

**U.S. ENVIRONMENTAL PROTECTION AGENCY  
Quality Assurance Reporting Form  
for Use by Recipients of Assistance Agreements**

<b>Recipient Organization:</b> <b>Name: WA Dept of Ecology</b> <b>Address: PO BOX 47600</b> <b>Olympia, WA 98504-7600</b>	<b>EPA Award Number:</b> <b>OS-83306801-0</b>
	<b>Project/Program Period(starting and ending dates, mm/dd/yyyy):</b> <b>08/01/2006 – 07/31/2008</b>

**Activity**       Infrastructure Development                       Planning, Mentoring, and Training  
**Group:**        X Data Exchange, Analysis and                                       Challenge  
(check all that apply)      Integration

Goal	Task	Output	Outcome	Quality Assurance Measures
GOAL 1 Mapping Application	Establish a Business Team of subject matter experts to confirm and refine Business Rules for Mapping Application. This will include requirements for complex features (lines, polygons, buffered linear features) define map look & feel,	Documented Project Organization, Business Rules, Requirements, and Use Cases & Test Cases	Well managed project which will meet the business requirements identified by users and meets the schedule and resources constraints of the project.	Adhere to Ecology best practices for documentation of user requirements, organization, definition of roles and responsibilities; and utilize <a href="#">Exchange Design Guidance and Best Practices for the Exchange Network</a> , and <a href="#">Washington State Enterprise Architecture Principles</a> where appropriate.

	display & search GIS layers, zoom functions, legend, etc.			
	Participate on the EDSC Geospatial Data Standard Scoping Team	Selection of XML standards to Geo-Spatial data exchange	Shared schema components for GML	Participate on the NEIN Geospatial Strategy Team to understand and influence use of XML for spatial data exchange.
	Research & incorporate existing XML standards from EDSC, ESRI, Open GIS Consortium Web Feature and Web Image Services	Selection of protocol and version to be implemented by the project	Further the use of open system standards for exchange of geo-spatial data	Participate on the Exchange Network Geospatial Strategy Team to understand and influence use of XML for spatial data exchange. Proposed that GML become included in the <a href="#">shared schema components</a> within the Exchange Network Schema Registry. Use <a href="#">Open Geospatial Consortium</a> standards for GIS web feature and image services where supported in GIS application framework.
	Design Map-based Location verification application and/or enter new location, or update of reported location, return XY (Lat/Lon) location with metadata (datum, method, scale)	Design specification for map-based location editor which returns location and location meta-data	Map-based location editor design which providing EPA standard metadata	Use EPA Latitude-Longitude standard and XML Tags. This project may need to add enumeration list value since EPA list does not support Washington State Standard of NAD83-91 HARN (this addition was requested, but ignored, when the EPA standards were last up for revision)

	<p>Construct Map-based Location verification application (display reported location) and/or enter new location, or update of reported location, return XY (Latitude-Longitude) location with metadata (datum, method, scale)</p>	<p>Map based location editor</p>	<p>Operational Map-based location editor which provides EPA standard metadata</p>	<p>Use EPA Latitude-Longitude standard and XML Tags</p>
	<p>Design Map-based interactive verification and/or create for complex geometry of line, polygon, and buffered line which returns a GML feature document and XY (Latitude-Longitude) centroid and metadata</p>	<p>Map based location editor capable of exchanging complex geometry as GML</p>	<p>Ability to exchange complex geometry between map-based location editor and requesting application</p>	<p>Use <a href="#">EPA Latitude-Longitude XML tags</a> for point features, and use Exchange Network Geospatial Strategy Team <a href="#">shared schema components</a> for GML if adopted by critical time. If not finalized, use <a href="#">Open Geospatial Consortium schema for Simple Features</a> or <a href="#">GeoRSS</a> may be used.</p>

	Technical Review of Map Application Design	Meeting to vet the map application design.	Peer-reviewed Map Application design	A multi-agency Technical Review Team of GIS specialists and application architects to review the conceptual, logical, and physical design of the map-based location editor.
	Construct Map-based interactive line, polygon, buffered line able to return GML document	Map based location editor with complex geometry capabilities	Operational Map-based location editor with complex geometry and metadata.	Construct the map application after implementing feedback from the Technical Review Team.
	Design testing strategy and recommend testing tools (Windsor client, ArcGIS, other?)	Testing strategy	Testing strategy with performance targets	Testing of the Map application will be based on testing the accuracy and reproducibility of location determination using locations of documented coordinates. Accuracy goals will be set based on the documented accuracy of map reference layers.
	Update JARPA & Ecology Applications to access Location edit & verification service	Map control or application incorporated in JARPA	Location editor integrated with JARPA application	The <a href="#">Joint Aquatics Resource Permit Application</a> E-Permitting (which is used by multiple agencies) will be updated to access the mapping application (and other Location services)
	Testing with updated Business application or testing application	Tested business applications using Test Cases	Verification that Location editor works with Business application	Confirmed meeting of the location requirement specified by the business team and reporting of the correct location and proper metadata.

	Deployment to existing Ecology Production .NET Environment (Pilot deployment for JARPA)	Deployed application to Ecology network	Confirmed deployable application	Confirmation that the mapping application operates in the production environment
GOAL2 Address Geo-coding Web Service	Confirm and redefine Business Rules	Use Cases and UML flow diagram for address matching and geo-coding	Clearly defined business use cases	Adhere to DOH best practices for documentation of user requirements, organization, definition of roles and responsibilities. Utilize guidelines from Washington State Department of Information Services, Enterprise Architecture Initiative where applicable. <a href="http://dis.wa.gov/enterprise/atom/index.aspx">http://dis.wa.gov/enterprise/atom/index.aspx</a>
	Review and incorporate existing XML standards	Finalized XML Schema	Standardized XML Schema	See "Data Standard Detail" for Latitude/Longitude at <a href="http://www.envdatastandards.net/files/720_file_Lat_Long_Standard_08_11_2006_Final_.pdf">http://www.envdatastandards.net/files/720_file_Lat_Long_Standard_08_11_2006_Final_.pdf</a>  Utilize XML standards from the FGDC where applicable to address elements. <a href="http://www.fgdc.gov/standards/projects/FGDC-standards-projects/street-address/05-11_2ndDraft.CompleteDoc.pdf">http://www.fgdc.gov/standards/projects/FGDC-standards-projects/street-address/05-11_2ndDraft.CompleteDoc.pdf</a>
	Design and Construct street + zip address cleaning and multi-match source geo-coding with returned Latitude-Longitude and metadata	ASP .NET XML Web Service for Address Correction  ASP .NET XML Web Service for Geo-coding  Valid WSDL Document for each Web Service	Functioning Web Services and WSDL document describing how to use them.	Incorporate the WC3 recommendations for XML where applicable. <a href="http://www.w3.org/TR/xml11/">http://www.w3.org/TR/xml11/</a>  Utilize guidelines for Web Services and WSDL where applicable. <a href="http://www.w3.org/2002/ws/">http://www.w3.org/2002/ws/</a>

	Update DOH applications to utilize these services	Integration with the Electronic Death Registration System and Public Health Reporting of Electronic Data	EDRS and PHRED systems using these Web Services	Adhere to DOH best practices for application integration.
	Testing with updated business applications or testing application	Web Services capable of supporting DOE and DOH applications	Scalable Web Services that respond in an acceptable amount of time	Adhere to DOH best practices for application testing.
	Deployment to existing application environment (pilot deployment)	Web Services available on the Exchange Network	Functioning Web Services	Adhere to DOH best practices for application testing and deployment.
	Driving directions from address A to Address B, including rural roads	Identified as out-of-scope by business team		
GOAL 3 Geo-Processing Web Service	Confirm and refine Business Rules for Geoprocessing Service(s) this will include agency-specific proximity rules	List of geo-processing data layers, & geo-spatial business rules	Documented business rules for geo-processing	Match requirements to existing JARPA permit application & instructions

	Design & Populate ArcSDE data collection, update metadata	List of SDE data layers from authoritative sources	Geo-processing layers & metadata	Match data sources to the requirements for Geoprocessing services
	Design testing strategy and recommend testing tools & Quality Assurance Test	Geo-processing testing strategy	Testing strategy with performance targets	Testing of the geo-processing web services will be based on testing the accuracy and reproducibility based on locations with documented coordinates. Accuracy goals will be set based on the documented accuracy of data layers from authoritative sources.
	Design XY (Latitude-Longitude) Geo-processing Services	Design specification for geo-processing services	Design specification for geo-processing services	Confirm that specification meets requirements articulated by the users.
	Assess Technical Architecture and select development and production architecture		GIS service Architecture Design	Base design on best reliable technology while utilizing existing Ecology Information Technology Standards and Guidelines
	Technical Review of XY Geoprocessing Service	Meeting to vet the Geoprocessing design.	Peer-reviewed Geo-processing services design	A multi-agency Technical Review Team of GIS specialists and application architects to review the conceptual, logical, and physical design Geoprocessing services.
	Construct XY (Latitude-Longitude) Geoprocessing Service	XY Geo-processing service	XY Geo-processing service.	Construct the geo-processing services after implementing feedback from the Technical Review Team.

	Design Geoprocessing Service which accepts a Open GIS Consortium GML feature	Design specification for geo-processing services which accept complex geometry as input	Design specification for GML based geo-processing services	Confirm that specification meets requirements articulated by the users.
	Technical Review of XY Geoprocessing Service	Meeting to vet the Geoprocessing design.	Peer-reviewed Geoprocessing service design	A multi-agency Technical Review Team of GIS specialists and application architects to review the conceptual, logical, and physical design Geoprocessing services.
	Construct Geoprocessing Service which accepts a Open GIS Consortium GML feature	Complex geometry Geo-processing service	GML-based Geo-processing service.	Construct the geo-processing services after implementing feedback from the Technical Review Team.
	Update JARPA & optionally Ecology and other agency applications	Geo-processing access incorporated in JARPA	Location editor integrated with JARPA application	The <a href="#">Joint Aquatics Resource Permit Application</a> E-Permitting (which is used by multiple agencies) will be updated to access the mapping application (and other Location services)
	User Testing of integrated applications with Geo-Processing Services	Tested business applications using Test Cases	Verification that Location editor works with Business application	Confirmed meeting of the geo-processing requirement specified by the business team and reporting of the correct location and proper metadata.
	Deployment to existing application .NET environment (Pilot	Deploy to production web service environment	Deployed complex geometry web service	Confirm that previously tested application work in the production environment

	deployment)			
GOAL 4 Deployment to National Environmental Information Network	Compile service documentation and Register Schemas and flow configuration documents with Exchange Network	Data exchange templates, Flow configuration document and XML schema to be registered on the exchange network	Registered Schemas & Flow configuration documents	Schemas will be registered with the <a href="#">Exchange Network Registry</a> after being checked with <a href="#">Schema Design Rules</a> and passed through the <a href="#">Schema Conformance and Review Process</a> . Exchange templates will be based on the <a href="#">templates</a> provided on the Exchange Network site. Flows configurations will be checked against the <a href="#">Flow Documentation Checklist</a> . Work-around will be developed if the Network Specification 2.0 is not available. Network specification 2.0 will replace the existing 'EXECUTE' primitive with 'PROCESS' which will allow chaining of service requests as well as a proper implementation of the a service primitive for Geo-Processing and Address Geo-Coding.
	Establish new Production GIS Application Server environment, configure firewall, load spatial data, test environment	Production Server	Production Server	Confirm that production server is operational and can communication to all dependent services
	Map error handling to NEIN standard messages	Error trapping and handling to return Exchange Network standard messages	Exchange Network Error messages returned	Error handling will map to the Error Mapping as specified in target Exchange Network specification, hopefully Exchange Network Specification 2.0
	Modify web services as plug-ins to Ecology Exchange Node and	Test Exchange Network access protocols	Tested application on Test server	Test access to GIS services using <a href="#">Network Authorization and Authentication Service (NAAS)</a> service accounts and verify that XML documents are validated against <a href="#">registered</a> schemas.

	deploy to Test Node			
	Modify web services as plug-ins to Ecology Exchange Node and deploy to Production Node	Test Exchange Network access protocols	Tested application on Production server	Test access to GIS services using <a href="#">Network Authorization and Authentication Service (NAAS)</a> service accounts and verify that XML documents are validated against <a href="#">registered</a> schemas.
	Develop Trading Party Agreement between participants	Trading Party Agreements	Agreements on expectations of service delivery and availability	Develop any required trading party agreements using <a href="#">Exchange Network Trading Party Agreement Best Practices</a>
	Project Management	Managed project	Delivered services within project schedule and budget	User Ecology and Washington Department of Health best practices for IT project management.
<p><b>Instructions:</b></p> <ul style="list-style-type: none"> <li>- Please submit electronically to your project officer within 90 days of award.</li> <li>- For Quality Assurance Measures, please refer to current Solicitation Notice for Quality Assurance Guidelines.</li> <li>- For Goals, please refer to goals outlined in your assistance agreement work plan.</li> </ul>				
<p><b>Paperwork Reduction Act (PRA) Burden Statement:</b> The public reporting and recordkeeping burden for this collection of information is estimated to average one hour per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.</p>				