one MARYLAND one CENTERLINE

collaborative. authoritative. seamless.

Roadway Safety Data: Maryland's Future in GIS Mapping

Maryland Traffic Records Forum
June 16, 2015

Marshall Stevenson, SHA/WBCM

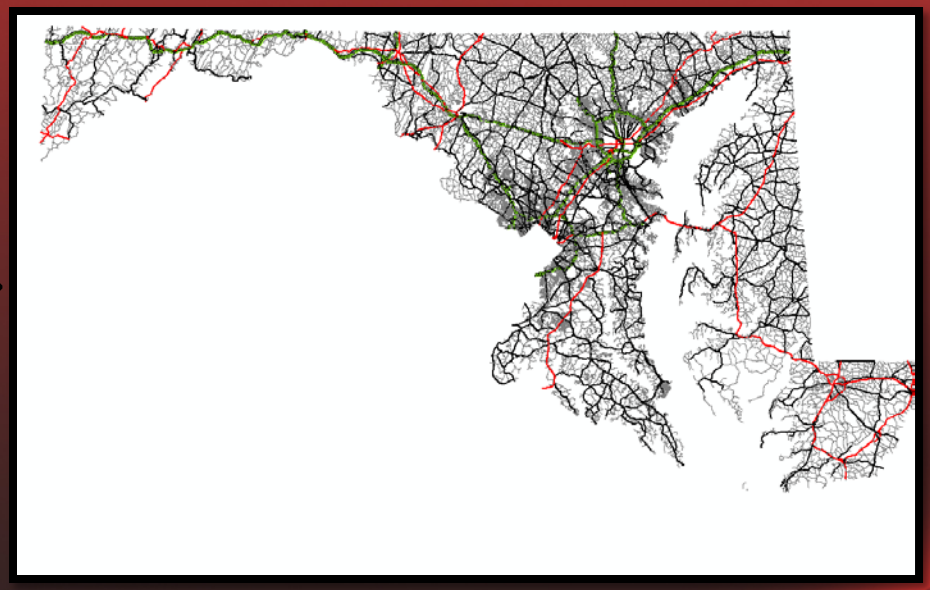
SHA State Highway Administration
Maryland Department of Transportation

One Maryland One Centerline (OMOC)

Municipality

County

State



Linear Referencing

Geocoding

Routing

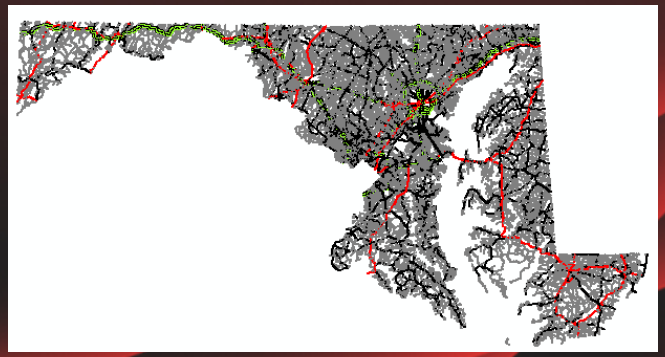
Authoritative Data

One Geometry Tied to Business Data

Supports Multiple Functionalities

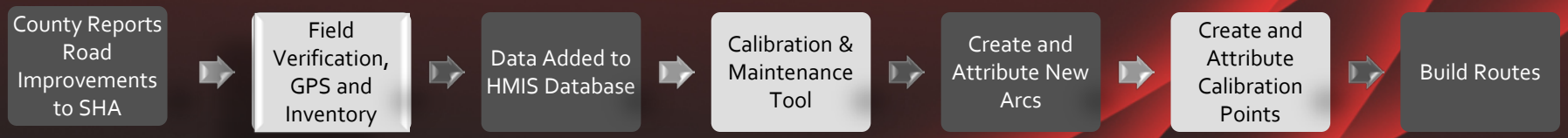
Current SHA Centerlines

- SHA maintains a seamless, statewide centerline
  - Represents state and local public roads
  - Supports the FHWA HPMS Program
    - Data used in the apportionment of Federal-Aid Highway Funds to the states
    - Yearly requirement to submit an inventory of publicly-maintained roads, including accurate mileage, lane mileage and travel information.
  - Supports Highway User Revenue Fund



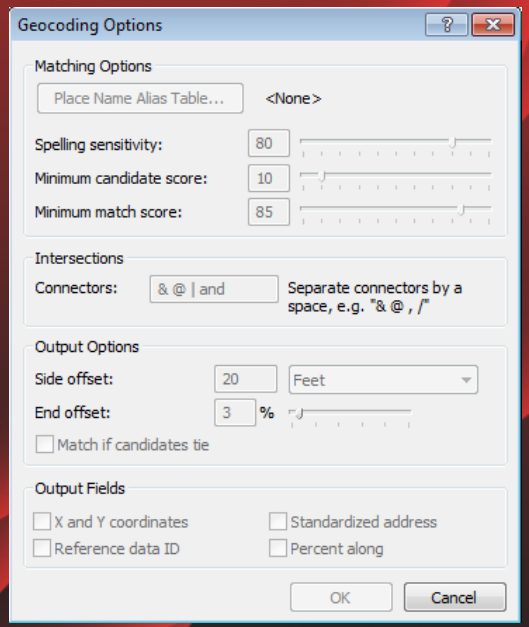
Current SHA Centerline Update Process for Publically-Maintained Roads

- SHA's Road Improvement Process
  - Paper-based submission to local jurisdictions
    - 23 counties plus Baltimore City
    - 159 incorporated municipalities
  - Paper-based submission of updates back to SHA
    - GIS updates added manually by SHA staff
    - Field verification and GPS capture



Other Current Centerlines in MD

- Local governments maintain jurisdiction centerlines
  - Represents state/local public and private roads
  - Supports local government operations
    - E-911
    - Addressing
    - Public Works
    - Planning
  - Compiled to create statewide geocoder maintain by MD DoIT



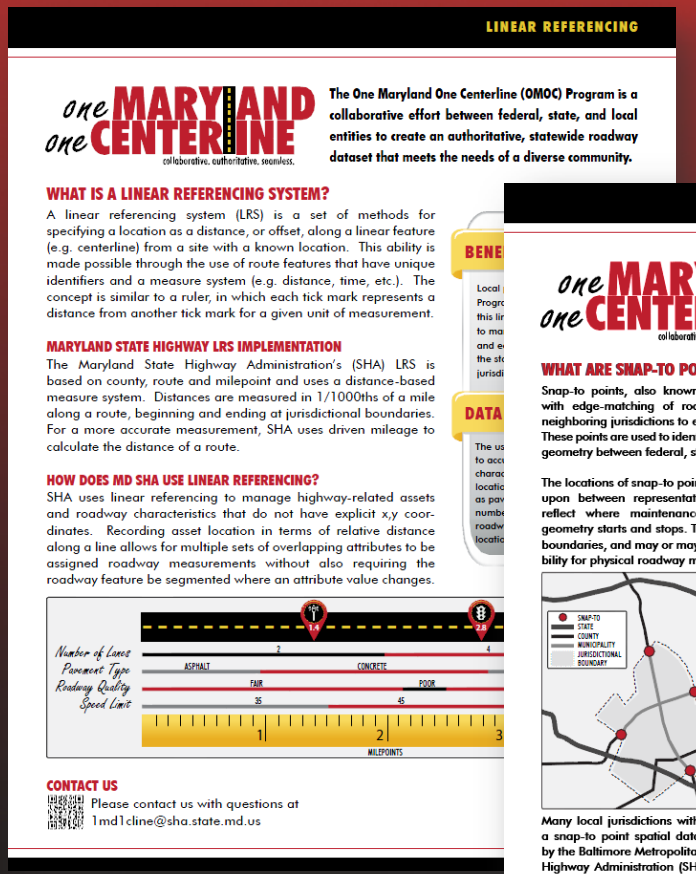
Why Change?

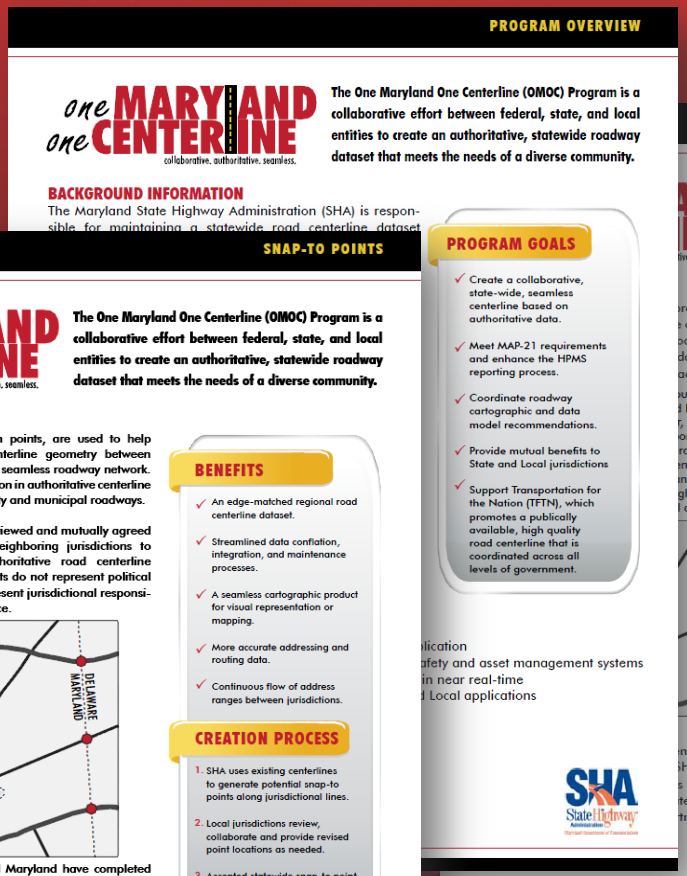
- 2012 MAP-21 Legislation, ARNOLD
  - States are required to include dual carriageways and all publicly maintained roads as part of their HPMS Submission
- Inefficient/dated maintenance processes within SHA
- Leverage authoritative centerline data
- Duplication of centerline maintenance in Maryland
- Centerline data needed on daily/weekly basis instead of yearly
- Statewide cartographic best practices
- Public Safety (e.g. mutual aid agreements)
- LRS for local governments
- One authoritative-based dataset can lead to more coordinated initiatives, e.g. state-wide road closure reporting

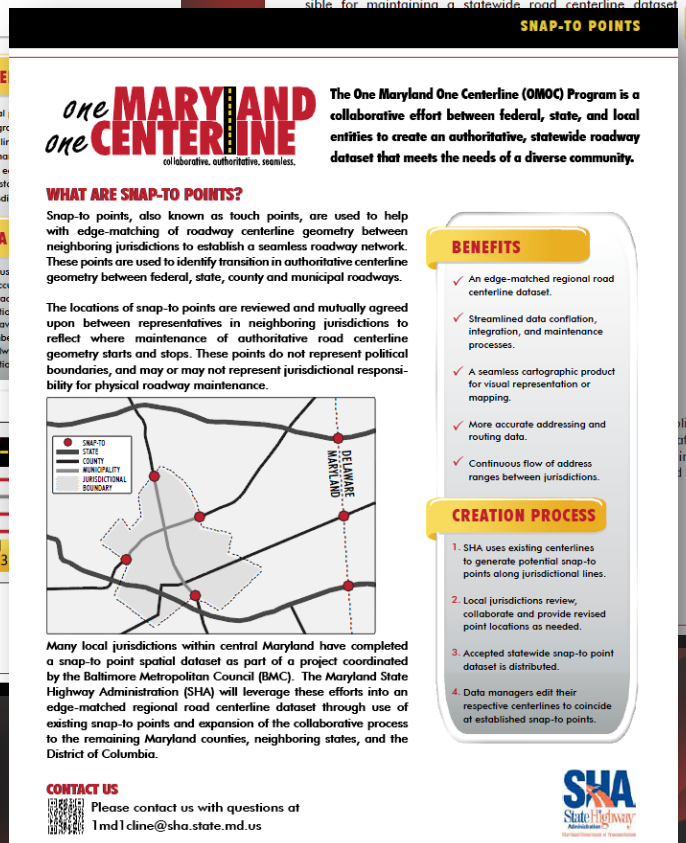
Outreach

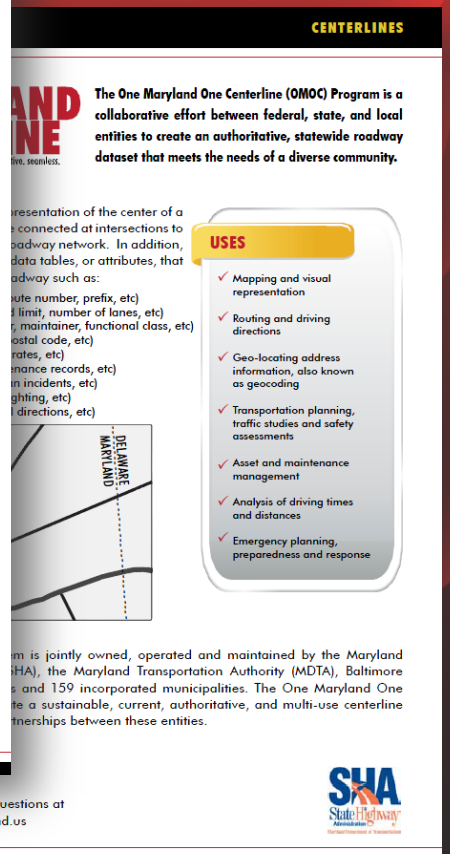
- Met with every MD county and some larger municipalities
- Established partnerships

Educational Materials









Centerline Cartographic Rendering Workshop

- Determine definitions for roadway features / configurations
- Determine level of granularity
- Inclusive list of use cases for cline rendering
- Identify industry best practices (MD) for each use case
- Acknowledge/understand implications for routing and linear referencing (may need individual meetings for these)
- Publish guide

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Maryland Centerline Cartographic Rendering Workshop
November 21, 2014

AGENDA

Registration—2nd Floor (parking garage entrance) **7:30 a.m. – 8:30 a.m.**

Continental Breakfast and Networking – 5th Floor Loft

Opening Session – 4th Floor, Room 4310 **8:30 a.m. – 9:45 a.m.**

Dean Terry Cooney, Towson University College of Liberal Arts
Kenny Miller, Deputy Geographic Information Officer, State of Maryland
Greg Slater, Director of Planning & Preliminary Engineering, Maryland State Highway Administration
Joe Hausman and Tom Roff, Federal Highway Administration
Gary Waters and Tom Brenneman, Esri

SME Presentations – 4th Floor, Room 4310 **9:45 a.m. – 11:30 p.m.**

Linear Referencing – Al Butler (MPzero)
Addressing & Next Generation911 - Patrick Melancon and Chris Knights (GeoComm)
Routing – Patrick Melancon (GeoComm)
Data Management & Conflation – Richard Sunderland and Duncan Guthrie (1Spatial)

Pre-Breakout Session - 4th Floor, Room 4310 **11:30 a.m. – 12:15 p.m.**

Lunch – 5th Floor Loft **12:15 p.m. – 12:45 p.m.**

After retrieving your lunch, please arrive in your assigned room by 12:45 p.m! You may eat in your assigned room.

Breakout Sessions – Location Varies **12:45 p.m. – 3:45 p.m.**

Closing Session – 4th Floor, Room 4310 **3:45 p.m. – 4:30 p.m.**

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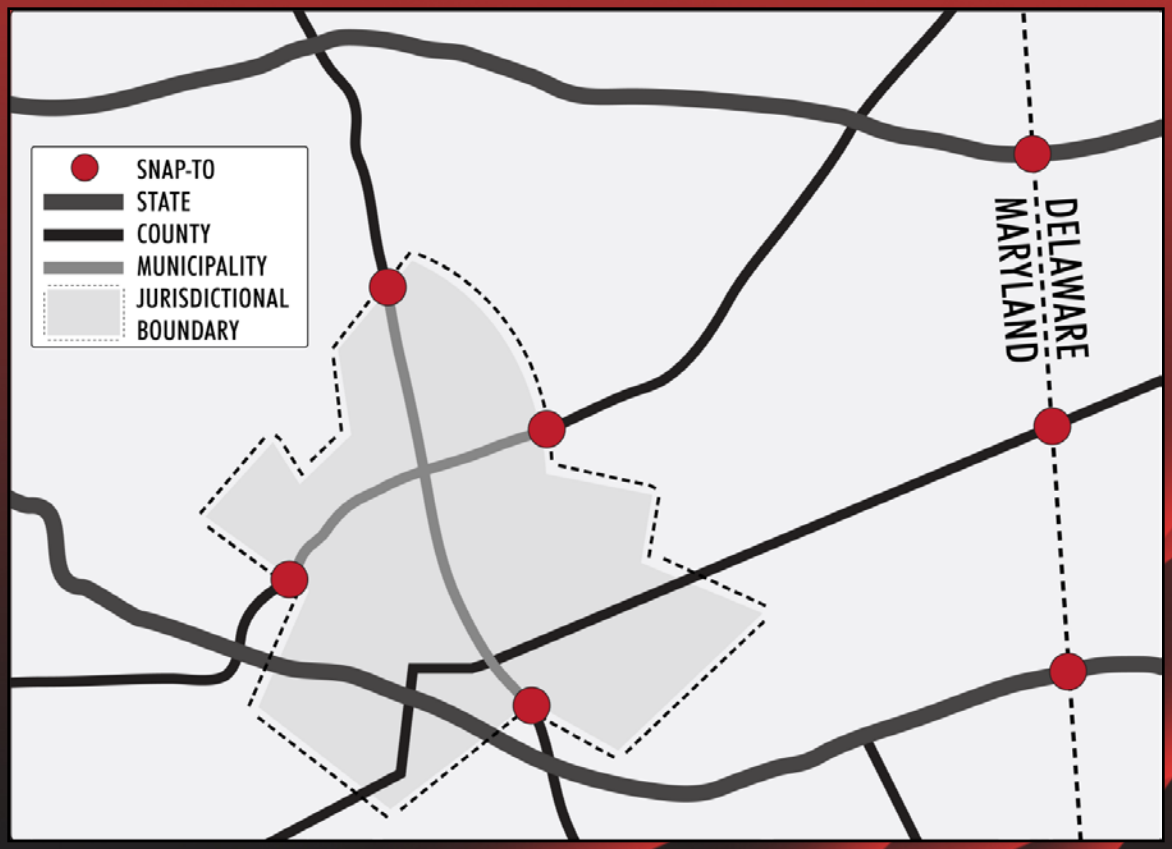
Snap-To-Points

- Edge-matching between neighboring jurisdictions



Snap-To-Point Example

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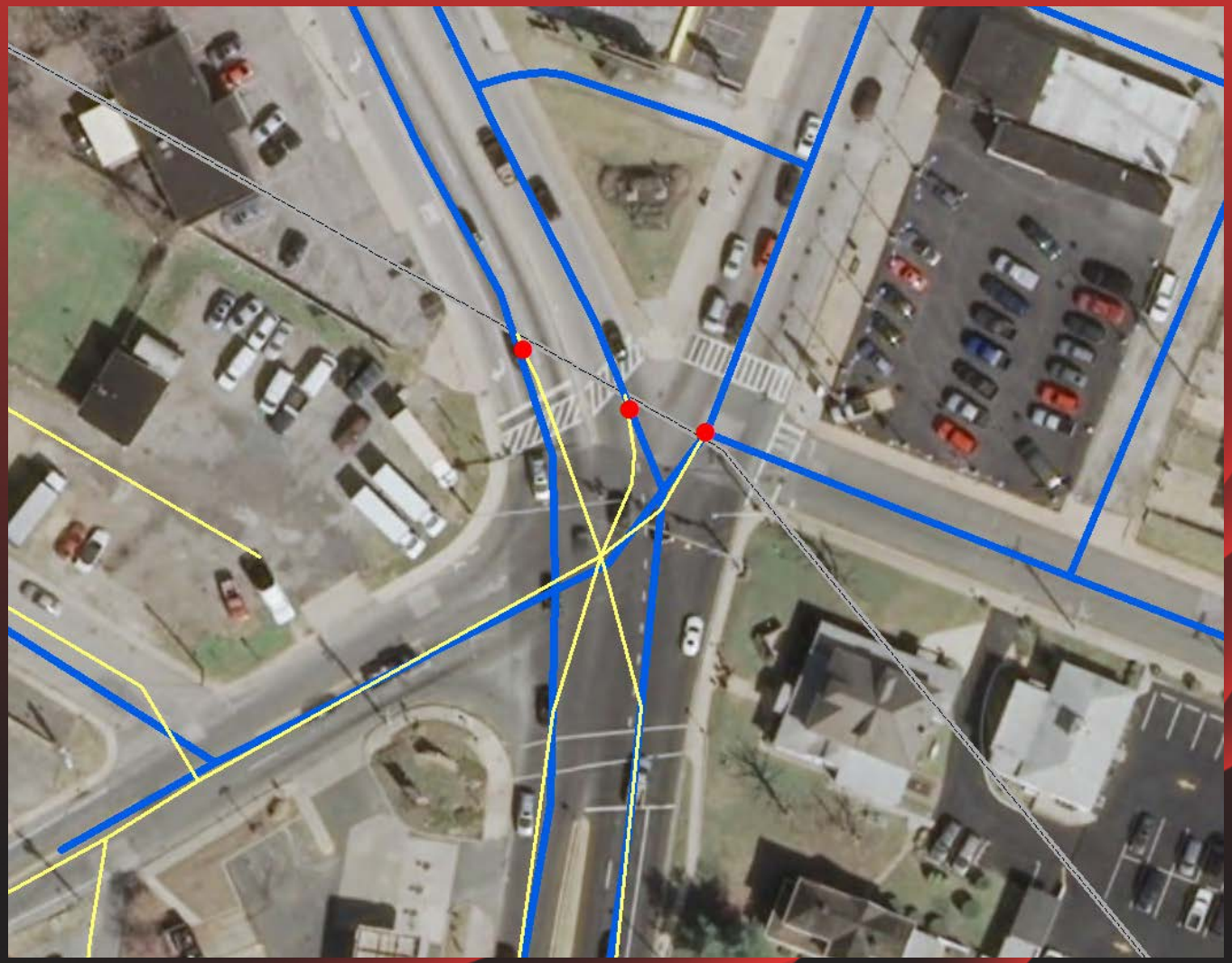
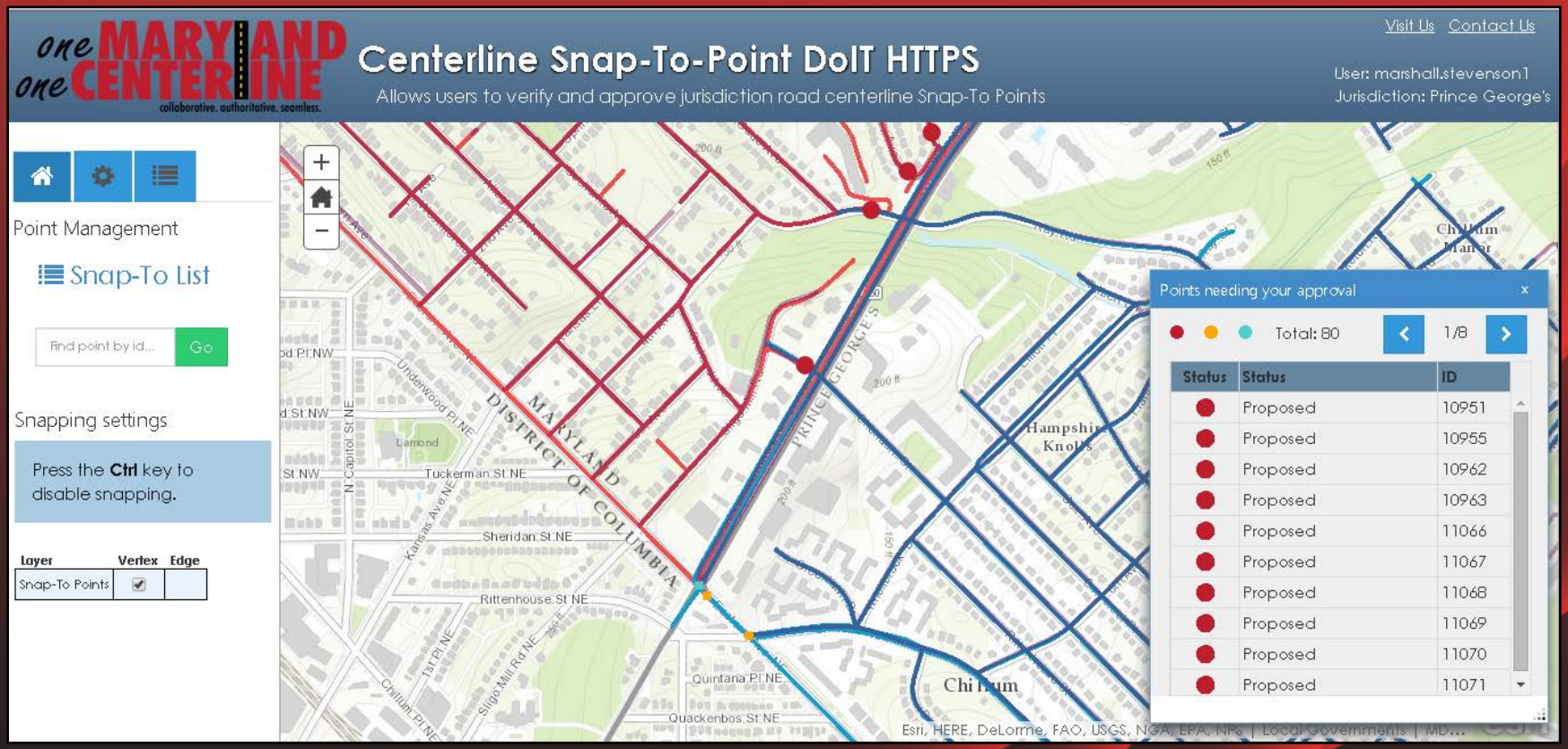
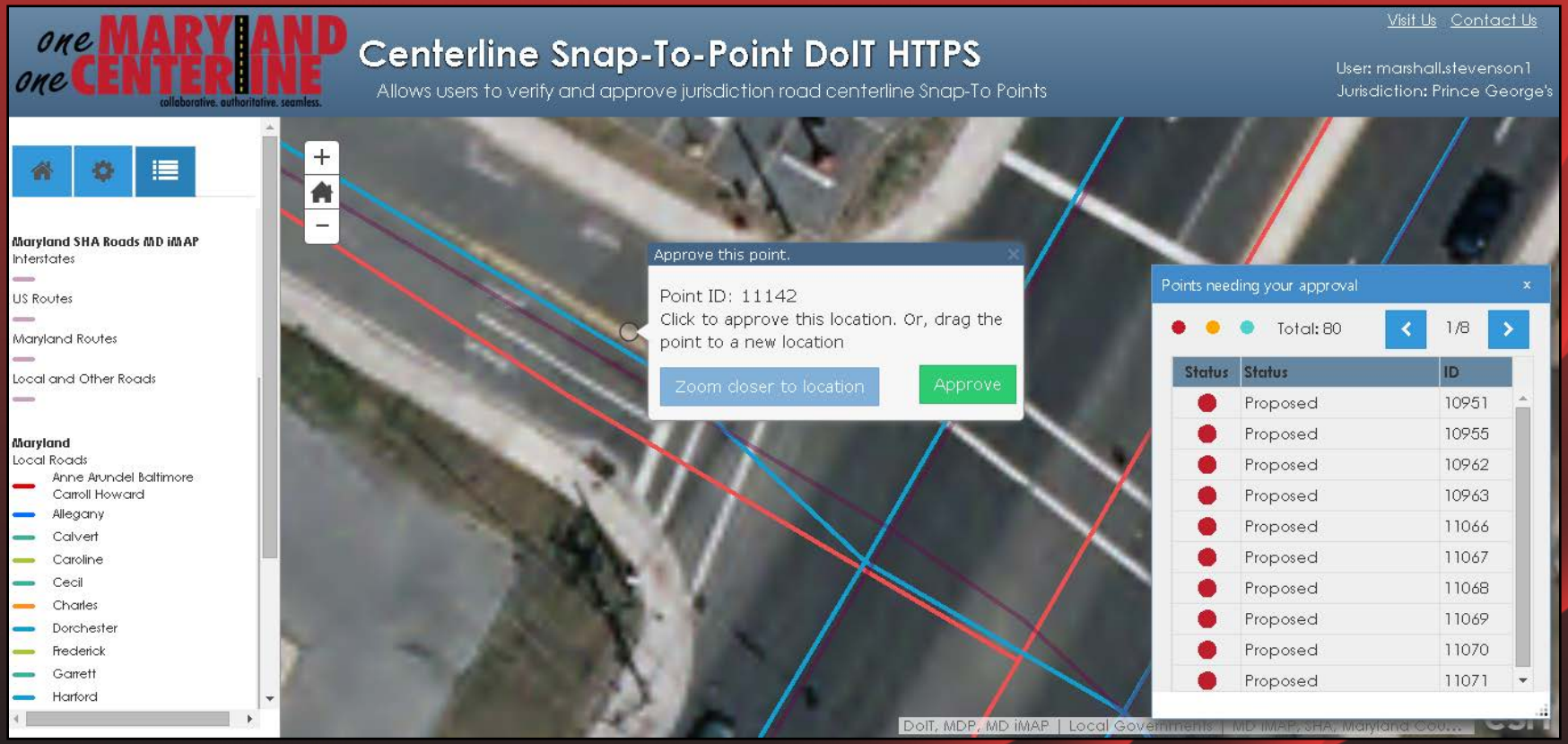


Snap-To-Point Reviewer

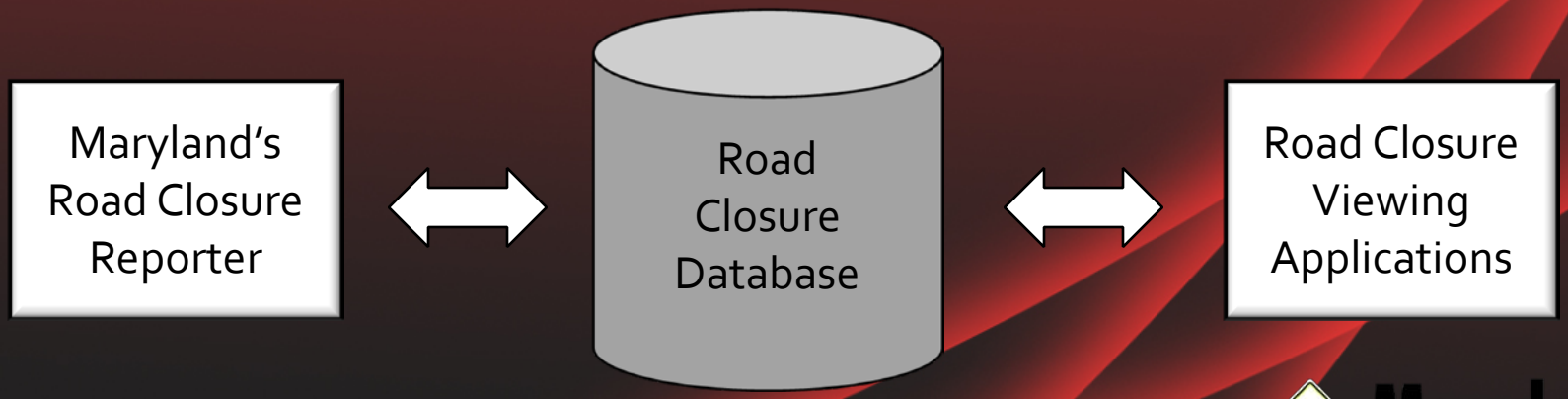


Snap-To-Point Reviewer



Maryland's Road Closure Reporter

- Data capture system
  - GIS Centric Back-End
  - Mobile and PC
- Common Data Model
- Data Publication System



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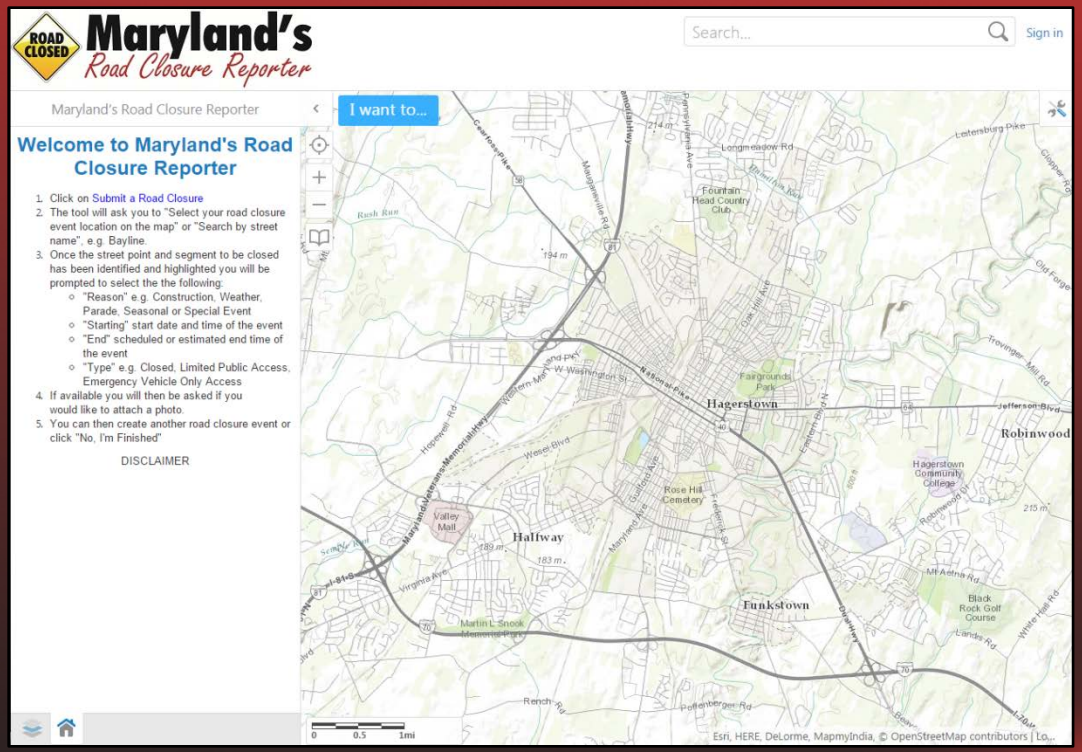

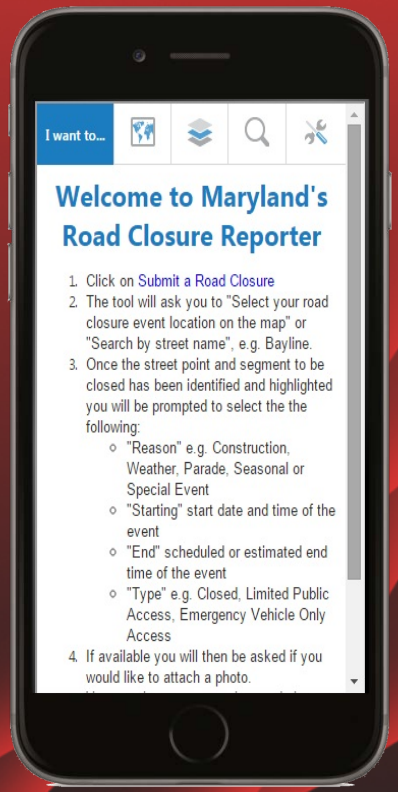

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Maryland's Road Closure Reporter

Lessons Learned

- Leverage experience of others
- Everyone has an equal voice
- Acceptance of local geometry and attribution
- Collaboration goes a long way
- Top-down support

Thank You

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