2025 REGIONAL ROADWAY SAFETY STUDY UPDATE

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Community Advisory Committee
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National Capital Region
Transportation Planning Board

Agenda Item #6

Agenda

- Study Background and Purpose
- Regional Context and COVID-19 Pandemic Impacts
- Crash Data Analysis
- Results of Jurisdictional Questionnaire
- Recommendations and Next Steps

Study Background and Purpose

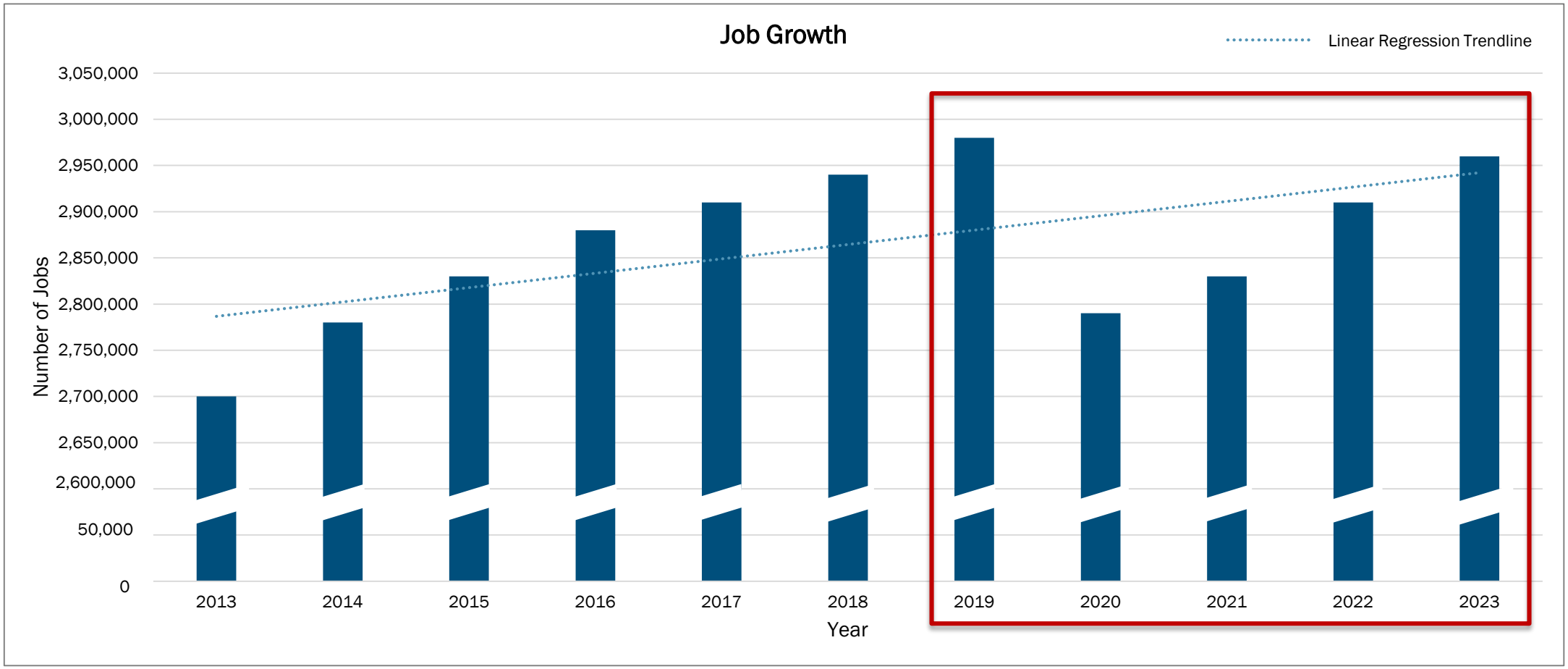
- TPB completed a Regional Roadway Safety Study in 2020, which conducted quantitative crash analysis of regional crash data for 2013-2017. The TPB subsequently adopted R3-2021 that prioritizes roadway safety.
- This latest study is an Update of the previous study and reviews crash data for 2019-2023 with the goals of:
  - Gaining insights into the nature, frequency, and location of fatal and serious injury crashes, as well as crash characteristics, and involved factors.
  - Understanding the impacts of the COVID-19 pandemic on roadway safety.
  - Reviewing the safety countermeasures and strategies included in TPB Resolution R3-2021 and suggesting updates.

Regional Context

Regional Trends, 2019-2023

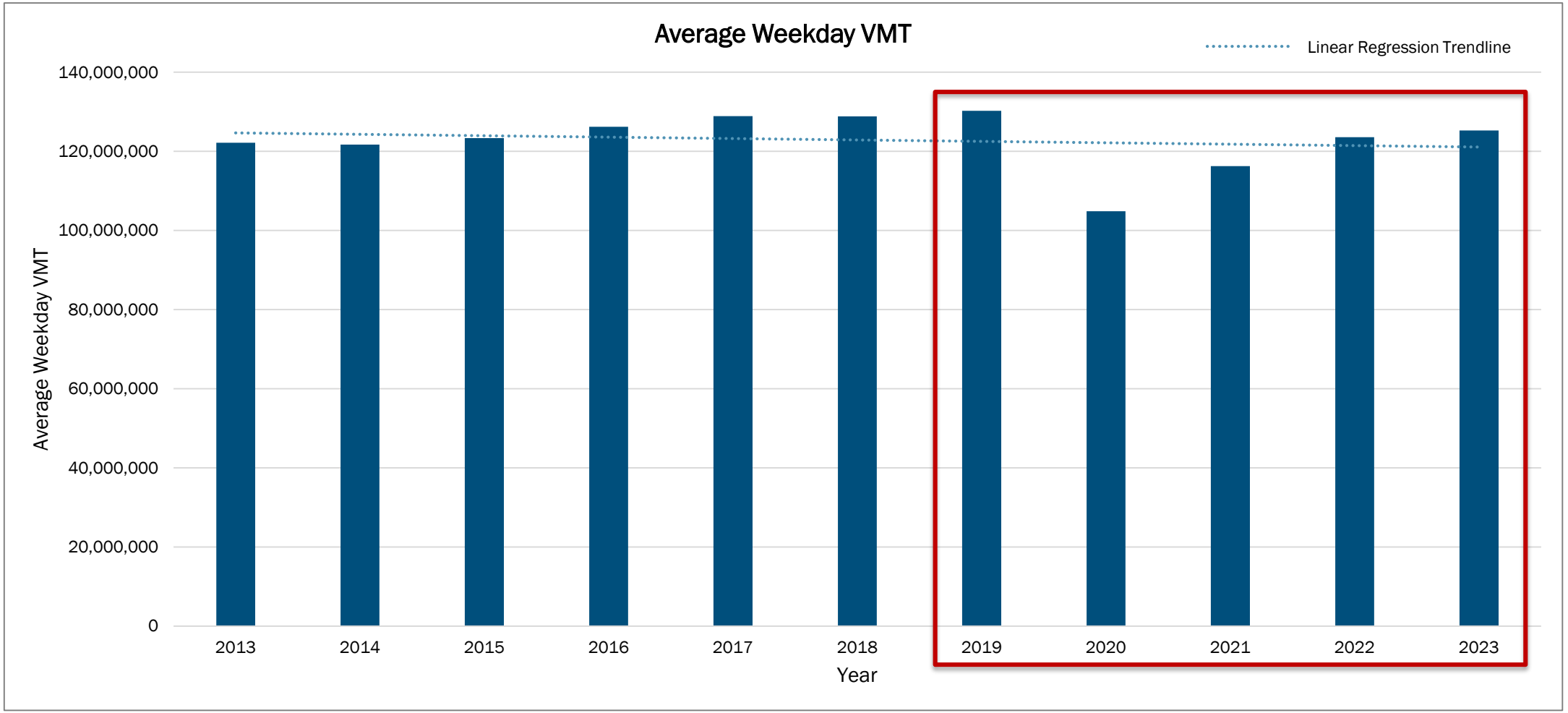
- Crashes are not random. They are the product of intersecting systems, including demographic shifts, travel behavior, economic activity, land use, and roadway design.
- Population and economic activity influence the level of activity on a region's transportation system. The level of activity can be a proxy for an individual's potential exposure to crash risk.
    - The COVID-19 pandemic, which began in March 2020, had a significant impact on job growth and regional travel demand as reflected in the regional VMT.
    - The reduction in jobs and VMT was most pronounced in 2020. Both measures started increasing beginning in 2021 but remained below pre-pandemic levels as of 2023.

Jobs in the COG Region, 2013-2023



[**Source**: Bureau of Labor Statistics, Quarterly Census of Employment & Wages—QCEW, All Employees in Total Covered Total, All establishment sizes, All Employees, Data extracted on: February 12, 2025.]

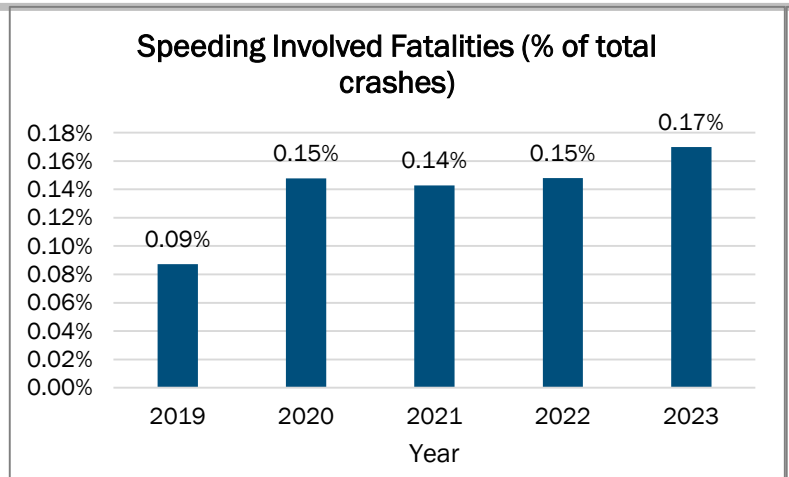
Average Weekday VMT, 2013-2023

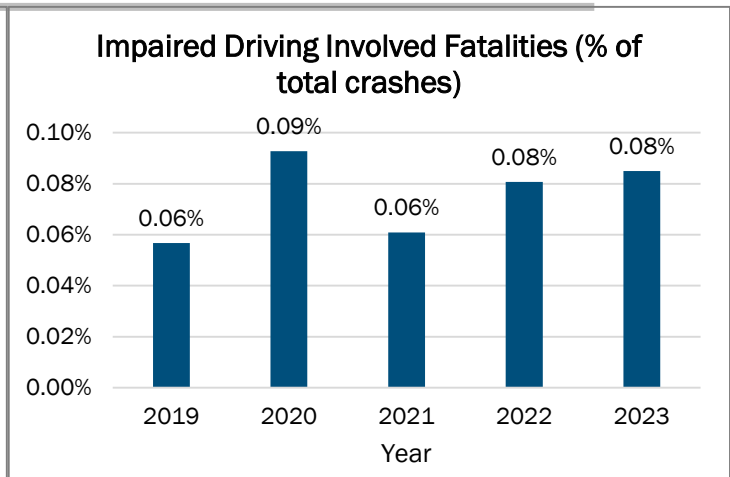


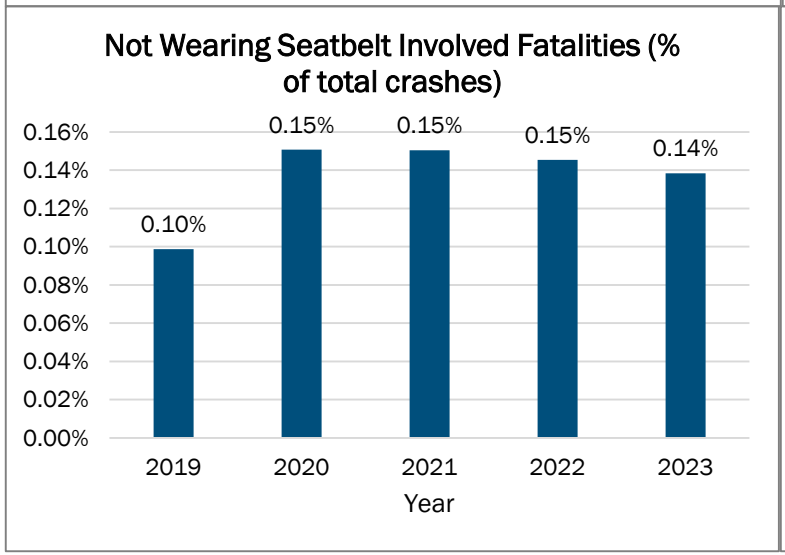
[**Source**: Metropolitan Washington Council of Governments (MWCOG), 2013-2023]

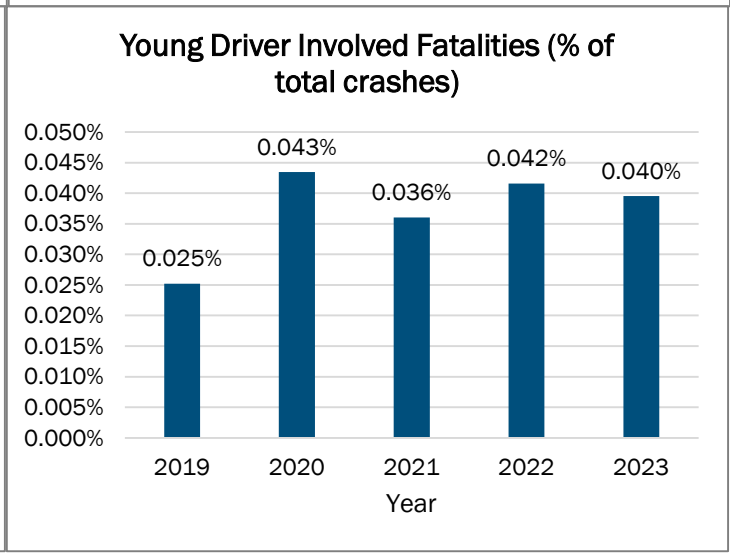
COVID-19 Impacts – Shift in Behavioral Trends

- The crash statistics during COVID exhibited some consistent but disturbing behavioral trends:
  - Speeding related fatalities jumped in 2020 by 67%. The percentage dropped in 2021 but stayed at above 2019 levels through 2023.
  - Impaired drivers involved in fatal crashes jumped in 2020 by 50%. The percentage dropped in 2021 and increased again in 2022 and 2023 and stayed at above 2019 levels.
  - The percentage of drivers with no seat belts involved in fatal crashes jumped in 2020 by 50%. The percentage dropped in 2021 but stayed at above 2019 levels through 2023.
  - The percentage of young drivers involved in fatal crashes jumped in 2020 by 72%. It dropped in 2021 but stayed at above 2019 levels through 2023.





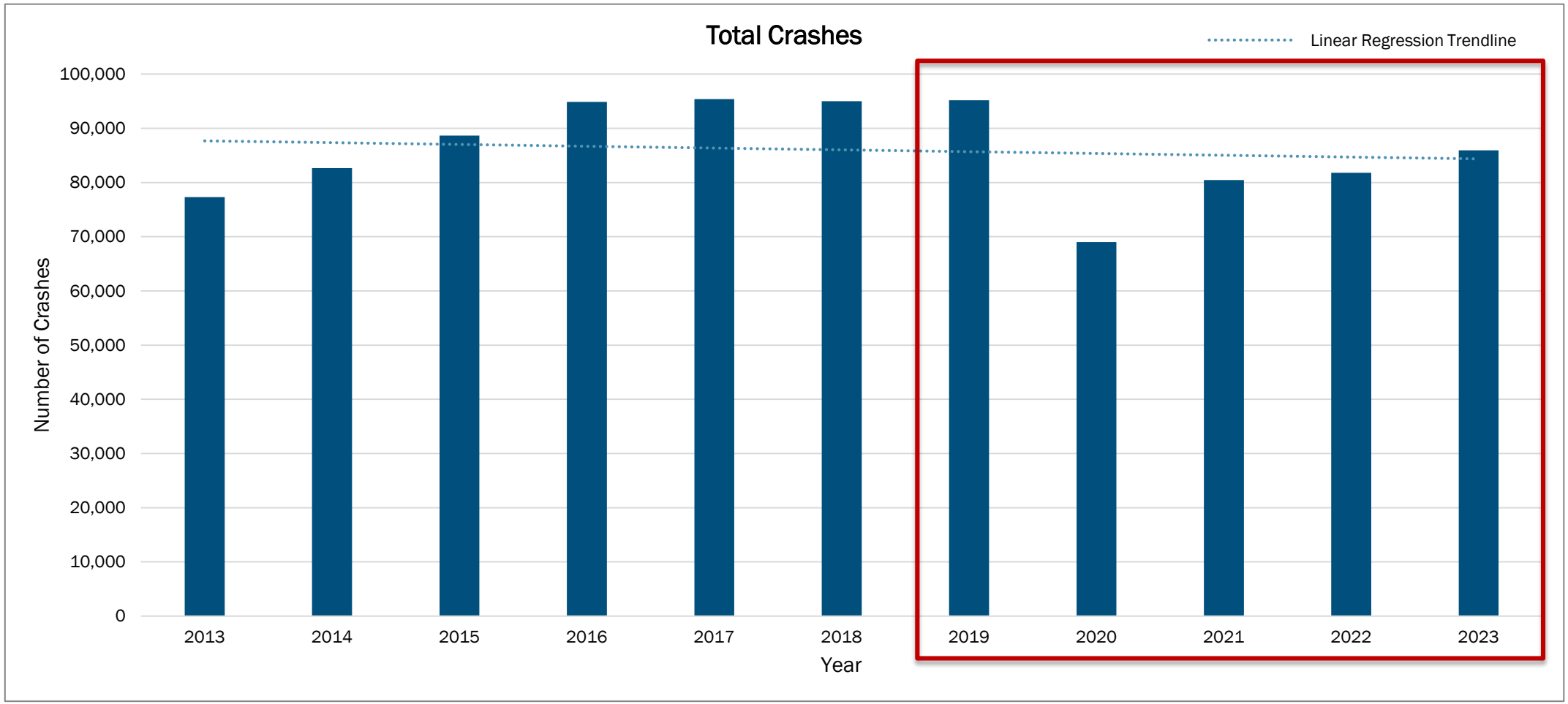




[**Source**: District Department of Transportation (DDOT), Virginia Department of Transportation (VDOT), and Maryland Department of State Police]

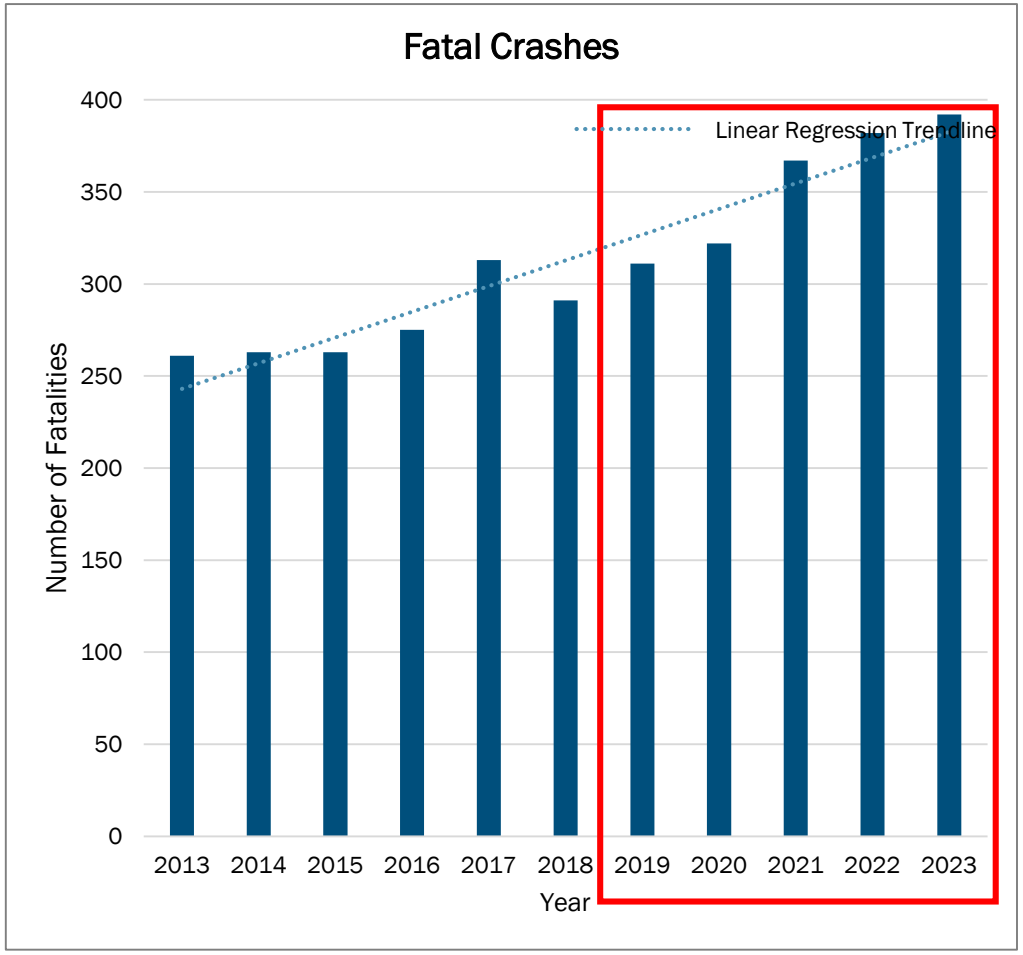
Crash Data Analysis

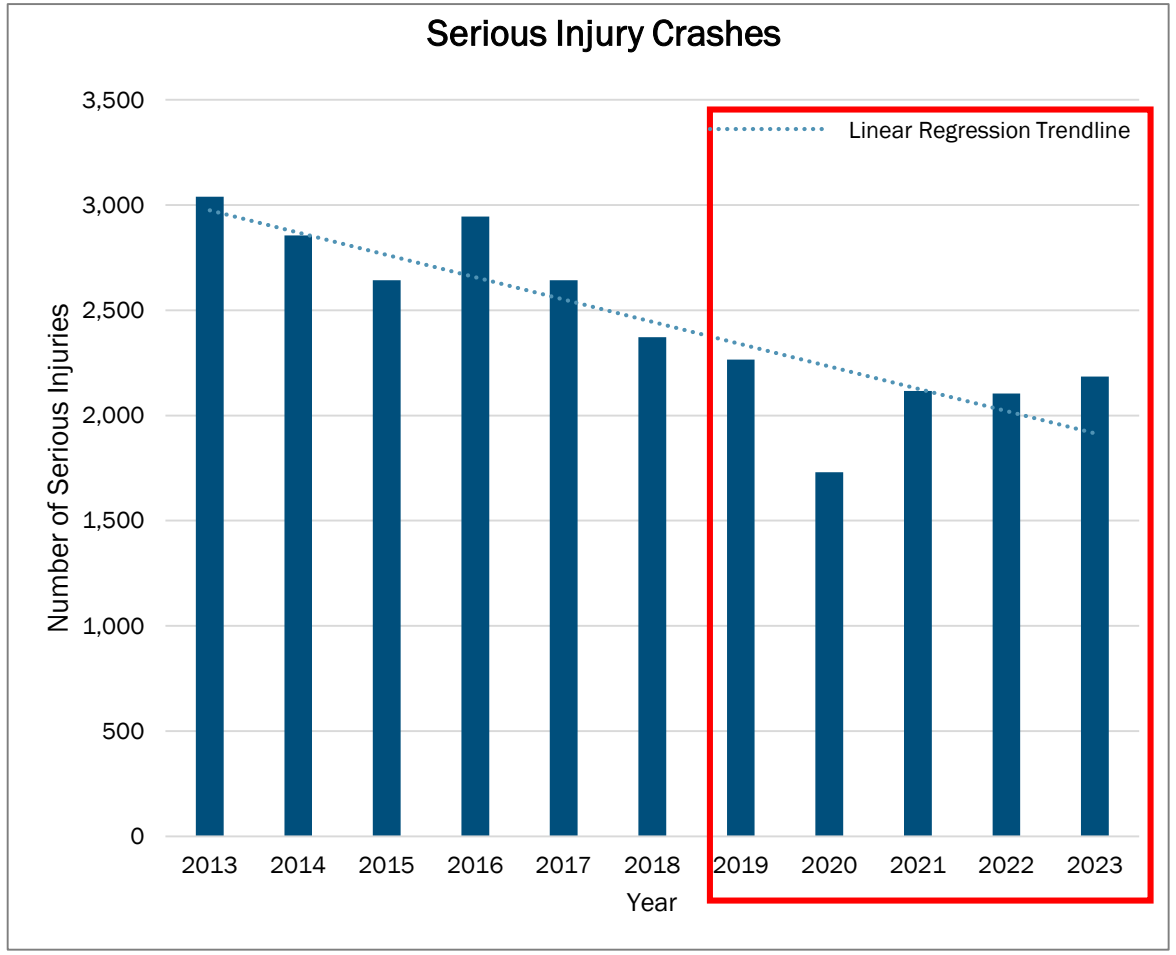
Total Crashes are Down



[**Source**: District Department of Transportation (DDOT), Virginia Department of Transportation (VDOT), and Maryland Department of State Police]

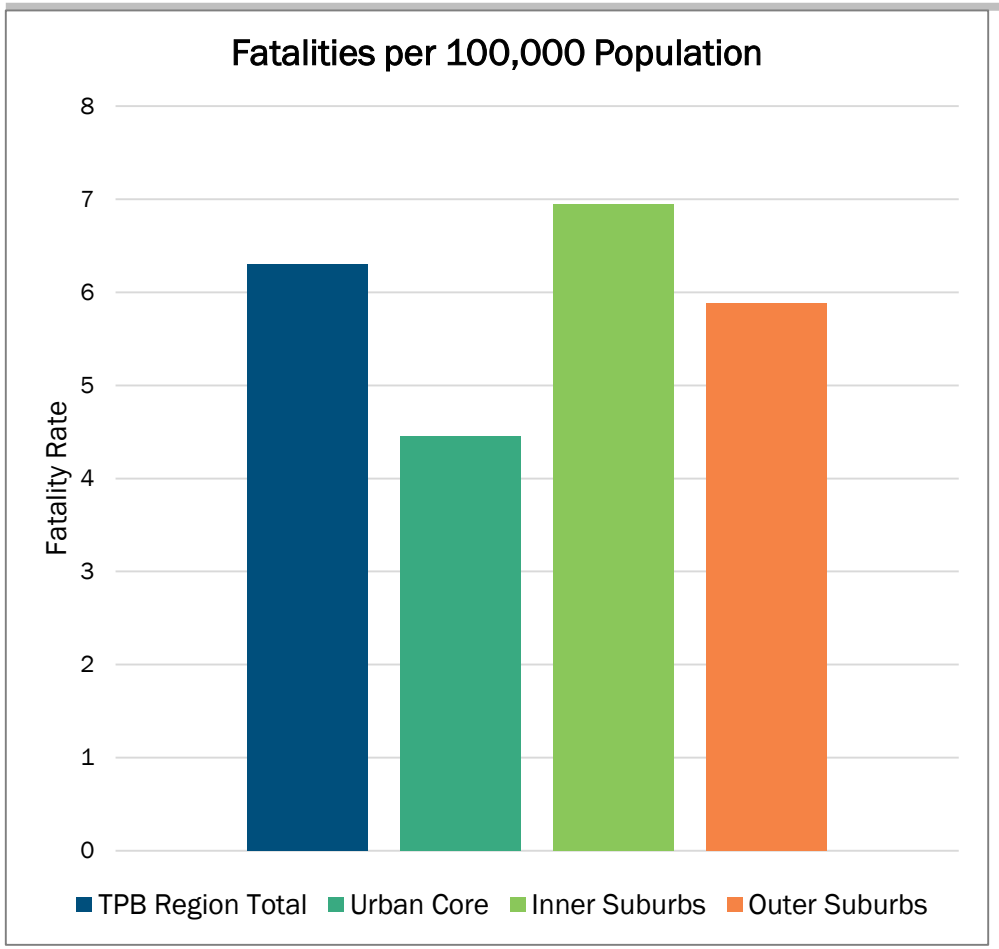
Fatalities are Up but Serious Injuries are Down

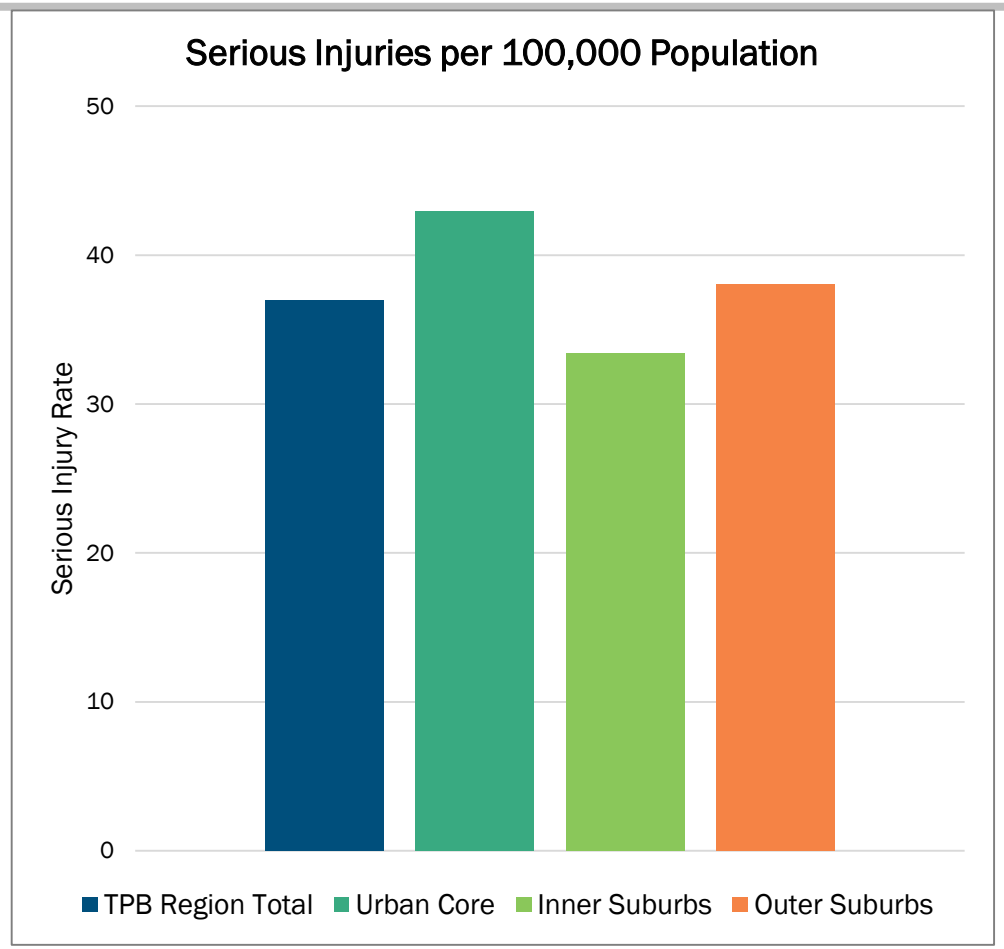




[**Source**: District Department of Transportation (DDOT), Virginia Department of Transportation (VDOT), and Maryland Department of State Police]

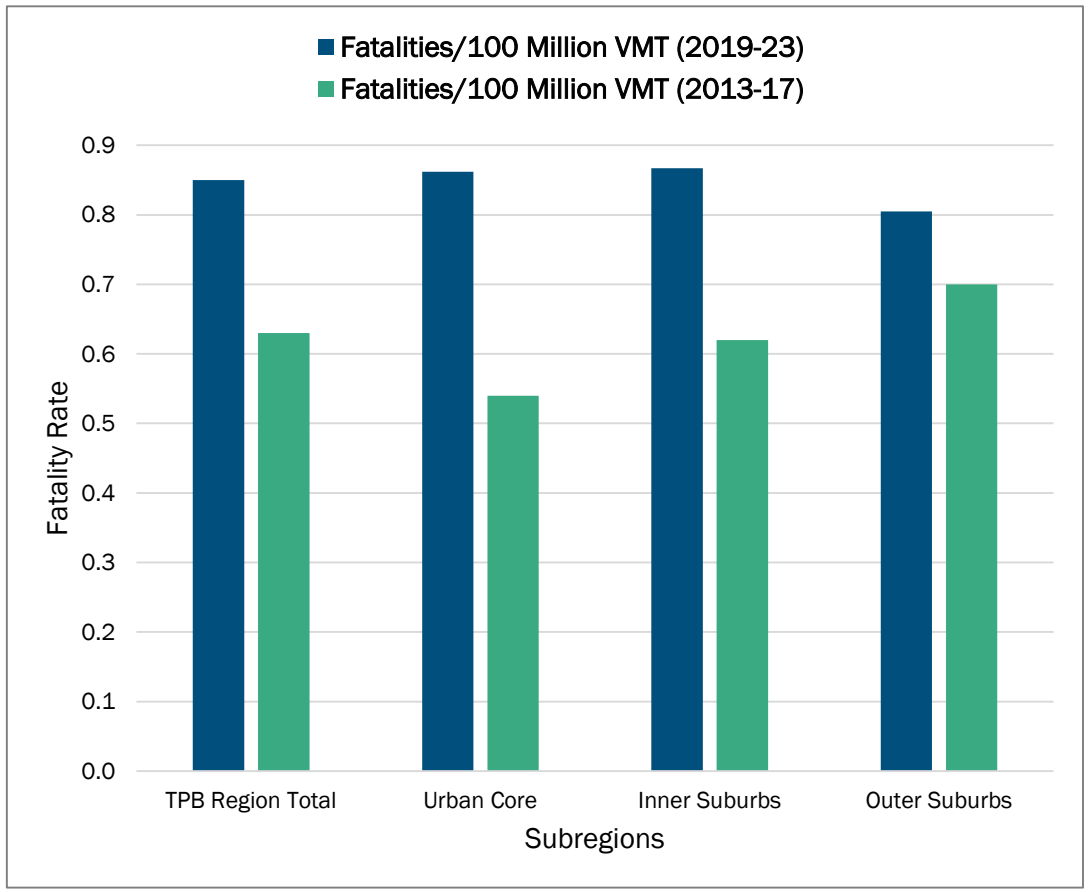
Fatalities and Serious Injuries by Population in Subregions, 2019 – 2023

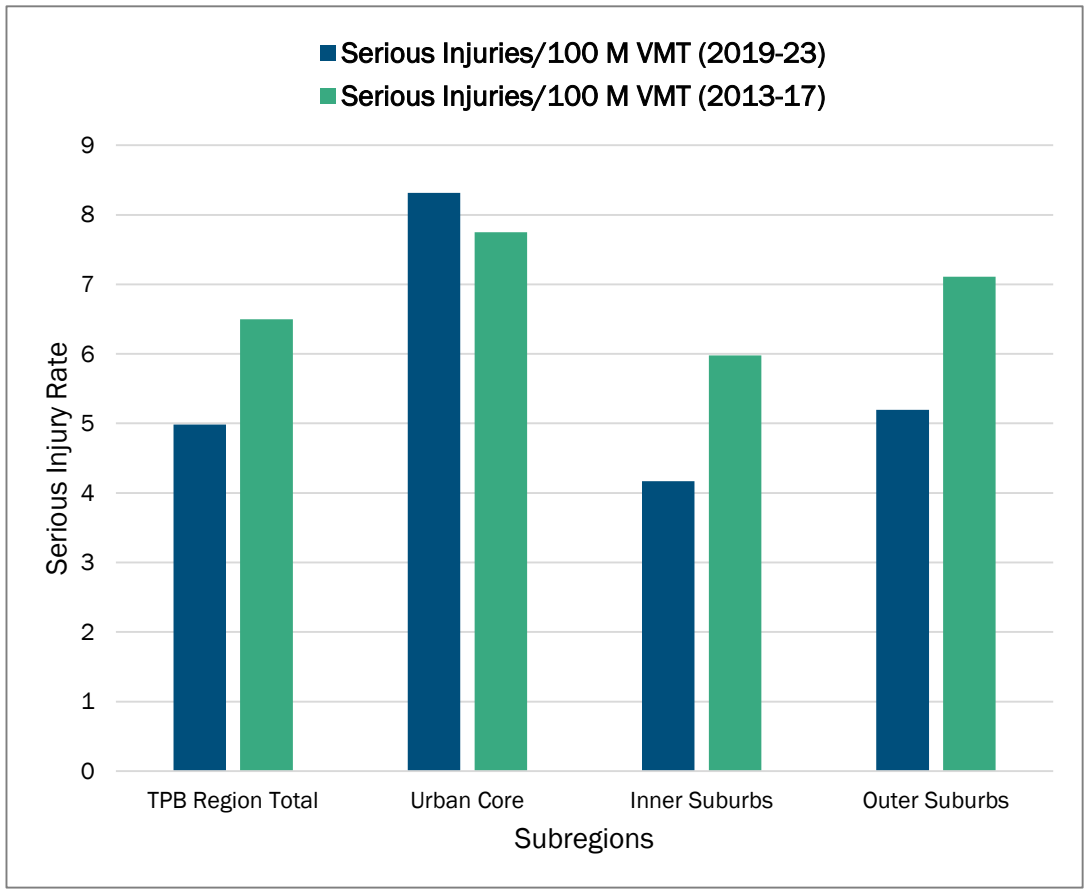




[**Source**: District Department of Transportation (DDOT), Virginia Department of Transportation (VDOT), and Maryland Department of State Police]

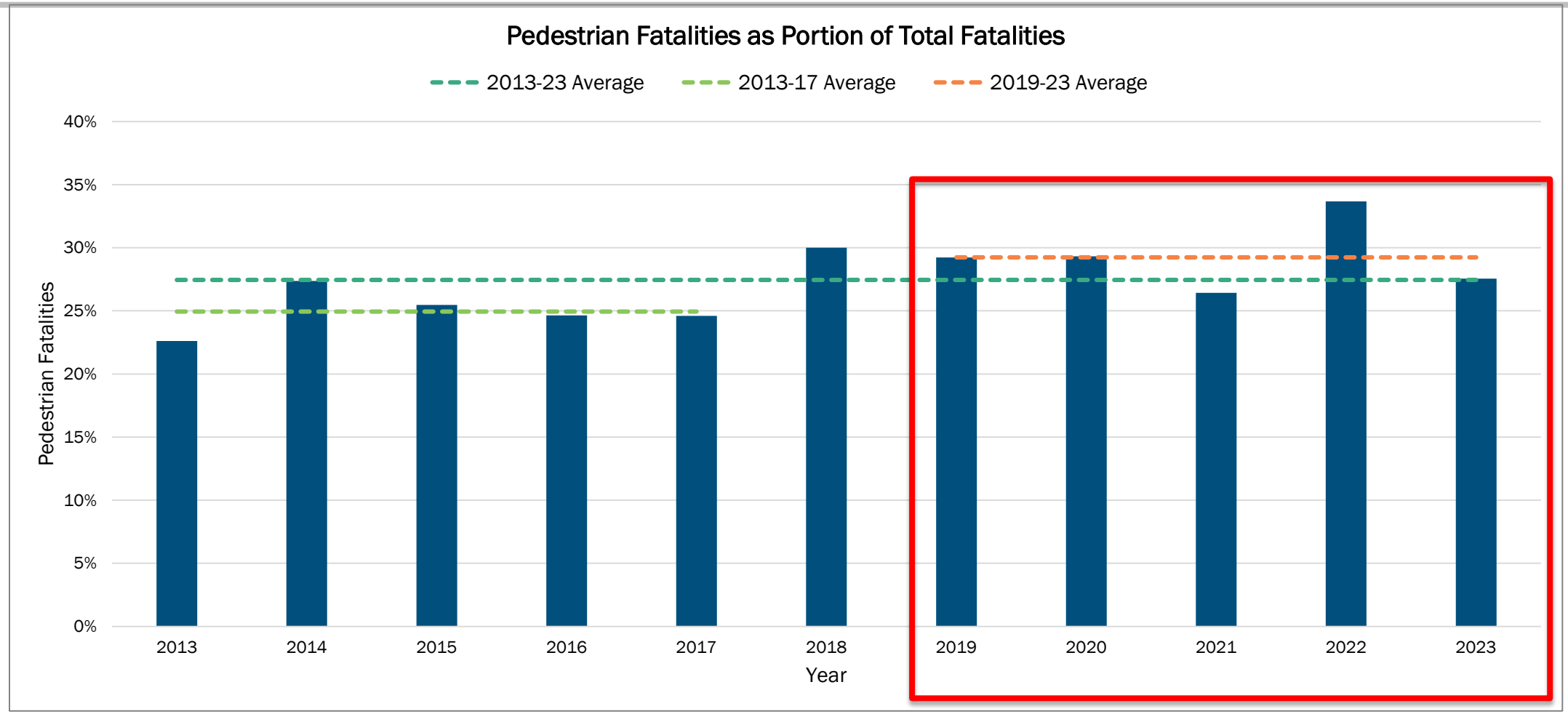
Fatalities and Serious Injuries by VMT in Subregions, Comparison of 2013-17 & 2019-23 Trends





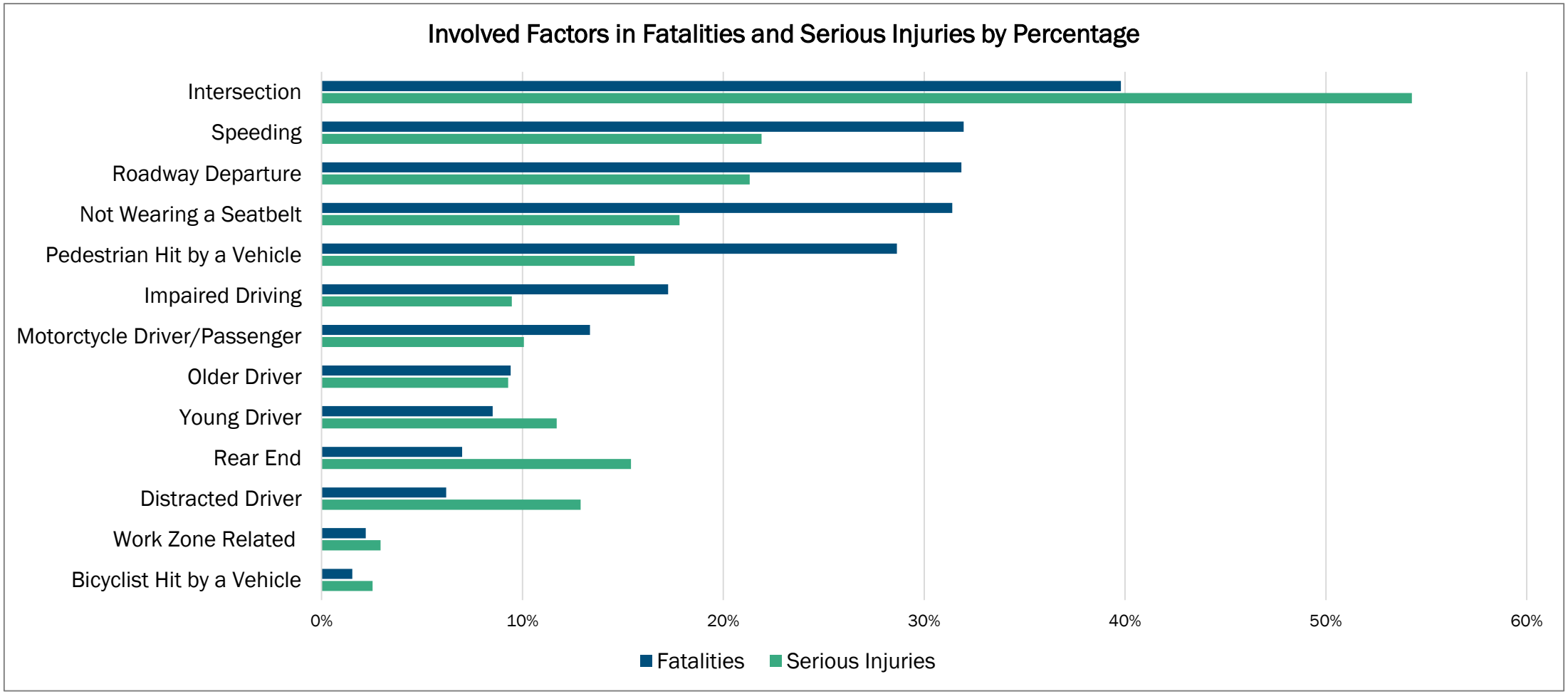
[**Source:** District Department of Transportation (DDOT), Virginia Department of Transportation (VDOT), and Maryland Department of State Police]

Pedestrian Fatalities as a Percentage of Total Fatalities



[**Source:** District Department of Transportation (DDOT), Virginia Department of Transportation (VDOT), and Maryland Department of State Police]

Involved Factors for Fatalities and Serious Injuries



[**Source:** District Department of Transportation (DDOT), Virginia Department of Transportation (VDOT), and Maryland Department of State Police]

Key Takeaways

Fatal crashes are increasing despite fewer overall crashes and serious injury crashes:

- From 2013 to 2023, total crashes and serious injury crashes declined, but fatal crashes rose steadily, a sign that while frequency is down, severity is worsening.
- Possible causes include higher speeds on less congested roads post-COVID; increased vulnerable road user exposure; and behavioral factors (impaired or distracted driving, and not wearing seatbelts).
- Pedestrians make up roughly 29 percent of total traffic fatalities (2019-2023), an increase compared to the previous five years.

Crash rates show an uneven safety landscape:

- The Inner Suburbs have the highest fatality rate per VMT and per capita, indicating a mismatch between infrastructure and current traffic volumes.
- The Urban Core has the highest serious injury rate per VMT and per capita, likely due to higher exposure of non-motorized users.

Involved factors emphasize behavioral and infrastructure failures:

- The most common contributors to fatal and serious injury crashes include: intersections; roadway departures; and speeding. Many crashes involve multiple compounding factors.

The region is not meeting its safety targets

Performance Measure (5-year rolling average)	Adopted 2019-2023 Targets (Dec 2022)	Actual 2019-2023 Performance	Percent Difference
# of Fatalities	253.0	353.0[1]	40% over
Fatality Rate (per 100 MVMT)	0.588	0.842[1]	43% over
# of Serious Injuries	1,757.4	2,150.8	22% over
Serious Injury Rate (per 100 MVMT)	3.733	5.196	39% over
# Nonmotorist Fatalities & Serious Injuries	486.9	563.2	16% over

1 - Figures listed are from preliminary state fatality data.

Jurisdictional Questionnaire

Key Findings from Questionnaire Results (based on 15 responses)

- **Increase in Fatalities during COVID-19 pandemic**: Most jurisdictions reported an increase in traffic fatalities during the pandemic, consistent with the trend seen across the region.
- **Decline in Serious Injuries**: Despite the rise in fatalities, most jurisdictions experienced a decline in serious traffic injuries, following the broader regional pattern.
- **Top Involved Factors for Serious Injuries**: Speeding and crashes involving vulnerable road users, such as pedestrians and bicyclists, were frequently cited as the leading causes of serious injuries.
- **Top Involved Factors for Fatalities**: Speeding and impaired driving were identified by respondents as the top involved factors for fatalities in most jurisdictions. These differ from the TPB's top three factors in 2013-2017, which included the lack of seatbelt use, pedestrian incidents, and intersection crashes.
- **Adoption of 'Zero Death Goal'**: 63 percent of the responding jurisdictions (10 out of 16) have adopted the 'zero death goal'. Of those, eight jurisdictions have set a target year to achieve this goal. Target years for the Vision Zero goal ranged from 2024 to 2040, with 2030 being the year most cited.

Effective Safety Strategies

1. **Speed management**: Multiple respondents mentioned installation of road diet projects and lowering speed limits as having demonstrated effectiveness.

2. **Pedestrian safety improvements:** Respondents noted high-visibility crosswalks, quick-build projects, rapid-flashing beacons, and pedestrian signal phasing modifications as having a beneficial effect on roadway user safety.

3. **Improved street lighting** for enhanced visibility during night/dark conditions: Respondents noted LED streetlight conversions have improved nighttime visibility.

4. **Automatic traffic enforcement** (e.g., red light and speed cameras): Respondents noted reductions in angle crashes after installation of red-light cameras.

Areas of Assistance Needed

1. **Supportive legislation and policy**: Specific areas cited included legislative policies around automated enforcement capabilities, distracted driving, impaired driving, and driver accountability.
2. **Funding**: Multiple jurisdictions noted the need for funding for institutionalizing safety programs, data collection, enforcement, and educational and awareness initiatives.
3. **Additional staffing**: Respondents indicated that staff capacity limits their jurisdiction's ability to implement projects, policies, and programs.
4. **Data collection and analysis**: Respondents expressed a desire for more specific localized data tailored to their jurisdiction.

Recommendations and Next Steps

Recommendations

1. Prioritize Focus Areas
2. Adopt the Safe System Approach
3. Restructure Countermeasures Using the Safe System Framework
4. More Emphasis on Post-Crash Care
5. Pursue Additional Funding Opportunities
6. Develop a Multijurisdictional Arrangement
7. Continue to Leverage Forums at MWCOG

Future Areas of Research

- Explore exposure data for pedestrians and bicyclists
- Provide consistency in crash data between Maryland, Virginia, and the District of Columbia
- Conduct further research on the impact of vehicle size and weight data on traffic safety
- Explore information sharing for post-crash care
- Inventory and report on safety-supportive activities undertaken by TPB members pertaining to the Safety Resolution
- Explore proactive tools and strategies for safety analysis

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