

## Attachment 7C

**Additional RME Plan Costs** - Estimated costs for additional RME Gaps (RFPs or RFQs), Mainstem/System and Estuary/Ocean proposals, or expanded effort in existing projects that were identified in the Draft RME Plan needed to meet the NMFS BiOp.

| RME Category                                     | RFP or Q, Proposal #, or Expanded Effort (EE) | Description                                   | \$2003*(M) | \$ 2004*(M) | \$2005*(M)   | Comments                                    |
|--|---|---|------------|-------------|--------------|---|
| <b>Action Effectiveness Research tributaries</b> | RFQ   | Top-down programmatic monitoring              | 2.0        | 4.0         | 6.0          | RPA 183 – pilot project                     |
|  | RFQ   | Intensive experiments                         | 1.5        | 3.0         | 3.75         | RPA 183                                     |
| <b>Action Effectiveness Research hatchery</b>    | RFP   | Hatchery reform                               | 1.5        | 1.5         | 1.5          | RPA 184                                     |
|  |   |   |            |             |              |   |
| <b>Critical Uncertainty Research</b>             | RFP   | Spawn Eff. hatch. fish-additional populations | 1.0        | 1.0         | 1.0          | RPA 182 - expanded population coverage      |
|  | RFP   | Extra Mortality – any H                       | 1.0        | 1.0         | 1.0          | RPA 195                                     |
|  | 35041 + 198909600(EE)                         | Spawning Eff. hatch. fish                     | 1.4        | 1.5         | 1.5          |   |
|  | 35047   | Extra Mortality - Hydro                       | 1.0        | 1.0         | 1.0          | Modified proposal                           |
|  |   |   |            |             |              |   |
| <b>Data Management</b>                           | 35048   | System development                            | 0.5        | 1.5         | 0.5          | Partial funding of proposal amount.         |
|  |   |   |            |             |              |   |
| <b>Status Monitoring</b>                         | 35019   | Population & Environmental Status Monitoring  | 0.75       | 1.5         | 2.25         | Modified proposal – pilot project           |
|  | EE  | adult surveys                                 | 0.25       | 0.5         | 0.75         |   |
|  | EE  | juvenile surveys                              | 0.25       | 0.5         | 0.75         |   |
|  | EE  | Accounting for harvest removals of wild fish  | 0.25       | 0.5         | 0.75         | Estimate for increased monitoring in zone 6 |
|  | EE  | Estimate % hatch. fish on spawning grounds.   | 0.5        | 0.5         | 0.5          |   |
|  | 35046   | Estuary/plume juveniles                       | 1.0        | 1.5         | 3.5          | Estimate juvenile residence time            |
|  | 30015   | Estuary monitoring                            | 0.5        | 1.0         | 0.9          | Monitoring and Data                         |
|  | 30001   | Estuary juveniles                             | 0.6        | 0.7         | 0.6          | Habitat opportunities and food-web linkages |
| <b>Regional Coordination</b>                     | 35033   | CBFWA Coordination                            | 1.0        | 1.0         | 1.0          |   |
| <b>RFP Subtotal</b>                              |   |   | <b>7.0</b> | <b>10.5</b> | <b>13.2</b>  |   |
| <b>Other Subtotal</b>                            |   |   | <b>8.0</b> | <b>11.7</b> | <b>14.05</b> |   |
| <b>TOTAL \$ (M)</b>                              |   |   | <b>15</b>  | <b>22.2</b> | <b>27.25</b> |   |

\*Estimates do not reflect actual fiscal year accruals. Projects would not start until April, 2003 and therefore accruals would need to be adjusted to address contract timing.

--Estimated cost (obligated) for filling BiOp required RME Gaps (RFPs) and Mainstem/System and Estuary/Ocean proposals as determined by BPA staff on 6 December, 2002 (revised 8 January 2003). EE designation indicates expanded effort required above current levels.

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### Derivation of cost estimates:

Unless noted below, estimates to conduct research as called for under RFP and EE were educated guesses by BPA staff. Estimates for funding of proposals were taken from the most recent version of each proposal.

#### *AER – Tributaries-*

Top-down: (3 pilot subbasins)

1. C. Paulsen estimate for Clearwater as a model to estimate pilot efforts in 3 subbasins.

- \$200k (Bio. Mon.) + \$200k (Env. Mon.) + \$100k (equipment, travel, vehicles etc) + \$150 k (Data Man & analysis) = \$650k/subbasin
- \$650 k - Assumes 25 pairs of treatment and control sites per subbasin
- 3 pilot subbasins =  $650 \times 3 = \$1.95 \text{ M}$ , rounded to 2.0 M.

Intensive Experiments (up to 3 projects in 2003)

Field experiments designed to demonstrate the biological effects of a particular class of habitat actions.

- Classes of actions can include nutrient enhancement, barrier removal, etc
- Depending on the type of action, biological responses can be fish survival, growth; invertebrate production, etc.
- Environmental responses are also documented

Educated guess for monies required

- \$500k per project
- 3 projects =
- \$1.5M in 2003

#### *AER- Hatchery-*

Hatchery Reform

- Draft Hatchery RME Plan identifies five research topics as “gaps.” Assuming five studies are needed to fill the gaps, at an estimated cost of \$300K each per year, total estimated cost would be  $5 \times \$300\text{K} = \$1.5\text{M}$  per year for RFP proposals.

#### *Critical Uncertainty Research-*

Spawning Effectiveness of Hatchery Fish relative to Wild Fish

RPA 184 calls for spawning effectiveness studies using pedigree analysis methods in each of eight ESUs. MS/SW proposals 35041 and 198909600 would implement studies in the SR Sp/Su Chinook, SR Steelhead, and UCR Spring Chinook ESUs. The Draft Hatchery RME Plan identifies studies in the UCR Steelhead, SR Fall Chinook, CR Chum, and possibly MCR Steelhead ESU as the most critical “gaps” to be filled through an RFP. Four studies (one in each “gap” ESU) =  $4 \times \$250\text{K} = \$1.0\text{M}$  per year. (Based on cost figures in the two MS/SW proposals, the average cost for a pedigree-analysis spawning effectiveness study of a hatchery/wild spawning population is roughly \$250K per year.)