

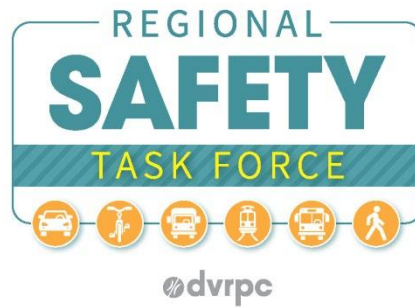


Safe Teen Mobility

September 12, 2019



CONNECT WITH US! @DVRPC #RSTF #VISIONZERO



RSTF Goal:

To reduce roadway crashes and eliminate serious injuries and fatalities from crashes in the Delaware Valley

Share the conversation!

Use **#rstf** during today's meeting, and

tag **@DVRPC**

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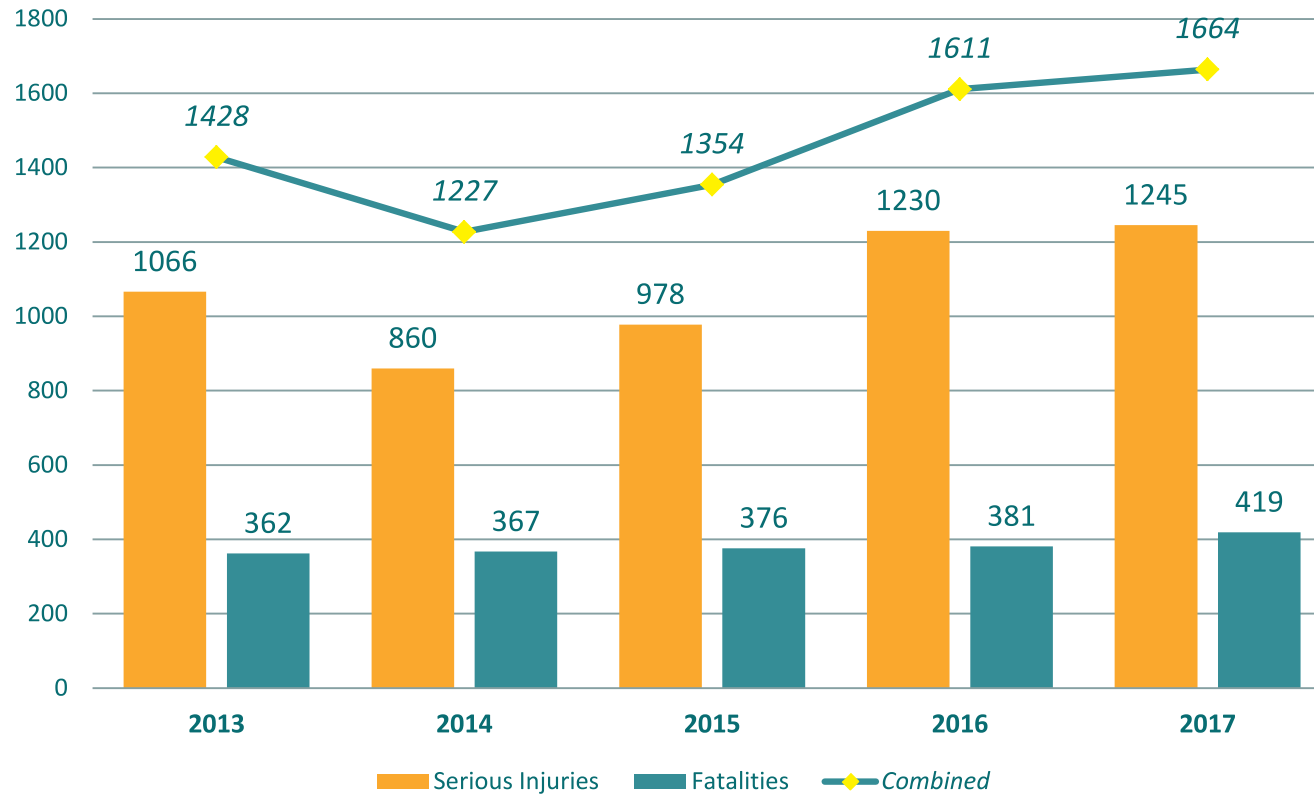
Safe Teen Mobility

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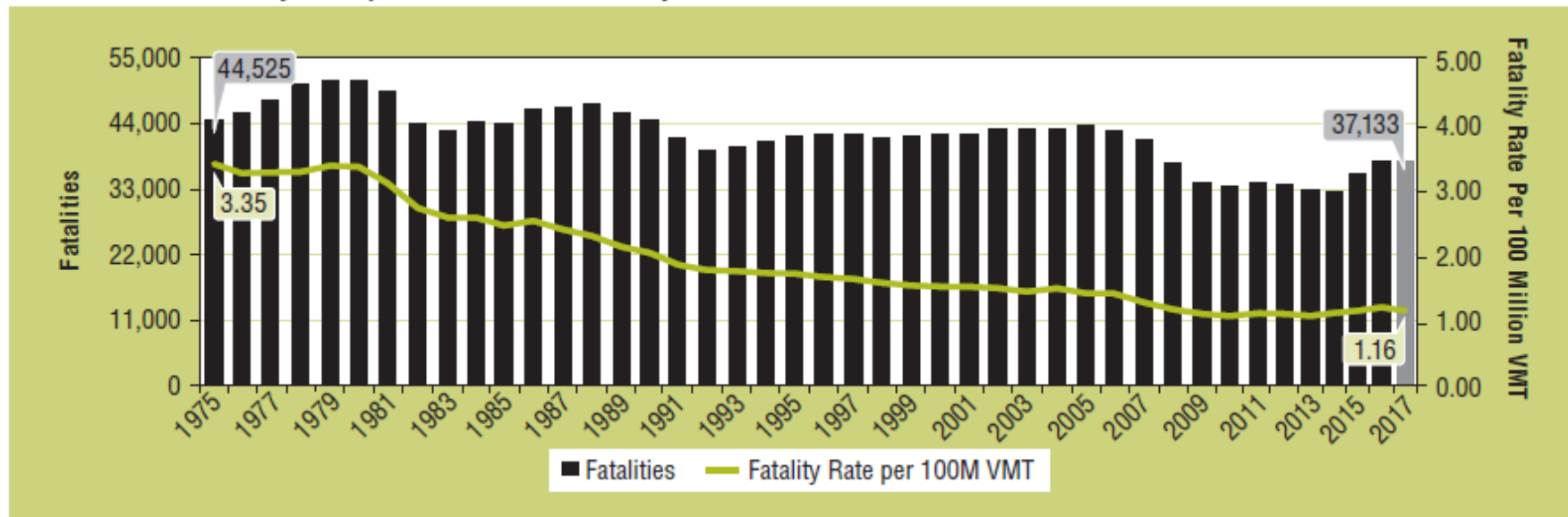
Total KSI - Regional Trend (by person), 2013-2017



NHTSA: U.S. Fatal Motor Vehicle Crashes, 2017

- 37,133 people killed in crashes:
 - 1.8-percent **decrease**, from 37,806 in 2016
 - vehicle miles traveled (VMT) **increased** by 1.2 percent from 2016 to 2017

Fatalities and Fatality Rate per 100 Million VMT, by Year, 1975–2017

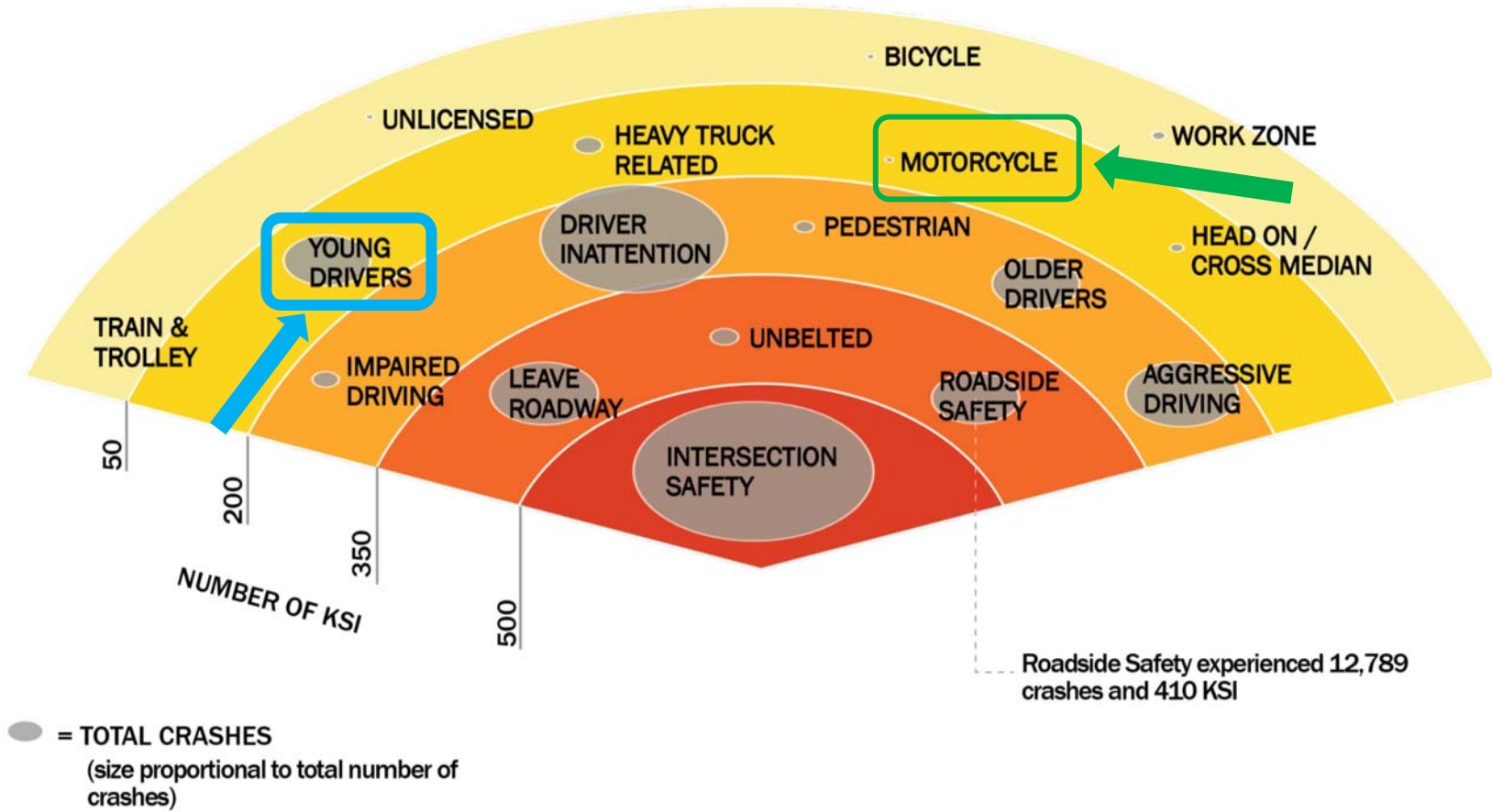


Sources: FARS 1975–2016 Final File, 2017 ARF; Vehicle Miles Traveled (VMT): FHWA.

NHTSA: Facts About Teen Drivers, 2017

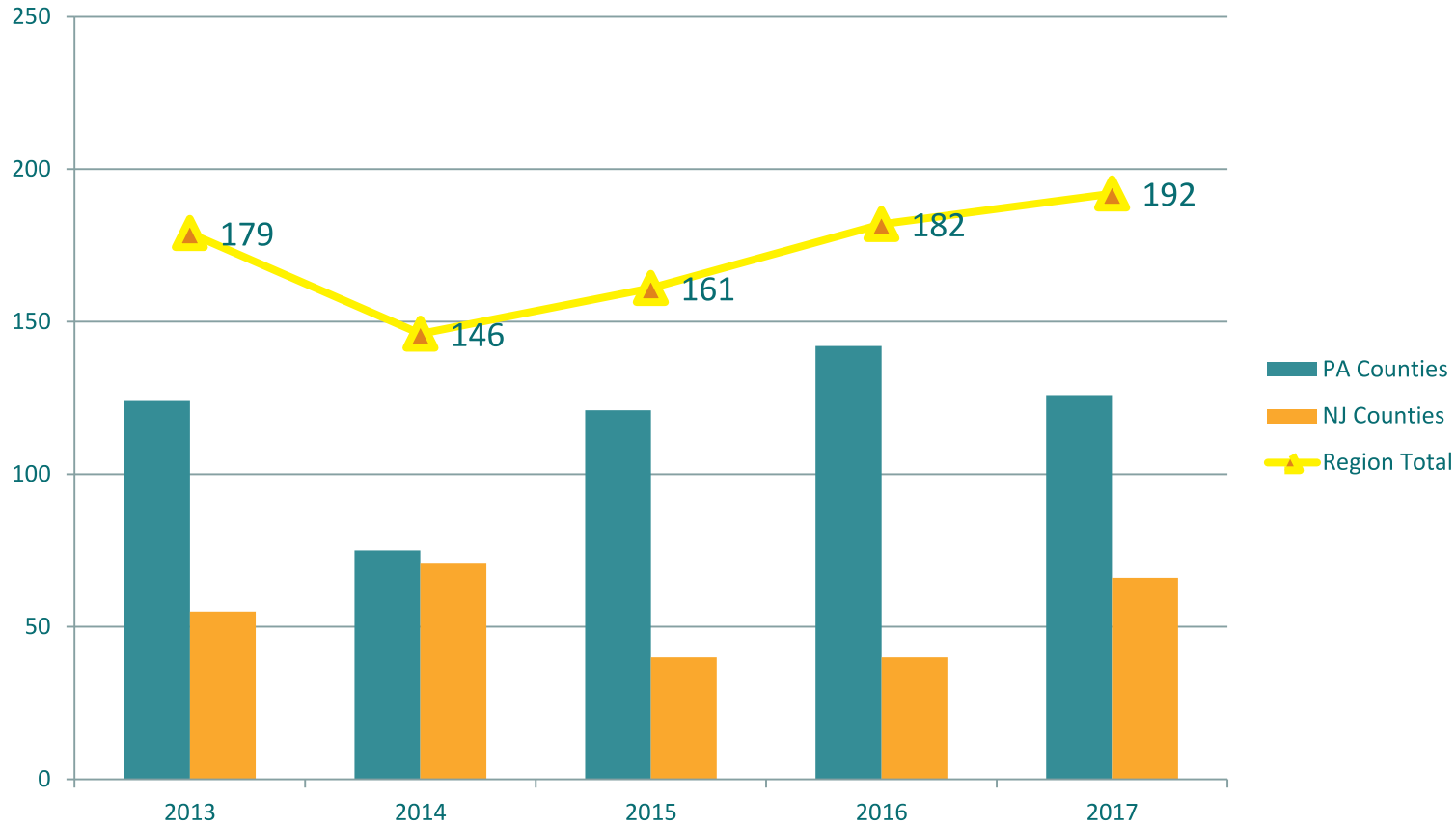
- **1,830**
 - Teen drivers (15-20 yrs) involved in fatal crashes, down 4% from 2016
- **225**
 - Million licensed drivers in the United States in 2017, and Teen drivers accounted for **5.4%** (12.1 million)
- **8.3%**
 - Percent of **all** drivers in fatal crashes were young drivers. However, young drivers were only **5.4%** of all licensed drivers

KSI & Total Crashes by Emphasis Area

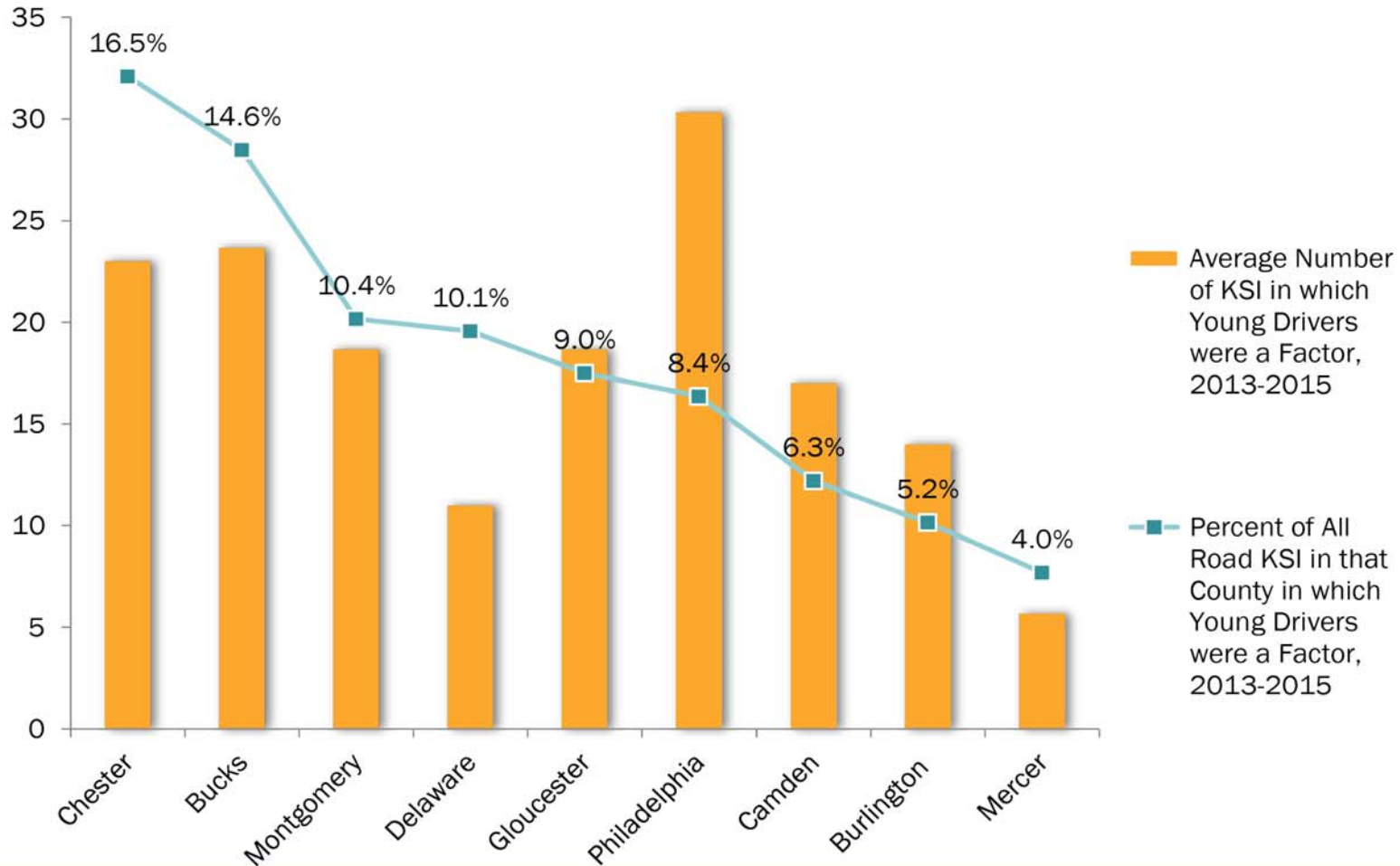


Safe Teen Mobility

Teen-Involved KSI, 5-year Regional Trend

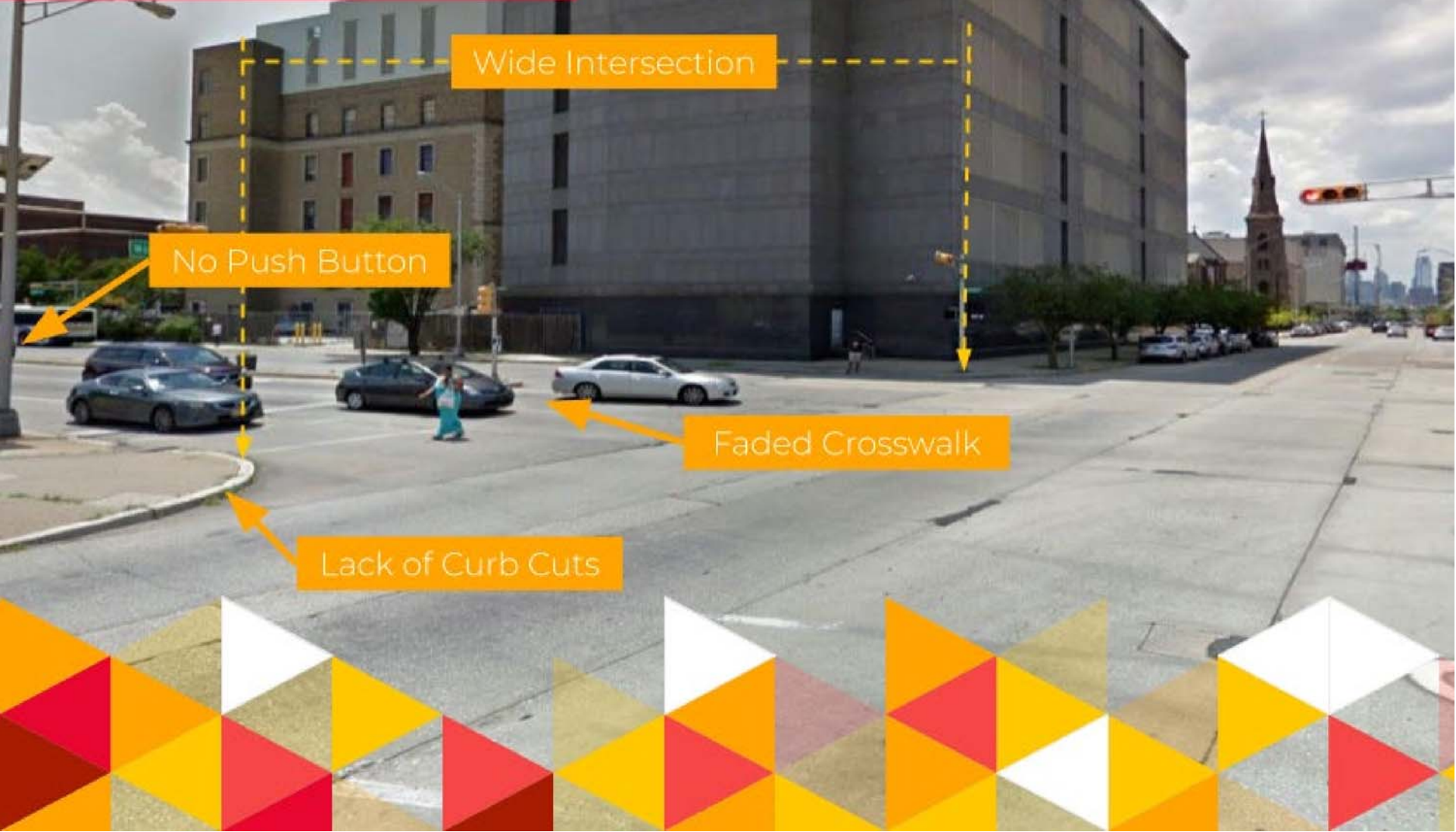


Teen Driver-Involved KSI Compared to Total KSI by County, 2013-2015





8th & Market St.



Priority Recommended Strategies

Teen Driver Safety

- Incentivize schools to better incorporate safety programs, such as **making driver education programs mandatory** and tying parking permits to participation in programs like Share the Keys.[Policy] [Education]
- Identify **locations with large young driver populations and significant crash trends** for consideration of improvements; share this information with municipalities and school districts to advance a safety culture.[Education] [Engineering]
- **Partner with hospitals, universities, and other research groups to study trends unique to young drivers** and develop new educational programs, including ones that emphasize peer-to-peer engagement.[Education]

Speakers

- **Dr. Allison Curry**
CHOP Center for Injury Prevention
- **Stephen Noll**
Bucks County TMA
- **Wendy Berk**
Brain Injury Alliance

REGIONAL
SAFETY
TASK FORCE



Thank You!



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Teen Drivers

Coincidence Ratios by Emphasis Areas

Aggressive driving crashes and Teen Driver crashes:  **1.31**

Emphasis Area	Intersection Safety	Lane Departure	Older Drivers	Young Drivers	Pedestrian & Bicyclist Safety	Impaired Driving	Distracted Driving	Aggressive Driving
Collision Type								
Intersection Safety	—	0.51	1.15	1.04	1.24	0.74	0.86	0.99
Work Zone	0.43	0.99	0.94	0.88	0.44	1.03	0.81	1.76
Lane Departure	0.51	—	0.62	1.01	0.18	2.22	0.89	1.05
Road User								
Older Drivers	1.15	0.62	—	0.64	0.62	0.44	1.09	1.20
Young Drivers	1.04	1.01	0.64	—	0.29	0.57	1.19	1.31
Truck-Related	0.71	0.79	0.92	0.54	0.37	0.48	1.01	1.32
Motorcycle	0.95	1.81	0.66	0.67	0.19	0.97	0.54	0.95
Train/Trolley	1.38	0.35	0.72	0.30	0.76	0.87	0.52	0.33
Pedestrian	1.20	0.20	0.62	0.30	—	0.87	0.41	0.20
Bicycle	1.36	0.14	0.60	0.26	—	0.51	0.47	0.24
Dangerous Behavior								
Impaired Driving	0.74	2.22	0.44	0.57	0.80	—	0.92	0.88
Unbelted	0.97	1.40	0.78	1.03	0.77	2.05	0.70	0.66
Distracted Driving	0.86	0.89	1.09	1.19	0.43	0.92	—	0.77
Aggressive Driving	0.99	1.05	1.20	1.31	0.21	0.88	0.77	—

Sources: PennDOT, NJDOT, DVRPC

The New Jersey Safety and Health Outcomes Data Warehouse:

Advancing Research in Young Driver Safety

DVRPC

September 12, 2019





**Just before
crash**



Crash



**Just after
crash**



**Just before
crash**



Crash

**Just after
crash**

*Time period:
minutes*



Licensing history

Prior adverse events

Individual/group factors

Medical conditions



Crash

● →

- Licensing history
- Prior adverse events
- Individual/group factors
- Medical conditions

● →

- Injury, disability & mortality
- Subsequent crash events
- Short- & long-term care



Licensing history
Prior adverse events
Individual/group factors
Medical conditions

Injury, disability & mortality
Subsequent crash events
Short- & long-term care

Time period:
decades



STATE OF NEW JERSEY
MOTOR VEHICLE COMMISSION



State of New Jersey
Office of Information Technology



2004-2018
N = 11 mil.

2004-2017
N = 7 mil. drivers
100k pass



98% of crash-involved NJ drivers matched to a driver license record

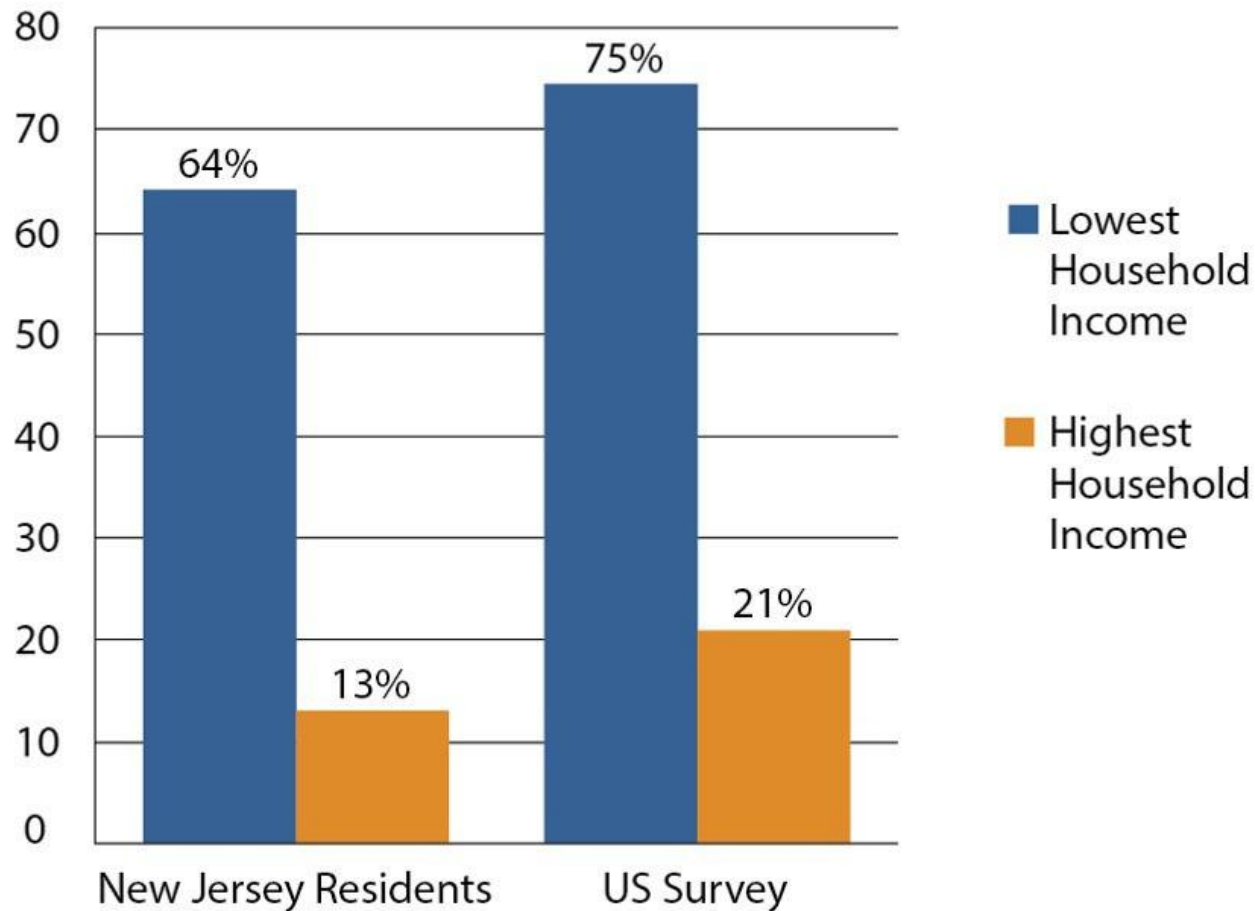
Data Warehouse Provides Ability to:

1. Estimate Population-Level Licensing Rates

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1. Estimate Population-Level Licensing Rates

% Not Licensed by 18th Birthday



Sources: Curry et al., *Accid Anal Prev*, 2015. AAA Foundation for Traffic Safety.

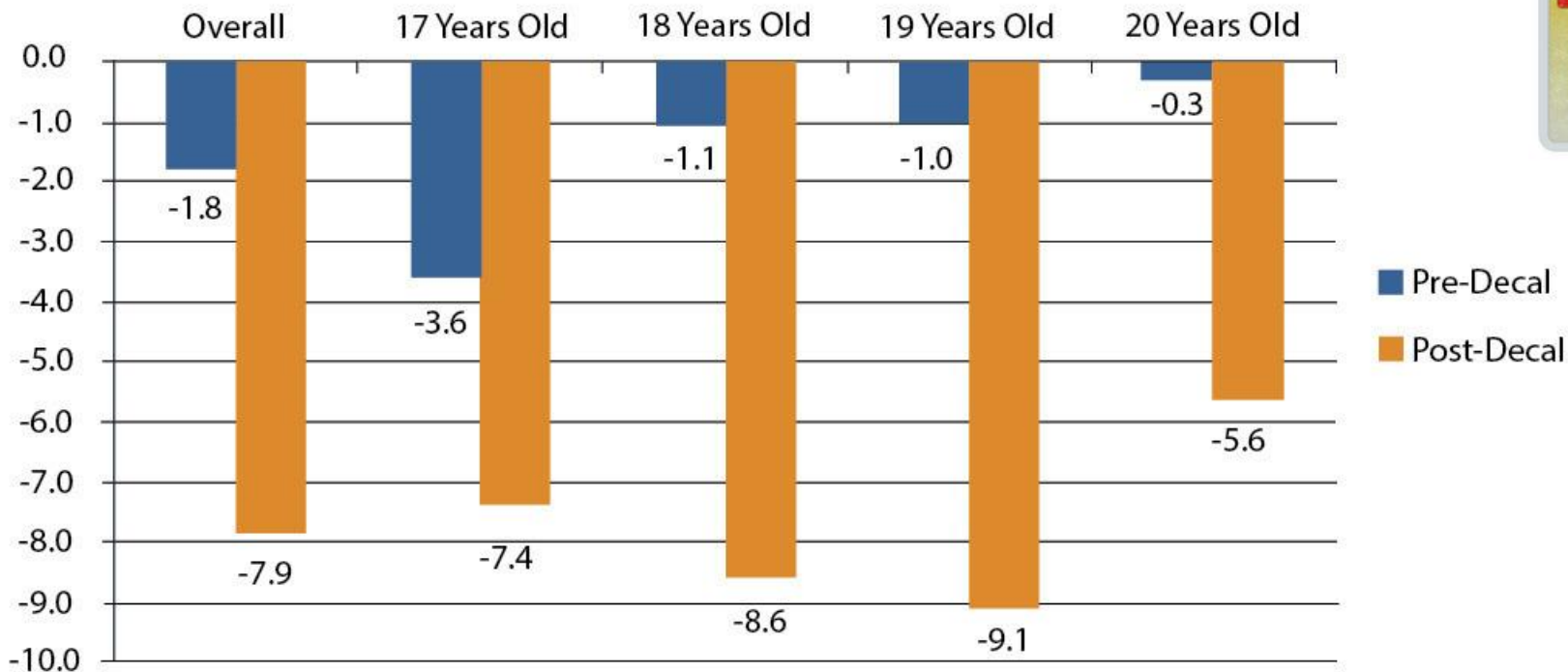
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3. Identify Drivers in Different Licensing Phases

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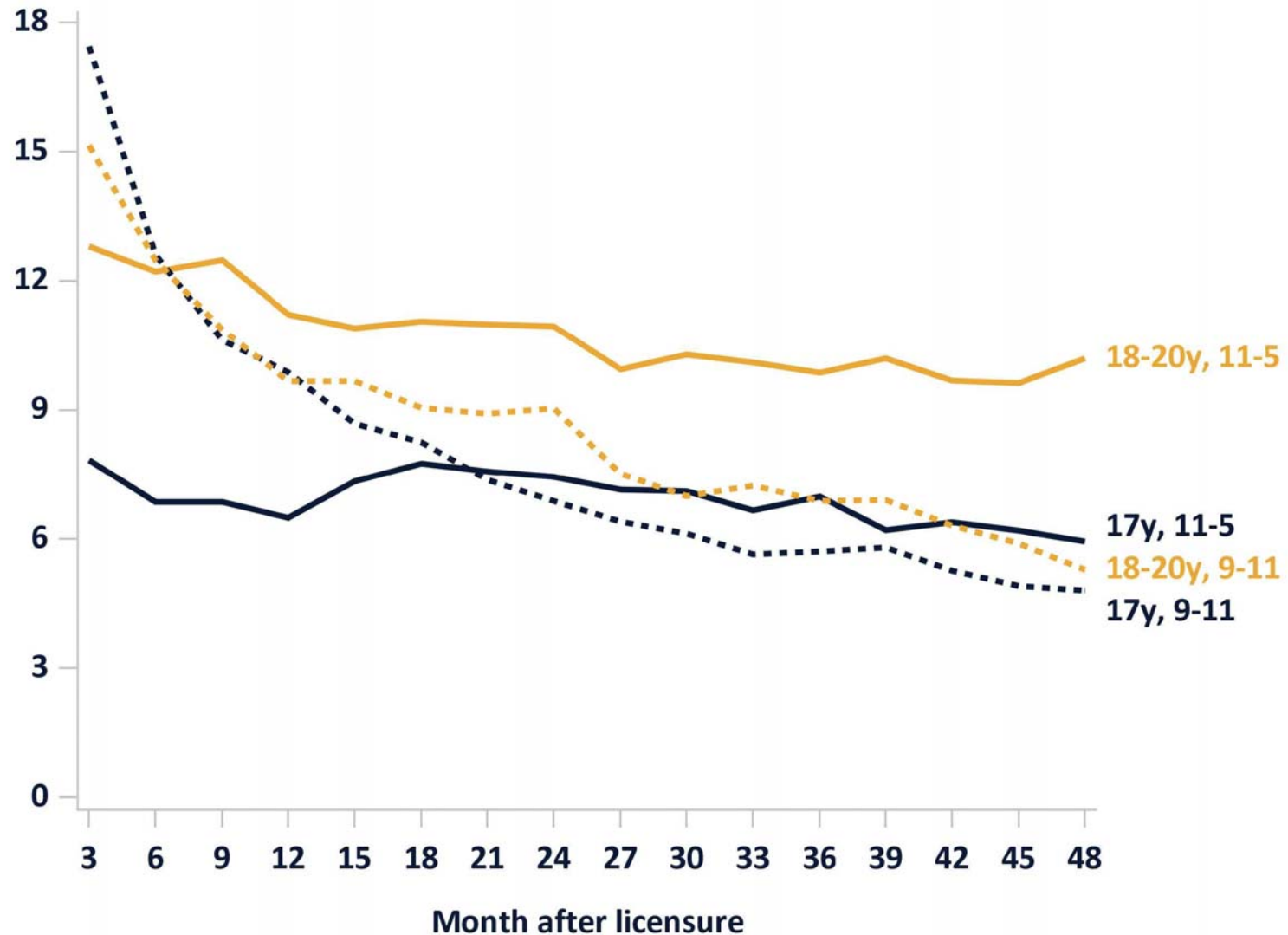
Estimated Annual % Decrease in Intermediate Driver Crash Rates (Per 10,000 Drivers)

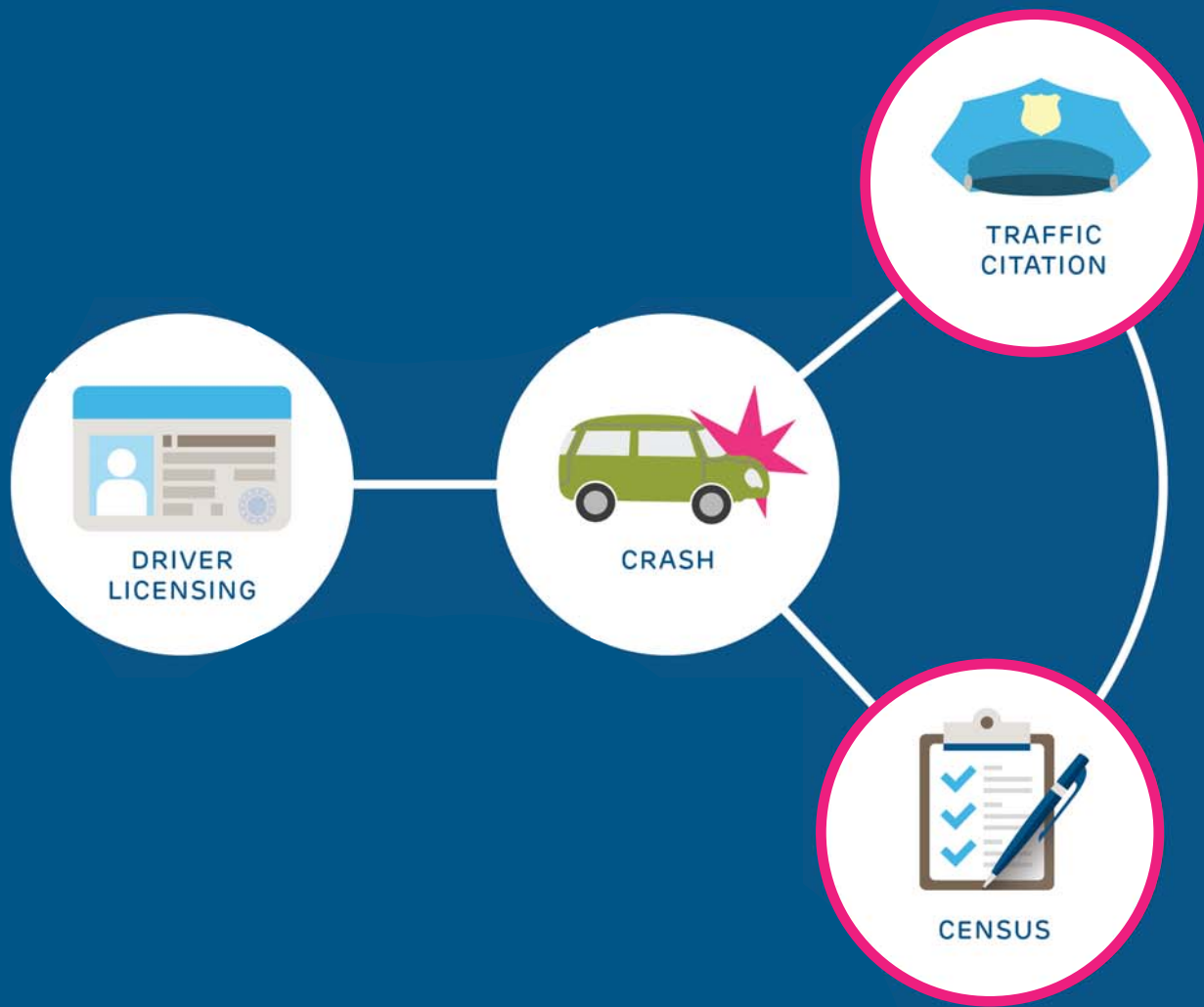


Source: Curry et al., Am J Prev Med, 2015

Data Warehouse Provides Ability to:

4. Examine Crash Rates by Time Since Licensure





DRIVER
LICENSING



CRASH

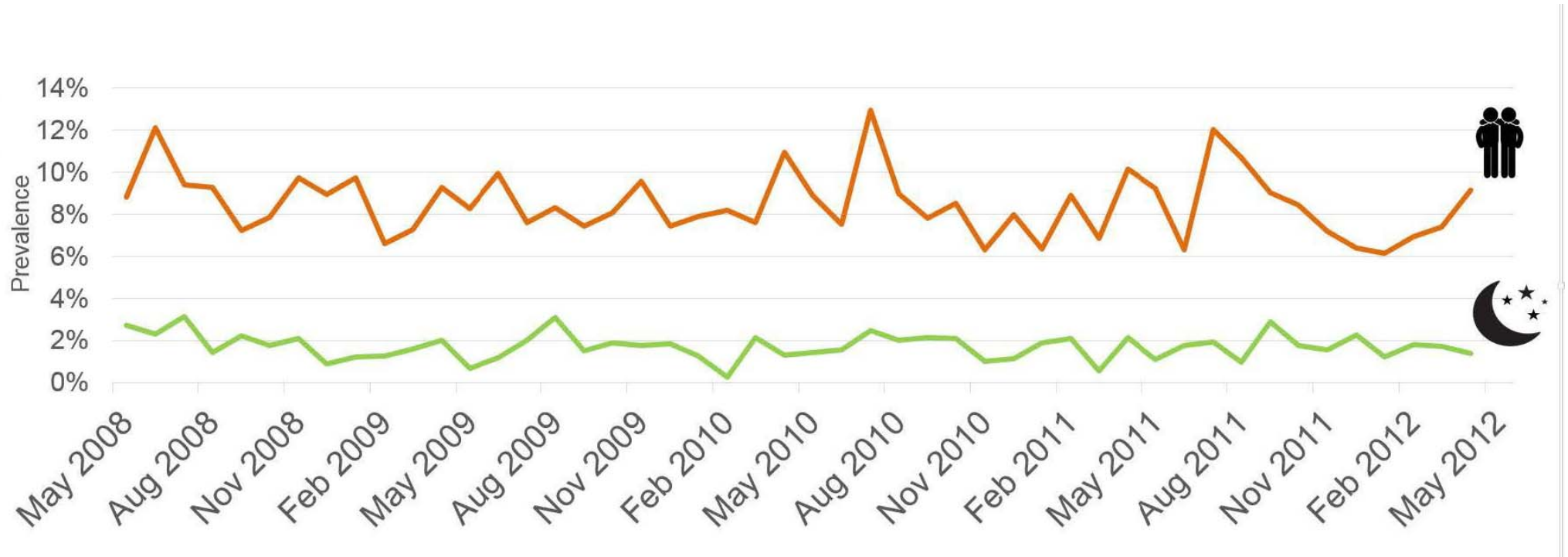


TRAFFIC
CITATION



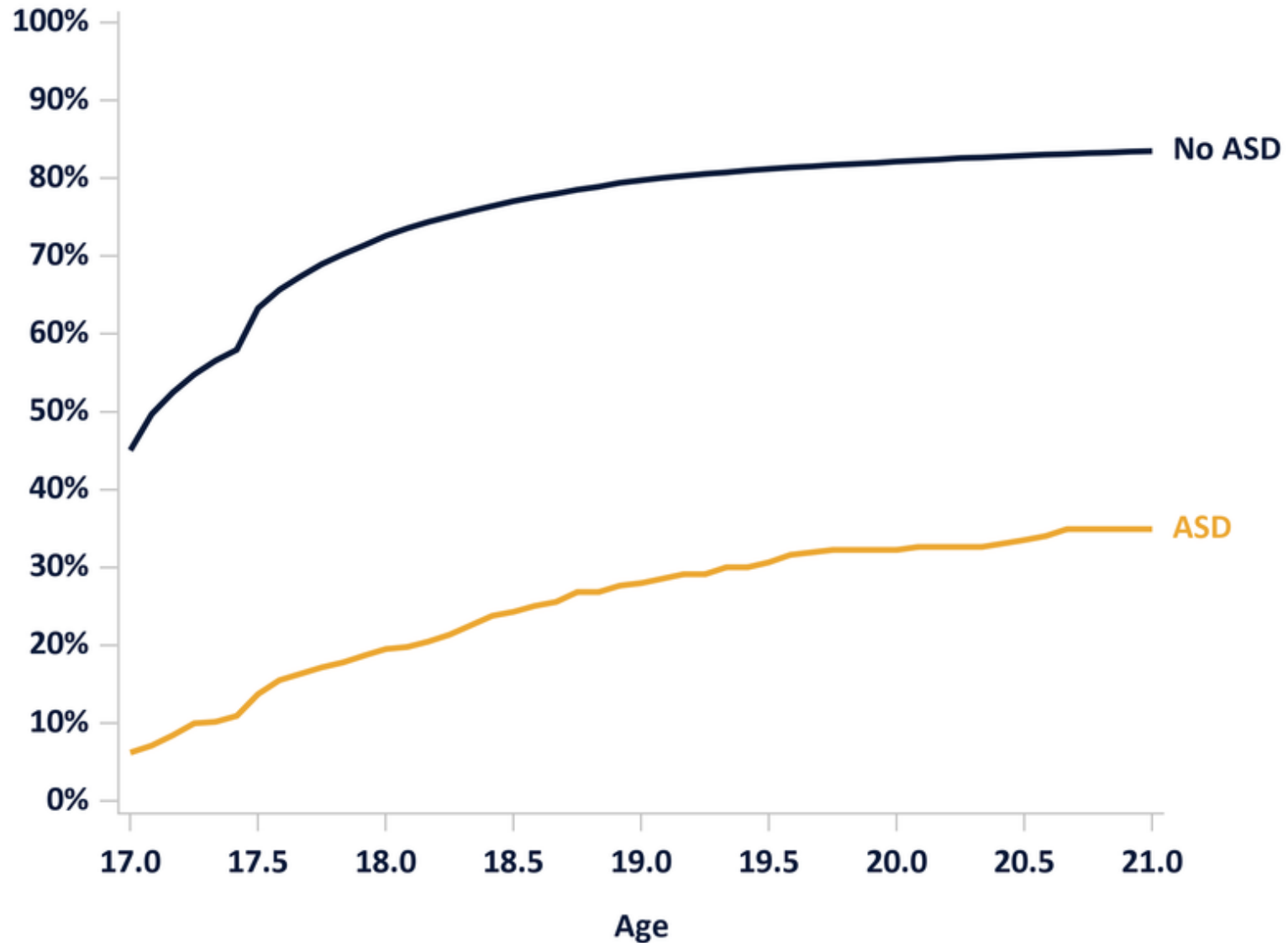
CENSUS

Non-Compliance with GDL Nighttime and Passenger Restrictions Among NJ Intermediate Drivers, 2008-2012



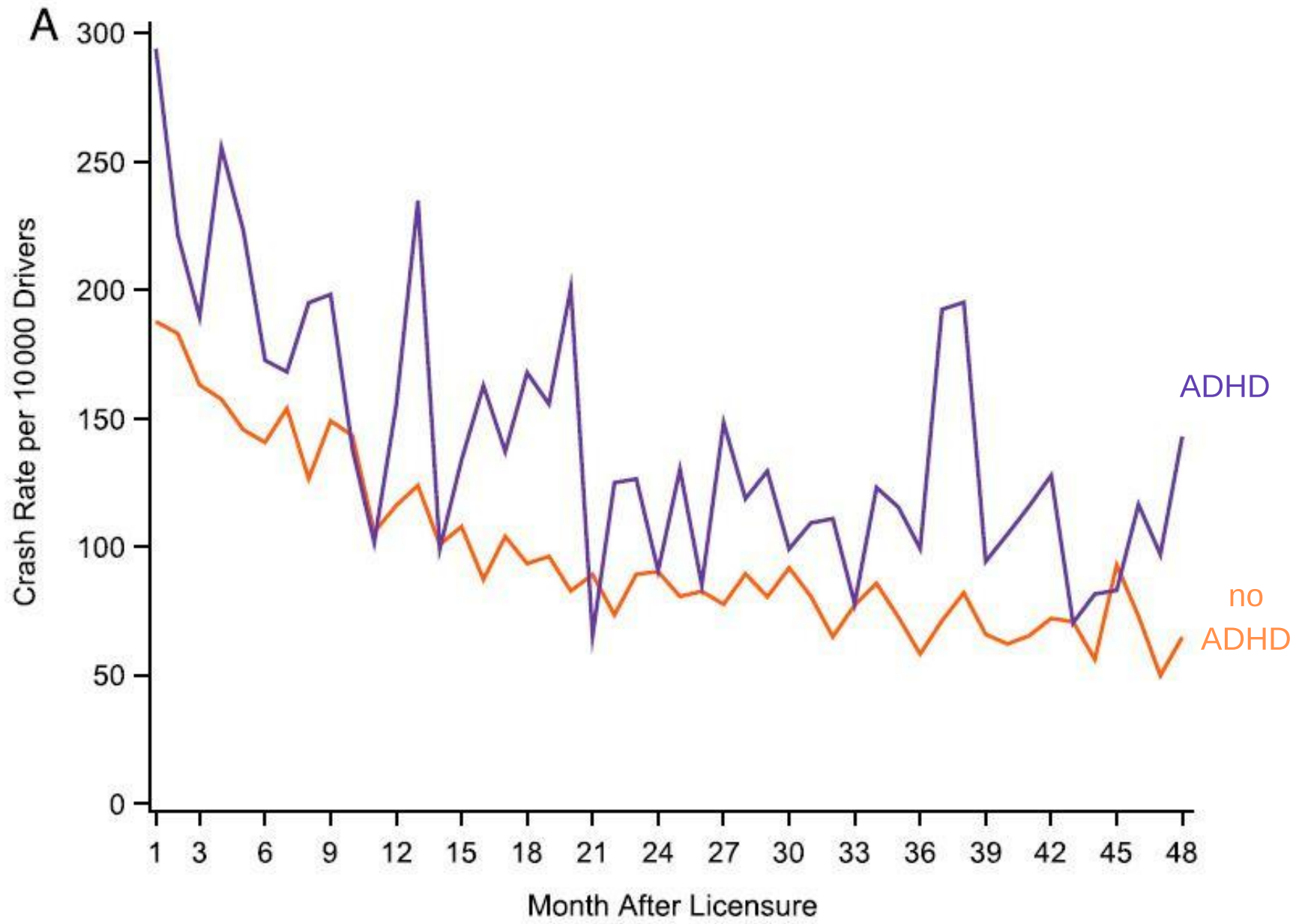


1 in 3 Autistic Adolescents Obtain a Drivers' License by Age 21

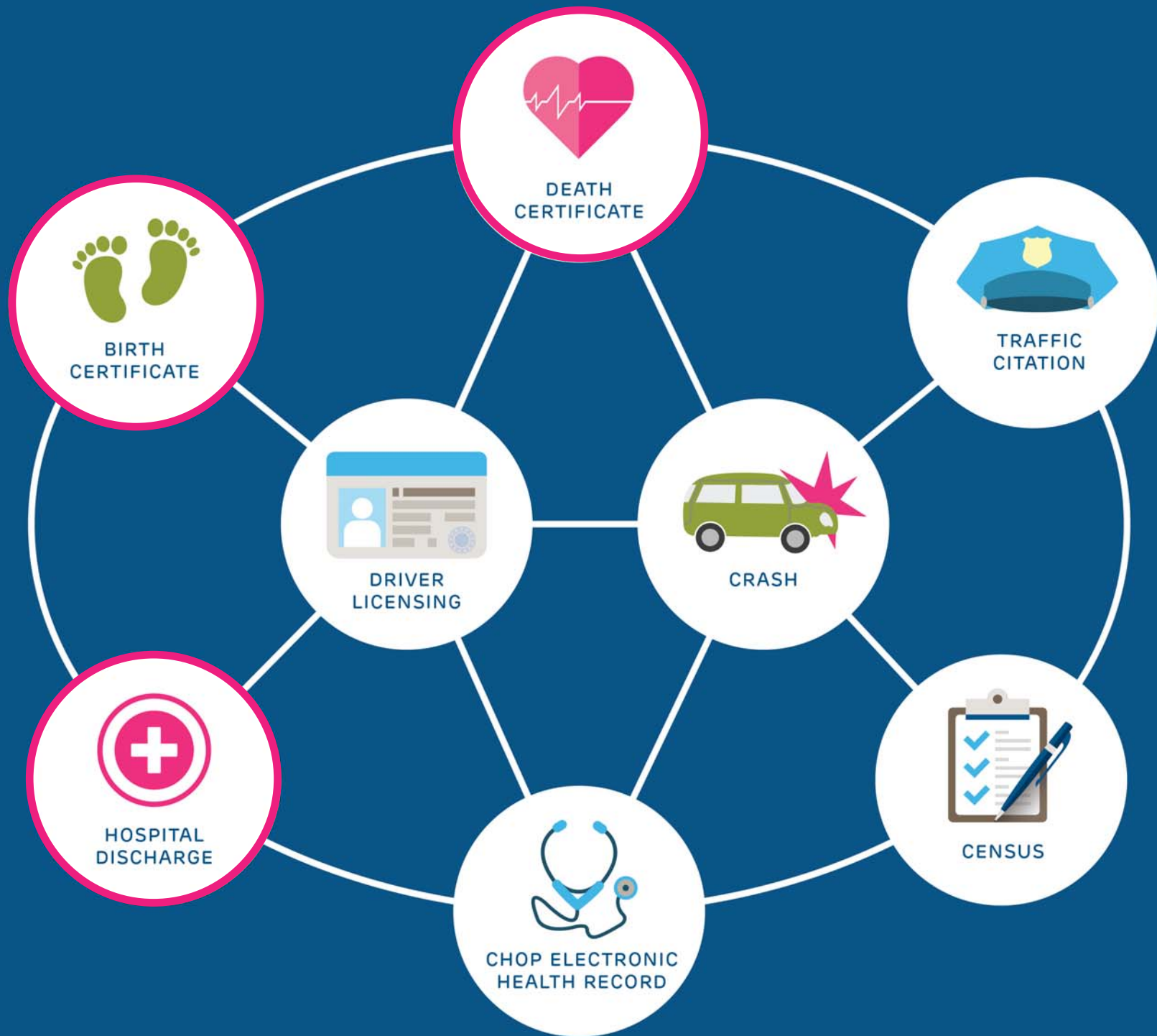


Source: Curry et al., Autism, 2017

Increased Crash Risk among Young Drivers with ADHD



Source: Curry et al., JAMA Pediatrics, 2017



Additional Questions in Teen Driving Safety

Socioeconomic disparities in crash rates - ***geocoded data***

How prior events affect future crash risk - ***longitudinal nature of data***

Vehicle safety - ***Vehicle Identification Number***

Other Areas of Traffic Safety Research

Effect of medications on driving - *linkage with Medicare/Medicaid data*

Child passenger safety - *compliance with NJ law rear-facing until age 2*

Pedestrian and bicycle injuries - *location of crash from home*

- Child Occupant Protection
- Concussion and Head Injury
- Crash Avoidance and Autonomous Vehicles
- Safe Mobility
- Teen Driving Safety
- Traumatic Stress
- Violence Prevention Initiative

New Jersey Safety and Health Outcomes (NJ-SHO) Data Warehouse

The New Jersey Safety and Health Outcomes (NJ-SHO) Data Warehouse tool is being used by CIRP researchers to advance safety and health research and associated epidemiologic methods through novel administrative data linkages. Led by **Allison E. Curry, PhD, MPH**, the research team developed a comprehensive data warehouse that includes the full licensing, citation, and crash history of every New Jersey driver between 2004 and 2014.

To provide further information about these NJ residents and drivers, we also linked zip-code level indicators from the Census and electronic health records for 150,000 pediatric patients of the CHOP Healthcare Network. We are also currently in the process of linking statewide birth certificate data, death certificate data, and hospital and emergency department discharge data.

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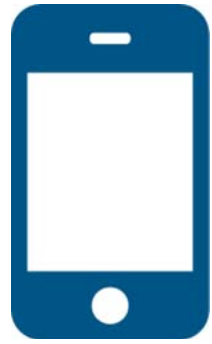
Join Our Team

View CIRP's employment opportunities

New Jersey Traffic Safety Outcomes (NJ-TSO) Data Warehouse



ety-health-outcomes-data-warehouse



Take a picture to learn more about NJ-SHO on our web page

Acknowledgements & Funding

NJ Motor Vehicle Commission, Dept of Transportation, Information Technology, Division of Highway Traffic Safety, Dept. of Health

National Institutes of Health

NSF / Center for Child Injury Prevention Studies

Robert Wood Johnson Foundation

Children's Hospital of Philadelphia

Brown University

Brain Institute Alliance of New Jersey

AAA Foundation for Traffic Safety

State Farm Insurance Company

Allison E. Curry, PhD, MPH
currya@email.chop.edu



Effectively Engaging Teens to Promote Traffic Safety

*U Got Brains Champion Schools Program:
Celebrating Ten Years of Teens
Teaching Teens in NJ*

Wendy Berk
Brain Injury Alliance of New Jersey



**Brain Injury
Alliance**
NEW JERSEY



New Jersey 2006:

- ▶ **6 out of 100** teens involved in a crash
- ▶ **Teen driving crash every 9 minutes**
- ▶ **48 teen drivers and 19 passengers died**
 - **6% ↑** from 2005

**Result: 2007– NJ Teen Driver Study
Commission Created**



How did BIANJ Get Involved?

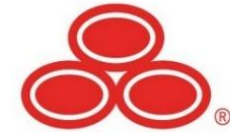
- ▶ Car crashes are #1 cause of BI in teens
- ▶ Existing prevention programs were not resonating with teens
- ▶ Teen Focus Groups
- ▶ NJDHTS Funding
- ▶ Private support



Program Sponsors



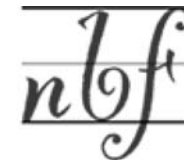
State Farm



VOLVO



AT&T



nikhil badlani foundation

About the U Got Brains Champion Schools Program

- ▶ Peer to peer
- ▶ Faculty Advisor
- ▶ Runs from September–May
- ▶ Cash stipend provided
- ▶ Midterm/final reports
- ▶ Awards Showcase
- ▶ Evaluation



By the Numbers:

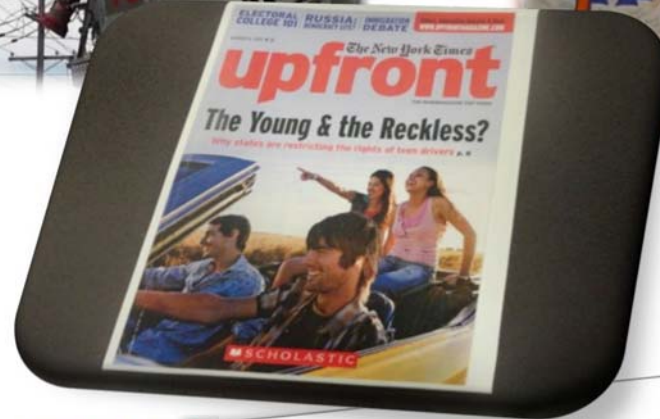


- ▶ **Started in 2010**
 - 19 schools
 - 14 counties
 - Approximately 25,000 students

- ▶ **2018–19**
 - 64 schools
 - 18 counties
 - Approximately 78,000 students

- ▶ **Program Totals**
 - 143 schools
 - 21 counties (statewide)
 - Approximately 550,000 students

Student Projects



Judging

- ▶ Each project is judged by a panel of experts in transportation field
- ▶ Measured on 10 criteria ranging from impact, thoroughness, execution, use of media, etc.
- ▶ Grand Prize winners have received a driving simulator for their school



Awards Showcase





Awards Showcase




CHOP Evaluation of Program

2013–2014: Children’s Hospital of Philadelphia Research Institute Evaluates Program

► Findings:






- Teens reported engaging in safer driving behaviors
 - Peers engaged in safer driving behaviors
 -  social pressure from friends to ride & drive safely
 - More positive driving safety culture at school
- 

BIANJ Annual Evaluation 2018–19 Student Survey Results

- ▶ **Students' Report: (177 responses)**
 - **89%** agree or strongly agree that they are **safer drivers**
 - **92%** agree or strongly agree that they are **safer passengers**
 - **94%** think the program offers the **opportunity to talk about safe driving in their schools and promote safe driving practices**
- 

2018–19 Student Survey Results

► Impact on Student Driving Behaviors:

- **Always Drive Focused:**
 - Before–44% After–63% **19%** 
- **Never Speed:**
 - Before–24% After–48% **24%** 
- **Always Follow NJ Laws for New Drivers:**
 - Before–58% After–75% **17%** 
- **Always Wear Seat Belts (drivers):**
 - Before–75% After–80% **5%** 
- **Always Wear Seat Belts (passengers)**
 - Before–59% After–77% **18%** 

Comments from Advisors:

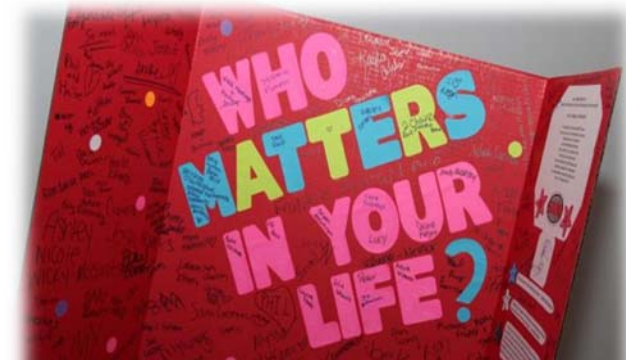
“When we first started this program 3 years ago the seatbelt use among student drivers was very low, around 60%. This year we had 98% seat belt compliance!”



Comments from Advisors:

“We helped with the Walking School Bus in the elementary schools. This was a great advantage because the younger kids are starting to find out about the program.”

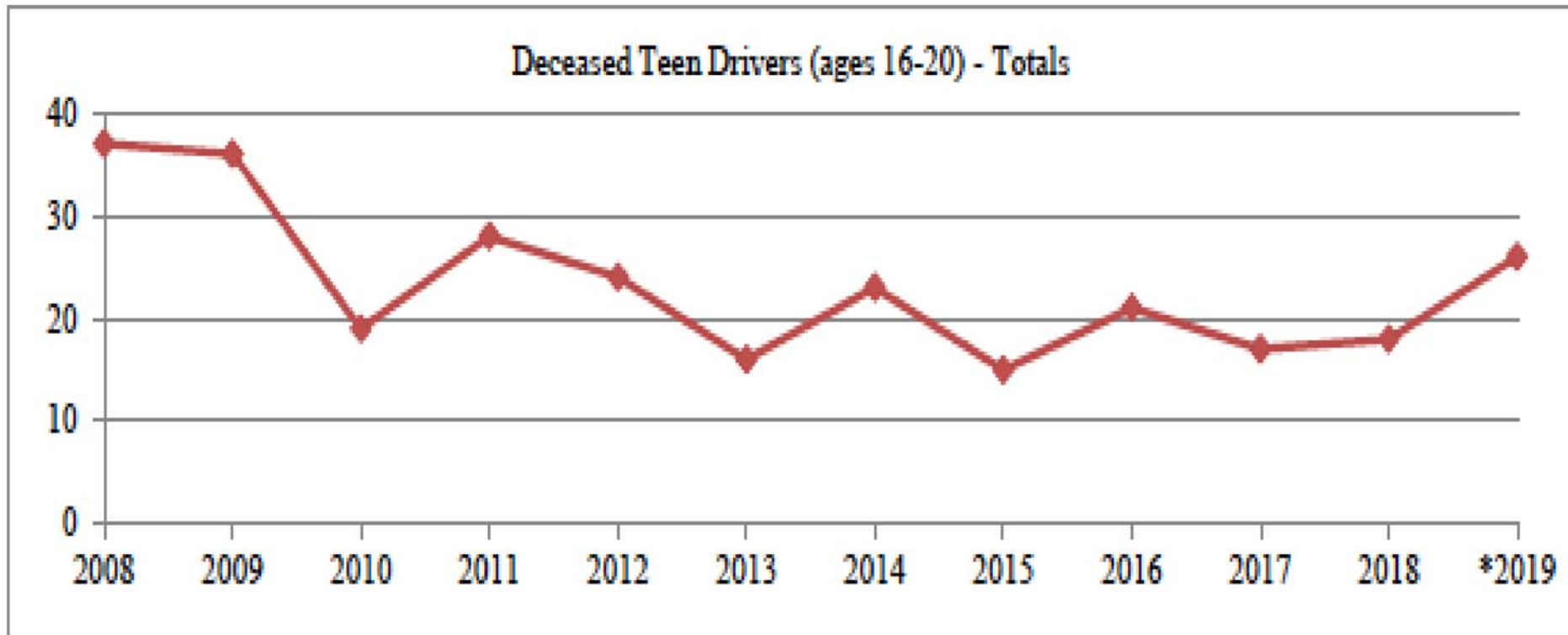
“Students found their voices to become advocates for promoting an issue so important to their lives.”



NJ Timeline

- ▶ **March 2008– NJTDSC recommendations released**
 - ▶ **May 2010–GDL laws strengthened**
 - ▶ **September 2010–UGB Champion Schools program introduced**
 - ▶ **January 2011–NJTSDC formed**
- 

NJ Teen Crash Fatalities–Drivers



As reported to the NJSP Fatal Accident Investigation Unit through June 30, 2019

*2019 Numbers are Projections Only


NJ Teen Crash Fatalities- Passengers



As reported to the NJSP Fatal Accident Investigation Unit through June 30, 2019

*2019 Numbers are Projections Only

Where Are We Now?

- ▶ **Statewide Network of Schools**
 - ▶ **Student Ambassadors**
 - ▶ **Culture of Driving Safety within Schools**
 - ▶ **Alumni of Program Continue Advocacy**
- 

**U GOT
BRAINS?**

**10th
Anniversary**

**CHAMPION
SCHOOLS
PROGRAM**

Celebrating 10 years

- ▶ Year long celebration
- ▶ Cash prizes
- ▶ Surprises





“I believe that peer to peer teaching and involvement is the best way to promote teen safety driver awareness. Having a friend or fellow student promoting a cause will have more of an impact on teens than a teacher/administrator”.

2017–18 Faculty Advisor

Become a Champion School!

<https://jerseydrives.com/csp-application/>



Thank you!

825 Georges Road, 2nd Floor
North Brunswick, NJ 08902

wberk@bianj.org

732-745-0200





TIP - LRP

Project Benefit Evaluation Criteria

Presentation to the RSTF | September 12, 2019



Evaluation Criteria

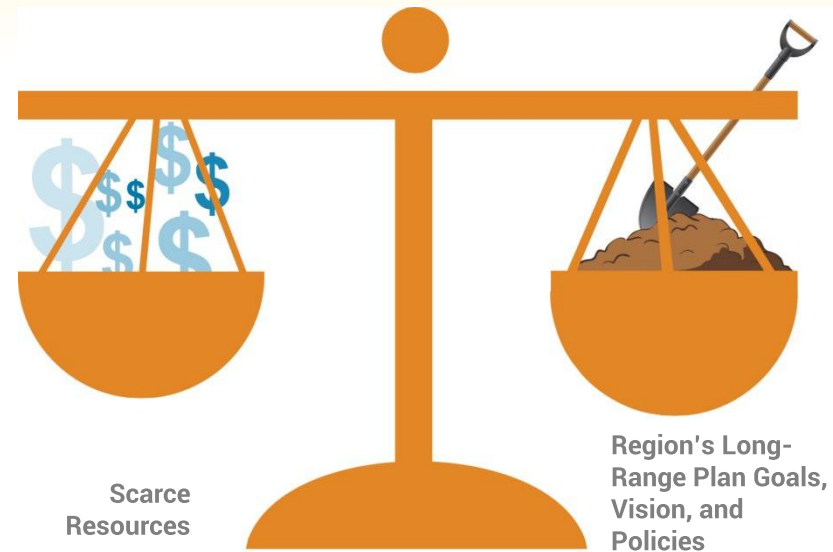


NJ | PA



TIP-LRP Benefit Evaluation Goals

- ▶ How do candidate projects:
 - Align with vision and goals of *Connections 2045 Long-Range Plan for Greater Philadelphia*?
 - Support FHWA and FTA Performance Measures?
- ▶ Data-informed decision making
- ▶ Highlight / evaluate trade-offs
- ▶ Develop **balanced program of multimodal investments**



Other considerations:

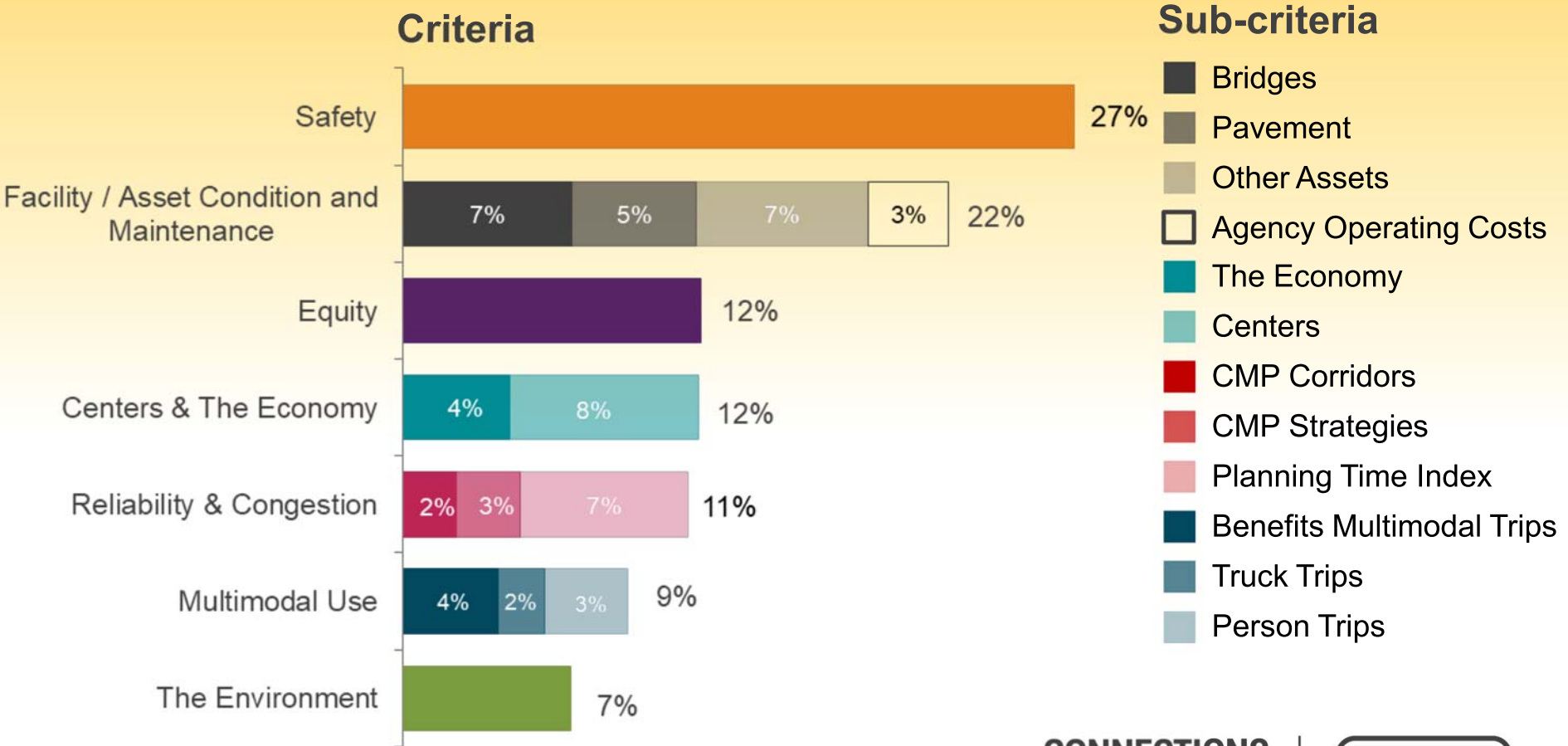
- ▶ Geographic equity
- ▶ Regional and local priorities
- ▶ Political support
- ▶ Funding eligibility
- ▶ Performance-based planning and asset management
- ▶ Project readiness
- ▶ Ability to leverage other investments

Opportunities for Improvement



- ▶ Increase stakeholder understanding & confidence
- ▶ More closely align TIP and LRP evaluations
 - Align with CMP, CEDS, and partner priorities
- ▶ Add scale, person trips, and reliability
- ▶ Use quantitative data
- ▶ Maintain / enhance multimodal approach

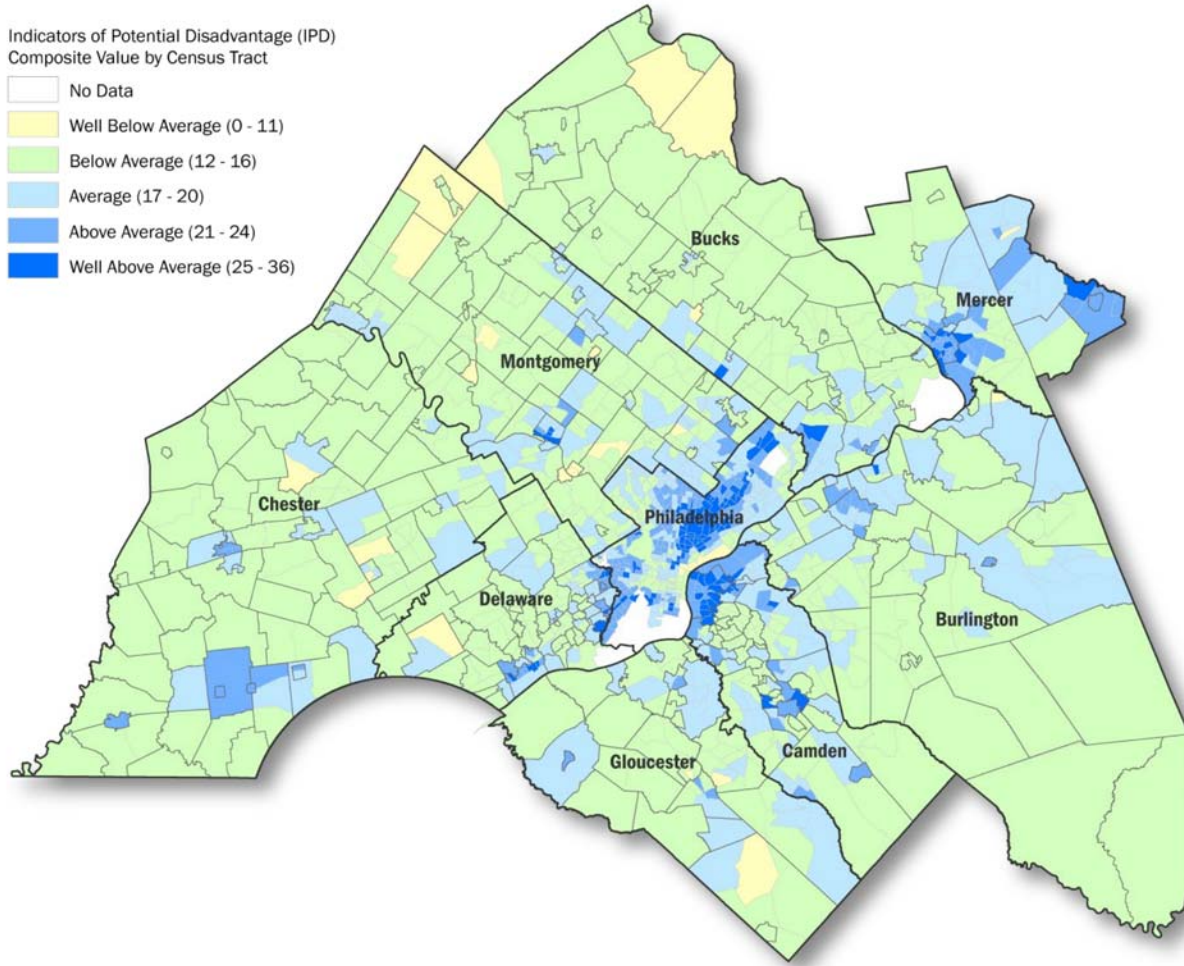
Criteria Overview



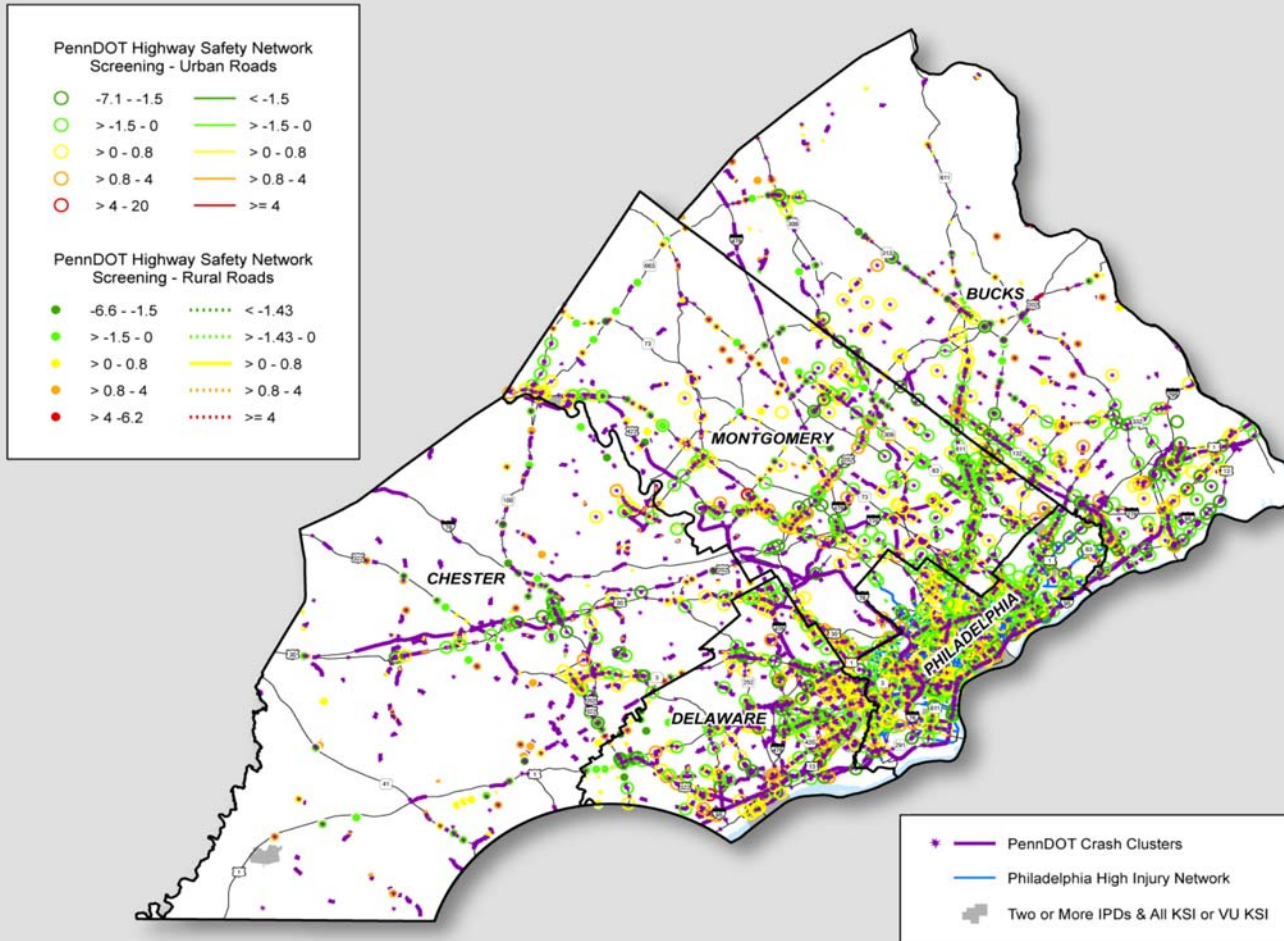
CONNECTIONS
2045



[12%] Equity



[27%] Safety



Safety Strategy Research



► Safety strategies and data layers

– FHWA Crash Modification Factors Clearinghouse



Roadside Design Improvement at Curves	Reduced Left-Turn Conflict Intersections	Systemic Application of Multiple Low Cost Countermeasures at Stop-Controlled Intersections	Leading Pedestrian Interval	Local Road Safety Plan
USLIMITS2	Enhanced Delineation and Friction for Horizontal Curves	Longitudinal Rumble Strips and Stripes on Two-Lane Roads	Median Barrier	Safety Edges _M
Backplates with Retroreflective Borders	Corridor Access Management	Dedicated Left- and Right-Turn Lanes at Intersections	Roundabouts	Yellow Change Intervals
Medians and Pedestrian Crossing Islands in Urban and Suburban Areas	Pedestrian Hybrid Beacon	Road Diet	Walkways	Road Safety Audit

SOURCE: FHWA

CONNECTIONS
2045



CONNECTIONS
2045



Thank You

Connect With Us!

