

# **USDOT**

## **Geospatial Information Programs**

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*Innovation for a Nation on the Move*



U.S. Department of Transportation  
Research and Innovative Technology Administration

# Topics

- USDOT GIO Agenda
- USDOT Geospatial Programs/Activities
  - RITA/Bureau of Transportation Statistics
  - Federal Highway Administration – Highway Performance Monitoring System
  - Federal Highway Administration – Office of Planning, Environment, and Real Estate Services
  - Federal Railroad Administration
  - Maritime Administration
  - Pipeline and Hazardous Materials Safety Administration

# USDOT GIO Agenda

- Appointed July 2008
- Internal Activities
  - Geospatial Community of Interest
  - Desktop Mapping for Everyone!?!
  - Development of a Strategic Plan/Vision
- External Activities
  - FGDC, OMB e-Government
  - Transportation for the Nation

# The RITA/BTS GIS Program

- National Transportation Atlas Databases (NTAD)
- Data Development
- Application Development
- Mapping and Analysis Support

# RITA/BTS: National Transportation Atlas Databases (NTAD)

- Transportation Theme of the NSDI
- Produced annually since 1995
- Contains data from throughout the USDOT and from several partner agencies.
- Distributed through the annual release of the NTAD DVD
  - Approximately 3,000 distributed each year
- All databases also available for download via the BTS web site
  - over 60,000 accesses/downloads in 2008

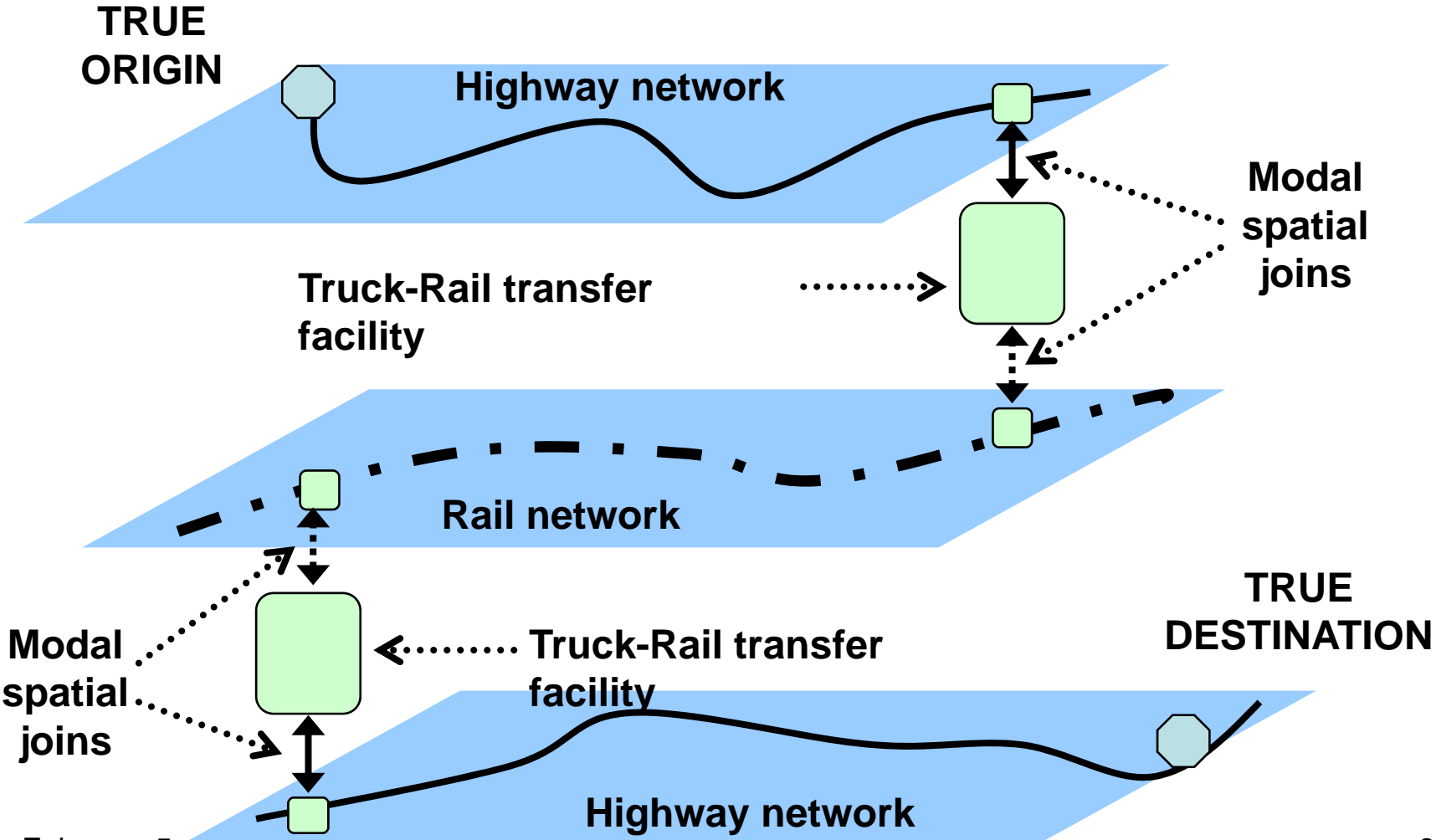
# RITA/BTS: Data Development

- Worked with our partners to develop geospatial data for:
  - Fixed guideway transit lines and stations
  - Multi-modal transfer facilities
  - MPO boundaries
  - EPA Non-attainment area boundaries
  - Bridges from the National Bridge Inventory
  - Highway Weigh-in-motion stations
  - Highway Automated Traffic Recorder stations
  - Highway Hazardous Materials routes
  - Alternative fueling stations

# RITA/BTS: Application Development

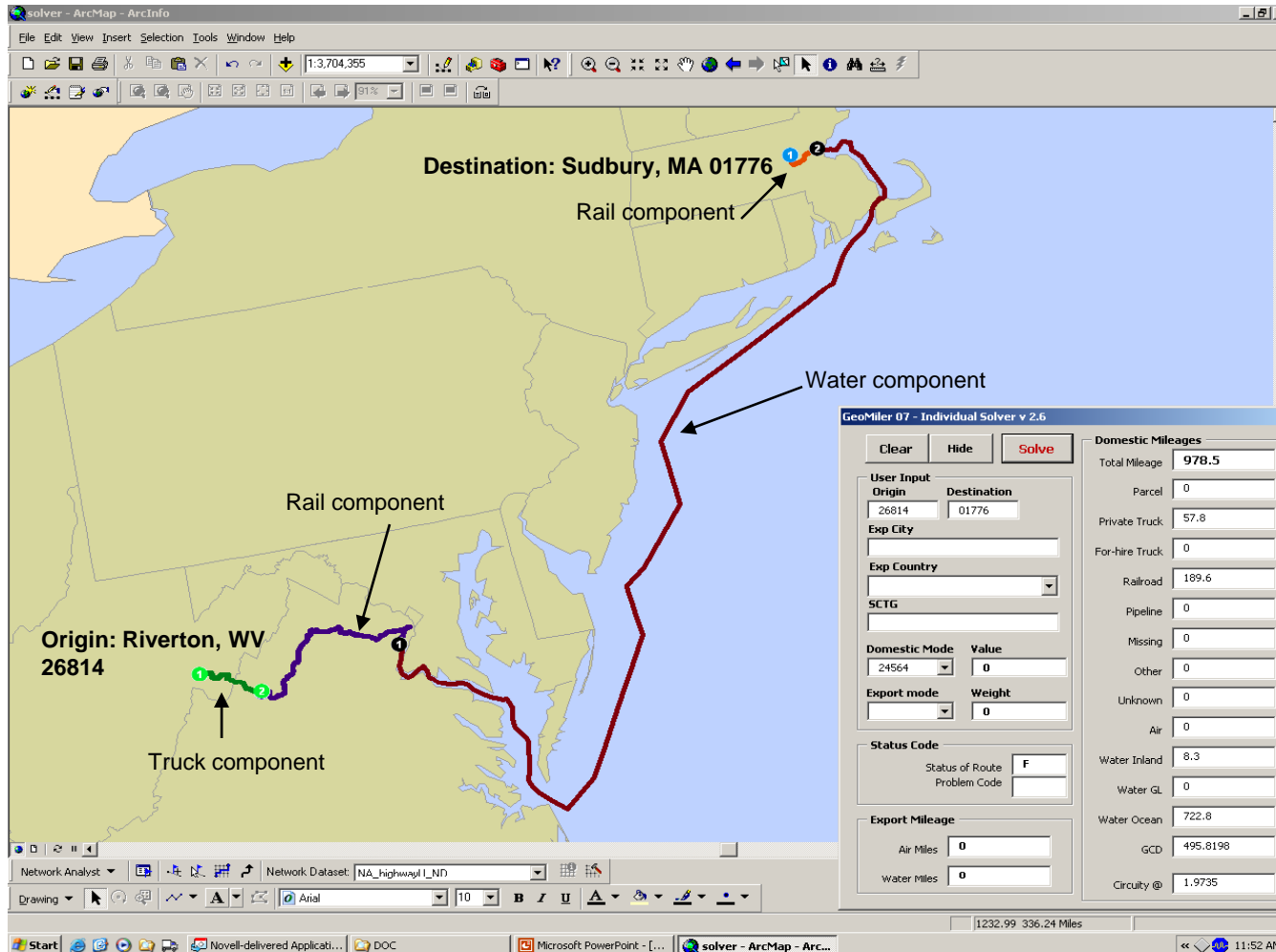
- GeoMiler (CFS Mileage Calculation Tool)
- Travel Time tool for the Census Transportation Planning Package
- About to re-start Internet Mapping application development

# GeoMiler: Modeling Multimodal Transfer



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# GeoMiler Truck-Rail-Water Shipment Riverton, WV → Sudbury, MA



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# RITA/BTS: Mapping and Analysis Support

- Within RITA/BTS
- Crisis Management Center/Continuity of Operations site
- Other USDOT agencies
- Congress

# FHWA – Highway Performance Monitoring System

- A data program in FHWA that manages 98 attributes about the extent, performance and condition of all public roads in the United States.
- HPMS is used for apportionment of Highway Trust Funds to State DOTs and provides the indications to gauge the health of the Nation's highways
- Traditionally, it is stored in a flat table with very limited geospatial elements.

# FHWA/HPMS: Reassessment

- HPMS will be retooled in 2010 to allow an extensive geospatial component.
- HPMS attributes will be linked to a GIS network for all Federal-Aid eligible roads.
- These will be linked through Linear Referencing on a network that is provided by each State DOT

# FHWA/HPMS: Data Model

- The retooled model will be event driven.
- Normalized data built on layered attributes rather than all attributes pertaining to a defined road segment.
- Built on data that is native to the State DOTs.
  - Attributes and GIS grown at the state level.

# FHWA/HPMS: Anticipated Benefits

- Better data quality, consistency, and accuracy
- Direct relationship between data providers and data
- Easier for states to submit data
- Enhanced analytical support
  - Section level analysis
  - Network level analysis
- Encapsulating the related data
  - Recognizes the independence of the various data programs
  - Changes in one data area won't necessarily affect the other data areas

# FHWA/HPMS: Bi-Products

- At the implementation of the retooled HPMS:
  - A road network for transportation will be built and a National Linear Reference System will be established.
  - A spatial linking mechanism to other datasets (National Bridge Inventory, Fatal Crashes, Traffic Counter Stations, etc) will be built.
  - The resulting National Network will serve as a starting point for Transportation for the Nation.

# FHWA – Office of Planning

- Outreach

- Sponsoring Case Studies and Peer Exchanges that look at GIS applications in the following transportation areas:

- Right-of-way
    - Planning and Environment Linkages
    - Project development and environmental review (NEPA)
    - Bicycle/Pedestrian
    - Visualization

# FHWA – Office of Planning

- Outreach (continued)
  - Deliver webcasts and newsletters aimed at highlighting particular applications of GIS at transportation agencies
    - November 2008 Webcast Florida DOT talked about their Enterprise GIS efforts
    - Next webcast late Feb./ Early March
    - Winter 2009 Newsletter looked at a GIS application at PennDOT

# FHWA – Office of Planning

- Data and Applications
  - NHPN Improvement Project – National Highway Planning Network will be built up from an aggregation of all available State DOT geospatial road networks.
  - HEPGIS – A publicly accessible web map server containing data that the office has.
    - <http://hepgis.fhwa.dot.gov>

# FRA: GIS Data & Applications

- 1:100k network
- Milepost
- Stations
- Crossings
- Yards
- Subdivisions
- Accidents
- Inspections
- Continuous Weld Rail (CWR)
- Trespassers
- Activation Failures
- Quiet Zones
- Bridges

# FRA: Outreach

- Internal

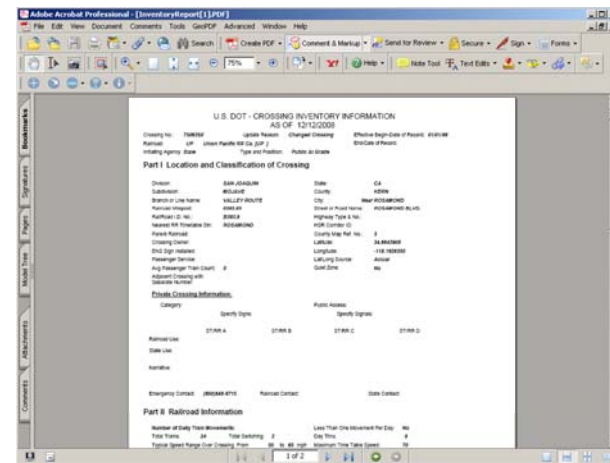
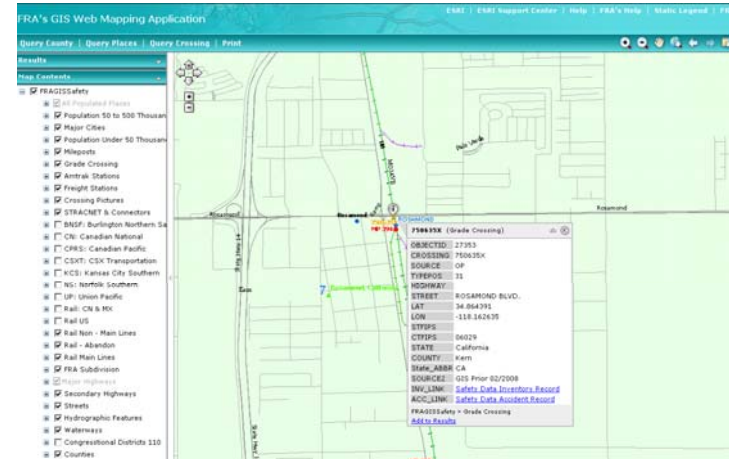
- Policy & Communication
- Safety
- Development
- Chief Counsel
- USDOT & WIKI

- External

- RCRMS
  - Class 1's
- NENA
- AAR\RailInc
- NSGIC
- AASHTO GIS-T
  - State DOTs

# FRA: GIS Web Mapping Application

- The application gives FRA inspectors and the public access to the GIS information that is maintained within FRA.

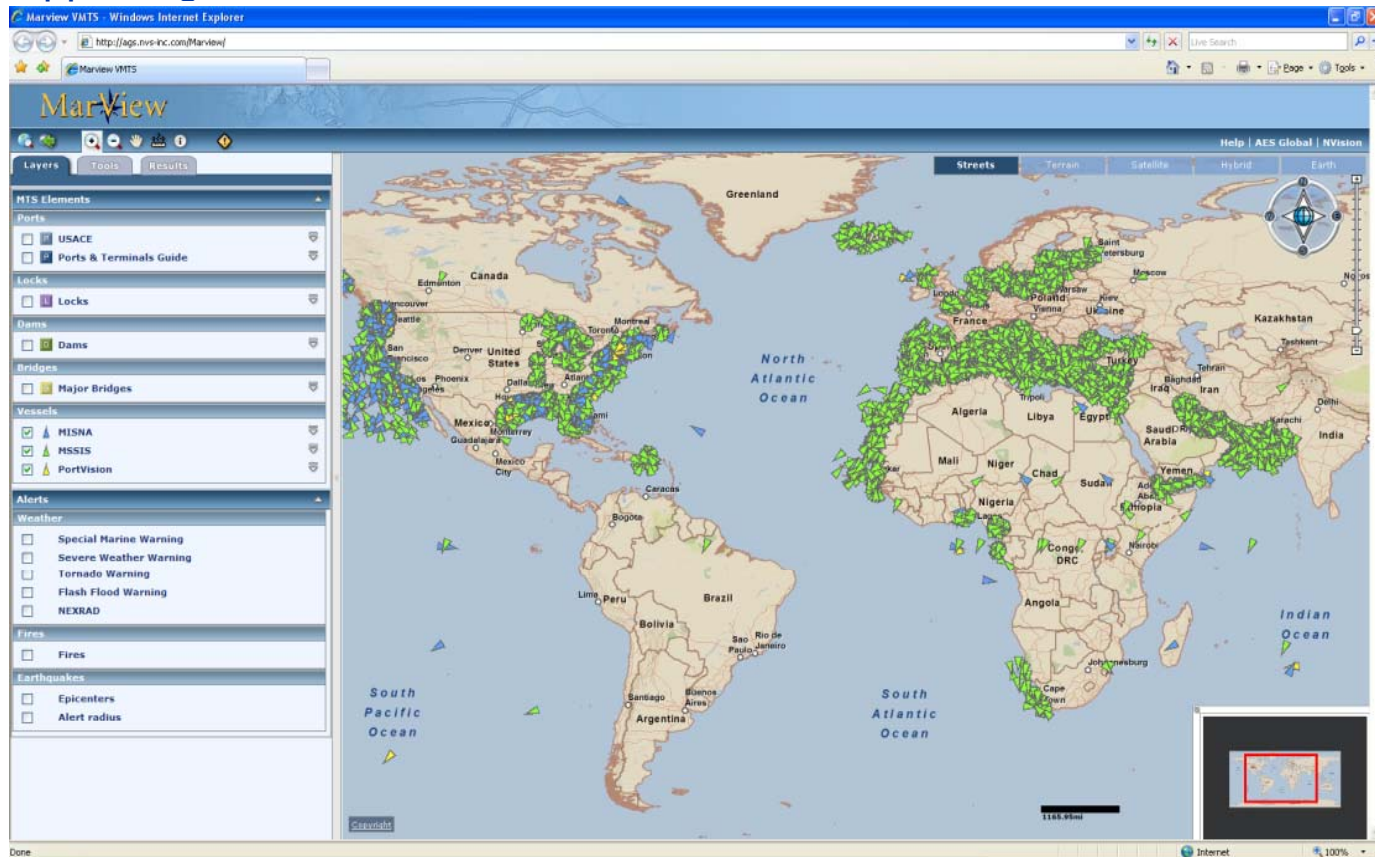


## MARAD: MarView

- **Marine View (MarView):** web portal offering an integrated data driven environment providing essential information to support the strategic requirements of the U.S. Marine Transportation System ([www.marview.gov](http://www.marview.gov))
  - Vessel Tracking
  - Information on national and international ports, vessels and related facilities
  - Information about Intermodal capabilities and infrastructure at the Containerized Ports
  - Information on U.S. Waterways, trade and facilities: Waterborne domestic and foreign trade (cargo, passenger, and vessel movement)

# MARAD: MarView

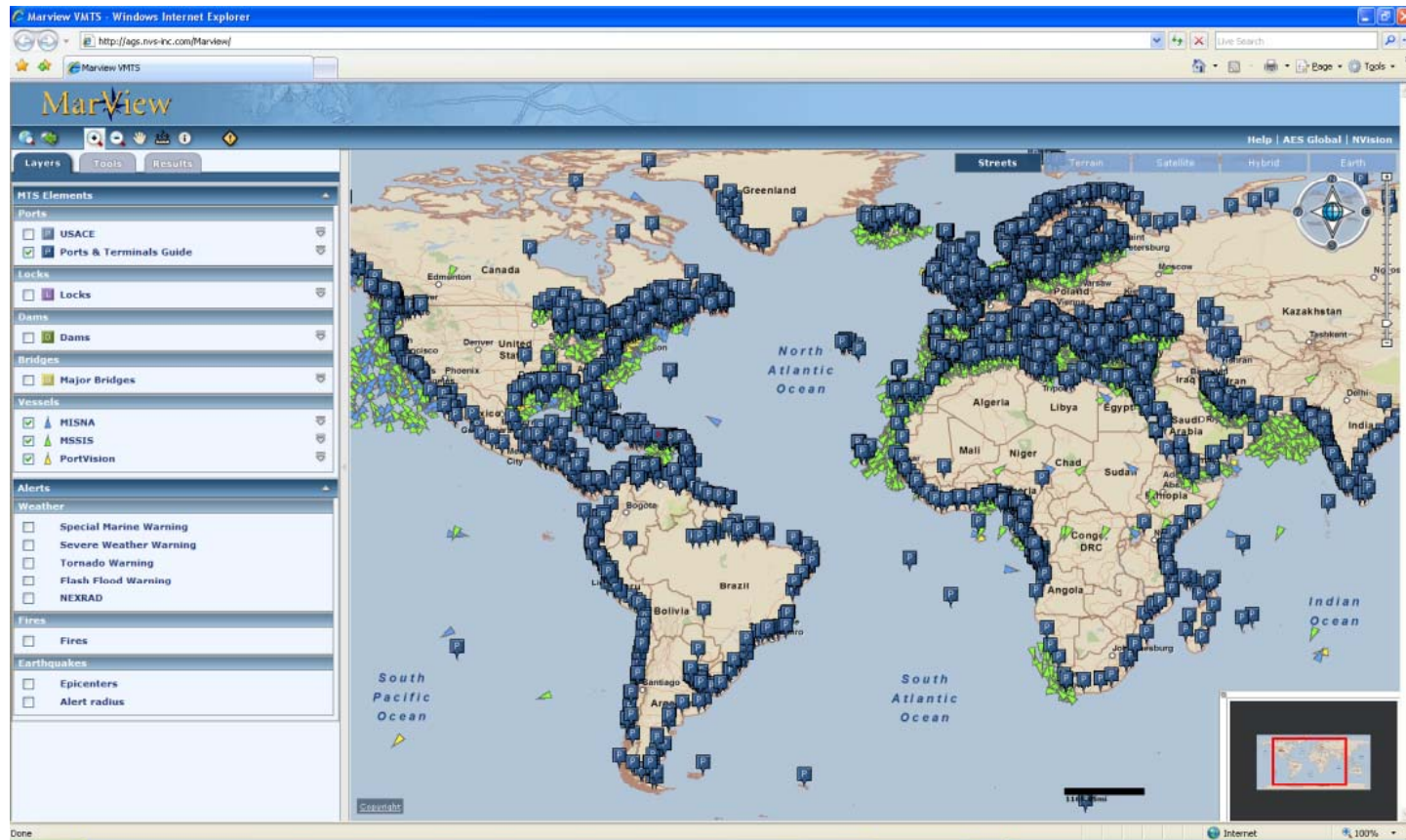
**Vessel Tracking:** MarView combines multiple sources for Automatic Identification System (AIS) data to provide world-wide coverage as well as accuracy of the supporting information for the vessels



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# MARAD: MarView

**Physical Attributes:** MarView has worldwide coverage for ports combining multiple sources of data

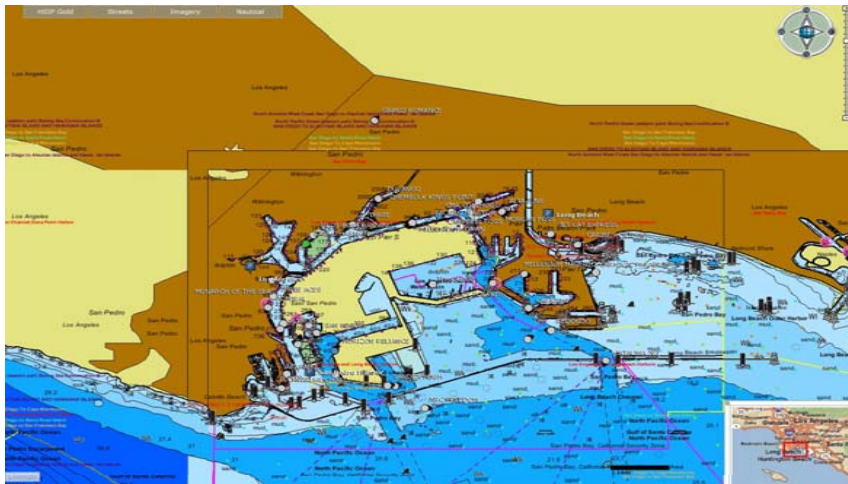


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# MARAD: MarView

## Physical Attributes

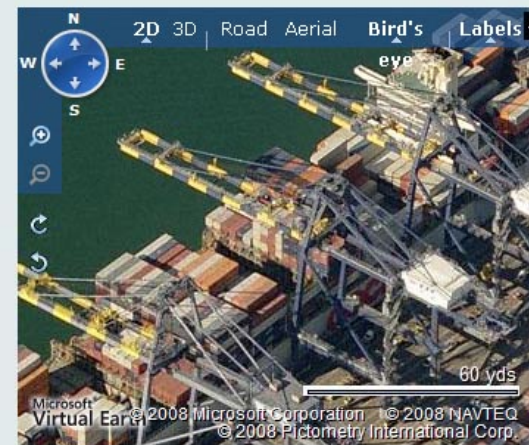


### Los Angeles - United States Of America

Status: Open  
Time Zone: GMT -8  
Latitude: 33 ° 45 N  
Longitude: 118 ° 17 W  
UN/LOCODE: USLAX  
Max Beam:  
Max DWT: 228896  
Max LOA:  
Max Offshore Draught:  
Max Draft: 21.4

#### Facilities:

Breakbulk:  Liquid:   
Container:  Multipurpose:   
Dry Bulk:  Passenger:   
Gas:  Ro-Ro:



[Port Details](#) [Tanker Berths](#) [Addresses](#)

#### PORT DESCRIPTION

**Location:** Los Angeles is situated on the W coast of the USA, facing San Pedro Channel.

**General overview:** The port of Los Angeles occupies approx 3,035ha of land and water area, encompasses 56km of waterfront and is one of the world's largest man made harbours. Diversified facilities for handling any kind of cargo are available. Besides state of the art container terminals, the port has bulk, break bulk, warehouse and automobile handling facilities, as well as the modern World Cruise Centre.

**Traffic figures:** Approx 181,600,000t cargo, 8,500,000TEU and 1,200,000 passengers handled annually.

**Load Line zone:** North Pacific Seasonal Tropical Area, Tropical Mar 1 to June 30 and Nov 1 to Nov 30, Summer Jul 1 to Oct 31 and Dec 1 to Feb 28/29.

**Max size:** Draught 21.0m, 228,000DWT.

**Largest vessel handled:** "Svend Maersk", 91,560GT LOA 347m, draught 14.5m.


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# PHMSA: The National Pipeline Mapping System (NPMS)

- [www.npms.phmsa.dot.gov](http://www.npms.phmsa.dot.gov)
- Contains GIS data for gas transmission and hazardous liquid pipelines, liquefied natural gas plants, and breakout tanks
- The Public Viewer allows the general public to view data in one county per session
- The FOUO version requires a username and password and is available for government officials and pipeline operators
- Raw geospatial data (ESRI format) is available to government officials and pipeline operators

To request raw data

 Pipeline and Hazardous Materials Safety Administration

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## National Pipeline Mapping System

ABOUT NPMS | PIMMA | MAKING A SUBMISSION | DATA REQUESTS & DOWNLOADS

General public viewer

NPMS PUBLIC MAP VIEWER

For gov't officials and pipeline operators

- [About the NPMS Public Map Viewer](#)
- [What's New?](#)
- [Operator ID Search](#)
- [Update Your Submission Online](#)
- [NPMS Operator Standards](#)
- [NPMS Submission FTP](#)
- [NPMS Operator Submission Status](#)
- [Find Who's Operating Pipelines in Your Area](#)
- [Resources for Government Officials](#)
- [Data Access Policy](#)



**PIMMA**  
Pipeline Integrity Management Mapping Application

Click Here to Apply for PIMMA Access

Already have a Username?  
Log on here:

PIPELINE OPERATOR  
FEDERAL GOVERNMENT  
STATE & LOCAL GOVERNMENT

Thanks for Your Time! Questions?



Happy Birthday  
Ariana!

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