







WILMAPCO Planning Safe Streets for All

2024 Delaware Safety Summit

Agenda

- What are MPOs and why we're a forum for safety planning
- Vision Zero and Safe Streets and Roads for All (SS4A) Approach and Scope
- Public Outreach Results
- Draft Crash Analysis
- Draft Recommendations
- Discussion and Next Steps

What are MPOs?

A Metropolitan Planning Organization (MPO):

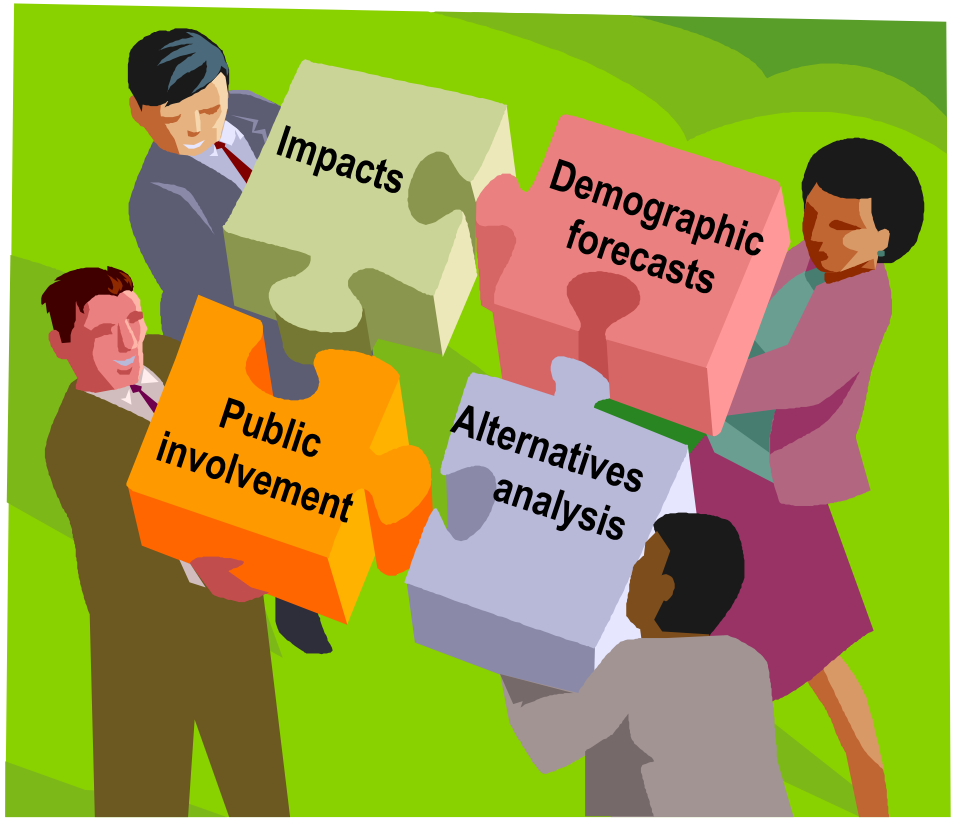
- Federally required regional transportation policy-making organization in areas with 50,000+ UZA population, called Transportation Management Areas (TMA) with 200,000+ UZA population
- Brings together local government, regional transit operators, state transportation agencies, stakeholders, and the public
- 3 MPOs in Delaware



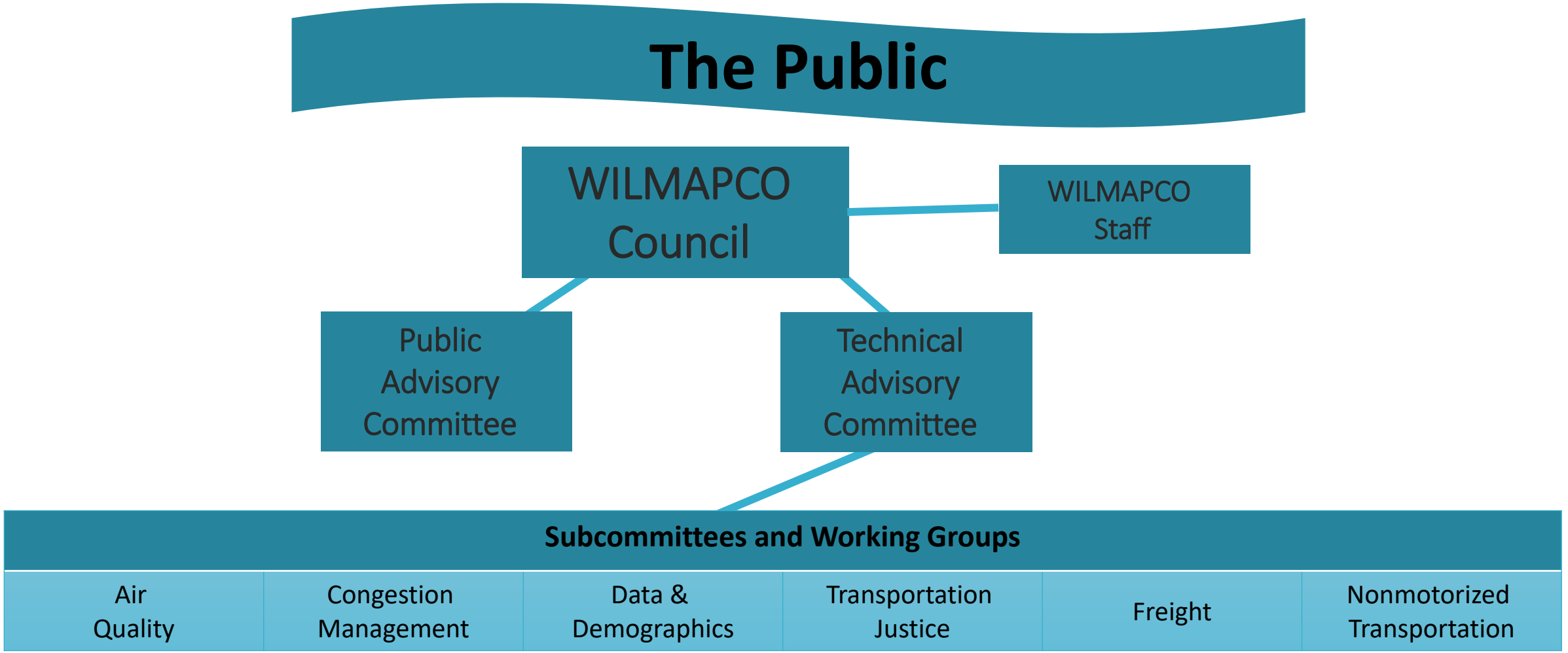
Metropolitan transportation planning

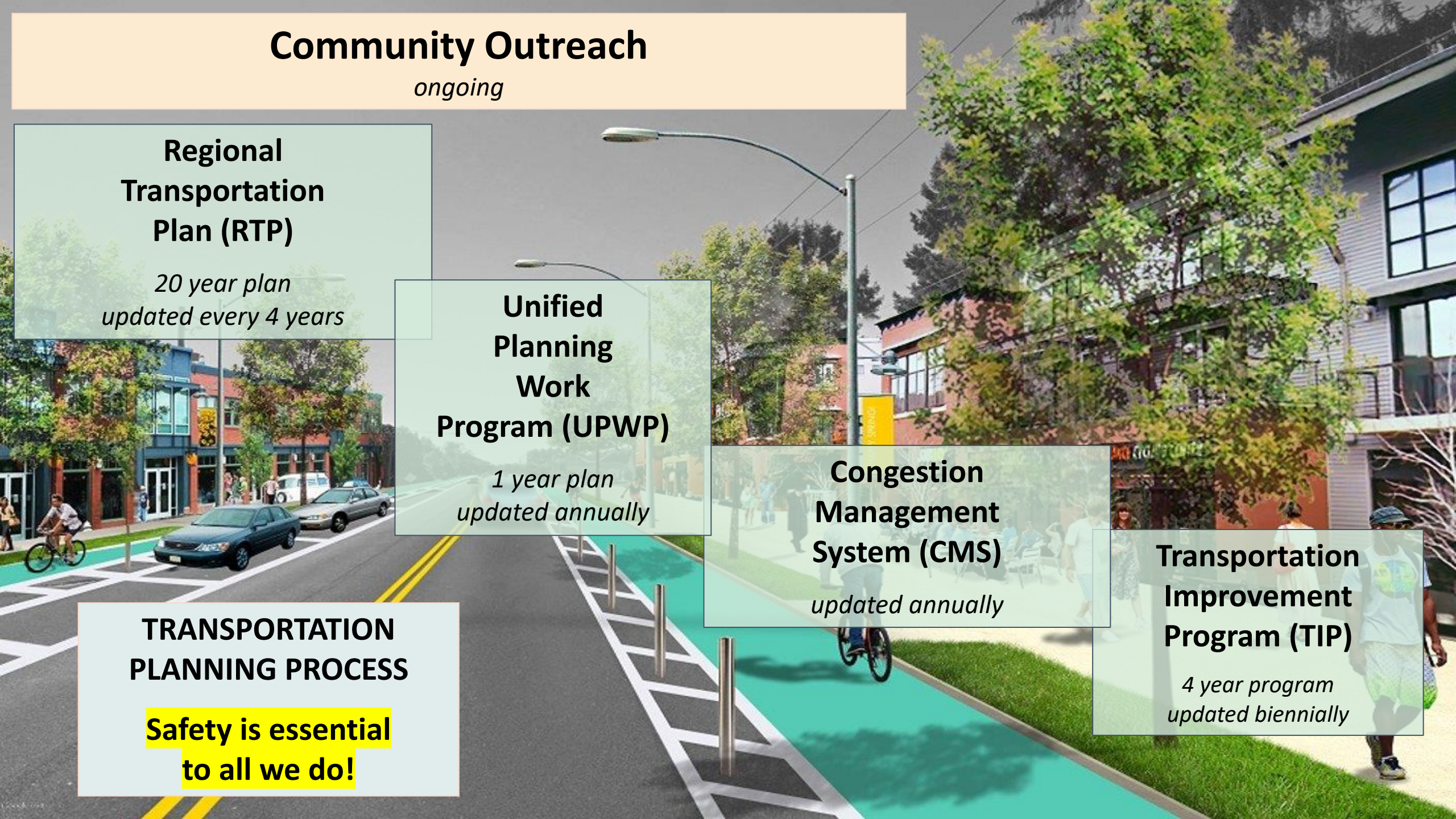
Continuing, comprehensive and cooperative process

- **Collaborative process**
  - Fosters involvement by public and stakeholders
  - Informs transportation decisions
- Reflects vision, goals and objectives of the community
- Considers a variety of alternative strategies and a diverse set of concerns
- Accounts for all forms of transportation and impacts



Who is WILMAPCO?





Community Outreach

ongoing

Regional Transportation Plan (RTP)

20 year plan
updated every 4 years

Unified Planning Work Program (UPWP)

1 year plan
updated annually

Congestion Management System (CMS)

updated annually

Transportation Improvement Program (TIP)

4 year program
updated biennially

TRANSPORTATION PLANNING PROCESS

Safety is essential to all we do!

Vision Zero and Safe Streets and Roads for All (SS4A)

Global Context

Traffic fatalities are a public health crisis affecting all road users.

1.25M

Lives lost globally each year from traffic crashes

Source: World Resources Institute

39,824

Lives lost on U.S. roads in 2020

Source: NHTSA

6,516

Pedestrians killed in U.S. traffic crashes in 2020

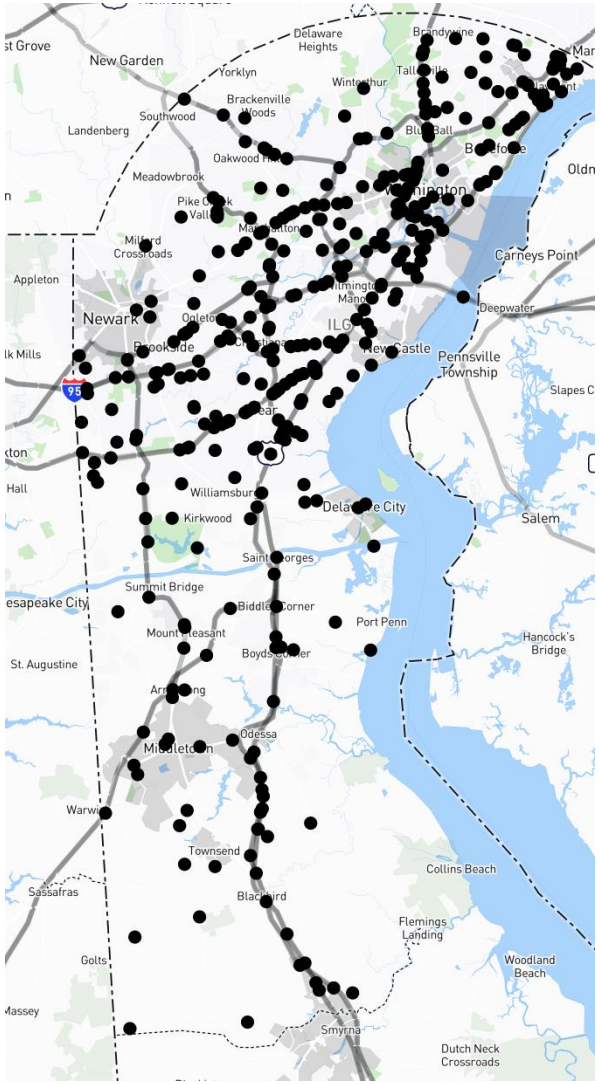
Source: NHTSA

Local Context

165 Delaware fatalities in 2022, matching 1988 record

542 fatalities in NCC, 2012-2021, 86 in 2022

More than one person dies each week on our streets





A new approach is needed	Traditional		Safe System Approach
	Prevent crashes	→	Prevent deaths and serious injuries
	Improve human behavior	→	Design for human mistakes/limitations
	Control speeding	→	Design for appropriate speeds
	Individuals are responsible	→	Share responsibility
	Enforce traffic laws	→	Design self-enforcing facilities
	React based on crash history	→	Proactively identify and address risks

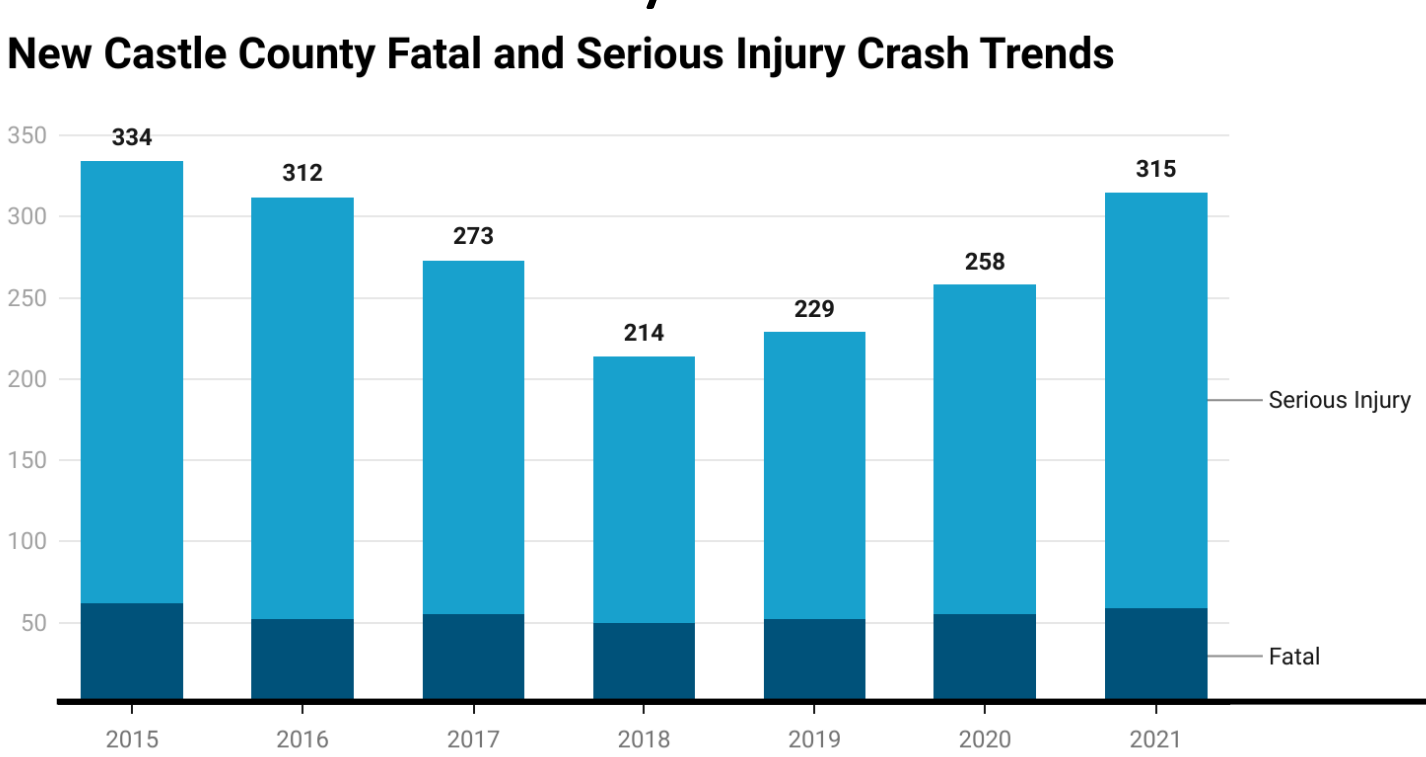
A Safe System Approach

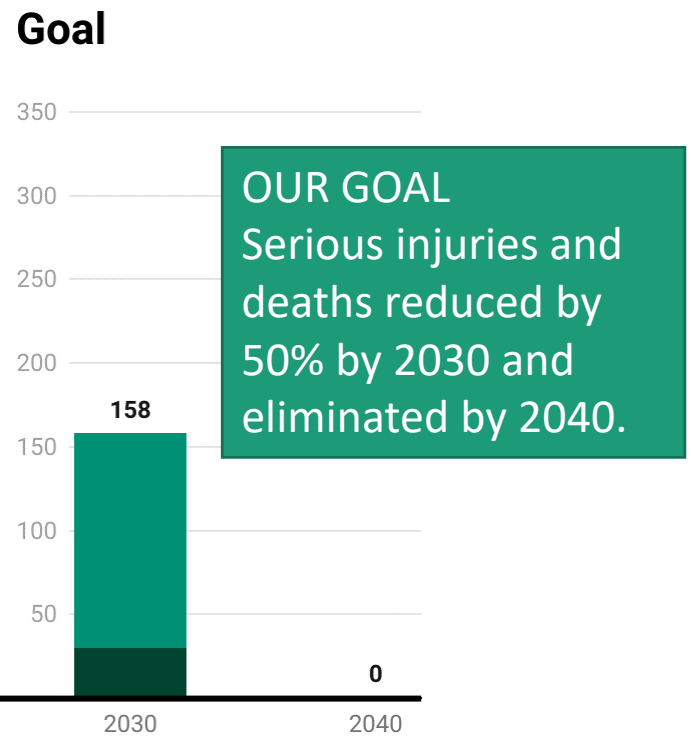
- Deaths and serious injuries are unacceptable
- People make mistakes
- People are vulnerable
- We share responsibility
- Safety is proactive
- Redundancy is crucial



New Castle County Safe Streets for All

Goal – Zero by 2040



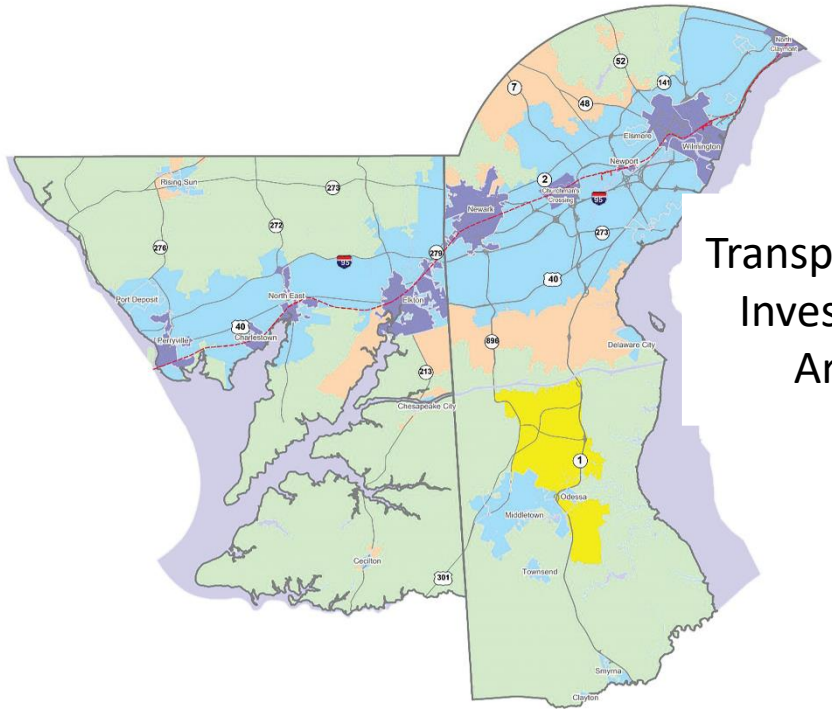


OUR GOAL
Serious injuries and deaths reduced by 50% by 2030 and eliminated by 2040.

CORE VALUES Everyone--regardless of background, ability or age--deserves a safe place to live in and travel around and no group should be disproportionately impacted by traffic crashes. We must prioritize and collaborate to make this happen using a proactive approach, guided by data and community engagement. Our quest for Vision Zero is not done until there are none.

Regional Transportation Plan (RTP)

- Identifies:
  - long-term transportation needs
  - specific projects and activities that address them
  - performance measures



Transportation Investment Areas

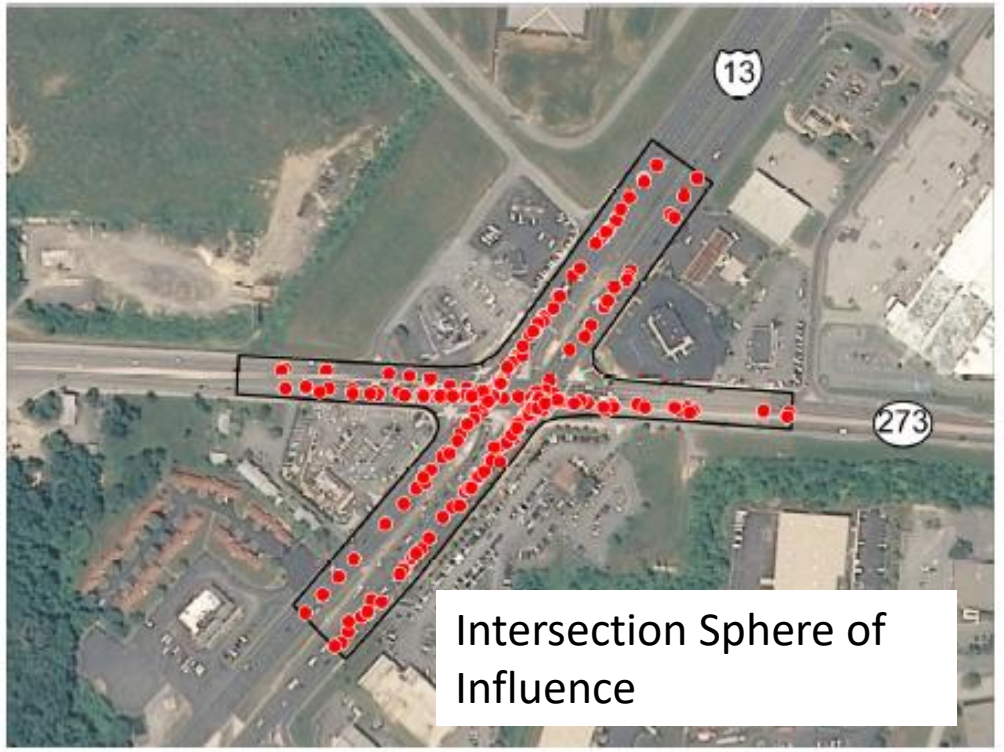


Unified Planning Work Program

- Annual call for projects to New Castle/Cecil County local goverments– usually due late February
- Funds planning assistance for land use and transportation plans, corridor studies, walkable community workshops, and technical assistance with mapping/data
- Funds areawide planning, analysis and outreach
- Does not fund engineering or construction of projects

Assessing the data—Congestion Management

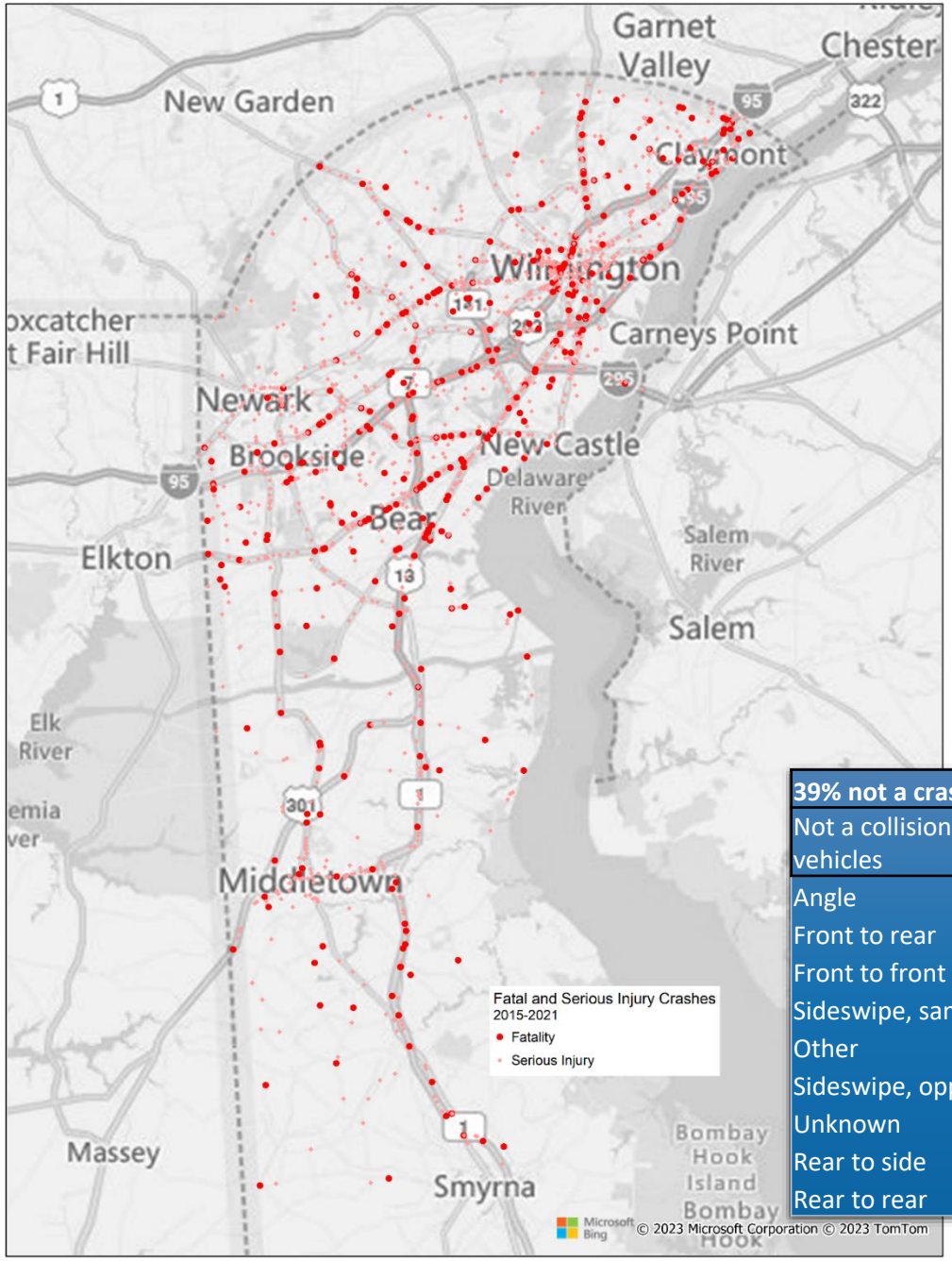
- Congestion from “incidents” - 25% urban and 50% rural
- Identify and understand congestion hotspots
  - **Intersection crash assessment**
  - Severe congestion
  - Peak hour intersection LOS
  - Travel time/delay
- Top-down strategies to alleviate them
  - #1: Reduce VMT during Peak Hours
  - #2: Shifting Trips to other modes
  - #3: Enhances Access to Jobs / Economic Development
  - #4: Operational Improvements
  - #5: Add Roadway Capacity



Intersection Sphere of Influence

Intersection crash assessment:

- 3-year total within buffer
- Severity index—fatal, injury, property damage
- Crash cost by manner of impact



Personal Injury Crash	1573
Fatality Crash	361
Grand Total	1935

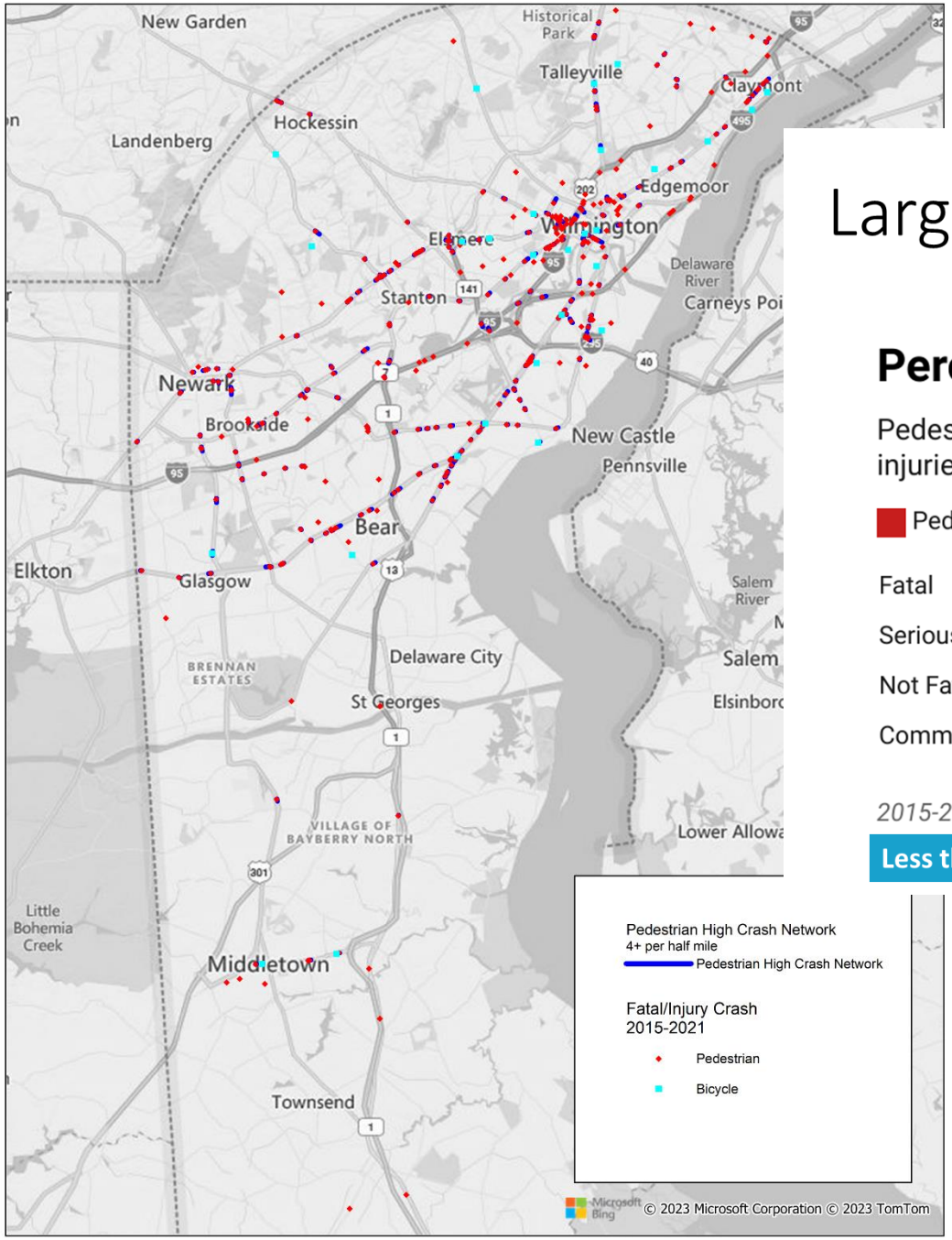
39% not a crash between 2 vehicles	
Not a collision between two vehicles	761
Angle	478
Front to rear	371
Front to front	201
Sideswipe, same direction	57
Other	41
Sideswipe, opposite direction	12
Unknown	7
Rear to side	6
Rear to rear	1

Hour	Monday	Tuesday	Wedneda	Thursday	Friday	Saturday	Sunday
1 a.m.	9	7	2	7	7	15	17
2 a.m.	2	2	2	6	4	9	15
3 a.m.	6	2	1	1	0	11	5
4 a.m.	1	1	8	4	2	5	10
5 a.m.	4	8	1	5	5	4	7
6 a.m.	9	20	10	4	9	4	4
7 a.m.	7	10	10	14	10	5	6
8 a.m.	7	10	11	10	11	5	5
9 a.m.	5	10	8	8	15	3	8
10 a.m.	2	7	9	9	10	8	12
11 a.m.	6	13	8	13	15	10	4
Noon	12	9	12	9	12	9	6
1 p.m.	12	11	9	11	13	13	11
2 p.m.	17	18	17	19	11	16	17
3 p.m.	23	10	21	14	28	19	18
4 p.m.	17	18	16	16	16	18	21
5 p.m.	20	22	19	22	27	25	12
6 p.m.	14	17	19	21	17	19	22
7 p.m.	13	14	12	11	22	17	11
8 p.m.	18	11	10	14	20	14	22
9 p.m.	11	14	14	11	18	17	17
10 p.m.	11	10	15	14	15	18	9
11 p.m.	4	10	15	14	19	15	11
Midnight	12	9	16	10	12	15	16

Primary Contributing Circumstances	Number	Percent
Unknown/Other	309	16%
Driving in an aggressive, careless or reckless manner	255	13%
Failed to yield right of way	242	13%
Pedestrian	238	12%
Driver inattention, distraction, or fatigue	231	12%
Driving under the influence	165	9%
Disregard Traffic Signal/Stop Sign	120	6%
Following too close	85	4%
Speeding	69	4%
Improper lane change	52	3%
Wrong side or wrong way	51	3%
Made improper turn	24	1%
Other environmental circumstances - weather, glare	22	1%
Animal in roadway	22	1%
Roadway circumstances - debris, holes, work zone,	18	1%
Mechanical defects	14	1%
Improper passing	12	1%
Improper backing	6	0%

60%

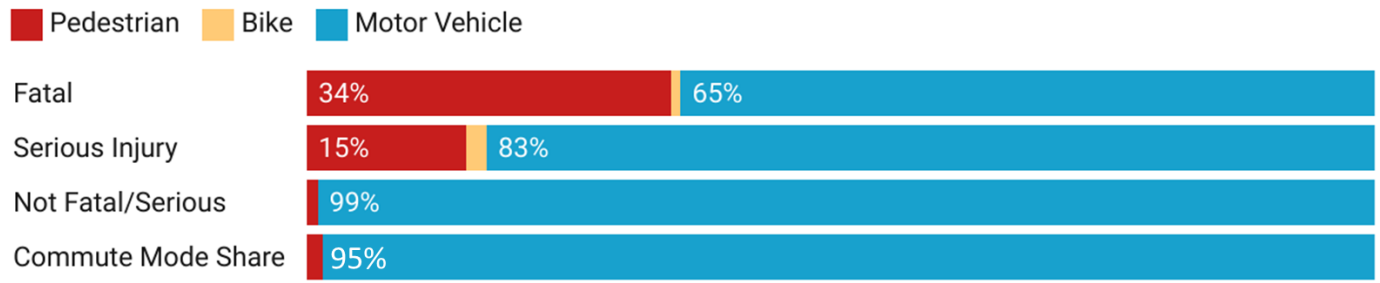
Primary causes



Large share of severe crashes are pedestrian

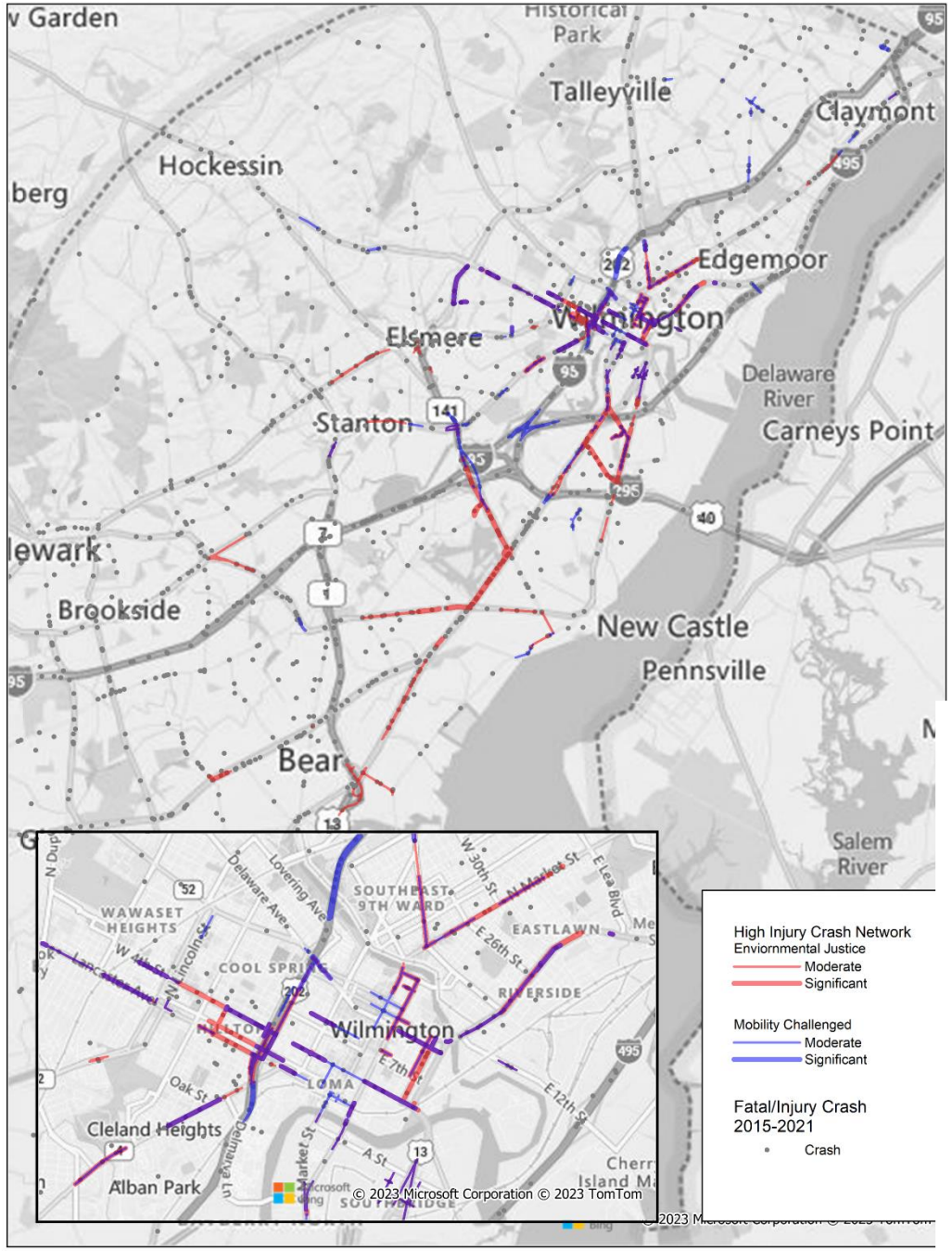
Percent of Severity by Mode

Pedestrian and bike crashes are only 1% of crashes that do not result in deaths or serious injuries but comprise 35% of fatal crashes and 17% of serious injuries



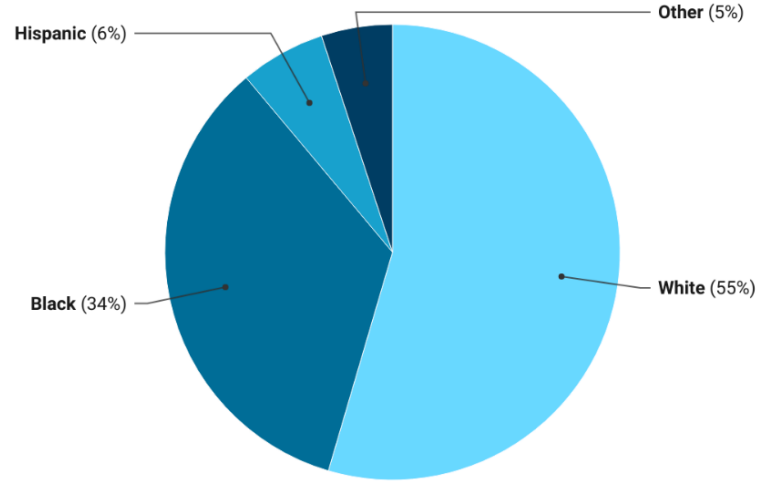
2015-2021

Less than 2% of commutes outside of the home are bicycle/pedestrian



Percent of fatalities by race

2015-2020 FARS

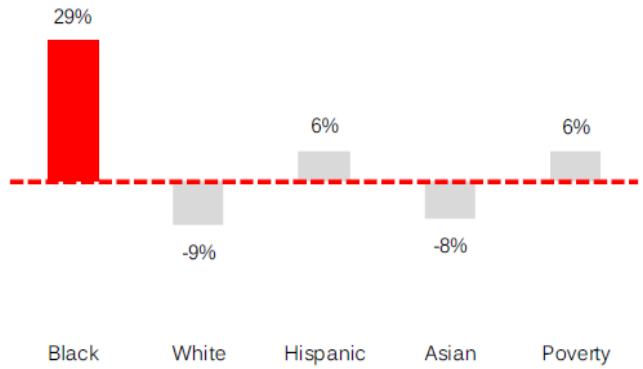


2020 Population: White alone 53%, Black alone 25%, Hispanic 11%, Other 11%

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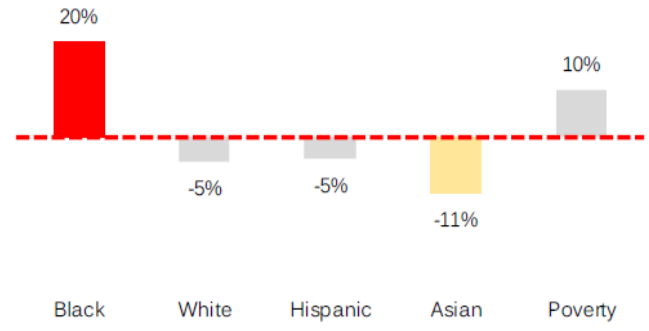
Pedestrian Crashes

Deviation from Expected by Group Concentrations, Year 2016



Bicycle Crashes

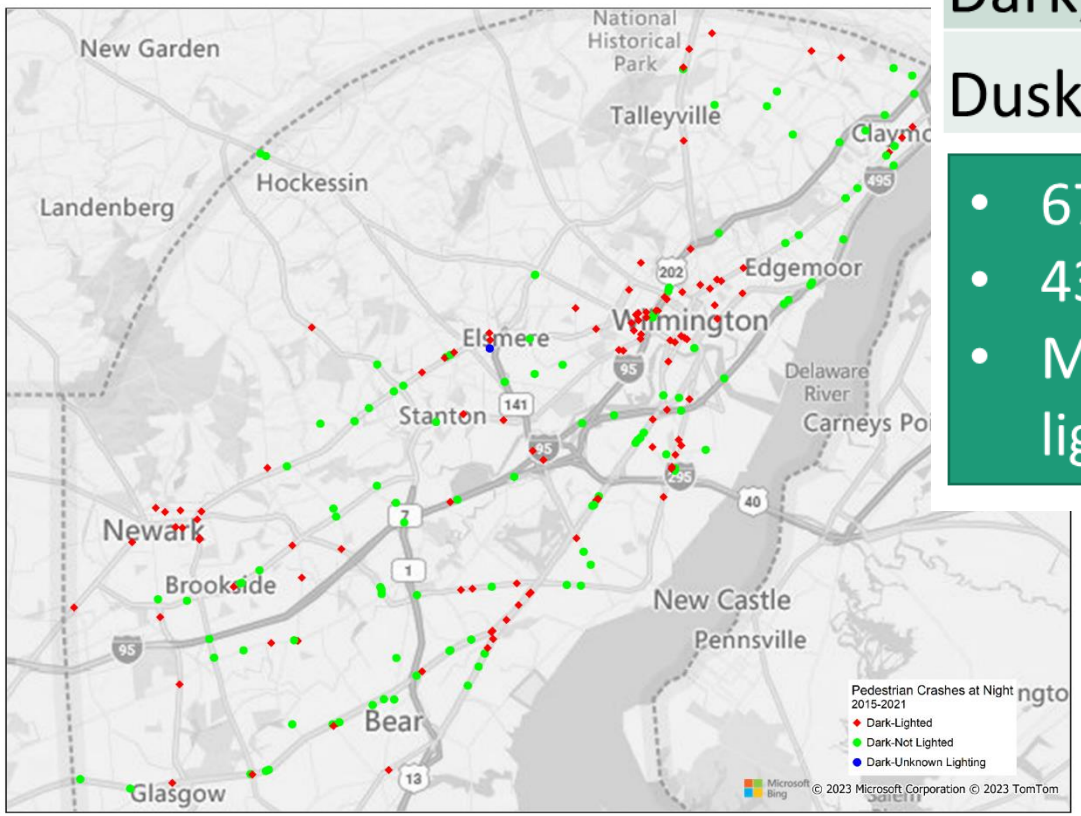
Deviation from Expected by Group Concentrations, Year 2016



Lighting

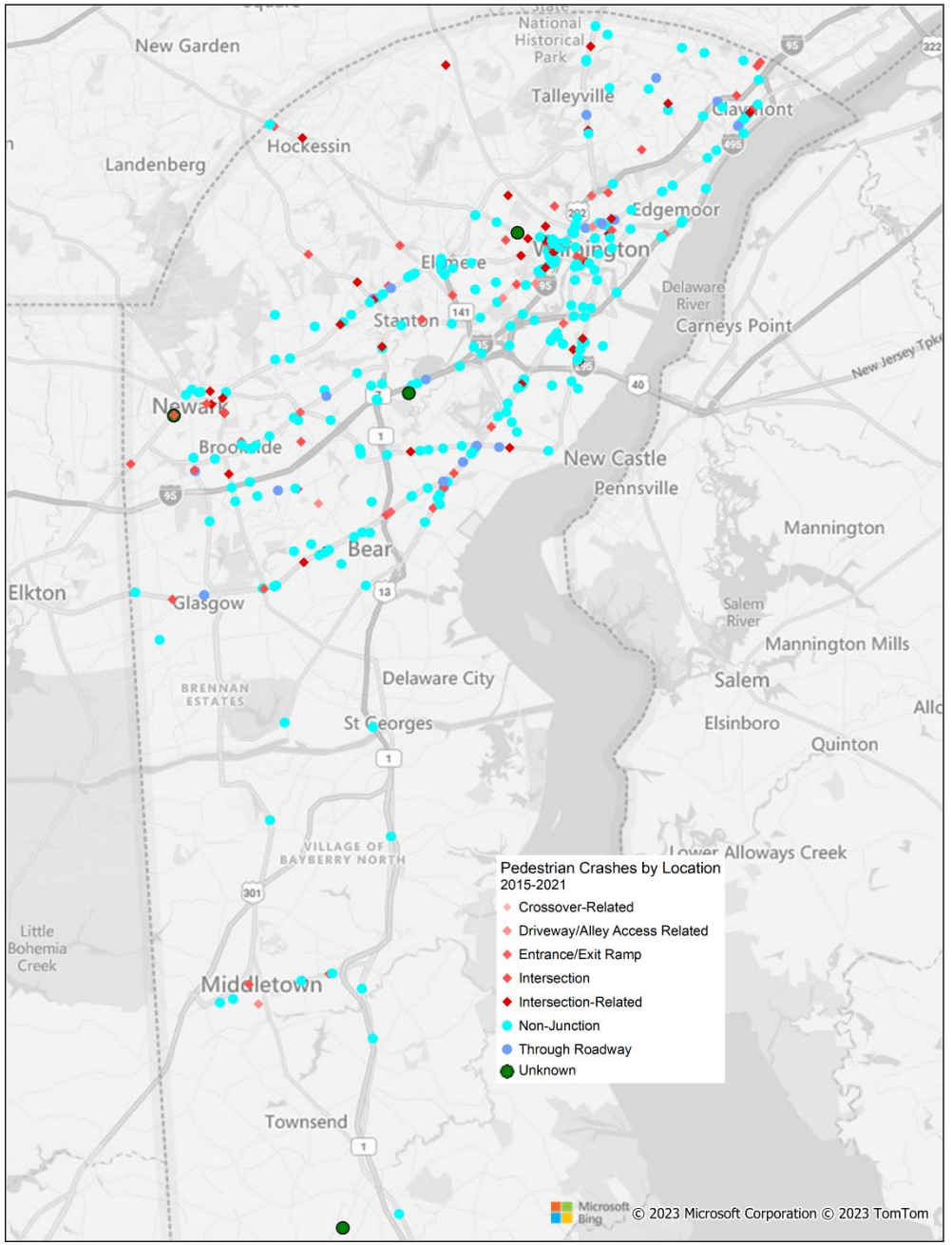
Fatal/Serious Injury Crashes	Pedestrian %	All Crash %
Daylight	28%	53%
Dark, lighted	34%	23%
Dark, not lighted	33%	20%
Dusk/Dawn	4%	4%

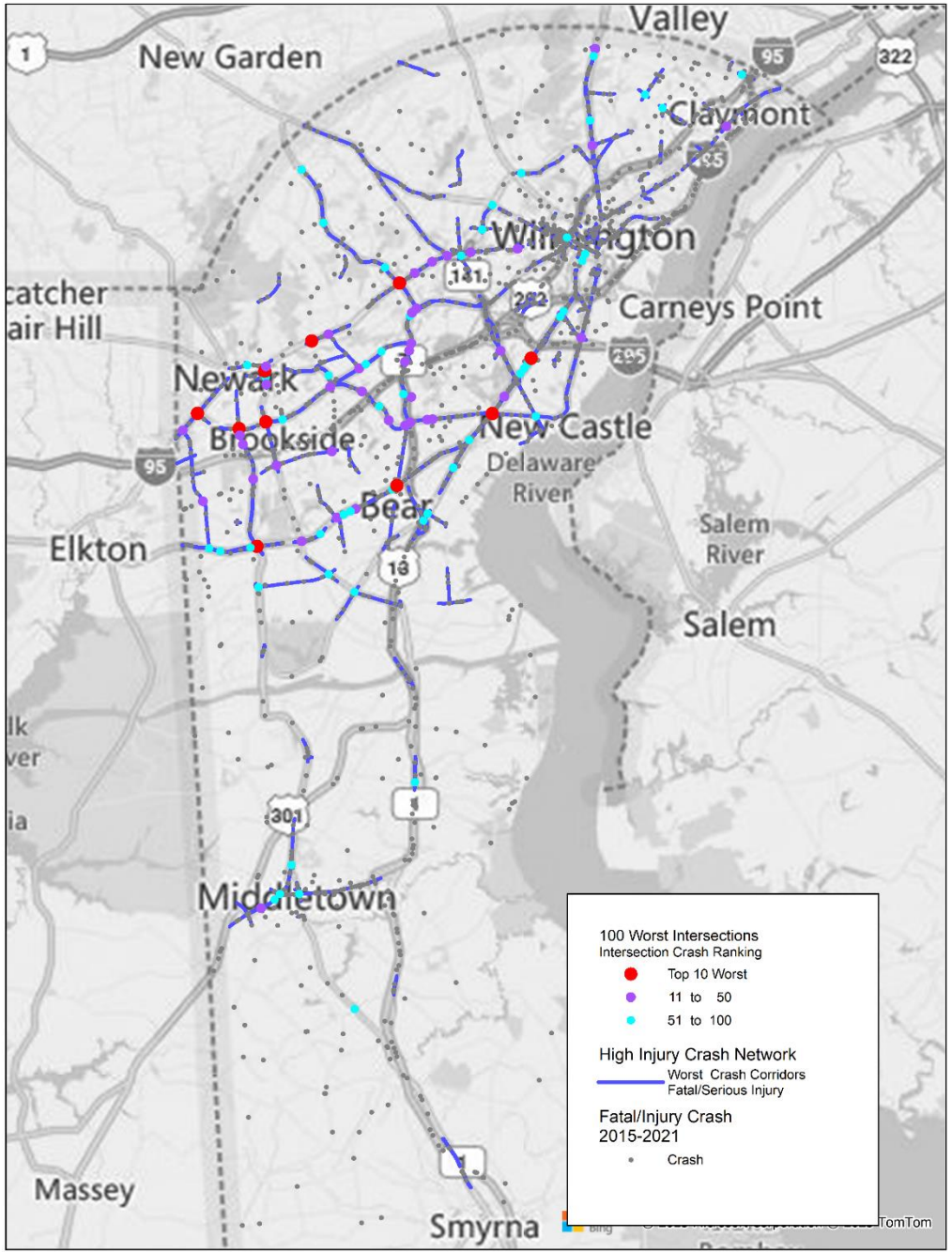
- 67% of fatal/serious pedestrian crashes were at night
- 43% of all fatal/serious crashes were at night
- Many streets lack sufficient or any pedestrian lighting



Crosswalks

- Pedestrian crashes less likely at intersections, driveways, and other junctions than other crashes
- Long gaps between crosswalks, high-stress crossings, land use
- Median barriers in high-speed corridors





Assessing the data—High Injury Crash Network

- Linked crash points with DelDOT road GIS, Delaware Bicycle Network Model, and WILMAPCO TJ/EJ layers
- Highlighted road segments with average 3 injury and fatal crashes/year per ½ mile
- Manually connected nearby segments emphasizing greater inclusion of those in densely populated areas, EJ/TJ communities, local roads, and along busy transit corridors

Data Challenges

- Timely access to crash data
- Access to enough details to analyze
- Crash GIS and Roadway Inventory GIS not linked
- Paralysis by analysis

Share your ideas for Safer Streets in New Castle County

Safe Streets for All Feedback Survey

Help the planners prioritize street safety improvements and tell us what actions to take to end traffic deaths and serious injuries. We appreciate your participation in this brief survey. It is intended to capture your experiences and perspectives related to road traffic safety and crashes. Your input will provide a valuable perspective on how we might reduce the number of people who suffer serious injuries or die as a result of road traffic crashes in New Castle County. The survey will take about ten minutes to complete.

heatherdunigan@gmail.com Switch account

Not shared

What types of transportation do you use to get around your community?

	Daily	Weekly	Monthly	Rarely/Never
Driving	○	○	○	○
Passenger	○	○	○	○
Motorcycle	○	○	○	○
Walking	○	○	○	○
Bicycling	○	○	○	○
Scooter, skateboard	○	○	○	○
Bus, train	○	○	○	○
Taxi, Uber, Lyft	○	○	○	○
Paratransit for				

WILMAPCO Safe Streets for All

We are collecting citizen feedback about your transportation safety concerns. Add your comments by zooming in, clicking on the location, selecting the pin, and filling in your ideas.

Filter Map Comments

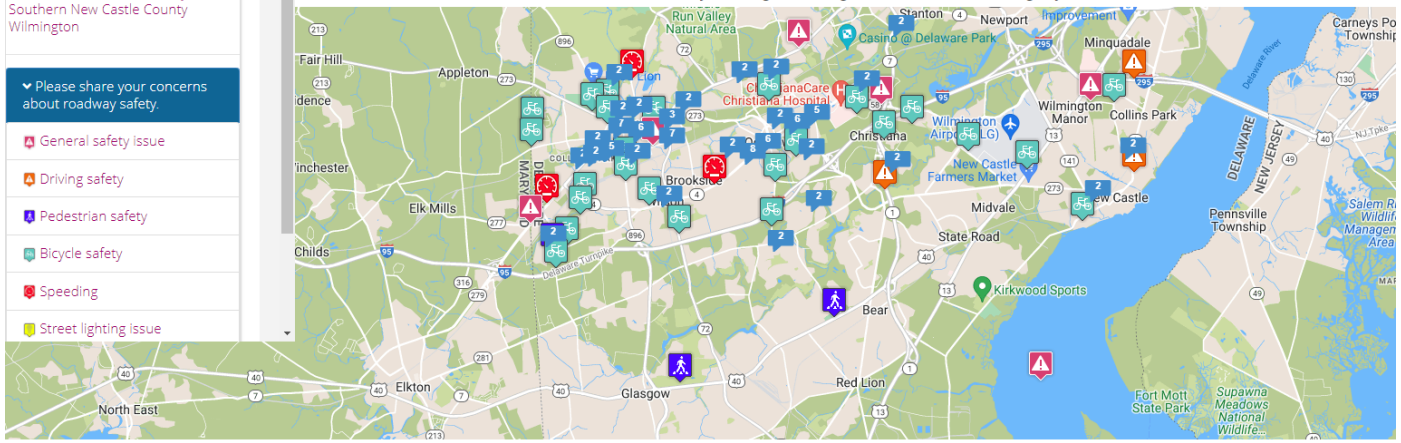
Middletown
Newark
Northern New Castle County
Southern New Castle County
Wilmington

Please share your concerns about roadway safety.

- General safety issue
- Driving safety
- Pedestrian safety
- Bicycle safety
- Speeding
- Street lighting issue

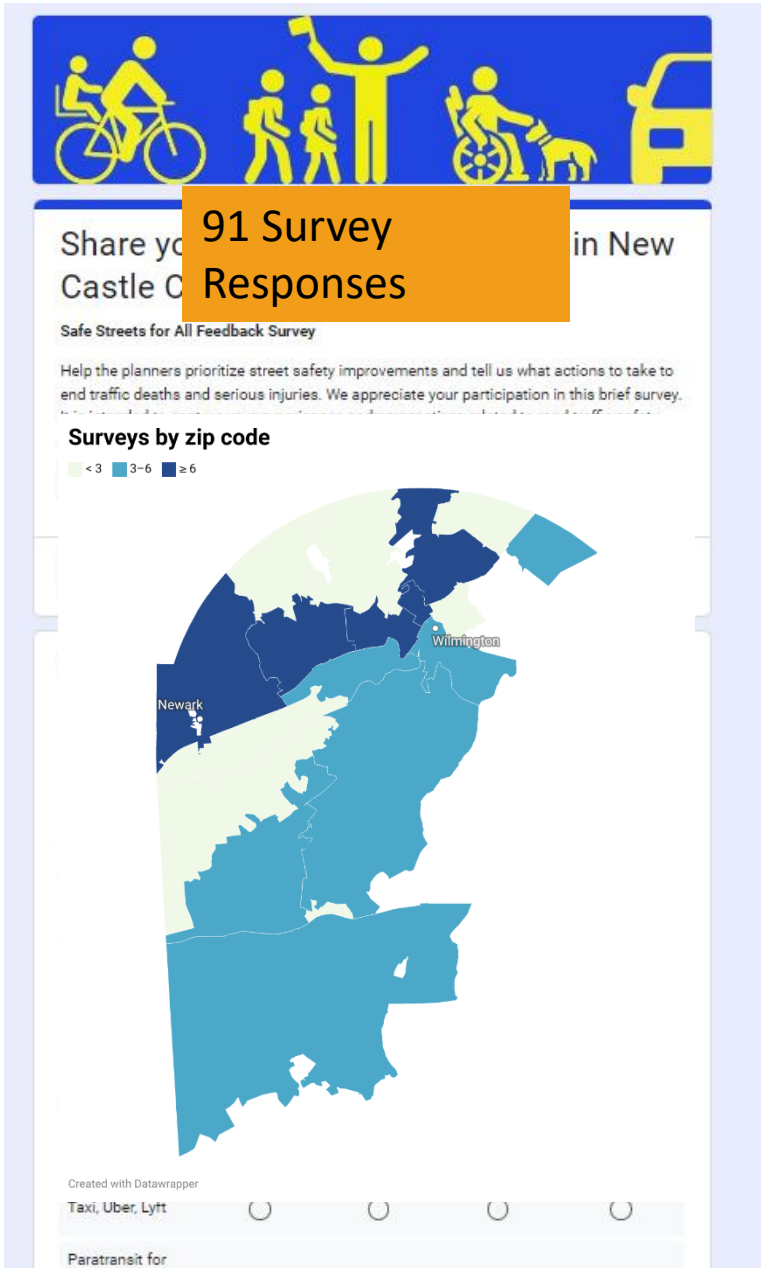
Safe Streets for All New Castle County

Comment by zooming in, clicking on the location, and filling in your ideas.

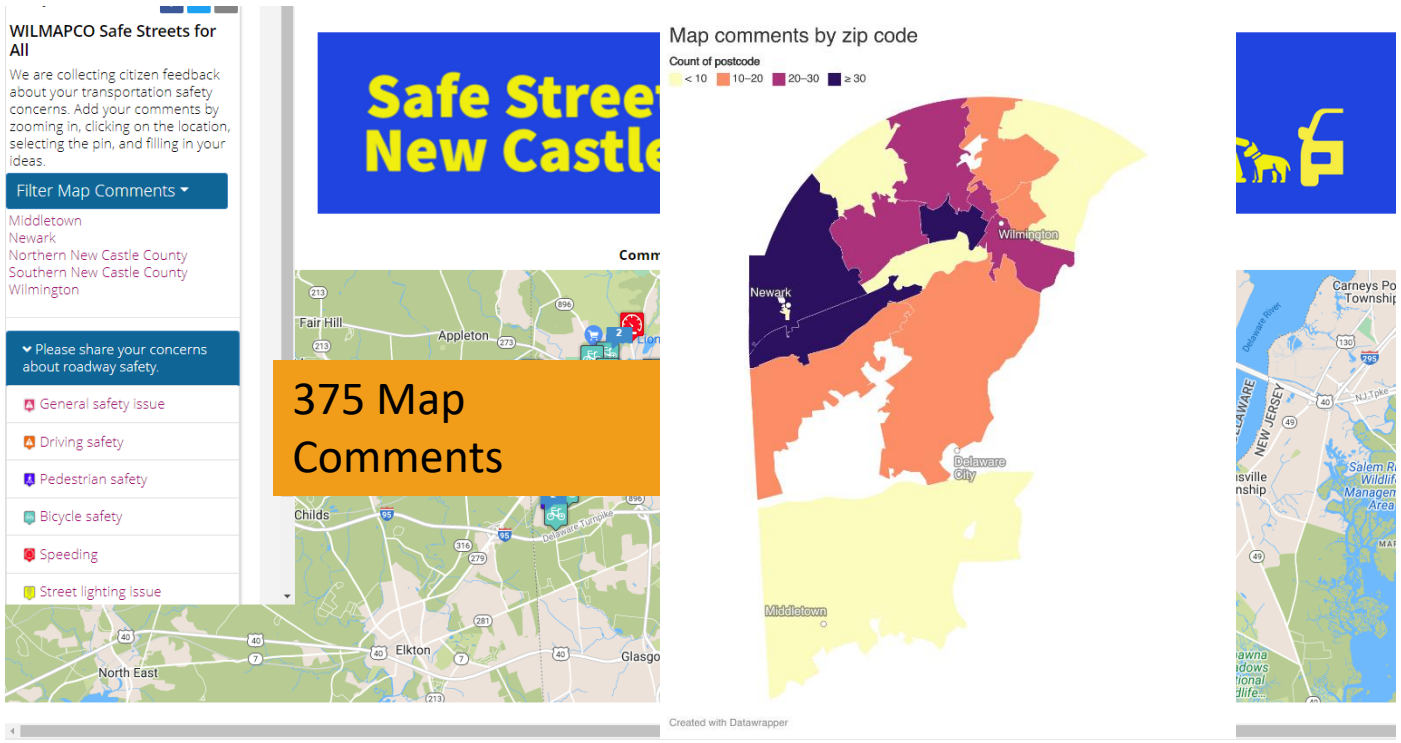


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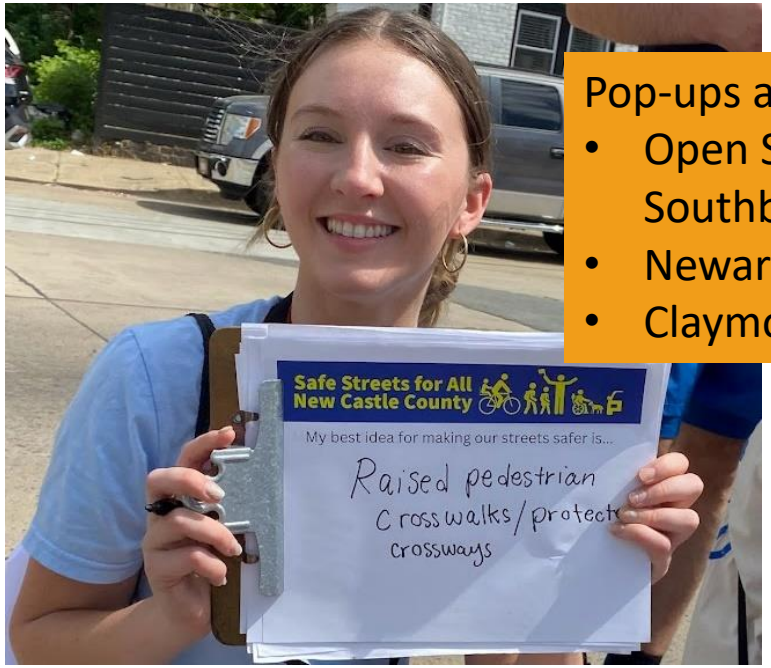




91 Survey Responses



375 Map Comments

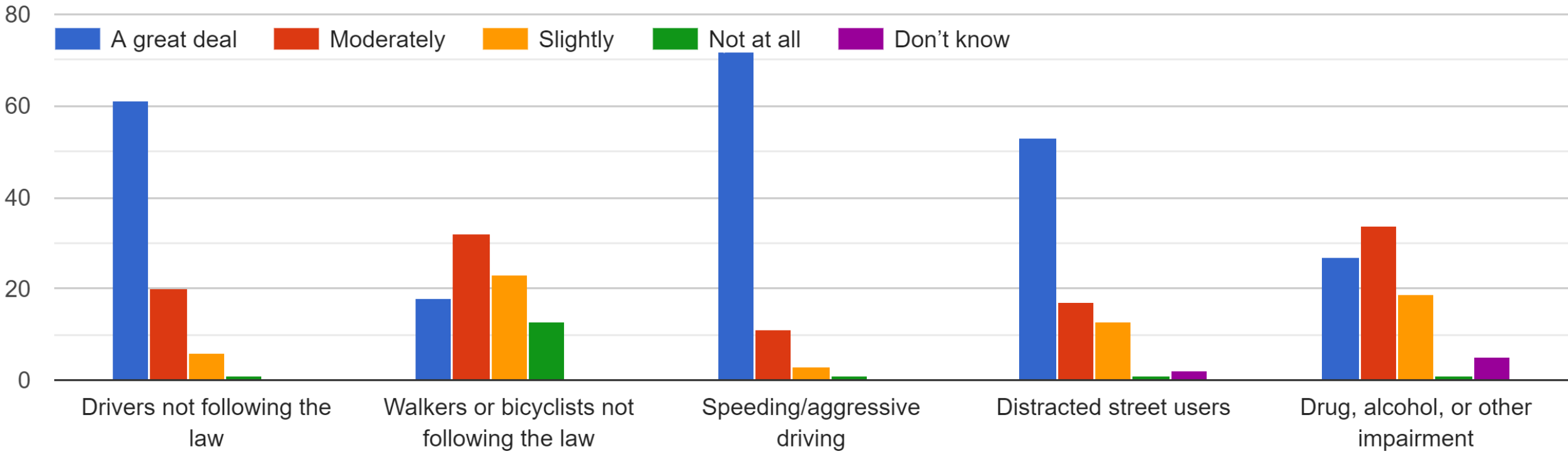


Pop-ups at:

- Open Streets Wilmington in Southbridge
- Newark Greenfest
- Claymont Library

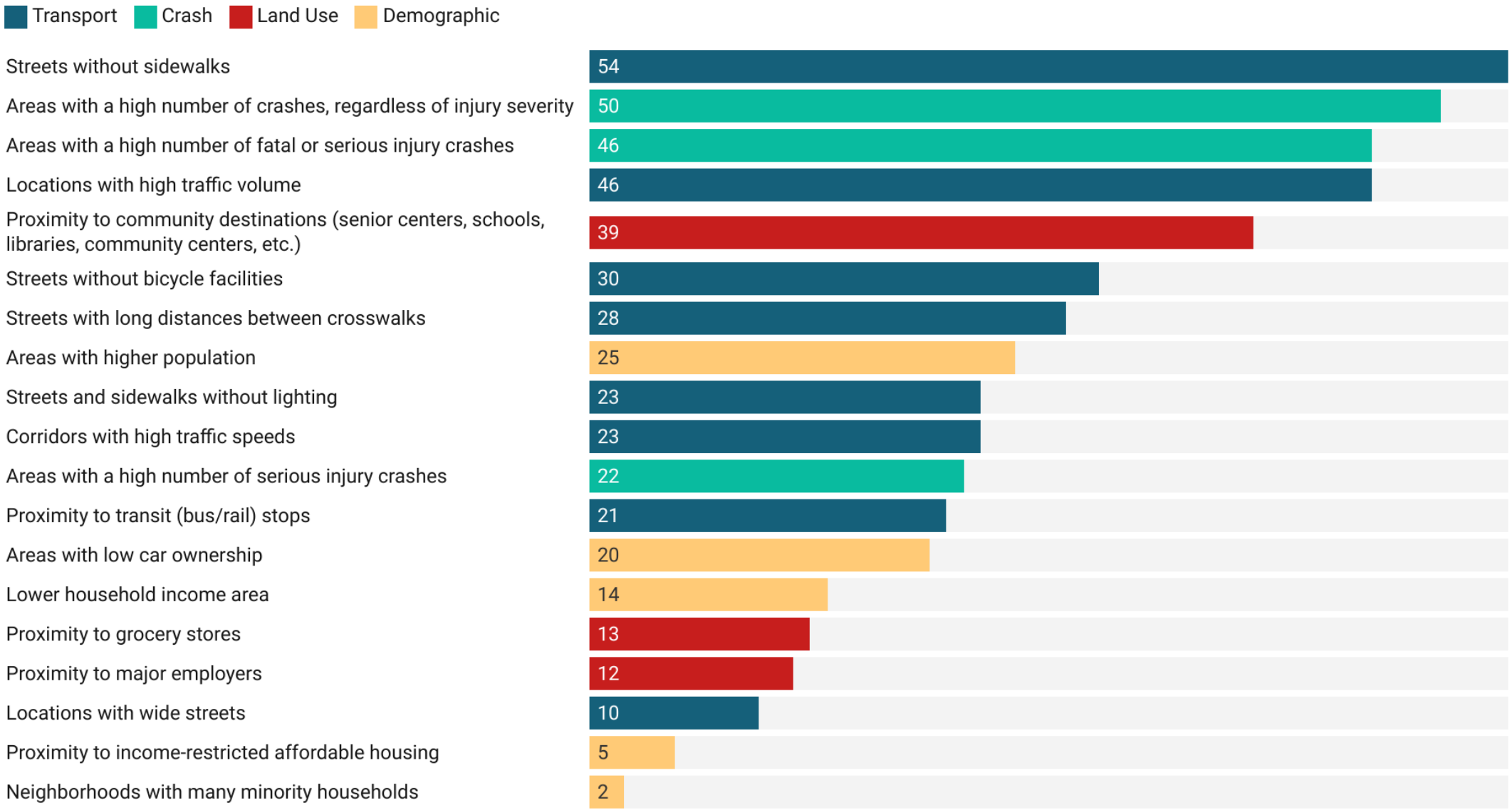
Responses 3/9 – 5/14

How much do you think the following behaviors contribute to traffic crashes?



Suggested Priority Criteria

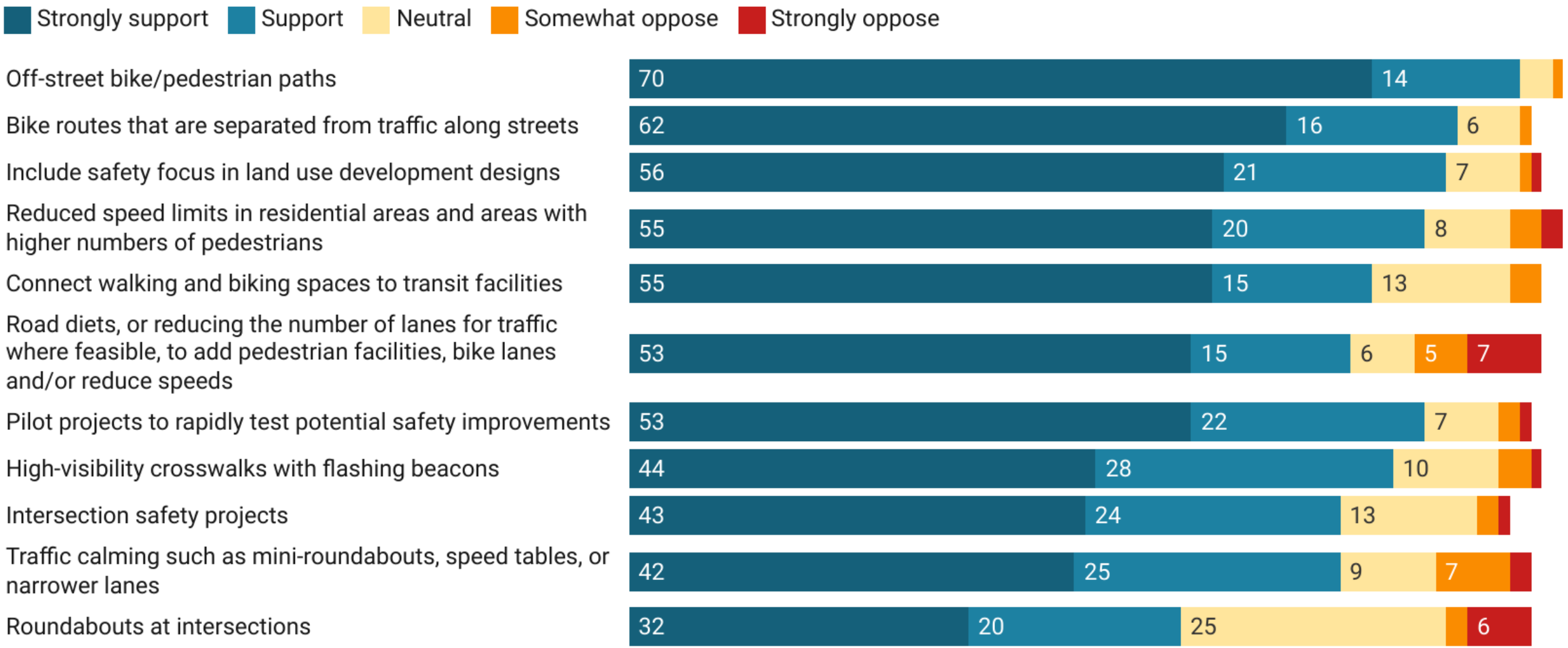
Select the top six criteria that planners should use when identifying and prioritizing locations for safety improvements.



Number of responses

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Support for Engineering Strategies



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Recommendations



Policy and Process



Supplemental Planning



Implementation

Proven Safety Countermeasures

U.S. Department of Transportation
Federal Highway Administration

SPEED MANAGEMENT


Speed Safety Cameras



Variable Speed Limits



Appropriate Speed Limits for All Road Users

ROADWAY DEPARTURE


Wider Edge Lines


Enhanced Delineation for Horizontal Curves


Longitudinal Rumble Strips and Stripes


SafetyEdge[SM]


Roadside Design Improvements at Curves


Median Barriers

INTERSECTIONS


Backplates with Reflective Borders


Corridor Access Management


Left- and Right-Turn Lanes at Two-Way Stop-Controlled Intersections


Reduced Left-Turn Conflict Intersections


Roundabouts


Systemic Application of Multiple Low Cost Countermeasures at Stop-Controlled Intersections


Yellow Change Intervals

PEDESTRIAN/BICYCLIST


Crosswalk Visibility Enhancements


Bicycle Lanes


Rectangular Rapid Flashing Beacons


Leading Pedestrian Interval


Medians and Pedestrian Refuge Islands in Urban and Suburban Areas


Pedestrian Hybrid Beacons


Road Diets (Roadway Reconfiguration)


Walkways

CROSSCUTTING


Pavement Friction Management


Lighting


Local Road Safety Plans


Road Safety Audits

Source: FHWA

Countywide Measures: Rethink Priorities



Prioritize safety

Make improvements systematically on High Injury Network Streets



Fund safety

Secure sufficient funding for Vision Zero improvements



Expand travel choice

Safe, low-stress alternatives to driving

Reduce VMT



Speedy Completion

Demonstration projects

Quick build projects

Countywide Measures: Rethink Street Design



Appropriate speeds

Set based on land use and travel context

Appropriate design speeds

Traffic calming to retrofit

Periodic and automated enforcement as interim approach

Variable speed limits can reduce crashes on freeways up to
- 34% for total crashes
- 51% for fatal and injury crashes



Complete streets

Incorporate in paving/rehab and TIP projects

Fill in walking/bicycling gaps

Reduce level of traffic stress



Better street lighting

Countywide Measures: Rethink Land Use Design



Walkable communities

Minimum intersection spacing

Compact, mixed-use

Parking behind or structured



Access management

Minimize conflict points



Site design

Use safe street measures

Pedestrian generators along high-speed roads require greater pedestrian protection

Countywide Measures: Rethink Programs



Expand advanced vehicle safety features

Fleet vehicles

Incentives for low-income families



Education

Expand driver training/school curriculum with pedestrian/bicycle safety info



Marketing culture of safety

Continue promoting personal responsibility

Countywide Measures: Rethink Enforcement



Focus on equitable enforcement

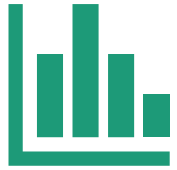
High impact times and locations

Automated options



Enforcement as stopgap measure

Strive for road design with self-enforcing speeds



Improve crash data reporting

Language matters, Crashes Not Accidents

Avoid victim-blaming with better details

Revise how crash reports are filled out to get better specifics

Crash and post-crash care data with EMS and Trauma registries

Fixed speed cameras can reduce crashes on urban arterials up to:

54%
for all crashes

47%
for injury crashes

Quick-build project delivery

- Supplemental planning/pilot projects for rapid improvement and safety testing
  - Pedestrian crossing improvements
  - Protected intersections
  - Road diets
  - Traffic calming
- UD Living Lab demos
- Demonstration project lending library







Intervention selection strategies

What:

- Proven safety countermeasures
- Complete Streets
- Testing of new countermeasures with to support data collection on benefits

Where:

- Projects along HIN and worst crash intersections
- Areawide projects
- Projects in Mobility Challenged communities

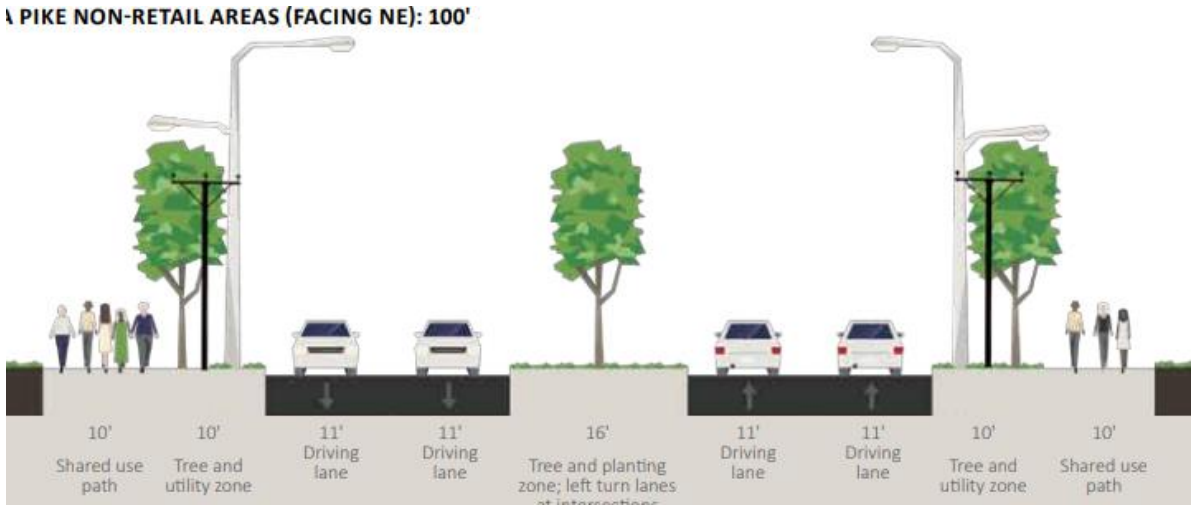
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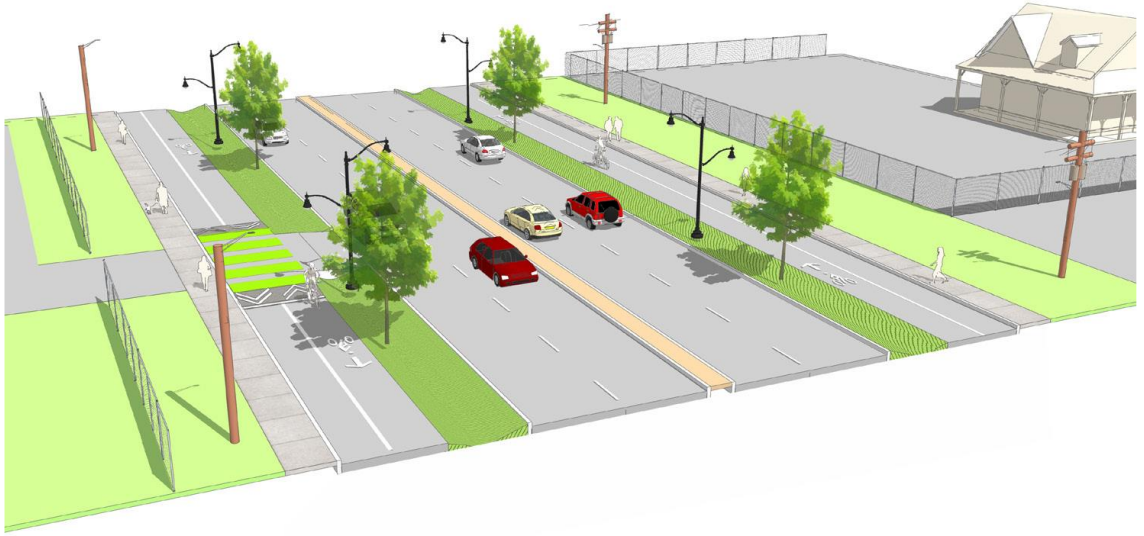
- Quick-build project delivery
- Ongoing education
- Enforcement as stopgap measure

Community and corridor planning

- Safety analysis going into process
- Focus on quick safety solutions
- Low-stress bike/ped links







Transportation Improvement Program

- Priority listing of short-term implementation

Improve Quality of Life	Efficiently Transport People	Support Economic Activity and Growth

• Air Quality–expected to:
  • reduce emissions
  • reduce VMT
  • not add capacity
  • increase access to non-auto modes
• Environmental Justice
  • high percentage of low-income and/or minority residents
• **Safety**
  • **score combines number of crashes and the rate at which they occur**
• Social Determinants of Health
  • enhances area of potential health concern
	• Congestion–CMS or location with Level of Service (LOS) E or F
	  • If congested, points added based on:
	  • Average Annual Daily Traffic
	  • Transit Use (riders/available seats)
	• Mobility Challenged
	  • high percentage of zero-car households, elderly & persons with disabilities
	• Pedestrian Priority
	  • based on pedestrian priority area scoring
		• **Freight bottlenecks**
		  • **High truck trip generation, truck crash frequencies and travel time delays**
		• Economic Development
		  • Uses WILMAPCO TIAs
		• Private / local funding
		  • Local and/or private funding contribution

Education outreach











Performance Measures

Type	Performance Measure	Description
Outcomes	Number of serious injuries	The number of serious injuries as the result of a vehicular crash
	Serious Injuries per 100 million vehicle miles traveled (VMT)	The rate of serious injuries
	Number of fatalities	The number of fatalities as a result of a vehicular crash
	Fatalities per 100 million VMT	The rate of fatalities
	Nonmotorized fatalities and serious injuries	The number of pedestrians killed and serious injuries as a result of a vehicular crash
	Percentage of people within NCC who have access to a low-stress pedestrian / bicycle facility	The portion of our region's population living close to a connected pedestrian/bicycle route.
Outputs	Construct safety improvements on the HIN	Completed projects.
	Construct safety improvements on the HIN in Mobility Challenged Areas	Completed projects.

Challenges

- Creating a culture of safety
- Extending partnerships beyond individual silos
- Assessing and sharing outcomes
- Truly putting safety #1 in decision-making



Questions and Comments

www.wilmapco.org/safestreets


DEATHS AND SERIOUS INJURIES ARE UNACCEPTABLE · PEOPLE MAKE MISTAKES · THE HUMAN BODY IS FRAGILE · WE SHARE RESPONSIBILITY · SAFETY IS PROACTIVE · REDUNDANCY IS CRUCIAL ·
Safe Response
Safe People
Safe Vehicles
Safe Streets
Safe Speeds
SAFE SYSTEM APPROACH