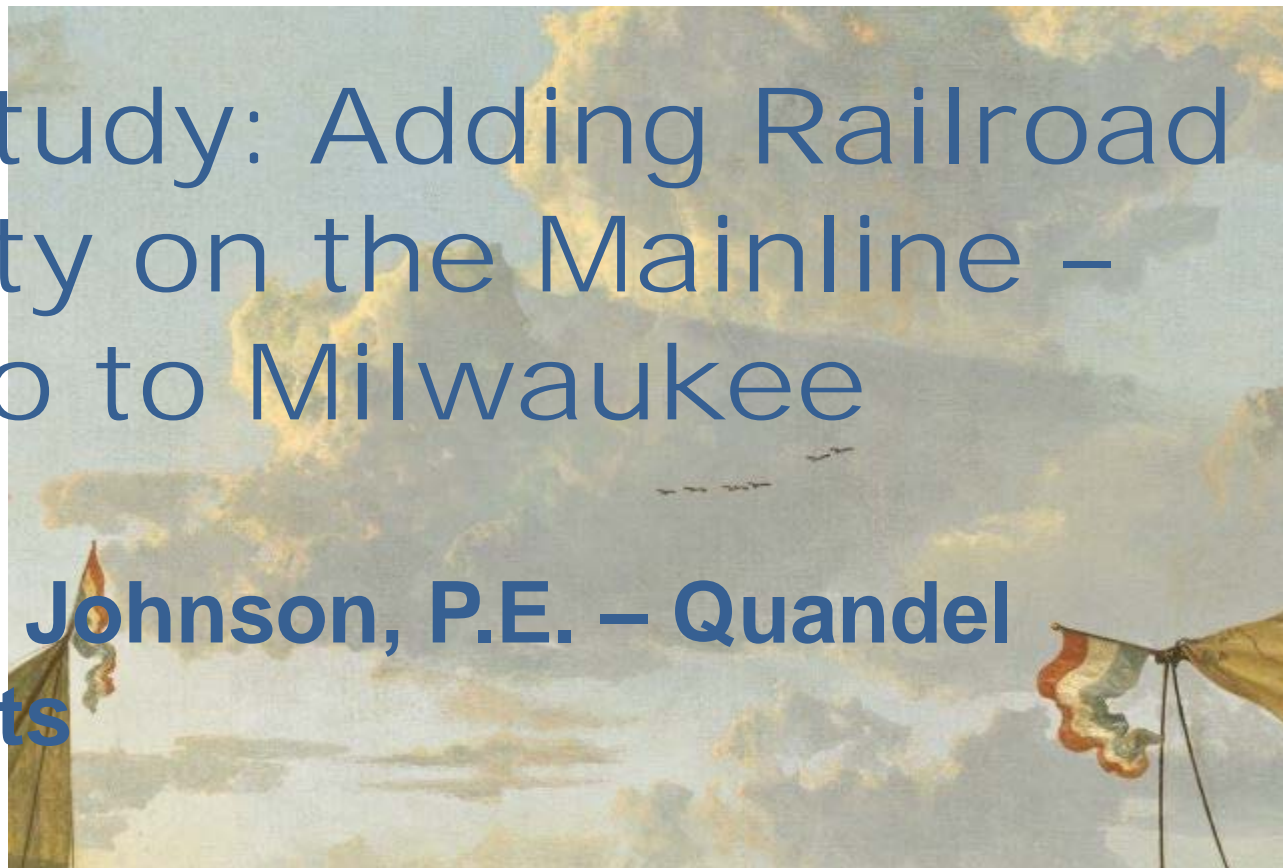


2015 FRA Rail Program Delivery



Case Study: Adding Railroad Capacity on the Mainline – Chicago to Milwaukee

**Melanie K. Johnson, P.E. – Quandel
Consultants**



Agenda

- Introductions
- Chicago-Milwaukee Intercity Passenger Rail Project
- Overview of the Corridor and the Chicago Area Network
- Rail Corridor Challenges
- Proposed Improvement Program
- Questions

Introductions

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Introductions

- Melanie Johnson, P.E. - Associate and Project Manager with Quandel Consultants in Cleveland, OH office
- B.S. in Civil Engineering from Purdue University
- Have spent the past 6 years working on high speed rail planning and engineering
- Member of APTA and APTA High Speed Rail Committee
- PM of Chicago-Milwaukee Intercity Passenger Rail Program, funded by WisDOT

Chicago-Milwaukee Intercity Passenger Rail Project

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Project Description

- Assessment of potential environmental impacts due to increase in Amtrak's *Hiawatha Service* from 7 round trips to 10 round trips at a maximum speed of 79 MPH and 90 MPH
- Service Development Plan to outline how the proposed service improvements will be implemented (operations, financials, capital programming)
- With railroad stakeholder working group, identify infrastructure improvements needed and clear projects environmentally within the EA
- FRA wants to expedite the movements of all rail users: commuter, freight, and intercity



Project Scoping

WisDOT and IDOT goals

- Improve Amtrak Chicago-Milwaukee *Hiawatha Service* (add train frequencies, reduce travel time)
- Meet Purpose and Need

Completion of EA and SDP

- Meet federal/state environmental requirements
- Make Chicago-Milwaukee corridor eligible for future federal funding
- Position project to go straight into Final Design/Construction phase

Next steps (future phases)

- *Final Design*
- *Construction*

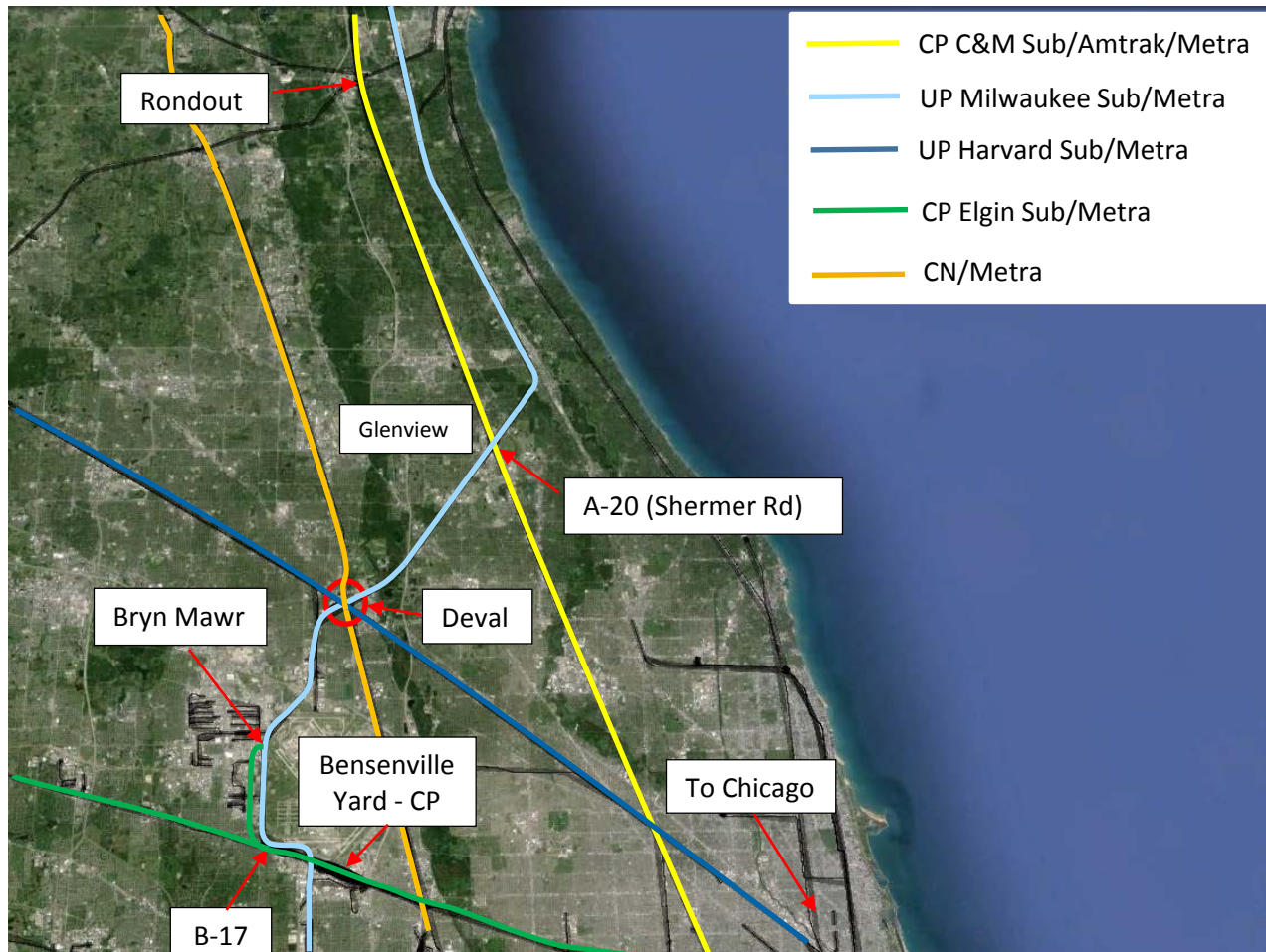
Overview of the Corridor and the Chicago Area Network

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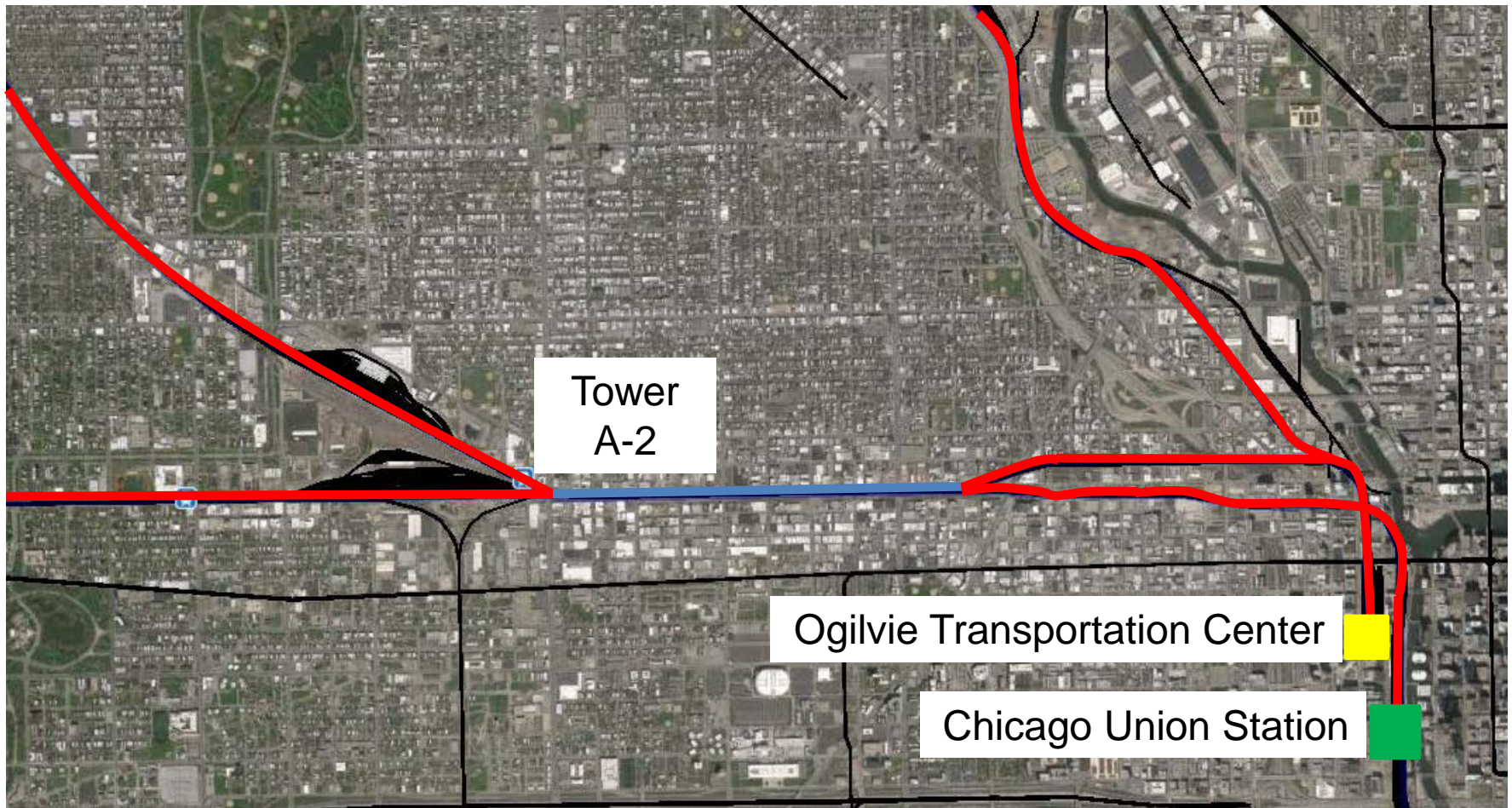
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Chicago Area Network



Chicago Area Network



Overview of the Corridor

- The Chicago, Milwaukee, St. Paul and Pacific Railroad Co. (The Milwaukee Road) was established in 1928 after the original Milwaukee and Waukesha Railroad was purchased, combined, renamed and reorganized
- The first Hiawatha train ran in 1935 from Chicago through Milwaukee to St. Paul and Minneapolis
- The *Hiawatha Service* as we know it began operating in 1971 under Amtrak



Overview of the Corridor

- The Milwaukee Road was constructed as a two main track railroad with single direction signaling and switches that allowed trains to operate at 25 MPH over them; passing tracks on mainline in both directions sized for 1920s era freight trains
- Since its construction, the use of the railroad has drastically changed as dozens of Canadian Pacific freight trains and over 60 Metra trains have been introduced to the corridor
- Improvements have been made over the years to upgrade tracks and switches and install bi-directional signaling, but the functionality of the route has not changed since its inception

CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC RAILROAD CO.	
MILWAUKEE DIVISION	
First District	
TIME TABLE No. 61	
Taking effect at 2:01 A. M. Central Standard Time	
Sunday, April 29, 1956	
For the government and information of employes only	
F. E. DEVLIN, Assistant Superintendent	M. GARELICK, Superintendent.
C. A. NUMMERDOR, General Superintendent of Transportation.	
F. G. MCGINN, Assistant General Manager	J. J. O'TOOLE, General Manager

Rail Corridor Challenges

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Rail Corridor Challenges

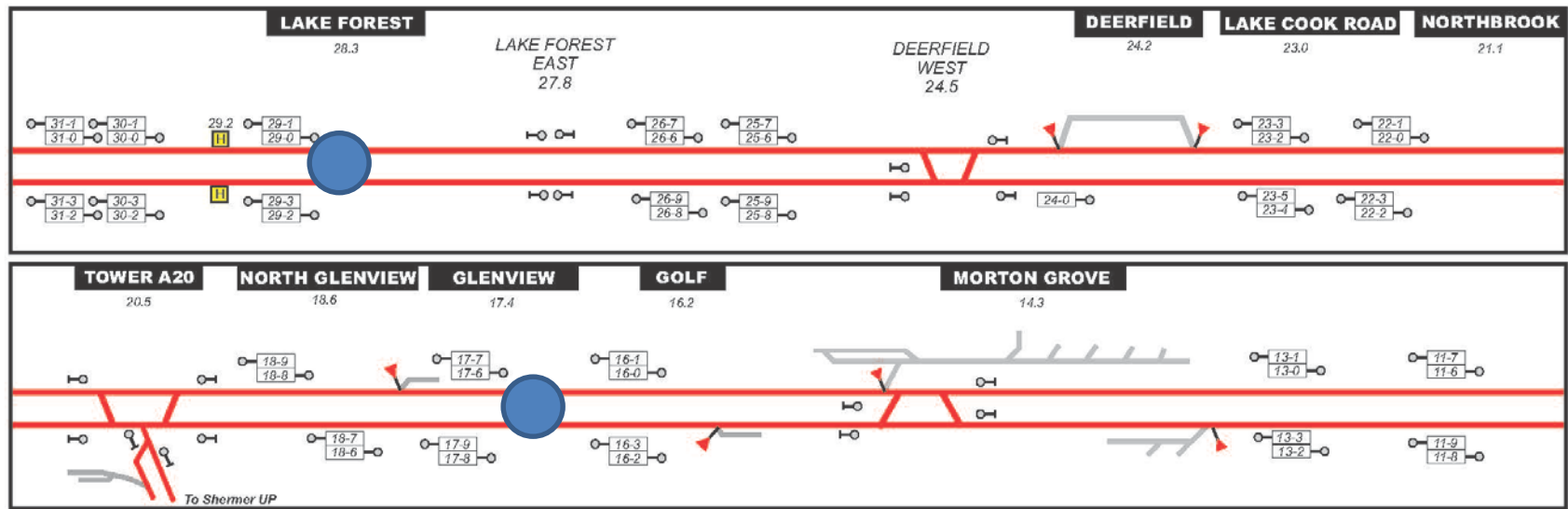
- Working Group Meetings were held with Canadian Pacific, Union Pacific, Metra, and Amtrak in the winter and spring of 2013
- Operational constraints:
 - Slots for additional trains between Chicago Union Station and A-2
 - Reduced maintenance windows for Metra
 - Delays for CP/Amtrak at Milwaukee Airport Rail Station
 - Capacity constraints in Deerfield due to trains turning back on mainline
 - Delays for CP, Metra, and Amtrak at Rondout
 - Delays for all trains near A-20

Rail Corridor Challenges – Slots for Additional Trains

- Original 10 round trip schedules were prepared using Metra schedules for the lines operating between Chicago Union Station and A-2
- Original schedules did not include deadhead moves and other non-revenue moves
- Working with Metra, the team identified slots that would meet the need of the expanded service but would not interfere with existing Metra operations

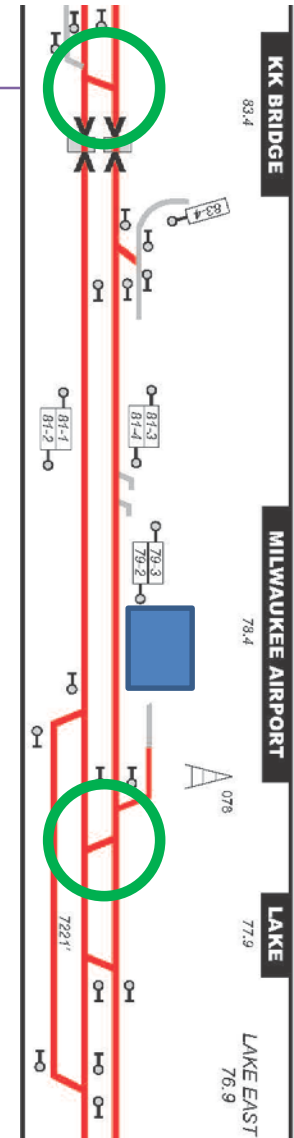
Rail Corridor Challenges – Reduced Maintenance Windows

- Metra identified a constraint with maintenance windows being reduced due to Canadian Pacific and Amtrak service
- Instead of doing maintenance work at night, which the surrounding communities would oppose, Metra identified two locations in which control points could be installed to allow trains to operate on the in-service track while the second main has maintenance work done



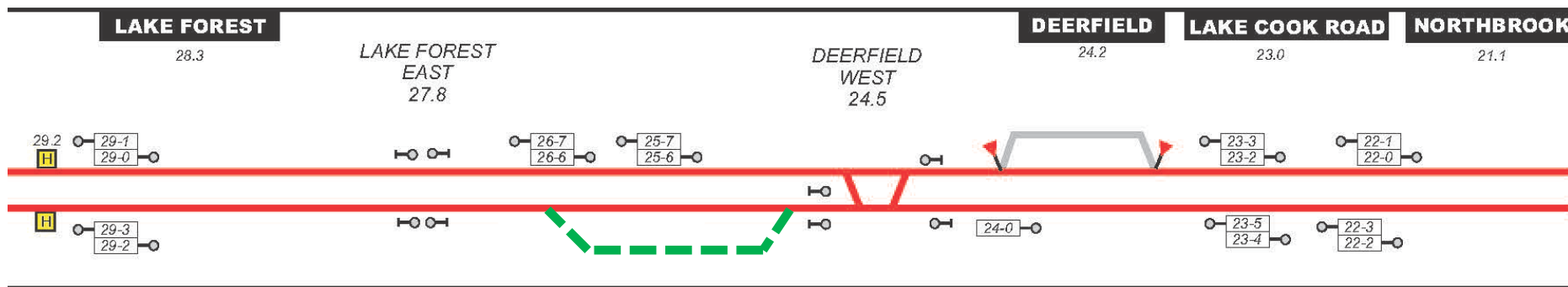
Rail Corridor Challenges – Milwaukee Airport Rail Station

- There is currently only one platform at the Milwaukee Airport Rail Station, serving both Chicago-bound and Milwaukee-bound Amtrak trains
- Chicago-bound trains must cross from Main 2 to Main 1 5 miles north of the station
- Can cause significant delays for Canadian Pacific trains and severe reliability issues
- Solution is to install a second platform on the west side of Main 2



Rail Corridor Challenges - Deerfield

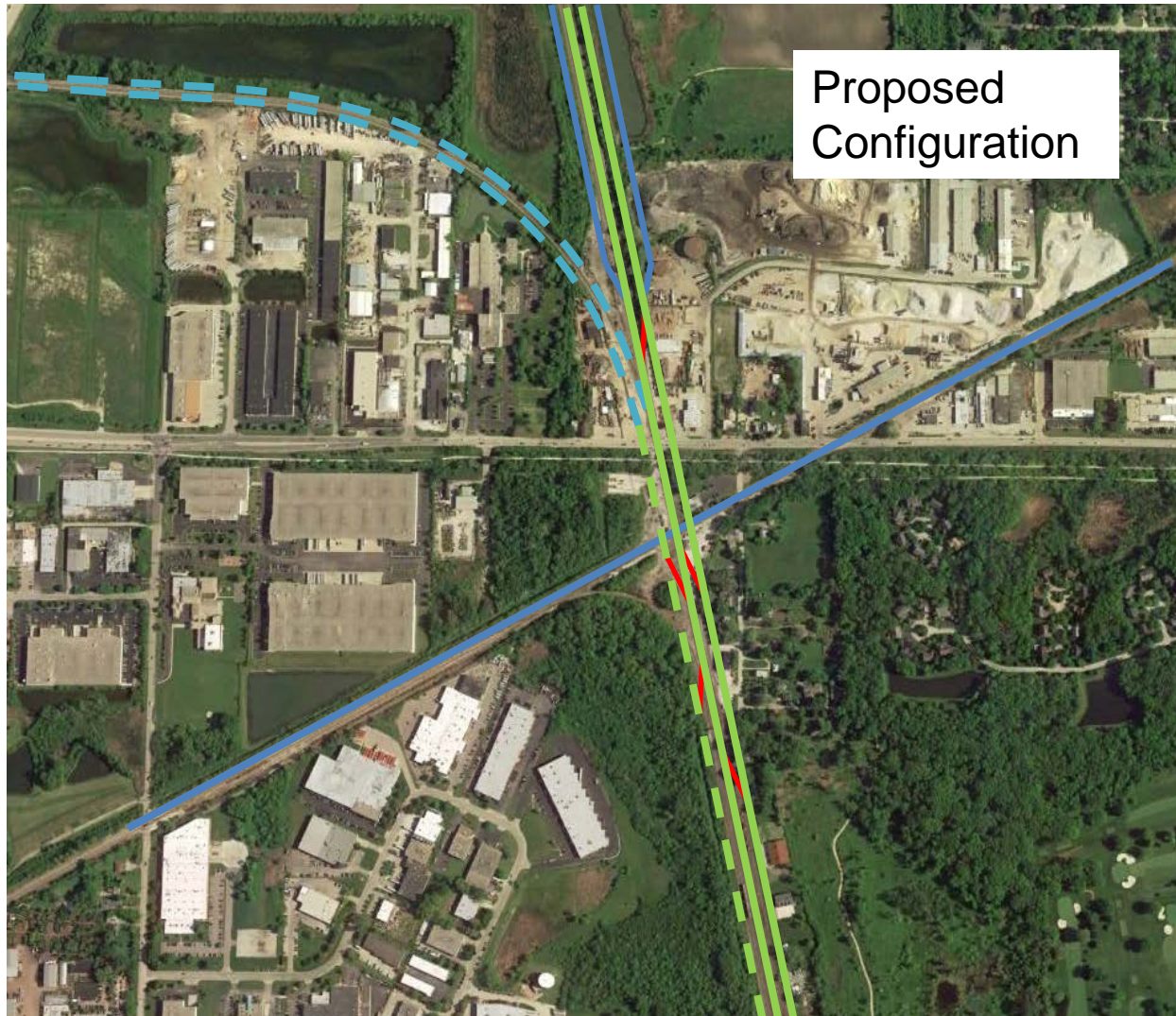
- Between 6 and 8 times per day, primarily during rush hour, Metra trains turn back trains in Deerfield, a location 24.5 miles north of Chicago
- Metra currently performs the turnback on the mainline, limiting capacity – PTC will add to the turn time
- A holding track on the west side of the mains just north of the control point at Deerfield West is proposed as a solution



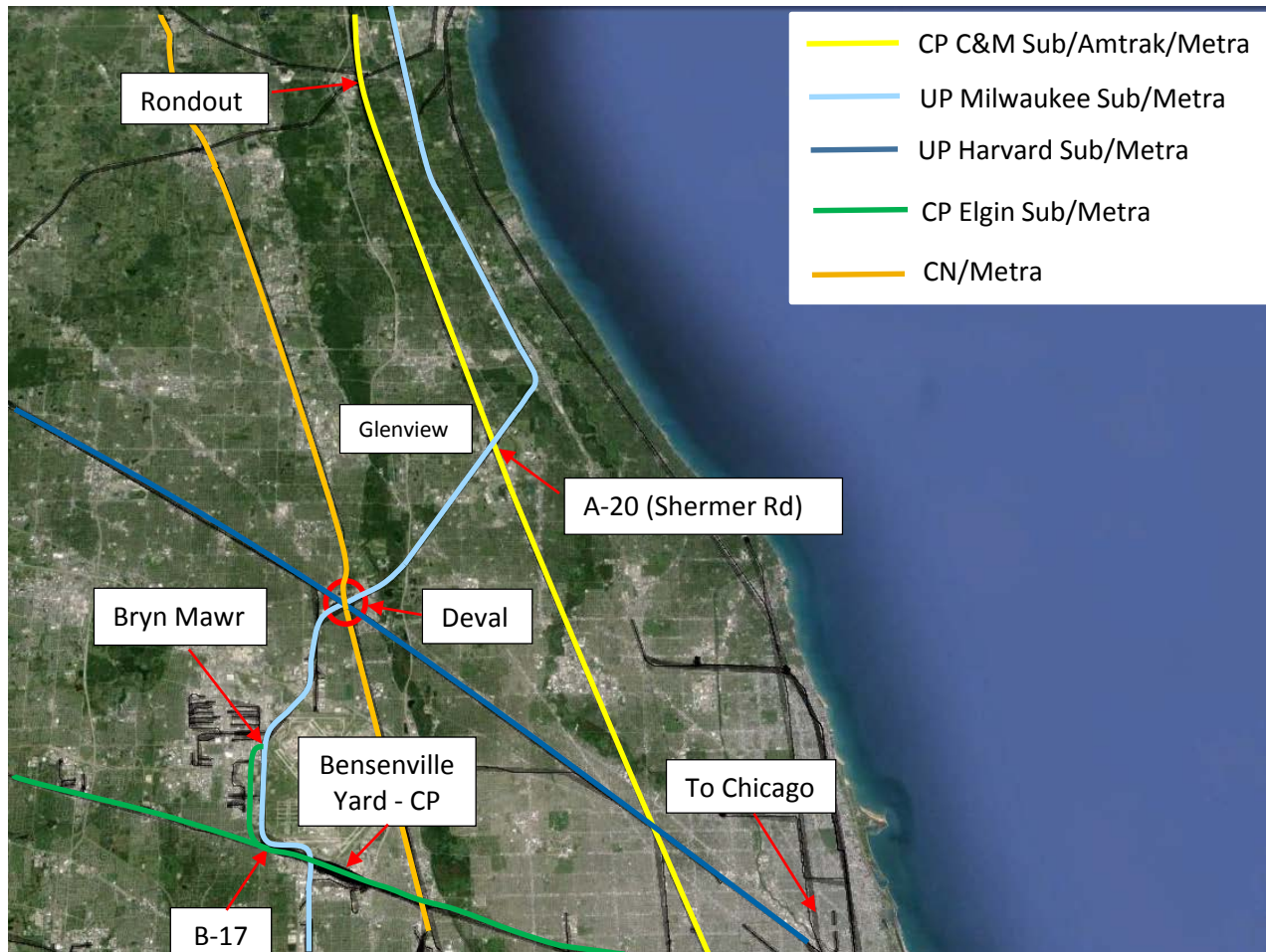
Rail Corridor Challenges - Rondout



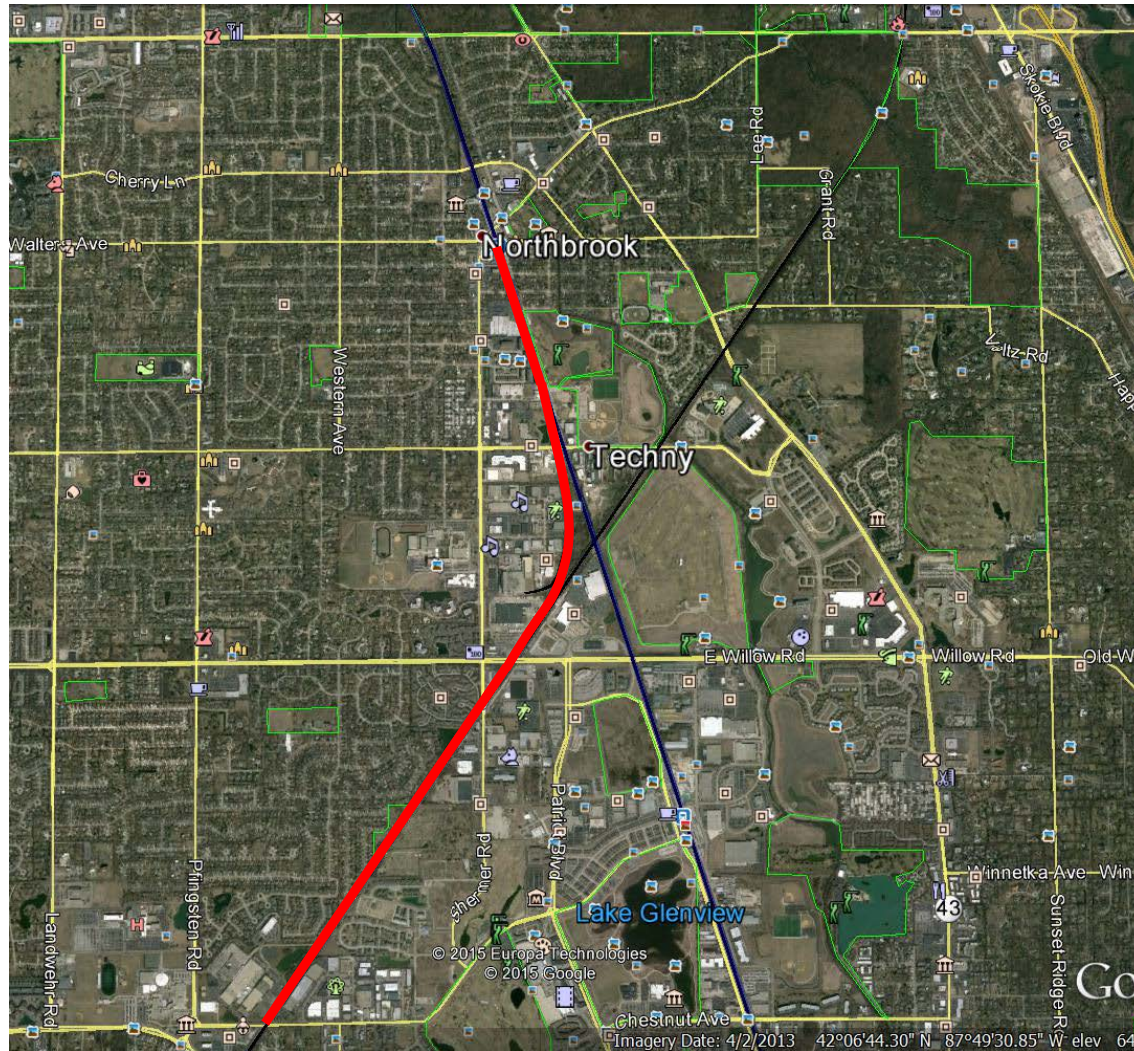
Rail Corridor Challenges - Rondout



Chicago Area Network

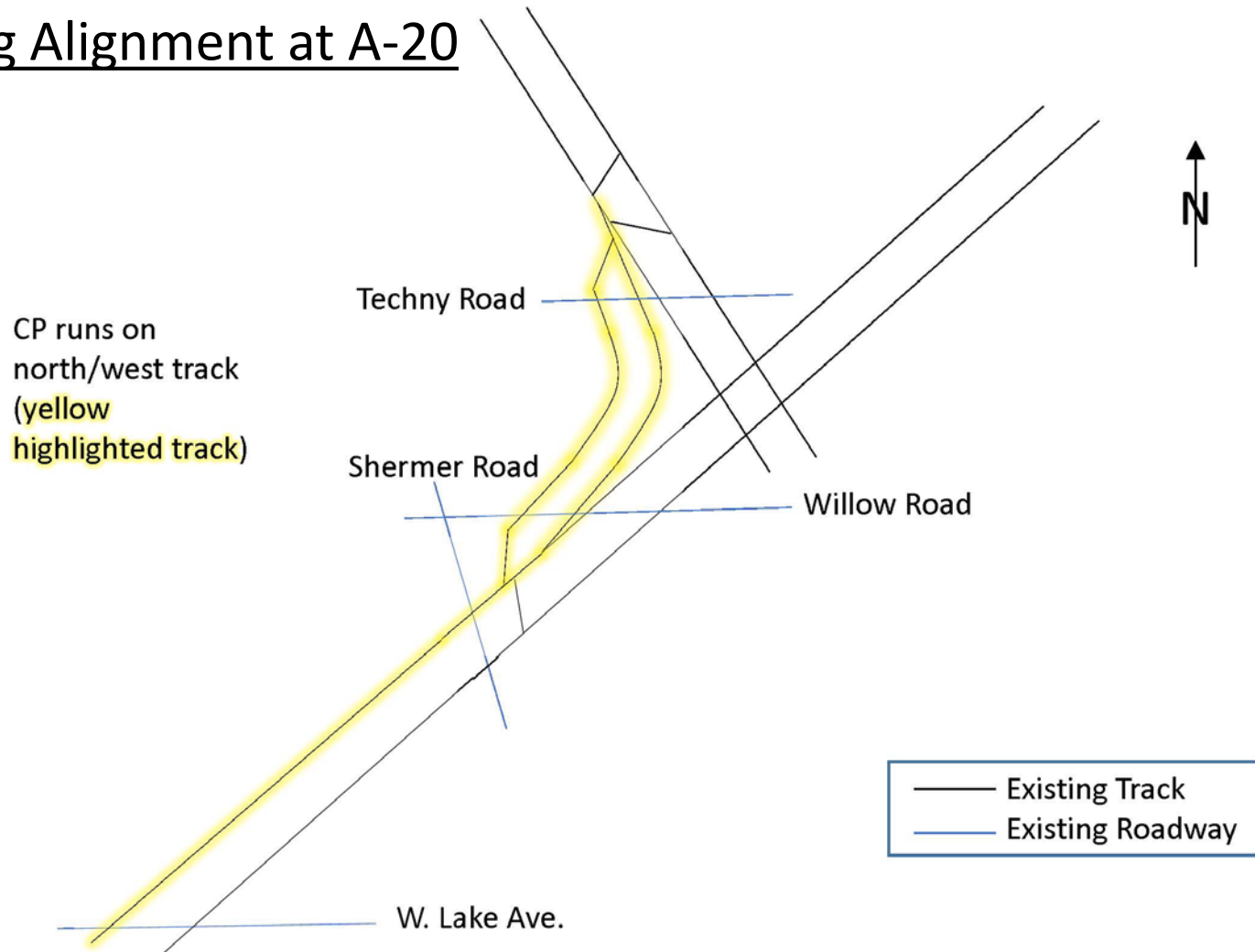


Rail Corridor Challenges – A-20



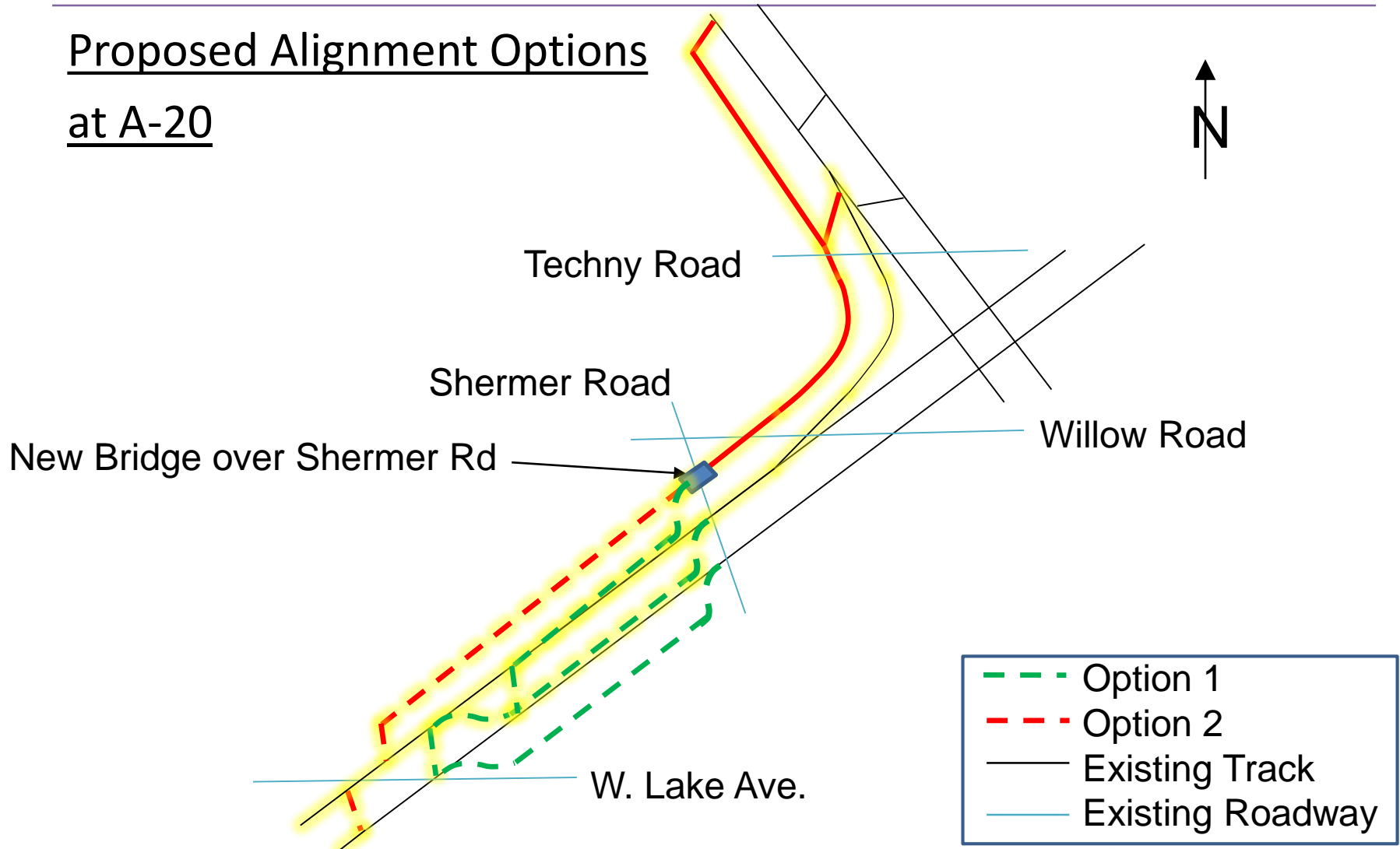
Rail Corridor Challenges – A-20

Existing Alignment at A-20



Rail Corridor Challenges – A-20

Proposed Alignment Options at A-20



Summary

- *Hiawatha Service* is operating on a 90 year old rail corridor in which major infrastructure improvements to accommodate modern train lengths and speeds have not been made
- Through intense and on-going collaboration with railroad stakeholders, the project team has identified current and future constraints in the corridor and solutions to some of the critical constraints
- Solutions to some of the constraints were more obvious than others

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