

Leveraging Mapping Software & Spatial Analysis (GIS) for Performance Audit

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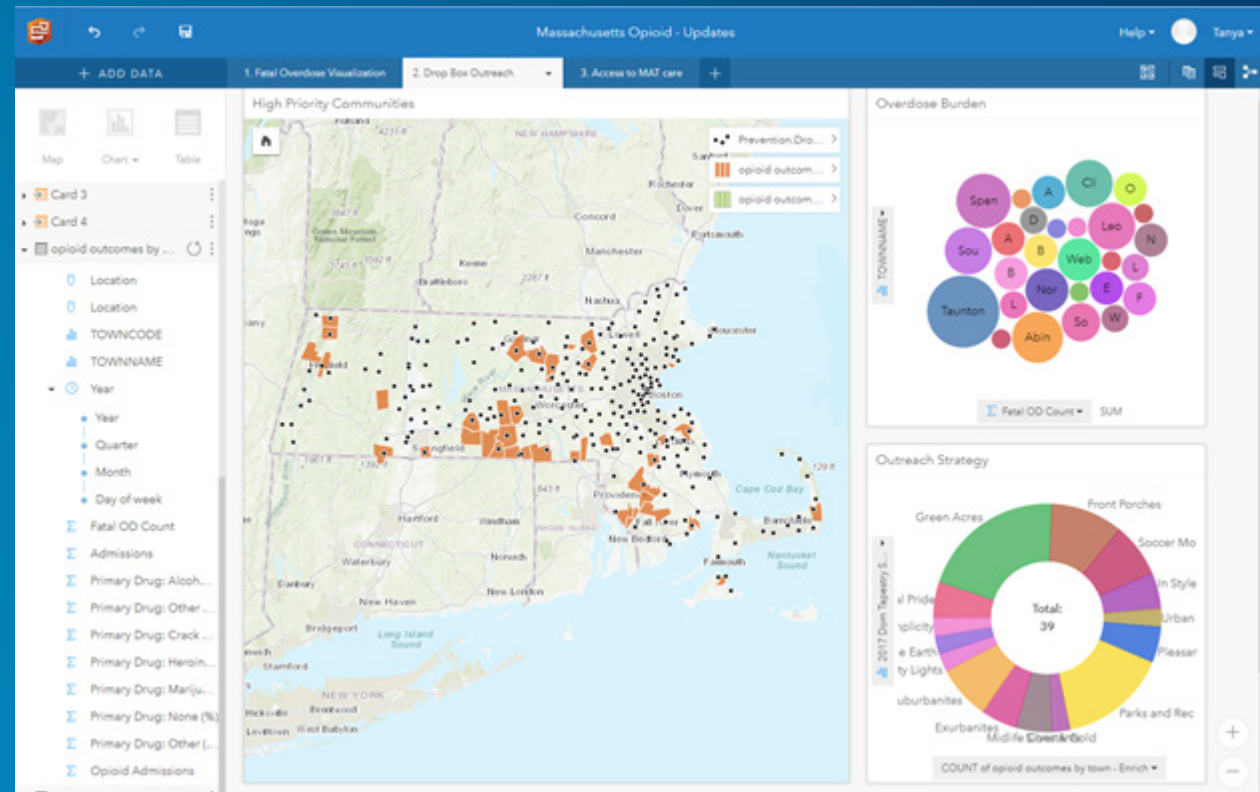
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Session Outcomes – Learning Goals

- **What is GIS?**
- **What is Spatial Analysis?**
- **How can it apply to Performance Audit?**
 - **State of Alaska – Breast Cancer Coalition Project**
 - **State of Washington Department of Transportation – Corridor Capacity Report**
 - **US Postal Service – Preventing Fraud, Waste, and Abuse**
- **Where do I start?**

What is GIS (Geographic Information System)?

- A Framework for gathering, managing, and analyzing data rooted in the science of Geography
- With GIS you can:
 - Identify problems
 - Monitor change
 - Manage & respond to events
 - Perform forecasting
 - Set priorities
 - Understand trends



Common Patterns of Use for GIS

Mapping & Visualization



Understand locations and relationships with maps and visual representations

Data Management



Collect, organize, and maintain accurate locations and details about assets and resources

Field Mobility



Manage and enable a mobile workforce to collect and access information in the field

Monitoring



Track, manage, and monitor assets and resources in real-time

Analytics



Discover, quantify, and predict trends and patterns to improve outcomes

Design & Planning



Evaluate alternative solutions and create optimal designs

Decision Support



Gain situational awareness, and enable information-driven decision making

Constituent Engagement



Communicate and collaborate with citizens and external communities of interest

Sharing & Collaboration



Empower everyone to easily discover, use, make, and share geographic information

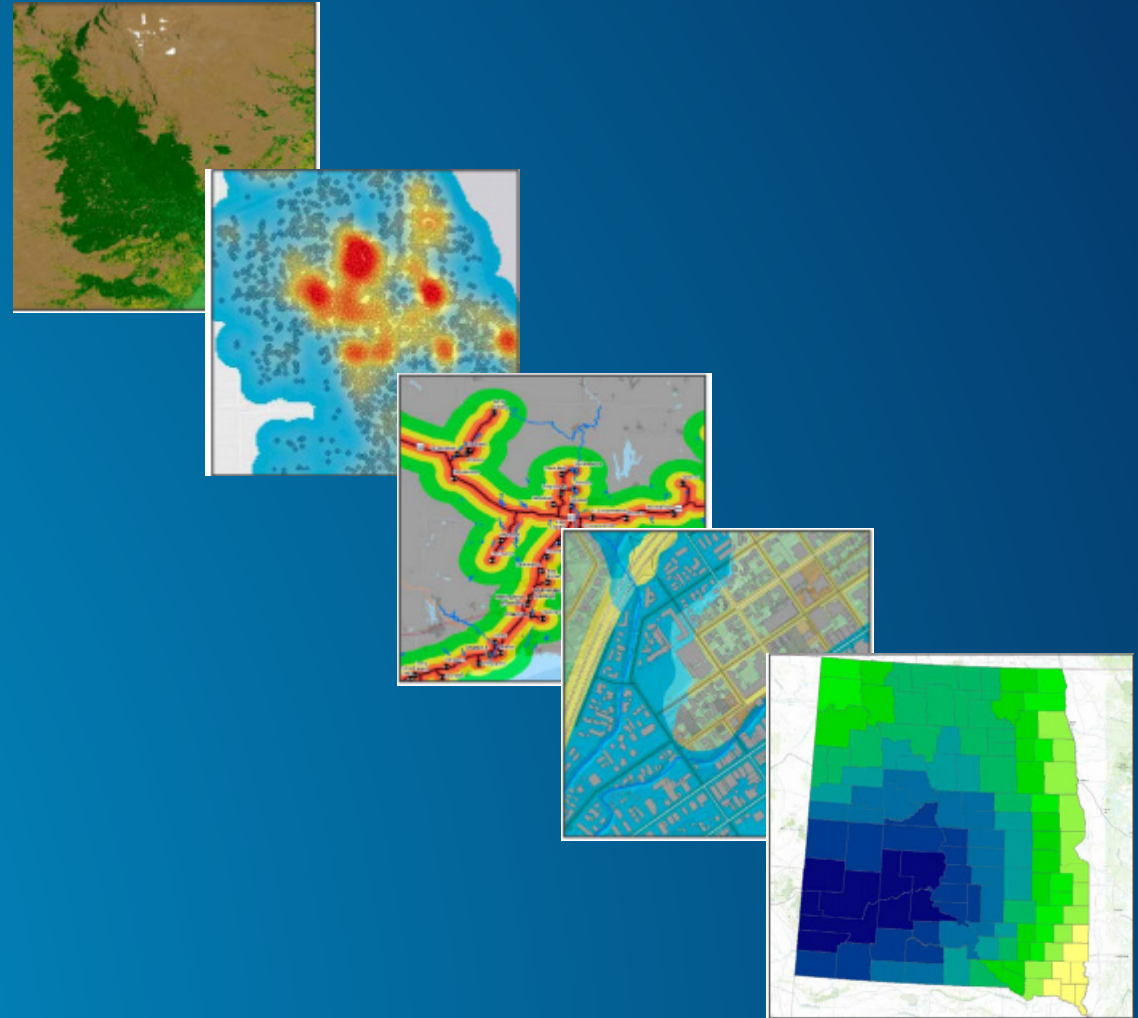
The Language of

spatial ANALYSIS



Understanding Spatial Relationships and Patterns

- You use Spatial Analysis to:
 - Understand Where
 - Measure Size, Shape, and Distribution
 - Determine How Places Are Related
 - Find The Best Locations and Paths
 - Detect and Quantify Patterns
 - Make Predictions



Spatial Analysis Process

- Ask questions
- Explore the data
- Analyze and model
- Interpret the results
- Repeat as necessary
- Present the results
- Make a decision





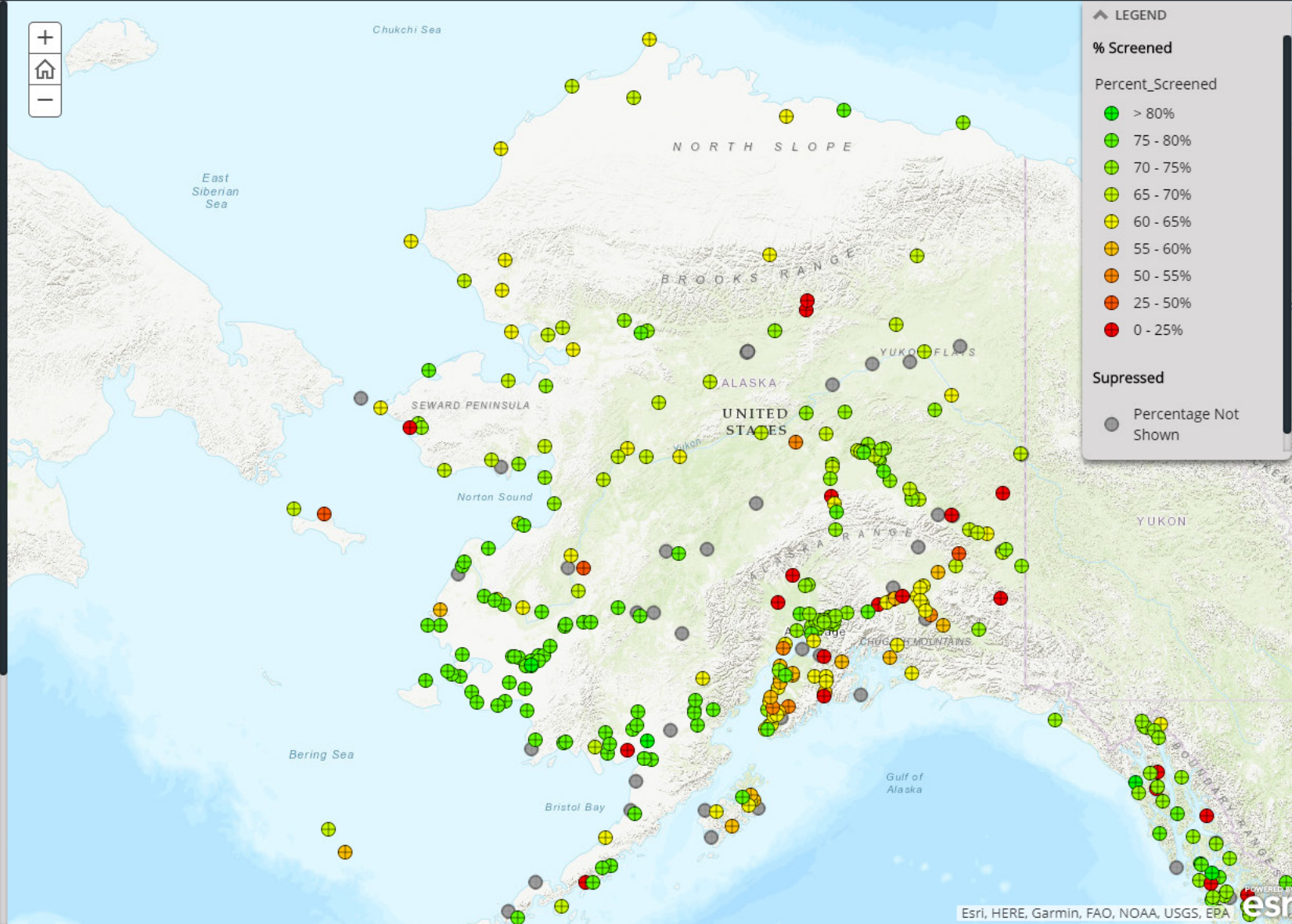
Benefits of Spatial Analysis

- **Achieve Objectives**
- **Improve program outcomes**
- **Reduce or avoid costs**
- **Increase efficiencies and productivity**
- **Support regulatory compliance**

State of Alaska Breast & Cervical Health Coalition - Breast Cancer Coalition Project

Breast Cancer Coalition Project

- 1 Introduction
- 2 Breast Cancer Screening rate by census area
- 3 Imaging Centers throughout the state
- 4 Alaska Breast Cancer Partnership
- 5 Screening Contrast
- 6 Imaging Centers on the Kenai Peninsula
- 7 Comparing 2014 BRFSS data to 2016
- 8 Health Education and Surveying the public



State of Washington Department of Transportation – Performance Reporting



Performance Reporting Gallery

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Performance Reporting Gallery

The Washington State Department of Transportation (WSDOT) has been publishing performance information on its programs, projects and the state's transportation system

[More](#)

Tags

2015 Corridor Capacity Report 2017 Corridor Capacity Report Accountability Amtrak Amtrak Cascades ARRA Before and after Capacity CCR Central Puget Sound Central Puget Sound Region Commute Congestion Corridor Corridor Capacity Report Delay Ferries GNB GNB 57 GNB 61 Gray Notebook Gray Notebook 57 Gray Notebook 61 HOV Maintenance map Map Map Journal Mitigation P&R Park and Ride Passenger Passenger Rail Performance performance Performance Reporting Person Throughput Puget Sound Rail RCS Routine Congestion Safety Rest Areas Seattle South Puget Sound South Puget Sound Region Spokane Spokane Region Story Map System Performance Systems Analysis Throughput Transit Transportation Transportation Performance Vancouver Vancouver Region Vehicle Miles Traveled VMT WA Washington Washington state



2015 Corridor Capacity Report Online

The 2015 Corridor Capacity Report Online

Web Mapping Application



2016 Corridor Capacity Report

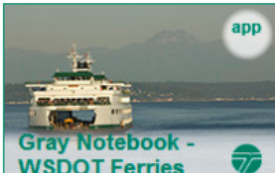
Web Mapping Application



Gray Notebook - Passenger Rail

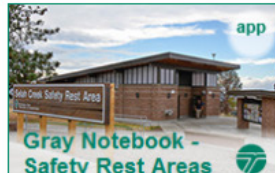
Gray Notebook - Rail: Amtrak Cascades

Web Mapping Application



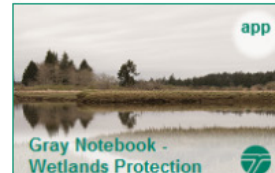
Gray Notebook - WSDOT Ferries

Web Mapping Application



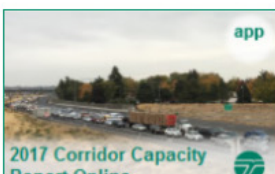
Gray Notebook - Safety Rest Areas

Web Mapping Application



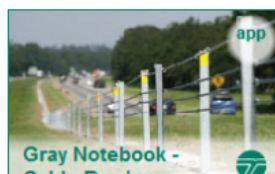
Gray Notebook - Wetlands Protection

Web Mapping Application



2017 Corridor Capacity Report

Web Mapping Application



Gray Notebook - Cable Barriers

Web Mapping Application

USPS Office of Inspector General: Preventing Fraud Waste and Abuse

- Fraud: Fuel Card Transactions
- Waste: Passport Optimization
- Abuse: Employee Double Deeping



Story Maps

let you combine authoritative maps with narrative text, images, and multimedia content. They make it easy to harness the power of maps and geography to tell your story.

<http://storymaps.arcgis.com/en/>

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Spyglass

Swipe

Custom Designs

Subject

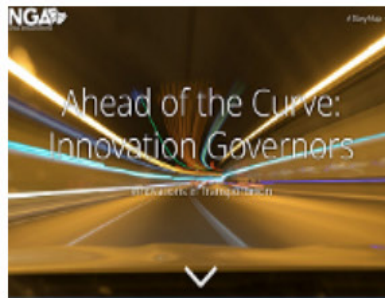
Business and Economy

Disasters and Humanitarian

History and Culture

[Getting Your License - A Guide From PennDOT](#)

By Pennsylvania Dept of Transportation

[Ahead of the Curve: Innovation Governors](#)

By National Governors Association

[Amazon DMV \(Greater Washington Area\)](#)

By Datastory Consulting / Metropolitan Washi

[Ottawa, OH : A Mitigation Success Story](#)

By Ohio Emergency Management Agency

[Maryland Historical Trust: Maryland Women's History](#)

By Maryland Historical Trust, Dept of Planning,

[Pennsylvania's Local Technical Assistance Program](#)

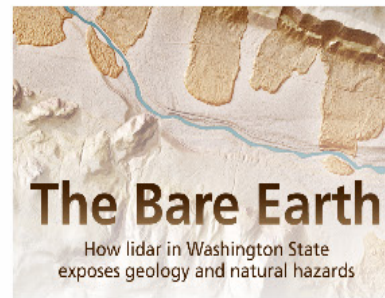
By Pennsylvania Dept of Transportation

[Transportation Art](#)

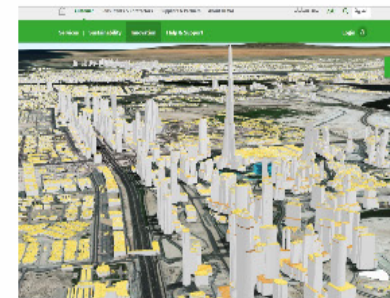
By Caltrans District 11 (San Diego/Imperial Counties)

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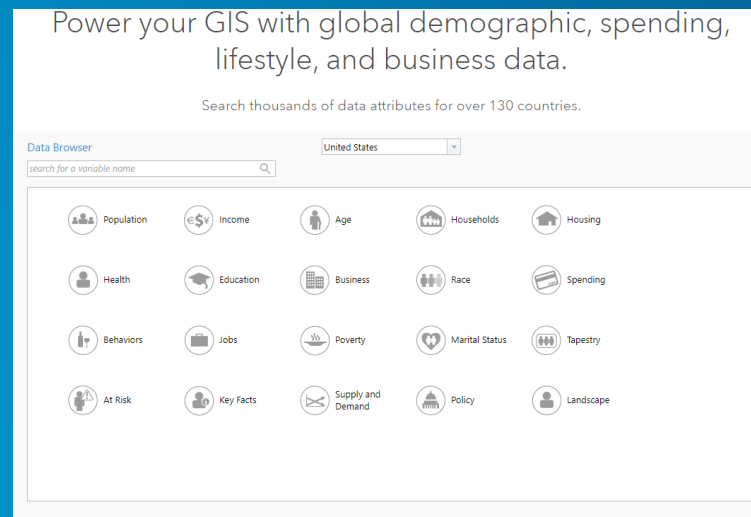
100 Years of Washington Water Law

A story of how Washington's water law shapes our lives



Where Do I Start?

- [Learn ArcGIS: Guided Lessons Based on real-work problems](#)
- [The Language of Spatial Analysis](#)
- **Watch recorded Webinars:**
 - ArcGIS for Fraud, Waste, and Abuse Webinar Series <http://go.esri.com/FWAwebinars>
- **ArcGIS Online:** <http://www.arcgis.com/features/index.html>
- **Esri Data:** <https://doc.arcgis.com/en/esri-demographics/>



Thank you

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THE
SCIENCE
OF
WHERE