



General Project Information

This study spotlight provides an overview of the project’s Purpose and Need as well as a recap of a few notable alternatives that were considered and dismissed at the beginning of the NDLS Study but continue to receive interest from the general public. For reference, the overall framework for the NDLS Study complies with the National Environmental Policy Act, or NEPA. The key steps in the NEPA process for assessing federally funded infrastructure investments include defining transportation needs, developing a Purpose and Need Statement, developing and evaluating Alternatives, and selecting a Preferred Alternative. Each of these steps includes technical analyses, stakeholder involvement, and agency coordination. For additional details regarding the overall Phase I Study, please visit the project website at northdusablelakeshoredrive.org.

PURPOSE AND NEED

The Purpose and Need is a concise summary of the transportation problems to be addressed within the project study limits, and why those problems should be addressed. The Purpose and Need serves as the overall guide for developing and evaluating alternatives and was created through data analyses and a collaborative process with stakeholders.

The Purpose and Need was discussed over the course of several Task Force Meetings and Two Public Meetings, where stakeholders helped to identify transportation needs and outline the Purpose and Need objectives along with data and technical analyses provided by the project team. As the NDLS Study has progressed, the project team has collected, analyzed, and shared additional data with stakeholders, which has further validated the identified transportation needs. The following table summarizes the NDLS Purpose and Need:

Purpose and Need Objective	Why should these transportation needs be addressed?
Improve safety for all users	The NDLS corridor averages 3 vehicular crashes per day, and 3 fatalities per year. An average of 30 crashes per year involve people walking or bicycling.
Improve mobility for all users	The Outer Drive carries up to 170,000 vehicles per day and 42,000 transit trips. During peak travel periods, the NDLS corridor and connecting arterials experience severe congestion impacting auto and bus performance. Mobility for people walking or bicycling in the corridor is hindered by insufficiently sized and ADA-noncompliant paths, sidewalks, and passageways across the Outer Drive and along Inner and Outer Drive. This leads to congestion on the Lakefront Trail, segments of which serve more than 30,000 people on peak days in this area
Address infrastructure deficiencies	Much of the NDLS infrastructure was built in the 1930’s; the pavement and bridges have exceeded their design life, and do not meet modern design guidelines and requirements such as the Americans with Disabilities Act (ADA). When lake levels are high, wave overtopping impacts the south end of the corridor, causing infrastructure damage and road closures.
Improve access and circulation	Deficiencies along the NDLS corridor restrict access and circulation. Community and transit access are both constrained by congestion on the Inner and Outer Drives, while transit circulation is limited by a lack of sufficient spaces for buses to turn around. Lakefront access is also restricted for people walking and bicycling due to insufficient east-west crossings, particularly south of Irving Park Road where crossings are currently spaced every 1/2- to 3/4-mile, as compared to north of Irving Park Road where crossings are currently spaced every 1/4-mile.

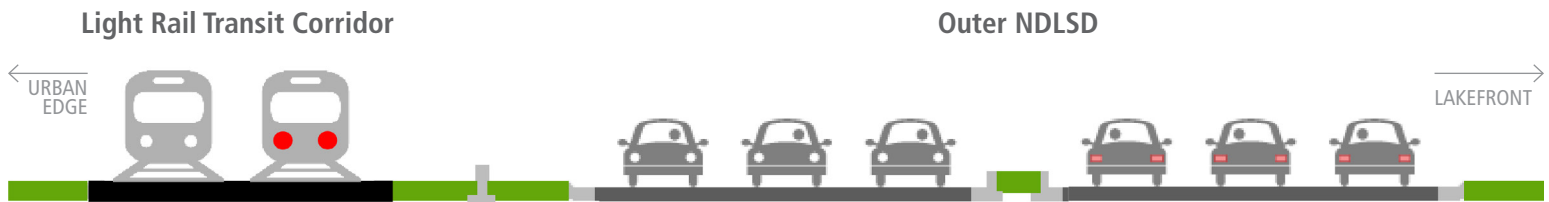


INITIAL ALTERNATIVES EVALUATION RECAP - LIGHT RAIL TRANSIT AND TUNNEL ALTERNATIVES

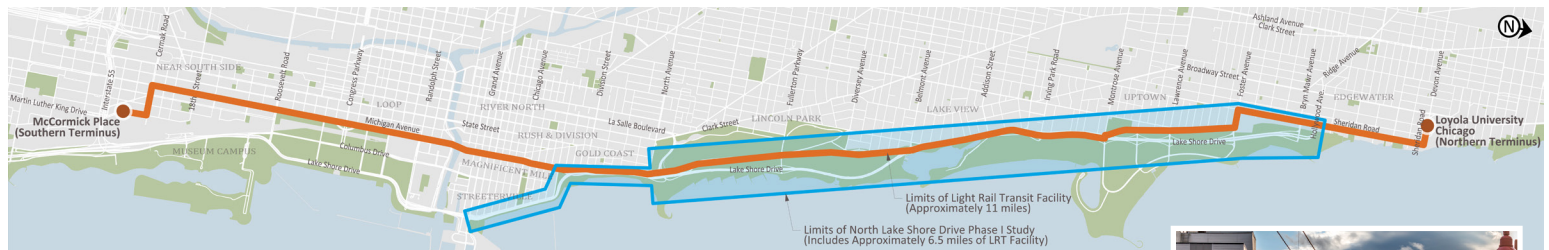
After establishing the project Purpose and Need, stakeholders helped to provide ideas for addressing NDLSO's Transportation Needs, and over 600 suggestions were received as part of [Task Force Meeting #3](#) and [Public Meeting #2](#). Among the ideas received were Light Rail Transit (LRT) and Tunnel Alternatives. Those ideas were among the alternatives presented and discussed at [Task Force Meeting #4](#) and [Public Meeting #3](#). The Light Rail Transit and Tunnel Alternatives evaluation is summarized below.

Light Rail Transit (LRT)

The LRT Alternative assessed by the study team would reduce the number of lanes on the Outer Drive from 4 to 3 lanes in each direction and build a two-track LRT line and stations to the west of the Outer Drive. Placing the LRT corridor within the NDLSO median was not considered because stations located in the medians would be less accessible than existing CTA express bus stops, which are primarily located at the urban edge along Inner Drive. The LRT typical cross section is shown below:



However, an LRT line would not be viable if it only operated in the NDLSO corridor—it would have to extend beyond the NDLSO corridor to the south and north (and possibly also to the west) to provide equivalent one-seat transit service as today's CTA express buses do and not require most riders to transfer between LRT and buses. For the purposes of assessing feasibility, the study team considered an LRT line that would extend from McCormick Place on the south to the Loyola Campus on the north. Portions of the arterial street system within and outside of the NDLSO corridor would also need to be used to accommodate such an LRT line. Many acres of space along the line would also need to be identified for an LRT rail yard and shops in order to operate and maintain this type of transit mode which does not have any existing facilities in Chicago. An exhibit depicting the conceptual LRT Alignment is shown below:



The key conclusions from the LRT alternative evaluation are summarized as follows:

- The LRT Alternative would not improve all modes of travel as called for in the Purpose & Need:
 - » The area directly served by LRT stations would be less than that served by existing express buses, requiring many more transit users to make transfer connections than are needed along NDLSO today.
 - » Adding LRT station stops and transfer connections would increase the travel time for most transit users relative to existing CTA express buses along the NDLSO corridor.
 - » Adding LRT to arterial streets along and outside of the NDLSO corridor would disrupt the configuration and operations of those streets for all street users.
- The LRT Alternative would greatly expand the scope, scale, and complexity of the NDLSO project while lengthening the study corridor by at least 3 miles to the south and 1 mile north. Estimated construction and operational costs would be 2x greater than the other alternatives which would not require additional infrastructure outside of the existing NDLSO corridor.
- Relatively less costly version of LRT could be Bus Rapid Transit (BRT) within the NDLSO median or alongside NDLSO. However, many of the same operational issues as noted above would arise for a BRT option including station access, travel time, and transfers.
- At the Task Force and Public Meetings, stakeholders expressed general agreement with the findings of the LRT evaluation.



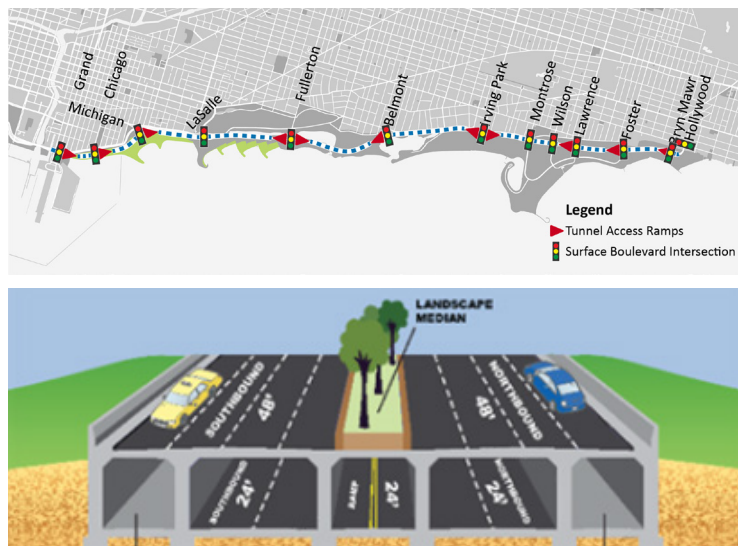
The LRT Alternative was dismissed during Level 1 Screening because it had substantially higher impacts and costs without generating additional benefits consistent with the project's Purpose and Need.

Tunnel Alternatives

The tunnel alternatives assessed by the study team would relocate NDLS into a tunnel either beneath the park or submerged on the bed of Lake Michigan with the intent to address transportation needs while avoiding or minimizing impacts to the park. The two tunnel alternatives assessed are described below.

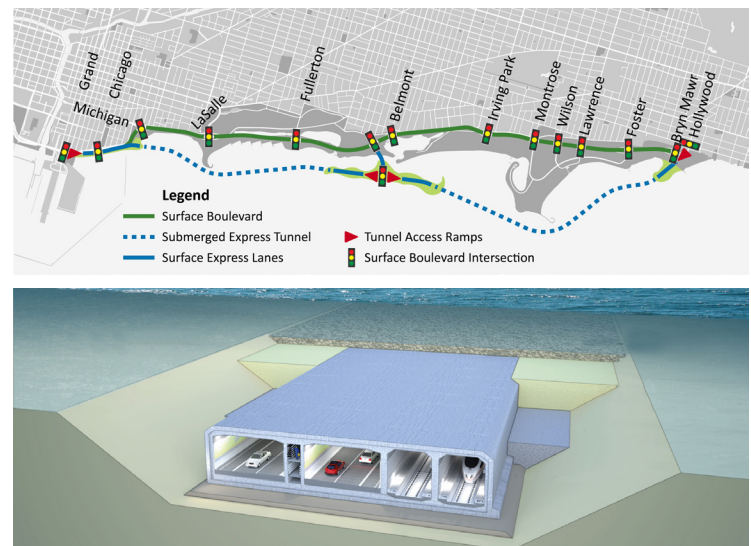
Land Based Tunnel Alternative

The Land Based Tunnel Alternative would include a four-lane express tunnel located below a four-lane surface boulevard in a double-deck configuration. Both a tunnel and a surface boulevard would be needed to address access needs. Due to safety and design constraints including sight distance and ramp steepness, full access to the tunnel would not be feasible from every existing cross street that currently has access. As such, the proposed tunnel access would prioritize existing major access points as well as CTA express bus service routes. CTA's express bus service would be relocated to the tunnel, and it would be expected that autos using the tunnel would be tolled to support financing the tunnel.



Submerged Express Tunnel Alternative

The Submerged Express Tunnel Alternative would include a four-lane, submerged tunnel on the bed of Lake Michigan. Due to the complexity and cost of providing multiple access points to a tunnel in the lake, access would be limited to the north and south ends of the tunnel, as well as a single midpoint access at Belmont Avenue. A four-lane surface boulevard with signalized intersections would be provided along the alignment of the existing Outer Drive to accommodate intermediate access needs. CTA's Express Bus service would be relocated to the surface boulevard, and it would be expected that autos using the tunnel would be tolled to support financing the tunnel.



The key conclusions from the tunnel alternatives evaluation are summarized as follows:

- Safety for all users would not be improved. Surface boulevard users (people walking, bicycling, or driving) would encounter a greater number of conflict points at signalized intersections for either tunnel alternative.
- Mobility for all users would not be improved. The share of trips that currently travel the full length of NDLS is relatively low, so the tunnel would be underutilized and the surface boulevard would be overutilized (for either tunnel alternative).
- Access and Circulation would not be improved. Limited access points for either tunnel alternative would concentrate auto traffic at those points, while congested conditions on the surface boulevard would hinder community and park access.
- The costs would be substantially higher than the other non-tunnel alternatives.
- Ventilation buildings would be required for either tunnel option, creating visual and spatial impacts within the historic park.
- At the Task Force and Public Meetings, stakeholders expressed general agreement with the findings of the tunnel evaluation.

The Tunnel Alternatives were dismissed during initial alternatives screening because they had substantially higher impacts and costs without generating additional benefits consistent with the project's Purpose and Need.

WHAT ABOUT A BOULEVARD ALTERNATIVE?

As noted, a surface boulevard was considered as part of each Tunnel Alternative and would consist of a four-lane arterial roadway with signalized intersections (e.g., no overpasses or ramps). A stand-alone surface boulevard treatment was also assessed independently of a tunnel alternative. The project team’s findings regarding a boulevard configuration are summarized as follows:

- Safety for all users would not be improved, as surface boulevard users (people walking, bicycling, or driving) would encounter a greater number of conflict points at signalized intersections.
- Mobility would not be improved for all users. A stand-alone boulevard would be even more congested than a tunnel/boulevard combination. As a frame of reference, the Outer Drive carries up to 170,000 vehicles per day, which would overwhelm a four, six or eight lane surface boulevard with signalized intersections. Such a large reduction in vehicular capacity on the Outer Drive would impact the roadway network away from the Drive, negatively affecting people walking, bicycling, taking transit, or driving on many other streets extending as far west as the Kennedy Expressway.
- Lakefront access and circulation for people using transit and the park would be impaired by the congested conditions on the surface boulevard. CTA express bus service would be slower and less reliable than existing conditions, even with dedicated lanes and transit signal priority, because buses would still need to stop at and often get delayed by backed up traffic at signalized intersections.
- A major net loss in transportation capacity along the north lakefront would result in negative economic impacts throughout the corridor.

For these reasons a surface boulevard configuration would not be consistent with the project’s Purpose and Need.

Could transit mode share in the NDLSL study area be significantly increased by restricting auto capacity?

Based on modeling performed by CMAP, restricting auto capacity would not result in a significant shift from autos to transit in the NDLSL Corridor. This conclusion is driven by several factors:

- NDLSL study area is nearly fully built out and already has the highest transit mode share within the City, at 45%.
- Potential to capture significant new ridership is limited - the existing transit mode share is as high as 80% in the areas closest to the CTA Red Line and NDLSL Express Bus service.
- CTA Red Line and NDLSL Express Bus service have overlapping “catchment” areas (e.g., within ¼ mile of a station), and as such, the two transit services are competing for many of the same riders—changes to one or the other service would mostly shift riders between modes rather than generate new ridership.
- Not all NDLSL auto trips are served by NDLSL express buses—the origins and destinations of auto trips along NDLSL are dispersed and include many areas that are much less convenient to access by transit than the areas where NDLSL express bus trips begin and end.

Other cities have replaced higher capacity roadways with lower capacity roadways. How is the NDLSL project any different?

Other cities, including San Francisco CA, Milwaukee WI, and Chattanooga TN have replaced sections of limited access roadways with arterial surface streets featuring signalized intersections. However, those projects have key differences compared to the NDLSL project:

Projects in other Cities	NDLSL Project
Pre-project traffic volumes ranged from 20,000 to 93,000 vehicles per day. Subsequent traffic volumes on the replacement surface streets was generally lower.	NDLSL carries up to 170,000 vehicles per day. Even a 50% volume reduction would overwhelm a four lane arterial roadway and displace very large volumes of traffic on to other streets, negatively affecting users of those streets.
Converted former expressway sections were generally one mile “spurs” with limited or no intermediate access. Therefore, removal and replacement of these roadways did not have significant impacts on the adjoining arterial roadway system or overall street network.	NDLSL is part of Chicago’s urban street grid as well as a major regional north-south corridor, and provides substantially more local access than the examples in other cities.
Higher volume roadways were replaced in some cases with six to eight lane boulevards. Project impacts on bicyclist/vehicular crashes and transit travel times were not uniformly positive.	A six to eight lane boulevard with signalized intersections would still have a wide footprint and would increase the number of conflict points between pedestrians, bicyclists and vehicles. In addition, signalized intersections would increase CTA’s express bus travel times on the Outer Drive.
Primary benefit of these projects was to reconnect neighborhoods, facilitate redevelopment, and increased property values.	NDLSL is generally located within historic Lincoln Park, with Lake Michigan as the eastern border, and not in an area targeted for redevelopment. A key goal of the project is to improve connections between the urban edge and the lakefront at consistent quarter-mile intervals.