new access roads, other linear construction areas, compressor stations, and pipe storage areas. Show nonlinear construction areas on maps at a scale of 1:3,600 or larger keyed graphically and by milepost to the right-of-way maps. - (ii) Original aerial images or photographs or photo-based alignment sheets based on these sources, not more than 1 year old (unless older ones accurately depict current land use and development) and with a scale of 1:6,000 or larger, showing the proposed pipeline route and location of major aboveground facilities, covering at least a 0.5 mile-wide corridor, and including mileposts. Older images/photographs/alignment sheets should be modified to show any residences not depicted in the original. Alternative formats (e.g., blue-line prints of acceptable resolution) need prior approval by the environmental staff of the Office of Energy Projects. - (iii) In addition to the copy required under §157.6(a)(2) of this chapter, applicant should send two additional copies of topographic maps and aerial images/photographs directly to the environmental staff of the Office of Energy Projects.	
☐ (4) When new or additional compression is proposed, include large scale (1:3,600 or greater) plot plans of each compressor station. The plot plan should reference a readily identifiable point(s) on the USGS maps required in paragraph (c)(3) of this section. The maps and plot plans must identify the location of the nearest noise-sensitive areas (schools, hospitals, or residences) within 1 mile of the compressor station, existing and proposed compressor and auxiliary buildings, access roads, and the limits of areas that would be permanently disturbed.	D
☐ (5)(i) Identify facilities to be abandoned, and state how they would be abandoned, how the site would be restored, who would own the site or right-of-way after abandonment, and who would be responsible for any facilities abandoned in place. - (ii) When the right-of-way or the easement would be abandoned, identify whether landowners were given the opportunity to request that the facilities on their property, including foundations and below ground components, be removed. Identify any landowners whose preferences the company does not intend to honor, and the reasons therefore.	D
☐ (6) Describe and identify by milepost, proposed construction and restoration methods to be used in areas of rugged topography, residential areas, active croplands, sites where the pipeline would be located parallel to and under roads, and sites where explosives are likely to be used.	D
☐ (7) Unless provided in response to Resource Report 5, describe estimated workforce requirements, including the number of pipeline construction spreads, average workforce requirements for each construction spread and meter or compressor station, estimated duration of construction from initial clearing to final restoration, and number of personnel to be hired to operate the proposed project.	D
☐ (8) Describe reasonably foreseeable plans for future expansion of facilities, including additional land requirements and the compatibility of those plans with the current proposal.	D
☐ (9) Describe all authorizations required to complete the proposed action and the status of applications for such authorizations. Identify environmental mitigation requirements specified in any permit or proposed in any permit application to the extent not specified elsewhere in this section.	D
☐ (10) Provide the names and mailing addresses of all affected landowners specified in §157.6(d) and certify that all affected landowners will be notified as required in §157.6(d).	D
[a] D Applicant	

Environmental Reports for Natural Gas Act Application
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380.12 (d) – Resource Report 2 – Water Use and Quality	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
This report is required for all applications, except those which involve only facilities within the areas of an existing compressor, meter, or regulator station that were disturbed by construction of the existing facilities, no wetlands or waterbodies are on the site and there would not be a significant increase in water use. The report must describe water quality and provide data sufficient to determine the expected impact of the project and the effectiveness of mitigative, enhancement, or protective measures. Resource Report 2 must:	
☐ (1) Identify and describe by milepost perennial waterbodies and municipal water supply or watershed areas, specially designated surface water protection areas and sensitive waterbodies, and wetlands that would be crossed. For each waterbody crossing, identify the approximate width, state water quality classifications, any known potential pollutants present in the water or sediments, and any potable water intake sources within 3 miles downstream.	L, GG, LL
☐ (2) Compare proposed mitigation measures with the staff's current "*Wetland and Waterbody Construction and Mitigation Procedures*," which are available from the Commission Internet home page or the Commission staff, describe what proposed alternative mitigation would provide equivalent or greater protection to the environment, and provide a description of site- specific construction techniques that would be used at each major waterbody crossing.	D, Z
☐ (3) Describe typical staging area requirements at waterbody and wetland crossings. Also, identify and describe waterbodies and wetlands where staging areas are likely to be more extensive.	D
☐ (4) Include National Wetlands Inventory (NWI) maps. If NWI maps are not available, provide the appropriate state wetland maps. Identify for each crossing, the milepost, the wetland classification specified by the U.S. Fish and Wildlife Service, and the length of the crossing. Include two copies of the NWI maps (or the substitutes, if NWI maps are not available) clearly showing the proposed route and mileposts directed to the environmental staff. Describe by milepost, wetland crossings as determined by field delineations using the current federal methodology.	D, O, HH
☐ (5) Identify aquifers within excavation depth in the project area, including the depth of the aquifer, current and projected use, water quality and average yield, and known or suspected contamination problems.	E, J, FF, GG
☐ (6) Describe specific locations, the quantity required, and the method and rate of withdrawal and discharge of hydrostatic test water. Describe suspended or dissolved material likely to be present in the water as a result of contact with the pipeline, particularly if an existing pipeline is being retested. Describe chemical or physical treatment of the pipeline or hydrostatic test water. Discuss waste products generated and disposal methods.	D
☐ (7) If underground storage of natural gas is proposed: - (i) Identify how water produced from the storage field will be disposed of, and - (ii) For salt caverns, identify the source locations, the quantity required, and the method and rate of withdrawal of water for creating salt cavern(s), as well as the means of disposal of brine resulting from cavern leaching.	D
☐ (8) Discuss proposed mitigation measures to reduce the potential for adverse impacts to surface water, wetlands, or groundwater quality to the extent they are not described in response to paragraph (d)(2) of this section. Discuss the potential for blasting to affect water wells, springs, and wetlands, and measures to be taken to detect and remedy such effects.	D

Environmental Reports for Natural Gas Act Application
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380.12 (d) – Resource Report 2 – Water Use and Quality	
FULL FILING REQUIREMENTS	
☐ (9) Identify the location of known public and private groundwater supply wells or springs within 150 feet of proposed construction areas. Identify locations of U.S. Environmental Protection Agency or state-designated sole-source aquifers and wellhead protection areas crossed by the proposed pipeline facilities.	E, J, FF, GG

[a]

D	Applicant	Z	Wetland and Waterbody Construction and Mitigation Procedures
E	State or county groundwater databases (e.g., Board of Health, Department of Natural Resource water divisions)	FF	State Drinking Water Division
		GG	State Water Quality Division
J	U.S. Environmental Protection Agency	HH	State Wetland Maps
L	Field Surveys	LL	U.S. Department of Transportation
O	National Wetlands Inventory Maps		

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380.12 (e) – Resource Report 3 – Fish, Wildlife, and Vegetation	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
This report is required for all applications, except those involving only facilities within the improved area of an existing compressor, meter, or regulator station. It must describe aquatic life, wildlife, and vegetation in the vicinity of the proposed project; expected impacts on these resources including potential effects on biodiversity; and proposed mitigation, enhancement, or protection measures. Resource Report 3 must:	
☐ (1) Describe commercial and recreational warmwater, coldwater, and saltwater fisheries in the affected area and associated significant habitats such as spawning or rearing areas and estuaries.	M
☐ (2) Describe terrestrial habitats, including wetlands, typical wildlife habitats, and rare, unique, or otherwise significant habitats that might be affected by the proposed action. Describe typical species that have commercial, recreational, or aesthetic value.	L, DD
☐ (3) Describe and provide the acreage of vegetation cover types that would be affected, including unique ecosystems or communities such as remnant prairie or old-growth forest, or significant individual plants, such as old-growth specimen trees.	A, L
☐ (4) Describe the impact of construction and operation on aquatic and terrestrial species and their habitats, including the possibility of a major alteration to ecosystems or biodiversity, and any potential impact on state-listed endangered or threatened species. Describe the impact of maintenance, clearing and treatment of the project area on fish, wildlife, and vegetation. Surveys may be required to determine specific areas of significant habitats or communities of species of special concern to state or local agencies.	D, M
☐ (5) Identify all federally listed or proposed endangered or threatened species and critical habitat that potentially occur in the vicinity of the project. Discuss the results of the consultation requirements listed in §380.13(b) at least through §380.13(b)(5)(i) and include any written correspondence that resulted from the consultation. The initial application must include the results of any required surveys unless seasonal considerations make this impractical. If species surveys are impractical, there must be field surveys to determine the presence of suitable habitat unless the entire project area is suitable habitat.	L, N, T, DD
☐ (6) Identify all federally listed essential fish habitat (EFH) that potentially occurs in the vicinity of the project. Provide information on all EFH, as identified by the pertinent federal fishery management plans, that may be adversely affected by the project and the results of abbreviated consultations with the National Oceanic and Atmospheric Administration's National Marine Fisheries Service, and any resulting EFH assessments.	N, M, T
☐ (7) Describe site-specific mitigation measures to minimize impacts on fisheries, wildlife, and vegetation.	D, DD
☐ (8) Include copies of correspondence not provided pursuant to paragraph (e)(5) of this section, containing recommendations from appropriate federal and state fish and wildlife agencies to avoid or limit impact on wildlife, fisheries, and vegetation, and the applicant's response to the recommendations.	N, M, T, DD

[a]

A	Aerial Photographs	T	National Oceanic and Atmospheric Administration, National Marine Fisheries Service
D	Applicant		
L	Field Surveys		
M	Fishery Biologist, State or Regional	DD	State Agencies
N	U.S. Fish and Wildlife Service		

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(Title 18 Code of Federal Regulations Section 380.12)

380.12 (f) – Resource Report 4 – Cultural Resources	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
This report is required for all applications. In preparing this report, the applicant must follow the principles in §380.14 of this part. Guidance on the content and the format for the documentation listed below, as well as professional qualifications of preparers, is detailed in '' Office of Energy Projects' (OEP) Guidelines for Reporting on Cultural Resources Investigations,'' which is available from the Commission Internet home page or from the Commission staff.	
☐ (1) Resource Report 4 must contain: - (i) Documentation of the applicant's initial cultural resources consultation, including consultations with Native Americans and other interested persons (if appropriate); - (ii) Overview and Survey Reports, as appropriate; - (iii) Evaluation Report, as appropriate; - (iv) Treatment Plan, as appropriate; and - (v) Written comments from State Historic Preservation Officer(s) (SHPO), Tribal Historic Preservation Officers (THPO), as appropriate, and applicable land-managing agencies on the reports in paragraphs (f)(1)(i)-(iv) of this section.	D
☐ (2) *Initial filing requirements.* The initial application must include the documentation of initial cultural resource consultation, the Overview and Survey Reports, if required, and written comments from SHPOs, THPOs and land-managing agencies, if available. The initial cultural resources consultations should establish the need for surveys. If surveys are deemed necessary by the consultation with the SHPO/THPO, the survey report must be filed with the application. - (i) If the comments of the SHPOs, THPOs, or land-management agencies are not available at the time the application is filed, they may be filed separately, but they must be filed before a final certificate is issued. - (ii) If landowners deny access to private property and certain areas are not surveyed, the unsurveyed area must be identified by mileposts, and supplemental surveys or evaluations shall be conducted after access is granted. In such circumstances, reports, and treatment plans, if necessary, for those inaccessible lands may be filed after a certificate is issued.	D
☐ (3) The Evaluation Report and Treatment Plan, if required, for the entire project must be filed before a final certificate is issued. - (i) The Evaluation Report may be combined in a single synthetic report with the Overview and Survey Reports if the SHPOs, THPOs, and land-management agencies allow and if it is available at the time the application is filed. - (ii) In preparing the Treatment Plan, the applicant must consult with the Commission staff, the SHPO, and any applicable THPO and land-management agencies. - (iii) Authorization to implement the Treatment Plan will occur only after the final certificate is issued.	D
☐ (4) Applicant must request privileged treatment for all material filed with the Commission containing location, character, and ownership information about cultural resources in accordance with §388.112 of this chapter. The cover and relevant pages or portions of the report should be clearly labeled in bold lettering: "CONTAINS PRIVILEGED INFORMATION—DO NOT RELEASE."	D
☐ (5) Except as specified in a final Commission order, or by the Director of the Office of Energy Projects, construction may not begin until all cultural resource reports and plans have been approved.	D
[a] D Applicant	

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380.12 (g) – Resource Report 5 – Socioeconomics	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
This report is required only for applications involving significant aboveground facilities, including, among others, conditioning or liquefied natural gas (LNG) plants. It must identify and quantify the impacts of constructing and operating the proposed project on factors affecting towns and counties in the vicinity of the project. Resource Report 5 must:	
☐ (1) Describe the socioeconomic impact area.	D, I, JJ, KK
☐ (2) Evaluate the impact of any substantial immigration of people on governmental facilities and services and plans to reduce the impact on the local infrastructure.	D
☐ (3) Describe on-site manpower requirements and payroll during construction and operation, including the number of construction personnel who currently reside within the impact area, would commute daily to the site from outside the impact area, or would relocate temporarily within the impact area.	D
☐ (4) Determine whether existing housing within the impact area is sufficient to meet the needs of the additional population.	I
☐ (5) Describe the number and types of residences and businesses that would be displaced by the project, procedures to be used to acquire these properties, and types and amounts of relocation assistance payments.	D, I
☐ (6) Conduct a fiscal impact analysis evaluating incremental local government expenditures in relation to incremental local government revenues that would result from construction of the project. Incremental expenditures include, but are not limited to, school operating costs, road maintenance and repair, public safety, and public utility costs.	D, I, JJ
[a] D Applicant; I County/Municipal Agencies; JJ U.S. Department of Labor; KK U.S. Bureau of the Census	

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(Title 18 Code of Federal Regulations Section 380.12)

380.12 (h) – Resource Report 6 – Geological resources	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
This report is required for applications involving liquefied natural gas (LNG) facilities and all other applications, except those involving only facilities within the boundaries of existing aboveground facilities, such as a compressor, meter, or regulator station. It must describe geological resources and hazards in the project area that might be directly or indirectly affected by the proposed action or that could place the proposed facilities at risk, the potential effects of those hazards on the facility, and methods proposed to reduce the effects or risks. Resource Report 6 must:	
☐ (1) Describe, by milepost, mineral resources that are currently or potentially exploitable;	A, L, S, LL
☐ (2) Describe, by milepost, existing and potential geological hazards and areas of nonroutine geotechnical concern, such as high seismicity areas, active faults, and areas susceptible to soil liquefaction; planned, active, and abandoned mines; karst terrain; and areas of potential ground failure, such as subsidence, slumping, and landsliding. Discuss the hazards posed to the facility from each one.	H, L, P, X, II, LL
☐ (3) Describe how the project would be located or designed to avoid or minimize adverse effects to the resources or risk to itself, including geotechnical investigations and monitoring that would be conducted before, during, and after construction. Discuss also the potential for blasting to affect structures, and the measures to be taken to remedy such effects.	D
☐ (4) Specify methods to be used to prevent project-induced contamination from surface mines or from mine tailings along the right-of-way and whether the project would hinder mine reclamation or expansion efforts.	D
☐ (5) If the application involves an LNG facility located in zones 2, 3, or 4 of the Uniform Building Code's Seismic Risk Map, or where there is potential for surface faulting or liquefaction, prepare a report on earthquake hazards and engineering in conformance with "*Data Requirements for the Seismic Review of LNG Facilities*," National Bureau of Standards Information Report 84-2833. This document may be obtained from the Commission staff.	D
☐ (6) If the application is for underground storage facilities: - (i) Describe how the applicant would control and monitor the drilling activity of others within the field and buffer zone; - (ii) Describe how the applicant would monitor potential effects of the operation of adjacent storage or production facilities on the proposed facility, and vice versa; - (iii) Describe measures taken to locate and determine the condition of old wells within the field and buffer zone and how the applicant would reduce risk from failure of known and undiscovered wells; and - (iv) Identify and discuss safety and environmental safeguards required by state and federal drilling regulations.	B, D

[a]

A	Aerial Photographs	S	Mineral Resource Maps, Federal and State
B	Agency Consultation	X	Natural Resources Conservation Service Soil Surveys or Soil Survey Geographic Database (SSURGO)
D	Applicant		
H	Comprehensive Plans, County or Land Management Agencies	II	Surficial Geologic and Bedrock Geologic Maps
L	Field Surveys		
P	Geological Survey Personnel, Federal, State, and Local	LL	U.S. Department of Transportation

Environmental Reports for Natural Gas Act Application
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380.12 (i) – Resource Report 7 – Soils	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
This report is required for all applications except those not involving soil disturbance. It must describe the soils that would be affected by the proposed project, the effect on those soils, and measures proposed to minimize or avoid impact. Resource Report 7 must:	
☐ (1) List, by milepost, the soil associations that would be crossed and describe the erosion potential, fertility, and drainage characteristics of each association.	L, W, X, CC
☐ (2) If an aboveground facility site is greater than 5 acres: - (i) List the soil series within the property and the percentage of the property comprised of each series; - (ii) List the percentage of each series which would be permanently disturbed; - (iii) Describe the characteristics of each soil series; and - (iv) Indicate which are classified as prime or unique farmland by the U.S. Department of Agriculture, Natural Resources Conservation Service.	C, H, L, W, X, CC
☐ (3) Identify, by milepost, potential impact from: Soil erosion due to water, wind, or loss of vegetation; soil compaction and damage to soil structure resulting from movement of construction vehicles; wet soils and soils with poor drainage that are especially prone to structural damage; damage to drainage tile systems due to movement of construction vehicles and trenching activities; and interference with the operation of agricultural equipment due to the probability of large stones or blasted rock occurring on or near the surface as a result of construction.	C, K, W, Y, CC
☐ (4) Identify, by milepost, cropland and residential areas where loss of soil fertility due to trenching and backfilling could occur.	C, D, H, K, W, Y, CC
☐ (5) Describe proposed mitigation measures to reduce the potential for adverse impact to soils or agricultural productivity. Compare proposed mitigation measures with the staff's current "*Upland Erosion Control, Revegetation, and Maintenance Plan,*" which is available from the Commission Internet home page or from the Commission staff, and explain how proposed mitigation measures provide equivalent or greater protections to the environment.	C, D, H, K, W, Y, CC

[a]
- C – Agricultural Extension Agents
- D – Applicant
- H – Comprehensive Plans, County or Land Management Agencies
- K – Erosion Control and Drainage Plan Handbooks, State and County
- L – Field Surveys
- W – Natural Resources Conservation Service
- X – Natural Resources Conservation Service Soil Surveys or Soil Survey Geographic Database (SSURGO)
- Y – Upland Erosion Control, Revegetation, and Maintenance Plan
- CC – Soil Authorities, Other than Natural Resources Conservation Service

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(Title 18 Code of Federal Regulations Section 380.12)

380.12 (j) – Resource Report 8 – Land Use, Recreation and Aesthetics	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
This report is required for all applications except those involving only facilities which are of comparable use at existing compressor, meter, and regulator stations. It must describe the existing uses of land on, and (where specified) within 0.25 mile of, the proposed project and changes to those land uses that would occur if the project is approved. The report shall discuss proposed mitigation measures, including protection and enhancement of existing land use. Resource Report 8 must:	
☐ (1) Describe the width and acreage requirements of all construction and permanent rights-of-way and the acreage required for each proposed plant and operational site, including injection or withdrawal wells. - (i) List, by milepost, locations where the proposed right-of-way would be adjacent to existing rights-of-way of any kind. - (ii) Identify, preferably by diagrams, existing rights-of-way that would be used for a portion of the construction or operational right-of-way, the overlap and how much additional width would be required. - (iii) Identify the total amount of land to be purchased or leased for each aboveground facility, the amount of land that would be disturbed for construction and operation of the facility, and the use of the remaining land not required for project operation. - (iv) Identify the size of typical staging areas and expanded work areas, such as those at railroad, road, and waterbody crossings, and the size and location of all pipe storage yards and access roads.	A, D, L, X, LL
☐ (2) Identify, by milepost, the existing use of lands crossed by the proposed pipeline, or on or adjacent to each proposed plant and operational site.	A, D, L, X
☐ (3) Describe planned development on land crossed or within 0.25 mile of proposed facilities, the time frame (if available) for such development, and proposed coordination to minimize impacts on land use. Planned development means development which is included in a master plan or is on file with the local planning board or the county.	I
☐ (4) Identify, by milepost and length of crossing, the area of direct effect of each proposed facility and operational site on sugar maple stands, orchards and nurseries, landfills, operating mines, hazardous waste sites, state wild and scenic rivers, state or local designated trails, nature preserves, game management areas, remnant prairie, old-growth forest, national or state forests, parks, golf courses, designated natural, recreational or scenic areas, or registered natural landmarks, Native American religious sites and traditional cultural properties to the extent they are known to the public at large, and reservations, lands identified under the Special Area Management Plan of the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration, and lands owned or controlled by federal or state agencies or private preservation groups. Also identify if any of those areas are located within 0.25 mile of any proposed facility.	A, B, I, L, O, DD, LL
☐ (5) Identify, by milepost, all residences and buildings within 50 feet of the proposed pipeline construction right-of-way and the distance of the residence or building from the right-of-way. Provide survey drawings or alignment sheets to illustrate the location of the facilities in relation to the buildings.	A, D, I, L
☐ (6) Describe any areas crossed by or within 0.25 mile of the proposed pipeline or plant and operational sites which are included in, or are designated for study for inclusion in: The National Wild and Scenic Rivers System (Title 16 United States Code [U.S.C.] part 1271); The National Trails System (16 U.S.C. 1241); or a wilderness area designated under the Wilderness Act (16 U.S.C. 1132).	B

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380.12 (j) – Resource Report 8 – Land Use, Recreation and Aesthetics	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ (7) For facilities within a designated coastal zone management area, provide a consistency determination or evidence that the applicant has requested a consistency determination from the state's coastal zone management program.	DD
☐ (8) Describe the impact the project will have on present uses of the affected area as identified above, including commercial uses, mineral resources, recreational areas, public health and safety, and the aesthetic value of the land and its features. Describe any temporary or permanent restrictions on land use resulting from the project.	D
☐ (9) Describe mitigation measures intended for all special use areas identified under paragraphs (j)(2) through (6) of this section.	D
☐ (10) Describe proposed typical mitigation measures for each residence that is within 50 feet of the edge of the pipeline construction right-of-way, as well as any proposed residence-specific mitigation. Describe how residential property, including for example, fences, driveways, stone walls, sidewalks, water supply, and septic systems, would be restored. Describe compensation plans for temporary and permanent rights-of-way and the eminent domain process for the affected areas.	D
☐ (11) Describe measures proposed to mitigate the aesthetic impact of the facilities especially for aboveground facilities such as compressor or meter stations.	D
☐ (12) Demonstrate that applications for rights-of-way or other proposed land use have been or soon will be filed with federal land-management agencies with jurisdiction over land that would be affected by the project.	D

[a]

A	Aerial Photographs	X	Natural Resources Conservation Service Soil Surveys or Soil Survey Geographic Database (SSURGO)
B	Agency Consultation		
D	Applicant	DD	State Agencies
I	County/Municipal Agencies	LL	U.S. Department of Transportation
L	Field Surveys		
O	National Wetlands Inventory Maps		

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380.12 (k) – Resource Report 9 – Air and Noise Quality	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
This report is required for applications involving compressor facilities at new or existing stations, and for all new liquefied natural gas (LNG) facilities. It must identify the effects of the project on the existing air quality and noise environment and describe proposed measures to mitigate the effects. Resource Report 9 must:	
☐ (1) Describe the existing air quality, including background levels of nitrogen dioxide and other criteria pollutants which may be emitted above U.S. Environmental Protection Agency-identified significance levels.	EE
☐ (2) Quantitatively describe existing noise levels at noise-sensitive areas, such as schools, hospitals, or residences and include any areas covered by relevant state or local noise ordinances. - (i) Report existing noise levels as the L_{eq} (day), L_{eq} (night), and L_{dn} and include the basis for the data or estimates. - (ii) For existing compressor stations, include the results of a sound level survey at the site property line and nearby noise-sensitive areas while the compressors are operated at full load. - (iii) For proposed new compressor station sites, measure or estimate the existing ambient sound environment based on current land uses and activities. - (iv) Include a plot plan that identifies the locations and duration of noise measurements, the time of day, weather conditions, wind speed and direction, engine load, and other noise sources present during each measurement.	R
☐ (3) Estimate the impact of the project on air quality, including how existing regulatory standards would be met. - (i) Provide the emission rate of nitrogen oxides from existing and proposed facilities, expressed in pounds per hour and tons per year for maximum operating conditions, include supporting calculations, emission factors, fuel consumption rates, and annual hours of operation. - (ii) For major sources of air emissions (as defined by the Environmental Protection Agency), provide copies of applications for permits to construct (and operate, if applicable) or for applicability determinations under regulations for the prevention of significant air quality deterioration and subsequent determinations.	R
☐ (4) Provide a quantitative estimate of the impact of the project on noise levels at noise-sensitive areas, such as schools, hospitals, or residences. - (i) Include step-by-step supporting calculations or identify the computer program used to model the noise levels, the input and raw output data and all assumptions made when running the model, far-field sound level data for maximum facility operation, and the source of the data. - (ii) Include sound pressure levels for unmuffled engine inlets and exhausts, engine casings, and cooling equipment; dynamic insertion loss for all mufflers; sound transmission loss for all compressor building components, including walls, roof, doors, windows and ventilation openings; sound attenuation from the station to nearby noise-sensitive areas; the manufacturer's name, the model number, the performance rating; and a description of each noise source and noise control component to be employed at the proposed compressor station. For proposed compressors the initial filing must include at least the proposed horsepower, type of compression, and energy source for the compressor. - (iii) Far-field sound level data measured from similar units in service elsewhere, when available, may be substituted for manufacturer's far-field sound level data.	D, G, R, U, EE

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380.12 (k) – Resource Report 9 – Air and Noise Quality	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
- (iv) If specific noise control equipment has not been chosen, include a schedule for submitting the data prior to certification. - (v) The estimate must demonstrate that the project will comply with applicable noise regulations and show how the facility will meet the following requirements: a. (A) The noise attributable to any new compressor station, compression added to an existing station, or any modification, upgrade or update of an existing station, must not exceed a day-night sound level (L_{dn}) of 55 decibels on the A-weighted scale at any pre-existing noise-sensitive area (such as schools, hospitals, or residences). b. (B) New compressor stations or modifications of existing stations shall not result in a perceptible increase in vibration at any noise-sensitive area.	
☐ (5) Describe measures and manufacturer's specifications for equipment proposed to mitigate impact to air and noise quality, including emission control systems, installation of filters, mufflers, or insulation of piping and buildings, and orientation of equipment away from noise-sensitive areas.	D, R

[a] D Applicant; G Community Noise, U.S. Environmental Protection Agency 1971; R Manufacturer's Data; U Noise Surveys; EE State Air Quality Agency

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380.12 (l) – Resource Report 10 – Alternatives	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
This report is required for all applications. It must describe alternatives to the project and compare the environmental impacts of such alternatives to those of the proposal. The discussion must demonstrate how environmental benefits and costs were weighed against economic benefits and costs, and technological and procedural constraints. The potential for each alternative to meet project deadlines and the environmental consequences of each alternative shall be discussed. Resource Report 10 must:	
☐ (1) Discuss the "no action" alternative and the potential for accomplishing the proposed objectives through the use of other systems and/or energy conservation. Provide an analysis of the relative environmental benefits and costs for each alternative.	D
☐ (2) Describe alternative routes or locations considered for each facility during the initial screening for the project. - (i) For alternative routes considered in the initial screening for the project but eliminated, describe the environmental characteristics of each route or site, and the reasons for rejecting it. Identify the location of such alternatives on maps of sufficient scale to depict their location and relationship to the proposed action, and the relationship of the pipeline to existing rights-of-way. - (ii) For alternative routes or locations considered for more in-depth consideration, describe the environmental characteristics of each route or site and the reasons for rejecting it. Provide comparative tables showing the differences in environmental characteristics for the alternative and proposed action. The location of any alternatives in this paragraph shall be provided on maps equivalent to those required in paragraph (c)(2) of this section.	A, B, D, I, L, W, X, LL

[a]

A	Aerial Photographs	W	Natural Resources Conservation Service
B	Agency Consultation	X	Natural Resources Conservation Service Soil Surveys or Soil Survey Geographic Database (SSURGO)
D	Applicant		
I	County/Municipal Agencies		
L	Field Surveys	LL	U.S. Department of Transportation

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380.12 (m) – Resource Report 11 – Reliability and Safety	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
This report is required for applications involving new or recommissioned liquefied natural gas (LNG) facilities. Information previously filed with the Commission need not be refiled if the applicant verifies its continued validity. This report shall address the potential hazard to the public from failure of facility components resulting from accidents or natural catastrophes, how these events would affect reliability, and what procedures and design features have been used to reduce potential hazards. Resource Report 11 must:	
☐ (1) Describe measures proposed to protect the public from failure of the proposed facilities (including coordination with local agencies).	D
☐ (2) Discuss hazards, the environmental impact, and service interruptions which could reasonably ensue from failure of the proposed facilities.	D
☐ (3) Discuss design and operational measures to avoid or reduce risk.	D
☐ (4) Discuss contingency plans for maintaining service or reducing downtime.	D
☐ (5) Describe measures used to exclude the public from hazardous areas. Discuss measures used to minimize problems arising from malfunctions and accidents (with estimates of probability of occurrence) and identify standard procedures for protecting services and public safety during maintenance and breakdowns.	D
[a] D Applicant	

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380.12 (n) – Resource Report 12 – Polychlorinated Biphenyl (PCB) Contamination	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
This report is required for applications involving the replacement, abandonment by removal, or abandonment in place of pipeline facilities determined to have polychlorinated biphenyls (PCBs) in excess of 50 parts per million in pipeline liquids. Resource Report 12 must:	
☐ (1) Provide a statement that activities would comply with an approved EPA disposal permit, with the dates of issuance and expiration specified, or with the requirements of the Toxic Substances Control Act.	J
☐ (2) For compressor station modifications on sites that have been determined to have soils contaminated with PCBs, describe the status of remediation efforts completed to date.	J
[a] J U.S. Environmental Protection Agency	

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380.12 (o) – Resource Report 13 – Engineering and Design Material	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
This report is required for construction of new liquefied natural gas (LNG) facilities, or the recommissioning of existing LNG facilities. If the recommissioned facility is existing and is not being replaced, relocated, or significantly altered, resubmittal of information already on file with the Commission is unnecessary. Resource Report 13 must:	
☐ (1) Provide a detailed plot plan showing the location of all major components to be installed, including compression, pretreatment, liquefaction, storage, transfer piping, vaporization, truck loading/unloading, vent stacks, pumps, and auxiliary or appurtenant service facilities.	D
☐ (2) Provide a detailed layout of the fire protection system showing the location of fire water pumps, piping, hydrants, hose reels, dry chemical systems, high expansion foam systems, and auxiliary or appurtenant service facilities.	D
☐ (3) Provide a layout of the hazard detection system showing the location of combustible-gas detectors, fire detectors, heat detectors, smoke or combustion product detectors, and low temperature detectors. Identify those detectors that activate automatic shutdowns and the equipment that would shut down. Include all safety provisions incorporated in the plant design, including automatic and manually activated emergency shutdown systems.	D
☐ (4) Provide a detailed layout of the spill containment system showing the location of impoundments, sumps, subdikes, channels, and water removal systems.	D
☐ (5) Provide manufacturer's specifications, drawings, and literature on the fail-safe shut-off valve for each loading area at a marine terminal (if applicable).	D
☐ (6) Provide a detailed layout of the fuel gas system showing all taps with process components.	D
☐ (7) Provide copies of company, engineering firm, or consultant studies of a conceptual nature that show the engineering planning or design approach to the construction of new facilities or plants.	D
☐ (8) Provide engineering information on major process components related to the first six items above, which include (as applicable) function, capacity, type, manufacturer, drive system (horsepower, voltage), operating pressure, and temperature.	D
☐ (9) Provide manuals and construction drawings for LNG storage tank(s).	D
☐ (10) Provide up-to-date piping and instrumentation diagrams. Include a description of the instrumentation and control philosophy, type of instrumentation (pneumatic, electronic), use of computer technology, and control room display and operation. Also, provide an overall schematic diagram of the entire process flow system, including maps, materials, and energy balances.	D
☐ (11) Provide engineering information on the plant's electrical power generation system, distribution system, emergency power system, uninterruptible power system, and battery backup system.	D
☐ (12) Identify all codes and standards under which the plant (and marine terminal, if applicable) will be designed, and any special considerations or safety provisions that were applied to the design of plant components.	D

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380.12 (o) – Resource Report 13 – Engineering and Design Material	
FULL FILING REQUIREMENTS	
INFORMATION	POTENTIAL DATA SOURCES [a]
☐ (13) Provide a list of all permits or approvals from local, state, federal, or Native American groups or Indian agencies required prior to and during construction of the plant, and the status of each, including the date filed, the date issued, and any known obstacles to approval. Include a description of data records required for submission to such agencies and transcripts of any public hearings by such agencies. Also provide copies of any correspondence relating to the actions by all, or any, of these agencies regarding all required approvals.	D
☐ (14) Identify how each applicable requirement will comply with Title 49 Code of Federal Regulations (CFR) part 193 and the National Fire Protection Association 59A LNG Standards. For new facilities, the siting requirements of 49 CFR part 193, subpart B, must be given special attention. If applicable, vapor dispersion calculations from LNG spills over water should also be presented to ensure compliance with the U.S. Coast Guard's LNG regulations in 33 CFR part 127.	D
☐ (15) Provide seismic information specified in "Data Requirements for the Seismic Review of LNG Facilities" (National Bureau of Standards Information Report 84-2833, available from Federal Energy Regulatory Commission staff) for facilities that would be located in zone 2, 3, or 4 of the Uniform Building Code Seismic Map of the United States.	D
[a] D Applicant	

ATTACHMENT 2

CUMULATIVE IMPACT EXAMPLE TABLES

TABLE 1

Past, Present, and Reasonably Foreseeable Projects and Associated Resource Impacts Considered in the Cumulative Impacts Analysis for the ABC Project [a]

Project/Project Proponent	Project Description	Estimated Timeframe	Geology	Soils	Ground-water	Surface Water	Wet-lands	Veg	Wildlife	Listed Species	Socio	Land use	Recrea-tion	Visual	Cultural	Air	Noise
INDUSTRIAL DEVELOPMENTS																	
XYZ Project XYZ Company	[Insert brief project description, overall project footprint, and location relative to proposed project]	Construction = [Year] Operation = [Year]	–	–	+	+ [#] crossings	–	+ [#] ac forest	+	+ NLEB	+	+	+	–	+	+	–
COMMERCIAL DEVELOPMENTS																	
XYZ Project XYZ Company	[Insert brief project description, overall project footprint, and location relative to proposed project]	Construction = [Year] Operation = [Year]	–	–	+	–	–	–	–	–	+	+	–	–	–	+ [#] tpy NO_x	–
RESIDENTIAL DEVELOPMENTS																	
XYZ Project XYZ Company	[Insert brief project description, overall project footprint, and location relative to proposed project]	Construction = [Year] Operation = [Year]	–	–	+	–	–	–	–	–	+	+	–	–	–	+	–
OTHER DEVELOPMENTS																	
XYZ Project XYZ Company	[Insert brief project description, overall project footprint, and location relative to proposed project]	Construction = [Year] Operation = [Year]	+	+ [#] ac	X	+	X [#] ac PEM [#] ac PFO	X	+	+	X	X	+	X	+	+	+

[a] Only resources affected by the ABC Project are included in this analysis.

Key:

– Cumulative impacts precluded because outside defined geographic scope.

X The other past, present, or reasonably foreseeable project listed here would not affect this resource; therefore, cumulative impacts on the resource would not occur and were not considered further.

+ Project-related impacts are included in the cumulative impacts analysis provided herein. Quantitative impact information is provided in the table if available. Where quantitative information is not available, the discussion is based on a qualitative analysis.

Acronyms:

NLEB = Northern long-eared bat

PEM = Palustrine emergent

PFO = Palustrine forested

tpy = tons per year

TABLE 2

Geographic Areas That Could Be Used in a Cumulative Effects Analysis

Resource	Possible Geographic Areas for Analysis
Air quality	Metropolitan area, airshed, or global atmosphere
Water quality	Stream, watershed, river basin, estuary, aquifer, or parts thereof
Vegetative resources	Watershed, forest, range, or ecosystem
Resident wildlife	Species habitat or ecosystem
Migratory wildlife	Breeding grounds, migration route, wintering areas, or total range of affected population units
Fishery resources	Stream, river basin, estuary, or parts thereof; spawning area and migration route
Historic resources	Neighborhood, rural community, city, state, tribal territory, known or possible historic district
Sociocultural resources	Neighborhood, community, distribution of low-income or minority population, or culturally valued landscape
Land use	Community, metropolitan area, county, state, or region
Coastal zone	Coastal region or watershed
Recreation	River, lake, geographic area, or land management unit
Socioeconomics	Community, metropolitan area, county, state, or country

Source: Council on Environmental Quality. 1997. *Considering Cumulative Effects Under the National Environmental Policy Act.* January 1997.