



**Pedestrian and Bicycle  
Information Center**

# Planning and Prioritizing Projects for Health

**PBIC Health + Transportation Webinar Series, Part 4**

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**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

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Pedestrian and Bicycle Information Center

Webinar Series

## 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**



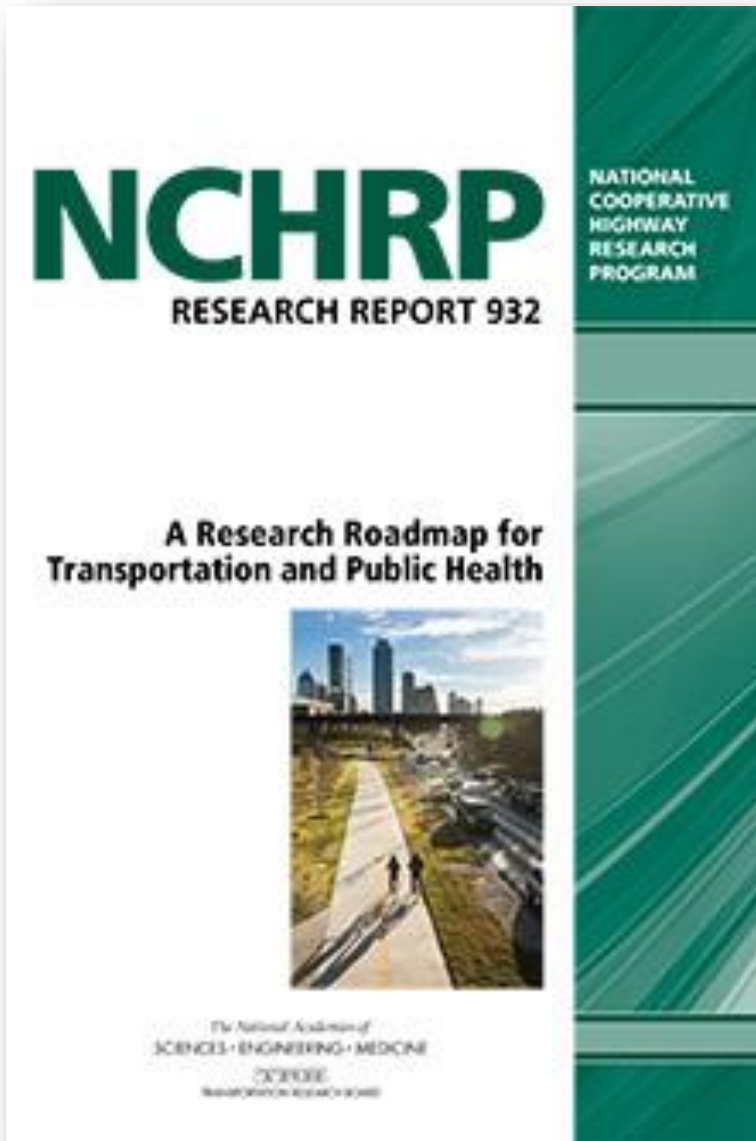
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# Transportation and health intersect in many ways





## 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?

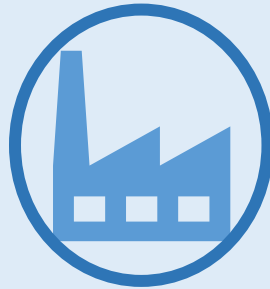
# Pathways to Health



**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](mailto:sshah@planning.org)



**American Planning Association**  
*Making Great Communities Happen*

# PLANNING AND COMMUNITY HEALTH

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.

Home > Knowledge Center > Applied Research >



## Planning and Community Health



Plan4Health

The Planning and Community Health program leads the first nationwide program linking public health and planning practice.

[Learn More](#)



# EXAMPLES OF PAST PROJECTS

## ACTIVE LIVING



### THE BENEFITS OF STREET-SCALE FEATURES FOR WALKING AND BIKING



Health Impact Assessment Toolkit for Planners



## HIA TOOLKIT

September 2016



### PAS Essential INFO PACKET

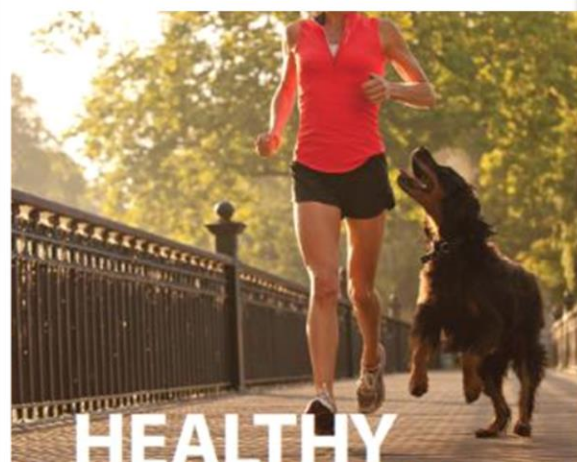
## Planning & Zoning for Health in the Built Environment

The Planning Advisory Service (PAS) researchers are pleased to provide you with information from our world-class planning library. This packet represents a typical collection of documents PAS provides in response to research inquiries from our subscribers. For more information about PAS visit [www.planning.org/pas](http://www.planning.org/pas).



# PLAN4Health

An American Planning Association Project



## HEALTHY PLANNING

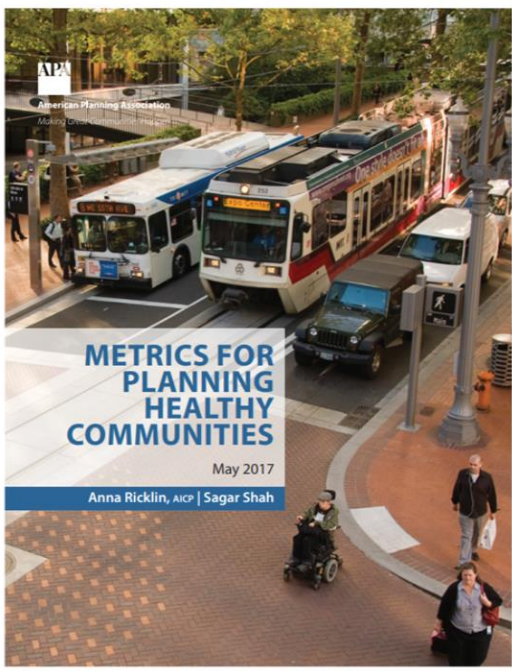
An evaluation of comprehensive and sustainability plans addressing public health



### PLANNING FOR FOOD ACCESS AND COMMUNITY-BASED FOOD SYSTEMS:

A National Scan and Evaluation of Local Comprehensive and Sustainability Plans

Kimberley Hodgson



### METRICS FOR PLANNING HEALTHY COMMUNITIES

May 2017

Anna Ricklin, AICP | Sagar Shah





COALITIONS STRIVING TO INCREASE  
ACCESS TO HEALTH AND NUTRITION

PLACE BASED WORK



THE BENEFITS OF  
STREET-SCALE FEATURES  
FOR WALKING AND BIKING

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## Planning and the Opioid Epidemic



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TRAINING & EDUCATION

APPLIED RESEARCH

TYPE OF WORK



# **American Planning Association**

*Creating Great Communities for All*

**Sagar Shah, PhD, AICP**

sshah@planning.org



# NCHRP 20-112 / Report 932

## 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

## Community Engagement / Data Integration

Public involvement

Coordination with local, regional, and tribal governments

Data Collection

Performance metrics



### 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.**

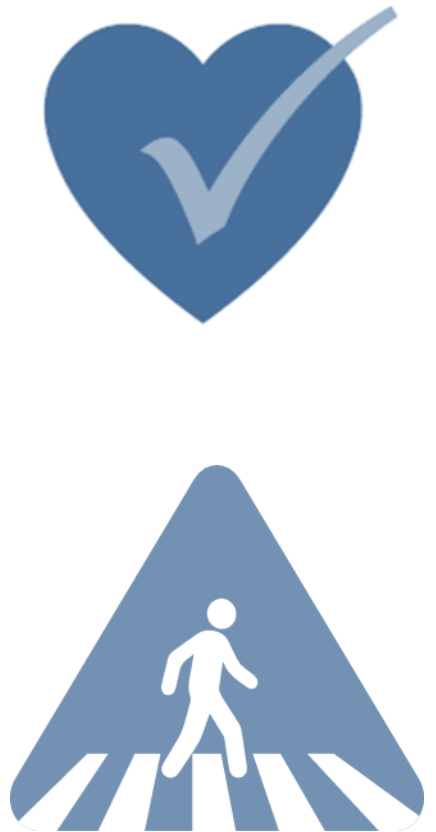
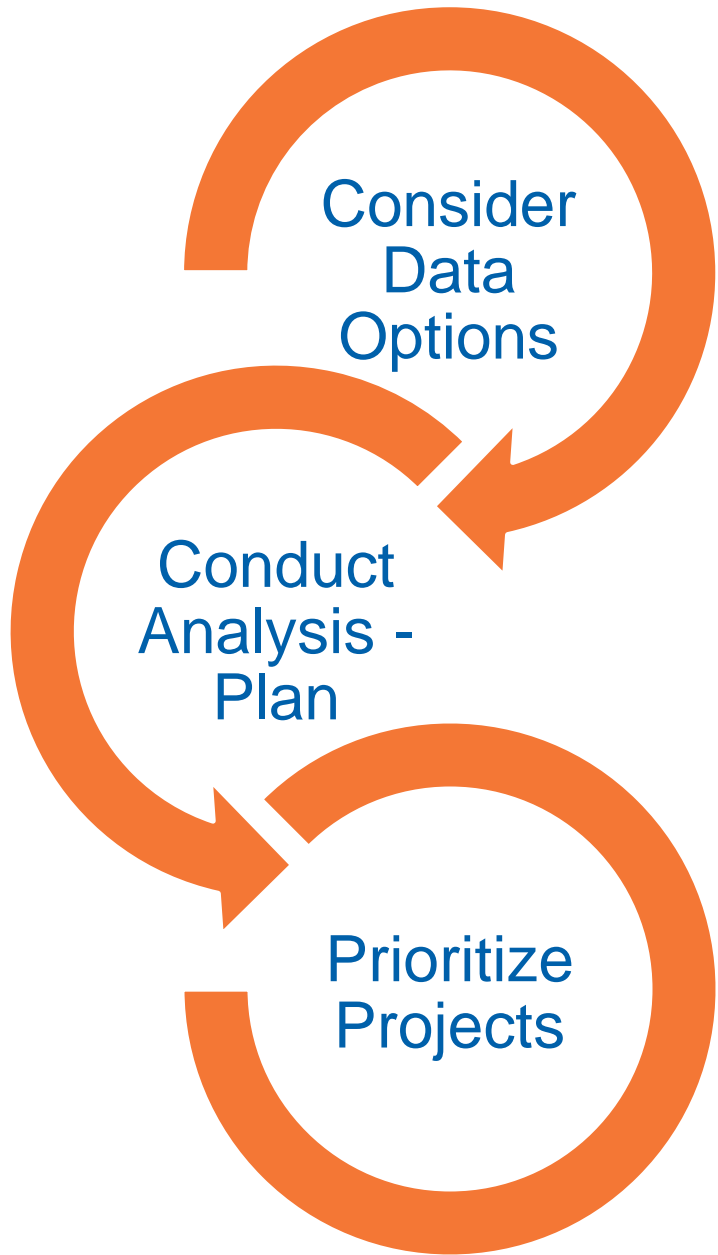
***Need: Synthesis of practices where MPOs or state DOTs included health indicators in transportation project prioritization criteria.***

*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.*





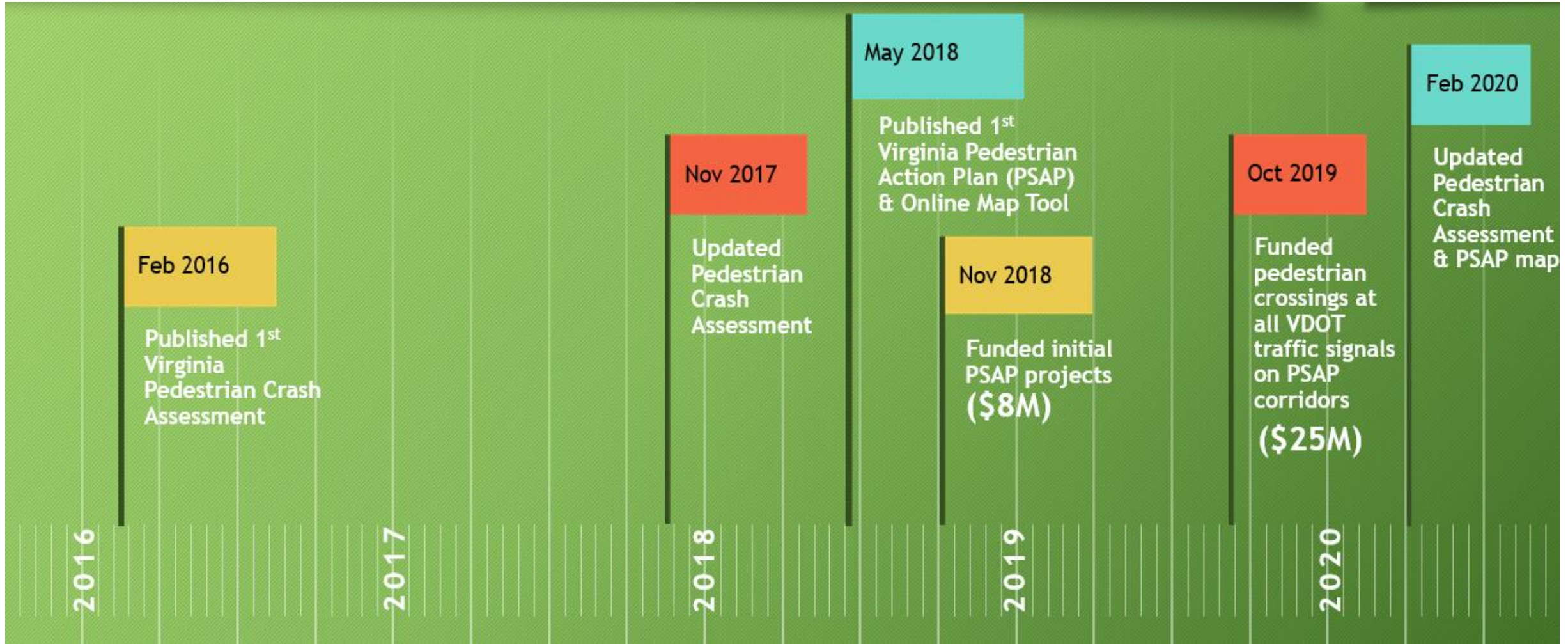
# **VIRGINIA PEDESTRIAN SAFETY ACTION PLAN**

## **Integrating Health Data into Systemic Safety Analysis**

**Mark A. Cole, PE, Virginia Department of Transportation**

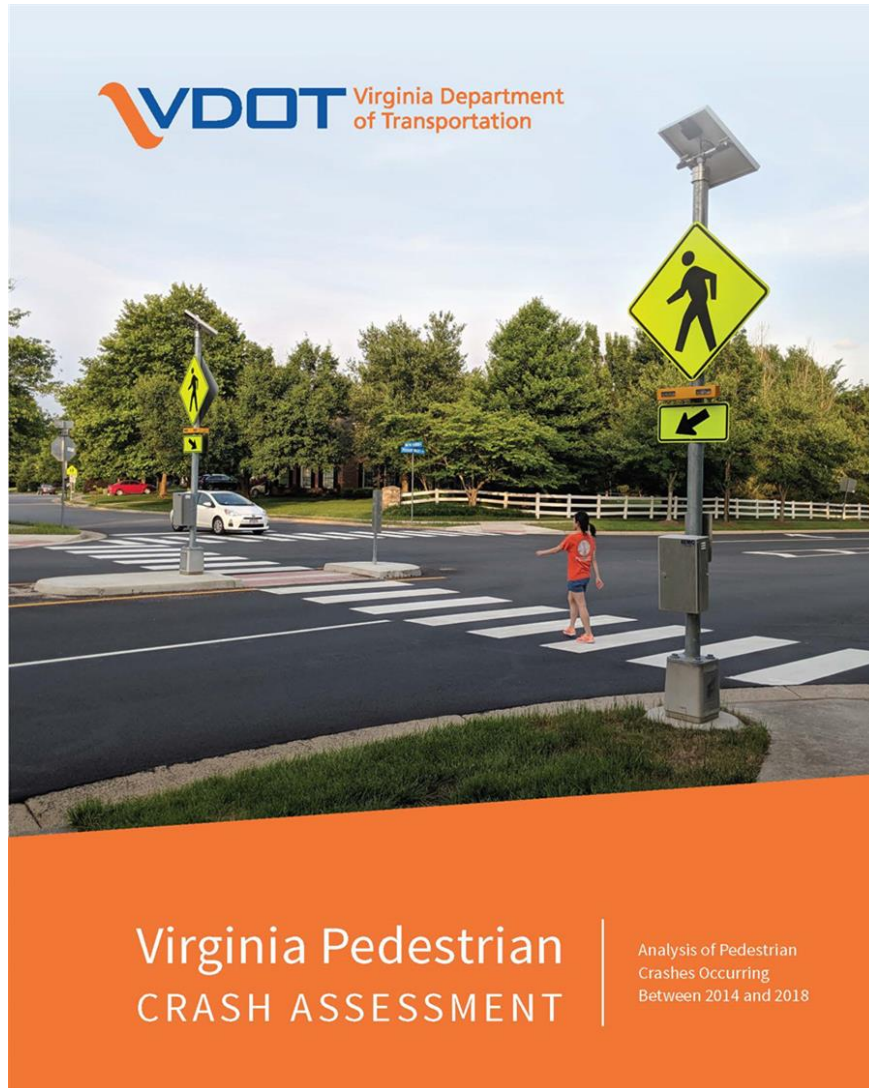
October 27, 2020

# Recent Timeline of VDOT Pedestrian Safety Efforts





# Virginia Pedestrian Crash Assessment



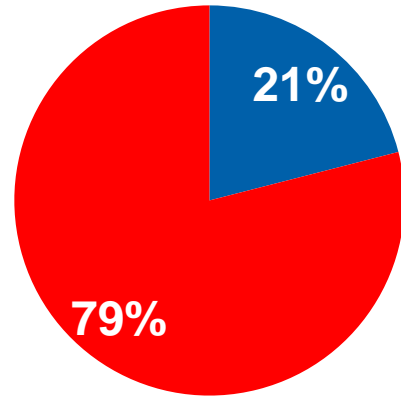
- Analyzes pedestrian crashes
- First published in 2016
  - updated in 2017 and 2020
- Uses a variety of data sources to:
  - Understand common factors among crashes
  - Identify crash trends across time



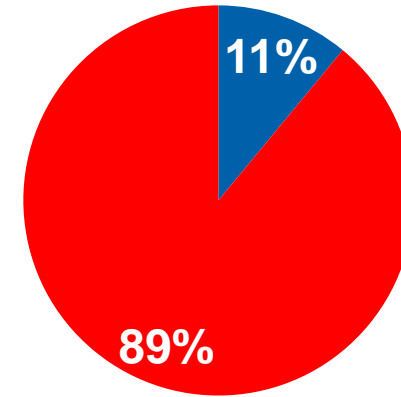
# Key Findings: Land Use

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

Pedestrian Fatal Crashes

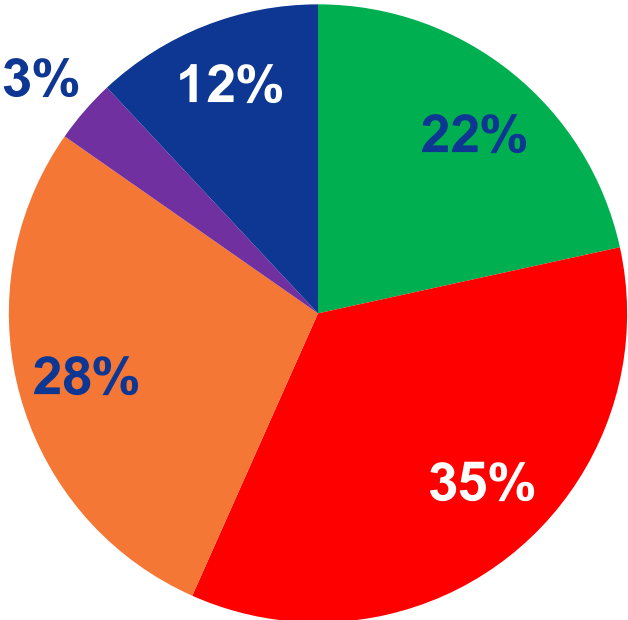


Pedestrian Injury Crashes



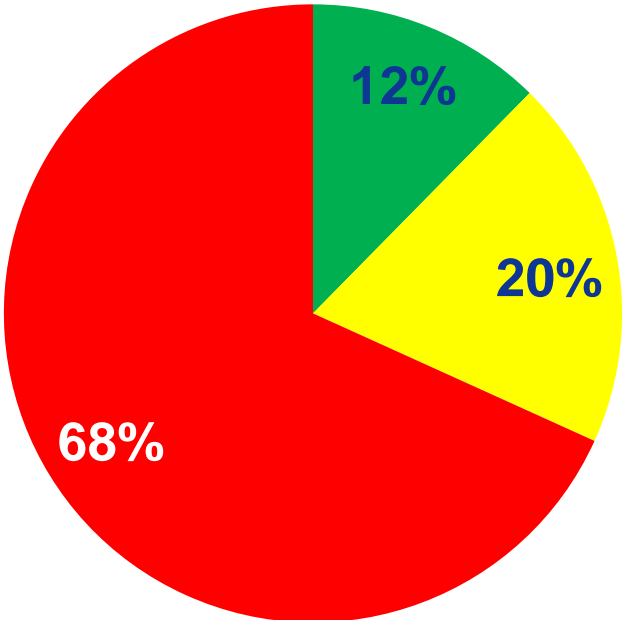
# Key Findings: Where Pedestrian Deaths are Happening

### Where Virginia's Fatal Pedestrian Crashes Happen (%)



- Signalized Intersection
- Mid-Block
- Other
- Unsignalized Intersection
- Intersection/Mid-Block

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

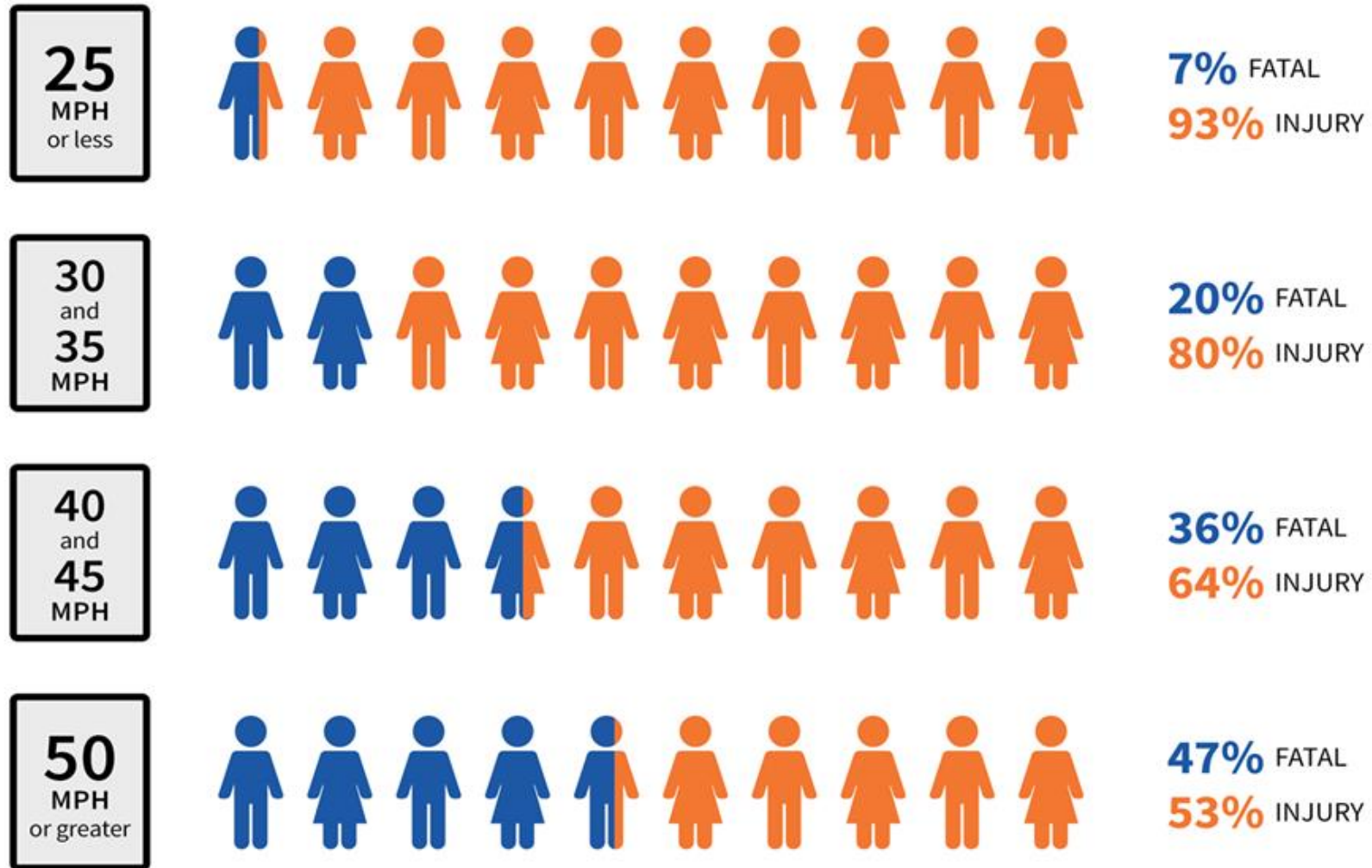


- Crosswalk Available - Pedestrian Struck In Crosswalk
- Crosswalk Available - Pedestrian Not in Crosswalk
- No Crosswalk Available



# Key Findings: Speed Limits

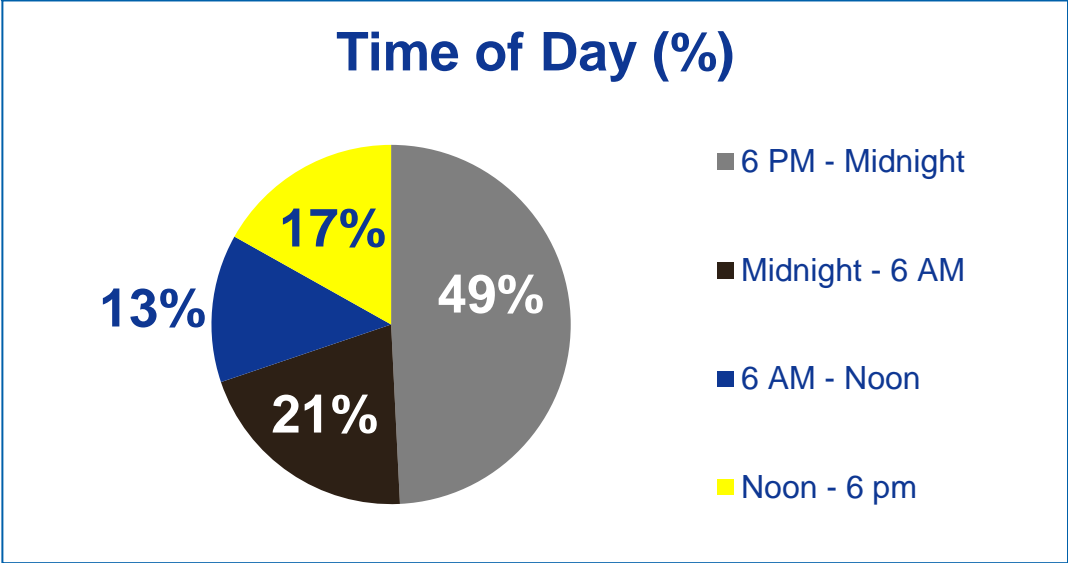
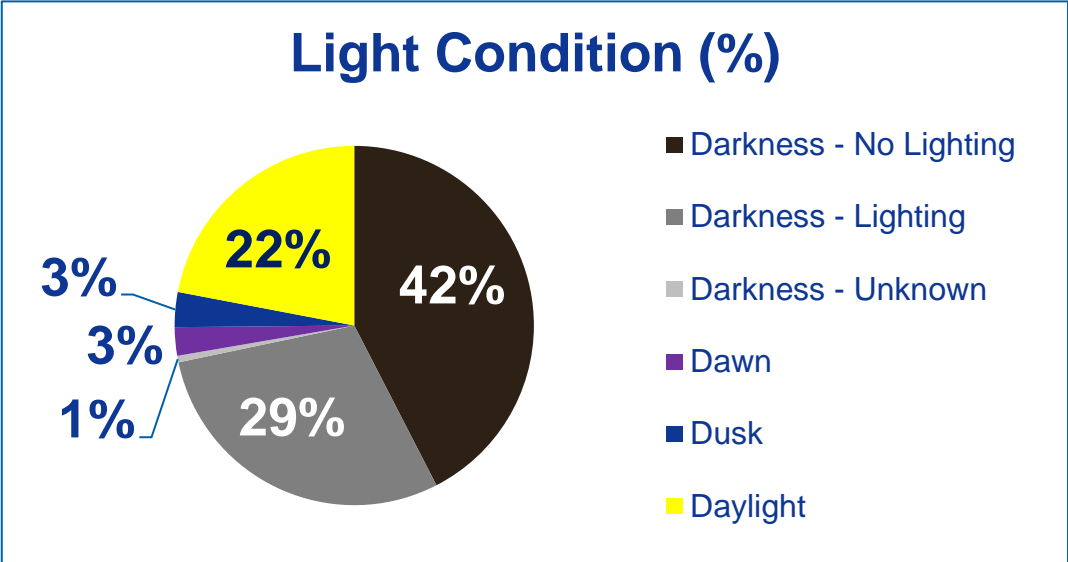
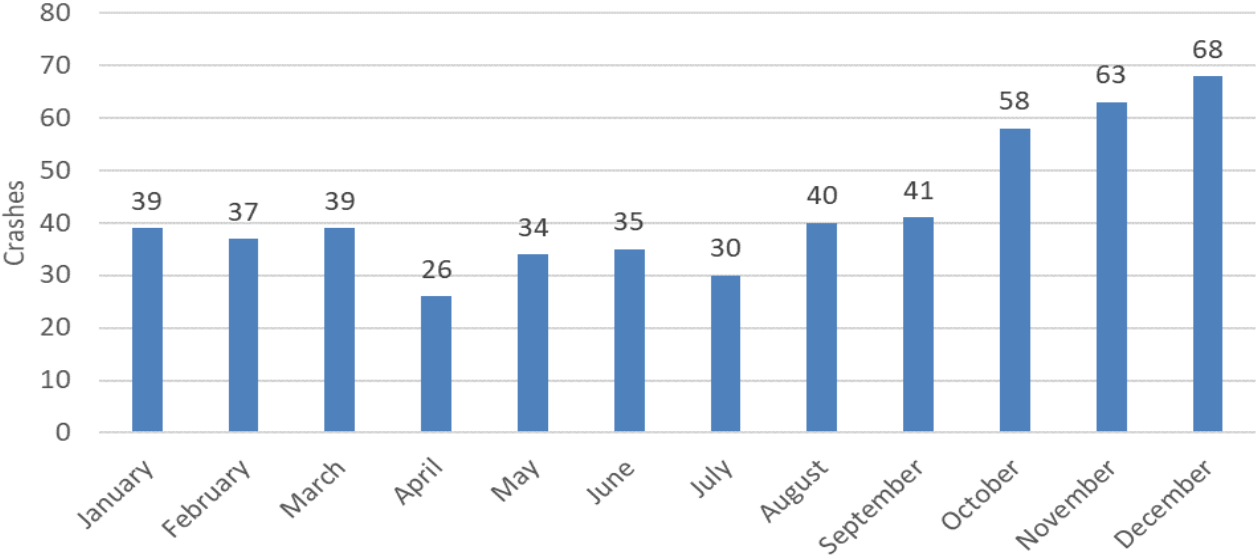
## Virginia Pedestrian Crash Severity By Speed Limit (2014-2018)



# Key Findings: Light Condition

## Pedestrian fatal crashes by:

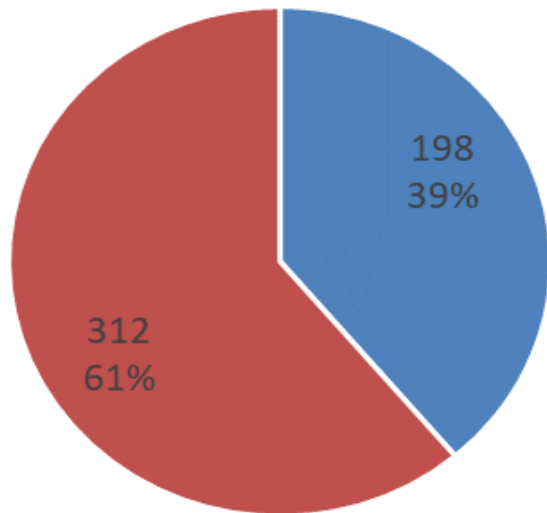
- light condition
- Month
- time of day



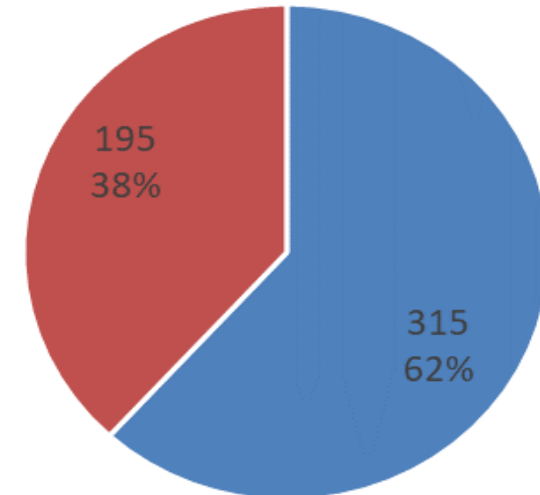
# Key Findings: Transit

- 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.

*Pedestrian Fatal Crashes and Proximity to a Bus Route*



*Pedestrian Fatal Crashes and Proximity to Bus Stops*

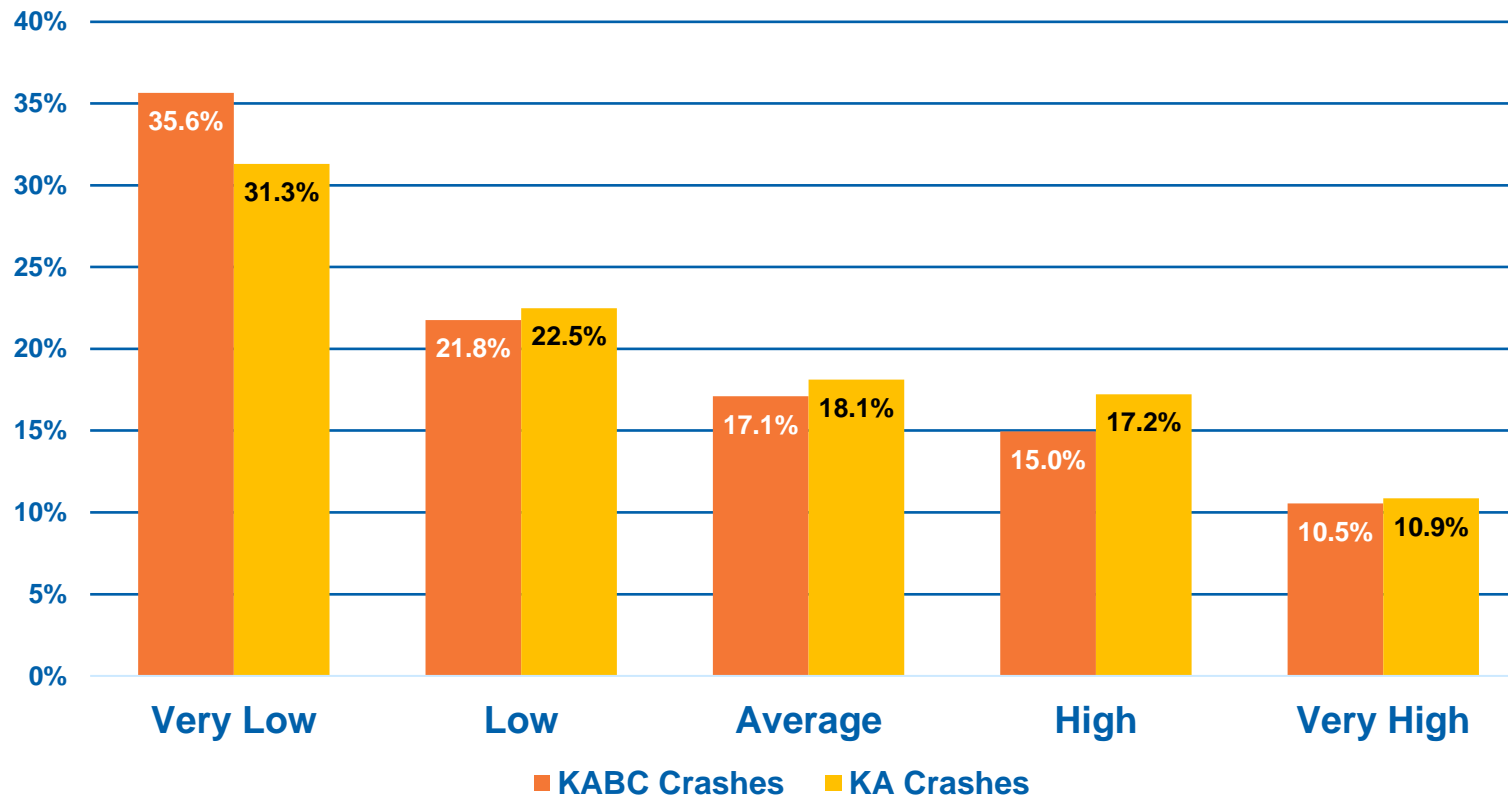




# Key Findings: Health Opportunity Index

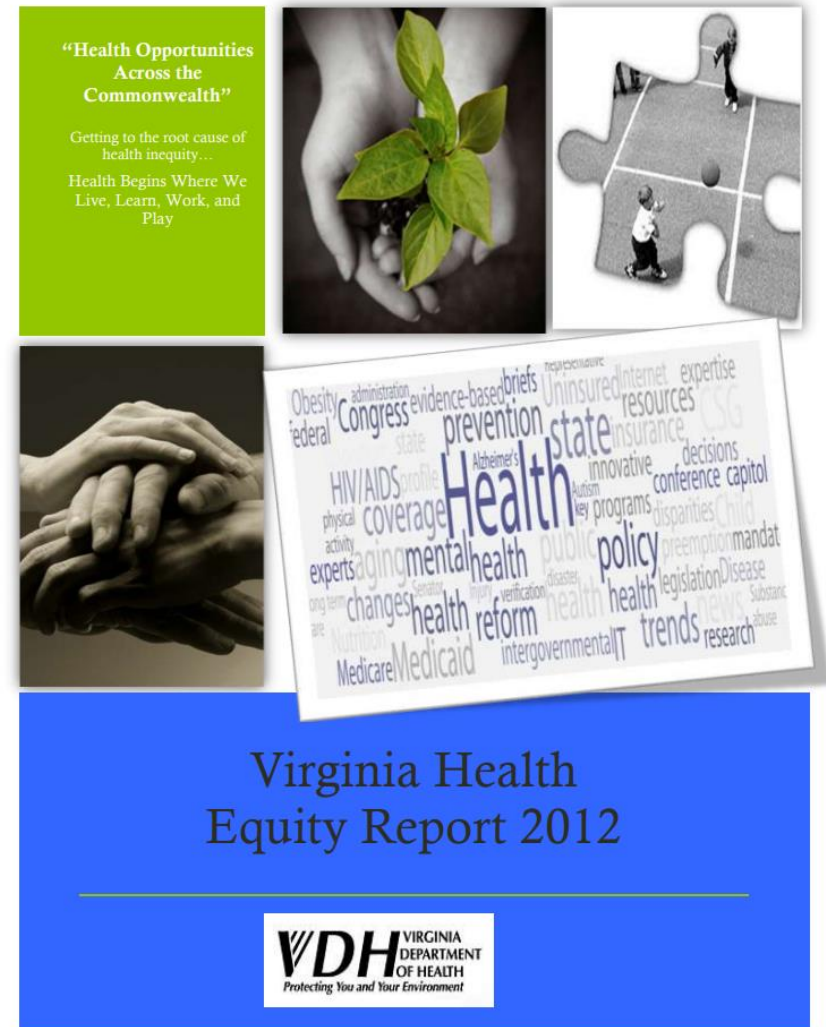
**Almost 60% of deaths and injuries occur in locations with VERY LOW or LOW Virginia Health Opportunity Index (HOI) Scores**

**Distribution of Pedestrian Crashes by HOI Category (2014-2018)**

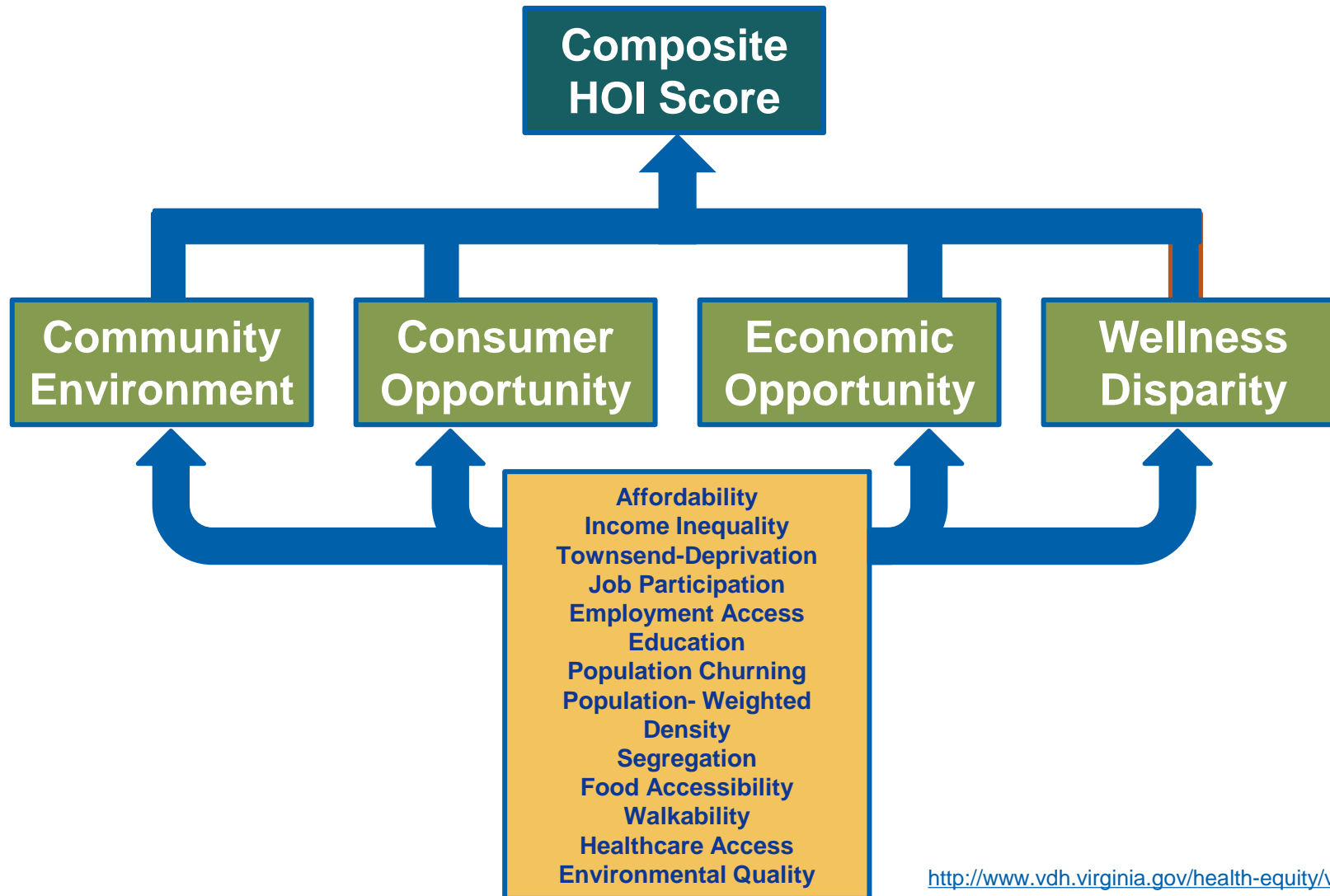


# Virginia Department of Health - Health Opportunity Index

- 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



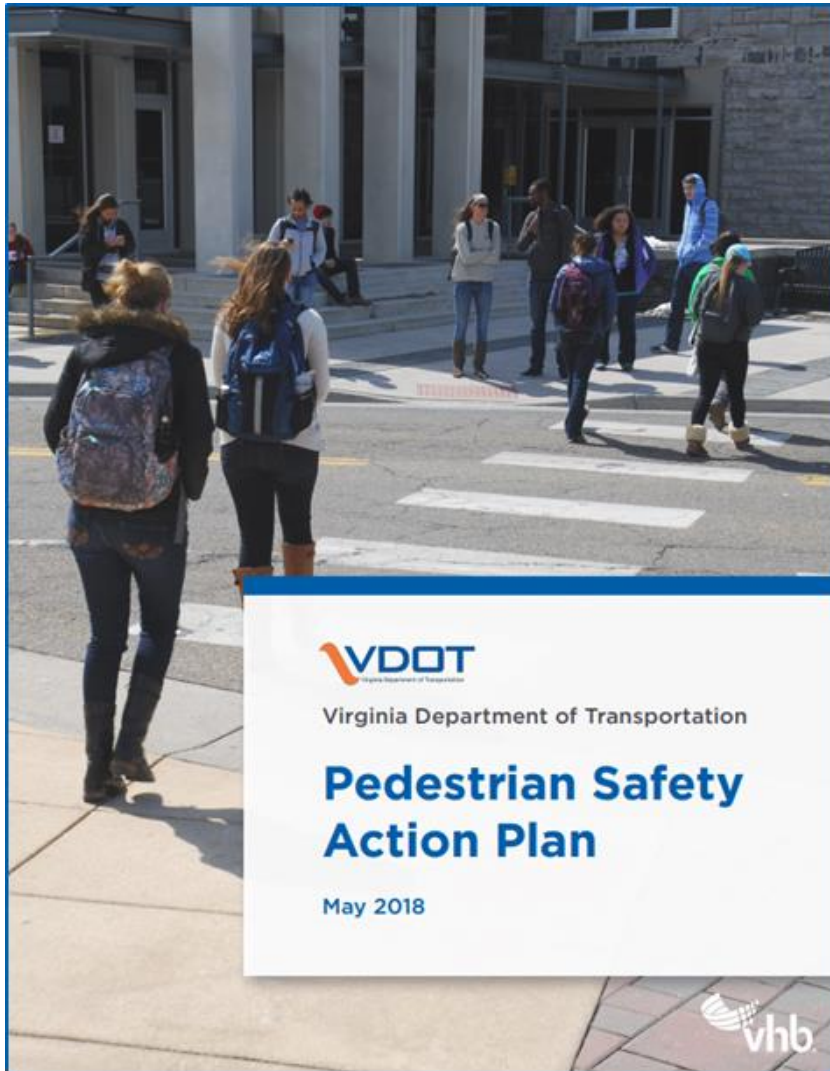
# What is the Virginia Health Opportunity Index?



<http://www.vdh.virginia.gov/health-equity/virginia-health-opportunity-index-hoi/>



# 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

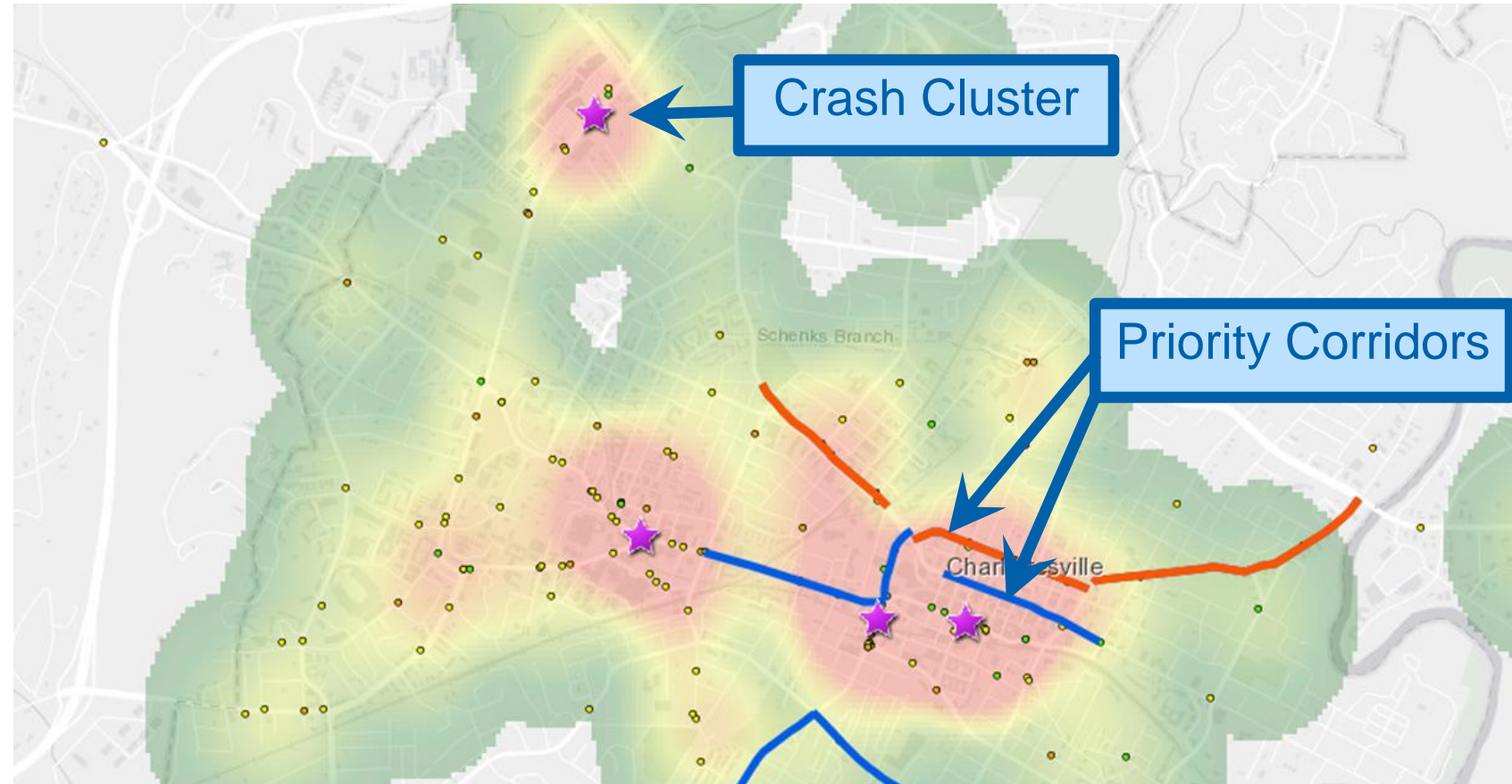
# Safety Analysis – Crash Clusters and Priority Corridors

## 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)

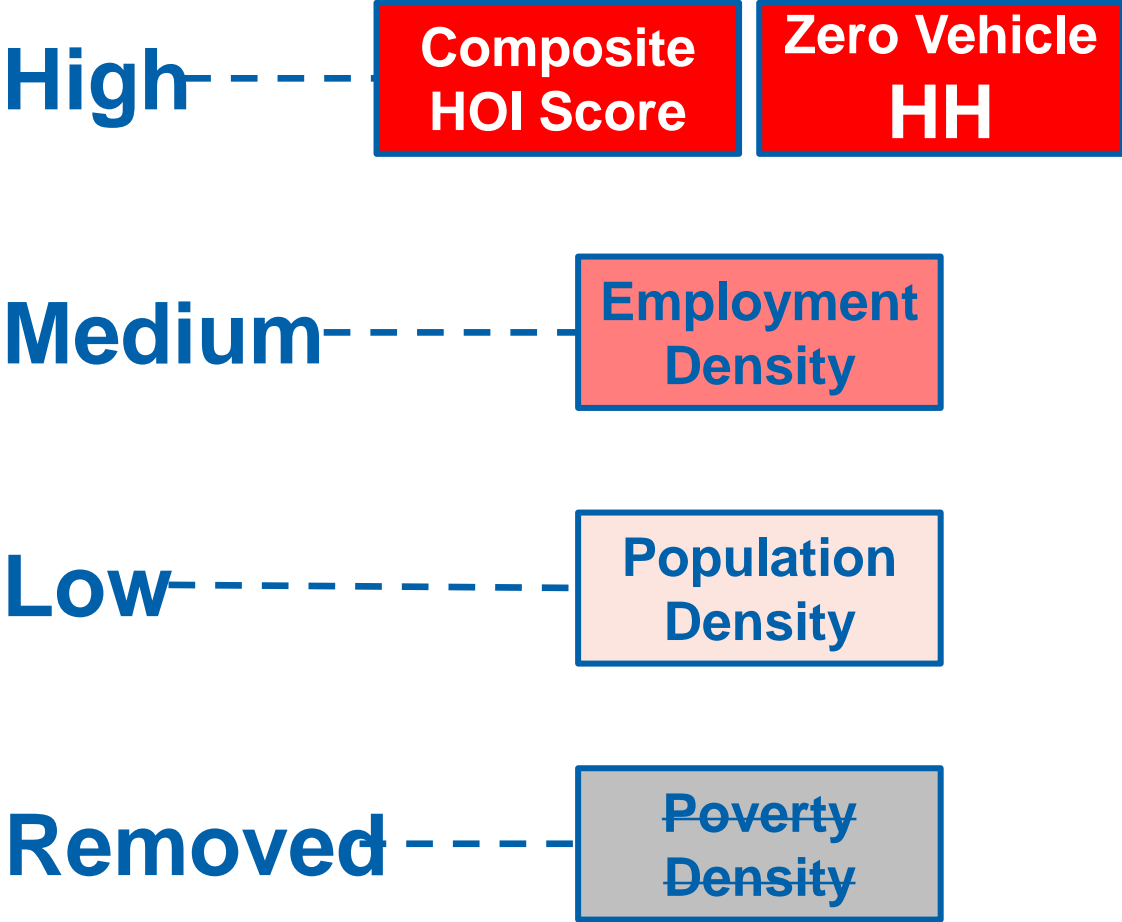
## 2018 PSAP Corridor Scoring Factors: 181 Priority Corridors

High	Medium	Low
<ul style="list-style-type: none"><li>• Annual average daily traffic (AADT)</li><li>• Posted speed limit</li><li>• Zero-vehicle households</li><li>• Population density</li></ul>	<ul style="list-style-type: none"><li>• Roadway geometry</li><li>• Urban/rural context</li><li>• Employment density</li><li>• Proximity to a school</li></ul>	<ul style="list-style-type: none"><li>• Population living below the poverty line</li><li>• Pedestrian crash history</li><li>• Proportion of alcohol related crashes (by district)</li><li>• Proximity to a park</li></ul>



# Spatial Bayesian Analysis to Examine Health Opportunity Index

- 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



# Priority Corridor Criteria – 2019 Update

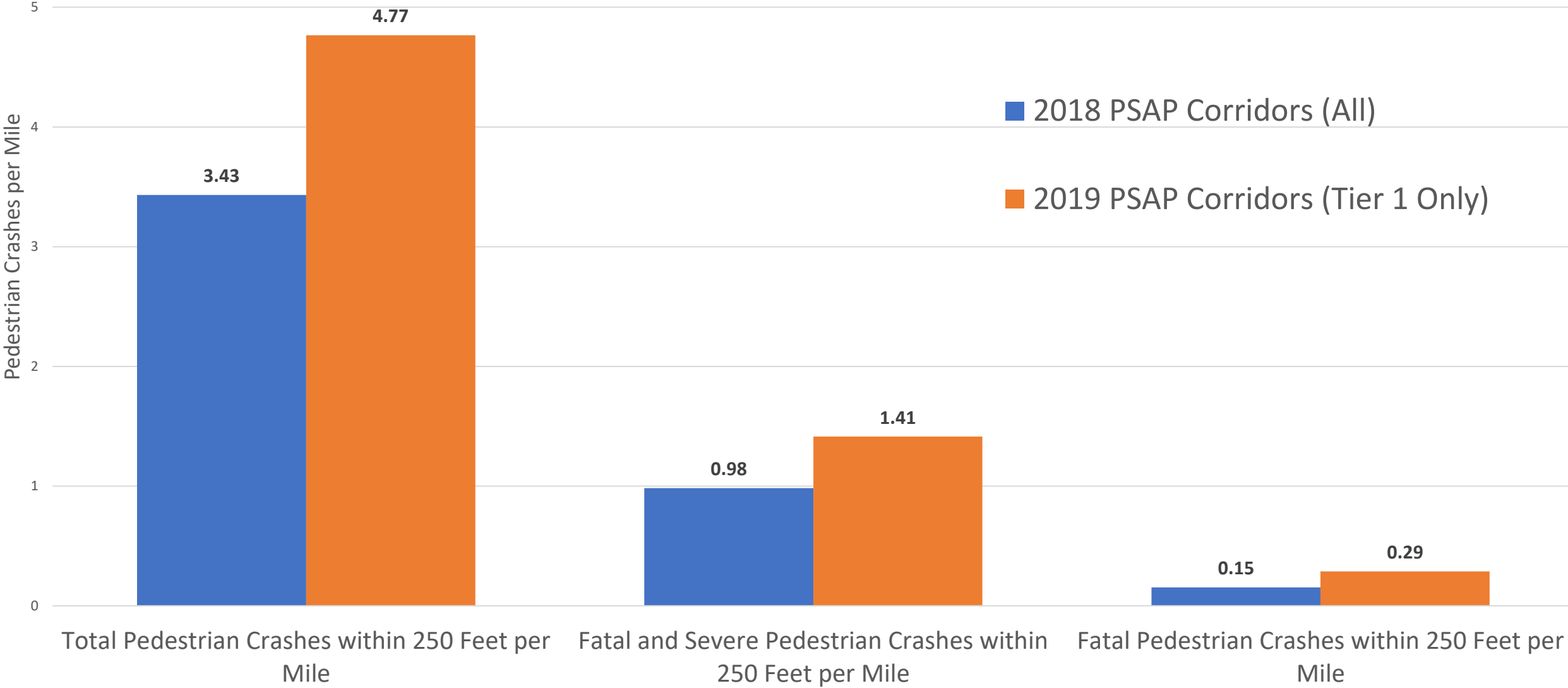
## 2019 PSAP Corridor Scoring Factors

High	Medium	Low
<ul style="list-style-type: none"> <li>• Annual average daily traffic (AADT)</li> <li>• Zero-vehicle households</li> <li>• <b>Transit access</b></li> <li>• <b>Health Opportunity Index (HOI)</b></li> </ul>	<ul style="list-style-type: none"> <li>• Roadway geometry</li> <li>• Employment density</li> <li>• Proximity to a school</li> <li>• <b>Posted speed limit</b></li> </ul>	<ul style="list-style-type: none"> <li>• Pedestrian crash history</li> <li>• Proximity to a park</li> <li>• <b>Population density</b></li> <li>• <b>Urban/rural context</b></li> <li>• <del>Proportion of alcohol related crashes (by district)</del></li> <li>• <del>Population living below the poverty line</del></li> </ul>

# 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





# PSAP Online Mapping Tool - [https://bit.ly/VDOTPSAP\\_V2](https://bit.ly/VDOTPSAP_V2)

**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, please contact:  
Map Viewer Administrator  
Engineering Division  
804.819.4196 (office) 804.819.9370 (cell)  
[Mark.Cole@VDOT.Virginia.gov](mailto:Mark.Cole@VDOT.Virginia.gov)

**Download PSAP**

**View YouTube Tutorial**

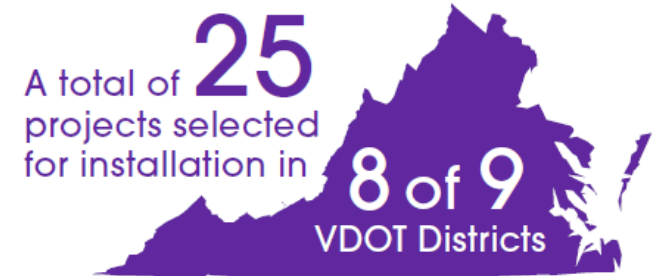
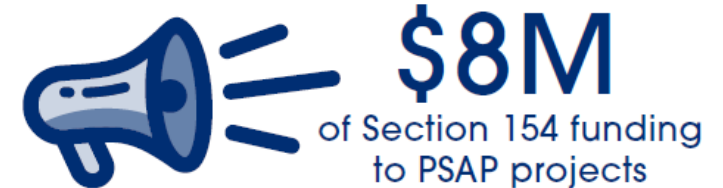
OK

# 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



VDOT staff evaluated the candidate projects and, in November 2018, announced the award of



Funding  
requested  
ranged  
between:



# 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

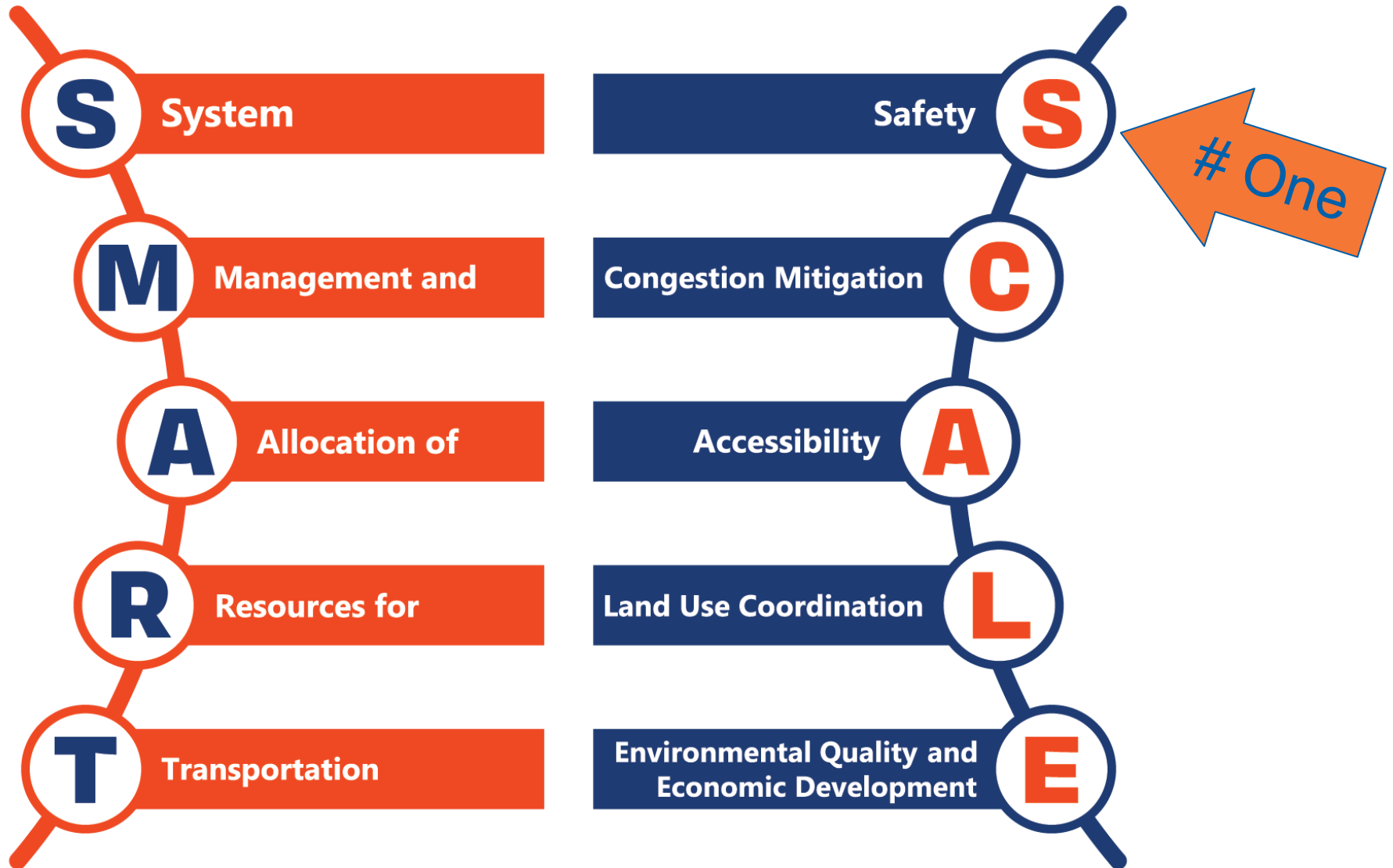


**SMART  
SCALE**

*Funding the Right  
Transportation Projects  
in Virginia*

[www.vasmartscale.org](http://www.vasmartscale.org)

# What is SMART SCALE?



# Major Steps & Players

**DRPT**

Virginia Department of Rail  
and Public Transportation

Office of  
**INTERMODAL**  
Planning and Investment

**VDOT**

Virginia Department  
of Transportation



## Eligibility/Funding

VDOT, OIPI, DRPT



## Project Application

Localities and Eligible Entities



## Project Screening

VDOT, OIPI, DRPT



## Evaluation/Scoring

VDOT, OIPI, DRPT



## Prioritization/ Programming

Commonwealth  
Transportation Board

### Project Types

- Highway
- Transit & Rail
- **Bicyclist and Pedestrian**
- Transportation Demand Management

# 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)

**VTRANS** | VIRGINIA'S  
TRANSPORTATION PLAN





# Defining VTRANS Pedestrian Safety Needs

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

Richmond Cons



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

**Performance Measure:** None, utilization of roadway segments included in VDOT's Pedestrian Safety Action Plan (PSAP)

**Where it applies:** VDOT-maintained roads statewide

**What it tells us:** Location of corridors with higher than normal risk of a pedestrian-involved accident

**Time periods:** Based on calendar year 2012-2016 crash data

**What it measures:** 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.

**Unit of Analysis for Performance Measures:** Roadway segment

**Unit of Reporting for Mid-Term Needs:** Roadway segment

#### Steps

#### Input

#### Action

#### Output

1. Identify appropriate measure for Goal.

#### Goal C. Safety for all Users:

- Provide a safer and more secure transportation system for passengers and goods on all travel modes.

- **Consult** with VDOT Highway Safety Improvement Program staff.
- **Review** VDOT's PSAP and procedures for considering safety in SMART SCALE.
- **Confirm** that using PSAP designations would address VTrans goal area and objectives.

Add PSAP Corridors

2. Consider stakeholder input.

Include consideration for non-motorized needs that may not get highlighted based on Potential for Safety Improvement (PSI) method.

- **Add location of PSAP corridors** as a separate category of Needs to complement the PSI-based Safety Needs.

- PSAP report and priority corridors map

3. Collect Data.

- Geospatial database developed for May 2018 PSAP<sup>1</sup>, which identified corridors with a history of pedestrian safety crashes and assessed pedestrian crash risk
  - AADT, posted speed limit, number of lanes, presence of a median, crash history, the population of the surrounding area and other factors in assessing pedestrian safety risk

- **Integrate PSAP database** with other needs layers.

- Geospatial database and locations of corridors with elevated risk of pedestrian-involved crashes and Need for Pedestrian Safety Improvement

# InteractVTRANS: Online Mapping of Needs

[Home](#) / [Mid-Term Planning](#) / [InteractVTrans](#)

**Find** Layers Comment

Governments

- Richmond Transportation Planning Organization
- Roanoke Valley Transportation Planning Organization

Search Criteria

Find features in up to three layers

1. Feature Type to Search For (Required)

2019 VTrans Mid-Term Need... x | v

Criteria

Need - Pedestrian Safety Improve... | v

Clear Find

Find Needs, Addresses, Districts, MPOs, and more...

+

-

+

Home

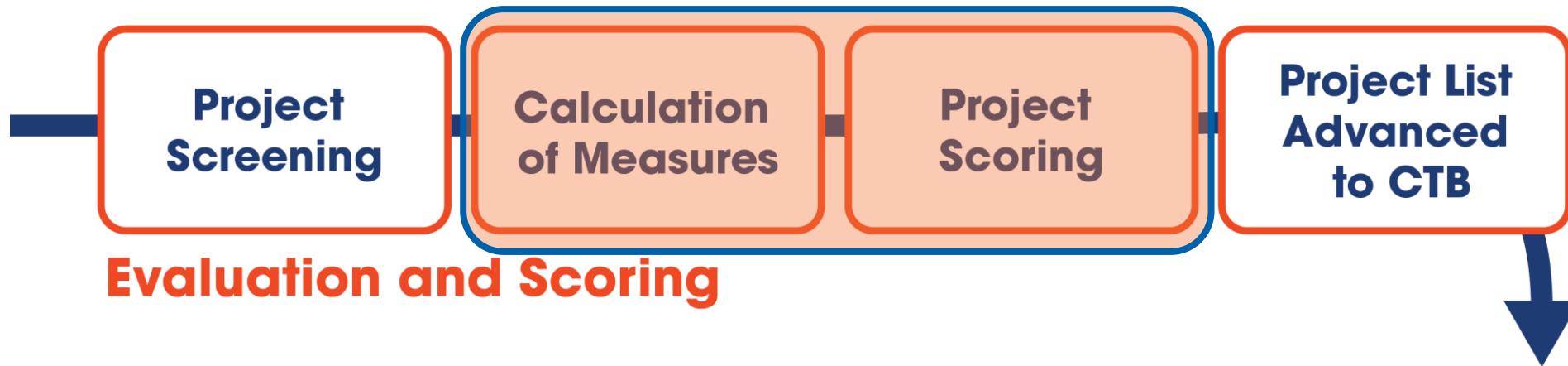
Esri, HERE, NPS

Select PSAP Corridors & other Needs



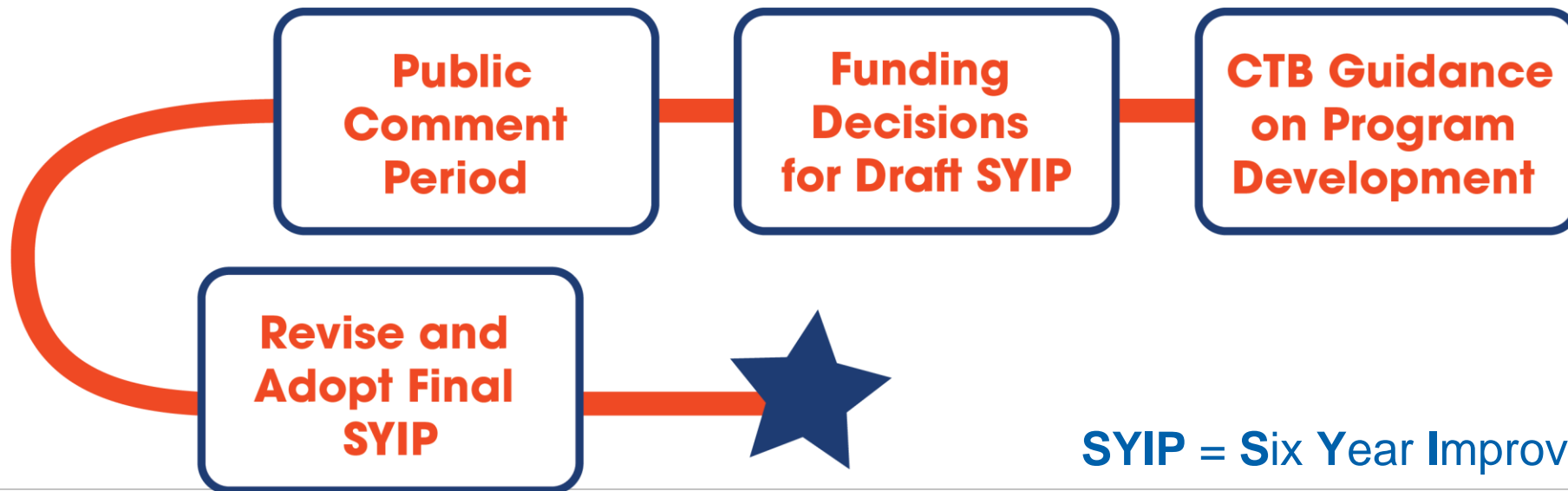


# SMART SCALE: Scoring and Programming Processes



## Evaluation and Scoring

## Prioritization and Programming



**SYIP = Six Year Improvement Program**



# Planning Level Project Benefits: Crash Reductions

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

- [http://vasmartscale.org/documents/cmf-list-smart-scale-rd4\\_fy2022.pdf](http://vasmartscale.org/documents/cmf-list-smart-scale-rd4_fy2022.pdf)



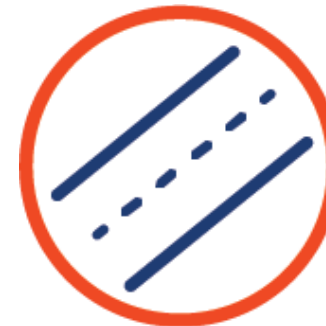
## Categories:



**Intersection**



**Interchange**



**Segments**



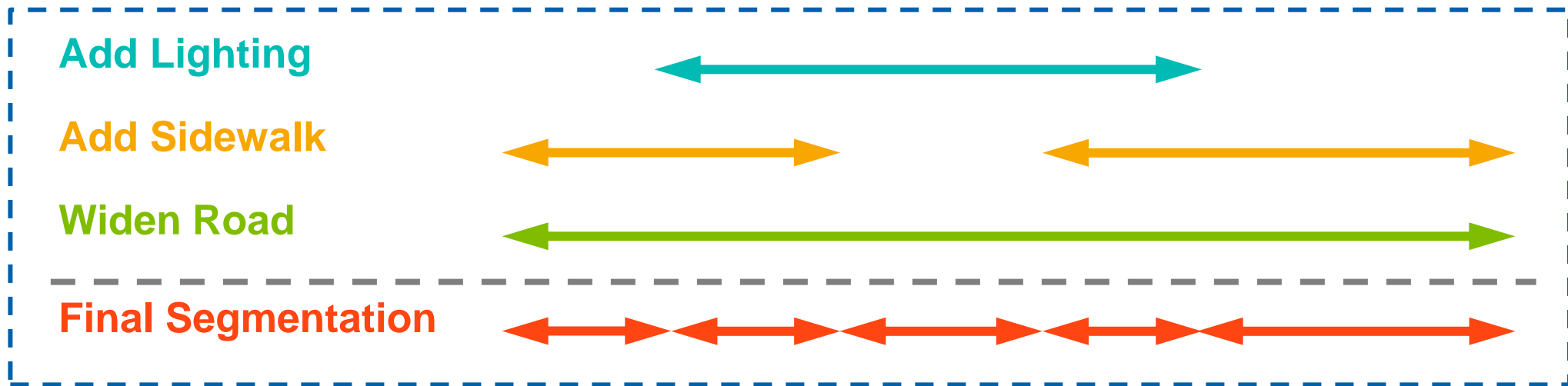
**Bicycle &  
Pedestrian**

# Identify Overlap Between Project Improvements

## 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





# Sidewalk

CMF Category	Pedestrian and Bicycle
CMF Description	Add new sidewalk
CMF Value	0.12
Targeted Crash Type(s)	Pedestrian

## 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



## Lee Highway Phase 3A

Widen Lee Highway to four lanes with a grass median and a 10' shared use path from 300' west of Old Airport Rd to 380' west of the Walmart entrance.

Submitting Entity: Bristol City  
 Preliminary Engineering: Underway  
 Right of Way: Not Started  
 Construction: Not Started  
 Eligible Fund Program: Both  
 VTRANS Need: CoSS  
 (click here for details)



SMART SCALE Area Type D														
Factor	Congestion Mitigation		Safety		Accessibility			Economic Development			Environment		Land Use	
Measure	Increase in Peak Period Person Throughput	Reduction in Peak Period Delay	Reduction in Fatal and Injury Crashes	Reduction in Fatal and Injury Crash Rate	Increase in Access to Jobs	Increase in Access to Jobs for Disadvantaged Populations	Increase in Access to Multimodal Travel Choices	Square Feet of Commercial/Industrial Development Supported	Tons of Goods Impacted	Improvement to Travel Time Reliability	Potential to Improve Air Quality	Other Factor Values Scaled by Potential Acreage Impacted	Transportation Efficient Land Use	Increase in Transportation Efficient Land Use
Measure Value	16.7 persons	1.1 person hrs.	8.0 EPDO	475.4 EPDO / 100M VMT	5.2 jobs per resident	2.1 jobs per resident	50.0 adjusted users	510,647.4 thousand adj sq. ft.	5,195.2 thousand adj daily tons	9,697,228.2 adj. buffer time index	66.7 adjusted points	1.0 scaled points	access * pop/emp density.h	access * pop/emp density change.
Normalized Measure Value (0-100)	0.1	0.0	2.3	1.0	0.1	0.0	0.2	2.6	0.1	0.2	0.5	3.1		
Measure Weight (% of Factor)	50%	50%	50%	50%	60%	20%	20%	60%	20%	20%	50%	50%	N/A	N/A
Factor Value	0.0		1.6		0.1			1.6			1.8			
Factor Weight (% of Project Score)	10%		30%		15%			35%			10%		N/A	
Weighted Factor Value	0.0		0.5		0.0			0.6			0.2			
Project Benefit												1.3		
SMART SCALE Cost												\$5,827,000		
SMART SCALE Score (Project Benefit per \$10M SMART SCALE Cost)												2.2		

2.2

SMART SCALE SCORE

#198 OF 433 STATEWIDE

#18 OF 44 DISTRICT





# 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

# PAVING THE ROAD TO HEALTH EQUITY

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



0304437

# Division of Social Epi

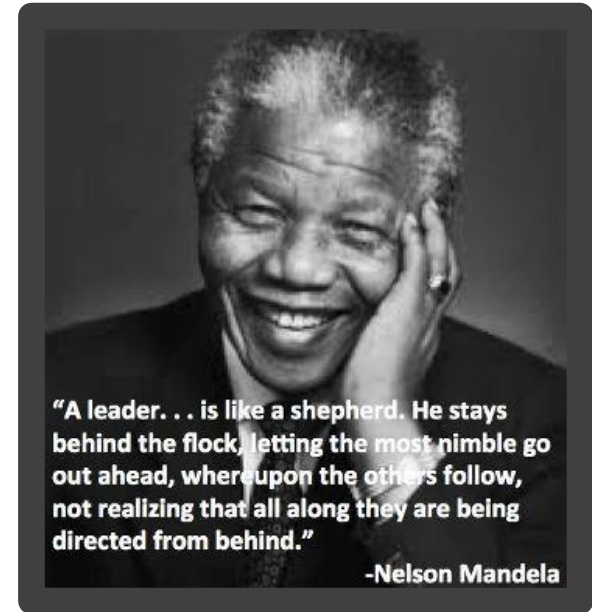
Leading with Data

## 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.

<http://www.vdh.virginia.gov/health-equity/division-of-social-epidemiology/>



# Health Opportunity Index

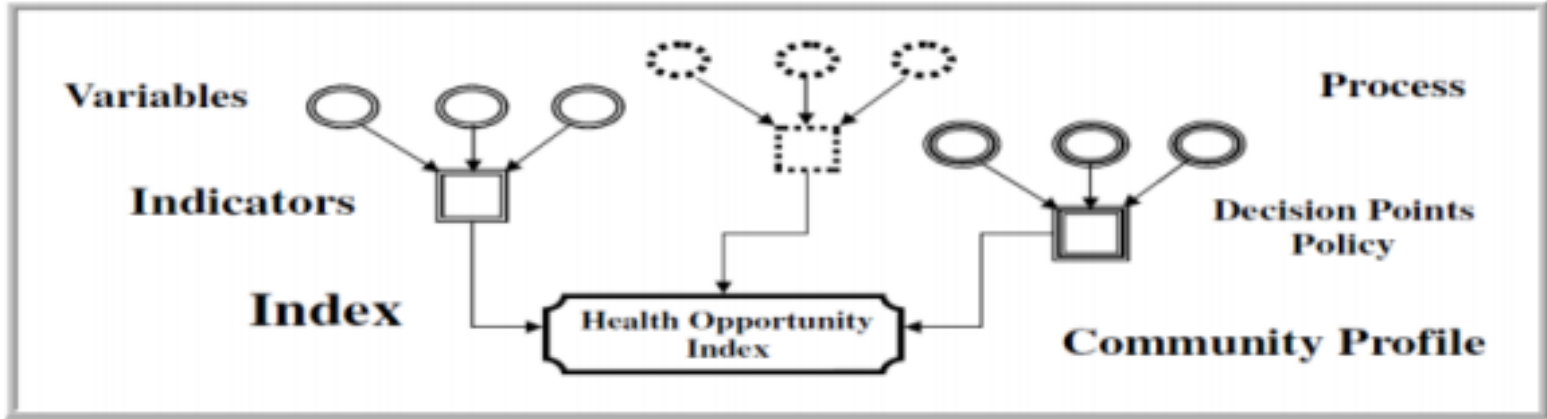
Identifies areas and populations that are most vulnerable to adverse health outcomes based on the Social Determinants of Health

# 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

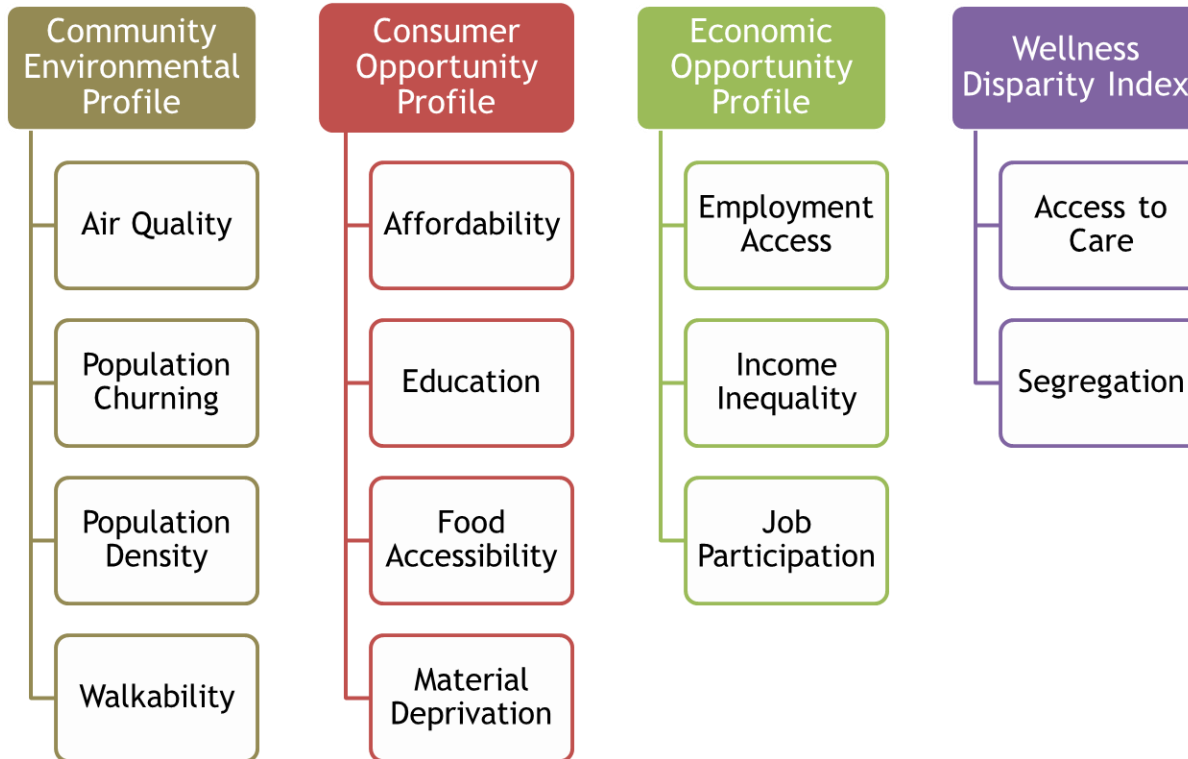
Consumer  
Opportunity Profile

Economic  
Opportunity Profile

Wellness Disparity  
Profile

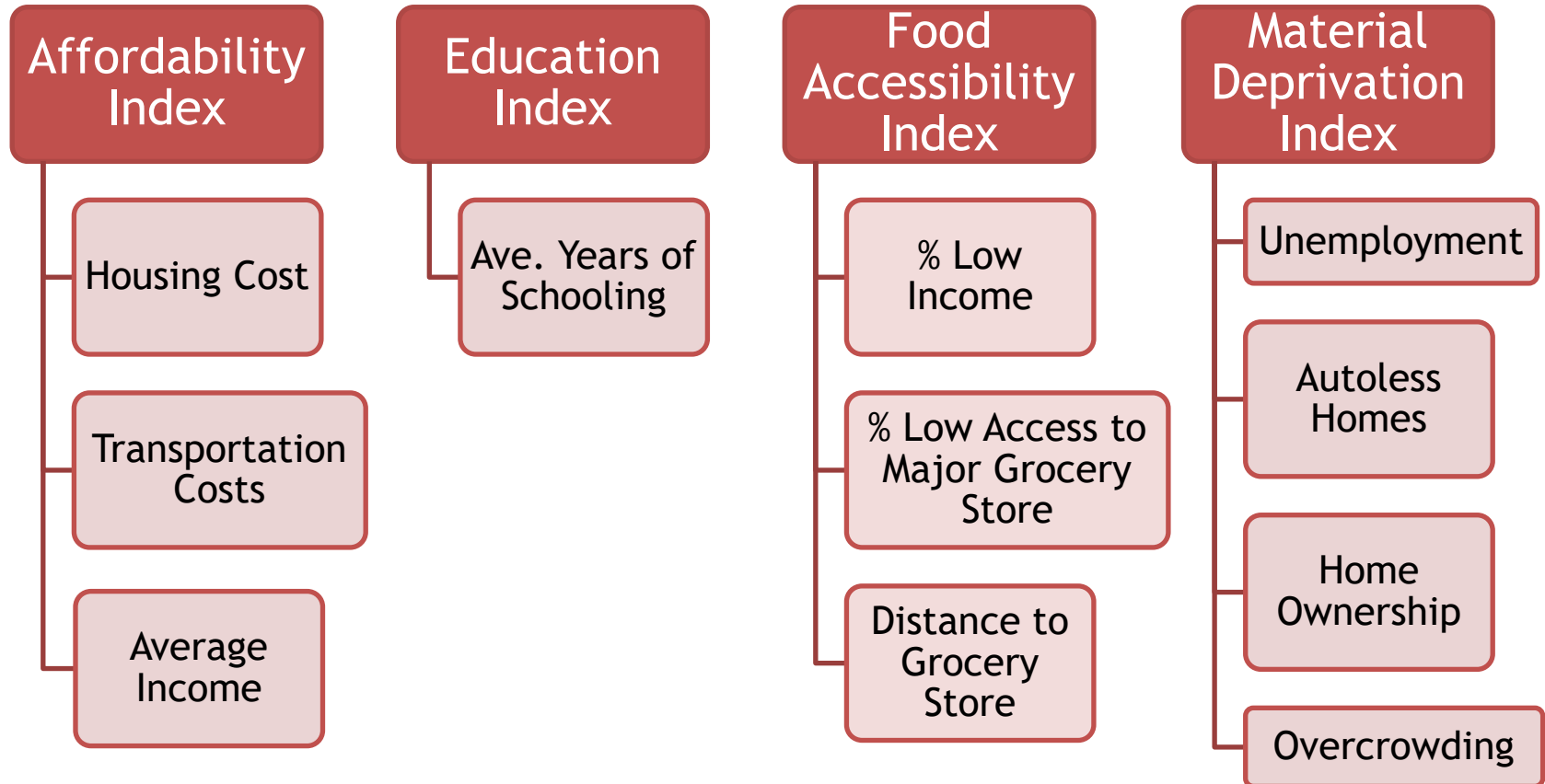


# Health Opportunity Index

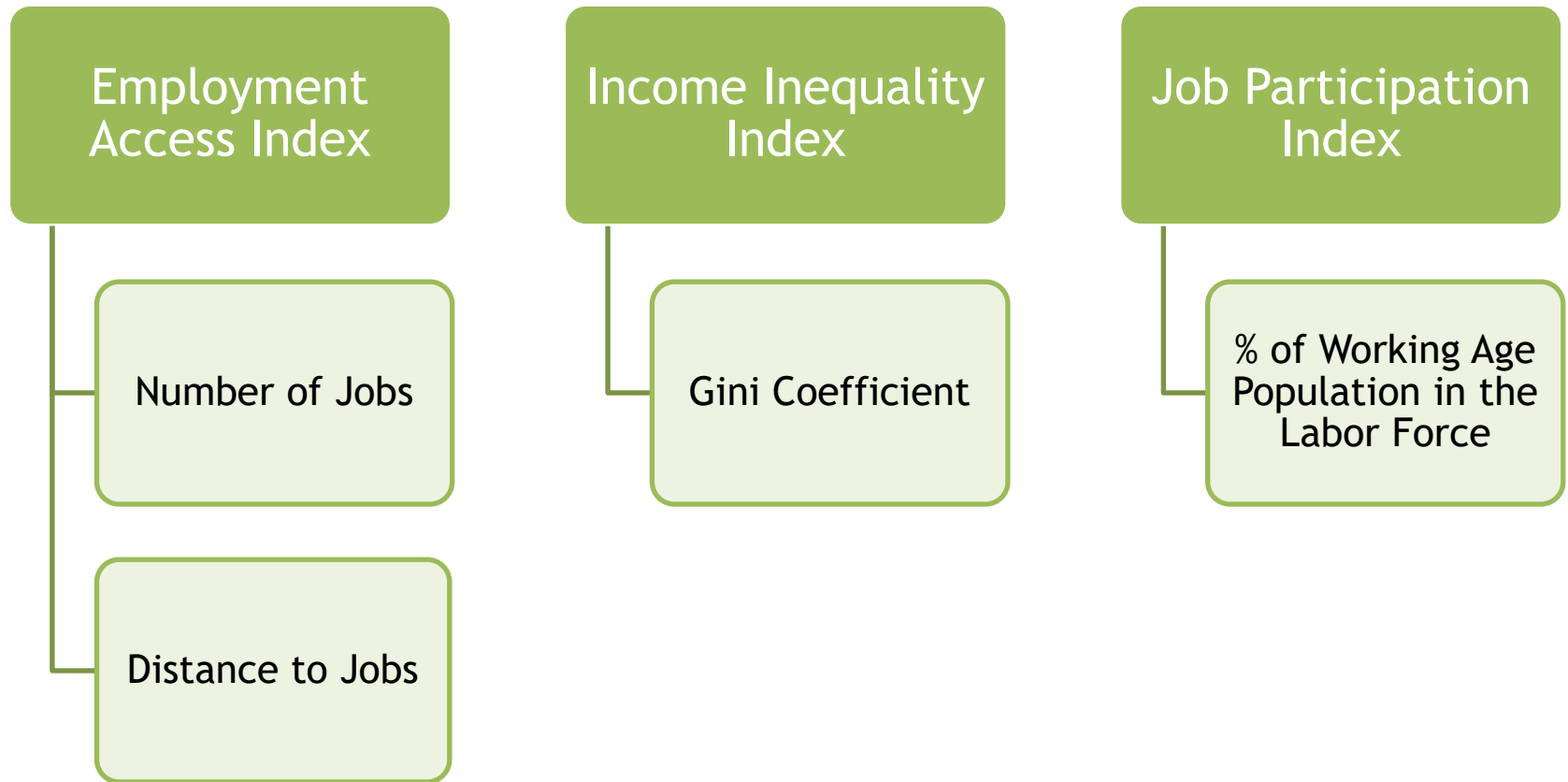




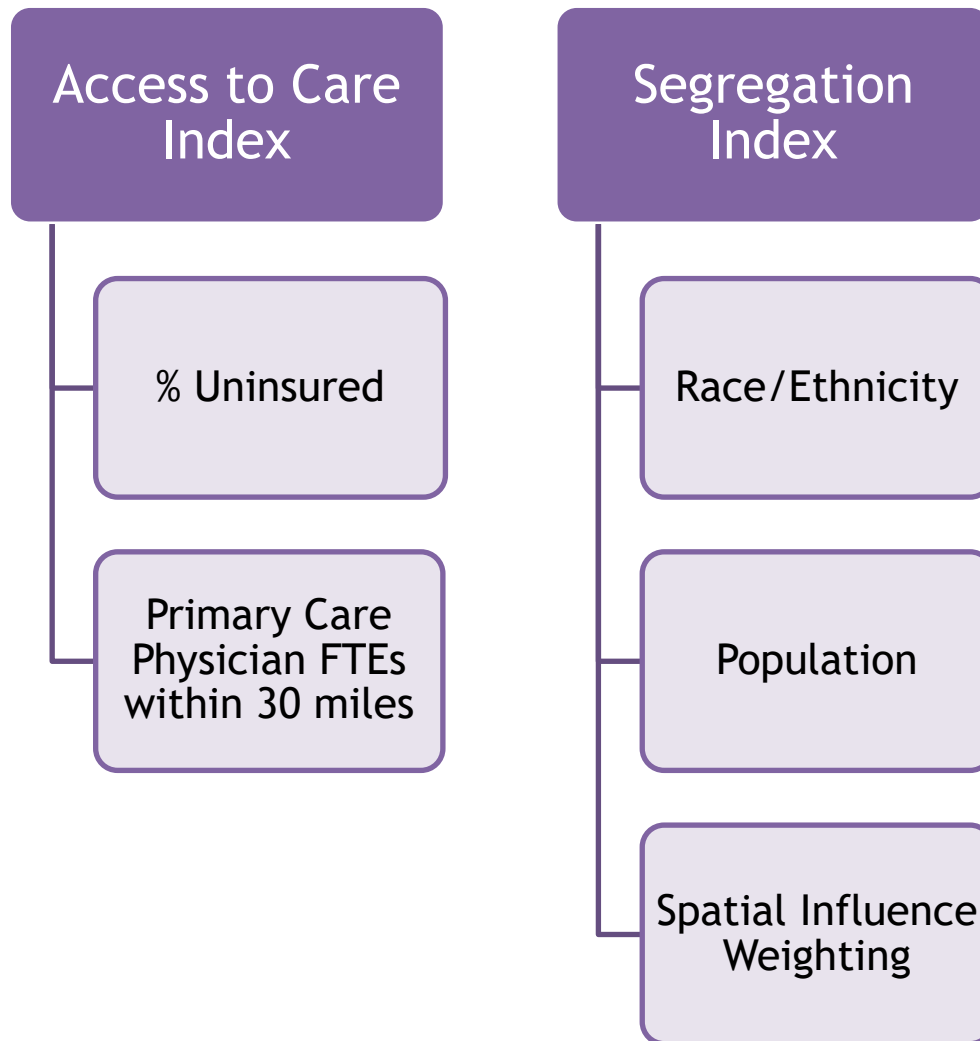
# Consumer Opportunity Profile



# Economic Opportunity Profile



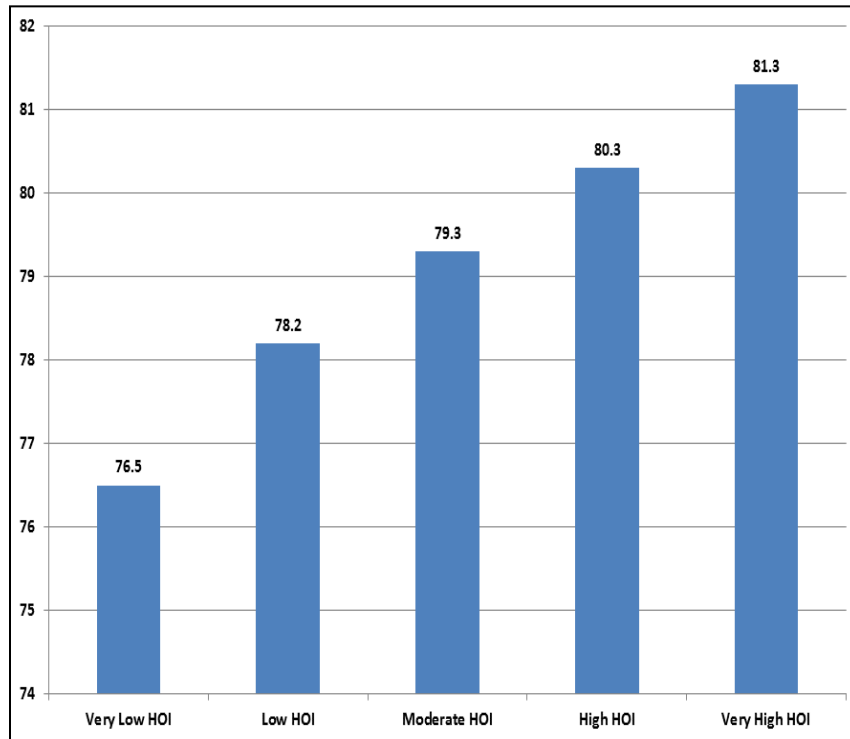
# Wellness Disparity Profile



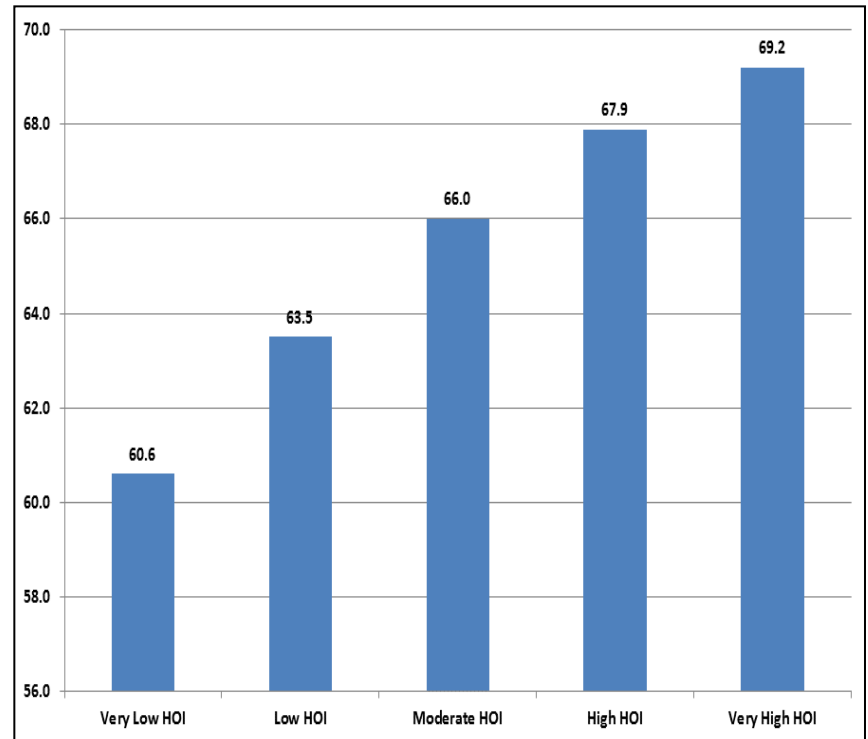


# Monotonicity of HOI

## Life Expectancy at Birth



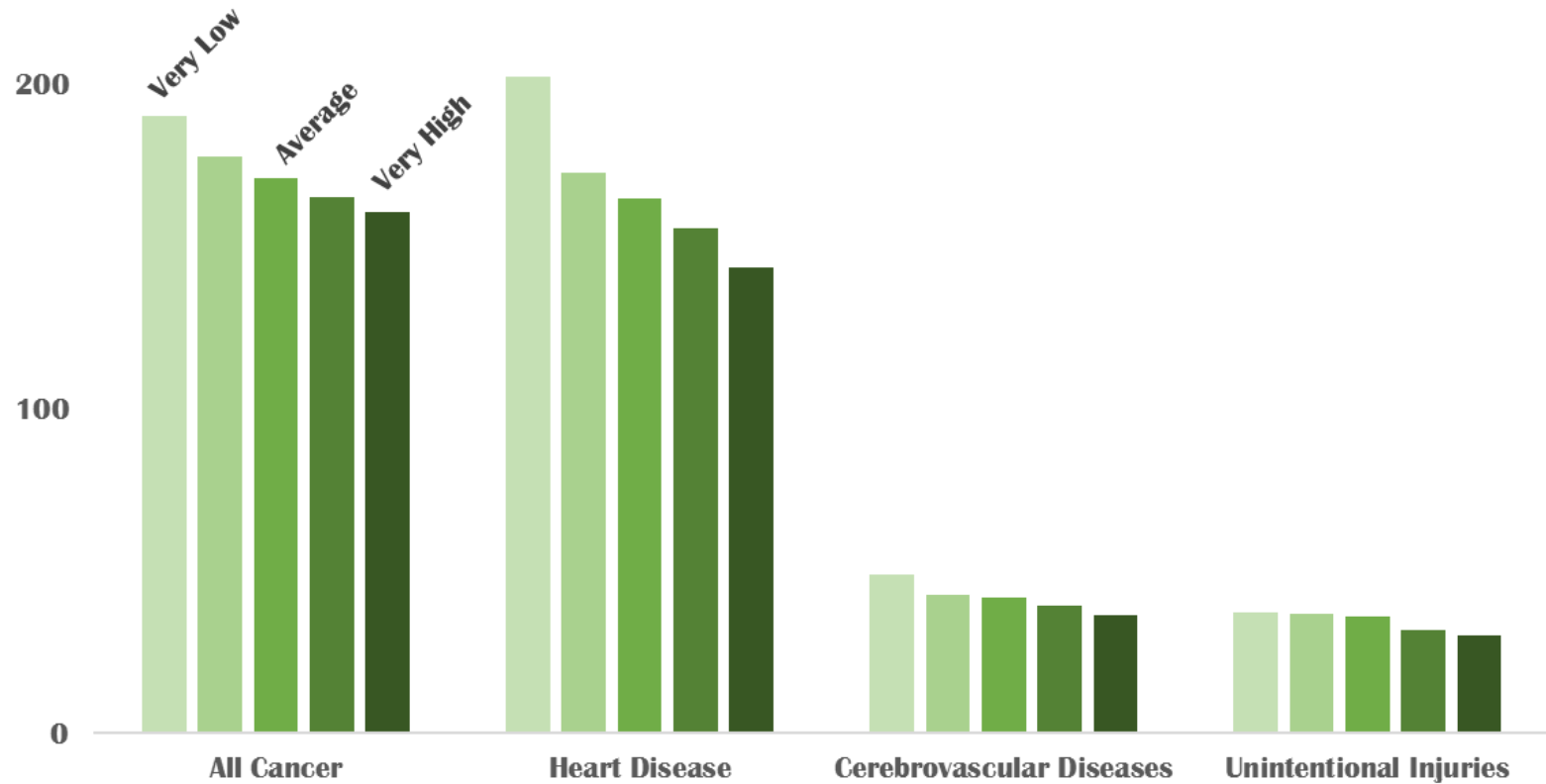
## Disability Free Life Expectancy



# Disparities by Health Opportunity

## Mortality per 100,000

(Age-Adjusted)



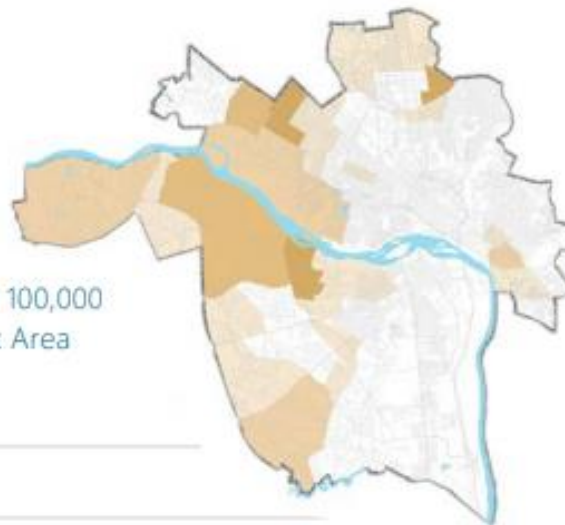
<b>VARNAME</b>	<b>VARIABLE</b>	<b>DEFINITION *</b>
<b>Neighbors</b>	<b>10.0</b>	
<b>ResidualSquares</b>	<b>29.3</b>	
<b>EffectiveNumber</b>	<b>462.5</b>	
<b>Sigma</b>	<b>0.30</b>	
<b>AICc</b>	<b>1102.7</b>	
<b>R2</b>	<b>0.83</b>	
<b>R2Adjusted</b>	<b>0.59</b>	
<b>Dependent Variable</b>	<b>0</b>	<b>DFLE</b>
<b>Explanatory Variable</b>	<b>1</b>	<b>HOI</b>

***Note: DFLE - Disability Free Life Expectancy (Healthy Life)  
HOI - Health Opportunity Index (composite Index)***

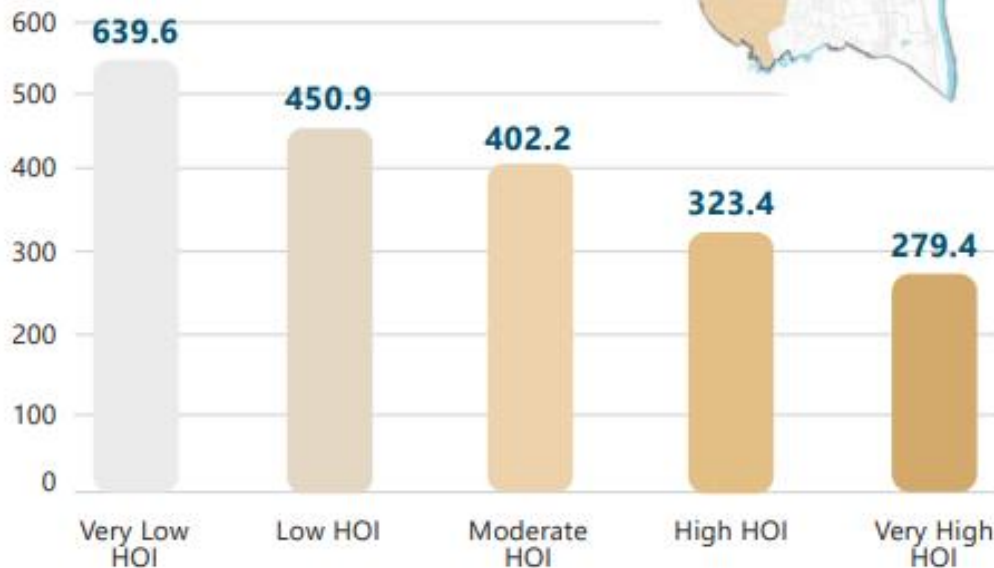
# Vision Zero Richmond, VA

## Health Outcomes

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.

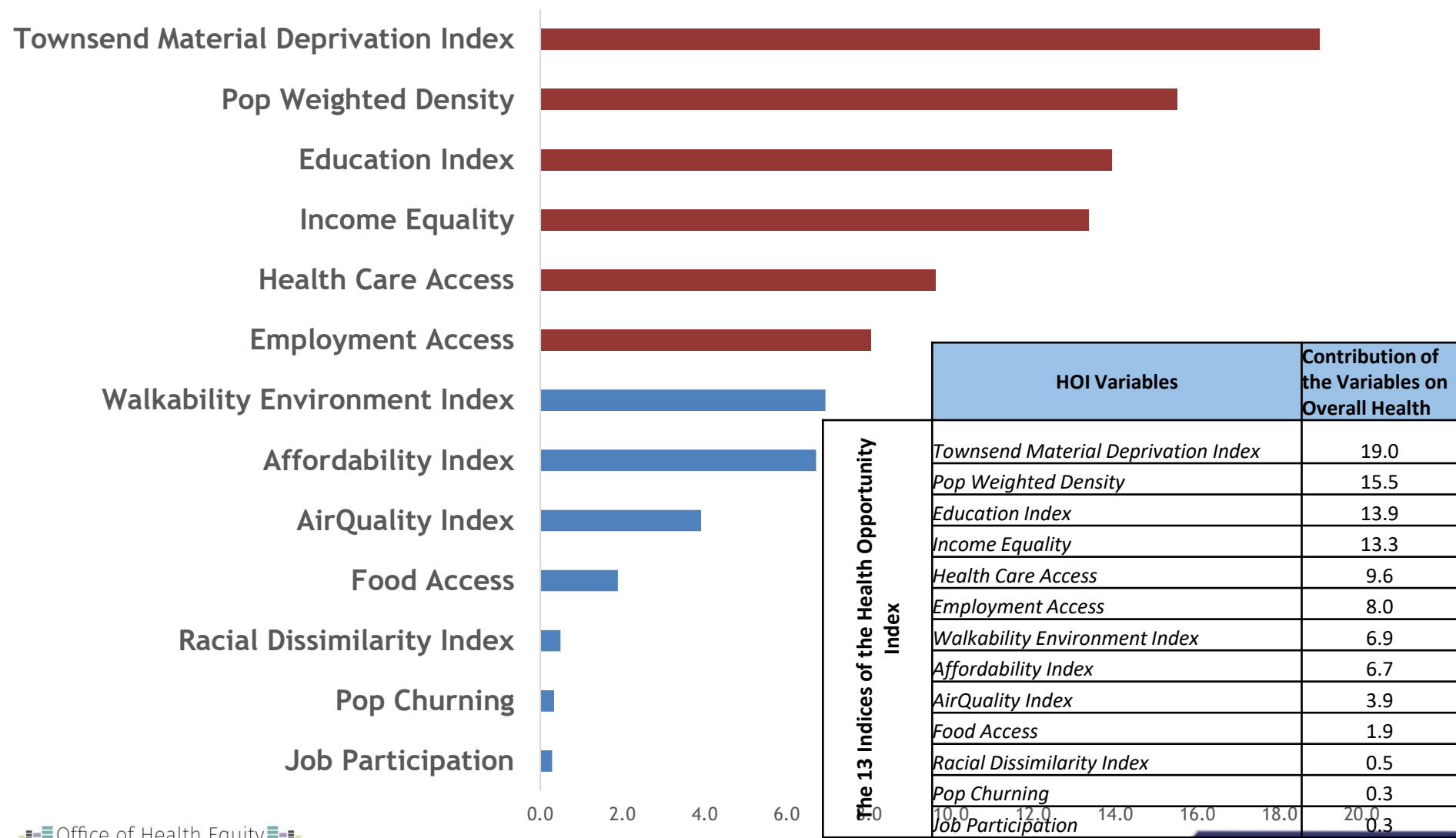


Fatality and Injuries Rate per 100,000 by Health Opportunity Index Area  
Colors on map reflect graph

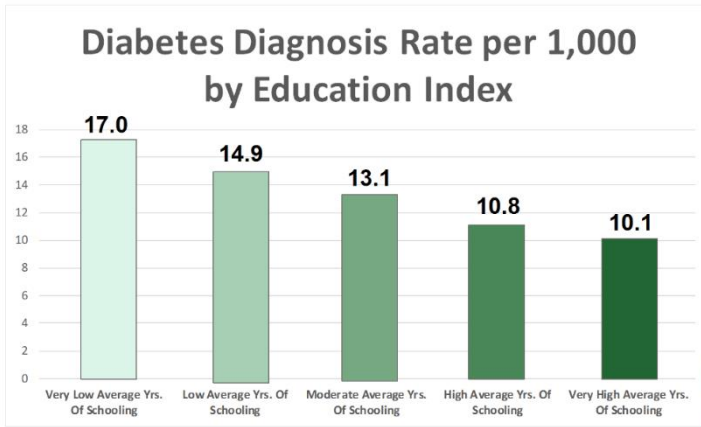


Source: Virginia Department of Health

# Contribution of individual HOI Indices on Overall Health (Life Expectancy) in Portsmouth







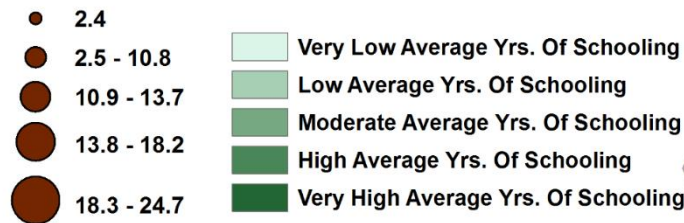
# Virginia

## Portsmouth Health District

### Education Index \*

by Census Tract  
Overlaid with Percent Diabetes Diagnosis \*\*

#### Percent Diabetes Diagnosis



\* 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  $\neq$  Neighborhood
- 5-year estimates
- Statewide measure

***For more information  
please contact:***

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Rexford Anson-Dwamena, MPH

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Visit the Health Opportunity Index Website:

<https://www.vdh.virginia.gov/omhhe/hoi/>

# Discussion

⇒ **Send us your questions**

⇒ **Follow up with us:**

⇒ **Sagar Shah [sshah@planning.org](mailto:sshah@planning.org)**

⇒ **Lauren Blackburn [lblackburn@vhb.com](mailto:lblackburn@vhb.com)**

⇒ **Mark Cole [mark.cole@vdot.virginia.gov](mailto:mark.cole@vdot.virginia.gov)**

⇒ **Stephen Read [stephen.read@vdot.virginia.gov](mailto:stephen.read@vdot.virginia.gov)**

⇒ **Justin Crow [justin.crow@vdh.virginia.gov](mailto:justin.crow@vdh.virginia.gov)**

⇒ **General Inquiries [pbic@pedbikeinfo.org](mailto:pbic@pedbikeinfo.org)**

⇒ **Archive at [www.pedbikeinfo.org/webinars](http://www.pedbikeinfo.org/webinars)**



Pedestrian and Bicycle Information Center

Webinar Series

## 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**



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# 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://sites.google.com/site/trbhealthandtransport/>