VDOT
Virginia Department of Transportation

STATEWIDE PEDESTRIAN CROSSING PRIORITIZATION TOOL

A Supplemental Resource for the IIM-TE-384.1 Policy

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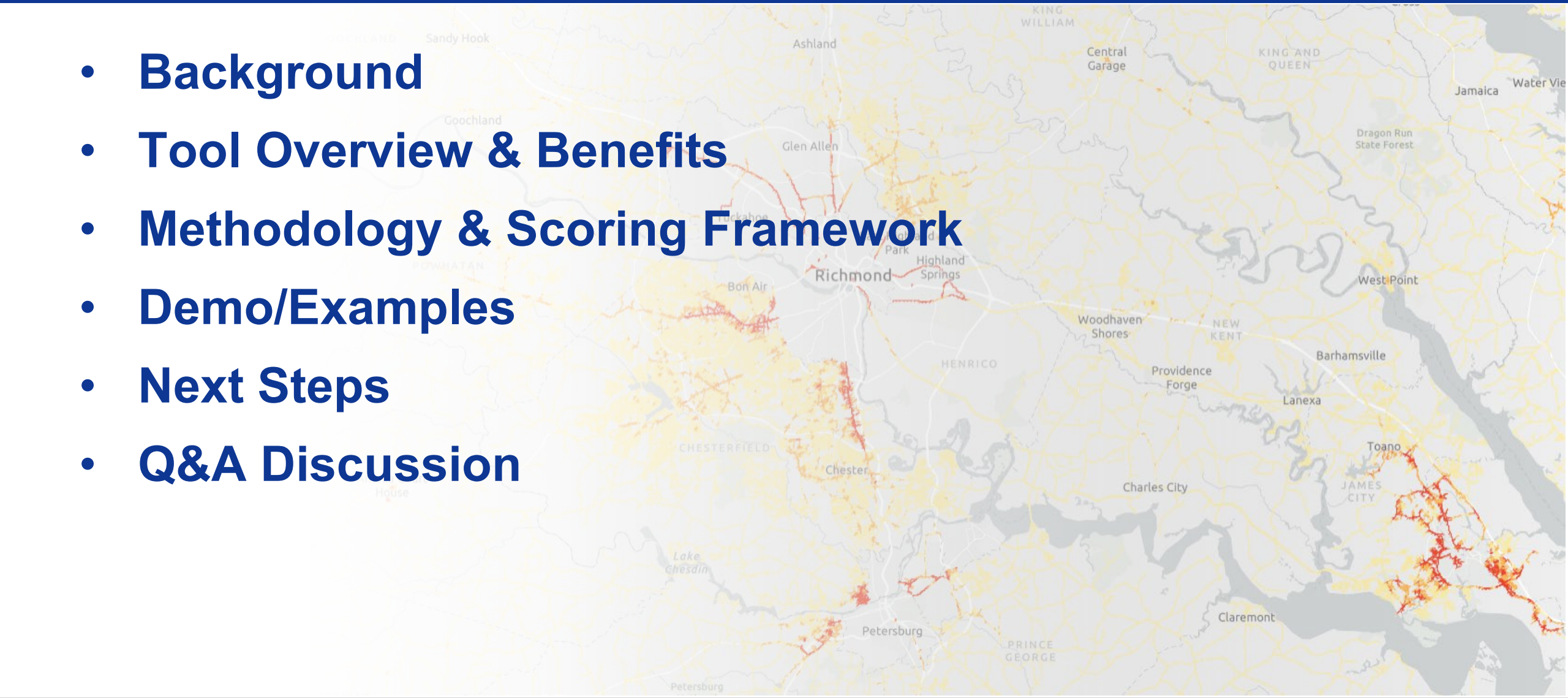
VASITE 6/2/2026

Agenda

- Background
- Tool Overview & Benefits
- Methodology & Scoring Framework
- Demo/Examples
- Next Steps
- Q&A Discussion



Background

- **IIM-TE-384.1 defines the conditions under which crosswalks shall, should, or may be installed at midblock or unsignalized locations on public roadways.**
  - Guidance is permissive.
  - Expect increase in requests for new crosswalk installations and enhanced treatments (e.g., RRFBs and PHBs).
- **There is concern about the long-term impacts of the growing number of enhanced crossing treatments:**
  - Overuse of these devices may reduce effectiveness at locations where they are most needed.
  - Ongoing maintenance and replacement costs are currently uncertain and not accounted for in the budget.

Tool Overview

- Supplemental tool developed to support IIM-TE-384.1
- Adapted from the spreadsheet-based framework originally developed in Richmond
- Provides additional context and prioritization for pedestrian crossing locations
- Interactive map-based interface
- Designed with a user-friendly workflow
- Generates automated scoring with configurable inputs through an embedded survey module

Benefits

- Identify locations with the greatest pedestrian demand and safety needs
- Support consistent and transparent statewide decision-making
- Prioritize limited resources for highest-impact locations
- Combine statewide criteria with local engineering judgment
- Provide a structured and comparable evaluation framework
- Enable proactive identification of pedestrian needs beyond submitted requests

Scoring Methodology

Category	Key Factors Considered
Base Score **50%** **(6 factors)** **[Or Trail Crossing Score]**	• Number and concentration of pedestrian generators • Proximity to transit stops • Proximity to schools/parks • Proximity to medical facilities • Pedestrian crash history **[Based on available GIS data sources & land uses]**
Demographics Score **50%** **(5 factors)** **[Or Ped Volume Score]**	• Population density • Percentage of low-income households • Zero-vehicle households • Populations under 18 or over 65 • Percentage of commuters walking, biking, or using transit **[All based on Census data relative to County Average]**

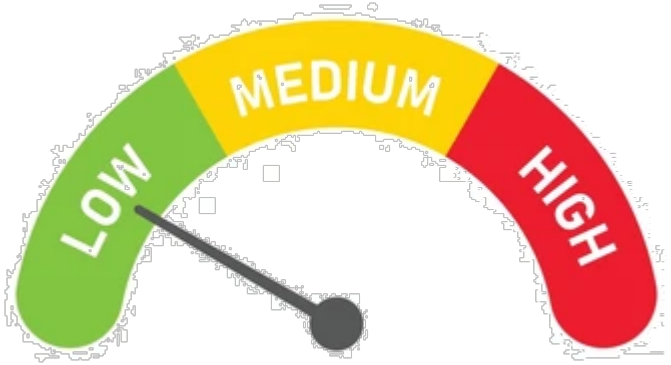
Scoring Scenarios

	Ped Count NOT Available	Ped Count Available
No Trail Crossing	Base Score Demographics Score	Base Score Ped Count Score
Trail Crossing	Trail Score Demographics Score	Trail Score Ped Count Score

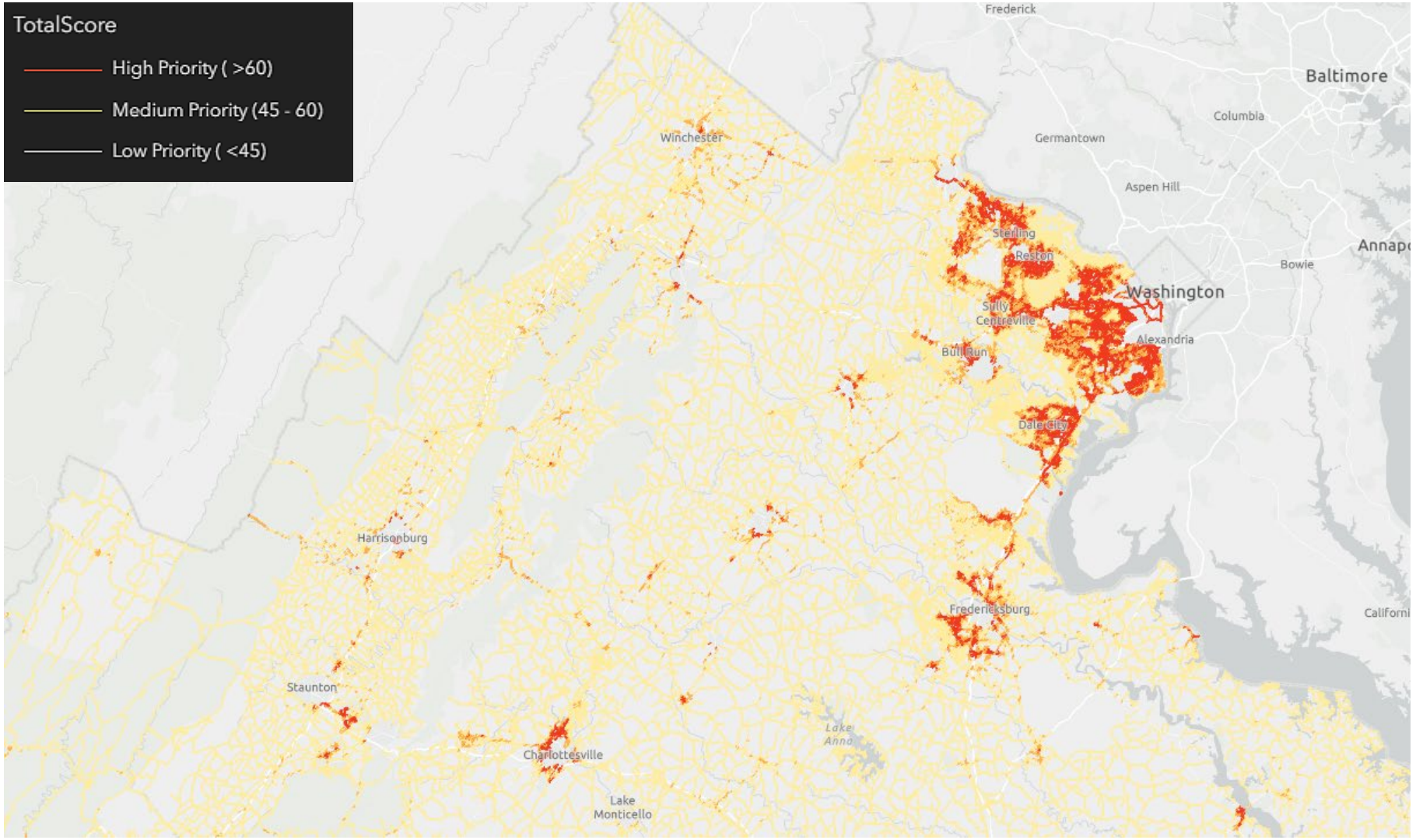
Priority Thresholds

- Analyzed statewide base scoring distributions by district, roadway type, and functional classification

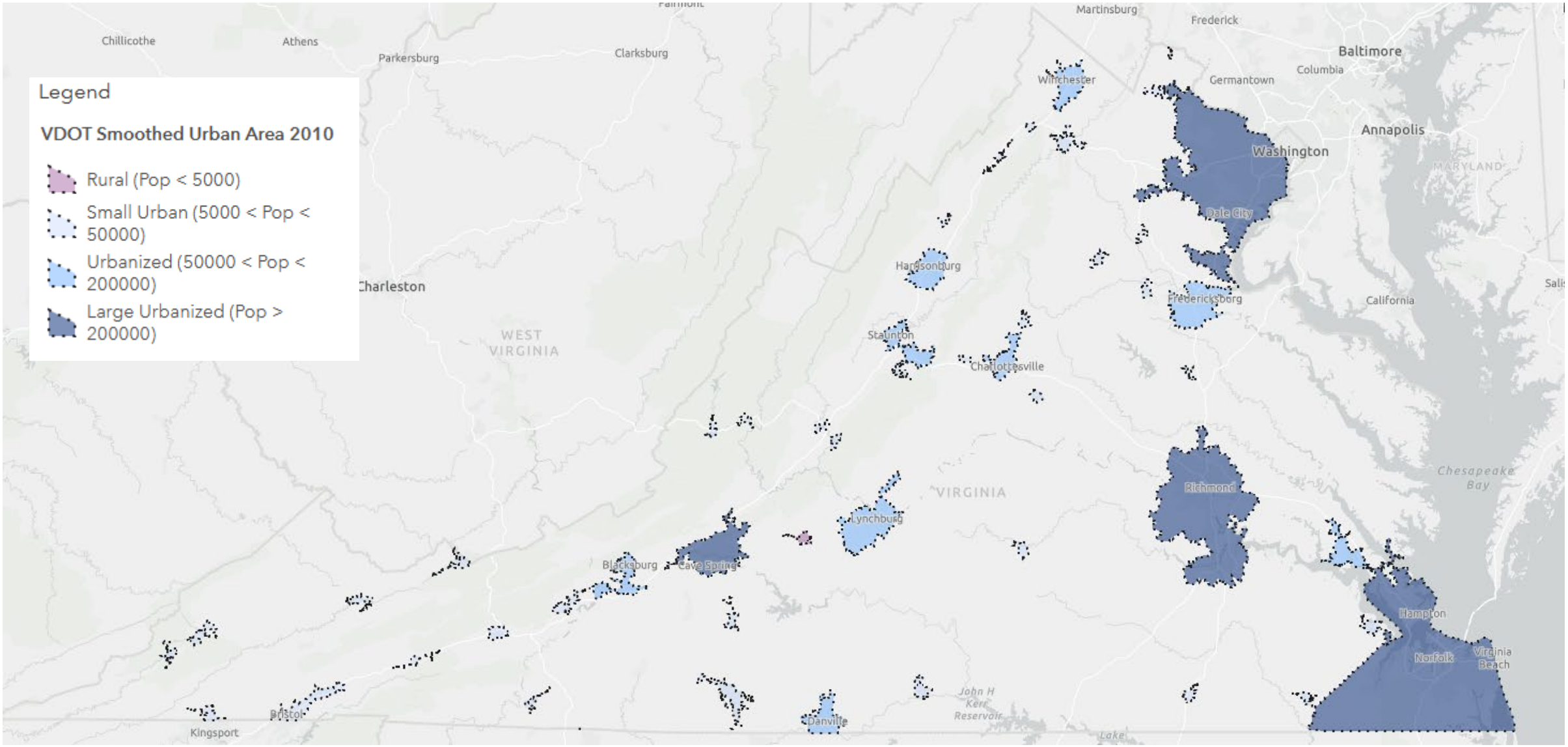
- Establish separate priority thresholds for urban and other areas using the VDOT functional classification map



Score Heatmap



VDOT Urban Area Map



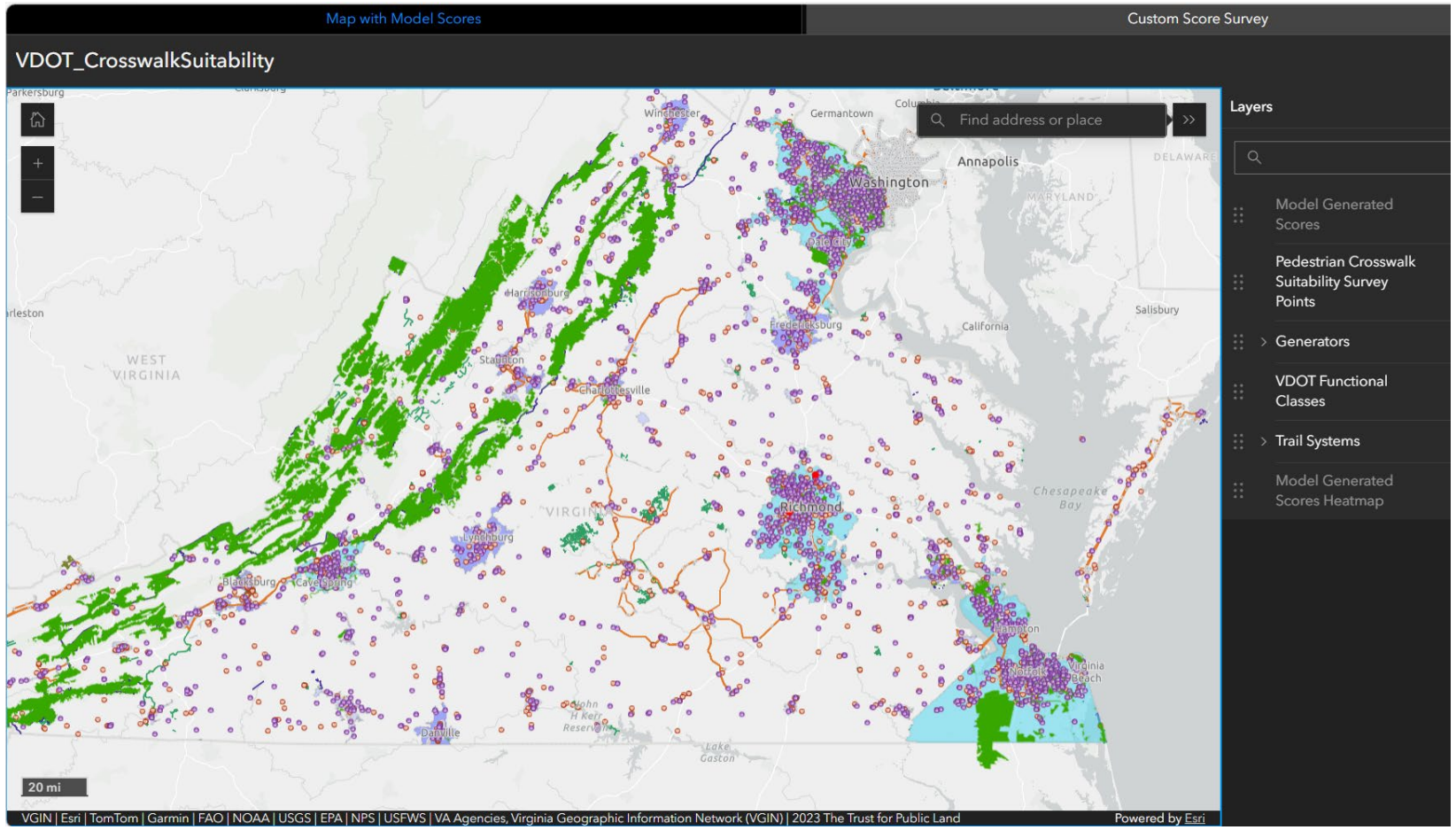
Score Prioritization

- **Prioritize areas with high pedestrian demand and need.**
- **Target investments where they will have the largest impact.**

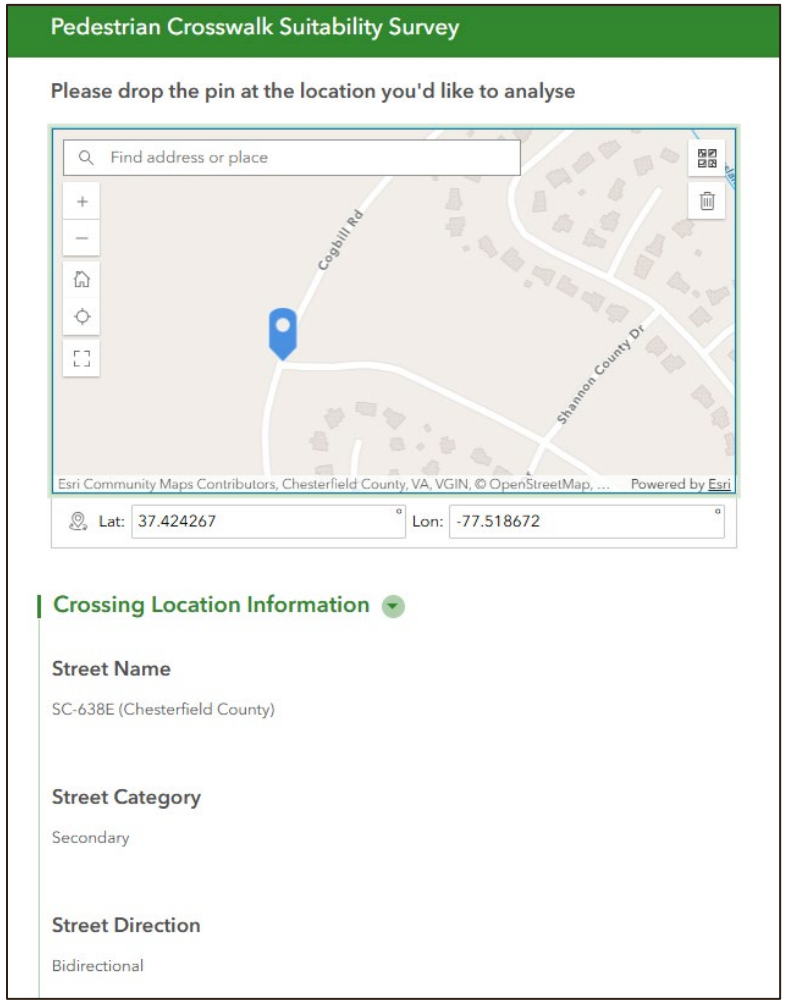
Scores	Urban Areas	Other Areas
High	60 - 100	40 - 100
Average	35 - 60	25 - 40
Low	0 - 35	0 - 25

- **Engineering judgement is still critical**

Interface

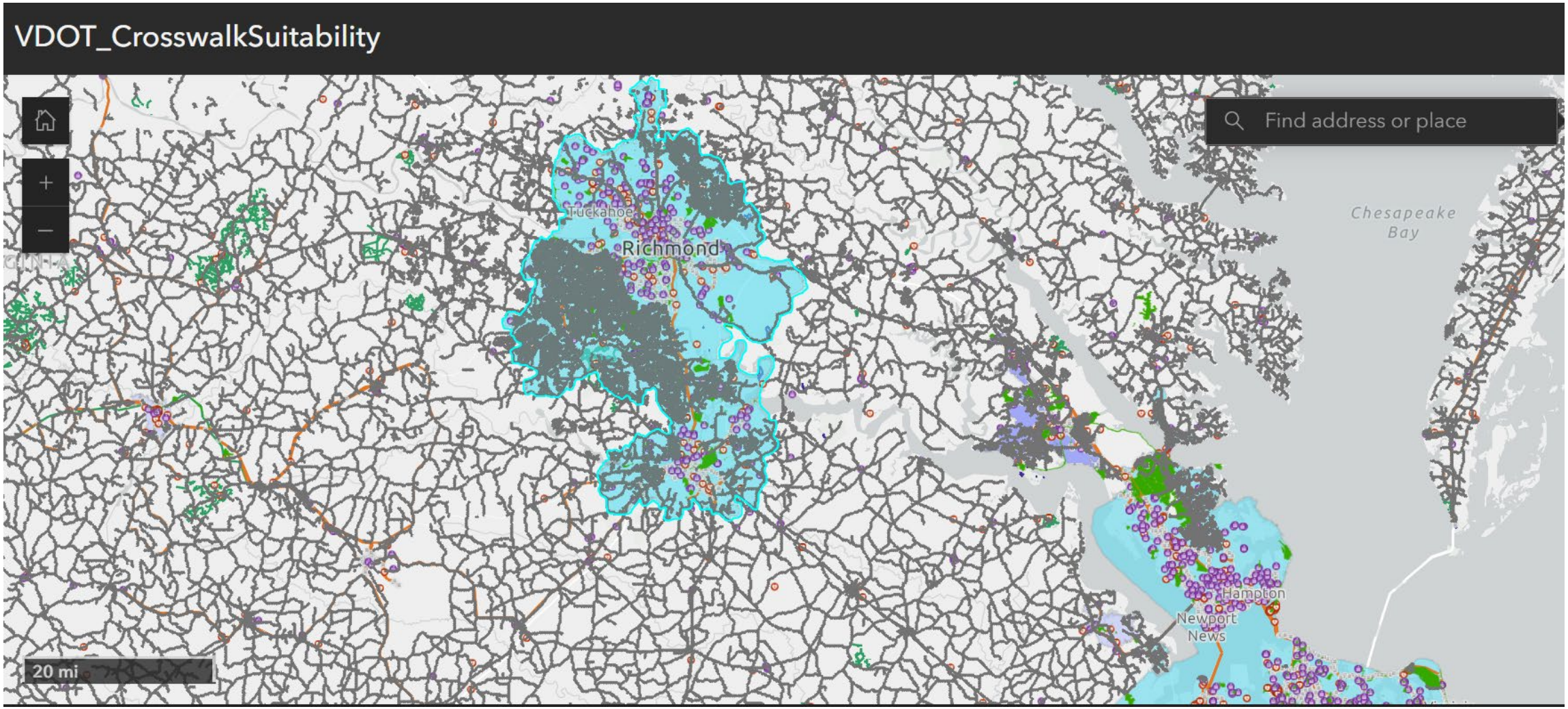


Map with Model Scores
Custom Score Survey
VDOT_CrosswalkSuitability
Find address or place
Layers
Model Generated Scores
Pedestrian Crosswalk Suitability Survey Points
Generators
VDOT Functional Classes
Trail Systems
Model Generated Scores Heatmap
Washington
Annapolis
Richmond
Chesapeake Bay
WEST VIRGINIA
20 mi
VGIN | Esri | TomTom | Garmin | FAO | NOAA | USGS | EPA | NPS | USFWS | VA Agencies, Virginia Geographic Information Network (VGIN) | 2023 The Trust for Public Land
Powered by Esri



Pedestrian Crosswalk Suitability Survey
Please drop the pin at the location you'd like to analyse
Find address or place
Cogbill Rd
Shannon County Dr
Esri Community Maps Contributors, Chesterfield County, VA, VGIN, © OpenStreetMap, ...
Powered by Esri
Lat: 37.424267
Lon: -77.518672
Crossing Location Information
Street Name
SC-638E (Chesterfield County)
Street Category
Secondary
Street Direction
Bidirectional

Base Map


VDOT_CrosswalkSuitability
Find address or place
Richmond
Chesapeake Bay
Hampton
Newport News
20 mi

Example 1 – Prince George

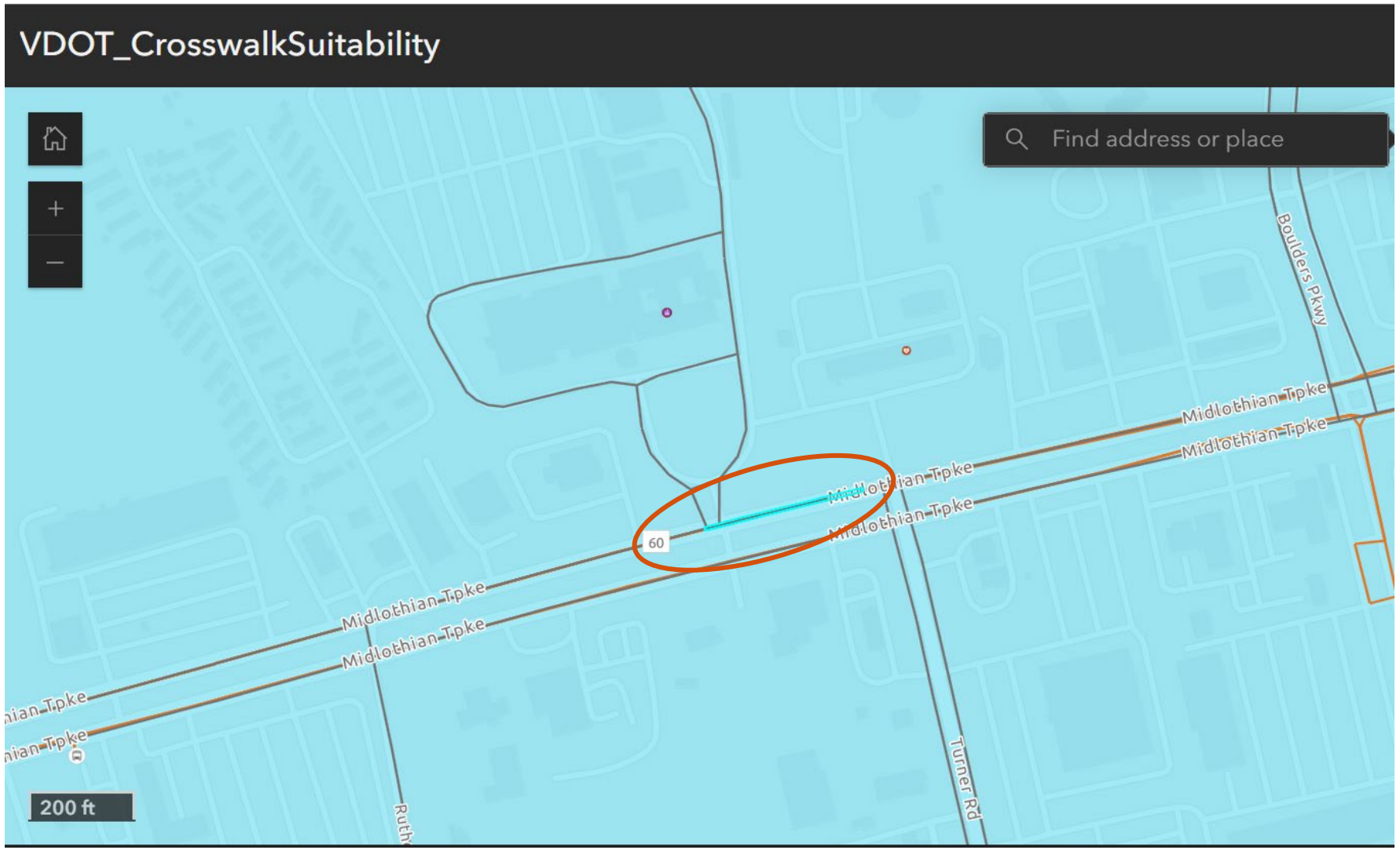
Example 1 - Evaluation

VA-106N

Model Calculated Score	56
Street Name	VA-106N
Street Category	State Highway Primary
Street Direction	Bidirectional
AADT	6800
Posted Speed Limit	35
How many pedestrian generators are within 1/2-mile of the proposed crossing location?	2
How concentrated are the nearby pedestrian generators?	Highly Dispersed
How close is the nearest transit stop to the crossing?	Greater than 1/2 mile
How close is the nearest school, playground, park or other likely generator of vulnerable users (under 18 years of age)?	Greater than 1/2 mile
How close is the nearest hospital, assisted living, nursing home or other likely generator of vulnerable users (over 65 years of age)?	Less than 300 feet
How may observed pedestrian crashes have occurred within 500 feet of the proposed crossing location within the past 5 years?	2 or more crashes
Population Under 18 / Over 65 relative to County avg	1.200076
% Commute to Work - Walk/Transit relative to County avg	0.330479
% Low-Income Households relative to County avg	1.204634
Population Density relative to County avg	3.896111
% Zero-Vehicle Households relative to County avg	1.040083

Scores	Urban Areas	Other Areas
High	60 - 100	40 - 100
Average	35 - 60	25 - 40
Low	0 - 35	0 - 25

Example 2 - Chesterfield



Example 2 - Evaluation

US-60W	
Model Calculated Score	90
Street Name	US-60W
Street Category	US Highway Primary
Street Direction	Master Non-Prime
AADT	48000
Posted Speed Limit	45
How many pedestrian generators are within 1/2-mile of the proposed crossing location?	9
How concentrated are the nearby pedestrian generators?	Highly Concentrated
How close is the nearest transit stop to the crossing?	Less than 300 feet
How close is the nearest school, playground, park or other likely generator of vulnerable users (under 18 years of age)?	Less than 300 feet
How close is the nearest hospital, assisted living, nursing home or other likely generator of vulnerable users (over 65 years of age)?	Less than 300 feet
How may observed pedestrian crashes have occurred within 500 feet of the proposed crossing location within the past 5 years?	2 or more crashes
Population Under 18 / Over 65 relative to County avg	0.831222
% Commute to Work - Walk/Transit relative to County avg	1.637001
% Low-Income Households relative to County avg	1.492120
Population Density relative to County avg	2.344191
% Zero-Vehicle Households relative to County avg	0.810013

Scores	Urban Areas	Other Areas
High	60 - 100	40 - 100
Average	35 - 60	25 - 40
Low	0 - 35	0 - 25

Next Steps

- Finalize the User Manual
- Coordinate with business process stakeholders
- Deploy the tool for internal VDOT use
- Make refinements as needed
- Expand distribution for broader use across stakeholders and industry, and consider inclusion into VDOT decision-making processes

Questions?

Thank You!

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