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## PART I - ADMINISTRATIVE

### Section 1. General administrative information

#### Title of project

Provide Technical Support For Path

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**BPA project number:** 9601700

**Contract renewal date (mm/yyyy):** 11/1999  **Multiple actions?**

#### Business name of agency, institution or organization requesting funding

BioAnalysts, Inc.

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#### Business acronym (if appropriate)

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#### Proposal contact person or principal investigator:

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#### NPPC Program Measure Number(s) which this project addresses

3.2 A,C,F, 4.2A, 4.3, 7.1E

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#### FWS/NMFS Biological Opinion Number(s) which this project addresses

NMFS Hydro BO RPA 13, A17

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#### Other planning document references

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#### Short description

BioAnalyst, Inc. staff provide technical support for modelling analyses in PATH. We assemble data and estimates for use in construction, calibration and validation of models used in PATH. We work with modelers and review their analyses and output.

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#### Target species

Salmon and steelhead populations in the Columbia Basin.

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### Section 2. Sorting and evaluation

**Subbasin**

Entire mainstem Columbia and Snake rivers.

**Evaluation Process Sort**

<b>CBFWA caucus</b>	<b>Special evaluation process</b>	<b>ISRP project type</b>
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories
<input checked="" type="checkbox"/> Anadromous fish <input type="checkbox"/> Resident fish <input type="checkbox"/> Wildlife	<input checked="" type="checkbox"/> Multi-year (milestone-based evaluation) <input type="checkbox"/> Watershed project evaluation	<input type="checkbox"/> Watershed councils/model watersheds <input type="checkbox"/> Information dissemination <input type="checkbox"/> Operation & maintenance <input type="checkbox"/> New construction <input checked="" type="checkbox"/> Research & monitoring <input checked="" type="checkbox"/> Implementation & management <input type="checkbox"/> Wildlife habitat acquisitions

**Section 3. Relationships to other Bonneville projects**

***Umbrella / sub-proposal relationships.*** List umbrella project first.

<b>Project #</b>	<b>Project title/description</b>
20515	Mainstem Columbia River Umbrella proposal
9600600	Facilitation, technical assistance and peer review of PATH
	ESSA is the Principal Investigator

***Other dependent or critically-related projects***

<b>Project #</b>	<b>Project title/description</b>	<b>Nature of relationship</b>
	See listings in the umbrella proposal.	

**Section 4. Objectives, tasks and schedules**

***Past accomplishments***

<b>Year</b>	<b>Accomplishment</b>	<b>Met biological objectives?</b>

**Objectives and tasks**

<b>Obj 1,2,3</b>	<b>Objective</b>	<b>Task a,b,c</b>	<b>Task</b>
1	Provide PATH modeling groups with sound information with which to construct, calibrate and validate the models.	a	Identify, assemble and characterize data and estimates that may be used in run reconstructions, passage model construction and operation.
2	Determine level of support for key assumptions and hypotheses	a	Critically review and synthesize biological information pertaining to certain key assumptions and hypotheses incorporated in the analyses. In some cases BPA may request alternative analyses to complement the standard model analyses employed in PATH.
3	Reconfigure models to reflect most up to date, sound information	a	Provide modelers with broad-based syntheses of topics important in the construct, calibration and validation of their tools. Emphasis is on fish behavior and survival during downstream and upstream migration.
4	Develop tractable and instructive adaptive management experiments to resolve critical assumptions and hypotheses.	a	Participate in the design of research and monitoring strategies with other PATH members.

**Objective schedules and costs**

<b>Obj #</b>	<b>Start date mm/yyyy</b>	<b>End date mm/yyyy</b>	<b>Measureable biological objective(s)</b>	<b>Milestone</b>	<b>FY2000 Cost %</b>
1	11/1999	10/2000	Improve predictive capabilities of models	Incorporate information into the PATH analytical reports for that year.	25.00%
2	11/1999	10/2000	Properly characterize the uncertainty associated with model predictions, retro- and prospectively.	Ditto	25.00%
3	11/1999	10/2000	Improve predictive capabilities of models	Ditto	25.00%
4	11/1999	10/2000	Sound experiments may assist in resolving uncertainties @ the	Ditto	25.00%

			effectiveness of management alternatives.		
				<b>Total</b>	100.00%

**Schedule constraints**

Litigation. Unexpected problems with run reconstruction or model development for particular populations.

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**Completion date**

Unclear. Some agencies (NMFS NPPC COE) have indicated a need for ongoing analytical work beyond FY2000.

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**Section 5. Budget**

**FY99 project budget (BPA obligated):** \$109,000

***FY2000 budget by line item***

<b>Item</b>	<b>Note</b>	<b>% of total</b>	<b>FY2000</b>
Personnel		%54	59,000
Fringe benefits		%0	
Supplies, materials, non-expendable property		%0	
Operations & maintenance	includes OH @ 57%, FICA, B&O tax	%40	44,000
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		%0	
NEPA costs		%0	
Construction-related support		%0	
PIT tags	# of tags:	%0	
Travel		%6	6,000
Indirect costs		%0	
Subcontractor		%0	
Other		%0	
<b>TOTAL BPA FY2000 BUDGET REQUEST</b>			<b>\$109,000</b>

**Cost sharing**

<b>Organization</b>	<b>Item or service provided</b>	<b>% total project cost (incl. BPA)</b>	<b>Amount (\$)</b>
		%0	
		%0	
		%0	
		%0	
<b>Total project cost (including BPA portion)</b>			<b>\$109,000</b>

**Outyear costs**

	<b>FY2001</b>	<b>FY02</b>	<b>FY03</b>	<b>FY04</b>
<b>Total budget</b>	\$110,000	\$110,000	\$110,000	\$110,000

**Section 6. References**

<b>Watershed?</b>	<b>Reference</b>
<input type="checkbox"/>	Refer to joint reports listed under the ESSA umbrella project.
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

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**PART II - NARRATIVE**

**Section 7. Abstract**

Refer to information provided in the umbrella proposal ( project 9600600) for this material.

**Section 8. Project description**

**a. Technical and/or scientific background**

Refer to the umbrella proposal (project 9600600) for this information.

**b. Rationale and significance to Regional Programs**

See umbrella proposal.

**c. Relationships to other projects**

See umbrella proposal

**d. Project history** (for ongoing projects)

See umbrella proposal.

**e. Proposal objectives**

See umbrella proposal for overall PATH objectives.

**f. Methods**

See umbrella proposal.

**g. Facilities and equipment**

See umbrella proposal.

**h. Budget**

The budgetary levels predicted for FY2000 and the out-years are consistent with the level of effort invested by BioAnalysts, Inc. staff each year since 1996. If additional involvement is requested by BPA or required by the broader PATH forum, these projections may be revised upward. Similarly if billing rates and or OH rates increase in FY1999 those costs will be reflected in the budget submission accompanying that years work statement.

## **Section 9. Key personnel**

Dr. Giorgi is the primary BioAnalysts, Inc. staff member involved in PATH. Dr. Giorgi will participate in the tasks specified herein, at an estimated 520 h annually. Mr. John Stevenson and Gary Johnson will also be available to provide technical support on selected topics (up to 320 h). Drs. Don Chapman and Tracy Hillman could also be available on a limited basis (40 h each) if called upon to review and comment on certain work products produced in PATH

## **Section 10. Information/technology transfer**

See umbrella proposal for a discussion of this topic.

**Congratulations!**