AASHTO Innovation Initiative

[Proposed] Nomination of Innovation Ready for Implementation

Sponsor

Nominations must be submitted by an AASHTO member DOT willing to help promote the innovation. If selected, the sponsoring DOT will be asked to promote the innovation to other states by participating on a Lead States Team supported by the AASHTO Innovation Initiative.

1. Sponsoring DOT (State): Delaware DOT

2. Name and Title: Stephanie Johnson, Asst. Director of Transportation Resilience & Sustainability

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State: Delaware

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Fax: Click or tap here to enter text.

Innovation Description (10 points)

The term "innovation" may include processes, products, techniques, procedures, and practices.

3. Name of the innovation:

DelDOT Equity Focus Areas Data and Analysis

4. Please describe the innovation.

This innovation is a GIS equity analysis that is being used by DelDOT employees (project and program managers) to identify "equity focus areas" at the neighborhood block group level to make data-driven

decisions related to financial and resource investments (consistent with Justice40) and public engagement strategies. This analysis has also been shared statewide with other sister cabinet agencies and our metropolitan planning organizations to provide for standardization of areas to in which to focus regarding equity.

5. What is the existing baseline practice that the innovation intends to replace/improve?

Mapped based data provided by the US DOT and other federal agencies is not granular enough nor does it accurately reflect where "disadvantaged communities" are in our state. With a population of less than a million people in our state, we knew we could use census and land use data to better reflect where these communities truly are. In an effort to truly meet the requirements of Justice40, DelDOT created this "equity focus areas" data set to inform our investment decisions and public engagement strategies. Beyond the equity focus areas, supplemental datasets are also available to assist project and program managers with understanding the communities that they will be serving. These datasets include state assisted housing, language isolation communities, American Indian/Native American tribal areas, aging population, and mobile home parks).

6. What problems associated with the baseline practice does the innovation propose to solve?

With a population of less than a million people in our state, we knew we could use census and land use data to locate/identify "disadvantaged communities" or, as we refer to them as "equity focus areas" at a more granular level. This data allows DelDOT to make more informed, data-driven decisions related to equity for investment decisions (in line with Justice40) and public engagement strategies. As part of the process, we went through an extensive verification/ground truthing process to ensure the data was as accurate as possible.

7. Briefly describe the history of its development.

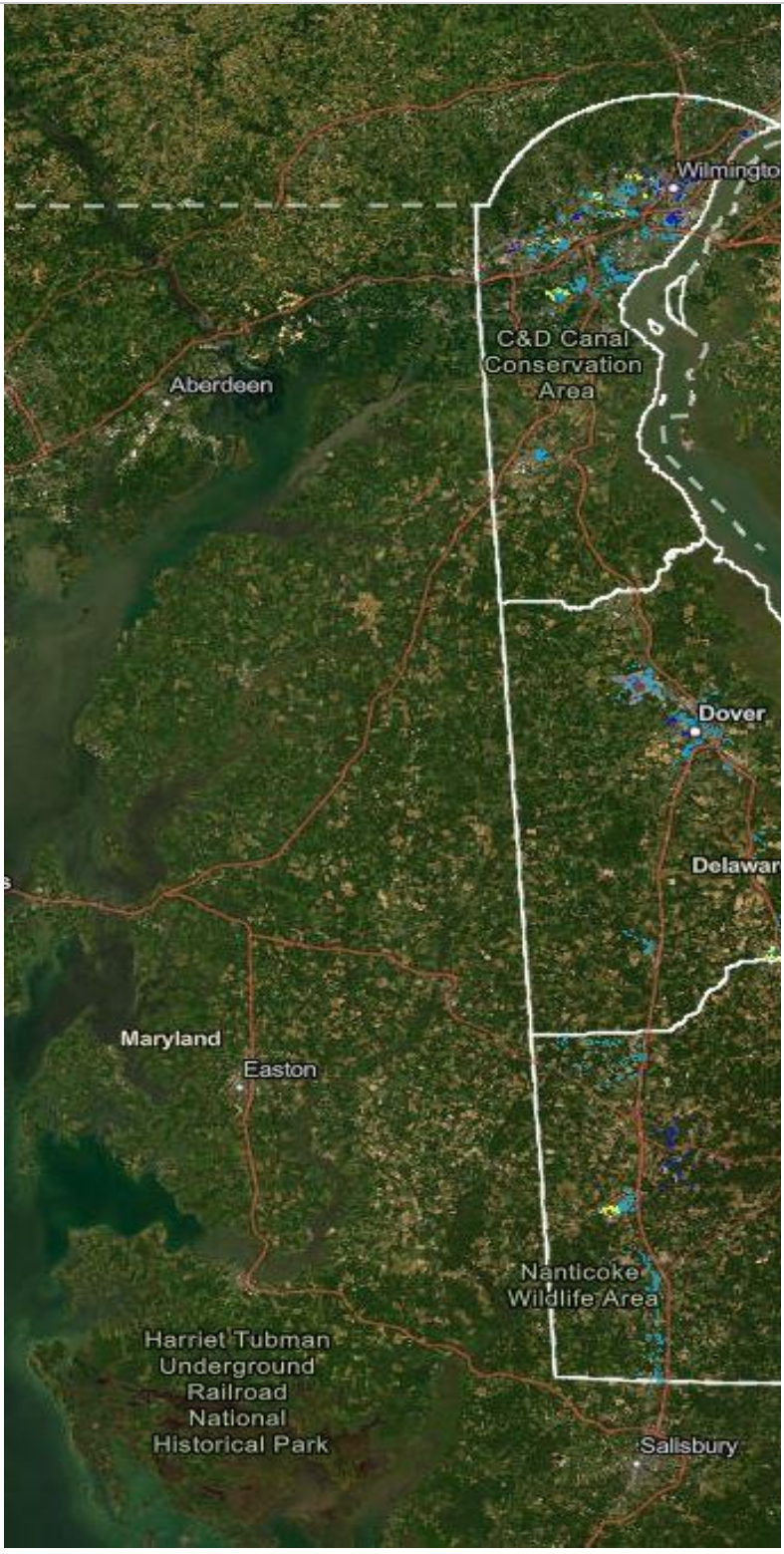
See the Delaware Equity Focus Areas story map (https://bit.ly/deldot_ej_analysis) for more information about how DelDOT developed this tool. It took DelDOT about 18 months for us to develop, ground truth and refine the analysis. As part of the process, we went through an extensive verification/ground truthing process to ensure the data was as accurate as possible.

8. What resources—such as technical specifications, training materials, and user guides—have you developed to assist with the deployment effort? If appropriate, please attach or provide weblinks to reports, videos, photographs, diagrams, or other images illustrating the appearance or functionality of the innovation (if electronic, please provide a separate file). Please list your attachments or weblinks here.

We have created an ESRI story map presentation (https://bit.ly/deldot_ej_analysis) with interactive maps for public, intra- and inter-departmental use to explain the purpose of the data, the methodology in the data analysis, how to use the datasets and examples of how the data can be used for project and

program management. We've also created a short YouTube video (https://youtu.be/GRES6DRDmrw) to also explain these same points. Additional technical documents are available for data maintenance.

Attach photographs, diagrams, or other images here. If images are of larger resolution size, please provide as separate files.


Wilmington
C&D Canal
Conservation
Area
Aberdeen
Dover
Delawar
Maryland
Easton
Nanticoke
Wildlife Area
Harriet Tubman
Underground
Railroad
National
Historical Park
Salisbury

State of Development (40 points)

Innovations must be successfully deployed in at least one State DOT. The AII selection process will favor innovations that have advanced beyond the research stage, at least to the pilot deployment stage, and preferably into routine use.

9. How ready is this innovation for implementation in an operational environment? Please select from the following options. Please describe.

☐ Prototype is fully functional and yet to be piloted

☐ Prototype has been piloted successfully in an operational environment

☒ Technology has been deployed multiple times in an operational environment

☐ Technology is ready for full-scale implementation

The data is currently being used within DelDOT and other Delaware sister cabinet agencies. We have also done several presentations of this equity analysis for NASTO, AASHTO, ESRI and others.

10. What additional development is necessary to enable implementation of the innovation for routine use?

The data is available and ready to be used. On-going maintenance of the data will be needed as data updates are made available.

11. Are other organizations using, currently developing, or have they shown interest in this innovation or of similar technology?? ☒ Yes ☐ No

If so, please list organization names and contacts. Please identify the source of this information.

Organization	Name	Phone	Email
Delaware Department of Natural Resources and Environmental Control	https://dnrec.maps.arcgis.com/apps/instant/sidebar/index.html?appid=c639c1d1be634591b8e14d3f3205f753	(302) 739-9000	james.brunswick@delaware.gov

Potential Payoff (30 points)

Payoff is defined as the combination of broad applicability and significant benefit or advantage over baseline practice .

12. How does the innovation meet customer or stakeholder needs in your State DOT or other organizations that have used it?

Allows others to more accurately identify areas within the state in which keen attention to equity is needed. Additionally, when incorporated with other data, performance measures related to equity can be quantified including investments (resources/funding) spent in these specific areas. DelDOT project managers can intersect this data with project or program data to identify if, for example, accidents are more prone in equity focus areas and investigate why (lack of access to multi-modal infrastructure, etc.).

13. Identify the top three benefit types your DOT has realized from using this innovation. Describe the type and scale of benefits of using this innovation over baseline practice. Provide additional information, if available, using quantitative metrics, to describe the benefits.

Benefit Types	Please describe:
Improved Customer Service	Allows project/program managers to develop appropriate, effective outreach strategies for projects and programs that may impact those communities.
Improved Safety	Allows project/program managers to perform assessments related to these communities to ensure identify trends or deficiencies in transportation infrastructure.
Organizational Efficiency	Has provided a standardized definition as to where these equity focused areas/communities are within the state instead of project managers and others using different federal or other tools.

Provide any additional description, if necessary:

Click or tap here to enter text.

14 How broadly might this innovation be deployed for other applications. in the transportation industry (including other disciplines of a DOT, other transportation modes, and private industry)?

We have made this data available to other state agencies with Delaware as well as our Metropolitan Planning Organizations. The data methodology that we used can be utilized by other states, local governments, and private industry. We purposely focused on demographic data (US census, American Community Survey data) for this dataset (removing the transportation lens) so that others outside DelDOT could use this same dataset within their organization/agency. For us DelDOT, we intersect this data with other transportation related data. Our Department of Natural Resources and Economic Control (DNREC) will use this same dataset but will use their own layers related to climate to assist in their analysis and decision making.

Market Readiness (20 points)

The AII selection process will favor innovations that can be adopted with a reasonable amount of effort and cost, commensurate with the payoff potential.

15. What specific actions would another organization need to take along each of the following dimensions to adopt this innovation?

Check boxes that apply	Dimensions	Please describe:
☒	Gaining executive leadership support	Our executive leadership recognized the value of this data analysis and fully supported the implementation of it department wide.
☒	Communicating benefits	In order to achieve standardization, communicating the benefits and providing the data dept wide is important.
☐	Overcoming funding constraints	Minimal cost if in-house resources are available.
☐	Acquiring in-house capabilities	Click or tap here to enter text.
☐	Addressing legal issues (if applicable) (e.g., liability and intellectual property)	Since Delaware does not have a codified definition of "disadvantaged" or Environmental Justice communities, there were no legal or legislative issues.
☐	Resolving conflicts with existing national/state regulations and standards	This tool only further enhances the data that is provided by US DOT, EPA, White House, etc.
☐	Other challenges	None

16. Please provide details of cost, effort, and length of time expended to deploy the innovation in your organization.

Cost: Click or tap here to enter text.

Level of Effort: Once we determined the methodology, creating the data set and analysis took very little time. Verification did take several months. Other states or organizations that choose to use this same methodology and has a good land use/land cover data set could create this data set for themselves relatively easily.

Time: Less than a year if the same methodology is used.

17. To what extent might implementation of this innovation require the involvement of third parties, including vendors, contractors, and consultants? If so, please describe. List the type of expertise required for implementation.

This work could be performed in-house with GIS and data analyst staff. Otherwise, professional services with this expertise would be needed.