

# ARNOLD

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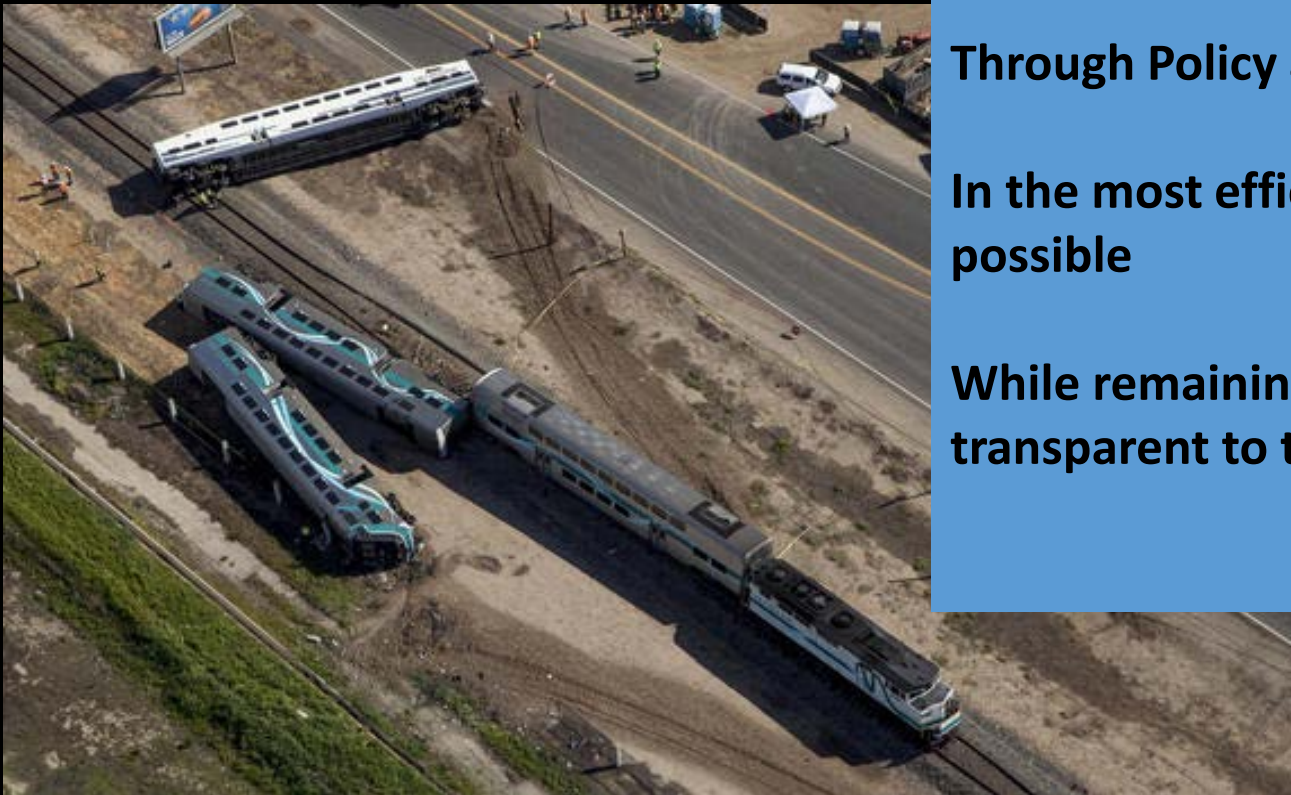
# Something Else to Think About

**I exist to keep bad things from happening and return the system to normalcy when a bad thing has happened.**

**Through Policy and Innovation**

**In the most efficient Manner possible**

**While remaining accountable and transparent to the tax paying public.**



# Introduction and Objective

- Federal Highway Administration
  - Office of Highway Policy Information
  - We interpret legislation and collect data to satisfy those requirements
  - Unwritten scope: All data comes from the State DOTs
- Program Manager:
- Highway Performance Monitoring System(HPMS)
  - Think Road Inventory with Attributes
- ARNOLD
  - Think Network to hold HPMS

# Highway Performance Monitoring System

There are 63 Road Characteristics that HPMS collects

Inventory  
Jurisdiction  
Traffic  
Pavement Condition  
Capacity  
Geometrics

Signals

Intersections

Traffic Volumes

Median Type

Lane Width

Roughness, Cracking,  
Faulting, Rutting

Parking



# Mission of HPMS aka ARNOLD

- Apportionment of Federal Aid Funds from the Highway Trust Fund.
  - Certified Public Road Miles --23CFR 460
    - Inventory of all Public Roads
  - Performance Measures
    - Proposed Rulemaking for Safety –VMT on all Public Roads
    - Divided Facility attribution for National Highway System
- Geolocation of Fatal and Serious Injury Crashes
- Geolocation of Federal Aid Highway Projects



# Perfect Storm



OMB Circular  
A-16



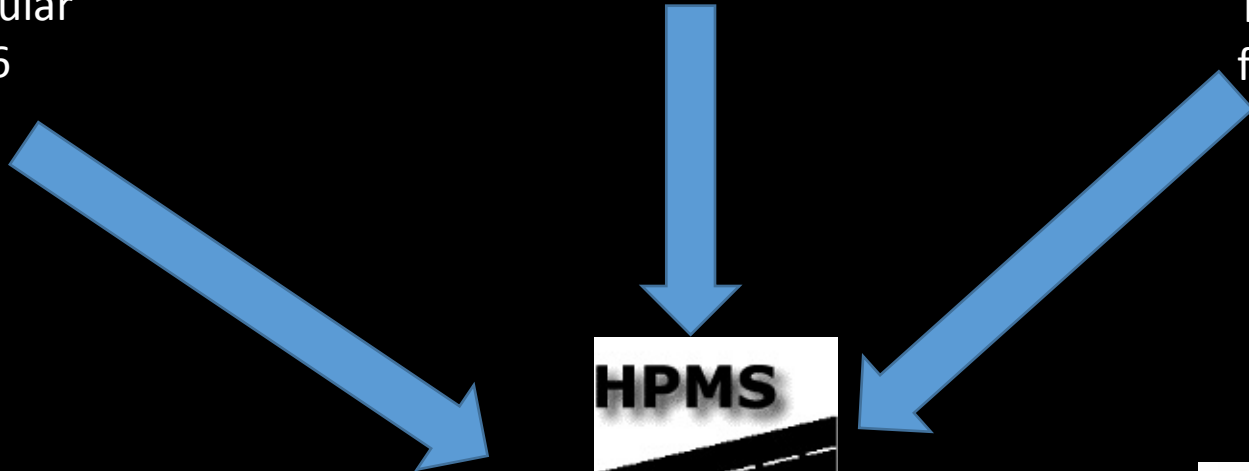
MAP-21



Transportation  
for the Nation



Geospatial Study





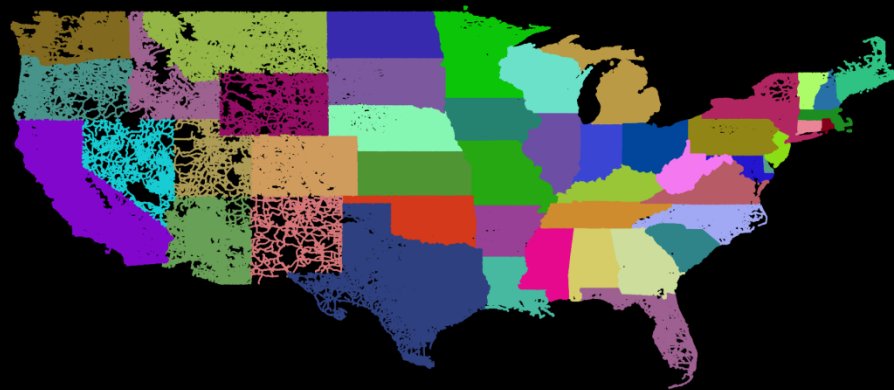
**August 7, 2012**

4.1 Million Miles

Dual Carriageway Representation

Public Domain

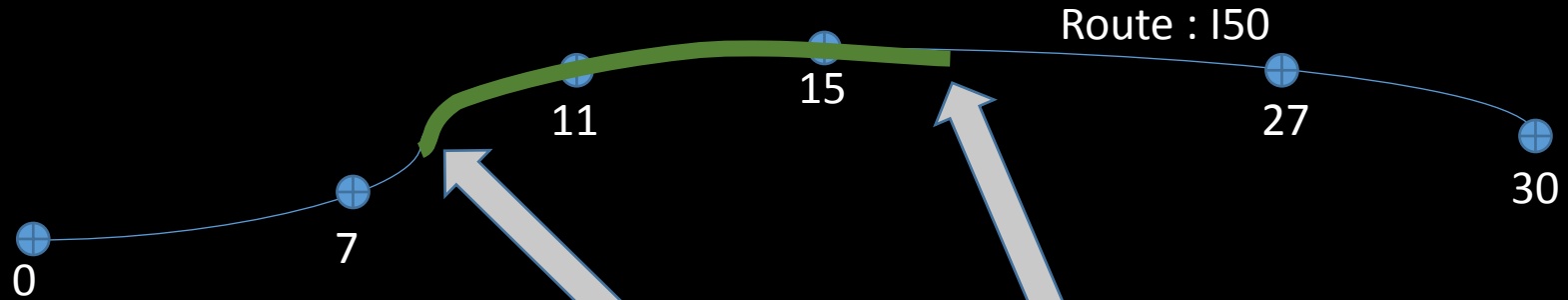
Authoritative



**ARNOLD**

**All Road Network Of Linear Referenced Data**

# WHAT IS LINEAR REFERENCING AND DYNAMIC SEGMENTATION?



Project_ID	Route_ID	Begin_Point	End_Point
Improv1	150	8.0	17.0



# Safety

- Highway Safety Improvement Program
  - Model Inventory Roadway Elements (MIRE)
  - Geolocate Fatal and Serious Injury Crashes on all Public Roads
  
- Autonomous Vehicles???

# The FHWA Need

- Track System Changes
- National Bridge Inventory
- Federal Land Management Agency Data
- Exposure Data for Environment and Public Health.
- Capacity, Speed Limits, and Restrictions on Use.
- Large Area Studies- Multi-State Analysis
- Freight including Intermodal Freight generators

# USDOT –

- Freight Analysis Framework
- Alternate Routes for Road Closures
- Bus & Transit
- Pipeline
- Rail Crossings
- Navigable Waterways
- Legal International Crossings
- Bike and Pedestrian Routes and Exposure Data

# What about Rail?

- FRA is doing the same thing with Rail.
- Highways and Rail will eventually link up.
- Remember the Photo on Opening Slides.

# What about Addresses?

- Earlier this Spring, There was a National Address Summit in Maryland
- 60 Participants and several Observers
- The OSM Community was well represented
  
- ARNOLD was seen as a viable model to make this happen
  
- The challenge was brought to your attention from the first slide

# Resources

- HPMS Field Manual
- HPMS and ARNOLD Shapefile on web.
  - Google “HPMS Shapefiles”
- ARNOLD Reference Manual
  - 4 Copies Available here or Google ARNOLD Reference Manual
- HiDaC – November 5<sup>th</sup> – Austin, Texas
  - I need presentations
- GIS-T – Raleigh, North Carolina Spring, 2016
  - OSM needs to be on the Agenda
- I love talking about this stuff- [Thomas.roff@dot.gov](mailto:Thomas.roff@dot.gov)
- 202-366-5035



# A word about OpenStreetMap

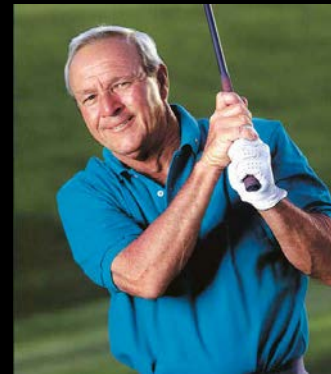
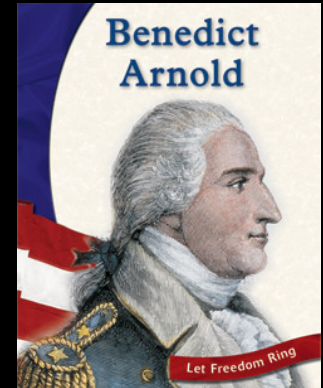


## Annapolis

Traffic  
pavement  
Bridges



# Why Brand ARNOLD?



Any Questions?

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So Long and Thanks for All the Fish!