

The slide features a green background with a pattern of overlapping hexagons. A dark grey rectangular area is positioned at the top right. The main content is on a white rectangular area at the bottom right, which is bordered by a thin white line and a thick green line at the bottom. The text is centered within this white area.

# FHWA GIS Outreach Activities

Loveland, Colorado  
April 17, 2012

# GIS for Improved Decision Making

- FHWA believes that geographic information systems and other geospatial technologies (remote sensing and GPS) and geospatial data can help transportation professionals make better decisions

# FHWA GIS Outreach

- Facilitate interactions within the transportation community focused on geospatial technologies and data
  - State GIS efforts and applications database
  - Newsletter
  - Webcasts
  - Case study reports
  - Peer exchanges

# GIS Peer Exchanges

- Topic focused
  - Cover broad range of transportation agency activities
  - Those that fit into existing FHWA initiatives
- Invite participants doing in topic area
- Invite participants interested in topic area

# GIS Peer Exchanges

- Participants share knowledge and experiences with GIS
- Provide FHWA perspective
- Produce a summary report
- [gis.fhwa.dot.gov](http://gis.fhwa.dot.gov)

# GIS Peer Exchanges

- Examples
  - Environmental Streamlining
  - Right of Way
  - Bicycle and Pedestrian Uses
  - Asset Management
  - Planning and Environment Linkages
  - Eco-Logical Applications
- Future topics

# GIS Peer Exchanges

- Learn from each other
- Get to know each other a little bit
- Capture ideas and discussions for Summary Report
- Allow participants to review/comment draft report
- [gis.fhwa.dot.gov](http://gis.fhwa.dot.gov)

# 2011 Peer Exchanges



# GIS & Livability

- GIS Applications for Livability Considerations
- July 18 – 20, 2011
- Hosted by City of Boulder, Colorado

# GIS & Livability

- Participants
  - City of Boulder
  - Center for Neighborhood Technology
  - Colorado DOT
  - Michigan DOT
  - Denver Regional Council of Governments
  - North Front Range MPO
  - Pikes Peak Area Council of Governments
  - Southern California Association of Governments

# GIS & Livability

- What is Livability?
  - The idea of tying the quality and location of transportation facilities to broader opportunities.
    - Access to jobs
    - Affordable housing
    - Quality schools
    - Safe Streets

# GIS & Livability

- Go Bike Boulder
  - Bicycle-oriented trip-planning tool
  - Web-based app provides maps and directions for on-road and trail-only bike trips
  - Aims to promote bicycling as an alternative means of transportation
  - [GOBikeBoulder.net](http://GOBikeBoulder.net)

# GIS & Livability

city of **BOULDER** colorado

Map | Elevation Graph | Calculators | Legend | Help | Logged In As: Guest

Directions	Distance (miles)
Start out going Southwest on SUNSET BV towards HIGH ST	0.29
1: Turn RIGHT (West) onto HIGH ST	0.14
2: Turn LEFT (South) onto 13TH ST	0.23
3: Turn RIGHT (West) onto SPRUCE ST	0.14
4: Turn LEFT (South) onto 11TH ST	0.21
5: Road name changes to Canyon Ped Bike Crossing	0.01
6: Turn RIGHT (South) onto Multi-Use Path	0.03
7: Turn LEFT (East) onto Boulder Creek Path	0.2
8: Turn RIGHT (South) onto Broadway Path	1.15
9: Road name changes to Multi-Use Path	0
10: Turn LEFT (North) onto KITTREDGE LOOP RD	0.08
11: Turn RIGHT (East) onto REGENT DR	0.28
12: Turn RIGHT (East) onto Unnamed	0.04
<b>Total Distance: 2.81 miles</b>	

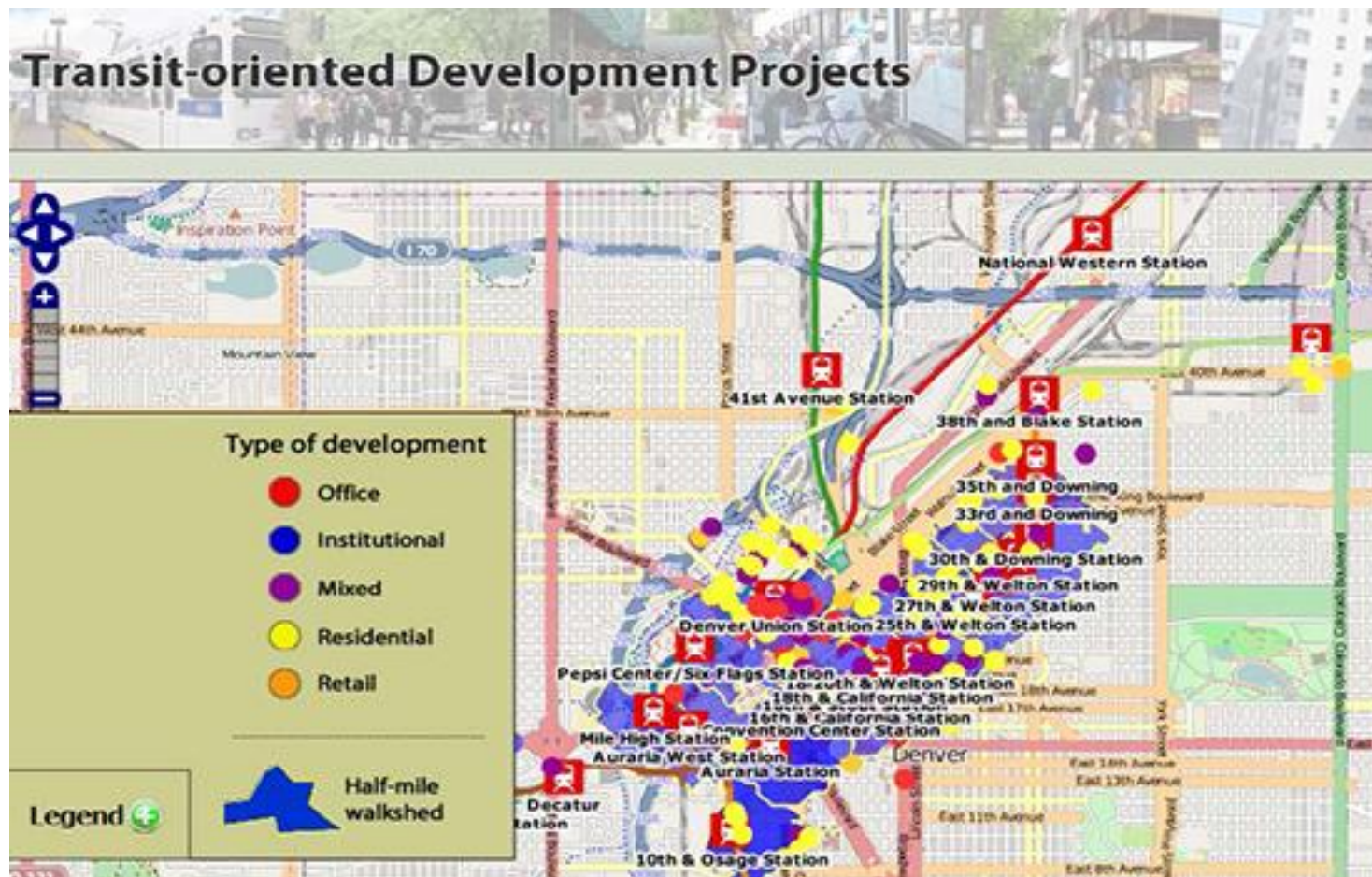
[Get New Route](#)  
[Print Map and Directions](#)

# GIS & Livability

- TOD Project Viewer
  - Denver Regional Council of Governments
  - App tracks real estate development projects within an approximate half-mile radius of existing and planned transit stations
  - Make TOD data more accessible and transparent to the public
  - <http://gis.drcog.org/todmap>



# GIS & Livability



# GIS & Livability

- Observations and conclusions
  - Ensure that GIS/Livability tools add value
  - GIS can facilitate data gathering and responses
  - GIS can facilitate information dissemination
  - GIS can be easily updated and revised



# GIS & Livability

- Challenges and Issues
  - The capabilities of GIS are not always understood
  - Rogue apps okay?
  - Concern about deficiencies being highlighted by GIS
  - Few specific examples of GIS/Livability performance measures
  - Resources are often lacking to support evaluation

# GIS & Climate Change

- GIS Applications for Climate Change Decision-Making
- September 26 – 27, 2011
- Atlanta Regional Commission, Atlanta, Georgia

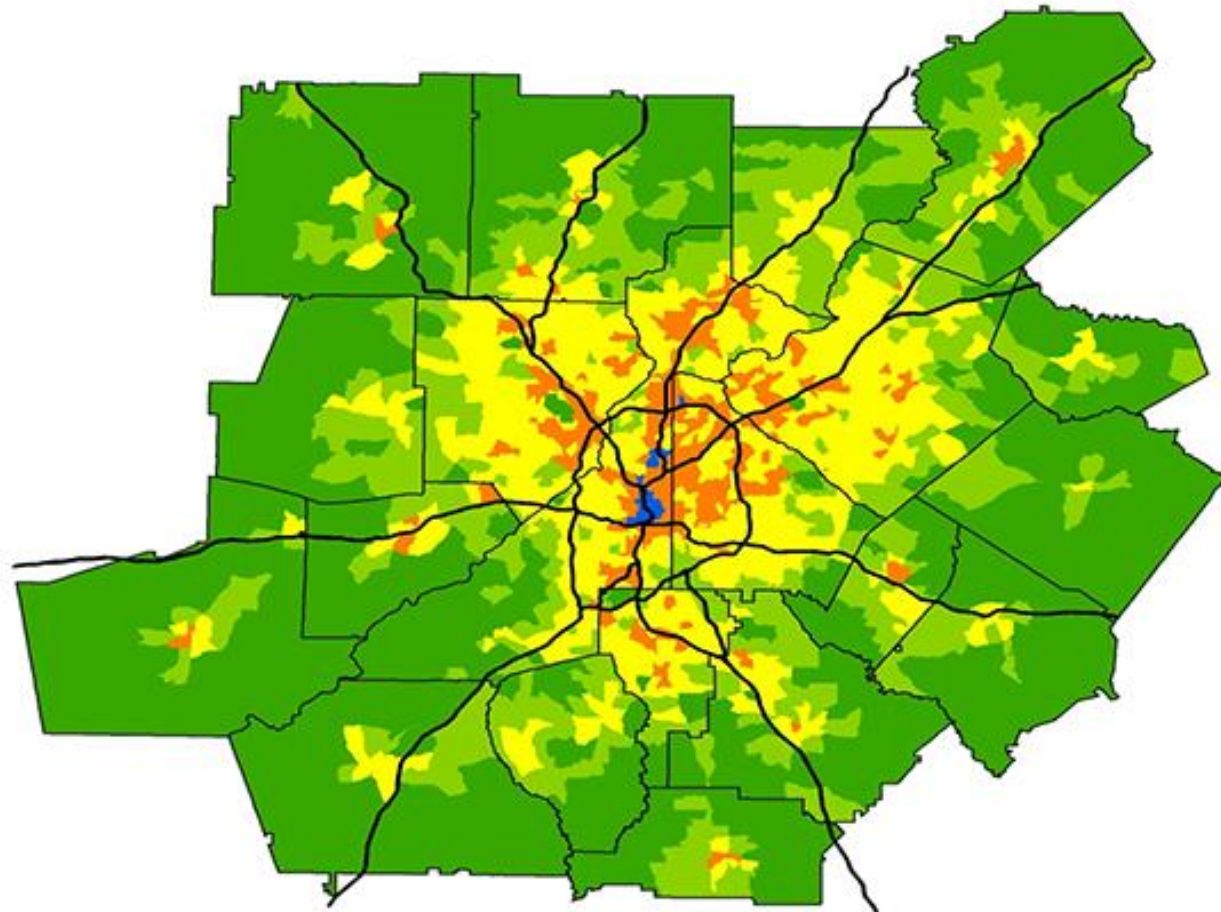
# GIS & Climate Change

- Participants
  - Atlanta Regional Commission
  - Sacramento Area Council of Governments
  - Washington State DOT
  - Maryland State Highway Administration
  - Southern Maine Regional Planning Commission
  - New England Environmental Finance Center
  - Maine Geological Survey

# GIS & Climate Change

- ARC looking at ways to reduce GHG emissions
- ID areas that can support short walking trips
- *Potential Walking Demand Measure*
  - Uses street network to ID those areas
  - Looks at overall street network and land uses
  - Helps determine where to invest in bicycle and pedestrian projects

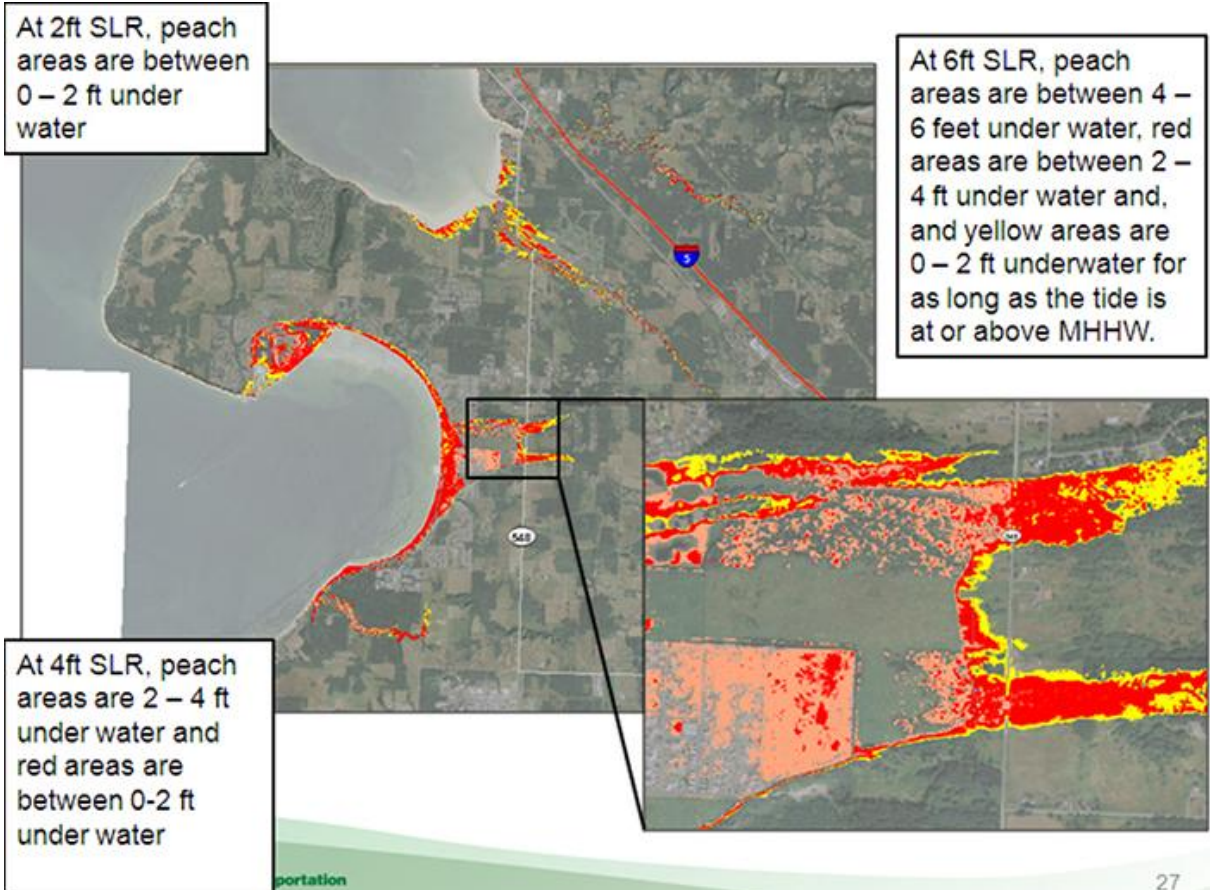
# GIS & Climate Change



# GIS & Climate Change

- Washington State DOT conducted vulnerability assessment on what assets would be affected by sea level rise of 22 inches, 50 inches, and 6 feet.
- Developed an ArcMap document that identified those assets.

# GIS & Climate Change



# GIS & Climate Change

- Observations
  - Stick to facts, avoid controversy
    - climate change is a controversial
    - In Maine focus was on existence of sea level rise vs. the cause of it.
  - Lack of guidance on what estimates to use
  - What is the appropriate scale of data?
  - Lack of accurate projection data for structures



# GIS & Climate Change

- Observations (cont'd)
  - Rely on source data, such as LIDAR, and stay as close to the source data as possible.
  - When developing GIS outputs, always use a process or model so that you can replicate the analysis easily, if and when there are changes in the source data.
  - Coordinate with adjacent state to develop necessary data.

# GIS & Safety

- Applications of GIS for Highway Safety
- September 14 – 15, 2011
- The Volpe Center, Cambridge, Massachusetts

# GIS & Safety

- Participants
  - Illinois DOT
  - Maine DOT
  - Massachusetts DOT
  - Ohio DOT
  - Tennessee DOT
  - Washington State DOT

# GIS & Safety

- What are the key challenges in using GIS for highway safety?
- What is in store in for the future of new GIS-based safety analysis tools?
- What is assistance is needed?

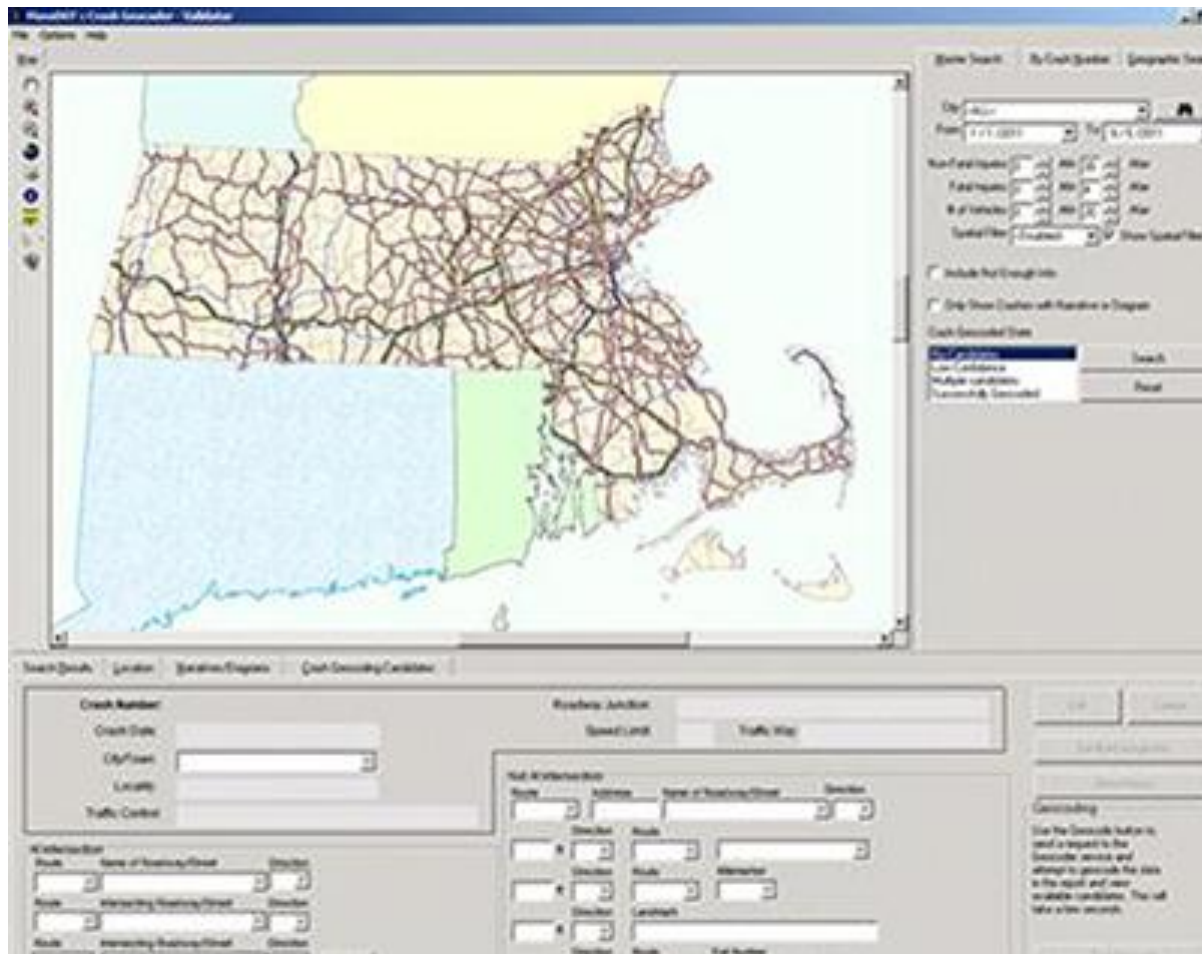
# GIS & Safety

- Massachusetts DOT developed a crash mapping tool
  - Geocoded crash locations themselves, since crash reports had unreliable crash data or none at all
  - Crash locations georeferenced using
    - Intersection and distance from intersection
    - Street address number
    - Route and milemarker
    - Route and exit number

# GIS & Safety

- MassDOT (cont'd)
  - 84% of 2009 crashes were automatically geocoded
  - Create statewide *TOP 200* at-grade intersections report.
  - Future web-based version for the public planned.

# GIS & Safety

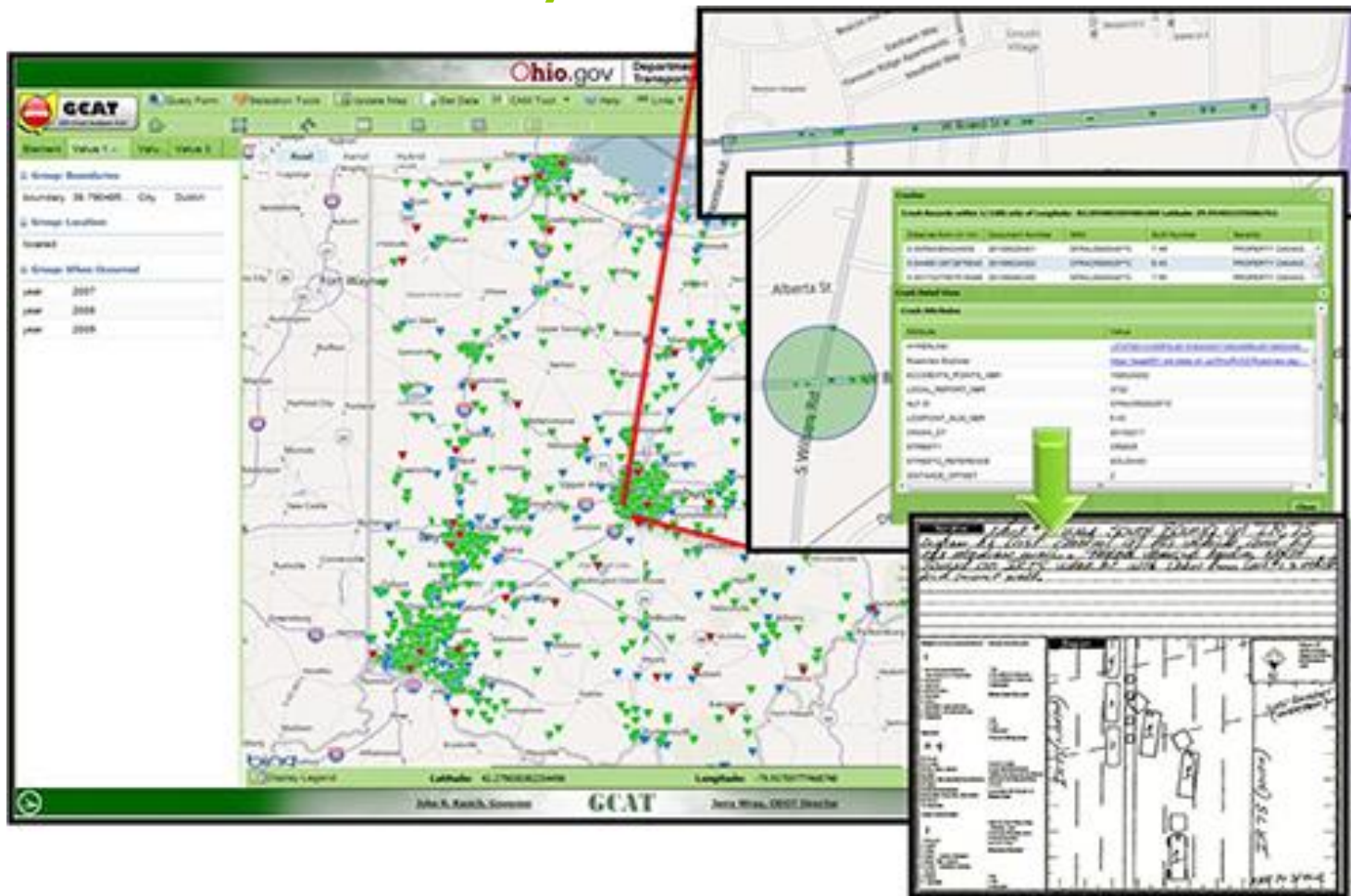


# GIS & Safety

- Ohio DOT
  - Developed web-based *GIS Crash Analysis Tool (GCAT)* to allow ODOT, MPOs and county engineers to perform efficient crash analysis
  - Users can query & download crash data
  - Attribute queries include when crash occurred, details of driver, vehicle, and location



# GIS & Safety



# GIS & Safety

- Observations
  - Data collection challenges
    - Crash data
    - Multiple offices involved
  - Data Storage
    - Storing data in a format accessible to many types of users
  - Obtaining crash rates for lower system roads
  - Technology is not the challenge

# GIS for Improved Decision Making

- FHWA believes that geospatial tools, like GIS, and geospatial data can help transportation agencies make better transportation decisions.

# Last Slide

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- Websites
  - gis.fhwa.dot.gov
  - **Reports available at**  
<http://gis.fhwa.dot.gov/reports.asp>