



City of Arlington Info



Abe Calderon
GIS/Engineering Division
City of Arlington, Public Works
Phone: 360.403.3522
acalderon@arlingtonwa.gov

3/1/2011



Welcome to our presentation

Where's the pressure?

(Decisions Made Easy in ArcMap)

Abe Calderon
GIS/Engineering Division
City of Arlington, Public Works
Phone: 360.403.3522
acalderon@arlingtonwa.gov

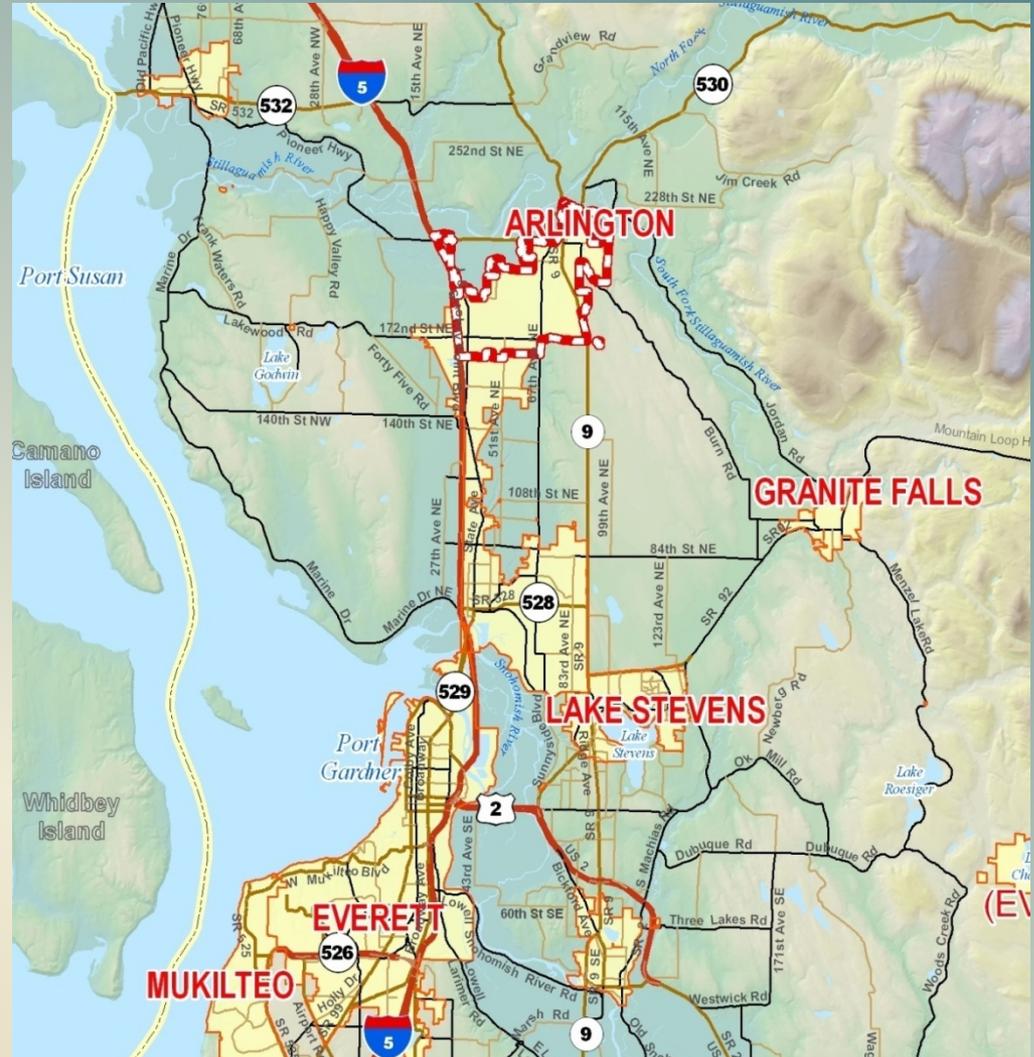
3/1/2011



Introduction

Arlington, WA?

- **Pop. 17,000**
- **Area of 9.2 square miles**
- **Bordered by the Stillaguamish River to our North**
- **Marysville to our South**
- **Silvana to our West**
- **Great expansion area to our East**





GIS Presence

- **Cemetery**
- **Airport**
- **Streets**
- **Maintenance and Operations**
- **Fire**
- **Police**



GIS Presence

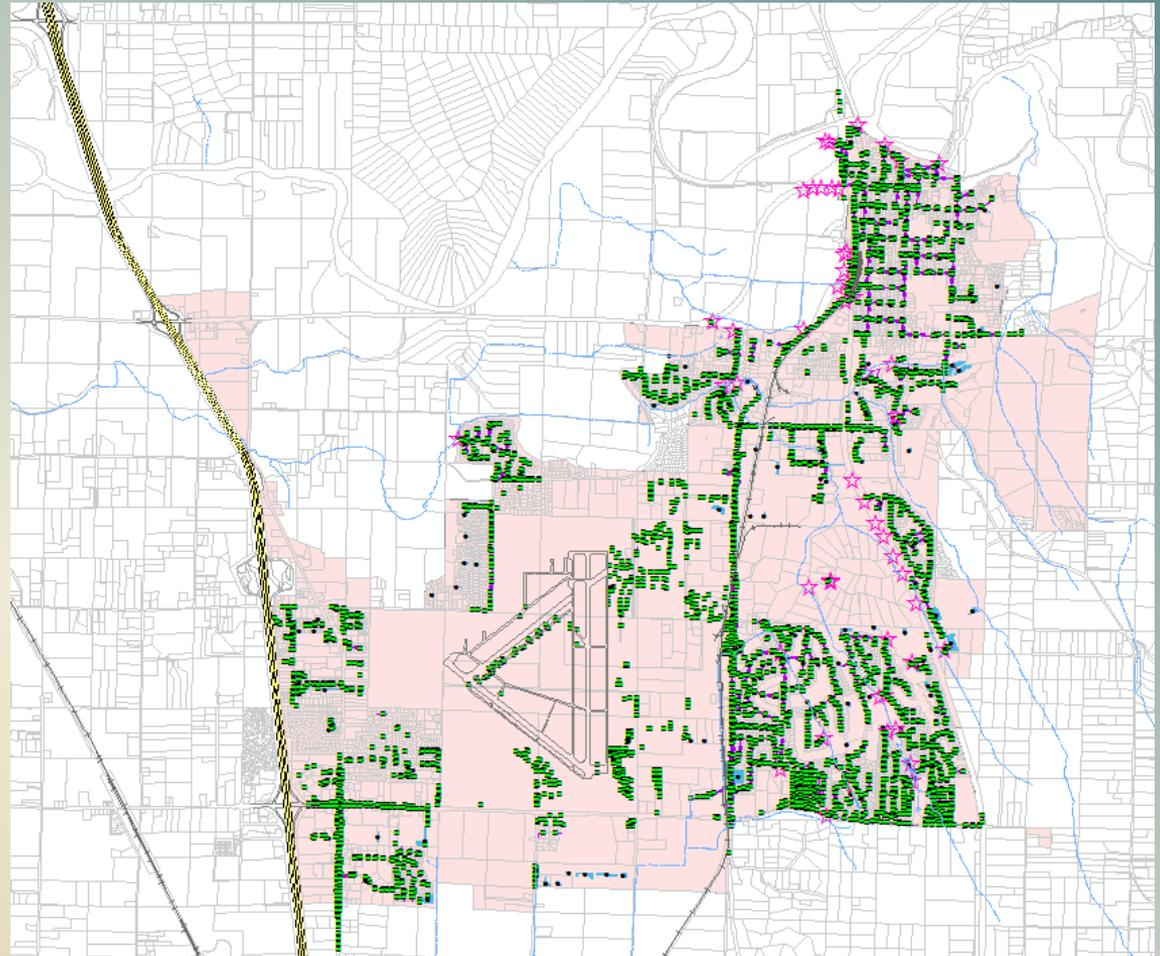
- **Stormwater**
- **Wastewater**
- **Water**





Stormwater Inventory

- **>3800 catch basins**
- **>48 miles of storm pipe**
- **> 100 detention ponds**
- **We are continuing to find more inventory every week**



Old Town Wetland

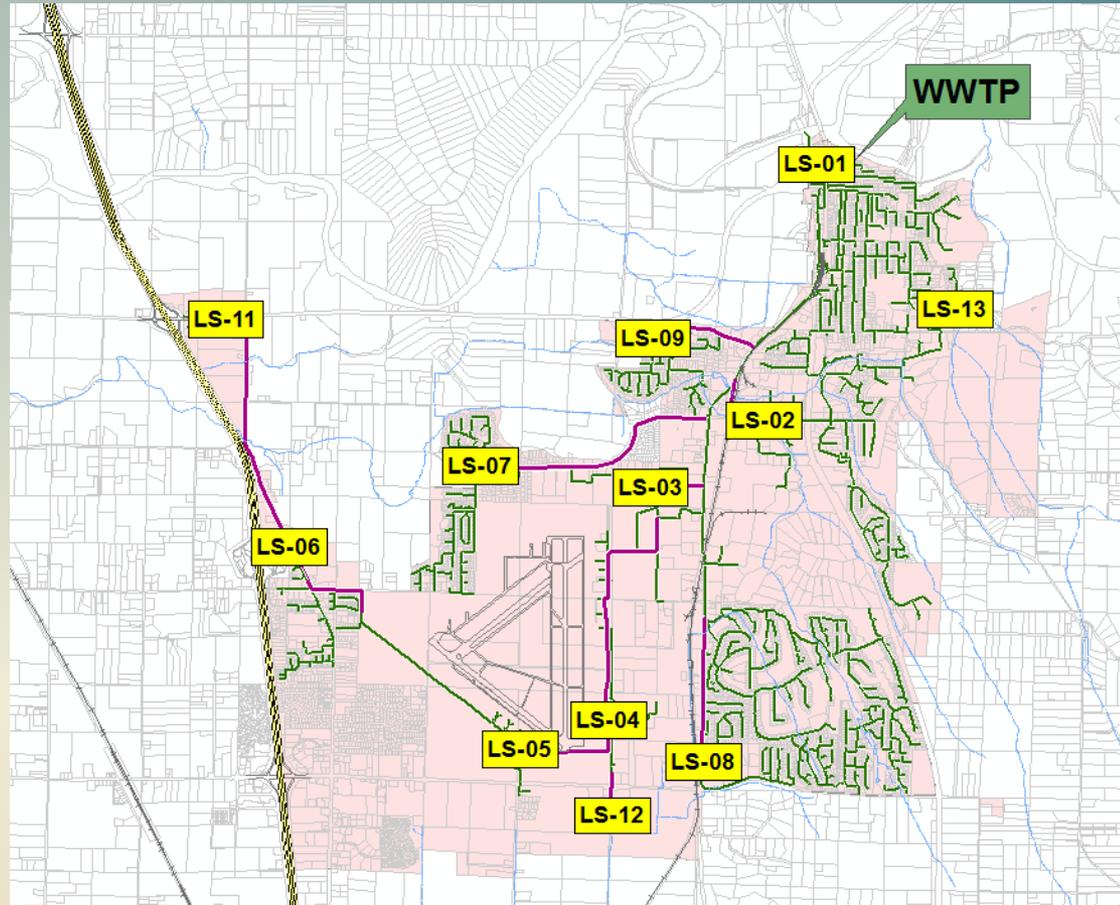
- **Self sustainable habitat**
- **Recycled materials for amenities**
- **Additional treatment for Old Town storm runoff**
- **Additional treatment for wastewater treatment plant effluent**
- **Broke ground just 2 month ago**
- **Grand opening August 24**
- **You're invited**





Wastewater Inventory

- 1 wastewater treatment plant
- 12 lift stations
- 24 pumps
- 4480 services
- 1400 manholes
- 59 miles of gravity pipe
- 7 miles force mains





Introduction

Wastewater Treatment Plant Upgrade

- **Began 2 years ago**
- **Old sbr to state of the art membrane**
- **Final pave less than 1 month ago**
- **Grand opening on August 24**
- **You're invited**
- **This aerial into GIS**

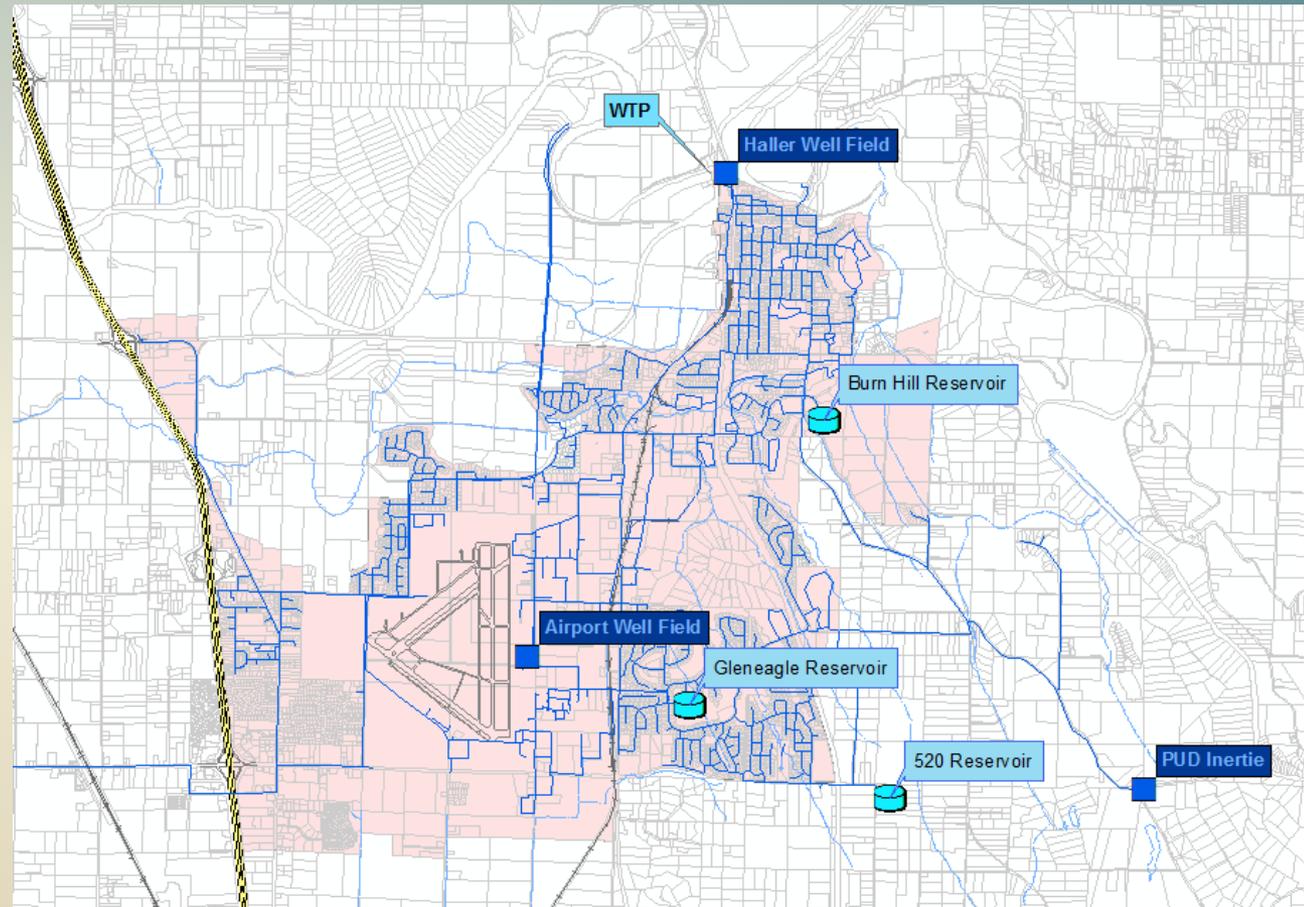




Introduction

Water Inventory

- **1** Water Treatment Plant
- **3** Sources
- **3** Reservoirs
- **>5000** services
- **>10,000** valves
- **>90** miles pipe
- **>1200** Hydrants





Welcome to our 5 min presentation

Where's the pressure?

Decisions Made Easy in ArcMap

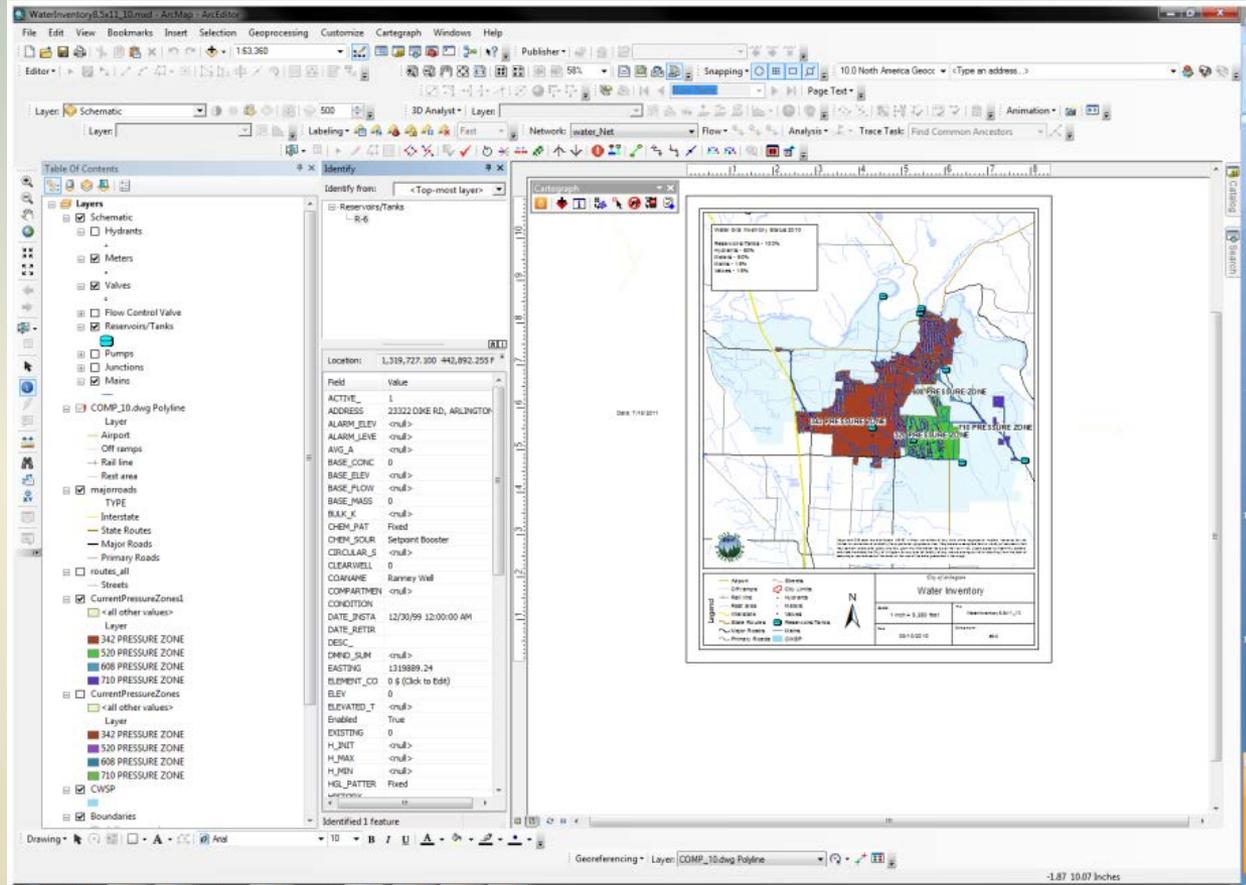
3/1/2011



Pressure Logger

Why?

- Straight forward
- Very easy to produce
- Used Arcmap from cradle to grave
- No expensive extensions
- Feedback from the final product was extremely positive



Research

- **Global Water Instrumentation**
 - Global logger





Steps in the office

- **Connect the logger to the computer**
- **Clear the logger**
- **Sync time**
- **Set duration**



Steps in the field

- **Chose a hydrant**





Steps in the field

- **Flush the hydrant**





Steps in the field

- **Attach the pressure logger (handtight)**





Steps in the field

- **Lock the pressure logger to avoid vandalism**





Steps in the field

- **Finally bag the hydrant to render it out-of-service**
- **Wait 3 days**





Steps back in the office

- **Connect the logger to the computer**
- **Download the data**
- **Save the csv file to a central location on the server**
- **Naming convention should include place and time**

A screenshot of a Microsoft Excel spreadsheet titled "Hydrant172SR9_12910.csv". The spreadsheet contains a table with 28 rows of data. The columns are labeled A through E, with headers "Date", "Time", "PSI", and "Volts" in columns B, C, D, and E respectively. The data shows a sequence of pressure and voltage readings over time on December 7, 2010.

	A	B	C	D	E
1	Date	Time	PSI	Volts	
2	12/7/2010	11:54:29	35.18	3.62	
3	12/7/2010	11:55:29	34.2	3.62	
4	12/7/2010	11:56:29	34.25	3.62	
5	12/7/2010	11:57:29	33.62	3.62	
6	12/7/2010	11:58:29	33.51	3.62	
7	12/7/2010	11:59:29	34.31	3.62	
8	12/7/2010	12:00:29	33.91	3.62	
9	12/7/2010	12:01:29	33.68	3.62	
10	12/7/2010	12:02:29	33.74	3.61	
11	12/7/2010	12:03:29	34.14	3.61	
12	12/7/2010	12:04:29	34.31	3.61	
13	12/7/2010	12:05:29	33.39	3.61	
14	12/7/2010	12:06:29	32.82	3.6	
15	12/7/2010	12:07:29	33.68	3.6	
16	12/7/2010	12:08:29	33.39	3.6	
17	12/7/2010	12:09:29	33.74	3.6	
18	12/7/2010	12:10:29	33.62	3.59	
19	12/7/2010	12:11:29	33.74	3.59	
20	12/7/2010	12:12:29	34.2	3.59	
21	12/7/2010	12:13:29	33.91	3.59	
22	12/7/2010	12:14:29	33.62	3.59	
23	12/7/2010	12:15:29	32.7	3.59	
24	12/7/2010	12:16:29	33.33	3.58	
25	12/7/2010	12:17:29	34.08	3.58	
26	12/7/2010	12:18:29	33.91	3.58	
27	12/7/2010	12:19:29	34.37	3.58	
28	12/7/2010	12:20:29	33.39	3.58	

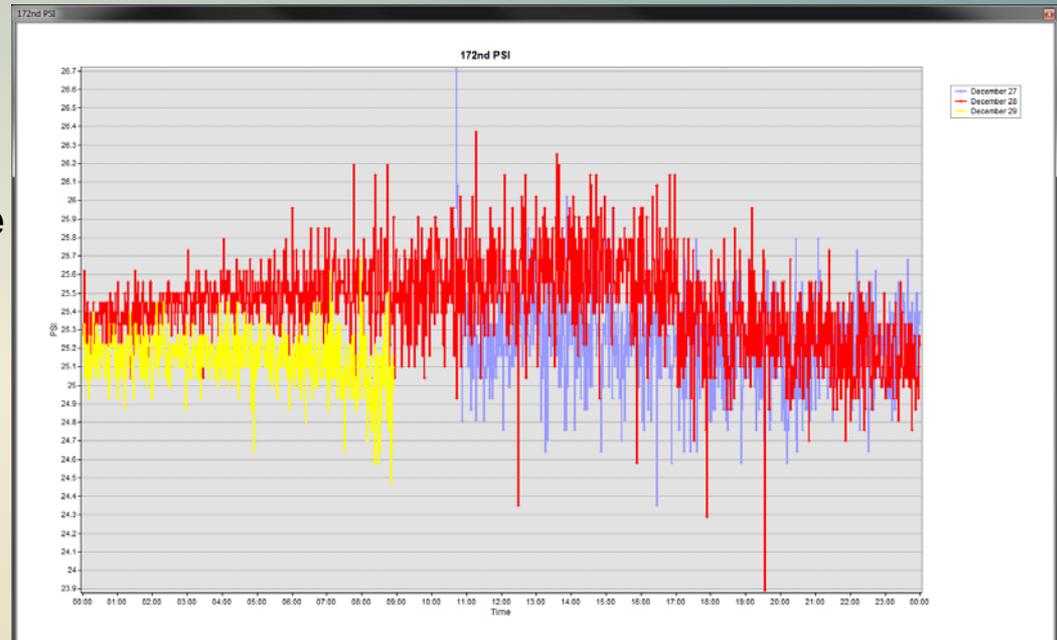


Pressure Logger

Steps in Arcmap

- Consume the csv file into Arcmap
- Reselect $PSI > 0$
- Run statistic on the data
 - Minimum
 - Maximum
 - Average
- Create line graph using date time and pressure

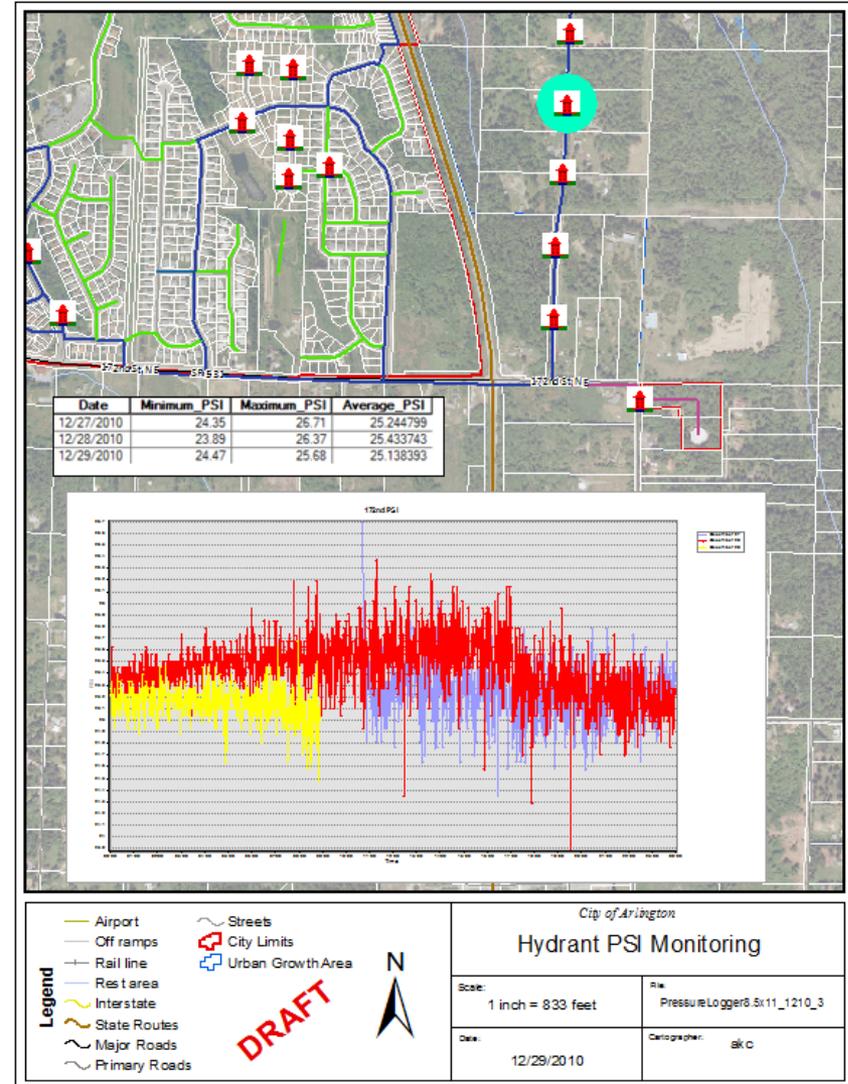
Date	Minimum_PSI	Maximum_PSI	Average_PSI
12/27/2010	24.35	26.71	25.244799
12/28/2010	23.89	26.37	25.433743
12/29/2010	24.47	25.68	25.138393



Pressure Logger

Final Product

- Where was the sample
- How large is the main
- What pressure zone





Things learned...

- Naming conventions should include time and place
- Software limitations with 64 bit
- Hardware limitations (battery life)

Thank You for Attending This Presentation Today

GIS/Engineering Division
City of Arlington,
Public Works
Phone: 360.403.3522
acalderon@arlingtonwa.gov



Questions...

GIS/Engineering Division
City of Arlington,
Public Works
Phone: 360.403.3522
acalderon@arlingtonwa.gov