

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINING, LAND AND WATER

PRELIMINARY DECISION

ADL 222656

Alaska Energy Authority

Amendment No.1 to Lease

AS 38.05.810 (a)

This Preliminary Decision (PD) is the initial determination on a proposed disposal of interest in State land and is subject to comments received during the public notice period. The public is invited to comment on this PD. The deadline for commenting is **5:00 PM June 20, 2017**. Please see the Comments section on page 8 of this decision for details on how and where to send comments for consideration. Only the applicant and those who comment have the right to appeal the Final Finding and Decision (FFD).

Proposed Action:

The Department of Natural Resources (DNR), Division of Mining, Land and Water (DMLW), Southcentral Regional Office (SCRO) has received a request from the Alaska Energy Authority (AEA) to amend the current existing lease, ADL 222656, by adding 704 acres of land to the existing Bradley Lake Hyrdoelectric Project. These lands would be added to the exisiting 55-year lease which will expire in 2049. The proposed amendment is located near Bradley Lake, approximately 23 miles northeast of Homer, Alaska. The location of the amendment project area is further described as being within Township 5 South, Range 9 West, Sections 7, 8, 17, 18, 19, and 20, Seward Meridian. AEA is proposing to use this site to divert water from the West Fork Upper Battle Creek drainage and convey it to Bradley Lake to supplement the power generating capacity for the Bradley Lake Hydroelectric Project. The additional water from the Battle Creek drainage would increase power production without changing the generation capacity.

SCRO is considering the issuance of a lease amendment to AEA for the construction, operation, and maintenance of the Bradley Lake Hydroelectric Project.

Scope of Review:

The scope of this decision is to determine if it is the State's best interest to amend ADL 222656 to include additional lands that will divert water into Bradley Lake to increase power production.

Authority:

This lease application is being adjudicated pursuant to AS 38.05.035 (b)(1) and AS 38.05.035 (e) Powers and Duties of the Director; AS 38.05.070 (c) Generally AS 38.05.810 (a) Public and Charitable Use; and AS 38.05.945 Notice.

The authority to execute the lease amendment has been delegated to the Regional Managers of DMLW.

Administrative Record:

Case file ADL 222656 constitutes the administrative record for the Bradley Lake Hydroelectric Project land lease.

Legal Description, Location, and Geographical Features:

The State land where this proposed lease site is located is described as follows:

- **Amendment Legal description:** Township 5 South, Range 9 West, Sections 7, 8, 17, 18, 19, and 20, Seward Meridian
- **Geographical location:** 23 miles northeast of Homer, Alaska, on the Kenai Peninsula
- **Approximate Lat/Long:** 59° 44' 12.59" N, 150° 52' 0.41" W
- **Area geographical features:** Rolling hills with alder and sparse trees
- **Existing surveys:** None
- **Municipality/Borough:** Kenai Peninsula Borough
- **Native Corporations/Federally Recognized Tribes:** Cook Inlet Region Inc.
- **Size:** 704 acres amended to an existing 5,336.42 acre lease

Title:

The State of Alaska holds fee title to the subject land under U. S. Patent # 50-95-0511 dated September 7, 1995. A DNR Title Report (RPT-9556) issued on April 6, 2017, from DMLW's Realty Services Section attests that aside from the usual reservations for ditches and canals there are no other reservations.

Third Party Interests:

The project site is near the Kachemak Bay Critical Habitat Area. The amended area is outside of the critical habitat area, but the water discharged eventually flows into Kachemak Bay.

Classification and Planning:

The project area is subject to the Kenai Area Plan, Region 8 Upper Kachemak Bay and Fox River Flats, Fritz Creek and Upper Kachemak Bay (Map 8A). The classification for this site is Wildlife Habitat, Public Recreation, and Water Resources. These lands are to be managed for a variety of uses including fish and wildlife resource production, public recreation, parks, campsites, scenic

overlooks, hunting, fishing, and boating. Additionally, these lands are classified as a suitable watershed to be used as a water supply, watershed protection, or hydropower site.

The Bradley Lake Hydroelectric Project is consistent with the classifications of the lands as it is utilizing the watershed for a hydropower site. The proposed amendment would increase power production at the site. Additionally, the road from the port to the site promotes public recreation, has some primitive campsites along the route, and provides for scenic overlooks. The proposed lease amendment will add an additional roadway that would provide scenic overlooks.

The Bradley Lake Hydroelectric Project is adjacent to the Kachemak Bay Critical Habitat Area which is managed through the Kachemak Bay Management Plan. The Kachemak Bay Management Plan does not prohibit the further development of the Bradley Lake Hydroelectric Project.

Traditional Use Findings:

The proposed site is located within the Kenai Peninsula Borough. Pursuant to AS 38.05.830 a traditional use finding is not required.

Access:

Access to the leasehold is by either boating to the tideland dock where the Fox River meets Kachemak Bay or flying to the airstrip at the same site. A seven mile road leads to the Bradley Lake Reservoir. The proposed lease amendment will add 2.9 miles of road to the West Fork of Upper Battle Creek.

Agency Review:

An agency review was conducted on February 21, 2017. The deadline for agency comments was March 15, 2017.

The following agencies were included in the review:

- DNR DMLW - Mining
- DNR DMLW - Water
- DNR Office of History and Archaeology/SHPO
- DNR Contract Administration
- DNR Division of Oil and Gas
- DNR Contracts and Land Sales
- DNR Title
- Department of Fish and Game - Habitat
- Department of Environmental Conservation
- Department of Transportation and Public Facilities
- National Oceanic and Atmospheric Administration (NOAA)
- U.S. Army Corps of Engineers

- U.S. Coast Guard
- U.S. Fish and Wildlife Service
- U.S. Environmental Protection Agency
- Kenai Peninsula Borough
- Homer Soil and Water Conservation District

Alaska Department of Fish and Game Comment:

The Department of Fish and Game stated that they are involved with the Federal Energy Regulatory Commission application for the project and have no comments to add to the amended lease application.

U.S. Army Corps of Engineers Comment:

The U.S. Army Corps of Engineers stated that this proposed improvement would require Department of the Army authorization under Section 404 of the Clean Water Act for the discharge of fill into waters of the U.S. The U.S Army Corps of Engineers recommends that AEA contact their office to discuss permitting requirements.

SCRO Response:

AEA will be required to acquire all necessary project permits.

Homer Soil and Water Conservation District Comment:

The Homer Soil & Water Conservation District (HSWCD) commented about invasive species mitigation during the course of this project. HSWCD staff conducted invasive vegetation surveys covering the entire footprint of the project in the summer of 2016. There were numerous invasives of moderate concern, and one species of particular concern. Of particular concern is an infestation of approximately two acres of white sweetclover. HSWCD would like to see the area marked with lathe and survey tape along with signage, and stated that they would be happy to conduct this work. Another stretch of white sweetclover has been identified along the side of the road. HSWCD staff would like to clear this before roadside brush work begins in July to prevent the spread of the invasive plant.

The HSWCD also recommends AEA use the UAF Cooperative Extension Manual on Controlling the Spread of Invasive Plants During Road Maintenance.

SCRO Response:

AEA has been in contact with the HSWCD and will continue to work with them to address their concerns moving forward.

Lease Discussion:

AEA is the lessee for the Bradley Lake Hydroelectric Project, which encompasses 5,336.42 acres. The 55-year lease was issued on January 10, 1994, with an expiration date of January 9, 2049. AEA was issued a license from the Federal Energy Regulatory Commission for the project on December 31, 1985.

AEA is an independent corporation of the State of Alaska and the state's energy office. As an entity of the State of Alaska designed to generate electrical power for Alaska customers AEA qualifies for a 38.05.810 (a) Public and Charitable lease.

After being created by the Alaska Legislature in 1976, AEA worked throughout the 1980s to develop the State's energy resources as a key element in diversifying Alaska's economy. A number of large-scale projects were constructed. After additional legislation in 1993 and 1999, AEA's primary role was to own existing hydroelectric projects and the Alaska Intertie. Although AEA's role has since expanded programmatically, it still manages and provides oversight to state-owned energy assets.

The Bradley Lake Hydroelectric Project is located near the head of Kachemak Bay approximately 23 miles northeast of Homer. The 120-megawatt project generates an average of 380,000 MWh of energy per year and transmits it to the State's main power grid via two parallel 20-mile transmission lines. The project went into commercial operation in 1991. Homer Electric Association, under contract with AEA, operates the project. Bradley Lake serves Alaska's railbelt from Homer to Fairbanks as well as the Delta Junction area.

The proposed amendment to ADL 222656 encompasses 704 acres with the purpose of supplementing the power generating capacity of the Bradley Lake Hydroelectric Project. The additional water to the reservoir would increase power production. Site development features would include construction of a diversion dam and intake structure, an HDPE pipeline, a pipeline discharge structure and open channel to convey water from the diversion pipeline to Bradley Lake, an interception channel for the East Fork Upper Battle Creek drainage, and an access road. The diversion dam and intake structure would direct water from the West Fork Upper Battle Creek into the pipeline, which would then convey the diverted water past the existing East Fork Upper Battle Creek diversion dike, and then on to Bradley Lake. The proposed access road would be constructed to provide access to the project features for operations and maintenance purposes. After construction the access road will be open to the public for non-motorized use. The road falls within the leasehold so no road easement will be required.

Public access will remain along all public and navigable waters.

DMLW is proposing to issue the Amendment No.1 to ADL 222656, which will make the proposed amendment part of the original lease while maintaining the expiration date of January 9, 2049. This action is in the State's best interest as it will provide additional power generation capacity to existing renewable energy infrastructure, transmitting energy along the railbelt from Homer to Fairbanks.

The proposed lease will be subject to the terms of SCRO's standard lease document (available for review upon request) and any stipulations based, in part, upon the following considerations.

Development Plan:

The Development Plan (DP) attached to this decision (Attachment A) and dated February 13, 2017, is under consideration by SCRO. Should the proposed lease be granted, it is anticipated that the DP will need to be updated throughout the life of the lease as activities and/or infrastructure are added or subtracted. All updates must be approved, in writing, by SCRO before any construction, deconstruction, replacement of infrastructure, or change in activity will be permitted. SCRO reserves the right to require additional agency review and/or public notice for changes that are deemed by SCRO to be beyond the scope of this decision.

Hazardous Materials and Potential Contaminants:

No onsite waste generation is anticipated at the site. Construction waste will be removed from the site and disposed of at an appropriate facility.

The use and storage of all hazardous substances must be done in accordance with existing federal, state, and local laws. Debris (such as soil) contaminated with used motor oil, solvents, or other chemicals may be classified as a hazardous substance, and must be removed from the site and disposed of in accordance with state and federal law.

Lease Performance Guaranty (bonding):

AEA will not be required to submit a performance guaranty for the lease amendment. Since AEA is a state entity applying for an amendment under AS 38.05.810 (a) SCRO will waive the need for a cash penalty bond and performance bond. SCRO is reserving the right to require a reclamation bond in the future.

- **EA Cash Penalty Bond:** Not required.
- **Performance Bond:** Not required.
- **Reclamation Bond:** SCRO is reserving the right to require a reclamation bond due to noncompliance issues during the term of the lease or near the end of the life of the project.

Insurance:

As AEA is a state entity that is self insured and bonded, no insurance will be required.

Survey:

AEA must complete an approved survey according to the requirements and standards of DMLW's Survey Section prior to lease issuance. AEA shall request survey instructions within **one year** of

the issuance of the Entry Authorization. The draft survey must be submitted for review to the Survey Section within **one year** of issuance of the survey instructions. If the submitted survey is accepted by DMLW, the measurements identified will be used to accurately calculate the total acreage. The survey must depict the leased boundaries, roads, and any improvements within the lease boundaries.

Compensation/Appraisal:

As a state corporation AEA is eligible for a public and charitable lease under 38.05.810 (a). Alaska Administrative Code allows the annual fee to be waived under 11 AAC 05.010 (c). This is justified given the benefit to the public for reduced energy costs.

Entry Authorization:

SCRO is proposing to authorize AEA entry onto State land through the issuance of an EA while they are completing construction and development diversion related infrastructure and the required survey and/or appraisal for the site. The proposed EA would be issued after the Final Finding and Decision goes into effect.

Subleasing:

Subleasing is permissible through AS 38.05.095, though no commercial use of the leasehold is allowed under AS 38.05.810 (a). Depending on the activity, SCRO is reserving the right to reevaluate the need for further agency review and/or public notice before making a determination on the appropriateness of the proposed sublease. Furthermore, SCRO is reserving the right to charge a sublease annual fee.

Assignment of Lease:

The proposed lease, if issued, may be transferred or assigned to another entity that qualifies under 38.05.810 (a) only with written approval from the DNR DMLW. A lease will not be assigned to an entity if that entity does not meet the statutory requirements of the lease, or if the lessee is considered not to be in “good standing” with this or any other agency authorization.

Reclamation:

In accordance with AS 38.05.090 (b), all lessees must restore their leased sites to a “good and marketable condition” within a 120 days after the termination of their leases. What level of reclamation constitutes as being “good and marketable” is at the discretion of SCRO.

Public Notice of the Preliminary Decision:

Pursuant to AS 38.05.945, this PD will be advertised for a 30-day public comment period, starting on **May 18, 2017**. Courtesy notices will also be mailed or emailed to neighboring property owners, permit/lease holders, and other interested parties on **May 18, 2017**.

In addition, the post offices located near the site (Homer, Seldovia, Anchor Point) will be requested to post the notice pursuant to AS 38.05.945(b)(3)(C). The notice will also be posted on the State of Alaska Online

Public Notice website pursuant to AS 38.05.945(b)(3)(B) located at:

<https://aws.state.ak.us/OnlinePublicNotices/Default.aspx>

Comment(s):

This decision is subject to both public and agency comments, and all written comments received by the comment deadline will be considered in the FFD. Only those who comment and the applicant have the right to appeal this decision.

Written comments about this project must be received in this office no later than 5:00 PM on June 20, 2017, to be considered.

To submit comments please choose one of the following methods:

Postal: Department of Natural Resources
Division of Mining, Land and Water
Southcentral Region Office
ATTN: Ben Hagedorn
550 West 7th Avenue, Suite 900C
Anchorage, AK 99501-3577
Email: ben.hagedorn@alaska.gov
Fax: (907) 269-8913

Questions about the lease portion of this project can be directed to Ben Hagedorn at (907) 269-8111.

If public comments result in significant changes to the Preliminary Decision, additional public notice will be given. To be eligible to appeal the Final Finding and Decision, a person must provide written comments during the Preliminary Decision comment period per AS 38.05.035(i)-(m).

Signature page follows:

Recommendation:

DMLW has completed a review of the information provided by the applicant, examined the relevant land management documents, and has found that this project is consistent with all applicable statutes and regulations. I recommend that DMLW issue this lease amendment for 704 acres to AEA to divert water from the West Fork Upper Battle Creek drainage and convey it to Bradley Lake to supplement the power generating capacity for the Bradley Lake Hydroelectric Project. The site development features would include construction of a diversion dam and intake structure, an HDPE pipeline, a pipeline discharge structure and open channel to convey water from the diversion pipeline to Bradley Lake, an interception channel for the East Fork Upper Battle Creek drainage, and an access road. This lease amendment is in the State's best interest as it will provide additional power generation capacity to existing renewable energy infrastructure, transmitting energy along the railbelt from Homer to Fairbanks.



Ben Hagedorn, Natural Resource Specialist III



Date

Preliminary Decision:

It is the determination of the Division of Mining, Land and Water that it may be in the State's best interest to issue AEA a 38.05.810 (a) public and charitable lease amendment to the existing lease that expires on January 9, 2049, as described above. This application shall now proceed to public notice.



Clark Cox, Regional Manager

Southcentral Regional Office, Division of Mining, Land and Water



Date

Attachments

Attachment A – Development Plan

Attachment B – Location Map



Attachment A Development Plan

Land Development Plan Application to Amend Bradley Lake Land Lease (ADL 222656)

Purpose:

The purpose of the West Fork Upper Battle Creek (WFUBC) Diversion Project is to divert water from the Battle Creek drainage and convey it to Bradley Lake to supplement the power generating capacity of the Bradley Lake Hydroelectric Project (Bradley Project). The additional water from the Battle Creek drainage would increase power production at this hydroelectric facility without changing the generation capacity.

Description:

The site of the proposed Battle Creek Diversion Project is located on the south end of the Kenai Peninsula near the Bradley Lake Dam, which is part of the Bradley Lake Hydroelectric Project. Site development features would include construction of a diversion dam and intake structure, an HDPE pipeline, a pipeline discharge structure and open channel to convey water from the diversion pipeline to Bradley Lake, an interception channel for the East Fork Upper Battle Creek drainage, and an access road (Figure A2 and Sheets G3-1 and G4-1). The diversion dam and intake structure would direct water from the WFUBC into the pipeline, which would then convey the diverted water past the existing East Fork Upper Battle Creek (EFUBC) Diversion Dike, and then on to Bradley Lake through improved conveyance features (Sheet G6-1). The proposed access road would be constructed to provide access to the project features for operations and maintenance purposes.

The Proposed WFUBC Diversion Dam would operate from May through October of each year. During this operational window, the Project would divert up to 600 cubic feet per second (cfs) from the WFUBC while maintaining minimum instream flow releases in accordance with the Federal Energy Regulatory Commission (FERC) Order amending the license, revising the project description, and approving Exhibit F Drawings for the Bradley Lake Hydro Electric Project (FERC Project No. 8221-094). Some stream flow would by-pass the diversion dam and remain in the existing WFUBC channel. The amount by-passed varies by month and the minimum is controlled by the FERC Order.

The existing EFUBC Diversion Dike (contained within ADL 222656) is a membrane lined embankment dike constructed in the channel of the EFUBC below the EFUBC falls (Figures G6-1). The diversion dike creates a shallow pool and diverts water to the east through a series of channels and small lakes to Bradley Lake. This existing diversion dike would be rehabilitated as part of the current project. Overland flows that are currently intercepted by the diversion and rerouted to the east would be intercepted approximately 250 feet to the south by a proposed new EFUBC interception and conveyance channel. The proposed new EFUBC channel would route EFUBC water around the proposed pipeline discharge structure and into the drainage network that outfalls into Bradley Lake. Construction is anticipated to begin in 2018.

The additional lands to be added to ADL 222656 are contain the WFUBC diversion dam, access road, and pipe under and adjacent to the access road. The existing EFUBC Diversion Dam and channel to Bradley Lake are within the existing ADL 222656.

Attachment A Development Plan

Project Components:

New WFUBC Diversion Dam:

The diversion dam design is for a rock filled concrete core wall dam. The design elevation of the top of dam is elevation 1,701.0 ft. for a maximum elevation from bottom of excavation 27 feet. The concrete core wall in the diversion dam includes a 48-ft wide (long) ungated spillway in alignment with the WFUBC channel. The design crest elevation of the ungated spillway is 1,696.0 ft. When the pool elevation on the upstream side of the diversion dam exceeds the spillway crest elevation, water will flow over the spillway. The total length of the dam wall/spillway is 56 feet.

At the right abutment of the diversion dam is a sluiceway with a 4-ft x 4-ft sluice gate. The Sluice Gate will serve the dual purpose of sluicing sediment and passing “maintenance” flows through the diversion dam. The design invert elevation of the Sluice Gate is 1,677 ft. The Sluice Gate will have an actuator configured for remote operation (as well as for local operation) and will be controlled remotely at the Bradley Lake Power Plant. The sluice gate can be opened to sluice accumulated sediment from the diversion pool area.

In front of the diversion pipeline intake fore bay area will be a “sediment guide wall”. The purpose of the sediment guide wall will be to “guide” sediment that is flowing down the WFUBC towards the sediment sluice gate and minimize the potential for sediment to be carried into the diversion pipeline fore bay area.

The fore bay Area will be behind the Sediment Guide wall and will act as a large sediment trap for sediment that flows over the Sediment Guide Wall. At a diversion rate of 600 cfs, the velocity of water flowing through the fore bay Area will be approximately 1 ft. /sec, which is not sufficient to carry or mobilize gravel-sized sediment. The design includes an equipment access ramp to the bottom of the fore bay Area. This access ramp can be used to remove accumulated sediment from the fore bay Area, as well as to clean sediment that may have accumulated in front of the Sediment Guide Wall.

The Minimum In-Stream Flow (MIF) Gate will be a 30-inch sluice gate in the fore bay Area. The design invert elevation of the MIF Gate is 1,679.0 ft., which is three feet below the invert elevation of the inlet to the diversion pipeline. The depressed MIF Gate inlet elevation serves two purposes. First, it ensures the MIF Gate gets “first water”. In other words, even when the diversion pipeline is operating, there will be a minimum of three feet of head over the MIF Gate invert, which equates to a minimum flow capacity of approximately 38 cfs when 100% open

The second purpose in depressing the depressed MIF Gate invert is that should any sediment accumulate in the fore bay area, the low point at the inlet to the MIF Gate may “draw” the sediment to the MIF Gate, where they can be sluiced through the MIF Gate and discharged back into the WFUBC. The MIF Gate will have an actuator configured for remote operation (as well as for local operation) and will be controlled remotely at the Bradley Lake Power Plant.

The purpose of the Trash Rack in front of the Diversion Pipeline Gate is to prevent facility operators, wildlife, and debris from entering the diversion pipeline.

Attachment A Development Plan

The Diversion Pipeline Gate will be an 8-ft sluice gate at the inlet to the diversion pipeline. The Diversion Pipeline Gate will have an actuator configured for remote operation (as well as for local operation) and will be controlled remotely at the Bradley Lake Power Plant.

Pipe:

Pipe entrance at the diversion dam is a nominal eight-foot diameter to be constructed of steel or fiberglass (contractor option). If steel then a sacrificial anode will be included. In the first 500 feet, the pipe transitions to a nominal five-foot diameter made of HDPE 9100 feet long. The last hundred feet at the East Fork discharge will be a nominal seven-foot steel or fiberglass. Transitions will be steel and encased in concrete.

Air vents and access points will be located along the pipe approximately every 1000 feet. A low-level drain will be located at the low point of the pipe mid-way.

Pipe shall be buried for protection from temperature swings, sunlight, and impact. There may be a couple of very short section exposed while bridging over a watercourse.

Access Road:

Access road starts off the existing Bradley Lake road at approximately mile eight and travels south. Road gains elevation until it reaches the existing EFUBC diversion site. From EFUBC diversion, the road travels west along the base of cliffs, with the pipe under the road, across a couple of small watercourses then increases in elevation through the cliffs to the proposed diversion dam. The pipe will be under or adjacent (buried) to the access road from the EFUBC to WFUBC. Power and communication cable will also be buried in a trench in the road from the road start to the proposed diversion dam.

Road will be built nominally 16 feet wide and 2.9 miles long.

A materials site will not be constructed along the access road since the volume of rock cuts will be approximately the same as the fill volume.

Non-Competitive Lease:

Sec. 38.05.810(a). Public and charitable use.

The lease, sale, or other disposal of state land or resources may be made to a state or federal agency or political subdivision.

Legal Description:

The proposed project boundaries are included in attached Figures 1 and 2. Northings and Eastings are provided for all boundary corners. All land is within Sections 7, 8, 17, 18, 19, and 20, Township 5S, Range 9W, Seward Meridian.

Terrain/Ground Cover:

The proposed WFUBC Diversion project is located in the Kenai Mountains near the southern end of the Kenai Peninsula. The land being requested in this proposed land lease amendment ranges in elevation from 1,200 feet to over 2,000 feet above mean sea level. The terrain and vegetation include exposed bedrock outcrops, dense thickets of alder and willow, and small areas of potential wetlands.

Attachment A Development Plan

Access:

Access to the land lease amendment area will be via the existing Bradley Lake Access Road on land covered under Land Lease ADL 222656. Any equipment for construction will be flown or barged in from Homer, Alaska and driven up the existing road.

Buildings and Structures:

The diversion project consists of three components. See Project Components. A concrete diversion structure located within the canyon of the WFUBC will divert flow into a covered pipe (initial eight foot diameter decreasing to nominal five-foot diameter) to a new five hundred foot long canal at the existing East Fork Diversion. Pipe will be buried and located under and alongside the access road except for short bridging sections (Sheet C4-1).

The cascade of the East Fork of Upper Battle Creek flows into the new canal. Flows (East and West Fork) will then follow an existing 3,600-foot long flow path to Bradley Lake (which was constructed on land included in the existing land lease ADL 222656).

Power Source:

Underground power cable will be run from the Bradley Lake dam to the new diversion dam to operate gates that control water released into the existing WFUBC channel. The cable will be laid within the road.

Waste types, sources and disposal methods:

Construction waste will be removed from the site and disposed of at an appropriate facility. No other onsite waste generation is anticipated in the future.

Hazardous Substances:

Hazardous materials may be stored in the staging areas, at the diversion structure in West Fork Upper Battle Creek, at the existing East Fork Upper Battle Creek diversion, or along the proposed access road where construction activities are actively occurring. Bulk storage of hazardous materials shall only be permitted in staging areas and only minimal quantities required for active work shall be permitted elsewhere.

The following construction practices and control measures shall be employed for the storage and security of potentially hazardous materials on-site:

- Fuels and oils for vehicles or equipment shall not be stored near water or sensitive habitats.
- Construction materials will not be stockpiled within 100 feet or on the bank of any waterway or wetland.
- Hazardous substances shall be stored in waterproof containers and should not be placed directly on the ground, if practicable.
- Underground storage of hazardous materials shall not be permitted.
- Storage areas shall be secured so that hazardous substances are inaccessible by the general public or wildlife.
- Storage containers shall display labels that identify the container's contents and whether the substance is hazardous.
- Hazardous materials will be completely used up prior to disposing of the container.

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- Storage of petroleum products in containers with a capacity exceeding 55 gallons shall not contain more than 1,320 gallons of petroleum products at any given time.
- Waste containers shall not be allowed to overfill such that materials are not protected from rainfall or storm water.
- Hazardous materials shall be stored in a manner that prevents damage or deterioration of the container.
- Hazardous materials shall not be stored on site during winter shutdown, if applicable.
- Hazardous materials should be evaluated prior to arrival on site for their ability to react with other materials. Incompatible materials shall be stored separately from one another by distance, physical partitions, or secondary containment.
- Storage containers shall be chemically inert and appropriate for the type of hazardous substance they contain.
- Materials that may result in hazardous gases, fumes, or vapors should not be stored in areas where employees or wildlife may be exposed.
- Oil pads shall be placed underneath equipment while parked on site.

Water Supply:

No potable water will be used onsite, nor there any wastewater disposal.

Parking and Storage Areas:

Parking and storage will be in designated areas on land within the existing land lease boundary.

Number of Users:

There will be no employees permanently stationed within the boundary of the land requested in this land lease amendment. Alaska Energy Authority, facility operator, and subcontractor employees will enter the property temporarily to inspect, adjust and assure structures are working properly.

Maintenance and Operations:

The proposed facilities will be maintained routinely to ensure proper function and structural integrity. Maintenance and inspection will occur prior to spring opening and winter shutdown. Maintenance activities may include grading the road and bedload removal from fore bay pool upriver of the diversion.

Closure/Reclamation Plans:

The Project and WFUBC are expected to have an operating life greater than 100 years. However, when the Project is to be decommissioned, the ends of the pipeline will be sealed and material placed to cover sealed ends. Native vegetation and local talus will be placed on the road. Diversion dam will be breached and material disposed.

Supplemental Information:

The additional water to the Project has several substantial benefits to Alaska. The additional water generation will be lower cost energy to all Railbelt energy consumers for the expected life of the Project, which is in excess of 100 years. In addition, during times of cold weather along

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the Railbelt the additional hydroelectric energy enables electric utilities to switch generation from natural gas to hydroelectric reducing the stress on the natural gas transmission network and allowing more gas for home heating.

Below is a table showing acres of direct wetland impacts:

Wetland Type	Acres
PEM1B	0.003
PEM1C	0.011
R3UBH	0.050
R3UBH/USC	0.070
R3USC	0.071
Total	0.204

This project has been through the FERC licensing process and both Federal (US Fish & Wildlife Service, National Marine Fisheries Service, and Bureau of Land Management) and State agencies (Department of Fish & Game and Department of Natural Resource), public, and tribal organizations have had opportunity for comment. AEA has received water rights for this project from the Department of Natural Resource.

As required by the license amendment there will be an Erosion and Sediment Control Plan, Fuel and Hazardous Substance s Plan, and Bear Safety Plan. Protections will be in place regarding distance to mountain goats, migratory birds, and Fish & Wildlife. An Environmental Compliance Monitor will be on-site during construction.

Project Schedule:

2017 spring: Arranging financing.

2017 summer: June Request for Proposals advertised.

2017 July 16: Start vegetation clearing along access road route.

2017 August: Contractor site visit.

2017 October: bids received.

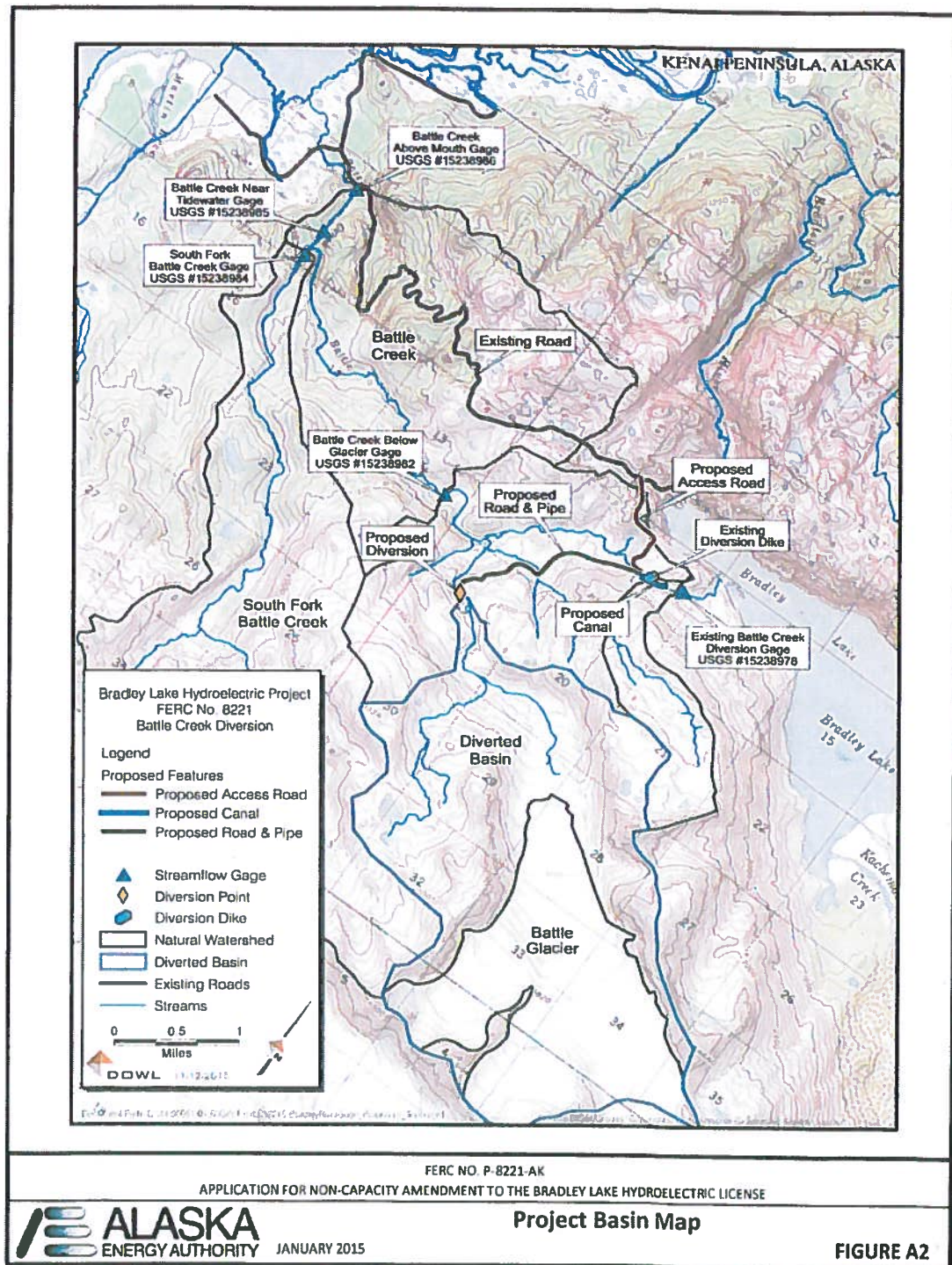
2018 Summer-Fall: Contractor starts constructing road to EFUBC and WFUBC.

2019 Summer-Fall: Contractor installs pipe under/adjacent to road and buries the pipe.

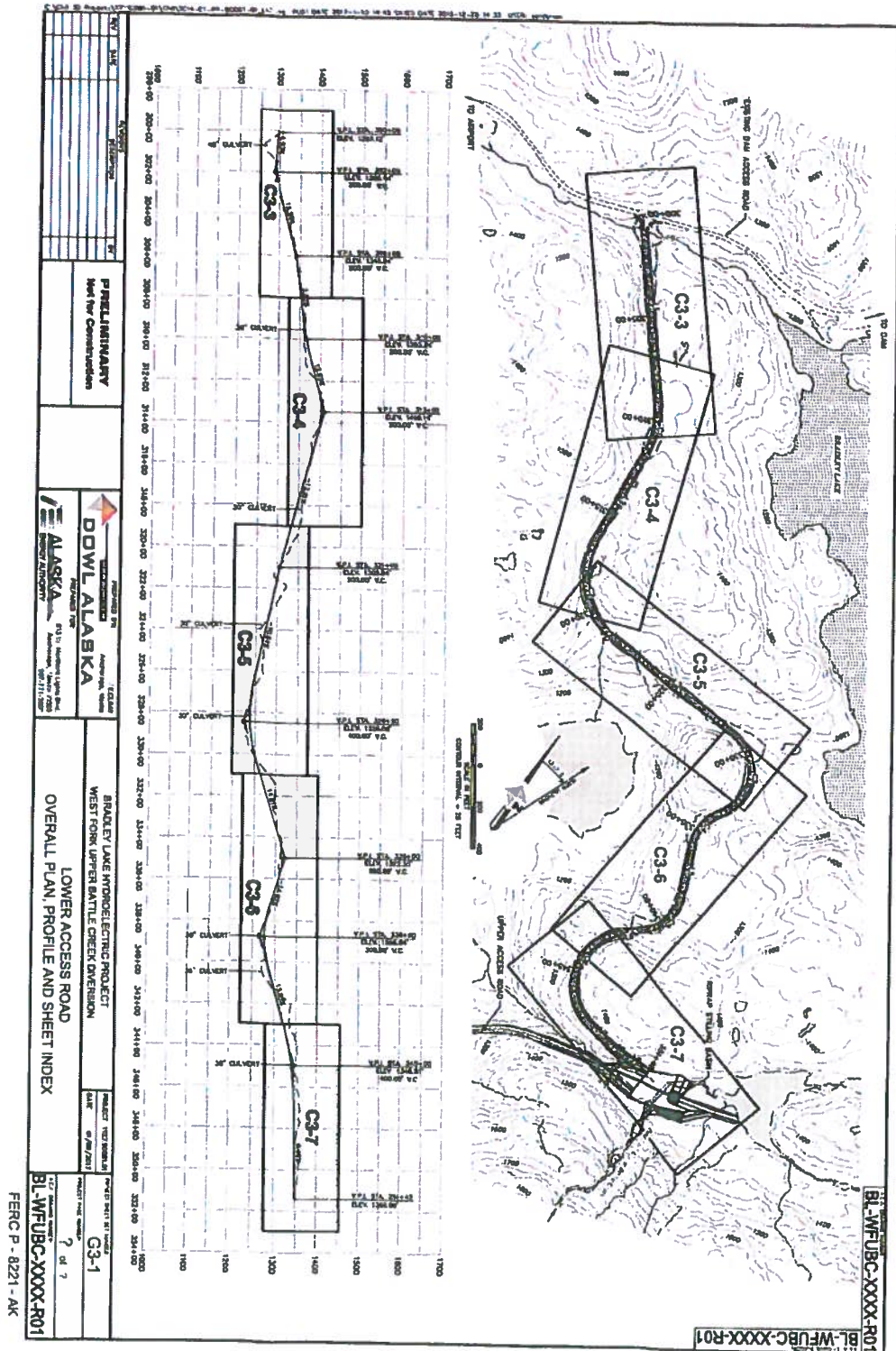
2020 summer: WFUBC diverted to EFUBC. Diversion dam constructed.

2020 Fall: Project completion.

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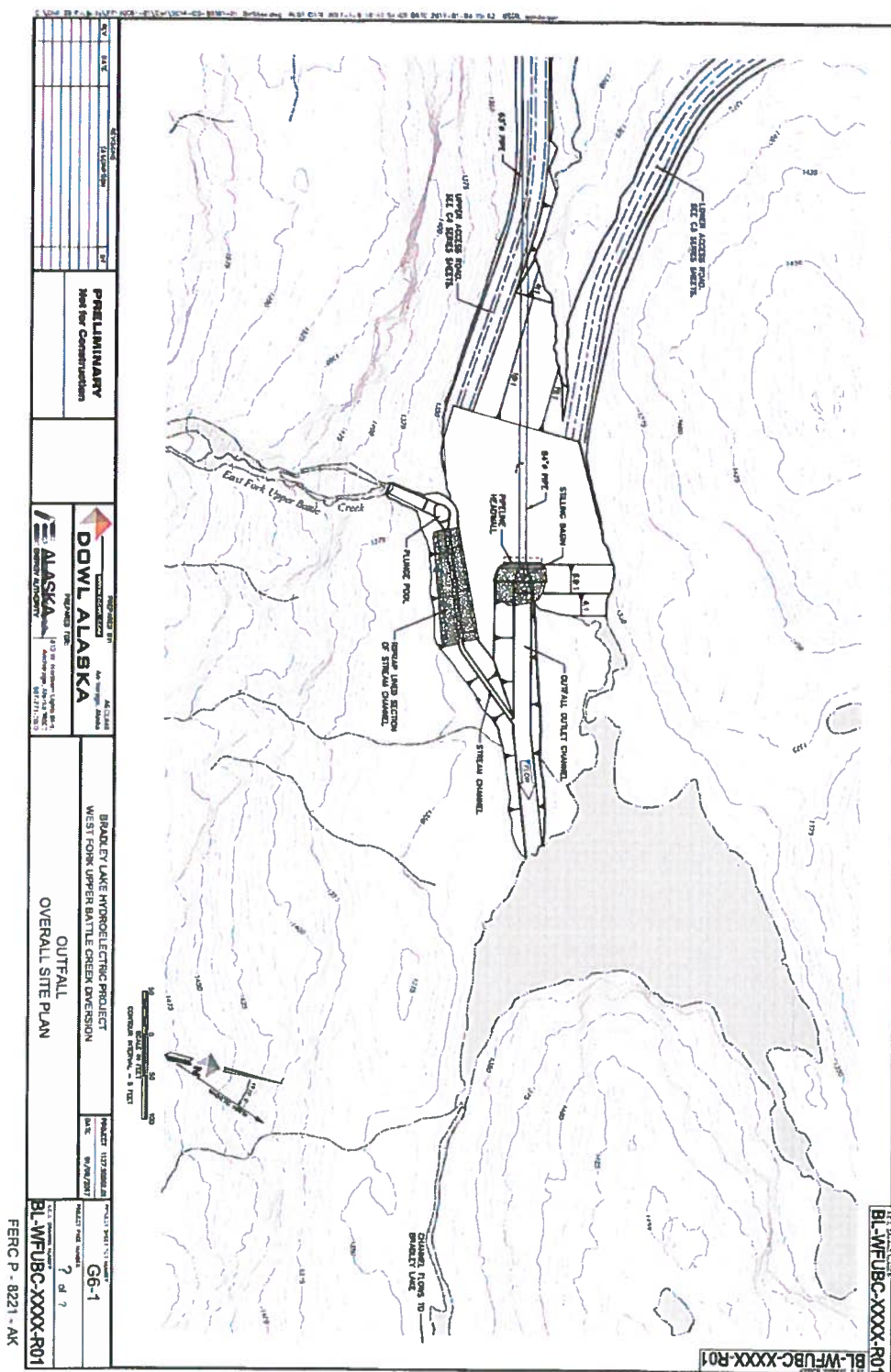


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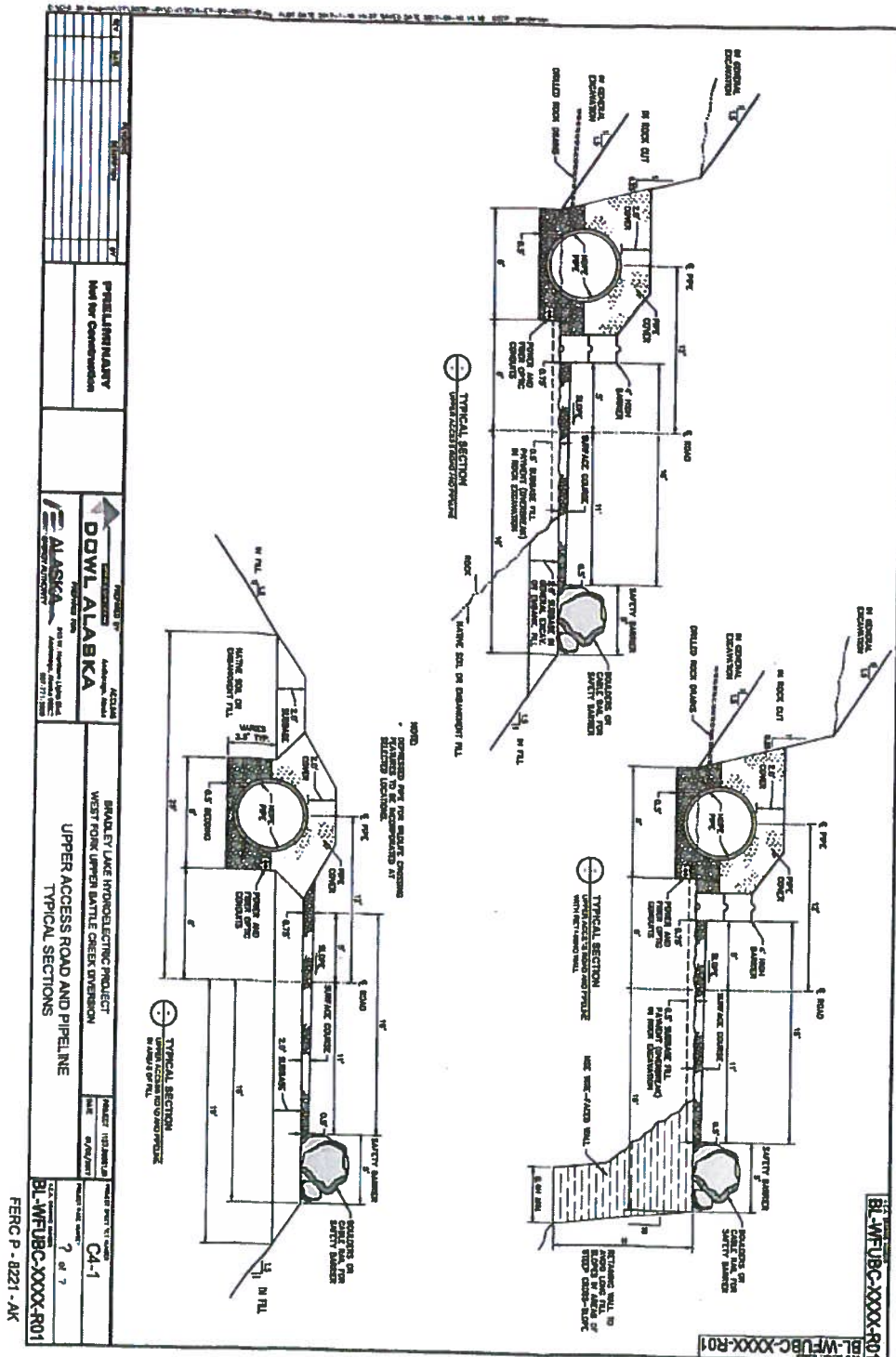


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Attachment A Development Plan



Attachment A Development Plan



Attachment B Location Map

