Contract Description 1988-108-04 EXP STREAMNET

1988-108-04 EXP STREAMNET (CIS-NED) FY15

StreamNet is a cooperative, regional scale data compilation and dissemination project that acquires fish related data from the management agencies, standardizes and georeferences them to the hydrography (stream network), and makes them widely available through online data query systems. The project also provides data management related services to a variety of regional entities, including the agencies that create the biological data, and regional groups that have interest in regional scale fish monitoring data.

The StreamNet project is undergoing significant changes in response to new regional data priorities. For FY-2015, data development work on the traditional data types continues to be a secondary priority, with primary emphasis on generating a flow of data to satisfy the Coordinated Assessments project, and to support the archiving of data to secure data repositories that are available to appropriate regional scale entities. More specific work priorities for this year are:

1. Based on the FY-13 inventory of fish monitoring data, work to ensure that data created by BPA funded projects are archived in suitably secure and accessible data repositories, as listed in monitoringresources.org.

2. Assure annual updates of available indicators and metrics as defined by the Coordinated Assessments (CA) project, and work to support improved data flow efficiency. Work toward establishing automated data feeds from the CA database to NOAA Fisheries for the Salmon Population Status database, and as agency capabilities improve, automate data feeds from the agencies to the CA database. As the CA project expands focus to additional types of indicators, such as for hatchery performance, lead the development of Data Exchange Standards (DES) for the project and incorporate them into the CA database.

3. Finalize a DES for juvenile abundance estimates and include this data type as part of the traditional data types in StreamNet. Assure that juvenile data are included in the CA data flow, and work to acquire juvenile data that are broader than just CA metrics for inclusion in the StreamNet database, as a lower priority.

4. Explore the potential to add fish population productivity estimates to the traditional StreamNet data types.

5. Implement a Data Sharing Agreement template to facilitate data sharing through StreamNet and other regional scale databases.

6. Expand use of web services to utilize information from various regional databases such as Taurus, mm.org, monitoringresources.org, etc. to facilitate development of metadata and query capabilities for data in StreamNet, with a goal of increasing efficiency by eliminating the need for data sources to enter the same information more than once.

7. Prepare to receive and maintain data from the Northwest Habitat Institute as directed by the Northwest Power and Conservation Council.

Any work to update the traditional StreamNet data types will be attempted only when work to address the new priorities has been completed. Some resumption of updating the more traditional data may begin in FY-15, but complete updating of standard data trends will not be possible due to other priorities.

Ongoing work to support the project will include maintenance of the databases and computer infrastructure needed to manage and disseminate the data, regional coordination to integrate StreamNet efforts with other regional efforts to maximize efficiency of data flow and support regional approaches to data management and sharing, and administration of the project.

Details of the specific tasks to be performed in FY-2015 are presented in this Statement of Work.

Streamlined and shortened

2015 StreamNet Statement of Work Template Draft 20140606

**Letter Title Pisces Work Element (Cost Percent)**

**A Support transfer of data into secure & accessible repositories** 159. Transfer/Consolidate/Regionally Standardize Data ($42,365.00 2.03 %)

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| **Description:** Work with BPA project sponsors and others, as needed, to assist in assuring that data are archived and backed up in repositories, as listed at monitoringresources.org, that are secure from catastrophic loss and are web accessible to specified data users. |
| **Deliverable Specification:** StreamNet participants assist sponsors in securing data in appropriate repositories, as requested. Data are stored in appropriate repositories. |

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| **Milestone Title: Assist project sponsors transfer of data to secure and accessible repositories** | **StartDate** | **EndDate** |
| PSMFC StreamNet will assist BPA project sponsors in locating appropriate data repositories, as listed in monitoringresources.org, for secure storage and accessibility to BPA and other appropriate entities. For data that will be archived in the StreamNet Data Store, staff will assist project sponsors with metadata creation and data upload if requested and within staff resources. | 10/1/2014 | 9/30/2015 |
| CTCR StreamNet will assist tribal project sponsors in locating appropriate data repositories, as listed in monitoringresources.org, for secure storage and accessibility. For data that will be archived in the StreamNet Data Store, staff will assist sponsors with metadata creation and data upload or refer sponsors to PSMFC for assistance. | 10/1/2014 | 9/30/2015 |
| IDFG StreamNet will assist IDFG project sponsors in locating appropriate data repositories, as listed in monitoringresources.org, for secure storage and accessibility. For data that will be archived in the StreamNet Data Store, staff will assist sponsors with metadata creation and data upload or refer sponsors to PSMFC for assistance. | 10/1/2014 | 9/30/2015 |
| MFWP StreamNet will assist MFWP project sponsors in locating appropriate data repositories, as listed in monitoringresources.org, for secure storage and accessibility. For data that will be archived in the StreamNet Data Store, staff will assist sponsors with metadata creation and data upload or refer sponsors to PSMFC for assistance. | 10/1/2014 | 9/30/2015 |
| ODFW StreamNet will assist ODFW project sponsors in locating appropriate data repositories, as listed in monitoringresources.org, for secure storage and accessibility. For data that will be archived in the StreamNet Data Store, staff will assist sponsors with metadata creation and data upload or refer sponsors to PSMFC for assistance. | 10/1/2014 | 9/30/2015 |
| WDFW StreamNet will assist WDFW project sponsors in locating appropriate data repositories, as listed in monitoringresources.org, for secure storage and accessibility. For data that will be archived in the StreamNet Data Store, staff will assist sponsors with metadata creation and data upload or refer sponsors to PSMFC for assistance. | 10/1/2014 | 9/30/2015 |
| FWS StreamNet will assist FWS project sponsors in locating appropriate data repositories, as listed in monitoringresources.org, for secure storage and accessibility. For data that will be archived in the StreamNet Data Store, staff will assist sponsors with metadata creation and data upload or refer sponsors to PSMFC for assistance.  | 10/1/2014 | 9/30/2015 |

**B Maintain SN Data Store as a secure and accessible repository** 160. Create/Manage/Maintain database ($3,975.00 0.19 %)

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| **Description:** Continue to manage and improve the StreamNet Data Store as a repository for unstructured data. Expand linkage with metadata in mm.org, Taurus, etc. to simplify metadata creation for project sponsors submitting data for archiving. Additional support may be provided for fixing bugs or further streamlining metadata requirements. Metadata should be consistent with the PNAMP MMX and should use standard schema adopted by the PNAMP metadata working group as used in the monitoring resources "Metadata builder". Implement universal login if feasible. |
| **Deliverable Specification:** The Data Store data submission procedure is improved, efficient, and is increasingly used as an archive for unstructured data, particularly from BPA project sponsors. The Data Store tools integrate with mm.org and cbfish.org. |

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| **Milestone Title: Enhance the function of the Data Store for dissemination of BPA project and other unstructured data** | **StartDate** | **EndDate** |
| PSMFC will improve functionality of the Data Store for disseminating data created by BPA-funded and other projects through integration with data in monitoringmethods.org, cbfish.org, etc. Standard procedures will include review and processing of each data set and related metadata within one business day of submission, with confirmation when the sponsor's data set is made live on the Data Store. Procedures for handling data sets with non-universal access, if established, will be implemented in appropriate cases. | 10/1/2014 | 9/30/2015 |

**C CA data - coordination**  189. Regional Coordination ($93,295.00 4.48 %)

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| **Description:** The Coordinated Assessments project seeks to improve basin-wide assessments of salmon and steelhead population abundance and productivity indicators by improving how data are shared among agencies and tribes. StreamNet will provide leadership and coordination for the project, particularly its technical aspects. StreamNet will continue serving on the CA Core Team and the Planning Group (CAPG). StreamNet will lead the DES Development Team to manage existing contents and to expand to new data types, and will participate in project meetings and workshops. StreamNet will work with partners to establish an exchange node on the EPA network for CA data. |
| **Deliverable Specification:** StreamNet provides leadership and coordination for the Coordinated Assessments project, including participation in the CA core team and planning group, leadership of the DES Development Team, leadership of the technical aspects of the project, and overall project participation and coordination. An exchange node on the EPA network is created. |

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| **Milestone Title: Coordinate and support the Coordinated Assessments project** | **StartDate** | **EndDate** |
| PSMFC StreamNet staff will continue in a leadership role in the Coordinated Assessments project, including serving as technical lead, serving on the CA Core Team, participating in the CA Planning Group, leading the DES Development Team, discussing expansion of a CA-like process for new data types, such as resident fish, and coordinating with the agencies that provide and use the CA data. | 10/1/2014 | 9/30/2015 |
| ODFW StreamNet will coordinate with the CAPG, ODFW, and other data source agencies in Oregon to support efficient flow of data to the Coordinated Assessments project, and will coordinate with project participants including participation in workshops, meetings or web meetings. | 10/1/2014 | 9/30/2015 |
| IDFG StreamNet will coordinate with the CAPG, IDFG, and other data source agencies in Idaho to support efficient flow of data to the Coordinated Assessments project, and will coordinate with project participants including participation in workshops, meetings or web meetings. | 10/1/2014 | 9/30/2015 |
| The Colville Tribe StreamNet project will participate in the several workshops and web meetings which are held throughout the year in which updates are given and coordination is made among various participants. | 10/1/2014 | 9/30/2015 |
| WDFW StreamNet will coordinate with the CAPG, WDFW, and other data source agencies in Washington to support efficient flow of data to the Coordinated Assessments project, and will coordinate with project participants including participation in workshops, meetings or web meetings. | 10/1/2014 | 9/30/2015 |
| FWS StreamNet project will participate in the several workshops and web meetings which are held throughout the year in which updates are given and coordination is made among various participants. | 10/1/2014 | 9/30/2015 |

**D CA data - DES and database** 160. Create/Manage/Maintain database ($128,450.00 6.17 %)

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| **Description:** Manage the existing Coordinated Assessments Data Exchange Standard (DES) for the initial indicators and metrics.  Expand the DES to include additional metrics as they are adopted by the CAPG and participating state and tribal agencies. New indicators may be recommended by the CAPG and incorporated into the work plan.  Manage and QA the CA data in a database conforming to the CA DES. Assist partners in creation of a database on the EPA node. Primary focus will be on maintaining the DES and database for the following Indicators: 1. NOSA (Natural Origin Spawning Adults)2. SARs (Smolt to Adult returns)3. RperS (Recruits per Spawner)4. Juvenile Productivity5. Hatchery spawning (pHOS), 6. PNI, (Percent Natural Influence)7. Egg to release survival, 8. Hatchery SAR, and 9. RperS (Hatchery recruits per spawner) |
| **Deliverable Specification:** The CA DES is maintained and updated to include new indicators and their supporting metrics and metadata, and CA data are loaded and QA'd in a conforming database. A node on the EPA network is created and an indicator database for the same data exists on StreamNet and is linked effectively to that node. |

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| **Milestone Title: Development and maintenance of CA data exchange standards and database** | **StartDate** | **EndDate** |
| PSMFC StreamNet staff will lead the development of a database for Indicator level data on the StreamNet website, including access and security as defined in the applicable Data Sharing Agreement for CA. PSMFC StreamNet staff will maintain the CA database indicator and metric database on the EPA node in conformity with the Coordinated Assessments DES. Staff will load the Indicators and Metrics provided by the participating agencies into the database, develop stored procedures to perform QA/QC to assure data quality, and assure that the data are available for dissemination to users through web services. PSMFC will maintain and improve the CA database as necessary until such time as an Exchange Network approach can be implemented among all project members, and at that time lead the central management function for the network. | 10/1/2014 | 9/30/2015 |
| PSMFC StreamNet staff will lead the DES Development Team to manage and update the existing CA Data Exchange Standard and work to add additional indicators to include derived estimates and field level measures of juveniles summarized as trends on an annual basis to the DES as directed by the CAPG. PSMFC staff will coordinate with data providers to ensure the DES is interpreted and implemented consistently among data sources. PSMFC StreamNet staff will educate the region about the smolt trap data collection, management, and analysis system that was created under USFWS funding, for possible implementation in the Columbia Basin. Where features, such as analysis routines, from this robust system could enhance other existing systems, the code will be provided for use in those systems. If agencies wish to adopt this system, PSMFC staff will assist new users with installation and implementation of the system. Workshops or webinars will be held to demonstrate system capabilities and for training | 10/1/2014 | 9/30/2015 |
| The Colville Tribe StreamNet project will participate in maintenance of the existing CA Data Exchange Standard and in development of new DES contents, as needed throughout the year. In order to conform to the Coordinated Assessment processes and goals, changes or additions to the OBMEP database will be made to incorporate the Coordinated Assessments Data Exchange Standard. | 10/1/2014 | 9/30/2015 |
| FWS will participate in the development and maintenance of the CA DES, and CA related data will be organized and managed in project databases. | 10/1/2014 | 9/30/2015 |
| IDFG StreamNet staff will participate in the management and modifications to the CA Data Exchange Format to assure consistent organization and flow of data. IDFG will develop a database and user interface for data entry and data management of Coordinated Assessments indicators developed and managed by IDFG biologists. | 10/1/2014 | 9/30/2015 |
| ODFW will participate in the management and modifications to the CA Data Exchange Format to assure consistent organization and flow of data. ODFW will develop database systems for data entry and/or data management of Coordinated Assessments indicators developed and managed by ODFW biologists. | 10/1/2014 | 9/30/2015 |
| WDFW StreamNet will manage their databases to incorporate the CA data (indicators, metrics and metadata) in DES format, and participate in management of the CA DES. | 10/1/2014 | 9/30/2015 |

**E CA data - compile data**  159. Transfer/Consolidate/Regionally Standardize Data ($175,675.00 8.43 %)

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| **Description:** Obtain the available CA indicator and supporting metrics, convert them into the DES format, and exchange them with the interim CA database at PSFMC StreamNet until such time as an exchange database is functional on the EPA node. Work with partners to assist in data exchange between agency databases and the node. |
| **Deliverable Specification:** All available CA indicators and metrics are obtained, updated, converted to the DES format, and exchanged with the CA database. |

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| **Milestone Title: Compile data relevant to Coordinated Assessments indicators and metrics as outlined in the Coordinated Assessment Planning Group’s (CAPG) annual work plan.** | **StartDate** | **EndDate** |
| PSMFC: StreamNet staff will ensure that the CAPG annual work plan includes measurable goals and objectives for compilation of data. These goals will be clearly communicated to partners and PSMFC staff will provide guidance, coordination, and will assist partners with data compilation issues. A database for indicator level data will be provided on the StreamNet website, and data will be exchanged. | 10/1/2014 | 9/30/2015 |
| CTCR: Data related to the Coordinated Assessments will be managed in the OBMEP database system, and any available indicators and metrics will be exchanged to the CA database at PSMFC and to the EPA node as it becomes operational.  | 10/1/2014 | 9/30/2015 |
| FWS will compile and deliver available hatchery indicators and metrics to the CA database at PSMFC.  | 10/1/2014 | 9/30/2015 |
| IDFG StreamNet Data related to the Coordinated Assessments will be managed in the IFWIS database system, and any available indicators and metrics will be exchanged to the CA database at PSMFC and to the EPA node as it becomes operational.  | 10/1/2014 | 9/30/2015 |
| ODFW StreamNet Data related to the Coordinated Assessments will be incorporated into the Salmon & Steelhead Recovery Tracker database system, and any available indicators and metrics will be exchanged to the CA database at PSMFC and to the EPA node as it becomes operational.  | 10/1/2014 | 9/30/2015 |
| WDFW StreamNet Data related to the Coordinated Assessments will be managed in the WDFW database system, and any available indicators and metrics will be exchanged to the CA database at PSMFC and to the EPA node as it becomes operational.  | 10/1/2014 | 9/30/2015 |

**F CA data - automated data exchange** 160. Create/Manage/Maintain database ($89,200.00 4.28 %)

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| **Description:** Establish automated feeds of the CA data to the CA database at PSMFC StreamNet and then to the exchange network at EPA via web services or other automated means.  |
| **Deliverable Specification:** Automated feeds of CA data to the CA database are implemented and evaluated for effectiveness, and automated data feeds to NOAA are initiated. |

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| **Milestone Title: Improve systems to manage data feeding CA indicators from field offices to regional repositories** | **StartDate** | **EndDate** |
| PSMFC: StreamNet staff will work with participants in the CA project to develop automated flow of indicator and metric data in CA DES format to the CA database at PSMFC and then to the EPA exchange network as it becomes operational. PSMFC StreamNet staff will maintain, and enhance as needed, the automated feed of CA indicators and supporting metrics to the NOAA Fisheries Salmon Population Status database that was initiated in FY-13. | 10/1/2014 | 9/30/2015 |
| IDFG: will develop corporate data sets and services to deliver CA data to StreamNet repositories automated method as determined by the Coordinated Assessments Exchange Configuration Team.  | 10/1/2014 | 9/30/2015 |
| CTCR: will develop corporate data sets and services to deliver CA data to StreamNet repositories via automated method as determined by the Coordinated Assessments Exchange Configuration Team. | 10/1/2014 | 9/30/2015 |
| WDFW: will develop corporate data sets and services to deliver CA data to StreamNet repositories via Data.Wa.Gov or other automated method as determined by the Coordinated Assessments Exchange Configuration Team. | 10/1/2014 | 9/30/2015 |
| ODFW: will develop corporate data sets and services to deliver CA data to StreamNet repositories via automated method as determined by the Coordinated Assessments Exchange Configuration Team. |  |  |

**G CA data – dissemination**  161. Disseminate Raw & Summary Data and Results ($24,200.00 1.16 %)

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| **Description:** StreamNet will disseminate the CA indicator data by hosting a database for this data on the StreamNet website. Searchability and access to this information will be provided consistent with a Data Sharing Agreement. Indicator and metric data will be stored on the EPA exchange node, and made accessible for use by regional fish managers for review and decision-making.  |
| **Deliverable Specification:** The CA indicators, metrics and metadata are available, consistent with a Data Sharing Agreement on either the StreamNet website or EPA node.  |

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| **Milestone Title: Disseminate the Coordinated Assessments indicators and metrics** | **StartDate** | **EndDate** |
| PSMFC: StreamNet will establish means to disseminate the CA indicators through the StreamNet website and will work with partners to establish means to disseminate the CA metrics through the EPA node.  | 10/1/2014 | 9/30/2015 |

**H Compile traditional StreamNet data and explore possible expansion of a CA-like process for resident fish and other fish metric data** 159. Transfer/Consolidate/Regionally Standardize Data ($233,960.00 11.22 %)

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| **Description:** Resume updating traditional data in the standard StreamNet database (redd counts, spawner counts, estimates of spawning population, dam and weir counts, hatchery return counts, age composition, barriers, and distribution), as time and staffing permit. Update the existing trends and exchange with the StreamNet database at PSMFC. Work on this task and maintenance of traditional StreamNet data will be secondary to progress on the existing Coordinated Assessments if prioritization is an issue. As regional priorities are established through collaboration and coordination, additional traditional data types may be included in a CA-type process for regional standardization, necessitating additional partnerships, such as with resident fish data managers. StreamNet will work with these partners collaboratively to develop, select indicators, compile data, and automate data flow as regional fish managers determine priorities for potential standardization of these new data types. |
| **Deliverable Specification:** Data sets are updated as time and staffing allow. State hydrography layers, including streams and lakes, are maintained and updated as necessary. Compile fish data on adult abundance, spawner counts, and estimates of spawning populations, hatchery returns, age composition, habitat, barriers, distribution, juvenile abundance, resident fish, hydrography, and related metrics. As regional priorities for resident fish and other fish metric data are established via a CA-like process, and as time and resources allow, survey fish managers to determine the availability of resident fish and other fish metric data, by priority, to detail the availability, type, and location of data.  |

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| **Milestone Title: Compile and deliver traditional fish data to StreamNet databases.** | **StartDate** | **EndDate** |
| PSMFC: Traditional data is uploaded and made available on StreamNet without interfering with progress on Coordinated Assessments. PSMFC StreamNet staff conduct a review of data use patterns and report to the Steering and Executive committees with recommendations on prioritization and focus. Develop a prioritized list of traditional data types and categories for review by the committees. Objective will be to focus future updates and maintenance on data types that are most useful to the region | 10/1/2014 | 9/30/2015 |
| The Colville StreamNet project will compile data on adult steelhead enumeration in the Okanogan River. Compiling these data my require building new tables and routines in the OBMEP database.Colville StreamNet will compile data on juvenile steelhead abundance in the Okanogan. Compiling these data may involve building new tables, routines, or scripts to expand snorkel observations into fish densities | 10/1/2014 | 9/30/2015 |
| FWS will compile data for 2013 hatchery returns and related age composition and exchange the data in DES format to the StreamNet database at PSMFC | 10/1/2014 | 9/30/2015 |
| IDFG will extract redd count, spawner count, hatchery return, age composition, spawning population estimate and fish distribution data from its internal databases, convert to StreamNet DES Format and submit to the central StreamNet database.After a juvenile abundance DES is formalized and after surveying available juvenile count data, IDFG will initiate the compilation of juvenile abundance data into StreamNet DES format and submit available data to the central StreamNet database. These data may be for populations or species besides those where the CA indicators and metrics are calculated, and may be calculated at less than a population scale. | 10/1/2014 | 9/30/2015 |
| WDFW will update traditional StreamNet data sets as staff time permits.  | 10/1/2014 | 9/30/2015 |
| ODFW will update traditional StreamNet datasets for listed populations, and compile new priority data types as time and resources allow.  | 12/1/2014 | 9/30/2015 |
| MFWP: After a juvenile abundance DES is formalized and after surveying available juvenile count data, MFWP will initiate the compilation of juvenile abundance data into StreamNet DES format and submit available data to the central StreamNet database. Update, maintain, correct and exchange resident fish abundance data including trends (redd counts), summarized population count and references. Compile updated genetic results information on Montana's species of concern/native trout and provide to StreamNet as an independent data set to the Data Store. Update, maintain, correct and exchange resident fish distribution and documentation information with the regional StreamNet database in the DEF tied to the current and/or appropriate hydrography scale. | 10/1/2014 | 9/30/2015 |

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| **Milestone Title: Compile and deliver hydrography to StreamNet databases.** | **StartDate** | **EndDate** |
| ODFW will maintain and update the mixed scale hydrography (NHD-derived whole stream routes) dataset for Oregon. Primary focus will be on maintaining stream routes onto the NHD geometry.  | 10/1/2014 | 9/30/2015 |
| WDFW will maintain a mixed-scale (1:24,000) stream hydrography layer for Washington state, and respond to the outcomes of technical review by GIS staff from PSMFC and other project participants. WDFW will continue to update base stream and lake hydrography and high-priority attributes to support spatial data exchange with StreamNet. Updates will be submitted to StreamNet when complete. | 10/1/2014 | 9/30/2015 |
| MFWP will continue to update the routes using the updated NHD layer, including lakes; will participate in Steering and Technical Committee assignments for either the 1:24 K hydrography or the mixed scaled hydrography. MFWP will continue to collaboratively work with the Montana State Library's Natural Resource Information System (NRIS), stewards of the NHD, and other state partners towards the development of the NHD 1:24 K layer. MFWP will participate in the development of a whole-stream identifier in the 24k hydrography with StreamNet and NRIS. | 10/1/2014 | 9/30/2015 |

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| **Milestone Title: Determine the availability of resident fish data or other fish metrics as prioritized by regional fish managers.** | **StartDate** | **EndDate** |
| PSMFC StreamNet staff will work with state, tribal and federal partner agencies to determine the availability resident fish and other fish metric data in each agency as priorities are established. Discussions are held with states and tribes to determine data availability and data form. Initial reports are provided and previous reports updated.  | 10/1/2014 | 9/30/2015 |
| CTCR: Colville Tribe StreamNet, after development of DESs, will survey the availability of resident fish and other fish metric data and report the information to PSMFC. Focus will be on tribal priority species. | 10/1/2014 | 9/30/2015 |
| IDFG StreamNet, after development of DESs, will survey the availability of resident fish and other fish metric data and report the information to PSMFC. | 10/1/2014 | 9/30/2015 |
| MFWP StreamNet, after development of DESs, will survey the availability of resident fish and other fish metric data and report the information to PSMFC. MFWP StreamNet staff will exchange resident fish data in DES format where available. If no DES is available, data will be submitted to the Data Store as independent data sets. Additionally MFWP StreamNet staff makes data publically available through MFWP websites. | 10/1/2014 | 9/30/2015 |
| ODFW StreamNet, after development of DESs, will review and update existing availability information for resident fish and survey the availability other fish metric data and report the information to PSMFC. | 10/1/2014 | 9/30/2015 |
| WDFW StreamNet, after development of DESs, will survey the availability of resident fish and other fish metric data and report the information to PSMFC. | 10/1/2014 | 9/30/2015 |

**I Data exchange standards and database for resident fish and other fish metrics** 160. Create/Manage/Maintain database ($77,105.00 3.7 %)

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| **Description:** Continue development of regional data exchange standards, including measures of resident fish abundance, using the regional coordination and collaboration approach as developed in the CA project. Manage and maintain the existing StreamNet Data Exchange Standard for current data sets (redd counts, spawner counts, estimates of spawning population, dam and weir counts, hatchery return counts, age composition, barriers, and distribution). Assure the ability to integrate data with the Upper Columbia tribal resident fish database and resident fish data from the state and other tribal agencies.  |
| **Deliverable Specification:** Discussions are held with states, tribes, NPCC staff, and others concerning development of DES for resident fish and other fish metrics. Timelines and priorities are established for developing regional DESs. The existing StreamNet DES and database for fish abundance, resident fish presence, and other fish metrics are maintained and data are loaded into the StreamNet database and quality assured as they are received.  |

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| **Milestone Title: Participate in regional development of DES for resident fish and other fish metrics and maintain existing DES and database.**  | **StartDate** | **EndDate** |
| PSMFC StreamNet staff will work with states, tribes, NPCC staff, and others to identify specific defined data needs and priorities for resident fish and other fish metrics. PSMFC, as directed by regional fish managers, will help to develop DES, databases, and related tools that would then be used to provide needed data in collaboratively developed regional exchange standards, using the methodology of the CA project. |  |  |
| PSMFC StreamNet staff will maintain and manage as necessary the existing Data Exchange Standard for these data types currently in the StreamNet database, and will log, QA, return to compiler or load, and then manage these data as they are submitted by the StreamNet partner agencies. | 10/1/2014 | 9/30/2015 |
| CTCR: The Colville StreamNet project will work cooperatively to revise existing and/or develop new DESs for resident fish and other fish metrics as these priorities are developed by regional fish managers, to assure regional data consistency and allow for inclusion of new data types. Focus will be on tribal priority species. | 10/1/2014 | 9/30/2015 |
| FWS, StreamNet project will work cooperatively to revise existing and/or develop new DESs for resident fish and other fish metrics as these priorities are developed by regional fish to assure regional data consistency and allow for inclusion of new data types. | 10/1/2014 | 9/30/2015 |
| IDFG, StreamNet project will work cooperatively to revise existing and/or develop new DESs for resident fish and other fish metrics as these priorities are developed by regional fish to assure regional data consistency and allow for inclusion of new data types. | 10/1/2014 | 9/30/2015 |
| MFWP. StreamNet project will work cooperatively to revise existing and/or develop new DESs for resident fish and other fish metrics as these priorities are developed by regional fish to assure regional data consistency and allow for inclusion of new data types. | 10/1/2014 | 9/30/2015 |
| MFWP StreamNet staff will review existing StreamNet DES’ for their appropriateness for resident fish data. If deemed necessary, new draft DES’ will be developed according to the established process. |  |  |
| ODFW, StreamNet project will work cooperatively to revise existing and/or develop new DESs for resident fish and other fish metrics as these priorities are developed by regional fish managers to assure regional data consistency and allow for inclusion of new data types. | 10/1/2014 | 9/30/2015 |
| WDFW, StreamNet project will work cooperatively to revise existing and/or develop new DESs for resident fish and other fish metrics as these priorities are developed by regional fish managers to assure regional data consistency and allow for inclusion of new data types. | 10/1/2014 | 9/30/2015 |

**J Coordination** 189. Regional Coordination ($203,255.00 9.76 %)

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| **Description:** Participants in the StreamNet project will coordinate with a wide range of entities to assure data flow, improve data sharing, promote data standards, and encourage widespread adoption of modern information technology to improve fish and wildlife management and recovery programs. Highest priority for coordination activities will be for entities participating in the Fish and Wildlife Program (BPA, NPCC, PNAMP, Federal Caucus, FWP project sponsors, etc.) and the agencies and tribes in the StreamNet program. Additional coordination may take place to promote the acquisition of priority data, learn about data management developments, and to inform others about StreamNet functions. The project will be promoted through participation in technical and professional groups on an opportunistic basis. |
| **Deliverable Specification:** StreamNet participants coordinate with regional entities to manage and improve data sharing at the Columbia Basin scale. Coordinated Assessment-like efforts are initiated to determine specific target data needs and then collaboratively develop standards and methods that simplify, standardize, and automate data flow to meet regional priorities. |

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| **Milestone Title: Collaborate to display locations and types of monitoring data available** | **StartDate** | **EndDate** |
| PSMFC StreamNet will continue to collaborate with the Monitoringresource.org Monitoring Explorer pilot in development of web services to display locations and types of monitoring data available in StreamNet along with data from other participating agencies and projects.  | 10/1/2014 | 9/30/2015 |

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| **Milestone Title: Coordination with data source agencies both inside and outside the Fish and Wildlife Program** | **StartDate** | **EndDate** |
| PSMFC will work with the StreamNet partners and other data sources to help support the data source agencies in developing the capabilities and tools (including database systems) to facilitate increased data flow, with particular emphasis placed on supporting systems to flow data efficiently to and coordinate with CRITFC, NOAA and USFWS for periodic population assessments of listed species, the Columbia Basin Coordinated Assessments, and NPCC High Level Indicators. Specific activities may include:1) Top priority will be to coordinate with all entities involved with the Coordinated Assessments and sponsors of BPA funded projects;2) Participate with the Pacific Northwest Aquatic Monitoring Partnership by serving on the PNAMP Steering Committee, the Data Management Leadership Team, Coordinated Assessment Core Team, and various PNAMP work groups, including Metadata, Monitoring Explorer, Effectiveness Monitoring, etc.3) Work with PNAMP, BPA, NPCC and others to assist with development of a consistent approach to fish and aquatic data management and sharing to support data flow in the Columbia Basin;4) Continue to participate with the NPCC and others in support of data flow to High Level Indicators;5) Work with Sitka, PNAMP, and others to complete a survey and assessments of hand held technologies and jointly host a workshop on developments in hardware and software technology for the region;6) Provide data related support (expertise and guidance) to other FWP related programs and projects as requested and as possible under existing resources. | 10/1/2014 | 9/30/2015 |
| CTCR StreamNet will coordinate with a variety of entities in the Columbia Basin to support efficient and effective development and implementation of information technology to support improved data flow. Coordination efforts will be prioritized first towards support of the Fish and Wildlife Program, including the Coordinated Assessments project and other High Level Indicator efforts as for NPCC. Coordination will be maintained with programs within the Colville Tribe to facilitate data flow and IT technology improvements, and with other data source agencies if they produce information of use to the tribe and its other regional scale coordination efforts. Coordination with other entities outside the Fish and Wildlife Program will be conducted on an as needed and as time permits basis to promote coordination of data flow to and from the Colville Tribe. | 10/1/2014 | 9/30/2015 |
| FWS will coordinate with national fish hatcheries and other data sources as needed to promote efficient acquisition of data for exchange with the StreamNet database. | 10/1/2014 | 9/30/2015 |
| IDFG will continue to coordinate regional fish data efforts including participation in Coordinated Assessments, the PNAMP Data Management Leadership Team and other PNAMP efforts regarding regional data management. IDFG StreamNet will coordinate with other agencies, tribes, regional groups, non-profits, etc. for the purpose of enhancing the collection and management of data related to the StreamNet project mission and efficient flow of data to the StreamNet database and Coordinated Assessments. StreamNet staff will closely coordinate within the agency in an effort to ensure that data is managed and maintained in an efficient and effective manner. | 10/1/2014 | 9/30/2015 |
| MFWP will continue to coordinate regional fish data efforts including participation in efforts on resident fish. MFWP StreamNet will coordinate with other agencies, tribes, regional groups, non-profits, etc. for the purpose of enhancing the collection and management of data related to the StreamNet project mission and efficient flow of data to the StreamNet database. StreamNet staff will closely coordinate within the agency in an effort to ensure that data is managed and maintained in an efficient and effective manner.  | 10/1/2014 | 9/30/2015 |
| ODFW continue to coordinate regional fish data efforts including participation in Coordinated Assessments, the PNAMP Data Management Leadership Team and other PNAMP efforts regarding regional data management. ODFW StreamNet will coordinate with other agencies, tribes, regional groups, non-profits, etc. for the purpose of enhancing the collection and management of data related to the StreamNet project mission and efficient flow of data to the StreamNet database and Coordinated Assessments. StreamNet staff will closely coordinate within the agency in an effort to ensure that data is managed and maintained in an efficient and effective manner. | 10/1/2014 | 9/30/2015 |
| WDFW continue to coordinate regional fish data efforts including participation in Coordinated Assessments, the PNAMP Data Management Leadership Team and other PNAMP efforts regarding regional data management. WDFW StreamNet will coordinate with other agencies, tribes, regional groups, non-profits, etc. for the purpose of enhancing the collection and management of data related to the StreamNet project mission and efficient flow of data to the StreamNet database and Coordinated Assessments. StreamNet staff will closely coordinate within the agency in an effort to ensure that data is managed and maintained in an efficient and effective manner. | 10/1/2014 | 9/30/2015 |
| MFWP: StreamNet staff will take the lead on providing organization, coordination and will assist in the completion of the multi-state, multi-agency Yellowstone cutthroat trout assessment. This standardized dataset is updated annually with results submitted to the StreamNet Data Store.  | 10/1/2014 | 9/30/2015 |

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| **Milestone Title: Promote the project through technical and professional organizations** | **StartDate** | **EndDate** |
| PSMFC will participate in technical and professional groups to promote the flow of data to StreamNet and to publicize the data and services available from the project through attendance and presentations at meetings and workshops, publications, and related means. | 10/1/2014 | 9/30/2015 |

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| **Milestone Title: Maintain a PSMFC forum on integration of data and functions among PSMFC databases** | **StartDate** | **EndDate** |
| PSMFC StreamNet will work to coordinate and integrate functions and sharing of data among the PSMFC database projects, including PTAGIS, RMIS, StreamNet, and the SNPs genetics database project. Discussions will serve to identify regional data coordination needs, foster integration of functions among projects, and development of integrated data sharing platforms and processes. | 10/1/2014 | 9/30/2015 |

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| **Milestone Title: Support documentation of monitoring protocols** | **StartDate** | **EndDate** |
| PSMFC will work with BPA and BPA project sponsors to support sponsors in describing the data management components of their fish monitoring protocols. Staff will assist project sponsors to upload data and data analysis forms to their protocols and methods, and participating in discussions of standardizing monitoring protocols and field data capture. StreamNet staff and data stewards will work with Sitka, PNAMP, and agency biologists to create standard data entry and data analysis forms (See CHaMP and SRFB effectiveness protocol as examples). | 10/1/2014 | 9/30/2015 |

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| **Milestone Title: Support BPA Data Management Strategy Implementation with PNAMP** | **StartDate** | **EndDate** |
| PSMFC will continue to work with PNAMP in supporting the implementation of BPA’s data management strategy actions, and will help coordinate data management in the basin. A series of discussion topics will be developed with BPA and PNAMP, and workshops, webinars, or training sessions will be held in the region on these topics.  | 10/1/2014 | 9/30/2015 |

**K Disseminate data** 161. Disseminate Raw & Summary Data and Results ($69,680.00 3.34 %)

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| **Description:** Maintain effective web-based tools that allow self-directed access to information on StreamNet. Respond to requests for data, maps and other information; source materials; and custom data products, with priority given to information requests having direct relevance to BPA, the Fish and Wildlife Program and data source agencies/departments. Develop and provide automated, user driven tools that integrate with data users to reduce workload. |
| **Deliverable Specification:** Website provides functional, attractive, and relevant access to key data, including CA indicators. Requests for information or assistance are responded to within one business day at PSMFC. If within StreamNet capabilities, requested help or information is provided as rapidly as reasonably possible within existing resources. All data that are submitted by the source agencies are available for review and download through the StreamNet online query systems and as web services.  |

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| **Milestone Title: Website and Database Maintenance**  |  |  |
| PSMFC StreamNet will develop and maintain web services that ease access to data, including CA indicator data, for cooperators and the public. PSMFC StreamNet staff will make data provided by the source agencies available for viewing and download through the StreamNet online data query systems, periodic Access database dumps, and as web services. An externally accessible SQL Server database is mirrored with StreamNet data for data compilers to query against. | **10/1/2014** | **9/30/2015** |
| **Milestone Title: Respond to and track data/information requests** | **StartDate** | **EndDate** |
| PSMFC StreamNet, will respond within one business day to requests for data, information or help, and will log and report responses to all requests received.  | 10/1/2014 | 9/30/2015 |
| FWS will respond to requests for data, maps, technical assistance, source materials, or custom data products at the agency level, within the capabilities provided by base funding. Requests will be logged and reported. | 10/1/2014 | 9/30/2015 |
| CTCR will respond to requests for data, maps, technical assistance, source materials, or custom data products at the agency level, within the capabilities provided by base funding. Requests will be logged and reported. | 10/1/2014 | 9/30/2015 |
| IDFG will respond to requests for data, maps, technical assistance, source materials, or custom data products at the agency level, within the capabilities provided by base funding. Requests will be logged and reported. | 10/1/2014 | 9/30/2015 |
| MFWP will respond to requests for data, maps, technical assistance, source materials, or custom data products at the agency level, within the capabilities provided by base funding. Requests will be logged and reported. | 10/1/2014 | 9/30/2015 |
| ODFW will respond to requests for data, maps, technical assistance, source materials, or custom data products at the agency level, within the capabilities provided by base funding. Requests will be logged and reported. | 10/1/2014 | 9/30/2015 |
| WDFW will respond to requests for data, maps, technical assistance, source materials, or custom data products at the agency level, within the capabilities provided by base funding. Requests will be logged and reported. | 10/1/2014 | 9/30/2015 |

**L Enhance data efficiency - system development** 160. Create/Manage/Maintain database ($171,855.00 8.24 %)

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| **Description:** Assist agencies in development of database systems and data management procedures for CA data, traditional StreamNet data, and other fish metric information that increase the efficiency of data flow internally and externally, with focus on data collected as part of the regional fish and wildlife program.  |
| **Deliverable Specification:** Agency database systems and procedures are enhanced over time to improve data flow efficiency. Web services are established, and automated flow of data to StreamNet is tested.  |

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| **Milestone Title: Develop automated data flow to central StreamNet database** | **StartDate** | **EndDate** |
| PSMFC StreamNet staff will work with partner agencies to investigate and, if possible implement means of automating the flow of data from the agencies to the StreamNet database. PSMFC staff will also work with regional entities, on request, to assist them with using the StreamNet web services to obtain data. | 10/1/2014 | 9/30/2015 |
| PSMFC StreamNet staff will assist partner agencies with development of internal database systems that will provide improved efficiency for organizing, standardizing and submitting data to StreamNet.  | 10/1/2014 | 9/30/2015 |
| CTCR: In addition to building automated reports, routines, and queries for the specific work elements already mentioned, there are other data types and data requests that are made throughout the year from StreamNet, CRITFC, PTAGIS, and DART. For regular data requests, the OBMEP database will be updated to enable automatic data dissemination to appropriate data systems. Additionally, the OBMEP database will be modified to automate data acquisition from sources that are currently being input manually (i.e. water quality data being collected at PIT tag arrays in the Okanogan Basin), so they may in turn be disseminated more rapidly and in a more automated fashion. | 10/1/2014 | 9/30/2015 |
| IDFG: Will assist with the maintenance of systems to compile agency data that feed the StreamNet and Coordinated Assessments databases. After completion of automated flow of Coordinated Assessments high level indicators to a central repository, IDFG will investigate the potential for delivering other data to the central StreamNet database using Web services. | 10/1/2014 | 9/30/2015 |
| MFWP: As part of the overall MFWP FIS centralized data system, the development of web services to exchange data with StreamNet will be explored. MFWP StreamNet staff will continue to assist in the scoping and development of the Fisheries Information System (FIS) which will enhance the flow of data from the field to a centralized database and subsequently to StreamNet and other data dissemination systems. | 10/1/2014 | 9/30/2015 |
| ODFW, as resources allow, will continue efforts to improve overall data flow from the field and then more efficiently to StreamNet by continuing the development of a data management and delivery system that also provides benefits to field projects, focusing on the system described in Oregon's CA Data Management Strategy and CA DES data elements. Staff will, on an opportunistic basis, update source contact information and attempt to acquire updated datasets and reports for upload to ODFW web applications, with priority given to mid-level metrics associated with CA data. | 10/1/2014 | 9/30/2015 |
| WDFW StreamNet will explore posting of data on data.wa.gov as a means for making data available for download to StreamNet. | 10/1/2014 | 9/30/2015 |

**M Coordinate testing of field data capture devices and software** 189. Regional Coordination ($65,545.00 3.12 %)

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| **Description:** PSMFC will work with PNAMP, private sector experts and other interested parties to coordinate ongoing field trials and conduct an evaluation of selected handheld electronic data capture devices, to assess devices, applications, 'cloud' database systems, and processes. Make recommendations to managers in the region on expanded use of this hardware and software in reports and workshops on this topic.  |
| **Deliverable Specification:** Conduct a comprehensive survey (to include a wide variety of devices and users) on the durability and utility of these devices in various field settings. Results are posted on the StreamNet website, and shared at professional meetings and in publications. Results are reported at a workshop held during the FY, and used to guide additional work in the future. Collaborative study of the use of field data collection devices and technology is continued and expanded by project cooperators.  |

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| **Milestone Title: Share information on field trials of data capture devices**  | **StartDate** | **EndDate** |
| PSMFC StreamNet staff will work with PNAMP, private sector vendors and other cooperators to survey and report on field data collection device tests, and will conduct a survey of users. Initial results will be reported, along with recommendations for appropriate uses for the technology. The groups will jointly sponsorship of a workshop on the use and application of this technology. | 10/1/2014 | 9/30/2015 |
| CTCR StreamNet staff will participate in the field testing of data capture devices as possible under current resources, and work with PSMFC to establish effective management of the data. | 10/1/2014 | 9/30/2015 |
| IDFG StreamNet staff will participate in the development of field trials of selected handheld electronic data capture devices and assist IDFG field staff with training and trials. | 10/1/2014 | 9/30/2015 |
| MFWP StreamNet staff will participate in the development of field trials of selected handheld electronic data capture devices, as possible within existing resources.  | 10/1/2014 | 9/30/2015 |
| ODFW StreamNet will participate in the development of field trials of selected handheld electronic data capture devices and assist field staff with training and trials | 10/1/2014 | 9/30/2015 |
| WDFW StreamNet staff will participate in the development of field trials of selected handheld electronic data capture devices and assist field staff with training and trials. | 10/1/2014 | 9/30/2015 |

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| **Milestone Title: Continue to implement field trials of handheld electronic data capture devices** | **StartDate** | **EndDate** |
| PSMFC, in collaboration with participating agencies/projects and regional entities, will continue to assist cooperators in the deployment and evaluation of electronic data capture devices and the upload, storage and management of data in a cloud database environment. PSMFC StreamNet staff will purchase, manage and deploy a limited number of handheld electronic data capture devices, including programming of the devices and design of forms to meet agency specifications, for selected new data and project types. For existing projects where development is more mature, PSMFC StreamNet staff will work with PNAMP, CRITFC, private sector experts, and other cooperators to assist in further placement and testing of devices and software. Data systems able to capture and store data from the devices will be designed and tested. | 10/1/2014 | 9/30/2015 |

**N Metadata exchange to support Monitoring Explorer geographic display**  161. Disseminate Raw & Summary Data and Results ($15,385.00 0.74 %)

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| **Description:** StreamNet will work with PNAMP and Sitka Technologies to provide metadata for an online project and data locator tool on the MonitoringExplorer.org website. The goal is to develop a common platform to display sampling/data locations from multiple types of projects on a common geographic scale.  |
| **Deliverable Specification:** Metadata for the pilot explorer are provided to Sitka via web services in conformity with the project metadata exchange standards. |

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| **Milestone Title: PSMFC participate in regional effort to share metadata to locate monitoring activities** | **StartDate** | **EndDate** |
| PSMFC StreamNet staff will participate with PNAMP and private sector experts to develop the Monitoring Explorer pilot with the intent of using metadata to geographically locate and display the different types of monitoring throughout the basin.  | 10/1/2014 | 9/30/2015 |

**O Data sharing agreements -** 161. Disseminate Raw & Summary Data and Results ($18,200.00 0.87 %)

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| **Description:** The Data Sharing Agreements for CA and the StreamNet Data Store guide release and use of data sets. Provisions of the Agreements are implemented effectively, and the use of these agreements as templates for further sharing are explored for other databases.  |
| **Deliverable Specification:** The Data Sharing Agreements are implemented effectively for CA and the Data Store.  |

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| **Milestone Title: PSMFC implements the Data Sharing Agreements**  | **StartDate** | **EndDate** |
| PSMFC StreamNet staff, in conjunction with cooperators and other entities throughout the region, implement existing Data Sharing Agreements effectively. Explore the use of these agreements with other data managers and databases. | 10/1/2014 | 9/30/2015 |

**P Infrastructure and base operations** 160. Create/Manage/Maintain database ($272,180.00 13.06 %)

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| **Description:** Maintain the infrastructure necessary for acquiring, managing and disseminating regionally standardized and georeferenced data, including system administration, databases, website pages, query systems, web services, and various data related applications. Maintain access to existing and historic data sets. Perform necessary operations to georeference, QA, maintain and manage data, and provide reference documents for all data to the StreamNet Library. Provide support and training to staff to maintain up to date operational system skills.  |
| **Deliverable Specification:** Project infrastructure and databases are maintained and updated as needed to acquire, manage and disseminate referenced data. Specific actions may include: 1. Computer system administration, including maintenance and upgrades to hardware and software, backup and recovery, and system security, as necessary2. Application of appropriate data management and QA/QC procedures in loading and managing data and creation of metadata3. Creation and maintenance of interfaces and applications to enhance data flow efficiency4. Participation in routine management and improvement of the StreamNet Data Exchange Standard working through the Steering Committee. 5. Obtain reference documents for all data developed under WE 159 and submit them for inclusion in the collection and catalog, and,6. Encourage and support the flow of agency reports and publications related to Columbia Basin fish and wildlife resources to the library. 7. Maintain and further develop integrated search capabilities based on the Fish Species geo-spatial datasets. |

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| **Milestone Title: Infrastructure maintenance and base operations**  | **StartDate** | **EndDate** |
| PSMFC, will maintain and update the hardware and software necessary to accomplish StreamNet's mission, including system administration, system backup and recovery, and security. In addition to the actions listed in the deliverable specifications, PSMFC StreamNet staff will perform:1. Management and maintenance of the GIS system, servers, software & databases.
2. Maintenance and upgrade of the StreamNet web server and software, including design, programming, and system security, with a target of the web server being on line and operational over 99.5% of the time.
3. Maintenance and improvement to the StreamNet Internet site, including maintaining logs of web query history and error events, and site usage by month.
4. Correcting errors, adding or fixing links, improving performance, improving appearance and usability.
5. Maintain and update (as needed) the NPCC Protected Areas data set.
6. Maintain and further develop integrated search capabilities based on the Fish Species geo-spatial dataset (CRITFC’s Salmon Population Names geodatabase) developed and maintained by StreamNet members.
7. Management and maintenance of the Data Store to improve ease of use and integrate with off-site resources such as monitoringmethods.org and CBFish.org.
8. Develop procedures to acquire, validate, and disseminate data through automated feeds such as web services.
9. Development and operation of the CA database, integrating operations on StreamNet and the EPA node.
10. Implementing system improvements and operations to maintain and enhance functionality as technological advances are made and to enhance the functionality of StreamNet for data providers and users.
11. Manage and improve query systems, including use of species population layers from NOAA and the CRITFC Population Crosswalk population names.
12. Maintain and manage database Data Exchange Standards (DES).
 | 10/1/2014 | 9/30/2015 |
| CTCR StreamNet will maintain its computer infrastructure and operations to assure efficient and effective management and flow of data internally and from the tribe to the StreamNet database | 10/1/2014 | 9/30/2015 |
| FWS StreamNet will maintain its computer infrastructure and operations to assure efficient and effective management and flow of data internally and from the FWS to the StreamNet database | 10/1/2014 | 9/30/2015 |
| IDFG StreamNet will maintain its computer infrastructure and operations to assure efficient and effective management and flow of data internally and from IDFG to the StreamNet database.  | 10/1/2014 | 9/30/2015 |
| MFWP StreamNet will maintain its computer infrastructure and operations to assure efficient and effective management and flow of data internally and from MFWP to the StreamNet database | 10/1/2014 | 9/30/2015 |
| ODFW StreamNet will maintain its computer infrastructure and operations to assure efficient and effective management and flow of data internally and from ODFW to the StreamNet database.  | 10/1/2014 | 9/30/2015 |
| WDFW StreamNet will maintain its computer infrastructure and operations to assure efficient and effective management and flow of data internally and from WDFW to the StreamNet database | 10/1/2014 | 9/30/2015 |

**Q Manage project activities** 119. Manage and Administer Projects ($303,030.00 14.54 %)

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| **Description:** Program direction will be provided by a Strategic Plan and an Executive Committee made up of policy level representatives of StreamNet partners and regional management agencies and organizations. The focus of this group will be to ensure that StreamNet is aligned with the data management needs and regional priorities established in the NPCC F&W program, recovery plans for listed species, and the participating agencies and tribes. Implementation of this direction and the SOW will be completed with the help of a Steering Committee, made up of data management professionals from each partner agency, as well as representatives of other groups and organizations involved in data management. The oversight of personnel, work statement and budget preparation, coordination among participating agencies, and implementation of the program will be completed by PSMFC StreamNet staff and funded employees embedded in partner organizations.  |
| **Deliverable Specification:** Regional data management priorities are addressed and project staff and budgets are effectively managed. Work detailed in this SOW is accomplished. Required SOW and budget documents are prepared and submitted on schedule.  |

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| **Milestone Title: Effective program management will be maintained**  | **StartDate** | **EndDate** |
| PSMFC: The Executive Committee will provide oversight, guidance, and program direction. The Steering Committee will provide direction on program implementation. PSMFC will effectively manage the program. All StreamNet cooperators will manage expenditures to accomplish the jobs in the Statement of Work within the approved budget. | 10/1/2014 | 9/30/2015 |
| CTCR: All StreamNet cooperators will manage expenditures to accomplish the jobs in the Statement of Work within the approved budget. | 10/1/2014 | 9/30/2015 |
| FWS: All StreamNet cooperators will manage expenditures to accomplish the jobs in the Statement of Work within the approved budget. | 10/1/2014 | 9/30/2015 |
| IDFG: All StreamNet cooperators will manage expenditures to accomplish the jobs in the Statement of Work within the approved budget. | 10/1/2014 | 9/30/2015 |
| MFWP: All StreamNet cooperators will manage expenditures to accomplish the jobs in the Statement of Work within the approved budget. | 10/1/2014 | 9/30/2015 |
| ODFW: All StreamNet cooperators will manage expenditures to accomplish the jobs in the Statement of Work within the approved budget. | 10/1/2014 | 9/30/2015 |
| WDFW: All StreamNet cooperators will manage expenditures to accomplish the jobs in the Statement of Work within the approved budget. | 10/1/2014 | 9/30/2015 |

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| **Milestone Title: PSMFC submit contract renewal package (SOW, Excel budget, property inventory) to BPA COTR** | **StartDate** | **EndDate** |
| PSMFC, with input from the participating agencies, will develop the statement of work (SOW) in Pisces, including a line-item budget (LIB) and property inventory (PI), and the package submitted to the COTR for review via Pisces 90 days prior to the end of the FY-15 contract period. | 5/1/2015 | 7/1/2015 |

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| **Milestone Title:** Attach FISMA Compliance Attestation (BPA risk category Low)  | **StartDate** | **EndDate** |
| PSMFC: As described in the terms and conditions of the contract, BPA contractors are required to protect their data and electronic systems consistent with the federal FISMA law (Federal Information Security Management Act of 2002).  Your contract has been rated as “low risk” by BPA Cyber Security.  Please obtain a signed attestation confirming your organization’s compliance with FISMA.  The designated signatory for your organization may vary.  Attestations can be in the form of a formal memorandum, letter, or email. An email will need to be cut and pasted into a word processing program.  All attachments must be PDF. Upload the attestation to Pisces under the new “FISMA Attestation” File Type, subtype “Low Risk per BPA” and insert the title as “FISMA attestation”.  This milestone is considered complete when the contractor has uploaded an electronic copy of a signed attestation at the contract level.    | 5/01/15 | 7/1/2015 |
| **Milestone Title: Address comments and revise SOW, LIB, and PI as needed to get BPA manager approval** | **StartDate** | **EndDate** |
| PSMFC: COTR and BPA manager comments are responded to and changes made, as needed prior to forwarding of the package to the Contracting Officer. | 7/1/2015 | 8/1/2015 |

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| **Milestone Title: Signed contract returned to BPA’s Contracting Officer within 30 days** | **StartDate** | **EndDate** |
| Signed contract returned to the BPA Contracting Officer (CO) within 30 days. | 8/1/2015 | 9/1/2015 |

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| **Milestone Title: Submit final invoice for prior contract within 90 days to facilitate contract closeout** | **StartDate** | **EndDate** |
| Within 90 days of the last day of the PRIOR contract, the contractor shall issue a final invoice. In instances where more than 90 days is needed (e.g., because subcontractors have not invoiced), the contractor shall: 1. review records, 2. estimate all outstanding costs, and 3. provide BPA with a single, cumulative estimate of all completed, but un-invoiced work. This amount shall be emailed to FWinvoices@bpa.gov and the COTR. | 10/1/2014 | 12/30/2015 |

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| **Milestone Title: Accrual - Submit September estimate to BPA** | **StartDate** | **EndDate** |
| Provide BPA with an estimate of contract work that will occur prior to September 30 but will not be billed until October 1 or later. Data must be input in to Pisces by September 10 (begins Aug 10, ends Sep 10). | 8/10/2015 | 9/10/2015 |

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| **Milestone Title: Facilitate inputting Cost Share information into Pisces at the Project level** | **StartDate** | **EndDate** |
| PSMFC will solicit cost share information for the previous federal FY from project partners and enter previous FY’s Cost Share information on the Project Cost Share tab by Nov 15 for all project partners. The subcontractors under this project will provide federal FY Cost Share information to PSFMC by Nov 1. (Milestone starts Sep. 30 and ends Nov. 15 for PSMFC, and ends Nov 1 for subcontractors) | 10/1/2015 | 11/15/2015 |

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| **Milestone Title: Project oversight and guidance: Project management, Executive and Steering Committees** | **StartDate** | **EndDate** |
| All StreamNet cooperators will perform project oversight and will participate cooperatively on the StreamNet Steering Committee to implement the direction of the Executive Committee, coordinate among agencies and resolve technical issues for the project. | 10/1/2014 | 9/30/2015 |

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| **Milestone Title: Project oversight and guidance: Supervision** | **StartDate** | **EndDate** |
| All StreamNet cooperators will supervise requisite project staff and provide guidance and staff development. | 10/1/2014 | 9/30/2015 |

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| **Milestone Title: Project oversight and guidance: Budget Control** | **StartDate** | **EndDate** |
| All StreamNet cooperators will manage expenditures to accomplish the jobs in the Statement of Work within the approved budget. | 10/1/2014 | 9/30/2015 |

**R Produce Annual Report**  132. Produce Annual Report ($50,000.00.00 2.0 %)

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| **Description:** Produce a detailed annual report for Calendar year 2015, using BPA reporting tools in Taurus. |
| **Deliverable Specification:** Finalize and submit 2015 Annual Report to BPA for upload into Pisces and cbfish  |

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| **Milestone Title: Produce Annual Report** | **StartDate** | **EndDate** |
| PSMFC: PSMFC will consolidate input from all project participants to prepare and submit a detailed annual report for Calendar year 2014 in draft form for internal review and to BPA by the end of January, with the final due March 1. | 1/1/2015 | 3/1/2015 |
| CTCR: Project participants submit their input to the 2015 annual progress report to PSMFC 15 days prior to the date the report is due to BPA. Draft is due to BPA by the end of January. | 1/1/2015 | 3/1/2015 |
| FWS: Project participants submit their input to the 2015 annual progress report to PSMFC 15 days prior to the date the report is due to BPA. Draft is due to BPA by the end of January. | 1/1/2015 | 3/1/2015 |
| IDFG: Project participants submit their input to the 2015 annual progress report to PSMFC 15 days prior to the date the report is due to BPA. Draft is due to BPA by the end of January. | 1/1/2015 | 3/1/2015 |
| MFWP: Project participants submit their input to the 2015 annual progress report to PSMFC 15 days prior to the date the report is due to BPA. Draft is due to BPA by the end of January. | 1/1/2015 | 3/1/2015 |
| ODFW: Project participants submit their input to the 2015 annual progress report to PSMFC 15 days prior to the date the report is due to BPA. Draft is due to BPA by the end of January. | 1/1/2015 | 3/1/2015 |
| WDFW: Project participants submit their input to the 2015 annual progress report to PSMFC 15 days prior to the date the report is due to BPA. Draft is due to BPA by the end of January. | 1/1/2015 | 3/1/2015 |

**S Produce Pisces Status Report** 185. Produce Pisces Status Report ($39,550.00 2.0 %)

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| **Description:** The Contractor shall report on the status of milestones and deliverables in Pisces. StreamNet will produce Status Reports quarterly. Additionally, when indicating a deliverable milestone as COMPLETE, the contractor shall provide metrics and the final location (latitude and longitude) prior to submitting the report to the BPA COTR. |
| **Deliverable Specification:** Status Report submitted on quarterly schedule.  |

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| **Milestone Title: Produce quarterly Status Report** | **StartDate** | **EndDate** |
| PSMFC: All project participants will report the status of their milestones in Pisces on a quarterly basis. PSMFC will review and edit all input from the partner agencies, report on work status for PSMFC, and submit the report to Pisces by the 15th of the month following the end of the first, second and third quarters. The report for the fourth quarter will be submitted to Pisces by Sept. 30. | 10/1/2014 | 9/25/2016 |
| CTCR: All project participants will report the status of their milestones in Pisces on a quarterly basis. Input on work progress will be inserted into Pisces by the 10th of the month following the end of the first, second and third quarters. The report for the fourth quarter will be submitted to Pisces by Sept. 25. | 10/1/2014 | 9/25/2016 |
| FWS: All project participants will report the status of their milestones in Pisces on a quarterly basis. Input on work progress will be inserted into Pisces by the 10th of the month following the end of the first, second and third quarters. The report for the fourth quarter will be submitted to Pisces by Sept. 25. | 10/1/2014 | 9/25/2016 |
| IDFG: All project participants will report the status of their milestones in Pisces on a quarterly basis. Input on work progress will be inserted into Pisces by the 10th of the month following the end of the first, second and third quarters. The report for the fourth quarter will be submitted to Pisces by Sept. 25. | 10/1/2014 | 9/25/2016 |
| MFWP: All project participants will report the status of their milestones in Pisces on a quarterly basis. Input on work progress will be inserted into Pisces by the 10th of the month following the end of the first, second and third quarters. The report for the fourth quarter will be submitted to Pisces by Sept. 25. | 10/1/2014 | 9/25/2016 |
| ODFW: All project participants will report the status of their milestones in Pisces on a quarterly basis. Input on work progress will be inserted into Pisces by the 10th of the month following the end of the first, second and third quarters. The report for the fourth quarter will be submitted to Pisces by Sept. 25. | 10/1/2014 | 9/25/2016 |
| WDFW: All project participants will report the status of their milestones in Pisces on a quarterly basis. Input on work progress will be inserted into Pisces by the 10th of the month following the end of the first, second and third quarters. The report for the fourth quarter will be submitted to Pisces by Sept. 25. | 10/1/2014 | 9/25/2016 |

**T Produce BiOp RPA Report**  202. Produce BiOp RPA Report ($7,671.00 0 %)

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| **Description:** Produce a detailed report for Calendar year 2014.  |
| **Deliverable Specification:** Finalize and submit Calendar Year 2014 BiOp Report to BPA for upload into Pisces and cbfish  |

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| **Milestone Title: Download RPA questions from cbfish.org** | **StartDate** | **EndDate** |
| PSMFC: To prepare for your RPA report, 1) Go to www.cbfish.org and log in, 2) Navigate to your project and select "BiOp Annual Report" from the menu on the left, 3) Click on "Input Needed" for each applicable RPA to find your RPA reporting requirements so you will know how much time to set aside for this task. You may also click the “download RPA doc” button to get all RPA questions in one MS Word document.4) Use “Request Review” link to email COTR or BPA RM&E RPA lead to request help or for review of draft content.For further guidance, see: http://www.cbfish.org/Content/tutorials/Reporting\_Guidance\_BiOp\_2013.pdf(Milestone start/end: July 1 – September 30) | 1/1/2015 | 2/27/2015 |

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| **Milestone Title: Draft calendar year report in cbfish.org** | **StartDate** | **EndDate** |
| PSMFC: For guidance on completing your report, see: http://www.cbfish.org/Content/tutorials/Reporting\_Guidance\_BiOp\_2013.pdf. If you have questions or would like BPA to review your draft, you may email RMEsupport@bpa.gov and your COTR to send them your working draft in Word or notify them to review in cbfish.org by using the “Request Review” email icon link to e-mail your COTR & BPA RM&E RPA lead.(Milestone start/end: September 30 - February 28) | 1/1/2015 | 3/1/2015 |

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| **Milestone Title: Finalize calendar year report in cbfish.org and click Publish by March 15** | **StartDate** | **EndDate** |
| PSMFC: The final version is due by March 15.(Milestone start/end: December 31 - March 15) | 3/2/2015 | 3/16/2015 |