STATE OF ALASKA
Department of Fish and Game
Division of Commercial Fisheries
1255 West 8th Street
Juneau, Alaska 99811-5526

Request For Proposals

RFP **2013-1100-1020**
Date of Issue: **May 7, 2012**

Title and Purpose of RFP:

Interactions of Wild and Hatchery Pink and Chum Salmon in Prince William Sound and Southeast Alaska

Offerors Are Not Required To Return This Form.

Important Notice: If you received this solicitation from the State of Alaska's "Online Public Notice" web site, you must register with the procurement officer listed in this document to receive subsequent amendments. Failure to contact the procurement officer may result in the rejection of your offer.

Tom Taylor
Procurement Officer
Department of Fish and Game
Division of Administrative Services
1255 West 8th Street
P.O. Box 115526
Juneau, Alaska 99811-5526
907-465-6177
907-465-6181
Tom.taylor@alaska.gov

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SECTION ONE
INTRODUCTION AND INSTRUCTIONS

1.01 Return Mailing Address, Contact Person, Telephone, Fax Numbers and Deadline for Receipt of Proposals

Offerors must submit four copies of their proposal, in writing, to the procurement officer in a sealed envelope. It must be addressed as follows:

Department of *Fish and Game*
Division of *Administrative Services*
Attention: *Tom Taylor*
Request for Proposal (RFP) Number: *2013-1100-1020*
Project name: Interactions of Wild and Hatchery Pink and Chum Salmon in Prince William Sound and Southeast Alaska
1255 West 8th Street
P.O. Box 115526
Juneau, Alaska 99811-5526

Proposals must be received no later than 1:30 P.M., Alaska Time on **June 12, 2012**. Fax proposals are not acceptable. Oral proposals are not acceptable. Electronic proposals are not acceptable.

An offeror's failure to submit its proposal prior to the deadline will cause the proposal to be disqualified. Late proposals or amendments will not be opened or accepted for evaluation.

PROCUREMENT OFFICER: ***Tom Taylor*** – PHONE **907*-465-6177*** - FAX ***907-465-6181*** - TDD ***800-478-3648***

1.02 Contract Term and Work Schedule

The contract term and work schedule set out herein represents the State of Alaska's best estimate of the schedule that will be followed. If a component of this schedule, such as the opening date, is delayed, the rest of the schedule will be shifted accordingly.

It is anticipated that this project will include three years of data collection (2013 – 1017). The anticipated length of the contract for Phase One will be from the date of award, approximately ***July 1, 2012*** until completion, approximately ***March 21, 2016***.

After completion of two full seasons of data collection (2013 and 2014) and receipt of the annual progress reports, the Department will review the activity/progress to determine the benefit and viability of continuation of the project beyond that point.

The contract may be amended/extended to include additional work for future phases.

Unless otherwise provided in this RFP, the State and the successful offeror/contractor agree: (1) that any holding over of the contract excluding any exercised renewal options, will be considered as a month-to-month extension, and all other terms and conditions shall remain in full force and effect and (2) to provide written notice to the other party of the intent to cancel such month-to-month extension at least 30-days before the desired date of cancellation.

The approximate contract schedule is as follows:

- Issue RFP ***May 7, 2012***,
- Deadline for Receipt of Proposals ***June 12, 2012***,
- Proposal Evaluation Committee complete evaluation by ***June 26, 2012***,
- State of Alaska issues Notice of Intent to Award a Contract ***June 26, 2012***,
- State of Alaska issues contract ***July 9, 2012***,
- Contract start ***July 9, 2012***,
- First contractor work period ***July 9, 2012*** to ***December 31, 2014***,
- Department conducts project assessment to determine viability of continuation, ***January 15, 2015***
- Contractor submits first draft ***February 15, 2016***,
- First draft review by state ***February 16, 2016***, to ***March 16, 2016***
- Draft back to contractor for revision as required ***March 16, 2016***, Contractor submits final report ***April 30, 2016.***

1.03 Purpose of the RFP

The Department of Fish and Game, Division of Commercial Fisheries, is soliciting proposals from entities interested in conducting a research program to address interactions of Wild and Hatchery Pink and Chum Salmon in Prince William Sound and Southeast Alaska

1.04 Budget

Department of ***Fish and Game***, Division of ***Commercial Fisheries***, estimates a budget of $4.5 million dollars for completion Phase One of this project. Proposals priced at more than $4.5 million dollars may be considered non-responsive.

1.05 Location of Work

The locations the work is to be performed, completed and managed are at sites throughout the State.

The contractor should include in their price proposal: transportation, lodging, and per diem costs sufficient to pay for ***all*** person(s) to make ***any number of*** trip(s) to **project sites**.

The state **WILL NOT** provide workspace for the contractor. The contractor must provide its own workspace.

By signature on their proposal, the offeror certifies that:

(a) all services provided under this contract by the contractor and all subcontractors shall be performed in the United States; and

(b) the offeror is not established and headquartered or incorporated and headquartered in a country recognized as Tier 3 in the most recent United States Department of State's Trafficking in Persons Report.

The most recent United States Department of State's Trafficking in Persons Report can be found at the following website: http://www.state.gov/g/tip/

Failure to comply with (a) or (b) of this requirement will cause the state to reject the proposal as non-responsive, or cancel the contract.

1.06 Assistance to Offerors with a Disability

Offerors with a disability may receive accommodation regarding the means of communicating this RFP or participating in the procurement process. For more information, contact the procurement officer no later than ten days prior to the deadline for receipt of proposals.

1.07 Required Review

Offerors should carefully review this solicitation for defects and questionable or objectionable material. Comments concerning defects and objectionable material must be made in writing and received by the procurement officer at least ten days before the proposal opening. This will allow issuance of any necessary amendments. It will also help prevent the opening of a defective solicitation and exposure of offeror's proposals upon which award could not be made. Protests based on any omission or error, or on the content of the solicitation, will be disallowed if these faults have not been brought to the attention of the procurement officer, in writing, at least ten days before the time set for opening.

1.08 Questions Received Prior to Opening of Proposals

All questions must be in writing and directed to the issuing office, addressed to the procurement officer. The interested party must confirm telephone conversations in writing.

Two types of questions generally arise. One may be answered by directing the questioner to a specific section of the RFP. These questions may be answered over the telephone. Other questions may be more complex and may require a written amendment to the RFP. The procurement officer will make that decision.

1.09 Amendments

If an amendment is issued, it will be provided to all who were mailed a copy of the RFP and to those who have registered with the procurement officer as having downloaded the RFP from the State of Alaska Online Public Notice web site.

1.10 Alternate Proposals

Offerors may only submit one proposal for evaluation.

In accordance with 2 AAC 12.830 alternate proposals (proposals that offer something different than what is asked for) will be rejected.

1.11 Right of Rejection

Offerors must comply with all of the terms of the RFP, the State Procurement Code (AS 36.30), and all applicable local, state, and federal laws, codes, and regulations. The procurement officer may reject any proposal that does not comply with all of the material and substantial terms, conditions, and performance requirements of the RFP.

Offerors may not qualify the proposal nor restrict the rights of the state. If an offeror does so, the procurement officer may determine the proposal to be a non-responsive counter-offer and the proposal may be rejected.

Minor informalities that:

- do not affect responsiveness;
- are merely a matter of form or format;
- do not change the relative standing or otherwise prejudice other offers;
- do not change the meaning or scope of the RFP;
- are trivial, negligible, or immaterial in nature;
- do not reflect a material change in the work; or
- do not constitute a substantial reservation against a requirement or provision;

may be waived by the procurement officer.

The state reserves the right to refrain from making an award if it determines that to be in its best interest. **A proposal from a debarred or suspended offeror shall be rejected.**

1.12 State Not Responsible for Preparation Costs

The state will not pay any cost associated with the preparation, submittal, presentation, or evaluation of any proposal.

1.13 Disclosure of Proposal Contents

All proposals and other material submitted become the property of the State of Alaska and may be returned only at the state's option. AS 40.25.110 requires public records to be open to reasonable inspection. All proposal information, including detailed price and cost information, will be held in confidence during the evaluation process and prior to the time a Notice of Intent to Award is issued. Thereafter, proposals will become public information.

Trade secrets and other proprietary data contained in proposals may be held confidential if the offeror requests, in writing, that the procurement officer does so, and if the procurement officer agrees, in writing, to do so. Material considered confidential by the offeror must be clearly identified and the offeror must include a brief statement that sets out the reasons for confidentiality.

1.14 Subcontractors

Subcontractors may be used to perform work under this contract. If an offeror intends to use subcontractors, the offeror must identify in the proposal the names of the subcontractors and the portions of the work the subcontractors will perform.

If a proposal with subcontractors is selected, the offeror must provide the following information concerning each prospective subcontractor within five working days from the date of the state's request:

(a) complete name of the subcontractor;

(b) complete address of the subcontractor;

(c) type of work the subcontractor will be performing;

(d) percentage of work the subcontractor will be providing;

(e) evidence that the subcontractor holds a valid Alaska business license; and

(f) a written statement, signed by each proposed subcontractor that clearly verifies that the subcontractor is committed to render the services required by the contract.

An offeror's failure to provide this information, within the time set, may cause the state to consider their proposal non-responsive and reject it. The substitution of one subcontractor for another may be made only at the discretion and prior written approval of the project director.

1.15 Joint Ventures

Joint ventures will not be allowed.

1.16 Offeror's Certification

By signature on the proposal, offerors certify that they comply with the following:

(a) the laws of the State of Alaska;

(b) the applicable portion of the Federal Civil Rights Act of 1964;

(c) the Equal Employment Opportunity Act and the regulations issued thereunder by the federal government;

(d) the Americans with Disabilities Act of 1990 and the regulations issued thereunder by the federal government;

(e) all terms and conditions set out in this RFP;

(f) a condition that the proposal submitted was independently arrived at, without collusion, under penalty of perjury;

(g) that the offers will remain open and valid for at least 90 days; and

(h) that programs, services, and activities provided to the general public under the resulting contract conform with the Americans with Disabilities Act of 1990, and the regulations issued thereunder by the federal government.

If any offeror fails to comply with [a] through [h] of this paragraph, the state reserves the right to disregard the proposal, terminate the contract, or consider the contractor in default.

1.17 Conflict of Interest

Each proposal shall include a statement indicating whether or not the firm or any individuals working on the contract has a possible conflict of interest (e.g., currently employed by the State of Alaska or formerly employed by the State of Alaska within the past two years) and, if so, the nature of that conflict. The Commissioner, Department of Fish and Game, reserves the right to **consider a proposal non-responsive and reject it or** cancel the award if any interest disclosed from any source could either give the appearance of a conflict or cause speculation as to the objectivity of the program to be developed by the offeror. The Commissioner's determination regarding any questions of conflict of interest shall be final.

1.18 Right to Inspect Place of Business

At reasonable times, the state may inspect those areas of the contractor's place of business that are related to the performance of a contract. If the state makes such an inspection, the contractor must provide reasonable assistance.

1.19 Solicitation Advertising

Public notice has been provided in accordance with 2 AAC 12.220.

1.20 News Releases

News releases related to this RFP will not be made without prior approval of the project director.

1.21 Assignment

Per 2 AAC 12.480, the contractor may not transfer or assign any portion of the contract without prior written approval from the procurement officer.

1.22 Disputes

Any dispute arising out of this agreement will be resolved under the laws of the State of Alaska. Any appeal of an administrative order or any original action to enforce any provision of this agreement or to obtain relief from or remedy in connection with this agreement may be brought only in the Superior Court for the State of Alaska.

1.23 Severability

If any provision of the contract or agreement is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and provisions will not be affected; and, the rights and obligations of the parties will be construed and enforced as if the contract did not contain the particular provision held to be invalid.

1.24 Federal Requirements

The offeror must identify all known federal requirements that apply to the proposal, the evaluation, or the contract.

SECTION TWO
STANDARD PROPOSAL INFORMATION

2.01 Authorized Signature

All proposals must be signed by an individual authorized to bind the offeror to the provisions of the RFP. Proposals must remain open and valid for at least 90-days from the opening date.

2.02 Pre-proposal Conference

There will be no Pre-Proposal Conference.

2.03 Site Inspection

The state may conduct on-site visits to evaluate the offeror's capacity to perform the contract. An offeror must agree, at risk of being found non-responsive and having its proposal rejected, to provide the state reasonable access to relevant portions of its work sites. Individuals designated by the procurement officer at the state's expense will make site inspection.

2.04 Amendments to Proposals

Amendments to or withdrawals of proposals will only be allowed if acceptable requests are received prior to the deadline that is set for receipt of proposals. No amendments or withdrawals will be accepted after the deadline unless they are in response to the state's request in accordance with 2 AAC 12.290.

2.05 Supplemental Terms and Conditions

Proposals must comply with Section **1.11 Right of Rejection**. However, if the state fails to identify or detect supplemental terms or conditions that conflict with those contained in this RFP or that diminish the state's rights under any contract resulting from the RFP, the term(s) or condition(s) will be considered null and void. After award of contract:

a) if conflict arises between a supplemental term or condition included in the proposal and a term or condition of the RFP, the term or condition of the RFP will prevail; and

b) if the state's rights would be diminished as a result of application of a supplemental term or condition included in the proposal, the supplemental term or condition will be considered null and void.

2.06 Clarification of Offers

In order to determine if a proposal is reasonably susceptible for award, communications by the procurement officer or the proposal evaluation committee are permitted with an offeror to clarify uncertainties or eliminate confusion concerning the contents of a proposal. Clarifications may not result in a material or substantive change to the proposal. The evaluation by the procurement officer or the proposal evaluation committee may be adjusted as a result of a clarification under this section.

2.07 Discussions with Offerors

The state may conduct discussions with offerors in accordance with AS 36.30.240 and 2 AAC 12.290. The purpose of these discussions will be to ensure full understanding of the requirements of the RFP and proposal. Discussions will be limited to specific sections of the RFP or proposal identified by the procurement officer. Discussions will only be held with offerors who have submitted a proposal deemed reasonably susceptible for award by the procurement officer. Discussions, if held, will be after initial evaluation of proposals by the PEC. If modifications are made as a result of these discussions they will be put in writing. Following discussions, the procurement officer may set a time for best and final proposal submissions from those offerors with whom discussions were held. Proposals may be reevaluated after receipt of best and final proposal submissions.

If an offeror does not submit a best and final proposal or a notice of withdrawal, the offeror's immediate previous proposal is considered the offeror's best and final proposal.

Offerors with a disability needing accommodation should contact the procurement officer prior to the date set for discussions so that reasonable accommodation can be made. Any oral modification of a proposal must be reduced to writing by the offeror.

2.08 Prior Experience

No specific minimums have been set for this RFP.

2.09 Evaluation of Proposals

The procurement officer, or an evaluation committee made up of at least three state employees or public officials, will evaluate proposals. The evaluation will be based solely on the evaluation factors set out in Section SEVEN of this RFP.

After receipt of proposals, if there is a need for any substantial clarification or material change in the RFP, an amendment will be issued. The amendment will incorporate the clarification or change, and a new date and time established for new or amended proposals. Evaluations may be adjusted as a result of receiving new or amended proposals.

2.10 Vendor Tax ID

A valid Vendor Tax ID must be submitted to the issuing office with the proposal or within five days of the state's request.

2.11 F.O.B. Point

All goods purchased through this contract will be F.O.B. final destination. Unless specifically stated otherwise, all prices offered must include the delivery costs to any location within the State of Alaska.

2.12 Alaska Business License and Other Required Licenses

At the time the proposals are opened, all offerors must hold a valid Alaska business license and any necessary applicable professional licenses required by Alaska Statute. Proposals must be submitted under the name as appearing on the person's current Alaska business license in order to be considered responsive. Offerors should contact the Department of Commerce, Community and Economic Development, Division of Corporations, Business, and Professional Licensing, P. O. Box 110806, Juneau, Alaska 99811-0806, for information on these licenses. Offerors must submit evidence of a valid Alaska business license with the proposal. An offeror's failure to submit this evidence with the proposal will cause their proposal to be determined non-responsive. Acceptable evidence that the offeror possesses a valid Alaska business license may consist of any one of the following:

(a) copy of an Alaska business license with the correct NAICS code;

(b) certification on the proposal that the offeror has a valid Alaska business license and has included the license number in the proposal;

(c) a canceled check for the Alaska business license fee;

(d) a copy of the Alaska business license application with a receipt stamp from the state's occupational licensing office; or

(e) a sworn and notarized affidavit that the offeror has applied and paid for the Alaska business license.

You are not required to hold a valid Alaska business license at the time proposals are opened if you possess one of the following licenses and are offering services or supplies under that specific line of business:

- Fisheries business licenses issued by Alaska Department of Revenue or Alaska Department of Fish and Game.
- Liquor licenses issued by Alaska Department of Revenue for alcohol sales only.
- Insurance licenses issued by Alaska Department of Commerce, Community and Economic Development, Division of Insurance.
- Mining licenses issued by Alaska Department of Revenue.

2.13 Application of Preferences

Certain preferences apply to all contracts for professional services, regardless of their dollar value. The Alaska bidder, Alaska veteran, and Alaska Offeror Preferences are the most common preferences involved in the RFP process. Additional preferences that may apply to this procurement are listed below. Guides that contain excerpts from the relevant statutes and codes, explain when the preferences apply and provide examples of how to calculate the preferences are available at the Department of Administration, Division of General Services' web site:

http://doa.alaska.gov/dgs/policy.html

Alaska Products Preference - AS 36.30.332
Recycled Products Preference - AS 36.30.337
Local Agriculture and Fisheries Products Preference - AS 36.15.050
Employment Program Preference - AS 36.30.170(c)
Alaskans with Disability Preference - AS 36.30.170 (e)
Employers of People with Disabilities Preference - AS 36.30.170 (f)
Alaska Veteran's Preference - AS 36.30.175

The Division of Vocational Rehabilitation in the Department of Labor and Workforce Development keeps a list of qualified employment programs; a list of individuals who qualify as persons with a disability; and a list of persons who qualify as employers with 50 percent or more of their employees being disabled. A person must be on this list at the time the bid is opened in order to qualify for a preference under this section.

As evidence of an individual's or a business' right to a certain preference, the Division of Vocational Rehabilitation will issue a certification letter. To take advantage of the employment program preference, Alaskans with Disability Preference or Employers of People with Disabilities Preference described above, an individual or business must be on the appropriate Division of Vocational Rehabilitation list at the time the proposal is opened, and must provide the procurement officer a copy of their certification letter. Offerors must attach a copy of their certification letter to the proposal. The offeror's failure to provide the certification letter mentioned above with the proposal will cause the state to disallow the preference.

2.14 5 Percent Alaska Bidder Preference AS 36.30.170 & 2 AAC 12.260

An Alaska Bidder Preference of five percent will be applied prior to evaluation. The preference will be given to an offeror who:

(a) holds a current Alaska business license;

(b) submits a proposal for goods or services under the name on the Alaska business license;

(c) has maintained a place of business within the state staffed by the offeror, or an employee of the offeror, for a period of six months immediately preceding the date of the proposal;

(d) is incorporated or qualified to do business under the laws of the state, is a sole proprietorship and the proprietor is a resident of the state, is a limited liability company organized under AS 10.50 and all members are residents of the state, or is a partnership under AS 32.05 or AS 32.11 and all partners are residents of the state; and

(e) if a joint venture, is composed entirely of entities that qualify under (a)-(d) of this subsection.

Alaska Bidder Preference Affidavit
In order to receive the Alaska Bidder Preference, proposals must include a statement certifying that the offeror is eligible to receive the Alaska Bidder Preference.

2.15 5 Percent Alaska Veteran Preference AS 36.30.175

An Alaska Veteran Preference of five percent will be applied prior to evaluation. The preference will be given to an offeror who qualifies under AS 36.30.170 (b) as an Alaska bidder and is a:

(a) sole proprietorship owned by an Alaska veteran;

(b) partnership under AS 32.06 or AS 32.11 if a majority of the partners are Alaska veterans;

(c) limited liability company organized under AS 10.50 if a majority of the members are Alaska veterans; or

(d) corporation that is wholly owned by individuals and a majority of the individuals are Alaska veterans.

Alaska Veteran Preference Affidavit

In order to receive the Alaska Veteran Preference, proposals must include a statement certifying that the offeror is eligible to receive the Alaska Veteran Preference.

2.16 Formula Used to Convert Cost to Points AS 36.30.250 & 2 AAC 12.260

The distribution of points based on cost will be determined as set out in 2 AAC 12.260 (c). The lowest cost proposal will receive the maximum number of points allocated to cost. The point allocations for cost on the other proposals will be determined through the method set out below. In the generic example below, cost is weighted as 40% of the overall total score. The weighting of cost may be different in your particular RFP. See section SEVEN to determine the value, or weight of cost for this RFP.

EXAMPLE

Formula Used to Convert Cost to Points

[STEP 1]

List all proposal prices, adjusted where appropriate by the application of all applicable preferences.

Offeror #1 -	Non-Alaskan Offeror	$40,000
Offeror #2 -	Alaskan Offeror	$42,750
Offeror #3 -	Alaskan Offeror	$47,500

[STEP 2]

Convert cost to points using this formula.

$$\frac{[(\text{Price of Lowest Cost Proposal}) \times (\text{Maximum Points for Cost})]}{(\text{Cost of Each Higher Priced Proposal})} = \text{POINTS}$$

The RFP allotted 40% (40 points) of the total of 100 points for cost.

Offeror #1 receives 40 points.

The reason they receive that amount is because the lowest cost proposal, in this case $40,000, receives the maximum number of points allocated to cost, 40 points.

Offeror #2 receives 37.4 points.

$40,000 Lowest Cost	x	40 Max Points	=	1,600,000	÷	$42,750 Offeror #2 Adjusted By The Application Of All Applicable Preferences	=	37.4 Points

Offeror #3 receives 33.7 points.

$40,000 Lowest Cost	x	40 Max Points	=	1,600,000	÷	$47,500 Offeror #3 Adjusted By The Application Of All Applicable Preferences	=	33.7 Points

2.17 Alaska Offeror Preference AS 36.30.250 & 2 AAC 12.260

2 AAC 12.260(e) provides Alaska offerors a 10 percent overall evaluation point preference. Alaska bidders, as defined in AS 36.30.170(b), are eligible for the preference. This preference will be added to the overall evaluation score of each Alaskan offeror. Each Alaskan offeror will receive 10 percent of the total available points added to their evaluation score as a preference.

EXAMPLE

Alaska Offeror Preference

[STEP 1]

Determine the number of points available to Alaskan offerors under the preference.

Total number of points available - 100 Points

100 Total Points Available	**x**	**10%** Alaskan Offerors Percentage Preference	**=**	**10** Number of Points Given to Alaskan Offerors Under the Preference

[STEP 2]

Add the preference points to the Alaskan offers. There are three offerors: Offeror #1, Offeror #2, and Offeror #3. Offeror #2 and Offeror #3 are eligible for the Alaska Offeror Preference. For the purpose of this example presume that all of the proposals have been completely evaluated based on the evaluation criteria in the RFP. Their scores at this point are:

Offeror #1 - 89 points
Offeror #2 - 80 points
Offeror #3 - 88 points

Offeror #2 and Offeror #3 each receive 10 additional points. The final scores for all of the offers are:

*Offeror #1 - **89 points***
*Offeror #2 - **90 points***
*Offeror #3 - **98 points***

Offeror #3 is awarded the contract.

2.18 Contract Negotiation

2 AAC 12.315 CONTRACT NEGOTIATIONS After final evaluation, the procurement officer may negotiate with the offeror of the highest-ranked proposal. Negotiations, if held, shall be within the scope of the request for proposals and limited to those items which would not have an effect on the ranking of proposals. If the highest-ranked offeror fails to provide necessary information for negotiations in a timely manner, or fails to negotiate in good faith, the state may terminate negotiations and negotiate with the offeror of the next highest-ranked proposal. If contract negotiations are commenced, they may be held in the Fish and Game Building in Juneau, Alaska.

If the contract negotiations take place in Juneau, Alaska, the offeror will be responsible for their travel and per diem expenses.

2.19 Failure to Negotiate

If the selected offeror

- fails to provide the information required to begin negotiations in a timely manner; or
- fails to negotiate in good faith; or
- indicates they cannot perform the contract within the budgeted funds available for the project; or
- if the offeror and the state, after a good faith effort, simply cannot come to terms,

the state may terminate negotiations with the offeror initially selected and commence negotiations with the next highest ranked offeror.

2.20 Notice of Intent to Award (NIA) — Offeror Notification of Selection

After the completion of contract negotiation the procurement officer will issue a written Notice of Intent to Award (NIA) and send copies to all offerors. The NIA will set out the names of all offerors and identify the proposal selected for award.

2.21 Protest

AS 36.30.560 provides that an interested party may protest the content of the RFP.

An interested party is defined in 2 AAC 12.990(a) (7) as "an actual or prospective bidder or offeror whose economic interest might be affected substantially and directly by the issuance of a contract solicitation, the award of a contract, or the failure to award a contract."

If an interested party wishes to protest the content of a solicitation, the protest must be received, in writing, by the procurement officer at least ten days prior to the deadline for receipt of proposals.

AS 36.30.560 also provides that an interested party may protest the award of a contract or the proposed award of a contract.

If an offeror wishes to protest the award of a contract or the proposed award of a contract, the protest must be received, in writing by the procurement officer within ten days after the date the Notice of Intent to Award the contract is issued.

A protester must have submitted a proposal in order to have sufficient standing to protest the proposed award of a contract. Protests must include the following information:

a. the name, address, and telephone number of the protester;

b. the signature of the protester or the protester's representative;

c. identification of the contracting agency and the solicitation or contract at issue;

d. a detailed statement of the legal and factual grounds of the protest including copies of relevant documents; and

(b) the form of relief requested.

Protests filed by telex or telegram are not acceptable because they do not contain a signature. Fax copies containing a signature are acceptable.

The procurement officer will issue a written response to the protest. The response will set out the procurement officer's decision and contain the basis of the decision within the statutory time limit in AS 36.30.580. A copy of the decision will be furnished to the protester by certified mail, fax or another method that provides evidence of receipt.

All offerors will be notified of any protest. The review of protests, decisions of the procurement officer, appeals, and hearings, will be conducted in accordance with the State Procurement Code (AS 36.30), Article 8 "Legal and Contractual Remedies."

SECTION THREE
STANDARD CONTRACT INFORMATION

3.01 Contract Type

This contract is a Fixed Price contract.

3.02 Contract Approval

This RFP does not, by itself, obligate the state. The state's obligation will commence when the contract is approved by the Commissioner of the Department of Fish and Game, or the Commissioner's designee. Upon written notice to the contractor, the state may set a different starting date for the contract. The state will not be responsible for any work done by the contractor, even work done in good faith, if it occurs prior to the contract start date set by the state.

3.03 Standard Contract Provisions

The contractor will be required to sign and submit the attached State's Standard Agreement Form for Professional Services Contracts (form 02-093/Appendix A). The contractor must comply with the contract provisions set out in this attachment. No alteration of these provisions will be permitted without prior written approval from the Department of Law. Objections to any of the provisions in Appendix A must be set out in the offeror’s proposal.

3.04 Proposal as a Part of the Contract

Part or all of this RFP and the successful proposal may be incorporated into the contract.

3.05 Additional Terms and Conditions

The state reserves the right to add terms and conditions during contract negotiations. These terms and conditions will be within the scope of the RFP and will not affect the proposal evaluations.

3.06 Insurance Requirements

The successful offeror must provide proof of workers' compensation insurance prior to contract approval.

The successful offeror must secure the insurance coverage required by the state. The coverage must be satisfactory to the Department of Administration Division of Risk Management. An offeror's failure to provide evidence of such insurance coverage is a material breach and grounds for withdrawal of the award or termination of the contract.

Offerors must review form APPENDIX B1, attached, for details on required coverage. No alteration of these requirements will be permitted without prior written approval from the Department of Administration, Division of Risk Management. Objections to any of the requirements in APPENDIX B1 must be set out in the offeror’s proposal.

3.07 Bid Bond - Performance Bond - Surety Deposit

There are no Bond/Surety requirements for this project.

3.08 Contract Funding

Payment for the contract for Phase One is subject to funds already appropriated and identified.

Amendment/continuation of the contract for future phase(s) is contingent upon legislative appropriation.

3.09 Proposed Payment Procedures

The state will make payments based on a negotiated payment schedule. Each billing must consist of an invoice and progress report. No payment will be made until the progress report and invoice has been approved by the project director.

3.10 Contract Payment

No payment will be made until the contract is approved by the Commissioner of the Department of Fish and Game or the Commissioner's designee. Under no conditions will the state be liable for the payment of any interest charges associated with the cost of the contract.

The state is not responsible for and will not pay local, state, or federal taxes. All costs associated with the contract must be stated in U.S. currency.

3.11 Informal Debriefing

When the contract is completed, an informal debriefing may be performed at the discretion of the project director. If performed, the scope of the debriefing will be limited to the work performed by the contractor.

3.12 Contract Personnel

Any change of the project team members or subcontractors named in the proposal must be approved, in advance and in writing, by the project director. Personnel changes that are not approved by the state may be grounds for the state to terminate the contract.

3.13 Inspection & Modification - Reimbursement for Unacceptable Deliverables

The contractor is responsible for the completion of all work set out in the contract. All work is subject to inspection, evaluation, and approval by the project director. The state may employ all reasonable means to ensure that the work is progressing and being performed in compliance with the contract. The project director may instruct the contractor to make corrections or modifications if needed in order to accomplish the contract’s intent. The contractor will not unreasonably withhold such changes.

Substantial failure of the contractor to perform the contract may cause the state to terminate the contract. In this event, the state may require the contractor to reimburse monies paid (based on the identified portion of unacceptable work received) and may seek associated damages.

3.14 Termination for Default

If the project director determines that the contractor has refused to perform the work or has failed to perform the work with such diligence as to ensure its timely and accurate completion, the state may, by providing written notice to the contractor, terminate the contractor's right to proceed with part or all of the remaining work.

This clause does not restrict the state's termination rights under the contract provisions of Appendix A, attached.

3.15 Liquidated Damages

The State will not assess Liquidated Damages on the contract.

3.16 Contract Changes - Unanticipated Amendments

During the course of this contract, the contractor may be required to perform additional work. That work will be within the general scope of the initial contract. When additional work is required, the project director will provide the contractor a written description of the additional work and request the contractor to submit a firm time schedule for accomplishing the additional work and a firm price for the additional work. Cost and pricing data must be provided to justify the cost of such amendments per AS 36.30.400.

The contractor will not commence additional work until the project director has secured any required state approvals necessary for the amendment and issued a written contract amendment, approved by the Commissioner of the Department of Fish and Game or the Commissioner's designee.

3.17 Contract Invalidation

If any provision of this contract is found to be invalid, such invalidation will not be construed to invalidate the entire contract.

3.18 Nondisclosure and Confidentiality

Contractor agrees that all confidential information shall be used only for purposes of providing the deliverables and performing the services specified herein and shall not disseminate or allow dissemination of confidential information except as provided for in this section. The contractor shall hold as confidential and will use reasonable care (including both facility physical security and electronic security) to prevent unauthorized access by, storage, disclosure, publication, dissemination to and/or use by third parties of, the confidential information. “Reasonable care” means compliance by the contractor with all applicable federal and state law, including the Social Security Act and HIPAA. The contractor must promptly notify the state in writing if it becomes aware of any storage, disclosure, loss, unauthorized access to or use of the confidential information.

Confidential information, as used herein, means any data, files, software, information or materials (whether prepared by the state or its agents or advisors) in oral, electronic, tangible or intangible form and

however stored, compiled or memorialized that is classified confidential as defined by State of Alaska classification and categorization guidelines provided by the state to the contractor or a contractor agent or otherwise made available to the contractor or a contractor agent in connection with this contract, or acquired, obtained or learned by the contractor or a contractor agent in the performance of this contract. Examples of confidential information include, but are not limited to: technology infrastructure, architecture, financial data, trade secrets, equipment specifications, user lists, passwords, research data, and technology data (infrastructure, architecture, operating systems, security tools, IP addresses, etc).

Additional information that the contractor shall hold as confidential during the performance of services under this contract include:
XXXXXXX
XXXXXXX
XXXXXXX

If confidential information is requested to be disclosed by the contractor pursuant to a request received by a third party and such disclosure of the confidential information is required under applicable state or federal law, regulation, governmental or regulatory authority, the contractor may disclose the confidential information after providing the state with written notice of the requested disclosure (to the extent such notice to the state is permitted by applicable law) and giving the state opportunity to review the request. If the contractor receives no objection from the state, it may release the confidential information within 30 days. Notice of the requested disclosure of confidential information by the contractor must be provided to the state within a reasonable time after the contractor's receipt of notice of the requested disclosure and, upon request of the state, shall seek to obtain legal protection from the release of the confidential information.

The following information shall not be considered confidential information: information previously known to be public information when received from the other party; information freely available to the general public; information which now is or hereafter becomes publicly known by other than a breach of confidentiality hereof; or information which is disclosed by a party pursuant to subpoena or other legal process and which as a result becomes lawfully obtainable by the general public.

SECTION FOUR
BACKGROUND INFORMATION

4.01 Background Information

Extensive ocean-ranching salmon aquaculture is practiced by non-profit private (PNP) sector corporations in Alaska for the purpose of enhancing the common property fisheries (CPF). These efforts are currently producing large numbers of hatchery salmon for harvest, especially in Prince William Sound (PWS) and Southeast Alaska (SE).

The PNP hatcheries in Alaska annually take 1.8B eggs, release 1.5B juveniles, and provide 45M adult salmon to the harvest, primarily of pink salmon in PWS and of chum salmon in SE (White 2011). In 2008, the wholesale value of hatchery fish harvested in the commercial sector was nearly $200M in PWS and $100M in SE (McDowell Group 2010a, b). In some years and in some areas, Alaska hatcheries have provided harvest opportunity to the fishing industry when wild stocks could not.

The scale of the Alaska hatchery programs has raised concerns that hatchery fish may detrimentally impact the productivity and sustainability of wild stocks of Alaska salmon. Others have demonstrated that hatchery releases have supported the recovery of declining populations (Heard et al., 1995; Brannon et al., 2004) and can enhance fisheries without impacting wild stocks (Bachen and Linley, 1995, Heard et al., 1995; Wertheimer, 1997). Biologists have long recognized risks to natural populations posed by hatcheries, including genetic (consequences of interbreeding between hatchery-bred and wild salmon), disease (introduction or amplification of pathogens), ecological (competition for resources), and harvest mortality. These risks have been recently reviewed by Naish et al. (2007). In evaluating this work we will also consider potential benefits to wild salmon; for example, whether consistent hatchery production, derived from local stocks, supports those smaller local wild stocks by consistently adding broodstock to the wild stocks.

The potential for detrimental effects of hatchery production on wild stocks was recognized by policy makers early in the development of the State's hatchery programs (reviewed by McGee 2004; Heard 2011). In contrast to the mitigation hatcheries of the Pacific Northwest, which were built to replace wild production that was diminished or even extirpated by widespread habitat degradation and damming of many major salmon-producing rivers, the Alaska hatchery program was developed to supplement and enhance fisheries that otherwise depend on wild production. To avoid some of detrimental impacts associated with lower-48 hatchery programs, Alaska established policies and practices in the 1980s to ameliorate risks from the expanding ocean-ranching programs. These policies included the State's Genetic Policy (Davis et al., 1985; Davis and Burkett, 1989), Disease Policy (Meyers et al. 1988; McDaniel et al., 1994), and Fish Transport Regulation (5 AAC 41.005, in effect before 1988). The policies require such considerations as siting hatcheries at a distance from significant wild stocks, using only stocks endemic to the region in broodstocks, and strict fish health regulation. These policies have been generally successful over more than 3 decades, preventing introductions of exotic stocks or fish pathogens and allowing increased harvest of hatchery stocks while minimizing the risk to wild fish.

While policies and management strategies have been implemented to reduce risk to wild stocks, the scale of the Alaska enhancement programs makes it likely that wild stocks will be impacted by enhanced fish to some degree. The effects of hatchery fish on wild stock productivity are often assumed to be negative, although the potential for positive effects exists, such as reducing harvest pressure, or strays contributing to escapements in rivers that are chronically below optimum escapement levels.

The type and degree of impact on wild stocks must be considered in the context of the potential risk to future natural production, the benefits from enhancement programs, and resolutions that can be applied to harvest management. In PWS, it has been argued that hatchery stocks have simply replaced the productivity of wild stocks of pink salmon, so that there is no net gain realized (Hilborn and Eggers 2000). However, Wertheimer et al. (2004) estimated that an annual average production of 24 million hatchery pink salmon in PWS was associated with a yield loss of 1 million wild fish. Harvest and escapement indexes of wild stocks in PWS and SE have been consistent with historical levels during more than 30 years of large-scale hatchery production, indicating that the enhanced production has been compatible with sustained wild stock productivity (Wertheimer et al., 2001).

The consequences of interbreeding of hatchery fish with wild con-specifics have received particular attention recently. Both direct genetic studies of populations and retrospective studies of productivity of hatchery-influenced populations in the Pacific Northwest have demonstrated loss of fitness in steelhead, Chinook, and coho (Araki et al. 2008, 2009; Chilcote et al., 2011). Evidence from pink or chum salmon hatchery programs (in which salmon are artificially cultured only until they are fry) is sparse. One pertinent study (Berejikian et al. 2009) on reproductive success (fry per adult) of chum salmon of hatchery broodstock ancestry found that, while the relative success of hatchery-bred males was 3% higher than that of natural-origin males and the relative success of hatchery-bred females was 28% less than that of natural-origin females, these differences were not statistically significant.

Hatchery programs in Alaska have pioneered the use of otolith thermal marks for mass-marking hatchery production to facilitate evaluation and management. These marking programs have also made possible the detection of hatchery-bred salmon on the spawning grounds of wild salmon. Recent studies have demonstrated large proportions of hatchery-bred salmon in some wild-spawning populations in Alaska (Eggers and Heinl 2008). These observations have raised several important questions:

(1) Are hatchery-bred salmon interbreeding with wild salmon to the extent that fitness and productivity of these stocks are being diminished? If so, does any loss of fitness and productivity continue through subsequent generations? Is a temporal loss of fitness compensated by the addition of spawning stock?

(2) Is the annual assessment of wild stocks (which is in part based on visual observation) so biased by the presence of hatchery salmon that excessive harvest of wild fish is being allowed or that escapement goals are difficult to set and difficult to assess? Or, if the additional enhanced fish have an overall positive effect on the escapement, should they be simply counted as part of that escapement?

(3) Do density interactions diminish the productivity of wild salmon?

In general, the proportion of strays detected in wild spawning populations has been higher in streams closer to hatchery release sites (ADF&G unpublished data). However, the sampling designs used to date have not been adequate to estimate the actual extent of straying at the level of the harvest management system, e.g., the district level for PWS pink salmon or the sub-regional level for SE chum salmon. Because of evidence of straying and uncertainty about its extent and effect, the Alaska Department of Fish and Game (ADF&GADF&G) generally acts cautiously and has denied some requests from hatchery corporations for permit alterations.

Because of the value of hatchery production to industry's harvest and its place in the international market, and the mandate that hatchery production be compatible with sustainable productivity of wild stocks, ADF&G and the PNP hatchery corporations have recognized the need for a research program addressing the concerns about escapement assessment and genetic and ecological interactions between hatchery and wild stocks. In July, 2011, ADF&G convened a Science Panel composed of current and retired scientists from ADF&G, University of Alaska, PNP Aquaculture Corporations, and the National Marine Fisheries Service. The Panel members have broad experience in salmon enhancement, management, and wild and hatchery interactions.

SECTION FIVE
SCOPE OF WORK

5.01 Scope of Work

This will describe the work to be performed under Phase One of this project.

The work described herein included related work that the Department will be undertaking as well as work beyond the three years of this contract for Phase One. Offerors should ensure that they propose only to conduct work for the three year period of Phase One and not work the department has committed to undertaking.

The contract may be amended to include work for additional phases.

Actions Proposed

The Panel addressed three priority questions:

(1) What is the genetic stock structure of pink and chum salmon in each region?

(2) What is the extent and annual variability in straying of hatchery pink salmon in PWS and chum salmon in PWS and SE?

(3) What is the impact on fitness (productivity) of wild pink and chum salmon stocks due to straying of hatchery pinks and chum salmon?

The Panel discussed a variety of potential research programs that could be developed to address these questions. The Panel agreed by consensus on the research approach described below, with a component for each of the questions.

Project Assessment

The contractor will submit annual progress reports detailing Contractor activity and project progress. After completion of two full seasons of data collection (2013 and 2014) and receipt of the annual progress reports, the Department will review the activity/progress to determine the benefit and viability of continuation of the project beyond that point.

Research Approach

Genetic Structure of Pink and Chum Salmon

The department is taking on the responsibility for the genetic structure aspect of this research.

Scope of straying

An investigation into interactions between hatchery and wild-origin salmon in natural spawning locations requires a clear and careful description of what is meant by a "stray" salmon (Grant et al., *In press*). The term is understood by most as referring to a salmon that is found in a stream in which it was not born and/or did not spend its early freshwater life. However, this definition covers a wide range of possible conditions from "nosing in" to successful spawning and contributing to the gene pool. For the purposes of the studies described here a stray salmon will be defined as an adult salmon of hatchery origin that is detected in a natural spawning location and presumptively has or will spawn in that system.

An effective evaluation of the extent of straying of pink and chum salmon requires accurate and precise estimates of both the numbers of strays and the number of wild fish in the streams into which the hatchery fish are straying. Currently, pink and chum salmon escapements are estimated by index counts in selected streams. The mass-marking of hatchery fish with otolith thermal marks provides the opportunity to estimate the actual number of wild-origin and hatchery-origin spawning populations of pink and chum salmon in PWS and chum salmon in SE by management units within each region. This information would provide a comprehensive perspective on the extent of straying at the management unit level. The research would also provide more accurate measures of the annual production of natural and hatchery fish, by accounting for the actual numbers of adults on the spawning grounds. A suggested research program to address these questions is detailed in Appendix 2.

Annual production of pink and chum salmon in PWS and of chum salmon in SE Alaska is the result of both natural spawning and hatchery production. This production is realized as catch and escapement with hatchery-produced salmon in natural escapement labeled as "strays". Currently, catches of naturally-spawned salmon (hereafter called wild salmon) and of hatchery-produced salmon (hereafter called hatchery salmon) are estimated with catch sampling programs. Hatchery salmon in samples can be recognized because 100% of hatchery pink and chum salmon production in these regions has been batch-marked (thermal marks on otoliths). However, escapement in both regions is indexed, not estimated.

The offeror is expected to provide data sufficient to annually estimate the following for those two regions:

- number of wild salmon spawning in the wild;
- number of hatchery salmon spawning in the wild (hatchery strays);
- production of hatchery salmon (including hatchery strays); and
- production of wild salmon (excluding hatchery strays).

It is expected the proposal will involve sampling in both the ocean and the streams to estimate two statistics: the fraction of the total run and the fraction of spawning abundance composed of hatchery salmon. These two fractions can be expressed as functions of catches (which are known), broodstock at the hatchery (which are known) and escapements to natural spawning systems (which are not). These two functions represent two equations with two unknowns (run size of wild salmon and the number of hatchery strays in the region). Solving these two equations produces estimates of these numbers, and subsequently estimates of the four bulleted numbers above.

New projects consist of field sampling in PWS and SE Alaska; and ocean sampling in PWS. The field sampling is to estimate the fraction of spawning abundance composed of hatchery salmon. The ocean sampling is to estimate the fraction of the run composed of hatchery salmon. Ocean sampling is needed in PWS because management and fishermen tend to concentrate fishing effort on hatchery salmon, sometimes restricting openings to hatchery terminal harvest areas. Therefore, PWS commercial catches will not be representative of proportion of wild and hatchery in the total return. No ocean sampling is needed for chum salmon in SE Alaska as they are caught throughout SEAK incidentally to directed fisheries on wild pink salmon, making catches in commercial fisheries (excluding terminal harvest fisheries) generally representative of the chum salmon run.

The amount of hatchery straying is not constant, but will vary annually due to factors such as run size, precipitation, water temperatures, and stream flows. To determine average straying rates and their variability will require multiple years of sampling and estimation of hatchery and wild returns, escapements, and hatchery strays. A minimum of five years is envisioned for estimating the scope of straying, after which time the costs and benefits of continuing to collect information on pink and chum salmon runs at this level of resolution can be evaluated.

Field Sampling: Prince William Sound

The proportions of hatchery pink and chum salmon in the escapement for each district and for all districts combined will be estimated with a stratified random design. The use of a stratified random sample guarantees a number of streams selected from each district. Also, the estimated proportion using stratification can be more precise than simple random design if there is considerable variation among strata (e.g., a district with a low average straying proportion compared to one with a high average straying proportion). Aerial surveys (integrated through time and adjusted for stream life and observer efficiency) will be used to appropriately weight samples. A suggested selection of streams has been completed for pink salmon with different levels of standard errors (0.02, 0.03, and 0.04). The department suggests starting with the streams selected at the S.E. of 0.03.

Sampling Design

1) **A set of aerial index streams will be randomly selected (without replacement) from throughout PWS weighted by the historical average index of escapement in each district and stream within each district, giving more productive streams from districts with larger escapements a higher probability of selection than less productive streams from districts with smaller escapements. Each selected stream will be sampled three times during the run (early, middle, and late).** In-season aerial surveys will provide run timing information to adjust the timing of collections. Sampling throughout the run is critical to accurately quantify the number of stray hatchery fish within individual streams because previous studies show proportions of hatchery pink and chum salmon in spawning locations changing seasonally. Hatchery chum salmon proportions tend to be highest in July and early August and decrease throughout the spawning season, whereas hatchery pink salmon proportions tend to be relatively low at the beginning of the spawning season and increase throughout late August and September.

2) **To estimate the fraction of hatchery fish in a stream within 5% of the true value 95% of the time, we suggest sampling up to 384 fish per stream. The actual sample size may be reduced for some streams using past knowledge of the fraction of hatchery fish and total escapement number in a stream. The total sample size in each stream will be allocated proportional to the abundance in each time frame (early, middle, and late) based on historical aerial survey estimates.**

3) The fraction of hatchery fish and the variance for each district will be weighted by the aerial survey index in each of the three temporal strata in the district. The fraction of hatchery fish and the variance for PWS overall will be weighted by the aerial survey abundance in each district.

Streams for pink salmon sampling in PWS

Note that the LIST OF STREAMS on this and on the following pages refer to streams selected for sampling in Prince William Sound to estimate the fraction of escapement comprised of hatchery strays. Each panel has three columns with each column corresponding to a specific precision (SE = 0.02, 0.03, 0.04 for the estimated, sound-wide fraction). These three levels were provided to give the researcher information needed to subsequently evaluate the cost of precision in the estimate.

The sample size "*n*" corresponds to the number of primary sampling units in the design that correspond to the specified precision. However, because this sampling design is based on selecting these primary units with a probability according to their size (the number of fish they represent) with replacement, the actual number of streams sampled (visited) will be $\leq n$. The column "Data ×" is the number of times the data from the specified stream will be used in subsequent calculations. The number after "streams sampled →" is the number of streams that will be in the study.

Tables of streams to sample pink salmon by district in PWS.

DISTRICT 221	n = 29		n = 13		n = 7	
	SE = 0.02		SE = 0.03		SE = 0.04	
Strm No.	Strm Name	Data X	Strm No.	Strm Name	Data X	Strm No.	Strm Name	Data X
2	Hartney Creek	3	2	Hartney Creek	2	2	Hartney Creek	2
36	Sheep River	1	36	Sheep River	1	36	Sheep River	1
48	Beartrap River	2	48	Beartrap River	1	48	Beartrap River	1
51	Olsen Creek	2	52	Control Creek	1	89	Fish Creek	1
52	Control Creek	2	80	Whalen Creek	1	99	Lagoon Creek	1
56	St. Matthews Creek	2	87	Sunny River	1	114	Turner Creek	1
80	Whalen Creek	2	89	Fish Creek	2			
83	Keta Creek	1	99	Lagoon Creek	1			
86	Fidalgo River	1	114	Turner Creek	1			
87	Sunny River	1	115	Millard Creek	1			
89	Fish Creek	4	152	Twin Falls Creek	1			
93	Kirkwood Creek	1						
99	Lagoon Creek	2						
114	Turner Creek	1						
115	Millard Creek	1						
117	Indian Creek	1						
129	Vlasoff Creek	1						
152	Twin Falls Creek	1						
	Streams Sampled ----->	18		Streams Sampled ----->	11		Streams Sampled ----->	6

DISTRICT 222	n = 22		n = 10		n = 5	
	SE = 0.02		SE = 0.03		SE = 0.04	
Strm No.	Strm Name	Data X	Strm No. Strm Name	Data X	Strm No. Strm Name	Data X
216	Vanishing Creek	2	216 Vanishing Creek	1	217 Spring Creek	2
217	Spring Creek	3	217 Spring Creek	3	233 Surplus Creek	1
233	Surplus Creek	1	233 Surplus Creek	1	257 Williams Creek	1
234	Wells River	3	257 Williams Creek	1	264 Siwash River	1
257	Williams Creek	1	264 Siwash River	2		
258	Jonah Creek	3	273 Schoppe Creek	1		
264	Siwash River	3	279 Canyon Creek	1		
265	Unakwik Creek	1				
273	Schoppe Creek	2				
277	Dead Creek	1				
279	Canyon Creek	1				
282	Good Creek	1				
289	Derickson Creek	1				
	Streams Sampled ----->	13	Streams Sampled ----->	7	Streams Sampled ----->	4

DISTRICT 223	n = 9		n = 4		n = 2	
	SE = 0.02		SE = 0.03		SE = 0.04	
Strm No.	Strm Name	Data X	Strm No. Strm Name	Data X	Strm No. Strm Name	Data X
322	Coghill River	4	322 Coghill River	2	322 Coghill River	1
414	Harrison Lagoon	1	425 Hummer Creek	1	425 Hummer Creek	1
425	Hummer Creek	1	430 Meacham Creek	1		
430	Meacham Creek	1				
432	Swanson Creek	2				
	Streams Sampled ----->	5	Streams Sampled ----->	3	Streams Sampled ----->	2

DISTRICT 224	n = 8		n = 4		n = 2	
	SE = 0.02		SE = 0.03		SE = 0.04	
Strm No.	Strm Name	Data X	Strm No. Strm Name	Data X	Strm No. Strm Name	Data X
469	Wickett Creek	2	485 W. Finger Creek	2	469 Wickett Creek	1
485	W. Finger Creel	2	454 Halferty Creek	1	485 W. Finger Creek	1
454	Halferty Creek	1	469 Wickett Creek	1		
480	Mink Creek	1				
493	Most Creek	1				
495	Chimevisky Lag	1				
Streams Sampled ----->		6	Streams Sampled ----->	3	Streams Sampled ----->	2

DISTRICT 225	n = 3		n = 2		n = 1	
	SE = 0.02		SE = 0.03		SE = 0.04	
Strm No.	Strm Name	Data X	Strm No. Strm Name	Data X	Strm No. Strm Name	Data X
504	Comstock Creek	1	504 Comstock Creek	1	504 Comstock Creek	1
506	Loomis Creek	1	506 Loomis Creek	1	506 Loomis Creek	1
510	Elishansky Creek	1				
Streams Sampled ----->		3	Streams Sampled ----->	2	Streams Sampled ----->	2

DISTRICT 226	n = 31		n = 14		n = 8	
	SE = 0.02		SE = 0.03		SE = 0.04	
Strm No.	Strm Name	Data X	Strm No.	Strm Name	Data X	Strm No.	Strm Name	Data X
601	Paddy Creek	1	603	Ewan Creek	3	655	Johnson Creek	2
603	Ewan Creek	3	608	Jackpot River	2	630	Bainbridge Creek	1
608	Jackpot River	4	655	Johnson Creek	2	608	Jackpot River	2
611	Jackpot Bay #1 W. Arm	1	601	Paddy Creek	1	603	Ewan Creek	3
613	Jackson Creek	1	611	Jackpot Bay #1 W. Arm	1			
621	Totemoff Creek	1	621	Totemoff Creek	1			
623	Brizgaloff Creek	1	630	Bainbridge Creek	1			
630	Bainbridge Creek	5	653	Hogg Creek	1			
632	Claw Creek	1	673	Falls Creek	1			
634	Passover Creek	1	676	Horseshoe Creek	1			
653	Hogg Creek	1						
655	Johnson Creek	3						
656	Halverson Creek	1						
661	Calvert Creek	1						
665	Bjorne Creek	1						
673	Falls Creek	1						
676	Horseshoe Creek	1						
681	Hogan Bay	1						
682	Snug Harbor	2						
	Streams Sampled ----->	19		Streams Sampled ----->	10		Streams Sampled ----->	4

DISTRICT 227	n = 8		n = 3		n = 2	
	SE = 0.02		SE = 0.03		SE = 0.04	
Strm No.	Strm Name	Data X	Strm No.	Strm Name	Data X	Strm No.	Strm Name	Data X
741	Chalmers River	4	739	Swamp Creek	1	748	Gilmour Creek	1
739	Swamp Creek	1	748	Gilmour Creek	1	759	Rocky Creek	1
748	Gilmour Creek	1	759	Rocky Creek	1			
759	Rocky Creek	1						
788	Green Creek	1						
	Streams Sampled ----->	5		Streams Sampled ----->	3		Streams Sampled ----->	2

DISTRICT 228	n = 2		n = 1		n = 1	
	SE = 0.02		SE = 0.03		SE = 0.04	
Strm No.	Strm Name	Data X	Strm No.	Strm Name	Strm No.	Strm Name	Data X
815	Constantine Creek	1	815	Constantine Creek	1	815	Constantine Creek	1
837	Widgeon Creek	1	837	Widgeon Creek	1	837	Widgeon Creek	1
	Streams Sampled ----->	2		Streams Sampled ----->	2		Streams Sampled ----->	2

Stratified Random, Two-Stage Sampling Design w/ Districts as Strata, Streams as Primary Sampling Units of Unequal Size, and Pink Salmon as Secondary Units

$n \rightarrow$ Maximum # of Streams to Sample in PWS

$n_h \rightarrow$ Maximum # of Streams to Sample Stratum h

$P_h \rightarrow$ Expected Fraction of Abundance comprised of Strays as specified in tables provided by ADFG based based on samples from streams taken in years 2008 - 2009

$W_h \rightarrow$ Weights from Aerial Surveys based on years 2006 - 2010

District	W_h	P_h	W_hP_h	$W_hP_h(1-P_h)$	n_h
221	0.25	0.05	0.012344	0.01173	13
222	0.12	0.08	0.009482	0.00872	10
223	0.13	0.03	0.003837	0.00372	4
224	0.09	0.04	0.003488	0.00335	4
225	0.01	0.52	0.002849	0.00137	2
226	0.08	0.18	0.01528	0.01253	14
227	0.11	0.03	0.003182	0.00309	3
228	0.22	0.004	0.000892	0.00089	1
	1	$\Sigma W_hP_h \rightarrow$	0.051	0.045395	$\leftarrow \Sigma W_hP_h(1-P_h)$
		half CI	V		
Objective Criterion →		0.06	0.0009	50	$\leftarrow n_o$ (w/o correction for sampling from a finite population)
				41	$\leftarrow n$ (w/ correction for sampling from a finite population of 225)

$$n_o = \frac{\sum W_h P_h (1 - P_h)}{V} \qquad n = \frac{n_o}{1 + n_o / N}$$

Streams for chum salmon sampling in PWS

No sampling needed in districts 225, 226, or 229.

Chums

DISTRICT 221

n = 11 SE = 0.02			n = 5 SE = 0.03			n = 3 SE = 0.04		
Strm No.	Strm Name	Data X	Strm No.	Strm Name	Data X	Strm No.	Strm Name	Data X
2	Hartney Creek	1	2	Hartney Creek	1	2	Hartney Creek	1
23	Chase Creek	1	36	Sheep River	1	87	Sunny River	1
36	Sheep River	1	48	Beartrap River	1	115	Millard Creek	1
48	Beartrap River	1	87	Sunny River	1			
51	Olsen Creek	1	115	Millard Creek	1			
52	Control Creek	1						
86	Fidalgo River	1						
87	Sunny River	1						
99	Lagoon Creek	1						
115	Millard Creek	1						
116	Duck River	1						
Streams Sampled ----->		11	Streams Sampled ----->		5	Streams Sampled ----->		3

Chums

DISTRICT 222

n = 31 SE = 0.02			n = 14 SE = 0.03			n = 8 SE = 0.04		
Strm No.	Strm Name	Data X	Strm No.	Strm Name	Data X	Strm No.	Strm Name	Data X
214	Long Creek	3	214	Long Creek	2	214	Long Creek	1
216	Vanishing Creek	3	216	Vanishing Creek	2	216	Vanishing Creek	2
217	Spring Creek	2	217	Spring Creek	1	217	Spring Creek	1
234	Wells River	10	234	Wells River	4	234	Wells River	3
258	Jonah Creek	4	258	Jonah Creek	2	264	Siwash River	1
264	Siwash River	4	264	Siwash River	1			
276	Black Bear Creek	1	279	Canyon Creek	2			
279	Canyon Creek	2						
283	Bad Creek	1						
12565	Complex Creek, East	1						
Streams Sampled ----->		10	Streams Sampled ----->		7	Streams Sampled ----->		5

Chums

DISTRICT 223

n = 7, SE = 0.02			n = 3, SE = 0.03			n = 2, SE = 0.04	
Strm No.	Strm Name	Data X	Strm No.	Strm Name	Data X	Strm No.	Strm Name	Data X
322	Coghill River	1	322	Coghill River	1	322	Coghill River	1
421	Mill Creek	2	421	Mill Creek	2	421	Mill Creek	1
430	Meacham Creek	2						
432	Swanson Creek	2						
Streams Sampled ----->		4	Streams Sampled ----->		2	Streams Sampled ----->		2

Chums

DISTRICT 224

n = 13, SE = 0.02			n = 6, SE = 0.03			n = 3, SE = 0.04	
Strm No.	Strm Name	Data X	Strm No.	Strm Name	Data X	Strm No.	Strm Name	Data X
450	Tebenkof Creek	1	451	Blackstone Cree	1	451	Blackstone Creek	1
451	Blackstone Cre	1	455	Paulson Creek	1	455	Paulson Creek	1
455	Paulson Creek	2	485	W. Finger Creek	3	485	W. Finger Creek	1
469	Wickett Creek	1	480	Mink Creek	1			
480	Mink Creek	2						
484	E. Finger Creek	1						
485	W. Finger Creel	4						
495	Chimevisky Lag	1						
Streams Sampled ----->		8	Streams Sampled ----->		4	Streams Sampled ----->		3

Chums

DISTRICT 227

n = 8, SE = 0.02			n = 4, SE = 0.03			n = 2, SE = 0.04	
Strm No.	Strm Name	Data X	Strm No.	Strm Name	Data X	Strm No.	Strm Name	Data X
739	Swamp Creek	1	739	Swamp Creek	1	739	Swamp Creek	1
741	Chalmers River	4	741	Chalmers River	1	747	Cabin Creek	1
747	Cabin Creek	2	747	Cabin Creek	2			
788	Green Creek	1						
Streams Sampled ----->		4	Streams Sampled ----->		3	Streams Sampled ----->		2

Chums

DISTRICT 228

	n = 4 SE = 0.02		n = 2 SE = 0.03		n = 1 SE = 0.04	
Strm No.	Strm Name	Data X	Strm No.	Strm Name	Strm No.	Strm Name	Data X
815	Constantine Creek	3	815	Constantine Creek	1	815	Constantine Creek	1
831	Double Creek	1	837	Double Creek	1	837	Double Creek	1
	Streams Sampled ----->	2		Streams Sampled ----->	2		Streams Sampled ----->	2

Example:

Stratified Random, Two-Stage Sampling Design w/ Districts as Strata, Streams as Primary Sampling Units of Unequal Size, and Chum Salmon as Secondary Units

n → Maximum # of Streams to Sample in PWS

n_h → Maximum # of Streams to Sample Stratum h

P_h → Expected Fraction of Abundance comprised of Strays as specified in tables provided by ADFG based based on samples from streams taken in years 2004 - 2009

W_h → Weights from Aerial Surveys based on years 1986 - 2010

District	W_h	P_h	W_hP_h	$W_hP_h(1-P_h)$	n_h
221	0.44	0.01	0.0044	0.00436	5
222	0.19	0.07	0.0133	0.01237	14
223	0.09	0.03	0.0027	0.00262	3
224	0.09	0.06	0.0054	0.00508	6
225	0.00	0.05	0	0.00000	0
226	0.00	1.00	0.00000	0.00000	0
227	0.04	0.91	0.0364	0.00328	4
228	0.15	0.01	0.0015	0.00149	2
		ΣW_hP_h →	0.064	0.029181	←$\Sigma W_hP_h(1-P_h)$
		half CI	V		
Objective Criterion →		0.06	0.0009	32	←n_o (w/o correction for sampling from a finite population)
				28	←n (w/ correction for sampling from a finite population of 225)

Field Sampling: SE Alaska

The objective of this project is to estimate the fraction of hatchery strays in each of three summer-run chum salmon sub-regions for three consecutive years. Summer chum salmon escapement goals are currently established for aggregates of 81 index streams in three sub-regions: Southern Southeast (13 streams on inside waters from Sumner Strait to Dixon Entrance); Northern Southeast Inside (63 streams on inside waters north of Sumner Strait); and Northern Southeast Outside (5 streams on outside waters of Chichagof and Baranof islands). We suggest that otolith samples are collected from a randomly selected set of index streams so that 40% of the index streams are sampled: 7 streams in Southern Southeast Inside, 26 in Northern Southeast Inside, and 3 in Northern Southeast Outside. An overall estimate of the fraction of hatchery fish within each sub-region can be formed as the weighted average of all sample proportions of hatchery fish, with peak aerial chum salmon indices used as the weights.

The sampling design could be similar to PWS with a goal of up to 384 samples per stream, however experience indicates that two visits per season is adequate for getting a representative sample.

If this approach is followed the following suite of streams could be surveyed:

Sub-Region	ADF&G Region 1 Stream Number	Anadromous Waters Catalog Number	Name
SSE	101-15-019	101-15-10190	Tombstone River
SSE	101-15-085	101-15-10500-2028	Fish Creek
SSE	101-30-030	101-30-10300	Keta River
SSE	101-30-060	101-30-10600	Marten River
SSE	101-55-020	101-55-10200	Wilson River
SSE	105-42-005	105-42-10050	Calder Creek
SSE	107-40-049	107-40-10490	Harding River
NSE Inside	108-41-010	108-40-10150-2007	North Arm Creek
NSE Inside	109-44-037	109-44-10370	Saginaw Bay S Head
NSE Inside	109-62-024	109-62-10240	Petrof Bay W Head
NSE Inside	110-23-008	110-23-10100	Johnston Creek
NSE Inside	110-23-040	110-23-10210	East of Snug Cove
NSE Inside	110-32-009	110-32-10090	Chuck River - Windham Bay
NSE Inside	110-34-006	110-34-10060	Glen Creek
NSE Inside	111-16-040	111-16-10450	Swan Cove Creek
NSE Inside	111-17-010	111-17-10100	King Salmon River
NSE Inside	111-50-069	111-50-10690	Fish Creek-Douglas I
NSE Inside	112-15-062	112-15-10620	Robinson Creek
NSE Inside	112-21-006	112-21-10060	Ralphs Creek
NSE Inside	112-42-025	112-42-10250	Kadashan Creek
NSE Inside	112-44-010	112-44-10100	Saltery Bay Head
NSE Inside	112-46-009	112-46-10070	Seal Bay Head
NSE Inside	112-48-019	112-48-10190	Little Goose Creek
NSE Inside	112-48-023	112-48-10230	West Bay Head Creek
NSE Inside	112-50-030	112-50-10300-2001	Freshwater Creek
NSE Inside	112-65-024	112-65-10240	Greens Creek
NSE Inside	112-72-011	112-72-10110	Weir Creek N Arm Hood Bay
NSE Inside	112-80-028	112-80-10280	Chaik Bay Creek
NSE Inside	112-90-014	112-90-10140	Whitewater Creek
NSE Outside	113-32-005	113-32-10050	W Crawfish NE Arm Hd
NSE Inside	113-54-007	113-54-10070	Rodman Creek
NSE Inside	113-56-003	113-56-10030	Ushk Bay W End

NSE Outside	113-72-005	113-72-10040-2025	Sister Lake SE Head
NSE Outside	113-73-003	113-73-10030	Lake Stream Ford Arm
NSE Inside	114-31-013	114-31-10130	Game Creek
NSE Inside	115-20-010	115-20-10100	Berners River

Ocean Sampling: Prince William Sound

The objective of this project is to estimate the proportion of the annual runs of pink and chum salmon in Prince William Sound comprised of first-generation offspring of hatchery salmon such that the estimate is within 5% of the true value 95% of the time.

The actual methods for ocean sampling could include directed fishery openings, contract purse seining, contract gillnetting, or a combination of these approaches. Any proposed method must have adequate stratification in space and time to ensure a representative sample of the total PWS pink and chum salmon runs. This requires both an estimate of the proportion of hatchery fish in the sampled area, and a measure of the relative magnitude of the fish in the sampled area throughout the run (and for each sampling event).

An ocean sampling program using drift gillnets is described here as an example of a program that would provide the level of information needed for valid estimates of the proportion of hatchery fish in the total runs of PWS pink and chum salmon. This example was modeled after the Port Moeller gillnet test fishery used to estimate stock composition of Bristol Bay sockeye salmon as they enter Bristol Bay.

Ocean sampling could occur along transects near Montague Strait and Hinchinbrook Entrance from May 15 to August 30. Pink salmon would be most abundant at these transects from June 15 to August 21 and chum salmon from May 15 to July 15. Transects would be positioned to intercept the bulk of the pink and chum salmon runs as they enter the Sound while minimizing the interception of salmon spawning outside the Sound. To distribute stations more uniformly over each transect, six stations would be arranged equally 6 km apart along the Montague transect. Three stations would be arranged equally 2 km apart along the Hinchinbrook transect. Sampling would alternate between the Hinchinbrook and Montague transects with Hinchinbrook stations sampled on Mondays and Thursdays and Montague stations sampled on Tuesdays and Fridays.

Drift gillnets 200 fathoms in length and consisting of panels with 5 sizes of mesh would be fished daily at each station for up to 60 minutes during daylight hours. Otoliths would be excised from 60 systematically selected fish each day (10 per station for the Montague transect and 20 per station on the Hinchinbrook transect). Origin of captured fish would be determined by otolith analysis.

For each transect, the proportion of hatchery fish in the daily run would be estimated as the average of the station proportions weighted by station CPUE. The proportion of hatchery fish for the season is the average of the daily proportions weighted by the daily CPUE. The proportion of annual run throughout PWS is the average of the transect proportions weighted by the transect CPUE.

The effect of straying on population fitness

Research is needed to evaluate potential changes in spawning populations of Alaskan pink and chum salmon due to straying of hatchery produced fish. There is concern that hatchery-origin fish mixed in and spawning with naturally produced fish may reduce the fitness of wild populations. Fitness is a statistic that describes the ability to both survive and reproduce, and is equivalent to the average contribution to the next generation that is made by an average individual of the specified type—hatchery-origin pink or chum salmon versus natural-origin pink or chum salmon in this case. For salmon, fitness is typically measured as the number of adult offspring produced per spawner of each sex. If hatchery-origin fish are less fit and interbreed with natural-origin fish, the concern is that the natural-spawning populations will lose productivity as a consequence of the presence of strays among the breeding population.

To evaluate whether or not fitness of natural-origin versus stray hatchery-origin salmon differ when spawning in the wild, the survival of both types of fish and their relative spawning success needs to be documented. For pink salmon in PWS and chum salmon in SE Alaska, hatchery-origin fish spawning in the wild can be identified because their otoliths have thermal marks. Fishery genetics has matured to where individual fish can be traced to their respective parents, so long as their parents have been genetically sampled. The science involved is identical to paternity evaluations conducted in humans. Thus the combination of thermal marks on all hatchery-origin pink and chum salmon coupled with application of current genetic techniques provides a means to set up a robust experiment to evaluate fitness of natural-origin versus hatchery-origin stray salmon spawning in the wild in streams of PWS and SE Alaska.

The scope of research will identify:

(1) six streams in PWS with pink salmon spawning populations of about 3,000 fish each, three streams which have a low portion of strays (less than 20%) and three streams which have a high proportion of strays (around 50%); and

(2) four streams in SE Alaska with chum salmon spawning populations of about 3,000 fish each, two streams which have a low portion of strays and two streams which have a high proportion of strays.

In each of these 10 streams, about 500 adult post-spawning salmon of the appropriate species will be collected annually, their otoliths sampled to determine their origin (hatchery or wild), and genetic samples taken. The next spring, about 2,500 fry taken from about 250 redds from each stream will be collected and genetically analyzed to determine if:

(1) their mother was one of the 500 sampled earlier,
(2) their father was one of the 500 sampled earlier, or

(3) neither of their parents was sampled earlier (see Table 1 for sample years).

In this way, the reproductive success to the fry stage can be estimated for hatchery-origin versus natural-origin fish in each stream as well as provide data for comparisons between low and high

stray rates for each of the two species with replication. Sampling of adults will again occur when offspring of the originally sampled 500 salmon return to spawn, and likewise it will be determined if these fish are offspring of males or females originally sampled and of known origin (either hatchery strays or natural-spawning fish) or were offspring of fish not sampled earlier. These data will be used to estimate survival rates and the reproductive success to the adult stage for hatchery-origin versus natural-origin fish in each stream as well as provide data for comparisons between low and high stray rates for each of the two species with replication.

Fish spawning in these streams will be similarly sampled for two complete generations; for pink salmon, sampling in each stream will occur in each of six years over two brood years for each brood line, and for chum salmon, sampling in each stream will occur in each of 11 years over two brood years. Pink salmon sampling will occur annually from 2012-2017 and chum salmon sampling will occur annually from 2012-2022. Data and statistics obtained from this robust experiment will provide the information needed to evaluate fitness of natural-origin versus hatchery-origin stray salmon spawning in the wild in streams of PWS and SE Alaska.

Since this work will extend beyond the contract period applicants should address the work that can be expected to be completed by June 30, 2018.

Genetic Tissue and Otolith Thermal Mark Analysis. All genetic tissue processing for this project will be done by the ADF&G Gene Conservation Lab (GCL) in Anchorage. The contractor should coordinate with that lab regarding collection, transportation and processing of samples. The GCL will provide parental analysis determinations. In a similar manner the Mark Tag and Age Lab (MTA Lab) in Juneau will be in charge of otolith processing. The contractor should coordinate with that lab regarding collection, shipment, and processing of samples.

Offerors should provide an estimate of the numbers of genetic and otolith samples that will need to be processed each year. The department will determine those processing costs and budget for that work independent of the contract for this work.

Work Plans

More detailed descriptions of what the department perceived as work plans for the two components of the program are provided in Appendices I-II.

Final results

The science panel that has worked on these proposed projects has a variety of viewpoints on the effects of the current enhancement program on Alaska's wild stocks. The long-term research project proposed here has the potential to answer some of the questions most relevant to the Alaska salmon enhancement program. Furthermore, as good stewards of wild salmon stocks and the natural resources of the state, the panel also believes strongly this work should be undertaken. It recognizes that the results will likely have some ambiguity and may even be interpreted differently depending on perspective. Nonetheless, this information will likely guide future decisions and will greatly advance the understanding of the ecological and evolutionary dynamics of wild and hatchery interactions.

Some of the proposed work will be of value immediately, such as the estimates of run size for wild and hatchery-produced pink salmon in PWS, and may well improve management and result in changes in how fish are harvested. Improved information on population structure should also accrue early in the process. Other information, such as quantitative estimates of average hatchery straying rates and their interannual variation, and the comparisons of fitness between hatchery strays and natural-origin parents, will take much longer.

The science panel recognizes the importance of timely presentation of results and analyses to the fisheries science community, producers, harvesters, and the general public. They recommend that the research program include a workshop for detailing field operations, reporting on sample collections and processing, and providing analytical updates from the three components of the research program.

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Appendices

To

Scope of work

Appendix I. Supporting information for: What is the Annual Production of Natural, Hatchery Produced Pink and/or Chum Salmon in Prince William Sound and in SE Alaska?

Equations:

Notation:

R_H is the size of the run of hatchery fish;

R_W is the size of the run of wild fish;

S_H is the number of hatchery strays that survive the fishery (end up spawning);

S_W is the number of wild fish that end up spawning;

C_W is the catch of wild fish;

C_H is the "catch" of hatchery fish;

θ is the fraction of wild fish in the total run; and

λ is the fraction of hatchery fish in the spawning population.

Note that

$$\theta = \frac{R_W}{R_W + R_H} = \frac{R_W}{C_H + S_H + R_W}$$

$$\lambda = \frac{S_H}{R_W - C_W + S_H}$$

where θ and λ are estimated from field sampling and ocean sampling. With estimates these two equations have two unknowns (R_W and S_H). The solutions are

$$R_W = \frac{aC_H - abC_W}{1 - ab}$$

$$S_H = b(R_W - C_W)$$

where $a = \theta/(1-\theta)$ and $b = \lambda/(1-\lambda)$. Substitution of estimates including statistics from ocean sampling and field sampling ($\hat{\theta} \to \theta$ and $\hat{\lambda} \to \lambda$) provides the following estimates:

$$\hat{R}_W = \frac{\hat{a}C_{\ H} - \hat{a}\hat{b}\hat{C}_W}{1 - \hat{a}\hat{b}}$$

$$\hat{S}_H = \hat{b}(\hat{R}_W - \hat{C}_W)$$

$$\hat{S}_W = \hat{R}_W - \hat{C}_W$$

As an example consider a hatchery run of 30 million pink salmon to Prince William Sound. The combination of ocean sampling (proposed project), catch sampling (as currently done), and field sampling (proposed project) would produce the statistics below for different sizes of wild runs of pink salmon (methods in the appendix were used to generate the table). The fraction of wild salmon in the total run could be accurately estimated through test fishing or catch sampling (the former for the Sound). Estimates of the fraction of hatchery fish in escapements would come from field sampling. Expectations for those statistics depend on harvest rates, not their common value, but the difference in their values. The right-most column would be germane to the Sound.

Wild Run (millions)	Fraction Wild In Total Run	Fraction Hatchery Fish in Escapement w/ Harvest Rate Hatchery vs. Wild	
		40%/40%	40%/20%
1	0.03	0.67	0.60
2	0.06	0.50	0.43
3	0.09	0.40	0.33
4	0.12	0.33	0.27
5	0.14	0.29	0.23
10	0.25	0.17	0.13
15	0.33	0.12	0.09

The equations above provide estimates over a region. A region could be all of Prince William Sound, eastern Prince William Sound, or for instance, the Southeastern District of the sound. The scale would depend on the geography and migration of the species involved. For instance, ocean sampling east of Montague Island would provide estimates for the eastern and southeastern districts of the sound. Field sampling in a stratum comprised of these two districts would provide the estimate of strays in the spawning population needed to estimate spawning abundance for the east side of the sound.

Estimates on a smaller scale than a region require some ancillary information to divide estimates for a region. Such information could be based on composites of indices for aerial surveys or on mark-and-recapture studies, telemetry studies, or genetic stock identification of wild salmon

piggy-backed on ocean sampling along with field sampling. For example, if 20% of all the salmon counted from the air, standardized for the number of times a stream was flown and the number of streams flown among all streams in the region, were made in one sub-region, then the estimate of spawning numbers in that sub-region would be 20% of the estimate for the region.

Appendix II. What is the impact on fitness (productivity) of wild pink and chum salmon due to straying of hatchery pink and chum salmon?

Experimental approach

Addressing the long-term effects of straying hatchery fish on fitness of wild pink and chum salmon in Alaska requires a robust experimental design that can evaluate demographic, genetic, and phenotypic changes over multiple generations by associating an informative pedigree with variation in fitness. The approach described here is intended to evaluate, for each of these species, the effect of hatchery fish straying on the productivity of naturally spawning populations. The proposed experimental framework incorporates an analysis for pink salmon in (Prince William Sound (PWS) and for chum salmon in southeastern Alaska (SEAK) of the effect of hatchery straying rate on natural population productivity. It does so by contrasting two straying rate treatments ("low," or ca. 5-20% of naturally spawning fish in the target population composed of stray hatchery fish, vs. "high," ca. 50% of naturally spawning fish as hatchery strays) that are treated as fixed effects in the analysis. Each of these treatments is to be replicated three times for pink salmon and twice for chum salmon. The proposed number of experimental units is therefore 10 (2 stray rates x 3 replicates for pink salmon and 2 stray rates x 2 replicates for chum salmon). Fish of each species in each selected stream system would be sampled for two complete generations; for pink salmon, sampling in each stream will occur in each of six years over two brood years (cohorts) for each brood line, and for chum salmon, sampling in each stream will occur in each of 11 years over two brood years—pink salmon annually between 2013-2018 and chum salmon annually between 2013 and 2023 (Table 1).

Sample collection

Field sampling will be coordinated with the sampling for estimating the amount of straying of pink and chum salmon in PWS and of chum salmon in SEAK. The streams selected for sampling must meet the escapement criterion (averaging less than 3,000 adults) for the parentage analysis. The streams must also meet the low or high straying criterion, based on previous sampling by ADF&G. If possible, the streams selected will be subsets of those selected for the straying project. However, additional streams may have to be incorporated into the fitness studies if there are not a sufficient number of streams in the straying study that meet the escapement and stray rate criteria.

Adult pink and chum salmon for otolith and parentage analysis will be sampled at each selected streams. Each selected stream will be sampled three times during the run (early, middle, and late). Inseason aerial surveys (conducted by ADF&G) will provide run timing information to adjust the timing of collections. Sampling throughout the run is critical to accurately quantify the number of stray hatchery fish within individual streams because previous studies show proportions of hatchery pink and chum salmon in spawning locations changing seasonally. Samples will be taken from spawned out fish, either when still living or as fresh carcasses. Otoliths and a bony fin clip (dorsal, anal, pectoral, pelvic, or caudal) will be collected from each sampled adult and preserved in individually marked, non-denatured ethanol-filled tubes. Any phenotypic data (e.g., age-sex-length) collected will be associated with the tissue sample

identifier and sample date. We encourage collection of these associated data wherever possible; when combined with the pedigree and demographic information they provide an opportunity to identify factors contributing directly to variation in fitness. The target sample size is 500 adults from high-stray systems. In low-stray systems, up to 1000 adults will be sampled to increase the number of hatchery strays sampled. From these larger sample sets, otolith analysis will be used to identify the 500 samples actually processed for DNA genotyping to maximize statistical power for comparing hatchery and wild fitness. Carcass weirs may be necessary to ensure adequate numbers of spawned-out fish for sampling. During the sampling process, the extent of the spawning area in each stream will be defined and mapped.

Alevins will be collected from each study stream by hydraulic sampling ("fry-pumping") in March following the spawning year. The hydraulic sampling involves using a portable pump to extrude and capture alevins within a standard 0.5-m diameter sample basket. A stratified sampling grid will be developed for each stream, with 1,000 sample sites equally spaced to cover the area of spawning mapped the previous fall. Initially, every fourth site starting with site 1 and continuing to site 997 will be sampled, so that a minimum of 250 standard samples are taken from each stream. All alevins from each sample site will be counted. Up to 25 will be retained for genetic analysis in sample-specific ethanol-filled vials; the rest will be released back into the stream. Sampling will proceed in an upstream direction. If at least one alevin is captured at 200 or more sites, sampling will be considered adequate. Otherwise, samplers will return to the start of the grid and sampling every fourth site, starting with site 2 and continuing until the minimum target sample size (200 with at least one alevin) or to site 998. In the latter case, the process would be repeated until the minimum sample size is attained or all 1000 sites are sampled.

Under this study design, we expect to collect and process samples for analysis and pedigree reconstruction over a period of 6 years for pink salmon and 11 years for chum salmon. (Table 1). The total numbers of samples processed for DNA extraction, genotyping, and pedigree reconstruction would be: (1) for pink salmon, 18,000 adults and up to 60,000 alevins; and (2) for chum salmon, 20,000 adults and up to 60,000 alevins.

Phenotypic data: Age, sex, and length

Ages of adults will be determined from scales or otoliths using conventional methods (for chum salmon). Sex will be determined by observation or internal examination of gonads. Other phenotypes that may be collected include length and run or spawn (or smolt) timing. The length of all adults will be measured to the nearest 5 mm from the mid-eye to the hypural plate (MEH), and the length of juveniles will be measured to the nearest 1 mm from the snout to the fork of the tail (SFL).

Genetic data

ADF&G will identify multilocus genotypes for up to 500 adults and 2,500 juveniles from each cohort in each population. The microsatellite or SNP loci used to determine parentage will be determined from existing population genetic surveys of pink and chum salmon populations in the two Alaska regions. Genomic DNA will be extracted from tissues using conventional methods used by ADF&G and collaborating molecular genetics laboratories. Alleles will be identified

using standard software and scored manually by at least two technicians, who will systematically resolve any discrepancies. Collected genotypes will be entered into the *Oracle* database, *LOKI*, installed at ADF&G. Quality control measures will include reanalysis of 8% of each collection for all markers to insure that genotypes are reproducible and to identify laboratory errors and measure rates of inconsistencies during repeated analyses. Archived tissues and final genotypes for all individuals for all markers and appropriate metadata will be maintained by the ADF&G Gene Conservation Laboratory.

Pedigree reconstruction

Individuals will be identified uniquely by analyzing genomic DNA isolated from the collected samples. Each individual will be genotyped for an informative set of DNA microsatellite or Single Nucleotide Polymorphism (SNP) loci that amplify well and are sufficiently polymorphic, using protocols similar to those outlined by Berejikian et al. (2009) and Serbezov et al. (2010). Recently developed statistical methods will be used to reconstruct a molecular pedigree from the multilocus genotypes for each population over two generations. The pedigrees and associated phenotypic and demographic data for each population will be used to estimate individual absolute fitness and its relationship to population productivity (e.g., long-term population growth rate, λ). Individual fitness will be estimated as both the number of fry produced per parent of either sex (recruitment to fry) and as adult progeny produced per parent of either sex (lifetime reproductive success). After traits are standardized within each sex and cohort (e.g., by subtracting the mean and dividing by the phenotypic standard deviation), individual fitness will be estimated by counting progeny of each parent in the pedigree at both fry and adult life stages. Absolute fitness (progeny counts) within sexes and cohorts will be converted to relative fitness by dividing by the mean population fitness. Where individual phenotypic data are available, standardized linear (directional) and quadratic (stabilizing or disruptive) selection gradients (Lande and Arnold 1983) will be estimated individually for each phenotype using the model: number of progeny = constant + phenotype + $(\text{phenotype})^2$. As an additional measure of selection, mean phenotype of the group of parents inferred to have produced progeny will be compared with the mean phenotype of those inferred to have produced no sampled progeny.

Reconstruction of the pedigree for each population will combine parentage assignment with sibship reconstruction (Figure 1). Because it is not possible to sample and genotype all potential parents and progeny in these natural salmon systems, we propose using a full probability Bayesian model for parentage assignment (Hadfield et al. 2006; Riester et al. 2009) that readily accounts for sparse pedigrees and can incorporate phenotypic data (e.g., size and age of potential spawners, and spatial location of spawners and progeny) to assist in identifying candidate parents (see Serbezov et al. 2010). These methods use sibships and other close relationships among sampled individuals to infer parental genotypes from progeny.

Parentage assignments will be made using likelihood or Bayesian methods as implemented in the programs Colony (Wang 2004; Wang and Santure 2009) and FRANz (Riester et al. 2009). Colony uses a likelihood algorithm to assign parentage based on the genotypes alone, whereas FRANz uses a Bayesian framework and Metropolis-Hastings coupled Markov Chain Monte Carlo (MCMC) algorithm to assign parentage based on phenotypic data (age, lifespan) as well as genotypes. Parentage assignment will be limited to those parent-progeny pairs assigned with log of odds score or posterior probability > 95%. Genotyping error will estimated for each locus and

limited to a rate < 1%. Individuals with missing genotypes at more than one locus will not be included in the analysis.

Fitness analysis

Individual fitness will be estimated as lifetime reproductive success (adult progeny per adult). Population growth rate will be estimated from the demographic data using conventional stock-recruitment methods. If sufficient phenotypic data are collected and associated with sampled genotypes, an attempt will be made to estimate genetic and environmental components of variance in these phenotypes—including fitness—and relate them directly to productivity, as measured by population growth. In this case an "animal" model (Kruuk 2004) will be used to estimate the genetic and environmental variance components underlying phenotypic variation associated with the pedigree data. An animal model is a form of linear mixed model relating an individual's phenotype to its breeding value (i.e., an individual's contribution to the trait mean phenotype in a population, measured as the deviation of its progeny from the population mean). The model incorporates explanatory terms that can be a mixture of both fixed (e.g., sex or parental origin) and random effects (e.g., year). These analyses readily incorporate unbalanced design datasets containing missing phenotypic measurements; there is also no requirement for balanced design in the pedigree structure. The animal model explicitly incorporates the breeding value of each individual as a random factor to estimate genetic (co)variance and heritability for traits by regressing phenotypes on breeding values (Wilson et al. 2010). Breeding values for any trait are estimated from an individual's trait covariance with those of its relatives. A range of effects can easily be incorporated in this model and other components of phenotypic variance such as maternal effects or common environmental effects. Also, estimates of variance in the base population are unbiased by any effects of nonrandom mating, inbreeding, selection or evolution during the study period. The random effects of primary interest are the additive genetic values of individual animals.

The animal model analysis will follow the Bayesian approach incorporated in the R package MCMCglmm ("Markov Chain Monte Carlo generalized linear mixed models"; Hadfield 2010) to evaluate the phenotypes in the pedigree. For fitness and its component traits a proper, weakly informative prior (drawn from, e.g., the inverse Wishart or Cauchy distributions) will be used. Estimates of genetic parameters will be conditioned on fixed effect of sex and random effect of sampling year. Each analysis will involve a single MCMC chain evaluated for convergence by inspection of the traces, posterior densities, and to ensure that the lag autocorrelation does not exceed ~0.05. The 95% credible intervals for each estimate will be obtained from the posterior densities.

If phenotypes are associated with both genotypic data and with demographic rates, the influence of individual phenotypes on mean fitness can be estimated using de-lifing analysis (Coulson et al. 2006) or Integral Projection Modeling (IPM, Coulson et al. 2010). These analyses represent a means of estimating individual contributions to population growth and changes in distributions of quantitative traits and alleles. An individual's contribution to population growth is an individual's realized annual fitness, and it can be estimated by examining this contribution at the level of each individual in turn. In delifing analysis, an approach similar to jackknifing is used to regress population fitness on phenotype by leaving out each individual in turn and identifying phenotypes with the greatest influence on fitness. IPM models are a type of population projection

model that constructs functional relationships between individual state and population performance in species with complex demographies, characterizing relationships between phenotype and fitness that are integrated over the entire life history. The objective of each approach is to explain associations among quantitative characters, life history and population dynamics. Combining these analytical methods with those of an animal model provides the most powerful approach available to estimate fitness and dissect its genetic and environmental components from available genetic and phenotypic information.

Expected results

The proposed study design uses the contrast in natural population productivity and relative fitness of progeny of hatchery and wild parents, observed between two hatchery fish straying rates, over two complete generations to evaluate whether and to what extent the presence of naturally spawning hatchery fish has a genetic effect on wild fitness. There are a number of ways in which these results could be analyzed. The power of each analysis (each species in each region in each system) is determined primarily by the detectable effect size, measured as either the difference in natural productivity between the two straying rate treatments observed over each generation or as the difference in trend (regression slope) observed between the two treatments.

The response variable in each case is mean reproductive success, or rate of change in reproductive success (or population productivity, e.g., λ). Differences in reproductive success between naturally spawning groups are expected to be difficult to detect without very large sample sizes. For example, in their analysis of reproductive success in naturally spawning chum salmon, Berejikian et al. (2009) found that relative reproductive success was less than 1.0 in most of their compared groups; in a post-hoc power analysis, they found that the number of replicate groups (with the same number of breeders per group) required to detect a 28% difference in reproductive success with the probability of a type I error (α) = 0.05 and power (1- the probability of a type II error, or β) = 0.8 would have to be 10 replicates. They estimated that to detect a 3% difference would require 24 replicates. An a priori power analysis suggests that for two groups differing in mean reproductive success by 0.5 (e.g., 1.0 - 0.5) with a within-cell standard deviation of 3.0, the effect size is ~0.083; to detect an effect size of this magnitude with a power of 0.8 (at $\alpha = 0.05$), approximately 575 fish would need to be sampled in each cell of the design.

The power to detect a difference in trend of over two generations is expected to be lower. It is directly proportional to the strength of the linear trend. Gerrodette (1987) provided an inequality that can be used to estimate the power of detecting a trend (or difference in trend):

$$\frac{\qquad}{\qquad}$$

where zb is the value of the standardized random normal deviate defining the area of the normal probability curve corresponding to the level of type II error equal to β for a two-tailed test, $z\alpha/2$ is the value of the deviate that corresponds to a level of type I error equal to α (two-tailed test), r is the mean rate of change in reproductive success or productivity per generation, n is the number

of generations (2 in this case), and CV is the coefficient of variation in reproductive success or productivity. Rearrangement of this equation to solve for r indicates that the smallest difference in trends of reproductive success that could be detected when both α and β are held to 10% and CV is 30% is expected to be on the order of 0.5 per generation.

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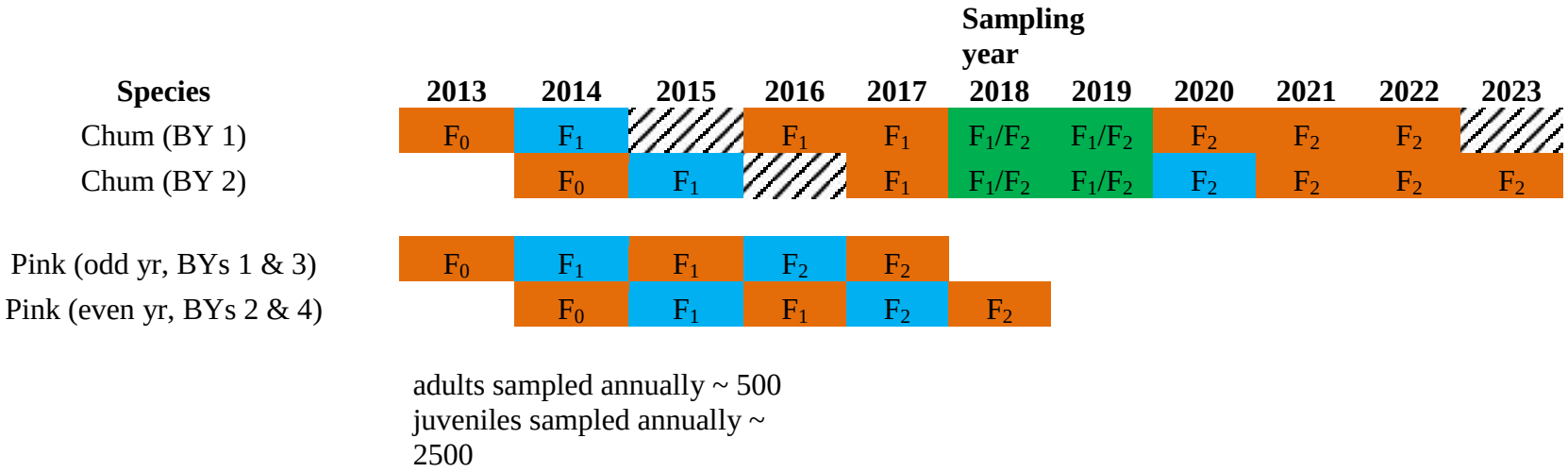
Table 1. Sampling design to evaluate relative reproductive success of hatchery and wild chum and pink salmon in a single stream (where both species are present). Orange cells indicate sampling of adults only, blue cells indicate sampling of juveniles only,

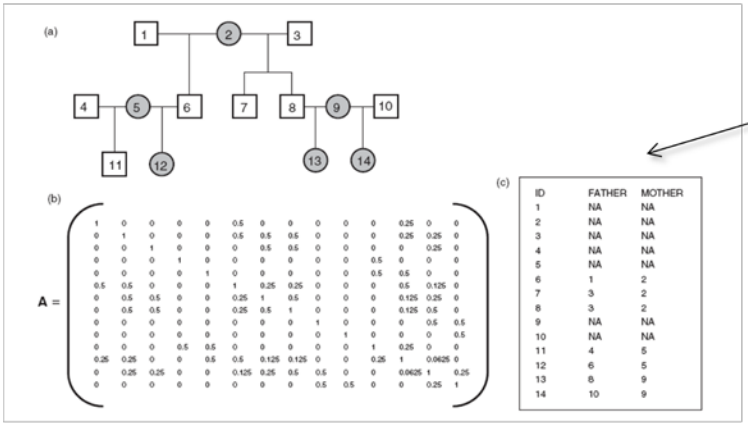
and green cells indicate sampling of both life stages (hatched cells indicate no sampling). F_0, initial generation; F_1, 1st-generation progeny; F_2, 2nd-generation progeny. BY is brood year (cohort).



adults sampled annually ~ 500
juveniles sampled annually ~ 2500

Figure 1. A simple schematic of pedigree reconstruction, showing a candidate final pedigree (a), a relationship matrix estimated from the kinship data and used to parameterize the animal model (b), and the raw genotypic relationships (c) and associated phenotypes (at bottom).

Pedigree reconstruction



Wilson *et al* (2010) *JAE*, and Hard & Olsen (unpubl)

Inputs:

- a DNA pedigree…

- corresponding phenotypic data

animal	sire	dam	brood.yr	sample.date	sex	length.mef	length.meh	age.fw	age.sw	age.total
ktul0310.004	NA	NA	1997	2003	f	905	NA	1	4	6
ktul0310.032	NA	NA	1997	2003	f	940	NA	1	4	6
ktul0310.033	NA	NA	1997	2003	f	885	NA	1	4	6
ktul0310.046	NA	NA	1998	2003	f	715	NA	1	3	5
ktul0310.058	NA	NA	1997	2003	f	830	NA	1	4	6
…	…	…	…	…	…	…	…	…	…	…
ktul0310.023	NA	NA	1998	2003	m	705	NA	1	3	5
ktul0310.056	NA	NA	1998	2003	m	890	NA	1	3	5
ktul0310.063	NA	NA	1998	2003	m	710	NA	1	3	5
ktul0310.073	NA	NA	1998	2003	m	790	NA	1	3	5
ktul0310.091	NA	NA	1999	2003	m	590	NA	1	2	4
KTUL0704.012	sire1	dam1	2003	06/29/00	m	505	NA	1	2	4
KTUL0704.017	sire2	dam2	2003	07/04/07	m	520	470	1	2	4
KTUL0704.022	sire3	dam3	2003	07/04/07	m	630	560	1	2	4
KTUL0704.025	sire4	dam4	2003	07/05/07	m	550	440	1	2	4
KTUL0704.035	sire5	dam5	2003	07/05/07	m	440	380	1	2	4
KTUL0704.036	sire6	dam6	2003	07/05/07	m	545	480	1	2	4
KTUL0704.038	sire7	dam7	2003	07/05/07	m	480	415	1	2	4
KTUL0704.045	sire8	ktul0310.004	2003	07/05/07	m	515	480	1	2	4
…	…	…	…	…	…	…	…	…	…	…

5.02 Deliverables

The contractor will be required to provide the following deliverables:

(a) *Annual Progress Reports detailing activities undertaken that year and summaries of data collection.*

After completion of two full seasons of data collection (2013 and 2014) and receipt of the annual progress reports, the Department will review the activity/progress to determine the benefit and viability of continuation of the project.

(b) Analysis of data collected on an annual basis , integrating field sampling data with otolith analyses provided by the ADFG MTA laboratory , including:

1) Estimate of proportion of hatchery pink salmon in escapements of PWS index streams by district and the whole sound.

2) Estimate of proportion of hatchery chum salmon in escapements of PWS and Southeast Alaska index streams by district and the sound in PWS and by the three broad index areas on Southeast Alaska.

3) Annual estimates of the numbers of hatchery and wild pink and chum salmon in the harvest and escapement in PWS and Southeast Alaska.

(c) *Final Report detailing results of five years of research.*

SECTION SIX
PROPOSAL FORMAT AND CONTENT

6.01 Proposal Format and Content

The state discourages overly lengthy and costly proposals, however, in order for the state to evaluate proposals fairly and completely, offerors must follow the format set out in this RFP and provide all information requested.

6.02 Introduction

Proposals must include the complete name and address of offeror's firm and the name, mailing address, and telephone number of the person the state should contact regarding the proposal.

Proposals must confirm that the offeror will comply with all provisions in this RFP; and, if applicable, provide notice that the firm qualifies as an Alaskan bidder. Proposals must be signed by a company officer empowered to bind the company. An offeror's failure to include these items in the proposals may cause the proposal to be determined to be non-responsive and the proposal may be rejected.

6.03 Understanding of the Project

Offerors must provide comprehensive narrative statements that illustrate their understanding of the requirements of the project and the project schedule.

6.04 Methodology Used for the Project

Offerors must provide comprehensive narrative statements that set out the methodology they intend to employ and illustrate how the methodology will serve to accomplish the work and meet the state's project schedule.

6.05 Management Plan for the Project

Offerors must provide comprehensive narrative statements that set out the management plan they intend to follow and illustrate how the plan will serve to accomplish the work and meet the state's project schedule.

6.06 Experience and Qualifications

Offerors must provide an organizational chart specific to the personnel assigned to accomplish the work called for in this RFP; illustrate the lines of authority; designate the individual responsible and accountable for the completion of each component and deliverable of the RFP.

Offerors must provide a narrative description of the organization of the project team and a personnel roster that identifies each person who will actually work on the contract and provide the following information about each person listed:

a. title,

b. resume,

c. location(s) where work will be performed,

d. itemize the total cost and the number of estimated hours for each individual named above.

Offerors must provide reference names and phone numbers for similar projects the offeror's firm has completed.

6.07 Cost Proposal

Cost proposals must include an itemized list of all direct and indirect costs associated with the performance of the contract, including, but not limited to, total number of hours at various hourly rates, direct expenses, payroll, supplies, overhead assigned to each person working on the project, percentage of each person's time devoted to the project, and profit.

Cost proposals must include a schedule of costs by year (annual budgets) for all services to be provided.

6.08 Evaluation Criteria

All proposals will be reviewed to determine if they are responsive. They will then be evaluated using the criterion that is set out in Section SEVEN.

An evaluation may not be based on discrimination due to the race, religion, color, national origin, sex, age, marital status, pregnancy, parenthood, disability, or political affiliation of the offeror.

A proposal shall be evaluated to determine whether the offeror responds to the provisions, including goals and financial incentives, established in the request for proposals in order to eliminate and prevent discrimination in state contracting because of race, religion, color, national origin, sex, age, marital status, pregnancy, parenthood, or disability.

SECTION SEVEN
EVALUATION CRITERIA AND CONTRACTOR SELECTION

THE TOTAL NUMBER OF POINTS USED TO SCORE THIS PROPOSAL IS 100

7.01 Understanding of the Project (10 Percent)

Proposals will be evaluated against the questions set out below:

[a] How well has the offeror demonstrated a thorough understanding of the purpose and scope of the project?

[b] How well has the offeror identified pertinent issues and potential problems related to the project?

[c] To what degree has the offeror demonstrated an understanding of the deliverables the state expects it to provide?

[d] Has the offeror demonstrated an understanding of the state's time schedule and can meet it?

7.02 Methodology Used for the Project (15 Percent)

Proposals will be evaluated against the questions set out below:

[a] How comprehensive is the methodology and does it depict a logical approach to fulfilling the requirements of the RFP?

[b] How well does the methodology match and achieve the objectives set out in the RFP?

[c] Does the methodology interface with the time schedule in the RFP?

7.03 Management Plan for the Project (10 Percent)

Proposals will be evaluated against the questions set out below:

[a] [How well does the management plan support all of the project requirements and logically lead to the deliverables required in the RFP?

[b] [How well is accountability completely and clearly defined?

[c] [Is the organization of the project team clear?

[d] [How well does the management plan illustrate the lines of authority and communication?

[e] [To what extent does the offeror already have the hardware, software, equipment, and licenses necessary to perform the contract?

[f] Does it appear that the offeror can meet the schedule set out in the RFP?

[g] Has the offeror gone beyond the minimum tasks necessary to meet the objectives of the RFP?

[h] To what degree is the proposal practical and feasible?

[i] To what extent has the offeror identified potential problems?

7.04 Experience and Qualifications (15 Percent)

Proposals will be evaluated against the questions set out below:

Questions regarding the personnel:

[a] Do the individuals assigned to the project have experience on similar projects?

[b] Are resumes complete and do they demonstrate backgrounds that would be desirable for individuals engaged in the work the project requires?

[c] How extensive is the applicable education and experience of the personnel designated to work on the project?

Questions regarding the firm:

[d] How well has the firm demonstrated experience in completing similar projects on time and within budget?

[e] How successful is the general history of the firm regarding timely and successful completion of projects?

[f] Has the firm provided letters of reference from previous clients?

[g] If a subcontractor will perform work on the contract, how well do they measure up to the evaluation used for the offeror?

7.05 Contract Cost (*40* Percent)

Overall, a minimum of ***40 %*** of the total evaluation points will be assigned to cost. The cost amount used for evaluation may be affected by one or more of the preferences referenced under Section 2.13.

Converting Cost to Points

The lowest cost proposal will receive the maximum number of points allocated to cost. The point allocations for cost on the other proposals will be determined through the method set out in Section 2.15.

7.06 Alaska Offeror Preference (10 Percent)

If an offeror qualifies for the Alaska Bidder Preference, the offeror will receive an Alaska Offeror Preference. The preference will be 10 percent of the total available points. This amount will be added to the overall evaluation score of each Alaskan offeror.

SECTION EIGHT
ATTACHMENTS

8.01 Attachments

Attachments

1. Standard Agreement Form/Appendix A
2. Appendix B1
3. Alaskan Offerors Affidavit

STANDARD AGREEMENT FORM FOR PROFESSIONAL SERVICES

1. Agency Contract Number	2. ASPS Number	3. Financial Coding	4. Agency Assigned Encumbrance Number
5. Vendor Number	6. Project/Case Number	7. Alaska Business License Number	

This contract is between the State of Alaska,

8. Department of	Division	hereafter the State, and

9. Contractor

hereafter the Contractor

Mailing Address	Street or P.O. Box	City	State	ZIP+4

10.

ARTICLE 1. Appendices: Appendices referred to in this contract and attached to it are considered part of **it.**

ARTICLE 2. Performance of Service:

2.1 Appendix A (General Provisions), Articles 1 through 14, governs the performance of services under this contract.
2.2 Appendix B sets forth the liability and insurance provisions of this contract.
2.3 Appendix C sets forth the services to be performed by the contractor.

ARTICLE 3. Period of Performance: The period of performance for this contract begins _____, and ends _____.

ARTICLE 4. Considerations:

4.1 In full consideration of the contractor's performance under this contract, the State shall pay the contractor a sum not to exceed $_____ in accordance with the provisions of Appendix D.
4.2 When billing the State, the contractor shall refer to the Authority Number or the Agency Contract Number and send the billing to:

11. Department of	Attention: Division of
Mailing Address	Attention:

12. CONTRACTOR		14. **CERTIFICATION:** I certify that the facts herein and on supporting documents are correct, that this voucher constitutes a legal charge against funds and appropriations cited, that sufficient funds are encumbered to pay this obligation, or that there is a sufficient balance in the appropriation cited to cover this obligation. I am aware that to knowingly make or allow false entries or alterations on a public record, or knowingly destroy, mutilate, suppress, conceal, remove or otherwise impair the verity, legibility or availability of a public record constitutes tampering with public records punishable under AS 11.56.815-.820. Other disciplinary action may be taken up to and including dismissal.
Name of Firm		
Signature of Authorized Representative	Date	
Typed or Printed Name of Authorized Representative		
Title		

13. CONTRACTING AGENCY		Signature of Head of Contracting Agency or Designee	Date
Department/Division	Date		
Signature of Project Director		Typed or Printed Name	
Typed or Printed Name of Project Director		Title	

Title	

NOTICE: This contract has no effect until signed by the head of contracting agency or designee.

02-093 (12/03/02)
BACK 02-093 (04/01/03)

APPENDIX A - GENERAL PROVISIONS

Article 1. Definitions.

1.1 In this contract and appendices, "Project Director" or "Agency Head" or "Procurement Officer" means the person who signs this contract on behalf of the Requesting Agency and includes a successor or authorized representative.

1.2 "State Contracting Agency" means the department for which this contract is to be performed and for which the Commissioner or Authorized Designee acted in a signing this contract.

Article2. Inspection and Reports.

2.1 The department may inspect, in the manner and at reasonable times it considers appropriate, all the contractor's facilities and activities under this contract.

2.2 The contractor shall make progress and other reports in the manner and at the times the department reasonably requires.

Article 3. Disputes.

3.1 Any dispute concerning a question of fact arising under this contract which is not disposed of by mutual agreement shall be decided in accordance with AS 36.30.620-632.

Article 4. Equal Employment Opportunity.

4.1 The contractor may not discriminate against any employee or applicant for employment because of race, religion, color, national origin, or because of age, disability, sex, marital status, changes in marital status, pregnancy or parenthood when the reasonable demands of the position(s) do not require distinction on the basis of age, disability, sex, marital status, changes in marital status, pregnancy, or parenthood. The contractor shall take affirmative action to insure that the applicants are considered for employment and that employees are treated during employment without unlawful regard to their race, color, religion, national origin, ancestry, disability, age, sex, marital status, changes in marital status, changes in marital status, pregnancy or parenthood. This action must include, but need not be limited to, the following: employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training including apprenticeship. The contractor shall post in conspicuous places, available to employees and applicants for employment, notices setting out the provisions of this paragraph.

4.2 The contractor shall state, in all solicitations or advertisements for employees to work on State of Alaska contract jobs, that it is an equal opportunity employer and that all qualified applicants will receive consideration for employment without regard to race, religion, color, national origin, age, disability, sex, marital status, changes in marital status, pregnancy or parenthood.

4.3 The contractor shall send to each labor union or representative of workers with which the contractor has a collective bargaining agreement or other contract or understanding a notice advising the labor union or workers' compensation representative of the contractor's commitments under this article and post copies of the notice in conspicuous places available to all employees and applicants for employment.

4.4 The contractor shall include the provisions of this article in every contract, and shall require the inclusion of these provisions in every contract entered into by any of its subcontractors, so that those provisions will be binding upon each subcontractor. For the purpose of including those provisions in any contract or subcontract, as required by this contract, "contractor" and "subcontractor" may be changed to reflect appropriately the name or designation of the parties of the contract or subcontract.

4.5 The contractor shall cooperate fully with State efforts which seek to deal with the problem of unlawful discrimination, and with all other State efforts to guarantee fair employment practices under this contract, and promptly comply with all requests and directions from the State Commission for Human Rights or any of its officers or agents relating to prevention of discriminatory employment practices.

4.6 Full cooperation in paragraph 4.5 includes, but is not limited to, being a witness in any proceeding involving questions of unlawful discrimination if that is requested by any official or agency of the State of Alaska; permitting employees of the contractor to be witnesses or complainants in any proceeding involving questions of unlawful discrimination, if that is requested by any official or agency of the State of Alaska; participating in meetings; submitting periodic reports on the equal employment aspects of present and future employment; assisting inspection of the contractor's facilities; and promptly complying with all State directives considered essential by any office or agency of the State of Alaska to insure compliance with all federal and State laws, regulations, and policies pertaining to the prevention of discriminatory employment practices.

4.7 Failure to perform under this article constitutes a material breach of the contract.

Article 5. Termination.

The Project Director, by written notice, may terminate this contract, in whole or in part, when it is in the best interest of the State. The State is liable only for payment in accordance with the payment provisions of this contract for services rendered before the effective date of termination.

Article 6. No Assignment or Delegation.

The contractor may not assign or delegate this contract, or any part of it, or any right to any of the money to be paid under it, except with the written consent of the Project Director and the Agency Head.

Article 7. No Additional Work or Material.

No claim for additional services, not specifically provided in this contract, performed or furnished by the contractor, will be allowed, nor may the contractor do any work or furnish any material not covered by the contract unless the work or material is ordered in writing by the Project Director and approved by the Agency Head.

Article 8. Independent Contractor.

The contractor and any agents and employees of the contractor act in an independent capacity and are not officers or employees or agents of the State in the performance of this contract.

Article 9. Payment of Taxes.

As a condition of performance of this contract, the contractor shall pay all federal, State, and local taxes incurred by the contractor and shall require their payment by any Subcontractor or any other persons in the performance of this contract. Satisfactory performance of this paragraph is a condition precedent to payment by the State under this contract.

Article 10. Ownership of Documents.

All designs, drawings, specifications, notes, artwork, and other work developed in the performance of this agreement are produced for hire and remain the sole property of the State of

Alaska and may be used by the State for any other purpose without additional compensation to the contractor. The contractor agrees not to assert any rights and not to establish any claim under the design patent or copyright laws. The contractor, for a period of three years after final payment under this contract, agrees to furnish and provide access to all retained materials at the request of the Project Director. Unless otherwise directed by the Project Director, the contractor may retain copies of all the materials.

Article 11. Governing Law.

This contract is governed by the laws of the State of Alaska. All actions concerning this contract shall be brought in the Superior Court of the State of Alaska.

Article 12. Conflicting Provisions.

Unless specifically amended and approved by the Department of Law the General Provisions of this contract supersede any provisions in other appendices.

Article 13. Officials Not to Benefit.

Contractor must comply with all applicable federal or State laws regulating ethical conduct of public officers and employees.

Article 14. Covenant Against Contingent Fees.

The contractor warrants that no person or agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee except employees or agencies maintained by the contractor for the purpose of securing business. For the breach or violation of this warranty, the State my terminate this contract without liability or in its discretion deduct from the contract price or consideration the full amount of the commission, percentage, brokerage or contingent fee.

APPENDIX B1
INDEMNITY AND INSURANCE

Article 1. Indemnification

The Contractor shall indemnify, hold harmless, and defend the contracting agency from and against any claim of, or liability for error, omission or negligent act of the Contractor under this agreement. The Contractor shall not be required to indemnify the contracting agency for a claim of, or liability for, the independent negligence of the contracting agency. If there is a claim of, or liability for, the joint negligent error or omission of the Contractor and the independent negligence of the Contracting agency, the indemnification and hold harmless obligation shall be apportioned on a comparative fault basis. “Contractor” and “Contracting agency”, as used within this and the following article, include the employees, agents and other contractors who are directly responsible, respectively, to each. The term “independent negligence” is negligence other than in the Contracting agency’s selection, administration, monitoring, or controlling of the Contractor and in approving or accepting the Contractor’s work.

Article 2. Insurance

Without limiting Contractor's indemnification, it is agreed that Contractor shall purchase at its own expense and maintain in force at all times during the performance of services under this agreement the following policies of insurance. Where specific limits are shown, it is understood that they shall be the minimum acceptable limits. If the Contractor's policy contains higher limits, the state shall be entitled to coverage to the extent of such higher limits. Certificates of Insurance must be furnished to the Contracting Officer prior to beginning work and must provide for a 30-day prior notice of cancellation, nonrenewal or material change of conditions. Failure to furnish satisfactory evidence of insurance or lapse of the policy is a material breach of this contract and shall be grounds for termination of the Contractor's services. All insurance policies shall comply with, and be issued by insurers licensed to transact the business of insurance under AS 21.

2.1 Workers' Compensation Insurance: The Contractor shall provide and maintain, for all employees engaged in work under this contract, coverage as required by AS 23.30.045, and; where applicable, any other statutory obligations including but not limited to Federal U.S.L. & H. and Jones Act requirements. The policy must waive subrogation against the State.

2.2 Commercial General Liability Insurance: covering all business premises and operations used by the Contractor in the performance of services under this agreement with minimum coverage limits of $300,000 combined single limit per occurrence.

2.3 Commercial Automobile Liability Insurance: covering all vehicles used by the Contractor in the performance of services under this agreement with minimum coverage limits of $300,000 combined single limit per occurrence.

ALASKA BIDDER PREFERENCE AFFIDAVIT
(AS 36.30.170)

In response to Request for Proposal number 2013-1100-1020, I certify under penalty of perjury that _____
(Name)

qualifies for the Alaska Bidder Preference under the following conditions:

(1) holds a current Alaska business license (**A COPY OF THE LICENSE OR ACCEPTABLE EVIDENCE MUST BE INCLUDED WITH YOUR PROPOSAL. SEE SECTION 2.09 FOR ACCEPTABLE EVIDENCE)**;

(2) submits a proposal for goods or services under the name on the Alaska business license;

(3) has maintained a place of business within the state staffed by the proposer, or an employee of the proposer for a period of six months immediately preceding the date of the proposal;

(4) is incorporated or qualified to do business under the laws of the State, is a sole proprietorship, and the proprietor is a resident of the State, is a limited liability company organized under AS 10.50 and all members are residents of the state, or is a partnership under AS 32.05 or As 32.11 and all partners are residents of the State; and

(5) if a joint venture, is composed entirely of entities that qualify under (1) to (4) of this section.

_____ _____
Authorized Signature Alaska Business License Number

_____ _____
Printed Name Date

_____
Employer ID No. (EIN) or SSN

_____
Telephone Number

Note: This "Alaska Bidder Preference Affidavit" and a copy of your current Alaska business license, or acceptable evidence, must accompany your proposal in order to ensure that the Alaska bidder preference is applied during the evaluation process.