State of West Virginia Health and Human Resources
Bureau for Public Health Environmental Health Services

Two Web-Based e-Reporting Systems

Technical Proposal

CRFQ 0506 EHS1700000001

September 29, 2016

WINDSOR SOLUTIONS | Environmental + Health Information Systems

Contents

Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
21 — Info Technology

Proc Folder: 216601

Doc Description: Two(2) Web Based E- Reporting Systems

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2016-08-10	2016-09-15 13:30:00	CRFQ 0506 EHS1700000001	1

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Windsor Solutions, Inc.
4386 SW Macadam Ave, Suite 101
Portland OR 97239
503-675-7833

FOR INFORMATION CONTACT THE BUYER

Mark A Atkins
(304) 558-2307
mark.a.atkins@wv.gov

Signature X [signature] **FEIN #** 93-1245518 **DATE** 9/26/2016

All offers subject to all terms and conditions contained in this solicitation

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
21 — Info Technology

Proc Folder: 216601

Doc Description: ADDENDUM_1: Two(2) Web Based E- Reporting Systems

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2016-09-06	2016-09-15 13:30:00	CRFQ 0506 EHS1700000001	2

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

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Portland OR 97239
503-675-7833

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2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
21 — Info Technology

Proc Folder: 216601

Doc Description: ADDENDUM_3: Two(2) Web Based E- Reporting Systems

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2016-09-22	2016-09-29 13:30:00	CRFQ 0506 EHS1700000001	4

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Windsor Solutions, Inc.
4386 SW Macadam, Suite 101
Portland OR 97239
503 675 7833

FOR INFORMATION CONTACT THE BUYER

Mark A Atkins
(304) 558-2307
mark.a.atkins@wv.gov

Signature X [signature] FEIN # 93-1245578 DATE 9/27/2016

All offers subject to all terms and conditions contained in this solicitation

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

Craig Austin, Communications Manager
(Name, Title)

Craig Austin, Communications Manager
(Printed Name and Title)

4386 SW Macadam Ave, Suite 101 Portland OR 97239
(Address)

503-675-7833 / 503-675-7804
(Phone Number) / (Fax Number)

craig_austin@windsorsolutions.com
(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Windsor Solutions, Inc.
(Company)

Vice President
(Authorized Signature) (Representative Name, Title)

Simon Watson Vice President
(Printed Name and Title of Authorized Representative)

9/26/2016
(Date)

503-675-7833 / 503-675-7804
(Phone Number) (Fax Number)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CRFQ 0506 EHS1700000001

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

- [x] Addendum No. 1
- [x] Addendum No. 2
- [x] Addendum No. 3
- [ ] Addendum No. 4
- [ ] Addendum No. 5
- [ ] Addendum No. 6
- [ ] Addendum No. 7
- [ ] Addendum No. 8
- [ ] Addendum No. 9
- [ ] Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Windsor Solutions, Inc.
Company

Authorized Signature

9/26/2016
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

11. MISCELLANEOUS:

11.1. Contract Manager: During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract Manager must be available Monday-Friday from 9:00 am to 4:00 pm Eastern Standard Time to address any customer service or other issues related to this Contract. The contract manage must also be available on the following business day after any nationally recognized holiday. Vendor should list its Contract manager and his or her contact information below.

Contract Manager: Craig Austin
Telephone Number: 503-675-7833
Fax Number: 503-675-7804
Email Address: craig_austin@windsorsolution.com

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Windsor Solutions, Inc.

Authorized Signature: _____ Date: 9/26/2016

State of Oregon

County of Multnomah, to-wit:

Taken, subscribed, and sworn to before me this 26 day of September, 2016

My Commission expires July 21, 2019.

AFFIX SEAL HERE

OFFICIAL STAMP
CATHERINE MARIE BOYKIN-SENA
NOTARY PUBLIC - OREGON
COMMISSION NO. 941037
MY COMMISSION EXPIRES JULY 21, 2019

NOTARY PUBLIC _____

Introduction

Windsor Solutions, Inc. (Windsor) is pleased to submit this proposal to the West Virginia Department of Health and Human Resources (WVDHHR) Bureau for Public Health (BPH) Office of Environmental Health Services (OEHS) for two e-Reporting systems. OEHS wishes to utilize the National Environmental Information Exchange Network (EN) in conjunction with the two e-Reporting systems to be developed as specified by this RFP to track and report on sportfish consumption data and laboratory water quality data. The two systems are to be known as the Sportfish Consumption Advisory Limit System (SCALES) and Drinking Water Lab Reporting System (DWLRS).

These new systems will share data via the EN infrastructure, allowing interested partners and the public greater access and visibility to advisory limit data and minimizing or eliminating the need for paper submissions and manual data entry for lab data.

The selected vendor for this project must possess a deep understanding of the Exchange Network and how it can be utilized to develop the two e-Reporting systems described in the CRFQ. The selected vendor will also need a broad and deep knowledge of government environmental agency business practices and data management systems in order to build a system that is not only technically capable, but also easy to use and likely to be adopted by the user community, both internal and external.

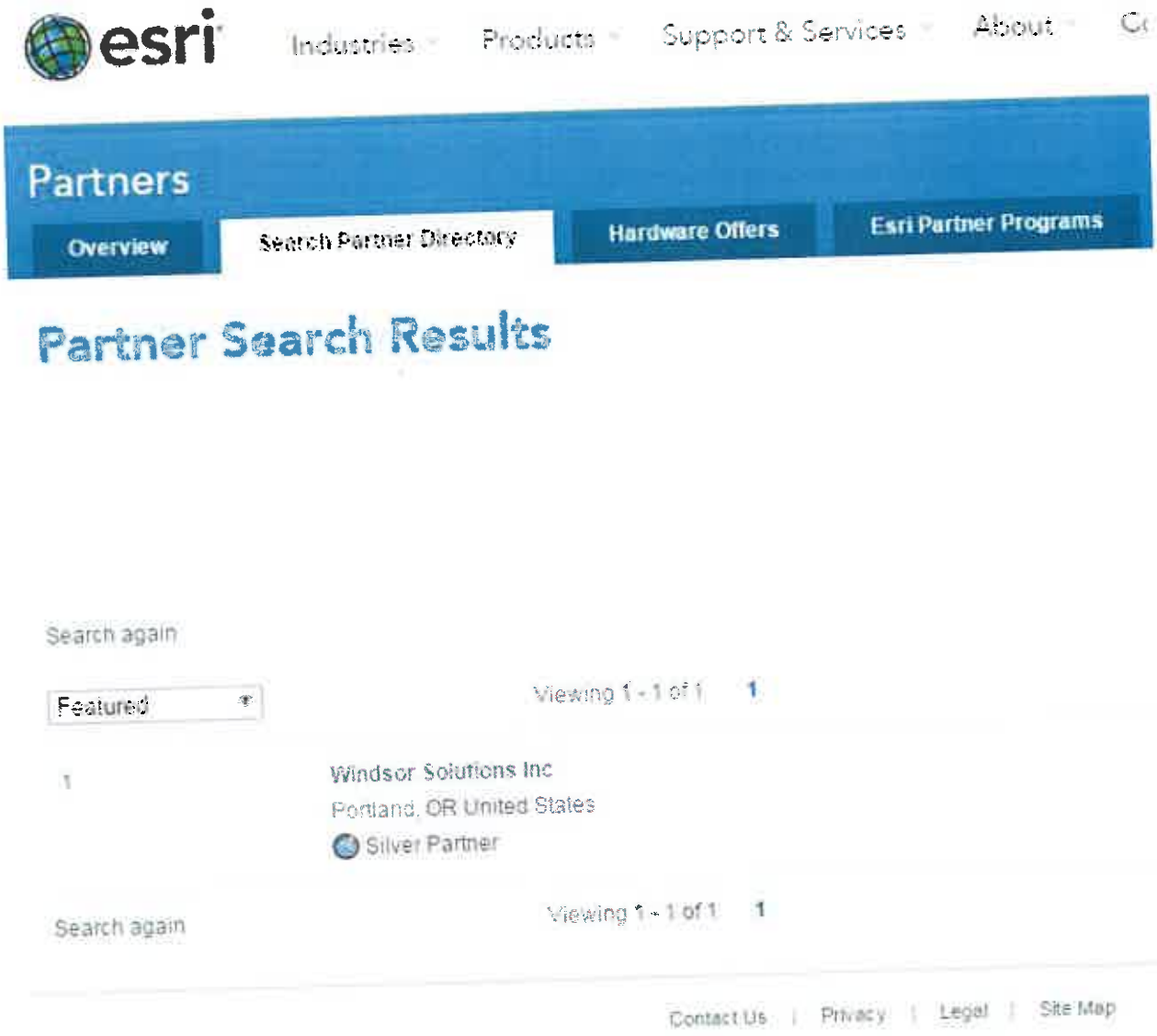
Windsor is the leading EN Consultancy in the US, having developed the underlying Exchange Network Node infrastructure including OpenNode2, the node software used by OEHS, as well as data exchange plugins used by the vast majority of EN partners across the country. In addition, we have nearly two decades of experience in building information systems exclusively for public-sector environmental agencies at the state, federal, county, and tribal level. Our systems are successful because they work well, but also because we consider the needs of the target user groups.

Windsor's public-sector IT projects range from a few thousand to several million dollars in size and cover the full gamut of environmental IT, from database development to electronic reporting, CROMERR compliance to mobile inspection management. Windsor is a Silver-Tier partner with ESRI, and nearly all our projects include a spatial component.

As directed by the CRFQ, this proposal contains Windsor's responses to the required items in the Specifications document, particularly Section 3 (Qualifications) and Section 4 (Mandatory Requirements), as clarified by the questions and answers issued in the addenda. Windsor's cost estimates for each of the line items are included in the Pricing Page in Exhibit A in a separate Cost Proposal document as required by the CRFQ.

Section 3.1 – ESRI Certification

Windsor Solutions is an ESRI Silver Partner, as shown on the ESRI website (screenshot below):



Section 3.2 – Windsor Project Portfolio

Offeror Identification and Information

Windsor Solutions is a privately held S-Corporation, incorporated May 20, 1998 in Oregon. There have been no name changes since the company was founded.

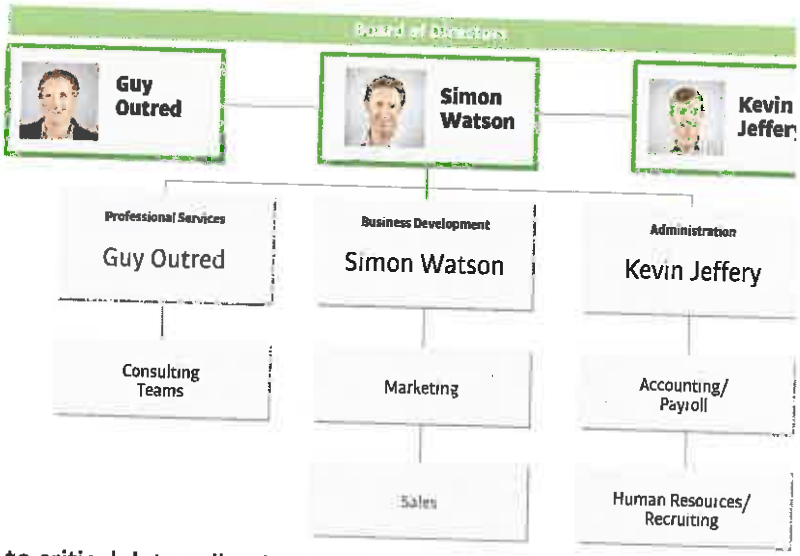
Our headquarters address is:

Windsor Solutions, Inc.
4386 SW Macadam Ave, Suite 101
Portland, OR 97239
503-675-7833
www.windsorsolutions.com

Windsor's primary contact for all matters related to this proposal is:

Craig Austin, Communications Manager
503-675-7833, ext. 215
craig_austin@windsorsolutions.com

Since its inception, Windsor has enjoyed steady, sustained growth to its current level of 54 employees. Windsor's organizational structure is shown in the accompanying chart.



A full service information systems consulting firm, Windsor is headquartered in Portland, Oregon, with a large regional office in Northampton, Massachusetts, from which this project will be managed. We are proud to have developed an exceptional national reputation for the delivery of high quality solutions, on time and within budget, that span most environmental program areas.

As a systems integrator specializing in environmental information management, Windsor is able to bring extensive and relevant experience to this initiative. Our business knowledge and technical expertise allow us to design and implement solutions that address an agency's specific needs in regard to critical data collection, appropriate analysis, and timely information sharing.

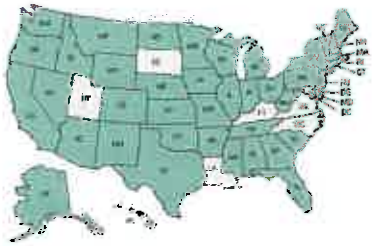
Windsor is in a relatively unique position having designed and built both fully integrated environmental management systems along with program-specific systems. Our staff therefore has experience with the pros and cons of each alternative and is able to support the agency with either direction.

Windsor currently employs 54 software engineers, developers, analysts, and project managers in our Portland, Oregon, Northampton, Massachusetts, and Honolulu, Hawaii offices. Windsor experiences very low staff turnover in comparison to the industry as a whole, and strives to maintain staff continuity throughout the life of a project.

Employee breakdown by division or function is as follows; in some cases, duties may overlap (e.g., a project manager may also play the role of senior analyst depending on the nature of the project):

- Project Management: 13
- Technical Manager: 3
- Analyst: 10
- Developer: 16
- Data Analyst: 3
- Technical Writer: 1
- Graphic/UI Design: 2
- IT Infrastructure Specialist: 1
- QA/Training: 6
- Administration: 2

Customer Base



Windsor was founded in 1998 to specialize in the provision of environmental information systems to federal, state, local, and tribal government organizations. Since that time, we are proud to have developed an exceptional national reputation for the delivery of high quality solutions on time and within budget.

As shown on the accompanying map, Windsor has successfully completed projects for agencies in nearly every state. We focus exclusively on the management and sharing of environmental and natural resources data with public-sector agencies at the federal, state, county, local, and tribal level. Our projects have ranged from a few thousand to several million dollars. Relevant projects can be viewed on our website at www.windsorsolutions.com.

Public Environmental Agency Focus

Windsor has conducted successful projects for dozens of state agencies, in addition to county, tribal, municipal, and regional governmental agencies. Some of our clients include:

Alaska Department of Environmental Conservation	Minnesota Department of Natural Resources
Arizona Department of Environmental Quality	Missouri Department of Natural Resources
Arkansas Department of Environmental Quality	Montana Department of Environmental Quality
California Environmental Protection Agency	Nebraska Department of Environmental Protection
California State Water Resources Control Board	Nevada Department of Conservation and Natural Resources
Colorado Department of Public Health and Environment	New Hampshire Department of Environmental Conservation
Connecticut Department of Energy and Environmental Protection	South Carolina Department of Health and Environmental Control
Environmental Council of States	New York Department of Environmental Conservation

Georgia Department of Natural Resources	New York Department of Health
Hawaii Department of Health	North Dakota Department of Health
Indiana Department of Environmental Management	Northwest Indian Fisheries Commission
Iowa Department of Natural Resources	Oregon Department of Environmental Quality
Kansas Department of Health and Environment	South Carolina Department of Health and Environmental Control
Massachusetts Department of Environmental Protection	Vermont Department of Environmental Conservation
Michigan Department of Environmental Quality	Washington Department of Ecology
Minnesota Department of Public Safety	Wyoming Department of Environmental Quality

Change of Ownership

Windsor has not changed ownership over the life of the company. Windsor is 100% privately owned by the officers of the company.

Overview of Business Units/Service Lines/Products

Windsor is a full service IT consulting firm that specializes in developing custom and off-the-shelf information systems exclusively for public health and environmental agencies. As a specialist in this arena, Windsor brings a deep understanding of the business practices and information management needs of public sector agencies that manage health and environmental data.

Windsor has recently introduced several software products that provide much-needed functionality for environmental agencies. These products are detailed on our website at www.windsorsolutions.com and include the following:

- nSITE, a data warehouse/repository for managing and reconciling site records across multiple programs
- nSPECT, a mobile inspection application for tablets and other mobile devices
- nFORM, an innovative online e-Permitting solution
- SLEIS, a state and local emissions inventory system

Along with our software product line, we've built our outstanding reputation on services. Windsor provides the full range of information-technology-related services required for environmental and natural resource agencies, including:

- Electronic reporting
- Data warehouse
- Spatial information systems
- Exchange network
- System re-engineering
- Technology migration
- Current systems/infrastructure assessment
- Cross-program data integration
- Information strategy planning
- Program area analysis

Windsor's consultants are experts in the following disciplines:

- Air Quality
- Water Quality
- Land Quality
- Environmental Health
- Natural Resources
- Cross-Discipline Services

Example Projects

Hawaii DOH: SDWIS Viewer

The Hawaii Department of Health Environmental Health Administration (EHA) contracted Windsor to design and implement a custom Safe Drinking Water Information System (SDWIS) viewer application. The application provides users the ability to query SDWIS data and return results in a spatially enabled and/or tabular format. The viewer provides county and environmental health specialists the ability to access and use the state's SDWIS information; it also provides field users with a way to improve GPS-collected coordinate data and import it into SDWIS.

The SDWIS Viewer is a moderately complex system comprised of Web applications, Web services and Mobile applications. The GIS technologies used for the application include the GoogleMaps API and the ArcGIS Extension for the GoogleMaps API for the Web interface, and the Windows Mobile SDK for the handheld GPS application.

The mobile application was designed to make the process of improving location data as simple as possible. When field users use the one-click synchronize feature, it verifies whether or not it needs an updated catalog of sampling point sites that must be collected and automatically downloads it if necessary. Field users can then collect and tag coordinates to a sampling point site in two clicks. New sampling points can also be collected and added to the catalog. Uploading sampling point data is performed automatically with a one-click synchronize. If the GPS readings are not within acceptable tolerances, there are mechanisms to allow for post-processing the collected and uploaded coordinates.

The Water Quality Data (WQD) Viewer provides public access to water quality data in the state and allows agency staff to post advisories warning of hazardous water conditions to a public Web site. These viewers offer many features, including:

- Spatial and Tabular Searching
- Spatial Data and Tabular Data Viewing
- ArcGIS Server overlay layers for spatial data viewing

- Data Exporting
- GPS application to collect coordinates and "tag" to sampling points
- Web service-based upload of GPS data to SDWIS database
- Automatic download of SDWIS data catalog to handheld device

Hawaii DOH Sample Analysis Tracking System

Windsor and the Hawaii State Environmental Health Administration's Safe Drinking Water Branch (SDWB) and Environmental Health Analytical Services Branch (EHASB) partnered to design and develop a Sample Analysis Tracking System (SATS) and implement a data exchange from SATS to the SDWB's SDWIS/State information management system.

SATS is a Web-based system that allows the State Laboratory Division and three neighboring island District Health Laboratories to track and manage chemistry, microbiology and lead/copper drinking water samples. The system was designed to manage information about the collected sample, analysis results and other notes recorded by laboratory analysts. The system also facilitates the laboratory quality assurance, review and approval process.

SATS includes a customized data extract to export drinking water sample result information into the electronic format required by SDWB for automatic import into SDWIS/State. This data extraction process generates files in the required standard format defined by EPA for import into SDWIS/State through the SDWIS/XMLSampling application.

Hawaii DOH Sample Collection Reservation System

The Hawaii State Environmental Health Administration's Safe Drinking Water Branch (SDWB) and Environmental Health Analytical Services Branch (EHASB) completed a project in 2011 to confirm the business and technical requirements for a Lab to SDWIS/State Data Exchange and establish a plan to guide design, development, and implementation activities.

The defined Lab to SDWIS/State Data Exchange vision was centered on two core information systems: (1) the Sample Collection and Reservation System and (2) the Sample Analysis Tracking System. Together, these two new systems make it possible for SDWB and EHASB to meet the overall data exchange project objectives.

Objectives included scheduling of sampling activities, sample collection by public water system operators, sample receipt and analysis by the SLD and certified outside labs, management of analytical result information, and reporting of that result information to the SDWIS/State system. The goal was to enhance and streamline the sample and analytical result data sharing process. This would improve the quality of information, increase the timeliness of that information, and improve the ability of SDWB to track the progress of drinking water compliance monitoring activities.

Windsor Solutions (Windsor) worked with the SDWB and EHASB to design and implement the Sample Collection and Reservation System (SCRS), which went into production in June of 2013. This Web-based application provides water systems with a comprehensive source of information and tools they need to meet their sampling obligations. The water system is able to review the most up-to-date sample scheduling and frequency information about a specific sampling location held in the SDWIS/State database and view and print a Chain of Custody form that is pre-populated with relevant information. The system is linked to the previously implemented Sample Analysis Tracking System (deployed in February 2012), allowing the water system to see the latest processing status for their samples. SCRS

also includes the capability for water systems to schedule sampling dates that coincide with the EHASB's plans for processing of specific analytical procedures or sample types.

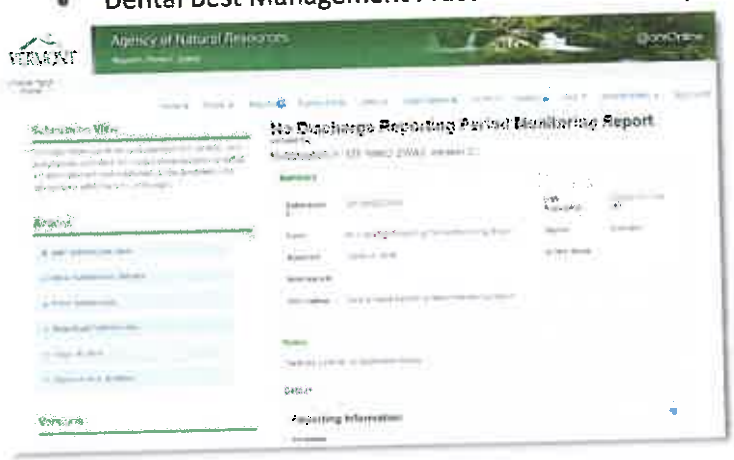
Vermont DEC eReporting/ePermitting Application - anrOnline

The Vermont Department of Environmental Conservation (DEC) has been at the forefront of electronic reporting and permitting for environmental agencies. Looking to upgrade their electronic reporting/permitting offering to the regulated community and to increase transparency, DEC selected Windsor's nFORM solution to replace their eDEC application.

- nFORM applies state-of-the-art web technologies to the form development and application process, putting the power directly into the hands of program staff, who can easily add new forms, modify existing forms, and customize internal workflow processes without programming/coding skills. It gives the DEC maximum flexibility and enables rapid program-driven application form development and workflow management. The system enhances transparency and efficiency and speeds communication between the agency and the applicant.

anrOnline recently went live, providing the general public and regulated community the ability to submit the following applications:

- Underground Storage Tanks Registration Renewals
- Underground Injection Control Permits
- Discharge Monitoring Reports
- Dental Best Management Practices Certification (Mercury Program)



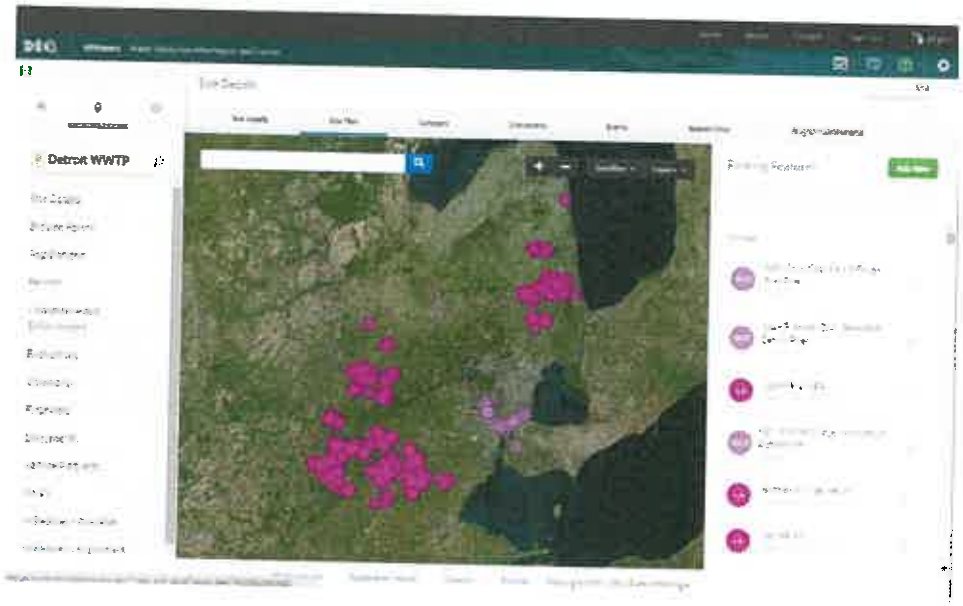
Electronic payments are accepted for both UST registration renewals and UIC permit applications. nFORM's flexible payment processor plug-in works with most third-party merchant accounts.

After this first phase of this project, DEC plans to expand nFORM's use to all reports/permit applications across the Department.

anrOnline can be found at the following url: http://anronline.vermont.gov/

Michigan DEQ MiWaters Online Water Resources Permitting and Compliance System

The Michigan Department of Environmental Quality (MDEQ) Water Resources Division (WRD), like many regulatory organizations, has increasingly become dependent upon information systems to manage regulatory compliance. Over many years, legacy applications were developed in a non-integrated fashion resulting in disjointed and redundant data across multiple systems. In addition, the fragmentation of the legacy applications could not support consistent permitting and compliance processes across program areas.



The MiWaters system is being built to consolidate and replace over 25 existing systems used by WRD, to bring consistency to permitting and compliance processes, and to significantly enhance WRD's capabilities through advanced technologies (e.g. GIS), enhanced public access to information, and improved data integrity.

The core of the MiWaters solution is comprised of a custom developed web application based on the Microsoft .NET framework, with data being managed and reported upon using Microsoft's SQL Server platform. However, significant functionality is also being provided by integrating Windsor Solutions products into the MiWaters solution:

- **nFORM** – supports online electronic form submission and management
- **nSPECT** – provides mobile inspections and data collection
- **nSITE Explorer** – delivers powerful GIS based data inquiry for both internal staff, the regulated community and the general public.

Primary capabilities provided by the MiWaters system include:

- Site Management
  - Management of Site Plans related to environmental interests (e.g. Permitted)
  - Integration with GIS for mapping of Site Plan Features as points, lines, or polygons.
  - Site centric view of environmental activities (Permits, Enforcement Actions, Inspections, Complaints)
- Service Request Processing
  - Integration with nSpect for submission of Permit Applications, Service Requests, and Complaints
  - Request processing and fulfillment
    - Permit development and/or modifications

        - Request fulfillment
        - Tracking of Complaints
    - Public Notice of proposed permit Applications and/or newly issued Permits
    - Processing paper-based Applications, Requests, Submissions

- Permit Maintenance
    - Schedules of Compliance
    - Permitted Features (e.g., Outfalls) and Feature Limits
    - Dynamic program-specific data components based on permit type
    - Contact Management
    - Related Documents

- Permittee Reporting Requirements
    - Electronic submission of Permit required reporting (via nForm) based on Schedules of Compliance specified in the Permit or Compliance/Enforcement Action
    - **Electronic Submission of Discharge Monitoring Reports (DMRs)**

- Compliance and Enforcement
    - Evaluation of permit reporting submissions
    - Automatic violation generation for late / missing permit report submissions
    - Planning and scheduling of Site Inspections
    - Field Inspection data capture, reporting and violation generation (via nSpect)
    - Tracking of Compliance and Enforcement Actions including escalations

- Complaints/Incidents
    - Recording and processing of Complaints or Incidents
    - Instantiation of Inspections, Permitting, or Compliance/Enforcement Actions from Complaints

- Financial Tracking
    - Application Fee Assessment
    - Invoice Generation
    - Payment Processing
    - Payment Status Tracking
    - Refund Request Processing

- Other Water Resources related functionality
    - Financial Instruments
    - Conservation Easements
    - Mitigation Banks

- EPA Reporting (ICIS / NPDES)

Other general features and capabilities of MiWaters include:

- External site for regulated community (registered users)
- Public Inquiry including GIS based inquiry
- Workflow and Tasking
- Automated Document Generation from user-defined document templates
- Integrated Document Management (upload/download)
- User Notifications – to both internal staff and registered external users (regulated community)
- Extensive configuration and administrative functions

- Contact Management
- User management
- System Announcements
- Online help

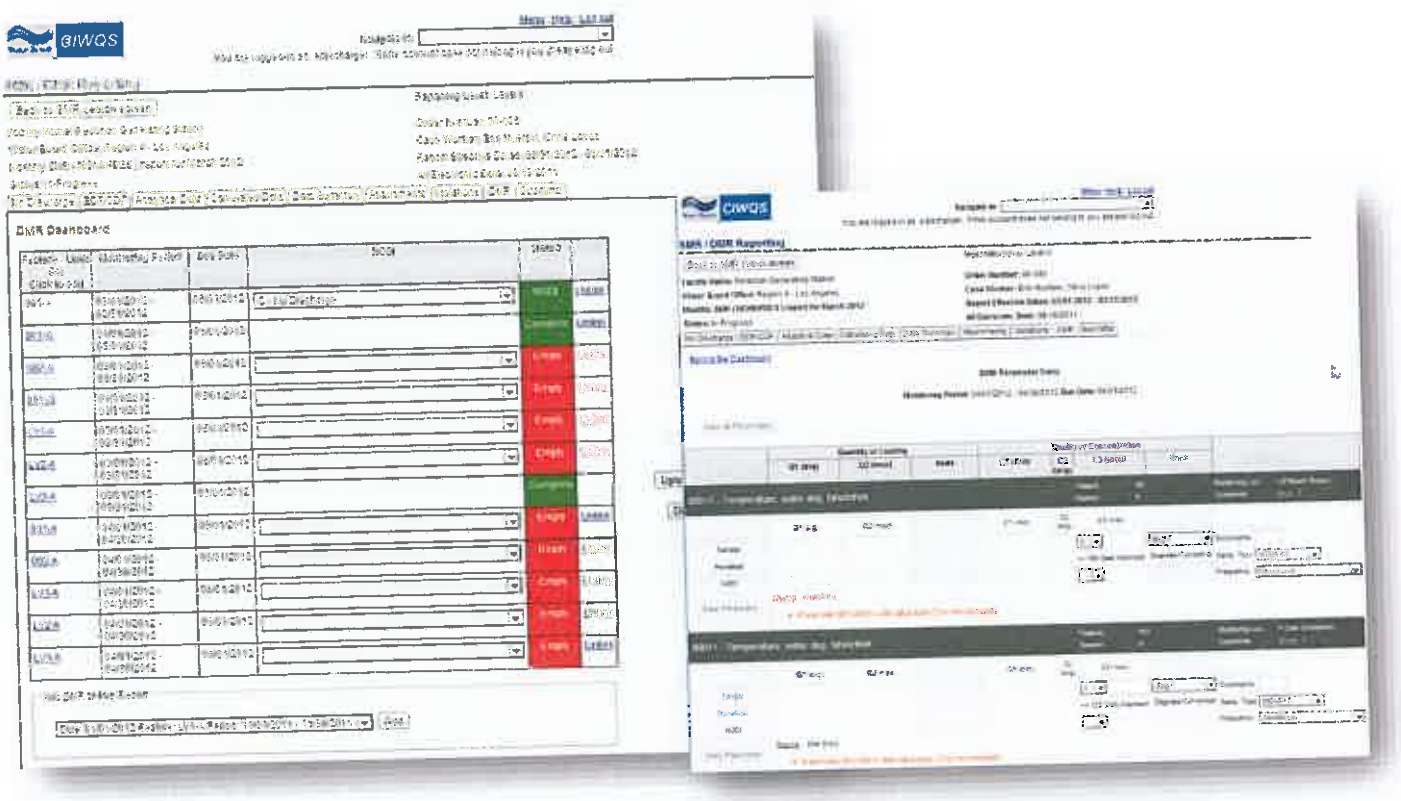
California State Water Resources Control Board eSMR 2.5 Project

In 2011, the California State Water Resources Control Board (SWRCB) contracted Windsor to implement a web-based solution for the capture of federal **Discharge Monitoring Reports** (DMRs) for California facilities permitted to discharge under the National Pollutant Discharge Elimination System (NPDES). This solution, known as eSMR 2.5, also automated the exchange of the captured DMR data with U.S. EPA using the Exchange Network. SWRCB had previously developed a solution, known as eSMR 2, for the capture of reports pertaining to State discharge monitoring regulations. Windsor extended this solution to also support the capture of federal NPDES DMRs, providing a single point of contact for facilities to report to both state and federal regulators. Data can be reported either through a user interface or through the upload of formatted data.

The allowable limits for NPDES permits are maintained by a U.S. EPA system known as ICIS-NPDES. In order to simplify the entry of DMR data for facilities, an automated download of ICIS-NPDES permit limit data (also known as an 'empty slot file' or ESF) data was implemented as part of the project. Downloading the ESF data allows the eSMR 2.5 solution to compare and validate DMR data that has been entered or uploaded by the facility against the pre-defined permit limits and conditions that apply, and highlight any exceedances that may have occurred. Once DMR data entry has been completed and reviewed by the responsible party at the facility, the submittal goes through a certification process and is forwarded to U.S. EPA via the exchange network for further validation and import into the ICIS-NPDES system.

The Exchange Network plays a central role in this solution, as the mechanism for delivery of current permit limits and conditions from U.S. EPA to SWRCB, and also the subsequent delivery of submitted, certified DMRs from SWRCB to U.S. EPA. Windsor's OpenNode2 solution has been deployed in California and is being used for all ICIS-NPDES related data exchanges.

The eSMR 2.5 solution was deployed in August 2012, with a gradual rollout to all regulated facilities afterwards. Future enhancements planned for eSMR 2.5 include the implementation of a CROMERR-compliant electronic submittal certification process.



Georgia Environmental Protection Division – Georgia Pollution Discharge Elimination System (GAPDES)

Windsor designed and implemented a new water National Pollutant Discharge Elimination System (NPDES) solution for the State of Georgia Environmental Protection Division (EPD).

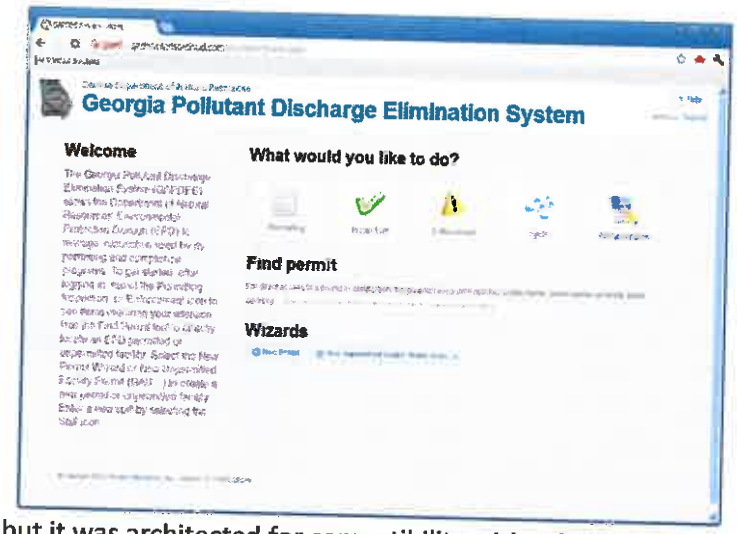
The solution provided for the EPD made extensive use of proven solutions that were already developed by Windsor to solve the specific challenges expressed by the EPD. The ability to reuse these capabilities ensured that the GAPDES project was delivered in a tight time frame and also with a rich set of functionality.

Specific functionality developed to meet the individual needs of EPD include:

- geospatial viewers for facilities, permitted outfalls, and spills
- advanced permitting features to enable support of multiple inactive limits
- generation of permit, inspection, and enforcement documents that conform to existing EPD templates
- customizations to enable a cloud-hosted implementation

GAPDES manages all information about the EPD's National Pollutant Elimination System (NPDES) permit, compliance, and enforcement program implementations, including:

- Permit applications
- Permits
- Inspections
- Enforcement actions
- Spills tracking



GAPDES is a fully integrated information system that consolidates existing separate EPD applications into a single data repository and provides a powerful and secure data collection, management and access interface for all program information. This Internet- based, cloud-hosted application was developed using Microsoft's .NET Framework and MySQL, but it was architected for compatibility with other database platforms.

EPD permitting staff uses GAPDES to manage the complex NPDES permit and water quality certification application process, ensuring that all required information is captured. Permit documents are automatically generated by the system, saving valuable time while promoting consistency and accuracy within the branch. Facilities and outfalls can be mapped using dedicated geospatial viewers, providing important context such as proximity to impaired waterbodies.

EPD compliance staff uses the system to schedule and record inspections, as well as generate post-inspection reports. GAPDES also provides robust functions to log single-event and permit violations and manage enforcement actions. Spills can be tracked in the system, and these can be integrated with the existing permits and facilities recorded by permitting staff. Spills can also be plotted on a map, showing their relationship to existing facilities, outfalls, and impaired waterbodies.

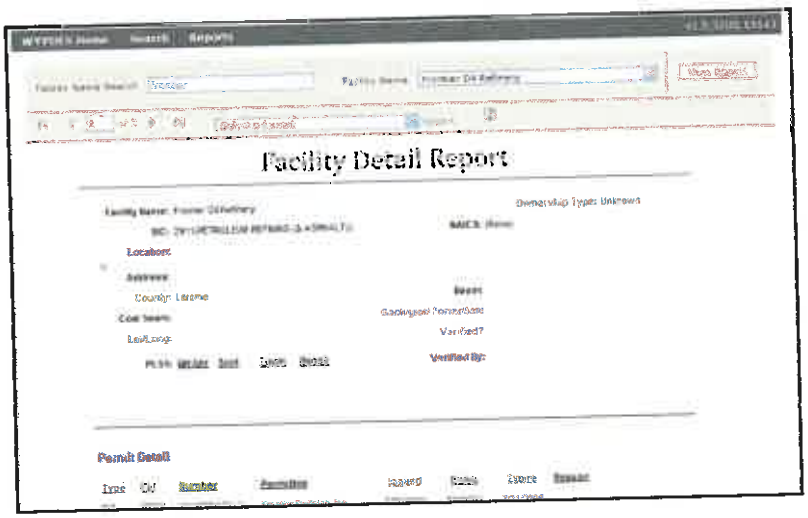
Project Relevance

- Demonstrated experience in the National Pollutant Discharge Elimination System (NPDES) permitting program etc.
- Demonstrated experience with multi-user relational database management systems (e.g. Oracle, SQLServer, MySQL, etc.) development and implementation.
- Demonstrated experience in the Rules and Regulations for Water Quality Control nationwide.
- Demonstrated experience with developing and implementing large water resources databases, and any experience using the Water Resources Database (WRDB) software utilized in creating model input files.
- Demonstrated experience developing and implementing a data exchange (flow) through the National Environmental Information Exchange Network.
- Demonstrated experience in presenting technical information to both technical and non-technical audiences and receiving, processing, and incorporating input from these groups into data management needs.

Wyoming Department of Environmental Quality – Wyoming Pollutant Discharge Elimination System (WYPDES)

In May 2006, Windsor began a project with the State of Wyoming Department of Environmental Quality (WDEQ) to implement a Network Node (Node) and initial data flow to the Environmental Protection Agency (EPA) Facility Registry System (FRS). Implementation of the Node and FRS data flow was completed on schedule in September 2006.

In parallel with this work, Windsor also conducted a comprehensive assessment of WDEQ's existing National Pollutant Discharge Elimination System (NPDES) permitting system with a view to understanding compliance with the EPA's Integrated Compliance Information System - National Pollutant Discharge Elimination System (ICIS-NPDES) database. Based on this assessment, Windsor developed an implementation plan to help WDEQ achieve compliance with the EPA system requirements, as well as facilitate future National Environmental Information Exchange Network (Exchange Network) based data exchanges from the WDEQ NPDES system to the EPA ICIS-NPDES system.



Having helped WDEQ successfully deploy the necessary technical components to support participation in the Exchange Network and establish an initial flow of facility data to FRS, Windsor was contracted to assist the agency in implementing an automated transfer of information about point source effluent discharges to surface water from WDEQ to the national EPA ICIS-NPDES system.

WDEQ recognized that the information systems and business processes that are currently used to maintain the NPDES program within the Wyoming Program (WYPDES) would require modernization to support the eventual flow of information to the new EPA ICIS-NPDES system. In addition, WDEQ could see that its programs would benefit from additional modifications to the existing information systems and business processes to streamline and enhance data collection and management.

In August 2007, WDEQ initiated an enterprise-wide Information Technology Initiative Implementation Project that included a task aimed to establish a fully integrated information system that will consolidate existing separate WYPDES Program systems into a single data repository and provide a powerful and secure data collection, management and access interface for all program information. This new system, named WYPDES, enables the WYPDES Program to fully comply with the data synchronization requirements of the EPA ICIS-NPDES data exchange.

WYPDES was implemented in the late fall of 2008. The system covers all aspects of facility and permit management, including effluent limits, discharge monitoring reports, inspections, violation tracking and enforcement actions. It also features robust document generations capabilities and customizable reporting. Windsor has been responsible for all planning and management, requirements gathering, design, development and testing activities.

The WYPDES Program will continue to send its NPDES data to EPA via PCS batch cards until the ICIS-NPDES data exchange is implemented on the Exchange Network for full batch states.

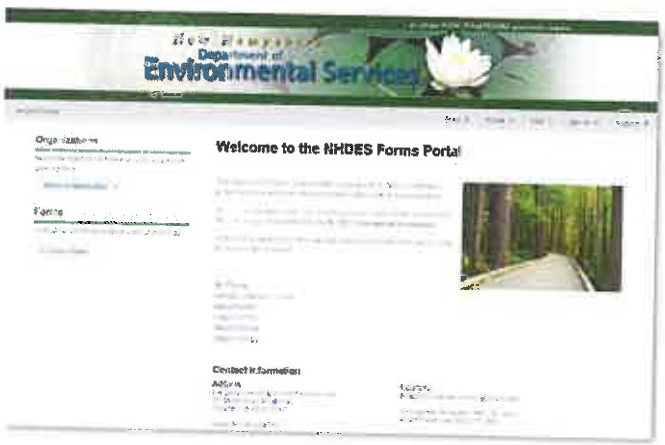
Project Relevance

- Demonstrated experience in the National Pollutant Discharge Elimination System (NPDES) permitting program etc.
- Demonstrated experience with multi-user relational database management systems (e.g. Oracle, SQLServer, MySQL, etc.) development and implementation.
- Demonstrated experience in the Rules and Regulations for Water Quality Control nationwide.
- Demonstrated experience with developing and implementing large water resources databases, and any experience using the Water Resources Database (WRDB) software utilized in creating model input files.
- Demonstrated experience developing and implementing a data exchange (flow) through the National Environmental Information Exchange Network.
- Demonstrated experience in presenting technical information to both technical and non-technical audiences and receiving, processing, and incorporating input from these groups into data management needs.

New Hampshire Online Forms Application

Building upon the efforts of the Governor of New Hampshire to attract innovative businesses and ensure that state government remains responsive to the needs of the business community, the State of New Hampshire has developed a number of business-centric strategic initiatives. One key initiative is directed at moving all possible business-related forms into an online format to improve how data from business entities is submitted to state agencies. Looking to rapidly respond, the State of New Hampshire, acting through the Department of Information Technology (DoIT), has selected Windsor's nFORM solution.

nFORM applies state-of-the-art web technologies to the form development and submission process, putting the power directly into the hands of program staff, who can easily add new forms, modify existing forms, and customize internal workflow processes without IT programming/coding skills. It gives agencies maximum flexibility and enables rapid form development and workflow management by those possessing the program expertise. Fully automated notifications improve visibility to processing activity and increase



efficiencies across the organizations. At the same time, the system enhances transparency and speeds communication between the agency and the submitter.

The current phase of the project includes collaborating with DoIT and working with a half dozen agencies and programs including Department of Environmental Services, Department of Health & Human Services, Department of Labor, Department of Administrative Services, and Department of Safety.

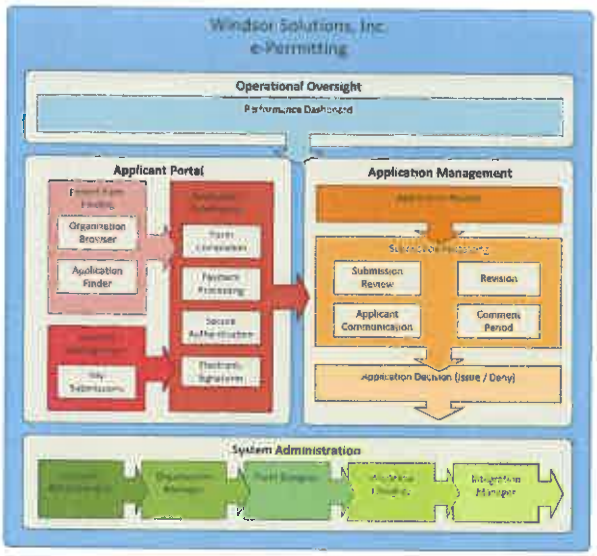
Windsor is working with DoIT and each of the agencies to help interactively design their online forms within the nFORM solution, including defining all workflow processes required such as administrative review and compliance recording tasks. Additionally, form submission data will be integrated into the back-end program database systems, which will eliminate the burden of manual data entry by program staff, addressing the call to improve efficiency and reduce time, effort, and expense involved in servicing the business communities.

Electronic payments will be accepted for forms requiring payment. nFORM's flexible payment processor plug-in works with most third-party merchant accounts. Windsor will work with NH DoIT to integrate nFORM with their payment processor, Bank of America.

After the first phase of this project, DoIT plans to expand nFORM's use by training and collaborating with additional programs and agencies to bring over 500 forms on-line.

Hawaii Department of Health - e-Permitting System (nFORM)

Windsor partnered with the Hawaii Department of Health (DOH) Environmental Health Administration (EHA) and the Hawaii State Energy Office within the Hawaii Department of Business, Economic Development and Tourism (DBEDT) to design, develop and implement an online permit application system with an emphasis placed on EHA permit application forms with a renewable energy interest. The implementation of this solution is intended to streamline regulated community permit application submissions and increase the efficiency of staff managing the permit application process. DBEDT considers streamlined permit processing for renewable energy facilities a major step towards achieving Hawaii's goal of 70% clean energy by 2030.



The result of the project is an e-Permitting solution aimed at the consolidation, education and facilitation of the permit submission process (including CROMERR compliance), payment processing and approval across the EHA. Such a solution brings all permit application processing into the same system with a common interface for the user community, where "user" is defined as the permit applicant. It provides learning and help tools that enable users to progress from basic users of the application to advanced users through education and experience. Most importantly, it provides an intuitive and easy-to-use mechanism for users to navigate the system and to submit and manage their permit applications electronically.

Windsor's e-Permitting system incorporates a series of reusable components. For instance, the security module is based upon Windsor's latest CROMERR solution design and supports future electronic reporting applications as they evolve within the administration with less effort.

From an early stage on this project, Windsor understood the importance of capitalizing on existing investments and making data available so that the administration can achieve greater efficiencies, make more informed decisions, and achieve more within an ever-tightening budget. Therefore, the solution will allow EHA staff to take ownership of the process over time, thus reducing the dependence on contractors or consultants and building the required in-house skill-sets. Similarly, Windsor understood the critical role that other initiatives such as the Hawaii EHA Environmental Health Warehouse (EHW) play in the successful implementation of a solution such as the e-Permitting system. The value of a centralized data repository, capable of supporting the regulated community's data entry, validation, and submissions, will become even greater as the EHA source system base increases.

To achieve the goals for the e-Permitting project in a fiscally responsible manner, Windsor proposed a solution based around four main focus areas:

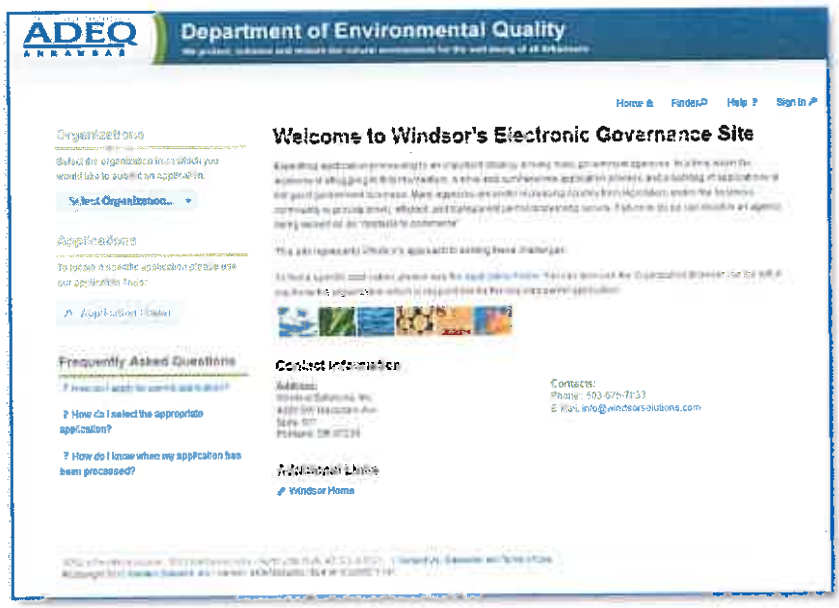
1. Ease of use to the end user (consistency, wizards, templates, notifications, maps, help, intuition, etc.)
2. Synergy with agency investments in existing systems, such as the Environmental Health Warehouse (EHW.)
3. Flexibility of the overall process (as the permitting needs of the agency change, the established solution needs to adjust, not be redeveloped.)
4. Overall cost (total cost of ownership including the initial design, system maintenance and future expandability.)

The Hawaii e-Permitting system has been in production for over three years and is currently supported by Windsor.

Arkansas eGovernment Portal (nFORM)

Windsor has worked with Arkansas DEQ for many years to provide integrated information management systems. Most recently Windsor has worked with Arkansas DEQ to deploy the electronic Permitting system successfully delivered and operating in the State of Hawaii.

This application has been delivered to Arkansas and deployed within the agency for their online permitting, licensing and registration needs, including those submissions requiring a CROMERR level certification. This ranges from storage tank registrations to complex title V air permits or mine permit applications.



Windsor initially supported ADEQ with a project to assess their electronic submission needs in response to a combination of factors including the expectation of government agencies to provide better service with fewer resources and the desire to streamline business processes. Based on this assessment, the core objectives for such an initiative were identified to include:

- Reduce staff workload related to application data entry – Engineering staff should be able to focus on their primary responsibilities rather than on data entry tasks.
- Streamline the permitting workflow – Efficiencies in division work processes should reduce burden and increase efficiency.
- Improve data quality – A common system has the opportunity to increase data quality and remove some of the existing data quality inconsistencies.
- Enhance data sharing; provide better access to data – Increased sharing of data between divisions provides the opportunity for better decision making. Currently access into the permit processing of other divisions is limited.
- Share knowledge among staff – This project represents an opportunity to capture and save the significant amount of the permitting institutional knowledge residing with existing staff.
- Simplify the application process for the customer – Variability between permit types within a division and across divisions makes it difficult for an applicant to understand the steps that need to be followed. The ADEQ wishes to improve the ease of use for the permit applicant.
- Provide consistency in the permitting process – ADEQ expressed the need to simplify the process for the regulated community through both consistency of process and an improved and assisted Web interface.
- Make the application process more transparent – ADEQ would like to provide more transparency in the application process in order that users can tell where in the process an application is.
- Provide greater stability for information systems – The Air Division and most other Divisions expressed the desire for greater stability of their information systems. Microsoft Access is used extensively by the divisions and ADEQ would like to develop a more stable and robust system to support electronic permit application submissions, utilizing the existing SQL Server enterprise relational database.
- Reduction of paperwork – While it may not be possible, initially, to eliminate all aspects of the current paper-based application process, reducing paperwork would provide many advantages to the programs.

Windsor was engaged in a phased approach to design and implement the state wide e-Governance solution for the agency. Requirements and Design were completed as a mechanism to identify the product backlog and the user stories to be implemented in the new e- Governance system. This was driven by the core objectives as described above and included a series of workshops where a gap analysis was essentially performed between the electronic permitting application built for Hawaii and the needs of Arkansas.

Alongside the requirements and design process Windsor assessed all the current permit application forms to determine an appropriate structure for a common template to support a consistent approach to permit form building and to also establish a user profile that will support automatic form population.

Section 3.3 – EPA Exchange Network Experience

A key factor in the success of a National Environmental Information Exchange Network (NEIEN, or Exchange Network) project is an in-depth knowledge of the program. In this respect, no other firm can match the depth and breadth of expertise that Windsor brings to the table. Windsor has been developing and implementing Network Nodes for partners since 2003, for both .NET and Java environments. During that time, our Node has evolved through multiple iterations to accommodate the advances in the underlying technologies, as well as Windsor's ever expanding experience with challenging and new and innovative data exchanges. The following figure illustrates this version evolution.

As a recognized leader in existing Exchange Network Node and data flow deployments, we believe that Windsor is able to bring the necessary experience and skills to successfully provide the services required for any NEIEN project. Windsor has been closely involved with the design and implementation of the Exchange Network from its inception through to the current functional revisions. Some of Windsor's specific achievements have been:

- The first engineers to successfully implement a fully functional production Node and the company with the most experience with production Node operation. The majority of the Exchange Network is now powered by Windsor developed tools and applications.
- The first company selected from among all leading Network Node providers to support the open-source Exchange Network Node. Windsor's OpenNode2, already powering the majority of state Exchange Network partners, is now freely available as an open-source product.
- Implementation of many regulatory environmental program data flows including RCRAInfo, EIS, AQS, OWIR-ATT, Beaches, FacID, ICIS-NPDES, SDWIS, TRI, UIC and WQX.
- Implementation of many innovative new data exchanges between partners that have served to dramatically illustrate the potential and power of the Exchange Network, including eManifest, the Homeland Emergency Response Exchange (HERE), the Juvenile Migrant Salmon Exchange (JMX) and the Pacific Northwest Water Quality Data Exchange (PNWWQX).
- Leaders in the advanced technologies and practical application of Web services, XML data exchange, data warehousing, and automated data cleansing.
- Recent implementers of a Tribal "SuperNode" for the Northwest Indian Fisheries Commission (NWIFC), as well as the United South and Eastern Tribes (USET).

Experience with OpenNode2 Installations

Windsor's latest Network Node solution was selected by a broad consortium of leading Network agencies during an open and competitive bid process that included all the leading Network Node solutions available. Windsor's latest generation open source Node, coined "OpenNode2," was funded through a 2008 multi-state Challenge Grant and allows states, counties, and tribal groups to exchange

data with EPA and other Exchange Network partners at a substantially reduced cost. OpenNode2 is currently in production operation with a large number of Exchange Network partners and has proven to be a robust and reliable engine in a variety of configurations. OpenNode2 simultaneously supports both the 1.1 and 2.0 versions of the Node Specifications, and works in either .NET or Java environments and with a wide range of supporting databases including Oracle and SQL Server. OpenNode2 was officially announced and released to all Network Partners at the Exchange Network User Conference in Atlanta in April 2009 and has since been available for download.

OpenNode2 builds upon Windsor's long-standing support for the Exchange Network. The "build once – share many times" approach is consistent with Windsor's philosophy of encouraging reuse and collaboration among Network Partners. The selection of Windsor's solution validates our long-standing approach to the implementation challenges over the last several years and is another reason Windsor is behind the majority of Exchange Network Node deployments throughout the United States.

The table below lists selected deployments of Windsor Nodes on the Exchange Network. As the Node has been available as an open source product for several years now, other agencies and tribes unknown to Windsor have self-deployed OpenNode2, and these numbers are constantly increasing. The following table presents some (but by no means all) of the Exchange Network partners utilizing OpenNode2:

Selected Exchange Network Partners Utilizing Windsor's Node (OpenNode2)	
Alaska Department of Environmental Conservation	Nebraska Department of Environmental Quality
Arizona Department of Environmental Quality	Montana Department of Environmental Quality
Arkansas Department of Environmental Quality	Nevada Division of Environmental Protection
California Climate Action Registry	New Hampshire Department of Environmental Services
California Environmental Protection Agency	New Mexico Environment Department
Colorado Department of Public Health and Environment	New York Department of Environmental Conservation
Connecticut Department of Environmental Protection	New York Department of Health
Delaware Department of Natural Resources and Environmental Control	North Dakota Department of Health
Georgia Department of Natural Resources	Northwest Indian Fisheries Commission
Gulf of Maine Ocean Observing System	Ohio Environmental Protection Agency
Hawaii Department of Health	Oklahoma Department of Agriculture
Idaho Department of Water Resources	Oregon Department of Environmental Quality
Iowa Department of Natural Resources	Pollution Prevention Resource Council
Illinois Environmental Protection Agency	Snohomish County, Washington
Kansas Department of Agriculture	Stillaguamish Tribe of Indians
Kansas Department of Health and Environment	United South and Eastern Tribes
Marianas Islands Department of Environmental Quality	US Geological Survey

Massachusetts Department of Environmental Protection	Vermont Department of Environmental Conservation
Minnesota Pollution Control Authority	Washington Department of Ecology
Missouri Department of Natural Resources	West Virginia DHHR
Navajo Nation EPA	Wyoming Department of Environmental Quality

Experience Implementing Data Flows

Not only has Windsor been on the forefront of Node development but they have also been heavily involved in flow innovation, having being responsible for the development of several of the most successful data exchanges on the Network. Many of these exchanges are now available along with OpenNode2, which is provided along with plugins needed to implement the ICIS-NPDES, ICIS-Air, FRS, EIS, AQS, WQX, SDWIS, and RCRAInfo Handler, and many other data flows. Other more creative data flows that have been developed by Windsor include the HERE Network, the Pacific Northwest Water Quality Exchange, and e-Manifest.

Northwest Indian Fisheries Commission Super-Node and Various Data Exchanges

Of particular relevance to this effort, Windsor has successfully completed a multi-phase Exchange Network project for the Northwest Indian Fisheries Commission (NWIFC). NWIFC is a consortium of twenty Indian tribes in western Washington whose role is to assist the tribes' natural resource activities and to provide efficiencies that would not otherwise be realized by the tribes when working independently. As such, the NWIFC applied for and received an Exchange Network Grant to develop a "Super-Node" of sorts which would allow tribes to exchange ambient water quality information amongst themselves as well as directly with the EPA or other partners.

The resulting system allows tribes to participate in a much greater level of data sharing than was previously available. The solution has helped to prove to some of the smaller partners that exchanging data on the Exchange Network does not require a complex or expensive system.

Designed specifically to meet the needs of the commission and its member tribes, this powerful exchange solution allows data providers to package and supply data to identified partners utilizing a number of methods and techniques, depending on the provider's technical environment, as well as being able to receive data back. All at a fraction of the cost it would take to deploy and test fully functional Nodes in all these locations.

Essentially Tribes and other smaller exchange participants can now cost-effectively participate in the Exchange Network.

Juvenile Migrant Fish Data Exchange

Under the sponsorship of the Puget Sound Partnership (PSP), Windsor worked with representatives from the NWIFC, Tribal Nations and the Washington Department of Fish & Wildlife (WDFW) to design and establish the Juvenile Migration Data Exchange (JMX). Using the National Environmental Information Exchange Network, participants collaborated to standardize, integrate and exchange information as part of their shared efforts to monitor and restore the health of the Puget Sound watershed. The Exchange Network provided tools and approaches for data to be shared efficiently and securely over the Internet, providing real-time access to higher-quality data while saving time and resources for the partners.

The WDFW and various Tribes throughout the State of Washington are the primary collectors of this juvenile migrant salmon information. The NWIFC and WDFW aggregate this information from all the partners and provide access to the aggregated information to inform decisions and activities designed to restore and protect the Puget Sound watershed.

This JMX focused on the use of the Exchange Network to collect and integrate Washington State's juvenile migrant salmon information. As part of the project, Windsor created a desktop client that allows the Tribal Partners to aggregate and share JMX data amongst participating partners and share this with Tribal Nations, NWIFC, WDFW, PSP and the National Oceanic and Atmospheric Administration's (NOAA's) National Marine Fisheries Service (NMFS).

Adult Fish Data Exchange

Following the successful implementation of the JMX data exchange, Windsor and NWIFC expanded the exchange to include adult fish data.

Nearshore Data Exchange

Windsor and the NWIFC also successfully completed the development of the Nearshore Data Exchange system. This system will help organizations in western Washington document, manage, analyze, and share species presence data and information about the health of nearshore areas. This includes information such as the type of species found (fish, shellfish, and vegetation), life stage, as well as environmental information such as water quality, sediment and weather observations.

This Nearshore Data Exchange is a brand new regional exchange designed, developed and implemented for the region's scientists and managers to share data in a timely and effective manner to assist in our understanding of the State's nearshore environment.

This project included developing a desktop client to manage and share this dataset as well as development of the supporting XML Schema and OpenNode2 plug-in to support the exchange components. The framework that had been established for the existing Juvenile Migrant Exchange (JMX) and Water Quality Exchange (WQX) was utilized and enhanced with additional high value features (e.g., data import, dynamic reporting, etc.) to incrementally improve the tool set.

Environmental Council of States – General Support Contract

Windsor has been engaged by ECOS since 2004 to support the Network Steering Board (NSB) with various Exchange Network implementation efforts. As part of this engagement, Windsor has conducted many activities, including:

- Development of the ICIS-Air plugin for OpenNode2 (.NET and Java versions)
- Development of much of the Network's technical flow design policy and guidance

documentation

- Design of the Flow Configuration for the FRS data flow,
- Design of the Flow Configuration for the RCRAInfo data flow,
- Design of the Flow Configuration for the NEI data flow,
- Design of an XML schema for the Toxics Release Inventory (TRI) data flow,
- Design of an XML schema for the Concentrated Animal Feeding Operations (CAFO) data flow,
- Development of marketing materials,
- Representing ECOS and providing expert technical assistance to the development of the Network Node 2.0 Specifications.
- General support to Network Steering Board institutions such as the Technical Resource Group.
- Assisting EPA with the development of flow capabilities, such as a RCRAInfo XML translator component

References

The following client references are provided as requested. Additional references are available on request.

Reference 1

Name:	Greg McNelly
Agency:	Environmental Council of the States (ECOS)
Telephone:	202-266-4930
Email:	gmcnelly@ecos.org
Description of Project:	Support for Exchange Network Data Flows for Various States

Reference 2

Name:	Kevin Weiss
Agency:	Nevada Department of Environmental Protection
Telephone:	775-687-9324
Email:	kweiss@ndep.nv.gov
Description of Project:	Exchange Network projects and multiple Data Flows

Reference 3

Name:	Bruce Jones
Agency:	Northwest Indian Fisheries Commission
Telephone:	(360) 528-4369
Email:	bjones@nwifc.org
Description of Project:	Exchange Network projects and multiple Data Flows

Section 11.1 – Contract Manager

Contract Manager:

Telephone Number:

Fax Number: 503-675-7804

Email address:

State of West Virginia Health and Human Resources
Bureau for Public Health Environmental Health Services

Two Web-Based e-Reporting Systems

Cost Proposal

CRFQ 0506 EHS1700000001

September 29, 2016

WINDSOR SOLUTIONS | Environmental + Health Information Systems

Exhibit A – Pricing

Windsor's estimated costs for building the two e-Reporting systems are presented below in the format required by the CRFQ.

EXHIBIT_A

CRFQ 0506 EHS1700000001 **PRICING PAGE**

Contract Item #	Item Description	Total
4.1.1	Construct a web based e-reporting system to be called Sportfish Consumption Advisory Limit System (SCALES).	$420,000 *Includes $5,000 to develop the project work plan*
4.1.1.1-4.1.1.2	The e-reporting system must establish an Extract, Transform, and Load (ETL) process that provides the following functionally: The e-reporting system must allow data to be extracted and loaded between the West Virginia Department of Environmental Protection and OEHS database systems.	$ 15,000 (4.1.1.1-4.1.1.2)
4.1.1.3-4.1.1.9	The e-reporting system must be built as an ASP.NET application (an open source server-side Web application framework designed for Web development to produce dynamic web pages) using C# programming language (a multi-paradigm programming language encompassing strong typing, imperative, declarative, functional, generic object-oriented, and component-oriented programming disciplines). The e-reporting system must be built using n-tier architecture (the architecture of an application that has at least 3 "logical" layers-or parts-that are separate. Each layer interacts with only the layer directly below, and has specific function that it is responsible for) including: Data Access Layer (DAL)	(continued next page)

	Business Logic Layer (BLL) Presentation Layer (PL) or (UI) The e-reporting system must be housed under the OEHS Data Portal with an ASP.NET application that uses a customized Microsoft membership provider written in C# programming language.	

	The e-reporting system must allow users to batch calculate Sportfish Consumption Advisories both statewide and per waterbody. The e-reporting system must allow users to enter field results into the application and submit to the system The e-reporting system allow users to query on various fields and combinations of fields.	**$ 200,000** **(4.1.1.3-4.1.1.9)**
4.1.1.10-4.1.1.11	The e-reporting system must integrate data into the OEHS Enterprise GIS System which includes: Environmental Systems Research Institute (ESRI) Arc GIS Spatial Database Engine (SDE) 10.1. Microsoft (MS) Structured Query Language (SQL) Server 2008. The e-reporting system must build and document all associated map services for the advisory data.	**$ 75,000** **(4.1.1.10-4.1.1.11)**

4.1.1.12-4.1.1.12.5	The e-reporting system must contain an interactive web mapping application to be built and called Development of Fish Advisory Map Explorer (FAME) this web mapping application must meet the following requirements: The web mapping application must be built on the ESRI ARC GIS Application programing interface (API) for JavaScript 3.10 or higher. The web mapping application must leverage Hypertext Markup Language (HTML) 5 and Cascading Style Sheets (CSS) 3 capabilities for application layout and functionality. The web mapping application must allow the user to query advisory data by water body.	**(continued next page)**

	The web mapping application must provide a time-lapse tool for observing sample data from past to present by water body, and fish species type. The web mapping application must allow the user to view advisory data in tabular and chart format when user clicks on a water body.	$ 75,000 **(4.1.1.12-4.1.1.12.5)**
4.1.1.13-4.1.1.13.3	A data exchange network must be built within the e-reporting system and called Development of the Fish Advisory Data Exchange (FAX). An Exchange Network (EN) data flow will have the following requirements and functionality: The data exchange network must work with OEHS and the USEPA National Listing of Fish Advisories (NFLA) program to gather the requirements and standards to build a standardized data flow that allows OEHS and other states to submit fish advisory data to NLFA.	$ 50,000

	The data exchange network must document and package all data flows, applications, and services. The data exchange network must register all data flows and services to the Exchange Network Discovery Service (ENDS) and Exchange Network's Reusable Component Services (RCS) systems.	**(4.1.1.13-4.1.1.13.3)**
4.1.2-4.1.2.1	Construct a Drinking Water Lab Reporting System (DWLRS) The DWLRS system will allow private and state run labs to electronically submit water quality data to OEHS over the EPA Exchange Network. This will limit or eliminate the need for paper submissions and manual data entry for OEHS staff. The requirements for this system are as follows: Must build and establish a new Exchange Node (LabNode) running OpenNode2 or Node Client. A node requires a server specifically designed to process requests and deliver data to other computers and special node software. This two-way functionality uses the internet to connect internal databases to other partner nodes.	**$ 15,000** **(4.1.2-4.1.2.1)**

4.1.2.2-4.1.2.2.7	Must build and establish a new data exchange within the DWLRS that provides the following functionality: Must allow lab staff to export lab data from a Lab Information Management System (LIMS) in eDWR (electronic Drinking Water Reports) XML (Extension Markup Language) format. Must allow lab staff to submit XML file to LabNode server. Must allow LabNode Server transfers file to OEHS Exchange Node server. Must provide e-mail notification to lab submitter of successful submission and transfer to OEHS. Must provide e-mail notification to OEHS staff of successful submission and transfer o OEHS Node with link to allow staff to review submission. Must allow OEHS staff to collect eDWR XML file from the OEHS Node. Must allow OEHS staff to validate and import raw data into SDWIS (State Drinking Water Information System)/State using SDWIS/XML Sampling Utility.	**$ 25,000** **(4.1.2.2-4.1.2.2.7)**
4.1.2.3-4.1.2.3.9	Must develop and build within the DWLRS a web based data entry application called the Drinking Water Sample Reporter which will have the following requirements and functionality:	

	This web based data entry application must be built as an ASP.NET application using C# programming language. This web based data entry application must be a CROMERR Compliant application. This web based data entry application must be built using n-tier architecture including: Data Access Layer (DAL) Business Logic Layer (BLL) Presentation Layer (PL) or (UI) This web based data entry application must be housed under the OEHS Data Portal which is an ASP.NET application that uses a customized Microsoft membership provider written in C# programming language. This web based data entry application must allow labs without a LIMS system to directly enter lab data into the application or perform a bulk upload of lab data into the application. This web based data entry application must allow data to be entered into the application, and must allow lab staff to mark the sampling data as "Complete", and submit the data to the system. This web based data entry application must generate and provide lab staff daily operational reports (bench sheets). This web based data entry application must provide e-mail certification to lab submitter of successful submission. This web based data entry application must provide e-mail notification to OEHS staff of successful submission and provide a link to allow staff to review submission.	**(continued next page)** **$ 215,000** **(4.1.2.3-4.1.2.3.9)**

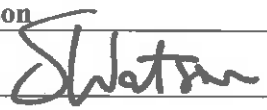
4.1.2.3.10-4.1.2.3.13	This web based data entry application must allow OEHS staff to review datasets and the application must allow OEHS staff to click a button to extract QA'ed datasets to the eDWR XML format and transfer the XML file to the OEHS Node. This web based data entry application must allow OEHS staff to collect eDWR XML file from the OEHS Exchange Node. This web based data entry application must allow OEHS staff to validate and import data into SDWIS/State using SDWIS/XML Sampling Utility. This web based data entry application must generate and provide OEHS staff with statistical reports of general analyses for private and public water samples.	**(continued next page)** $ 25,000 **(4.1.2.3.10-4.1.2.3.13)**
4.1.2.4-4.1.2.5	Must document and package within the DWLRS all data exchanges, applications, and services. Must register all data flows and services within DWLRS to the Exchange Network Discovery Service (ENDS) and Exchange Network's Reusable Component Services (RCS) systems.	$ 10,000 **(4.1.2.4-4.1.2.5)**
4.1.3-4.1.4	Both SCALES and DWLRS systems must be developed, tested, documented, and moved into the OEHS Portal production environment within three hundred and sixty five (365) calendar days of contract start date. All the SCALES and DWLRS data systems and source codes must be properly documented using in code comments and must be owned by OEHS and free of copyright issues.	$ 40,000 **(4.1.3-4.1.4)**

	Grand Total	**$ 750,000**

Contract will be awarded to the Vendor meeting the required specifications for the lowest overall Grand Total cost.

Delivery of orders will be F.O.B. Destination.

VENDOR SECTION:

Vendor Name: **Windsor Solutions, Inc.**	
Physical Address: **4386 SW Macadam Ave, Suite 101** **Portland, OR 97239**	
Remit to Address: **4386 SW Macadam Ave, Suite 101** **Portland, OR 97239**	
Telephone: **503-675-7833**	
Fax: **503-675-7804**	
Email: simon_watson@windsorsolutions.com	
Vendor Representative (print name): **Simon Watson**	
Signature: 	**Date:9/27/2016**

Assumptions

Vendor will not be responsible for modifying laboratories' LIMS systems as part of the effort to build and establish a new data exchange to allow laboratories to export and electronically submit sample data in eDWR XML format (4.1.2.2-4.1.2.2.7).

The new DWSR system will allow laboratories without LIMS systems to directly enter data into the application or perform a bulk upload of data into the application. The development of the file specification will be a joint effort between OEHS and the vendor. Expected formats are XML and CSV (4.1.2.3-4.1.2.3.9).

CROMERR certification requires EPA approval of both the technology and the processes utilized. Windsor can assist DHHR with applying for certification but software alone cannot achieve CROMERR compliance (4.1.2.3-4.1.2.3.9).