

# Web Services and Enterprise GIS Web Applications

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February 19, 2004

# Today's Goals

- ◆ Demystify Web Services
- ◆ Suggest GIS Roles For Web Services
- ◆ Examples of Web Services and Enterprise GIS

# Approach

- ◆ Define Web Services
- ◆ Discuss why Web Services important
- ◆ How might Web Services be used advantageously

# What is a Web Service?

The “Quick and Dirty” Definition:

- ◆ A website without a Graphical User Interface (GUI)

# No GUI? Consider [www.google.com](http://www.google.com)

- ◆ WWW-based Search Engine
- ◆ Simple input
- ◆ Rich result set (hyperlinks, images, etc.)

What if you could design your own User Interface but still use the google search engine?

# The Underlying Idea

- ◆ Provide useful functions via WWW
- ◆ Allow Developers to create Apps
- ◆ Developers responsible for GUI

# What is a Web Service, Revisited

- ◆ Modular Application
- ◆ Published, invoked over WWW
- ◆ Self-Describing
- ◆ Based on accepted IT standards

# Traditional Examples

- ◆ Web Applets (e.g.: Stock Quotes, etc.)
- ◆ Search Engines
- ◆ Database Queries
- ◆ And lots of other business uses

# Foundation Technologies

- ◆ HTTP: Hypertext Transport Protocol
- ◆ XML: Extensible Markup Language
- ◆ SOAP: Simple Object Access Protocol
- ◆ UDDI: Universal Discover and Description

# It's Really HTTP and XML

- ◆ HTTP: Browsers, Word Processors, XL, and GIS APPLICATIONS
- ◆ Discovery/Access (UDDI, SOAP) are accomplished via XML

# Foundation Technologies Enable...

- ◆ Universal Availability (location, HW)
- ◆ Access to otherwise unavailable functionality
- ◆ Ability to interoperate between applications

# Implications for GIS

- ◆ Access to rich Geodatabases
- ◆ Access to Geo-spatial services
- ◆ Data/Service Publishing
- ◆ Geodatabase/Systems Interoperability!

# How Are Web Services Supporting GIS?

- ◆ Geocoding
- ◆ Spatial Analyses
- ◆ Map Creation
- ◆ Simple Geodatabase Maintenance



Find Incident Location by:

Show All - - - Hide All

Pipeline Number and Milepost

RR Line Name and Milepost

Street Information

Address OR Intersection ?

3rd Gilman

City AND State OR Zip

Berkeley CA

Navigate To:

City

County

State

Map Utilities:

Alignment Drawing

Printable Map

Home

Help

Welcome to the Kinder Morgan Pacific Region Control Center Application

Total Elapsed Time: 0.0000647439



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Map Utilities:

Alignment Drawing

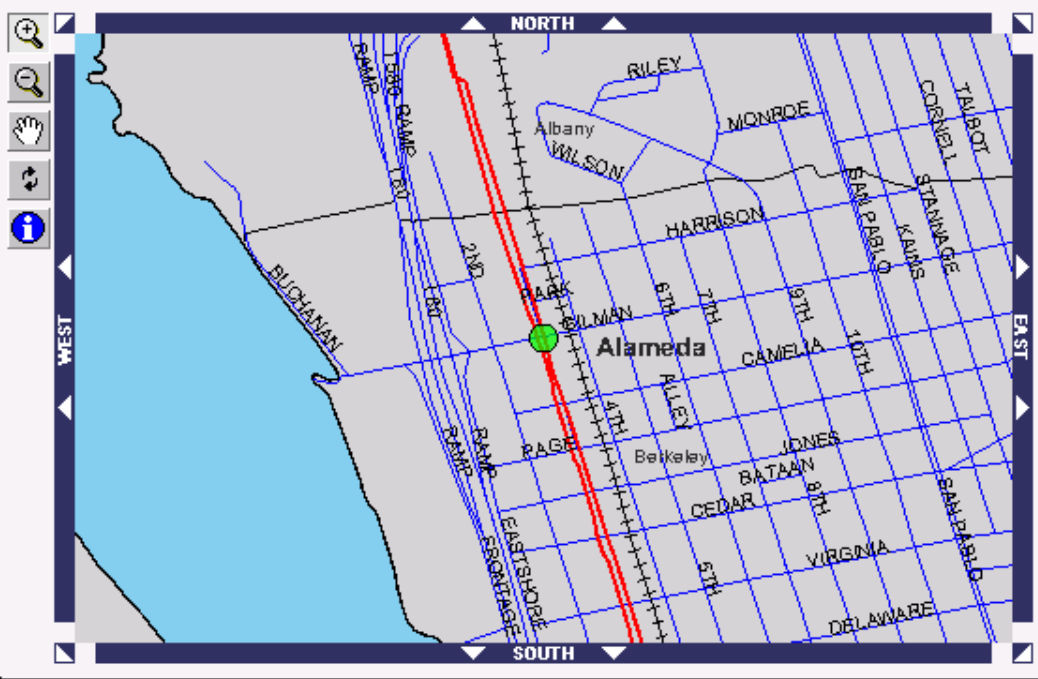
Printable Map

Home

Help

Map Scale - 1 : 20,713

Active Feature KMEP Lines



Legend

Selected Features

UPRR MP

Pipeline Features

Pipeline

Pipeline Mile Markers

RailRoad Mile Markers

Stations/Terminals

**Please enter an address**

**STREET ADDRESS:**  (eg: 910 Harrison St)

**CITY:**  (eg: San Francisco)

**STATE:**   **ZIP CODE**

# Map Demo

SAVE FIND LAYERS LEGEND ABOUT



## Find Assets

Select an Asset type to display on the map. Choose your desired:

Radius:

Type:

Keyword:

Location	Name
1	LINCOLN SCHOOL
2	SAINT PATRICK SCHOOL
3	CHINESE HOSPITAL
4	BESSIE CARMICHAEL SCHOOL
5	ST FRANCIS MEMORIAL HOSPITAL
6	REDDING SCHOOL
7	FRANCISCO JUNIOR HIGH SCHOOL
8	GOUGH SCHOOL
9	HOLY TRINITY CATHEDRAL
10	SHERMAN SCHOOL

# Future/Emerging GIS Web Services

- ◆ Feature capture (Point, Line, Poly)
- ◆ Topologic geodatabase editing
- ◆ Sophisticated spatial analyses  
(workflows)

# For Your Consideration

- ◆ Invest in XML
- ◆ Prepare for modular GIS Web application development
- ◆ Consider using available web services
- ◆ Look for “Develop Once, Use Often” opportunities

# And Finally

- ◆ Inter-agency GIS interoperability will likely require web services!

# Thank You