

Freight Planning Update

October 24, 2019

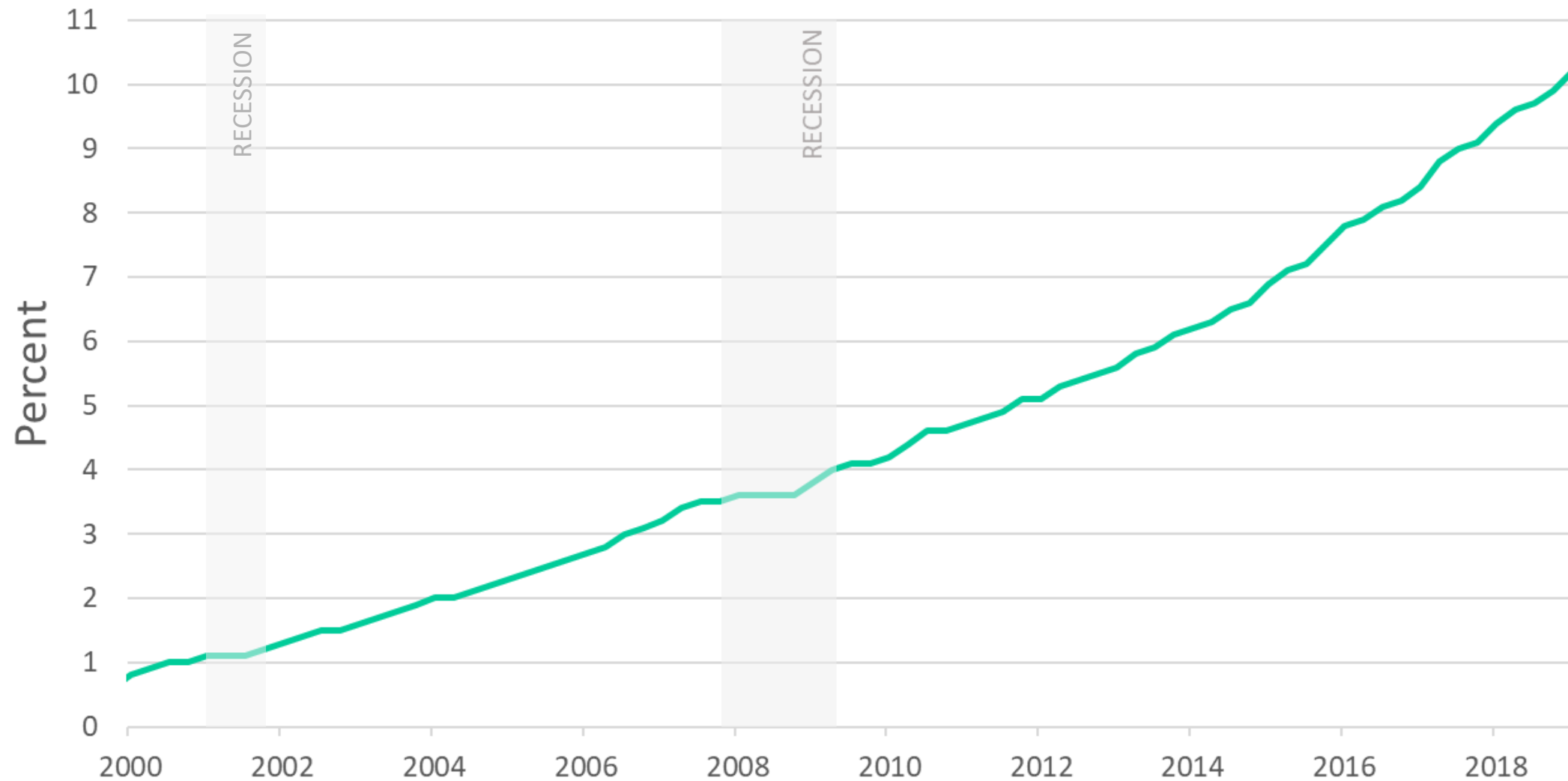
Responding to the Growth of E-Commerce

Goals

Understand the impacts that growing e-commerce may have on transportation, land use, fiscal condition, the environment, and the workforce

Develop local, regional, and state policies, investment strategies, and other responses to direct impacts and take advantage of opportunities

E-Commerce Retail Sales as a Percent of Total Sales



Source: Federal Reserve Bank of St. Louis

Transportation Impacts

Urban VMT

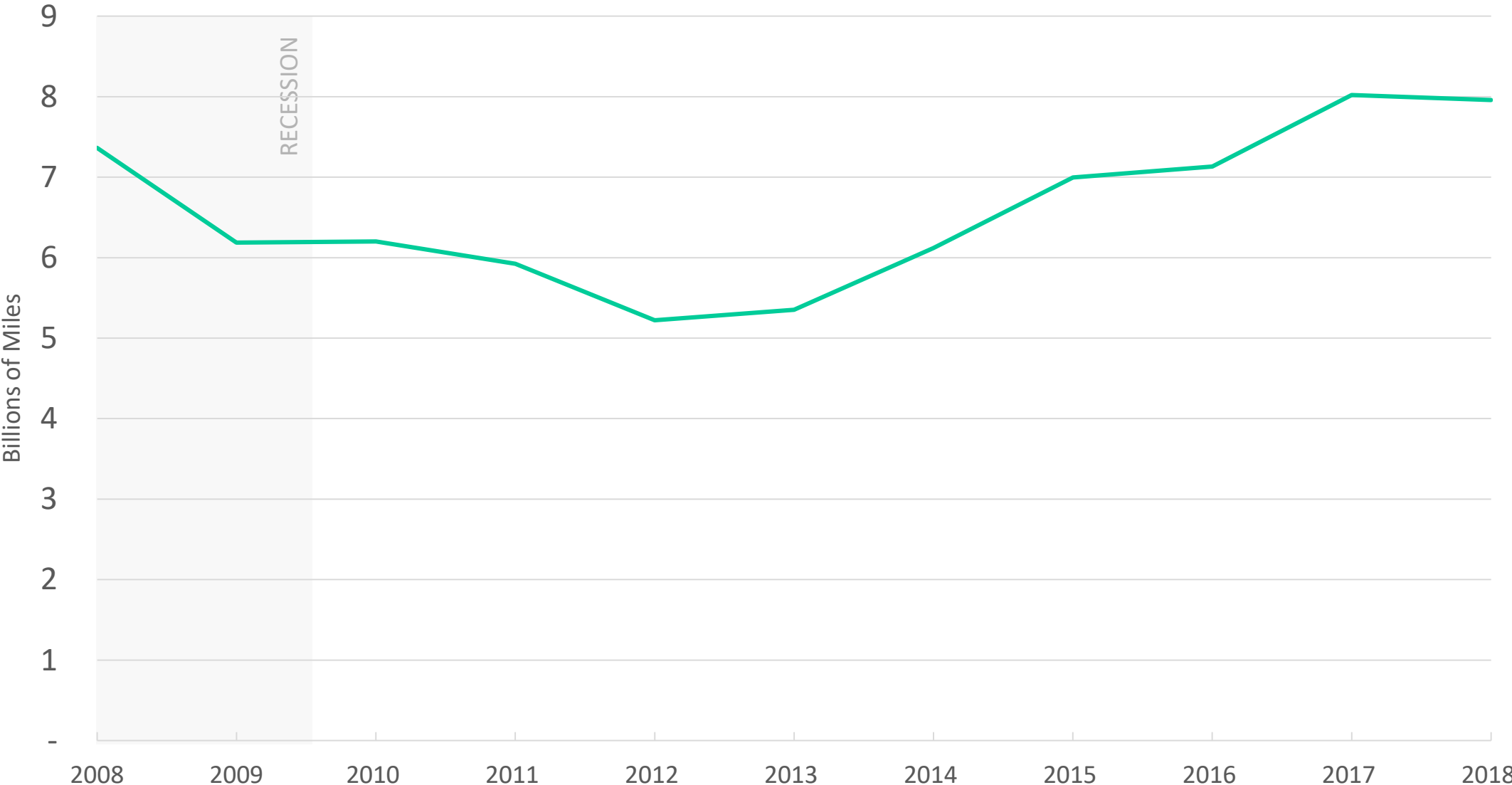
Roadway congestion

Wear and tear on roads

Curb congestion and use conflicts



Annual Urban Truck VMT, Illinois



Source: Illinois Travel Statistics, Table TVT-1

Uncertain Land Use Impacts

How Much Real Estate Does a \$1B Retailer Need?

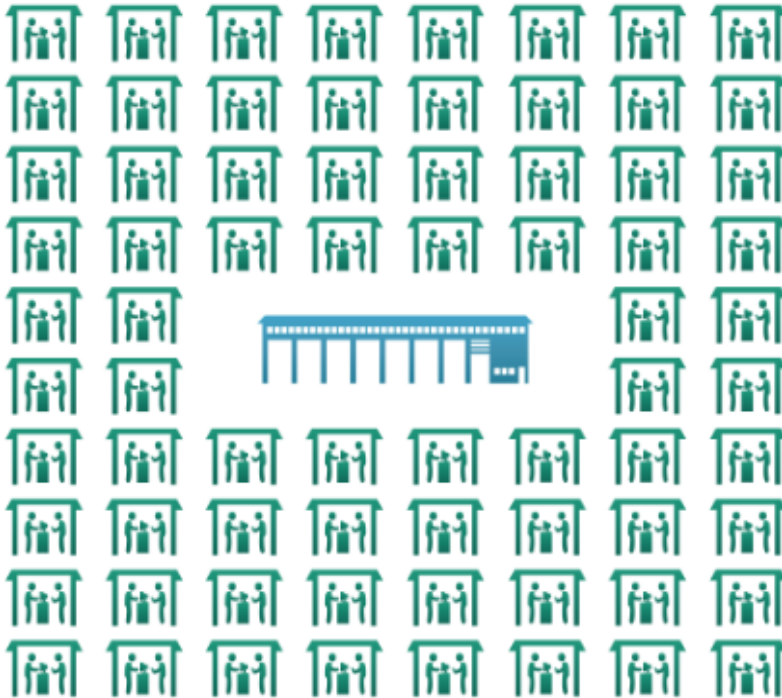
Brick & Mortar Real Estate Footprint: 2.8 MSF



Retail: 2,500,000 SF



Logistics: 325,000 SF



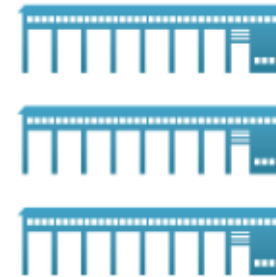
E-commerce Real Estate Footprint: 1.0 MSF



Retail: 0 SF



Logistics: 1,000,000 SF



Other impacts:

Communities

Environment

Workforce

The industry is changing

Increased omnichannel approaches (mix of physical and online outlets)

Adaptation by traditional brick and mortar retailers

Shifting distribution strategies and the addition of urban delivery hubs

Changing regulatory environment (sales taxes)

Water Transportation Planning

Illinois International Port District (IIPD) Master Plan



IIPD Master Plan

IIPD properties

- Iroquois Landing
- Lake Calumet

Identify strategies to better utilize existing facilities.

Position the port to realize its full economic potential.

Provide workforce, community, recreational, and environmental benefits.

IIPD Master Plan

Phase I

- Examine existing conditions
- Perform market assessments
- Visioning

Phase II

- Scenarios for improvements and developments
- Identify key initiatives
- Identify a series of near- and long-term implementable actions

<https://www.cmap.illinois.gov/programs/lta/iipd-master-plan>

Motorist Delay at Grade Crossings

Purpose of analyses
Estimating crossing delay
Prioritization of crossings
Feasibility studies

Purpose of analyses

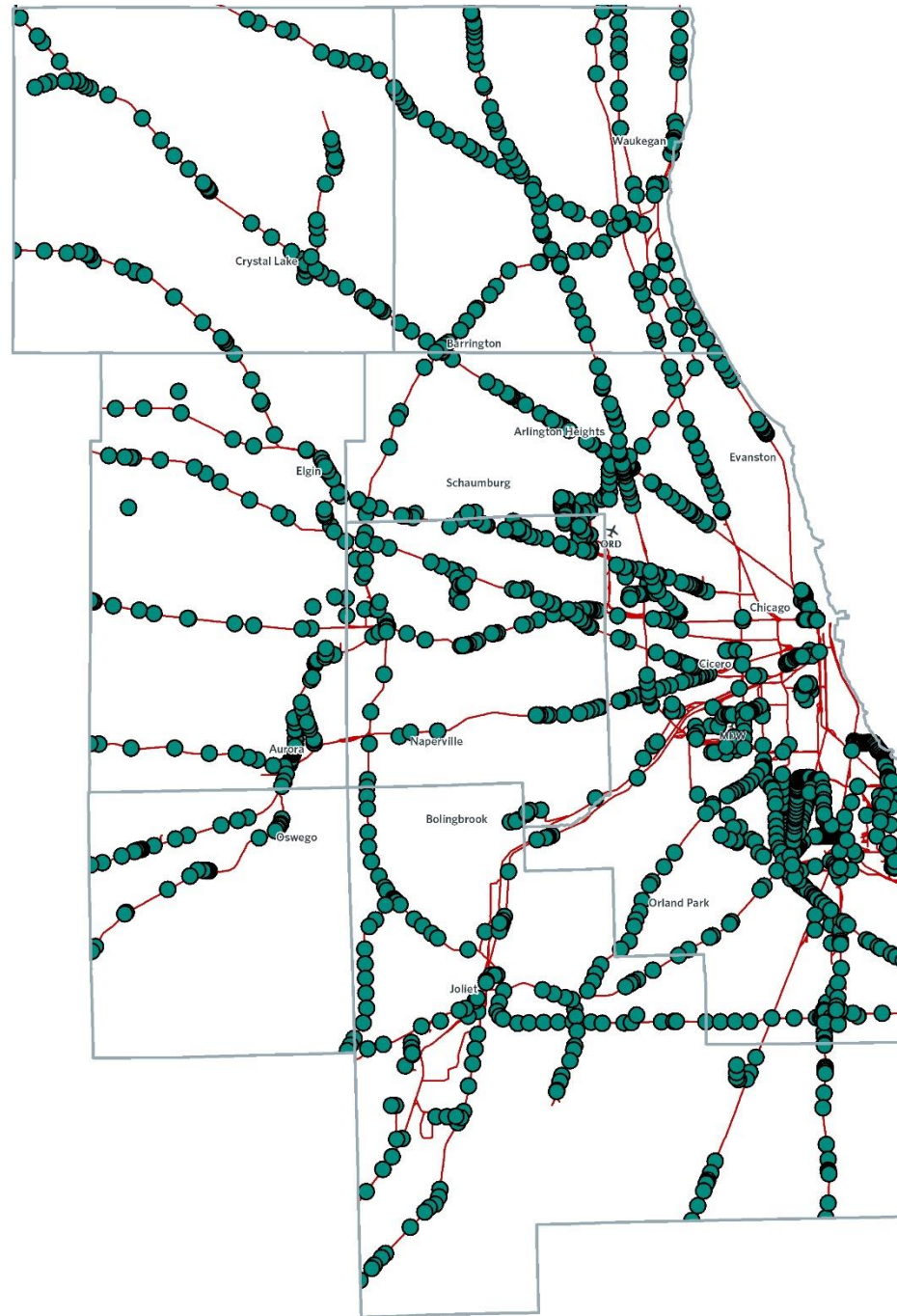


Highway-Rail Grade Crossings

- Grade Crossings
- Railroads

Sources: ICC, FRA, CMAP

**There are 1,646
highway-rail grade
crossings in the 7-
county Chicago region.**



Regional Indicator

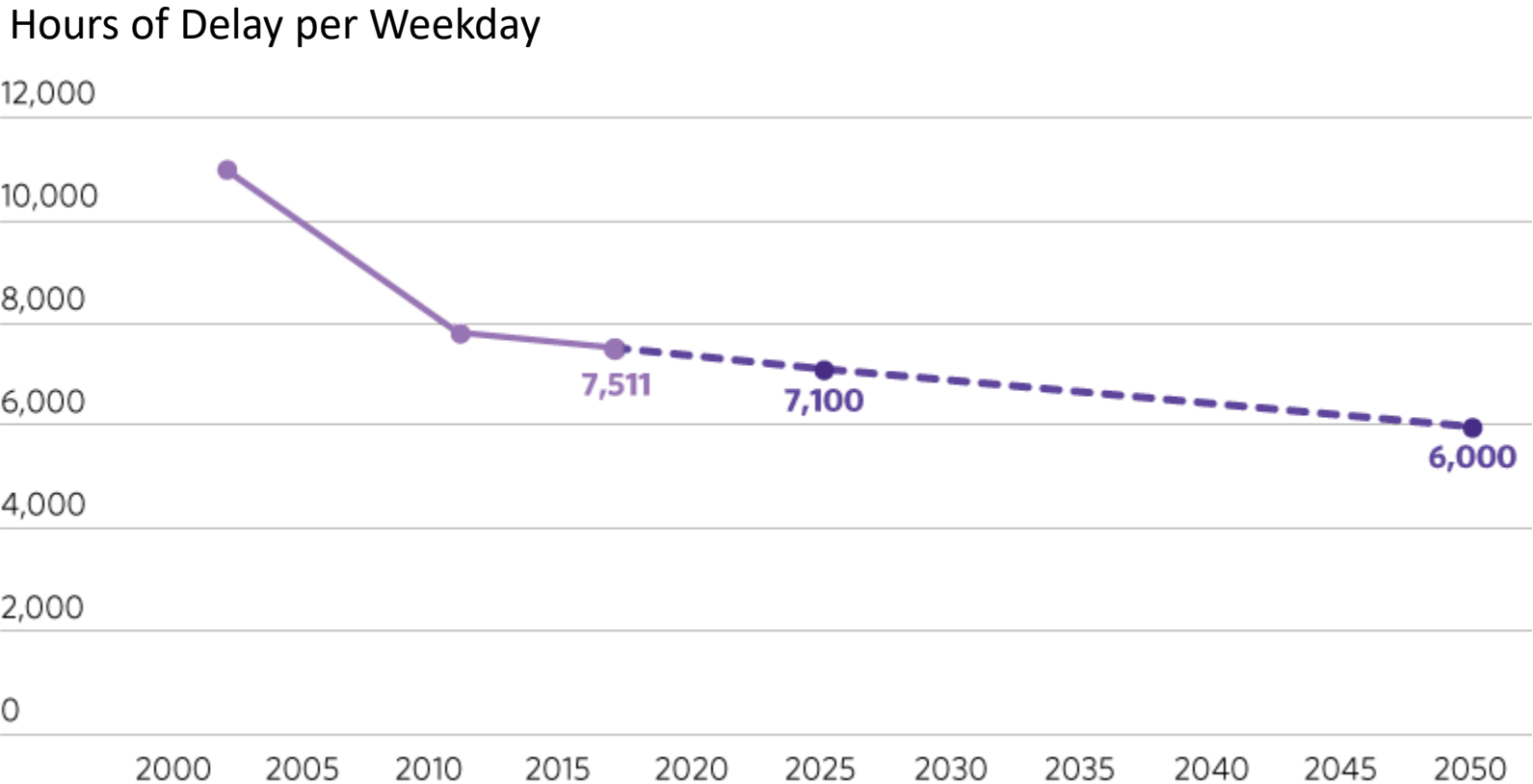
Indicator:
Motorist delay at highway-rail
grade crossings

Key:

Actual

Target

Source: CMAP analysis of Illinois
Commerce Commission data



How to Reduce Crossing Delay

Improve rail-system performance (speed up trains).

- CREATE Program, e.g., WA-11 on Dolton and Riverdale
- Additional track (e.g., UP West Line), sidings, and crossovers
- Terminal improvements (reduce switching and dead-heads)

Consolidate problematic crossings

Reroute highway traffic to better-performing crossings

Grade separations

Estimating Crossing Delay

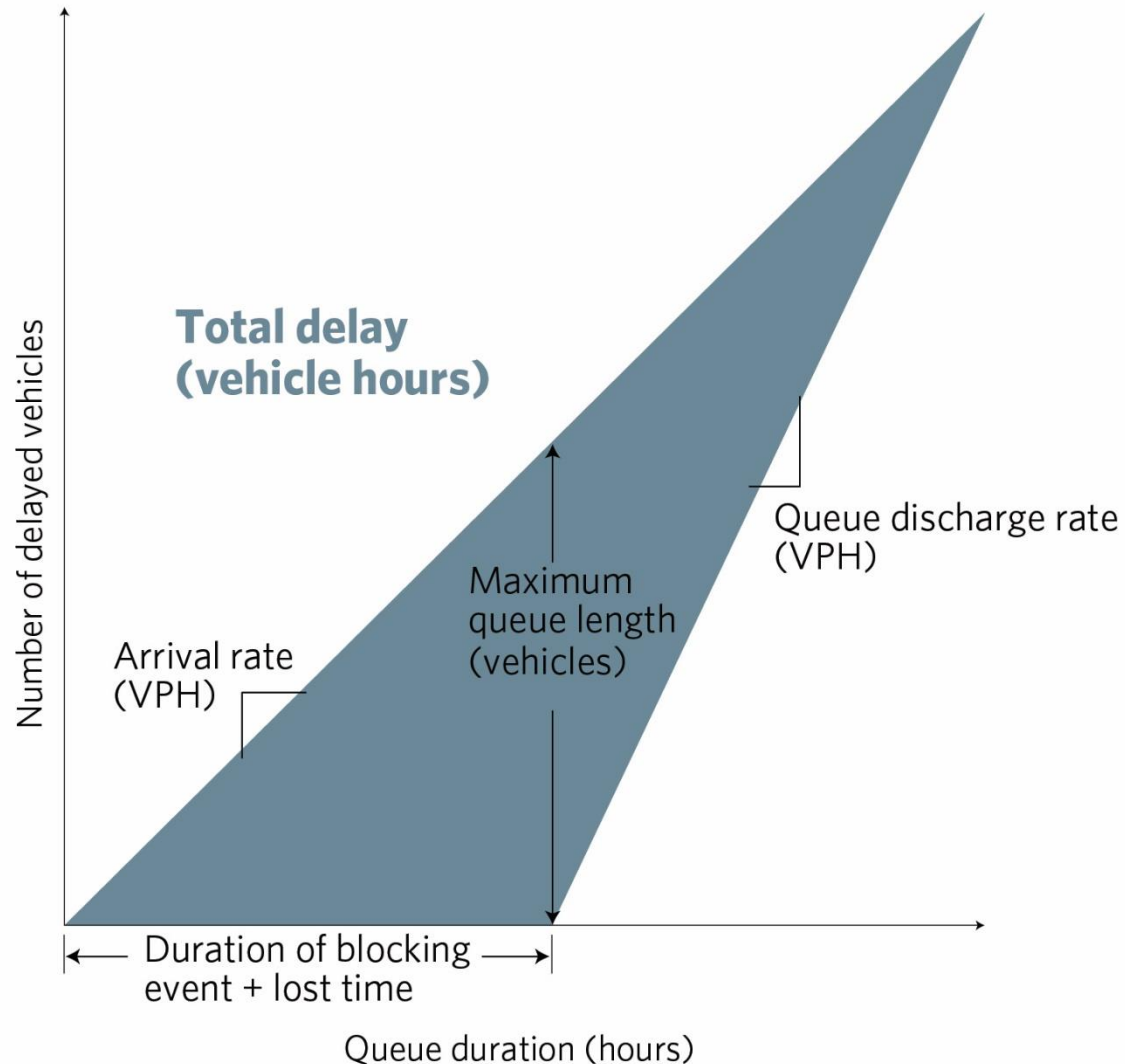


New Method for Estimating Delay

Estimating grade crossing delay

Note: VPH means "vehicles per hour."

Source: Chicago Metropolitan Agency for Planning analysis of Okitsu, Louie, and Lo, "Simulation-Free Railroad Grade Crossing Delay Analyses," 2010.

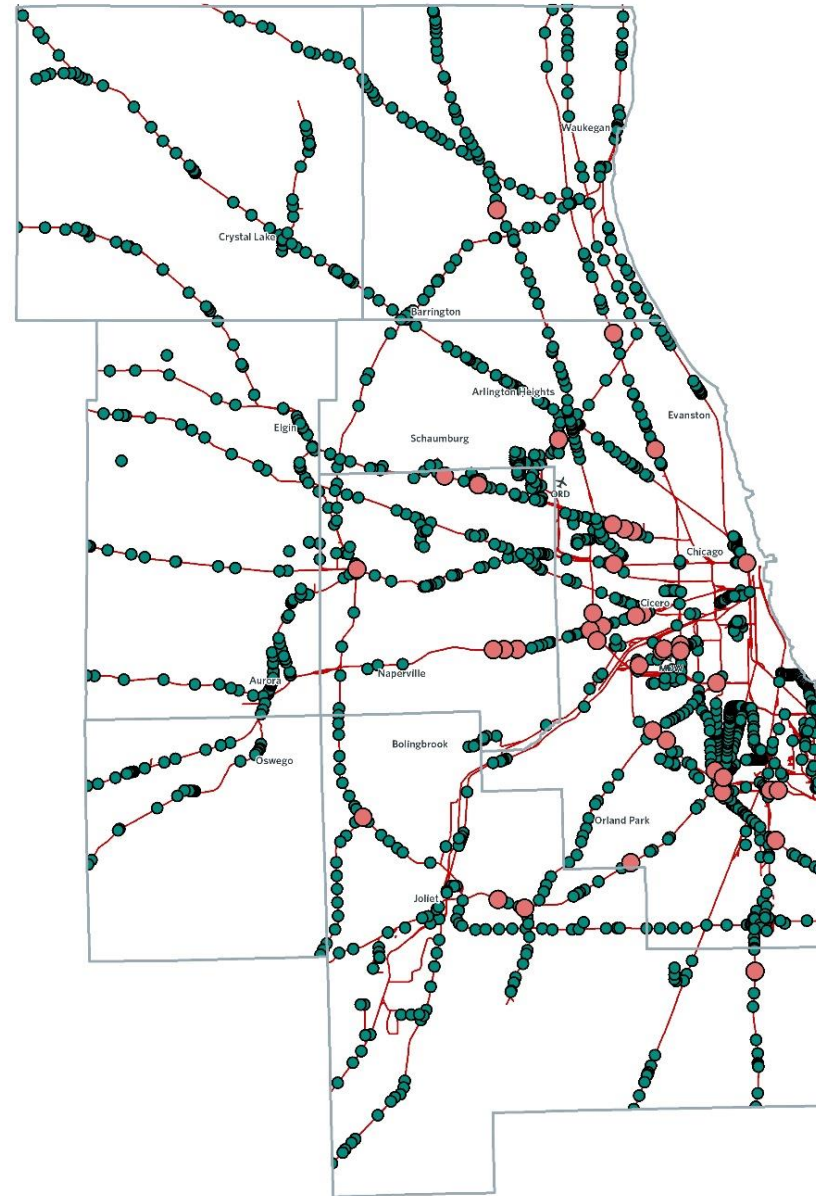


Highway-Rail Grade Crossings

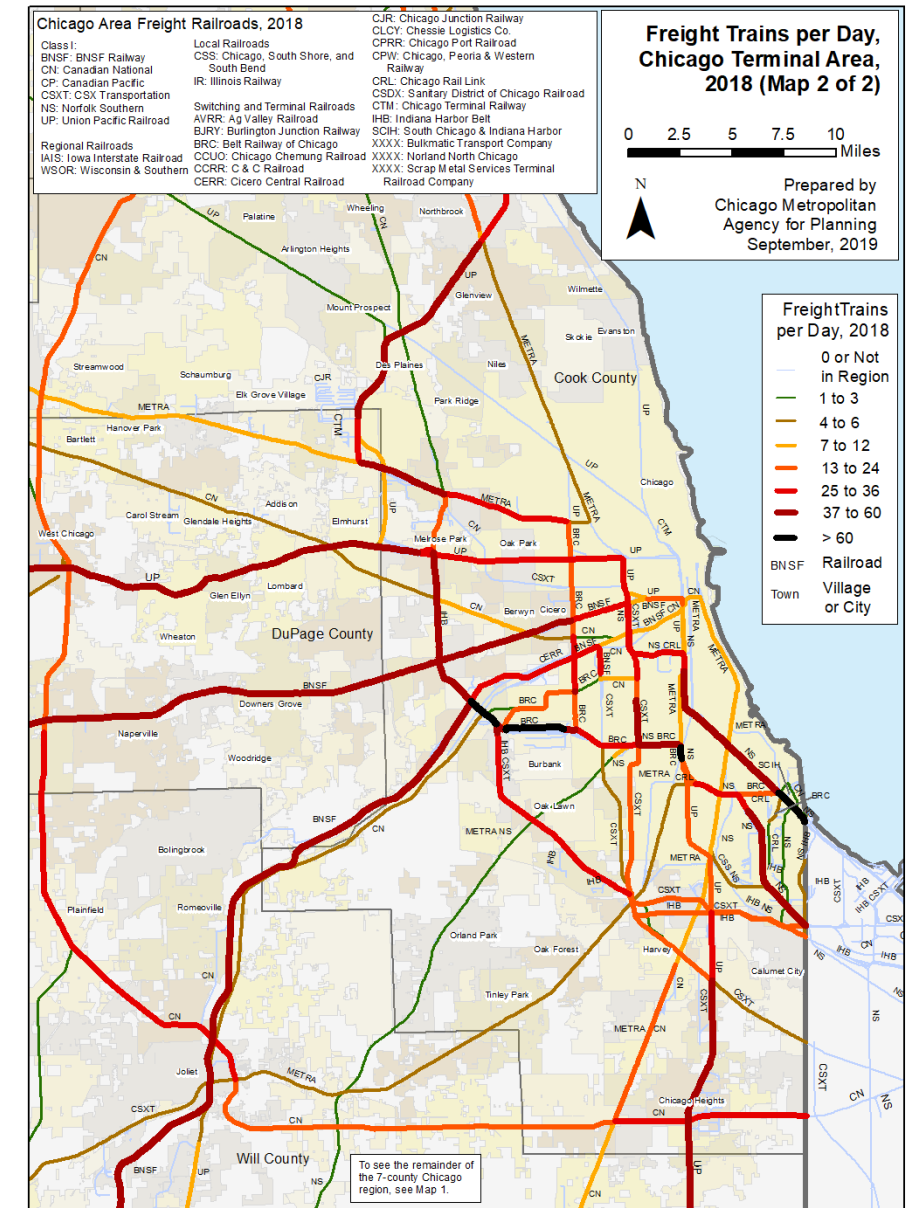
- Grade Crossings
- Data Collection Sites
- Railroads

Sources: ICC, FRA, CMAP

Data was collected over two summers at 40 sites, primarily by summer interns.



New estimates of daily freight trains were required. CMAP compiled industry data supplemented by field data collection.



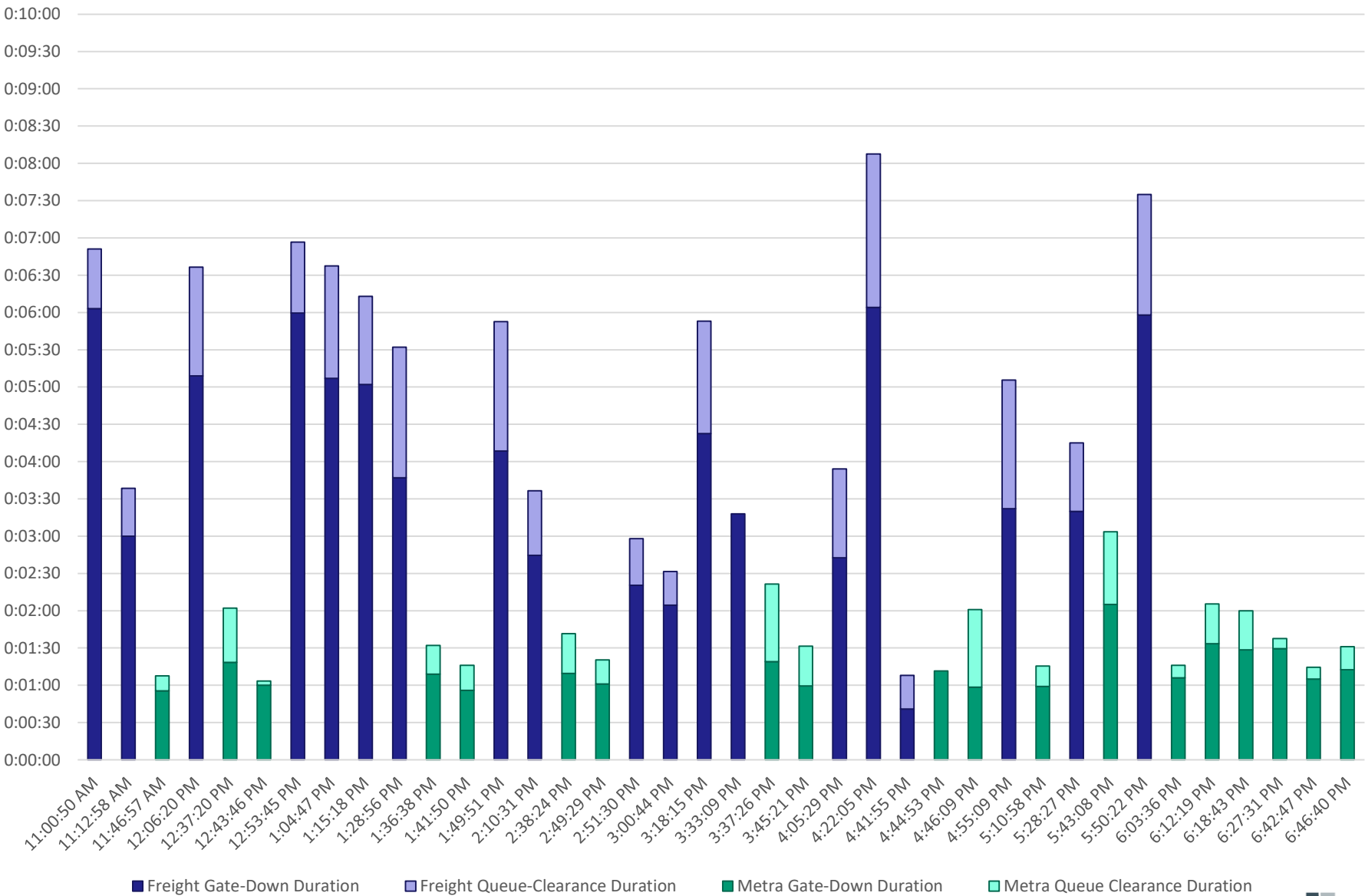
Estimate by CMAP represents the average weekday, excluding switching and equipment moves. Source: National Transportation Database (NTD), 2011, Updated with information from createprogram.org, NTD 2017, FRA and Illinois Commerce Commission Grade Crossing Databases, CN EJE Operations Monitoring, 75th CIP EIS, 2019 AAR Illinois Profile, Google Earth, field data collection, and personal communications. Missing data was interpolated. Note: Figures include overhead trackage rights for many railroads. See <http://www.cmap.illinois.gov/mobility/freight/freight-data-resources>

Crossings 174973G, 260541T - Washington St. UP/CN (West Chicago)
Gate-Down and Queue-Clearance Durations by Type (Minutes, 2017)

Freight trains are slower than expected.

Queue-clearance times are substantial.

At this crossing, ICC-estimated average gate-down times were 1:00 for Metra trains and 2:24 for freight trains.



Results: Motorist Delay per Crossing

Average of Old Estimates of Delay

46 hours
per
weekday

Range 2 - 182

Average of New Estimates of Delay

120 hours
per
weekday

Range 2 - 430

Percent Change

↑160%

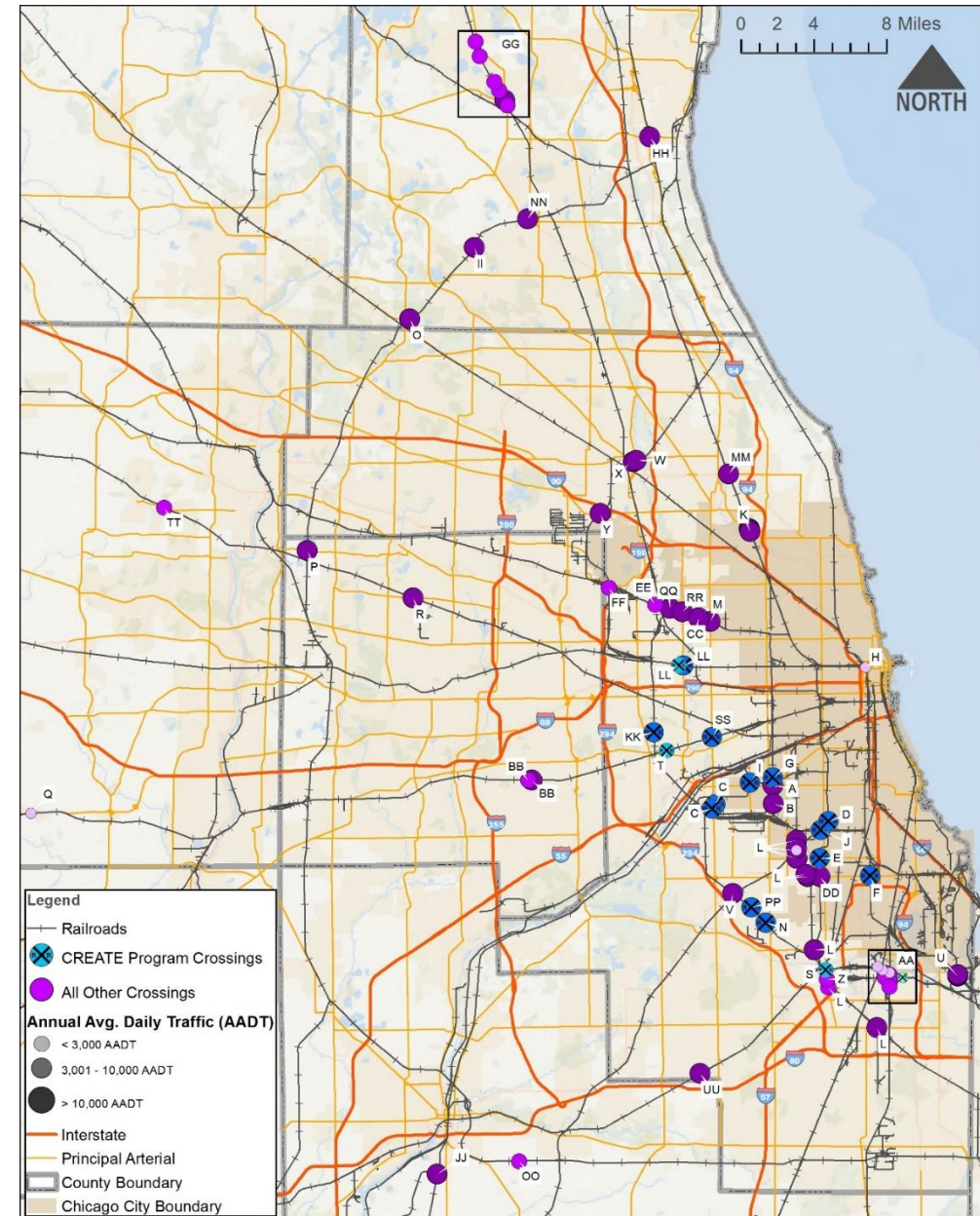
Prioritization of Crossings



Grade Separation Prioritization

Based on:

- estimate of crossing delay
- estimate of crash risk
- truck exposure
- transit impact
- initial analysis of likely impacts
- status of project development



Feasibility Studies



Grade Crossing Feasibility Studies

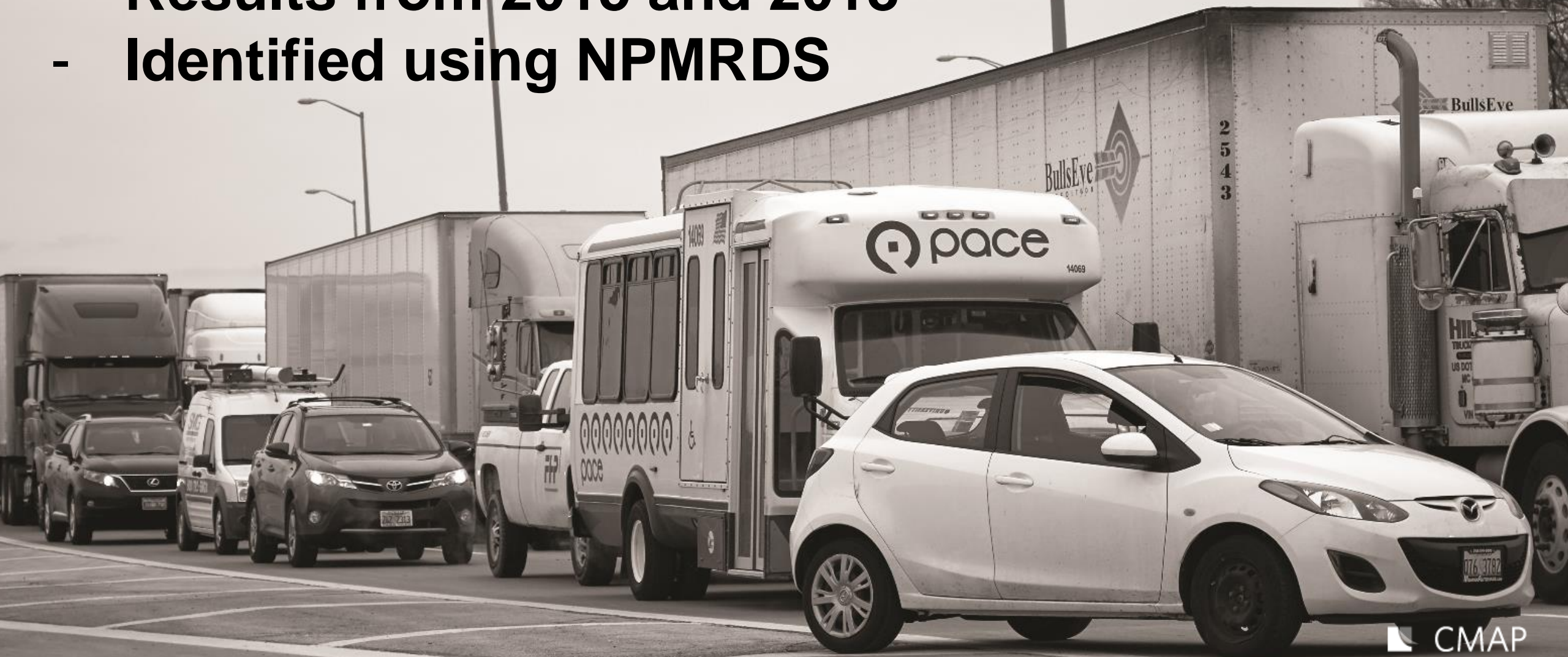
- Up to 5 crossings to be studied
- Outreach and engagement
- Existing conditions analysis
- Purpose and need
- Alternatives Screening and Feasibility Study
- Employing FHWA's Planning and Environmental Linkages process to prepare a purpose and need statement and screened alternatives for the preliminary engineering and environmental studies process.

Truck Studies

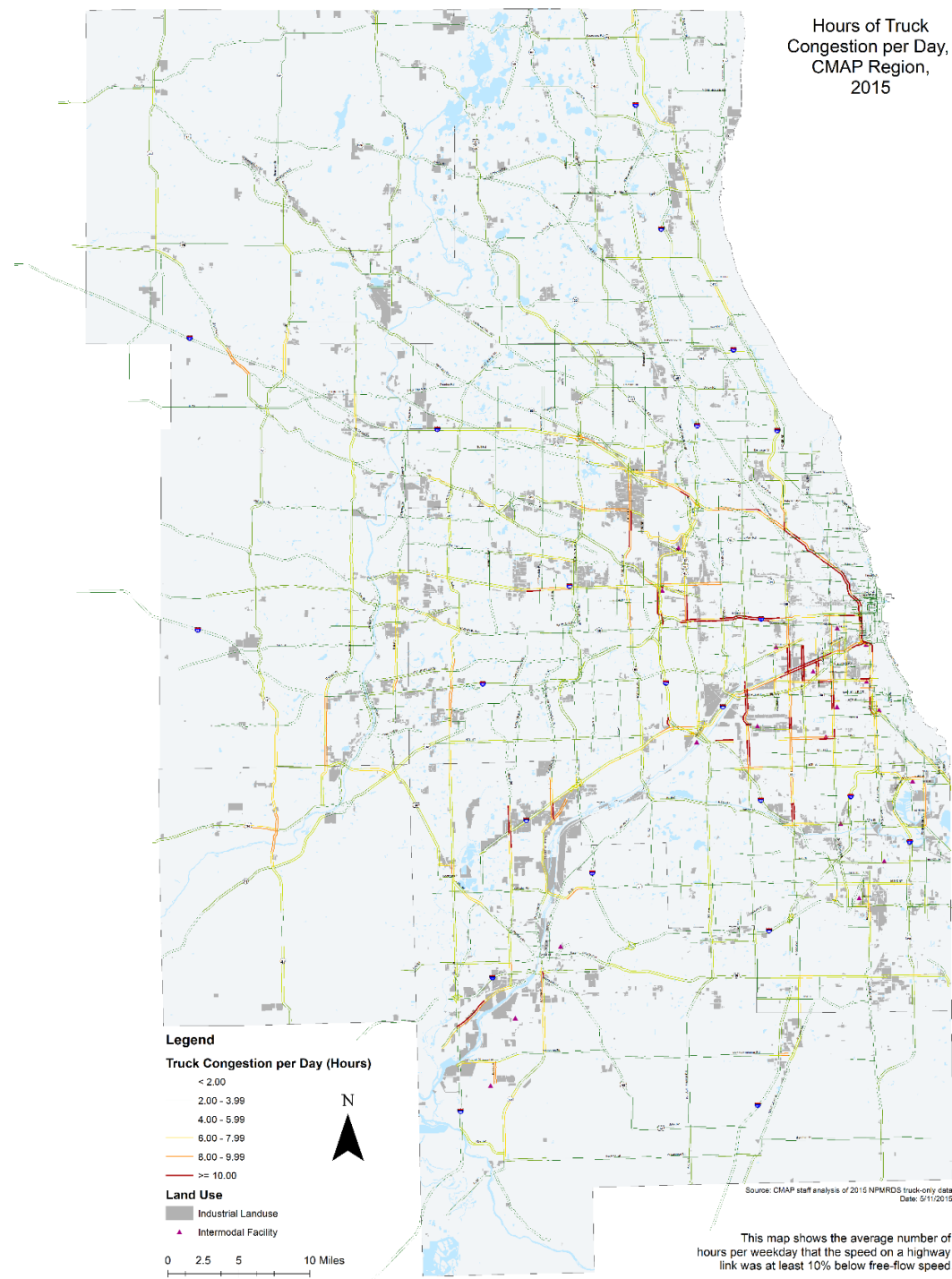
- Truck Bottlenecks
- Truck Route Studies

Truck Bottlenecks

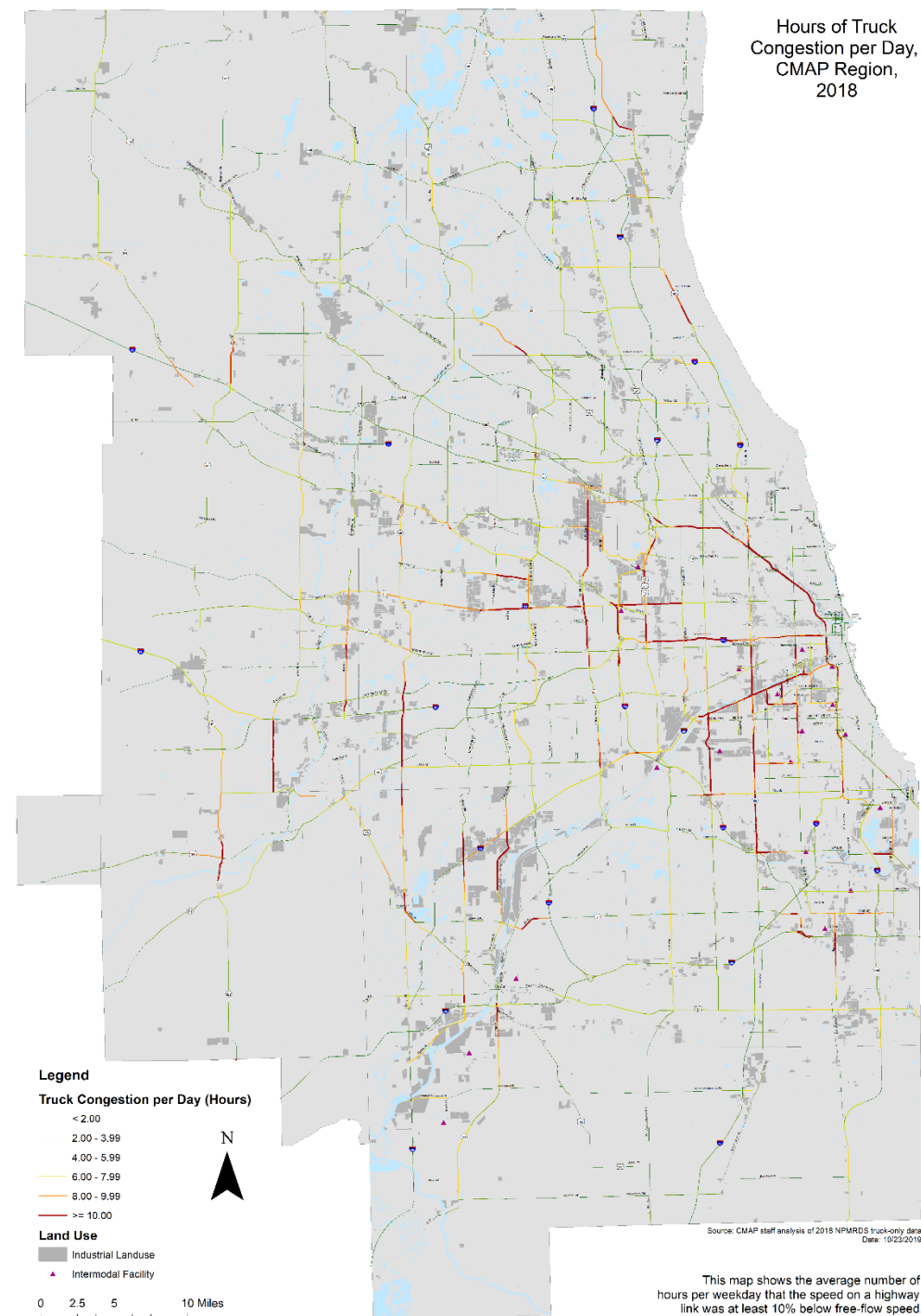
- Results from 2015 and 2018
- Identified using NPMRDS



Hours of truck congestion per day, 2015

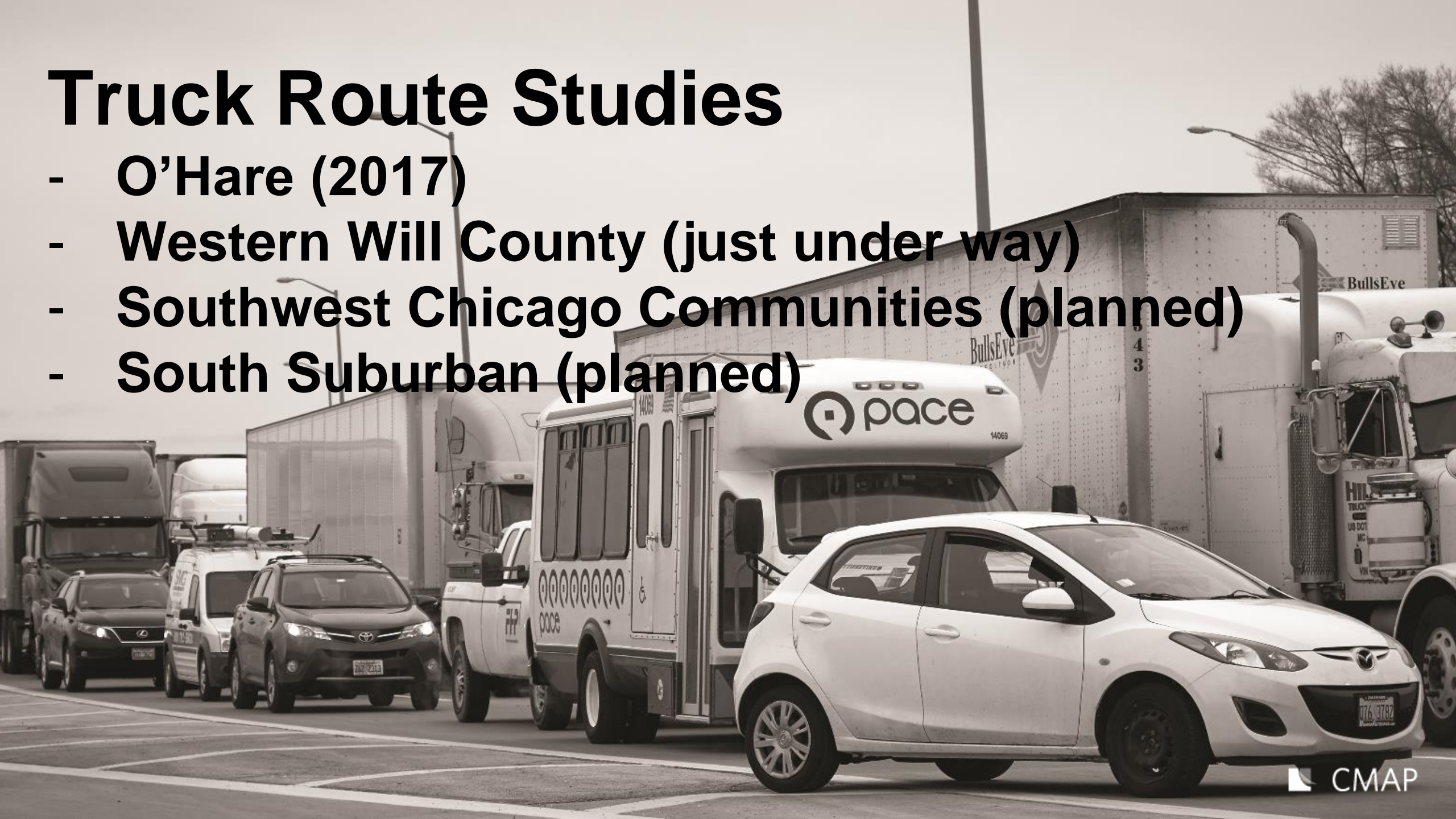


Hours of truck congestion per day, 2018



Truck Route Studies

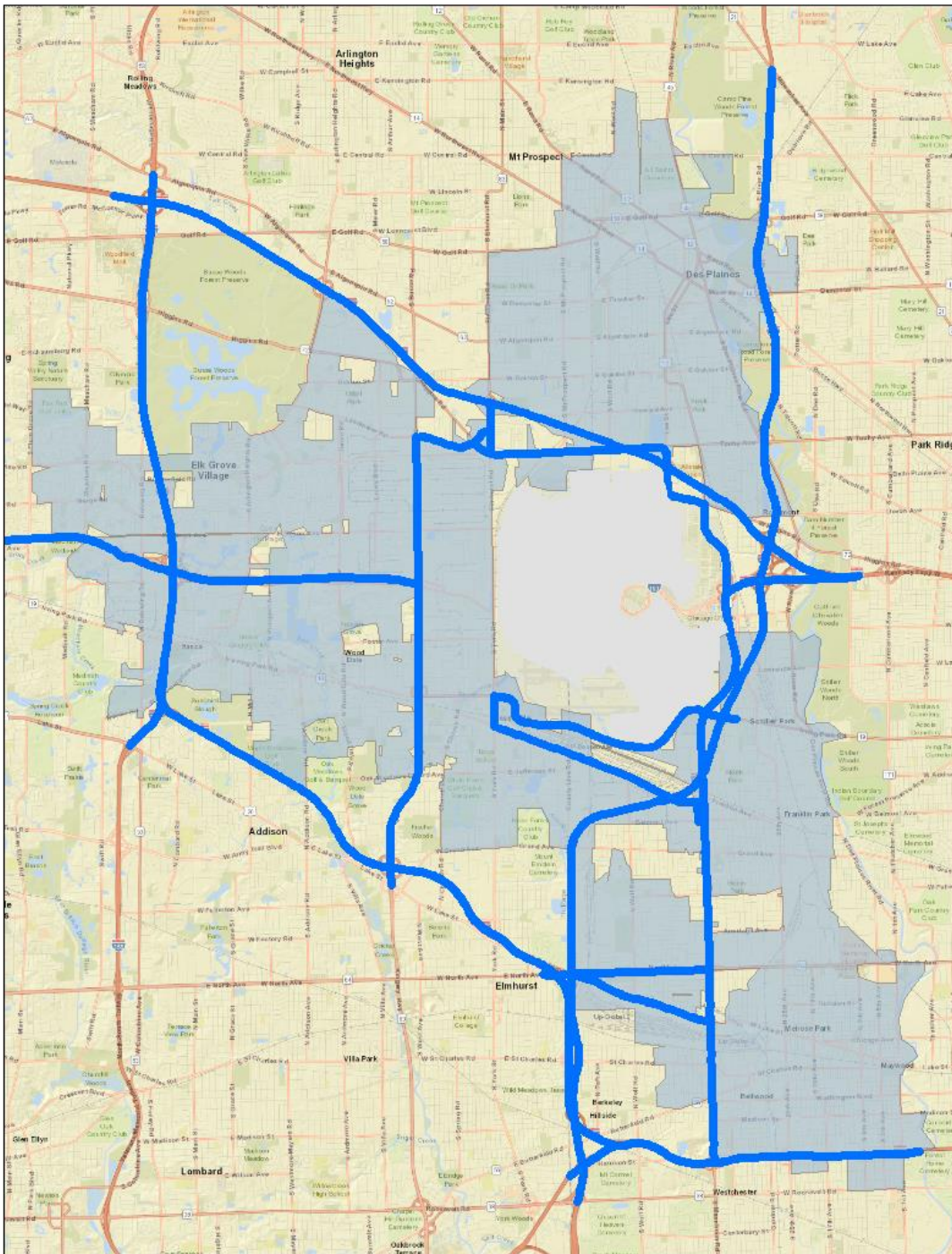
- O'Hare (2017)
- Western Will County (just under way)
- Southwest Chicago Communities (planned)
- South Suburban (planned)



Conceptual framework

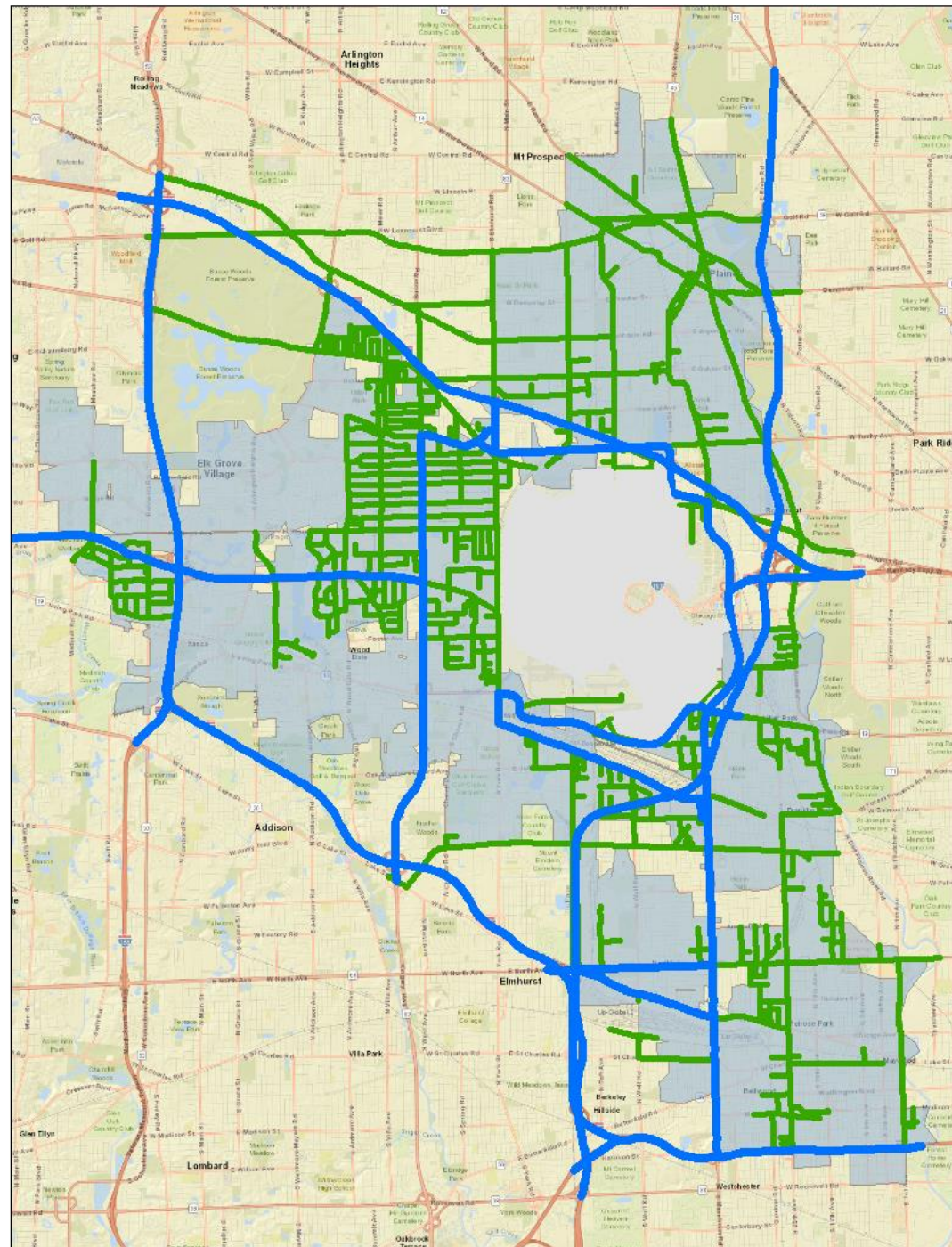
Road Level	Proposed Level A	Proposed Level B	Proposed Level C	Proposed Level D
Designate a Class I Truck Route?	Yes	No	No	No
Designate a Class II Truck Route?	Yes	Yes	No	No
Designate a Locally Preferred Truck Route?	No	No	Maybe (if allowed under IL law)	No
Undesignated Roads and Streets?	No	No	Maybe	Yes
Truck Route Sign?	Yes	Yes	Maybe	No
Truck Restriction?	No	No	Maybe (if allowed under IL law)	Yes
Truck Investment?	Yes (Prioritized)	Yes (Balanced)	Maybe (focus on small trucks)	No
Primary Investment Guidelines	AASHTO	AASHTO	AASHTO/ NACTO	NACTO / AASHTO
Included in a Truck Route Map?	Yes	Yes	Maybe (if allowed under IL law)	No

Level A

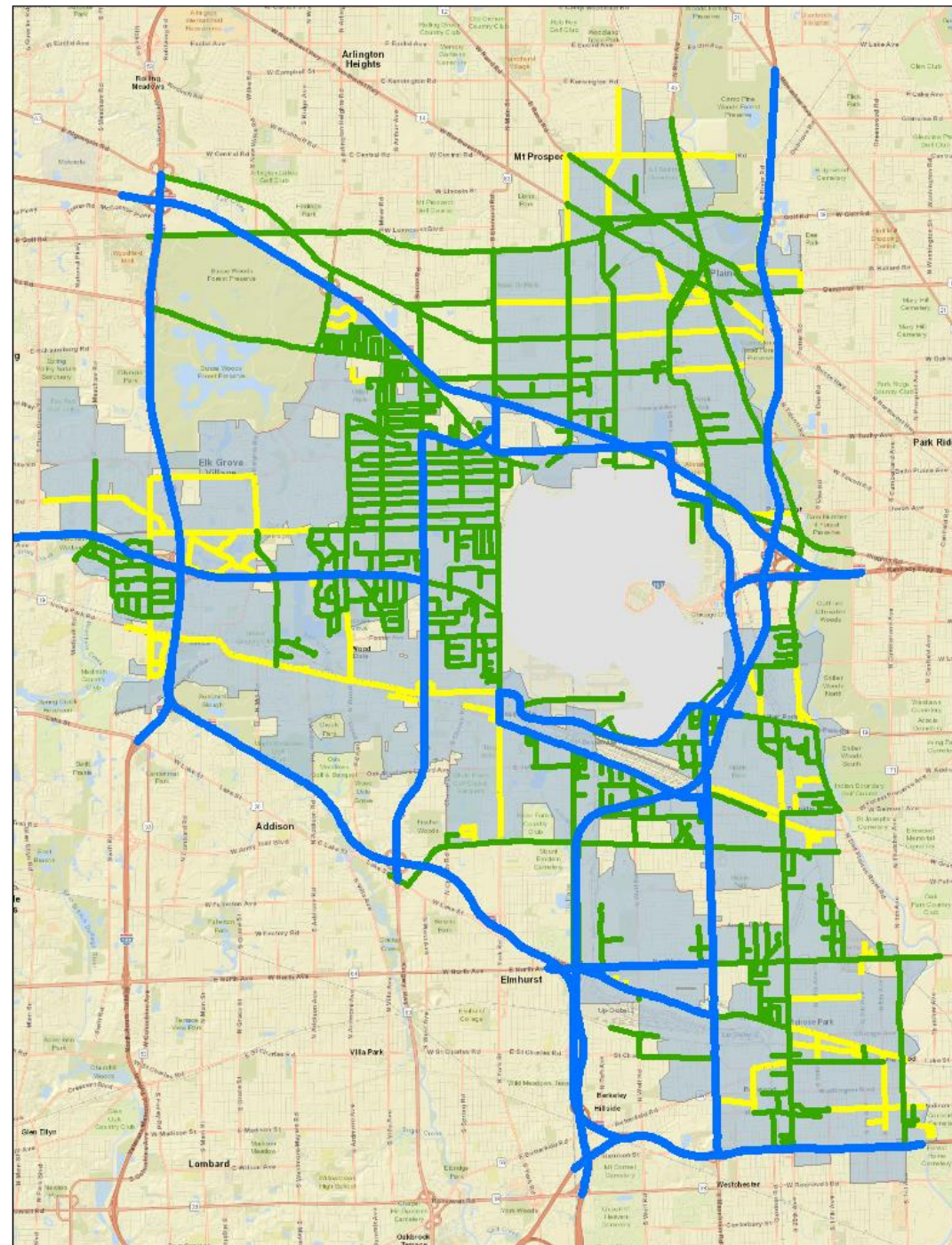


Level A

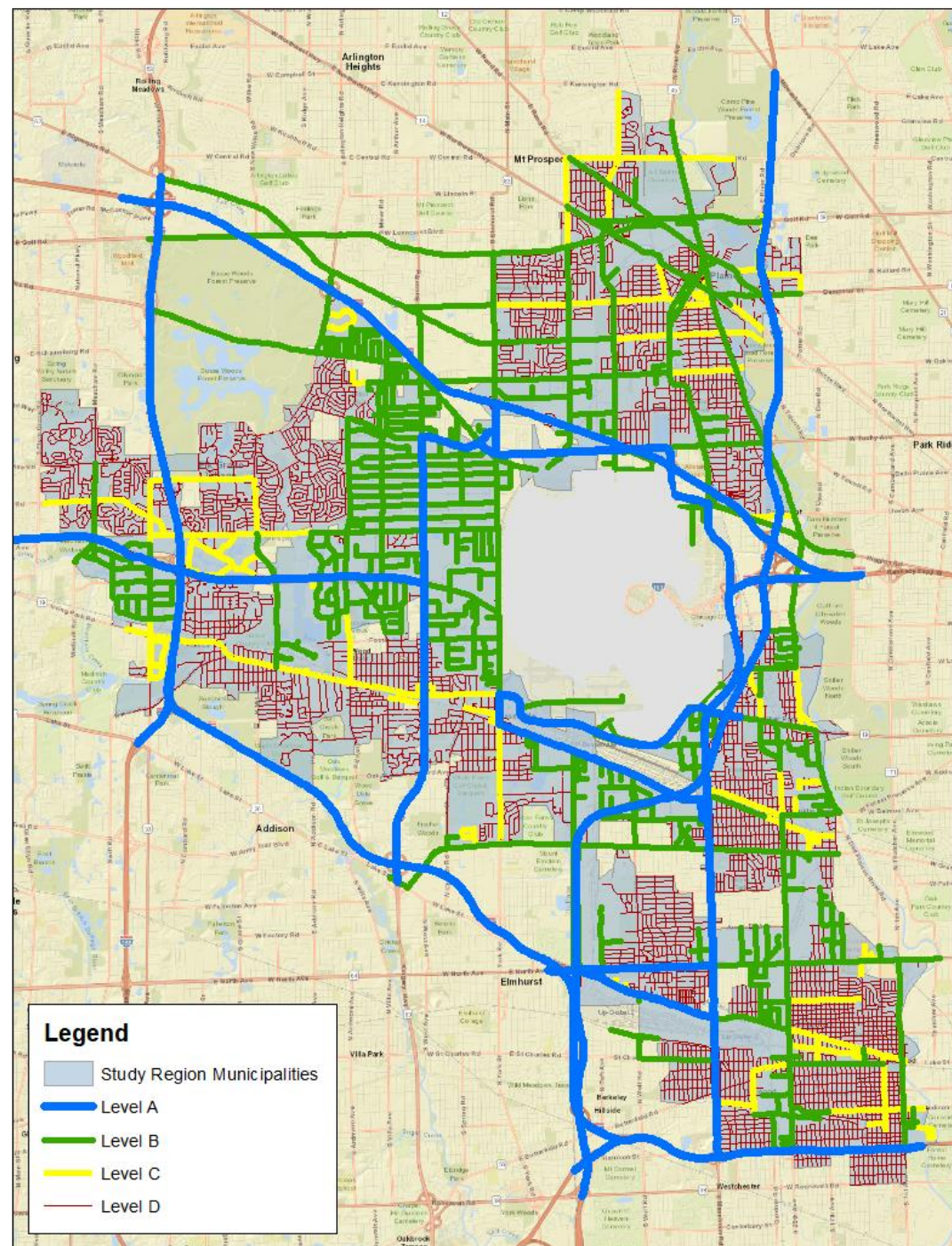
Level B



Level A
Level B
Level C

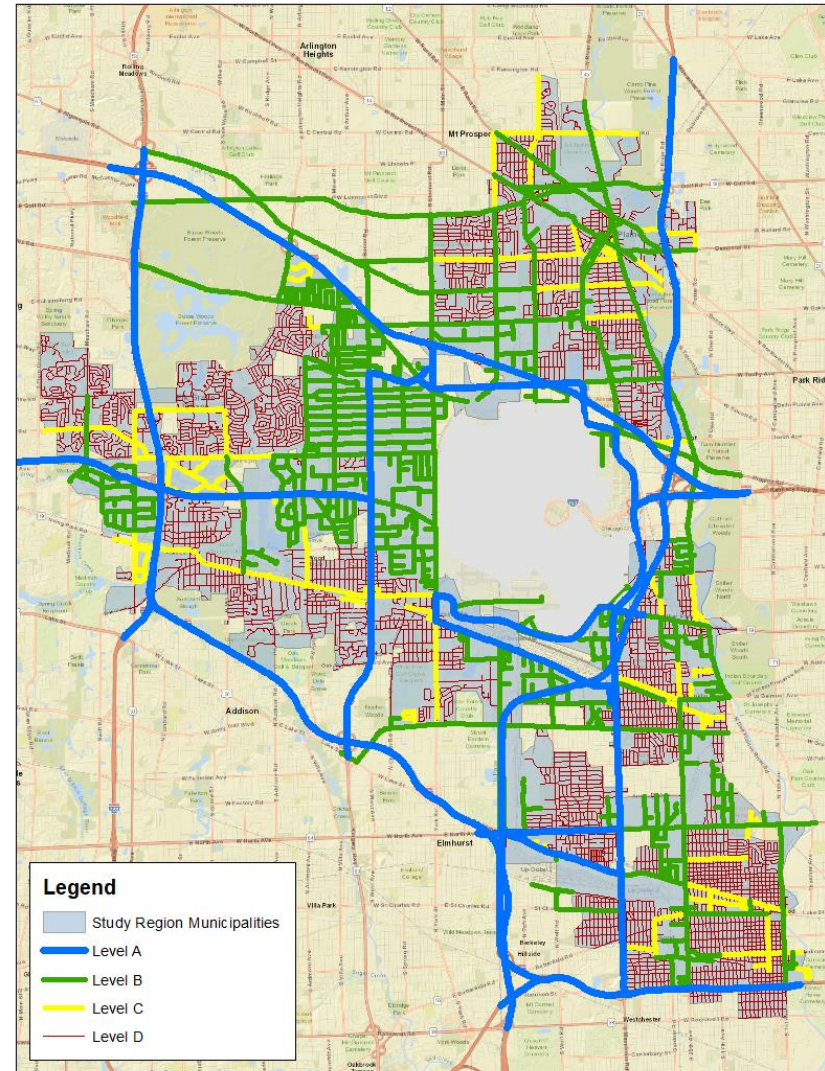


Level A
Level B
Level C
Level D



Recommended CMAP actions

- Assist local agency truck route designations.
- ✓ Collect and maintain truck restriction data (SB 1381 now PA 101-0328).



Address highway designation law



Changes in highway designation law

Public Act 100-0343

625 ILCS 5/15-107(b) *On all non-State highways, the maximum length of vehicles in combinations is as follows:*

(1) A truck tractor in combination with a semitrailer may not exceed 65 ~~55~~-feet overall dimension. An agency or instrumentality of the State of Illinois or any unit of local government shall not be required to widen or otherwise alter a non-State highway constructed before [January 1, 2018] to accommodate truck tractors under this paragraph (1).

Changes in highway designation law

Public Act 101-0328

- 5-mile access for the largest vehicles to all roads not otherwise restricted
- Access can be for food, fuel, loading, unloading, repairs, or rest
- Eliminates Class 3 truck routes
- Class II truck routes reported to IDOT, but signs are no longer necessary
- Truck restrictions may be reported to IDOT
- IDOT must post local truck restrictions to its web site

Changes in highway designation law

Key takeaways:

- New laws better align with municipal practice
- New laws will place greater importance on getting restrictions right
- With greater legal access for large trucks on local roads, there will be more importance on assuring those roads are structurally suitable for large trucks
- New investments for trucks may be increasingly important

Will need to revisit specific O'Hare study recommendations.

Will need to consider new law in the course of upcoming studies.



www.cmap.illinois.gov/onto2050

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