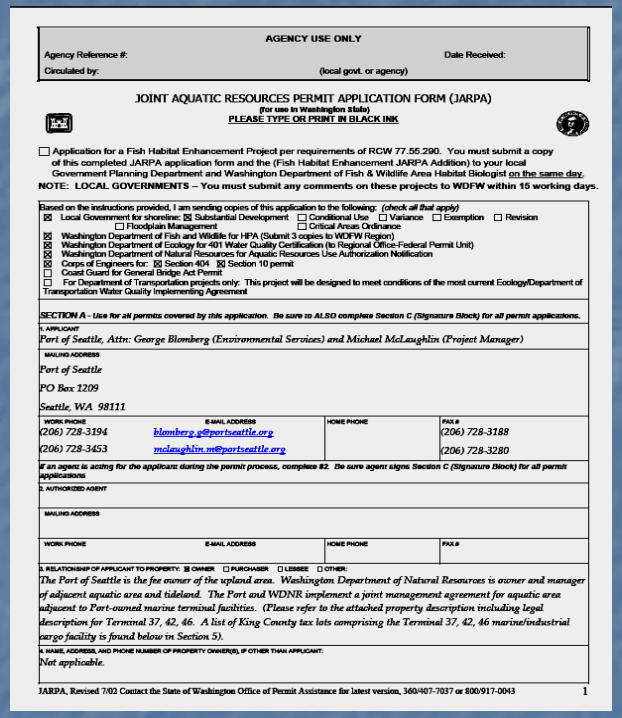
Washington Location Finder Project

Partners:
Washington Department of Ecology
Washington Department of Health
Environmental Information Exchange Network
(US Environmental Protection Agency &
Environmental Council of the States)

Exchange Network Conference

May 1, 2008

Background



AGENCY USE ONLY

Agency Reference #: Date Received:

Circulated by: (local govt. or agency)

JOINT AQUATIC RESOURCES PERMIT APPLICATION FORM (JARPA)

(for use in Washington State)

PLEASE TYPE OR PRINT IN BLACK INK

☐ Application for a Fish Habitat Enhancement Project per requirements of RCW 77.55.290. You must submit a copy of this completed JARPA application form and the (Fish Habitat Enhancement JARPA Addition) to your local Government Planning Department and Washington Department of Fish & Wildlife Area Habitat Biologist on the same day.

NOTE: LOCAL GOVERNMENTS – You must submit any comments on these projects to WDFW within 15 working days.

Based on the instructions provided, I am sending copies of this application to the following: *(check all that apply)*

☒ Local Government for shoreline: ☒ Substantial Development ☐ Conditional Use ☐ Variance ☐ Exemption ☐ Revision
☐ Floodplain Management ☐ Critical Areas Ordinance
☒ Washington Department of Fish and Wildlife for HPA (Submit 3 copies to WDFW Region)
☒ Washington Department of Ecology for 401 Water Quality Certification (to Regional Office-Federal Permit Unit)
☒ Washington Department of Natural Resources for Aquatic Resources Use Authorization Notification
☒ Corps of Engineers for: ☒ Section 404 ☒ Section 10 permit
☐ Coast Guard for General Bridge Act Permit
☐ For Department of Transportation projects only: This project will be designed to meet conditions of the most current Ecology/Department of Transportation Water Quality Implementing Agreement

SECTION A – Use for all permits covered by this application. Be sure to ALSO complete Section C (Signature Block) for all permit applications.

1. APPLICANT
Port of Seattle, Attn: George Blomberg (Environmental Services) and Michael McLaughlin (Project Manager)

MAILING ADDRESS
Port of Seattle
PO Box 1209
Seattle, WA 98111

WORK PHONE	E-MAIL ADDRESS	HOME PHONE	FAX #
(206) 728-3194	blomberg.g@portseattle.org		(206) 728-3188
(206) 728-3453	mclaughlin.m@portseattle.org		(206) 728-3280

If an agent is acting for the applicant during the permit process, complete #2. Be sure agent signs Section C (Signature Block) for all permit applications

2. AUTHORIZED AGENT

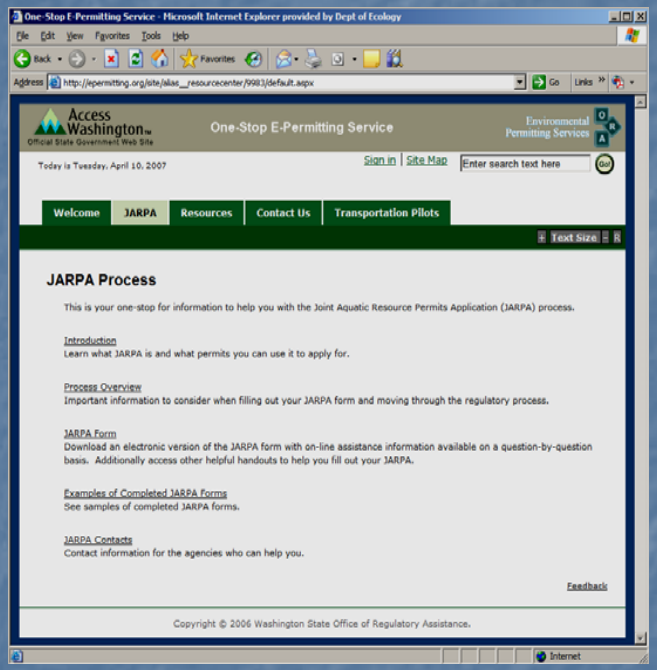
MAILING ADDRESS

WORK PHONE	E-MAIL ADDRESS	HOME PHONE	FAX #

3. RELATIONSHIP OF APPLICANT TO PROPERTY: ☒ OWNER ☐ PURCHASER ☐ LESSEE ☐ OTHER:
The Port of Seattle is the fee owner of the upland area. Washington Department of Natural Resources is owner and manager of adjacent aquatic area and tideland. The Port and WDNR implement a joint management agreement for aquatic area adjacent to Port-owned marine terminal facilities. (Please refer to the attached property description including legal description for Terminal 37, 42, 46. A list of King County tax lots comprising the Terminal 37, 42, 46 marine/industrial cargo facility is found below in Section 5).

4. NAME, ADDRESS, AND PHONE NUMBER OF PROPERTY OWNER(S), IF OTHER THAN APPLICANT:
Not applicable.

JARPA, Revised 7/02 Contact the State of Washington Office of Permit Assistance for latest version, 360/407-7037 or 800/917-0043 1



Joint Aquatic Resources Permit Application (JARPA)

Project Objectives

- Increase The Accuracy Of Data Submitted For Environmental Review
- Make On-line Applications Easier To Use
- Standardize Data Entry Methods For Capturing Location Information

Project Scope

- Develop An Interactive Map-Based Location Editor
- Develop Geo-Processing Services
- Develop Address Correction & Standardization Service
- Develop Address Geo-Coding Service
- Publish These Services to The Exchange Network
- Interface These Services with Selected Permitting and Reporting Applications

Hidden Technical Agenda

- Develop Expertise to Flow Geo-Spatial Data Using XML
- Advance Exchange Network Use of Geo-Spatial Exchange
- Adopt SOA Principles to GIS Applications, Replacing Outdated Proprietary GIS Technologies

Location Finder Services

On-Line Applications

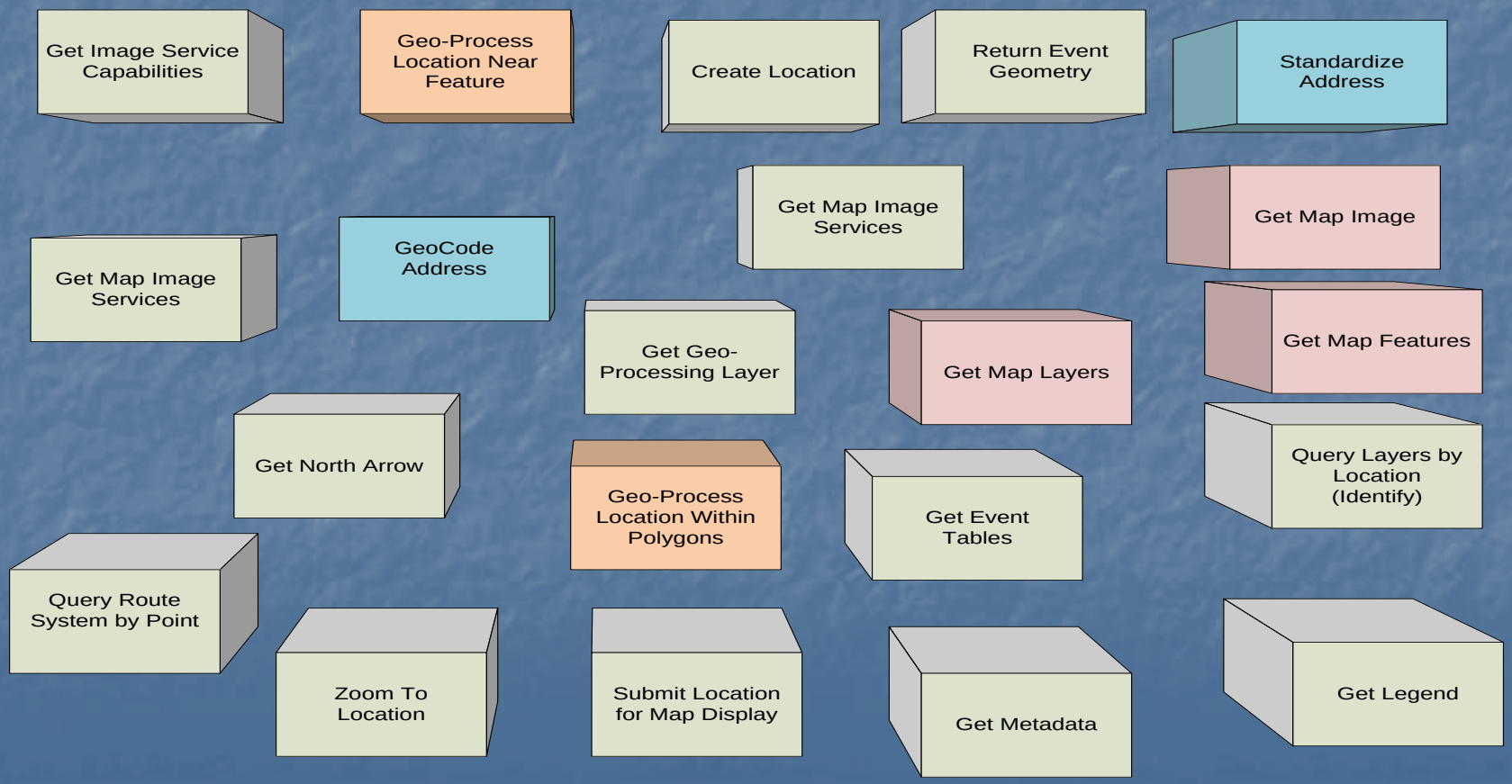
- JARPA &ePermitting
- WDOH Applications
- Facility/Site
- Contract & Grants

Address Geo-Coding Services

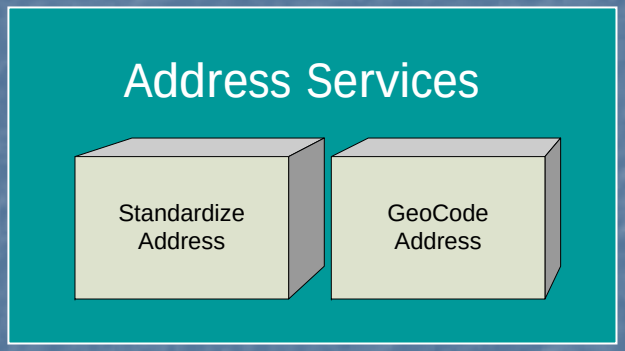
Location Verification & Editing Application

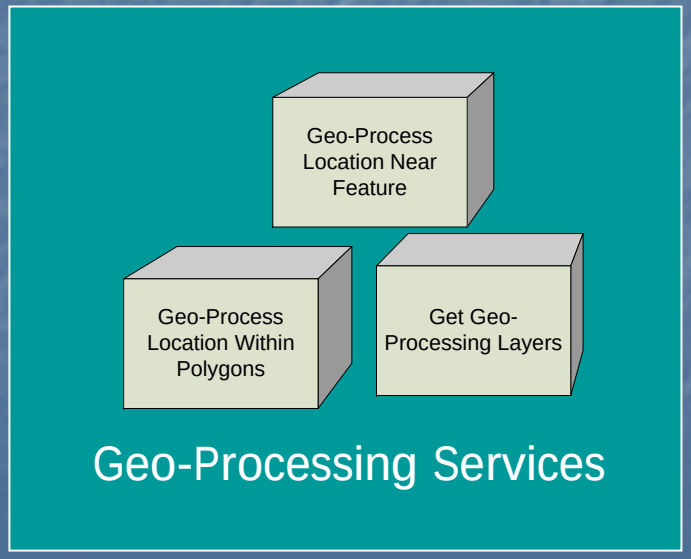
Geo-Processing Web Service

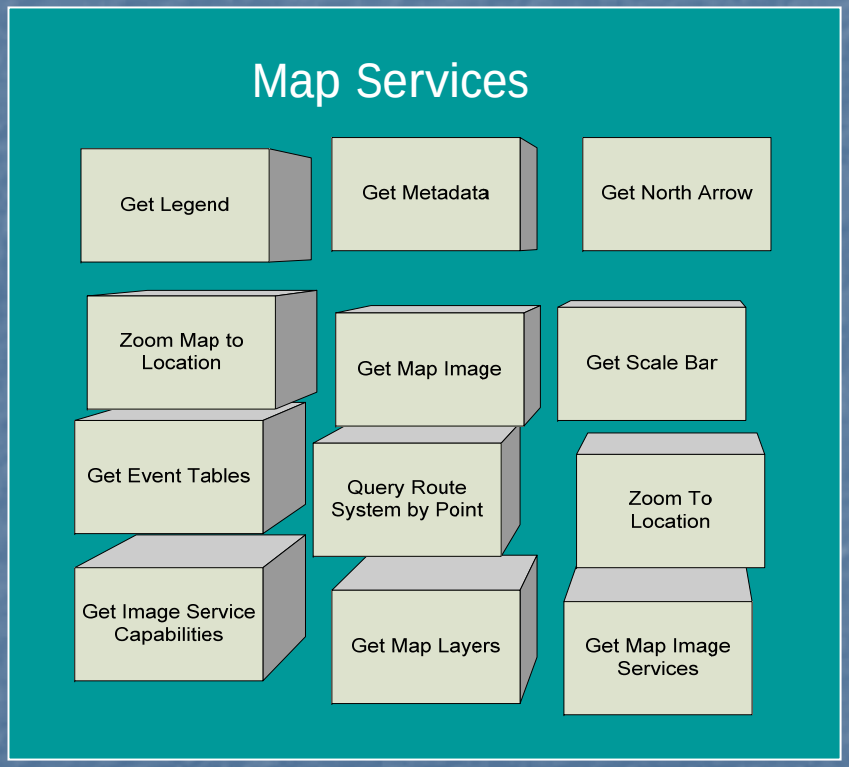
Develop Elemental GIS Web Services As Building Blocks



Services Are Loosely Connected; Can Be Coupled To Meet Specific Needs







Map Image Service

(map reference for location capture & location display)

URL with parameters

OGC Web Map Service

Get Capabilities

GetMap

GetFeature Info

URL

XML

XML

Category 5: Polluted Waters/303(d) List

Rec	Listing ID	Name	Parameter	Medium	Listed in 98	Listed in 96	Waterbody ID
1	5862	Puget Sound	Dissolved oxygen	Water	Y	N	47122A9G0

Map Feature Service

(zoom-to, display selected feature location, transaction)

URL with parameters

OGC Web Feature Service

Get Capabilities

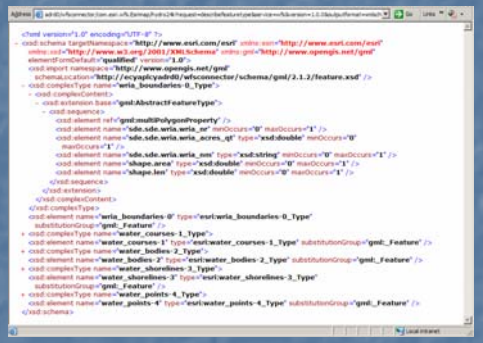
Describe Feature Type

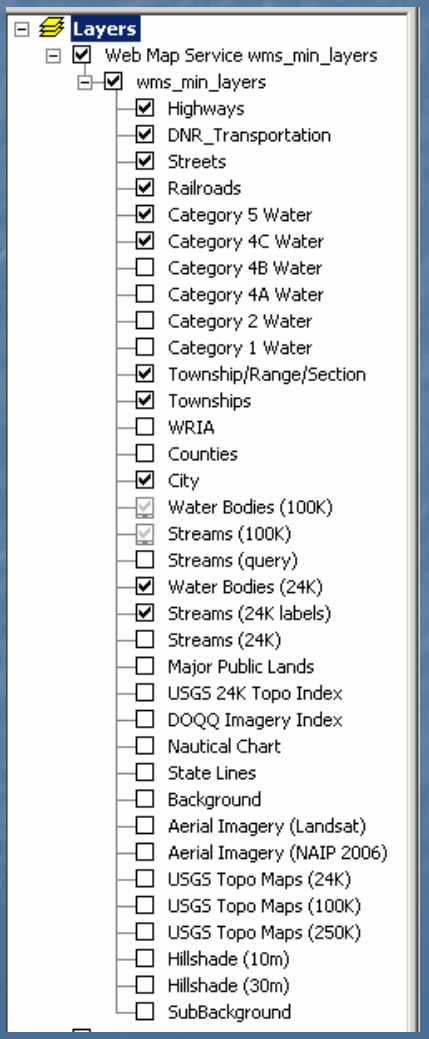
GetFeature

XML

XML Schema For Layer(s)

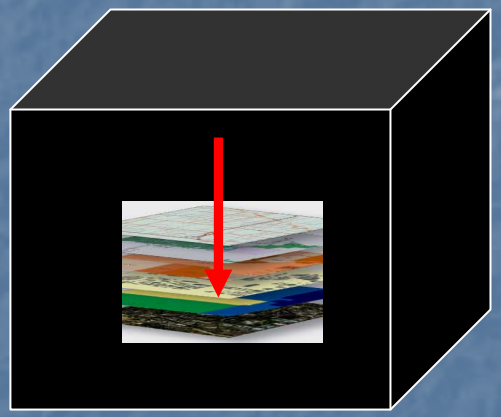
GML





Geo-Processing Service

GeoRSS GML feature
+ Layer List - Buffer Distance List



Geo-Processing Service

XML Response With Intersected Layer Attributes Reported


```xml
<?xml version="1.0" encoding="UTF-8" ?>
- <GeoprocessingResults>
  - <Layer LayerName="City">
    - <IntersectedFeature>
        <CITY_NM>Auburn</CITY_NM>
      </IntersectedFeature>
    </Layer>
  - <Layer LayerName="County">
    - <IntersectedFeature>
        <COUNTY_NM>King</COUNTY_NM>
      </IntersectedFeature>
    </Layer>
  + <Layer LayerName="Tribal_Lands">
  + <Layer LayerName="Parcels2006">
  + <Layer LayerName="dnr_arc">
  - <Layer LayerName="HUC_6th_field">
    - <IntersectedFeature>
        <SUBWAT_NM>LOWER GREEN RIVER</SUBWAT_NM>
        <CATCHMENT>171100130399XX</CATCHMENT>
      </IntersectedFeature>
    - <IntersectedFeature>
        <SUBWAT_NM>WHITE RIVER/BOISE CREEK</SUBWAT_NM>
        <CATCHMENT>171100140204XX</CATCHMENT>
      </IntersectedFeature>
    </Layer>
  + <Layer LayerName="sections">
  - <Layer LayerName="wq_303d_2004">
    - <IntersectedFeature>
        <WB_GNIS_NM />
        <ECOLOGY_ID>LY34GL12.450</ECOLOGY_ID>
      </IntersectedFeature>
    </Layer>
  - <Layer LayerName="WRIA">
    - <IntersectedFeature>
        <WRIA_NR>9</WRIA_NR>
      </IntersectedFeature>
    - <IntersectedFeature>
        <WRIA_NR>10</WRIA_NR>
      </IntersectedFeature>
    </Layer>
  </GeoprocessingResults>
```

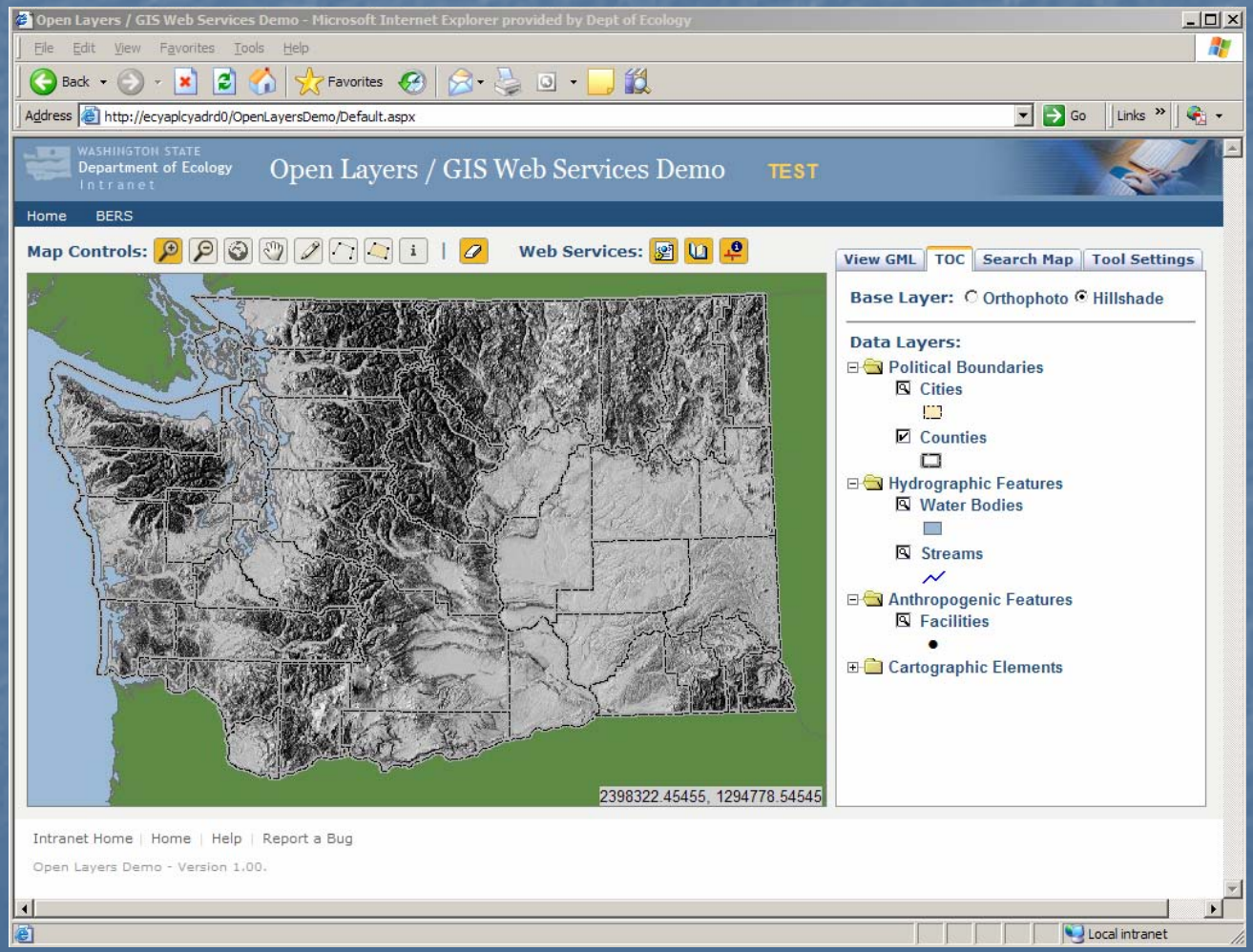
What Is GML?

- XML Specification For Geospatial Data
- Non-Proprietary Standard Developed By Open Geospatial Consortium (OGC)
- Offers Several Levels Of ‘Profiles’ With A Range Of Complexity (GML Point, GeoRSS GML, GML Simple Feature, GML 3.1.1)

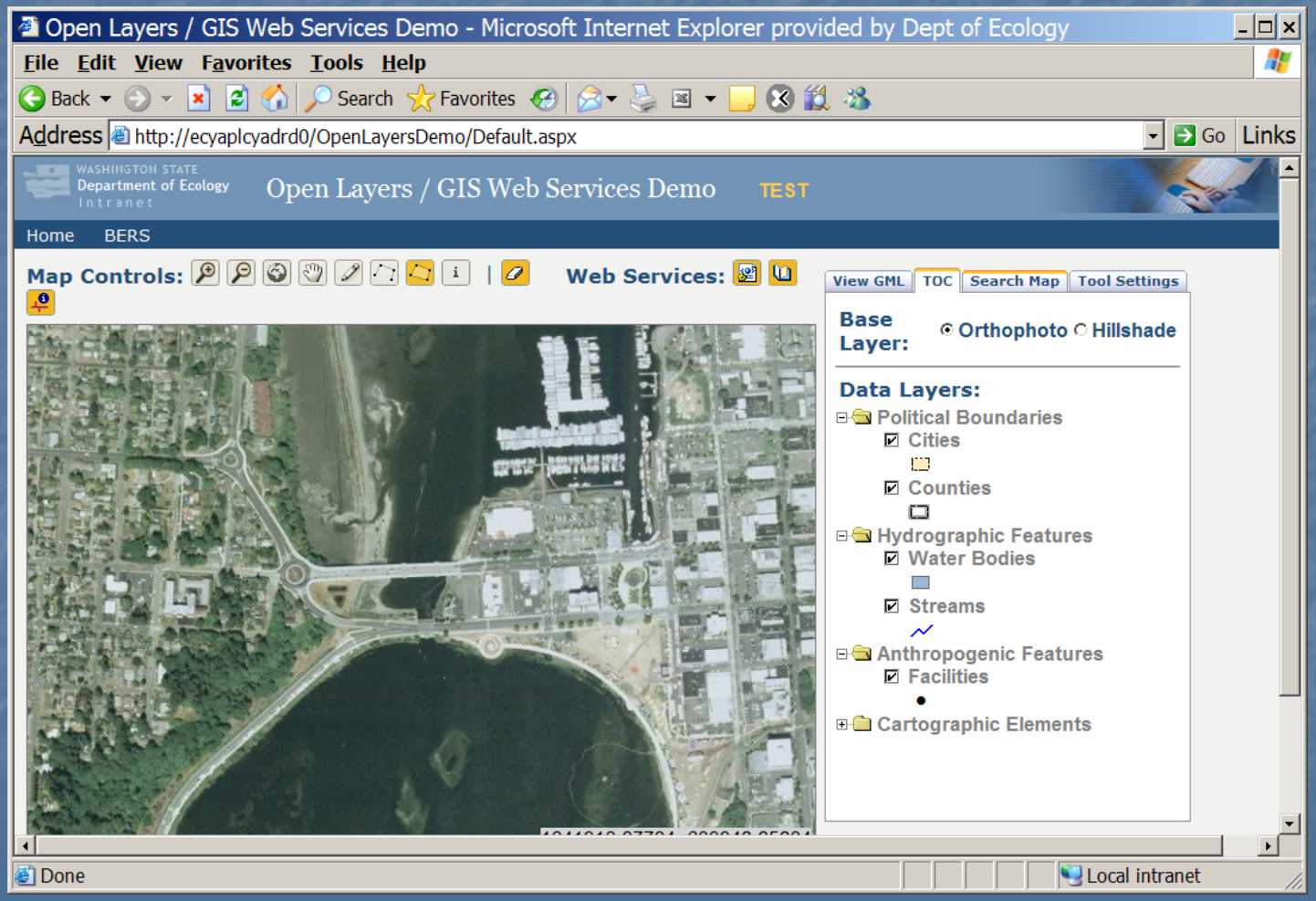
GeoRSS GML Polygon Example

```
<gml:Polygon>
    <gml:exterior>
      <gml:LinearRing>
        <gml:posList>
          45.256 -110.45 46.46 -109.48 43.84 -109.86 45.256 -110.45
        </gml:posList>
      </gml:LinearRing>
    </gml:exterior>
</gml:Polygon>
```

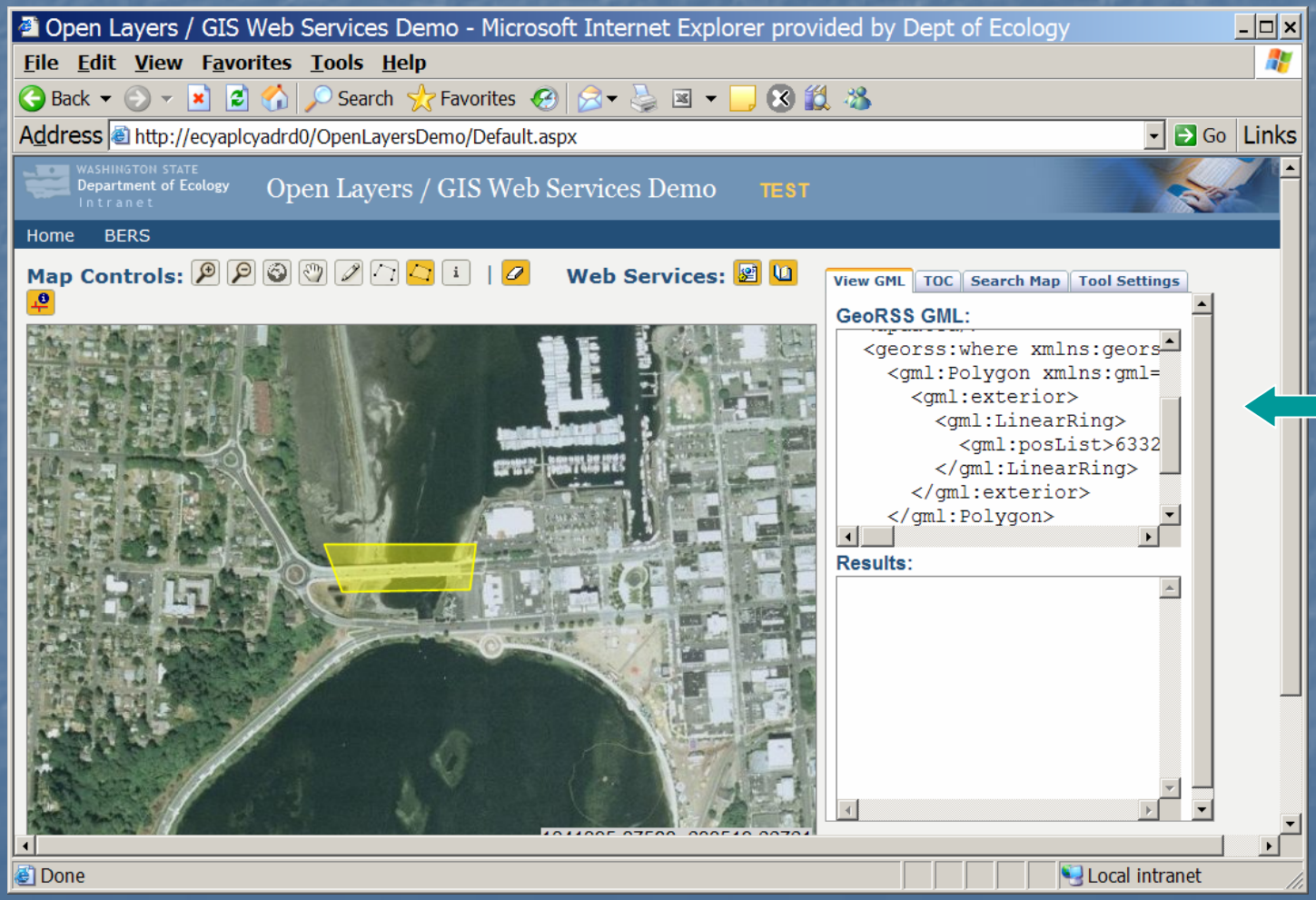
Demonstration Of Services



Navigate to Area of Interest



Delineate Project Area

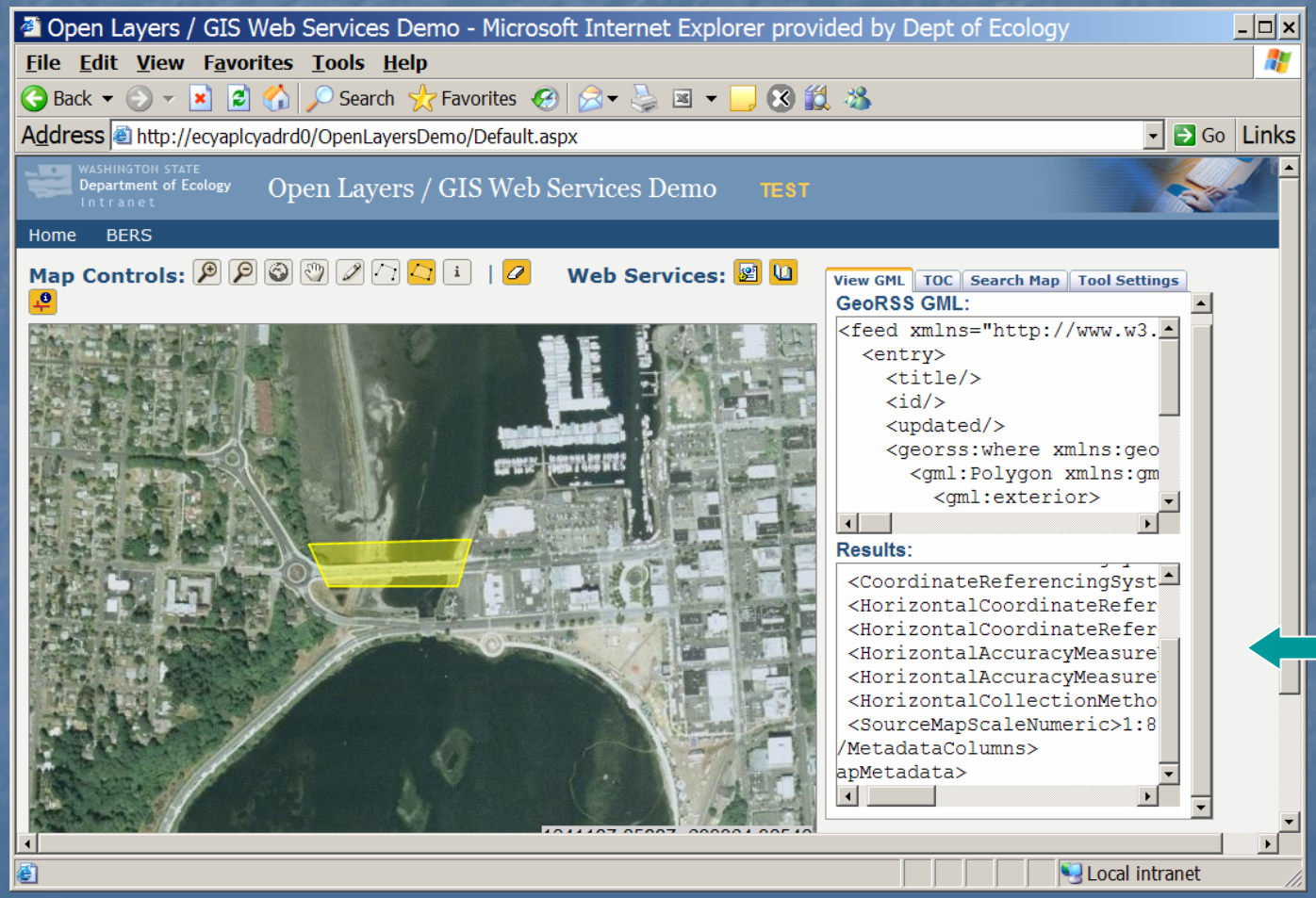


GeoRSS GML

Capture GeoRSS GML

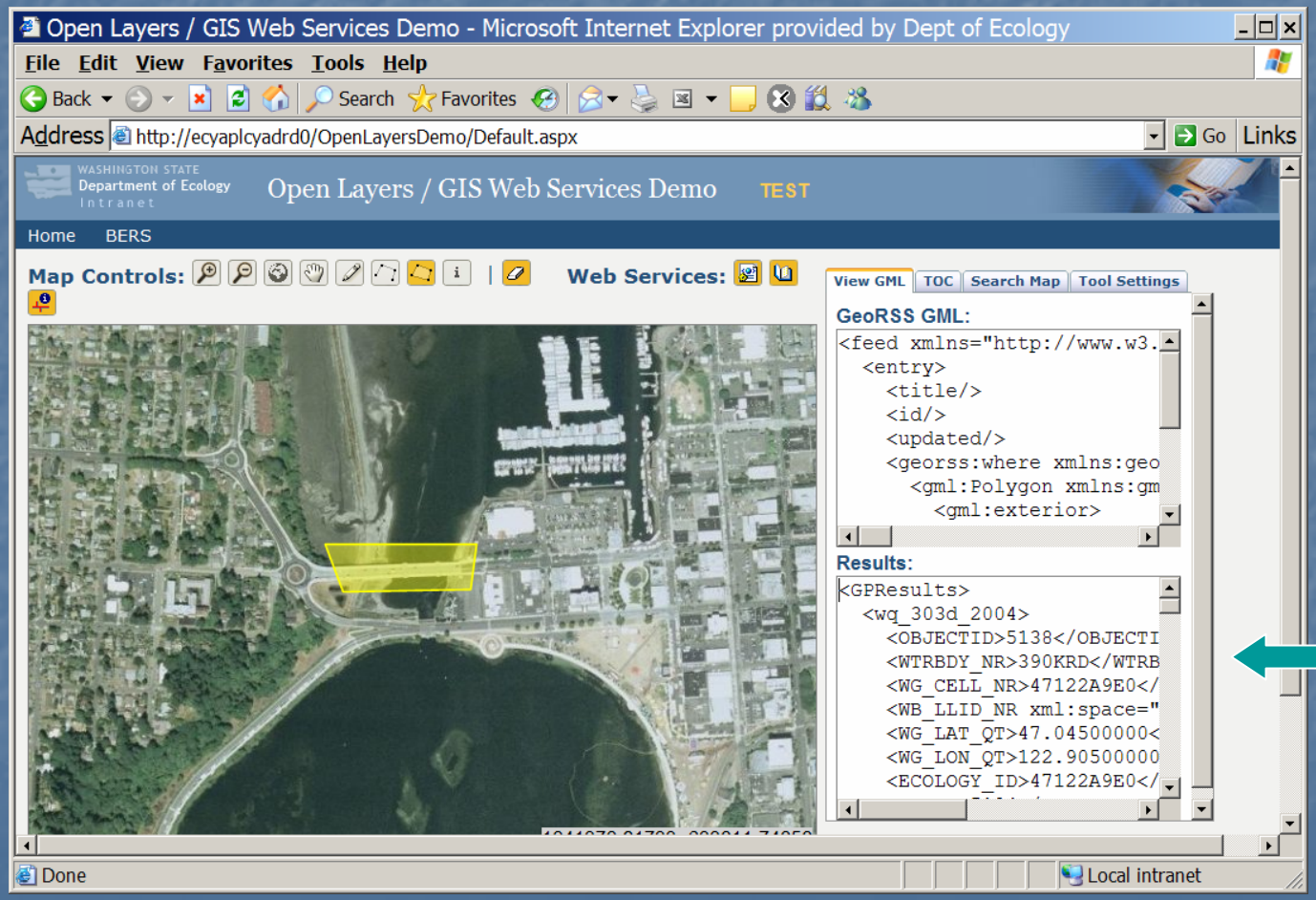
```
<georss:where xmlns:georss="http://www.georss.org/georss">
  <gml:Polygon xmlns:gml="http://www.opengis.net/gml" srsName="EPSG:2927">
    <gml:exterior>
      <gml:LinearRing>
        <gml:posList>
                1173869.4545454546 1077867.9090909091 976596.7272727273
                1065140.6363636362  922505.8181818182 1287867.9090909091
                992505.8181818181 1370595.1818181818 1126142.1818181818
                1243322.4545454546 1215233.0909090908 1205140.6363636362
                1180233.0909090908 1166958.8181818181   1173869.4545454546
                1077867.9090909091
        </gml:posList>
      </gml:LinearRing>
    </gml:exterior>
  </gml:Polygon>
</georss:where>
```

Capture Location Metadata



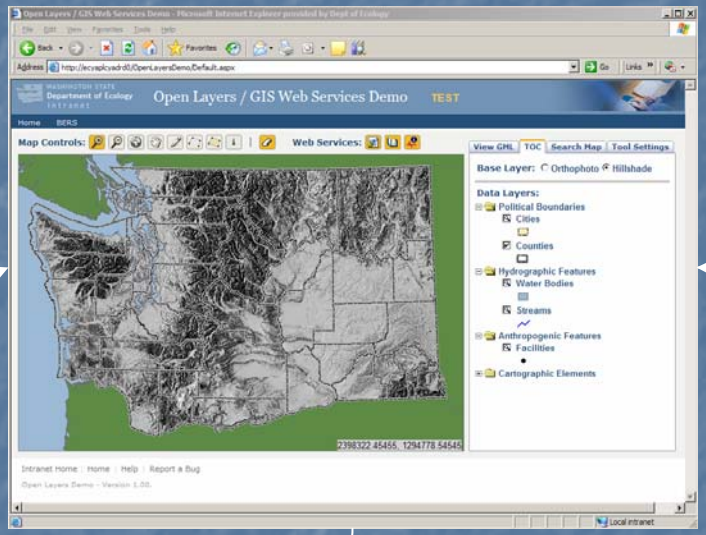
EDSC Location Metadata

Geo-Process Using GeoRSS GML



Geo-Processor XML

What Just Happened?



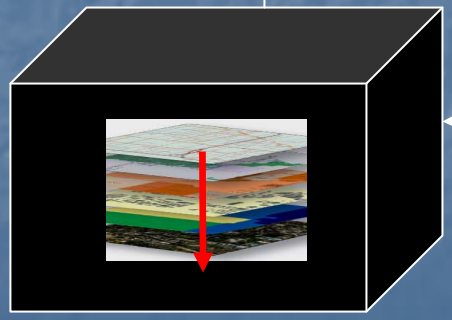
XML

GML + XML

URL

Image

Map Service



Geo-Processing Service

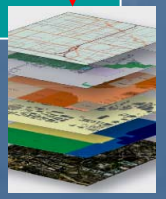
ESRI & GeoRSS GML

GeoRSS GML entered by user

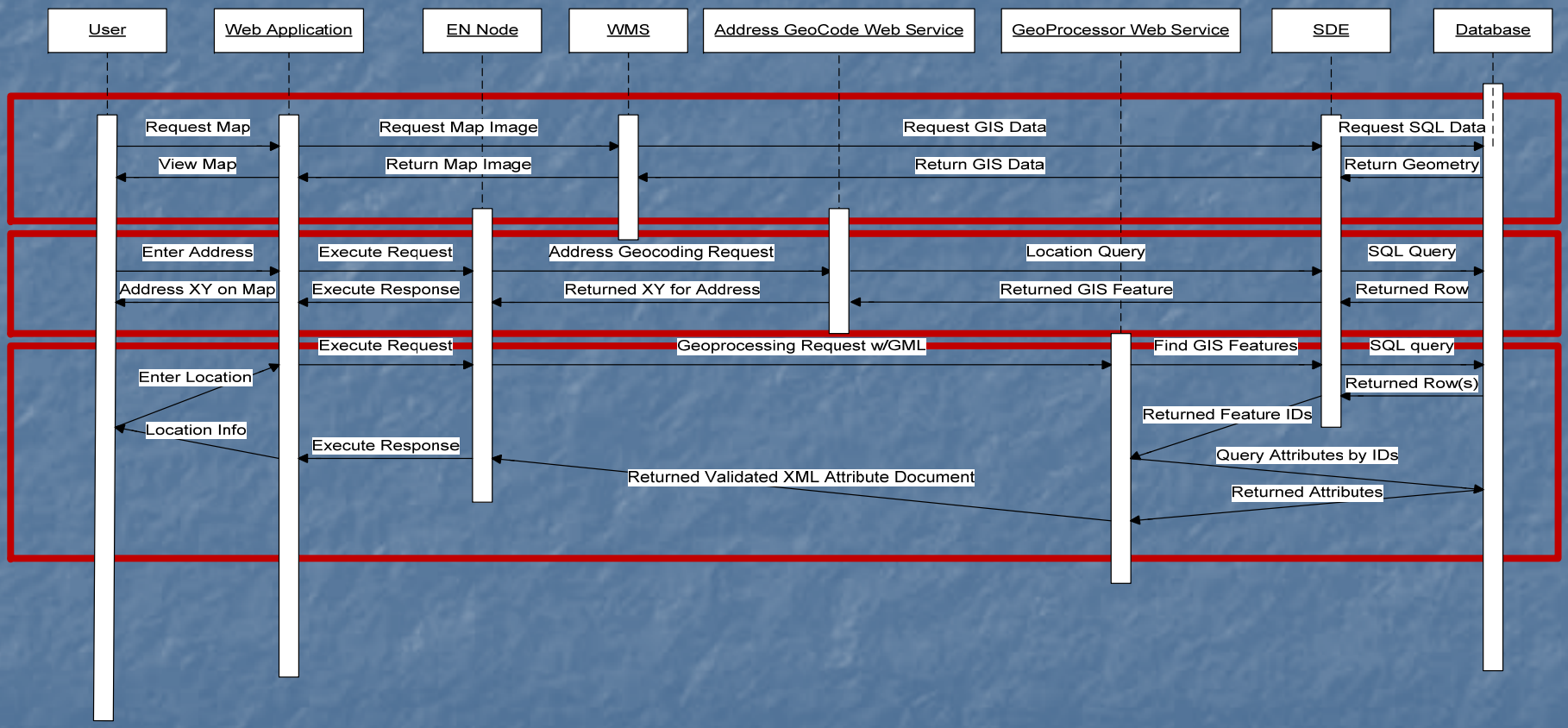
```
<feed xmlns="http://www.w3.org/2005/Atom">
  <entry>
    <title/>
    <id/>
    <updated/>
    <georss:where xmlns:georss="http://www.georss.org/georss">
      <gml:Polygon xmlns:gml="http://www.opengis.net/gml"
        srsName="EPSG:2927">
        <gml:exterior>
          <gml:LinearRing>
            <gml:posList>1173869.4545454546 1077867.9090909091
                976596.7272727273 1065140.6363636362
                922505.8181818182
                1287867.9090909091 992505.8181818181
                1370595.1818181818
            </gml:posList>
          </gml:LinearRing>
        </gml:exterior>
      </gml:Polygon>
    </georss:where>
  </entry>
</feed>
```

ArcSDE Workspace

- Create ArcSDE Workspace
- Create Object based on Feature Type defined in the GML
- Read coordinate pairs from GML into feature
- Define Coordinate Reference System based on Coordinate System defined in GML



Location Finder Sequence Diagram



Washington Location Finder Sequence Diagram

Some Next Steps

- Deploy Services to Production Servers (June 2008)
- Contracts Grants Loans Management (GCLM) Integration (June 2008) – consuming application
- Integrated Project Review & Mitigation Tools Project (IPRMT) Integration (May - July 2008) – consuming application
- WDOH Applications Integration (Ongoing) – consuming applications
- Ecology Facility / Site Integration (May - October 2008)
- Exchange Network Access via Node 2.0 (September 2008)

Questions

Contact

- John Tooley; WA Department of Ecology (360) 407-6418; jtoo461@ecy.wa.gov