Planning and Prioritizing Projects for Health

PBIC Health + Transportation Webinar Series, Part 4

Sagar Shah  American Planning Association
Lauren Blackburn  VHB
Mark Cole  Virginia Department of Transportation
Stephen Read  Virginia Department of Transportation
Justin Crow  Virginia Department of Health
Health and Transportation

Oct. 13: Confronting Power and Privilege for Equity
Oct. 15: Agency Structures for Collaboration
Oct. 22: Integrating Health Data
Oct. 27: Planning and Prioritizing Projects
Oct. 28: Bringing Health to Transportation Policy

#PBICWebinar
Transportation and health intersect in many ways
Series Motivation

- How are health and equity defined within the transportation community?
- How can transportation practices impact health?
- In what ways are transportation agencies considering health in current practices?
- What partnerships, research, and other resources are needed to improve practice?
Pathways to Health

- Improving access to opportunities and services
- Providing opportunities for physical activity
- Mitigating human exposure to environmental risks (air and noise pollution)
- Preventing injuries and improving safety
- Supporting resiliency to disaster and extreme weather events
- Promoting community connectedness and vitality
Meet the Panel

Sagar Shah  
American Planning Association

Lauren Blackburn  
VHB

Mark Cole  
Virginia Department of Transportation

Stephen Read  
Virginia Department of Transportation

Justin Crow  
Virginia Department of Health
HEALTH AND TRANSPORTATION

Webinar Series
October 26, 2020

Sagar Shah, PhD, AICP
Planning and Community Health Manager
American Planning Association (APA)
sshah@planning.org
APA's Planning and Community Health (PCH) program provides tools, educational materials, technical support to members so they can integrate health and equity into planning practice at all levels.
EXAMPLES OF PAST PROJECTS
Planning and the Opioid Epidemic
Objectives:

- Develop a holistic and strategic research roadmap
- Identify evidence to support practical and useful information, and implementable tools, for state DOTs and partners

Research products:

10-year strategic roadmap
- Six specific Research Problem Statements
- Communications/implementation plan

PowerPoint slides
Technical report
Excel file of studies reviewed (bonus)
Research Roadmap

Framed around key transportation agency processes and practices

<table>
<thead>
<tr>
<th>Community Engagement / Data Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public involvement</td>
</tr>
<tr>
<td>Coordination with local, regional, and tribal governments</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Data Collection</th>
<th>Performance metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy-making</td>
<td>Monitoring and Evaluation</td>
</tr>
</tbody>
</table>

- **Policy-making**
  - Vision and/or Mission
  - Statewide multimodal transportation plan
  - Agency guidance

- **Planning**
  - Long-range plans
  - Mode-specific plans
  - Corridor studies
  - Scenario plans
  - Small area plans

- **Capital programs, projects and implementation**
  - Project evaluation
  - Project selection
  - Environmental assessment

- **Monitoring and Evaluation**
  - Design review and comparison
  - Construction
  - Operation
  - Maintenance
**Gap:** Lack of guidance on opportunities to integrate health considerations during prioritization, programming, and pre-scoping processes.

**Need:** Synthesis of practices where MPOs or state DOTs included health indicators in transportation project prioritization criteria.

**Need:** Survey of MPO and state DOT interest in incorporating health into project prioritization and programming decisions and expressed barriers in doing so.

**Need:** Summary of transportation agencies who collect and review health data for potential impacts as part of project screening.

**Need:** Case studies or documentation of the use of health department representation in transportation planning processes, such as boards or advisory committees.
Consider Data Options

Conduct Analysis - Plan

Prioritize Projects

Monitor Outcomes
VIRGINIA PEDESTRIAN SAFETY ACTION PLAN

Integrating Health Data into Systemic Safety Analysis

Mark A. Cole, PE, Virginia Department of Transportation

October 27, 2020
Recent Timeline of VDOT Pedestrian Safety Efforts

- **Feb 2016**: Published 1st Virginia Pedestrian Crash Assessment
- **Nov 2017**: Updated Pedestrian Crash Assessment
- **May 2018**: Published 1st Virginia Pedestrian Action Plan (PSAP) & Online Map Tool
- **Nov 2018**: Funded initial PSAP projects ($8M)
- **Oct 2019**: Funded pedestrian crossings at all VDOT traffic signals on PSAP corridors ($25M)
- **Feb 2020**: Updated Pedestrian Crash Assessment & PSAP map
Virginia Pedestrian Crash Assessment

- Analyzes pedestrian crashes
- First published in 2016
  - updated in 2017 and 2020
- Uses a variety of data sources to:
  - Understand common factors among crashes
  - Identify crash trends across time
Key Findings: Land Use

**Pedestrian Crashes By Land Use (2014-2018)**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Pedestrian Fatal Crashes</th>
<th>Pedestrian Injury Crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential/Commercial/Recreational</td>
<td>79%</td>
<td>89%</td>
</tr>
<tr>
<td>Rural/Industrial</td>
<td>21%</td>
<td>11%</td>
</tr>
</tbody>
</table>

**Pedestrian Fatal Crashes**
- 79% Residential/Commercial/Recreational
- 21% Rural/Industrial

**Pedestrian Injury Crashes**
- 89% Residential/Commercial/Recreational
- 11% Rural/Industrial
Key Findings: Where Pedestrian Deaths are Happening

Where Virginia’s Fatal Pedestrian Crashes Happen (%)

- Signalized Intersection: 22%
- Unsignalized Intersection: 35%
- Mid-Block: 28%
- Intersection/Mid-Block: 12%
- Other: 3%

Virginia’s Fatal Pedestrian Crashes & Marked Crosswalk Availability (%)

- Crosswalk Available - Pedestrian Struck In Crosswalk: 68%
- Crosswalk Available - Pedestrian Not in Crosswalk: 12%
- No Crosswalk Available: 20%
Key Findings: Speed Limits

Virginia Pedestrian Crash Severity By Speed Limit (2014-2018)

- **25 MPH or less**: 7% FATAL, 93% INJURY
- **30 and 35 MPH**: 20% FATAL, 80% INJURY
- **40 and 45 MPH**: 36% FATAL, 64% INJURY
- **50 MPH or greater**: 47% FATAL, 53% INJURY
Key Findings: Light Condition

Pedestrian fatal crashes by:

- light condition
- Month
- time of day

**Light Condition (%)**

- Darkness - No Lighting: 42%
- Darkness - Lighting: 29%
- Darkness - Unknown: 3%
- Dawn: 3%
- Dusk: 1%
- Daylight: 22%

**Time of Day (%)**

- 6 PM - Midnight: 17%
- Midnight - 6 AM: 21%
- 6 AM - Noon: 49%
- Noon - 6 pm: 13%
Key Findings: Transit

- Among pedestrian fatal crashes 45% took place near transit stop (38% near a bus stop, and 7% near a rail stop).
- Roughly 60% of pedestrian fatal crashes occurred near a bus route.
Key Findings: Health Opportunity Index

Almost 60% of deaths and injuries occur in locations with VERY LOW or LOW Virginia Health Opportunity Index (HOI) Scores.

Distribution of Pedestrian Crashes by HOI Category (2014-2018)
Virginia Department of Health - Health Opportunity Index

- First developed in 2012 as part of the *Virginia Health Equity Report*
- “Examines how where you live, work and play influences the opportunity to live long, healthy lives.”
- Each profile is made up of 13 indices covering the spectrum of quality of life indicators (affordability, healthcare access, air quality, etc.)
- Complex interactions that generate the final HOI
What is the Virginia Health Opportunity Index?
Virginia Pedestrian Safety Action Plan (PSAP) - 2018

3 Major Components:

1 – VDOT Policy Recommendations to ensure pedestrian safety

2 – Safety Analysis to determine which specific road locations pose the greatest risk for pedestrians

3 – Pedestrian safety countermeasure recommendations
Safety Analysis – Crash Clusters and Priority Corridors

Crash clusters
- Density map of actual crash locations
- Look back

Priority Corridors
- Top ranked corridors based on scoring criteria that used various data sources indicating pedestrian presence or risk
- Predictive
Corridors – Original Method (2018)

2018 PSAP Corridor Scoring Factors: 181 Priority Corridors

<table>
<thead>
<tr>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Annual average daily traffic (AADT)</td>
<td>• Roadway geometry</td>
<td>• Population living below the poverty line</td>
</tr>
<tr>
<td>• Posted speed limit</td>
<td>• Urban/rural context</td>
<td>• Pedestrian crash history</td>
</tr>
<tr>
<td>• Zero-vehicle households</td>
<td>• Employment density</td>
<td>• Proportion of alcohol related crashes (by district)</td>
</tr>
<tr>
<td>• Population density</td>
<td>• Proximity to a school</td>
<td>• Proximity to a park</td>
</tr>
</tbody>
</table>
HOI and zero vehicle households were the strongest indicators of pedestrian crashes – both all injury crashes and fatal/severe only crashes.

Employment density was another strong indicator.

Population density and density of persons in poverty were poorer performers.

- Poverty alone was dropped in the PSAP scoring.

Spatial Bayesian Analysis to Examine Health Opportunity Index
### Priority Corridor Criteria – 2019 Update

#### 2019 PSAP Corridor Scoring Factors

<table>
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<th>Medium</th>
<th>Low</th>
</tr>
</thead>
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</tr>
<tr>
<td>• Transit access</td>
<td>• Proximity to a school</td>
<td>• Population density</td>
</tr>
<tr>
<td>• Health Opportunity Index (HOI)</td>
<td>• Posted speed limit</td>
<td>• Urban/rural context</td>
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<td></td>
<td></td>
<td>• Proportion of alcohol related crashes (by district)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Population living below the poverty line</td>
</tr>
</tbody>
</table>


What Else Changed in 2019?

- New 3-tier system for ranking priority corridors:
  - **Top Statewide Priority:** These corridors are of the highest priority in the State (Top 0.1%)
  - **Secondary Statewide Priority:** These locations represent important pedestrian corridors at a state and district-level but are of slightly lower priority than the first tier (Top 1%)
  - **Top 5% Priority:** This tier is comprised of corridors that are not the top priority in the State but are still important regional locations. These sites have at least one segment that scored within the top 5% of all scored segments.

- Based on the final score assigned to road segment(s)
  - Located along the State’s master LRS network

- Provides several priority locations in all VDOT districts
PSAP 1.0 vs 2.0 Comparison

- Total Pedestrian Crashes within 250 Feet per Mile:
  - 2018 PSAP Corridors (All): 3.43
  - 2019 PSAP Corridors (Tier 1 Only): 4.77

- Fatal and Severe Pedestrian Crashes within 250 Feet per Mile:
  - 2018 PSAP Corridors (All): 0.98
  - 2019 PSAP Corridors (Tier 1 Only): 1.41

- Fatal Pedestrian Crashes within 250 Feet per Mile:
  - 2018 PSAP Corridors (All): 0.15
  - 2019 PSAP Corridors (Tier 1 Only): 0.29
Welcome to VDOT’s Ped Safety Action Plan (PSAP) Map Viewer!

This map works in conjunction with Virginia’s award-winning PSAP report, which can be read and downloaded by clicking HERE. You can also read and download the supporting Virginia Pedestrian Crash Assessment report by clicking HERE.

The map defaults to show Version 2 (the latest version) by default, that includes pedestrian priority corridors and crash clusters that have been identified as a result of the latest PSAP analysis methods. Version 2 is based on pedestrian crashes that occurred between 2014 and 2018 and the priority pedestrian corridors are organized into three tiers as follows:

- Priority 1 (P1), shown in red, which represent the corridors that score in the top 0.1% of scored corridors in the state.
- Priority 2 (P2), shown in blue, which represent the corridors that score in the top 1% of scored corridors, and
- Priority 3 (P3), shown in green, which represent corridors that fall in the top 5% of scored corridors.

Version 2 pedestrian crash clusters can be shown by turning the heat map layer on. The top crash clusters in each VDOT District are noted by yellow stars.

The original PSAP (Version 1) can still be viewed using this map viewer. For a brief video tutorial on how to toggle between Version 1 and Version 2, please click HERE. Finally, to download the underlying GIS data for Version 2, please click HERE.

For more information or to contact:

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Director, Program Administrator
Planners Support Services
4196 (office) 804 819 9370 (cell)
Mark Cole@VDOT.Virginia.gov

Download PSAP
View YouTube Tutorial
PSAP Infrastructure Projects

- Summer 2018 - Identified $8 Million for initial PSAP projects

- Criteria:
  - Low-cost/high-benefit countermeasures
  - Address pedestrian crossings only
  - Shovel Ready or quick delivery

- Overwhelming Interest
  - 59 project requests ($43M total)
  - Funded 25 projects
  - Projects are being completed now
PSAP Pedestrian Safety Infrastructure Projects

• Fall 2019 – Additional $25 Million approved for PSAP improvements

• All VDOT signals on PSAP priority corridors will receive crosswalks and ped countdowns over a five–year period

Jefferson Park Avenue & Brandon Avenue, Charlottesville, VA
Using the PSAP to Identify Needs for all Projects

Stephen Read, PE, Virginia Department of Transportation

October 27, 2020
What is SMART SCALE

Virginia’s transportation funding prioritization process created by 2014 Legislation

- Picking the right transportation projects for funding
- Ensuring the best use of limited transportation funds
- Reset funding streams

Branded as SMART SCALE in 2016

www.vasmartscale.org
What is SMART SCALE?

- System
- Management and Allocation of Resources for Transportation
- Safety
- Congestion Mitigation
- Accessibility
- Land Use Coordination
- Environmental Quality and Economic Development

# One
How are Projects Screened In?

Proposed projects must meet a need as identified by VTRANS:

- Corridors of Statewide Significance
- Regional Networks
- Urban Development Areas
- Safety

Funding Eligibility Key

- = High Priority Projects Program (HPPP)
- = Construction District Grant Program (DGP)
# Defining VTRANS Pedestrian Safety Needs

## METHODOLOGY REPORT FOR THE IDENTIFICATION OF 2019 MID-TERM NEEDS

### Goal C: Methodology for Identification of Pedestrian Safety Improvement Needs

<table>
<thead>
<tr>
<th>Performance Measure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>None, utilization of roadway segments included in VDOT's Pedestrian Safety Action Plan (PSAP).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What it tells us:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of corridors with higher than normal risk of a pedestrian-involved accident.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What it measures:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher-risk areas for pedestrians. VDOT’s Pedestrian Safety Action Plan (PSAP) conducted a predictive systemic analysis that considered accident histories on major thoroughfares throughout the state on a comparative basis to identify locations with elevated risk.</td>
</tr>
</tbody>
</table>

### Input

<table>
<thead>
<tr>
<th>Step</th>
<th>Goal C: Safety for all Users:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify appropriate measure for Goal.</td>
<td>• Provide a safer and more secure transportation system for passengers and goods on all travel modes.</td>
</tr>
<tr>
<td>2. Consider stakeholder input.</td>
<td>• Include consideration for non-motorized needs that may not get highlighted based on Potential for Safety Improvement (PSI) method.</td>
</tr>
<tr>
<td>3. Collect Data.</td>
<td>• Geospatial database developed for May 2018 PSAP, which identified corridors with a history of pedestrian safety crashes and assessed pedestrian crash risk.</td>
</tr>
</tbody>
</table>

### Action

<table>
<thead>
<tr>
<th>Step</th>
<th>Goal C: Safety for all Users:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify appropriate measure for Goal.</td>
<td>• Consult with VDOT Highway Safety Improvement Program staff.</td>
</tr>
<tr>
<td>2. Consider stakeholder input.</td>
<td>• Review VDOT’s PSAP and procedures for considering safety in SMART SCALE.</td>
</tr>
<tr>
<td>3. Collect Data.</td>
<td>• Confirm that using PSAP designations would address VTRANS goal area and objectives.</td>
</tr>
</tbody>
</table>

### Output

<table>
<thead>
<tr>
<th>Step</th>
<th>Goal C: Safety for all Users:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify appropriate measure for Goal.</td>
<td>• PSAP report and priority corridors map.</td>
</tr>
<tr>
<td>2. Consider stakeholder input.</td>
<td>• Add location of PSAP corridors as a separate category of Needs to complement the PSI-based Safety Needs.</td>
</tr>
<tr>
<td>3. Collect Data.</td>
<td>• Integrate PSAP database with other needs layers.</td>
</tr>
</tbody>
</table>

* Add PSAP Corridors

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https://www.vtrans.org/mid-term-planning
InteractVTRANS: Online Mapping of Needs

Select PSAP Corridors & other Needs

https://www.vtrans.org/mid-term-planning/InteractVTrans
SMART SCALE: Application Portal Identifies PSAP Needs

VTRANS Needs Categories Requested:

<table>
<thead>
<tr>
<th>Need Id: 261364</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need Name: City Rt. 7561W (City of Richmond): Maury St</td>
</tr>
<tr>
<td>Description: Pedestrian Safety Improvement</td>
</tr>
</tbody>
</table>

Zoom to
SMART SCALE: Scoring and Programming Processes

**Evaluation and Scoring**
- Project Screening
- Calculation of Measures
- Project Scoring
- Project List Advanced to CTB

**Prioritization and Programming**
- Public Comment Period
- Funding Decisions for Draft SYIP
- CTB Guidance on Program Development

SYIP = Six Year Improvement Program
Planning Level Project Benefits: Crash Reductions

Predefined list of Crash Modification Factors (CMFs) covers most project improvements


Categories:

- Intersection
- Interchange
- Segments
- Bicycle & Pedestrian
Multiple improvements

Multiple CMFs may be assigned to one segment within the influence area of any individual improvement

- In other words – start a new segment once the number of applicable CMFs changes

Identify Overlap Between Project Improvements

Virginia Department of Transportation

Add Lighting
Add Sidewalk
Widen Road
Final Segmentation
## Sidewalk

<table>
<thead>
<tr>
<th>CMF Category</th>
<th>Pedestrian and Bicycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMF Description</td>
<td>Add new sidewalk</td>
</tr>
<tr>
<td>CMF Value</td>
<td>0.12</td>
</tr>
<tr>
<td>Targeted Crash Type(s)</td>
<td>Pedestrian</td>
</tr>
</tbody>
</table>

## Q&A

- Should I apply the CMF in these cases?
  - Widening existing sidewalk = **No**
  - Repairing existing sidewalk = **No**
  - ADA improvements to existing sidewalk = **No**

- Is there any benefit to non-pedestrian crashes?
  - See slides on Roadside Hazard Rating
Safety Component of Total Score Card

<table>
<thead>
<tr>
<th>Factor</th>
<th>Congestion Mitigation</th>
<th>Safety</th>
<th>Accessibility</th>
<th>Economic Development</th>
<th>Environment</th>
<th>Land Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure</td>
<td>Increase in Peak Period Person Throughput</td>
<td>Reduction in Peak Period Delay</td>
<td>Reduction in Fatal and Injury Crash Rate</td>
<td>Increase in Access to Jobs</td>
<td>Increase in Access to Jobs for Disadvantaged Populations</td>
<td>Increase in Access to Multimodal Travel Choices</td>
</tr>
<tr>
<td>Measure Value</td>
<td>18.7 persons</td>
<td>1.1 person hrs.</td>
<td>8.0 EPDO</td>
<td>475.4 EPDO / 100M VMT</td>
<td>5.2 jobs per resident</td>
<td>2.1 jobs per resident</td>
</tr>
<tr>
<td>Normalized Measure Value (0-100)</td>
<td>0.1</td>
<td>0.0</td>
<td>2.3</td>
<td>1.0</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Measure Weight (% of Factor)</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>Factor Value</td>
<td>0.0</td>
<td>1.6</td>
<td>0.1</td>
<td>1.6</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>Factor Weight (% of Project Score)</td>
<td>10%</td>
<td>30%</td>
<td>15%</td>
<td>35%</td>
<td>10%</td>
<td>N/A</td>
</tr>
<tr>
<td>Weighted Factor Value</td>
<td>0.0</td>
<td>0.5</td>
<td>0.0</td>
<td>0.6</td>
<td>0.2</td>
<td></td>
</tr>
</tbody>
</table>

Project Benefit: 1.3
SMART SCALE Cost: $5,827,000
SMART SCALE Score: 2.2

In Health Matters, Place Matters - The Health Opportunity Index (HOI)

Virginia Department of Health
Office of Health Equity
VDH Office of Health Equity

Mission:

To identify health inequities and their root causes and promote equitable opportunities to be healthy.

- State Office of Rural Health
- State Primary Care Office
- Office of Multicultural Health & Community Engagement
- Division of Social Epidemiology

http://www.vdh.virginia.gov/health-equity/
PAVING THE ROAD TO HEALTH EQUITY

Health Equity is when everyone has the opportunity to be as healthy as possible.

Programs
Successful health equity strategies

Measurement
Data practices to support the advancement of health equity

Policy
Laws, regulations, and rules to improve population health

Infrastructure
Organizational structures and functions that support health equity

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Office of Health Equity
Health equity for all Virginians

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment
Division of Social Epi

Vision
Information with Impact.

Mission
To provide information and insight to the public, stakeholders and policy-makers that inspires them to take actions that improve the lives of vulnerable Virginians.

Strategic Priorities

- Engage stakeholders, policymakers and the public with actionable information.
- Cultivate a stable workforce with diverse academic backgrounds, experiences and skills.
- Develop high quality data products and continuously improve existing products.
- Translate social epidemiology research to the Commonwealth.

Health Opportunity Index

Identifies areas and populations that are most vulnerable to adverse health outcomes based on the Social Determinants of Health
Selecting Indicators

1. Identified by Local Health Departments & Stakeholders as important.

2. Linked to health outcomes in academic literature.

3. “Actionable” (e.g., segregation vs race)

4. Consistent, quality data for all Census Tracts in Virginia.
Structure

- 30+ Variables
- 13 Indicators
- 4 Profiles
- 1 Health Opportunity Index
Health Opportunity Index

- Community Environmental Profile
- Economic Opportunity Profile
- Consumer Opportunity Profile
- Wellness Disparity Profile
Health Opportunity Index

Community Environmental Profile
- Air Quality
- Population Churning
- Population Density
- Walkability

Consumer Opportunity Profile
- Affordability
- Education
- Food Accessibility
- Material Deprivation

Economic Opportunity Profile
- Employment Access
- Income Inequality
- Job Participation

Wellness Disparity Index
- Access to Care
- Segregation
Community Environmental Profile

Air Quality Index (EPA)
- Neurological Risk
  - Cancer Risk
  - On-road Pollution
    - Non-point
  - Respiration Risk
    - Non-road

Population Churning Index
- Inflow Mobility
- Outflow Mobility

Population-Weighted Density

Walkability Index
- Density
- Diversity (Land-use)
- Design (Connectivity)
- Distance to Transit

Office of Health Equity
Health equity for all Virginians

VDH Virginia Department of Health
Protecting You and Your Environment
Consumer Opportunity Profile

Affordability Index
- Housing Cost
- Transportation Costs
- Average Income

Education Index
- Ave. Years of Schooling

Food Accessibility Index
- % Low Income
- % Low Access to Major Grocery Store
- Distance to Grocery Store

Material Deprivation Index
- Unemployment
- Autoless Homes
- Home Ownership
- Overcrowding
Economic Opportunity Profile

- Employment Access Index
  - Number of Jobs
  - Distance to Jobs

- Income Inequality Index
  - Gini Coefficient

- Job Participation Index
  - % of Working Age Population in the Labor Force
Wellness Disparity Profile

Access to Care Index
- % Uninsured
- Primary Care Physician FTEs within 30 miles

Segregation Index
- Race/Ethnicity
- Population
- Spatial Influence Weighting
Monotonicity of HOI

Life Expectancy at Birth

Disability Free Life Expectancy

Office of Health Equity
Health equity for all Virginians

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment
Disparities by Health Opportunity
Mortality per 100,000
(Age-Adjusted)
<table>
<thead>
<tr>
<th>VARNAME</th>
<th>VARIABLE</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighbors</td>
<td>10.0</td>
<td></td>
</tr>
<tr>
<td>ResidualSquares</td>
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<tr>
<td>Explanatory Variable</td>
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<td>HOI</td>
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</table>

Note: DFLE - Disability Free Life Expectancy (Healthy Life)
HOI - Health Opportunity Index (composite Index)
The Virginia Department of Health uses a Health Opportunity Index (HOI) as a composite measure of the social, economic, educational, demographic, and environmental factors that relate to a community’s well-being. This includes indicators of neighborhood walkability and access to transportation; two factors directly relevant to Vision Zero. Areas in the City with a “very low” HOI experience a fatality and injury rate 2.65 times higher than areas with a very high HOI. Investments in transportation safety in these communities may contribute to the overall health outcomes of residents in areas with the greatest need. It will be necessary for the City and Vision Zero stakeholders to continue to determine which factors have the greatest influence on crash rates and the resulting injuries and fatalities in these specific communities.

Source: Virginia Department of Health
Contribution of individual HOI Indices on Overall Health (Life Expectancy) in Portsmouth

The 13 Indices of the Health Opportunity Index

<table>
<thead>
<tr>
<th>HOI Variables</th>
<th>Contribution of the Variables on Overall Health</th>
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<tbody>
<tr>
<td>Townsend Material Deprivation Index</td>
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<td>Education Index</td>
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<td>Affordability Index</td>
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<td>Racial Dissimilarity Index</td>
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<td>Pop Churning</td>
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<td>Job Participation</td>
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HOI Variables

- Townsend Material Deprivation Index
- Pop Weighted Density
- Education Index
- Income Equality
- Health Care Access
- Employment Access
- Walkability Environment Index
- Affordability Index
- AirQuality Index
- Food Access
- Racial Dissimilarity Index
- Pop Churning
- Job Participation
Virginia
Portsmouth Health District
Education Index *
by Census Tract
Overlaid with Percent Diabetes Diagnosis **

Percent Diabetes Diagnosis
- 2.4
- 2.5 - 10.8
- 10.9 - 13.7
- 13.8 - 18.2
- 18.3 - 24.7

* The average number of years of schooling among adults in the community. It can range from zero (those with no formal schooling) to 20 (those with a doctorate/professional degree).

** aged ≥18 years who report ever been told by a doctor, nurse, or other health professional that they have diabetes other than diabetes during pregnancy.
Limitations

- Data limitations
- Ecological Fallacy: Individual results may vary
- Census Tract ≠ Neighborhood
- 5-year estimates
- Statewide measure
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Visit the Health Opportunity Index Website:
https://www.vdh.virginia.gov/omhhe/hoi/
Discussion

➡️ Send us your questions

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  ➡️ General Inquiries  pbic@pedbikeinfo.org

➡️ Archive at  www.pedbikeinfo.org/webinars
Health and Transportation

Oct. 13: Confronting Power and Privilege for Equity
Oct. 15: Agency Structures for Collaboration
Oct. 22: Integrating Health Data
Oct. 27: Planning and Prioritizing Projects
Oct. 28: Bringing Health to Transportation Policy

#PBICWebinar
Take Action

- **State DOTs and AASHTO members**: advance transportation health and equity research and evaluation through your state research program or AASHTO committee

- **Planners, engineers, and others**: Join the ITE or TRB committees on Health and Transportation
  
  - [https://www.ite.org/technical-resources/topics/transportation-and-health/](https://www.ite.org/technical-resources/topics/transportation-and-health/)
  - [https://sites.google.com/site/trbhealthandtransport/](https://sites.google.com/site/trbhealthandtransport/)