

Susitna-Watana Hydroelectric Project Document

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**Susitna-Watana Hydroelectric Project
(FERC No. 14241)**

**The Future Watana Reservoir Fish Community and
Risk of Entrainment Study
Study Plan Section 9.10**

**Initial Study Report
Part C: Executive Summary and Section 7**

Prepared for

Alaska Energy Authority



SUSITNA-WATANA HYDRO

Clean, reliable energy for the next 100 years.

Prepared by

R2 Resource Consultants, Inc.

June 2014

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EXECUTIVE SUMMARY

The Future Watana Reservoir Fish Community and Risk of Entrainment Study 9.10	
Purpose	The purpose of this study is to predict the fish community that will develop in the Project reservoir and identify the effects of the Project on the future reservoir fish community.
Status	This study is scheduled for implementation in 2015.
Study Components	<p>Major study components include:</p> <ul style="list-style-type: none"> • Development of scenarios for anticipated daily and seasonal changes in reservoir habitat characteristics, based on the alternative Project operating scenarios developed by Project engineers. • Development of alternative potential fish community structure. • Development of alternative fisheries management scenarios. • A desktop potential fish entrainment analysis.
2013 Variances	This study was not implemented in 2013 (RSP Section 9.10.10). As noted in the Study Plan, this study is largely a desktop analysis that is to be completed as information from other studies becomes available. These other studies are continuing, and AEA will meet study objectives by completing this study as described in the Study Plan.
Steps to Complete the Study	<p>AEA will complete a desktop analysis of anticipated daily and seasonal changes in reservoir habitat, future reservoir fish communities, the potential for entrainment and impingement of reservoir fish species and potential management options for a future reservoir fishery as data become available from other studies in accordance with the Study Plan.</p> <p>AEA is not planning any efforts under this study in 2014. AEA plans to complete all remaining data collection and analysis for this desktop study in 2015.</p>
Highlighted Results and Achievements	No results specific to this study have been obtained as of this ISR.

7. COMPLETING THE STUDY

7.1. Proposed Methodologies and Modifications

To complete this study, AEA will implement the methods in the Study Plan, with no modifications. To summarize these activities, AEA will:

- Develop scenarios of anticipated daily and seasonal changes in reservoir habitat characteristics corresponding to alternative Project operating scenarios through evaluation of lacustrine zones, water temperature and turbidity. (RSP Section 9.10.4.1).
- Develop scenarios for future reservoir fish communities based on current fish species composition upstream of the proposed dam site, anticipated reservoir habitat characteristics, and management practices acceptable to ADF&G through defining the existing fish community, identifying potential use of lacustrine habitat, identifying potential invasive species and identifying the potential for an anadromous versus land-locked salmon-based community. (RSP Section 9.10.4.2).
- Characterize potential management options for a future reservoir fishery. (RSP Section 9.10.4.3).
- Conduct a desktop analysis of the potential for entrainment and impingement of fish species inhabiting the proposed reservoir, through understanding alternative Project designs and operating scenarios, conducting a literature review focusing on deep water intakes and cold water reservoirs, and synthesizing the information to analyze the potential vulnerability of target species. (RSP Section 9.10.4.4).

7.1.1. Decision Points from Study Plan

There were no decision points in the FERC-approved Study Plan to be evaluated for this study following the completion of 2013 work.

7.1.2. Modifications to Study Plan

No modifications to the Study Plan are needed to complete the study and meet Study Plan objectives.

7.2. Schedule

In general, the schedule for completing the FERC-approved Study Plan is dependent upon several factors, including Project funding levels authorized by the Alaska State Legislature, availability of required data inputs from one individual study to another, unexpected weather delays, the short duration of the summer field season in Alaska, and other events outside the reasonable control of AEA. For these reasons, the Study Plan implementation schedule is subject to change, although at this time AEA expects to complete the FERC-approved Study

Plan through the filing of the Updated Study Report (USR) by February 1, 2016, in accordance with the ILP schedule issued by FERC on January 28, 2014.

AEA is not planning any efforts under this study in 2014. AEA plans to complete all remaining data collection and analysis for this desktop study in 2015.

7.3. Conclusion

Implementation of the Future Watana Reservoir Fish Community and Risk of Entrainment Study is planned for 2015 with no proposed modifications to FERC-approved methods. The study is interrelated with five other AEA Project studies: Water Quality (RSP Section 5.6), operations modeling reported as part of the Instream Flow Study (RSP Section 8.5), the Upper River Fish Distribution and Abundance Study (RSP Section 9.5), Fish Passage at Watana Dam (RSP Section 9.11), and Recreation Resources (RSP Section 12.5). AEA expects the approved Study Plan objectives of Study 9.10 will be fully achieved and reported in the USR.