Appendix C
Build Alternative Supporting Documentation

C-1: Vision Study Summary Report

C-2: Conceptual Engineering Plans

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North Red and Purple Lines Vision Study

Summary Report

November 5, 2010

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Dear CTA Customers:

Beginning in the fall of 2009, I asked CTA staff to undertake a Vision Study for the northern segment of the Red Line and the Purple Line. The CTA has completed multiple major federally-funded construction projects in the past fifteen years, across all branches of the rail system, including the Green Line (1996), the Pink Line (2004), the South Red Line (2006), the Brown Line (2009) and the Blue Line (2010). CTA has delivered these projects on time and on budget, demonstrating best practices in the industry. Now, after nearly 100 years of reliable service, the North Red and Purple Line infrastructure is in desperate need of improvement. Built in the early 1900s, these two branches have provided a backbone of service to neighborhoods up and down the corridor. Together, the North Red and Purple Lines carry 120,000 of CTA's 645,000 rail trips on a daily basis. This Vision Study begins the process to identify a comprehensive strategy for reconstructing and improving the infrastructure to serve and enhance these neighborhoods and the entire region for the next 100 years.

The Vision Study started with public open houses and a community engagement survey, which helped to identify existing issues, concerns and desires of the communities. This feedback was incorporated into twenty preliminary options, which were evaluated based on predicted ridership, constructability and cost, among other attributes. These options were narrowed to four potential approaches, which were evaluated at a more detailed level and are presented in this summary report.

CTA will now turn its attention to a strategy for implementing the North Red and Purple Line improvements. We will be requesting your feedback on these options, in order to identify an approach that best meets the vision of the local residents and the region. We will evaluate the impact of the construction work on the surrounding communities, to ensure that will be reasonable and well-mitigated. We will also be working diligently to secure the funding necessary to do the planning, design and construction, in partnership with local, state and federal agencies. Throughout this process, we will be asking for your ongoing feedback.

The North Red and Purple Lines improvement has the potential to provide benefits to the region as a whole, as well as to the local neighborhoods. This investment could create over 190,000 jobs and could be the catalyst for further development along the corridor. By improving service, CTA will increase ridership, which is a critical part of the Mayor's Climate Action Plan. If the 120,000 trips that are now made every weekday using the North Red and Purple Lines were taken by car, we would need to add five lanes to Lake Shore Drive to accommodate the 60% increase in traffic. We would need to plant over 17 million additional trees to absorb the 230 million pound annual increase in carbon emissions. Maintaining this asset in state of good repair is vital to economic vitality, environmental stewardship and quality of life in the region.

We look forward to working with you to bring the improvements of the North Red and Purple Lines from "Vision" to reality. Thank you for your time and commitment to making this effort a success.

Sincerely,

Richard L. Rodriguez

President, Chicago Transit Authority

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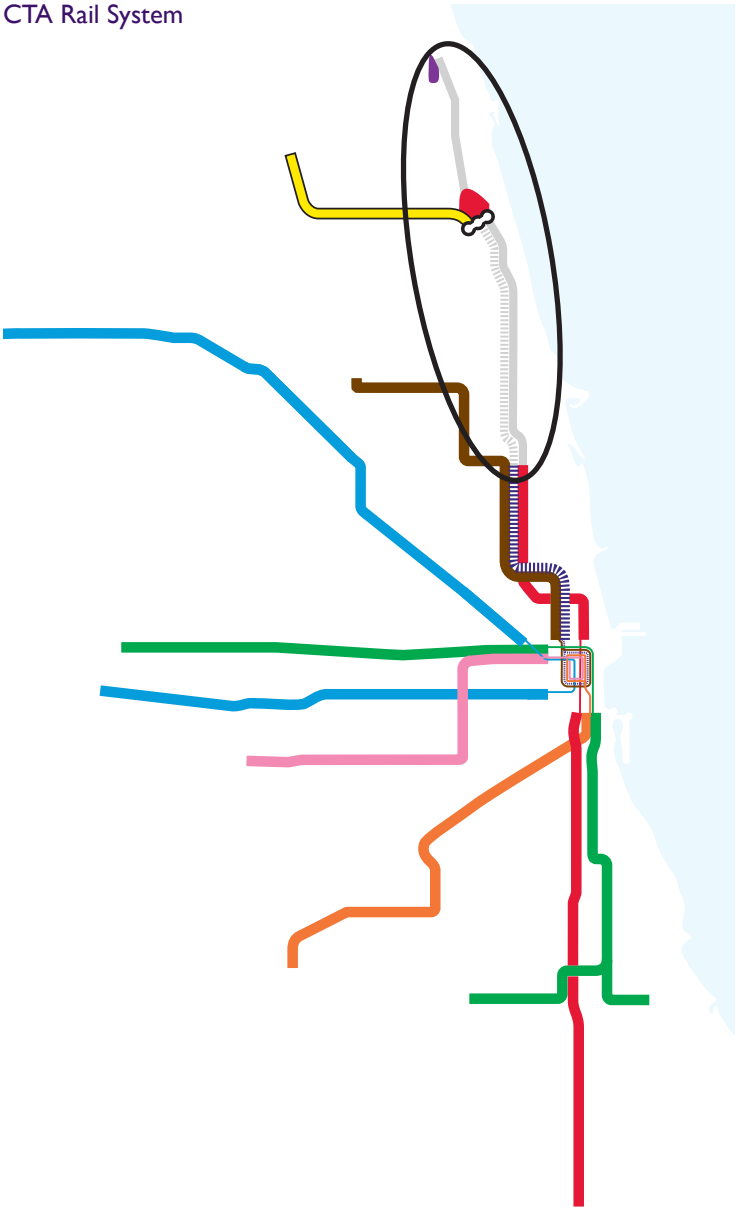
Introduction

CTA Rail System



CTA Rail System Rehabilitation

1991
- Yellow Line Ties and Track

1993
- State Street - Dan Ryan Connection Subway; Orange Line Construction; Howard and Linden Yards and Shops

1996
- Green Line Stations, Signals, Ties and Track

2005
- Pink Line Stations, Structure, Signals, Ties, and Track

2006
- Red Line (Dan Ryan) Stations, Power, and Signals

2007
- Red Line (State Subway) Ties and Track

2008
- Blue Line (O'Hare) Ties and Track

2009
- Blue Line (Dearborn) Ties and Track; Brown Line Stations; Howard Station; and Loop Track - Lake/Wabash Legs

2010
- Blue Line (Forest Park to Jefferson Park) Signals; and Loop Signals

The North Red and Purple Lines have not received any major reconstruction within the last 100 years.

After nearly 100 years of service, we must identify how best to improve the North Red and Purple Lines for the ***next*** 100 years.

In April 2009, the Federal Transit Administration (FTA) released a report titled "Rail Modernization Study Report to Congress", that called attention to a critical backlog in state of good repair[1] projects for the seven oldest rail agencies in the United States. The North Red and Purple Lines represent the CTA's largest need for rehabilitation or replacement of essential, aging infrastructure in the system.

Building upon CTA's previous success on large scale improvements such as the Brown and Blue Lines, as well as full funding grant agreements, this improvement is the next logical step in upgrading the rail system.

Built in the 1900s and 1920s, the North Red and Purple Lines were among the first lines constructed on the CTA system. Over the last two decades, many lines have gone through major capital improvements. However, the North Red and Purple Lines have not received any major reconstruction within the last 100 years.

The North Red and Purple Lines have critical needs today:

- Deteriorating 100 year-old structure
- Americans with Disabilities Act (ADA) accessibility at only 6 of 21 stations
- Viaducts require temporary steel support
- Slow zones continue to develop and impact service

Deteriorating timber ties

Non-ADA accessible station platform

Obsolete viaduct

1 The Federal Transit Administration (FTA) defines State of Good Repair as, "An asset or system is in a state of good repair when no backlog of capital needs exists." CTA defines State of Good Repair in terms of the following standards: Rail lines should be free of slow zones and have reliable signals; Rail cars should be rehabilitated at quarter- and half-life intervals and replaced at 25 years; and Maintenance facilities should be replaced at 40 years (70 years if rehabilitated); Rail stations should be comfortable and secure, and replaced or rehabilitated at 40 years.

Newly Reconstructed Howard Station

Study Definition

Recognizing that a modern, reliable, and convenient public transportation system is essential to our communities and the region as a whole, the CTA strives to find the most efficient operating methods and capital investments required to provide and maintain quality service efficiently. Timely maintenance and replacement of aging assets is necessary to keep trains and buses running efficiently, to keep facilities safe and efficient, to incorporate technologies that will improve service for customers, and to control future costs.

The deterioration of the aging infrastructure along the North Red and Purple Lines continues to outpace the funding available to maintain the system, which has made it more expensive to maintain and operate these lines. This pattern of funding has resulted in the overall deterioration of the quality of service and condition of the infrastructure.

Study Area

The North Red and Purple Lines Vision Study project area extends approximately 9.5 miles, from north of Belmont station to Linden terminal. The North Red Line section is a four-track corridor from Belmont to the Howard Terminal, consisting of 1.9 miles of steel support elevated structure and 3.8 miles on elevated embankment fill; the Purple Line portion is a two-track corridor from the Howard Terminal to the Linden Terminal consisting of 3.8 miles on elevated embankment. The Purple Line travels through the North Red Line section during weekday peak hours when Purple Line trains operate express between Howard and Belmont stations.

The CTA's Yellow and Brown Lines also affect the project area. The Yellow Line shuttles between Skokie and the Howard transfer station, where customers can transfer to Red and Purple Lines. The Brown Line

The CTA recognizes that an efficient, reliable, and convenient public transportation system is essential to the region.

service intersects the project area at Clark Junction, just north of Belmont station where the Brown Line joins the Red Line. The project area includes two rail yards; the Howard Yard has a capacity of 274 cars and the Linden Yard has a capacity of 80 cars.

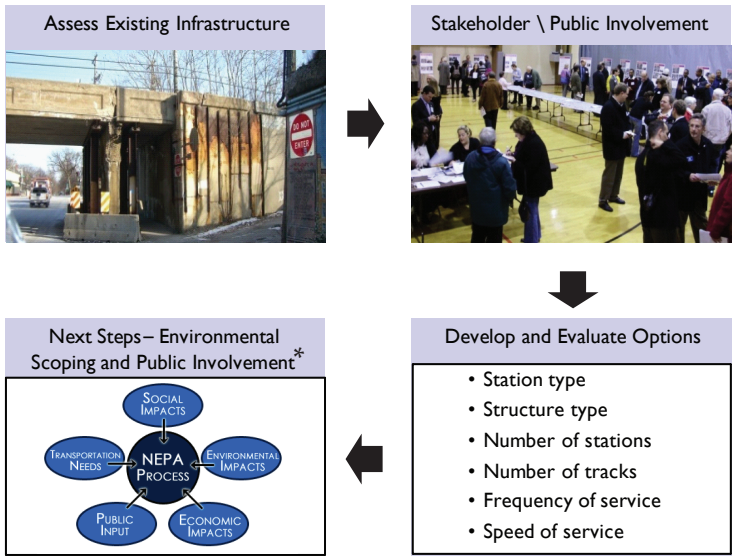
Purpose of the Study

Built in the 1920s, the North Red and Purple Lines are the backbone of the regional transit system, carrying 120,000 riders daily— 18% of all CTA daily rail trips. There are slow zones throughout the corridor, because of deterioration to rail ties, tracks, retaining walls, and bridges. These slow zones and aging signal and power systems cause delays, unreliable service, and longer travel times for daily commuters. Many stations are antiquated, lacking accessibility and adequate weather protection. Stations are also perceived as unsafe to some customers and community members.

In order to address the CTA's crucial infrastructure needs, the agency will develop comprehensive plans for reconstruction. This Vision Study has helped identify and evaluate concepts that would, at a minimum, bring the North Red and Purple Lines to a state of good repair and provide a modern sustainable service for the next century. The options identified and evaluated seek to satisfy the following goals:

- Improve travel times and minimize slow zones
- Improve capacity to meet future demand and accommodate growth
- Improve ADA access, safety, comfort, and convenience
- Attract additional ridership
- Spur transit friendly development, encouraging livable communities and incentivizing sustainable projects
- Improve intermodal transfer
- Implement improvements with minimal right-of-way, environment, and construction impacts
- Provide cost-effective solutions

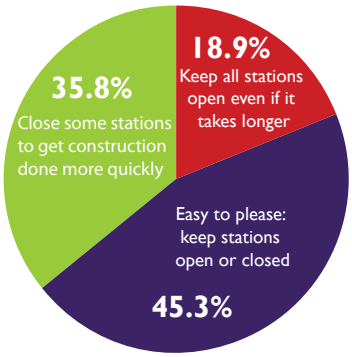
Study Process



*See page 15 for more information. The National Environmental Policy Act of 1969 (NEPA) process consists of an evaluation of relevant environmental effects of a federal project or action undertaking, including a series of pertinent alternatives.

Community Survey Results - Station Availability During Construction

Residents are willing to sacrifice both their service and stations temporarily in order to finish construction more quickly



Stakeholder Involvement

To help the CTA define the options, public input was initiated early on in the study process. As part of the public involvement process, the CTA hosted open houses to discuss the project, maintained a project web site, and conducted a survey to capture input about the project from residents of adjacent communities. Public and stakeholder input will continue to play a role the future phases of project development.

Open Houses

The CTA initiated the study with four open houses to listen to public input on existing conditions and inform the community of the North Red and Purple Line Vision Study goals, process and timeline. The open houses were held at the following locations and dates:

ROGERS PARK
11/30/2009,
Loyola Park Fieldhouse

UPTOWN
12/2/2009,
Truman College

EDGEWATER
Tuesday 12/1/2009
Emanuel Congregation

EVANSTON
Thursday 12/3/2009
Fleetwood-Jourdain Center

More than 300 people attended the open houses and over 1,100 comments were received from the meetings. The CTA received the most comments with regard to improving travel times by removing slow zones (replacing infrastructure) and moving at higher speeds. Other highly-rated concerns include:

- Customer safety at stations facilities and surrounding communities, with suggestions that included message boards, greater police presence, and security cameras.
- ADA accessibility, with suggestions that included adding elevators and ramps at stations.
- Passenger capacity, with suggestions that included more frequent trains and rearranging seats in cars.
- Consideration for the CTA's effects on surrounding neighborhoods, with suggestions that included more retail and services, and providing more recycling options adjacent to stations.

Community Engagement Survey

The CTA took a proactive approach to collecting public input and conducted a mail survey of the study area.

Open Houses, December 2009

The CTA is committed to public involvement. There will be numerous opportunities for public participation.

The CTA conducted a mailed survey from January 6, 2010 to February 12, 2010 in the communities located adjacent to the North Red and Purple Lines. Most respondents believe the project would benefit both themselves and the community.

Project Survey

- 11,475 area residents over the age of 16 surveyed
- 30.4% response rate
- Most respondents believe the project would benefit both themselves and the community
- 83% view the project as either "somewhat favorable" or "very favorable"
- 91% intend to support the project
- Most respondents indicated that they would be willing to sacrifice both their service & stations, temporarily, in order to finish construction more quickly
- 74% say "don't close my station"
- 45% indicated that they are "easy to please," and that they did not mind if CTA maintained full or limited service during construction
- 30% said they would be willing to endure limited service during construction

A total of 11,475 surveys were mailed out to the area and data collection occurred from January 6, 2010 to February 12, 2010.

The majority of comments received from the community engagement survey were regarding the condition of station facilities. The comments suggest replacing or rehabilitating stations, as well as, aesthetic and design improvements. The second largest number of comments received were regarding access and connections. Access includes upgrades to comply with ADA standards, such as adding elevators and wider platforms, while increased connectivity suggestions includes internal links to Metra stations, high-capacity bicycle racks, and secure car drop-off locations.

Overall, residents are highly favorable and supportive of this project. The community is generally amenable to minor inconveniences during construction as long as the product is an improvement over the status quo. Making an effort to improve safety qualities in and around stations will likely have a positive impact on both riders and non-riders, potentially leading to more customers. Currently, residents are indicating that they are somewhat flexible and willing to modify their trip in exchange for faster service after construction.

Project Website

The CTA believes public and stakeholder input is critical to the success of the project and maintains a project website where the public can currently review information about the project, as well as, provide comments. The website address is:

http://www.transitchicago.com/news_initiatives/planning/redpurplevision.aspx

Argyle Station

Existing Conditions

Existing Facility Conditions

Structures The North Red Line elevated structure from Belmont to Lawrence was built in 1899. The majority of the structure is unchanged since that time. Most of the track north of Lawrence to Howard on the Red Line and to Linden on the Purple Line is on retained fill built between 1910-1929. Significant deterioration is witnessed by:

- Failure to control storm water, in particular to drain water away from tracks and stations
- Concrete failure, such as large cracks on deck slabs, ballast retainers, concrete piers, abutments, retaining walls, chipped concrete and exposed reinforcing steel support
- Retaining wall cracking and significant chipping
- Collision damage to piers and bridge deck
- Bearing areas for viaduct bridge deck slabs are in poor condition
- A large number of temporary steel support structures are in place

When the structure deteriorates, slow zones may be imposed in order to safely operate rail service.

Track The four-track North Red Line consists of open deck supported on elevated structures from Belmont to Lawrence, and ballasted tracks on retained embankment from Lawrence to Howard. The two-track Purple Line from Howard to Linden consists of ballasted track on embankment, short sections of elevated structure and at grade track north of Isabella Street. In general, timber ties are worn and ballast is clogged, which impairs drainage and track support along this corridor. Track support conditions are variable and resistant to conventional remedial maintenance measures. Slow zones have been imposed at locations displaying severe tie and/or ballast deterioration

Howard and Linden rail yards are relatively new facilities, however, some elements of the shop, track interlocking and appurtenant systems are exhibiting wear and deterioration and will be approaching the end of their useful life and in need of renewal.

Traction Power The North Red Line and Purple Line receive power from six substations, which were constructed between 1968 and 2007; the majority are over 30 years old. Much of the power conversion equipment is approaching the end of its useful life, while demand for power has been increasing, thus creating system reliability issues. In particular, the Broadway substation is regularly overloaded due to its considerable distance from the next adjacent substation.

Signal and Communication Systems The North Red and Purple Lines train operations are controlled by cab signal systems that provide rear-end collision and overspeed protection and requires the operator to adhere to visual and audible signals relative to the track ahead.

The on-board equipment interacts with various wayside/fixed equipment, the majority of which was installed in 1974. As this equipment ages, the likelihood of service delays and safety concerns increases. In addition, interlocking plants providing control and protection for crossing, merging and opposing moves are located at strategic intervals. The cab signal and interlocking equipment varies in condition, however, much of it is obsolete and is nearing the end of its useful life. The communication systems vary significantly with respect to their age and physical condition, but overall, the technology is becoming functionally obsolete.

The current state of the North Red and Purple Line infrastructure makes it difficult and expensive to maintain.

Stations There are 21 stations within the project limits: 13 are on the North Red Line and 8 are on the Purple Line. Most of the station houses on the North Red and Purple Lines opened almost 100 years ago. Approximately 16 of the stations have varying platform widths and are in poor condition. The stations need to be reconstructed to conform to contemporary CTA station and site development standards, and brought into compliance with current codes, including ADA accessibility standards, and National Fire Protection Association (NFPA) exiting requirements. Currently 6 of 21 stations have ADA vertical access (elevators or ramps).

Dempster Viaduct

Howard Yard

Existing Environmental Conditions

A desktop environmental inventory was performed by compiling existing environmental data from publicly accessible sources of information and creating preliminary environmental constraints mapping to identify the environmentally-sensitive areas within or adjacent to the North Red and Purple Lines Vision Study project limits.

The environmental conditions were reviewed to determine if potential options would have a negative impact on any of these resources. Many of these resources either were not identified within the project area or are highly unlikely to be negatively impacted. There are no wetlands, floodplains, substantial terrestrial habitat, or agricultural soils in the area. A few threatened and endangered species are identified, including the peregrine falcon, longnose sucker, marram grass, sea rocket, and seaside spurge, as well as, a potential natural area (Montrose Beach Dune); however, due to the highly-developed and previously disturbed nature of the area, it is unlikely that these species will be further adversely affected. Hazardous waste and underground storage tanks are also found throughout the project area.

The largest diverse population concentrations are around the Loyola, Morse, and Jarvis stations. The improvements will provide a benefit to all members of the community by increasing livability and sustainability.

Several parks are adjacent to the North Red and Purple Lines and may be impacted throughout the development process. There is an area of high potential for archaeological resources near the North Shore Channel and several historic resources in close proximity that could be negatively impacted.

Douglas Line, rebuilt in 2002-2004 on time and on budget

Preliminary Evaluation

The Preliminary Evaluation was primarily based on conceptual costs, ridership, travel time savings, environmental concerns, constructable schemes, and public and stakeholder preference. The most promising options that met the project goals and objectives were advanced to the Detailed Evaluation.

The process began with a preliminary evaluation of several options and concluded with an in-depth analysis of fewer options. Preliminary options were defined and evaluated primarily based on conceptual costs, ridership, travel time savings, environmental concerns, constructable schemes, and public and stakeholder preference. These criteria required both qualitative and quantitative analysis. Sophisticated computer modeling of the area provided detailed ridership forecasts for each option. The most promising options that met the project goals and objectives were advanced to the Detailed Evaluation.

Twenty options were evaluated at this stage of the process. Different alignments and track configurations were tested with various operating plans, frequency of service, and differing levels of capital investment. The options considered in the preliminary evaluation are described as follows:

Worst-Case Option This option was based on a reduction in funding over historical levels and demonstrates the effect of having to reduce the facility to a two track operation with less frequent service. Clearly the reduction in ridership and quality would be unacceptable in this mature transit corridor.

Retain Options The Retain options were primarily used for comparison purposes and reflect a status-quo scenario where current funding and maintenance practices would continue over a significant amount of time. This option would simply prolong the slow deterioration of the existing structures, service, and amenities, with increasing slow zones and is not considered a viable option.

Two-Track Options Six two-track options, where the segment south of Howard was reduced to two tracks,

Glossary

Term	Definition
Ballast	Layer of crushed rock or stone upon which railway track is laid
Communications	Public address systems, visual messaging, security cameras and TV monitors in stations and on platforms
Elevated Structure	Steel support structure that supports tracks, platforms and/or station houses
Infrastructure	Basic elements of the transit system including track, structures, signals, and power
Retaining Walls	Vertical, typically concrete walls that hold back earth and fill materials that create embankments
Signal Systems	System which controls the speed and movement of trains to maintain safe distance
Slow Zones	Sections of the system where trains must reduce speed in order to safely operate rail service

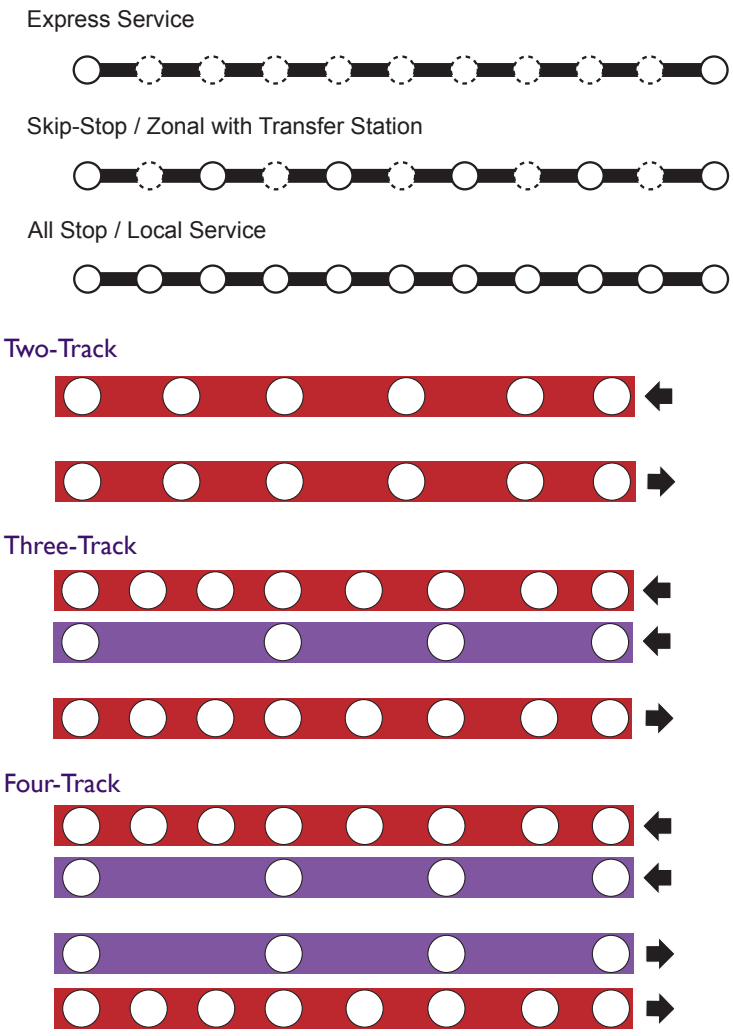
were evaluated. Included were multiple options with elevated rail within the current right-of-way as well as a subway along a new alignment west of the existing right-of-way. Combinations of skip-stop, all-stop, all-stop wide station spacing, and express services were tested. The subway option with wide station spacing revealed compelling results but was not carried forward primarily due to its incompatibility with future expansion projects.

Three-Track Options Two three-track options were evaluated where a third track would be used as a reversible express track. In addition to local all-stop service, the first option provided traditional inbound morning express service, while the second provided reverse commute express service. Three track options were tested due to potential maintenance cost savings and the ability to widen the station platforms within the existing right-of-way by removing one track.

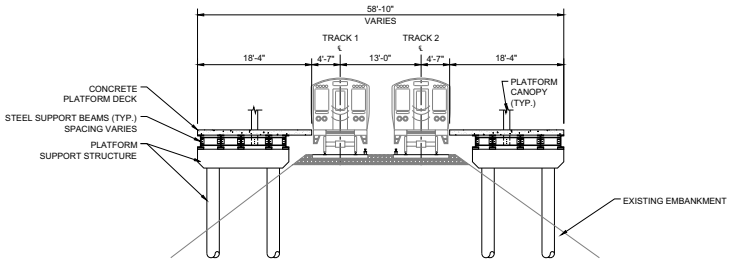
Four-Track Options Eight options continuing the use of four-tracks south of Howard were evaluated, all of which were elevated and generally followed the existing right-of-way. Combinations of local, express, limited express and zonal services were evaluated with various frequencies of service. The range of capital investment spanned from lower cost improvements primarily within the existing right-of-way, to fully modernizing the corridor, which could require substantial new right-of-way acquisition.

From the Preliminary Evaluation, four options advanced to the Detailed Evaluation. These options were most favorable in terms of achieving the goals and objectives of the project and providing a good balance among evaluation criteria, such as, public and stakeholder preference, improvement of service, environmental concerns, future capacity, and potential cost.

Types of Service Tested in the Preliminary Evaluation



Typical Section - 2 Track Structure along the Purple Line



Detailed Evaluation

The four options that advanced from the Preliminary Evaluation were further refined as part of the Detailed Evaluation. All options were compared with similar frequency of service to provide for a fair comparison. A detailed description of each option considered and a summary of the evaluation results is below.

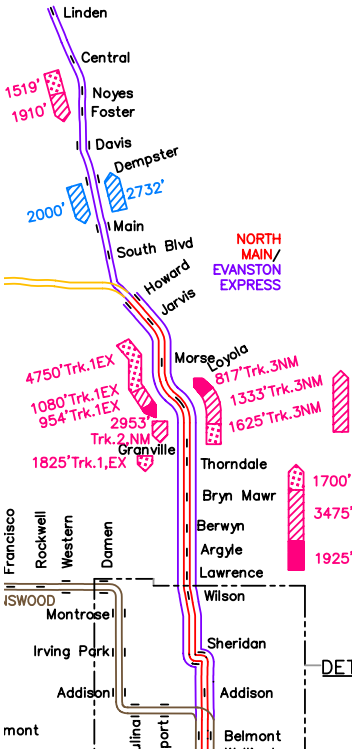
Retain: Option 1

Status Quo

The Retain option represents the status quo if significant investment is not made to bring the corridor into a state of good repair. Slow zones would remain or increase and overall conditions would continue to worsen. The cost to maintain the system would continue to escalate year-over-year and the disparity between funding and needs would widen until facilities and services would ultimately become non-functional. Continuation of current service could be jeopardized. The Retain option is not considered a viable long-term solution to meet CTA goals and customer needs.

Using current capital funding levels, the Retain option consists of minor repairs for the elevated structure from Clark Junction to Lawrence Avenue; two viaducts will receive major repairs and two will be reconstructed between Lawrence and Linden. This level of repair would address only the worst two percent of the structures. At other viaducts, minor repairs consisting of concrete patching and maintenance of existing temporary steel support will be done. Additional future steel support will be required as structures continue to deteriorate. It is estimated that only five percent of the retaining walls will be repaired. CTA's current maintenance programs and capital renewal of track, traction power, signal and communication systems will continue. A new substation at Farwell will be included this option. All 21 existing station locations will remain with minor repair and no improvement to substandard platform widths.

In the Retain option, more steel support would be used to maintain viaducts



SLOW ZONE BY AREA				
Track (CTA)	15 mph		12,658	57,682
	25 mph		27,424	
	35 mph		17,600	
Structure (CTA)	15 mph		0	4,732
	25 mph		4,732	
	35 mph		0	
Signal (CTA)	15 mph		0	4,984
	25 mph		0	
	35 mph		4,984	
Power (CTA)	15 mph		0	0
	25 mph		0	
	35 mph		0	
Construction (CTA/Contractor)	15 mph		0	0
	25 mph		0	
	35 mph		0	

★ NOTE: SIGNAL ISSUE RESULTING IN MULTIPLE 10 MIN. PLUS DELAYS DURING PREVIOUS MONTH

The North Red and Purple Lines Slow Zones as of February 2010. Slow zones are currently imposed on 10.8% of the North Red Line and 20% of the Purple Line and 38% of the Purple Express.

The four options that advanced from the Preliminary Evaluation were further refined in the Detailed Evaluation.

Additional ADA vertical access will be difficult, if not impossible to obtain due to restricted platform widths. NFPA 130 code and CTA standards compliance beyond current conditions will not be accomplished.

Improve: Option 2

Rehabilitation

This four-track option includes a strategic mix of repairs, rehabilitation, and replacement to bring the North Red and Purple Lines into a state of good repair. It would fix instead of patch infrastructure and establish a sustainable system. Slow zones due to track and structural condition would be eliminated. It would provide a fast, reliable service for the next 20-40 years, but would not bring the stations up to modern standards.

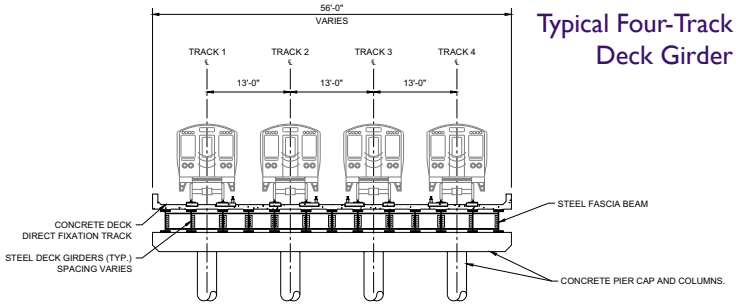
The Improve option consists of upgrades to structures primarily within the existing CTA right of way and maintaining the same overall track alignment, structure, and station configurations except at a few locations. Some of the existing elevated structure between Clark Junction and Lawrence Avenue will receive major repair and reconstruction. Major repair includes column base renewal, foundation replacement, steel support repairs, drainage system replacement, and protective coating sufficient to achieve a state of good repair. Reconstruction of the elevated structure will be required at the Sheridan, Wilson, and Loyola locations along with associated station reconstruction and track realignments. Existing temporary steel support will be removed and a significant number of viaducts will undergo major repair or complete replacement.

Slow zones due to deficient track components will be removed through replacement of ties and ballast, along with improved drainage measures. From Lawrence to Linden, 11 viaducts will undergo minor repair, 25 viaducts would undergo major repair, and 27 viaducts will be reconstructed. Some vertical clearances may be improved at a limited number of viaducts. The North Red Line retaining walls will receive major repair and shorter retaining walls along the Purple Line will receive minor repairs. Cab signal systems, interlockings, cable, voice, data and control systems will be upgraded and Granville interlockings will be replaced. A new Farwell substation will be included with equipment upgrades at Broadway and Noyes. Howard and Linden Yard complexes will receive minor repairs to yard components.

All existing station locations will remain with the following type of station improvements:

- Minor Repair: reuse existing narrow 6-8 car platforms. Stations impacted are - Addison, Granville, Howard, Davis, Linden.
- Major Repair: Designed to meet ADA & NFPA requirements, reuse existing narrow 6 to 8 car platforms. Stations impacted are – Lawrence, Morse, Main, Dempster, Foster, Noyes, Central.
- Renovation: Designed to meet ADA & NFPA. Widen platforms to 14 feet and lengthen to accommodate at least 8 cars, with red line stations being able to eventually accommodate 10 cars within right-of-way. Stations impacted are – Argyle, Berwyn, Bryn Mawr, Thorndale, Jarvis, and South.
- Reconstruction: Designed to meet ADA & NFPA. Widen platforms to 18-26 feet as well as length platforms to accommodate up to 10 cars in the future. Stations impacted are – Sheridan, Wilson (transfer), Loyola (transfer).

Typical Four-Track Deck Girder



Detailed Evaluation (cont.)

Modernize Options

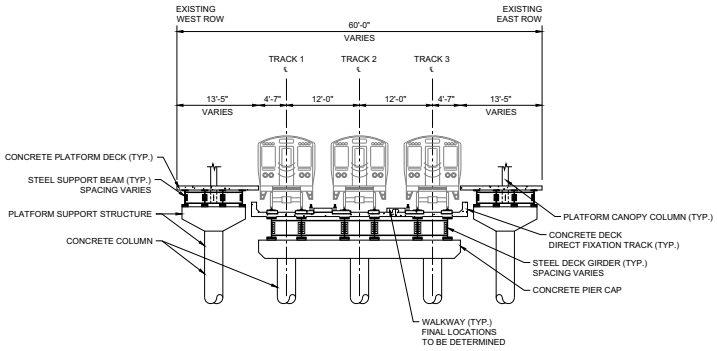
The Modernize Options consist of a 3-Track Option, which will eliminate one of the four existing tracks between Belmont and Howard, and a 4-Track Option, which will enhance the existing 4-track corridor with the addition of 2 transfer stations. The Purple Line north of Howard will remain as a two track system in both options. The following paragraphs describe the type of improvements that will occur under either modernize option.

Complete reconstruction of the North Red and Purple Lines will be accomplished under these options. The existing retained embankment will be removed and replaced with new aerial structures between Lawrence and Howard. All but the five recently reconstructed viaducts will be replaced and the North Shore Channel truss structure will undergo major repair. All Purple Line retaining walls between Howard and Central will be reconstructed. Curves at Sheridan, Wilson, and Loyola as well as other speed restrictions will be eased to reduce travel time and improve customer comfort. From Belmont to Linden, complete reconstruction of all track work, substations/equipment, cabling, conduits, and contact rail systems will be performed. Interlocking plants, cab signal system, and communication systems will be replaced.

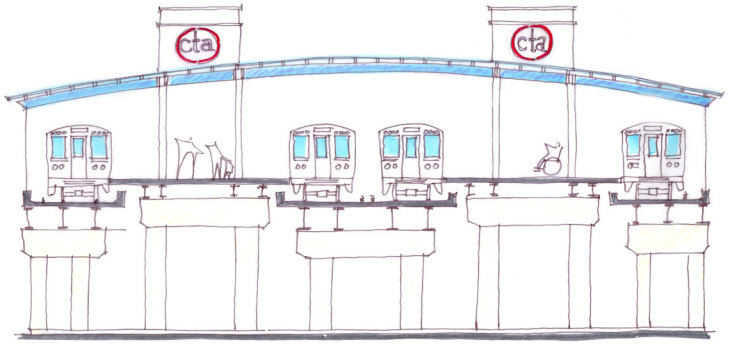
Two new transfer stations between express and local service would be added at Loyola and Wilson. These transfer stations would allow more customers to access and use express service. The modernize options will include two levels of station improvements; renovation or reconstruction. Renovation would take place where necessary at newer stations to accommodate 8 car trains on the Purple Line and potentially 10 car trains on the Red Line. Reconstruction of stations will include all new accessible stationhouses, auxiliary entry/exits and emergency-only exits, and new, widened and lengthened platforms. Some stations may be consolidated to provide faster service and lower maintenance costs. Neighborhood access to the stations, however, would be maintained by adding more station entrances.

- Alternative access to locations provided at adjacent stations for – Lawrence, Thorndale, Jarvis, Foster
- Reconstruction – Addison, Sheridan, Wilson (transfer), Argyle, Berwyn, Bryn Mawr, Granville, Loyola (transfer), Morse, South, Main, Dempster, Noyes, Central

Typical Three-Track Deck Girder at Station



New Loyola Transfer Station Alignment



Two new transfer stations would allow more customers to access and use express service

Modernize 3-Track: Option 3

Reconstruct Peak Directional Express

This option would provide local service in both directions and express service inbound in the morning and outbound in the evening. Some of the realignments described as part of a modernize option may be accomplished with fewer property impacts compared to the 4-Track Option, however, special track work locations/ configurations would have to change to accommodate three track operations.

The primary reason for considering a three-track option is the ability to meet station width requirements, while staying within the existing right-of-way. Eliminating one of the existing tracks, however, creates system capacity and operational restrictions making this option less desirable.

Modernize 4-Track: Option 4

Reconstruct Bi-Directional Express

This option would provide express and local service in both directions with expanded hours of operation, taking advantage of the new transfer stations. The 4-Track Option provides for the greatest capacity and accommodation of future demand and expansion projects. Substantial additional right-of-way, however, would be required to build stations to meet modern standards including platform widths and clear lines of sight.

Evaluation of Options

The four detailed options[1] were evaluated and compared to each other on the several criteria noted in the evaluation matrix below:

Detailed Evaluation Matrix

	Option 1: Retain	Option 2: Improve	Option 3: Modernize 3-Track	Option 4: Modernize 4-Track
Cost (billion)	0.28	2.9	4.1	4.2
Longevity		20 years	60-80 years	60-80 years
Access (ADA)	No Change	Minimum	Full	Full
Speed (travel time)	No Change	Moderate	Fast	Fast
Future Compatibility (system expansion)	No Change	Improved	Reduced	Improved
Markets Served	No Change	More Options	Reduced Options for Reverse Commute	More Options and Improved Travel Time
Service During Construction	No change	Impact	Significant Impact	Significant Impact
Community Impacts*	No Change	Minimal Land Acquisition	Minimal Land Acquisition	Significant Land Acquisition
Community Benefits	No Change	Improved Stations	New Stations	Development Potential

* Land acquisition impacts have not been determined at this time. The formal NEPA process with public input will be required.

1 An additional option is a "Benchmark - State of Good Repair" option for comparison purposes. This option represents the Option 2 Improve without two new transfer stations. The associated cost is at $2.4 billion with a longevity of 20 years. Under this option, it was evaluated as "No Change" to criteria: Speed; Future Compatibility; Markets Served; Community Impacts; and Community Benefits. There will be impact to service disruption during construction.

Belmont Historic Stationhouse Rehabilitation, part of the 2004-2006 Brown Line reconstruction completed on time and on budget providing accessible stations for all

Moving Forward

Next Steps

To complete the North Red and Purple Lines project, the CTA will need to advance into the next steps of the process. The key next steps are:

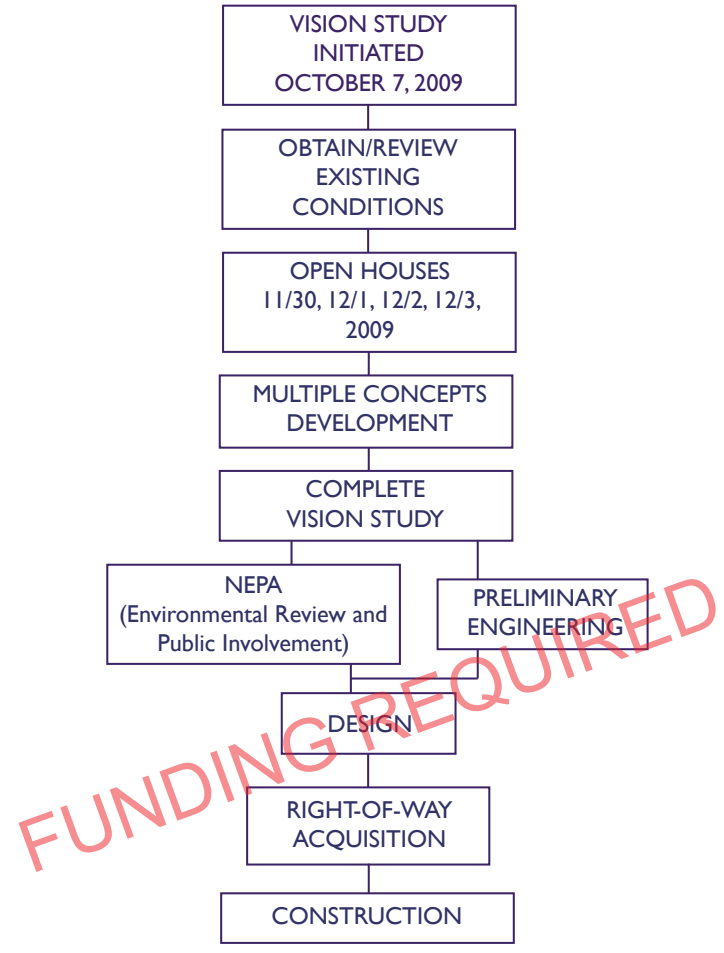
- Environmental Review (NEPA)
- Preliminary Engineering
- Final Design
- Right-of-Way Acquisition
- Construction

Ideally, the entire project would be moved forward as a single large-scale project and advance through the project development and implementation process all at once. This approach would likely be the most expeditious and efficient way to deliver the project with minimized service disruptions and construction impacts. However, some elements in the corridor (such as viaducts and retaining walls) may require capital investment in the near term to keep the system safe and fully operational. These discrete phases of the project may be advanced and implemented as individual projects. Other large scale phases may take considerably longer before funding is available and construction is begun.

For this project to move toward construction, it will need to transition from the planning phase to the project development phase, which includes the National Environmental Policy Act of 1969 (NEPA) and preliminary engineering. Because of the complexities associated with a project of this scale, and some of the near term critical needs mentioned above, careful consideration needs to be given in regard to the NEPA process to ensure compliance and eligibility for federal funding.

The NEPA process requires federal agencies to consider the potential environmental consequences of their actions, to document the analysis and to allow the public to comment on the action prior to the undertaking. As such, the general public, interested parties and elected officials will have additional opportunities to engage in the project development process in regard to the North Red and Purple Line Project.

Project Process



The CTA will now turn its attention to securing funding for planning, design, and construction.

Capturing the Benefits

When implemented, the Project will provide regional benefits as well as benefits to the local neighborhoods. This investment could create over 190,000 jobs and could be the catalyst for further development along the corridor. Today, 120,000 trips are made every weekday using the North Red and Purple Lines. If these trips were taken by car, it would represent a greater than 60% increase in traffic on Lake Shore Drive - the equivalent of adding five lanes. Additionally, 17 million trees would need to be planted to absorb the 230 million pound annual increase in carbon emissions.

Funding the Project

The CTA will be working with local, state and federal agencies and elected officials to secure the necessary funding to keep this Project moving forward. The CTA will pursue innovative financing strategies such as joint development, value capture and public-private partnerships.

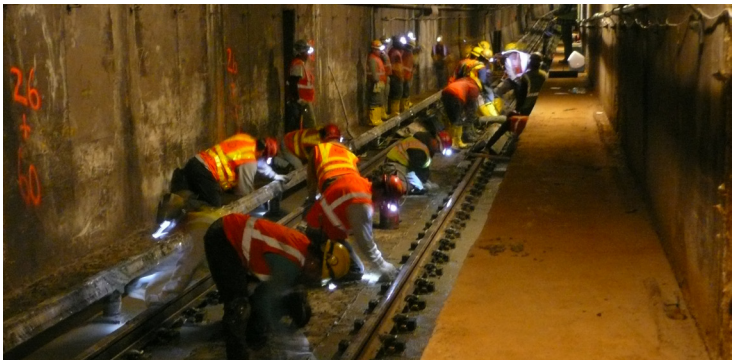
The CTA will be looking for innovative ways to deliver this project considering the need to:

- Secure funding
- Streamline environmental process
- Maintain existing infrastructure during planning and design phases
- Coordinate service during construction
- Limit right-of-way impacts

The North Red and Purple Lines improvement project will provide regional benefits and rejuvenate livable neighborhoods. The CTA values our customers continual involvement and will once again request your feedback as we make this project a success together.

Rejuvenating the transit line

Community Development and Livability



Job Creation

Transit Facts:

- Every $1 invested in public transit yields $8 in local economic activity
- Every $10 million capital investment yields $31 million increase in business sales
- For every $2 billion investment in transit results in 95,000 jobs created
- 1 CTA train is equivalent to 600 automobiles
- The average Chicagoan can save $11,298 a year by choosing transit over car ownership
- The average Chicagoan who chooses transit over driving can reduce annual carbon emissions by 4,800 Pounds
- 82.7% of the population along the North Red and Purple Lines are active CTA Customers
- 44.5% of the population along the North Red and Purple Lines use the CTA at least 5 days a week
- Less than 1% of the population along the North Red and Purple Lines has never ridden the CTA

Chicago Transit Authority

1-888-YOUR-CTA (1-888-968-7282)

CTA TTY: 1-888-CTA-TTY1 (1-888-282-8891)

Transit Information: 312-836-7000

RTA TTY: 312-836-4949

www.transitchicago.com

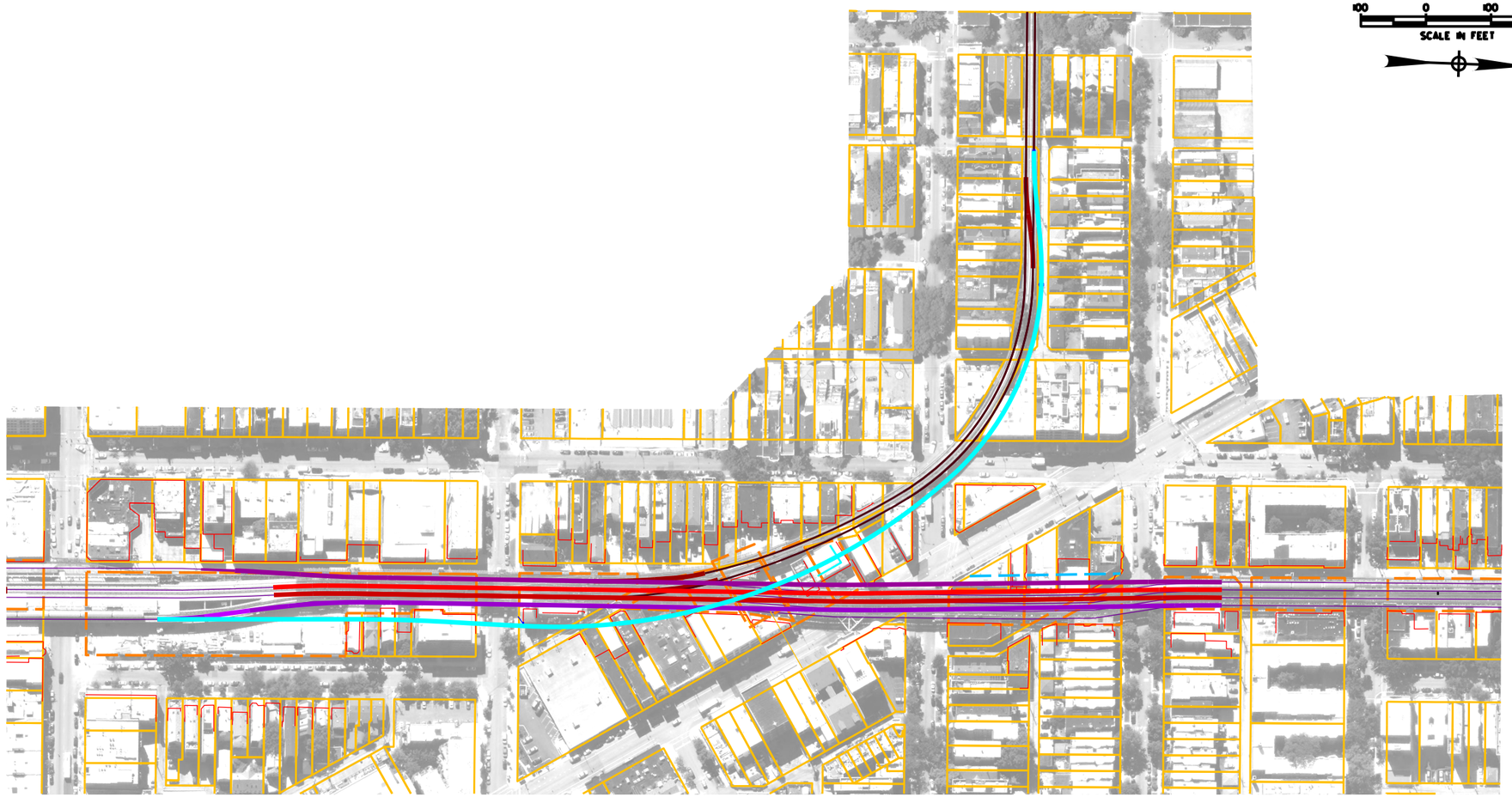
Project Website:

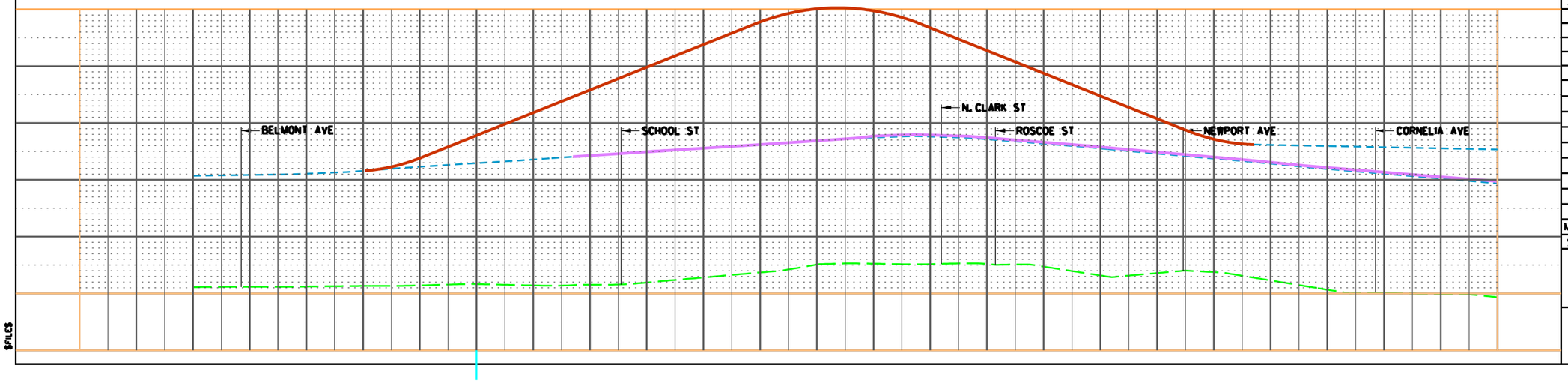
http://www.transitchicago.com/news_initiatives/planning/redpurplevision.aspx

Appendix C
Build Alternative Supporting Documentation

C-1: Vision Study Summary Report

C-2: Conceptual Engineering Plans





CONCEPTUAL DRAFT
NOT FOR CONSTRUCTION

CHICAGO TRANSIT AUTHORITY

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RED PURPLE BYPASS
ENVIRONMENTAL ASSESSMENT

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APPROVED BY	
CHECKED BY	
DESIGNED BY	T. WILLIAMS
DRAWN BY	
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FILE NAME	

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TRACK 5 ALTERNATIVE
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DRAFT