GRANT LAKE / FALLS CREEK PROJECT

Kenai Hydro, LLC

Joint Meeting Presentation

Nov 12, 2009

Presenters

- Kenai Hydro LLC
- Long View Associates
- HDR Alaska, Inc.
- Northern Ecological Services

Project Updates

- Permits Surrendered for Ptarmigan Lake & Crescent Lake
- No additional projects pending at this time

Grant Lake/Falls Creek Project

- Finalize 2009 Baseline Study Work & Report
- Receive Post-Joint Meeting Comments
- Schedule beyond tonight is tentative and dependent on obtaining additional funds to implement studies

Agenda

- FERC Traditional Licensing Process (TLP)
- Goals for Joint Meeting
- Filing Comments with FERC
- Project Description
- Resource Area Existing Information and Potential Effects
  - Fish and Aquatic Resources
  - Water Resources
- Break
  - Terrestrial Resources
  - Visual and Recreation Resources
  - Cultural Resources
- Wrap-Up and Additional Time for Public Comments

Goals for Joint Meeting

- Summarize Existing Information
  - Pre-Application Document
  - 2009 Baseline Study Report for Fish and Aquatics and Water Quality (available in December 2009)
- Identify Study Topics
  - Studies and information gathering efforts will focus on information needed to assess potential resource impacts of the proposed Project in a license application to FERC
- Gather Feedback on Identified Study Topics
  - Transcript of meeting will be filed with FERC
  - Identify parties interested in resource specific workgroups

Joint Meeting Process and Comments

- Please hold questions until the end of each resource segment
- Please be concise
- Please focus comments on identifying or clarifying potential issues that should be studied
- If you have extensive additional existing information on the Project area please submit in writing
- We will be available for detailed comments and questions at the break and following the meeting

FERC Process

- Federal Energy Regulatory Commission (FERC) has jurisdiction over hydroelectric development, guided by the Federal Power Act
- FERC outlines detailed licensing processes for applicants to use that include opportunities for agency, tribal, and public input throughout the Project development
  - Kenai Hydro requested, and received authorization from FERC to use the Traditional Licensing Process (TLP) with early scoping
  - TLP has three stages of consultation

TLP: First Stage Consultation

File Notice of Intent and Pre-Application Document (PAD)	**August 6, 2009**
Public and Agency Comments on Use of the TLP	**August 6 - September 6, 2009**
FERC approval of request to use TLP	**September 15, 2009**
Joint Meeting	**November 12, 2009**
Public Comment on Study Issues and Available Information • Parties provide comments on study determination on necessary studies, and additional study requests with explanation how the studies and information requested will be useful to the agency, Tribe, or member of the public in furthering its resource goals and objectives	**November 12, 2009 – January 11, 2010**
Dispute Resolution Process • This is a formal step in the TLP regulations for the applicant or other parties to request FERC input if there is disagreement over which studies should be conducted. • FERC has committed to Early Scoping for this Project, so FERC will engage in reviewing the range of issues to be studied whether dispute resolution is requested or not.	**Following end of comment period**

FERC Early Scoping

- Timing TBD in 2010 prior to initiation of study program
- FERC issues Scoping Document 1 and Meeting Notice at least 30-days prior to meeting date
- Two meetings to be held (at least one will be held in close proximity to the Project area)
- An environmental site review will be scheduled in coordination with the early scoping meeting
- 60-day Comment Period follows scoping meeting
- If necessary, Scoping Document 2 with expanded range of studies to be conducted will be issued by FERC within 45-days following close of public comment

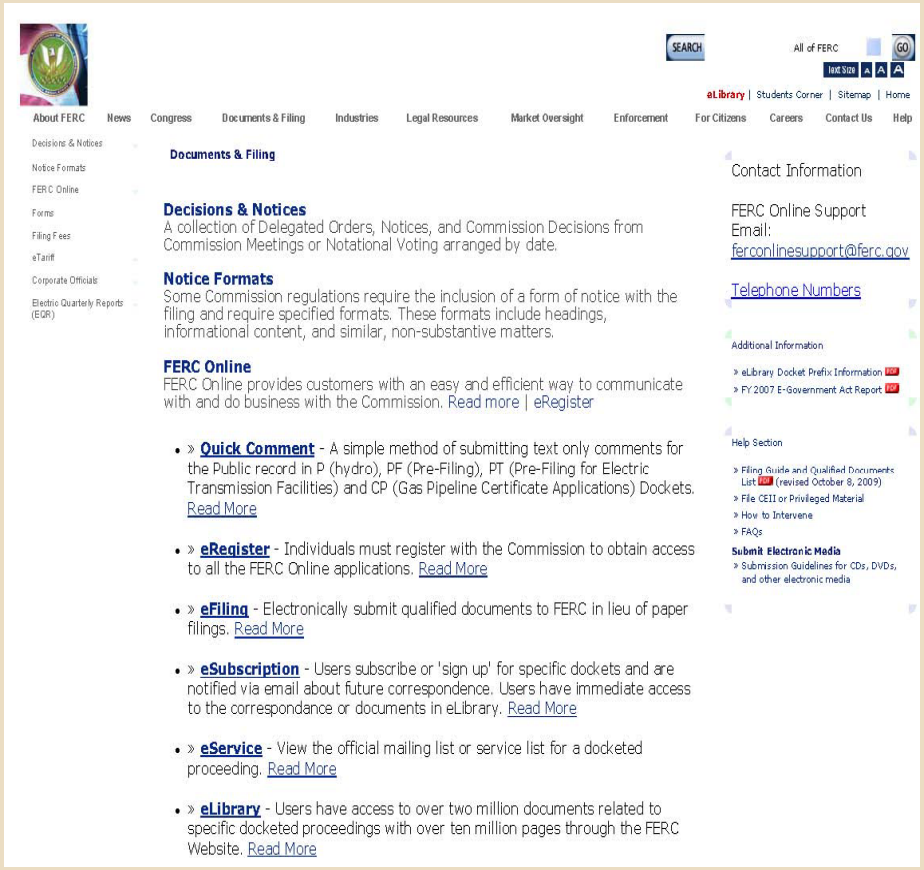
TLP Second Stage Consultation (Tentative Schedule)

KHL Files Summary Response to Comments on Study Requests	January 2010
KHL Issues Draft Study Plans for Agency and Public Review	February - March 2010
Public Workgroup Meeting(s) to discuss 2010 draft study plans	March - April 2010
KHL Issues final study plans	May 2010
Conduct studies per study plans and provide updates to workgroups	May 2010 – January 2011
Consultation with workgroups regarding development of Draft License Application	January – April 2011
File Draft License Application • Includes study results to date • Include response to study requests received at Joint Meeting	May 2011
Public Comment Period on Draft License Application	May – July 2011 [90-days following filing of draft license application]
FERC Dispute Resolution Process	As requested

TLP Third Stage Consultation (Tentative Schedule)

File Final License Application	September 29, 2011
Expiration of Preliminary Permit	September 30, 2011
FERC Dispute Resolution Process and Requests for Additional Information	As requested

Filing Comments with FERC Use P-13211 and P-13212



- FERC e-filing at www.ferc.gov
- Three ways to comment:
  - Written correspondence
  - Electronic "Quick Comment" [limited to 6,000 characters]
  - Register on ferc.gov to e-file longer documents
- Copy comments to applicant
- Questions?
  - FERC's Project Manager is Joe Adamson (joseph.adamson@ferc.gov)

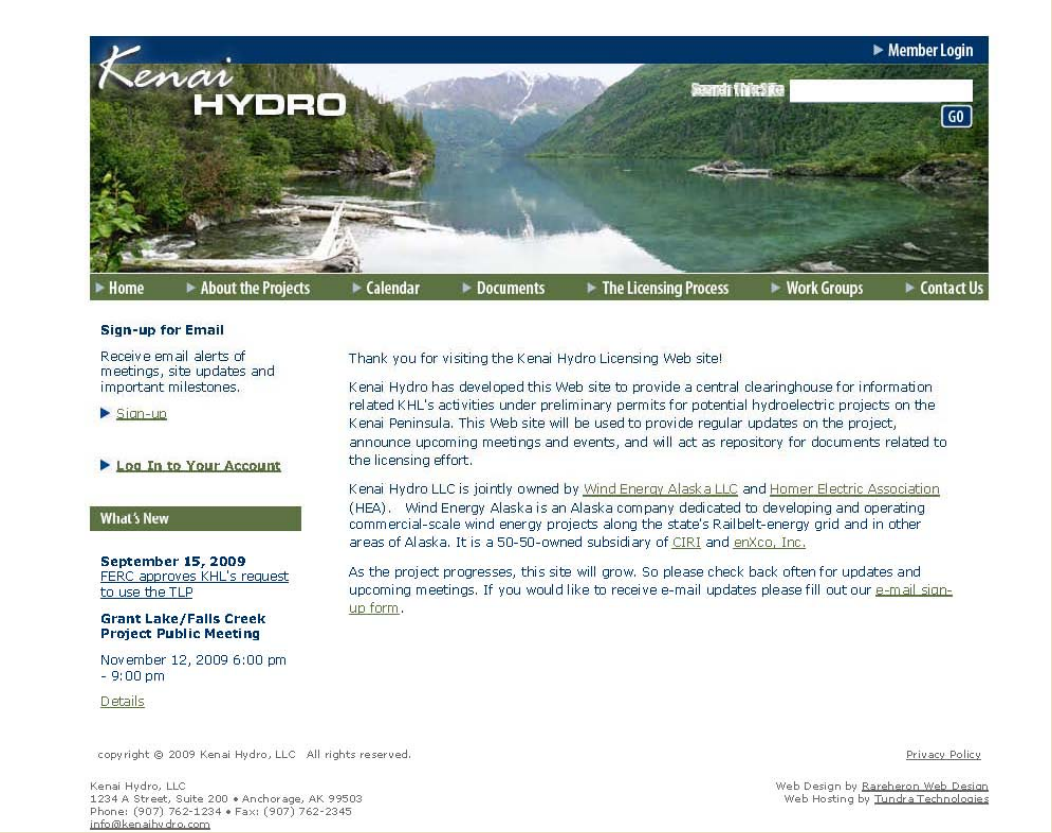
Tracking Project Progress and Comments

Kenai Hydro, LLC website

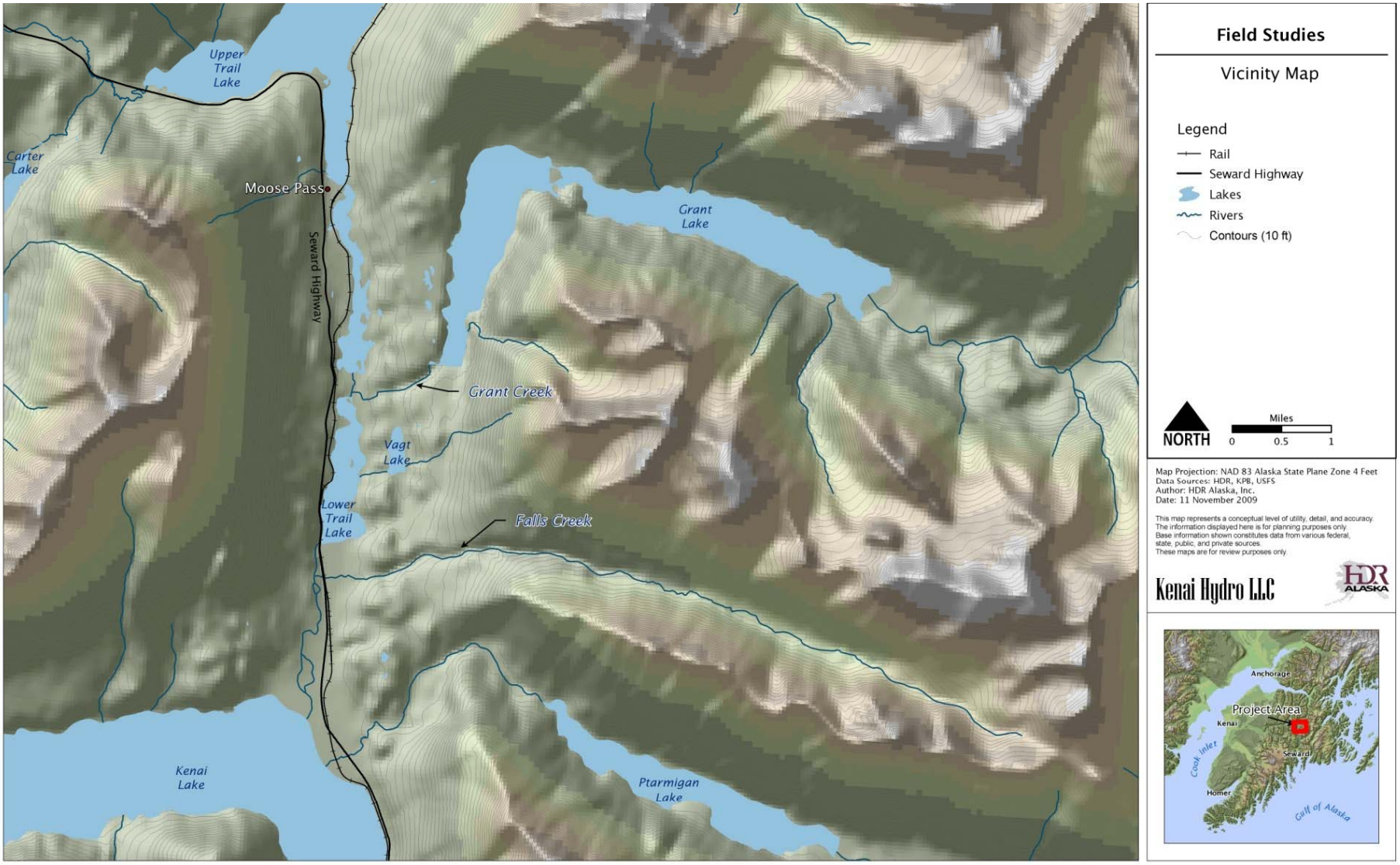
(www.kenaihydro.com)

FERC E-Subscription Service

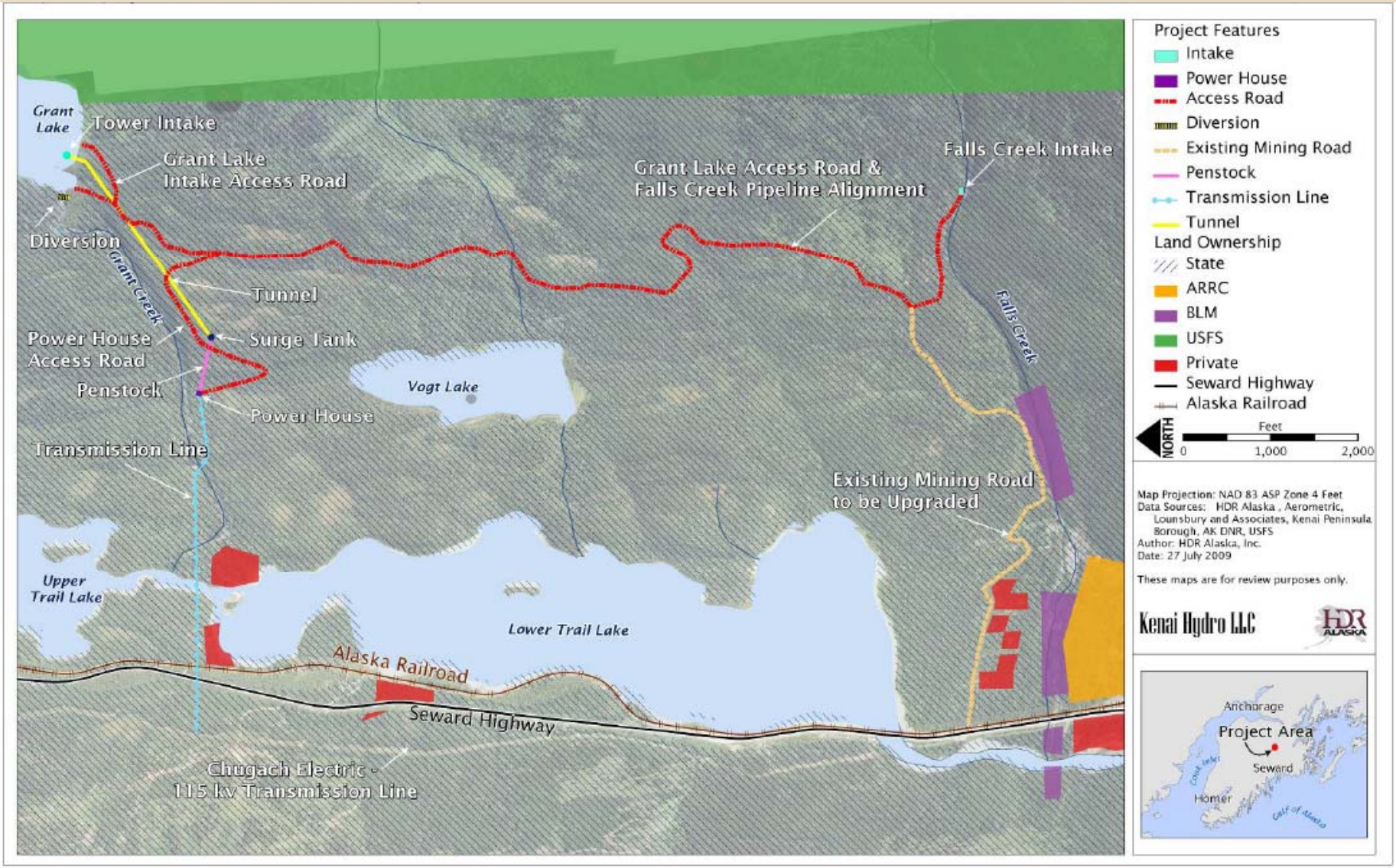
(www.ferc.gov)



Kenai Hydro Environmental Baseline Studies



Proposed Project Facilities



Other Issues and Comments

??????????????

Fish and Aquatic Resources

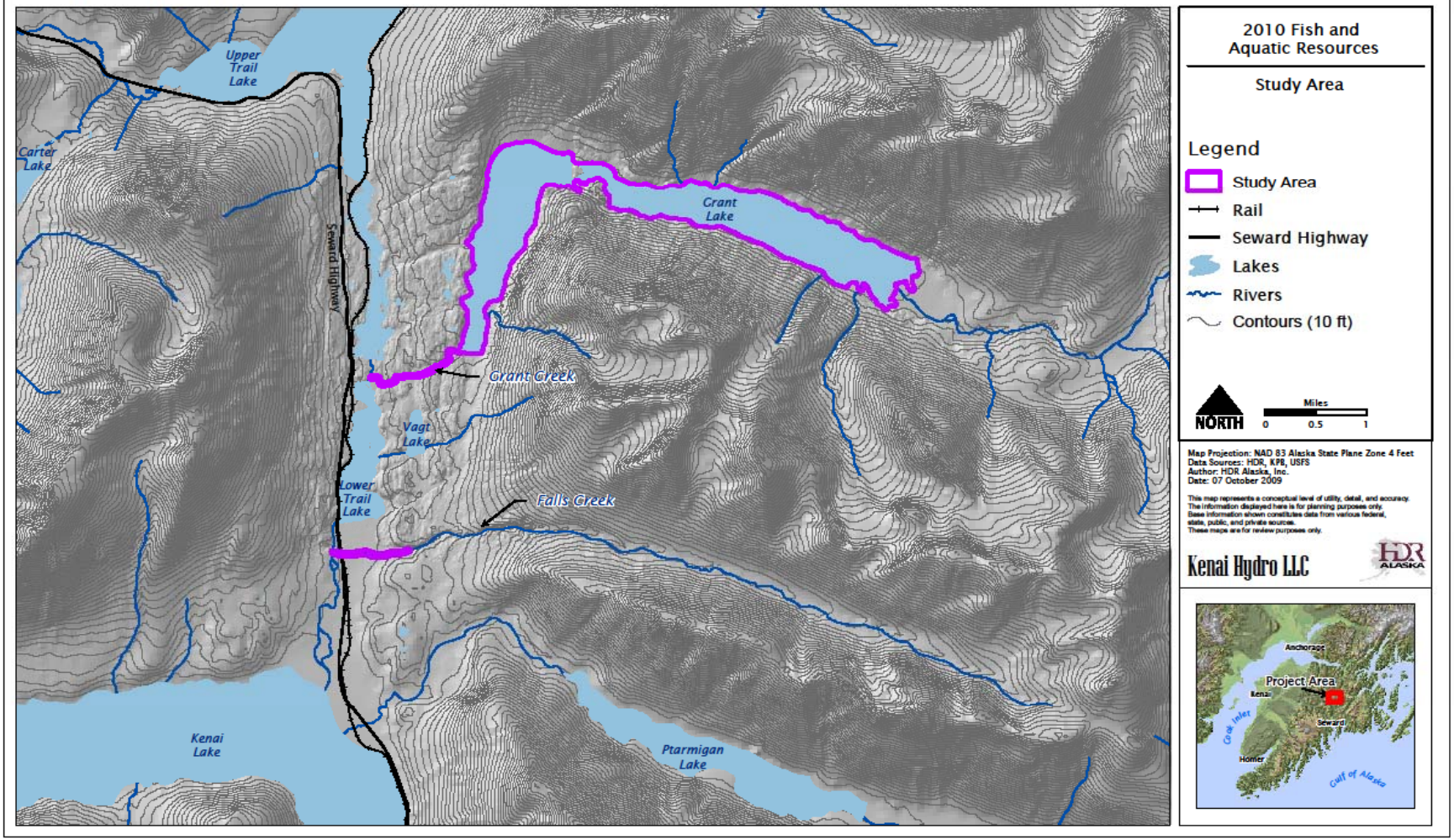
Fish and Aquatic Resources
Existing Information

Sources of existing information

- Fish and aquatic habitat data were collected in Grant Lake and Grant Creek as part of various studies in the 1960's and 1980's by USGS, USFS, USFWS, ADFG, and AEIDC
- Resource information derived from the above studies has been summarized in the Preliminary Application Document (PAD)
- Pre-licensing study program conducted by HDR in 2009
- Information sources are available on the Kenai Hydro Project web site (www.kenaihydro.com)

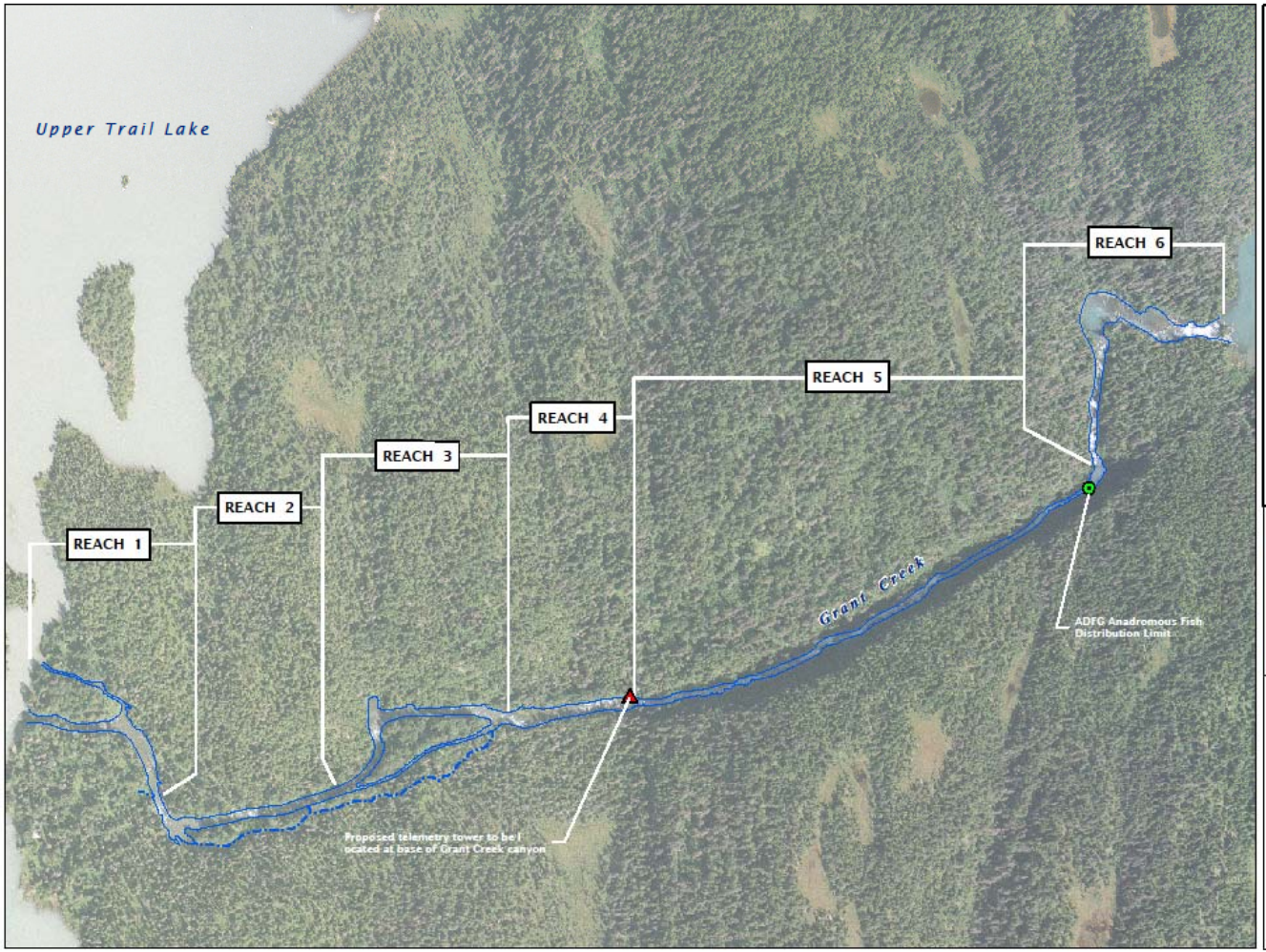
Kenai Hydro Environmental Baseline Studies

Figure 1



Kenai Hydro Environmental Baseline Studies

Figure 2



Fisheries Field Studies

2010 Grant Creek Telemetry Tower Location (Proposed)

Legend

- Telemetry Tower (Proposed)
- ADFG Anadromous Fish Distribution Limit
- Grant Creek Wetted Edge
- Side or Overflow Channel

NORTH

0 250 500 Feet

Map Projection: NAD 83 Alaska State Plane Zone 4 Feet
Data Sources: HDR Alaska, Inc., USFS, KPB, USGS, Aerometric
Author: HDR Alaska, Inc.
Date: 07 October 2009

This map represents a conceptual level of utility, detail, and accuracy. The information displayed here is for planning purposes only. Base information shown constitutes data from various federal, state, public, and private sources. These maps are for review purposes only.

Kenai Hydro LLC

HDR ALASKA

Fish and Aquatic Resources
Summary of Habitat Values

Grant Lake

Sticklebacks and sculpins present. No salmon, trout, or Dolly Varden have been captured in the lake or its tributaries.

Grant Creek

Adult Salmon

- Lower 0.8 miles mapped as anadromous fish habitat by ADF&G; upstream passage blocked by an impassable waterfall
- Sockeye Salmon – Escapement estimates have ranged from 400 to 2,500 adult spawners
- Chinook Salmon – Escapement estimates have ranged from 33 to 230 adult spawners
- Coho – Count numbers have ranged from 55 to 300 adult spawners

Fish and Aquatic Resources
Summary of Habitat Values (cont.)

Grant Creek (cont.)

Juvenile Salmon

- Lower reach of Grant Creek contains limited scattered slow water habitats suitable for juvenile salmon rearing
- Rearing habitats consist mainly of undercut bank, side channel and backwater areas
- Chinook and coho fry abundant within limited available habitats
- Most juvenile salmon are fry suggesting limited use by older juveniles

Resident Fish

- Dolly Varden most abundant fish in stream. All size classes present.
- Adult and subadult Rainbow trout also common

Fish and Aquatic Resources
Summary of Habitat Values (cont.)

Falls Creek

- Lower 1/3 mile mapped as anadromous habitat by ADF&G
- 2009 minnow trapping captured Dolly Varden only
- Spawning surveys in 2009 found no adult salmon present

Fish and Aquatic Resources Issues

- What are the potential effects of increased lake level fluctuation on Grant Lake fish resources?
- What are the potential effects of the project intake structure on Grant Lake fish resources?
- What are the potential effects of changes to the seasonal flow regime on the abundance and distribution of fish in Grant Creek?
- What are the potential effects of changes to Grant Creek flows on the availability of spawning gravels and/or sediment deposition rates in Grant Creek?

Fish and Aquatic Resource Issues (cont.)

- What are the potential effects of project construction or operation on the overall productivity of Grant Creek as determined by the abundance of aquatic insects (macroinvertebrates) and/or algae (periphyton)?
- What are the potential effects of project construction activities on fish habitats in Grant Creek, Falls Creek, or Grant Lake?
- What are the potential effects of reduced flow in lower Falls Creek on the abundance and distribution of fish in the creek?
- What are the potential effects of increased access resulting from project roads on fish resources through increased recreational fishing opportunities?

Fish and Aquatic Resources Proposed Studies

- Grant Creek Salmon Spawning Distribution and Abundance
- Grant Creek Resident and Rearing Fish Distribution and Abundance
- Grant Creek Aquatic Habitat Mapping and Critical Factors Analysis
- Grant Creek Instream Flow Study
- Falls Creek Fish Distribution and Abundance
- Baseline Study of Benthic Invertebrates and Periphyton in Grant Creek
- Baseline Study of zooplankton and phytoplankton in Grant Lake

Other Issues and Comments

??????????????

Water Resources

Water Resources Hydrology

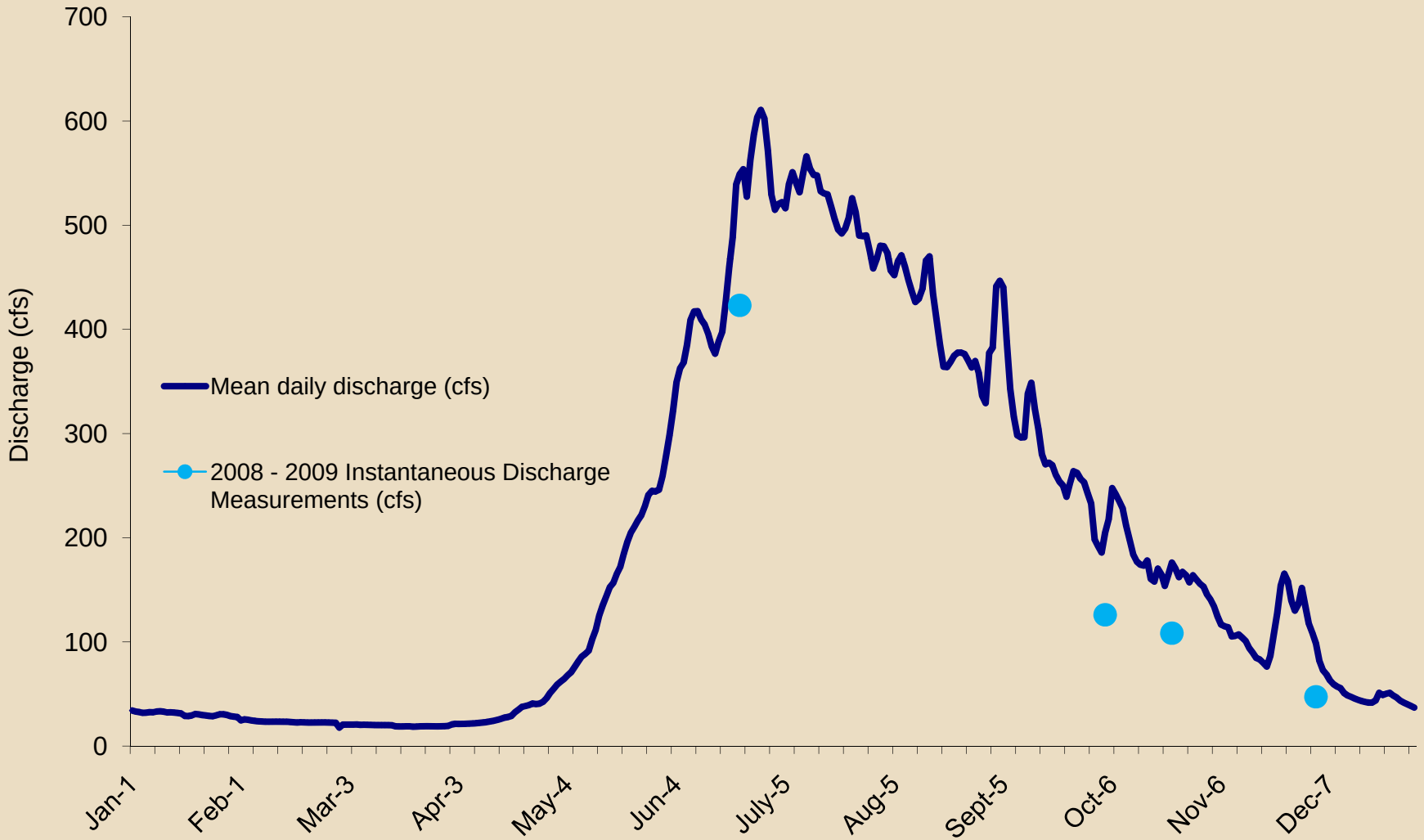
Sources of Existing Information

- Historical Grant Creek stream gage data (USGS 15246000) – 11 years of continuous stream gage data from 1947-1958.
- Grant Lake Hydroelectric Project Detailed Feasibility Analysis, EBASCO, 1987, that includes modeled Falls Creek data.
- Historical Falls Creek discharge data includes continuous measurements during one summer in the mid-1980s and several instantaneous discharge measurements made over various years including 1963-70, 1976, and 2007- 2008.
- HDR Stream Gage data at USGS Station - 2009

Water Resources
Hydrologic Characteristics

- Grant Lake fed by several tributary streams, most of which terminate at glaciers
- Grant Lake water level fluctuates naturally over a several foot range
- Seasonal flow characteristics typical of glacial systems
- Most summer flow derived from snow and glacial melt
- Most winter flow derived from ground water

Historical Grant Creek (GC200) Hydrograph (1947 -1958)



Water Resources
Water Quality

Sources of existing information

- Water chemistry and temperature data collected in Grant Lake and Grant Creek as part of various studies in the 1960's and 1980's by USGS, USFS, USFWS, ADFG, and AEIDC
- HDR's ongoing 2009 study has collected seasonal water chemistry data and continuous temperatures in Grant Creek and Grant Lake at several stations

Water Resources
Water Quality Characteristics

- Water quality typical of cold Alaska drainages with glacial input
- Nutrient levels are generally low, indicating low biological productivity
- Turbidity varies with the season – moderately high in the summer during glacier melt and low during winter and spring
- No indication of water pollution or other unusual conditions

Water Resources Issues

- What are the potential effects of Project construction and operation on Grant Lake, Grant Creek, and Falls Creek water quality, hydrology, and water temperature?
- What are the potential effects of Project construction and operation on water quality and hydrology of Lower Trail Lake and Trail Creek?
- How will physical changes to Grant Creek, Falls Creek, and downstream water bodies affect fish resources?

Water Resources
Proposed Studies

Hydrology

- Continue the ongoing stream gaging in lower Grant Creek to increase the period of record, confirm earlier data, and provide essential input to the instream flow study
- Continue the ongoing stream gaging of Falls Creek

Water Resources
Proposed Studies

Water Quality

- Collect water chemistry data in Grant Creek, Falls Creek, and Grant Lake to define baseline water quality conditions.
- Continue the collection of continuous water temperature data in Grant Creek, Falls Creek, and Grant Lake to provide input to aquatic resource impact assessment models.

Other Issues and Comments

??????????????


TERRESTRIAL RESOURCES
Plants and Wildlife

Terrestrial Resources

Existing Information:

- Previous studies and agency surveys
- AEIDC, APA, US Forest Service, ADF&G
- Summarized in PAD

Terrestrial Resources
Plant Community Characteristics

- Wide range of plant communities represented in Project area
  - Coniferous, deciduous, and mixed forest
  - Shrublands, grasslands, and alpine tundra
  - Muskeg, wetlands, and riparian areas
- Spruce bark beetle has affected spruce in the past 15 years
  - Areas of dead trees are in or near the Project area
- Plant communities of special interest include:
  - Forested areas with harvestable timber
  - Wetland and riparian communities
  - Rare or sensitive plant habitats

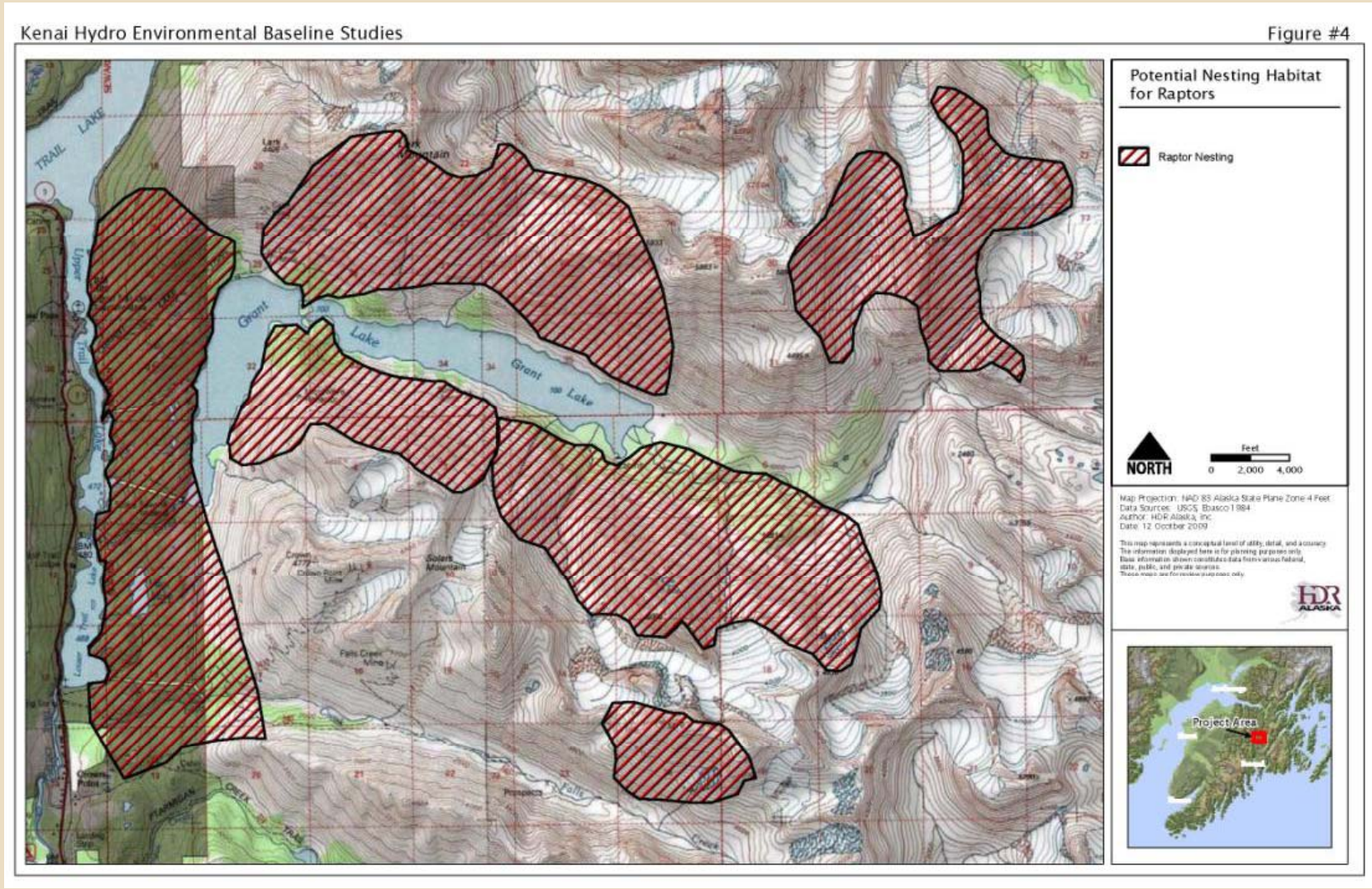
Project Area: Grant Lake, Vagt Lake, Trail Lakes

Terrestrial Resources
Wildlife Community Characteristics

- Studies from the 1980's estimated 108 bird species, 34 mammal species, and one amphibian

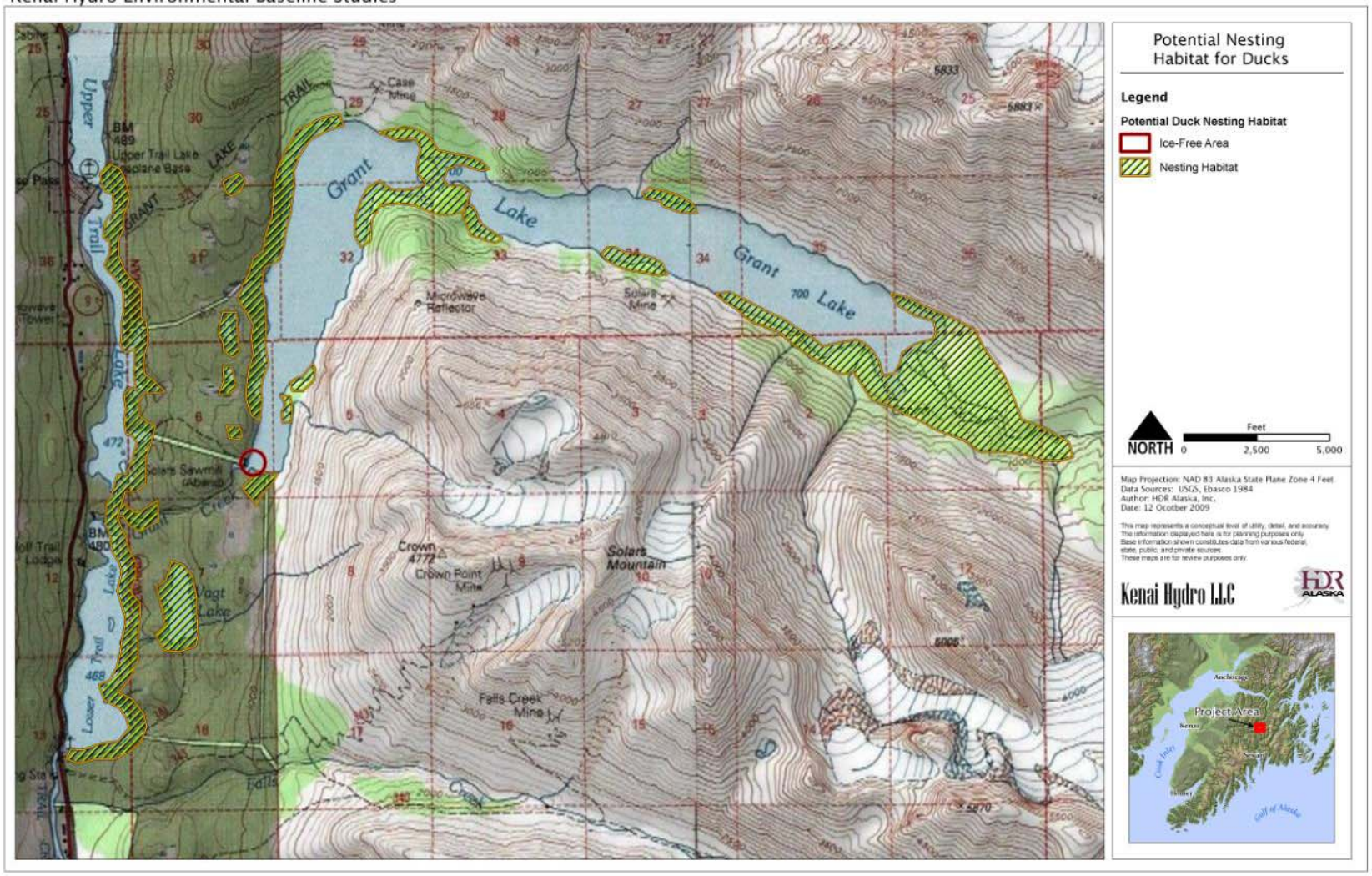
- Habitats of interest: inlet delta, outlet area, bear use habitats, moose range, raptor nesting areas, and potential waterbird nesting areas

Grant Lake Outlet

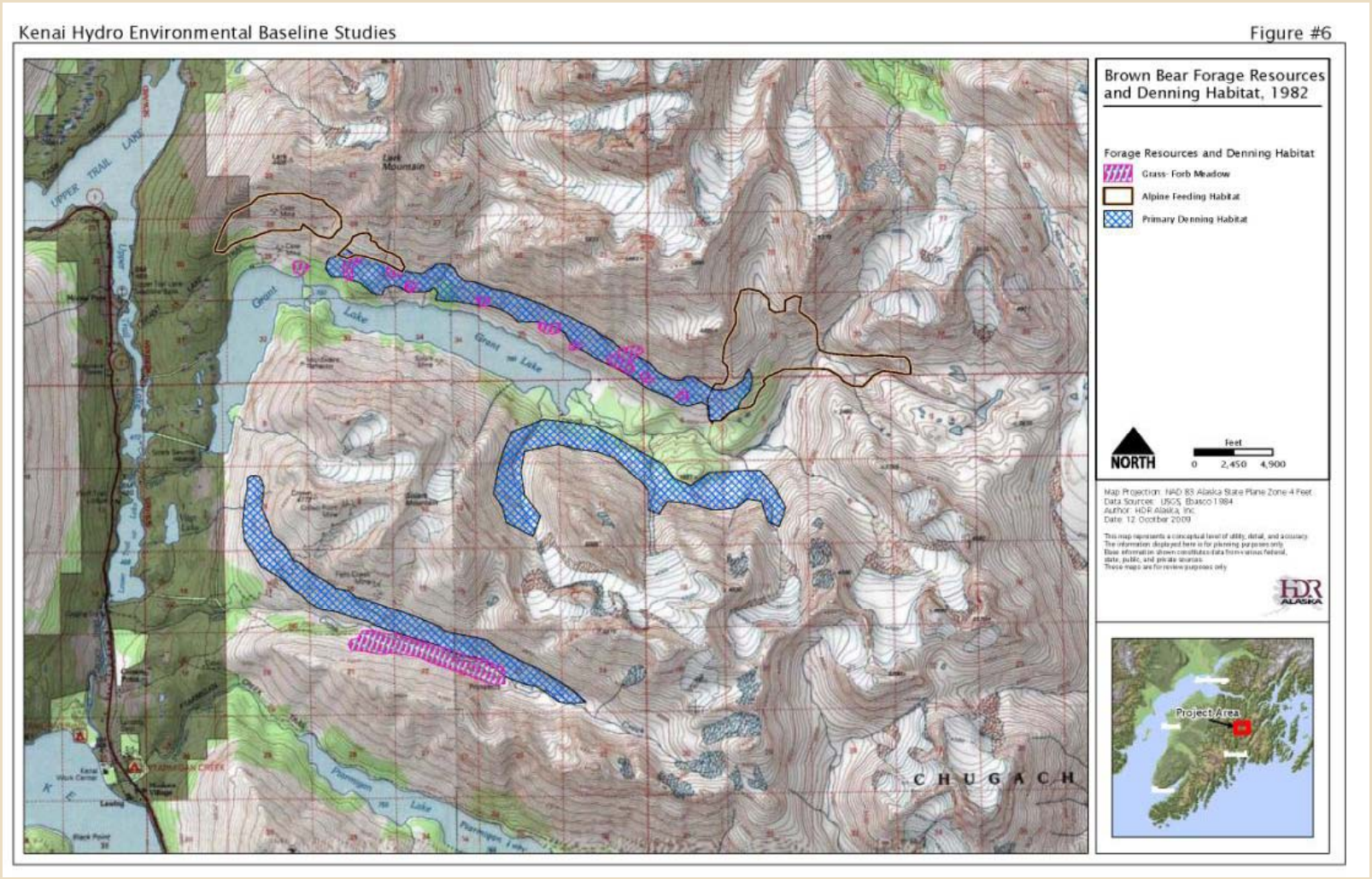


Potential Raptor Nesting Habitat, 1982

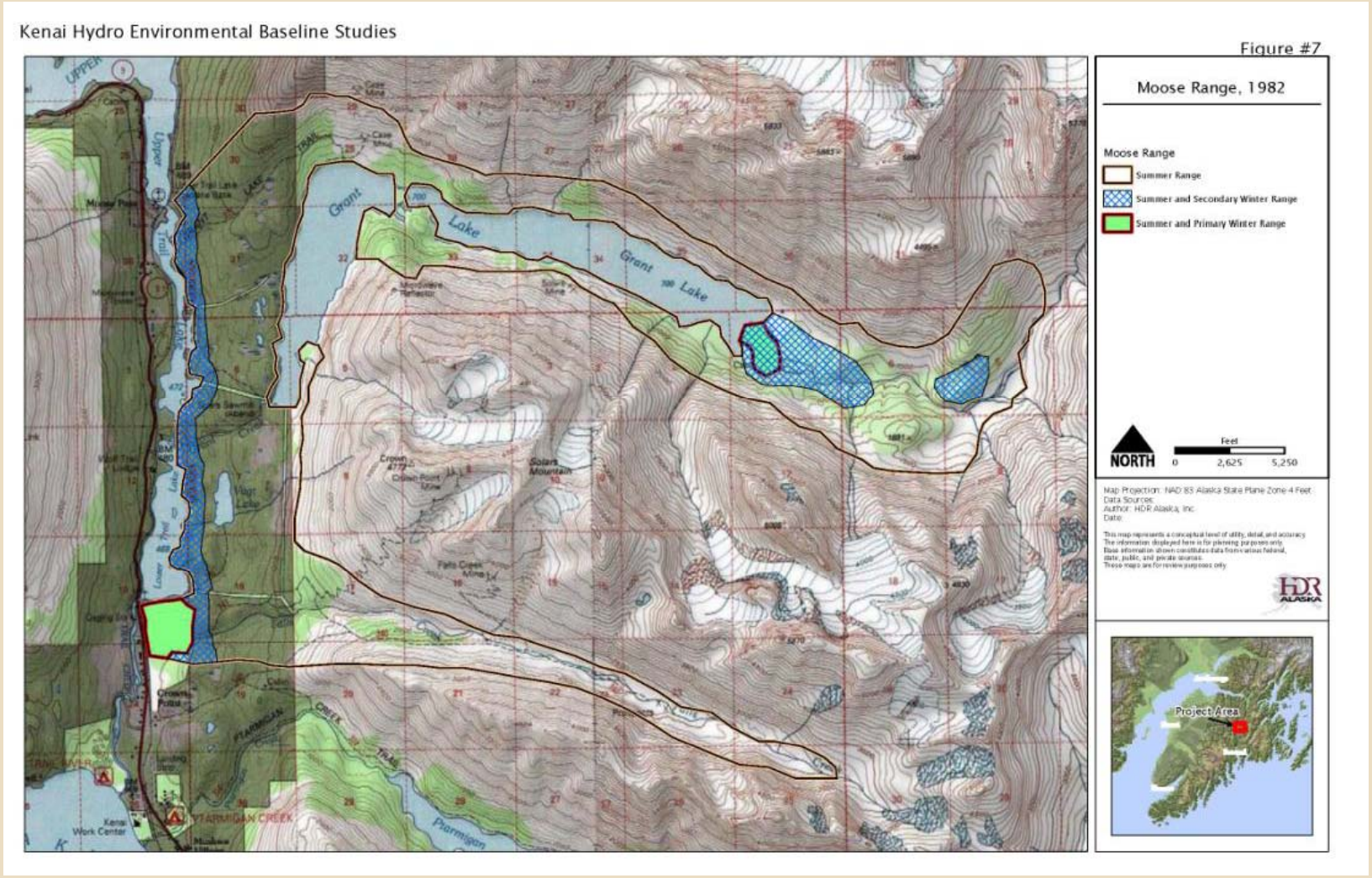
Kenai Hydro Environmental Baseline Studies



Potential Waterbird Nesting Habitat, 1982



Brown Bear Foraging and Denning Habitats, 1982



Moose Range, 1982

Terrestrial Resources
Special Status

- USFS has identified two sensitive plant species that may be present in the Project area, but no sensitive, rare, threatened or endangered plants have been documented in Project area.
- No threatened or endangered animals occur in the Project area.
- The USFS identifies three management indicator species: brown bear, moose, and mountain goat; and eight species of special interest.
- The state list of Species of Special Concern has several species that may occur in the Project area.

Terrestrial Resources Issues

- What are the potential effects on wildlife from general disturbance associated with studies, construction, and operation?
- What are the potential effects of increased water level fluctuation in Grant Lake?
- What are the potential effects of changes in flow in Grant Creek and Falls Creek?

Terrestrial Resources Issues (cont.)

- What are the potential effects of construction of the Project facilities?
- What are the potential effects on wildlife if the distribution and/or abundance of salmon changes?
- What are the potential effects of construction and maintenance of access roads and transmission lines?

Terrestrial Resources
Proposed Studies: Plants

Studies will be designed to gather information for accurate evaluation of how the Project will affect terrestrial resources.

Study topics:

- Refining existing vegetation mapping
- Conducting a timber stand survey in areas not previously surveyed
- Conducting a sensitive plant survey to produce a Biological Evaluation for Plants
- Conducting an invasive plant survey (concurrent with sensitive plant survey)
- Conducting wetland delineations
  - The wetland survey will include a detailed survey of Project activity areas and a general survey of the larger Project area.

Terrestrial Resources
Proposed Studies: Wildlife

Study topics:

- Quantifying the distribution and abundance of target wildlife species during key seasons of activity in the Project area
  - Documenting the species composition of avian communities, particularly landbirds, shorebirds, and waterbird
  - Classifying and mapping wildlife habitat in the Project area in conjunction with the Botanical Resources Study
- Conducting bear denning survey

Other Issues and Comments

??????????????

Recreational and Visual Resources

Recreational and Visual Resources

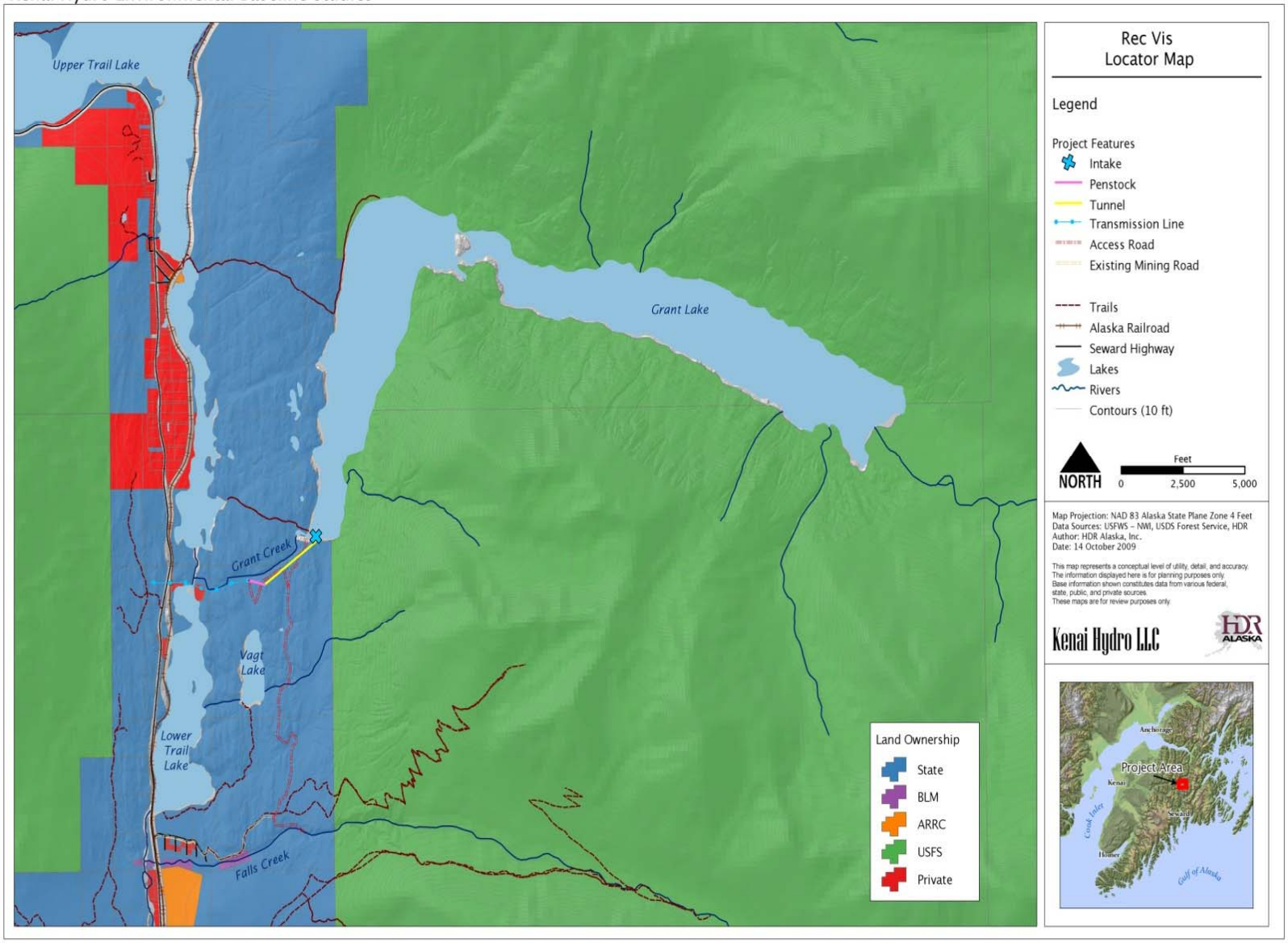
Existing Information:

- Previous studies and agency surveys
- ADNR, KPB, AEIDC, APA, USFS, ADF&G
- Summarized in PAD

Recreational and Visual Resources: Land Use

- **USFS Land Use Designation** (USFS Plan)
  - Most of Project area watershed is on USFS land
  - Grant Lake area (within FS boundaries) is Fish, Wildlife, and Recreation Prescription
  - East end of Grant Lake is Backcountry Prescription
- **State lands** on either side of Trail Lakes
  - includes locations of tunnel, penstock, powerhouse, access roads, and transmission line
- **KPB** has selected lands between Grant Lake and Upper Trail Lake
  - Use to be determined by KPB
- **Private property** in Moose Pass, and along shores of Upper and Lower Trail Lakes

Kenai Hydro Environmental Baseline Studies



Project Area Land Ownership

Recreational and Visual Resources: Recreation

- **Trails**
  - Iditarod National Historic Trail traverses the Project area
  - Grant Lake Trail, Falls Creek Road, Vagt Lake Trail, and Crown Point Mine Road and Trail
- **Access**
  - Boat in summer
  - Snowmachine or cross-country ski in winter
  - No developed trailhead or signs
- **Use Level –** currently, both summer and winter use is light

Falls Creek Area Hiking Trail

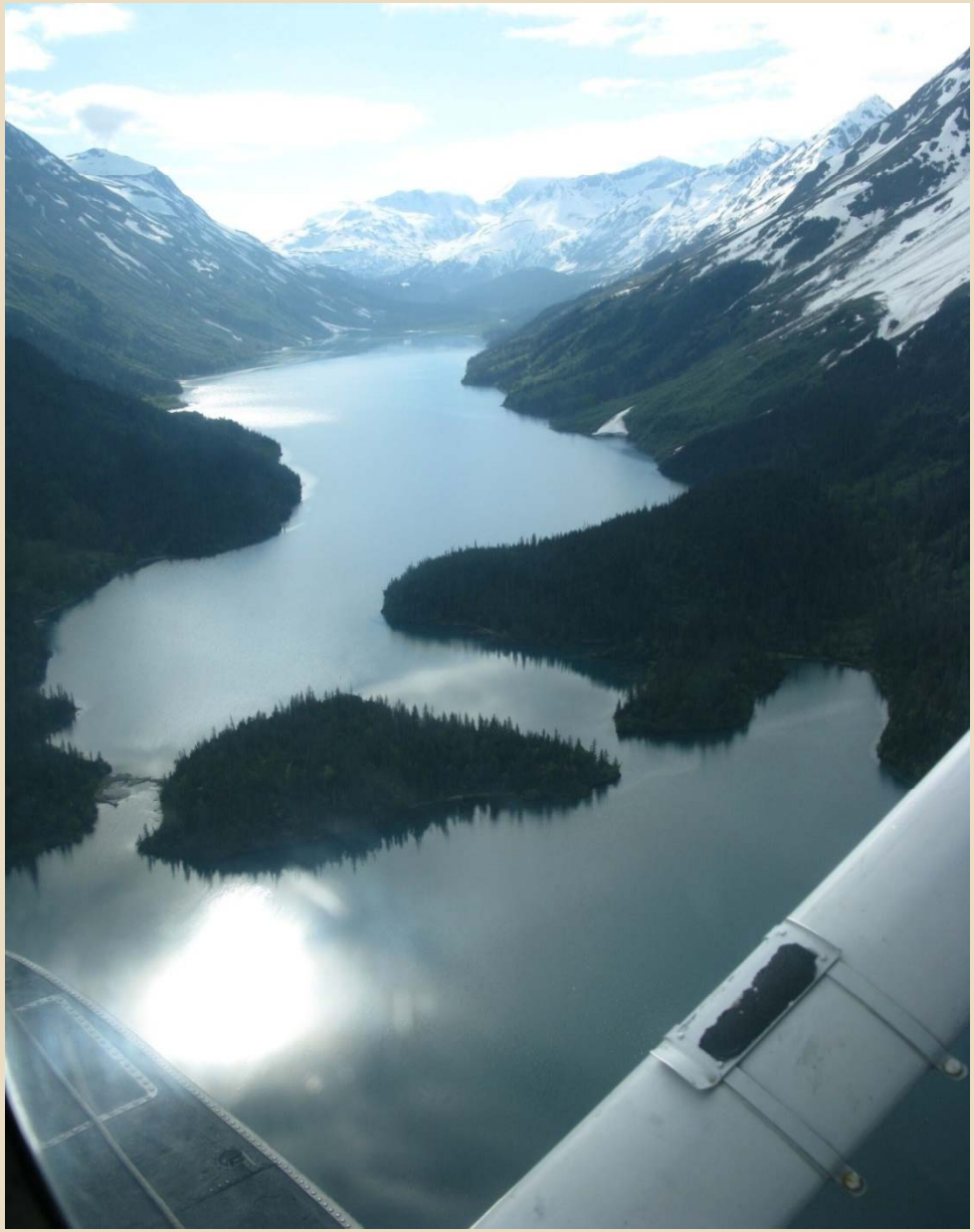
Recreational and Visual Resources: Recreation

- **Hunting and Fishing**
  - No game fish in Grant Lake
  - Some hunting and fishing in area
- **Mining**
  - Abandoned mine in the area
  - Active mining claims near Falls Creek
  - Area designated for mining use with approved plan near Falls Creek Road
- **Access Type**
  - Motorized travel in winter permitted, except in Backcountry area where only helicopters are approved
  - Helicopter use permitted all year

Recreational and Visual Resources: Visual and Aesthetics

- Scenic designation by USFS
  - Scenic Integrity Values are "moderate" except in eastern Backcountry Prescription area where values are "high"
- Scenic features described by ADNR
  - Waterfall at the outlet of Grant Lake
  - High mountain walls surround lake on east shore
- Visibility
  - Project area not visible from Seward Highway, ARRC line, or other easily accessible vantage points

Cascade Below Outlet of Grant Lake



Grant Lake Looking East to Backcountry

Recreational and Visual Resources Issues

- What are the potential effects of increased water level fluctuation in Grant Lake?
- What are the potential effects of changes in flow in Grant Creek and Falls Creek?
- What are the potential effects of construction of the intake, sluiceway, penstock, and powerhouse?
- What are the potential effects on recreation if the distribution and/or abundance of fish changes?
- What are the potential effects of construction and maintenance of access roads and transmission lines?

Recreation and Visual Resources Proposed Studies

- Studies will be planned to gather information for accurate evaluation of how the Project will affect recreational and visual resources
- Study Topics
  - Determine level of recreational use, and predict trends
  - To understand public use and perception of recreational opportunities
  - To determine recreational opportunities in terms of the USFS Recreational Opportunity Spectrum (ROS) and other designations as defined by the Chugach National Forest Plan (2005)
  - To determine the visual quality of the Project area in terms of the USFS Scenic Integrity Values
  - To understand public perception of the visual and aesthetic quality of the area

Other Issues and Comments

??????????????

CULTURAL RESOURCES

Cultural Resources

Existing information:

- Thirteen previous cultural resource surveys in general project area
- AEIDC, APA, USFS, State Historic Preservation Office (SHPO)
- Summarized in PAD

Cultural Resources

- Kenai Peninsula occupied prehistorically and historically by Eskimo and Dena'ina Athapaskan groups.
- Historic mining, logging, and settlement in Project area.
- Nine historic properties in Project area; several on the shores of Grant Lake.
- One site determined eligible for listing in the NRHP: the Solars Sawmill on Grant Lake at head of Grant Creek.
- No prehistoric archaeological sites recorded in Project area.

Cultural Resources Issues

- Are there any cultural sites that may be affected by Project activity, construction, or operation?
- Are there any cultural sites that may be affected by the construction and maintenance of access roads and transmission lines?
- Are there any cultural sites that may be affected by increased lake level fluctuation?
- Do subsistence activities occur in the Project area and will there be any effects on subsistence?

Cultural Resources
Proposed Studies

The Project must meet the requirements of the National Historic Preservation Act and consult with tribal entities with interest in the Project.

Study topics:

- Determining if historic properties are present in the proposed project Area of Potential Effect (APE)
- Determining if the Project will have an effect on identified historic properties (those cultural resources evaluated and recommended eligible for listing in the NRHP)

Cultural Resources
Proposed Studies

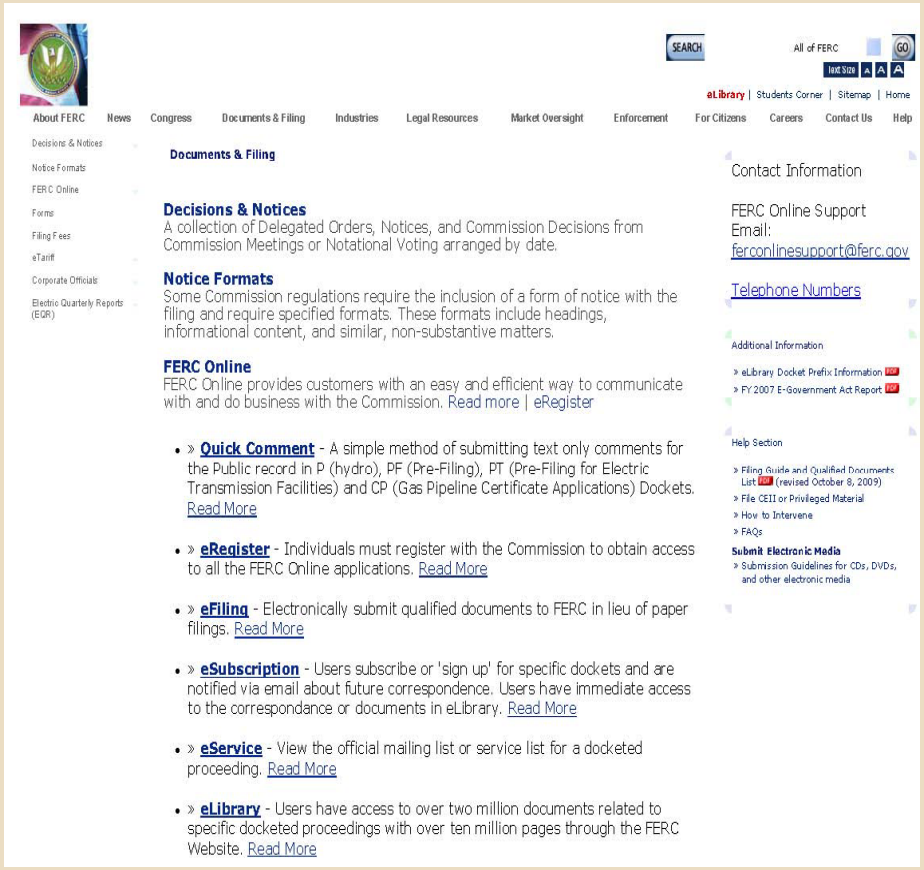
Study topics continued:

- Determining if additional investigations are necessary for evaluation historic properties, and determining a recommendation on potential mitigation and consultation strategies in resolving any possible adverse effects
- Determining if the Project will have an effect on either sites of cultural significance or subsistence activity

Other Issues and Comments

??????????????

Filing Comments with FERC Use P-13211 and P-13212



- FERC e-filing at www.ferc.gov
- Three ways to comment:
  - Written correspondence
  - Electronic "Quick Comment" [limited to 6,000 characters]
  - Register on ferc.gov to e-file longer documents
- Copy comments to applicant
- Questions?
  - FERC's Project Manager is Joe Adamson (joseph.adamson@ferc.gov)

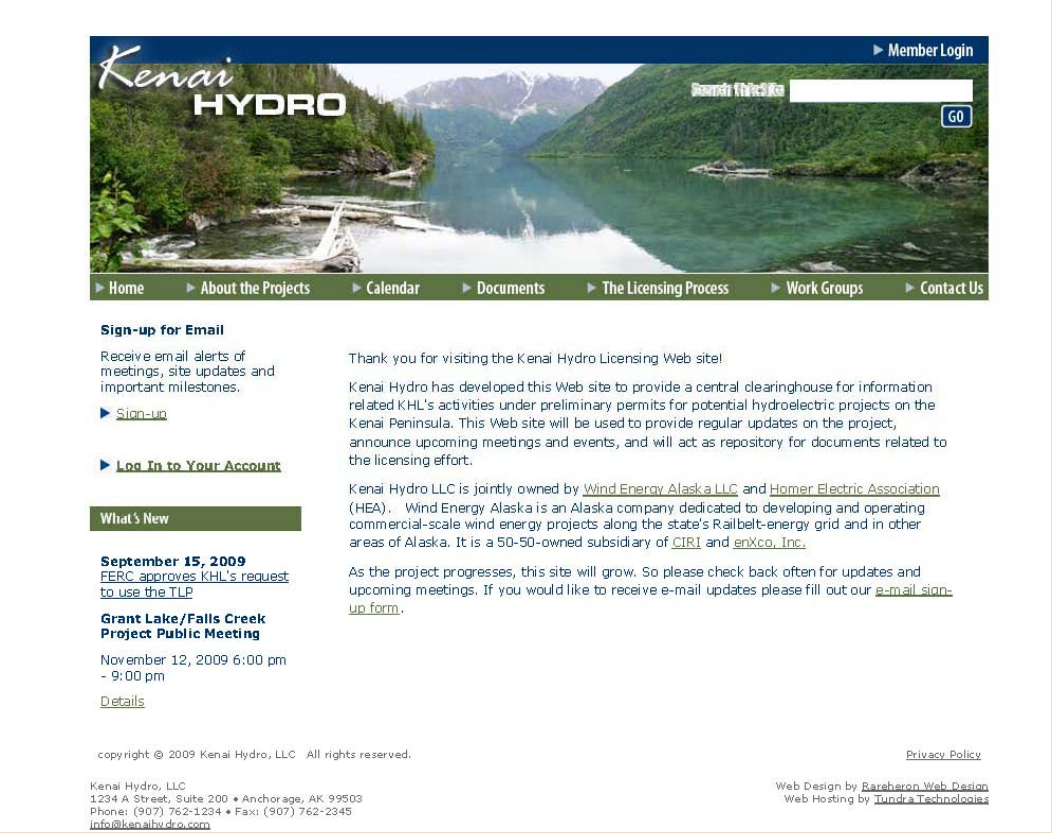
Tracking Project Progress and Comments

Kenai Hydro, LLC website

(www.kenaihydro.com)

FERC E-Subscription Service

(www.ferc.gov)



Thank You!

- Comments and Questions?