



Multimodal Master Plan & Comprehensive Safety Action Plan

VASITE Annual Meeting - City of Virginia Beach, Virginia

June 17, 2025

Keith Darrow,
City Transportation Engineer

Alan Budde,
Transportation Strategic Planner



Norfolk Department of Transportation



Formerly Division of Transportation in Public Works

Converted to department in 2019

UCI Locality as part of VDOT's Locally Administered Program

Responsible for:

- Maintenance of signs, signals, pavement markings, and signal fiber network
- Management of over \$260M in state/federal funds
- Planning, development, and analysis of transportation improvements
- In-house design and site plan review
- Traffic calming and speed reduction programs
- Micromobility program
- Streetlights



Norfolk Department of Transportation



ADA Ramp Program

Bicycling, Pedestrian, and Active
Transportation Commission

Current Projects & Studies

Getting Around Norfolk

Multimodal Transportation Planning

Norfolk Safety Action Plan

Traffic Enforcement Cameras

Traffic Operations Center

Transportation Engineering

[Home](#) > [Government](#) > [Departments](#) > [Departments N to V](#) > Transportation

Department of Transportation

The Department of Transportation is responsible for planning, developing, and maintaining a multi-modal transportation system that supports all modes of transportation, including biking, walking, scooters, rail, air, and public transportation.

Divisions



Multimodal Transportation Planning

- Oversees the management and coordination of project development and public engagement efforts for the City's transportation safety projects.



Transportation Engineering

- Responsible for the design, construction, and project management of the City and the Virginia Department of Transportation's projects.

Contact Us

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Director of Transportation

[Email Department of Transportation](#)

Transportation

Physical Address

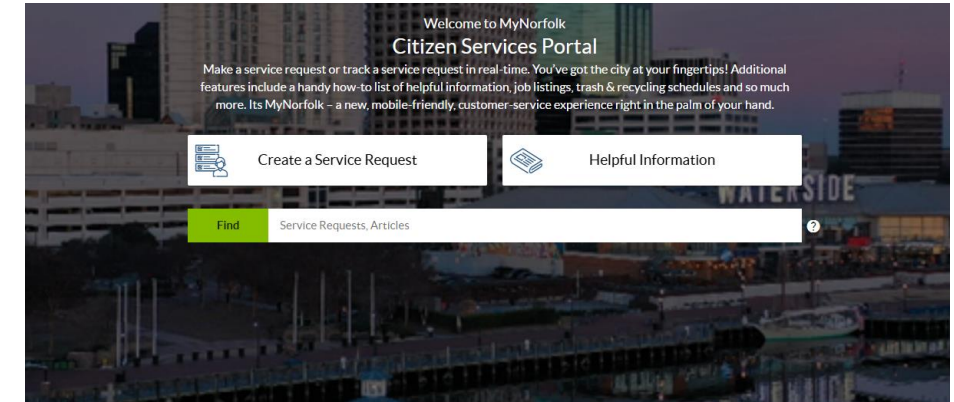
810 Union St. - Suite 200
Norfolk, VA 23510

Phone: [757-664-7300](#)

Report a Problem

Need to report an infrastructure problem?
Submit a request through [MyNorfolk](#).

Need to report a train blocking a roadway
crossing? [View these steps for how to file a report.](#)



Norfolk Department of Transportation



John Stevenson, Director

Administration

Administrative Mgr.
Management
Analysts (2)

Planning

*Transportation
Strategic Planner*
Planners (2)

Engineering

City Transportation Engineer
VDOT Program Manager
Network Engineer
Sr. Project Manager
Civil Engineers/PMs (4)
Field Team Program Manager
Engineering Tech. (4)
Construction Insp.

Operations

*Superintendent of
Operations*
Operations Mgr. – Signs &
Pavement Markings
Operations Mgr. – Signals
Maintenance Shop Mgr.
GIS Specialist
Traffic Signal Tech. (10)
Traffic Maint. Tech. (11)
Traffic Signs Fabricator

Financial

Fiscal Manager
Accountants (3)





MULTIMODAL NORFOLK

A TRANSPORTATION MASTER PLAN

What is Multimodal Norfolk?



Norfolk's first multimodal transportation master plan

- Creating an equitable transportation system
- Working towards achieving Vision Zero
- Transforming transportation to cut carbon emissions and combat climate change



Vision

Multimodal Norfolk is a blueprint for linking all travel modes to support the safety, connectedness, and prosperity of the people of Norfolk and the region.

Guiding Values

- Safety – make sure everybody is safe on Norfolk's streets
- Freedom – give everyone freedom to get where they need to go
- Equitable Prosperity – give everyone viable choices for getting around and accessing opportunities to work, learn, play, and gather



Vision Zero

In 2020, **25** people were killed in traffic-related incidents on Norfolk's streets.

Six pedestrians or bicyclists are killed in Norfolk on average every year.



In 2019, Norfolk City Council adopted a Vision Zero policy to “eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all because no traffic-related loss of life is acceptable.”

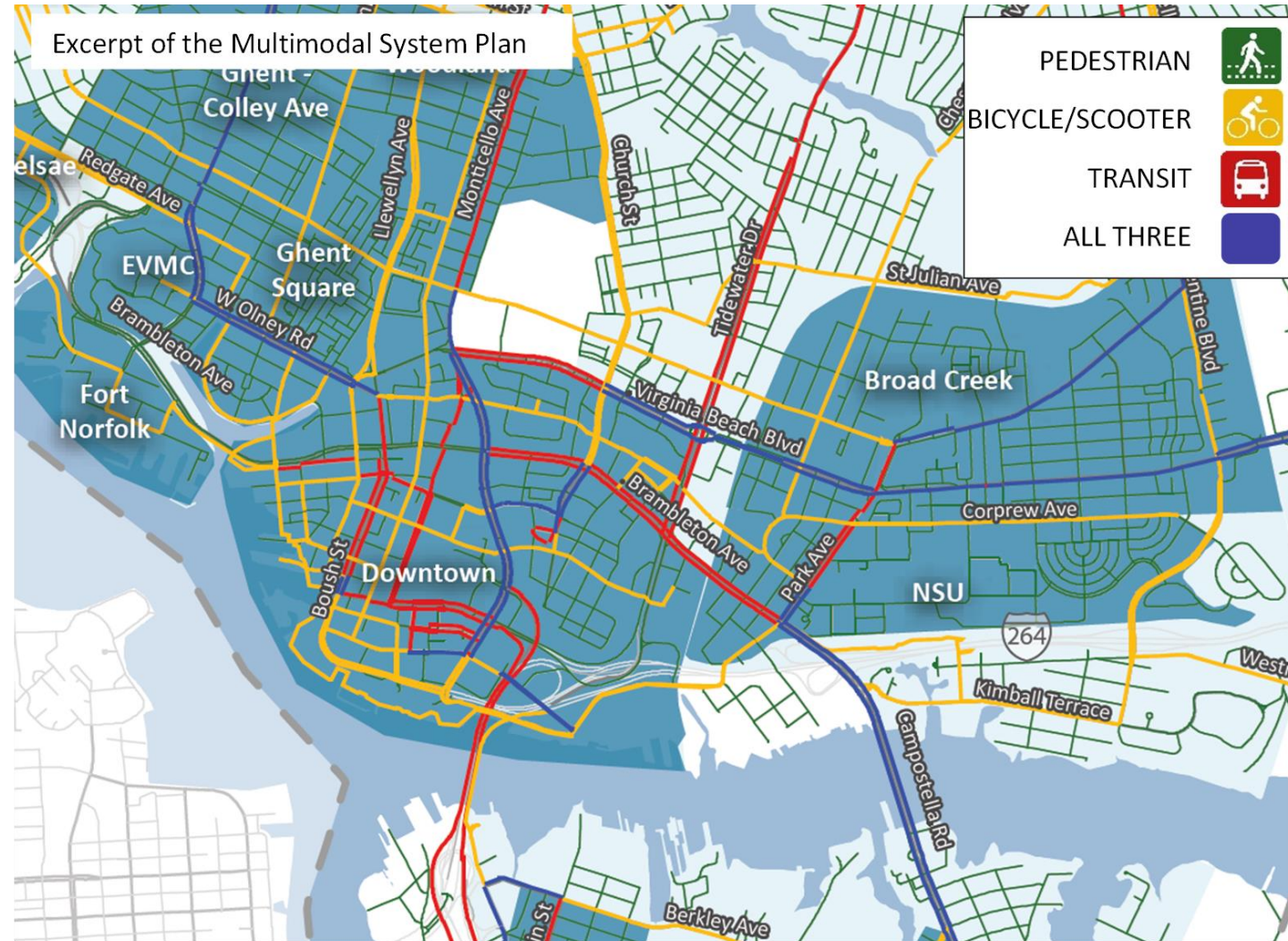


The Multimodal System Plan: Providing Mobility for All

The Multimodal System Plan identifies gaps for each mode and proposes connections to close those gaps.

A series of maps outlining the future vision for a safe, connected citywide multimodal system

- Multimodal Centers and Multimodal Districts
- Multimodal Corridors
- Modal Emphasis
- Transect Zones

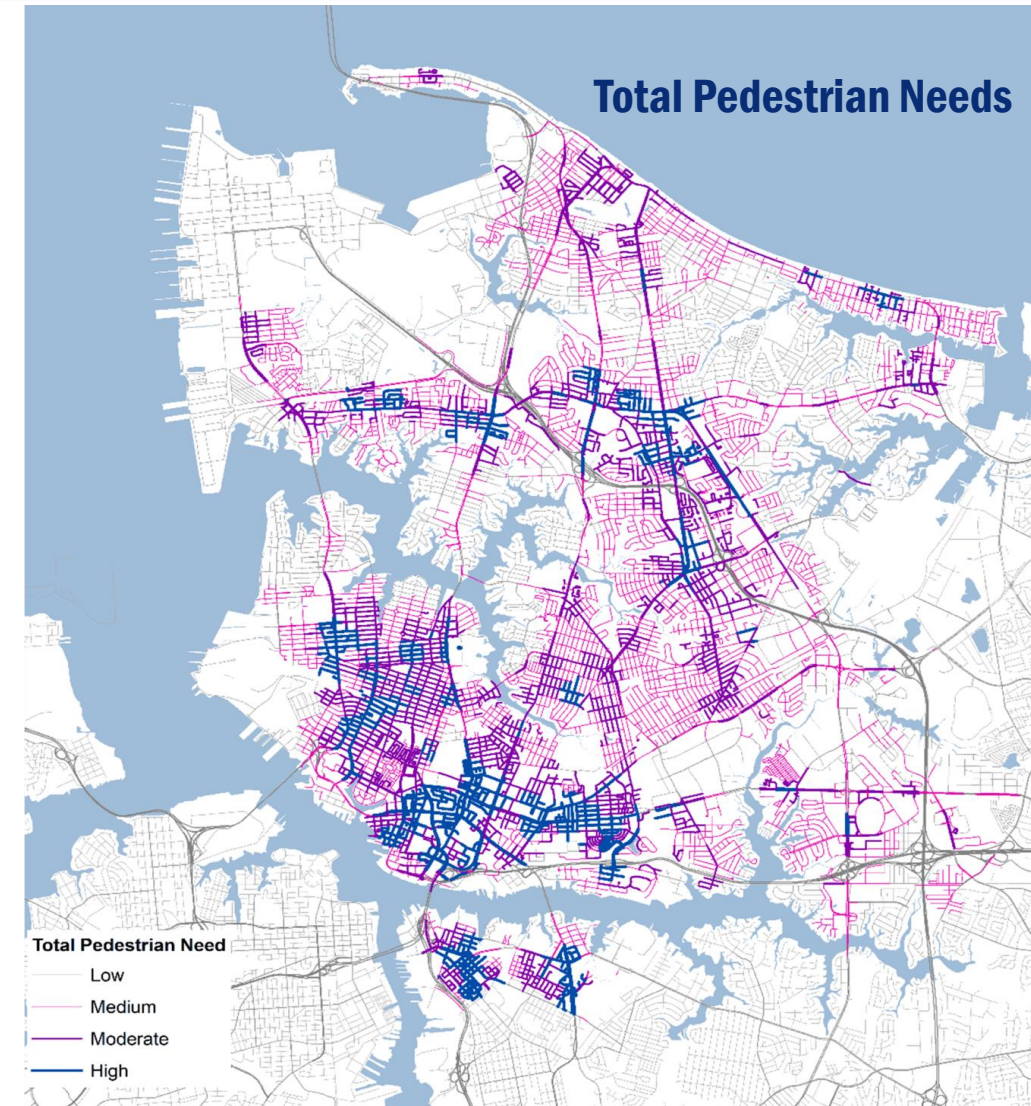


Multimodal Needs Analysis

Identifying Pedestrian Needs

Pedestrian Needs Data

Safety Vision Theme	Connectivity Vision Theme	Equitable Prosperity Vision Theme	Public Input
<ul style="list-style-type: none">• Pedestrian crashes• Pedestrian fatalities• VDOT Pedestrian Safety Action Plan priority corridors• Distance to crosswalks• Sidewalks• Traffic volume• Traffic speed• Interstate ramps• Signalized intersections without pedestrian signals• ADA curb ramps	<ul style="list-style-type: none">• Pedestrian trip generators (parks, schools, libraries, etc.)• Transit stops• Transit ridership• Activity (population and jobs)• Multimodal centers	<ul style="list-style-type: none">• Zero-vehicle households• Populations of color• Low-income households	<ul style="list-style-type: none">• Public comments



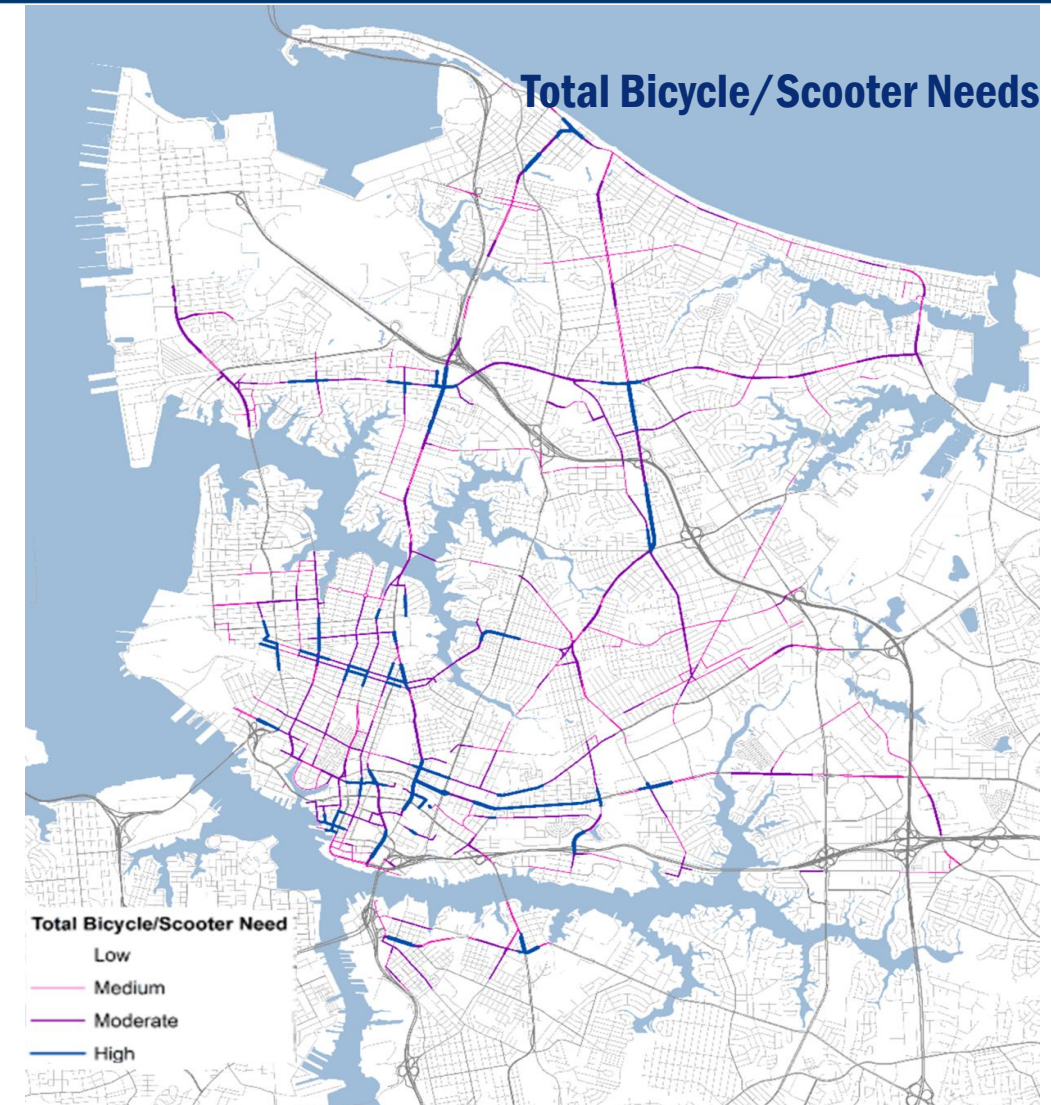
Multimodal Needs Analysis

Identifying Bicycle/Scooter Needs

The needs maps identify the highest need areas for transportation improvements to guide future transportation investments and priorities.

Bicycle/Scooter Needs Data

Safety Vision Theme	Connectivity Vision Theme	Equitable Prosperity Vision Theme	Public Input
<ul style="list-style-type: none">• Bicyclist crashes• Bicyclist fatalities• Bicycle facilities• Traffic volume• Traffic speed• Interstate ramps	<ul style="list-style-type: none">• Pedestrian trip generators (parks, schools, libraries, etc.)• Transit stops• Transit ridership• Activity (population and jobs)• Multimodal centers	<ul style="list-style-type: none">• Zero-vehicle households• Populations of color• Low-income households	<ul style="list-style-type: none">• Public comments



What should we build?

Program of Projects: a full list of all potential pedestrian, bicycle, scooter, and other infrastructure improvement projects that is intended to meet the highest needs in Norfolk

Candidate projects were identified from...

- Transit's prior list of improvement projects
- Multimodal Needs Assessment public input
- Norfolk's Bicycle & Pedestrian Strategic Plan (2015)

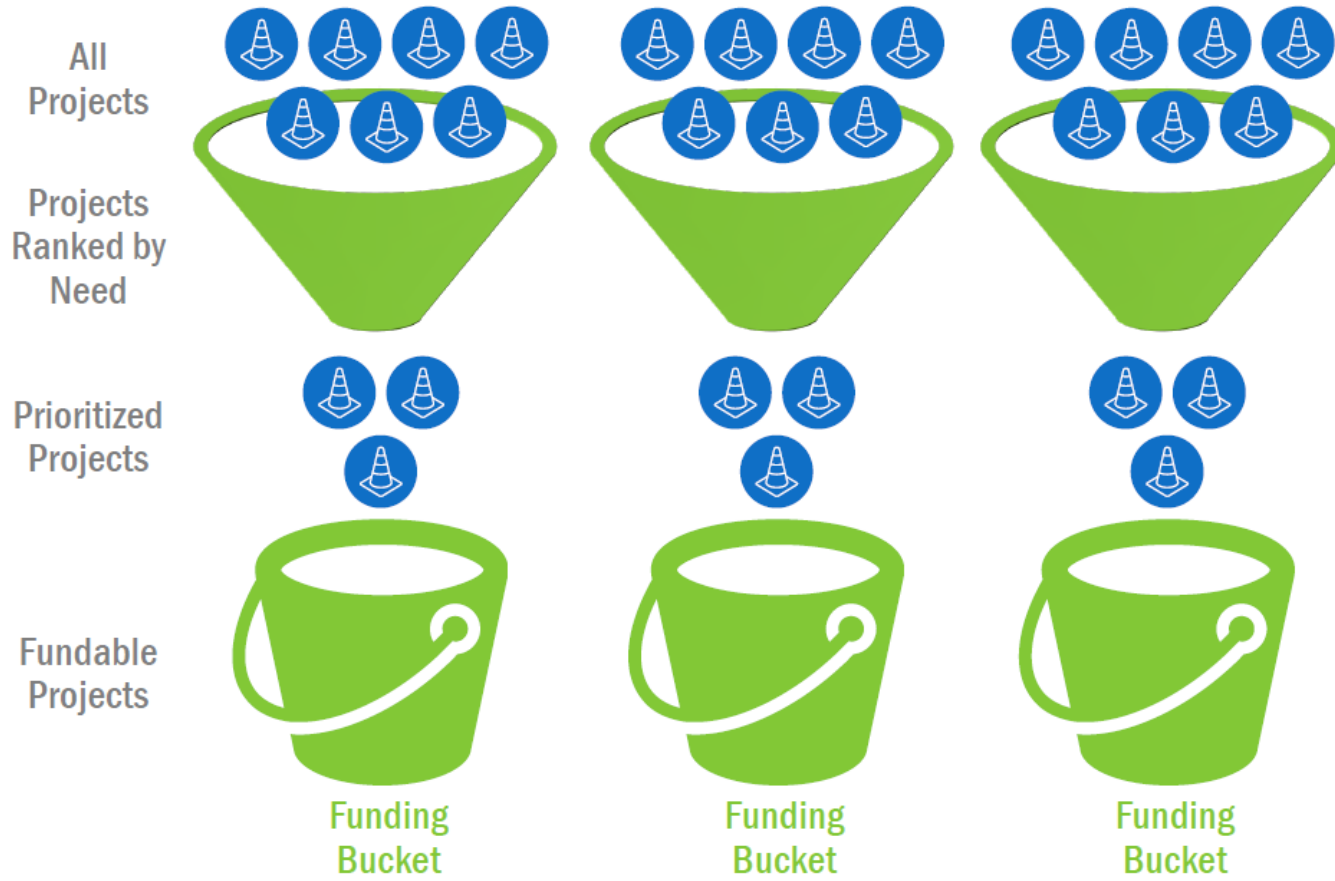
Appendix G: Program of Projects

The projects listed in this current program of projects are not listed in any particular order, rank, or priority. The map is available at www.MultimodalNorfolk.com.

ID	Project Name	Project Type	Project Source	Funding	Need Level
1	Curlew Drive Multi-Use Path	Bike/scooter facility projects	Committed projects with funding	Funded	Not scored
3	Granby Street Bridge Rehabilitation	Other	Committed projects with funding	Funded	Not scored
4	Campostella Bridge Rehabilitation	Other	Committed projects with funding	Funded	Not scored
5	Granby Street Bike Lanes - Willow Wood Drive to Admiral Taussig Boulevard	Bike/scooter facility projects	Committed projects with funding	Funded	Not scored
6	Virginia Beach Boulevard Improvements at Newtown Road.	Sidewalk projects	Committed projects with funding	Funded	Not scored
7	Elizabeth River Trail at Fort Norfolk.	Bike/scooter facility projects	Committed projects with funding	Funded	Not scored
8	Granby Bike Bypass at Lafayette Park and Columbus Avenue.	Bike/scooter facility projects	Committed projects with funding	Funded	Not scored
9	Princess Anne Road Corridor Improvements between Tidewater Drive and Ballentine Boulevard.	Other	Committed projects with funding	Funded	Not scored
10	Virginia Beach Blvd Widening - George St to Newtown Rd	Other	Committed projects with funding	Funded	Not scored
11	Granby Street - NEON District Streetscape Project	Other	Committed projects with funding	Funded	Not scored
12	Citywide Sidewalk Infrastructure Phase 2 - Little Creek Road (Chesapeake Boulevard to Carlton Street)	Sidewalk projects	Committed projects with funding	Funded	Not scored
13	Citywide Sidewalk Infrastructure Phase 1 - Princess Anne Road (Shelton Avenue to Fleetwood Avenue)	Sidewalk projects	Committed projects with funding	Funded	Not scored
14	Citywide Sidewalk Infrastructure Phase 1 - Easy Street and Tidewater Drive	Sidewalk projects	Committed projects with funding	Funded	Not scored
15	Citywide Sidewalk Infrastructure Phase 2 - Berkley Ave/Indian River Road (Wilson Road to Marsh Street)	Sidewalk projects	Committed projects with funding	Funded	Not scored
16	Citywide Sidewalk Infrastructure Phase 2 - Sewells Point Road (Princess Anne Road to Azalea Garden Road)	Sidewalk projects	Committed projects with funding	Funded	Not scored
17-46	St. Paul's Phase I/II	Other	Committed projects with funding	Funded	Not scored
47	Newtown Road Corridor Study	Other	Committed projects with funding	Funded	Not scored
48	Southside Bicycle Improvements	Bike/scooter facility projects	Committed projects with funding	Partially Funded?	High
49	Church Street Pedestrian Improvements	Pedestrian signals and crosswalk projects	Committed projects with funding	Funded	Not scored
50	Westminster Reconstruction	Other	Committed projects with funding	Funded	Not scored
51	Lake Taylor Sidewalk Improvements	Sidewalk projects	Committed projects with funding	Funded	Not scored
52	Ballentine Blvd Lane Improvements	Other	Committed projects with funding	Funded	Not scored
53	Tidewater Drive Sidewalk at I-64	Sidewalk projects	Committed projects with funding	Funded	Not scored
54	Traffic calming and pedestrian crossing safety treatments on Granby Street between Main Street and Charlotte Street.	Traffic Calming	Candidate projects from 2021 needs assessment	Unfunded	High



How do we fund it?



Resource Allocation Plan: a subset of projects from the Program of Projects that the City can realistically move forward within the near term (5-10 years)

Matches funding sources to projects based on

- Best chance of getting funded
- Long, medium, or short timeframes
- Available funds

Projects were run through the Needs Assessment & the highest need projects were evaluated for compatibility with each funding program



Multimodal Project Design: Designing Mobility for All

A new Design Approach framework:

- Guidance for selecting the type of facility
- Considerations for the multimodal system context
- Accommodating bicycle/scooter and transit modes in limited right-of-way

		Design Considerations		
		Frequency of Buses	Speed of Buses	Impact to Roadway
Design Approach	Combined Bus and Bicycle Lane	Ideal where bus frequency is no more than 1 bus every 15 minutes. Potentially feasible where bus frequency is as often as 1 bus every 5 minutes.	Appropriate where bus speed is limited to 20 mph.	16-ft lane desired. Potentially feasible with a 12-ft lane.
	Separate Bus and Bicycle Lanes	Appropriate where bus frequency is more than 1 bus every 5 minutes.	Appropriate where bus speed is higher than 20 mph.	18.5-ft is the minimum width needed to accommodate a dedicated bus lane and a separated bike lane that do not share the same space. More width may be needed.



Multimodal Project Evaluation: Evaluating Mobility for All

A new Evaluation Framework to reflect multimodal goals

- Connect, Protect, Prosper
- Moving beyond vehicular LOS metrics
- Communicating benefits and tradeoffs

	Does the potential design concept:	Yes	No
Connect	Increase overall person-throughput of the street?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Increase modal options or create dedicated space in the right of way for a new mode?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Form, enhance, or strengthen a link in a non-automobile modal network?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Provide non-automobile access to new parts of the city?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Introduce low-cost mobility options?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Increase the efficiency of the public right of way?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Protect	Slow down vehicle traffic?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Provide physical protection to vulnerable road users?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Shorten pedestrian crossings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Decrease curb radii?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Provide refuge islands?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Facilitate low or no carbon emission travel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Accommodate sea-level rise and flooding events?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Include green infrastructure to improve resilience?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Prosper	Increase travel choice for residents and workers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Add new options for accessing business locations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Enhance a local sense of place?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Contribute to an attractive public realm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Support the economic viability of adjacent land uses and the city as a whole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Include green infrastructure or recreational opportunities, or improve access to parks or open spaces?	<input checked="" type="checkbox"/>	<input type="checkbox"/>





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Safe Streets and Roads for All (SS4A)



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- ✓ Introduced as part of the Bipartisan Infrastructure Bill
- ✓ Provides grants to local, regional, and Tribal communities as part of a systematic approach to prevent deaths and serious injuries on the nation's roadways
- ✓ Received Planning Grant in 2023 from USDOT
- ✓ \$5 Billion in Funding Over 5 Years (2022-2026):
 - Safety Action Plans (Step 1)
 - Implementation Grants (Step 2)





- ✓ Leadership Commitment of **Target Goal**
- ✓ Safety Analysis
- ✓ Equity Analysis
- ✓ Engagement and Collaboration
- ✓ Policy Review
- ✓ Strategy and Project Selections
- ✓ Progress Tracking and Transparency

The Norfolk Safety Action Plan is a comprehensive approach to identify challenges and concerns with roadway safety and identify strategies and treatments for implementation.

Building upon the Vision Zero policy adopted by Norfolk City Council in 2019...

This Plan aims to reach a goal of zero traffic-related fatalities and serious injuries by 2050 by making city streets safer for all road users through engineering, enforcement, education, and policy.

Objective 1:
Safe Streets

Objective 2:
Quality of Life

Objective 3:
Transparency

Objective 4:
Culture of Safety

Engagement Overview



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The **engagement strategy** was designed to encourage broad participation and gather diverse perspectives from key stakeholders and the community. The community engagement process generally consisted of **two phases** and included the following:

- ✓ Advisory Committee Meetings (4)
- ✓ Stakeholder Meetings (2)
- ✓ Community Meetings/Pop Ups (6)
- ✓ Virtual Engagement



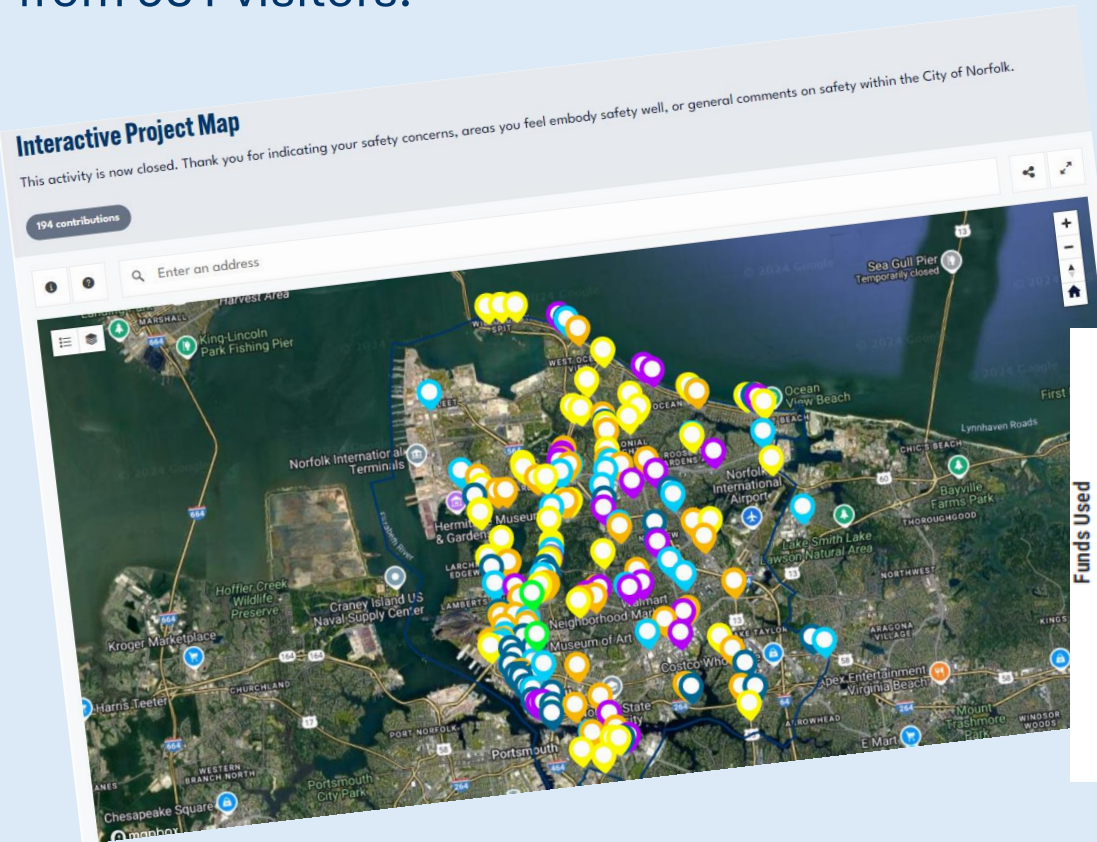
Virtual Engagement



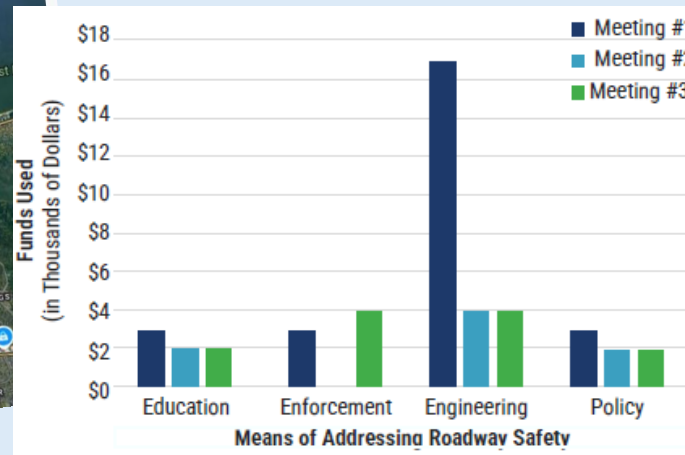
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Our hybrid approach to community engagement included providing a **project website** and **online activities** that complemented in-person activities. As of December 2024, the website received 1,414 visits from 981 visitors.



[Learn more about the plan and our upcoming public engagement opportunities on our Social Pinpoint website!](#)



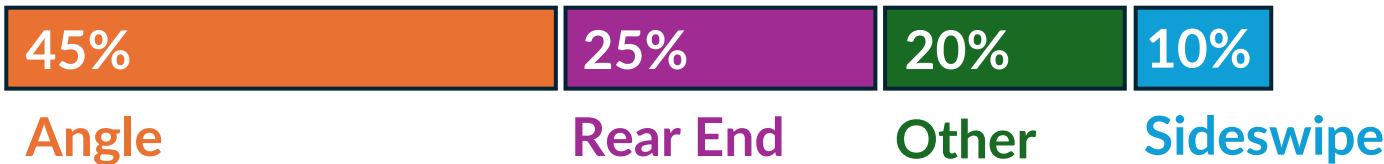
Citywide Crash Trends



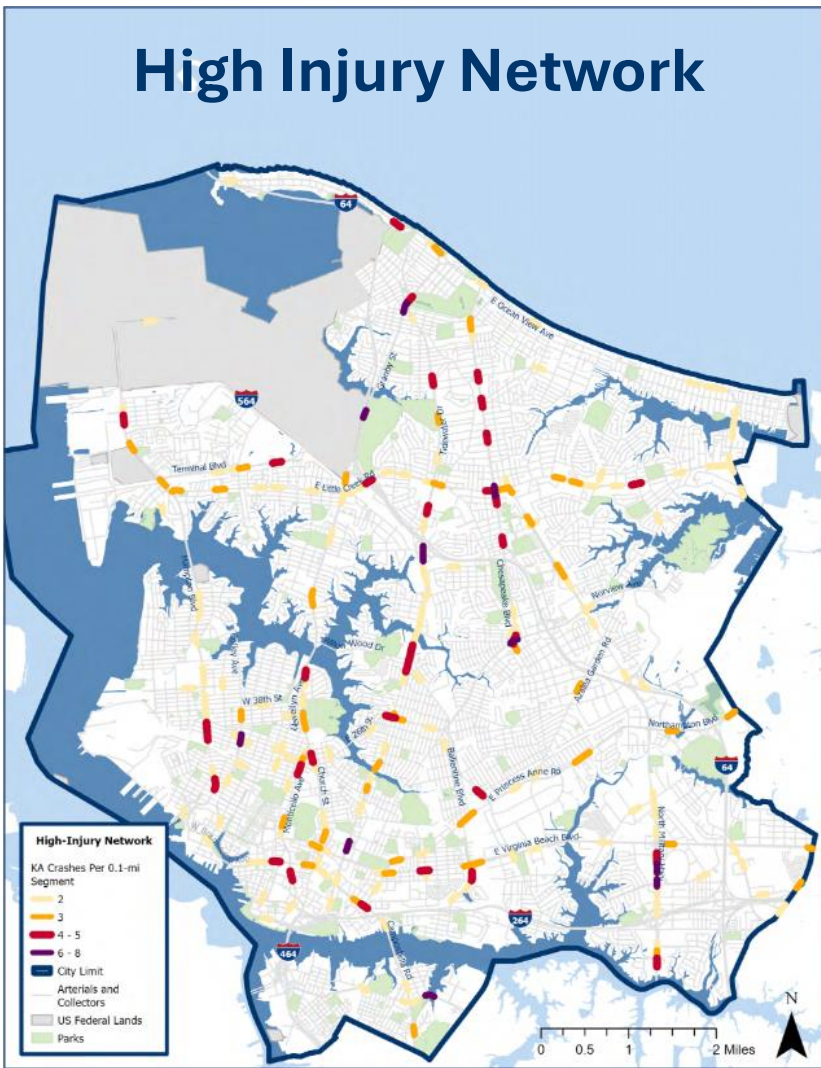
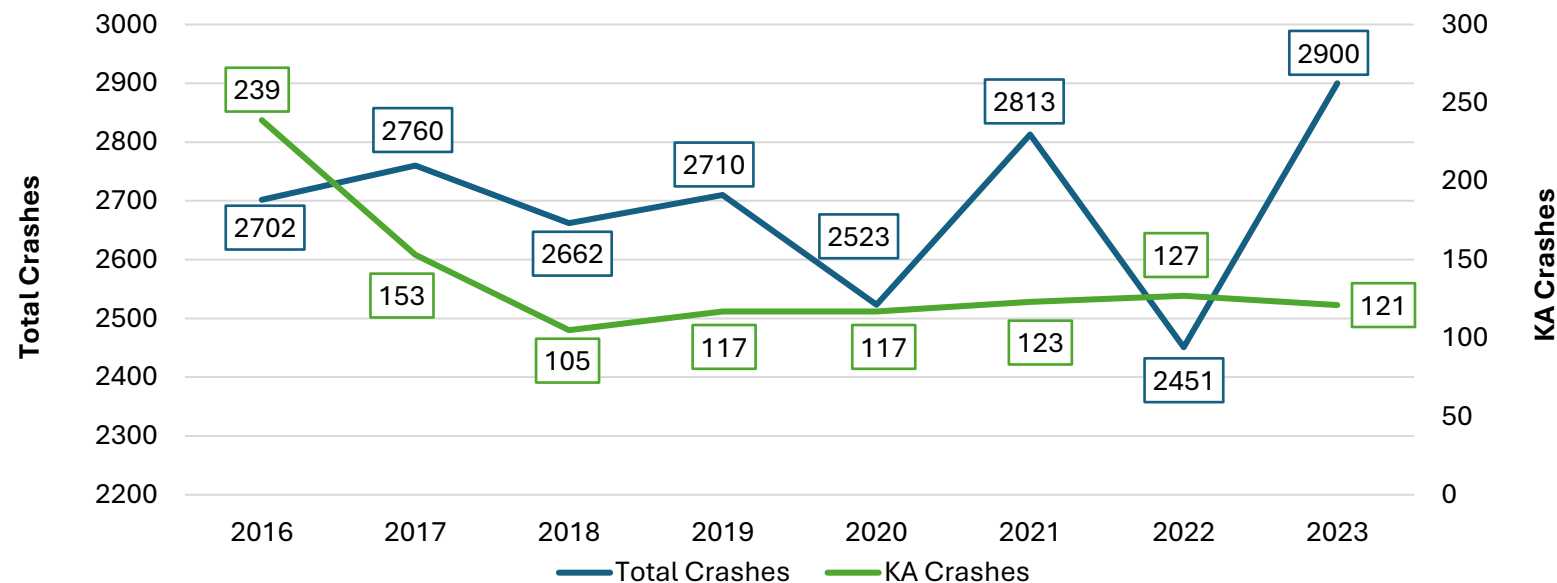
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Total Crashes (2016-2023): 21,521



Fatal and Serious Injury Crashes: 1,102 (5%)



Emphasis Area Approach



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Emphasis Area	Total Crashes	Fatal & Serious Injury Crashes	% Fatal & Serious Injury Crashes	% of Citywide Total Crashes	% of Citywide Fatal & Serious Injury Crashes
Signalized Intersections	10,090	514	5%	47%	47%
Impaired Driving	4,855	373	8%	23%	34%
Speeding	2,529	229	9%	12%	21%
Pedestrians	625	198	32%	3%	18%
Unsignalized Intersections	4,675	198	4%	22%	18%
Unprotected Occupants	761	170	22%	4%	15%
Motorcyclists	452	140	31%	2%	13%
Wet Conditions	3,177	140	4%	15%	13%
Equity Focus Area: Low Income Population	1,897	102	5%	9%	9%
Equity Focus Area: Minority Population	2,051	90	4%	10%	8%
Heavy Vehicles	1,267	50	4%	6%	5%
Bicyclists	269	46	17%	1%	4%
Top Corridor	723	41	6%	3%	4%
School Zones	511	33	6%	2%	3%
Top Intersection	102	7	7%	0%	1%



Emphasis Area Highlights



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Impaired Driving

44%

In Dark Conditions

34%

Of Fatal and Serious
Injury Crashes



Speeding

42%

In Dark Conditions

32%

Involved Impaired
Driving



Pedestrians

50%

At An Intersection

43%

In Dark Conditions



Countermeasure Identification



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Systemic

Engineering treatments that can be broadly applied across the City.



Policies & Initiatives

Policies and strategies to promote safer behaviors and compliance.



Targeted

Location-specific engineering treatments identified for geographic-based emphasis areas.



Countermeasure Examples



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Systemic

Curb Extensions (Bulb-Outs)

Curb extensions, also known as bulb-outs, extend the sidewalk into the parking lane, narrowing the street and improving pedestrian safety by shortening crossing distances and enhancing visibility. These extensions also prevent vehicles from parking at corners, thus increasing intersection visibility.

Driver Feedback Speed Limit Signs

Research shows interactive speed limit signs, which show a vehicle's current speed, have successfully reduced speeds by 5 miles per hour (mph) and can reduce crashes by 5%.



Policies & Initiatives

Bicycle Training and Subsidized Helmets for Children

This initiative would provide bicycle safety training and offer subsidized helmets to children to promote safe riding practices. The goal is to reduce head injuries and increase overall safety for young bicyclists.

Impaired Driving Campaigns

Impaired Driving Campaigns focus on raising awareness about the dangers of distracted and drowsy driving or driving under the influence of alcohol and drugs. These initiatives use a mix of media outreach, education, and enforcement to discourage impaired driving and improve road safety.




Prioritization Approach

Step 1


What?

Systemic Countermeasure	Safety Benefit			Cost Magnitude			Implementation Complexity			Funding Options			Impact to Vulnerable Road Users			Score
Range	+++	++	+	\$	\$	\$	Low	Medium	High	High	Medium	Low	High	Medium	Low	
Weight	40	20	10	20	10	5	20	10	5	20	10	5	20	10	5	
High Visibility Crosswalks	✓			✓			✓					✓	✓			105
Leading Pedestrian Interval (LPI)	✓			✓			✓					✓	✓			105
High-Friction Surface Treatment of Curves	✓			✓			✓			✓					✓	105


Systemic countermeasures, policies, and initiatives which target the following emphasis areas should be prioritized:




Pedestrians (32% result in fatal and serious injuries)



Motorcyclists (31% result in fatal and serious injuries)



Unprotected Occupants (22% result in fatal and serious injuries)

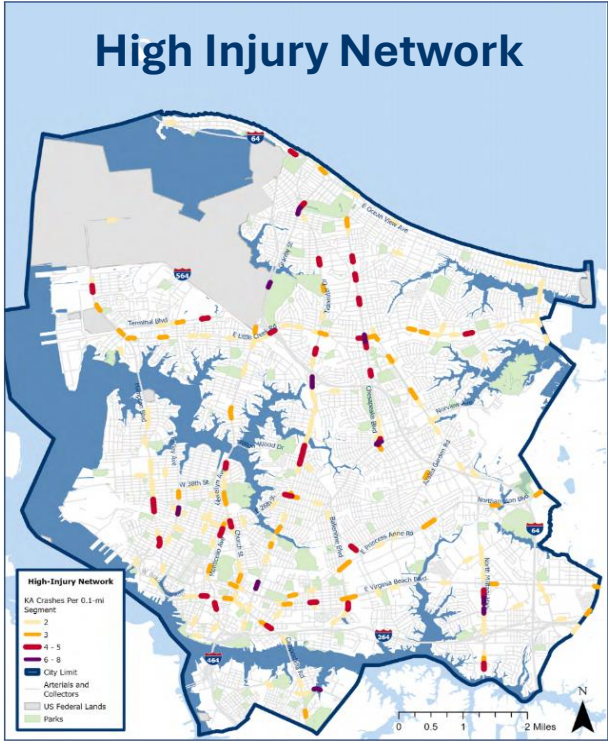


Bicyclists (17% result in fatal and serious injuries)

Step 2

Where?

High Injury Network



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How to Use The Plan?



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- ✓ Prioritize Safety Improvements
- ✓ Allocate CIP Funds
- ✓ Pursue External Funding
 - ✓ Federal – SS4A Implementation Grants
 - ✓ State – HSIP, TAP, SMART SCALE, and More
- ✓ Track Progress Toward Safety



Thank You!



SAFETY ACTION PLAN

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