Greetings!

Washington Location Finder Project Exchange

Network Conference April 2011

Partners:

Washington Department of Ecology

Washington Department of Health

Environmental Information Exchange Network

(US Environmental Protection Agency &

Environmental Council of the States)

Background

One of the primary questions we face in environmental work is

Where did it take place?

And using some standard tools we can find some general information like:

Address –

21660 N. US Highway 101
Potlatch, WA 98584

And we can find decimal coordinates

Latitude: 47.28874
Longitude: -123.17597

Need for More Data

But users want information like ...

- **Real Address:** N 21020 HWY 101 Shelton WA 98584

- **Ecology Region:** Southwest Regional Office

- **County:** Mason

- **Legislative District:** 35

- **Congressional District:** 6

- **WRIA:** 16 (Skokomish - Dosewallips)

- **Tribal Land:** No – (It is Potlatch State Park)

The Answer!

Washington State proposed and developed a Location Finder Project that would process basic location information and would provide an options rich process to return to the user application ready geographic data.

The Project

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

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How does it work?
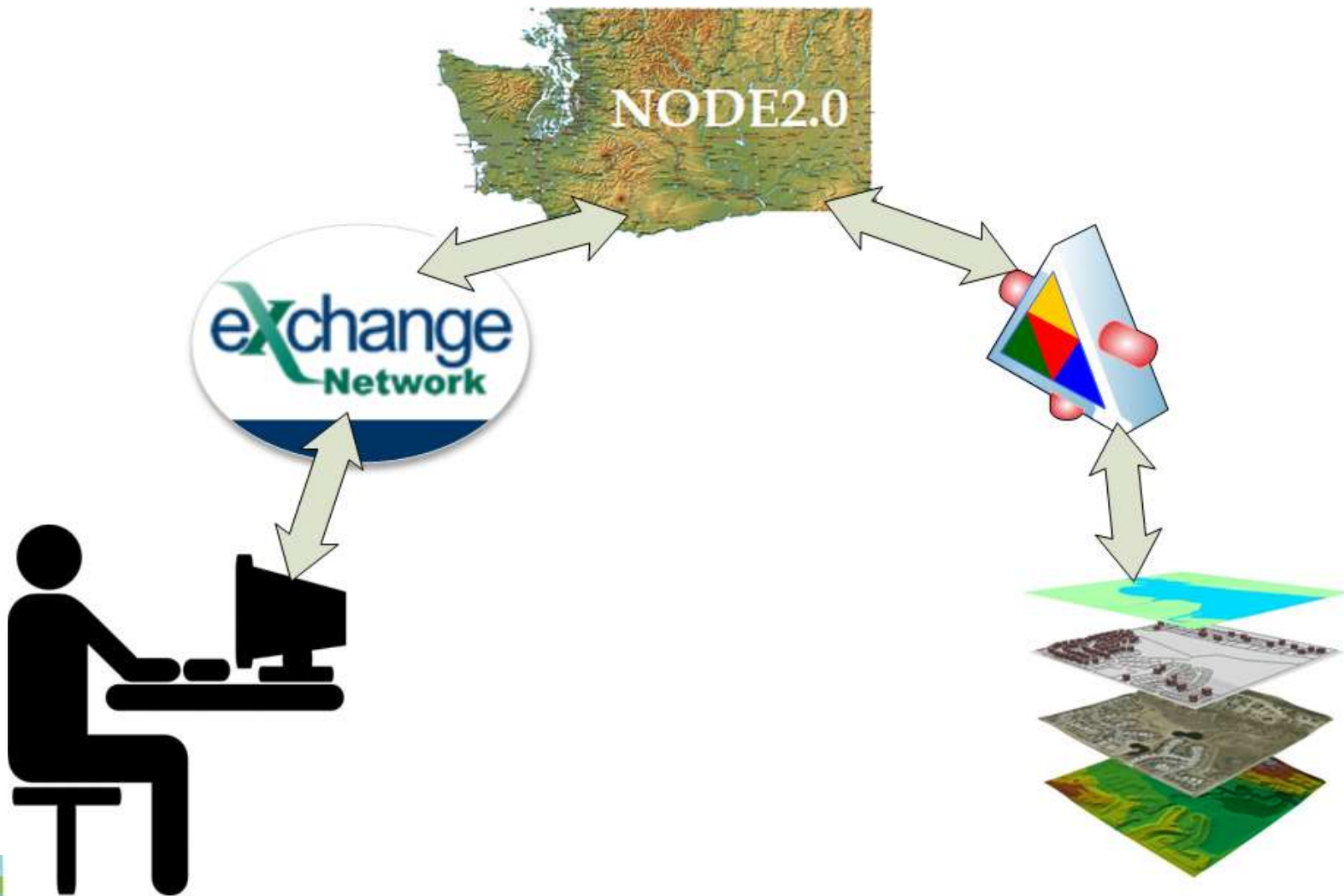
Sample of supported layers

| Layer Description |
|---|
| Washinton t/r/s 1/4 1/4 section points |
| Boundaries of Washington cities/urban growth areas |
| Census blocks as used in the US Census 2000 |
| Cadastre Leagal Description |
| Washington State Congressional Districts as redrawn after the year 2000 census |
| A hydrologic unit boundary layer that is at the sub-watershed level |
| Boundaries of Washington State's incorporated municipalities |
| Washington State Legislative District boundaries as redrawn after April 2000 US census |
| Ownership parcels for Federal, State, County, City and Tribal lands in Washington State |
| All linear hydrographic features participating in the flow network |
| Washington Tribal Lands |
| Water Resource Inventory Area polygons |

How was it done?

- The GIS side of the processing
  - As part of the overall project a web service was developed for Geo-Location services
  - The web service was first made available to Ecology applications
  - The web service has been consumed within the Washington State Government Network for 2 years.
- The EN Code Side
  - An initial Execute plugin was developed in 2008
  - As the web service matured the plugin got out of date
  - A new plugin was developed in 2010

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How it was constructed

• C# Web service running within the Washington State Government Network.
•Web Methods are:
- • GetGPServiceLayers
- • IntersectLayersByPoint
- • IntersectLayersByGmlFeature
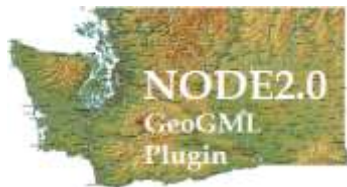
• GEOGML_GetLayers Method to get all the layers that are currently supported by the service.
• GETGMLIntersectByPoint Method to get data using a lat/long as input.
•GetIntersectByGML Method to get data using GML input.

Washington State GeoGML Processor

Architecture:

1. .Net C#

2. Windsoresque

3. Written by Wa Dept of Ecology

4. Approach build reusable plugin project then clone and construct.

5. Three methods, first took 45 minutes from start to have running. Second took additional hour and half. Last because of GML and XML parsing took three days.

Approach to building a plugin

We have done the following things:

1. Build a limited collection of generic prototype plugins for rapid plugin development.

2. When we started to develop this plugin we copied the generic execute plugin that was setup to call a web service, changed the methods, coded for the parms and started to test.

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There is assistance for developer when developing new node flows.

The Windsor NodeEndpointClientFactory

We are pushing it a bit further. We are writing a wrapper to the factory that simplifies it further.

Just a little code

Using the Factory

```
CommonTransactionStatusCode returnedStatusCode =
CommonTransactionStatusCode.Unknown;
      try
      {
        NodeEndpointClientFactory NECFactory = new NodeEndpointClientFactory();
    NECFactory.DefaultAuthenticationCredentials = new AuthenticationCredentials(UserID,
    UserPsw);

        using (INodeEndpointClient client = NECFactory.Make(nodeUrl, nodeVersion))
        {
          returnedStatusCode = client.GetStatus(currentTransactionID);
        }
      }
      catch (Exception e)
      {
        return (e.Message);
      }
      return returnedStatusCode.ToString();
```

Using the wrapper class

```
ENOpenNodENOpenNode20Helper.ENHelper(urle20Helper.ENHelper Service = new,
endpointType, userID, passWord);

      returnedDocs = NodeService.GetDownload(flowName, transactionID);
```

What the service can do

Goal is to expose the services to partners for implementation in selected reporting and permitting applications.

User Action	Application Action
The Application starts and wants to show available layers	Calls Node to GetGPServiceLayers
	Receives and shows the laters to user
User selects Layers to show and supplys the lat long for the site.	Calls Node to IntersectLayersByPoint
	Application populates the UI for the user to see the retreived payload.
User Smiles	

NODE2.0

Contact Info and Questions

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QUESTIONS?