



# SUSITNA-WATANA HYDROELECTRIC PROJECT

## Fish and Aquatic Resources Technical Work Group Meeting 1st Quarter 2013

March 26, 2013

# First Quarter 2013 Activities

RSP Section	RSP Title	1 <sup>st</sup> Quarter 2013 Activity
9.5	Fish Distribution and Abundance Upper River	Implementation Plan filed, Field planning
9.6	FDA Middle and Lower River	Implementation Plan filed, Field planning
9.7	Salmon Escapement	Field planning
9.8	River Productivity	Implementation Plan Filed, Field Planning
9.9	Habitat Characterization	Remote habitat mapping completed
9.10	Future Reservoir and Entrainment	No activity
9.11	Fish Passage Feasibility	Kick off meeting, compiling existing data
9.12	Fish Passage Barriers Middle and Upper River	FERC SPD modifications, Field Planning
9.13	Access, Alignment, Transmission and Construction Area	No activity
9.14	Genetic Baseline	Development of Operational Plan, Field Planning
9.15	Harvest	No activity
9.16	Eulachon Run Timing, Distribution, and Spawning	Field Planning
9.17	Cook Inlet Beluga Whales	Field Planning

## FERC Study Plan Determination

- 9 of the 13 F&A studies were approved by FERC in February 1, 2013 Study Plan Determination (SPD).
- FERC delayed SPD on 4 F&A studies until April 1, 2013:
  - 9.5 Fish Distribution and Abundance Upper River
  - 9.6 Fish Distribution and Abundance Middle and Lower River
  - 9.8 River Productivity
  - 9.9 Habitat Characterization

# FERC Study Plan Determination, February 1, 2013

- 5 F&A studies were approved with no modifications:
  - 9.11 – Fish Passage Feasibility at Watana Dam
  - 9.13 – Aquatic Resources Study within Access Alignment, Transmission Alignment, and Construction Area
  - 9.15 - Analysis of Fish Harvest in and Downstream of the Susitna-Watana Hydroelectric Project Area
  - 9.16 – Eulachon Run Timing, Distribution, and Spawning in the Susitna River
  - 9.17- Cook Inlet Beluga Whale

# FERC Study Plan Determination, Feb. 1, 2013

- 4 F&A studies were approved with recommended modifications:

9.7- Salmon Escapement

9.10 – The Future Watana Reservoir Fish Community  
and Risk of Entrainment

9.12 – Study of Fish Passage Barriers in the Middle and  
Upper Susitna River

9.14 – Genetic Baseline

## Status of FERC Study Plan Determination

- 2 F&A studies that were approved by FERC February 1, 2013 are being disputed by NMFS
  - 9.7 - Fish Escapement
  - 9.11 - Fish Passage
- Dispute Hearing April 3, 2013

# RSP 9.5 FDAUP and 9.6 FDAML

- Site selection complete
- Field preparation and permitting
- Equipment procurement
- Golder Assoc. added to support Lower River sampling effort
- Second winter field trip completed
- Early life history sampling begins late April



# RSP 9.7 Salmon Escapement

2012 Draft Report submitted to FERC January 31, 2013

2012 Study Results presented:

- February 8, 2013 Agency Meeting, and
- February 15, 2013 Technical Workgroup Meeting

FERC Study Determination accepted with modifications



# RSP 9.7 Salmon Escapement

## 2013 Study Highlights and FERC Study Plan Determination

- All five species of salmon to be radio-tagged, again
- Extend operation of Curry fishwheel through September
- Add a fishwheel near Devils Canyon to tag Chinook
- Refine sonar methods to detect spawning in turbid water
- Assess the feasibility of using a weir or sonar near Watana dam site to provide fish counts



# RSP 9.8 River Productivity Study

- Implementation Plan refinements:
  - **Study Site Selection:** station selected for Lower Susitna River segment (Trapper/Birch creeks area)
  - **Adult emergence trap sampling:** added to sampling a slow-water site at each station
  - Final IP filed with FERC March 1, 2013.

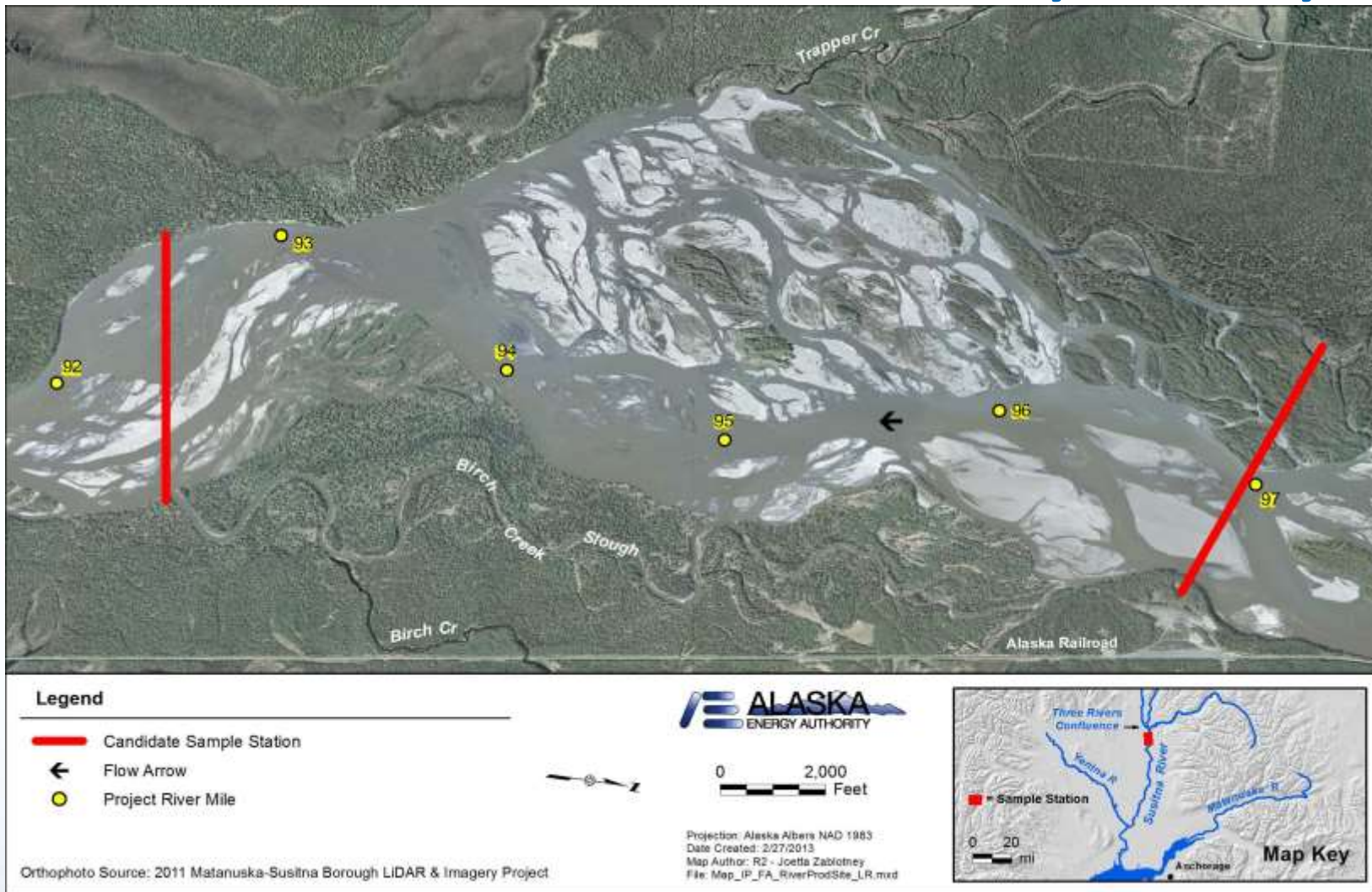


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# RSP 9.8 River Productivity Study

- Additional coordination with the Water Quality Study at Focus Areas
  - TOC, DOC, and *Chl-a* measurements
  - Will review Water Quality Model results for possible study revisions in 2014
- Testing of drift sampling under ice as part of Winter Pilot Studies
  - Drift is the major contributor to colonization
  - May provide information on winter colonization potential



# RSP 9.11 Fish Passage Feasibility Study

The study will explore various alternatives in support of three basic strategies related to fish passage:

1. proposed Project without fish passage,
2. integration of upstream and downstream passage features into the current dam design, and
3. the retrofit of upstream and downstream fish passage features to a dam designed without passage.



# RSP 9.11 Fish Passage Feasibility Study

- Kickoff meeting, February 22, 2013
- Fish Passage Technical Team
  - Technical reps and passage experts from ADF&G, NMFS, NOAA, AEA
- “Retrofit”
- Results expectation, multiple passage alternatives
- Fish Passage Technical Team
  - Technical reps and passage experts from ADF&G, NMFS, NOAA, AEA
- Workshop #1, April 9-10, 2013
  - Review of existing physical and ecological information



# RSP 9.12 Fish Passage Barriers Study

Goal: Evaluate potential effects of Project-induced changes in flow and water surface elevation on free access of fish into, within, and out of suitable habitats in the Upper and Middle Susitna River.





# RSP 9.12 FERC SPD Modifications

FERC recommended that “**AEA prepare and file a detailed plan no later than June 15, 2013**, that provides additional information on implementation of the study within the Middle River study area. The detailed plan will include:

- Documentation draft plan and schedule were provided to FWS, NMFS, and any other TWG participants at least 30 days prior to the due date of the plan and schedule (allowing at least 15 days for comment)
- Incorporation of FWS’, NMFS’, or other TWG participants’ comments
- Explanation for why any of FWS’, NMFS’, or other TWG participants’ comments are not incorporated into the final plan

## 9.12 Detailed Plan Development Schedule continued

- March 26: TWG Fish and Aquatics Meeting
- May 15 (or sooner): AEA submits draft Detailed Plan to TWG for Comment
- May 30 (or sooner): Licensing Participants submit comments to AEA
- May 30 – June 10: AEA revises Draft Plan to include agency comments
- June 15: AEA submits final Detailed Plan to FERC

## RSP 9.12 FERC SPD Key Element:

A plan for the assessment of stream flows during the time salmon are documented to successfully pass upstream of Devils Canyon

**SPD suggests:** “...assess the actual discharge conditions occurring at the streamflow gages closest to Devils Canyon and near the dam site during the time periods when salmon are documented to successfully pass upstream of the passage impediment (via radio-tagging as set forth in study 9.7, Salmon Escapement)”.



# RSP 9.12 FERC SPD Key Element:

A schedule for consultation with the TWG to identify target fish species, passage criteria, and selection of fish barrier study sites.

**SPD Requires:** A schedule of consultation with the TWG in the detailed plan



# RSP 9.12 FERC SPD Key Element:

A description of how the effects of load-following during the winter ice-cover period on salmonid juvenile and fry passage from mainstem into off-channel habitats would be evaluated.

**SPD suggests:** “...the intensive, multidisciplinary study elements that would be implemented within the focus areas would provide some information to evaluate fish passage conditions between the mainstem and off-channel habitats under ice cover and load-following operations.”



# RSP 9.12 FERC SPD Key Element:

A description of the specific instream flow modeling approaches that would be applied at the off-channel and tributary delta locations selected for the depth barrier analysis, including study sites for the open-water period for adult and juvenile fish, and the ice-cover period for juvenile fish.

**SPD suggests:** “...evaluate tributary mouths and off-channel habitat entrances within Middle River focus areas to determine if velocity barriers to juvenile salmonids and particularly salmonid fry would be created by modifications to the flow regime under proposed project operations.”

“...the intensive, multidisciplinary study elements that would be implemented within the focus areas would provide some information to evaluate fish passage conditions between the mainstem and off-channel habitats under ice cover and load-following operations.”



# RSP 9.14 Genetic Baseline Study

## FERC SPD Modifications:

- Include an “operational plan” to address comments
- Provide schedule for the 2012 report results (preliminary genetics studies)
- Describe in 2012 report the criteria to determine whether sufficient genetic uniqueness to estimate % MR and UR fish in LR

# RSP 9.14 Genetic Baseline Study

## Schedule

- Draft Operational Plan to agencies: **March 31**
- Allow 15 days for comments
- File final Operational Plan with FERC: **April 30**