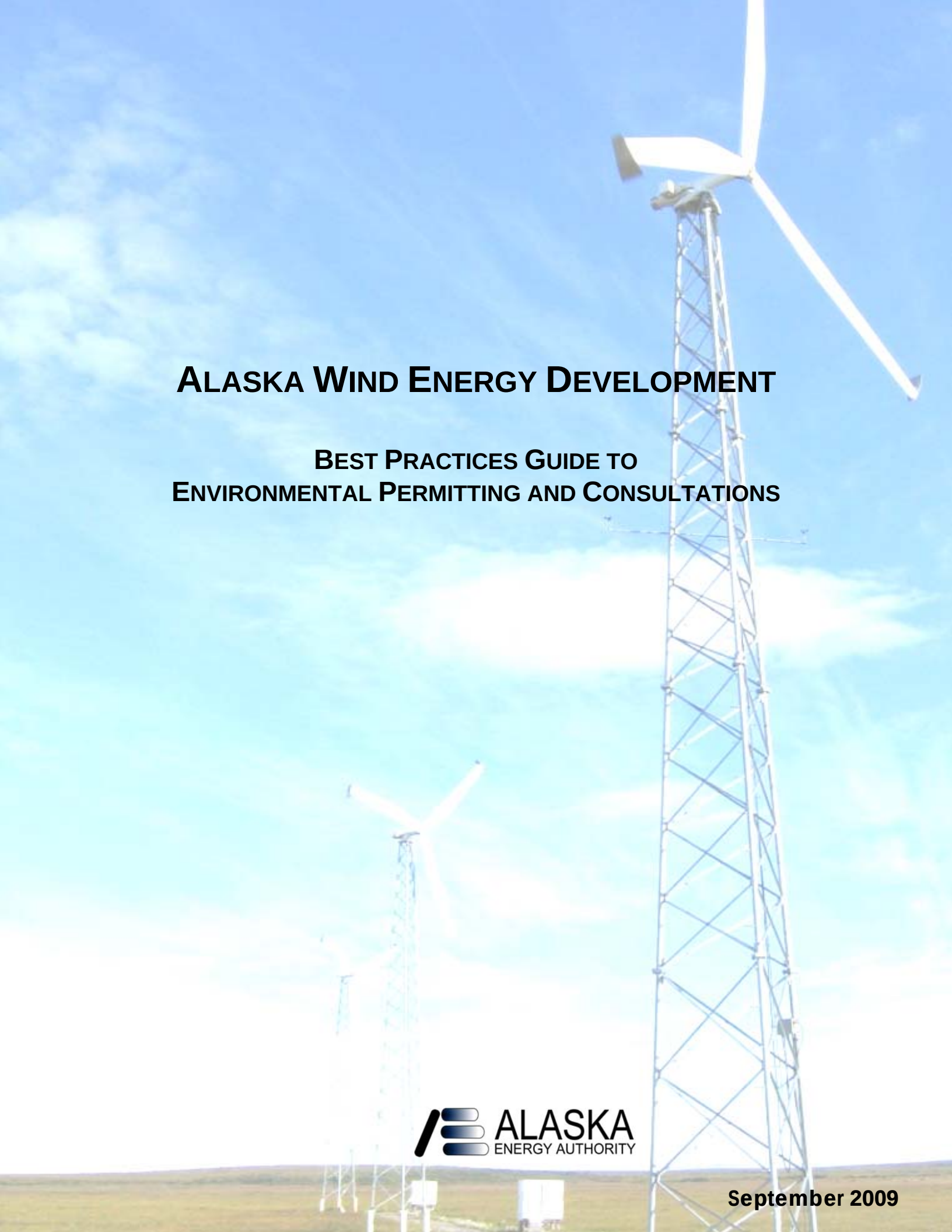

ALASKA WIND ENERGY DEVELOPMENT

BEST PRACTICES GUIDE TO ENVIRONMENTAL PERMITTING AND CONSULTATIONS

ALASKA ENERGY AUTHORITY

September 2009

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BEST PRACTICES GUIDE TO ENVIRONMENTAL PERMITTING AND CONSULTATIONS

PREPARED BY URS CORPORATION

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ACRONYMS AND ABBREVIATIONS

ACMP	Alaska Coastal Management Program
ADEC	Alaska Department of Environmental Conservation
AEA	Alaska Energy Authority
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
ADOT&PF	Alaska Department of Transportation and Public Facilities
AGL	above ground level
AHRS	Alaska Heritage Resource Survey
ANSCA	Alaska Native Claims Settlement Act
APDES	Alaska Pollutant Discharge Elimination System
APE	Area of Potential Effect
AVEC	Alaska Village Electric Cooperative
AWE	Aleutian Wind Energy
BGEPA	Bald and Golden Eagle Protection Act
BiOp	Biological Opinion
BMPs	Best Management Practices
CE	Categorical Exclusions
CGP	Construction General Permit
CPQ	Coastal Project Questionnaire
CWA	Clean Water Act
DCOM	Division of Coastal and Ocean Management
DNH	Determination of No Hazard to Air Navigation
DMLW	Division of Mining, Land and Water
DOD	Department of Defense
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIN	Employer Identification Number
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FONSI	finding of no significant impact
GP	General Permit
Guide	Wind Energy Best Practices Guide
GVEA	Golden Valley Electric Association
IRS	Internal Revenue Service
kW	kilowatt
LLC	Limited Liability Corporation
LUP	Land Use Permit
MBTA	Migratory Bird Treaty Act
MET	Meteorological Towers
MMPA	Marine Mammal Protection Act
mph	miles per hour
MSFCMA	Magnuson-Stevens Fisheries Conservation and Management Act
MW	megawatt
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Association
NOI and eNOI	Notice of Intent and electronic NOI (filed online)

ACRONYMS AND ABBREVIATIONS

NPH	Notice of Presumed Hazard
OHA	Office of History and Archaeology
O&M	Operation and Maintenance
PIC	Public Information Center
PJD	Preliminary Jurisdictional Determination
ROW	right-of-way
SHPO	State Historic Preservation Office
SWPPP	Storm Water Pollution Prevention Plan
T&E	Threatened and Endangered Species
TDX	Tanadgusix Corporation
TWUP	Temporary Water Use Permit
U.S.	United States
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U. S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WEA	Wind Energy Alaska

1.0 INTRODUCTION

The Alaska Energy Authority's (AEA) Wind Energy Best Practices Guide (Guide) focuses on assisting rural Alaska communities navigate through the permitting processes for small wind energy development projects. The Guide begins by providing a brief introduction to AEA's role in wind energy development and the history of wind power in Alaska. Next, the objectives of the Guide are outlined. Section 2 describes the site evaluation and selection process. Section 3 discusses permitting steps and considerations to assist with project design. Section 4 describes how to determine the necessary permits for wind energy projects, and Section 5 discusses post construction monitoring and adaptive management. The appendices correlate to the permitting summaries in Section 4. The appendices include the step-by-step process necessary to obtain permits, approvals, and authorizations; and complete regulatory agency consultations. AEA is a public corporation with the Alaska Industrial Development and Export Authority. AEA is committed to reducing the cost of energy by assisting in the development of sustainable, environmentally sound, safe, reliable, and efficient energy systems. AEA supports the Alaska Energy Plan's (August 2008) objectives of providing affordable energy by focusing on energy opportunities, building public and private industry relationships, and decreasing the dependence on diesel fuel. Development of wind power infrastructure is expected to improve local economies by providing employment opportunities during construction and operation, and by reducing current power generation costs.

AEA helps fund energy-related projects in Alaska. Funds are made available through competitive solicitation; details are posted on the AEA website.
http://www.akenergyauthority.org/.

1.1 Wind Resources

The quality of a location's wind resource is one of the most powerful and important factors in determining whether a wind project should be built in a specific location. This is because the wind resource defines how much energy is available for capture. To determine if your community has potential for wind power generation, begin by viewing the wind map for Alaska on the AEA website: www.akenergyauthority.org/programwind.html. Generally, a location should have at least a Class 4 wind resource before it is considered for a wind project. If the wind map shows potential for wind power generation, long-term data should be collected from nearby airports or weather stations. After a potential wind farm site has been selected for further study, the long-term data will be compared and correlated to site specific data collected using an anemometer.

AEA's anemometer loan program provides technical assistance and the equipment necessary to assess local wind resources. Electric utilities, municipalities, Alaska Native villages, and Alaska Native Claims Settlement Act (ANSCA) corporations are eligible for the program. AEA assists with identifying viable sites, installing and removing the meteorological (MET) towers, gaining necessary federal and state authorizations for MET tower placement, and analyzing data. Community responsibilities include acquiring permissions from the landowner, monthly site visits to replace data storage cards, and checking equipment to ensure proper operation. More information is available at http://www.akenergyauthority.org/PDF%20files/BiennialAEEE assistanceplan2005Final.pdf.

1.2 Energy Needs

An important step in this process is to determine the energy needs for electrical generation, space heating, and transportation in your community. The AEA website link includes information on energy models and current energy status for Alaska communities. http://www.akenergyauthority.org/PDF%20files/AK_Energy_Model_Comm.pdf

The current costs of power are compared to the capital for infrastructure, operations, and maintenance costs of wind technology to determine if wind power is a viable, cost-effective option.

This Guide assumes that the wind energy project proponent has conducted the appropriate economic analysis and determined that wind energy is a viable option for the location and has identified a funding source for the project.

Photo 1. Kotzebue Wind Farm
Source: (AEA, 2008)

Photo 2. Selawik Wind Farm
Source: (AEA, 2008)

1.3 Objectives and Organization of the Best Practices Guide

Photo 3. Kasigluk Wind Farm
Source: (AEA, 2008)

Alaskan communities are seeking ways to cut energy costs and develop renewable energy sources. The objective of this Guide is to provide communities and private developers with the resources necessary to comply with the environmental, regulatory and permitting processes for wind power development projects. This Guide is also meant to bring consistency to permitting and consultation process for resource and regulatory agencies to facilitate and expedite development of wind projects. AEA has developed this Guide based on coordination with state and federal agencies to ensure important issues and requirements for permitting and reviewing wind development projects are described accurately. By coordinating with resource and regulatory agencies, AEA is attempting to help standardize requirements for data collection, necessary permitting information, and mitigation measures.

Section 2 describes the roles of each agency related to permitting and consulting on wind energy projects in Alaska. For the purposes of this Guide, wind energy development has been divided into five main stages:

1) Site Evaluation
2) Project Design
3) Permitting and Consultation
4) Construction
5) Operation and Maintenance

Table 1, *Project Stages and Agency Index*, provides a brief overview of the key stages each state or federal agency is involved in. Given that many agencies are involved in several stages, the primary stage is noted.

Table 1. Project Stages & Agency Involvement Index

Project Stage	ACMP	ADEC	ADF&G	ADNR	ADOT&PF	FAA	NMFS	SHPO	USACE	USFWS	Local Government
Site Evaluation		✓				✓ (primary)		✓ (primary)	✓	✓ (primary)	✓
Project Design		✓				✓		✓	✓	✓	
Permitting & Consultation	✓ (primary)	✓	✓	✓	✓		✓	✓	✓	✓	✓
Construction		✓	✓							✓	✓
O&M						✓				✓	

Section 3 is organized by issue as they relate to wind energy development. So, for example, if a project proponent needs to understand the requirements related to wetlands or other waters of the United States (U.S.), Table 15 provides a basic overview while an expanded section (located in Appendix A) entitled *Wetlands and Other Waters of the U.S.* in Section 3 includes more detailed information. Table 2 presents the layout for tables presented in Section 2 and is intended to provide a brief overview of the permitting and consultation processes to help readers understand the basics required by each agency.

Appendix A provides more detailed information on the individual processes required by each regulatory and resource agency for consultations and permits. Appendix A has a section for each issue and is organized alphabetically (as in Section 3) to make it easy for readers to find information.

Not all permits are required for each project; and this Guide will help you determine the permits necessary for construction and operation. The narratives in Section 4 will point you to the proper appendix to view step-by-step instructions and information necessary to adequately address the permitting requirements most probable for developing small wind power projects.

2.0 FEDERAL AND STATE AGENCY ROLES IN WIND DEVELOPMENT

The federal government's role in regulating wind power development is limited to projects occurring on federal lands or projects that have some form of federal involvement. Since the majority of wind development to date has been on non-federal land or has not required federal funding or permits, the federal government has had a limited role in regulating wind power facilities. In those cases where federal agencies do regulate wind power, projects must comply both with state and local requirements and with any applicable federal laws. These laws often require pre-construction studies or analyses of proposed projects, and possibly project modifications to avoid adverse environmental effects.

The Department of Energy (DOE) is one of the primary federal agencies involved with funding wind energy projects, but they do not issue any permits for wind energy projects.

U.S. Department of Agriculture (USDA), Rural Utility Service also provides funding for wind energy projects through their Rural Development Program.

The U.S. Fish and Wildlife Service (USFWS) is the primary wildlife agency involved with wind power development. They have regulatory responsibility for birds, bats, terrestrial mammals on federal property, and three marine mammals in Alaska (polar bears, sea otters, and walrus). The USFWS authority for wildlife issues is defined in the Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), Bald and Golden Eagle Protection Act (BGEPA), and the Fish and Wildlife Coordination Act, and all the implementing regulations for these laws. The most important issue for the USFWS regarding wind power development is the avoidance and mitigation of bird and bat collisions with wind turbines and associated power transmission structures.

The Federal Aviation Administration (FAA) is the primary agency responsible for air safety and hazards to navigable airspace or communications/navigation technology. If your wind generator or MET tower is greater than 200 ft above ground level (AGL), the FAA will need to evaluate your project to ensure it does not present a potential hazard to air safety.

The National Marine Fisheries Service (NMFS) is responsible for all other marine mammals, anadromous and marine fish species, and Essential Fish Habitat (EFH). The legal basis for their authority over wildlife issues is the ESA, Marine Mammal Protection Act (MMPA), and the Magnuson-Stevens Fisheries Conservation and Management Act (MSFCMA). This agency will have an oversight role if the proposed project has marine components (intertidal or off-shore) or involves crossing anadromous streams with access roads or power transmission structures.

The U.S. Army Corps of Engineers (USACE) regulates the placement of fill in wetlands and other waters of the U.S. (Clean Water Act, Section 404) and placement of structures in navigable waters (Rivers and Harbors Act, Section 10). If a wind energy project requires filling wetlands for access roads, transmission lines or tower foundations, a Section 404/Section 10 permit from the USACE would be required.

The Denali Commission is a federal-state partnership designed to provide cost-shared infrastructure projects across the State of Alaska and has provided funding for several wind energy development projects around the State.

The Alaska Department of Fish and Game (ADF&G) does not issue permits for development activities that may affect wildlife but it may have an advisory role if the proposed project disturbs important wildlife habitat or has linear components (roads and transmission lines) which may hinder wildlife movements or affect hunting and fishing access. ADF&G is consulted by other federal and state agencies regarding wildlife impacts and mitigation measures that are included in land use or other project-related permits. ADF&G also reviews National Environmental Policy Act (NEPA) documents and provides substantive comments directly to action agencies. If any access roads or transmission lines cross anadromous fish streams, the project would need to consult ADF&G regarding fish passage (Alaska Statute 16.05.841, the Fishway Act) and obtain a Fish Habitat Permit that would have stipulations for stream crossings (Alaska Statute 16.05.871, Anadromous Fish Act).

In Alaska, the State Historic Preservation Office (SHPO) reviews all proposals for construction, such as a wind energy development, to determine if known historical properties will be adversely affected or if historical properties on the site are eligible for listing under the National Register of Historic Places. This only applies to projects receiving federal or state funding, are on State or Federal land, or need state or federal permits. This review by SHPO is an important consideration in siting a project and could result in having to relocate or substantially modify your project to get concurrence letter from SHPO if historic properties are involved.

Federal and state agencies are also major land managers in Alaska and manage millions of acres of public lands. Major federal agencies include the Bureau of Land Management, the USDA Forest Service (Tongass and Chugach National Forests), the USFWS (National Wildlife Refuges, and the National Park Service (National Parks and Preserves).

3.0 OVERVIEW OF THE PERMITTING ISSUES RELATED TO DEVELOPING WIND ENERGY PROJECTS

For each of the issues listed in Table 2, the Guide provides an introduction that identifies the issue, why it is important, major steps involved, when the issue will arise, agencies involved and a list of resources that define and assess the issue. The following table layout is used for each issue.

Table 2. Table Layout and Content

<table>
<tr><td>What is it?</td><td>Concise summary of the issue.</td></tr>
<tr><td>When will it come up?</td><td>Environmental permitting for wind energy development can be broken down into five key stages as heading across the row. These stages area as follows:
Site Evaluation & Selection: Investigating wind resources, and environmental and engineering constraints at specific locations.
Project Design: Designing the site layout and connectivity.
Permitting & Consultation: Coordination with agencies and communities to obtain necessary permits and consultations.
Construction: Building the project.
Operation & Maintenance: Operating and maintaining the project.
<table><tr><th>Stage of the Project</th><th>Site Evaluation</th><th>Design</th><th>Permitting & Consultation</th><th>Construction</th><th>O&M</th></tr><tr><td>Involvement</td><td>✓</td><td>✓</td><td></td><td>✓ (primary)</td><td></td></tr></table>The second line indicated during which stage the issue will come up. If the issue is a primary consideration for this stage, it is indicated. If it is one of many issues that will come up, it is indicated by a check mark.</td></tr>
<tr><td>Why is this important?</td><td>Indicates why this issue is important for the wind energy development.</td></tr>
<tr><td>Steps Involved</td><td>Provides an overview of major steps involved in complying with the requirement, obtaining the necessary permits, or conducting required consultations related to the issue.</td></tr>
<tr><td>Authorization Process</td><td>Provides an overview of the review timeline associated with permit authorization.</td></tr>
<tr><td>Agencies Involved</td><td>Provides a list of agencies involved that you may need to coordinate with.</td></tr>
<tr><td>Resources</td><td>Provides a list of essential resources that have additional information regarding this topic.</td></tr>
</table>

Table 3. Alaska Pollutant Discharge Elimination System

What is it?	Section 402 of the Clean Water Act (CWA) requires that all discharges (i.e., storm water runoff) to surface waters be permitted under the Alaska Pollutant Discharge Elimination System (APDES) permit program. For additional information see Appendix A-1.
When will it come up?	**Stage** / **Site Evaluation** / **Design** / **Permitting & Consultation** / **Construction** / **O&M** **Involvement** / / / ✓ / ✓ (primary) /
Why is this important?	Sediment is the most common cause of water quality problems in the nation's rivers and streams. The goal of this program is to reduce or eliminate storm water runoff that might contain pollutants or sediment from a project site during construction. Projects disturbing **one acre or more** of soil must be permitted under the State's Construction General Permit (CGP) and have a Storm Water Pollution Prevention Plan (SWPPP). Wind projects may include road(s), wind tower footprint(s), utility line corridor(s), lay down/staging areas, gravel source pits, or clearing limits that would require coverage under a CGP and SWPPP.
Steps Involved	• The "operator" submits a Notice of Intent (NOI) form to the U.S. Environmental Protection Agency (EPA). The operator is the entity (village, company, corporation, etc.) that has operational control over the construction plans or day-to-day activities necessary to implement the SWPPP. The NOI form lets EPA know that you are filing for permit coverage. • The SWPPP is a plan for how you will control storm water runoff from your construction site. It is broader and more complicated than a typical erosion and sediment control plan. • The operator must assess the potential effects of storm water runoff on federally listed endangered and threatened species and any designated critical habitat on or near the site. • Implement all Best Management Practices (BMPs) outlined in your SWPPP. BMPs must be inspected and maintained regularly. Inspections are required either (1) at least once every 7 days or (2) at least once every 14 days and within 24 hours of the end of a rain event of ½-inch or more. The plan must also be updated as site conditions and BMPs change. • The last step is to terminate permit coverage when your project is completed.
Authorization Process	• Preliminary draft permit issued by ADEC and posted on website for 10-day applicant review period. This review period can be waived by the applicant. • A notice of a Draft permit is issued by ADEC followed by a 30-day public comment period. • A proposed final permit is issued by ADEC after the end of the 30-day public comment period. There is a 5-day review period before the final permit is issued. This review period may be waived by the applicant. • Following the close of the 5-day review period of the proposed final permit, ADEC will issue the final APDES permit for the project.
Agencies Involved	ADEC 555 Cordova Street Anchorage, AK 99501 (907) 269-7692 Environmental Protection Agency Region X 1200 Sixth Avenue, OWW-130 Seattle, WA 98101 (800) 424-4372 ext. 6650
Resources	http://www.dec.state.ak.us/water/index.htm http://cfpub.epa.gov/npdes/home.cfm?program_id=6

Table 4. Alaska Coastal Management Program

What is it?	The Alaska Coastal Management Program (ACMP) evaluates projects within the Coastal Zone (up to 200 miles inland) for consistency with statewide standards and local coastal district enforceable policies. The ACMP consistency review process is a coordinated review that involves all federal and state permitting authorities and the Coastal District where the project is located. For additional information see Appendix A-2.
When will it come up?	<table><tr><th>Stage</th><th>Site Evaluation</th><th>Design</th><th>Permitting & Consultation</th><th>Construction</th><th>O&M</th></tr><tr><td>Involvement</td><td>✓</td><td>✓</td><td>✓ (primary)</td><td></td><td></td></tr></table>
Why is this important?	The Coastal Project Questionnaire (CPQ) can be a useful tool to determine what federal or state authorizations the project may require regardless of the proposed location. Projects within the Coastal Zone must go through the ACMP consistency review process and be certified consistent with the ACMP standards before any federal or state permits will be issued.
Steps Involved	• Determine if your project is in the Coastal Zone. The Coastal Zone, as defined under the ACMP, extends up to 200 miles inland and varies in elevation from the coast. You can determine if your project is within the Coastal Zone by going to the ACMP website: http://dnr.alaska.gov/coastal/acmp/GIS/boundary.htm. If your project is not within the Coastal Zone you are not required to coordinate with the ACMP. • Fill out the CPQ and consistency evaluation form and submit it to Division of Coastal and Ocean Management (DCOM). o The Evaluation template that the state provides is very useful in helping you to evaluate the consistency of your project, relative to state standards and policies. Some of these standards may not apply to your project. You do not have to evaluate those that are not applicable to your development. o You will need also the local Coastal District enforceable policies. You may contact the local Coastal District Coordinator for guidance on what policies relate to your project.
Authorization Process	• A 15 or 30-day public comment and review period is required, depending on the type of other authorizations required for the project; requests for additional information may delay this review time. • DCOM has 90 days (which can be stayed for various reasons) to issue a final consistency determination, but final determinations are usually issued within 20 days of the end of the public comment period. • If the project design changes during construction, or if additional facilities are added post-construction, additional permits or modifications to existing permits and authorizations may be needed. DCOM should be consulted to determine if additional ACMP review is necessary as a result of these circumstances.
Agency Involved	Alaska Department of Natural Resources (ADNR), Division of Coastal and Ocean Management: (907) 269-7470 (Anchorage) or (907) 465-3562 (Juneau), http://alaskacoast.state.ak.us/.
Resources	Electronic copy of the CPQ and consistency evaluation form: http://dnr.alaska.gov/coastal/acmp/Projects/pcpq3.html. ACMP Handbook of Statutes and Regulations: http://dnr.alaska.gov/coastal/acmp/Clawhome/handbook/panels/A.htm

Table 5. Aviation Safety

<table>
<tr><td>What is it?</td><td>Wind turbines and meteorological (MET) towers must not adversely affect air traffic or radar systems. The Federal Aviation Administration (FAA) must make a determination that the proposed project does not pose a hazard to navigable airspace or communications/navigation technology of aviation or Department of Defense (DOD) operations. For additional information and help with the online forms see Appendix A-3.</td></tr>
<tr><td>When will it come up?</td><td>
<table>
<tr><th>Stage</th><th>Site Evaluation</th><th>Design</th><th>Permitting & Consultation</th><th>Construction</th><th>O&M</th></tr>
<tr><td>Involvement</td><td>✓ (primary)</td><td>✓</td><td>✓</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Why is this important?</td><td>If your wind power project structures are over 200 feet above ground level (AGL), you are required to file a Form 7460-1 (Notice of Proposed Construction) with the FAA. The FAA does require notice on structures under 200 ft. depending on proximity to public use airports. These criteria are stated in Appendix A-3, Before installing a MET tower or wind turbine, a Determination of No Hazard to Air Navigation must be received from the FAA. Determinations are good for 18 months, so the FAA requests you begin approximately one year before you plan to break ground. Coordination should begin when you are siting MET towers or wind turbines.</td></tr>
<tr><td>Steps Involved</td><td>

The first step is coordination with FAA. Early coordination with the FAA is a key step in siting your wind turbines. Prior to completing FAA Form 7460-1 (Notice of Proposed Construction), it would be helpful to contact your local FAA representative to discuss potential locations for siting wind turbines in your community.
Fill out online form for all proposed turbine or met tower at http://oeaaa.faa.gov.
For any filed project, the FAA undertakes an initial aeronautical evaluation within the relevant FAA region based on the information submitted, and issues either a Determination of No Hazard to Air Navigation (DNH) — the “green light” for the project — or a Notice of Presumed Hazard (NPH). An NPH is an initial agency action to inform the developer that the project exceeds obstruction standards, and provides 60 days for the developer to request further study or negotiate height or location.
If your project requires notification, you must fill out and submit FAA Form SF 7460-1, "Notice of Proposed Construction or Alteration". Pertinent information about the alteration and appropriate attachments showing the type and location of the construction or alteration must also be submitted. Supplemental information needed for the FAA review include the following items:

Scaled drawing showing location of alteration in relation to nearest runways. This may be a marked up-Airport Layout Plan or Terminal Area sheet.
Perpendicular distance of the proposed alteration to the nearest runway centerlines.
Distance along centerline (actual or extended) from runway end to the perpendicular intercept point.
Ground Elevation at the site of the proposed alteration.
Height of the proposed alteration including antennas or other appurtenances.
Accurate geodetic coordinates conforming to NAD 83.
Sketches, drawings, etc. showing the type of construction or alteration being proposed

</td></tr>
<tr><td>Authorization Process</td><td>Advisory Circular 70/7460-2k states that notification is to be submitted 30 days prior to construction. Given the time required to conduct an aeronautical study, we recommend a 60-day advance notification to accommodate the extensive review process and allow timely issuance of the FAA determination letter.</td></tr>
<tr><td>Agencies Involved</td><td>Federal Aviation Administration
Alaskan Region
222 W 7th Ave
Anchorage, AK 99513
(907) 271-5438

Agency Contact for Wind turbines
Earl Newalu
FAA Atlanta
770-909-4401,
earl.newalu@faa.gov</td></tr>
<tr><td>Resources</td><td>Need for an aeronautical study
http://oeaaa.faa.gov Notice Criteria Tool
Air Traffic Areas of Responsibility
http://oeaaa.faa.gov Click on Alaska</td></tr>
</table>

Table 6. Bird Collision Issues

<table>
<tr><td>What is it?</td><td>The Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) together protect numerous bird species from incidental or accidental mortality.. Executive Order 13186 provides additional protection for migratory bird habitats from federal actions including actions such as project permitting or approval. The U.S. Fish and Wildlife Service (USFWS) has oversight and enforcement responsibility but does not issue incidental or accidental take permits for projects impacting birds. For additional information see Appendix A-4a and b.</td></tr>
<tr><td>When will it come up?</td><td>
<table>
<tr><th>Stage</th><th>Site Evaluation</th><th>Design</th><th>Permitting & Consultation</th><th>Construction</th><th>O&M</th></tr>
<tr><td>Involvement</td><td>✓ (primary)</td><td>✓</td><td>✓</td><td>✓</td><td>✓ (for large projects)</td></tr>
</table>
</td></tr>
<tr><td>Why is this important?</td><td>For wind energy projects, the primary concern is collision of migratory birds and bats with turbines and associated structures. Preliminary work to determine bird use and flight patterns near proposed sites may be warranted, depending on the location and size of the project. Large projects may also need to plan for post-construction surveys and adaptive management plans to reduce collision morality.

The MBTA has provisions that prohibit the take of active bird nests, their eggs and young; this hereby limits vegetation clearing to non-nesting seasons to protect nesting birds and the BGEPA prohibits disturbance of eagle nests at any time of year, whether or not they are active in a particular year.</td></tr>
<tr><td>Steps Involved</td><td>
• Review the draft guidelines. The USFWS has developed draft guidelines for wind power projects in Alaska to help avoid impacts to birds (Section 4). However, these guidelines will be modified as new information arises and new national regulations are implemented. The USFWS is creating comprehensive guidelines for wind-power at a national scale and new regulations for take of bald and golden eagles should be available and are forthcoming. Information in the two guidance documents will be used to update the AEA's Best Practices Guide. The guidelines are divided into several stages: a) site evaluation and selection, b) project design and construction, and c) facility operation, monitoring, and adaptive management.
• Avoidance of impact through site selection. The most important stage for avoiding impacts to birds is site selection. The USFWS urges developers to work with local or regional bird experts to identify high value bird habitat early in the site selection process. The USFWS "rules of thumb" to determine if there may be major risks to birds are if the turbines are within:
o ¼ mile of a bald or golden eagle nest
o ½ mile of a coastline or mountain pass (or on a ridge)
o ½ mile of a seabird nesting colony
o a known bird migration corridor or areas of special designation (e.g., parks, refuges)
However, as new information emerges these parameters may change. Therefore, consulting with a USFWS Biologist early in the process may save time and money later.
• Use Best Management Practices (BMPs). Best Management Practices are recommended to minimize habitat disturbance and bird collisions with power lines. Other BMPs address lighting issues, tower types, and access roads.
• Adaptive management. Larger developments may be asked to conduct post-construction monitoring to measure actual collision mortality. The USFWS would work with large projects to develop an "Avian and Bat Protection Plan" that lays out a strategy of adaptive management if mortality is substantial. The USFWS understands there may be bird mortalities at wind power developments even if all of their guidance has been followed. They are trying to gather data on seasonal effects, identify potential problem areas (e.g., recurrent, significant mortality events), identify types of situations with little or no risk to birds, and would like to work with wind power developers to minimize or mitigate any problem situations before they arise. USFWS encourages developers to communicate with them about their monitoring efforts and general results even if no problems are encountered.
</td></tr>
<tr><td>Authorization Process</td><td>No permit authorization is involved with the MBTA except where issuance of a Special Purpose Permit or Scientific Collecting Permit is necessary. The BGEPA will require a permit for the disturbance of lethal take of eagles. A final regulation under BGEPA is forthcoming.</td></tr>
<tr><td>Agency Involved</td><td>The USFWS: Anchorage Field Office (907-271-2888); Fairbanks Field Office (907-456-0203); Juneau Field Office (907-780-1160).</td></tr>
</table>

Table 6. Bird Collision Issues

Resources	USFWS wind energy website: http://www.fws.gov/habitatconservation/wind.html Wind Coordinating Committee publications: http://alaska.fws.gov/fisheries/fieldoffice/anchorage/pdf/vegetation_clearing.pdf. SFWS national bald eagle management guidelines: http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf Draft EA Proposal –Take Permits under BGEPA: http://www.fws.gov/migratorybirds/baldeagle_files/DEAforPermit.to.Take_7Aug08.pdf

Table 7. Fish and Essential Fish Habitat

<table>
<tr><td>What is it?</td><td colspan="6">Wind power projects that require access roads or transmission lines that cross fish-bearing waterways need to research potential impacts on fish and Essential Fish Habitat (EFH) and may need to acquire permits that stipulate mitigation measures. For additional information see Appendix A-5.</td></tr>
<tr><td>When will it come up?</td><td>Stage</td><td>Site Evaluation</td><td>Design</td><td>Permitting & Consultation</td><td>Construction</td><td>O&M</td></tr>
<tr><td></td><td>Involvement</td><td>✓</td><td></td><td>✓ (primary)</td><td>✓</td><td></td></tr>
<tr><td>Why is this important?</td><td colspan="6">ADF&G oversees and regulates activities that may impact fish streams and surrounding upland watersheds. Alaska Statute 16.05.871 (Anadromous Fish Act) requires prior notification and a Title 16 Fish Habitat Permit before any development activity directly or indirectly affects a catalogued water body. A Fish Habitat Permit would specify mandatory mitigation measures and Best Management Practices (BMPs) for many of the project's activities affecting anadromous fish streams and surrounding upland watersheds. Alaska Statute 16.05.841 (Fishway Act) requires authorization from ADF&G Division of Habitat for activities within or across a stream used by resident or anadromous fish if the activity may impede fish passage. The Magnuson-Stevens Fishery Management and Conservation Act establishes an advisory role for the NMFS to protect EFH. NMFS would offer conservation guidelines for EFH if the proposed project has marine components (intertidal or off-shore) or involves crossing anadromous streams.</td></tr>
<tr><td>Steps Involved</td><td colspan="6">• Identify whether road construction or transmission lines would cross any anadromous streams. ADF&G maintains a catalog of anadromous waters that is available at their field offices or online (see Resources). If no fish habitat would be affected, no permits or guidance from ADF&G or NMFS is needed.
• If the project involves construction across fish-bearing streams, contact ADF&G to obtain a Title 16 Fish Habitat Permit and Fish Passage authorization. ADF&G has a Memoranda of Agreement with the ADOT that specifies criteria for installing culverts across fish streams.
• If the project involves federal funding or permitting and impacts marine waters or anadromous fish habitat, the federal action agency should contact NMFS regarding potential EFH concerns.</td></tr>
<tr><td>Authorization Process</td><td colspan="6">The review period for this permit process varies, depending on the complexity of the project. Some projects may be able to receive authorization under an expedited General Permit process. All Title 16 Fish Habitat permits are generally issued within 30 days of application, unless other authorizations, such as an ACMP consistency determination are required to be issued first.</td></tr>
<tr><td>Agency Involved</td><td colspan="6">ADF&G Habitat Division: Douglas Regional Office, (907) 465-4105; Anchorage Regional Office, (907) 267-2172; Fairbanks Regional Office, (907) 459-7289; or their website: http://www.habitat.adfg.alaska.gov/
NMFS Habitat Conservation Division, (907) 586-7636 (SE Alaska), or (907) 271-5006 (rest of Alaska), or email HCD_Alaska@noaa.gov.</td></tr>
<tr><td>Resources</td><td colspan="6">NMFS EFH website: http://fakr.noaa.gov/habitat/efh.htm
ADF&G catalog of anadromous waters: http://www.sf.adfg.state.ak.us/SARR/AWC/index.cfm/FA/maps.interactive.
ADF&G criteria for culverts to allow fish passage: http://www.habitat.adfg.alaska.gov/tech_reports/standards_techniques/dot_adfg_fishpass080301.pdf
ADF&G Fish habitat permits information : http ://www.habitat.adfg.alaska.gov/fhpermits.php.</td></tr>
</table>

Table 8. Land Use - Federal Special Use Permits and ROWs

<table>
<tr><td>What is it?</td><td>Land ownership and right-of-way (ROW) access are important factors to consider early in the planning phase for any wind energy project, including siting for turbines, access roads, and transmission lines, to ensure the sites evaluated for wind power development will actually be available. For additional information see Appendix A-6.</td></tr>
<tr><td>When will it come up?</td><td>
<table>
<tr><th>Stage</th><th>Site Evaluation</th><th>Design</th><th>Permitting & Consultation</th><th>Construction</th><th>O&M</th></tr>
<tr><td>Involvement</td><td>✓</td><td></td><td>✓ (primary)</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Why is this important?</td><td>It is important to get written permission from the federal land owners early in the site evaluation phase of the project, which may require public hearings and other efforts to build local support for the project. Projects occurring on or crossing federal lands require Special Use Permits and ROWs, and subsequently require the developer to comply with certain federal agency permitting requirements, including review of the projects potential impacts under the NEPA. The requirements associated with project construction will be very different if it is built on federal lands versus private or state land and will significantly affect the time and cost of completing the project. Many Special Use Permits are not granted, therefore, it is prudent to plan well in advance and develop other options that don't involve federal lands.</td></tr>
<tr><td>Steps Involved</td><td>

Contact the ADNR, Public Information Center (PIC) for help in determining land ownership for the proposed wind power development, including utility corridors.
If any part of the project would be on or cross federal lands, contact the regional office of the federal agency that manages the land and determine whether you need a Special Use Permit or a ROW. The Special Use Permit authorizes the use of public land for a purpose not specifically authorized under other regulation or statute. The federal agency can provide permit applications and specific information regarding permitting timelines and department contacts.
Apply for a Special Use Permit. Consistent with the issuing agency's jurisdiction, Special Use Permits address all resources that may be affected by the project, including the physical environment such as geology and soils, air, surface water and groundwater, and biological resources such as vegetation, wildlife, threatened and endangered (T&E) species and wetlands, cultural resources, human populations, and others. Before Special Use Permits are issued, the federal agency must determine that the proposed use complies with all management plans and laws, that there is a demonstrated need for the activity, and that the use is appropriate on federal lands under there jurisdiction.

</td></tr>
<tr><td>Authorization Process</td><td>The process for authorization and issuance of Special Land Use Permits and ROWs can be complex and time consuming. Permits applications can take a long time to process because of requirements such as environmental analysis under NEPA. It is best to start this process early on during project planning to ensure a timely authorization. From the time that permit applications are filed to the time the permit or ROW is recorded can be over a year but varies on a case by case basis.</td></tr>
<tr><td>Agencies Involved</td><td>Bureau of Land Management (BLM)
222 West 7th Ave., Box 13
Anchorage, Alaska 99513-7599
Telephone: (907) 271-5477 (or a local BLM Offic

U.S. Fish &Wildlife Service (FWS)
Office of the Regional Director
101 1 East Tudor Road
Anchorage, Alaska 99503
Telephone: (907) 786-3440

Department of Agriculture
Regional Forester, Forest Service (USFS)
Federal Office Building,
P.O. Box 21628
Juneau, Alaska 99802-1628
Telephone: (907) 586-7847 (or a local Forest Service Office)

Department of the Interior
Bureau of Indian Affairs (BIA)
Juneau Area Office
Federal Building Annex
9109 Mendenhall Mall Road, Suite 5
Juneau, Alaska 99802
Telephone: (907) 586-7177</td></tr>
</table>

Table 8. Land Use - Federal Special Use Permits and ROWs

Resources	Special Use Permit application form for BLM and Forest Service http://www.fs.fed.us/specialuses/documents/sf-299.rtf Tongass and Chugach National Forests Special Use Permit information http://www.fs.fed.us/r10/ro/passes-permits/ http://www.fs.fed.us/specialuses/special_app_process.shtml U.S. Fish and Wildlife Service Special Use permits for Refuges http://www.fws.gov/refuges/generalinterest/permits.html U.S. Fish and Wildlife Service easement and right-of Ways http://alaska.fws.gov/nwr/realty/rights/nwr.htm U.S fish and Wildlife Service easement and right-of-ways National Park Service Special Park Use Permits http://www.nps.gov/policy/DOrders/DOrder53.html

Table 9. Land Ownership - State Leases, Easement, and Rights-of-Way

<table>
<tr><td>What is it?</td><td>Land ownership and right-of-way (ROW) access are important factors to consider early in the planning phase for any wind power project, including siting for turbines, access roads, and transmission lines, to ensure the sites evaluated for wind power development will actually be available. For additional information see Appendix A-7.</td></tr>
<tr><td>When will it come up?</td><td>
<table>
<tr><th>Stage</th><th>Site Evaluation</th><th>Design</th><th>Permitting & Consultation</th><th>Construction</th><th>O&M</th></tr>
<tr><td>Involvement</td><td>✓</td><td>✓</td><td>✓ (primary)</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Why is this important?</td><td>It is important to get written permission from private land owners early in the planning phase, which may require public hearings and other efforts to build local support for the project. Projects occurring on or crossing state lands require leases and ROWs, and subsequently require the developer to comply with certain federal or state agency permitting requirements. The requirements associated with project construction will be very different if it is built on private land versus public land and will significantly affect the time and cost of completing the project.</td></tr>
<tr><td>Steps Involved</td><td>• Contact the ADNR, PIC for help in determining land ownership for the proposed wind power development.
• If any part of the project would be on or cross State of Alaska lands, contact the regional office of ADNR Division of Mining Land and Water to determine weather you will need a Land Use Permit (LUP), lease, easement, or ROW. They can provide permit applications and specific information regarding permitting timelines and department contacts.
• If any part of the project would be on or cross Alaska Mental Health Trust lands, apply for authorization to access and utilize Trust lands. Competitive lease sales are required for long-term uses and private development projects while utility easements and non-competitive lease sales may apply to short-term uses and public projects.
• If proposed road and transmission line corridors would be on airport property or along roadways managed by the Alaska Department of Transportation (ADOT), a utility ROW permit and a letter of non-objection from the other current ROW users will be necessary before development begins. Contact the appropriate ADOT Regional ROW Office.</td></tr>
<tr><td>Authorization Process</td><td>The process for authorization and issuance of easements and ROWs can be complex and time consuming. It is best to start this process early on during project planning to ensure a timely authorization. From the time that permit applications are filed to the time the easement or ROW is recorded can be as long as two years in some cases. Work may be authorized under other permits during this process. This time frame varies greatly on a case by case basis.</td></tr>
<tr><td>Agencies Involved</td><td>ADNR, Division of Mining Land and Water: Northern Region (907) 451-2740, South Central Region (907) 269-8552, Southeast Region (907) 465-3400, http://dnr.alaska.gov/mlw/
Alaska Mental Health Trust Authority: (907) 269-7960, http://www.mhtrust.org
Alaska Department of Transportation, Regional ROW Offices: Northern Region (907) 451-5423, Central Region (907) 269-0700, Southeast Region (907) 465-4541, http://dot.alaska.gov/comm/about/pop_row.shtml.</td></tr>
<tr><td>Resources</td><td>ADNR Public Information Center: http://dnr.alaska.gov/commis/pic/, or Fairbanks (907) 451-2705, Anchorage (907) 269-8400, Juneau (907) 465-3400.</td></tr>
</table>

Table 10. Mammals (including bats)

<table>
<tr><td>What is it?</td><td>The primary concerns for mammals are to prevent mortality of bats from turbine collisions and to address potential impacts on wildlife habitat and hunter access. For additional information see Appendix A-8.</td></tr>
<tr><td>When will it come up?</td><td>
<table>
<tr><td>Stage</td><td>Site Evaluation</td><td>Design</td><td>Permitting & Consultation</td><td>Construction</td><td>O&M</td></tr>
<tr><td>Involvement</td><td>✓ (primary)</td><td>✓</td><td>✓</td><td>✓</td><td>✓ (for large projects)</td></tr>
</table>
</td></tr>
<tr><td>Why is this important?</td><td>There are no specific legal protections for bats in Alaska but, given the known problems with bat mortality in some eastern U.S. wind farms, the USFWS has taken a precautionary approach regarding potential impacts of wind power developments on bats in Alaska. ADF&G does not issue permits for development activities that may affect wildlife but it may have an advisory role to permitting agencies if the proposed project disturbs important wildlife habitat or has linear components (roads and transmission lines) which may hinder wildlife movements or affect hunter access.</td></tr>
<tr><td>Steps Involved</td><td>

Review USFWS draft guidelines. Because the issues are similar, the USFWS has incorporated protection measures for bats into their voluntary guidelines for protection of birds (Section 4).
Research the potential of bat issues. The USFWS requests developers to research the presence of bats in the project area and avoid sites within ¼ mile of bat hibernacula or maternity roosts. There are five species of bats that regularly occur in Alaska but only one, the little brown bat, occurs outside Southeast Alaska. There is very little site-specific information on hibernacula of any species.
Consultation with ADF&G during the planning and siting phases of a project is recommended to avoid potential problems concerning wildlife habitat or hunter access.
Consult with Federal Subsistence Board, Regional Advisory Council in your area to determine if subsistence hunting will be affected by your project. On federal land, subsistence hunting is regulated by the Federal Subsistence Board.

</td></tr>
<tr><td>Authorization Process</td><td>There is no permit authorization required</td></tr>
<tr><td>Agency Involved</td><td>The USFWS: Anchorage Field Office (907-271-2888); Fairbanks Field Office (907-456-0203); Juneau Field Office (907-780-1160).
ADF&G Division of Wildlife Conservation, State headquarters (907-465-4265) or http://www.wildlife.alaska.gov/index.cfm?adfg=info.contact
Federal Subsistence Board, regional advisory councils (800-478-1456) or http://alaska.fws.gov/asm/rac.cfml</td></tr>
<tr><td>Resources</td><td>Alaska Natural History Program, bat biology and distribution in Alaska: http://aknhp.uaa.alaska.edu/akbats/index.htm
University of Alaska Southeast, bat monitoring project: http://www.alaskabats.org/
Parker, D.I., B.E. Lawhead, and J.A. Cook, 1997. Distributional limits of bats in Alaska. Arctic (50): 256-265. Available online: http://pubs.aina.ucalgary.ca/arctic/Arctic50-3-256.pdf</td></tr>
</table>

Table 11. Material Sale and Reclamation Plan and Temporary Water Use

<table>
<tr><td>What is it?</td><td>ADNR issues many different ancillary authorizations that may be required for your project, depending on the project scope. These authorizations include a Material Sale Permit, with required Reclamation Plan, from the Division of Lands and a Temporary Water Use Permit (TWUP) from the Division of Water. For additional information see Appendix A-9.</td></tr>
<tr><td>When will it come up?</td><td>
<table>
<tr><th>Stage</th><th>Site Evaluation</th><th>Design</th><th>Permitting & Consultation</th><th>Construction</th><th>O&M</th></tr>
<tr><td>Involvement</td><td></td><td>✓</td><td>✓ (primary)</td><td>✓</td><td></td></tr>
</table>
</td></tr>
<tr><td>Why is this important?</td><td>A Material Sale Permit and Reclamation Plan are needed if your project requires the extraction of materials from state owned resources. This includes the extraction of sand or gravel from a river bed, as well as the extraction of material from the ground in areas where the subsurface rights are owned by the State of Alaska.

A TWUP is required for a “significant amount” of water usage lasting less than five years. This includes surface water as well as ground water. Your project may require a TWUP if you plan to use water for dust control or cement making for turbine foundations.</td></tr>
<tr><td>Steps Involved</td><td>• Determine the application required. You can obtain applications for each of these authorizations by contacting the ADNR PIC or your Division of Mining, Land and Water (DMLW) regional office.
• Submit the required information on the application. Specific information regarding the location and proposed quantity of material desired will be needed for the Material Sale permit application, and the development of a Reclamation Plan is required.
• Determine if water withdrawls will be needed. The TWUP application will require that you reference the location of water withdrawal, as well as the estimated quantity of usage.

Note: if you will be siphoning water from a catalogued anadromous fish stream, then you would also be required to obtain authorization from ADF&G under Title 16.</td></tr>
<tr><td>Authorization Process</td><td>The Material Sale Permit and Reclamation Plan approval process requires a 30-day public comment period and generally takes 90 days for the issuance of the authorization.

The TWUP review process is a simple process that requires a 15-day agency notice. Permits are generally issued within 30 days of receipt of a complete application.</td></tr>
<tr><td>Agencies Involved</td><td>Alaska Department of Natural Resources
Division of Mining Land and Water
Material Sale
550 W 7th Ave Ste 900c
Anchorage, AK 99501-3577
(907)269-8560

Southcentral Region
Water Permit
550 W. 7th Ave.,
Anchorage, AK 99501-3577
(907) 269-8503
Fax: (907) 269-8947

Northern Region
Water Permit
3700 Airport Way
Fairbanks, AK 99709-4699
(907) 451-2790
Fax: (907) 451-2703

Southeast Region
Water Permit
400 Willoughby Suite 400
Juneau, AK 99801
(907) 465-2533
Fax: (907) 586-2954</td></tr>
<tr><td>Resources</td><td>The following PDF’s provide helpful information and are also located in Appendix A of this document:
http://dnr.alaska.gov/mlw/factsht/material_sites.pdf
http://dnr.alaska.gov/mlw/factsht/wtr_fs/wtr_rght.pdf</td></tr>
</table>

Table 12. National Environmental Policy Act

<table>
<tr><td>What is it?</td><td>Wind projects that involve federal permits or federal funds are subject to the requirements of the National Environmental Policy Act of 1969 (42 USC 4321 et seq.) (NEPA). NEPA requires that federal agencies analyze the potential environmental impacts for federal actions that may ‘‘significantly affect the quality of the human environment.’’ For additional information see Appendix A-10.</td></tr>
<tr><td>When will it come up?</td><td>
<table>
<tr><th>Stage</th><th>Site Evaluation</th><th>Design</th><th>Permitting & Consultation</th><th>Construction</th><th>O&M</th></tr>
<tr><td>Involvement</td><td>✓</td><td>✓</td><td>✓</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Why is this important?</td><td>The reviewing agency may use the results of a NEPA process to clarify requirements for mitigation and monitoring to address the proposed project’s environmental impacts. Not all projects will go through the NEPA evaluation process.</td></tr>
<tr><td>Steps Involved</td><td>Determine which federal agency has jurisdiction. Many agencies have NEPA guidelines that will help you understand how to comply with their specific NEPA requirements and process.
The three levels of environmental review under NEPA include: Categorical Exclusions (CEs), Environmental Assessments (EAs) and Environmental Impact Statements (EISs).
• Categorical Exclusions
Categories of actions that do not individually or cumulatively have a significant effect on the human environment nor are they connected to other actions which potentially have significant effects and for which, therefore, neither an EA or and EIS is required.
Wind energy development projects with federal involvement generally would require a higher level of environmental review than a CE.
• Environmental Assessment
A concise public document that a federal agency prepares to provide sufficient evidence and analysis to determine whether a proposed project would require further evaluation of the potential impacts under an EIS or a finding of no significant impact (FONSI).
Most wind energy projects in Alaska with federal involvement would be reviewed under an EA.
• Environmental Impact Statements
An EIS is a detailed written statement that is required for a major federal action that could significantly affect the human environment. An EIS is the highest level of evaluation under NEPA. The regulatory requirements for an EIS are more detailed than the requirements for an EA and require a considerably longer period of time to complete and often are done at considerable expense. Only large wind energy projects with federal involvement with potential for significant impacts would be reviewed under an EIS.
The agencies that are typically involved with NEPA review of wind energy projects is due to funding; funding agencies often include the DOE and a lesser extent, the Department of Agriculture and the Denali Commission.</td></tr>
<tr><td>Authorization Process</td><td>The authorization process for NEPA documents is variable and dependant on the type of document and level of analysis (See Appendix A10).</td></tr>
<tr><td>Agencies Involved</td><td>U.S. Department of Energy
Golden Field Office (GO)
Phone: 303-275-4723
Fax: 303-275-4790
http://www.windpoweringamerica.gov/

Denali Commission
510 L St # 410
Anchorage, AK 99501-1956
907-271-1414
http://www.denali.gov

Department of Agriculture
Regional Forester, Forest Service
(USFS)
Federal Office Building,
P.O. Box 21628
Juneau, Alaska 99802-1628
Telephone: (907) 586-7847 (or a local</td></tr>
<tr><td>Resources</td><td>DOE National NEPA Website: http://www.gc.energy.gov/NEPA//
NEPA Compliances Information: https://www.eere-pmc.energy.gov/NEPA.asp
DOE NEPA Regulations: http://ceq.hss.doe.gov/Nepa/regs/nepa/nepaeqia.htm
Examples of DOE NEPA documents: http://www.gc.energy.gov/NEPA/DOE_NEPA_documents.htm</td></tr>
</table>

Table 13. Office of History and Archaeology and the State Historic Preservation Office

<table>
<tr><td>What is it?</td><td>Consultation with Office of History and Archaeology (OHA) and State Historic Preservation Office (SHPO) is required by Section 106 of the National Historic Preservation Act (NHPA). All projects receiving federal or state funding, occurring on federal or state land, or needing federal or state permits (including a Coastal Zone Consistency Determination), must coordinate with the OHA. Projects on private land, without federal or state funding sources or permit requirements do not need to coordinate with SHPO. For additional information see Appendix A-11.</td></tr>
<tr><td>When will it come up?</td><td>
<table>
<tr><th>Stage</th><th>Site Evaluation</th><th>Design</th><th>Permitting & Consultation</th><th>Construction</th><th>O&M</th></tr>
<tr><td>Involvement</td><td>✓ (primary)</td><td></td><td>✓</td><td>✓</td><td></td></tr>
</table>
</td></tr>
<tr><td>Why is this important?</td><td>A letter from SHPO concurring that “no historic properties will be adversely affected” must be received prior to project construction of your wind project. Coordination should begin early, as SHPO may require moving project sites or components prior to giving concurrence. Contact information for SHPO is provided within the Agency Contacts section of this Guide.</td></tr>
<tr><td>Steps Involved</td><td>To assist OHA and SHPO in determining if your project may affect historic properties, the following information is necessary:
Description of the project including funding source, permit list, and land ownership.
Description of ground disturbing activities.
Map with location of all project components, including access roads, wind tower locations, staging areas, and gravel source area. (If the gravel source is commercial, you do not need to map the location, but do name the source in your description.)
Project location marked on a U.S. Geological Survey (USGS) topographic map showing contour lines.
Provide the legal description section, township, range, and meridian, city or village name, and include a street address if applicable.
Photographs and aerial photograph of the site.
Describe known historic sites within the project area, and list the parties consulted regarding the historic potential of the site. If a building is involved, give the approximate date of construction. Note: This information may come from interviews with village elders.
Describe the research conducted to determine if historic properties are eligible within the Area of Potential Effect (APE). (i.e., did you conduct a search of the Alaska Heritage Resources Survey [AHRS] files and maps; or have there been any other archeological or historic surveys conducted in the area?)
If historic sites are within or near the project site that have never been evaluated, supply an opinion about the eligibility.
Request concurrence on whether or not any historic properties would be affected.
Note: Electronic copies sent via email are not accepted.</td></tr>
<tr><td>Authorization Process</td><td>SHPO has 30 days to respond to a project review request.
If SHPO agrees no historic properties would be affected, they will mail a concurrence stamped with the words “No Historic Properties Affected.”
If SHPO disagrees, and believes adverse effects would occur to eligible or potentially eligible historic properties in the project vicinity, a consultation will begin.
SHPO may require a site specific Historic Evaluation be preformed and recorded by a registered archeologist or an archeologist be present during any excavation work.
Note: Costs associated with a historic evaluation by an archeologist are likely to be less than having an archeologist on site during excavation.</td></tr>
<tr><td>Agencies Involved</td><td>Office of History and Archaeology
State Historic Preservation Office
550 West 7th Ave., Suite 1310
Anchorage, Alaska 99501-3565
(907) 269-8721</td></tr>
<tr><td>Resources</td><td>The following website provides helpful information: http://dnr.alaska.gov/parks/oha/
For a helpful step by step process on coordination with OHA and SHPO, click on #8 “Review and Compliance Program Guidelines for Consultation, Cultural Resources Identification, and Area of Potential Effect Determination: http://dnr.alaska.gov/parks/oha/misc/ohastaff.htm</td></tr>
</table>

Table 14. Threatened & Endangered Species

<table>
<tr><td>What is it?</td><td>Special protection rules apply to species that are listed under the Endangered Species Act (ESA). The primary ESA concern for wind power projects in Alaska involve several listed or candidate species of birds that spend most of their time in marine waters but come to land to nest. Wind projects sited on marine coasts or offshore may also need to consider impacts to listed marine mammals. Wind energy projects near marine waters are therefore more likely to have ESA considerations. For additional information see Appendix A-12.</td></tr>
<tr><td>When will it come up?</td><td>
<table>
<tr><th>Stage</th><th>Site Evaluation</th><th>Design</th><th>Permitting & Consultation</th><th>Construction</th><th>O&M</th></tr>
<tr><td>Involvement</td><td>✓ (primary)</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr>
</table>
</td></tr>
<tr><td>Why is this important?</td><td>The ESA prohibits “take” of listed species, which, in the context of wind turbine installations, means to actually kill or cause injury to listed animals. This applies to individuals and private entities as well as government entities, even if the listed species occur on private land. For wind energy projects, the primary concern is to prevent listed bird species from colliding with turbines and associated structures.</td></tr>
<tr><td>Steps Involved</td><td>

Find out if there are any listed species that occur in your project site (see the U.S. Fish and Wildlife Service [USFWS] and the National Marine Fisheries Service [NMFS] websites below or contact them directly). If there are no ESA listed species near the site, no further consultation with the agencies is needed.
If listed species occur in the area, consultation with USFWS and NMFS is strongly recommended for private projects and required if the project involves federal funding or permits.
The USFWS has developed guidelines for wind power projects in Alaska to help avoid impacts to birds, whether ESA listed or not (Section 4). The guidelines are divided into several stages: a) site evaluation and selection, b) project design and construction, and c) facility operation, monitoring, and adaptive management.
The most important stage for avoiding impacts to ESA listed species is site selection. The general guidance from USFWS is to avoid placing wind turbines within ½ mile of marine coasts.
If wind turbines and/or above-ground transmission lines must be sited in an area where listed species are likely to occur, pre-construction and/or post-construction bird surveys may be needed to determine the actual potential for conflicts with listed species. The intensity and duration of these surveys will depend on the size of the proposed project.
If the project involves federal funding or permits, the action agency will need to initiate informal ESA Section 7 consultations with USFWS and NMFS. If there are substantial risks to listed species, the level of consultation will increase.

</td></tr>
<tr><td>Authorization Process</td><td>None</td></tr>
<tr><td>Agencies Involved</td><td>The USFWS is responsible for listed birds, sea otters, and polar bears. Anchorage Field Office (907-271-2888); Fairbanks Field Office (907-456-0203); Juneau Field Office (907-780-1160). NMFS is responsible for all other listed marine species. Alaska Regional Office, Protected Resources Division (907-586-7235)</td></tr>
<tr><td>Resources</td><td>USFWS http://alaska.fws.gov/fisheries/endangered/consultation_guide.htm,
NMFS http://www.fakr.noaa.gov/protectedresources/</td></tr>
</table>

Table 15. Wetlands and Other Waters of the U.S.

What is it?	The U.S. Army Corps of Engineers (USACE) regulates the placement of fill in "waters of the United States", including wetlands and streams, under Section 404 of the Clean Water Act (CWA). If your project requires a CWA Section 404 authorization from the USACE, then you will also need the corresponding Section 401 Water Quality Assurance Certification. The permit application for the USACE Section 404 authorization serves as the permit application for this certification as well. Coordination with Alaska Department of Environmental Conservation (ADEC) will occur as a function of the USACE Section 404 permit review. ADEC usually issues a Section 401 certification or waiver of certification on or around the finalization of the USACE Section 404 permit. Any development that is within or over navigable waters is regulated under Section 10 of the Rivers and Harbors Act of 1899. For additional information see Appendix A-13.
When will it come up?	**Stage** / **Involvement**: Site Evaluation ✓; Design ✓; Permitting & Consultation ✓ (primary); Construction ✓; O&M ✓
Why is this important?	The CWA Section 404 requires a project proponent to avoid, minimize, and compensate for impacts to waters of the U.S., including wetlands. It is often difficult to avoid impacts to wetlands because of their prevalence in many areas of Alaska. If the project requires placement of fill in waters of the U.S., a Section 404 permit is required.
Steps Involved	• To determine if your project is within wetlands or other waters of the U.S., contact the USACE Alaska District for a preliminary jurisdictional determination (PJD). A list of consultants qualified to conduct wetland delineations can be found on the Alaska District website: http://www.poa.usace.army.mil/REG/conslist.htm. • Minimize impacts on wetlands as much as possible during the siting and design phases of the project, including placement of turbines, access roads, transmission lines, and other structures. Minimize impacts of high value wetlands, such as freshwater marshes, emergent wetlands, and estuarine salt marsh habitat to reduce the cost of mitigation. • Section 10 permits are required under the Rivers and Harbors Act for developments that are within or over navigable waters. The application is the same as the Section 404 permit. If your project requires authorization under both statutes, you only need to submit one application.
Authorization Process	• There are three types of permits issued under Section 404; Nationwide Permits, Regional General Permits , and Individual Permits. • Nationwide permits (NWPs) are issued for a period of five years at the national level. NWP's are simple and fast (most require only a 10-day agency review) but are limited to projects that impact less than ½ acre of wetlands and have other conditions • Regional General Permits (GP) are issued for a period of five years by the Alaska District USACE, which is currently working on developing a GP for small to medium size wind power projects throughout Alaska. Once this GP is finalized, wind project developers could use it to avoid the individual 404 permit process provided they meet the requirements of the GP, such as limited size of the facilities and amount of wetlands filled. • Individual permits are issued by the USACE after a full public interest review of an individual application, which is a much more complicated and time-consuming process than the other types of permits. Individual 404 permit applications involve a three-step evaluation process: pre-application consultation (for major projects), formal project review, and decision making. The USACE project manager prepares a public notice, evaluates the impacts of the project and all comments received, negotiates necessary modifications of the project if required, and drafts appropriate documentation to support a recommended permit decision. The permit decision is generally based on a public interest balancing process where the benefits of the project are balanced against the detriments. Individual 404 permits are usually issued within 120 days of receipt of a completed application, unless it is determined that an Environmental Impact Statement is required.
Agency Involved	USACE, Alaska Regulatory District; Anchorage (800) 478-2712, Fairbanks (907) 474-2166, Juneau (907) 790-4490, Kenai (907) 283-3519, http://www.poa.usace.army.mil/reg/
Resources	Nationwide permits: http://www.poa.usace.army.mil/REG/NWPs.htm Individual 404 application form: http://www.poa.usace.army.mil/REG/permitapp.htm. Applicable regulations: http://www.poa.usace.army.mil/REG/LawsandRegulations.htm

APPENDIX A

DETAILED INFORMATION ON BEST PRACTICES, PERMITS AND CONSULTATIONS FOR WIND ENERGY DEVELOPMENT BY ISSUE

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Tables

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A-1. Alaska Pollutant Discharge Elimination System

Projects disturbing one acre or more of soil must have coverage under Construction General Permit (CGP) (including road(s), wind tower footprint(s), utility line corridor(s), lay down/staging areas, gravel source pits, and clearing limits).

No Permit is Required if you can answer YES to the following:

- Less than one acre of soil is disturbed.
- NOT part of a planned disturbance of a larger common plan of development (wind tower footprint(s), lay down/staging areas, gravel source pits, or clearing limits).
- NOT discharging storm water into U.S. surface waters (lakes, streams, rivers, ponds, wetlands, salt water, or into a storm drainage system).

If you are disturbing more than one acre of soil or discharging storm water to U.S. surface waters, you are required to:

- Complete a Storm Water Pollution Prevention Plan (SWPPP) and submit to Alaska Department of Environmental Conservation (ADEC), and pay a review fee to ADEC. A SWPPP outlines your plans to manage materials, equipment, and storm water runoff from your construction site.
- Complete consultation under Section 7 of Endangered Species Act (ESA) with the U.S. Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service (NMFS) and receive a letter stating your project “will not effect” or “may affect, but not adversely effect” endangered species (see Table 14 and Appendix A-12 for additional information).
- Complete consultation under Section 106 of the Historic Preservation Act with the State Historic Preservation Office and receive a letter concurring “no historic properties affected” (see Table 13 and Appendix A-11 for additional information).

Submit NOI to EPA

- Go to the following website: http://cfpub.epa.gov/npdes/stormwater/enoi.cfm.
- Click on Electronic Notice of Intent (envoi) link
- Click on envoi icon on right side of the page
- Read the Notice and “Click here to continue”
- Click on “If you are new to CDX and wish to register, please click here”
- Read Warning Notice and Privacy Statement “Click here to continue”
- Read and Click “I Accept”
- Fill in the Name, create a User Name, Password, and Secret Question, then click “Next”
- Fill in Organization Name, Mailing Address, City, State, Zip Code, Country, Email address and Phone Number, then click “Next”
- CDX Registration: Add Program page, click on Storm Water Notice of Intent (envoi) (SWENOI), then click “Next”
- CDX Registration: Add Program ID, click ID: and type in AK, then click Finished
- Next you will see this message: Congratulations! You have successfully completed the online portion of CDX registration. You should receive an e-mail confirming receipt of your information. Click Finished
- Click on SWENOI: Storm Water envoi

- Identify your role as either Company/Organization Certifying Official or Organization Staff, then verify
- Fill in the Apply for coverage under an EPA General Permit or for Coverage Waiver
- Select form type: SWENOI
- Select State: AK
- Is you facility located on Indian Country Lands: NO - unless your project is located on a Native Allotment or Annette Island (Indian Reserve)
- Is this industrial facility of construction site considered a federal facility: No – unless the facility is owned by or constructed for the purpose of leasing to the federal government
- Do you have an Employer Identification Number (EIN) number? NO – unless you have a federal tax identification number (9 digit number assigned by the Internal Revenue Service [IRS] to identify a business or taxpayer required to file business tax returns). Businesses operating as a corporation or partnership have an EIN. The following do not have an EIN: Limited Liability Company (LLC), state and local governments, federal government/military, Native tribal government or enterprise.

All projects must implement storm water controls described in the SWPPP, conduct and document inspections at least every seven days, maintain erosion and sediment controls, keep a copy of the permit and all records on site during the entire construction phase, revise the SWPPP when necessary to reflect site conditions, and retain records for at least three years after the site is permanently stabilized.

A-2. Alaska Coastal Management Program

The ACMP was originally established under the Coastal Management Act of 1977 and is administered by the ADNR, DCOM: http://alaskacoast.state.ak.us/. The mission of the ACMP is "to provide stewardship for Alaska's rich and diverse coastal resources to ensure a healthy and vibrant Alaskan coast that efficiently sustains long-term economic and environmental productivity."

The Coastal Zone, as defined under the ACMP, extends up to 200 miles inland and varies in elevation from the coast. To determine if your project is within the Coastal Zone, call ADNR's Coastal and Ocean Management Office at (907) 269-7470 (Anchorage) or (907) 465-3562 (Juneau), or visit the ACMP website at http://dnr.alaska.gov/coastal/acmp/GIS/boundary.htm.

If your project **IS NOT** within the Coastal Zone, then you are not required to coordinate with the ACMP and obtain a Coastal Consistency Determination. However, the Coastal Project Questionnaire (CPQ) can be a useful tool to determine what authorizations your project may require regardless of the proposed location.

The ACMP consistency review process is a valuable resource that communities or private developers can use to determine the potential impacts of their wind energy project. By completing a CPQ, a community or developer can determine what Federal and State agencies they may need to contact in order to receive authorizations and permits to develop a wind energy project. Completing a CPQ is a good first step in the permitting process.

If your project **IS** within the Coastal Zone **AND** requires at least one Federal or State permit, then your project must go through the ACMP consistency review process and be determined consistent with the ACMP standards and local Coastal District enforceable policies before any permits will be issued.

ACMP Consistency Review Process

The ACMP consistency review process is a coordinated review that involves all Federal and State permitting authorities and the Coastal District where the project is located.

Step 1. Fill out the CPQ and consistency evaluation form.

An electronic copy of the CPQ and consistency evaluation form can be found at http://dnr.alaska.gov/coastal/acmp/Projects/pcpg3.html. The evaluation component of this package must reference applicable State standards and enforceable policies of the local Coastal District. The form will help you determine what permits are needed and which policies you will have to follow. The ACMP Handbook of Statutes and Regulations contains the Federal and State laws that are most relevant to the ACMP, and provides useful information for project applicants, Coastal Districts, agency staff, and the public: http://dnr.alaska.gov/coastal/acmp/Clawhome/handbook/panels/A.htm.

Once you have determined the State and local enforceable policies that apply to your wind energy project, you must evaluate how your project has incorporated the principles of "avoid, minimize, and mitigate" to the potential impacts of the development on the environment. Descriptions of avoidance, minimization, and mitigation during project planning and design are necessary to refer to when evaluating your project.

- Describe how the project would avoid impacts to coastal uses or resources listed in the applicable enforceable policies.

- If impacts could not be avoided, describe the methods that could be used to minimize impacts, as well as any mitigation planned to offset potential impacts.

Prior to submitting the CPQ and evaluation, you may request that a pre-application agency coordination meeting be held to address agency concerns about the project before the ACMP consistency review begins. This may be wise to do if the project requires numerous Federal or State permits, or if the project is in an environmentally or culturally sensitive area.

Step 2. Public Comment and Review**.**

DCOM has 21 days from the date of submittal to determine if an application is complete and begin the ACMP consistency review. This review requires a public notice with:

- 30-day public comment period for projects involving a Federal permit.
- 15-day to 30-day public comment period for projects that require only State issued permits (timelines are based on public notice times required by the individual State permits.)

During this period agencies and members of the public may comment on the consistency of the project with reference to the applicable enforceable policies, or request more information in order to comment effectively. This Request for Additional Information (RFAI) may lead to the temporary suspension of the consistency review while new information is being gathered and presented to the commenting agency. The agency that submitted the RFAI has seven calendar days to evaluate the new information and respond. If the information is adequate, then the consistency review will start back up on the day that the review was stopped.

Step 3. Consistency Determination

DCOM has 90 days (which can be stayed for various reasons) to issue a final consistency determination once you have submitted a complete CPQ and consistency evaluation. However, the proposed consistency determination is usually issued within 15 days of the end of the public comment period, and the final consistency determination is usually issued within five days of the proposed determination.

If your project design changes during construction or if additional facilities are added post-construction, then additional permits or modifications to existing permits and authorizations may be needed. You will need to contact the individual permitting authorities, as well as DCOM, prior to construction of modifications to determine whether a new consistency review would be required as a result of any project amendment.

A-3. Aviation Safety

CFR Title 14 Part 77.13 states that any person/organization, who intends to sponsor any of the following construction or alterations, including wind turbines and MET towers, must notify the Administrator of the FAA:

- any construction or alteration exceeding 200 ft above ground level
- any construction or alteration:
  - within 20,000 ft of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with at least one runway more than 3,200 ft
  - within 10,000 ft of a public use or military airport which exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 ft
  - within 5,000 ft of a public use heliport which exceeds a 25:1 surface
  - any highway, railroad or other traverse way whose prescribed adjusted height would exceed the above noted standards
  - when requested by the FAA
  - any construction or alteration located on a public use airport or heliport regardless of height or location

The following process should be completed and a Determination of No Hazard to Air Navigation received prior to installation of meteorological (MET) towers or wind turbines. Determinations are good for two years, so the FAA requests you begin approximately one year before you plan to break ground. Coordination should begin when you are siting MET towers or wind turbines. The time it takes to complete the process varies depending on the airport class and work load of the FAA Air Traffic Wind Turbine Technicians and Specialists.

To assist the FAA in determining if your project will need an aeronautical study go to http://oeaaa.faa.gov and click on Notice Criteria Tool on the left side of the home page.

Enter the necessary information: Latitude, Longitude, Horizontal Datum (from your GPS), site elevation to the nearest foot, and structure height AGL to the nearest foot. **Click on Submit.**

The response from the FAA will say either ***Notice Required*** or ***Do Not Meet Notice Requirement.***

If ***Do Not Meet Notice Requirement*** is displayed, you do not need to coordinate further with the FAA unless the position or height of your wind turbine or MET tower changes. Print this page as documentation of your coordination efforts.

If a **Notice Required** is displayed, you must file Form 7460. This can be done electronically.

To file electronically - go to the home page and click on New User Registration in the box titled "If construction or alteration IS NOT LOCATED on an airport." New User Registration is also located on the left side of the page or Login if you already have an account.

If you need assistance in completing the on-line applications, please contact the FAA Help Desk at 1-866-835-5322.

To complete the registration form you will need to supply the following information. Name, Email Address, user name and password (that you make up), phone number, fax number, your company or organization name, and address.

After you have created an account and logged in, Click on Add New Case (Off Airport).

Once you are at the form, the following information is required:

Construction/Alternation Information

Sponsor: (the person or company proposing the construction is the Sponsor)

Notice of: Construction; Duration: Permanent; Work Schedule – Start (the date you anticipate construction will begin); Work Schedule – End (the date you anticipate construction will be complete); State Filing – Not Filed with State or Filed with State.

Structure Summary

Structure Type: Met Tower or Wind Turbine; Structure Name: Create a name

Structure Details

Latitude, Longitude, Horizontal Datum (you GPS will display this information), Site Elevation, Structure Height AGL, Requested Marking/Lighting (mark None unless you have been given specific requirements by another agency) Nearest City, Nearest State – Alaska; Description of Location Section, township, range, meridian or best describe the location. Description of Proposal (construction and operation of number of wind turbines and how they will be positioned, clustered, in a line, etc.) then click Save. Maps and other documents can be uploaded. You will receive an Aeronautical Study Number (ASN).

If you have questions or need assistance with the application process or the Aeronautical Study, contact one of the FAA representatives listed under Air Traffic Areas of Responsibility on the left side of the home page (http://oeaaa.faa.gov). Click on Alaska to view Air Traffic Wind Turbine Contacts for Alaska.

Always refer to the ASN when contacting the FAA about your Aeronautical Study. After your application has been received, it will be in New Status and contact should be made with the Air Traffic Technician. When your application is transferred to Work Status, contact should be made with the Air Traffic Specialist.

Marking and lighting requirements could affect the cost of the project, and may make wind towers more visible to the community.

Timing of Notification:

Advisory Circular 70/7460-2k states that notification is to be submitted 30 days prior to construction. Given the time required to conduct an aeronautical study, we recommend a 60-day advance notification to accommodate the extensive review process and allow timely issuance of the FAA determination letter.

A-4a. Bird Collision Issues

There is substantial information on the projected effects of wind power development on birds in other parts of the U.S. but very little in Alaska. The USFWS has therefore approached the development of wind power in Alaska with caution until the level of risk to birds in different environments is better understood. The USFWS supports the development of alternative energy projects in Alaska that minimize impacts to wildlife. Their mandate is to protect birds from incidental or accidental mortality (under the directive of the ESA, MBTA, and BGEPA). Their challenge is to gather data about the level of actual mortality from wind projects under different conditions.

The Alaska Regional Office of USFWS has developed voluntary guidelines for wind power projects in Alaska to help avoid impacts to bird. These guidelines are "living documents" and are intended to be updated as new information becomes available. The guidelines are intended to be useful for all wind power developments, whether or not they have federal involvement.

The guidelines ask project proponents to consult with local, knowledgeable individuals, organizations, and agencies to determine if their proposed site(s) is located in a bird migration corridor or high bird use habitat, such as a concentrated breeding, feeding, staging roosting, or stop-over site (BLM 2005). Unfortunately, there no agreed to standards for what constitutes a "migration corridor" or "high" bird use. This depends, in part on the species present, the proportion of its population using the area, and its vulnerability to disturbance and decline. In some cases, pre-construction surveys of bird use are recommended. Knowledge about the relative abundance of birds may be useful in deciding which alternative site is preferable. However, it does not necessarily translate into an index of expected mortality. There are a number of factors that contribute to the susceptibility of different bird species to collisions with turbines and some species appear to be much more susceptible to collisions than others (BLM 2006). The USFWS is interested and willing to work with project proponents if they need any help making these judgments regarding the relative risks at different sites. Contact the appropriate field office for your project area: Anchorage Field Office (907-271-2888); Fairbanks Field Office (907-456-0203); Juneau Field Office (907-780-1160).

Although the USFWS guidelines are voluntary, good faith efforts to follow them provide some assurance that a developer will not face legal challenges over incidental bird mortality once a project is completed. The USFWS understands there may be bird mortalities at wind power developments even if all of their guidance has been followed. They are not interested in trying to prosecute wind power developers over sporadic mortality incidents. It should be noted that the MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the DOI. While the Act has no provision for allowing unauthorized take, the USFWS realized that some birds may be killed during wind power operations, even if all reasonable measures to protect them are used. The USFWS Office of Law Enforcement carries out its mission to protect migratory birds through investigations and enforcement, as well as by fostering relationships with individuals, companies, and industries that have taken effective steps to minimize their impacts on migratory birds, and by encouraging others to enact such programs. It is not possible to absolve individuals, companies or agencies from liability even if they are implement avian mortality avoidance or similar conservation measures. However, the Office of Law Enforcement focuses its resources on investigating and prosecuting individuals and companies that take migratory birds without regards for their actions. Or

without following an agreement such as this to avoid take. They are more concerned with seasonal effects, effect to declining and imperiled species, identifying potential problem areas (e.g., recurrent, significant mortality events), and working with wind power developers to minimize or mitigate any problem situations if they arise. They are also interested in hearing from developers about projects that do not result in any substantial bird mortality. These types of data showing few impacts to birds are very important during the early years of wind power development in Alaska, helping to characterize the types of situations where wind power can be developed without harm to birds. As such, USFWS encourages developers to communicate with them about their monitoring efforts and general results even if no problems are encountered.

The USFWS Alaska guidelines cover three distinct stages of a project:

Stage 1: Site Evaluation and Selection

Stage 2: Project Design and Construction

Stage 3: Facility Operation, Monitoring, and Adaptive Management

In stage 1, there are several “rules of thumb” USFWS uses to determine if there may be major issues with a wind power site. If one or more of these conditions apply, the USFWS does not automatically recommend against the site but requests that proponents conduct pre-construction surveys to characterize timing, abundance, and movement patterns of birds at the site and if these are related to patterns in weather. If none of the following conditions apply, the USFWS considers the risks to be minor enough that small developments (less than five turbines of any size) would not need any pre-construction or post-construction bird monitoring, a factor that may be important for siting decisions (see Section 4b).

In stage 2, Best Management Practices (BMPs) are recommended to minimize habitat disturbance and bird collisions with power lines (Section 4b).

Site-clearance and other developmental activities should be timed to avoid high-use seasons and minimize disturbance during critical periods for wildlife. The MBTA has provisions limiting vegetation clearing to non-nesting seasons and the BGEPA prohibits destruction of eagle nests at any time of year, whether or not they are active. The USFWS recommends the following time periods for avoiding vegetation clearing to protect migratory birds.

Table A-4-1. Migratory bird no-clearing windows for all regions of Alaska.

Habitat Type → Region ↓	Forest or woodland [1] *(i.e., trees present)*	Shrub or Open *(i.e., shrub cover or marsh, pond, tundra, gravel, or other treeless/shrubless ground habitat)*	Seabird Colonies *(including cliff and burrow colonies)*	Raptor and raven cliffs
Southeast	April 15 – July 15	May 1 – June 15[2]	May 1 – September 15[3]	April 10 – August 10
Kodiak Archipelago			April 15 -September 7 [3]	
Southcentral *(Lake Iliamna to Copper River Delta north to Talkeetna)*	May 1 – July 15 [2]			
Bristol Bay/ Alaska Peninsula *(north to Lake Iliamna)*	April 10 – July 15	May 1 – July 15 [2,4]	May 10 – September 15	
Interior	May 1 – July 15 [2]		May 1 – July 20 [5]	April 15 – August 1
Aleutian Islands		April 25 – July 15	May 1- September 15 [3]	April 1 – August 1
Yukon-Kuskokwin Delta *(east to treeline)*		May 5 – July 25 [2,4]	May 20 – September 15	April 15 – August 15
Seward Peninsula		May 20 – July 20 [4]		
Northern *(includes northern foothills of Brooks Range)*		June 1 – July 31 [4]		
Pribilof and Bering Sea Islands		June 1 – July 15	May 25 – September 1	

Source: USFWS, 2007

[1] Owl species may begin to nest two or more months earlier than other forest birds, and are fairly common breeders in forested areas of Alaska. You may wish to survey for nesting owls (or other early spring tree-cavity nesters) prior to tree-cutting. It is your responsibility to protect active nests from destruction.
[2] Canada geese and swan habitat: begin April 20
[3] Storm petrel burrow habitat: April 1 – October 15
[4] Black scoter habitat: through August 10
[5] Seabird colonies in Interior refer to terns and gulls

Stage 3 of the USFWS Alaska guidelines are primarily concerned with larger developments where substantial post-construction monitoring is recommended to measure actual collision mortality. In these cases, the USFWS would work with the project proponent to develop an "Avian and Bat Protection Plan" that lays out a strategy of adaptive management for the specific facility. These plans should include a dedicated funding mechanism over a specified time frame, a specific monitoring protocol for pre- and post-construction surveys that is commensurate with the risk of birds and other resources at a site, and recommendations for technological and operational methods to address unacceptably high bird mortality rates.

An adaptive management strategy is based upon the premise that ecosystems are complex and inherently unpredictable over time. This type of strategy is a flexible approach to dealing with the complex issue of bird collision mortality when there is little data to go on. Ideally, it is a "learn as you go" approach and monitoring results are used to continually modify these measures to achieve pre-determined goals. If your goal is to reduce bird mortality, various methods are implemented, results are monitored, and if the goals are not met, additional methods are implemented. This management plan would be developed when bird mortality reached an established threshold, based on annual mortality monitoring. These actions could include changing the turbine lighting or,

if collision mortality is concentrated during certain migration periods or weather conditions, could include idling or feathering the turbines or cut-in speed during such times to avoid or reduce collisions and barotrauma.

Key published or web-based resources

BLM, 2005. Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States. Prepared by Argonne National Laboratory for BLM, Washington, D.C., June. Available online: http://windeis.anl.gov/

Erickson, W.P., G.D. Johnson, M.D. Strickland, D.P. Young, K.J. Sernka, and R.E. Good, 2001. Avian Collisions with Wind Turbines: A Summary of Existing Studies and Comparisons to Other Sources of Avian Collision Mortality in the United States. Prepared by Western EcoSystems Technology, Inc., Cheyenne, Wyo., for the National Wind Coordinating Committee, Washington, D.C. Available online: http://www.nationalwind.org/publications/wildlife/avian_collisions.pdf

Gehring, J., P. Kerlinger, and A.M. Manville II. 2009. Communication towers, light, and birds: successful methods of reducing the frequency of avian collision. Journal Ecological Applications 19(2): 505-514.

Manville, A.M II. 2009. Towers, turbines, power lines, and buildings – steps being taken by the U.S. Fish and wildlife Service to avoid or minimize take of migratory birds at thse structures. *In* C.J. Ralph and T.D Rich (editors). Proceedings of the 4Th International Partners in Flight Conference: Trundra to Tropics (in press).

National Renewable Energy Laboratory, wind-wildlife literature searchable database: http://www.nrel.gov/wind/wild.html

National Wildlife Coordinating Collaborative, publications on wind and wildlife interactions and meeting presentations:
http://www.nationalwind.org/publications/wildlife.htm
http://www.nationalwind.org/events/meetings/presentations.htm

USFWS wind energy website: http://www.fws.gov/habitatconservation/wind.html

USFWS seabird colony website:
http://alaska.fws.gov/mbsp/mbm/seabirds/colony/colony.htm

USFWS wind turbine guidelines advisory committee website:
http://www.fws.gov/habitatconservation/windpower/wind_turbine_advisory_committee.html

USFWS, 2007. Advisory: Recommended Time Periods for Avoiding Vegetation Clearing in Alaska in order to Protect Migratory Birds.
http://alaska.fws.gov/fisheries/fieldoffice/anchorage/pdf/vegetation_clearing.pdf.
Accessed May 15, 2009.

A-4b Guidelines for Building and Operating Wind Energy Facilities in Alaska

U.S. Fish and Wildlife Service
Alaska Region
April, 2009

Background: The U.S. Fish and Wildlife Service (Service) is currently participating on a Federal Advisory Committee formed to develop national guidelines for site selection, evaluation, construction and operation of wind energy facilities across the country. This collaborative effort includes the power industry, non-governmental organizations (NGOs), and state and other federal agencies. For more information on the national guidelines visit: http://www.fws.gov/habitatconservation/wind.html.

We used the draft national guidelines as a model for developing the regional guidance that follows, but stepped them down to make the guidance more relevant for Alaskan wind energy developers. The Service supports the development of clean energy, especially if it is bird- and bat-friendly, and seeks to assist in the deployment of this technology by providing the best possible information.

Finalization of the National Wind Energy guidelines and implementation of new Bald and Golden Eagle regulations will likely cause changes in these draft wind energy guidelines for Alaska. Subsequent updates will occur to this document when the new guidance documents are completed.

Purpose: To provide guidance to energy developers on how to avoid and minimize the impacts of wind power projects on wildlife in Alaska, particularly birds and bats.

Legal Authorities: Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, Endangered Species Act, Fish and Wildlife Coordination Act.

The Service has an advisory and management role aimed at facilitating compliance with these laws. We collaborate with states and other stakeholders to develop a process for evaluating potential direct, indirect and cumulative impacts of wind energy development on wildlife and habitats, and measures to avoid and minimize such impacts.

Organization: These guidelines are designed to provide Alaskan developers with simple steps for assessing potential impacts, designing, and then operating a wildlife-friendly wind facility. We have organized these steps into three basic stages of wind facility development:

Stage 1: Site Evaluation and Selection

Stage 2: Project Design and Construction

Stage 3: Facility Operation, Monitoring and Adaptive Management

We realize that all projects are unique, and many will not need to consider all of the steps provided. With some projects, for example, site selection and land purchase have already occurred, and therefore, project managers will begin the process at Stage 2. In addition, some of the same issues or questions may be raised at multiple steps but at different scales (e.g., questions may be regional in scope in Stage 1 and site-specific in Stages 2 and 3). An important distinction between projects is size; small projects (fewer than 5 small to medium sized turbines) will likely not require the same level of planning and monitoring as larger projects. It is intended that energy developers will seek information and guidance from agencies and NGOs early as they plan their projects. A list of agency and NGO contacts and links to related information are included throughout these guidelines.

Stage 1: Site Evaluation and Selection

With this and subsequent stages, developers are encouraged to contact the Fish and Wildlife Field Office responsible for the area in which the facility may be constructed with any questions or for information. See Figure A-4-1 for the locations of the Field Offices and their contact information.

The first stage in the assessment of potential risk to wildlife, particularly for larger projects, may be to conduct a preliminary regional evaluation of potential sites for the purposes of identifying those to avoid and those that warrant further review. Large project developers typically conduct a regional evaluation of potential sites using information in the public domain and contacts with agencies and NGOs, specifically the Service, the Alaska Department of Fish and Game and NGOs such as local and regional Audubon chapters. Developers are encouraged to use the list of questions below as a guide in making decisions regarding the suitability of a given site and whether studies at the site may be needed for additional information. By reviewing the publicly available data, having discussions with agencies and local experts and conducting site visits and studies if needed, developers can determine whether sites are reasonably suitable and then decide whether to proceed to subsequent steps in the process.

Questions to consider in Stage 1:

As a first step in this process, prospective developers, as well as entities with jurisdiction over the project area, should gather information intended to answer the following questions:

1. Are there any federally listed threatened or endangered species that occur on, or that migrate through the proposed site? If so, you will need to contact the appropriate Fish and Wildlife Field Office (Figure A-4-1) for further consultation. Visit http://alaska.fws.gov/fisheries/endangered/consultation.htm to determine if your potential site is within the range of a federally listed threatened or endangered species.

2. Do bald or golden eagles nest on or within ¼ mile of the site? Do eagles congregate at the site or within ¼ mile of the site? If so, consult the Service's *Bald Eagle Management Guidelines* at http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf or contact the appropriate Fish and Wildlife Field Office (Figure A-4-1). The new regulation under the BPEPA and the final environmental assessment are anticipated to be available by fall 2009.

3. Are there bat concentrations, maternity roosts or hibernacula present in the vicinity of the proposed site? Visit http://aknhp.uaa.alaska.edu/akbats/index.htm for bat distribution and biology information.

4. Are there state-listed threatened or endangered species or any other species of management concern that could occur on or migrate through the site? Visit http://www.adfg.state.ak.us/special/esa/esa_home.php and http://www.audubonalaska.org/BirdSci.html for more information.

5. Is the site within or near any specially designated areas, including, but not limited to, State or National Parks or Wildlife Refuges, scientific preserves, federally- or state-designated critical habitat areas; NGO high-priority areas; or other local, state, or federal designation that may affect energy

development?

6. Is the site located within a known migration corridor for birds, bats or other wildlife?
7. Are there known critical areas of wildlife congregation, including, but not limited to, maternity roosts, staging areas, migration stopovers, nesting colonies, calving areas or other areas of seasonal importance that could be impacted by construction and operation of a wind power facility?
8. Which species of birds and bats are likely to use the proposed site based on existing information (from agencies and NGOs) and possible site visits?
9. What types of habitats occur at and around the site?
10. What are the potential risks to wildlife likely using the site and can these risks be avoided and minimized?

The focus of Stage 1 is to identify sites to avoid, sites that look promising, and ultimately to select a site that is suitable. The questions outlined above address major issues that developers will need to understand prior to further planning and construction. If unable to answer these questions, developers are encouraged to ask questions or to seek help in designing studies to answer them. General guidelines for pre- and post-construction monitoring are provided in Table A-4-2. These are only intended to give developers an idea of how much monitoring may be needed if information outlined above is lacking.

Stage 2: Project Design and Construction

During project development, significant attention should be given to reducing risk of adverse impacts to wildlife through careful site selection and facility design. Stage 1 should have identified and excluded any sites with special designation and/or particularly high risks to birds and bats. It is assumed that at this stage, endangered species consultation has been initiated if necessary.

The following best management practices (BMPs) for wind energy development in Alaska are intended to assist developers who are in the planning and design phase to further reduce potential impacts to wildlife. These BMPs will evolve over time as additional experience, monitoring and research become available on how to best avoid and minimize impacts to wildlife. The Service will work with developers, other stakeholders and the State to evaluate, revise, and update BMPs on a continual basis and maintain a readily available publication of recommended and generally accepted practices. Use of these BMPs should ensure that the potential adverse impacts to most wildlife will be reduced. If necessary, additional measures may be recommended for specific projects to address site-specific concerns.

1. Minimize, to the extent practicable, the area disturbed by site development, construction and operation.
2. Avoid locations identified to have high risk to birds and bats, including, but not limited to, areas within:
   a. ½ mile of all coastlines;
   b. one mile of major wildlife staging areas;
   c. ½ mile of seabird nesting colonies, and;
   d. migration corridors or travel corridors between feeding and roosting/nesting sites.
3. Avoid disturbing active raptor nest sites.
4. Time site-clearing and development activities to avoid the bird nesting season.
5. If eagles congregate or their nests occur on or within ¼ mile of the site, follow the Bald Eagle Management Guidelines, which can be found at http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf.
6. Avoid using or degrading high-value habitat areas (e.g., open water and emergent wetlands, eel grass beds and estuaries).
7. Site wind power projects on disturbed lands where possible unless development there would result in greater risk to wildlife than on undisturbed lands.
8. Minimize construction and management activities that may attract prey and predators to the wind turbine site (e.g., avoid replacing native vegetation with grass that could attract geese; avoid creating perches that would attract hunting raptors).
9. To reduce bird collisions, place transmission lines associated with the wind energy development underground, to the extent possible, unless burial of the lines is prohibitively expensive (i.e., where shallow bedrock exists), or where greater impacts to biological resources would result. Overhead lines may be acceptable if they:
   a. are sited away from areas used by high numbers of birds crossing between roosting and feeding areas, or between lakes, rivers and nesting areas;
   b. employ bird flight diverters or related deterrent devices, or are otherwise bird-friendly and visible so that collision risk is reduced;
   c. and all transformers, conductors and related infrastructure are designed to be bird-friendly and fully comply with the Avian Power Line Interaction Committee (APLIC) 2006 “Suggested Practices for Avian Protection on Power Lines” and 1994 “Mitigating Bird Collisions at Power Lines” (currently being rewritten with publication anticipated in late 2009).
10. Guy wires and tower lighting should be avoided when possible. Use self-supporting towers for wind turbines as well as temporary and permanent meteorological towers. If guy wires are necessary, bird flight diverters or high

visibility marking devices should be used. If lights are necessary on towers or turbines, see recommendations in 11 and 12 below.

11. To avoid disorienting or attracting migratory birds, FAA-required visibility lighting of wind turbines should employ only strobe, strobe-like or blinking incandescent lights; no steady burning lights should be used**.**
12. Keep lighting at both operation and maintenance facilities, as well as any substations located within ½ mile of the turbines, to the minimum level needed for safety and security:
    a. use lights with motion or infrared sensors and switches to keep lights off when not required;
    b. lights should be hooded, down-shielded and directed to minimize horizontal and skyward illumination; and
    c. do not use high intensity lighting, steady-burning, or bright lights such as sodium vapor or spotlights.
13. Establish buffer zones to avoid disturbing raptor nests, bat roosts, areas of high bird or bat use, or special-status habitats identified in pre-construction studies. Determine the extent of the buffer zone in consultation with the Service, State and local wildlife biologists, and land management agencies (e.g., BLM).
14. Locate turbines to avoid separating birds and bats from their daily roosting, feeding, or nesting sites.
15. Use tubular towers (as opposed to lattice towers) or best available technology to reduce ability of birds to perch and to reduce collision risk.
16. Minimize the number and length of access roads.
17. Use only plants native to the area for seeding or planting.
18. Where warranted, develop a project-specific habitat conservation and/or restoration plan to avoid or minimize negative impacts to vulnerable wildlife while maintaining or enhancing habitat values for other species.
19. For projects that are either large (more than 10 large turbines or 15 medium-sized turbines) or located in areas of concern for birds or bats, developers may need to work with the Service to craft an *Avian and Bat Protection Plan*.

Stage 3: Facility Operation, Monitoring and Adaptive Management

The above BMPs include operational guidelines that are important to follow for minimizing risk to wildlife. Other operational measures intended to reduce the likelihood of bird and bat mortality are possible, and will normally be based on post-construction monitoring at the facility. Not all projects in Alaska will warrant pre- or post-construction monitoring, particularly smaller projects. The degree of monitoring will be determined by a combination of factors, including the size of the facility, existing information and perceived/known risks at the site. Table A-4-2 is a matrix that provides general guidelines on how much pre- and post-construction monitoring may be requested for projects of a given size and perceived risk.

Agencies in Alaska often have limited information on the site-specific use of areas by birds and bats. In cases where concerns exist with little information to adequately evaluate risks, a developer may, depending on factors outlined above, need to conduct

post-construction monitoring to better define actual mortality and potential risks to birds and bats and to identify mitigation opportunities if problems are identified. The Service will assist developers and other agencies in the design and implementation of these studies. These studies may vary in duration, level of detail and scientific rigor depending on the given site and proposed project.

In some cases, where particularly large projects are proposed, or where potentially significant risks to birds and/or bats are anticipated, the development of an *Avian and Bat Protection Plan* may be recommended. The developer and the Service draft these plans together, and they lay out not only the strategy for monitoring, but how and by whom the data will be collected and analyzed. These plans also typically identify potential levels of impact with corresponding mitigation measures. This is called "adaptive management," in which the management of a facility changes based upon the outcome of further data collection and analysis. *Avian and Bat Protection Plans* lay out a strategy of adaptive management for a specific facility. In this fashion, both the developer and the Service have a reasonable expectation of operational measures to be employed if significant bird and bat mortality occurs. Examples of additional measures include habitat manipulation and management on and around the project site, radar monitoring when storm events coincide with migration and turbine shutdown during high risk conditions.

All projects are unique, which means developers and agencies need to take a flexible approach in facility planning and operation. What works for one project may not be appropriate for another. These are guidelines, not regulation, and they are intended to help developers deploy wind power technology in Alaska while safeguarding wildlife. The Service is here to help, and if questions or concerns arise, developers are encouraged to contact the appropriate Field Office Figure A-4-1.

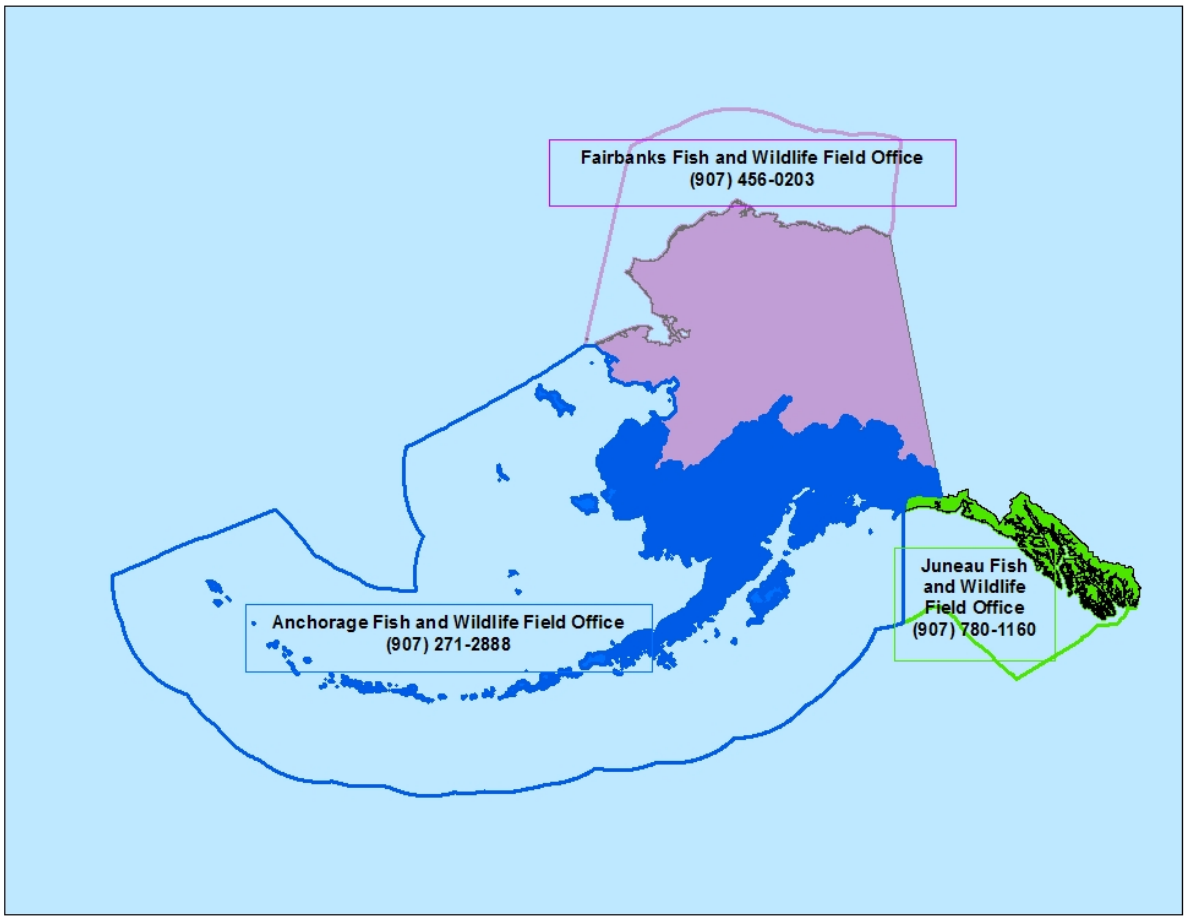

Figure A-4-1. U.S. Fish and Wildlife Service Field Offices. Regions of responsibility and contact numbers for each of the three major field offices in Alaska.

Table A-4-2. USFWS Alaska Region guidelines for the number of years of pre- and post-construction monitoring that may be necessary for a given wind energy project. This matrix provides an estimate of the number of years of pre-construction monitoring (pre) needed to assess the risk of avian or bat mortality and the number of years of post-construction monitoring (post) needed to assess the actual mortality rates. This matrix assumes that most of the best management practices are implemented.

Major Issues[2]	Number and size of turbines[1]					
	Less than 5 small-medium	Less than 5 large	5–15 small-medium	5–15 large	Greater than 15 small-medium	Greater than 15 large
No	None	None	1 year post	1 year post	1 year post	2 years post
Yes	1 year pre or post	1 year pre and post	1 year pre and post	3 years combined pre and post	3 years combined pre and post	2 years pre and post; Avian and bat plan[3]
Unknown	1 year pre or post	1 year pre or post	1 year pre and post	1 year pre and post	1 year pre and post	3 years combined pre and post; Avian and bat plan[3]

[1] Turbines sizes are as follows. Large = 500 kW and larger; Medium = 100 kW – 490 kW; Small = smaller than 100 kW.
[2] Major issues could include (but are not limited to) one or more of the following:

- Site is within ¼ mile of a bald or golden eagle nest.
- Site is within ½ mile of the coastline, in a mountain pass, on a ridge, or on a coastal spit.
- Site is within ½ mile of a seabird nesting colony.
- Site is within a known bird migration corridor.
- Site is within ¼ mile of bat hibernacula or maternity roost.
- Site is within areas of special designation, including, but not limited to, National and State Parks or Wildlife Refuges, scientific preserve, federally-designated critical habitat; high-priority area for non-government organization.

[3] We suggest that an *Avian and Bat Protection Plan* be developed to specify the adaptive management strategy that will be used to minimize impacts to birds and bats at the facility.

A-5. Fish and Essential Fish Habitat

ADF&G oversees and regulates activities that may impact anadromous fish streams and surrounding upland watersheds. If the proposed wind power project includes the construction or upgrading of access roads, project proponents may need to consult and apply for permits from ADF&G. The Magnuson-Stevens Fishery Management and Conservation Act establishes an advisory role for the NMFS to protect EFH in marine waters or projects that may impact anadromous streams.

The first step is to identify whether road construction would cross any anadromous streams. ADF&G maintains a catalog of anadromous waters that is available at their field offices or online: http://www.sf.adfg.state.ak.us/SARR/AWC/index.cfm/FA/main.overview. Alaska Statute 16.05.871 (Anadromous Fish Act) requires prior notification and a Fish Habitat Permit before any development activity directly or indirectly affects a catalogued water body. A Fish Habitat Permit would specify mandatory mitigation measures and Best Management Practices (BMPs) for many of the project's activities affecting anadromous fish streams and surrounding upland watersheds.

Alaska Statute 16.05.841 (Fishway Act) requires authorization from ADF&G Division of Habitat for activities within or across a stream used by resident or anadromous fish if the activity may impede fish passage. ADF&G has a Memoranda of Agreement with the Alaska Department of Transportation (ADOT) that specifies criteria for installing culverts across fish streams: http://www.habitat.adfg.alaska.gov/tech_reports/standards_techniques/dot_adfg_fishpass080301.pdf. Additional information on fish habitat permits can be found on the ADF&G website: http://www.habitat.adfg.alaska.gov/fhpermits.php.

NMFS maintains an on-line tool for people to identify EFH in their project area: http://akr-mapping.fakr.noaa.gov/Website/EFH/viewer.htm?simple. Text descriptions of EFH can be found at: http://www.fakr.noaa.gov/habitat/seis/final/appd_txtdesc.pdf. Federal action agencies are required to determine if their action may have adverse effects on EFH during their National Environmental Policy Act of 1969 (NEPA) review process. If they do not, no EFH consultation with NMFS is necessary. If a wind project is determined to have adverse effects on EFH, the next step would be to inform NMFS of the project and the determination. NMFS will assess the project and offer conservation guidelines and BMPs to protect EFH. Following these guidelines is not required but law unless they are often incorporated as stipulations in permits issued by other agencies. Additional Information on EFH can be found at: http://www.fakr.noaa.gov/habitat/efh.htm.

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A-6. Land Uses and Rights-of-Way - Federal

Use of federal land is an important factor to consider when investigating sites for a wind energy facility, access roads, and transmission line corridors. Wind energy projects occurring on or crossing federal lands require either Special Use Permits, easements and right-of-ways (ROWs), and subsequently require the developer to comply with certain federal permitting requirements as explained in other sections of this document.

Federal lands in Alaska are managed by several resource agencies including the Bureau of Land Management (BLM), the Forest Service (Tongass and Chugach National Forests), the USFWS and the National Park Service (NPS). The BLM administers approximately 80 million surface acres of federal public land in Alaska. The Forest Service manages approximately 17 million acres in the Tongass National Forest and another 5.5 million in the Chugach National Forest (http://www.fs.fed.us/r10/tongass/forest_facts/faqs/intro.shtml). The NPS manages another 51 million acres (http://www.nps.gov/akso). The USFWS Refuge System is even larger with approximately 78 million acres.

ADNR, PIC will be able to assist with the determination of land ownership for the proposed wind power development. Contact them at: http://dnr.alaska.gov/commis/pic/, or Fairbanks (907) 451-2705, Anchorage (907) 269-8400, Juneau (907) 465-3400.

If any part of your project would be on or cross federal lands, you will need an authorization for access or placement of infrastructure, such as a MET tower. The regional office of the federal agency can provide permit applications and specific information regarding permitting timelines and agency contacts. Most federal agencies use Standard Form 299 for a Special Use Permit application. Five-year Special Use Permits for up to five acres. Longer term, 30-year permits are also available and can be renewed for an additional 30 years. This form can be downloaded at: http://www.nps.gov/glca/upload/ROW%20Application.pdf.

The project proponent is advised to schedule a pre-application meeting with representatives of the agency responsible for processing the application. Each agency may have specific and unique requirements to be met in preparing and processing the application.

Consistent with the issuing federal agency's jurisdiction, Special Use Permits address all resources that may be affected by the project, including the physical environment such as geology and soils, air, surface water and groundwater, and biological resources such as vegetation, wildlife, threatened and endangered (T&E) species and wetlands, cultural resources, human populations, and others. The more detailed information that is provided with the permit application, the better the change there will be fewer delays with requests for additional information from the agencies.

Before Special Use Permits are issued, the federal agency must determine that the proposed use complies with all management plans and laws, that there is a demonstrated need for the activity, and that the use is appropriate on federal lands under there jurisdiction. There is no guarantee that a Special Use Permit will be granted.

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A-7. Land Uses, Easements and Rights-of-Way - State and Private

Land ownership is an important factor to consider on all sites investigated for the wind power production facility, access roads, and transmission line corridors. It is important to get written permission from private land owners early in the planning process to ensure the sites evaluated for wind power development will actually be available. Wind energy projects occurring on or crossing state lands require leases and right-of-ways (ROWs), and subsequently require the developer to comply with certain state agency permitting requirements, as explained in other sections of this document. Land ownership, current uses of the corridor, and the potential for conflicts with natural or cultural resources should be investigated along any proposed access road and transmission line corridors.

The ADNR, PIC will be able to assist with the determination of land ownership for the proposed wind power development. Contact them at: http://dnr.alaska.gov/commis/pic/, or Fairbanks (907) 451-2705, Anchorage (907) 269-8400, Juneau (907) 465-3400.

If any part of your project would be on or cross State of Alaska lands, you will need an authorization for access or placement of infrastructure on state land. The regional office of ADNR Division of Mining, Land and Water (DMLW) or the PIC will be able to provide permit applications and specific information regarding permitting timelines and department contacts. DMLW Northern Region (907) 451-2740, Southcentral Region (907) 269-8552, Southeast Region (907) 465-3400, http://dnr.alaska.gov/mlw/. ADNR will determine whether you will need a Land Use Permit (LUP), lease, easement, or ROW. Once a complete permit application is submitted to ADNR, a public comment period of 30 days will be initiated. Once a decision has been made by the adjudicator, the applicant will be required to provide detailed survey information regarding the location of the transmission line or access road, to be included in the official record. The complete easement authorization process can take up to two years. An LUP may be obtained in order to start construction prior to finalization of the easement; however, this is at the discretion of ADNR.

If the proposed wind energy development would be located on or cross Alaska Mental Health Trust lands, the developer will need to apply for authorization to access and utilize Trust land for development purposes. Contact them at http://www.mhtrust.org or (907) 269-7960. A competitive lease sale is required for long-term use of Trust land, including turbine placement on Trust land. Utility easements can be obtained on a non-competitive basis if they are associated with a public project, as opposed to a private, for-profit enterprise. Short-term uses, such as the installation of MET towers to collect data, can be authorized by licenses from the Trust, and issued on a non-competitive basis, without involvement of a public notice.

If proposed road and transmission line corridors would be on airport property or along roadways on property managed by the ADOT, a utility ROW permit, and a letter of non-objection from the other current ROW users will be necessary before development begins. Contact with ADOT should be initiated early in the planning process, before any routes are finalized or engineering design has begun.

The first step is to find the ADOT region where your project is located. Go to http://www.dot.state.ak.us/regions-portal.shtml and locate your general project site on the color map to find the proper region. The Regional ROW Office contacts are at http://dot.alaska.gov/comm/about/pop_row.shtml; Northern Region (907) 451-5423, Central Region (907) 269-0700, Southeast Region (907) 465-4541. You will need to know the road name(s) along the proposed electric transmission line or access route in order to find out if they are owned or managed by ADOT.

The Regional ROW office can supply any needed permit application. The application will need to provide drawings and sufficient detail to allow a reviewer to know where the proposed power poles would be placed in relation to the road and the ROW. An Electrical and Communications Facilities application must be completed and submitted for electrical utility lines.

A-8. Mammals

Bats

There are no specific legal protections for bats except the ESA and there are no threatened or endangered species of bats in Alaska. However, the USFWS has oversight responsibility for the welfare of bats and, given the known problems with bat mortality in some eastern U.S. wind farms and the scarcity of distributional information on bats in Alaska, the USFWS has taken a precautionary approach regarding potential impacts of wind power developments on bats in Alaska. Because the issues are similar, the USFWS has incorporated protection measures for bats into their voluntary guidelines for protection of birds (Appendix A-4b).

In Stage 1 of the project evaluation, the USFWS requests that developers research the presence of bats in the project area and avoid sites within ¼ mile of bat hibernacula or maternity roosts. This site consideration may be more important in Southeast Alaska than elsewhere in the state. There are five species of bats that regularly occur in Alaska but only one, the little brown bat, occurs outside Southeast Alaska. There is very little site-specific information on hibernacula of any species. If a developer discovers bats near a wind project site, or bat mortality during post-construction monitoring, the USFWS would be very interested in hearing about it in an effort to expand their knowledge about potential effects on bats in different areas.

Other Mammals

The primary wind power/mammal issue concerns bat collisions. However, wind turbines could disturb various land mammals and alter their normal movement patterns, with potential impacts on their habitat use and access of hunters to those animals. Transmission lines and access roads associated with wind projects may also affect movement patterns and hunter access. ADF&G is concerned about these types of issues and has oversight responsibility on non-federal lands. ADF&G does not issue wildlife permits for development activities but they are consulted by other federal and state agencies regarding wildlife impacts and mitigation measures that are included in land use or other project-related permits. Consultation with ADF&G during the planning and siting phases of a project is recommended in order to avoid any future problems. Regional offices of ADF&G Division of Wildlife Conservation can be contacted through their state headquarters, (907) 465-4265 or:
http://www.wildlife.alaska.gov/index.cfm?adfg=info.contact.

On federal land, subsistence hunting is regulated by the Federal Subsistence Board. If the wind project could affect subsistence hunting activities, consult with the appropriate regional advisory council in the area, (800) 478-1456 or http://alaska.fws.gov/asm/rac.cfml.

Key published or web-based resources

Alaska Natural History Program, biological information about bats and distribution in Alaska: http://aknhp.uaa.alaska.edu/akbats/index.htm

University of Alaska Southeast, bat monitoring project: http://www.alaskabats.org/

Parker, D.I., B.E. Lawhead, and J.A. Cook, 1997. Distributional limits of bats in Alaska. Arctic (50): 256-265. Available online: http://pubs.aina.ucalgary.ca/arctic/Arctic50-3-256.pdf

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A-9. Material Sale and Reclamation Plan and Temporary Water Use Permit

Fact Sheet

Title: Material Sales in Alaska

Alaska Department of NATURAL RESOURCES
Division of Mining, Land & Water
February 2009

What is "Materials"?
Materials are sand, gravel, riprap, rock, limestone, slate, peat, and any other substances from the ground that are not applied for through the location system for mining claims (e.g. gold, silver, and other metals. Materials are measured and sold in cubic yards.

Where can I find materials on state land?
You can find information on material sites at the Department of Natural Resources (DNR) Public Information Center (PIC) offices listed at the end of this fact sheet. Often, sites that have already been used for extracting materials will be shown on state status plat maps. You may also do your own research to find new areas where you can extract materials. To get started, find the area in which you want to extract the materials. Use a USGS topographic map to determine what township, range and section your selected site is in. To determine if the site is on state-owned land, visit or contact the PIC.

How do I buy material on state land?
Determine the quantity of material you require from the site you have identified and request an application from the PIC.

Are there different types of state material sales?
Yes, there are three types of material sales.

- The first and smallest is a "limited" material sale which cannot be for more than 200 cubic yards per 12 month period per person. This is a revocable, nonexclusive contract for personal or commercial use.

- The second type is the "negotiated" sale, which generally cannot exceed 25,000 cubic yards per year per person or company. Material purchased under this type of sale can be sold or used for commercial purposes. The term of the sale is generally one year, but can be longer depending on circumstances.

- The third and larges is the "competitive" sale. The sale contract can be issued for an unlimited amount of material to be taken over many years. Award will be determined by public auction if there are multiple bidders for the same location. If no competitive interest is expressed during the public notification period, no auction is necessary and the sale can proceed to contract upon completion of the decision making process. Material purchased through competitive sale can be sold or used for commercial purposes.

What are the procedures for material sales?
If the material is located in an approved site, a limited material sale (200 cubic yards or less) can usually be issued over-the-counter at the Public Information Center.

For a negotiated material contract at an approved material site, the applicant must submit the following:

- A negotiated material sale application, environmental risk questionnaire, development plan, reclamation plan and a $100 application fee.

- Bonding deposit and insurance are requirements of a negotiated material sale contract. If approved the Division of Mining, Land & Water will then issue a contract to the applicant.

If a negotiated material or competitive contract is requested from a "new undeveloped site", a more involved public interest process must be followed. The process begins with agency review and a Coastal Zone Review if the project is within a coastal district.

Preliminary and final findings must be written and public notice given. The applicant is responsible for the cost of the public notice. These additional procedures take several months to process, depending on the complexity of issues and agency/public comments that must be addressed. Plan ahead; apply several months before you need to extract material.

What are the costs involved?
No filing or application fee is charged for a limited material permit, but negotiated and competitive sales contracts require a filing fee of $100.

The price charged for "limited" and small "negotiated" sales is set by the DNR, typically based on the fair market sales price of material in the area.

The amount charged for larger "negotiated" and "competitive" material sales (sales of more than 25,000 cubic yards) is generally based on a site-specific appraisal or an abbreviated appraisal called an "opinion of value". A "competitive" sale price is initially set by an appraisal, but may be raised during an auction if more than one person or company competes for the material.

NOTE: State regulations require the DNR to set a minimum "base price" which covers the cost of processing the contract. In no event can the amount charged for materials be less than this "base price".

USEFUL FACTS

- A full size pickup bed can hold approximately one cubic yard.
- A standard dump truck has a capacity of 10-12 cubic yards.
- The standard capacity of a belly dump is approximately 18-20 cubic yards.
- One Cubic Yard = 1.5 Tons (approximate)

Most negotiated material sales and all competitive sales require a business license, proof of insurance and a performance/reclamation bond. The bond will be refunded if all the terms of the sale contract are observed.

What happens when the material sale expires?
If you have met all the terms of the material sale contact, any bond will be refunded. If terms of the contract have been violated, penalties may be assessed against you. If you need to purchase more material, a new application must be submitted and processed by DNR in order to issue a new material sale contract.

Authority:
The applicable State statute and regulations include, but are not limited to: AS 38.05.110-120 and 11 AAC 71.

Where do I apply?
Material sale applications are available from and may be submitted to any of the DNR offices listed below.

DNR Public Information Center
550 West 7th Avenue, Suite 1260
Anchorage, AK 99501-3557
Phone: 907-269-8400
Fax: 907-269-8901

DNR Public Information Center
3700 Airport Way
Fairbanks, AK 99709-4699
Phone: 907-451-2700
Fax: 907-451-2706

DNR Public Information Office
400 Willoughby Street, 4th Floor
Juneau, AK 99801
Phone: 907-465-3400
Fax: 907-586-2954

Helpful Hints to Speed Processing

- Plan ahead; apply several months before you need to extract your material.
- If you have selected an existing material site used by the Department of Transportation and Public Facilities, obtain a written letter of non-objection from them and attach it to your application.
- If you will be applying for an extraction site within a wetland, river or stream you will need to contact the U.S. Army Corps of Engineers and the Department of Fish & Game Office of Habitat Management & Permitting (OHMP)

U.S. Army Corps of Engineers
Anchorage – 907-753-2712
Outside Anchorage - 1-800-478-2712
Fairbanks – 907-474-2166
Juneau - 907-790-4490

DF&G – OHMP
http://www.habitat.adfg.alaska.gov
Anchorage - 907-267-2342
Fairbanks - 907-459-7289
Juneau - 907-465-4105

Fact Sheet

Alaska Department of NATURAL RESOURCES

Division of Mining, Land and Water – February 2006

Water Rights in Alaska

What are water rights?

A water right is a legal right to use surface or ground water under the Alaska Water Use Act (AS 46.15). A water right allows a specific amount of water from a specific water source to be diverted, impounded, or withdrawn for a specific use. When a water right is granted, it becomes appurtenant to the land where the water is being used for as long as the water is used. If the land is sold, the water right transfers with the land to the new owner, unless the Department of Natural Resources (DNR) approves its separation from the land. In Alaska, because water wherever it naturally occurs is a common property resource, landowners do not have automatic rights to ground water or surface water. For example, if a farmer has a creek running through his property, he will need a water right to authorize his use of a significant amount of water. Using water without a permit or certificate does not give the user a legal right to use the water.

How do I obtain a water right?

To obtain water rights in Alaska, you need to submit an application for water rights to the DNR office in the area of the water use. After your application is processed, you may be issued a permit to drill a well or divert the water. Once you have established the full amount of water that you use beneficially and have complied with all of the permit conditions, a certificate of appropriation may be issued. This is the legal document that establishes water rights.

What costs are involved?

An application for water rights must be accompanied by the appropriate filing fee as determined by 11 AAC 05.010(a)(8) :

- $100 for one single-family residence or duplex, or for water use associated with one single-family residence or duplex
- $1,200 for activities related to oil and gas and associated substances
- Fee varies for activities related to locatable minerals, unless the application is filed under 11 AAC 05.010(a)(9)(E)(i) or (9)(F)(i) - *contact Water Resources Section for pre-application meeting*
- Fee varies for hydroelectric power generation - *contact Water Resources Section for pre-application meeting*
- Fee varies for water removal out of a hydrologic unit under AS 46.15.035 or 46.15.037 - *contact Water Resources Section for pre-application meeting*
- $200 for 5,000 gallons per day (gpd) or less for a use not listed above
- $450 for greater than 5,000 gpd and no more than 30,000 gpd for a use not listed above
- $550 for greater than 30,000 gpd and no more than 100,000 gpd for a use not listed above
- $900 for greater than 100,000 gpd for a use not listed above

To ensure that the public is notified of proposed water uses, you may be required to pay the cost of a legal advertisement in at least one issue of a local newspaper in the area of the proposed water use. Public notice is required if the appropriation is greater than 5,000 gpd. Public notice may be required for uses of less than 5,000 gpd if the water source is an anadromous fish stream or the water source has a high level of competition among water users. In addition, permit, certificate, and authorization holders are subject to an annual $50 administrative service fee. Water appropriations of 500 gpd or less for any use, appropriations of 1,500 gpd or less for a single-family residence or duplex, and reservations of water for public benefit are exempt from the annual fee.

Why should I apply for water rights?

1. If you have water rights, you have legal standing to assert those rights against conflicting water users who do not have water rights.
2. A person with water rights has priority to use water over persons who later file for water rights from the same source.
3. Anyone who diverts, impounds, or withdraws a significant amount of water for use, without a permit, certificate, or authorization is guilty of a misdemeanor (AS 46.15.180). A significant amount of water is defined by 11 AAC 93.035(a) and (b) as:

- the consumptive use of more than 5,000 gallons of water from a single source in a single day;
- the regular daily or recurring consumptive use of more than 500 gpd from a single source for more than 10 days per calendar year;
- the non-consumptive use of more than 30,000 gpd (0.05 cubic feet per second) from a single source; or
- any water use that may adversely affect the water rights of other appropriators or the public interest.

4. By filing for water rights, you provide valuable information about water use and water availability in Alaska. Water right records are updated and maintained in an online database. This system contains data on customers, water right status, water source (well depth or water body name), type of water use, water quantity, period of water use, water right priority date, and property description (meridian, township, range, section, quarter sections, latitude and longitude, subdivision name or survey number, tract, block, and lot). Currently, the water right database has over 24,000 records. This information allows state water managers to estimate present uses of water, determine how much water is available from streams and aquifers in the state, protect established water right holders, prevent over-appropriation of water sources, and manage the state's water resources.

What other water resources authorizations are available from the Department of Natural Resources?

- Dam Safety: A certificate of approval is required for constructing or modifying a dam that impounds 50 acre-feet of water and is at least 10 feet high, or is at least 20 feet high, or poses a threat to life and property. An application form and the fee prescribed by 11 AAC 05.010(a)(8) should be filed with the Department of Natural Resources.
- Instream Flow: A certificate is required for maintaining a specific flow in a portion of stream or water level in a lake. An instream flow reservation can be made to protect fish and wildlife habitat, migration, and propagation; recreation and park purposes; navigation and transportation purposes; and sanitary and water quality purposes. An application form and the fee prescribed by 11 AAC 05.010(a)(8) should be filed with the Department of Natural Resources.

How do I obtain authorization for short-term water use (temporary water use authorization)

A temporary water use authorization may be needed if the amount of water to be used is a significant amount, the use continues for less than five consecutive years, and the water to be used is not appropriated. This authorization does not establish a water right but will avoid conflicts with fisheries and existing water right holders. The application fee for a temporary water use authorization is $350 for all uses of water from up to five water sources.

Where can I get more information?

More information is available in the Department of Natural Resources' fact sheets on Administrative Service Fee, Dam Safety in Alaska, Reserving Water for Instream Use, Federal Reserved Water Rights, and Alaska Hydrologic Survey. Further information and application forms may be obtained from the following offices or visit www.dnr.state.ak.us/mlw/water/index.htm.

Department of Natural Resources
Water Resources Section
Anchorage Office
550 West 7th Avenue, Suite 1020
Anchorage, AK 99501-3562
Phone: (907) 269-8600
Fax: (907) 269-8947

Fairbanks Office
3700 Airport Way
Fairbanks, AK 99709-4699
Phone: (907) 451-2790
Fax: (907) 451-2703

Juneau Office
PO Box 111020
400 Willoughby Avenue
Juneau, AK 99811-1020
Phone: (907) 465-3400
Fax: (907) 586-2954

A-10. National Environmental Policy Act

National Environmental Policy Act of 1969

Federal actions are subject to the requirements of the National Environmental Policy Act of 1969 (42 USC 4321 et seq.) (NEPA). NEPA requires that federal agencies prepare Environmental Impact Statements (EISs) for major federal actions that may ''significantly affect the quality of the human environment.'' Depending on the type of actions and the potential for impacts, the federal agency may have to prepare an Environmental Assessment (EA) or EIS for the project before it can proceed. The NEPA process requires public involvement in identifying issues to be considered and in commenting on the agency's analysis. The reviewing agency may use the results of the NEPA review to clarify requirements for mitigation and monitoring to address the project's environmental impacts.

Federal Agencies

The federal government's role in regulating wind power development is limited to projects occurring on federal lands or projects that have some form of federal involvement. While the Federal Energy Regulatory Commission regulates the interstate transmission of electricity, natural gas, and oil, it does not approve the physical construction of electric generation, transmission, or distribution facilities; such approval is left for state and local governments.

Since the majority of wind development to date has been on non-federal land or has not required federal funding or permits, the federal government has had a limited role in regulating wind power facilities. In those cases where federal agencies do regulate wind power, projects must comply both with state and local requirements and with any applicable federal law. These laws often require pre-construction studies or analyses of proposed projects, and possibly project modifications to avoid adverse environmental effects.

There are two primary federal funding agencies that regularly fund wind project in Alaska, the U.S. Department of Energy and the U.S. Department of Agriculture, Rural Utility Service (RUS). These agencies are required to implement a NEPA review on projects they provide funding.

Department of Energy

The Department of Energy (DOE) becomes involved in a project when there is a request for funding of a wind energy project. Because of the potential expenditure of federal funds, DOE is obliged to perform an environmental review under NEPA. DOE's ultimate decision to make is whether to fund the project or not. DOE itself has very few Best Management Practices (BMPs) for wind energy projects that they recommend and rely more on individual applicants to proposed BMPs on a case by case situation after having coordinated with federal, state, and local authorizing agencies. DOE does require the applicant to provide a substantial amount of detail on their project as far as what they are going to do, the risks involved, the impacts the project will have on the environment and how they will mitigate these impacts. More information on DOE NEPA guidelines can be found at: http://www.gc.energy.gov/NEPA/requirements.htm

The three levels of environmental review under NEPA include: Categorical Exclusions (CEs), EAs, and EISs.

Categorical Exclusions

Categorical exclusions are categories of actions that do not individually or cumulatively have a significant effect on the human environment nor are they connected to other actions which potentially have significant effects and for which, therefore, neither an EA or and EIS is required. DOE has a list of actions that fit under a CE.

Examples of actions that would categorically excluded from further NEPA review would be the installation and operation of meteorological (MET) towers and associated activities, including

assessment of potential wind energy resources, vegetation control around facilities, and general maintenance activities. These projects are evaluated on a case by case basis for inclusion under a CE and the more information that is provided to DOE, the better the chance of them fitting under a CE. However, the development of a wind energy facility generally would not be covered under a CE and would require a higher level of environmental review.

Environmental Assessment

An EA is a concise public document that a federal agency prepares to provide sufficient evidence and analysis to determine whether a proposed project would require further evaluation of the potential impacts under an EIS or a finding of no significant impact (FONSI). DOE often prepares an EA on a project to further understand the nature of the proposal.

An EA should include brief discussions of:

- the need for the proposal;
- alternative courses of action for any proposal which involves unresolved conflicts concerning alternative uses of available resources;
- the environmental impacts of the proposed action and alternatives; and
- a listing of agencies and persons consulted.

In an EA, DOE is looking to the applicant to define the risks associated with the project and how the project applicant proposes to manage that risk and quantify the hazards and the appropriate mitigation. The applicant must consult and coordinated with the appropriate federal and state agencies and provide that information to DOE. For instance, DOE itself has no specific requirements for pre- or post-construction bird and bat surveys and leaves it up the project proponent to contact and coordinate with U.S. Fish and Wildlife Service (USFWS) to develop the details of required studies based on the project-specific details and location of the proposed project. Once these studies are agreed to, is up the project proponent to carry out these studies, improperly conducted studies can result in substantial project delays.

The same holds for other issues, such as historic properties or cultural resources. DOE relies on State Historic Preservation Office (SHPO) to develop requirements for studies and mitigation of potential impacts. An EA for funding the construction of a wind energy project will often take approximately 2 to 2 ½ to years complete and require pre-construction studies, developing and publishing the draft EA, public comment, final EA, and FONSI.

The FONSI issued by DOE would briefly describe why the DOE has prepared the EA and why will not have a significant effect on the human environment and, therefore, will not need further evaluation under an EIS. Most federally-funded wind development projects in Alaska would be evaluated under an EA.

Environmental Impact Statements

An EIS is a detailed written statement that is required by NEPA for a proposed major federal action significantly affecting the quality of the human environment. An EIS is the highest level of evaluation under NEPA. The regulatory requirements for an EIS are more detailed than the requirements for an EA and require a considerably longer period of time to complete and often are done at considerable expense.

Under an EIS, the lead agency must objectively evaluate all reasonable alternatives and discuss why other alternatives were eliminated from consideration. Reasonable alternatives are those that substantially meet the agency's purpose and need for the project. The lead agency is obligated to evaluate all reasonable alternatives in enough detail so that the public can compare and contrast the environmental effects of the various alternatives. Upon completion of an EIS, a Record of Decision (ROD) is issued that explains the agency's decision on the project.

Because of the time and cost required to complete an EIS, only large wind development projects would likely have the resources to complete this process.

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A-11. Office of History and Archeology and State Historic Preservation Office

HISTORIC PRESERVATION SERIES

Alaska Department of NATURAL RESOURCES

Office of History and Archaeology
Alaska Department of Natural Resources
550 West 7th Avenue, Suite 1310
Anchorage, Alaska 99501-3565
(907) 269-8721
oha@alaska.net
http://www.dnr.state.ak.us/parks/oha/index.htm

Series No. 8

Revised March 2003

REVIEW AND COMPLIANCE PROGRAM GUIDELINES FOR SECTION 106 CONSULTATION WITH THE STATE HISTORIC PRESERVATION OFFICE

The National Historic Preservation Act of 1966 as amended requires federal agencies to consider the impacts of their undertakings on properties included in or eligible for the National Register of Historic Places *(36 CFR 800)*. This is commonly called Section 106 review. Federal agencies and applicants for federal funds, licenses and permits should provide the State Historic Preservation Office (SHPO), also known as the Alaska Office of History and Archaeology, with the following information during the Section 106 consultation process.

A. Identify the federal agency program and the nature of federal involvement in the project (such as HUD housing or Economic Development Assistance), as well as the associated permit identification number.

B. Briefly describe the proposed project activities, and provide the following information:

   1. The current condition of the area or building and how will it be impacted by the project.
   2. If a building is involved, the date, or approximate date, of construction.
   3. Photographs of the project area.

C. Define the area of potential effect (APE).

   1. Mark boundaries of the APE on a USGS topographic map (1:63,360 or 1:25,000 scale). If the project is within an urban area, include a street map with the location clearly marked.
   2. Provide a legal description (meridian, township, range, and section), and if applicable, the city or village and a street address.
   3. Include other maps or site plans to depict the extent of the project and its relationship to its surroundings and environment.

D. List the parties consulted regarding the project (Certified Local Governments, Native groups, local interest groups, an the like.)

E. Identify the agency/applicant contact person for the project. Include the telephone number and e-mail address.

F. Describe what research the agency/applicant conducted to determine if historic properties are present within the APE. (Note: The term "historic properties" includes archaeological sites, historic buildings, structures and objects.)

1. Did the agency/applicant consult the Alaska Heritage Resources Survey (AHRS) files and maps at the Office of History and Archaeology?
2. Have there been any archaeological or historic surveys conducted within or near the APE?
3. Did the agency/applicant conduct or contract for an archaeological or historic survey for the current project? If new sites were recorded as a result of the survey, contact the AHRS manager (269-8718) for AHRS numbers.

G. List any reported historic properties within or near the project area *[36 CFR 800.4(b)]*. Provide the following information for each historic property:

1. The AHRS number.
2. Previous determinations of eligibility for the National Register of Historic Places of the property. If there has been a determination, provide:
    a. The outcome of the evaluation. (Was the property determined eligible? Is the property formally listed in the National Register?)
    b. Date of SHPO concurrence with the determination of eligibility. (Determinations made more than 5 years ago need to be revisited.)

H. If a historic property within the project area never has been evaluated for eligibility to the National Register of Historic Places, then:

1. Provide the agency/applicant's opinion regarding eligibility *[36 CFR 800.4(c)]*. Refer to *Historic Preservation Series No. 7, Determinations of Eligibility* for guidance.
2. Request concurrence from the SHPO on the agency's finding regarding eligibility.

I. Request concurrence from the SHPO on the agency's finding regarding whether or not any historic properties are affected by the undertaking *[36 CFR 800.4(d)]*.

1. Finding of "no historic properties affected." This finding is appropriate when one of the following apply:
    a. Historic properties are not present.
    b. Historic properties are present but have been determined not eligible for the National Register.
    c. Historic properties are present but will not be affected by the project.
2. Finding of "historic properties affected."

J. If historic properties are affected, then:

1. Determine if the undertaking will affect the historic property in an adverse way *(36 CFR 800.5)*. Adverse effects result when the undertaking alters the characteristics of a historic property that qualify it for the National Register.

2. Examples of adverse effects:
    a. Physical destruction or damage.
    b. Alteration inconsistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (see www2.cr.nps.gov/tps/secstan1.htm for more information).
    c. Moving the property from its historic location.
    d. Changing the character of the property's use or setting.
    e. Introducing incompatible visual, atmospheric or audible elements.
    f. Neglect and deterioration.
    g. Transfer, lease or sale of the property out of federal ownership or control without adequate preservation restrictions.
3. Choose one of the following findings of effect:
    a. "No historic properties adversely affected."
    b. "Historic properties adversely affected."
4. Request concurrence from the SHPO on the agency's finding of effect.

K. If a historic property will be adversely affected, the agency might ask to start consultation to develop a memorandum of agreement that stipulates measures to mitigate the adverse effect *(36 CFR 800.6)*.

Correspondence should be addressed to:

Judith E. Bittner, State Historic Preservation Officer
Alaska Office of History and Archaeology
Alaska Department of Natural Resources
550 West 7th Avenue, Suite 1310
Anchorage, AK 99501-3565

SHPO response:

Under Section 106, the SHPO has 30 days from receipt of the project package to respond. If the SHPO fails to respond within 30 days of receipt of a request for review of a finding or determination, the agency official can proceed to the next step in the process based on its finding or determination, or the agency can consult with the Advisory Council on Historic Preservation (ACHP) in lieu of the SHPO. If the SHPO re-enters the Section 106 process, the agency official shall continue the consultation without being required to reconsider previous findings or determinations *[36 CFR 800.3(c)(4)]*.

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A-12. Threatened and Endangered Species

The purpose of the ESA is to protect native plants and animals that are in danger of going extinct and to conserve the ecosystems upon which those species depend. The ESA prohibits "take" of listed species, which, in the context of wind turbine installations, primarily means to kill or cause injury to listed species. This applies to individuals and private entities as well as government entities, even if the listed species occurs on private land. For wind energy projects, the focus is to prevent listed bird species from colliding with turbines, MET or other towers, guy wires, and power transmission lines.

The first step to avoiding injury to ESA listed species is to know if there are any that occur in your proposed project site. The best place to start is the USFWS consultation website: http://alaska.fws.gov/fisheries/endangered/consultation_guide.htm. This website has maps of where species occur, designated critical habitat, species information, and contact information for USFWS offices throughout Alaska. In Alaska the listed and candidate bird species are all seabirds that come to land only during nesting season; Steller's eider, spectacled eider, Kittlitz's murrelet, and yellow-billed loon. Wind energy projects near marine waters are therefore more likely to have ESA considerations. If there are no ESA listed species at or near the proposed wind energy site, or that migrate through it, no further consultation with USFWS is needed.

If the proposed project has marine components (on the coast, intertidal, or off-shore), other listed species under the management of both the USFWS (short-tailed albatross, sea otter, and polar bear) and the NMFS (most marine mammals) should also be consulted about potential impacts to T&E species under their jurisdiction and any designated critical habitat for those species. See NMFS website: http://www.fakr.noaa.gov/protectedresources/.

If the proposed project is in an area where ESA listed species occur, the approach to addressing this issue depends on whether or not the project involves federal funding (either directly or passed through any state agency or other entity), federal property, federal permits, or other federal oversight. One of the two following situations should apply:

1. The proposed project DOES NOT involve federal agencies:
    - Consultation with USFWS/NMFS is not required by law but is recommended. Individuals and private entities are responsible for complying with the ESA. The USFWS has developed guidelines for wind power projects in Alaska to help avoid impacts to birds, whether ESA listed or not.
    - The USFWS guidelines are divided into several stages: 1) Site evaluation and selection, 2) Project design and construction, and 3) Facility operation, monitoring, and adaptive management.
    - The most important stage for avoiding impacts to ESA listed species is the first one, site selection, so it is important to get advice from the representative agency office early in project planning phase, before commitments are made to one specific project site. The general guidance from USFWS is to avoid placing wind turbines within ½ mile of marine coasts.
    - If wind turbines and/or above-ground transmission lines must be sited in an area where listed species are likely to occur, pre-construction, site-specific surveys designed to define bird use and movement patterns would help determine the actual potential for conflicts with listed species. If more than one alternative site is available or there are different power transmission options, information on use of the alternative areas by listed species would be an important factor in the decision making process.
    - The type of information useful to begin discussions with USFWS includes:

1. Map and GPS coordinates of project location and all alternative sites under consideration.
2. Number, size, and type of turbines to be installed.
3. Height of support towers and type (monopole or guyed).
4. Locations for any new, above-ground transmission lines required for the alternative turbine sites (provide maps).
5. Location of any salt water estuaries or other marine waters in relation to the project.

- The USFWS may request bird surveys before and/or after construction to help determine potential and the actual effects on listed species. The intensity and duration of these surveys may depend on the size of the proposed project. As with all of their guidelines, these requests are intended to help project proponents avoid violations of the ESA but are not required by the law.

2. The proposed project DOES involve one or more federal agencies. The project will need to have some level of NEPA review, such as an Environmental Assessment (EA) or Environmental Impact Statement (EIS). The NEPA review will need to address T&E species in a specific manner (see the USFWS consultation guide online).

- Under Section 7(a)(2) of the ESA, federal agencies must consult with USFWS and/or NMFS to ensure their actions do not jeopardize listed species or adversely modify their critical habitat.

- Section 7 consultation begins with the federal action agency or its representative requesting a list from USFWS or NMFS of ESA species that may be affected in the project area. This information may also be obtained from USFWS and NMFS websites.

- The action agency makes a preliminary determination on the potential effects of the project on all listed species that occur in the area. If the action agency determines "no effect" from the proposed project, no further consultation is necessary.

- If the action agency determines the project "may affect" listed species, but is "not likely to adversely affect" (meaning there will be no "taking"), then a letter describing the project, the potential affects (beneficial and harmful) and the justification for the determination.

- If the action agency determines that the project "may affect" and "is likely to adversely affect" it prepares an assessment document (either a letter or a Biological Assessment if the project requires an EIS) and submits it to the USFWS or NMFS. Then, based on the Biological Assessment, the USFWS or NMFS must then respond either by concurring with the action agency determination or disagreeing with that determination prepares a Biological Opinion which analyzes the potential for the project to jeopardize the continued existence of the listed species or adversely modify their critical habitat. Once it is established that the project will not cause the extinction of a listed species or irreversibly modify their critical habitat, incidental take is estimated, and conditions under which a permit for incidental take may be issued are established.

- The assessment document must describe the project, the potential effects on listed species, and the determination of whether or not the project may have adverse effects on listed species or their critical habitat. USFWS or NMFS must then respond either by concurring with the action agency determination or disagreeing with that determination.

- If the action agency determines the project “is not likely to adversely affect” listed species, and USFWS or NMFS concurs, Section 7 consultation is complete.
- If the action agency determines the project “is likely to adversely affect” listed species or their habitat, and USFWS or NMFS concurs, the action agency may, 1) change the proposed project sufficiently to change that determination to “not likely to adversely affect”, or 2) initiate formal Section 7 consultation with USFWS or NMFS.
- Formal Section 7 consultation requires USFWS or NMFS to prepare a Biological Opinion (BiOp). The BiOp would determine whether the project jeopardized the continued existence of the listed species or adversely modified its critical habitat. The BiOp would also include a list of mandatory and recommended mitigation measures. See the USFWS consultation guide for more details.
- At any point in the informal consultation process, USFWS may request the action agency to conduct bird surveys before and after construction to help determine potential and actual effects on listed species. The intensity and duration of these surveys may depend on the size of the proposed project. As with all of their guidelines, these requests are intended to help the project proponents avoid violations of the ESA but are not required by the law.
- If the proposed project involves construction in marine environments, NMFS may recommend marine mammal monitoring and construction windows that need to be coordinated with requirements of the USACE 404/Section 10 permits. The USACE often incorporates NMFS and USFWS recommendations as stipulations of permits for working in marine environments and wetlands.

Key published or web-based resources

USFWS and NMFS, 1998. Endangered Species Act consultation handbook: Procedures for conducting Section 7 consultations and conferences. 315pp.

Available on-line at: http://www.nmfs.noaa.gov/pr/pdfs/laws/esa_section7_handbook.pdf

USFWS, 2007. Alaska’s Threatened and Endangered Species. Anchorage Fish and Wildlife Field Office, Anchorage, Alaska. 63 pp.

Available online: http://alaska.fws.gov/fisheries/endangered/consultation_guide.htm

USFWS contact information for each Alaska community.
http://alaska.fws.gov/fisheries/endangered/pdf/consultation_guide/66_VillagesByESOffice.pdf

Information on ESA-listed species under the regulatory protection of NMFS can be found at: http://www.fakr.noaa.gov/protectedresources/default.htm

NMFS section 7 guidance documents: http://www.nmfs.noaa.gov/pr/laws/esa/policies.htm

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A-13. Wetlands and Other Waters of the U.S.

Wetlands and other waters of the U.S.

The CWA, Section 404 requires that a project proponent avoid, minimize, and compensate for impact to waters of the U.S., including wetlands. In Alaska, it is often difficult to avoid impacts to wetlands with many projects, including wind energy projects which have a relatively small footprint, due the prevalence of wetlands in many areas of the state. Avoidance of wetland fill is the ideal situation for siting wind development projects, including access roads, is to locate the entire infrastructure in upland areas. If that is not possible, avoidance of high value wetlands, such as freshwater marshes, emergent wetlands, and estuarine salt marsh habitat will help reduce the cost of mitigation.

Minimizing the impact can be accomplished in the siting phase of the project. Routing access roads in upland areas to the extent possible minimizes wetlands fill and, in areas where access roads cross wetlands, minimizing the width of the roads to the extent practical also minimized wetland impact.

Compensation for impacts to wetlands typically includes a payment of in-lieu fee of mitigation based on the acreage of wetland affected and the wetland type. The actual cost of compensatory mitigation depends on the region, but the costs can be substantial. This payment is generally provided to a land trust organization, which then uses the money to purchase lands slated for development for the purpose of preservation or restores degraded wetlands in the same general regions as the affected wetlands.

Wetlands delineations

To determine if your project is within wetlands or other waters of the U.S. that are under the jurisdiction of the USACE, a jurisdictional determination (JD) would be required. A list of consultants qualified to conduct wetland delineations can be found on the USACE Alaska District website: http://www.poa.usace.army.mil/REG/conslist.htm

The USACE regulatory division regulates the placement of fill in “waters of the United States” under Section 404 of the CWA. In addition to this authority, any development that is within or over navigable waters is regulated under Section 10 of the Rivers and Harbors Act of 1899. You will need to contact the USACE once your project location has been identified to request a Jurisdictional Determination that will determine if the USACE has jurisdiction over any aspects of your project. If your project does require a USACE permit, you will undergo consultation with the U.S. Fish and Wildlife Service (USFWS) as part of this permitting process. This process will be described in more detail within the Additional Consultation section below.

Clean Water Act, Section 404 Permit

Actions such as road construction for access and maintenance activities and placement of turbine foundations may require that fill be placed into waters of the U.S., including wetlands, which are under the jurisdiction of the USACE. Placement of structures or fill in wetlands should be avoided during the siting of the project. However, if your project requires placement of fill in “waters of the United States, including wetlands”, then you will need a Section 404 permit.

Three types of permits are issued under Section 404:

- Nationwide Permits,
- General Permits,
- Individual permits

Nationwide Permits

Nationwide Permits (NWPs) are a form of General Permit issued by USACE Headquarters nationally. NWPs authorize specific activities in areas under USACE Regulatory jurisdiction (for example, navigable waterways, wetlands, etc.). To use one of the NWPs, you must ensure that your project meets all applicable terms and conditions, including the regional conditions specific to Alaska. If the conditions cannot be met, a regional general permit or individual permit will be required. More information on the 50 individual NWPs, at: http://www.poa.usace.army.mil/reg/currentNWPs2.htm

The NWP that would apply to activities associated with a wind energy project would be NWP 12 – Utility Line Activities (see attached). This expedited permitting process can be applied to the placement of transmission cable and the construction of roads to service utilities in or over "waters of the United States" when the total area of disturbance is less than ½ acre. NWP 12 may authorize utility access roads that require fill in "waters of the United States" if the total disturbance is less than 1/3 acre. This type of authorization is very simple and requires a 10-day agency review followed by a typically swift authorization. NWPs can only authorize activities or categories of activities that have minimal impacts both individually and cumulatively

Regional General Permits

Regional General Permits (GPs) are issued by the Alaska District USACE for a period of five years. GPs can authorize specific activities throughout the state, or can be specific to certain areas within Alaska. GPs can only authorize activities or categories of activities that have minimal impacts both individually and cumulatively. The Alaska District is currently working on developing a GP for small to medium size wind farm development throughout Alaska. Once this GP is finalized, wind project developers could use this GP to avoid the more lengthy process of individual 404 permit process, provided they meet the requirements of the GP, such as size of the authorized facilities and amount of wetlands fill. Most GPs require written verification from the USACE prior to conducting the work. If a developer plans to use a GP, they would have to thoroughly familiarize themselves with the terms and conditions of any GP to ensure your project would comply, and follow the authorization procedures described in the GP text.

Individual Permits

Individual permits are issued by the USACE after a full public interest review of an individual application. The application can be found on the Alaska Districts webpage: http://www.poa.usace.army.mil/REG/permitapp.htm

The Individual Section 404 permit application is fairly detailed. A complete project description is required including:

- the nature of the activity and project purpose;
- name of nearest water body;
- reasons for discharge and amount and type of material being discharged;
- size of affected area;
- addresses of adjacent land owners;
- a complete list of other permits required for the project; and
- three types of illustrations (vicinity map, plan view or typical cross section)

A public notice (usually of a 30-day duration) is distributed to interested parties for a 30-day public comment period, with the potential for public hearings. Processing individual 404 permit

applications involves evaluation of individual, project-specific application in a three steps: pre-application consultation (for major projects), formal project review, and decision making.

Pre-application Consultation

Pre-application consultation usually involves one or several meetings between an applicant, USACE district staff, interested resource agencies (federal, state, or local), and sometimes the interested public. The basic purpose of such meetings is to provide for informal discussions about the pros and cons of a proposal before an applicant makes irreversible commitments of resources (funds, detailed designs, etc.). The process is designed to provide the applicant with an assessment of the viability of some of the more obvious alternatives available to accomplish the project purpose, to discuss measures for reducing the impacts of the project, and to inform the applicant of the factors the USACE must consider in its decision making process.

Formal Review

Once a complete application is received, the formal review process begins. USACE districts operate under what is called a project manager system, where one individual is responsible for handling an application from receipt to final decision. The project manager prepares a public notice, evaluates the impacts of the project and all comments received, negotiates necessary modifications of the project if required, and drafts or oversees drafting of appropriate documentation to support a recommended permit decision. The permit decision document includes a discussion of the environmental impacts of the project, the findings of the public interest review process, and any special evaluation required by the type of activity such as compliance determinations with the Section 404(b)(1).

Decision Making

A final decision on the application is made after evaluating all comments and information received. The permit decision is generally based on the outcome of a public interest balancing process where the benefits of the project are balanced against the detriments. The permit is granted unless the proposal is found to be contrary to the public interest.

The Individual Section 404 permit reviews require a public notice. Usually permits are issued within 120 days of receipt of a completed application, unless it is determined that an Environmental Impact Statement (EIS) is required.

Rivers and Harbors Act of 1899, Section 10 Permit

Section 10 permits are required for activities such as the placement of transmission cable through or over a navigable water or the construction of a bridge for access to the proposed development site. The application for this permit is the same as the Section 404 permit. If your project requires authorization under both statutes, you only need to submit one application. The permitting timeline associated with this authorization is also identical to the Section 404 permit process mentioned above.

Nationwide Permit No. 12. Utility Line Activities.

Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2 acre of waters of the United States.

Utility lines: This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in preconstruction contours. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area. Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

Utility line substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2 acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead utility line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the total discharge from a single and complete project does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR Part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met:

(1) the activity involves mechanized land clearing in a forested wetland for the utility line right-of-way;

(2) a section 10 permit is required;

(3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet;

(4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to a stream bed that is within that jurisdictional area;

(5) discharges that result in the loss of greater than 1/10-acre of waters of the United States;

(6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or

(7) permanent access roads are constructed in waters of the United States with impervious materials. (See general condition 27.) (Sections 10 and 404)

Note 1: Where the proposed utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters), copies of the pre-construction notification and NWP verification will be sent by the USACE to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

Note 2: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, accordance with the requirements for temporary fills.

Note 3: Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).