

FOXCONN IN WISCONSIN

BUILDING FOR THE FUTURE



I-94 North-South Connected and Autonomous Vehicle Deployment Opportunities

WISCONSIN DEPARTMENT OF TRANSPORTATION

BRETT WALLACE, FOXCONN PROJECT DIRECTOR



Presentation Overview

- I-94 NS and Local Road Reconstruction Project Highlights
- INFRA Grant
- I-94 NS Corridor Characteristics
- Initial Planning-Level Roadmap for CV and AV Deployment
- Proposed CV and AV Enabling Infrastructure
- Considerations and Next Steps



Scope of Work

FOXCONN DEVELOPMENT ROADS

- \$134 million
- Since October 2017
 - Developed concepts
 - Preliminary design
 - Right of way for Mount Pleasant
- First LETs in June 2018

I-94 NORTH SOUTH FREEWAY

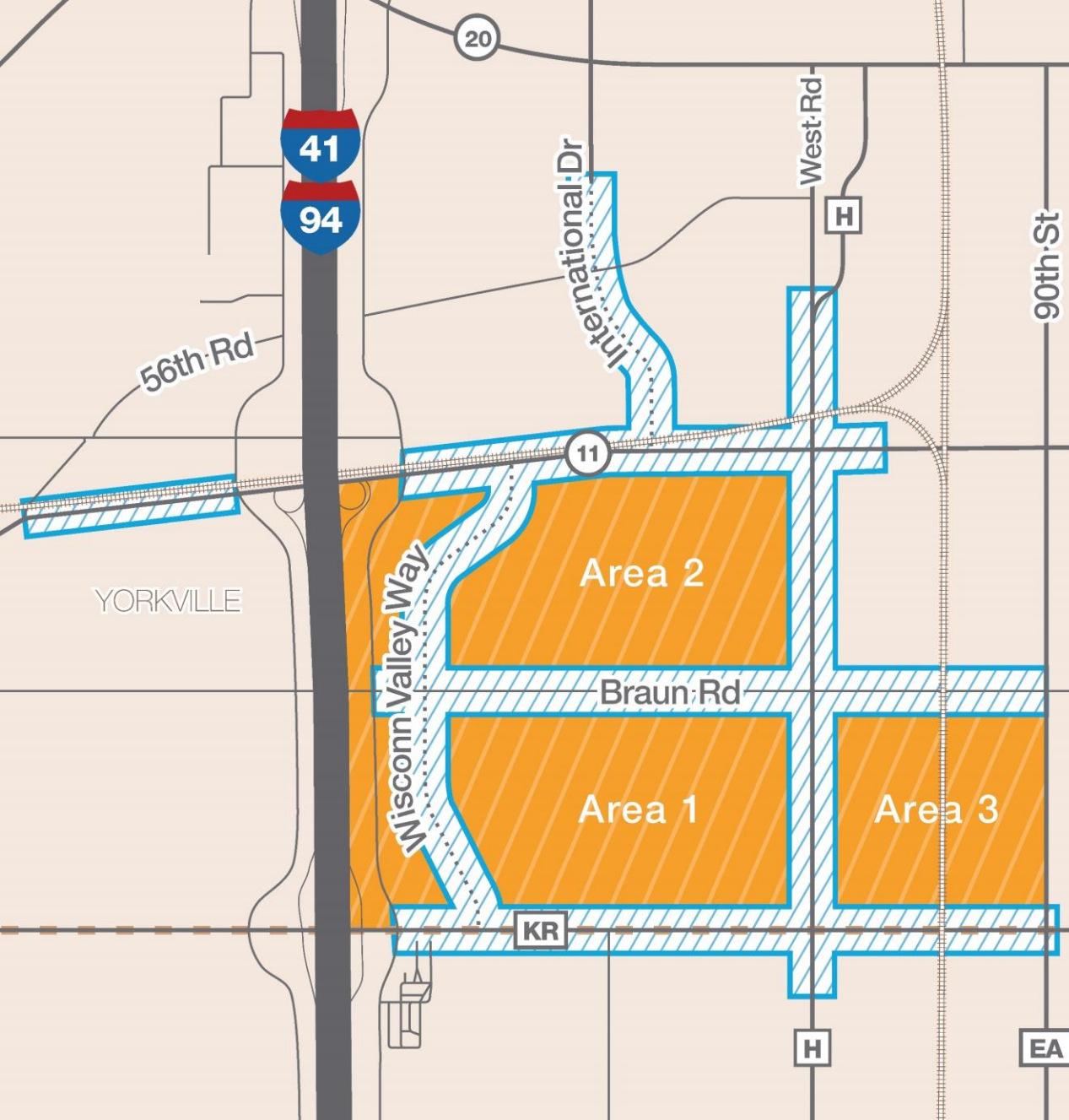
- \$500 million
- Off-the-shelf plans
- Staging plans
- Environment re-evaluation
- Accelerated schedule



WisDOT Role in Development Roads

- Investment in WIS 11 and local roads around Foxconn
- Temporary jurisdiction to design and construct
 - Planned construction along I-94
 - One entity coordinating construction
 - Expertise managing large and complex projects
 - Jurisdictional transfer has been done before
 - Local jurisdiction returned after construction
- No WisDOT committed 2018 projects affected

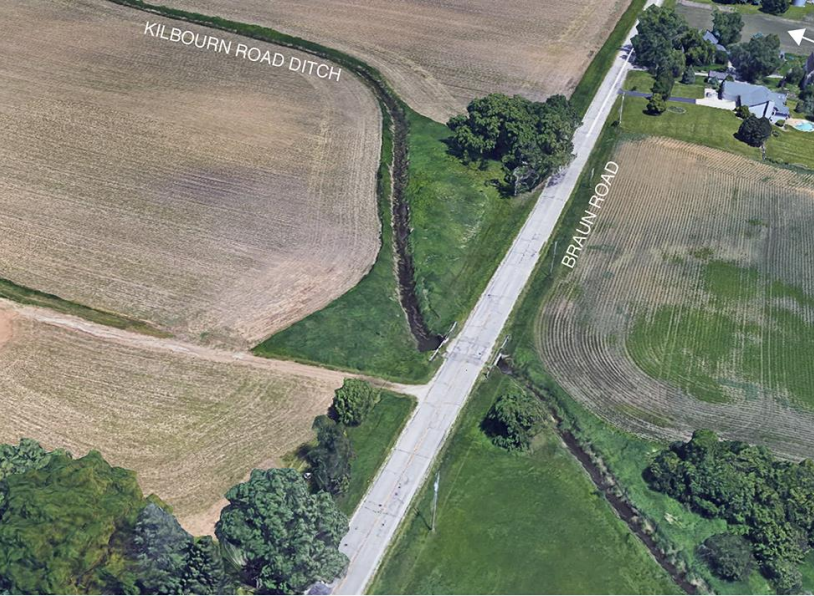




Development Roads

- Initial priorities: safety and mobility
 - County KR
 - County H
 - Braun Road
 - WIS 11
 - International Drive
 - Wisconn Valley Way
 - New road between County KR and WIS 11





EXISTING



PROPOSED

Development Road Details

- 15 miles of multi-lane divided urban roadways
 - Curb and gutter
 - Storm sewer
 - Signalized intersections
 - Multi-use path in some areas
- Extensive utility coordination
- Coordinated construction schedule 2018-21





North Segment

- 7.5 Miles
- Begins: August 2018
- Ends: December 2020

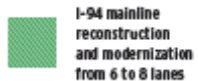
Central Segment

- 4.5 Miles
- Begins: May 2018
- Ends: November 2019

South Segment

- 6.5 Miles
- Begins: May 2018
- Ends: November 2019

LEGEND



*Schedule is subject to available funding/INFRA grant

I-94 North-South

- Three mainline segments
- Seven interchanges
- 18.5 miles
- Completion in 2021
- INFRA Grant



I-94 INFRA Grant

- WisDOT applied for \$246.2 million
- Completes project by 2021
- Accelerates benefits
- Accommodates development
 - Foxconn
 - Amazon
 - Uline
 - Northwestern Mutual
- Supports CAV Technology



I-94 North-South Corridor Characteristics

- Primary connection between Chicago and Milwaukee
- Two metro areas: 5 million jobs, 11 million residents
- Milwaukee airport, Amtrak Hiawatha, Port of Milwaukee, three Class I railroads



I-94 North-South Corridor Characteristics

- \$10 billion Foxconn manufacturing development
- Uline corporate headquarters, warehouses
- Amazon distribution center
- Haribo's first North American candy factory
- IKEA
- Supporting and complementary businesses in Wisconn Valley and throughout corridor



Creating Smart Corridors

- Initial planning-level guides for CV and AV deployment
- Guides refined as stakeholder needs identified, systems engineering process applied, technology matures
- Three CV- and AV-use cases identified
 - Freeway and local road safety, operations
 - Freeway commercial vehicle/freight efficiency, and throughput to/from GMIA
 - “Last-mile” tech-based options on surface streets



USE CASE 1:

Freeway/Local Road Safety, Operations



- Improve by providing opportunities for vehicles and infrastructure to communicate
- Accommodate future CV applications
- Expand on existing ITS uses such as:
 - Smart traffic signal technology
 - Travel time notification
 - Emergency vehicle preemption
 - Intersection warning detectors



USE CASE 2:

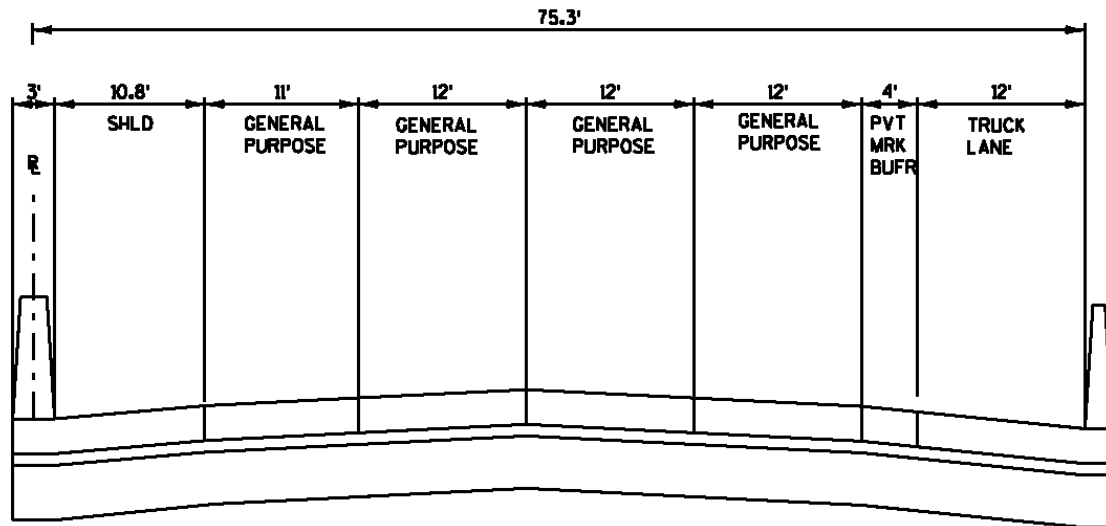
Freeway Freight Efficiency to/from GMIA

- Partnership with Foxconn
- Complements Use Case 1
- INFRA commitment: Dedicated I-94 CV/AV functionality by 2021
- Current I-94 projects aim to ready corridor for CV/AV
- Technology maturing and evolving
- Auto industry dependent for individual users

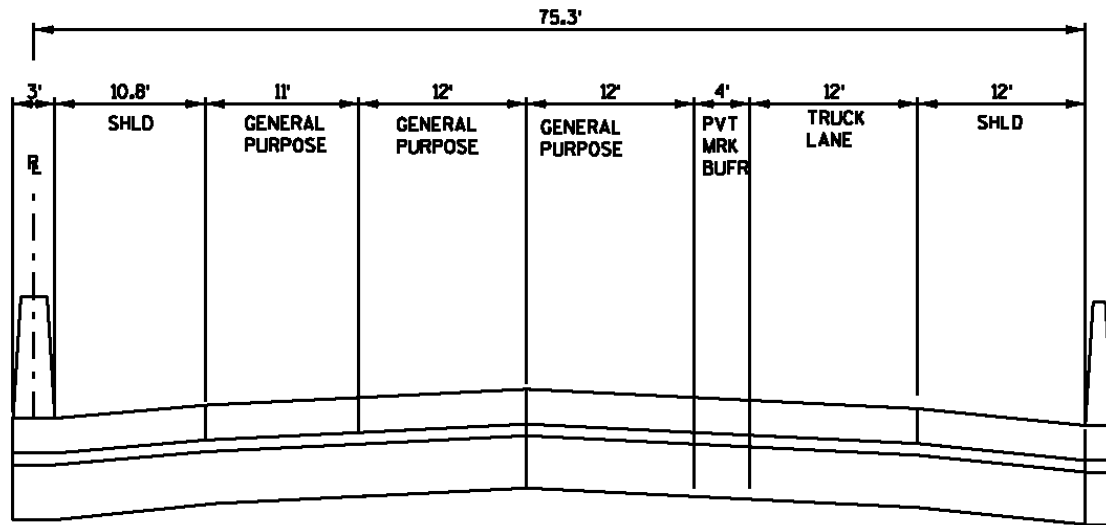


Source: www.truckinsurancenitic.com





OUTSIDE SHOULDER CONVERSION



OUTSIDE LANE CONVERSION

USE CASE 2:

Freeway Freight Efficiency to/from GMIA

- Physical infrastructure considerations
- Potential future lane for CV/AV and traditional freight
- Options
 - Convert shoulder to CAV lane; or
 - Convert through lane to CAV lane
- Pros and cons with both options



USE CASE 3:

“Last-Mile” Tech-Based Options on Surface Streets



- Transportation from I-94 to front door or loading dock of Foxconn, other businesses, GMIA
- Work with Foxconn on-campus AV shuttle
- Last-mile freight connections
- Surface street infrastructure planned to support future technology



Proposed CV-/AV-Enabling Infrastructure

- Build on investments in TMC and communication tech
- I-94 N-S plans include:
 - Additional CCTV locations provide full coverage of corridor
 - Two new dynamic message signs
 - Detector stations collect vehicle data and support vehicle-to-infrastructure applications
 - Fiber optics provide connectivity throughout corridor
- Evaluating plan additions for:
 - Tighter spacing of detector stations on freeway
 - Cameras and fiber on surface streets
 - Traffic signal controllers will support future tech applications



Other Considerations

- Wisconsin resources
 - AV proving grounds
 - Governor's committee on CV/AV testing and deployment
 - Ultimate progression to fully AV operations will be gradual
- Technology rapidly evolving



Completed and Upcoming

- ✓ INFRA Grant submittal – October 2017
- ✓ Initial CV/AV roadmaps developed – December 2017
- CV/AV concept of operations and needs assessment/implementation plan – **Spring through Fall 2018**
- Systems engineering and design – **2018/2019**
- Demonstrations and testing – **2020/2021**
- Full implementation of CV/AV functionality – **2021**



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