

RED AHEAD



Red and Purple Modernization (RPM) A Core Capacity Expansion

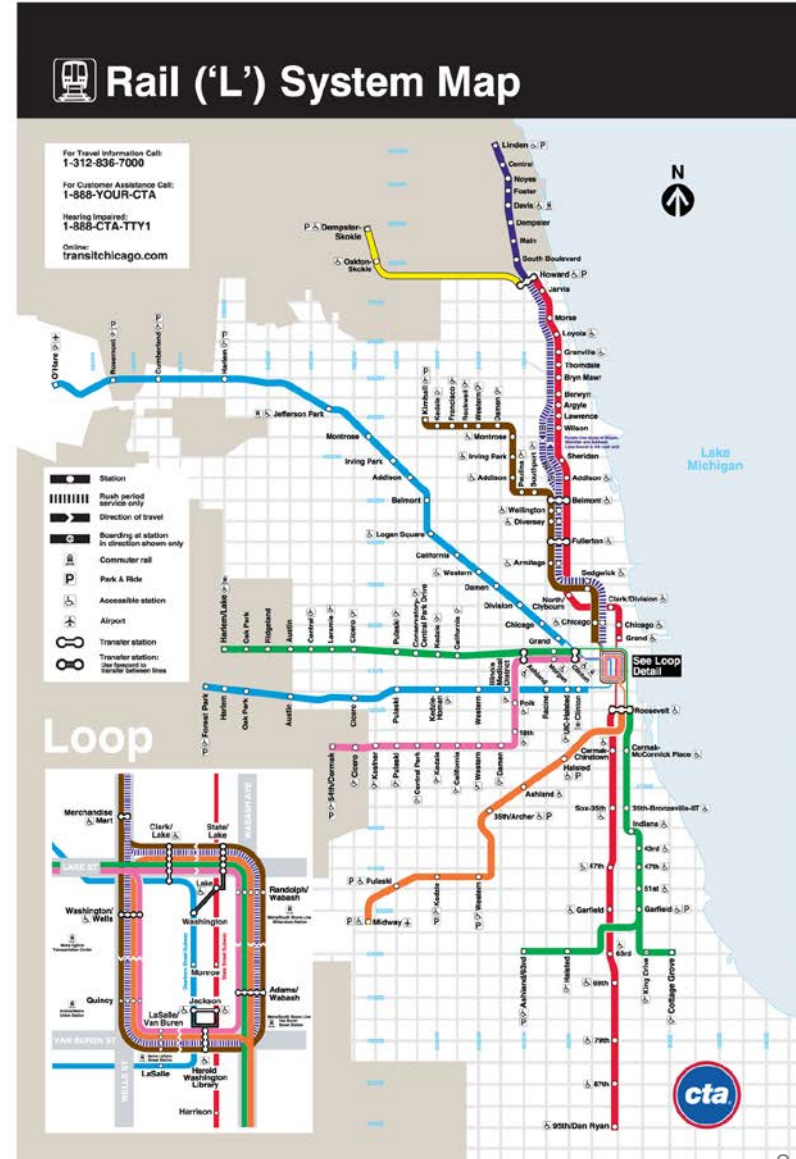
Northwestern University
Transportation Center
October 13, 2016



Chicago Transit Authority

Chicago Transit Authority

- Created in 1947
- Serves Chicago and 35 nearby suburbs
- Carries ~1.6 million trips every weekday
- Rail System
 - 145 Rail stations
 - 224 miles of Track
- Fleet
 - 1,885 buses
 - 1,400 rail cars

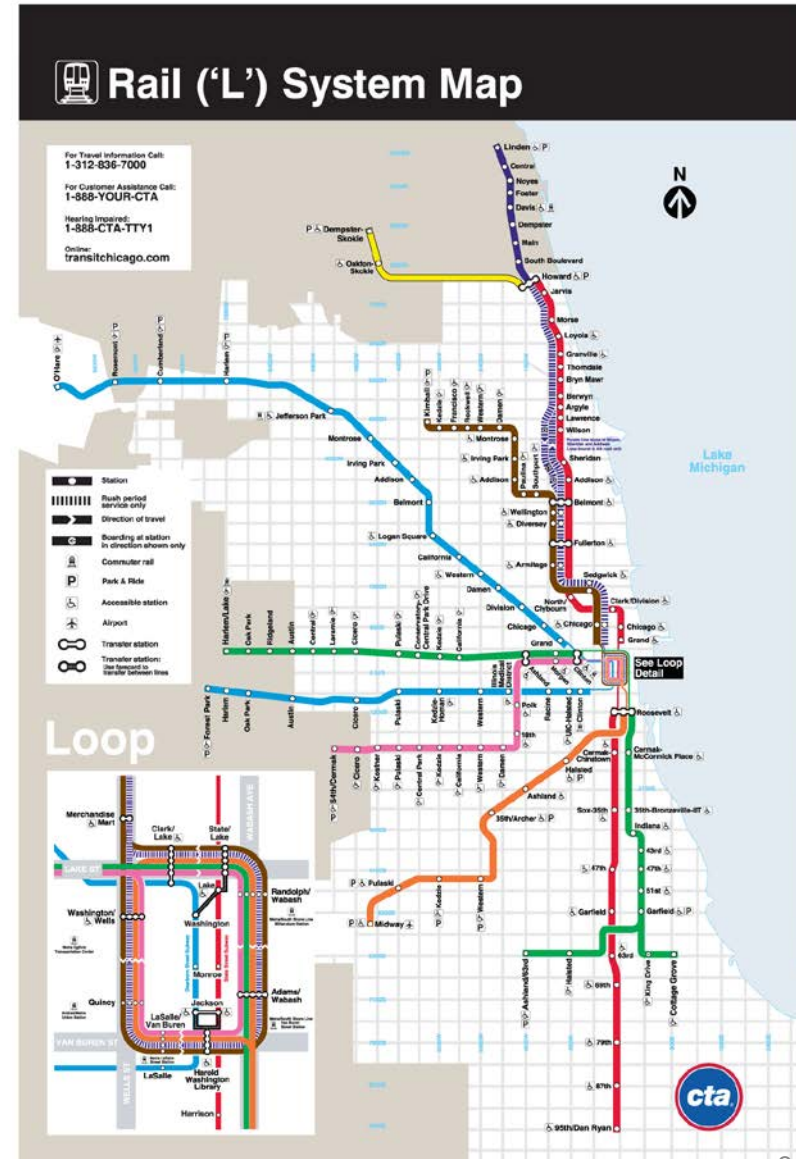


Growing Rail Ridership

- CTA provided 241,676,065 trips in 2015 on its eight rail lines (up 2% from 2014 to 2015)
- 2015 rail ridership was the largest since CTA began tracking ridership in 1961.
- Peer Comparisons:*

 - NYCT – 2,666,925,814 (-3%)
 - WMATA – 260,004,801 (-4%)
 - MBTA – 237,545,202 (-4%)

*Includes heavy rail, light rail and street car





RED AHEAD

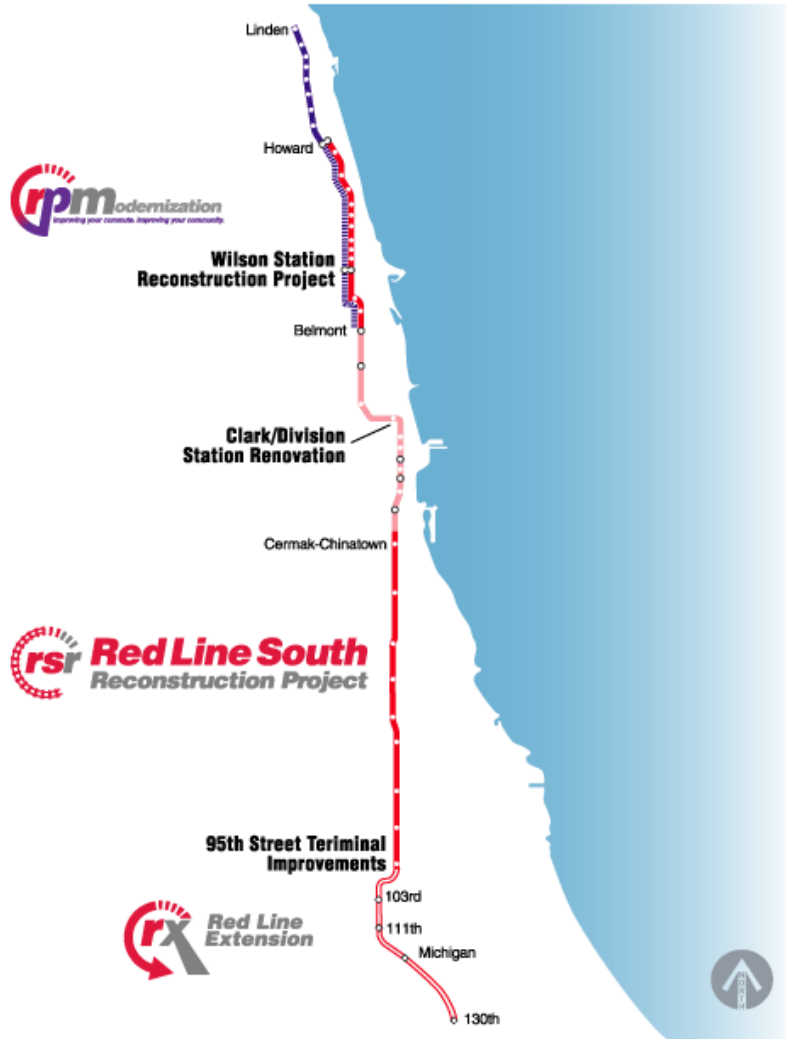


Red and Purple Modernization

BACKGROUND



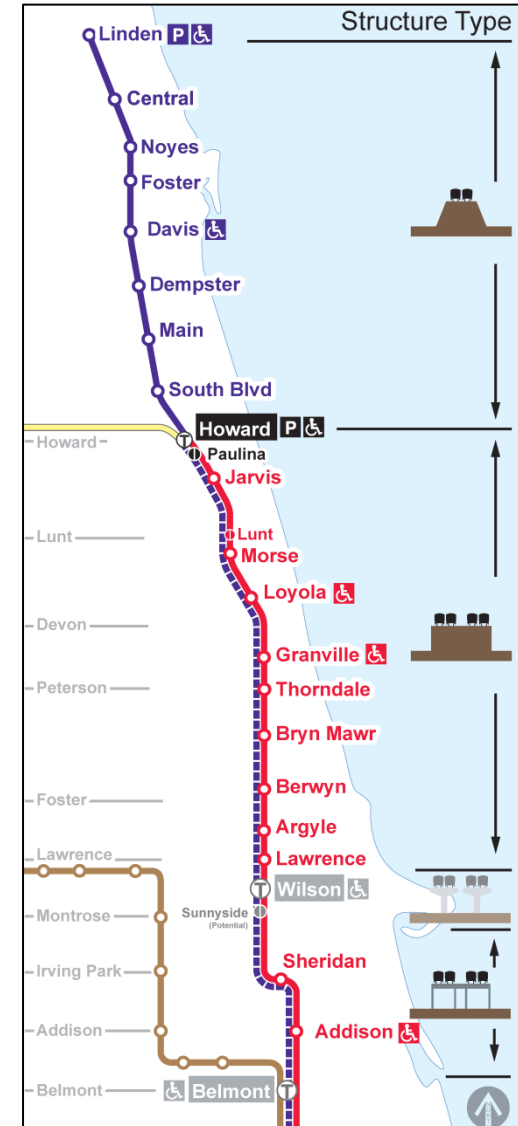
RPM and the Red Ahead Program



Red Ahead is a comprehensive initiative for maintaining, modernizing, and expanding Chicago's most traveled rail line.

Red and Purple Modernization Program

- A series of projects to improve the North Red and Purple Line Corridor:
 - Over 90 years old
 - 21 current stations
 - 9.6 miles long
 - Carries over 20% of CTA train rides
 - A multi-billion dollar program

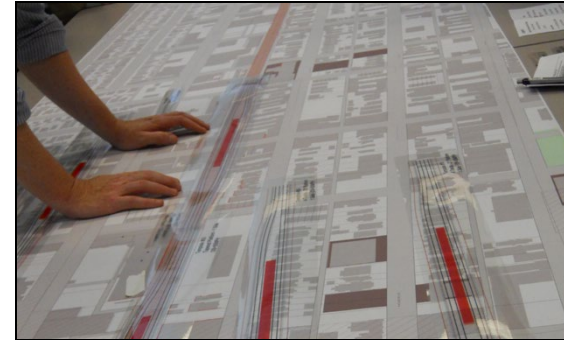


RPM Corridor Vision Goals

- **Expand capacity**
 - more riders with less crowding
- **Speed service**
 - fewer curves and better infrastructure
- **Improve accessibility**
 - all stations accessible to people with disabilities
- **Build modern facilities**
 - New wider stations, more reliable infrastructure for the next 60-80 years
- **Support economic development**
 - more jobs and new development opportunities
- **Improve customer experience**
 - modern, quiet and smooth ride



RPM Program History





RED AHEAD



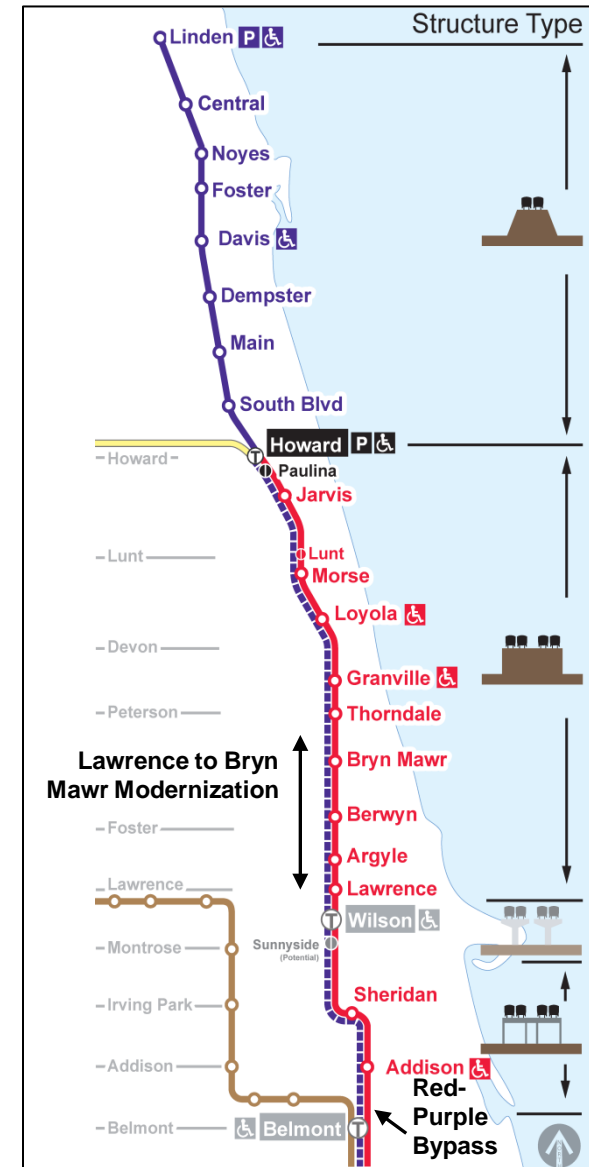
Red and Purple Modernization

PHASE ONE

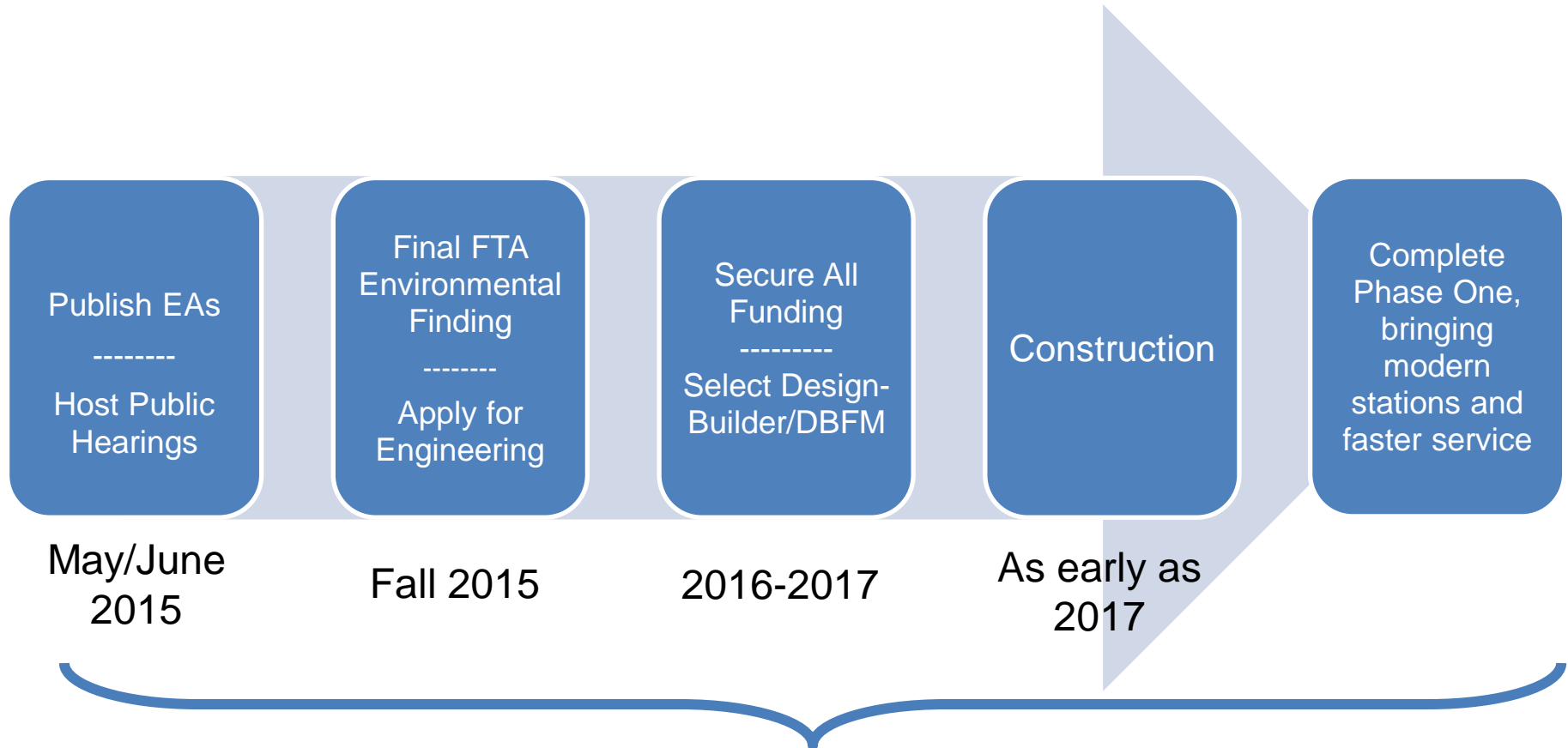


RPM Phase One

- **Lawrence to Bryn Mawr Modernization Project**
 - Replace 1.3 miles of 90-year-old track/embankment
 - Rebuild four stations and add ADA accessibility
 - 28,000 trips begin or end at these stations
 - 45,000 people live within ½ mile of these stations
- **Red-Purple Bypass Project**
 - Almost 150,000 rides every weekday
 - Current bottleneck precludes CTA from adding trains
 - Bypass allows CTA to run more trains that could serve 7,200 additional customers, PER HOUR
- **Corridor Signal Improvements**
- **CTA intends to seek Capital Investment Grant funding from the FTA's Core Capacity Program**
 - Phase One is estimated to cost ~ \$1.9 billion
 - Core Capacity Grant could cover ~ \$900+ million



RPM Phase One – Overall Schedule



Continuing dialogue with the community

Red and Purple Modernization

LAWRENCE TO BRYN MAWR MODERNIZATION

Challenge: Old Stations & Narrow Platforms

Bryn Mawr station existing photo



Solution: Modern Wider Stations

Bryn Mawr station conceptual rendering



Challenge: Antiquated Infrastructure

Bryn Mawr station existing photo



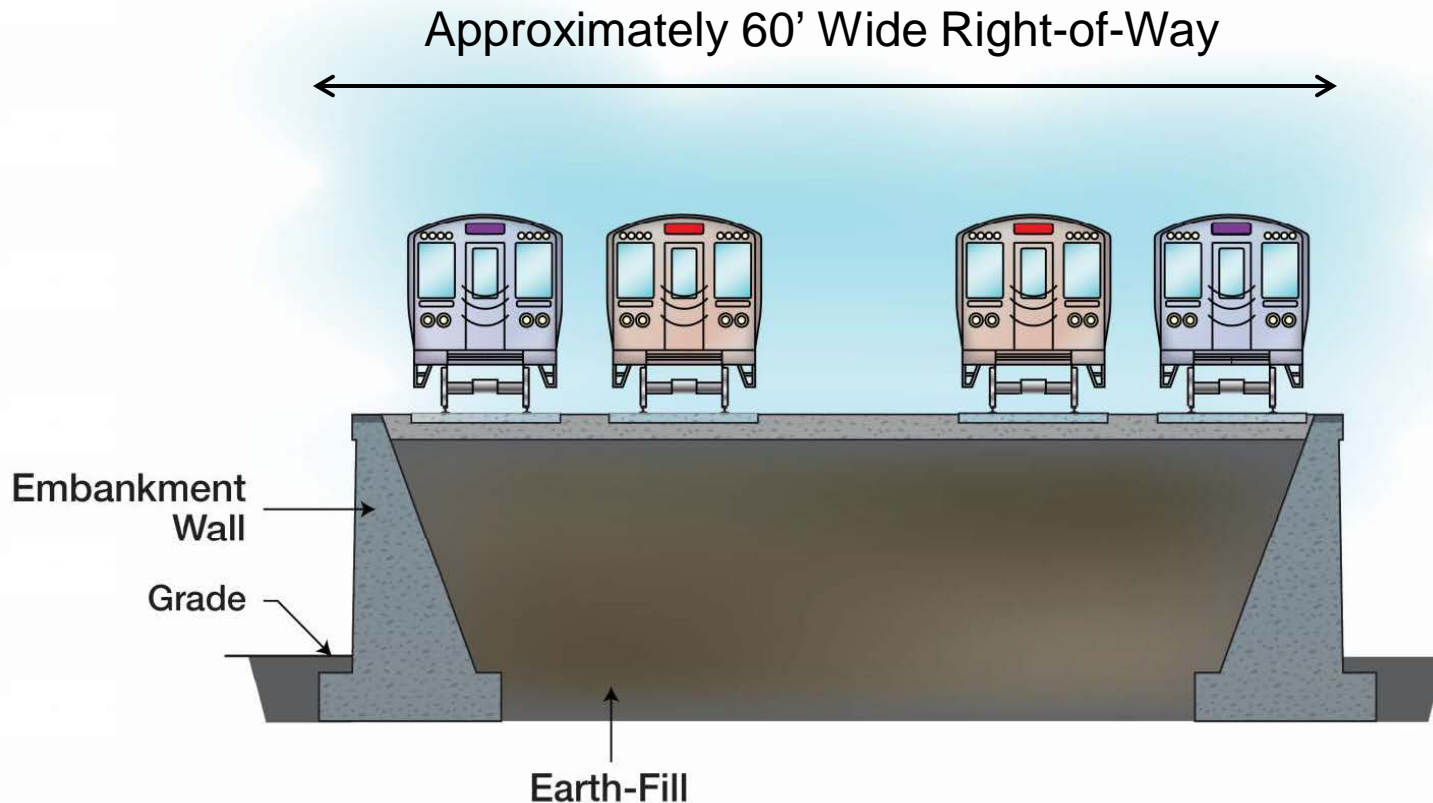
Solution: Modernize

Bryn Mawr station conceptual rendering



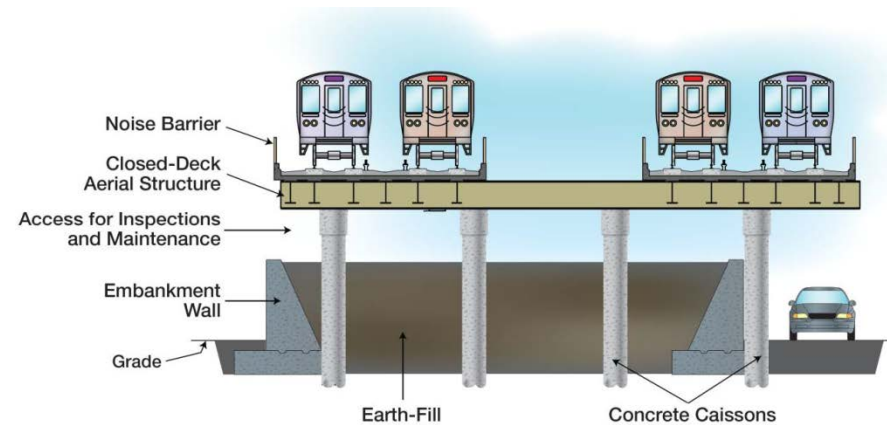
Challenge: Limited Right-of-Way

Existing embankment diagram

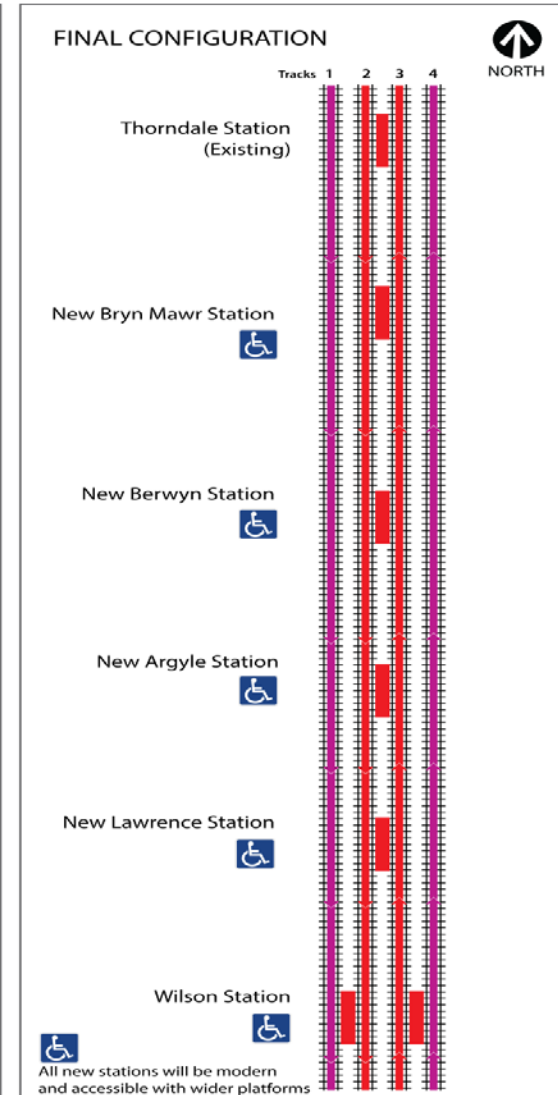
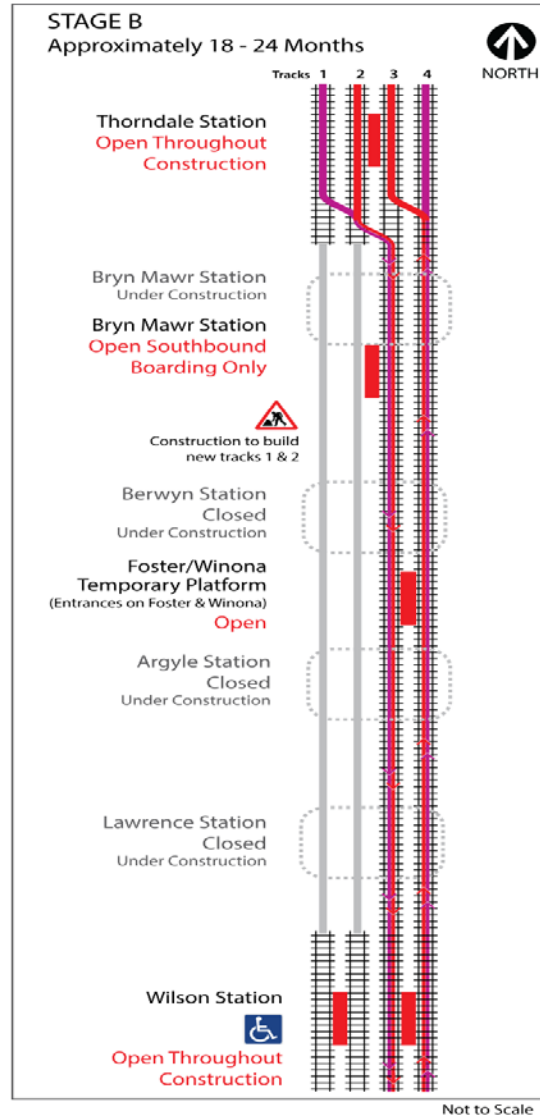
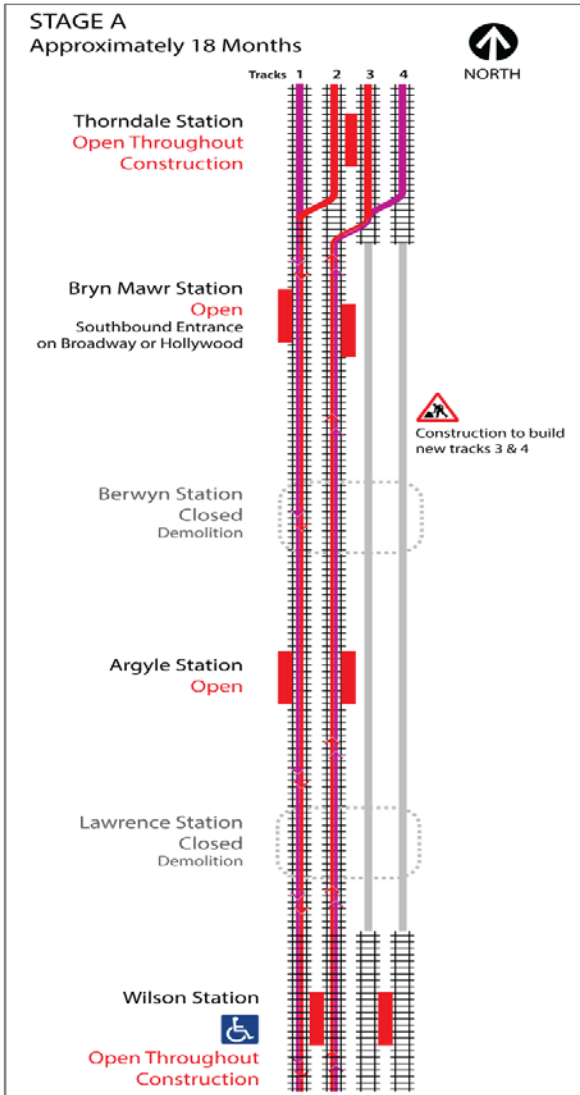


Solution: Spanning over public alley

Alley-spanning conceptual rendering and diagram



Construction Staging of Lawrence to Bryn Mawr – Start to Finish

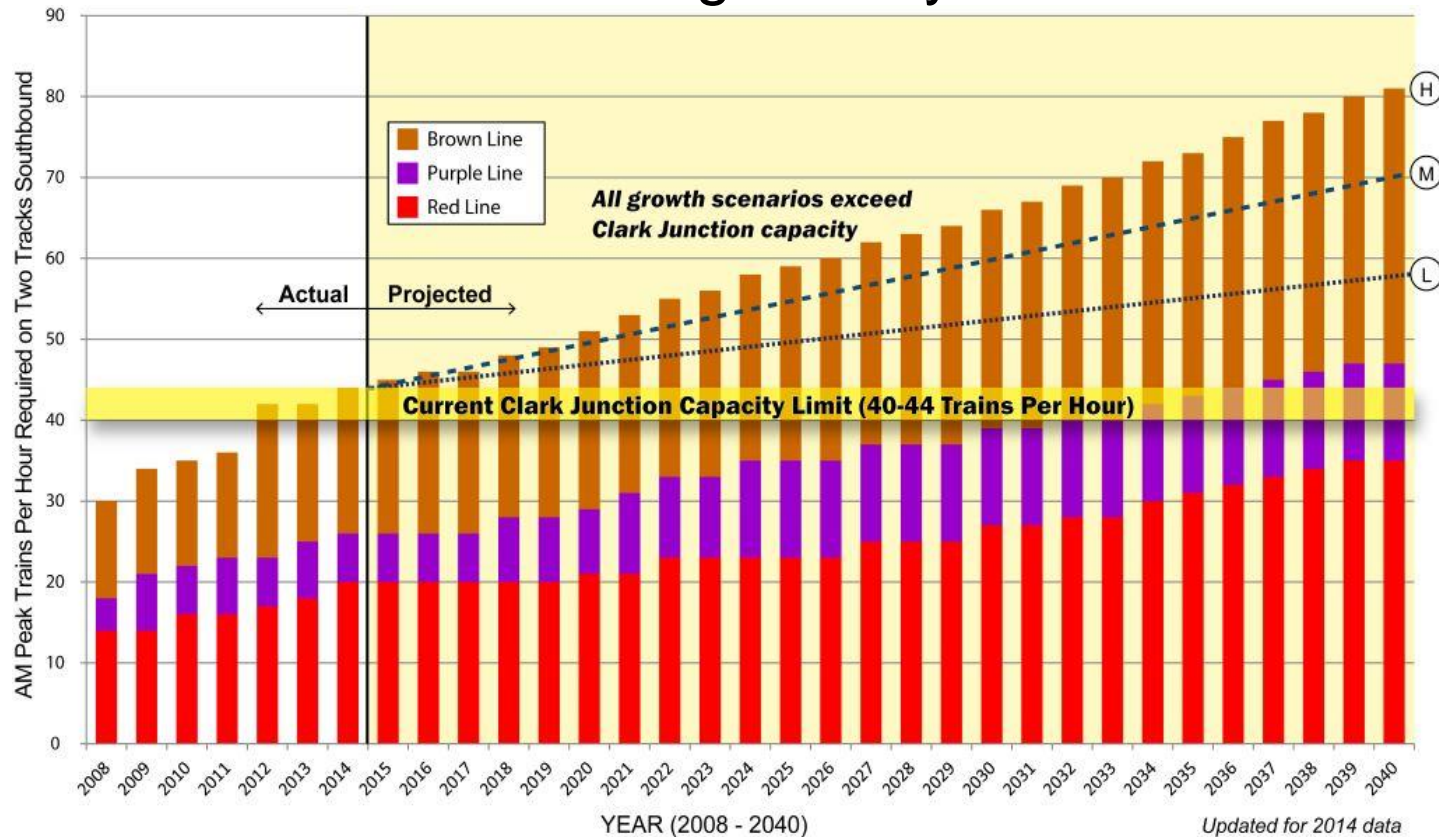


Red and Purple Modernization

RED-PURPLE BYPASS

Challenge: Growing Demand

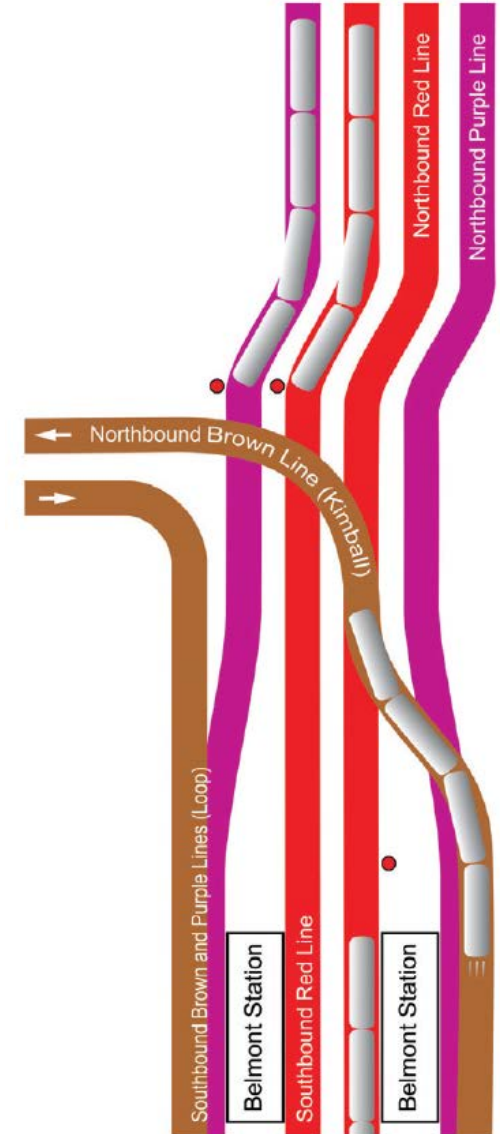
Peak hour demand has grown by 40% since 2008



- (H) High Growth Scenario based on average growth in peak hour train loading 2008 - 2014
- (M) Medium Growth Scenario (average of High and Low Growth Scenarios)
- (L) Low Growth Scenario based on annual average weekday boardings 2000 - 2014

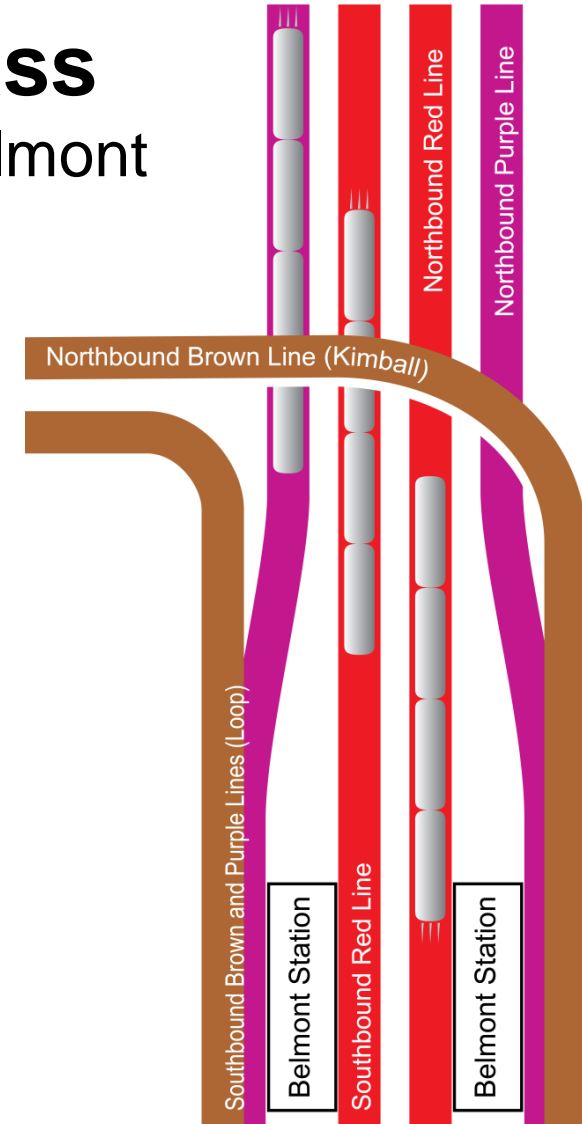
Challenge: Flat Intersection Bottleneck

Existing Photo and diagram



Solution: New Fifth Track Bypass

Conceptual rendering looking north from Belmont



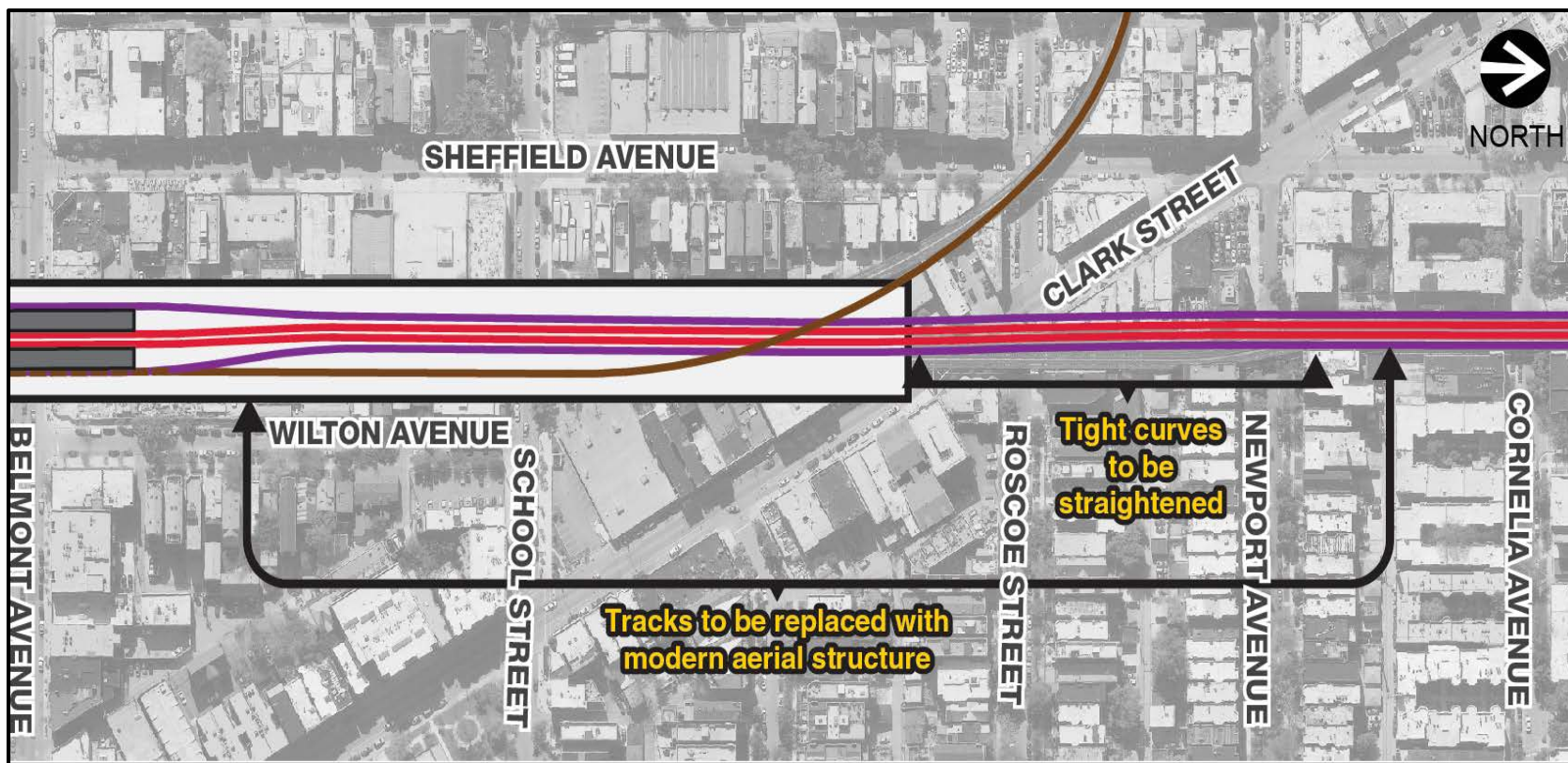
Challenge: Tight radius curves

Image of train traveling through junction



Solution: Realign curves while modernizing

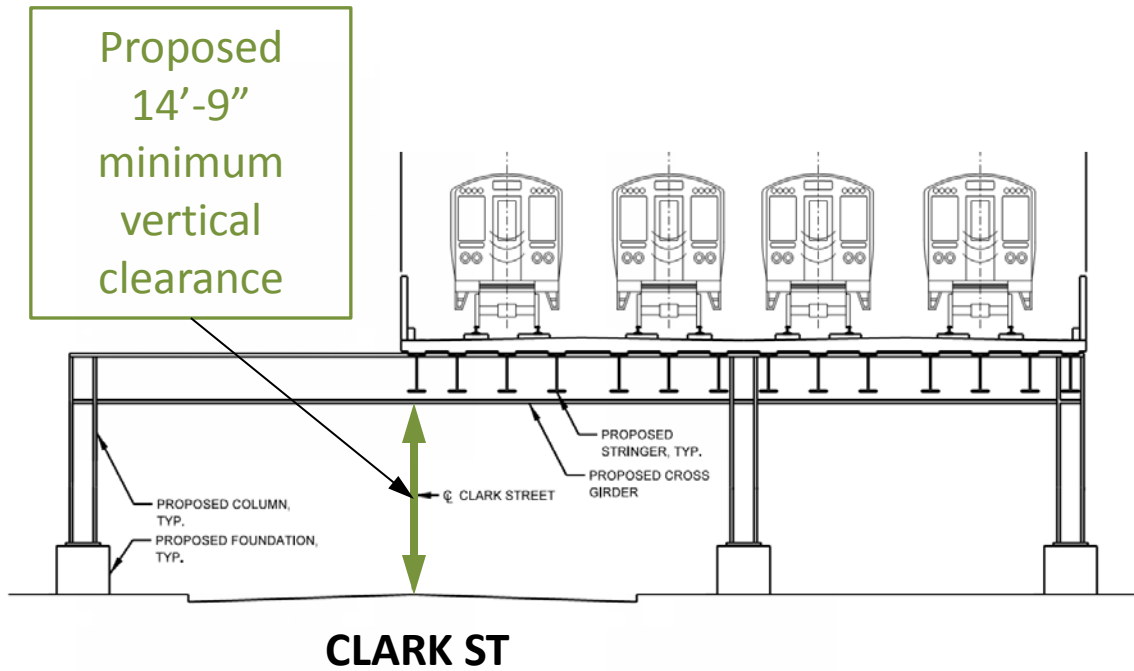
Diagram of improvements



Design Challenge: Sub-standard Vertical Clearance at Clark Street, property constraints for pier location



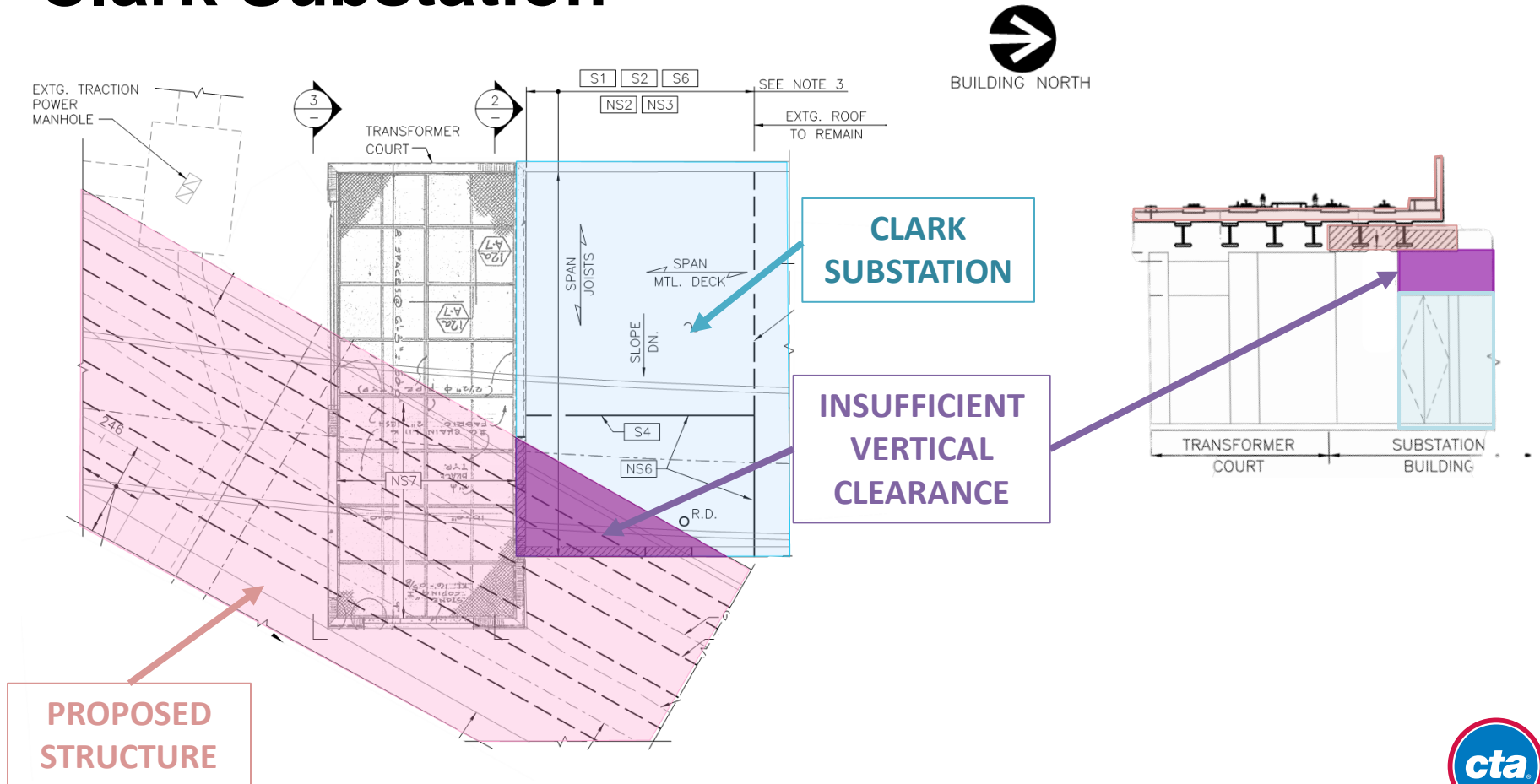
Design Solution: Clear Span Structure with offset substructure



SECTION 5-5

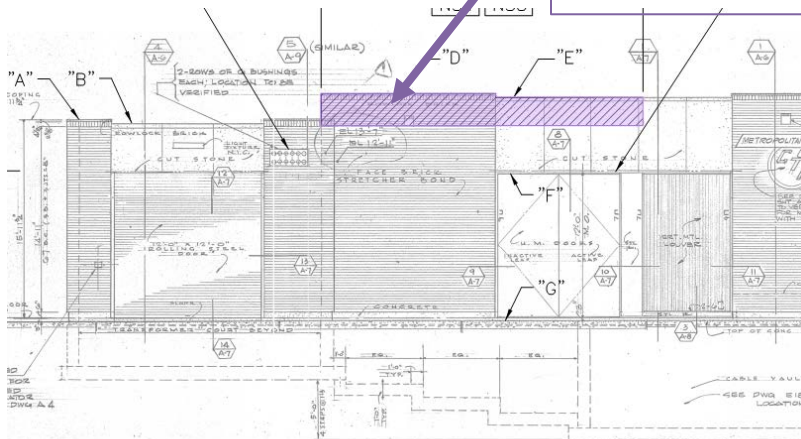
N.T.S.

Design Challenge: Avoiding Impacts to Clark Substation

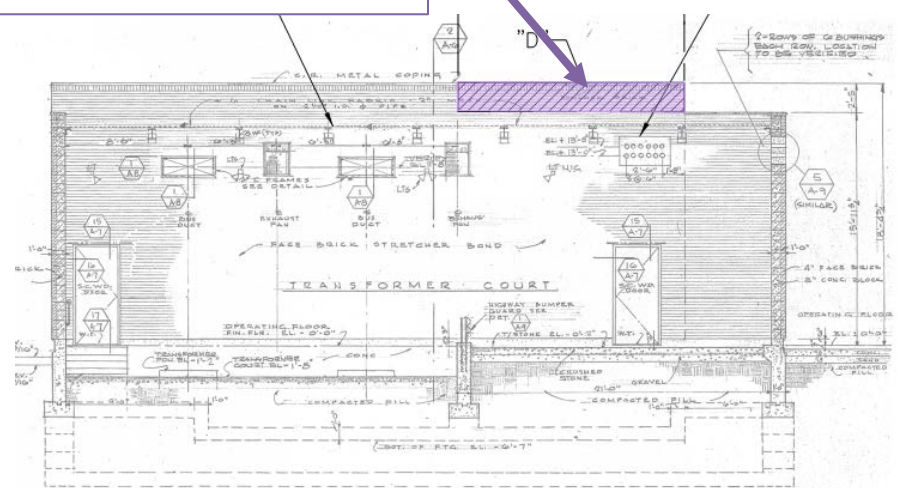


Design Solution: Structural Modifications to Clark Substation

MODIFY SUBSTATION ROOF TO GAIN SUFFICIENT CLEARANCE TO TRACK STRUCTURE- NO IMPACTS TO SUBSTATION OPERATIONS

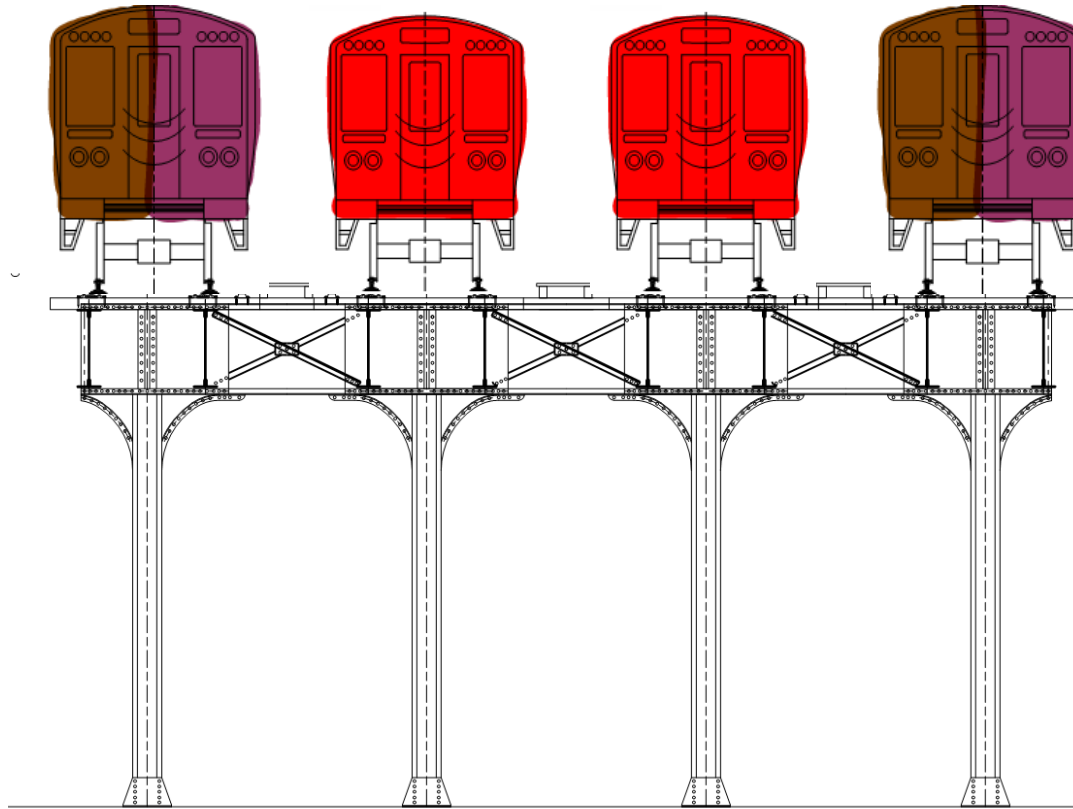


1 ELEVATION - EAST WALL
N.T.S.



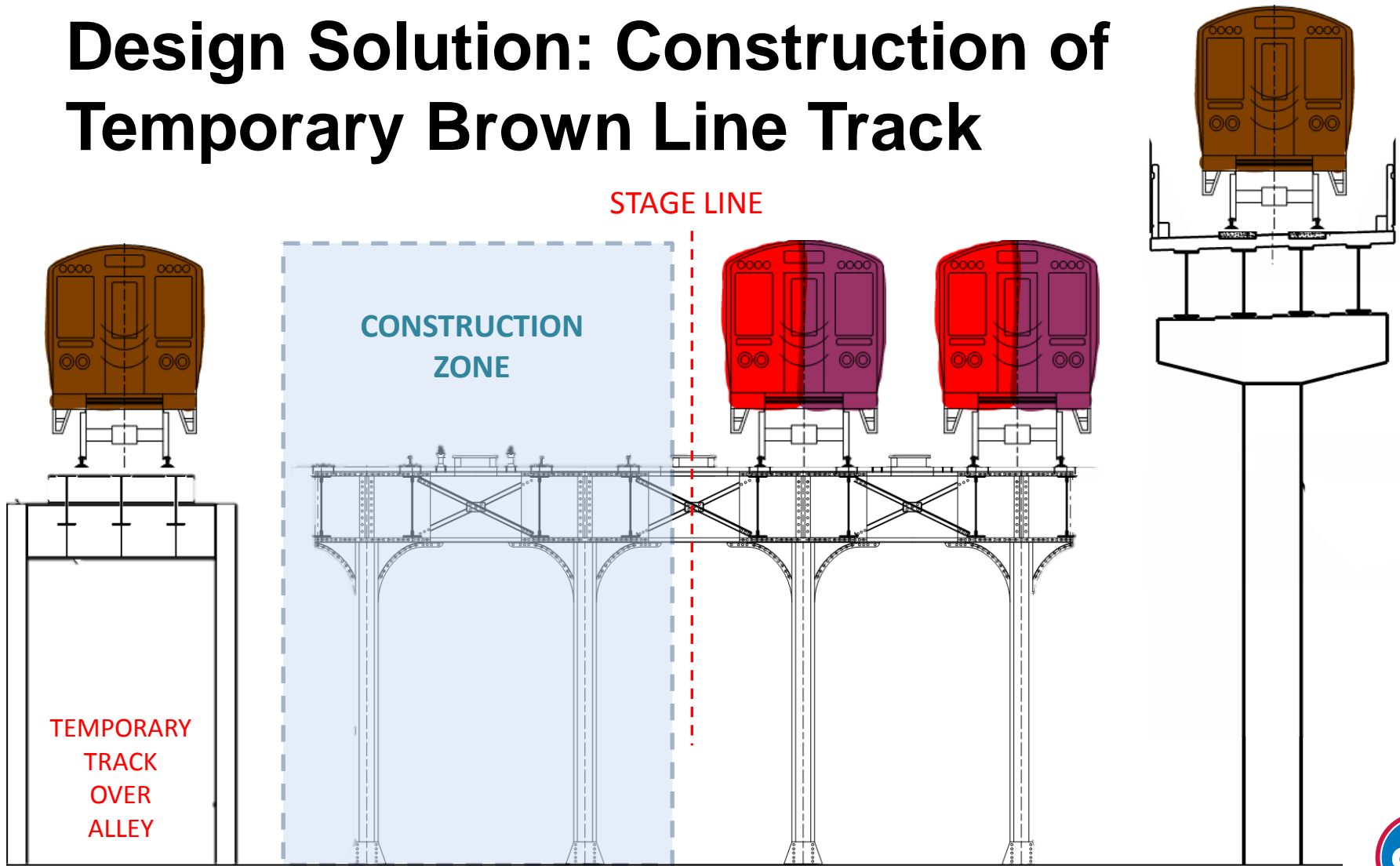
2 ELEVATION - SOUTH WALL
N.T.S.

Design Challenge: Maintain Independent Red/Brown Line Service Thru Belmont



EXISTING CROSS SECTION

Design Solution: Construction of Temporary Brown Line Track



STAGE 2 CROSS SECTION- NORTH OF BELMONT STATION

Red and Purple Modernization

TRANSPARENCY AND RESPONSIVENESS

Addressing Impacts

- Displacements
- Noise
- Construction
- Closures

Station
Closed



Neighborhood Redevelopment Plan



**Existing Condition
Photo**



**Conceptual Rendering After
Bypass Project and Before
Redevelopment**



**Conceptual Rendering with
Potential Redevelopment
Concept**

Brown Line Capacity Expansion Post Development Experience



**Before
(2002)**



**After
(2014)**

The Brown Line Capacity Expansion Project

- Constructed from 2006-2009
- \$530 million investment
- Lengthened platforms to accommodate 8-car trains
- Reconstructed 16 stations and added ADA access

Red and Purple Modernization

WHAT'S NEW & WHAT'S NEXT

What's New

- FTA Issued Finding of No Significant Impact for both RPM Phase One Projects
- CTA Awarded TOD Pilot Grant
- CTA Awarded \$125 Million in CMAQ Funding
- Project entered FTA Engineering Phase
- CTA has begun process to apply for Federal Core Capacity Expansion Grant
- State Legislature Authorized Transit TIF



What's Next

- TOD/Neighborhood Redevelopment Plan – Contract awarded September 2016
- Implement Transit TIF and secure FFGA
- Procure Early Construction Work
- Procure Design-Build /Design-Build-Finance-Maintain Contractor beginning in 2017

THANK YOU

Red and Purple Modernization Program

transitchicago.com/RPMproject

Carole Morey
Chief Planning Officer
Chicago Transit Authority
cmorey@transitchicago.com