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1.0 General

1.1 Flow Monitoring Program

To support the City of Seattle's 2005 CSO NPDES permit requirements, the flow monitoring program detailed in this Scope of Work will collect data from 21 dual channel flow meters and 68 single channel flow meters at City determined monitoring locations in the combined sewer system for a total of 110 monitoring points.

The major functions for the flow monitoring program are:

- Combined sewer flow and overflow data collection at the Permanent CSO sites
- Flow meter maintenance
- Flow data analysis
- Online flow data reporting
- Dry weather combined sewer overflow alarming
- Flow data display and warehousing

ADS shall provide flow monitoring equipment, maintenance services, software, data analysis, reporting, and maintenance services in support of these functions. Additionally, ADS shall follow all equipment manufacturers' recommendations when performing these tasks.

ADS shall provide adequate staff to ensure all requirements of this scope are accomplished. On holidays listed below, ADS will maintain the operation and maintenance duties for the installed equipment and the responsibility of responding to alarms from IntelliServe™ for automated monitoring. Additionally, ADS field crews will be available to respond to equipment work orders.

<u>Date</u>	<u>Holiday</u>
11/11/2008	Veteran's Day
11/26/2008	Thanksgiving Day
11/28/2008	Day Following Thanksgiving Day
12/25/2008	Christmas Day
01/01/2009	New Year's Day 2009
01/19/2009	Martin Luther King Jr Birthday
02/16/2009	President's Day
05/25/2009	Memorial Day
07/04/2009	Independence Day (observed July 3, 2009)
09/07/2009	Labor Day
11/11/2009	Veteran's Day

City of Seattle Permanent CSO Flow Meter Comprehensive Maintenance and Data Analysis

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11/26/2009	Thanksgiving Day
11/27/2009	Day Following Thanksgiving Day
12/25/2009	Christmas Day
01/01/2010	New Year's Day for 2008
01/18/2010	Martin Luther King Jr Birthday
02/15/2010	President's Day
05/31/2010	Memorial Day
07/04/2010	Independence Day (observed July 5, 2010)
09/06/2010	Labor Day
11/11/2010	Veteran's Day
11/25/2010	Thanksgiving Day
11/26/2010	Day Following Thanksgiving Day
12/25/2010	Christmas Day (observed December 24, 2010)

1.2 Locations of the Meter Sites

The meter sites are located throughout the City of Seattle and are located in streets, major roadways, parking lots, parks and at or adjacent to sewer pump stations. Most of the meter installations are inside manholes that may range in depth from 3 feet to 30 feet. All confined space entries are to comply with Washington Department of Labor and Industries entry requirements. Details for the locations may be found in the ADS site sheets produced during the installation phase of this program.

Transmission of data and signals from the flow meters may utilize telephone service connections, cellular phone systems or dedicated lines required to transit MODBUS for future integration into the City's SCADA system.

2.0 Safety

2.1 Safety Requirements

ADS is committed to providing a safe working environment for its employees.

ADS shall comply with the requirements of the Washington State Department of Labor and Industries (WSDLI) safety requirements.

ADS identifies Mike Pina (Project Manager), who is located on a full time basis in Seattle, as ADS's primary safety representative who is located at Seattle to manage compliance with safe working procedures. Written notification of any change, either temporary or permanent, of the primary contact must be provided to the City at least 5 business days in advance of the change.

These duties the safety representative is responsible for shall include but not be limited to: site inspections, incident investigation, employee training, preparation and updating site specific safety and health plans, preparation of Job Safety Analysis (JSA), enforcement of safety requirements, and reports as required by WSDLI. ADS shall provide Safety Plans on an annual basis to the SPU Project Manager.

3.0 Training

3.1 Training for Online Access to IntelliServe™

ADS shall provide training at the City facilities for City staff, which will allow staff to access, download and analyze flow data from the meter sites. ADS shall provide an outline and handouts for use during a total of 8 hours per year of training.

4.0 Service and Software Requirements

For the purpose of collecting quality flow data ADS shall provide to the City service and software that meets the requirements detailed in Sections 4.1, 4.2 and 4.3.

4.1 Comprehensive Service Program

ADS shall provide a comprehensive service program for the equipment provided under this contract detailed in Section 5.0.

The program shall include:

- Onsite inspection of the CSO equipment and onsite and remote diagnosis of the data being collected by the equipment to determine service required.
- Preventive maintenance, cleaning, repair, replacement and services as necessary to keep the equipment operating in accordance with the manufacturer's specifications and the requirements of this contract.
- Field service shall be performed in accordance with Section 5.0 of this Scope of Work.

4.2 Profile™ Software Requirements

ADS shall provide the use of Profile™ software for meter activation, data acquisition and analysis of flow under this contract.

The purpose of the Profile™ software is to provide the user with the ability to download data on demand from the flow meter via user query, review it in a hydrograph/ scattergraph, edit, and export the data. This software is installed on a user's PC. The rain data viewed in Profile™ is both raw and final data meaning it can be viewed raw in "edit mode" and as final data in "report mode". Raw data has been directly uploaded from the flow meter with no QAQC review of the data, and final data has had a QAQC review (per Section 6.1).

The functionality of Profile™ shall include:

- a) ADS shall provide the specifications for desktop computers stationed at the City's offices to use the software.
- b) Upgrades to the software will be provided to the City free of charge for the duration of the contract.
- c) The software shall be capable of providing data access and processing capability to City staff (up to 10 users).
- d) The software shall be capable of providing data in English measurement units.
- e) Software shall provide remote data access at user designated intervals
- f) Software shall be capable of flow meter set up and parameter adjustment, specifically with the ability to:
 - i. Set up a location information file for each flow meter site.
 - ii. Set up a pipe table that is representative of the location in which the equipment is installed.
 - iii. Define and change site parameters such as but not limited to, devices (includes sensors), sample rate, entities, serial, landline or cellular connection.
 - iv. Store a record of site description, GPS coordinate location, elevation, assigned rain gauge and upstream meter locations.
- g) Software shall be capable of editing and data analysis and specifically with the ability to:
 - i. Review data in edit mode in graphical and tabular formats. In edit mode the data sample rate will be all data (5 minute) and time periods of daily, weekly, monthly, quarterly, annual and manually determined time periods can be selected.
 - ii. Print onscreen, hardcopy or .pdf format graphs and tables in edit mode. In edit mode the data sample rate will be all data (5 minute) and time periods of daily, weekly, monthly, quarterly, annual and manually determined time periods can be selected.
 - iii. Review data in report mode and in graphical and tabular formats. In report mode the data sample rate can be all data (5 minute), 15 minute, hourly, or daily and time periods of daily, weekly, monthly, quarterly, annual and manually determined time periods can be selected.
 - iv. Print onscreen, hardcopy or .pdf format graphs and tables in report mode. In report mode the data sample rate can be all data (5 minute), 15

- minute, hourly, or daily and time periods of daily, weekly, monthly, quarterly, annual and manually determined time periods can be selected.
- v. Electronically produce graphs and tabular reports from report mode (i.e. “batch mode” reports for multiple sites using the same entities and format),
- vi. Setup groups of meter sites and view groups graphically with the same data entities, i.e. depth, velocity, final flow rate
- vii. “Flag” (toggle off/on) any depth and/or velocity data that is identified as invalid or questionable (without deleting any original data points).
- vii. Reconstitute identified invalid or questionable depth and/or velocity data that has a reasonably repeatable hydraulic depth and velocity relationship.
- viii. Allow visibility of all raw data points including the edited data points (edit mode).
- ix. View at a glance (e.g. a data table) the dates and offsets that were applied to each meter.
- x. View a log of events for each meter site that includes data collection, data edits, data imports/exports.
- xi. Obtain a data uptime report that calculates and displays percentage data points available for a user defined period.
- xii. Export data to Excel and text in ADS predefined or user defined formats.

4.3 IntelliServe™ Software Requirements

ADS shall implement the IntelliServe™ system for dry and wet weather alarming and to display the following data:

- a) Raw data (depth, velocity, quantity based on Dry Weather Flow if the site requires it – see Section 7.4)
 - b) Finalized data (depth, velocity and quantity based on Dry Weather Flow displayed if the site requires it – see Section 7.4.) The finalized overflow quantity is to be published in an Excel spreadsheet and posted – see Section 7.3.
 - c) Raw rainfall to be displayed
 - d) Finalized rainfall to be published in an Excel spreadsheet and posted.
1. The purpose of the IntelliServe™ software is to provide the user with near-real time alarming when preset user defined thresholds are exceeded. In addition, IntelliServe™ is a web based data warehousing system where the CSO depth and/or velocity, and/or flow data is uploaded on a twice daily basis for viewing by the end user and can be downloaded on demand from the flow meter via user query. The data can be plotted in hydrograph, scattergraph and tabular formats for depth, velocity and flow data. Data can be exported by the user to Excel and .csv formats. The data viewed in IntelliServe™ is both raw and processed format. For a

detailed description of the terms raw and processed and how they apply to data, please refer to the Help menu in IntelliServe™ or the IServe Data Entities.pdf document.

The functionality of the IntelliServe™ shall include:

- a) ADS shall provide the hardware and software desktop computer requirements for SPU to be able to use the IntelliServe™ software.
- b) ADS shall assign passwords to SPU staff to allow staff to access and use the IntelliServe™ system. SPU shall designate a representative to request passwords for new account set up.
- c) Upgrades to the IntelliServe™ software will be provided to the City free of charge for the duration of the contract.
- d) The IntelliServe™ software shall be capable of providing website access capability to City staff (up to 50 users).
- e) The IntelliServe™ software shall be capable of providing data in English measurement units.
- f) The IntelliServe™ software shall be capable of storing documents (for example Excel files).
- g) ADS shall implement IntelliServe™ according to the following requirements:
 - i. The ability to review the near-real time flow data collected from the meter sites and to issue alarms via on-screen warnings, audio annunciations, pagers, e-mail and voice messaging for once a threshold is exceeded specified by SPU as described below.
 - ii. Automated QA/QC processes which will be enabled to minimize false alarms induced by erroneous data, data fluctuations, equipment malfunctions and other system defects. This is known as Monitor Level Intelligence (MLI) processing.
 - iii. Detection of the increase of flow depth (“high” or “high high” alarms) exceeding a pre-determined level (e.g. pipe crown) determined by the City during dry and wet weather conditions.
 - iv. Detection of a reduction in flow that is more than a user defined percentage of the average dry weather flow, as processed by MLI over a period of time (known as the learning period) and excluding any days set by the user (e.g. holidays).

5.0 Field Services for Flow Meters

Quality flow data is important to the City of Seattle for reliable and accurate records of flow data and for reporting of overflow volumes to the Department of Ecology as part of the requirement of the 2005 CSO NPDES permit. ADS's maintenance program detailed in Section 5.1 shall provide to the City 90% availability of data per data completeness tests one and two calculated on a per monitor basis.

Raw data completeness test one, as defined for this project, addresses the question, "Are communications to and from the field instrument functional?" This defines the total number of missing measurements the utility is willing to accept over a defined period as a result of equipment malfunction. This project established a 90 percent target value. Missing measurements means the raw data does not exist. This is calculated as:

*Raw Data Completeness Test 1 = 100 * (Total Number of Collected Points) ÷ (Total Number of Possible Data Points)*

Furthermore raw data completeness (test two) as defined for this project addresses the question, "Is the raw data hydraulically valid?"

This defines the total number of non valid measurements the utility is willing to accept over a defined period as a result of site hydraulics. This project established a 90 percent target value. Exceptions to this might include monitors that are knowingly installed in turbulent sites, where data are needed even if the quality is below this standard. A valid data point in this instance is defined as a point that has passed a gross error check and a range check.

Raw Data Completeness Test Two = (Number of Valid Data Points) ÷ (Total Number of Possible Data Points)

5.1 Flow Meter Maintenance Requirements

The maintenance and services shall include the following:

- a) Access to Meter Sites; The City shall provide access to the meter sites. Any questions concerning access to the sites should be directed to Hai Bach (206) 684-5139) or email at Hai.Bach@Seattle.gov.
- b) Staffing; ADS shall maintain a permanent field service crew in Seattle dedicated to the meter sites identified under this contract. The service crew shall be available to service the meter sites in accordance with the requirements of this

- contract. ADS identifies Mike Pina (Project Manager), who is located on a full time basis in Seattle, as ADS's primary contact for the supervision and scheduling of the field service crew. Written notification of any change, either temporary or permanent, of the primary contact must be provided to the City at least 5 business days in advance of the change.
- c) Planning; ADS's primary contact shall meet with the City on a schedule as mutually agreed by the City and ADS. The City shall notify ADS when mainline cleaning is planned through the sections of mainline in which ADS equipment is located. If ADS field crews are required to remove the equipment and to reinstall the equipment once line cleaning is completed, 48-hours notice shall be given by the City to ADS to schedule this task. The cost to remove and reinstall a flow meter site under this condition is listed in Section 8.
 - d) Standard Site Service; Sites will be serviced as determined by the ADS data analyst procedures to provide 90% valid raw velocity and depth data. Field calibrations shall be completed as needed and determined by the ADS data analyst procedures and may coincide with a service call.
 - e) Preventative Maintenance; ADS shall repair and/or replace and carry out all preventative maintenance services needed for the reliable operation of the meter sites. The repair and maintenance services shall include but is not limited to; communication links (flow meter to external communication system), sensors, cables, power sources (batteries), monitors, desiccant and all other components necessary for the meter sites to provide reliable and consistent data to the City.
 - f) Unscheduled Service; ADS will provide a 72-hour repair response for sites in disrepair. Manual data collection shall be provided weekly for sites with data transmission problems where the transmission issue is within ADS's control. Manually collected data and data that are collected via the Profile software when the monitor does not normally connect with IntelliServe™, shall be posted within 3 business days of collection. Costs for repair or replacement of flow monitors or flow monitor parts, including ADS labor, due to activities out of ADS control (i.e. force majeure, vandalism, other contractors, unauthorized City activities, etc.) shall be reimbursed by the City at a fee mutually agreeable to the City and ADS, in addition to the standard monthly service fee. ADS shall stock parts locally.
 - g) Data Gaps: A continuous record of flow data at all of the CSO sites is critical to SPU for accurate reporting to the Department of Ecology. Accordingly, ADS will provide SPU with all details regarding the reasons for the loss of data in excess of 72-hours and of ADS's actions to minimize a reoccurrence of a similar data loss. Subsequently, if any flow meter sites experience a time period greater than 72-hours during which data from the site is unavailable to SPU (e.g. missing data that cannot be recovered from the meter) then ADS will not invoice SPU for the field site maintenance charges, data analyst charges and IntelliServe charges for that

- site for the time of disrepair that the data gap occurred. This credit of charges shall not apply to sites that are affected by power or communications failures external to ADS equipment.
- h) Repair to communications external to ADS equipment; Repair and or replacement of the landline and cellar services for remote communications to the equipment is not covered under this service contract. Where it is deemed that the communication issue is not related to the ADS equipment, ADS staff shall inform the City of Seattle.
 - i) Documentation; Access to service and maintenance reports including site confirmation sheets for each meter site, shall be available to the City in electronic format - either through an easily accessible web site or by a downloadable spreadsheet on a monthly basis for the previous month.

6.0 Data Analysis Services for Flow Meters

Quality flow data is important to the City of Seattle for reliable and accurate records of flow data and for reporting of overflow volumes to the Department of Ecology as part of the requirement of the 2005 CSO NPDES. ADS's data analysis and reporting program detailed in Section 6.1 shall provide 90% availability of quality assured data per the Final Data Completeness test calculated on a per monitor basis.

Final or QA/QC data completeness shall be defined as complete if 90 percent of available data is determined hydraulically valid. This is calculated as:

Final Data Completeness = (Number of Valid Data Points) ÷ (Total Number of Possible Data Points)

6.1 Data Analysis Requirements

Access to data; Data and related information must be available to the City staff. ADS shall provide the software requirements for which are detailed in Section 4.2 that permits authorized staff to view download and print information at anytime.

Staffing; ADS shall provide the full time services of a trained and knowledgeable full time data analyst, who shall be available during standard business hours (8-5 M-F PST) to review data, resolve issues and answer questions

Diagnostics; ADS shall monitor the data being transmitted from the flow meter sites and shall carry out a diagnostic inspection of the data on a daily basis to insure that the meter site is transmitting data and that the data being recorded is reliable and consistent.

Quality Assurance; The data analyst shall use ADS standard procedures to:

- a) Verify the flow meters are online (daily);
- b) Verify that velocity, ultrasonic and pressure depth data is valid (daily) "Flag" (toggle off/on) invalid and/or questionable data (monthly) ;
- c) Reconstitute identified invalid or questionable depth and/or velocity data that has a reasonably repeatable hydraulic depth and velocity relationship (monthly);
- d) Issue service requests in the event that a flow meter needs service (daily);
- e) Field confirmations of the equipment are completed as needed (but at least annually);
- f) Calculate the quantity based on overflow volumes during an overflow event at a site (monthly);
- g) Calculate the quantity based on Dry Weather Flow (DWF) for specified sites (see Section 7.4) (monthly).

ADS will provide the City with a copy of the ADS standard procedures.

IntelliServe™ Monitoring Services; The ADS data analyst shall review the IntelliServe™ user defined reports (refer to Section 7.5) and final data warehousing. ADS shall perform regularly scheduled maintenance of the IntelliServe™ software to maintain 99% system uptime and connectivity.

The flow meters connect to the IntelliServe™ website via wireless and/or landline communications. An on-demand IntelliServe Connectivity Report detailing the connectivity rate of each site shall be available for designated SPU staff. All sites are configured to connect with IntelliServe™ twice daily. Cellular or landline communication issues that occur and are the responsibility of the independent providers of landline and cellular services to resolve, are not covered under this service contract. Where it is determined that resolution of a communication issue requires the expertise of independent provider, ADS staff shall inform the City of Seattle of the communications issue. When connectivity at a site drops below 95% (i.e., less than 19 positive connections in the previous 20 attempts), ADS will proactively investigate and if necessary, service the site with the intention of improving connectivity.

7.0 Reporting

7.1 Flow Meter Site Location Specifics

- a) ADS shall provide a document that is a drawing detailing the location of the sensors/ dual channel meter sensor array for the site specific installation. SPU will have on-line access to this site document through IntelliServe™. Any revisions to this document shall be sequentially numbered and the effective date noted and all revisions uploaded to IntelliServe™.
- b) A document (white paper) that indicates the type of flow quantification(s) occurring at the site will be created for each monitoring site. SPU will have on-line access to this site document through IntelliServe™. Any revisions to this document shall be sequentially numbered and the effective date noted and all revisions uploaded to IntelliServe™.
- c) Alarming criteria for each site should be clearly defined in the document (white paper) and parameters related to alarming updated as needed. Any revisions to this document shall be sequentially numbered and the effective date noted and all revisions uploaded to IntelliServe™.

7.2 Flow Meter Site Maintenance Report Requirements

ADS shall provide a system to record and track service records completed as outlined in Section 5.1. SPU will have on-line access to the report. The maintenance records shall include the following details:

- i) Site name
- ii) Work order number
- iii) Description of the problem or service at the meter
- iv) Date of site visit
- v) Date of completion for any work performed
- vi) List of parts used
- vii) Name of the person requesting work to be performed
- viii) Name of the person who performed the work

ADS is in the process of examining the level of effort to switch to the ZFM2 system for reporting maintenance records. Once that assessment is made, using this software reporting system can be priced and SPU can determine if that would be the preferred report system for operation and maintenance logs.

7.3 Data Analysis Report Requirements for Overflow data from NPDES network

- a) Monthly Combined Sewer Overflow Final Data: The data analyst will upload the final depth, velocity (if applicable) and overflow quantity data (posted in a spreadsheet) to IntelliServe™ (monthly by the 19th of each month).
- b) Monthly Combined Sewer Overflow Report Cover Sheet and Draft DOE letter:
The data analyst will upload the monthly CSO report cover sheet to IntelliServe™ by the 19th of each month and provide a draft DOE letter to Mr. Andrew Lee by the 19th of each month. The Monthly CSO Report Cover Sheet is a spreadsheet summarizing site overflows and data gaps for the preceding month.
- c) Monthly Detailed Combined Sewer Overflow Report and Draft DOE letter:
The data analyst will upload the detailed monthly CSO report to IntelliServe™ by the 19th of each month. The Monthly Detailed CSO Report is a spreadsheet that details site overflows.
- d) Dry Weather Overflow Notification: As per SPU's Functional Requirements Report the NPDES determination of a dry weather overflow is defined as any sewer overflow that initiates more than 24 hours after a rain event.
 - i) If ADS is responsible for filtering IntelliServe alarms, ADS will notify designated SPU staff of an actual dry weather overflow alarm via phone within one (1) hour of the event. Email notification will be accomplished per NPDES CSO Alarm Contact List updated and provided to ADS by SPU as needed.
 - ii) Within three business hours of a dry weather overflow having returned to a normal state, the data analyst will email designated SPU staff of the date and time of the overflow as well as the volume of the event (in gallons). ADS will provide designated SPU staff with any available information regarding the probable cause of the overflow.
 - iii) If a false dry weather overflow alarm occurs, ADS will notify designated SPU staff of the false alarm via email within 1 business day of the event(s).
- e) Wet Weather Overflow Notification: As per SPU's Functional Requirements Report the NPDES determination of a wet weather overflow is defined as any sewer overflow that initiates within 24 hours of a rain event.
 - i) If ADS is responsible for filtering IntelliServe alarms, ADS will notify designated SPU staff of an actual or false wet weather overflow alarm within 1 business day of the event(s).
 - ii) ADS shall notify SPU within 24 hours of the condition at a site where a wet weather overflow occurs and does not return to a normal state. The

data analyst will contact designated SPU staff via telephone and email that the condition has occurred and with an overflow volume estimate for the volume of overflow not associated with the wet weather overflow event.

- f) False Alarms: A false alarm is defined as an alarm notification that does not announce an actual dry weather overflow. If ADS is not responsible for filtering alarms, then ADS is responsible for false alarms triggered by ADS equipment failure or procedural error. ADS may incur a total of 1 false alarm per 30-day period system-wide without prejudice. Should ADS incur more than 1 false alarm ADS will disable alarm notifications through IntelliServe to SPU and instead filter all alarm notifications through an ADS data analyst until the problem has been resolved plus a 72-hour quality check. Notification of dry weather overflows during this time will be accomplished as detailed in Section 7.3 Para d).
- g) By scheduled request, a presentation will be given monthly by an ADS representative (either senior data analysts or regional engineer) that summarizes the overflow events that occurred the previous month and any interesting observed characteristics of other sites that did not overflow.

7.4 Data Analysis Report Requirements for Dry Weather Flow (DWF) data from NPDES network

- a) DWF data is defined as the flow that bypasses the overflow weir during non overflow event periods. This data is to be used to supplement SPU’s modeling efforts.
- b) DWF Data Reporting: At the locations listed below provided by SPU to ADS, ADS will upload to IntelliServe™ finalized DWF depth, velocity and flow data by the end of the 15th business day of the following month

NPDES Site ID	Address/Location
NPDES025_MH038149	E Lee St & 42nd Ave E
NPDES027_MH042269	1522 Lake Washington Blvd
NPDES029_MH042303	519 Lake Washington Blvd
NPDES030_MH042322	219 Lake Washington Blvd
NPDES031_MH046033	300 Lakeside Ave S
NPDES032A_MH046078	35th Ave S & Lakeside Ave S
NPDES033_MH046171	900 Lakeside Ave S
NPDES034_MH046054 S	900 Lakeside Ave
NPDES035_MH046E138	1700 Lakeside Ave S
NPDES061_MH026013	W Raye St & Perkins LN W
NPDES063_MH026010	2603 Perkins LN W
NPDES095_MH075035	Fauntleroy Way SW & SW Brace Pt Dr
NPDES111B_MH056270	S Oregon St & Ohio Ave. S

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NPDES111F_MH057078	6th Ave S & S Snoqualmie St
NPDES130_MH030410	E. Lynn St & Minor Ave E
NPDES132_MH030416	Minor Ave E & E Roanoke St
NPDES139_MH031313	16th Ave E & E Calhoun St
NPDES147A_MH022187	3400 Stone Way N
NPDES147B_MH022160	N 34th St & Woodland Park Ave N
NPDES150_MH011184	NW Market St & 24th Ave NW
NPDES152_MH011189	28th Ave NW & NW Market St
NPDES174_MH021052	NW 36th St & 2nd Ave NW
NPDES175B_MH036028	E Garfield St & Lakeview Blvd E

- c) A detailed summary of the data analysis performed at the site will be provided in spreadsheet format. This spreadsheet details the finalization parameters for the site (includes any data offsets applied or data reconstitution performed).
- d) ADS will also provide this data in CD format quarterly by the 19th of the month following the end of the quarter.

7.5 IntelliServe™ Report Requirements

The IntelliServe™ report system shall be capable of being viewed, downloaded and printed at all times and shall include the following:

- a) An online IntelliServe™ alarm screen that shall provide the following information in chronological order:
 - i. The identification of the site in alarm with a link to data viewing tools.
 - ii. Identify the type of alarm, i.e. High High Depth, Wet Weather Overflow and Dry Weather Overflow
 - iii. Identify the date and time of the alarm
 - iv. Identify the time the alarm was acknowledged
 - v. Identify the IntelliServe™ user name of the person acknowledging the alarm
 - vi. Identify the date and time the alarm was cleared
- b) An Alarm History Report shall be created to report historical alarm data. The user can configure an alarm report using the alarm template. This report can also be configured by the user to auto generate.
- c) Connectivity Reporting: An on-demand IntelliServe Connectivity Report detailing the connectivity rate of each site shall be available for designated SPU staff. All sites should connect twice daily. Cellular or landline communication issues that occur and are the responsibility of the independent providers of landline and cellular services to resolve, are not covered under this service

contract. Where it is determined that resolution of a communication issue requires the expertise of independent provider, ADS staff shall inform the City of Seattle of the communications issue.

8.0 Additional Services

The pricing below is for additional services that may be requested by SPU to occur outside the regular service activities for the SPU NPDES CSO site locations:

Installation Activities

Item	Unit Price
Installation of Single Channel Flow Monitor in Wireless Configuration	\$4,734.00
Installation of Dual Channel Flow Monitor in Wireless Configuration	\$5,621.00
Installation of IntelliServe™ for Single Channel Flow Monitor	\$520.00
Installation of IntelliServe™ for Dual Channel Flow Monitor	\$1,040.00
Modification of Single Channel Wireless to Single Channel Landline with installation of external power for monitors originally purchased in wireless configuration.	\$1,256.00
Modification of Single Channel Wireless to Single Channel Landline with installation of external power for monitors originally purchased in landline configuration.	\$760.00
External Power Conversion Installation Kit	\$571.00

1. Pricing good for duration of scope.
2. Does not include applicable taxes.
3. The above prices do not include any special, modified, or custom documentation or manuals that may be required. Standard ADS Environmental Services Manuals appropriate to the delivered equipment are included with the equipment.
4. Does not include uninterruptable power supply
5. Sale of above equipment and services are subject to the terms and conditions of ADS's current Vendor Contract #1729 amended November 6, 2008.