

Urban freight and road safety in the era of e-commerce

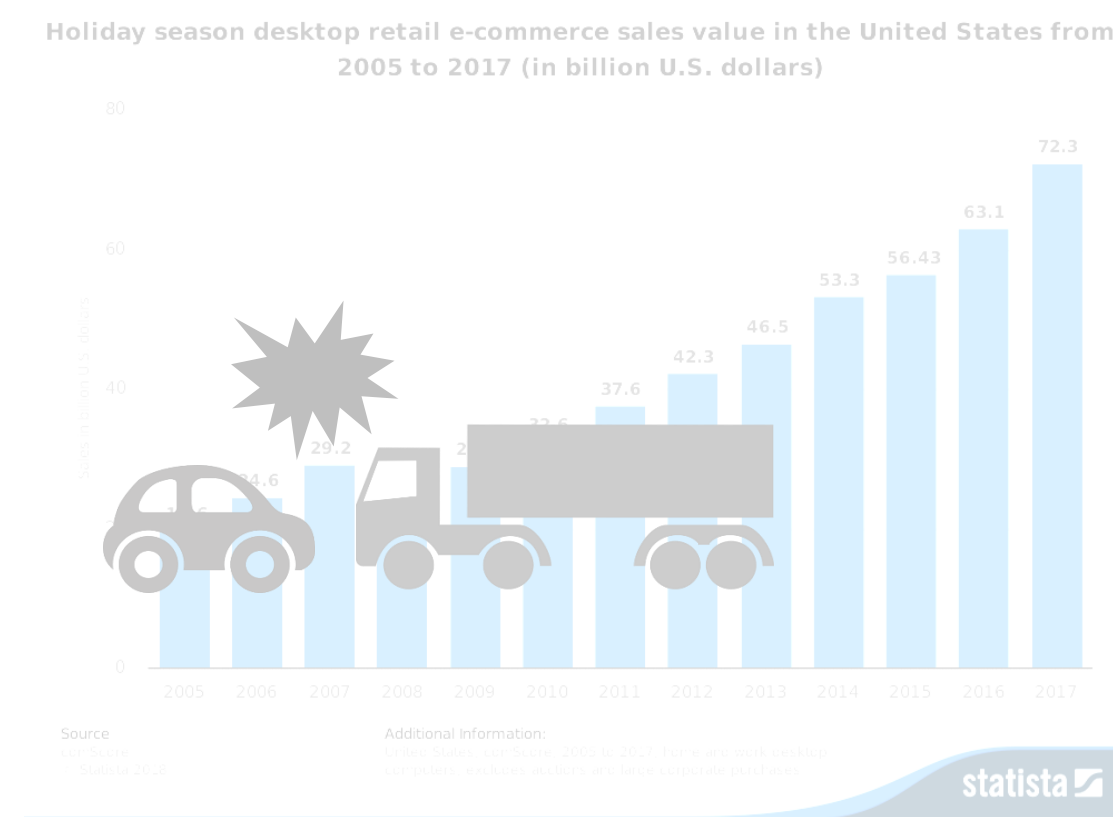
Noreen McDonald, Quan Yuan, and Becky Naumann

Introduction

- Traffic accidents as leading cause of death
- Declining overall fatal crash rates
- Changing landscape of freight movement

=> Major research question:

What are the recent trends in urban freight-related safety characteristics?



Methods

Definition



Data



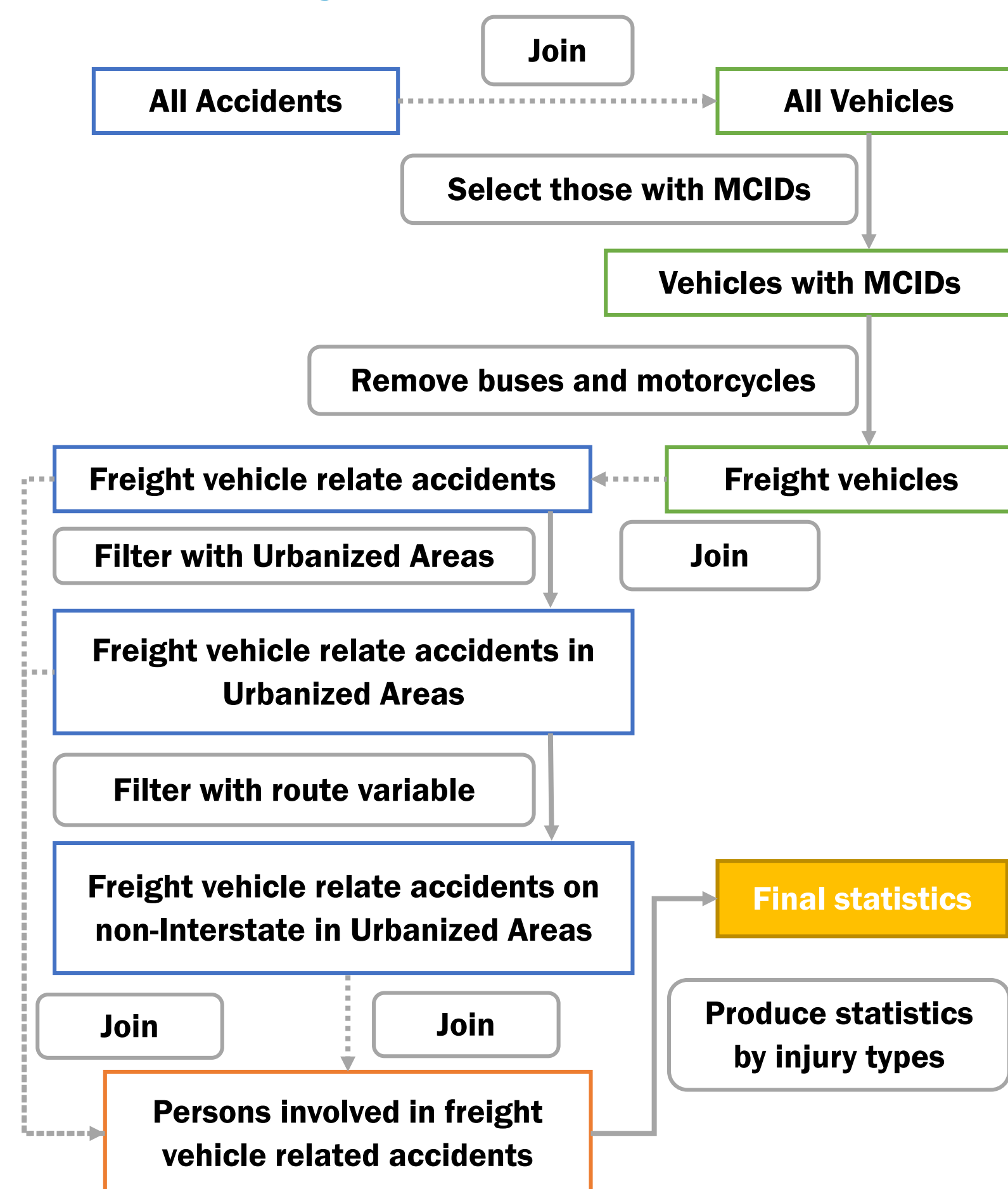
- Fatal Analysis Reporting System (FARS)
- National Automotive Sampling System (NASS) General Estimates System (GES)

- Travel Volume Trends Reports
- TIGER/Line Shapefiles

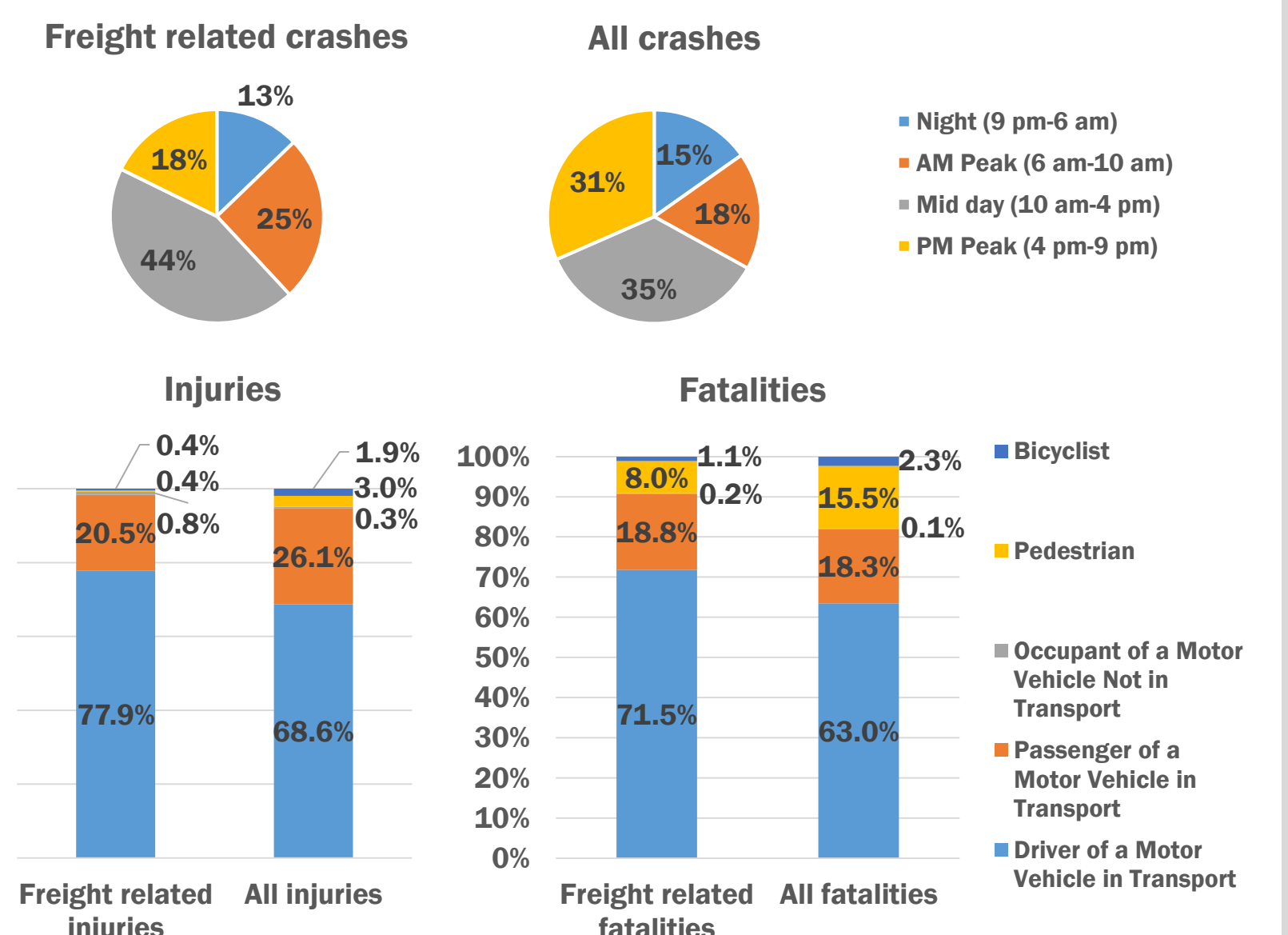
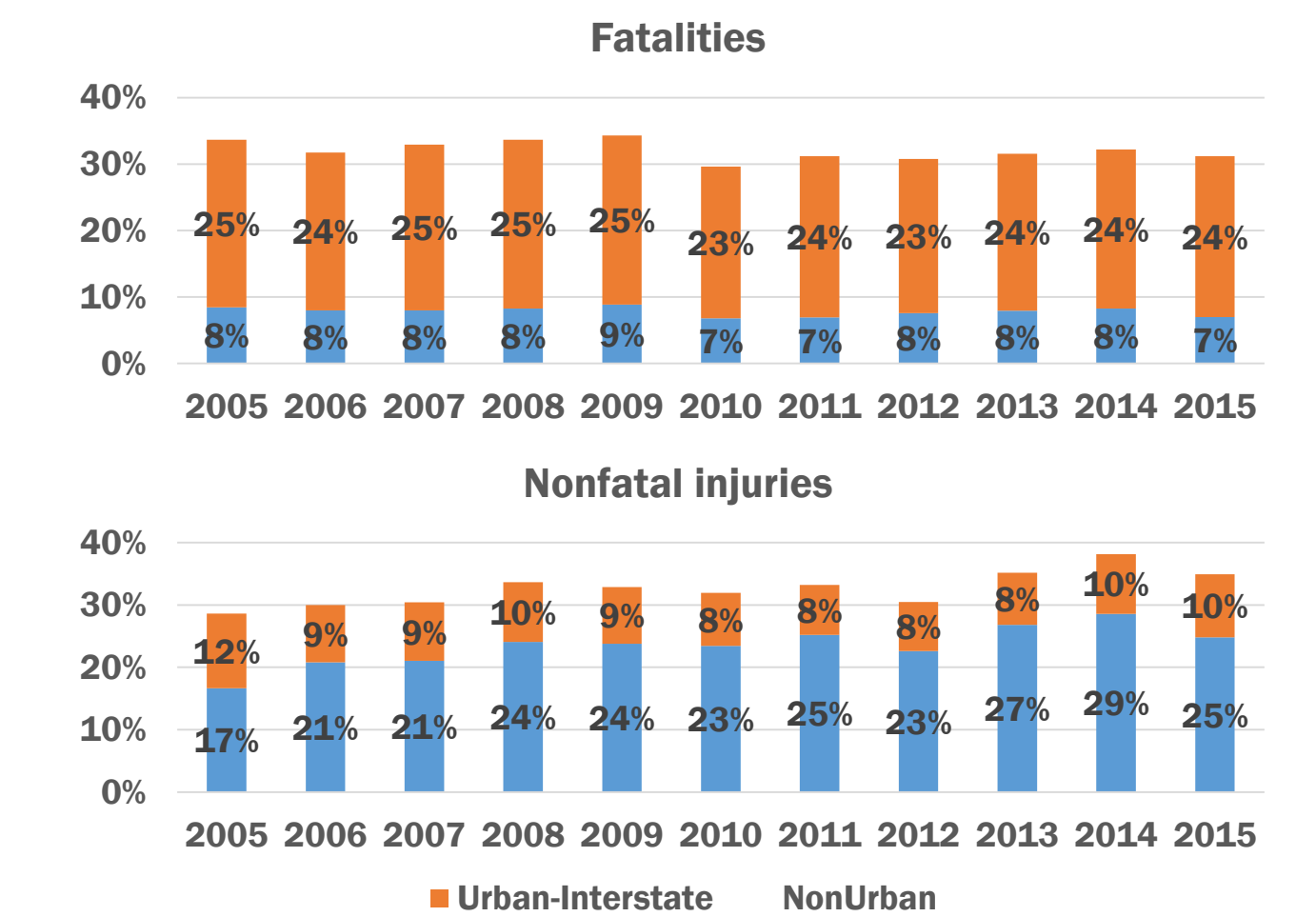
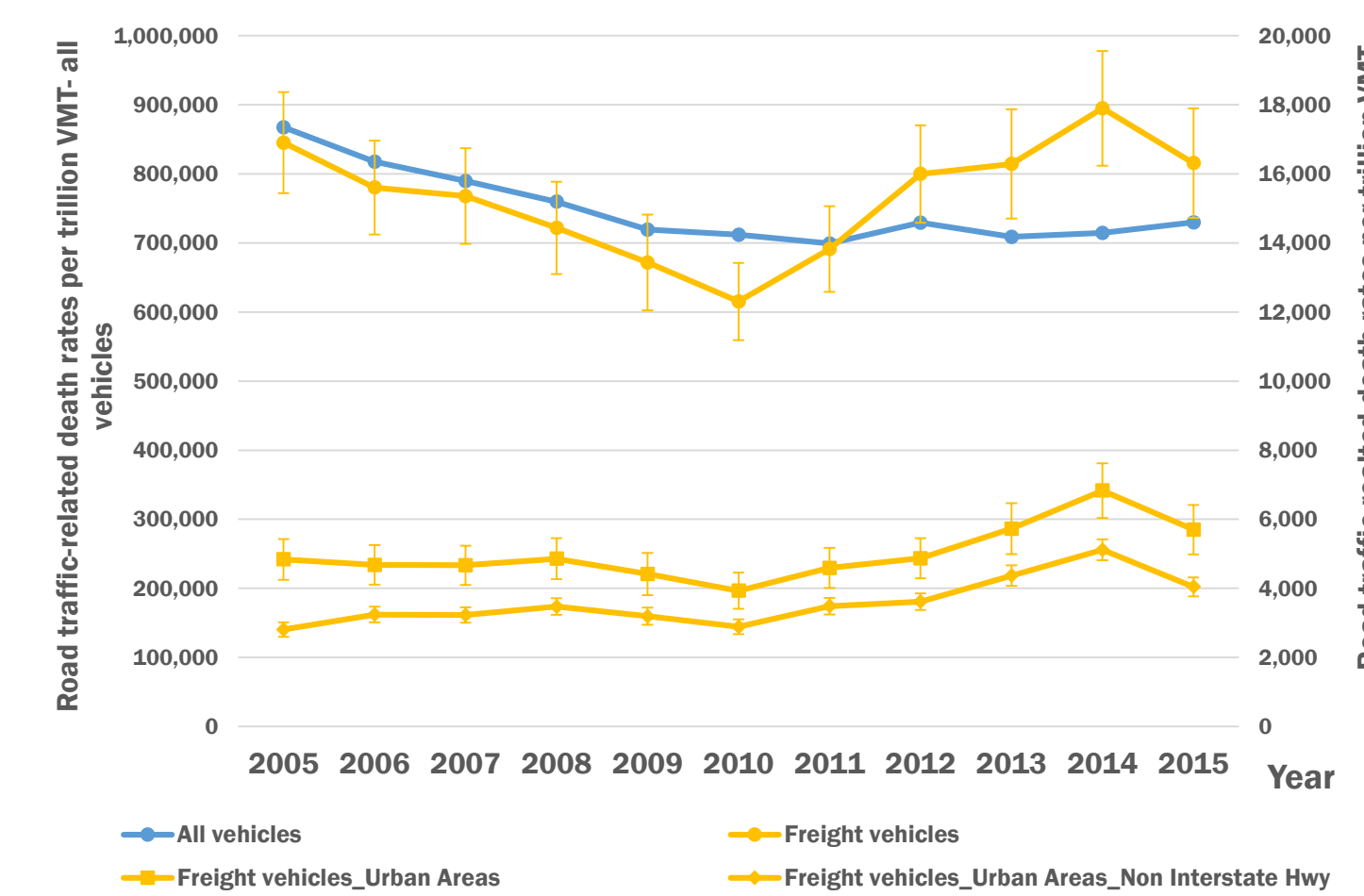
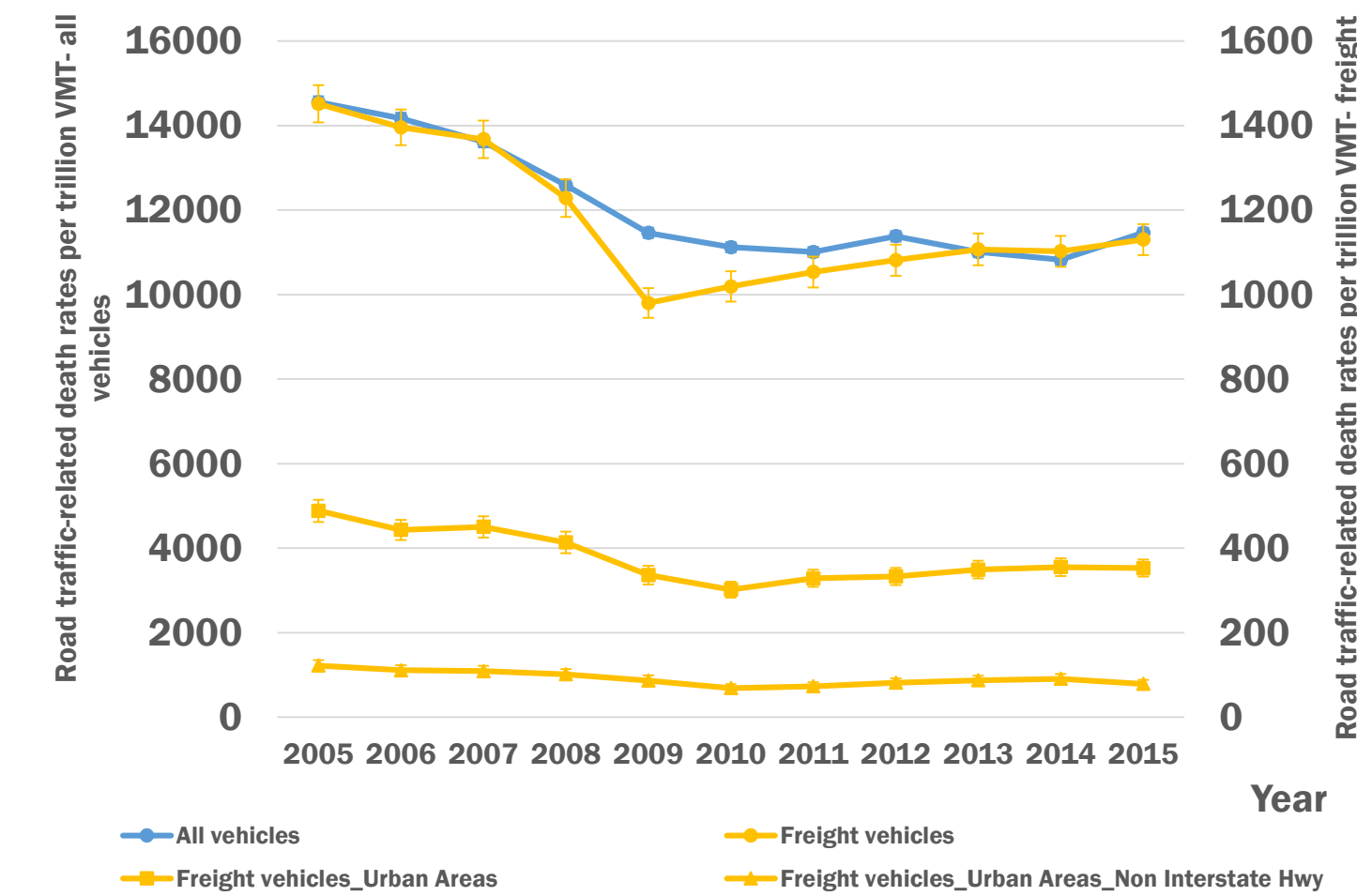
U.S. Department of Transportation
Federal Highway Administration

United States' Census Bureau

Analysis



Results



Discussion and Conclusion

Limitations:

- Existing surveillance systems such as FARS and GES/NASS, do not readily identify freight-involved crashes and have therefore limited attention to goods movement.

Major findings:

- Freight related fatalities and injuries have been increasing since 2010 and these increases have occurred at a faster pace than all crashes;
- Compared to fatal rates, the nonfatal injury rates have increased much faster;
- Nonfatal freight-involved injuries in urban areas are increasingly likely to occur on local roads and arterials and during weekday morning and mid-day periods.

Policy Implications:

- Better integrate freight in urban/transportation planning