CMAP FY 2016-2020 CMAQ PROJECT APPLICATION
TRANSIT PROJECTS

I. PROJECT IDENTIFICATION

Project Sponsor	Contact Information – Name, Title, Agency, Address, Phone, e-mail (e-mail required)
Chicago Transit Authority	**Laura Fedak** **567 W. Lake Street Chgo, Il 60661** **Phone 312-681-4108 Fax 312-681-4197** **E-mail lfedak@transitchicago.com**
Other Agencies Participating In Project **N/A**	**(Project Manager Steve Hands)**

X **New Project** ☐ Existing CMAQ Project ☐ Add CMAQ to Existing Project	☐ New Project ☐ Existing CMAQ Project ☐ Add CMAQ to Existing Project

II. PROJECT LOCATION

- Projects not readily identified by location must provide a title on the last line of this section
- Attach a map sufficient to accurately locate this project in a GIS system

Name Of Street Or Facility To Be Improved – **North Red and Purple Line**	Marked Route #	
Project Limits: North/West Reference Point/Cross St Intersection - **W. Albion Avenue at N. Lakewood Avenue (including signal improvement tie-in)**	Marked Route #	Municipality & County **Chicago, Cook**
Project Limits: South/East Reference Point/Cross St/Intersection - **W. Belmont Avenue between N. Sheffield and N. Wilton Ave**	Marked Route #	Municipality & County **Chicago, Cook**
Other Project Location Information Or Project Title **Red and Purple Line Modernization – Phase One**		

III. PROJECT FINANCING & CMAQ FUNDING REQUEST

Please review the instructions.

	Starting Federal Fiscal Year*	Total Phase Costs	(New) CMAQ Funds Requested	Other Federal Funds Including prior CMAQ awards	
				Fund Type	Fund Amount
Engineering Phase 1	**2014**	**$44,000,000**	**$**	**Core Capacity Grant**	**$35,000,000**
Engineering Phase 2	**2016**	**$141,000,000**	**$25,000,000**		**$**
Right-Of-Way Acquisition	**2016**	**$**	**$0**		**$**
Construction (Including Construction Engineering)	**2017**	**$1,525,000,000**	**$100,000,000**	**5309 Core Capacity Grant**	**$ TBD**
Engineering (For Implementation Projects)		**$**	**$**		**$**
Implementation		**$**	**$**		**$**
Alternatives Analysis		**$**	**$**		**$**
*Phase must be accomplished within 3 years Total Project Costs		**$1,710,000,000**	**$125,000,000**		

Source Of Local Matching Funds	**CTA Bond Funds**
If Soft Matching Funds Are Intended To Be Used, Please Contact CMAP Staff.	
Have the Matching Funds Been Secured? (Provide Details):	**Yes, $31.25 million in matching funds will be provided through CTA Bond Funds.**

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IV. PROJECT EMISSIONS BENEFIT DATA

Project Type (Check One): ☒ **Facility Improvement** ☒ **Service And Equipment** ☒ **Access to Transit**

Auto Trips Eliminated Per Day (Round Trips): **1,353**

Length Of Auto Trips Eliminated (One-Way Miles To The Nearest Tenth): **7.5 (Foster Avenue to Madison in CBD)**

Auto Trips Diverted Per Day (Round Trips): **451**

Line-Haul Length Of Diverted Trips (One-Way Miles To The Nearest Tenth): **7.5 (Foster Avenue to Madison in CBD)**

Project Life (Years): **60-80**

Provide basis for parameters used to estimate benefits (e.g., new ridership, auto occupancy, trip length. See instructions):

There are three aspects of this project that would lead to new ridership and elimination of auto trips. 1) Increase in train throughput in the peak period by constructing the Red-Purple Bypass to accommodate growing demand that has already reached our capacity limit, 2) Modernized stations in the Lawrence to Bryn Mawr corridor, and 3) Improved travel times and reliability for all passengers traveling through this corridor. For simplicity, the below calculations are based only and the first two aspects.

1) Throughput
The project would add another 6 AM peak period Red Line trains in the southbound direction toward the Loop. Each train would be 8 cars long and each car can accommodate 75 passengers. This equates to 3,600 total new weekday AM rides, which represents 3,600 round trips. It is anticipated that ~50% of all new rides will come from autos, therefore there are 1,800 trips from autos/ 1.2 vehicle occupancy = 1,500 auto trips affected
75%*** of 1,500 trips affected = 1,125 trips eliminated; 1,500-1,125=375 diverted

2) Station Modernization
Average weekday boarding counts (Nov 2014)*
Lawrence: 3,669
Argyle: 3,314
Berwyn: 3,688
Bryn Mawr: 4,934
Total: 15,605 total daily boardings x 3.74% diversion rate** / 1.2 vehicle occupancy = 486 auto trips affected
75%*** of 486 trips affected = 364 trips eliminated; 486-364=121 diverted.

FINAL:
As 12% of all North Red boardings occur at these four stations today (129,008/15,605), approximately 12% of the throughput ridership increase is attributed to these stations. So as not to double count these rides, we attribute the throughput ridership effect on the stations at 12% of the above estimates to come to a final net estimate of auto trips affected: 1,125 * 12% = 136 trips eliminated from throughput attributed to stations, 375 * 12% = 45 trips diverted from throughput attributed to these four stations. Total: 1,125 from throughput + (364 - 136) from stations = 1,353 total auto round trips eliminated. Total: 375 from throughput + (121 - 45) from stations = 451 total auto round trips diverted.

*latest official 11/2014 weekday boarding numbers from CTA ridership reports, available at www.transitchicago.com
**net increase in overall transit ridership for "modernize stations in neighborhood" (2000 Resource Systems study)
*** derived from estimates utilized in past CMAQ applications for similar projects.

As stated above, the improvements in travel time and reliability would lead to additional transit ridership and auto trip elimination, but these effects are not included in this estimate.

SERVICE IMPROVEMENTS

On-Time Performance - Route to be Improved: **Red, Purple, and Brown lines** System-Wide: **These lines carry over 50% of all CTA Rail Riders annually (2013 Annual total)**

Reliability Enhancements (Check All that Apply):

Rail	Bus	
☒ **New Vehicles**	☐ New Vehicles	☐ Transit signal priority
☒ **Upgraded Switches**	☐ Queue Jump/Bypass Lanes	☐ Multi-Door Boarding with Off-board Fare Collection
☒ **Upgraded Power Supply**	☐ Off-board Fare Collection	☐ Bus-on-Shoulders
☒ **Positive Train Control**	☐ Reduced Stops/Express Service	☐ Managed Lanes
☐ Station Consolidation	☐ New Dispatching/Decision Support Systems	☐ Dedicated Bus Way
☒ **Track Improvements**	☐ Passenger Vehicle Movement Restrictions	☐ Far-side Stops
☒ **Reduction of Freight/Vehicle/Pedestrian Interference**		☐ Bus Stop Upgrades
		☐ Near Level Boarding

FACILITIES/CAPITAL IMPROVEMENTS

Existing Asset Condition (1-5 scale used by RTA): **Lawrence to Bryn Mawr Elevated Structure (2.1) & Red-Purple Bypass Elevated Structure (1.6)**

Description and Location of Service (For Equipment Purchases):

Net Number Of New Vehicle Parking Spaces: _____ Net Number Of New Bicycle Parking Spaces: _____

V. PROGRAM MANAGEMENT INFORMATION

Is right-of-way acquisition required for this project? ☒ **Yes** ☐ No
If so, has right-of-way been acquired? ☐ Yes ☒ **No**

Engineering Status: ☐ N.A ☐ Not Begun ☒ **Engineering Underway (provide details below)** ☐ Engineering Completed
Date completion is anticipated: **Q3 2016**

Estimated Completion Year/Start Of Service: **2022**

VI. PROJECT DESCRIPTION

Please describe project.

Rebuilding vital infrastructure for Chicago's future

The Chicago Transit Authority (CTA) is undertaking the largest capital improvement project in its history: the Red & Purple Modernization Program. This major initiative will completely rebuild the northern portion of the Red Line from Belmont to Howard station and the Purple Line, which extends to Linden station in Wilmette. The RPM corridor was built close to a century ago—in 1924—when Calvin Coolidge was President and the Wrigley Building had just been constructed.

The Red Line is now Chicago's busiest 'L' line, serving some of the most densely populated neighborhoods in the country, and the number of riders along this corridor is only growing. In the past five years alone, for example, rush hour ridership increased by nearly 40 percent.

RPM is an effort to accommodate current and future ridership needs by comprehensively upgrading tracks and reconstructing stations. RPM will also increase the number of passengers that pass through these stations by expanding the number of trains that can travel on the Red Line—an improvement that will allow CTA to better serve customers for generations to come.

Phase One

In late 2013, FTA, CTA, and City of Chicago officials developed a phased, tailored approach for improving the RPM corridor, allowing CTA to make the greatest number of improvements, while meeting the public's expectations for timely delivery of these improvements.

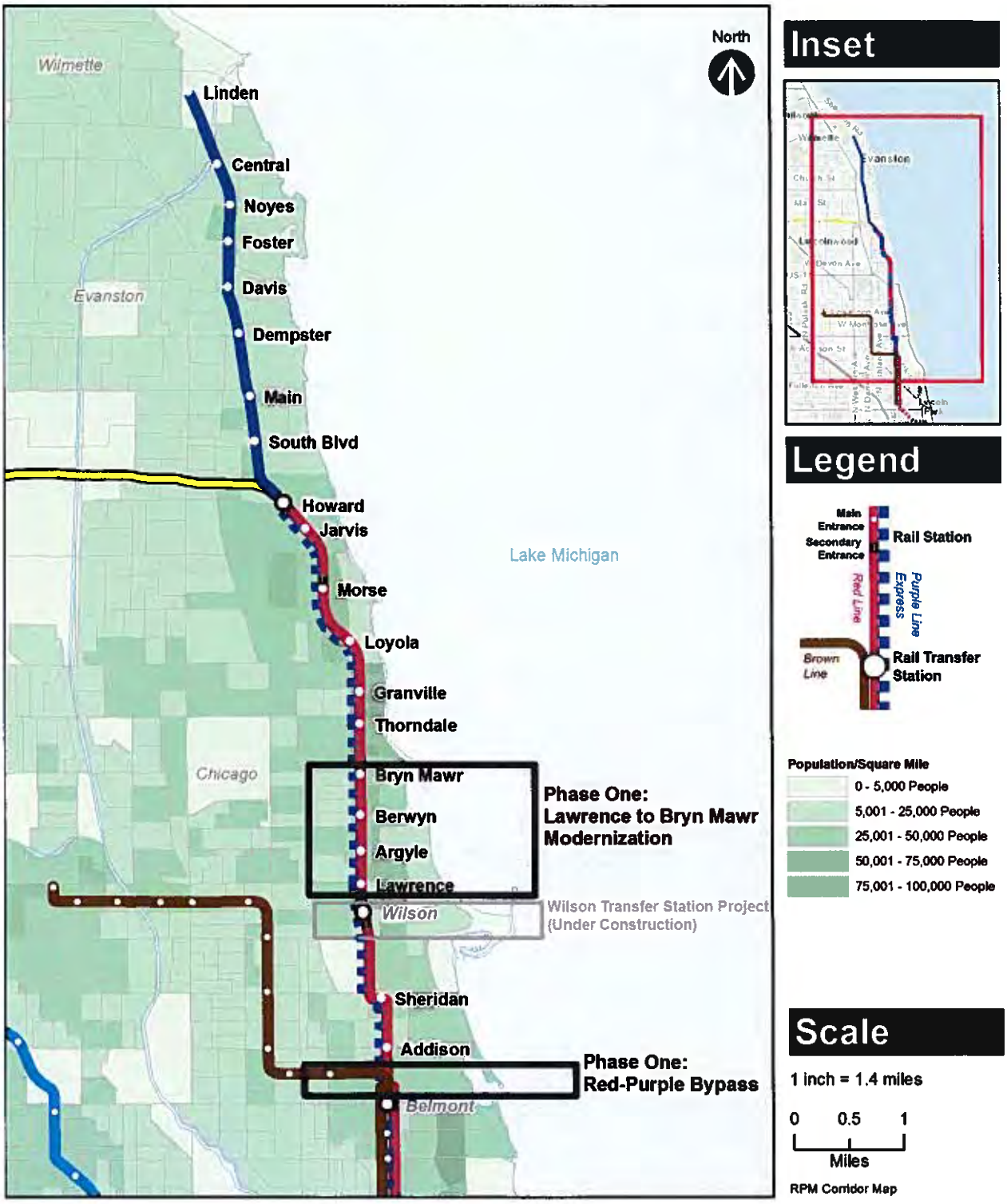
Phase One includes two main components:

Red-Purple Bypass Project - A bypass would be constructed north of the Belmont station to address capacity constraints caused by the current configuration of the junction where the Red, Purple, and Brown lines all intersect. This intersection, created in 1907, forces trains to stand and wait for other trains to pass. Because of this configuration, the CTA is currently near capacity now in this corridor. Based on the pattern of nearly 40 percent ridership growth during rush periods over a five-year period, we will be at capacity by 2016 and no longer able to add service to relieve train overcrowding without the bypass. In addition, the project would include replacement of associated Red and Purple line tracks from just north of Belmont station to the segment of track between Newport and Cornelia Avenues, increasing train speeds and improving passenger comfort.

Lawrence to Bryn Mawr Modernization Project - CTA would completely rebuild the Lawrence, Argyle, Berwyn, and Bryn Mawr stations. These stations would be expanded, modernized, and made fully accessible to customers with disabilities. This project would also rebuild all tracks, support structures, bridges and viaducts along the 1.3-miles between these stations, significantly improving train speed and reliability.

Signal Improvement and Modernization – In addition to the two main components, RPM Phase One would also include corridor signal improvements and modernization along approximately 3.5 miles of the existing rail line from Belmont station on the south to near Loyola station on the north.

GO TO 2040 – The RPM Program is a high priority project, addressing many of the criteria within the GO TO 2040 Regional Plan. This project is included as a "Major Capital Transit Project" in the constrained GO TO 2040 plan.



Source: U.S. Census Bureau 2012

Figure Red and Purple Modernization Program Corridor Overview Map and Phase One

RED AHEAD
Moving Ahead to a Better Red

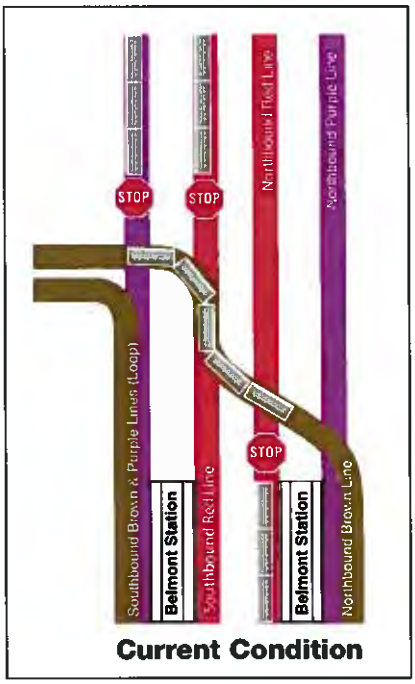
rpm Modernization

Red-Purple Bypass Project

Challenge: Red, Purple, and Brown Line Intersection

- Up to **150,000 rides** pass through the busy rail intersection near Belmont every weekday
- A single Brown Line train can delay three other trains at a time
- The current intersection limits the number of trains which leads to delays on all three train lines
  - 40% of weekday trains are delayed, some trains up to four minutes
  - Delays weekday trains 450 hours a year
  - Results in unreliable service
  - Makes adding service difficult

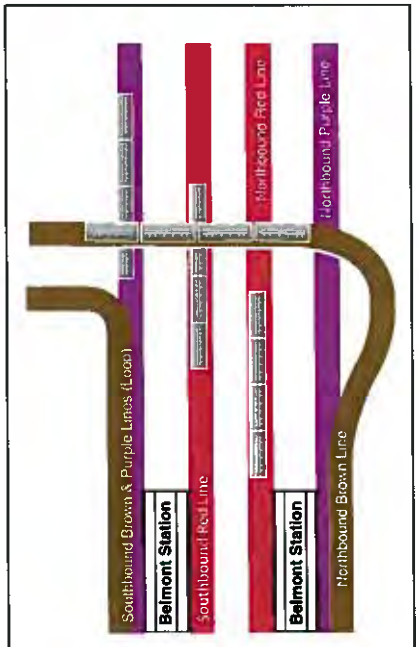
STOP "Your attention please! We are **standing** momentarily waiting for signal clearance."



Current Condition

Project Purpose

- Expand capacity
  - Ability to run an additional 6 to 9 Red Line and 6 to 8 Brown Line trains per hour
- Meet existing and growing ridership demands
  - Greater capacity for trains to operate would result in less crowding on overcapacity Red and Brown line trains
- Improve travel times and reliability
  - The increase in train service and reduction in train delay because of the bypass would significantly improve travel times and reliability on all three lines
- Improve access to jobs
  - Commuters that live in the north on Red, Purple, and Brown lines rely upon transit to access jobs in the Loop and throughout Chicago



Red-Purple Bypass

cta