



**OFFICE of ELECTRICITY
DELIVERY & ENERGY
RELIABILITY**

**INFRASTRUCTURE
SECURITY & ENERGY
RESTORATION**

Real Time Monitoring of Energy Infrastructure Status

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Office of Electricity Delivery and Energy Reliability



- OE's Response Mission
 - Provide the Department's support to energy emergencies under the National Response Framework
 - Deploy personnel to assist FEMA, State, and Local governments
 - Provide status of energy infrastructure to senior leadership
 - Work within DOE and with other Federal agencies to support waivers and specific response legal authorities

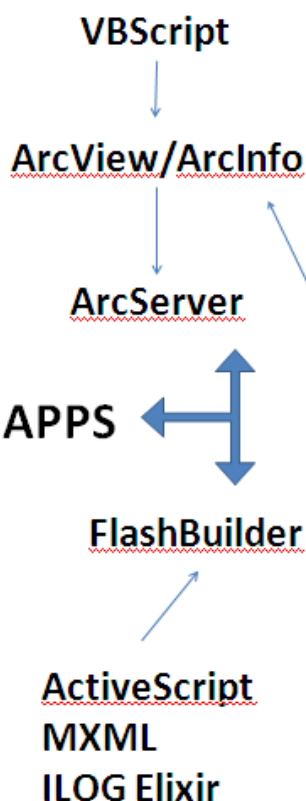


REAL TIME SYSTEM DEVELOPMENT

- PHASE 1:
 - Situational awareness
 - Automated alerting
- PHASE 2:
 - Real time impact prediction
 - Automated analysis and modeling

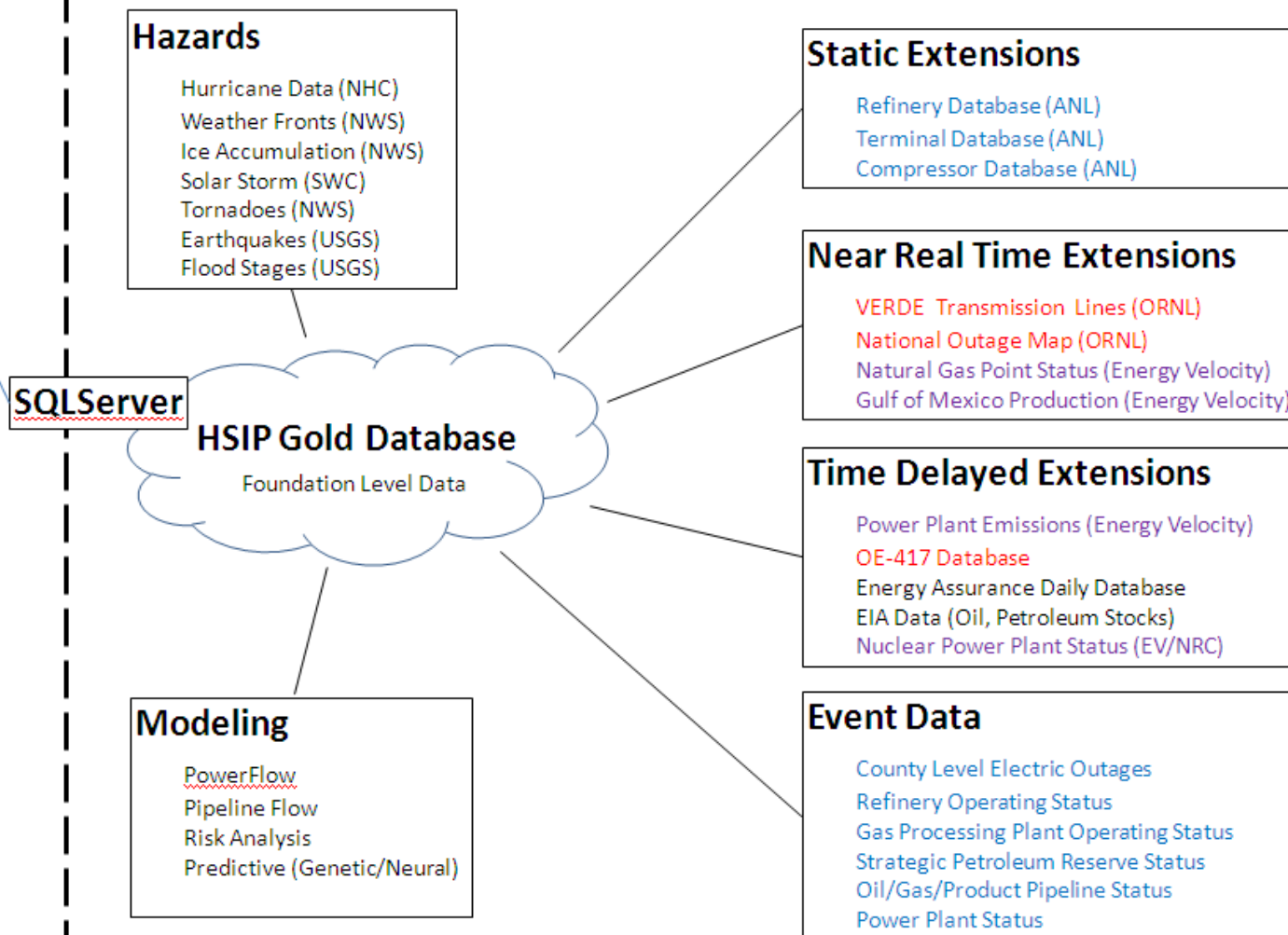


APPLICATION



Data Key
NDA/Proprietary
License Agreement
OUO/Sensitive

DATA ARCHITECTURE





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Electricity – Frequency event monitoring

ERC Dashboard 1.3.4 (Designed for 1024x728 res. or higher)

Electricity Natural Gas Petroleum Coal

Official Use Only (OUO)

Streets Topo Imagery

Electric Data

ISO Status

NE ISO

NY ISO

PJM

MISO

CAISO

ERCOT

SPP

GridEYE

GridEYE Events

Events Today: 0

Events in Last Hour: 0

Events this Month: 32

FDR Data

OE 417

Verde Line Status

Customer Outages

Regional Overview

Region I

Region II

Region III

Region IV

Region V

Region M

Region MI

Region VIII

Region IX

Region X

Click an event to get more information

Event Date: 2011-07-31

Event Time: 14:17:14

Event Type: Generator Trip

Event Magnitude: 468MW

Interconnect: EI

Generator Trip

Load Shed

Single Day

Accumulated

30 Days Ago

2011-08-14

Events Today

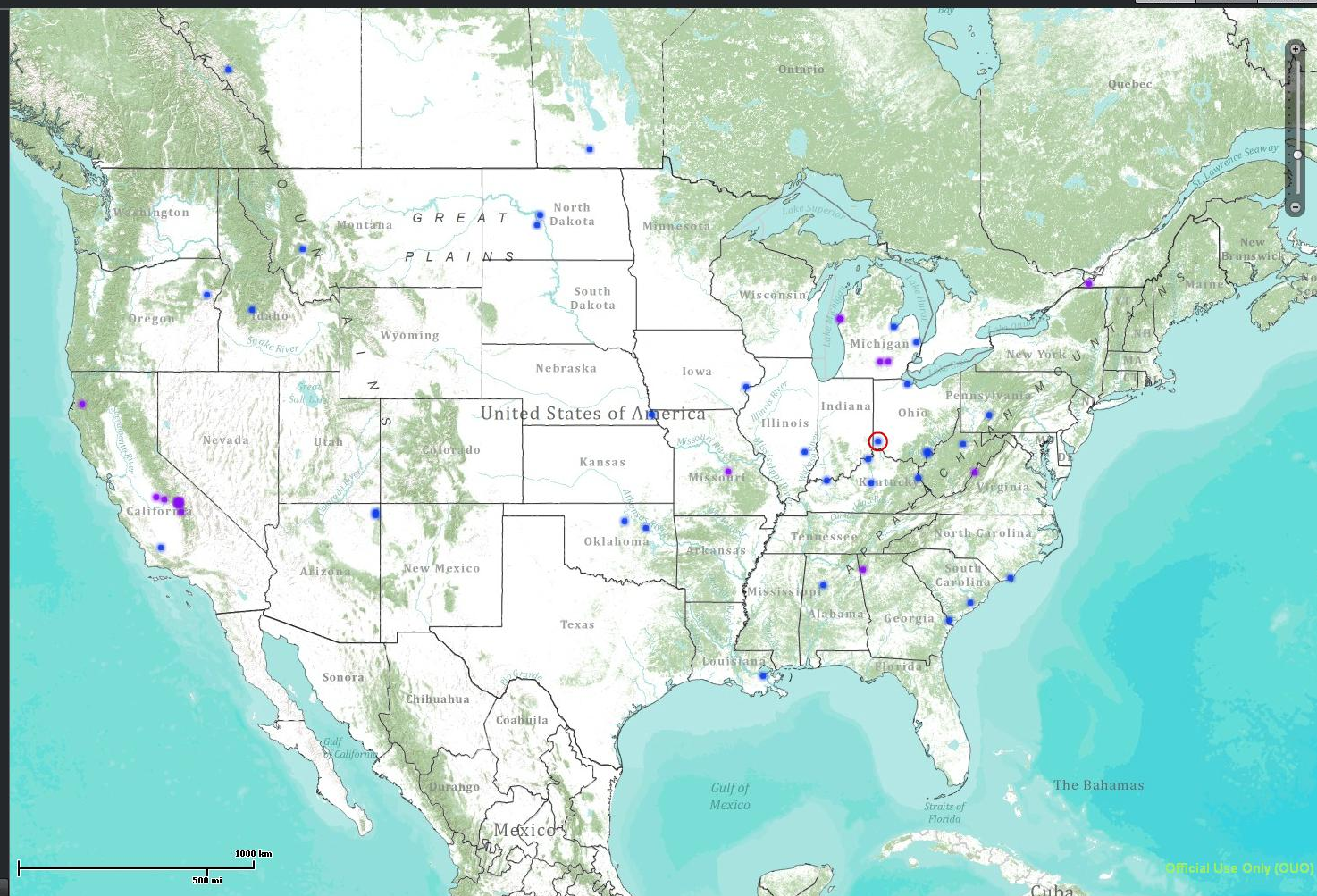
Loop

Play

Stop

Power Plant	Op. Cap. (MW)	Distance (Miles)
Woodsdale	492	6.81
Madison (OH)	576	6.85
Miami Fort	1,237.8	23.09
AEP Generating Co Laurenceburg Plant	1,080	26.54

Table shows power plants with an operational capacity at or greater than 60% of event magnitude found within 50 miles of event.



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Trusted sites

100%



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Electricity – Transmission line monitoring

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Streets Topo Imagery

Electric Data

ISO Status

NE ISO

NY ISO

PJM

MISO

CAISO

ERCOT

SPP

GridEYE

GridEYE Events

Events Today:

Events in Last Hour:

Events this Month:

FDR Data

OE 417

Verde Line Status

Customer Outages

Regional Overview

Region I

Region II

Region III

Region IV

Region V

Region M

Region VII

Region VIII

Region IX

Region X

Verde Line Status

Unknown Abnormal
Unknown Mx Abnormal Mx

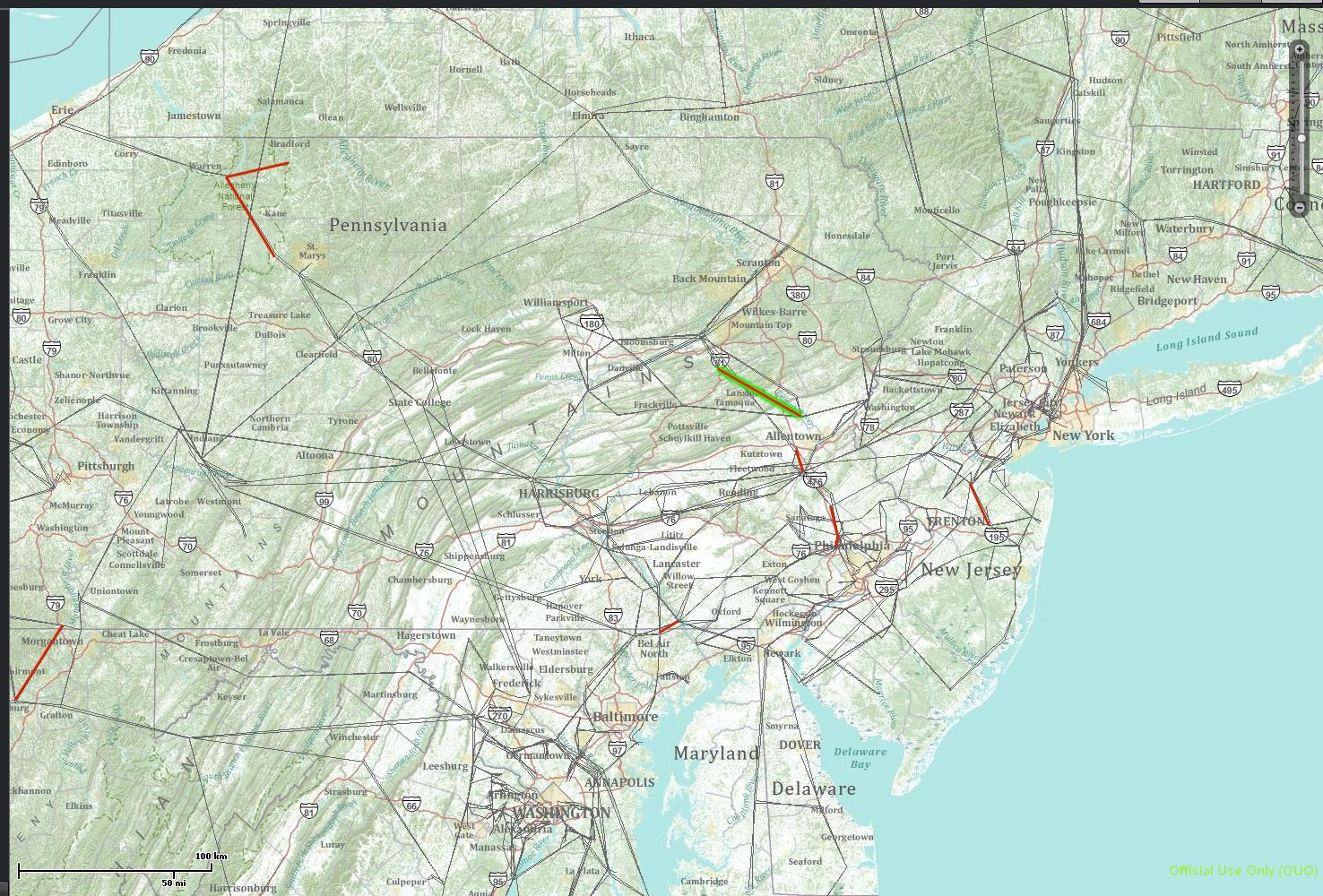
Selected Line:

Substations: Harwood (PPL) 68/115 kV
Interconnect: PL PL
Control Area: 230 230
Voltage (kV):

Current Status: 0
Status Since: 2011-07-31 13:06:04
Percent Day:
Percent Week:
Percent Month:

Display Options:

Display Current Day GridEYE Events



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Electricity – Customer outage monitoring

ERC Dashboard 1.3.4 (Designed for 1024x728 res. or higher)

Electricity Natural Gas Petroleum Coal

Electric Data

ISO Status

NE ISO

NY ISO

PJM

MISO

CAISO

ERCOT

SPP

GridEYE

GridEYE Events

Events Today:

Events in Last Hour:

Events this Month:

FDR Data

OE 417

Verde Line Status

Customer Outages

Regional Overview

Region I

Region II

Region III

Region IV

Region V

Region M

Region MI

Region VIII

Region IX

Region X

Date:

Total Customers Out in Region: 8831

Region:

State	Customers Out	Total Customers
Delaware	157	377,809
District of Col	8	266,229
Maryland	2,775	2,228,435

Show multiple states

View Outages By:

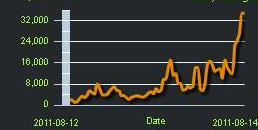
County Utility

County	Outages	Date-Time
Adams	0	2011-08-15 08:02:01
Albemarle	2,984	2011-08-15 00:47:23
Alexandria	1	2011-08-15 00:47:23

Export to CSV

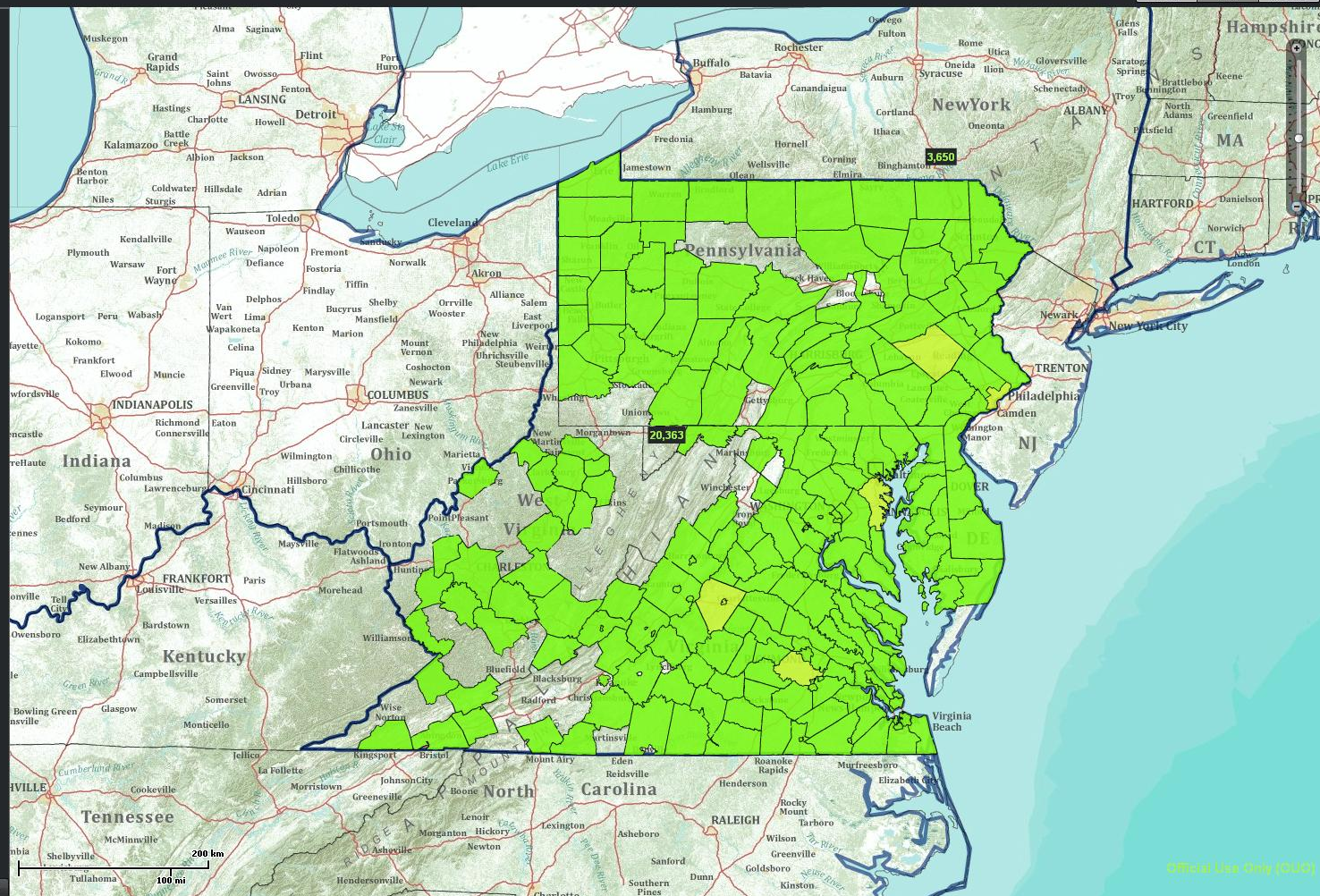
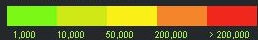
Multiple States

Hourly Outages



Change Display Options

Customers without Power



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Trusted sites

100%



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Natural Gas – Critical notice monitoring

ERC Dashboard 1.2 (Designed for 1024x728 res. or higher)

Electricity Natural Gas Petroleum Coal

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Streets Topo Imagery

Natural Gas Data

Pipelines

Critical Notices

Flowpoint Status

Critical Notices

Pipeline	Type	Subject
Tennessee Gas	Curtailment	RESTRICTIONS FOR 08/15/11 EC
Tennessee Gas	Curtailment	RESTRICTIONS FOR 08/14/11 ID2

Table Filter Options

From: 08/12/2011 To: 08/15/2011

Pipeline: ANR

Notice Type: CAPACITY CONSTRAINT

State: AL

Filter By:

Pipeline Notice Type State

Filter Reset Preview & Export

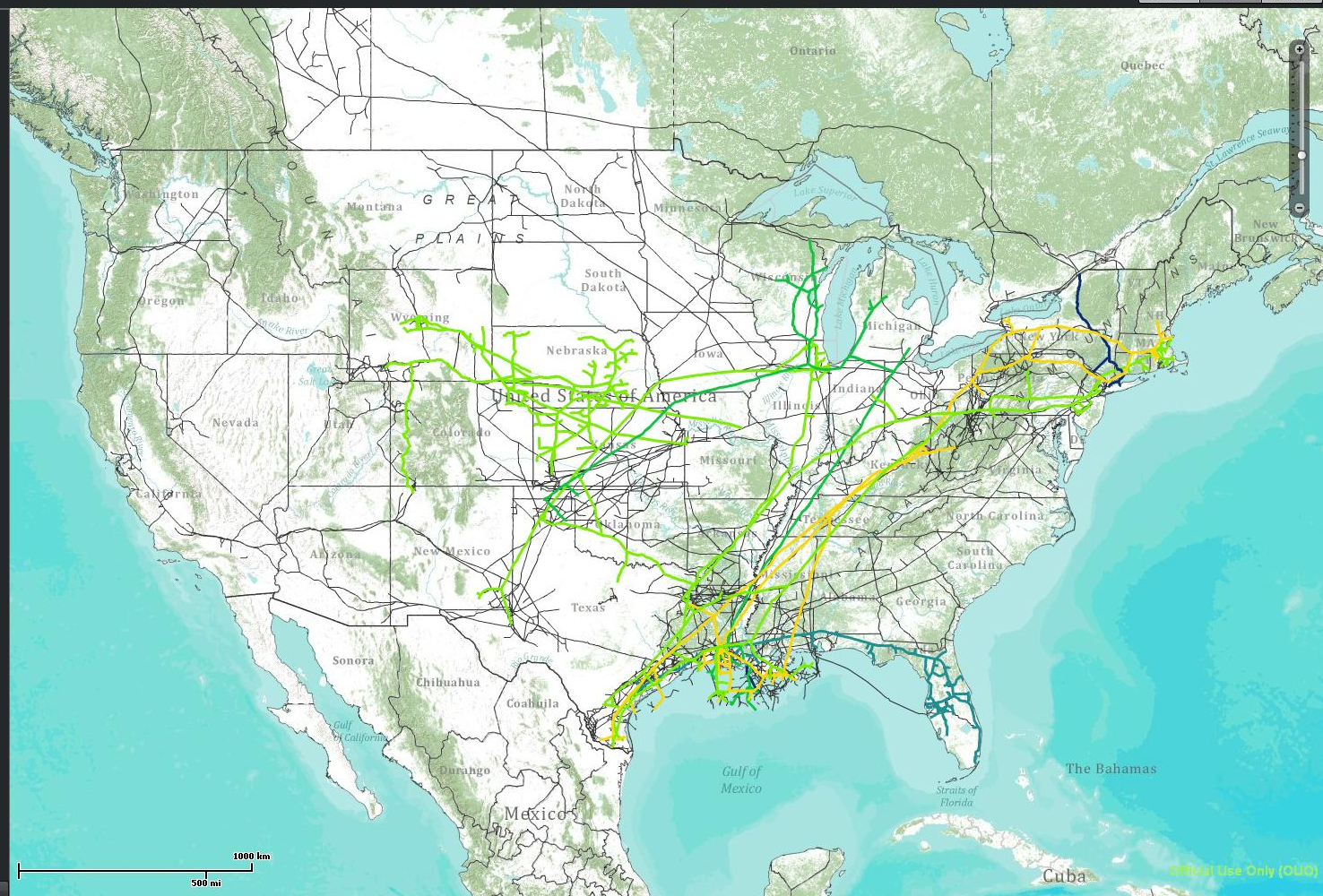
Notice Priority:

High Low

View power plants connected to gas pipelines*

Italicized pipeline names indicate pipelines that are not shown on the map & will not show in the table if the table is filtered by state.

*Does not include power plants that receive gas from LDCs





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Natural Gas – Flow point monitoring

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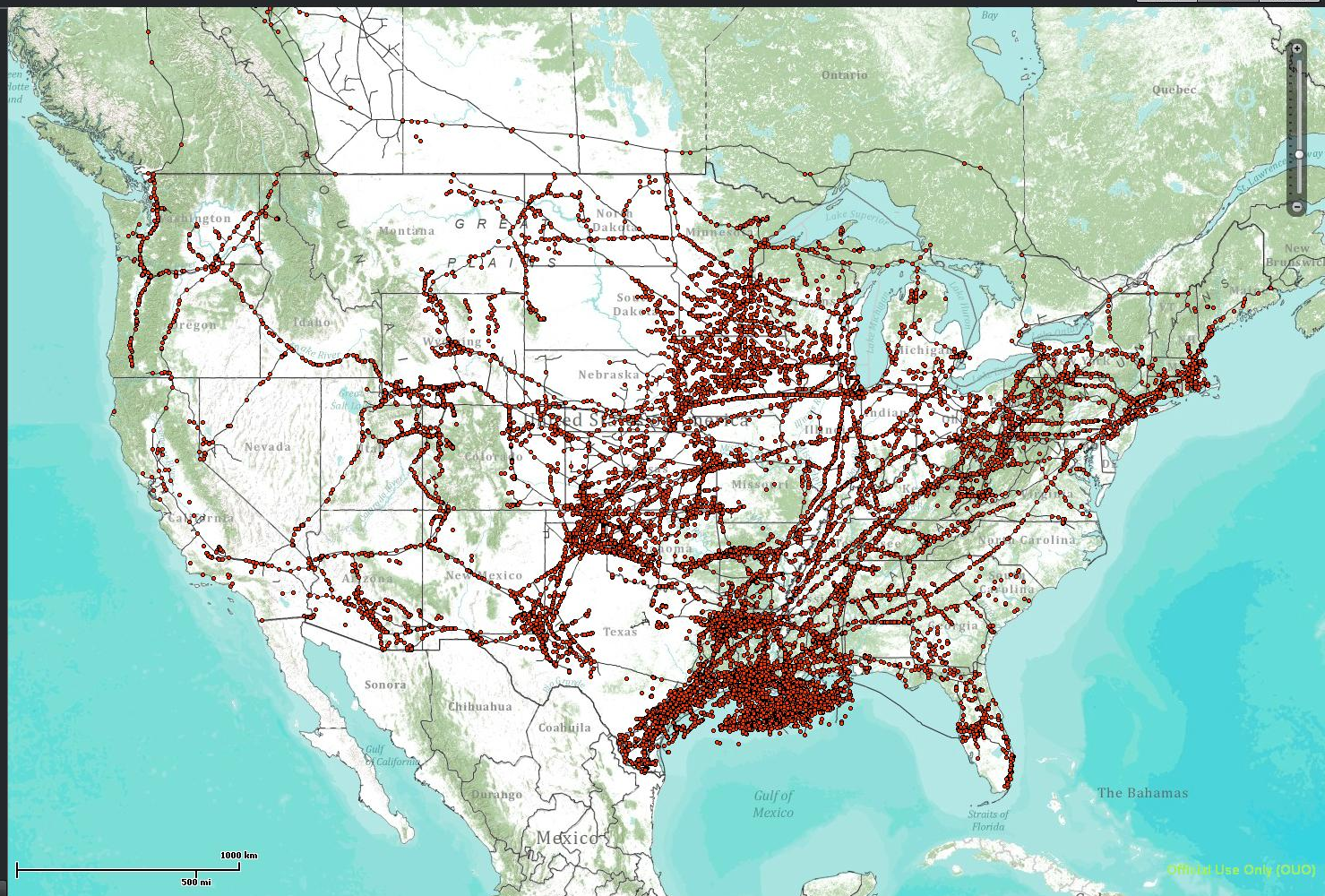
Streets Topo Imagery

Natural Gas Data

- ☒ Pipelines
- ☐ Critical Notices
- ☐ Flowpoint Status

Legend

 Natural gas flow points and pipelines





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Petroleum – Stocks and storage monitoring

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Electricity Natural Gas Petroleum Coal

Official Use Only (OUO)

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Petroleum Data

Petroleum Stats

Stocks & Supply

Imports & Exports

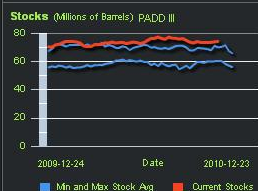
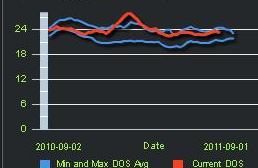
Flow

Facility Status

GOM Production

Fuel Prices

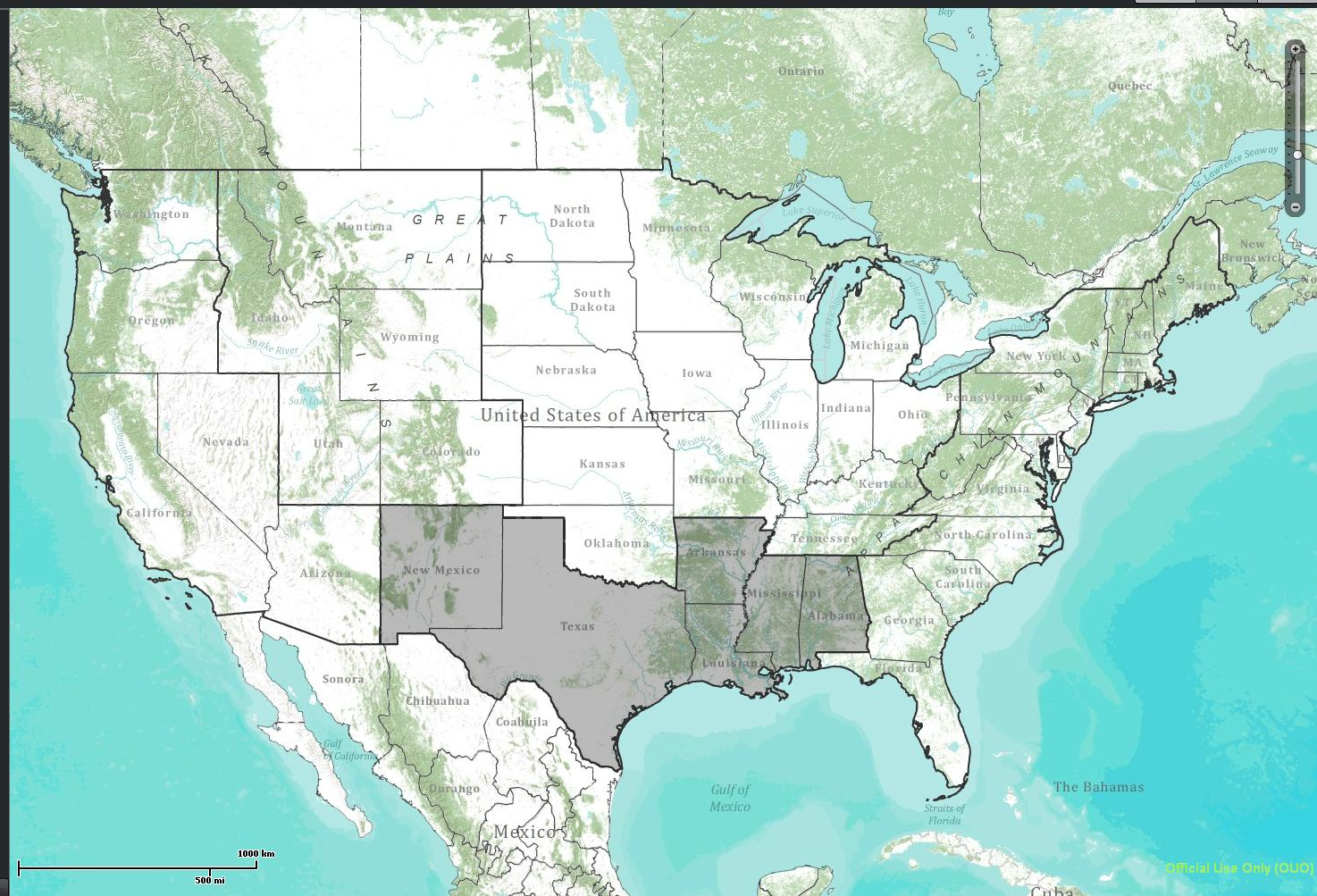
Days of Supply (US Overview)



Gasoline III

Compared to Ten Year High/Low

Update Charts





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Petroleum – Fuel price monitoring

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Electricity Natural Gas Petroleum Coal

Official Use Only (OUO)

Streets Topo Imagery

Petroleum Data

Petroleum Stats

Stocks & Supply

Imports & Exports

Flow

Facility Status

GOM Production

Fuel Prices

Fuel Prices



Market Details Richmond-Petersburg, VA

August 15 2011: \$3.39 A Month Ago: \$3.56
A Day Ago: \$3.40 A Year Ago: \$2.58
A Week Ago: \$3.51 *Fuel Prices are Per Gallon

Map Display

Regular Gasoline

Change Parameters

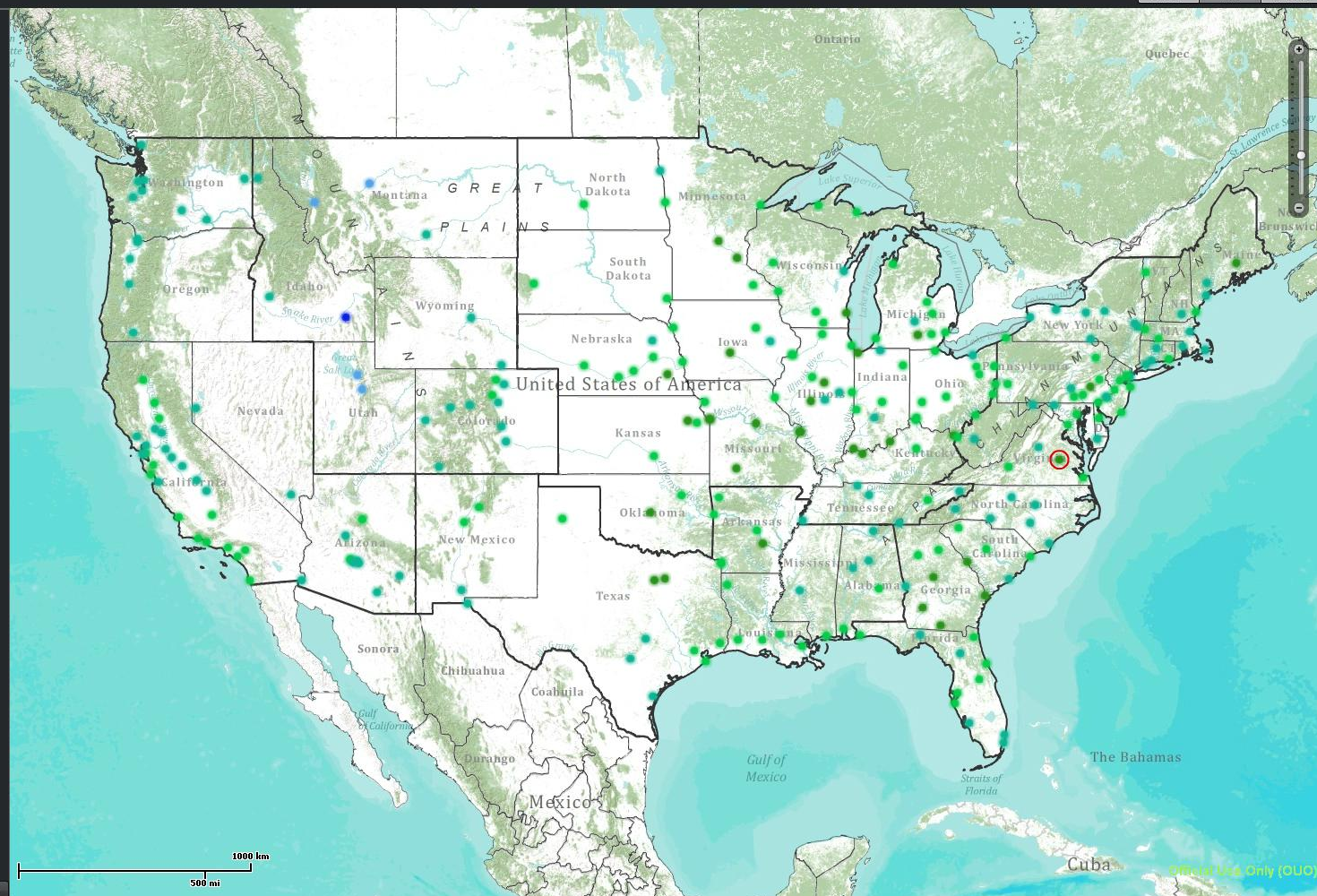
Price Difference Compared to Last Month



Date: 8/15/2011

Legend:

- Selected City
- State Average
- PADD Average
- FBMA Average





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Coal – Supply and movement monitoring

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Electricity Natural Gas Petroleum Coal

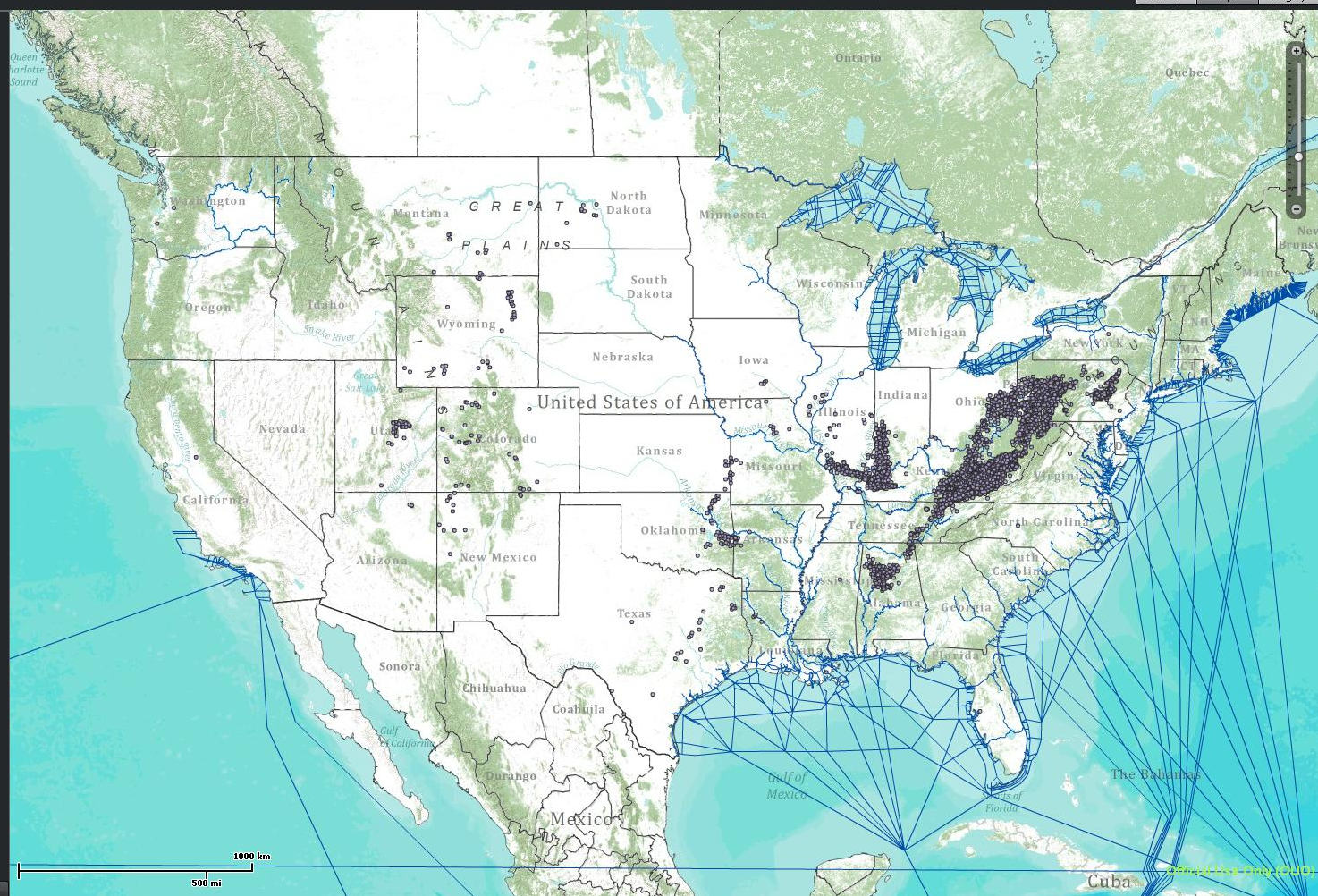
Official Use Only (OUO)

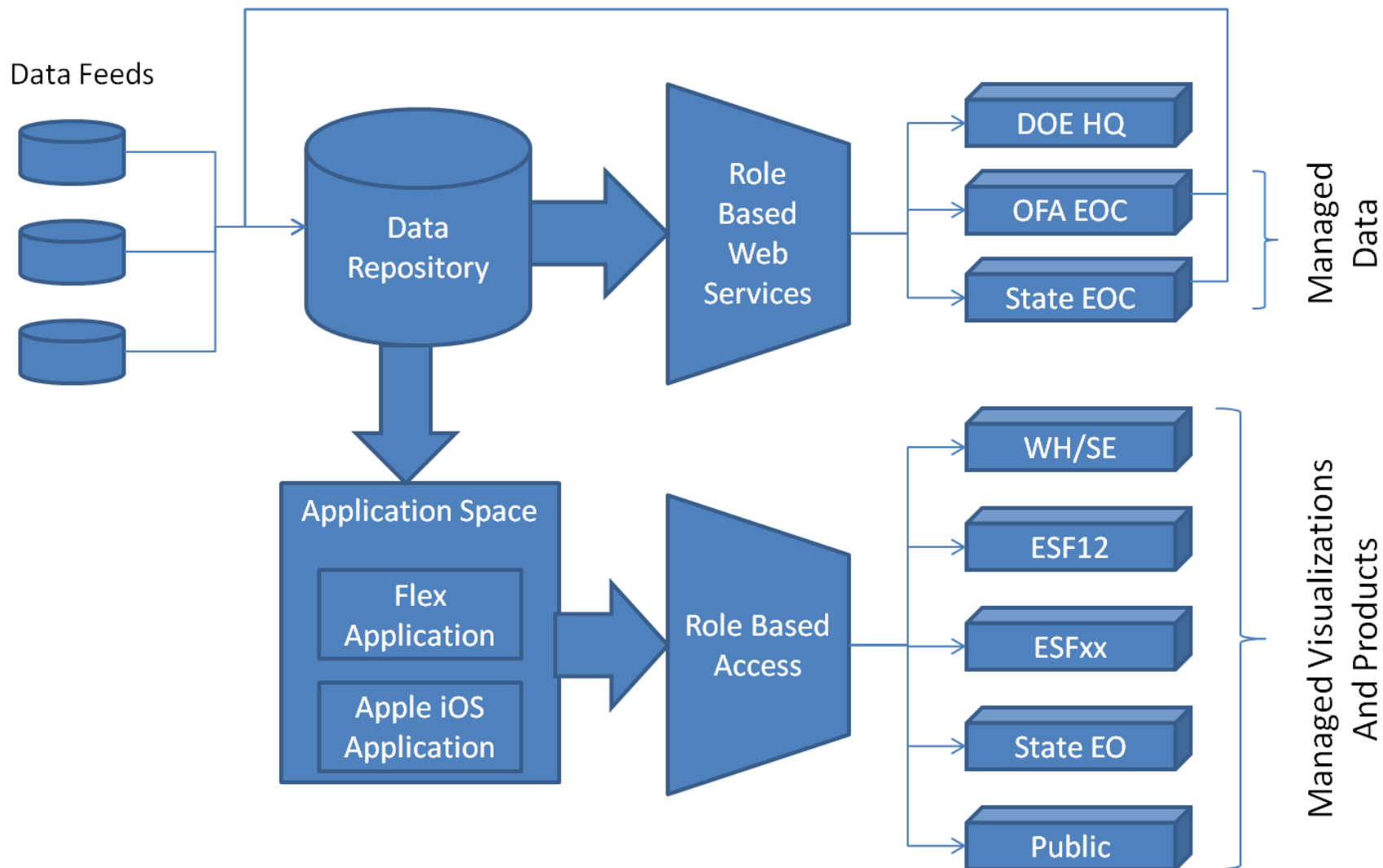
Streets Topo Imagery

Coal Data

Legend

- Coal Mine
- Coal Fired Power Plant
- Navigable Waterways
- Coal Basin







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QUESTIONS

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