

# **VISION ZERØ PHILADELPHIA**

## **Evaluating Complete Streets Projects**



**Office of Transportation, Infrastructure, and Sustainability**

**December 7, 2023**

# Agenda

- About Vision Zero
- Philadelphia Crash Trends
- Complete Streets Projects Analysis

Vine Street at 12th, 2022



# TRAFFIC DEATHS ARE PREVENTABLE AND UNACCEPTABLE

15th Street at JFK Boulevard

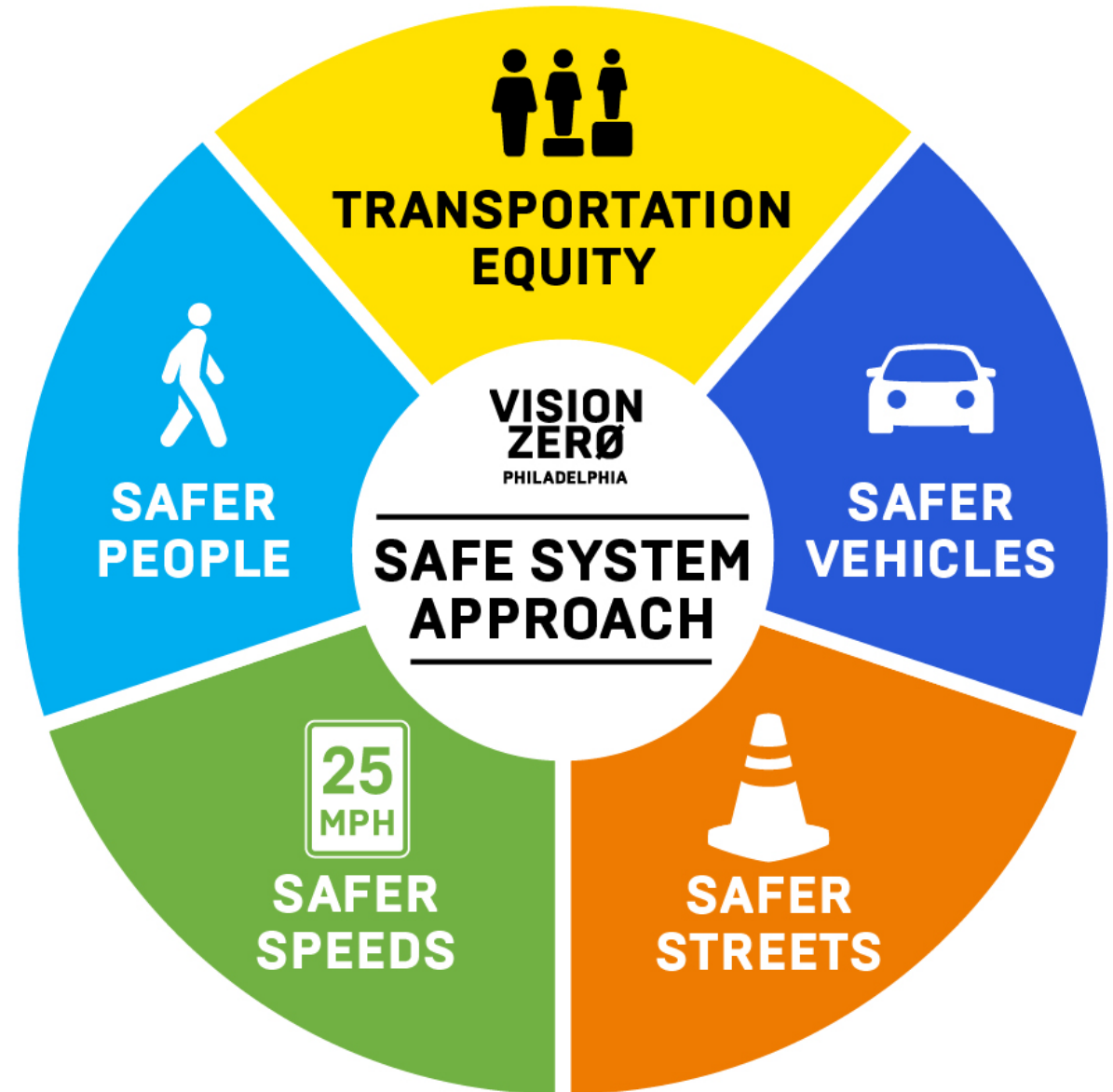
[VISIONZEROPHL.COM](http://VISIONZEROPHL.COM)

 City of  
Philadelphia

**VISION  
ZERO**  
PHILADELPHIA

# What is Vision Zero?

- International policy initiative.
- Adopted in Philly in 2016.
- Guides infrastructure and programing investments.



# Vision Zero Goal

Vision Zero is dedicated to eliminating traffic deaths on Philadelphia streets.



# Vision Zero Action Plan

- The current Five-Year Action Plan (2020-2025) guides the City's approach to Vision Zero.
- Collaborative effort between government, community, and advocacy groups.

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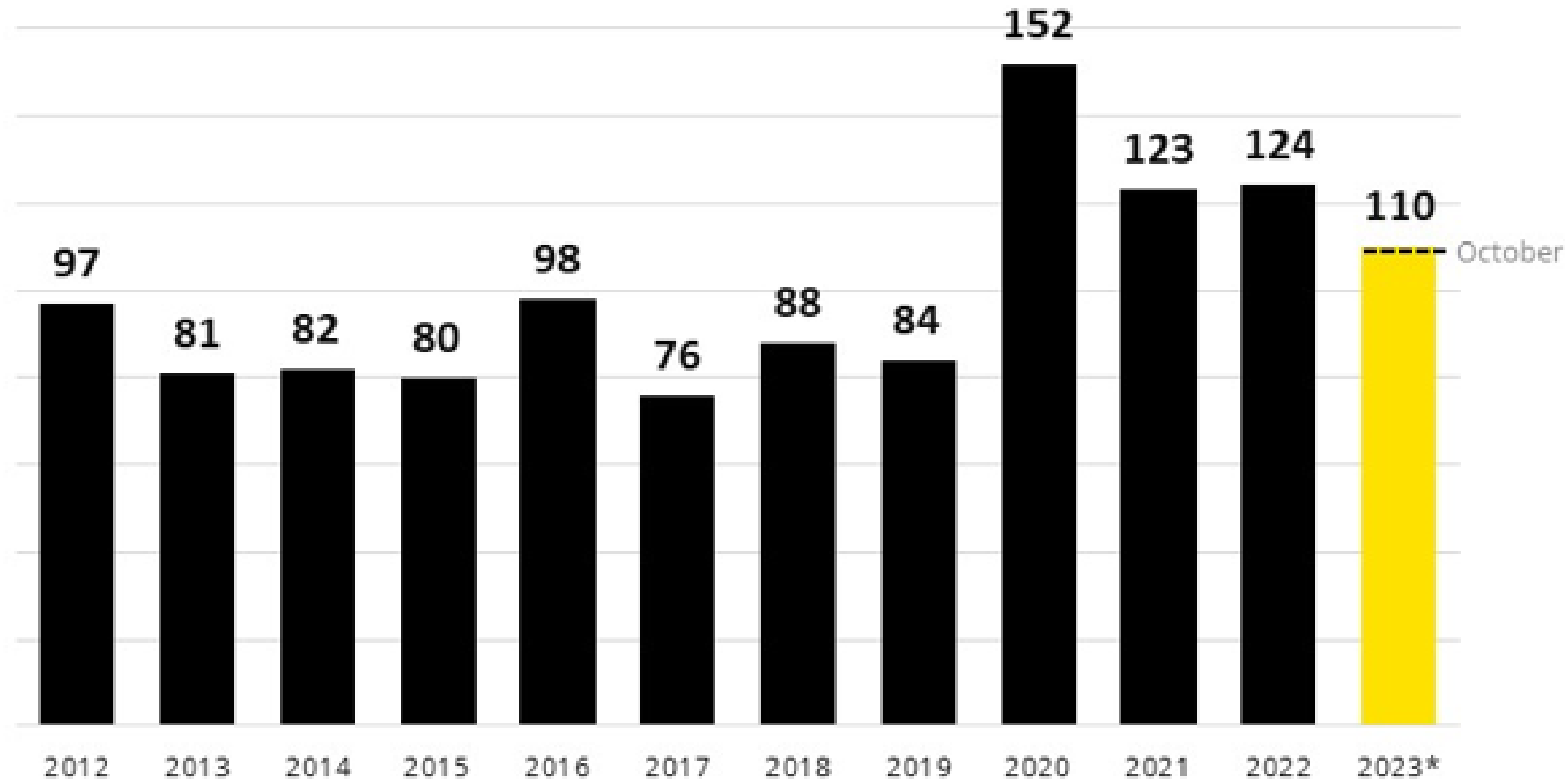
Vision Zero Action Plan 2025

November 2020



# Why Vision Zero?

Since 2020, there has been a "new normal" of about 120 traffic deaths per year.

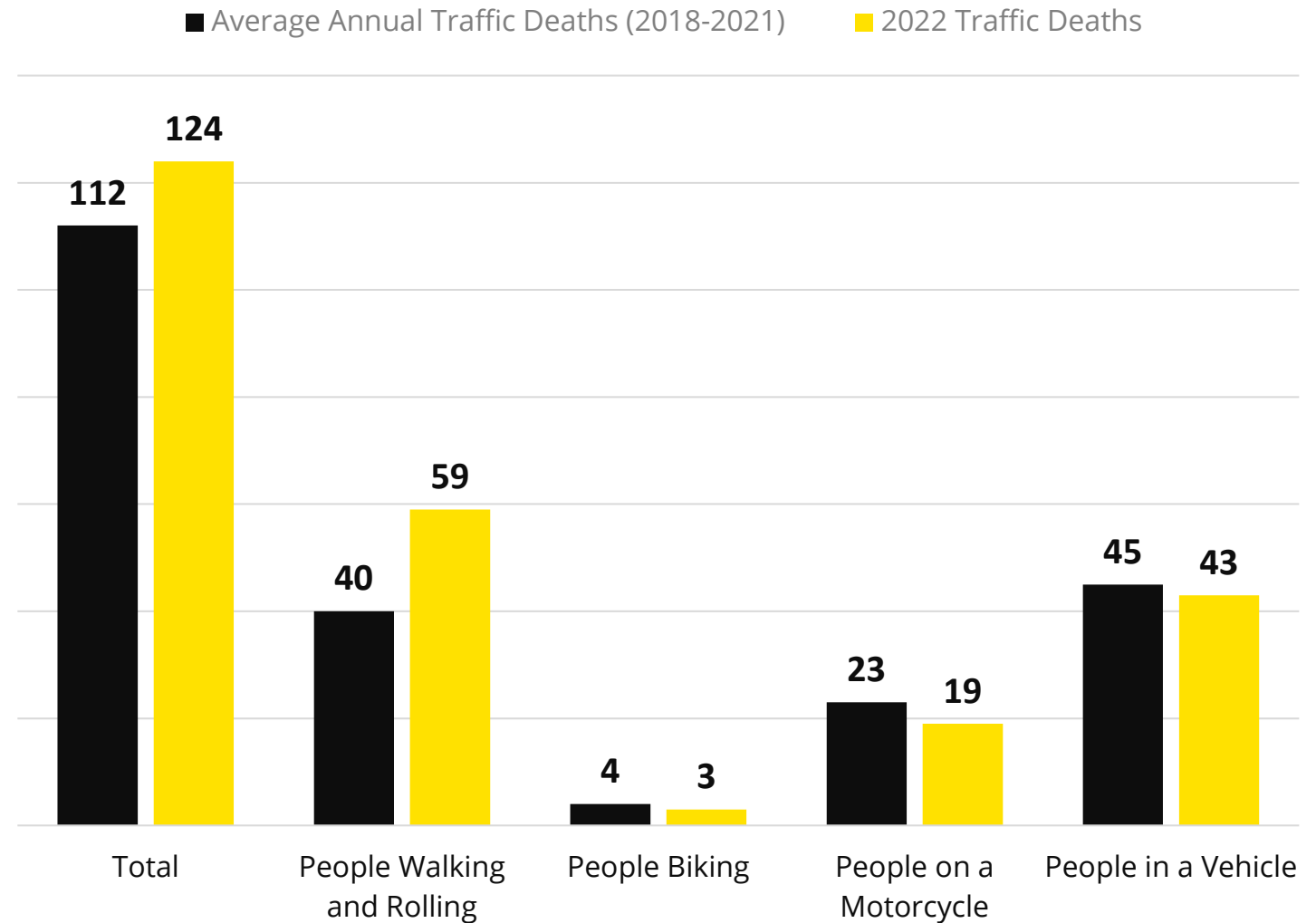


Source: PennDOT Crash Data (2018-2022), PPD Fatal Crash Data (2023)

# Traffic deaths rising for most vulnerable

In 2022, more people were killed while walking and rolling (59) than by any other mode.

Traffic Deaths by Travel Mode



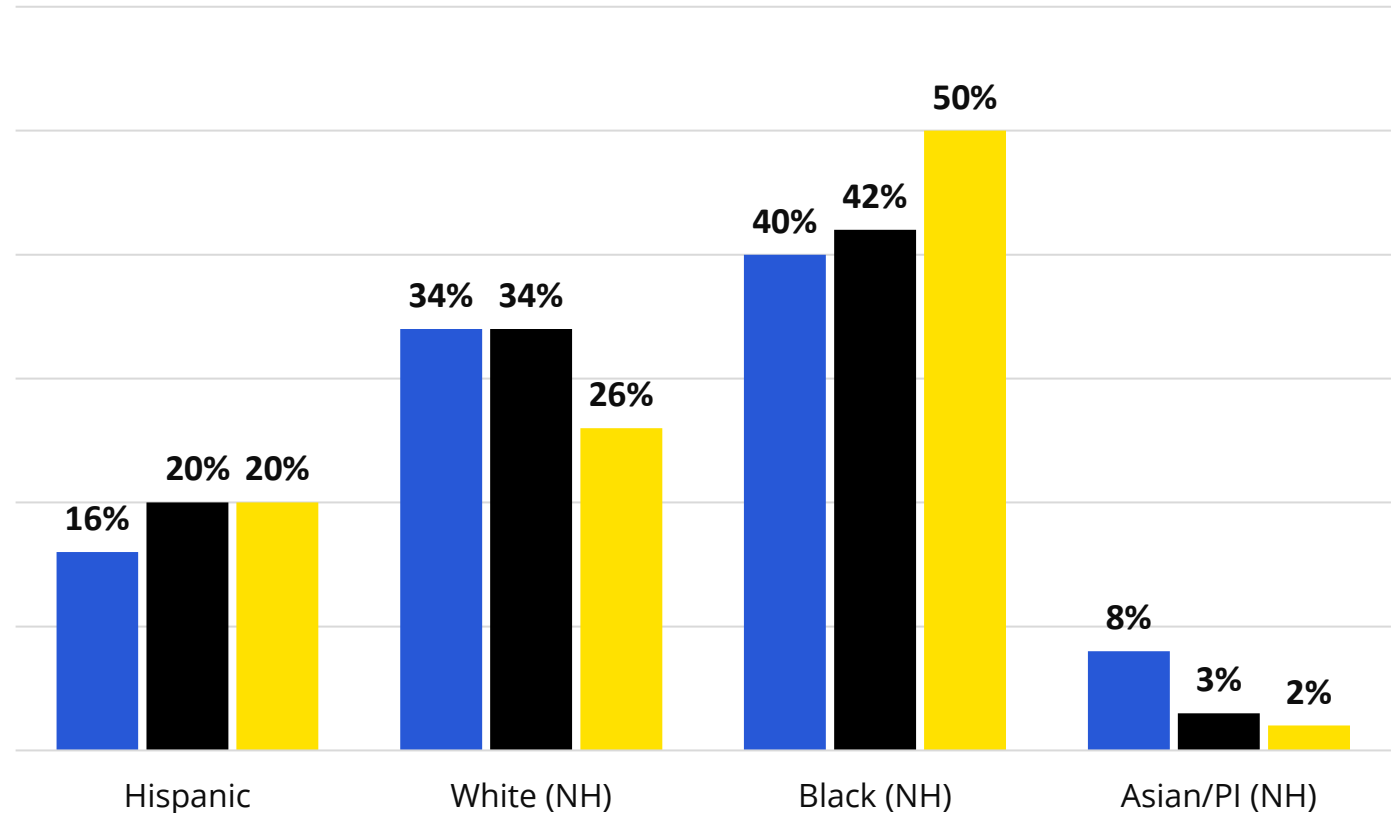


# Racial disparities are growing

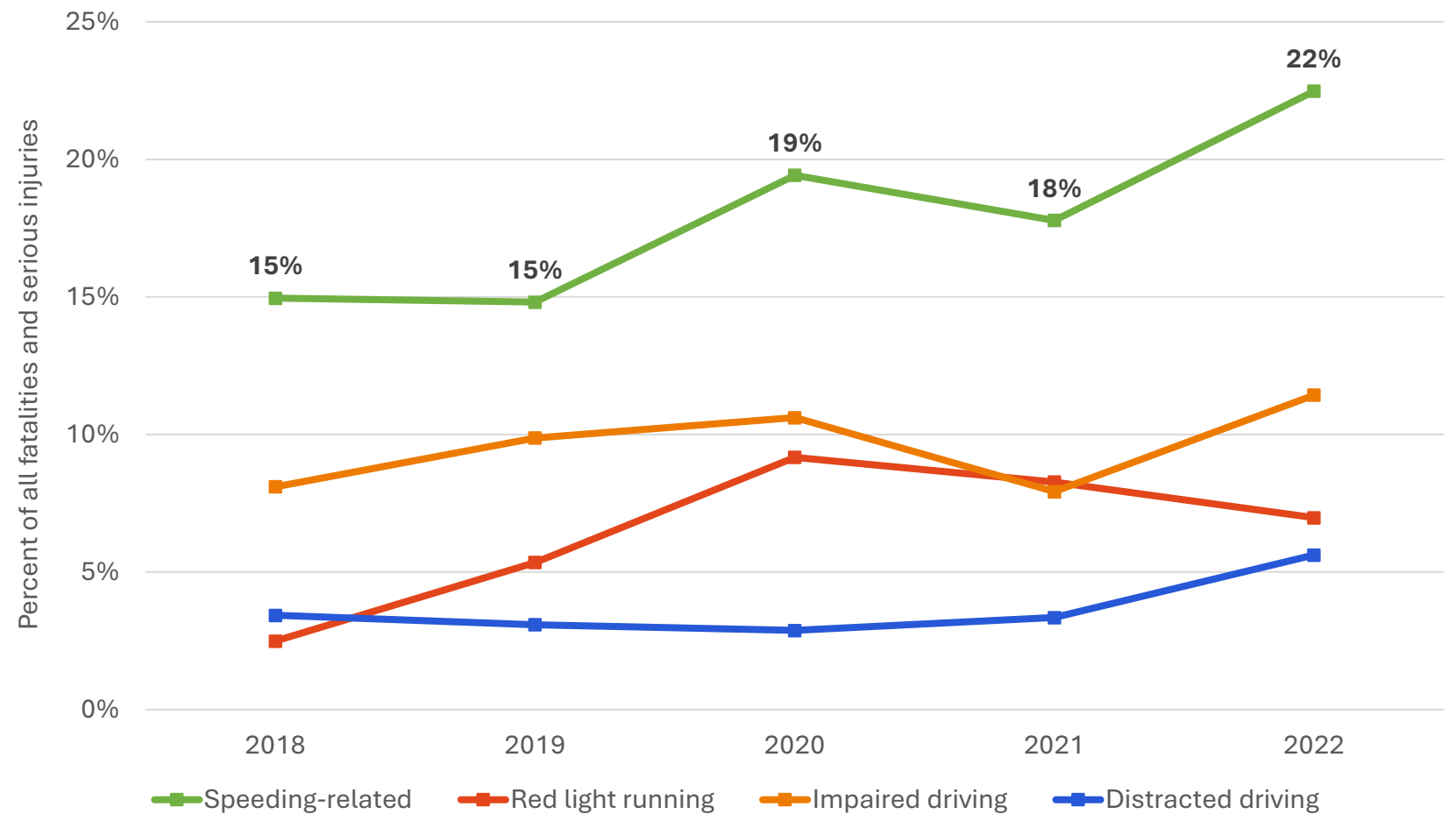
70% of traffic deaths since 2020 have been among Black and Hispanic Philadelphians.

Percent of Traffic Deaths versus Percent of Population by Race

■ % of Philadelphia Population (2021)   ■ % of Traffic Deaths (2017-2019)   ■ % of Traffic Deaths (2020-2022)

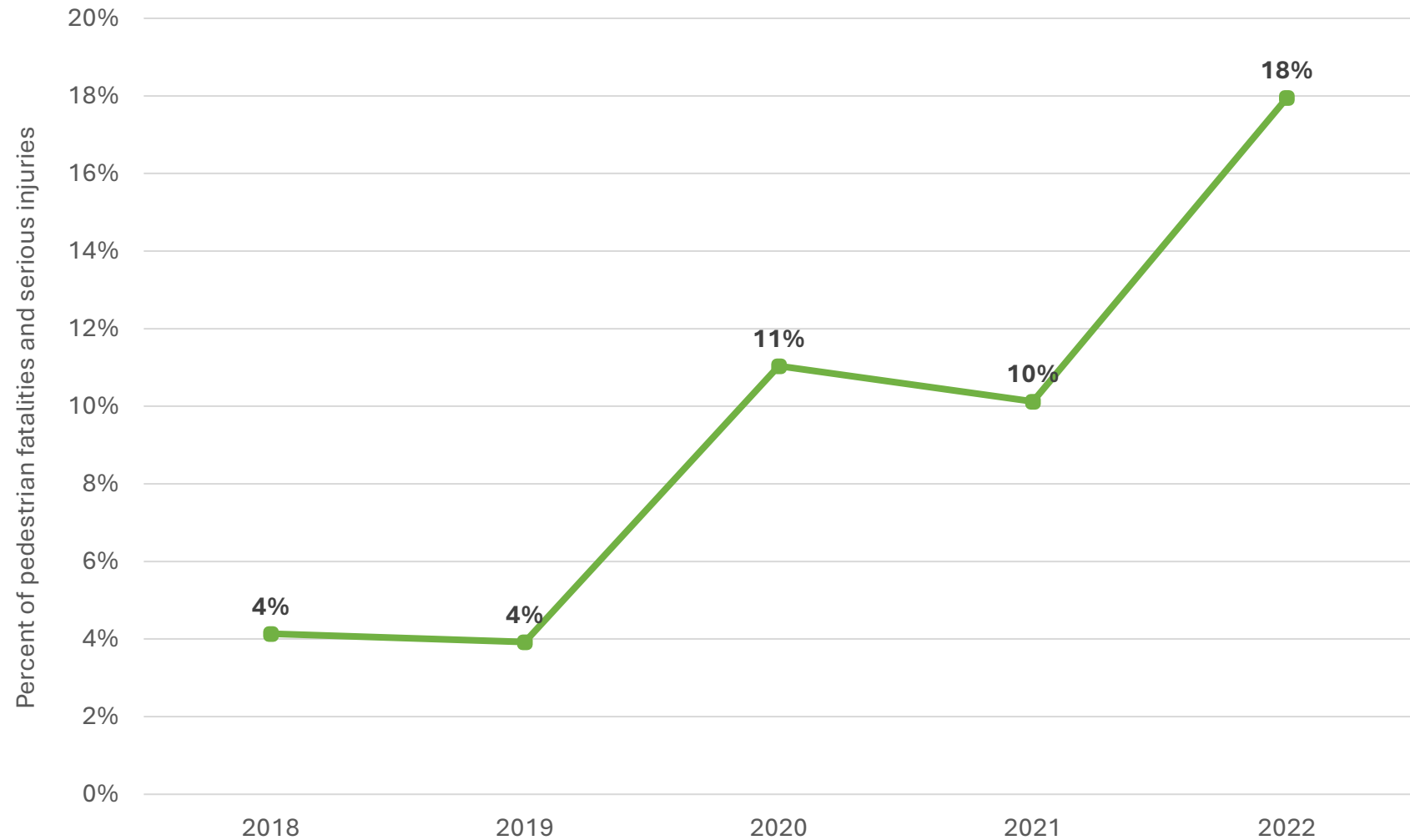


# Speed is increasing as a factor in severe crashes...



Source: PennDOT Crash Data (2018-2022)

# ...especially in severe pedestrian crashes



Source: PennDOT Crash Data (2018-2022)

# Parkside Avenue Protected Bikeway: After



 City of Philadelphia

[www.VisionZeroPHL.com](http://www.VisionZeroPHL.com)

# 5th Street Protected Bike Lane: After

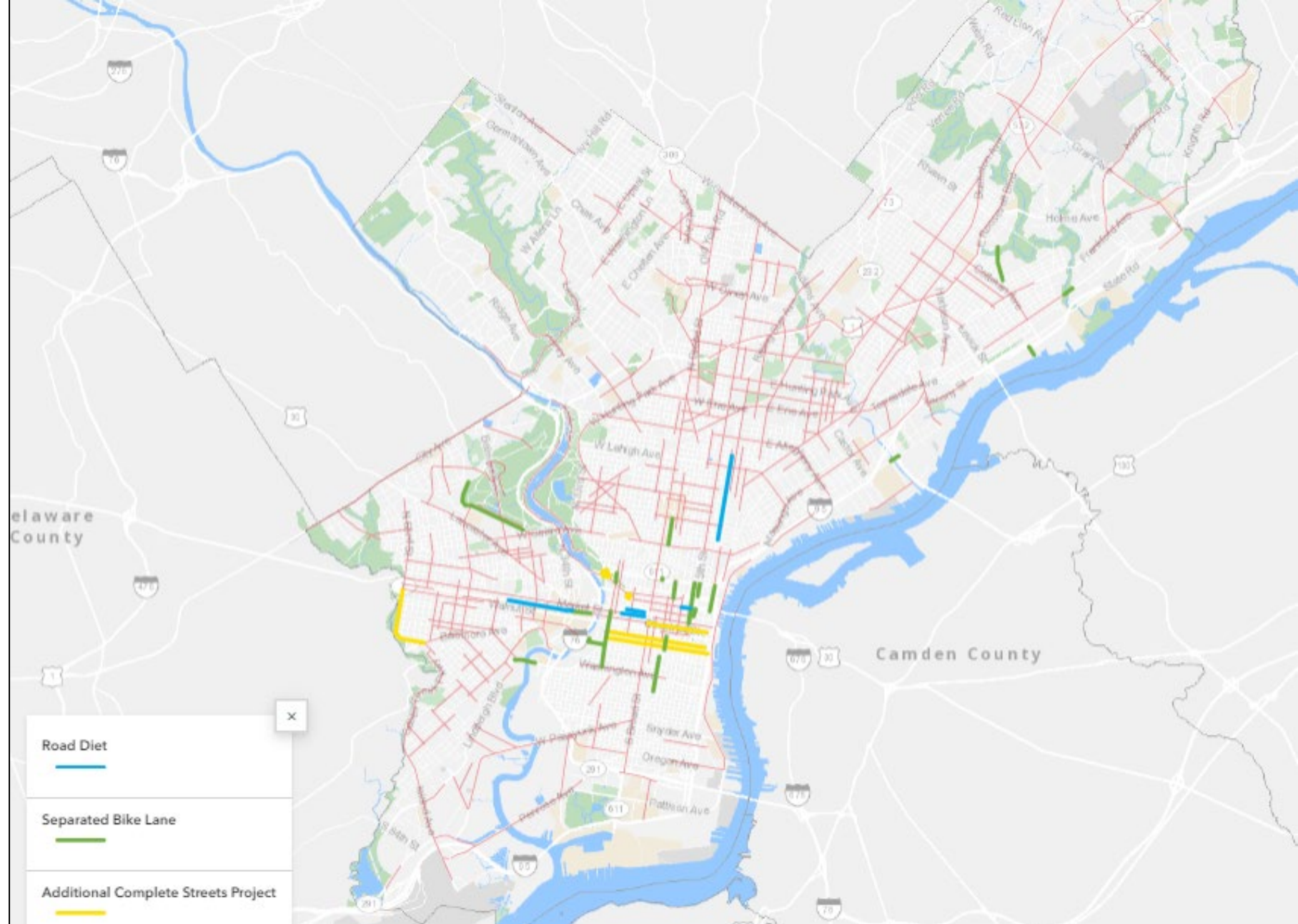


## FAIRHILL NEIGHBORHOOD SLOW ZONE: AFTER

N 3rd Street and Ontario Street



# VZ Project Map



# Research Question

Do Complete Streets safety improvements reduce fatal and serious injuries, and injury crashes overall?

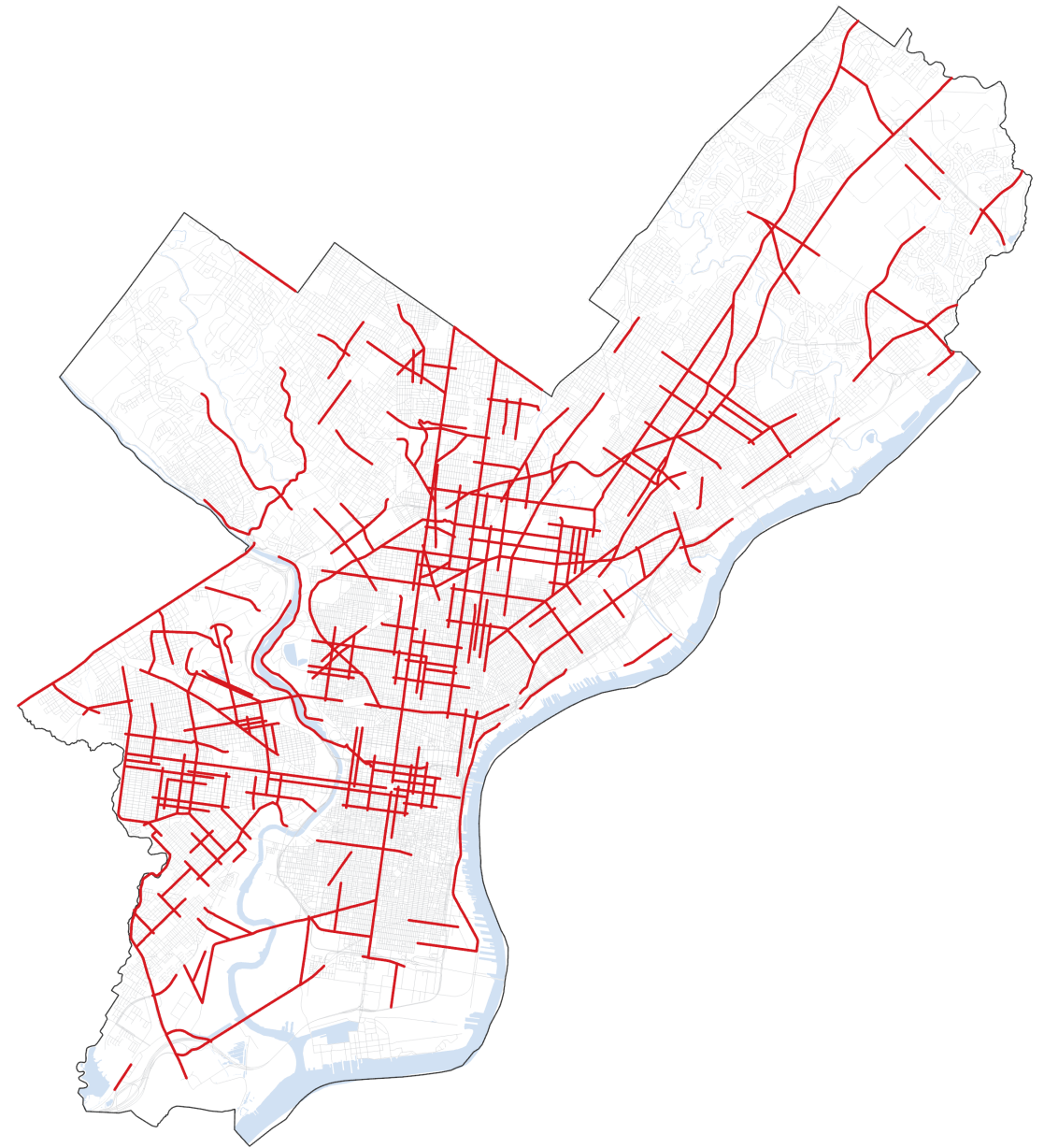
If so, by how much?





# High Injury Network

- **80% of serious crashes occur on just 12% of Philadelphia streets**
- Projects evaluated:
  - Roosevelt Boulevard's Speed Cameras
  - Road Diets
  - Separated Bike Lanes



# Complete Streets project reduce crashes

What we found:

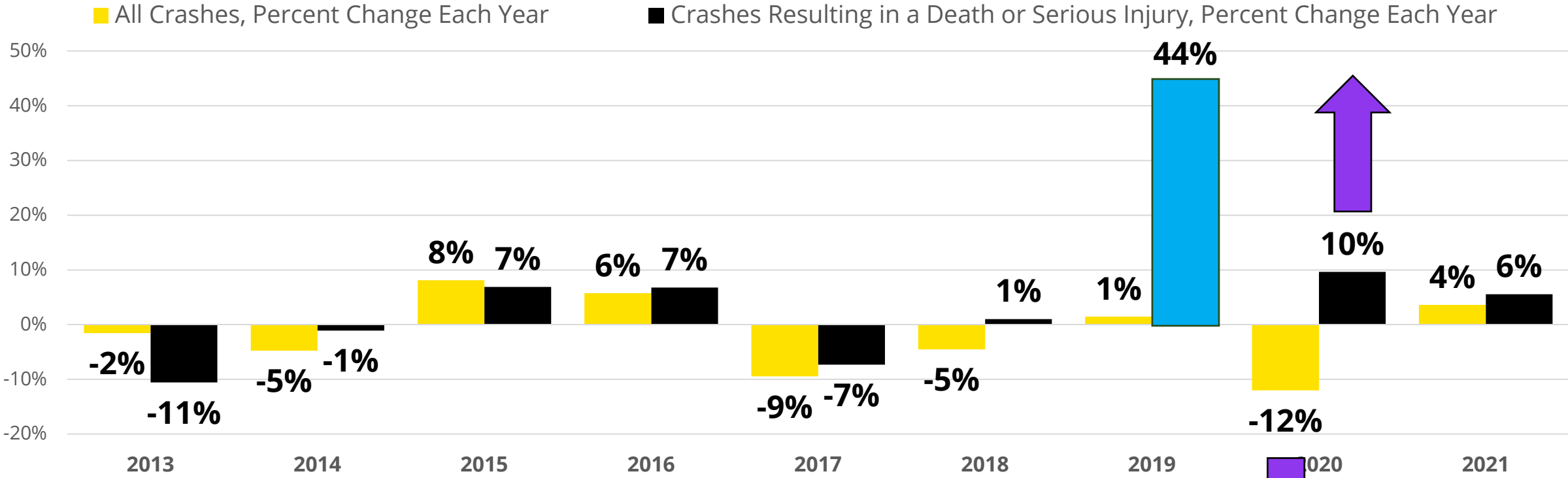
**20% fewer injury crashes**

**34% fewer KSI crashes**



# Data Challenges

City-wide impacts on data, such as the pandemic or a 2019 change in data reporting, must be considered in multi year project before and after analysis.

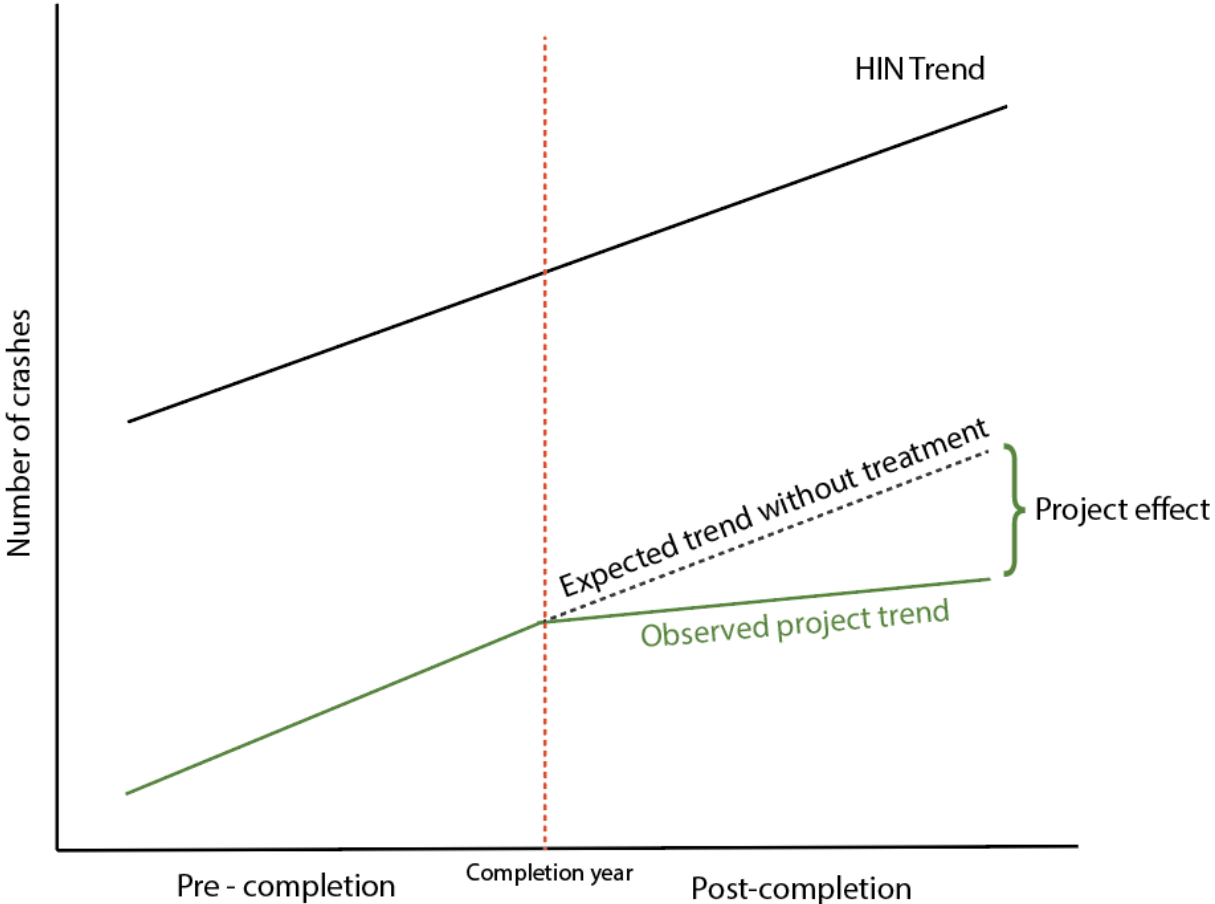


Source: PennDOT Crash Data 2012-2021

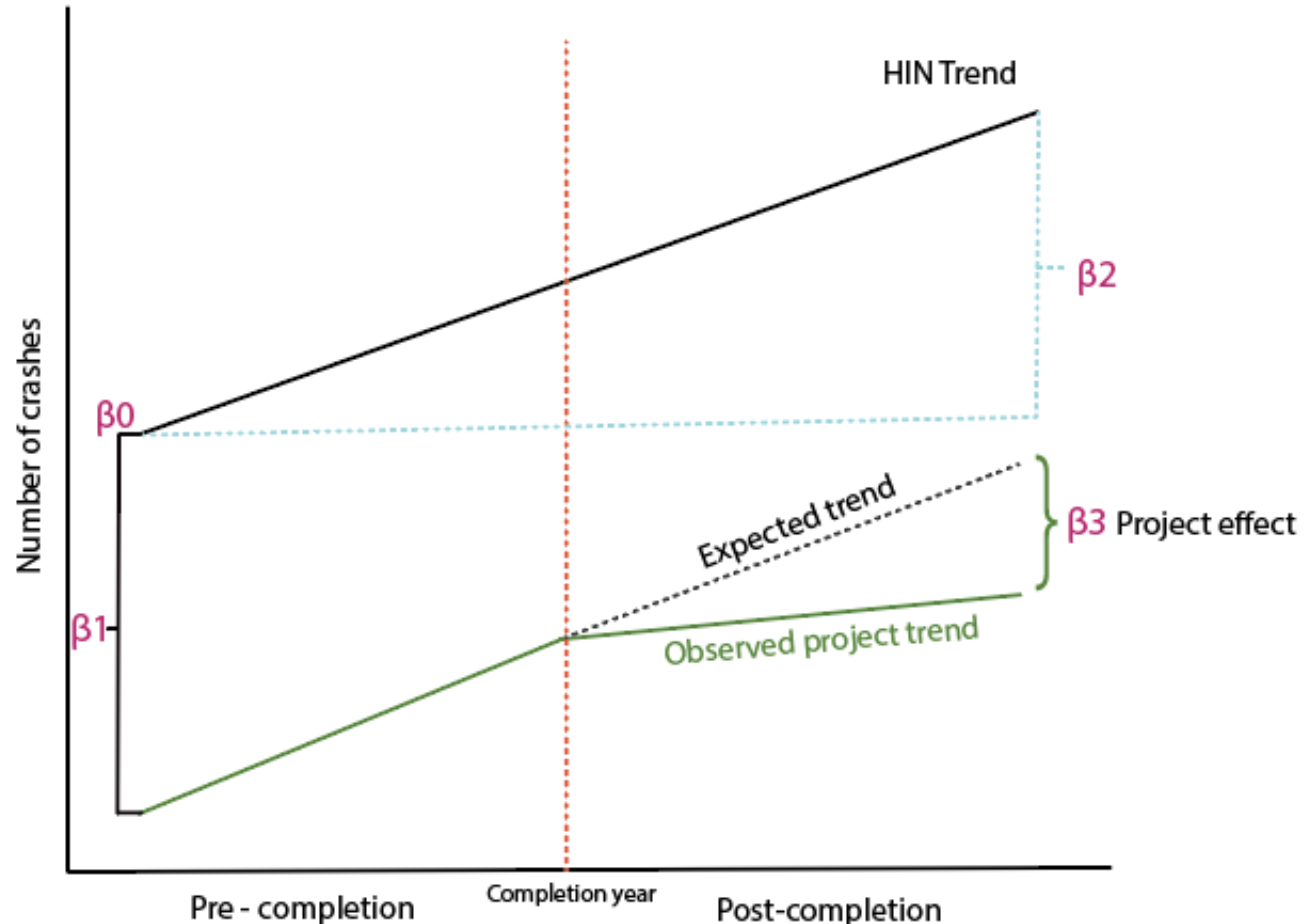
# Solution: Difference-in-Difference Analysis

- Accounts for background trend
- Two components are compared:
  - Within difference - the difference of the treatment group with itself before and after the intervention
  - Between difference - the difference between treated and control groups
- **Makes the estimation unbiased by eliminating the effect of background trend noise**

# Difference-in-Difference Analysis



# Difference-in-Difference Analysis



## Beta 0

Crashes of control group pre-completion year

## Beta 1

Difference in crashes between HIN and project corridors pre-completion year

## Beta 2

Difference in crashes between pre-completion and post-completion of HIN

## Beta 3

How has the crashes changed between pre-completion and post completion of project corridors

# Road Diets

- Adds dedicated turning lanes, encourages better **traffic flows**, and **reduces traffic conflicts**, especially during turns.
- Reduces number of travel lanes **pedestrians** have to cross.
- Encourages **multimodal transportation**.



# Road Diets

Removing excess vehicle capacity led to a **23% drop** in speeding and **doubled** the number of people biking on the roadway.





**Road diets resulted in  
18% fewer injury crashes**



# Separated Bike Lanes



Before



After

# Separated Bike Lanes

- Place the bike lane in between the curb and the parking lane to **shield cyclists** from moving traffic.
- A buffer zone allows for flexpost installation to keep bike lane **clear of car doors**.
- **Narrow crossing distance** for pedestrians in front of moving vehicles.



# Separated Bike Lanes

Separating bike lanes from traffic also led to a **5% drop** in speeding and more than **doubled** the number of people biking on the roadway.



**Separated bike lanes resulted  
in 17% fewer injury crashes**



# Neighborhood Slow Zones



Before



After

# Neighborhood Slow Zones

- **Slows down drivers** going through and turning onto street.
- **Narrow crossing distance** for pedestrians.
- **Opportunities for larger pedestrian plazas** at wide intersections.



# Neighborhood Slow Zones

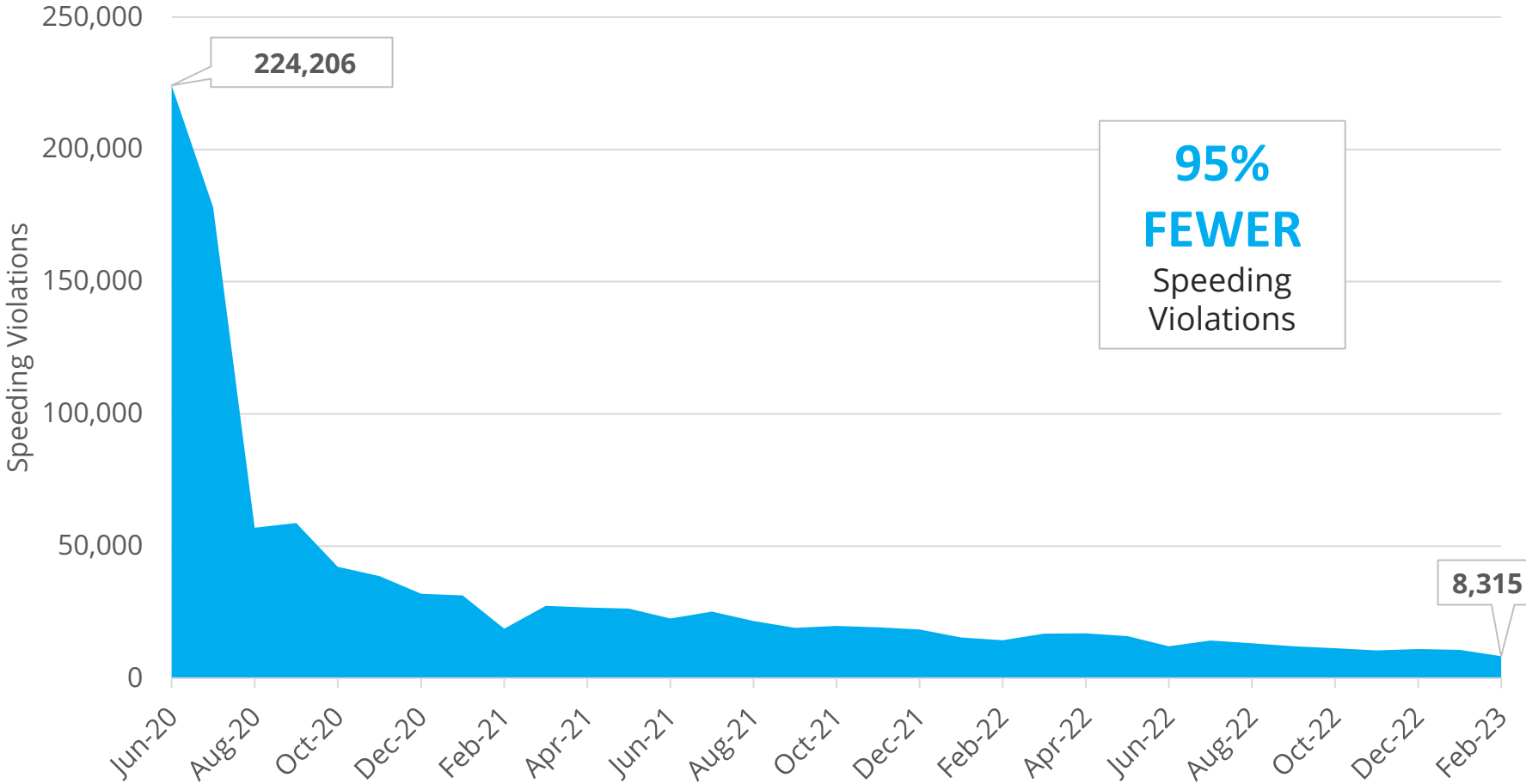
In the first year since installing neighborhood traffic calming, there were **zero serious crashes** in the Willard and Fairhill Slow Zones.





# Roosevelt Blvd Speed Cameras

Roosevelt Boulevard - June 2020 to February 2023



**50% FEWER**  
Crashes Involving  
People Walking

**21% FEWER**  
KSI Crashes

*Data Source: PPA (2020-2023);  
PennDOT (2018-2022)*

# Roosevelt Blvd speed cameras have saved 36 lives since installation



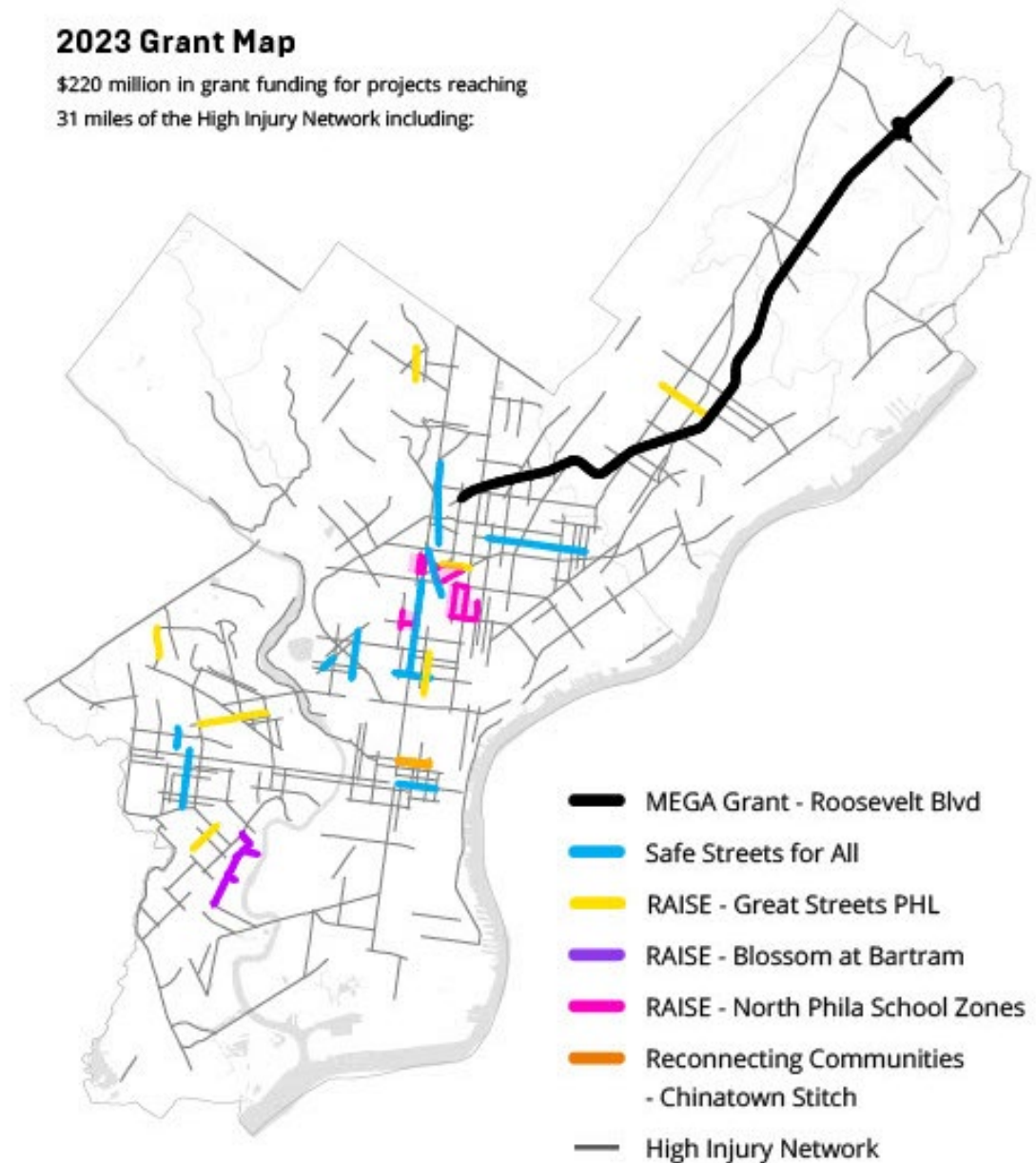
# Traffic Safety Grants

\$220+ million over the past year:

- [\\$78 million MEGA Grant](#) for Roosevelt Boulevard
- \$30 million [Safe Streets for All](#)
- "Chinatown Stitch" on Vine St.

## 2023 Grant Map

\$220 million in grant funding for projects reaching 31 miles of the High Injury Network including:



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