North Lake Shore Drive
Corridor Planning Committee/ Task Force Meeting #5

December 1, 2016

Welcome

Meeting Agenda

- Introductions
- Recap of Task Force/CPC Meeting #4
- Chicago Park District Lakefront Trail Update
- Alternatives Development & Evaluation
  - Review of Level 1 Screening Results
  - Overview of Level 2 Screening Process
  - Example: Level 2 Evaluation
- Junctions Update
- Next Steps

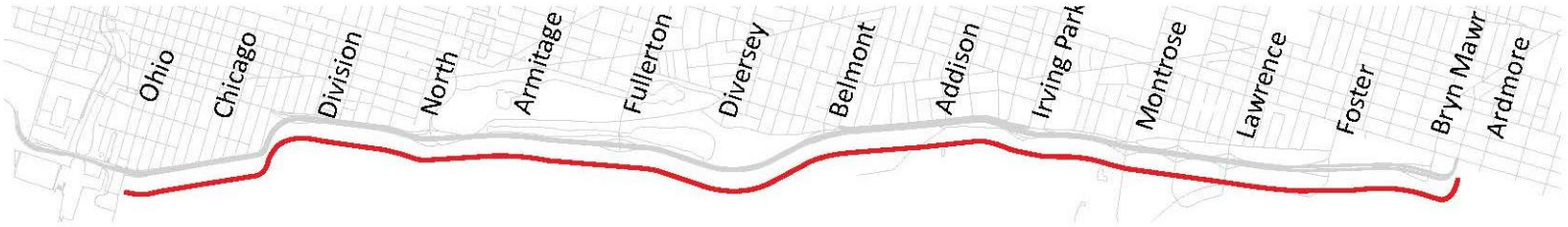
Recap of CPC/TF Meeting #4

- Meeting Held December 2015
- Alternative Development & Evaluation Process
- Overview of Travel Demand Modeling
- Overview of "Building Blocks" Approach
  - Junction treatments
  - Transit treatments
  - Non-motorized travel considerations
  - Shoreline considerations
- Case Study at Chicago Avenue

Chicago Park District

Lakefront Trail Interim Improvements Update

North Lakefront Trail



Lincoln Park Lake Front Trail Improvement

Chicago Park District Lakefront Trail Improvement

CPD, ATA & CARA Trail Survey 2015

Goal: Develop recommendations for trail signage, education, and other strategies to improve Lakefront trail use.

How you use it?

- 94% Bicycling
- 48.8% Walking
- 43.5% Running
- 3.2% Rollerblading, etc.

Issues?

- 79.1% People Clogging Path
- 64.8% People Not Moving to the Right
- 44.7% Distracted by Electronics
- 39.1% Not Slowing Down or Yielding
- 33.1% Not Using Proper Passing Signals

Most Important Trail Improvements

- 89.5% Separate Bikes, Runners and Pedestrians
- 48.1% Educate About Safety
- 44.7% Improve Signage and Pavement Parking
- 25.6% Improve Access from City
- 25.6% Year-Round Maintenance

Lincoln Park Lake Front Trail Improvement

Chicago Park District Lakefront Trail Improvement

CPD, ATA & CARA Trail Survey 2015

32.6%

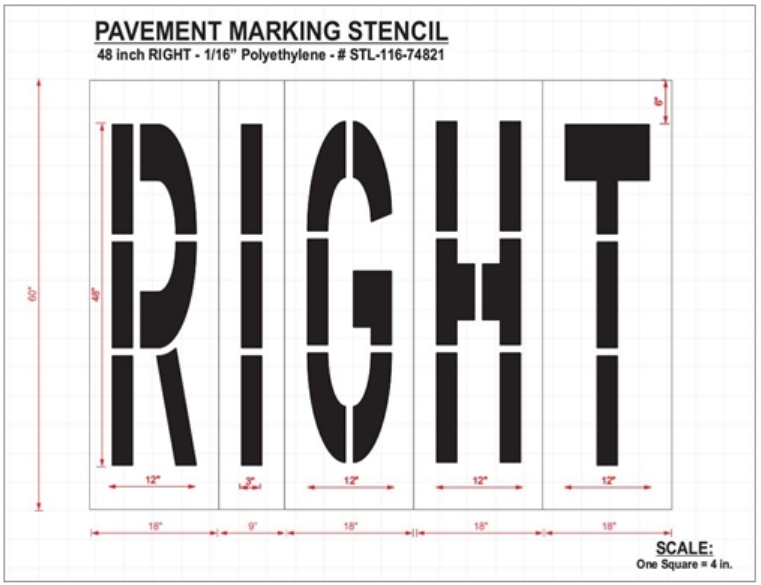
6.4%

51.4%

9.5%

Which of the messages above do you think is most effective promoting safe behavior among all trail users?

Signing & Striping



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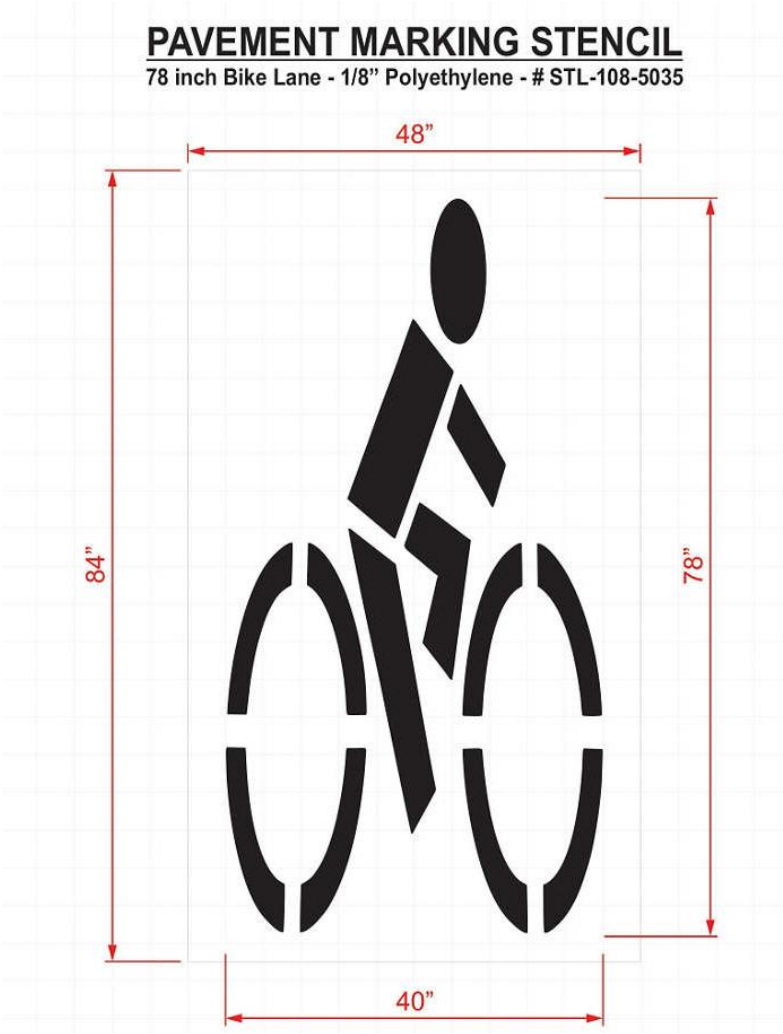
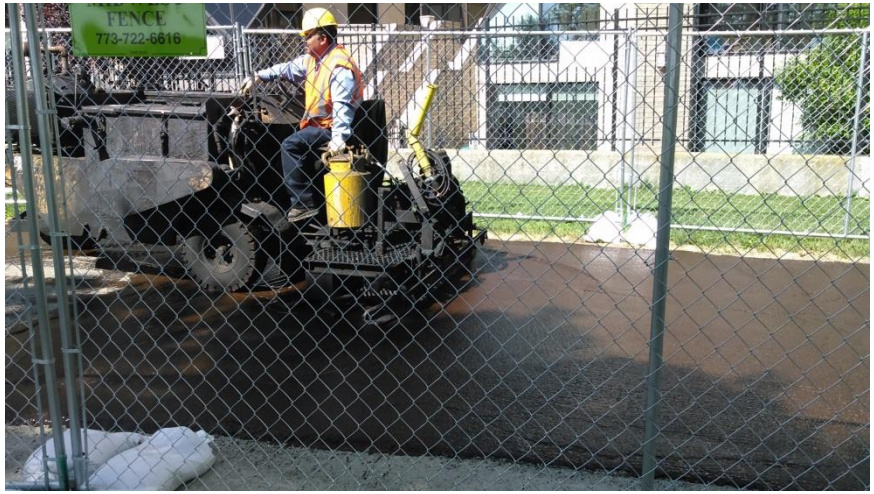
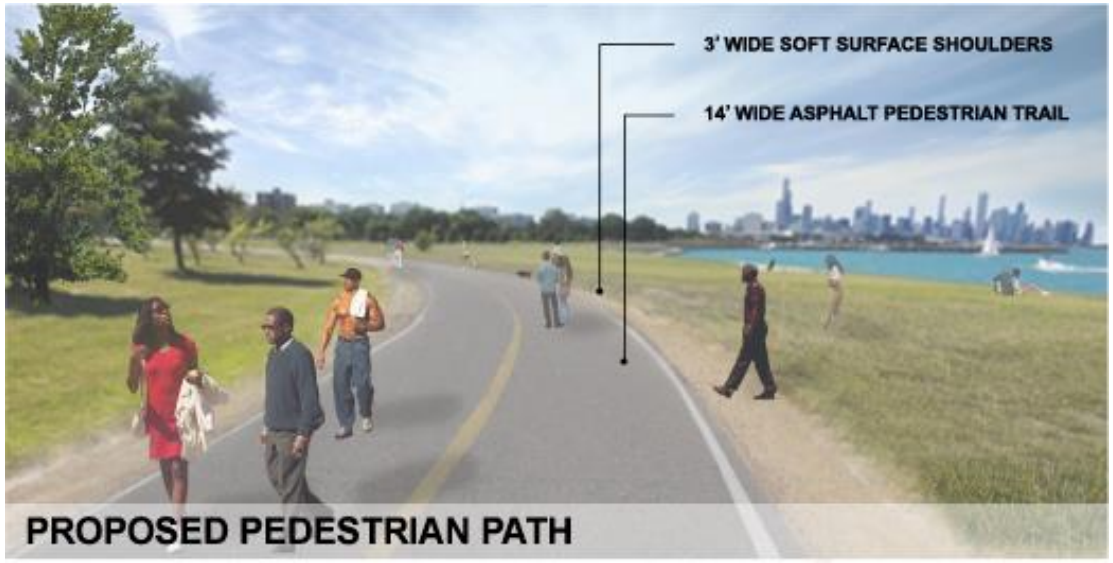


Trail Surfacing

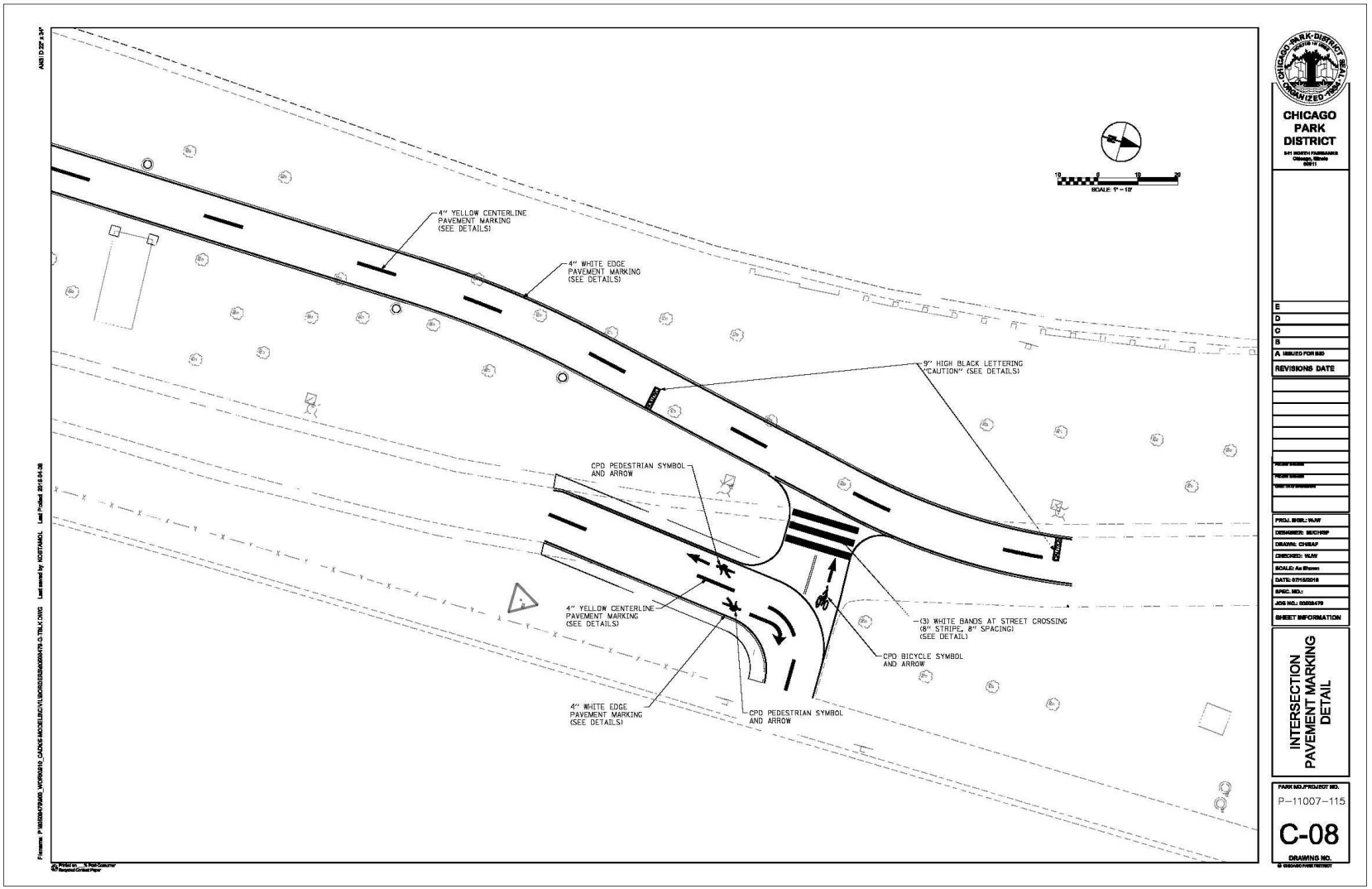
Trail surfacing occurred during the summer of 2016



Trail Separation – South Lakefront

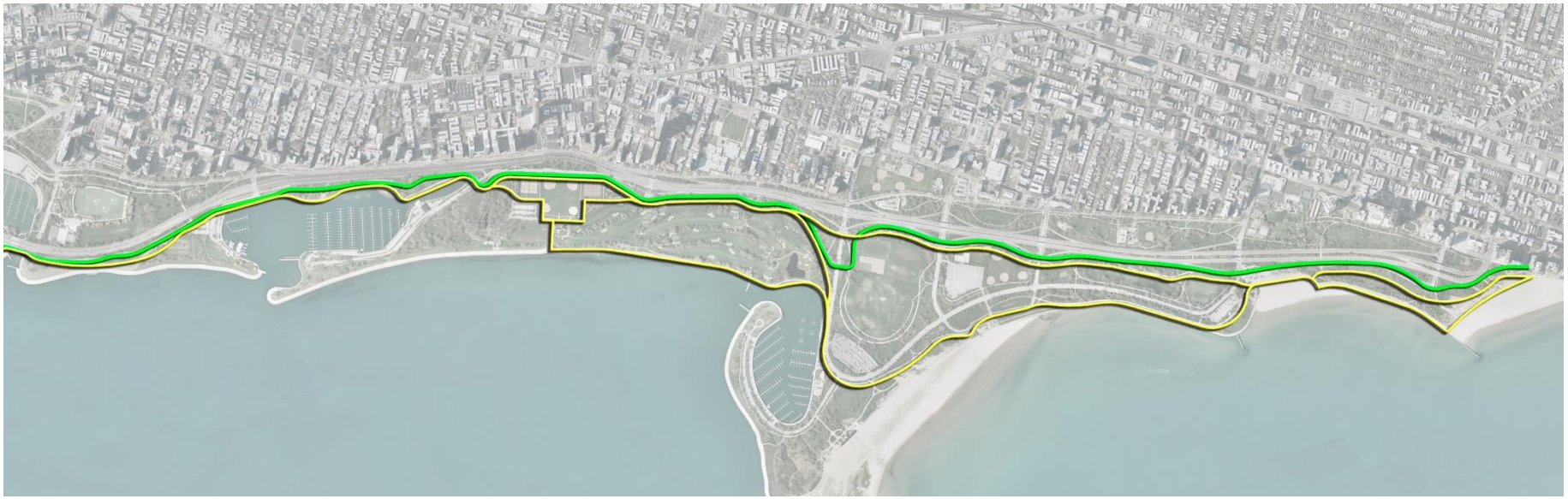


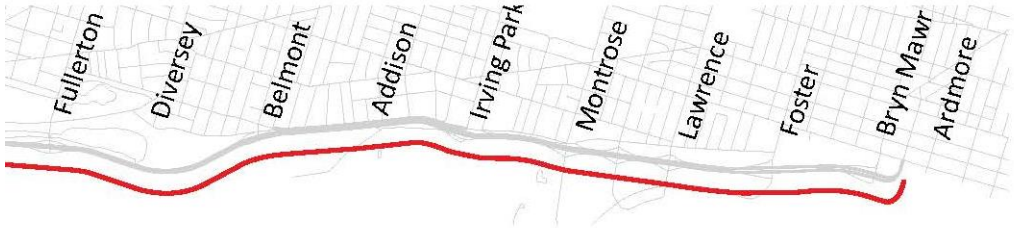
31st Street Trail Separation



31st Street Trail Separation

Future Improvements



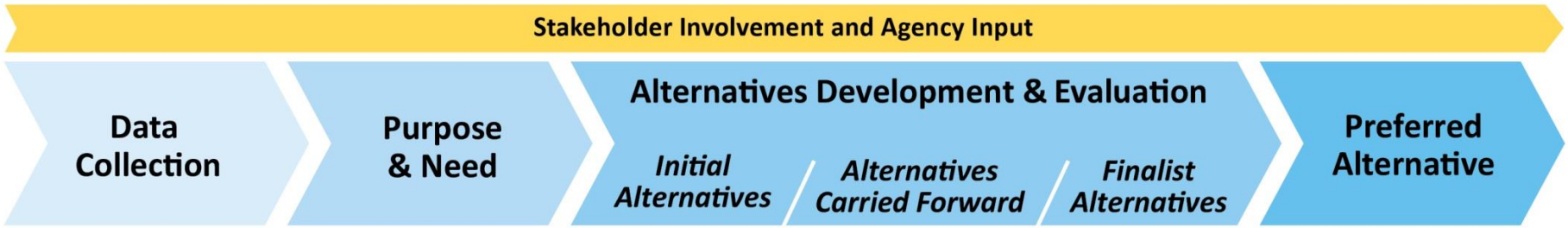


PEDESTRIAN PATH

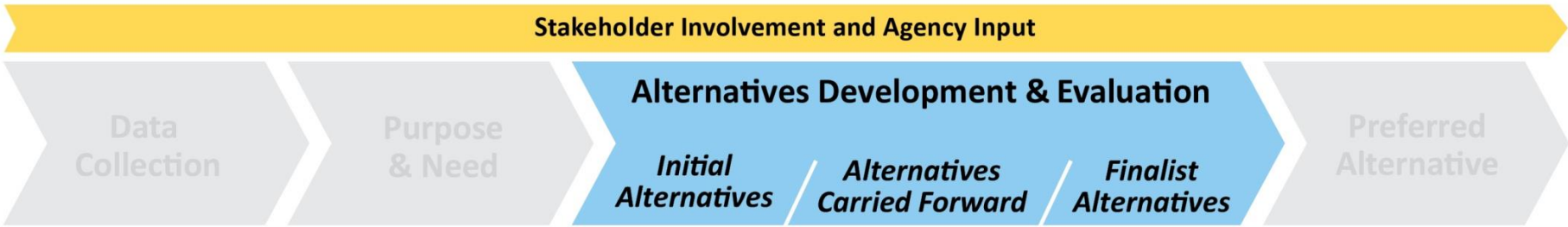
COMMUTER PATH

Range of Alternatives Development & Evaluation

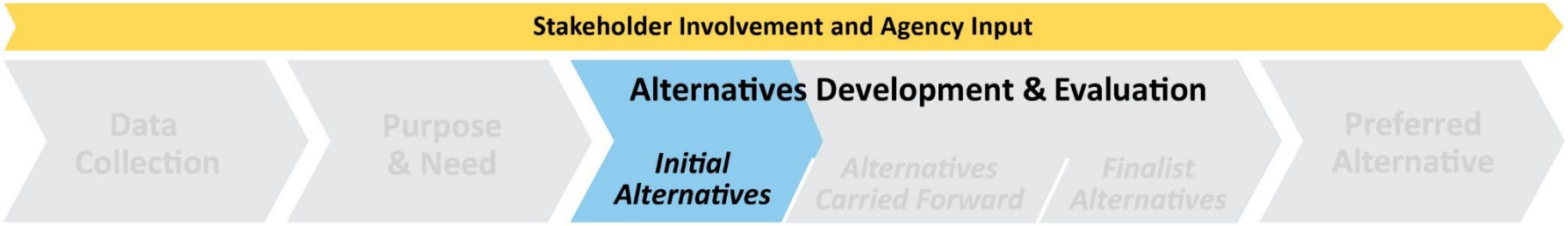
Phase I Study Process



Alternatives Development & Evaluation



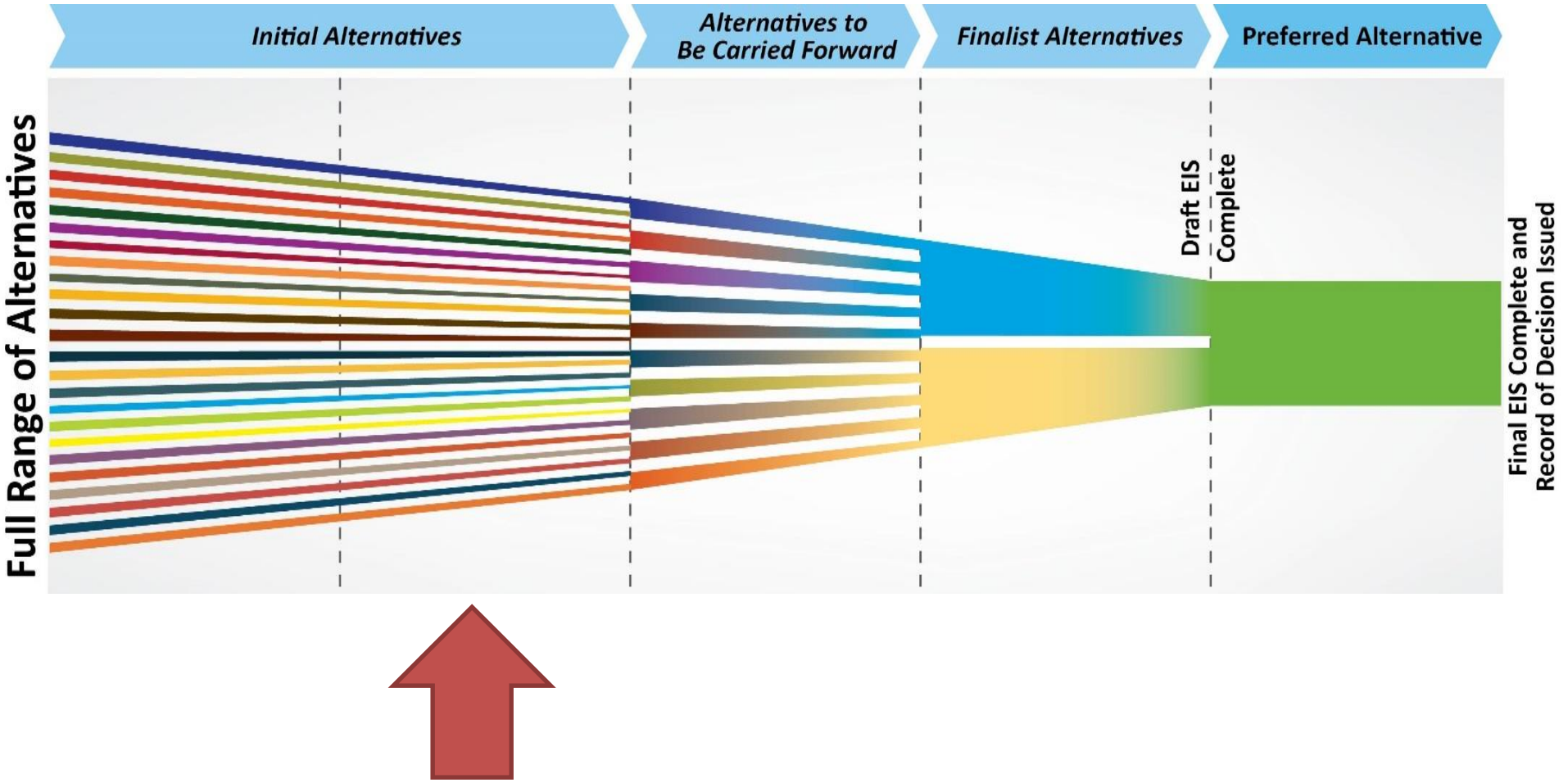
Alternatives Development & Evaluation



Initial Alternatives

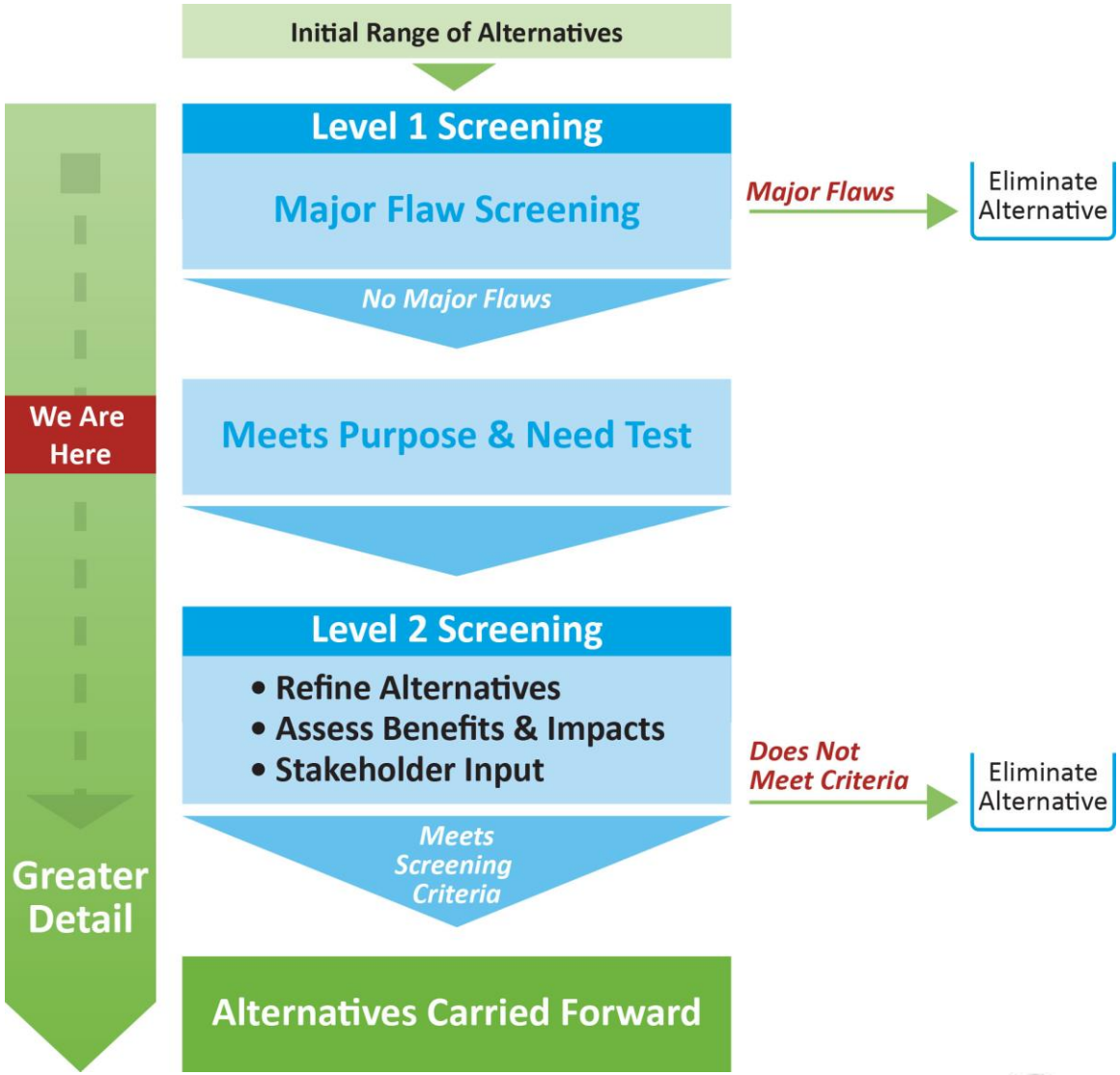
- Establish transportation performance criteria
- Identify existing environmental constraints
- Sketch alternatives
- Eliminate alternatives that do not address Purpose & Need
- Compare transportation benefits of alternatives – eliminate underperforming alternatives

Alternatives Development & Evaluation



We are here

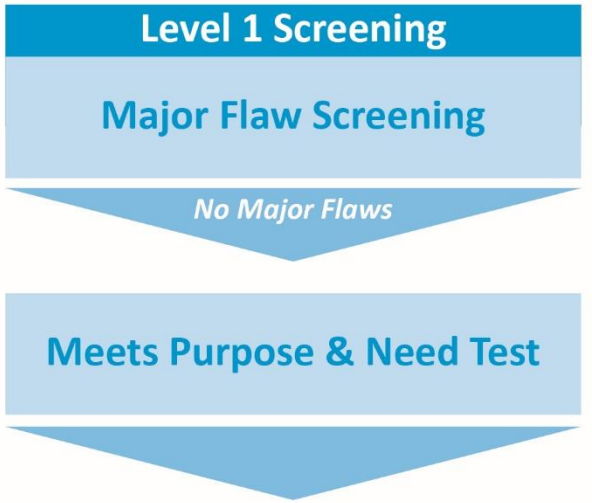
Alternatives Evaluation Process



Level 1 Screening

Dismiss an alternative if:

- Major Flaws
  - Does not meet the project purpose and stated objectives
  - Not financially feasible or reasonable based on significantly greater cost compared to other alternatives
  - Severe and unacceptable socio-economic or environmental impacts
- Does not sufficiently meet Purpose & Need
  - Improve **safety** for all users
  - Improve **mobility** for all users
  - Address **infrastructure deficiencies**
  - Improve **access and circulation**



Initial Range of Alternatives

Range of alternatives fits under five main categories:

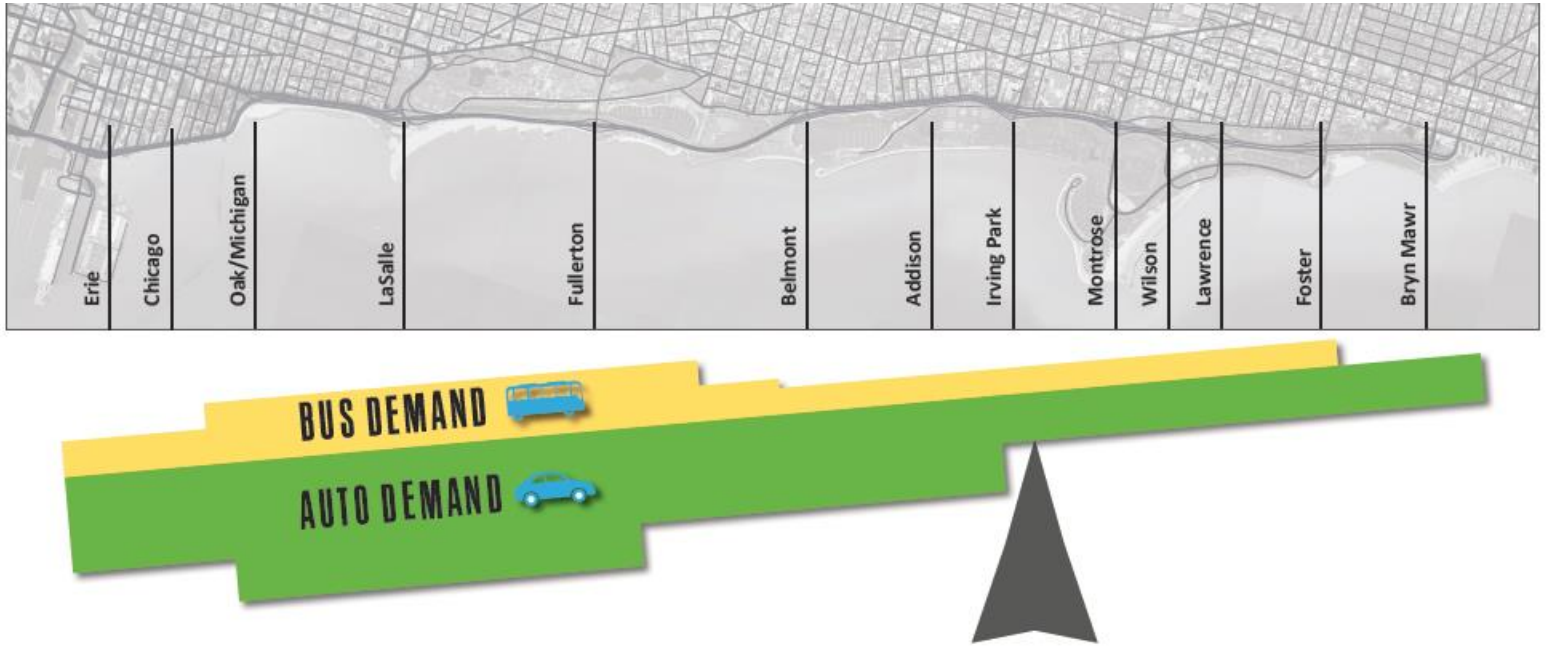
- No-Action
- Context Tailored Treatments
- Transitways
- Managed Lanes
- Tunnels and Causeways

2040 No-Action Alternative

Assumes that **routine maintenance** is performed on North Lake Shore Drive, but there are **no additional trail, transit or roadway improvements**.

2040 No-Action (Baseline) Findings

- Bus and auto travel demand is variable across the NLSD
- **Roadway capacity available** north of Irving Park Road
- **Roadway capacity constrained** south of Irving Park Road, with most heavily used segment (autos and buses) between Michigan Avenue and Fullerton Parkway



2040 No-Action Alternative

- **Does not address need for improved mobility**
  - Congestion remains on the Drive for autos and buses
  - No improvements to Lakefront Trail
- **Does not address need to improve safety**
  - Oak Street curve would remain substandard
  - Does not separate cyclists and pedestrians on Lakefront Trail
- **Does not improve existing infrastructure**

2040 No-Action Alternative

- **Does not improve access and circulation**
  - Access restrictions at Chicago Avenue remain
  - East-west non-motorized connections remain inadequate
  - Does not improve transit access to Lincoln Park

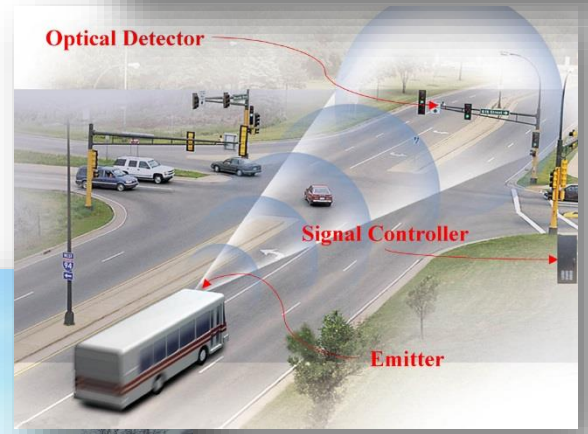
The No-Action alternative does not meet Purpose & Need, but is carried forward as the benchmark against which all other alternatives are measured

Context Tailored Treatments

- Improvements that are tailored to the varying roadway, transit, non-motorized travel and shoreline protection needs along the corridor
- Recognize that locations along the corridor have varying needs and different contexts within which to satisfy those needs
- Junction Tool Box driven as discussed at Task Force Meeting #4
- These treatments can be combined to form many different alternatives

Context Tailored Treatments

- Non-Motorized Treatments
- Transit Advantage Treatments
- Shoreline Protection Treatments
- Roadway Treatments



Context Tailored Treatments

Non-Motorized Travel Treatments

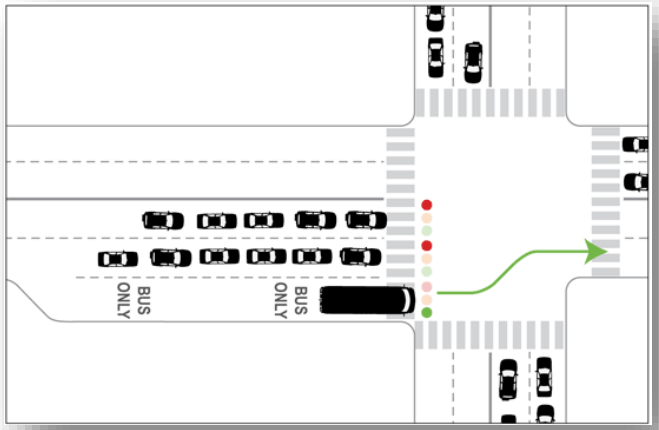
- **Treatments may include:**
  - Separating cyclists and pedestrians on the Lakefront Trail (LFT)
  - Grade separating LFT bike lanes at tunnels and junctions
  - Improving east-west lakefront access facilities
  - Installing additional grade separated lakefront access facilities

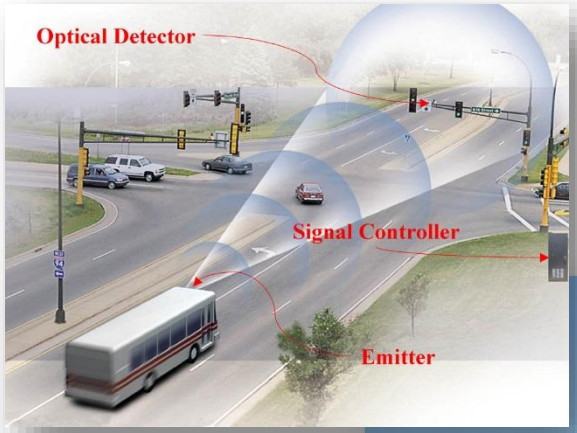
These treatments can be applied as appropriate throughout the corridor to improve safety, mobility and access for non-motorized users.

Context Tailored Treatments

Transit Advantage Treatments

- **Treatments may include:**
  - Queue jump facilities
  - Ramp Meters
  - Traffic Signal Priority





These treatments can be applied as appropriate throughout the corridor to improve transit mobility.

Context Tailored Treatments

Shoreline Protection Treatments

- **Construction of an increased buffer between portions of NLSD and Lake Michigan which may include:**
  - Revetment Walls
  - Beach areas

These treatments can be applied as appropriate throughout the corridor to reduce the risk of wave overtopping and flooding.

Context Tailored Treatments

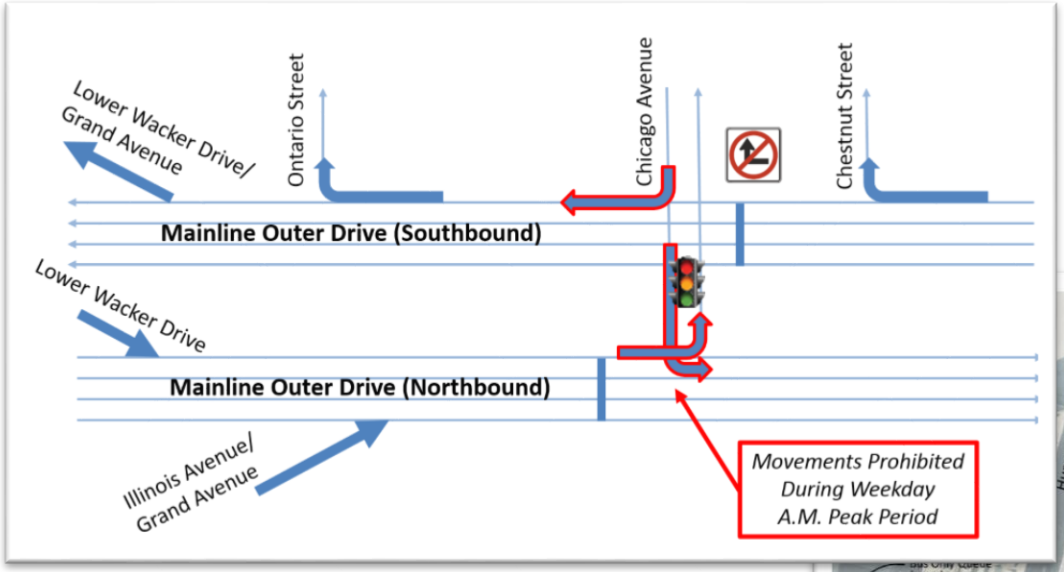
Roadway Treatments

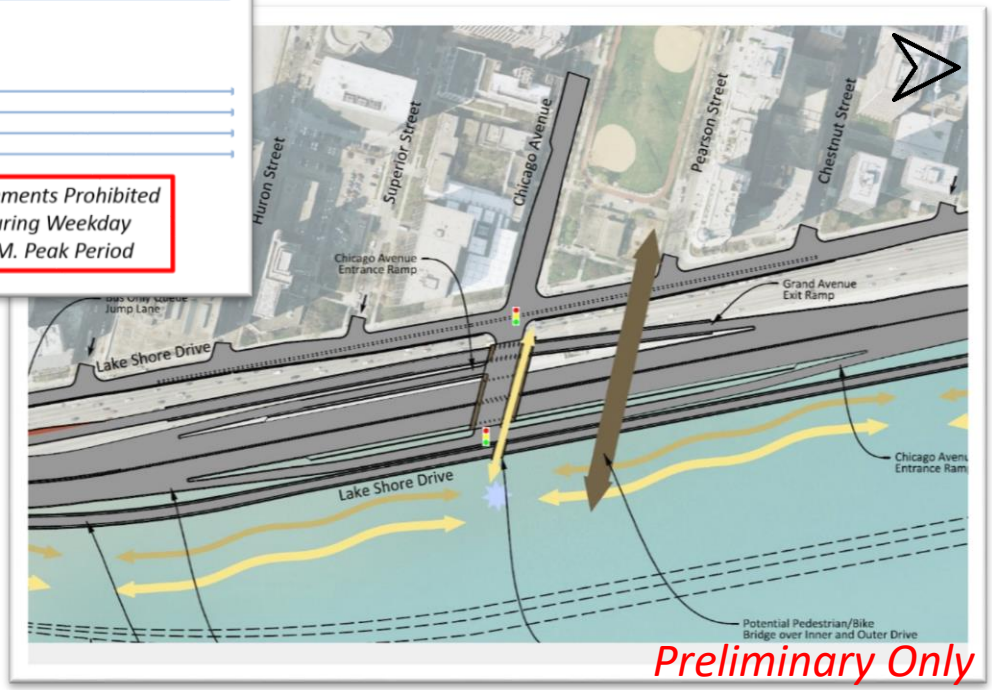
Treatments may include:

- Elimination of Access Restrictions (e.g. at Chicago Avenue)
- Oak Street Curve Realignment
- Junction Reconfiguration
- Provision of Improved Ramp Terminals and Weaving Zones
- Frontage Drives

Context Tailored Treatments

Elimination of Access Restrictions



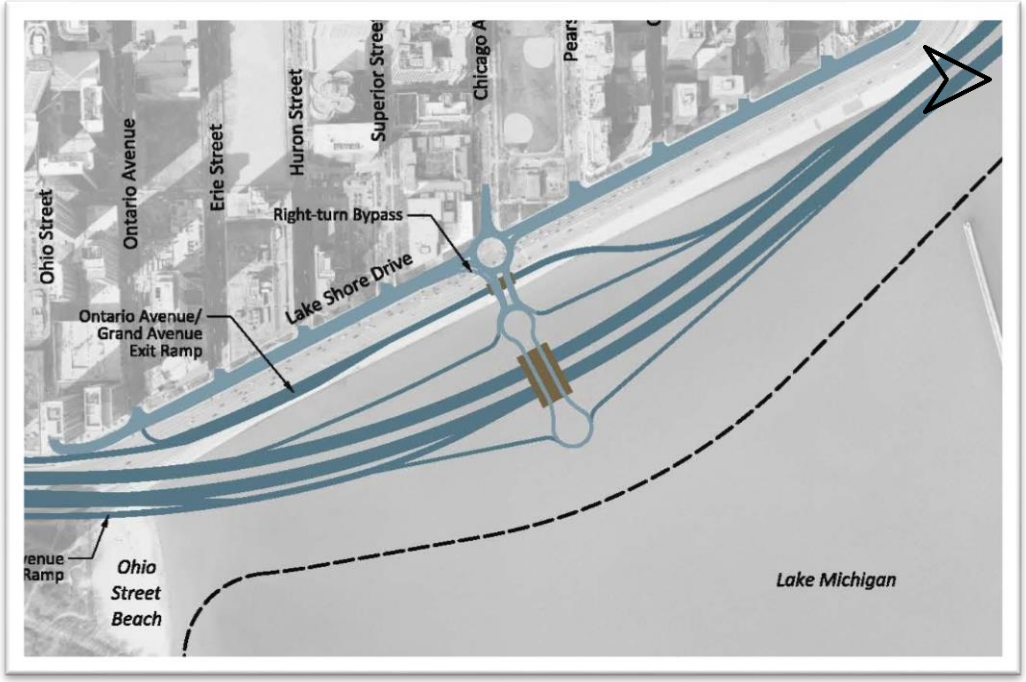


Preliminary Only

Context Tailored Treatments

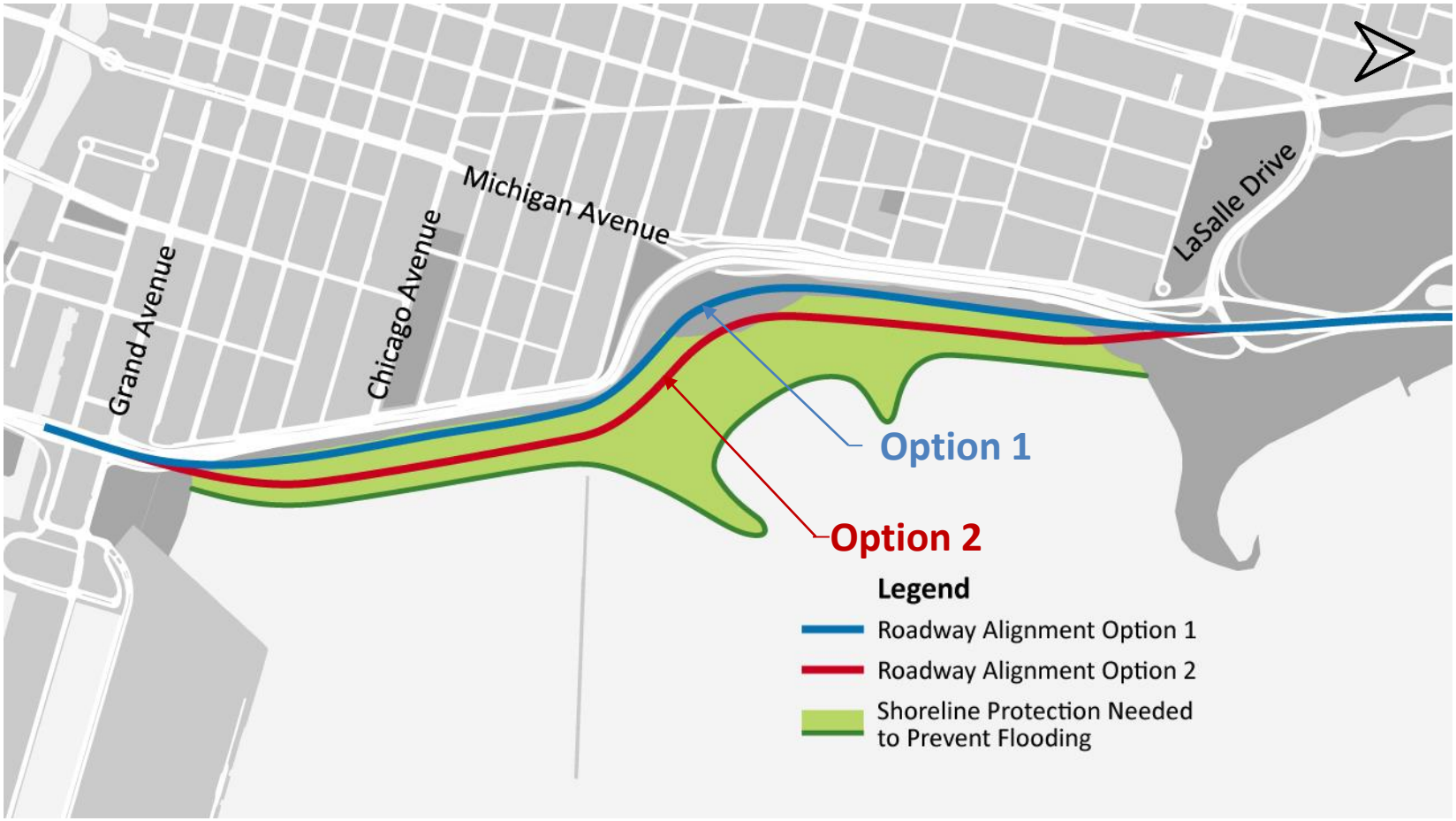
Junction Reconfiguration

- Elimination or relocation of junction access ramps
- Additional access ramp locations
- Change junction type



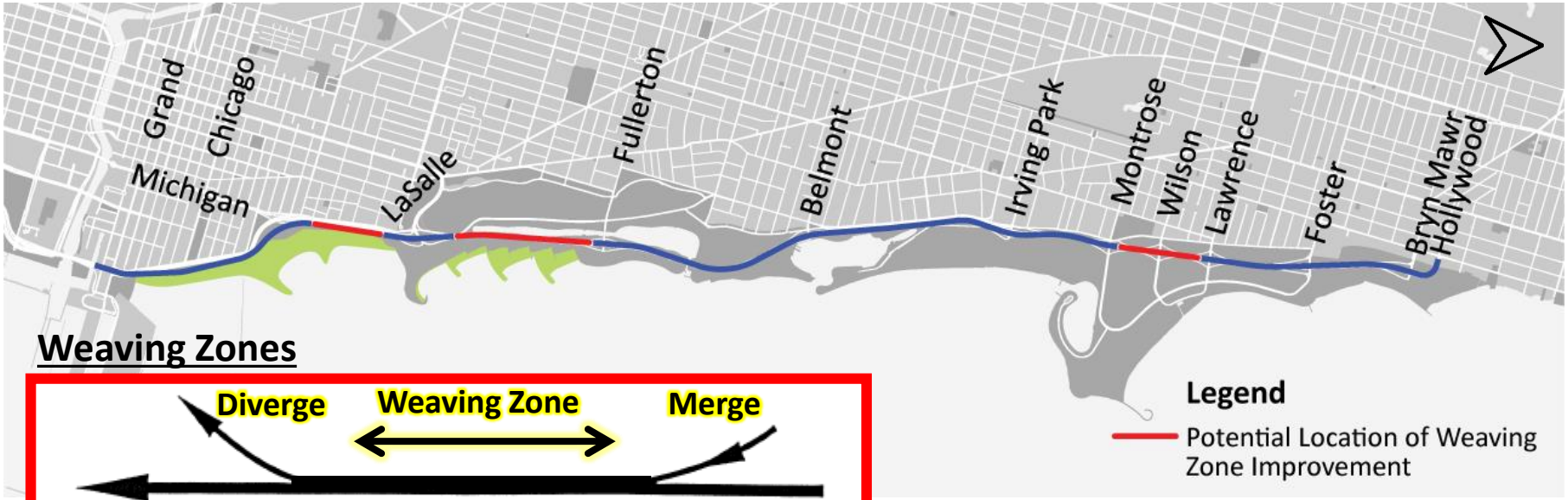
Context Tailored Treatments

Oak Street Curve Realignment



Context Tailored Treatments

Improved Ramp Terminals and Weaving Zones



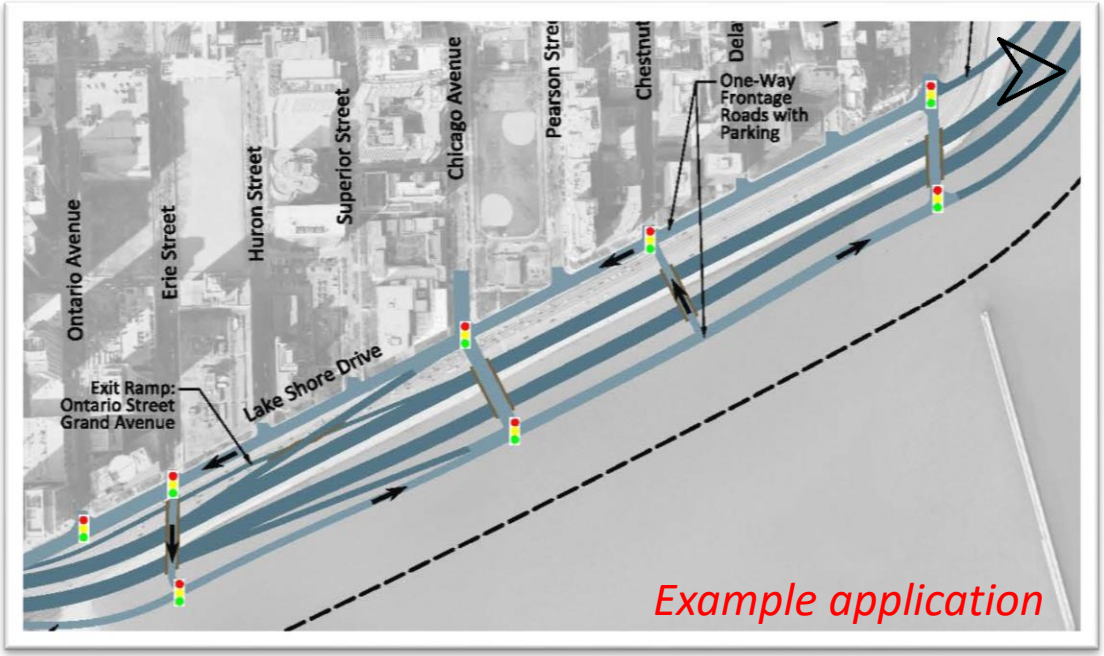
Reduce bottlenecks by:

- Improving exit/entrance ramp terminals at all junctions
- Introducing continuous weaving zones between closely spaced junctions

Context Tailored Treatments

One-Way Frontage Drives

- Improve local circulation
- Potentially applicable where Inner Drive and Outer Drive are in close proximity to one another



Context Tailored Treatments

- These treatments will be applied as appropriate throughout the corridor to improve safety, mobility and access for all users.
- This category of alternatives can result in several combinations of treatments that respond to needs outlined in the Purpose & Need.

It is recommended that this category of alternatives be further evaluated

Transitways

Four options considered:

- Bus on Right – Shoulder/Weaving Zones
- Bus on Left – Dedicated Transitway
- Transitway Off Alignment
- Light Rail Transit

Transitways

Bus on Right – Shoulder/ Weaving Zones

- Buses may use shoulder to bypass other traffic
- Most common use is during peak hours, buses can shift out of congested lanes at any time
- Buses could operate faster than adjacent lanes but speed would be limited to maintain safe operations
- Bus-only queue-jump ramps provided at junctions to bypass ramp congestion
- Shoulders may also be used for disabled vehicles, speed enforcement, etc.

Transitways

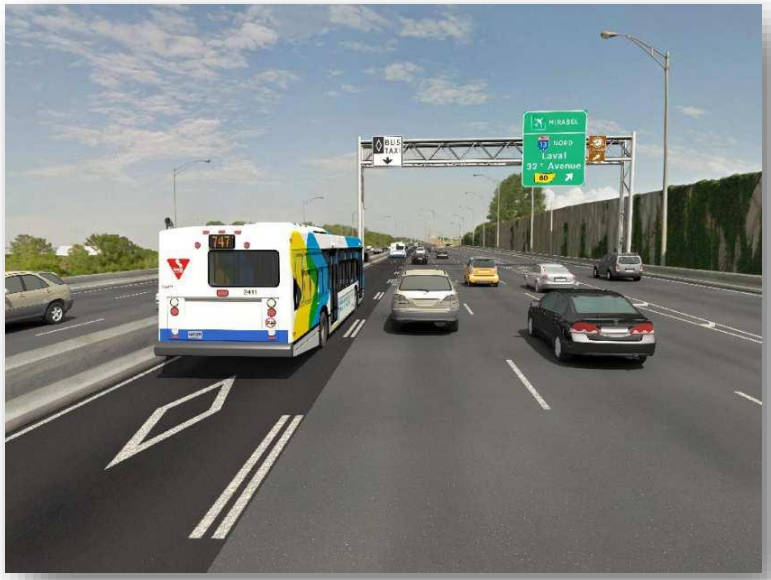
Bus on Right – Shoulder/ Weaving Zones

- Improves mobility for buses
- Improves mobility for autos by removing buses from general purpose lanes when congested
- Meets Purpose and Need

It is recommended that this alternative be further evaluated

Transitways

Bus on Left – Dedicated Transitway



- Adds a bus only travel lane with dedicated access
- Travel speeds of up to 45 mph
- Bus only queue-jump ramps provided at junctions
- Provides reliable transit travel times

Transitways

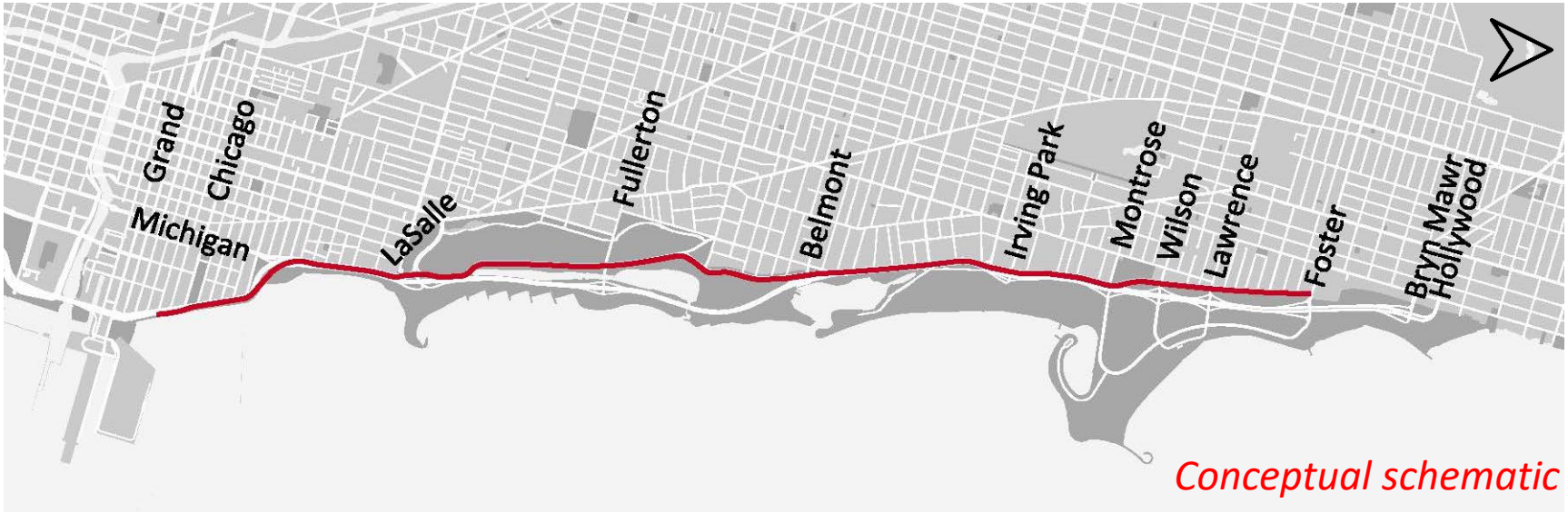
Bus on Left – Dedicated Transitway

- Improves mobility for buses
- Improves mobility for autos by removing buses from general purpose lanes
- Meets Purpose & Need

It is recommended that this alternative be further evaluated

Transitways

Transitway Off Alignment



- Provides separate transitway facility
- Located along urban edge between Inner and Outer Drives in most areas

Transitways

Transitway Off Alignment

- May improve mobility for buses
- Improves mobility for autos by removing buses from general purpose lanes
- Improves access to park by transit compared to transitways along Outer Drive
- Meets Purpose & Need

It is recommended that this alternative be further evaluated

Transitways

Light Rail Transit

- Inflexible operations compared to existing bus routes
- Slow travel speeds due to frequent stops and lack of access-controlled right-of-way
- Requirement for specialized vehicles, maintenance shop and storage yard
- Need for passengers to transfer to/from E-W bus routes

Transitways

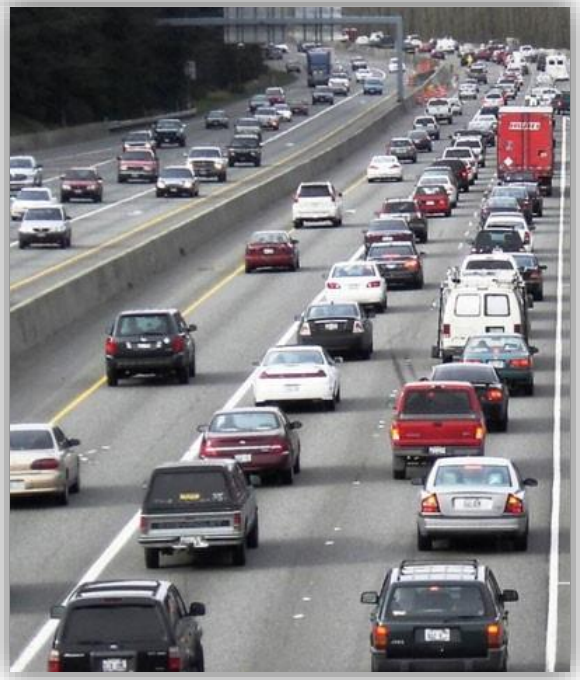
Light Rail Transit

- No clear mobility improvement for transit riders compared to express bus service
- Lack of flexibility to adjust to changing markets
- Significantly greater capital (total capital cost **>$4B**) compared to other alternatives with similar benefits

It is recommended this alternative be dismissed from further consideration as a standalone alternative

Managed Lanes

- Congestion management strategy to improve system performance & provide travel time reliability for some users
- Provides mobility and operational efficiency to adapt to changing travel demands
- Assumes conversion of an existing general purpose lane to a managed lane (3GPL+1ML)
- CTA buses shifted out of general purpose lane to improve transit mobility
- Can be implemented in combination with Context Tailored Treatments and Transitways



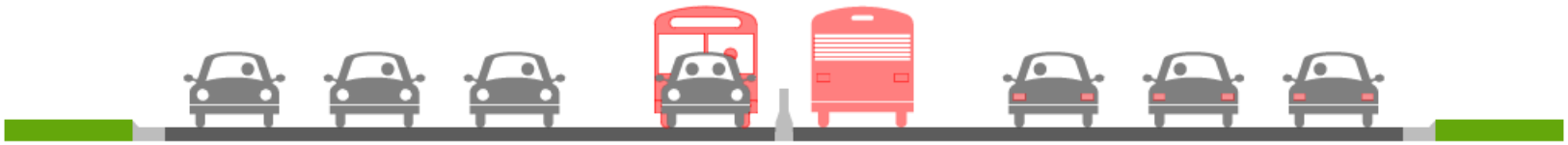
Managed Lanes

High Occupancy Vehicle (HOV) Lane

- Priority access by CTA buses and vehicles that have multiple riders
- Single occupant vehicles are not permitted
- HOV does not require a toll

Existing Conditions

3 General Purpose Lanes + 1 HOV Lane



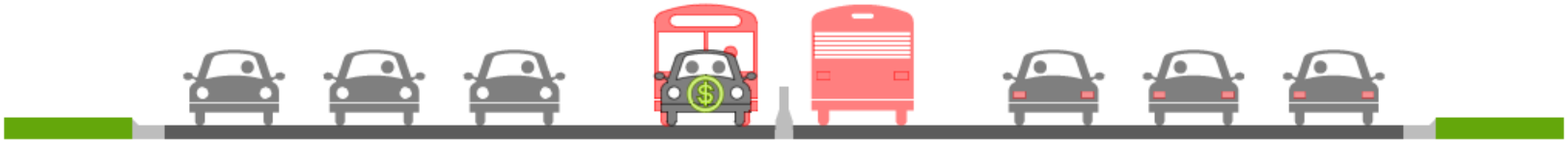
Managed Lanes

High Occupancy Toll (HOT) Lane

- High occupancy vehicles allowed; single occupancy vehicles allowed with user fee
- CTA buses can use HOT lane without user fee
- Congestion-based ***variable pricing*** is used to maintain acceptable Level of Service; reduces auto capacity by up to 8% in order to maintain reliable travel speeds in the managed lane

Existing Conditions

3 General Purpose Lanes + 1 HOT Lane



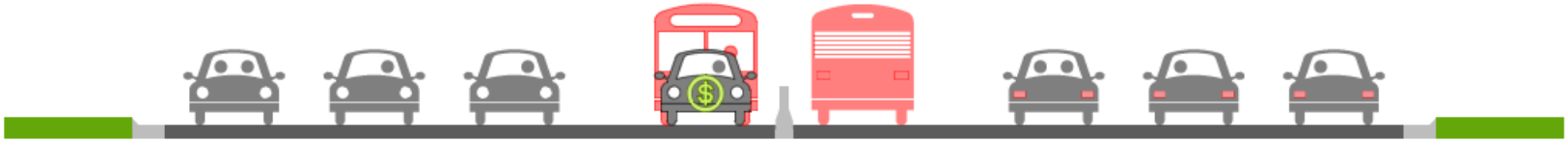
Managed Lanes

Express Toll Lane (ETL)

- Vehicles allowed with user fee, regardless of occupancy
- CTA buses can use ETL without user fee
- Congestion-based ***variable pricing*** is used to maintain acceptable Level of Service; reduces auto capacity by up to 8% in order to maintain reliable travel speeds in the managed lane

Existing Conditions

3 General Purpose Lanes + 1 ETL



Managed Lanes

Bus Only Lane

- Remove all autos from managed lane
- Bus travel speeds of up to 45 mph
- Bus only queue-jump ramps provided at junctions
- Reduce auto capacity along Outer Drive by 25%

Existing Conditions

3 General Purpose Lanes + 1 Bus Only Lane

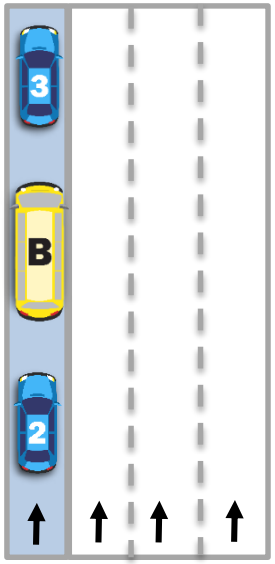
Managed Lanes

Express Reversible Lanes

- Provide one or more travel lanes to serve southbound traffic in the morning peak period and the northbound direction in the evening peak period
- Priority access by CTA buses
- Increases auto capacity in the peak direction along Outer Drive by 25%; reduces auto capacity in the non-peak direction by 25%
- This option could be implemented with HOV, HOT, ETL or Bus Only Lane

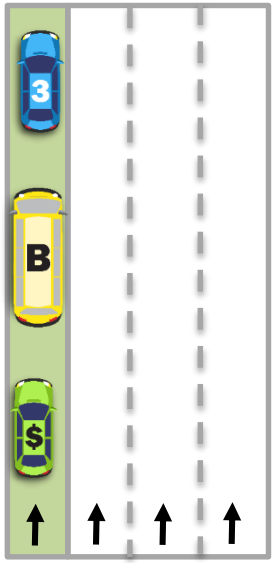
Managed Lanes

CTA buses can use managed lanes



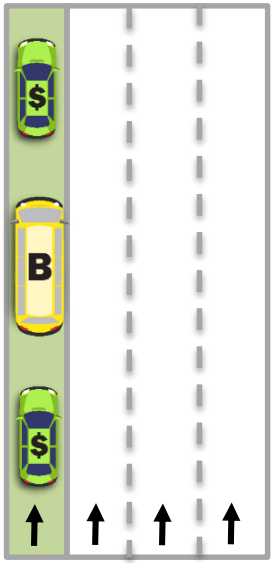
HOV

- ✓ Multiple passenger autos can use lane for free



HOT

- ✓ Multiple passenger autos can use lane for free
- ✓ Single occupancy autos can use the lane for a fee



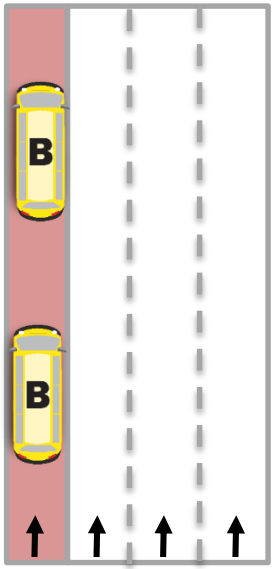
ETL

- ✓ All autos can use the lane all day for a fee

It is recommended that these alternatives be further evaluated

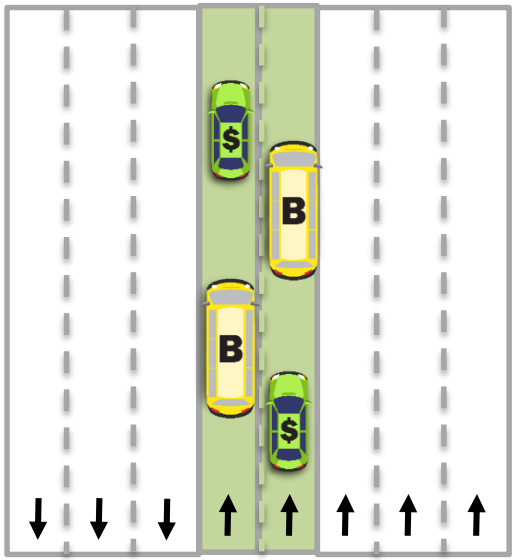
Managed Lanes

CTA buses can use managed lanes



Bus Only

- ✓ Only buses can use the lane



Express Reversible

- ✓ Vehicles can use SB lanes during the a.m. peak
- ✓ Vehicles can use NB lanes during the p.m. peak
- ✓ Fees may or may not apply

It is recommended that these alternatives be further evaluated

Tunnels and Causeways

All tunnel and causeway options would improve the Lakefront Trail and provide a surface boulevard with sidewalks through Lincoln Park. Transit would likely use both the surface boulevard and express tunnel or causeway depending on bus route and time of day.

Three options considered for Outer Drive reconstruction:

- **Submerged Express Tunnel** in Lake Michigan
- **Causeway** in Lake Michigan from Chicago Avenue to Diversey Parkway
- **Land Based Express Tunnel** below surface boulevard on current alignment

Tunnels and Causeways

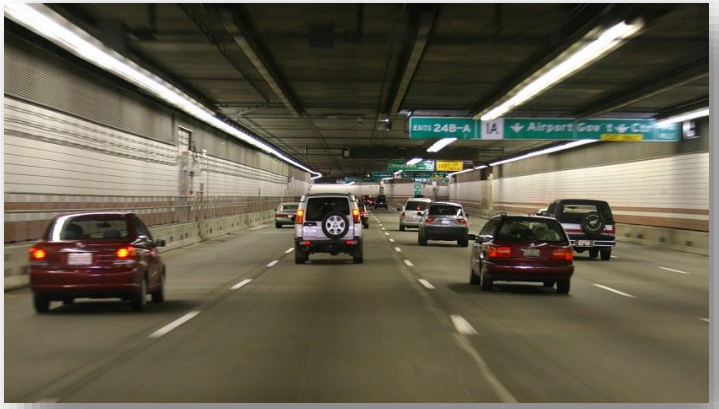
Submerged Express Tunnel in Lake Michigan

- Outer Drive would be located in submerged tunnel constructed on floor of Lake Michigan from Grand Avenue to Hollywood Avenue
- Access to tunnel at 3 locations
- Surface boulevard with at-grade intersections replaces Outer Drive to accommodate local traffic circulation

Tunnels and Causeways

Submerged Express Tunnel in Lake Michigan

- Primarily serves longer end-to-end travel through corridor
- Concentrates E-W access to tunnel at three locations resulting in impacts to local streets
- Surface boulevard with at-grade intersections would carry majority of NLSD traffic flow, resulting in reduced overall mobility for autos and buses



Tunnels and Causeways

Submerged Express Tunnel in Lake Michigan

- Requires extensive ventilation system to purge auto exhaust and smoke from traffic emergencies
- Requires large multi-story ventilation fan buildings with exhaust stacks at each tunnel portal
- Large capital cost **(>$5B)** compared to other alternatives with similar benefits - **would require user fee**

Tunnels and Causeways

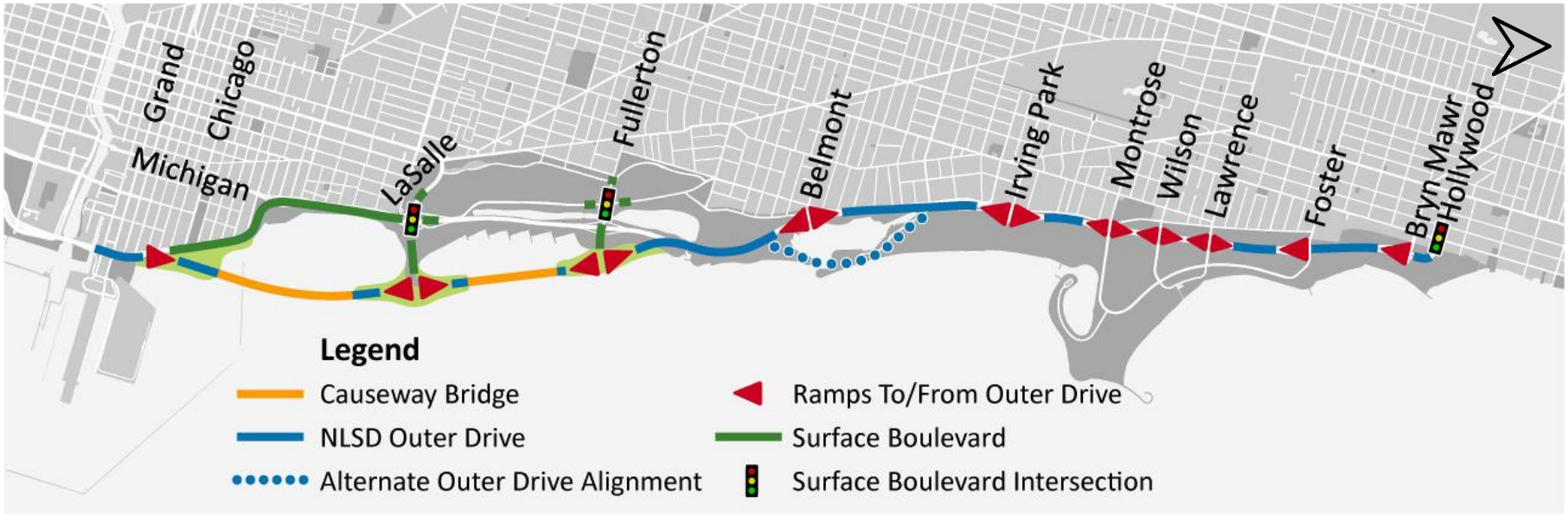
Submerged Express Tunnel in Lake Michigan

- **Does not meet Purpose & Need**:
  - Does not improve safety and mobility for all users
  - Does not improve access to transit
  - Does not improve transit access to Lincoln Park
- Even with user fees, **public costs would far exceed cost of other viable alternatives**

It is recommended this alternative be dismissed from further consideration

Tunnels and Causeways

Realigned Drive on Causeway in Lake Michigan



- Outer Drive relocated onto offshore bridges in Lake Michigan (**causeway**) from Chicago Ave to Diversey Pkwy. Access to causeway at 3 locations
- NLSD possibly shifted east of Belmont Harbor, crossing harbor mouth on tall bridge
- Outer Drive reconstructed on existing alignment north of Addison Street

Tunnels and Causeways

Causeway in Lake Michigan

- Concentrates E-W access to causeway at three locations resulting in impacts to local streets
- Eliminates direct access to Michigan Avenue (Traffic diverted to Chicago Avenue and LaSalle Drive)
- Traffic diversions and adverse travel distance reduce mobility for some transit and auto users

Tunnels and Causeways

Causeway in Lake Michigan

- Causeways will require special measures to prevent pollution of Lake Michigan from roadway runoff and salt spray
- Structure will substantially alter view of Lake Michigan from the shore
- Large capital cost **(>$2.6B)** compared to other alternatives with similar benefits **- would require user fee**

Tunnels and Causeways

Causeway in Lake Michigan

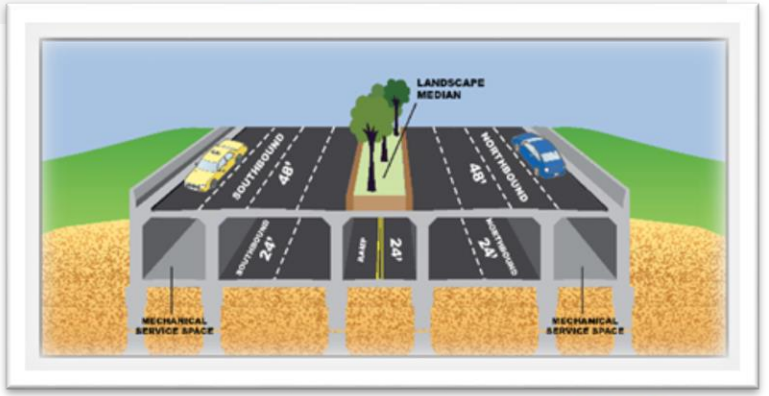
- **Does not meet Purpose & Need:**
  - Does not improve safety and mobility for all users
  - Does not improve access to transit
  - Does not improve transit access to Lincoln Park
- Construction and maintenance **costs would far exceed those of other viable alternatives**

It is recommended this alternative be dismissed from further consideration

Tunnels and Causeways

Land Based Express Tunnel

- Outer Drive reconstructed in below ground tunnel from Grand Avenue to Bryn Mawr Avenue. Access to tunnel provided at 9 locations
- Surface boulevard with at-grade intersections replaces Outer Drive to accommodate local traffic circulation



Tunnels and Causeways

Land Based Express Tunnel

- May require wider transportation footprint in some areas to provide ramps to and from tunnel
- Replacement of junctions with at-grade intersections on surface boulevard will increase congestion and reduce mobility for autos and buses that travel through surface boulevard intersections

Tunnels and Causeways

Land Based Express Tunnel

- Requires extensive ventilation system to purge auto exhaust and smoke from traffic emergencies
- Requires frequent ventilation fan buildings with exhaust stacks along tunnel route
- Large capital cost **(>$3B)** compared to other alternatives with similar benefits **- would require user fee**

Tunnels and Causeways

Land Based Express Tunnel

- **Does not meet Purpose & Need:**
  - Does not improve safety and mobility for all users
  - Does not improve access to transit
  - Does not improve transit access to Lincoln Park

It is recommended this alternative be dismissed from further consideration

Note: Short tunnel segments may be considered as a Context Tailored Treatment to minimize roadway impacts

Level 1 Screening Summary

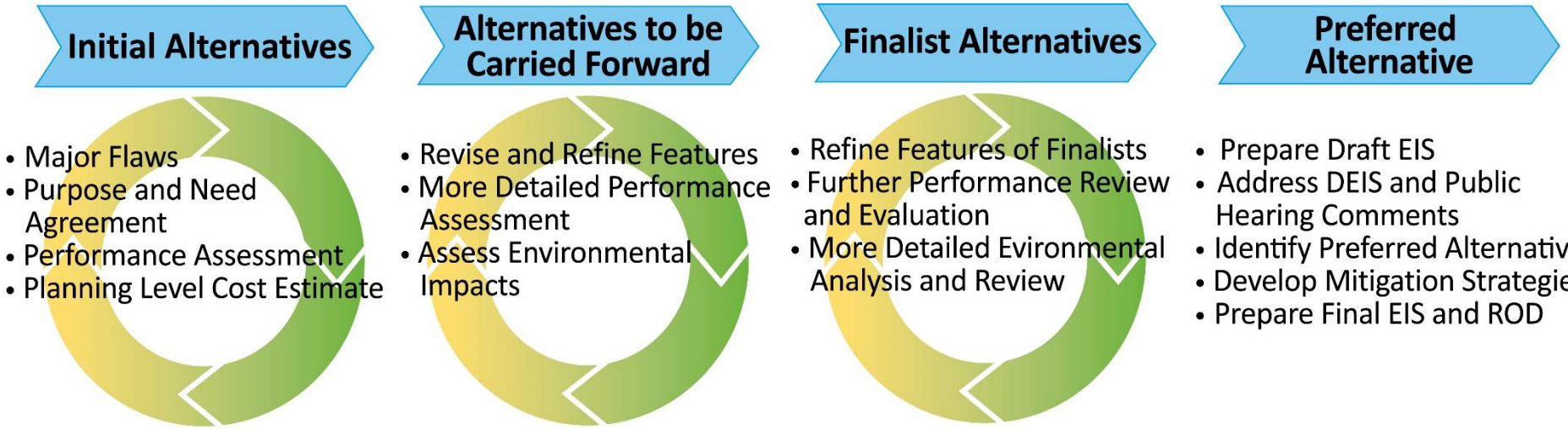
INITIAL RANGE OF ALTERNATIVES CATEGORY	INITIAL RANGE OF ALTERNATIVES	ALTERNATIVES DISMISSED	ALTERNATIVES TO BE EVALUATED FURTHER
No-Action	No-Action	N/A	N/A
Context Tailored Treatments	Context Tailored Treatments		Context Tailored Treatments
Transitways	Bus on Left – Dedicated Transitway		Bus on Left – Dedicated Transitway
	Bus on Right – Shoulder/Weaving Zones		Bus on Right – Shoulder/Weaving Zones
	Transitway Off Alignment		Transitway Off Alignment
	Light Rail Transit	Light Rail Transit	
Managed Lanes	High Occupancy Vehicle Lane		High Occupancy Vehicle Lane
	High Occupancy Toll Lane		High Occupancy Toll Lane
	Express Toll Lane		Express Toll Lane
	Bus Only Lane		Bus Only Lane
	Express Reversible Lanes		Express Reversible Lanes
Tunnels and Causeways	Submerged Express Tunnel in Lake	Submerged Express Tunnel in Lake	
	Causeway in Lake	Causeway in Lake	
	Land Based Express Tunnel	Land Based Express Tunnel	

Next Step

Level 2 Screening

Alternatives Development & Evaluation

Iterative Process of Evaluation



Increasing Level of Alternative Refinement and Analysis

PSG/Agency Coordination and Public Involvement

Level 2 Screening Criteria

Further development of alternatives will consider the following criteria:

- Mobility
- Safety
- Social, economic and environmental impacts
- Costs/ benefits

Level 2 Screening

The first step in development of any alternative begins with:

- Understanding existing travel behavior and demand
- Predicting how travel behavior and demand will change in the future under the improvement scenario

Predicting future travel behavior and demand is accomplished using a **Travel Demand Model**

Travel Demand Model

What is a Travel Demand Model?

- A mathematical computer based model that will evaluate trip making characteristics and travel choices for a region/area
- Tool for estimating the number of vehicles or people that will use a specific transportation facility or mode in the system
- TDM is validated to existing conditions
- Forecast travel demand is based on conformed long-range population and employment forecast for the region

Travel Demand Model

What is the CMAP Travel Demand Model?

- The Chicago Metropolitan Agency for Planning (CMAP) is the Chicago-region's *Metropolitan Planning Organization* (MPO) and is responsible for preparing a *Metropolitan Transportation Plan*
- The CMAP *Travel Demand Model* serves as the **required transportation planning tool** for regional travel demand forecasting
- IDOT relies on CMAP to provide traffic forecasts for all transportation projects in the 7-county metropolitan area
- The project team is utilizing CMAP data and model inputs to evaluate travel demand and travel performance within the NLSD project area

Stakeholder Input

Transit improvement measures suggested by some stakeholders at public outreach forums:

- Enhance NLSD bus travel times and reliability
- Implement exclusive bus lanes on NLSD
- Convert general purpose lanes (GPLs) to bus-only managed lanes (BOMLs)

Lane conversion to exclusive bus use (i.e. Bus –only Managed Lanes), ***if feasible***, is one means of enhancing transit service without adding additional lanes to NLSD.

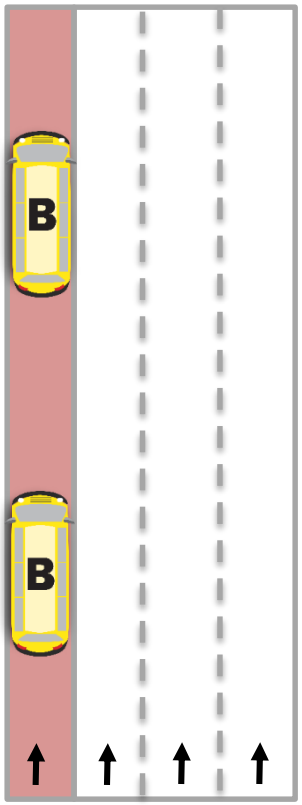
Level 2 Screening

Level 2 Screening will help answer a *key question:*

- What would be the effects of reducing the number of general purpose travel lanes on NLSD by converting existing lanes to bus-only managed lanes?

Travel Demand Modeling is a tool that will be used to help answer that question.

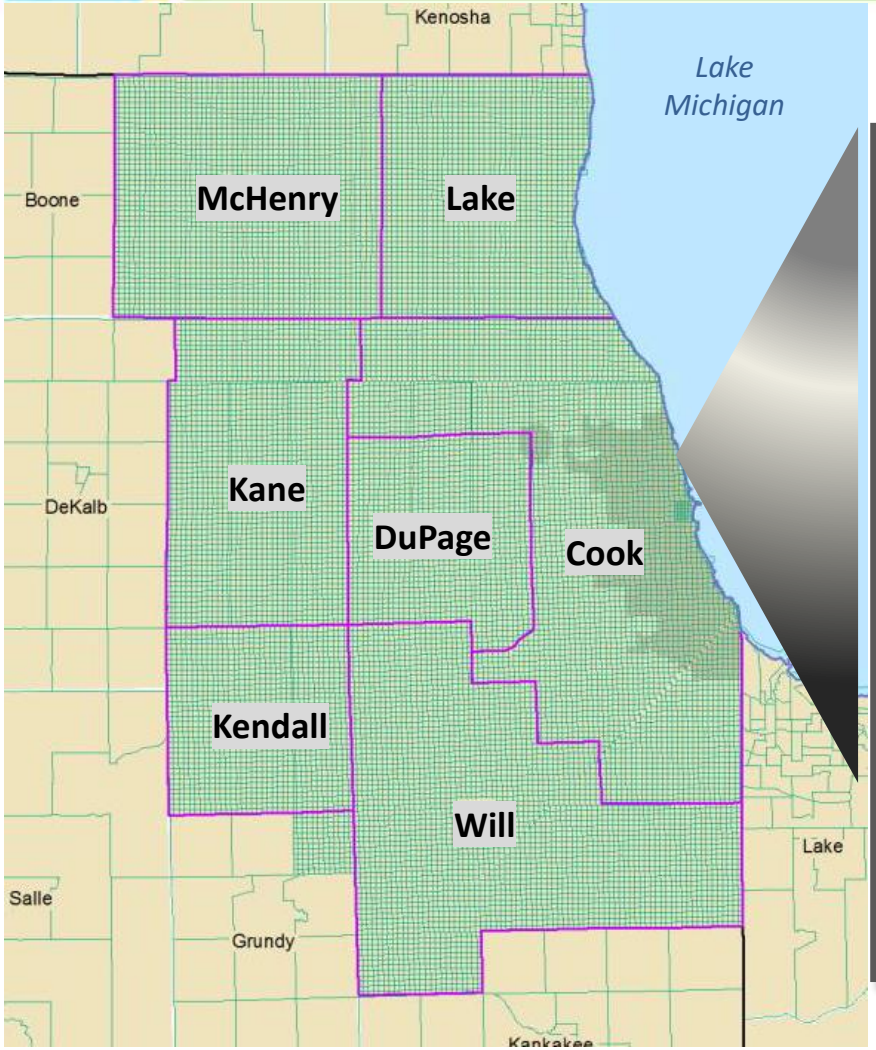
Level 2 Alternative Analysis - Case Study



Bus-Only Managed Lane Alternative

- How would converting a general purpose lane to a bus-only managed lane affect mobility?
- Would safety be improved for all users?
- What are the environmental impacts?
- What are the costs and benefits?

Level 2 Alternative Analysis - Case Study



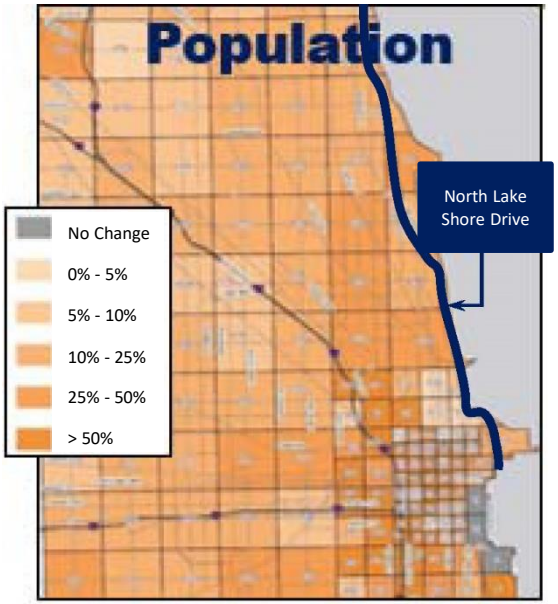
CMAP Regional model encompasses seven counties

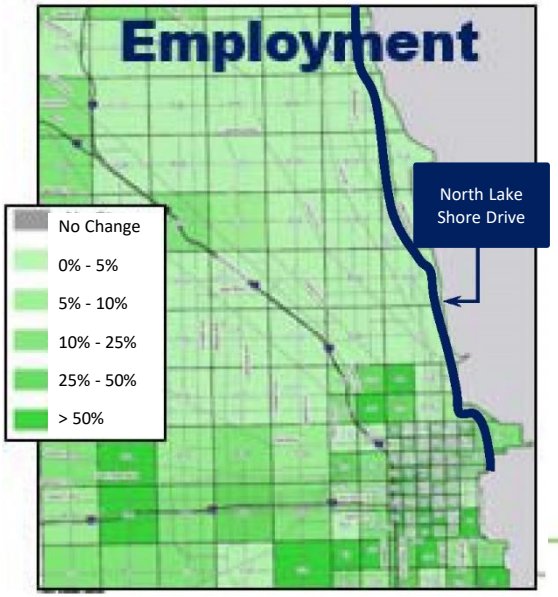
CMAP Travel Demand Model

North Lake Shore Drive Project Limits

NLSD Sub-regional Model

Level 2 Alternative Analysis - Case Study





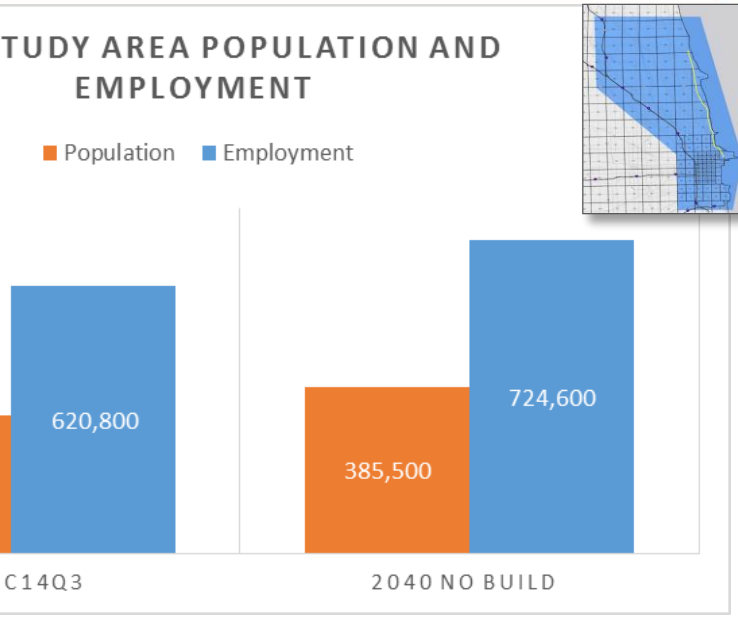
2040 No-Action

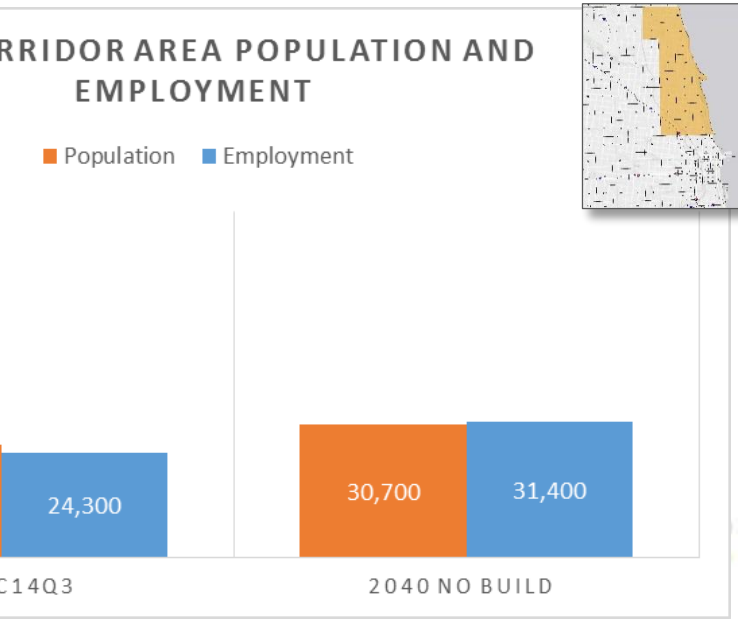
The 2040 No-Action scenario, for the area shaded in blue, assumes:

- 15 - 20% population & employment growth
- Only minor changes to the roadways, (i.e., no increases in auto capacity)
- Planned improvements to transit such as Red/ Purple Line Modernization
- No restraint on transit capacity

Socio-Economic Data Comparison

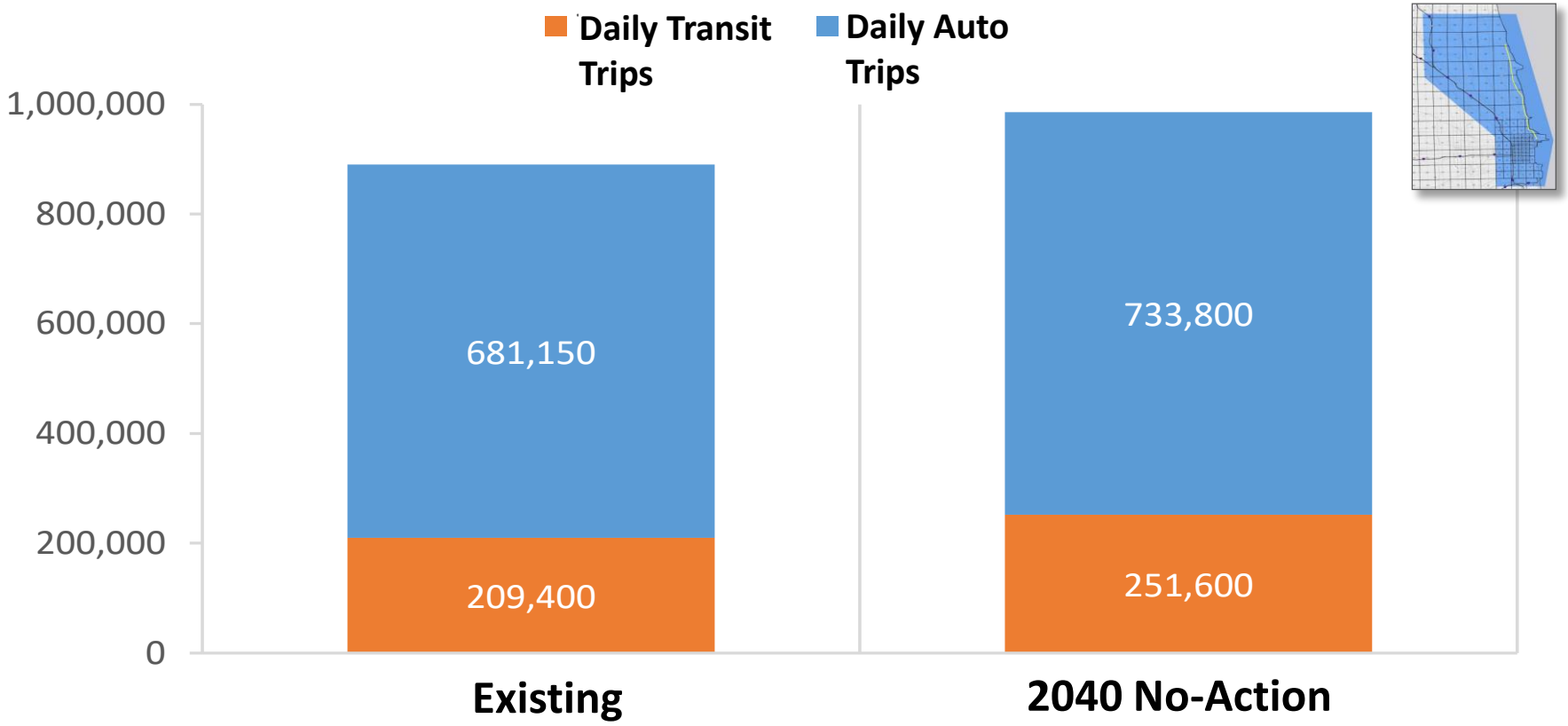
- Neighborhoods along the NLSD corridor are built-out
- Marginal growth in population anticipated by forecast year 2040
- Of the 67,000 increase in population anticipated for the Study Area, only 7% expected in the vicinity of the corridor





Level 2 Alternative Analysis - Case Study

Auto & Transit Demand in Sub-Regional Area



The model predicts:

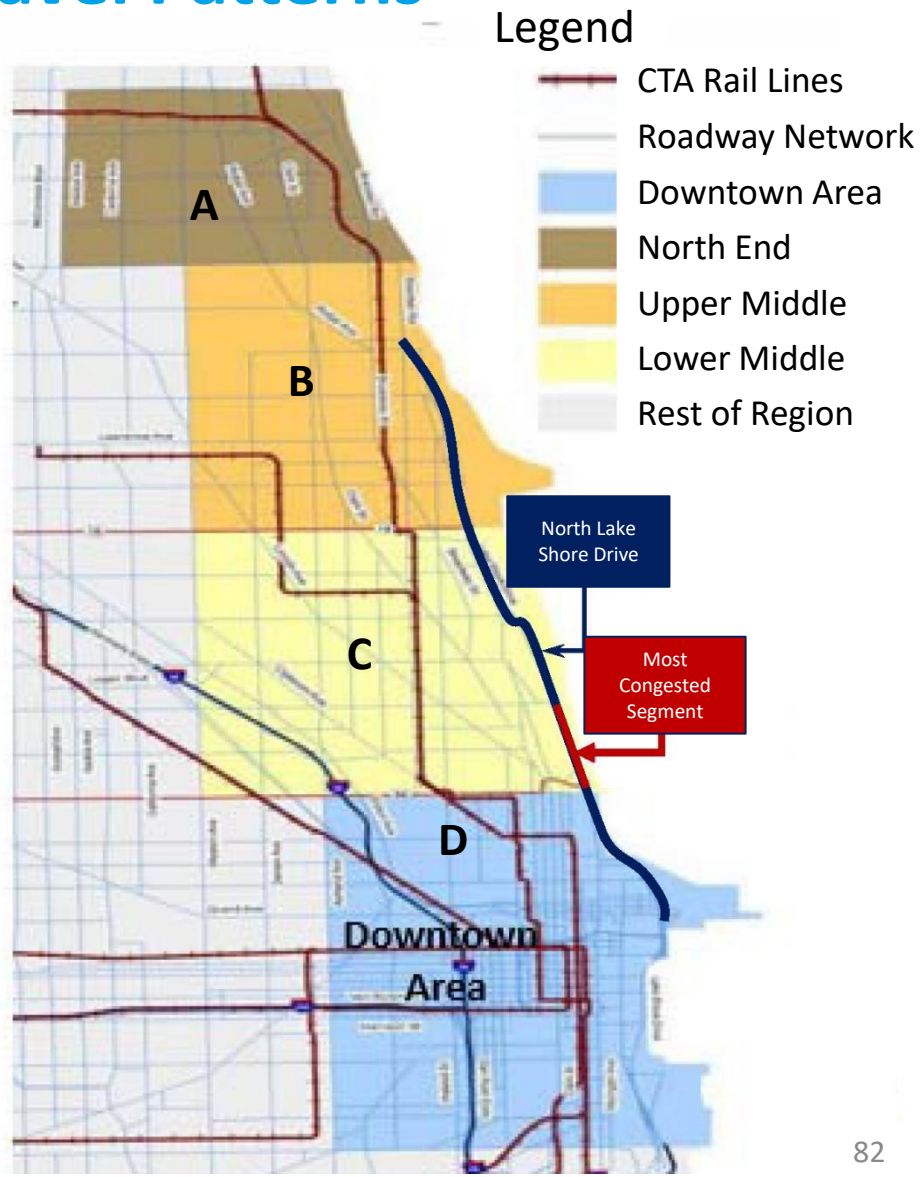
- Approximately **8% increase** in daily auto trips (52K) by 2040
- Approximately **20% increase** in daily transit trips (42K) by 2040

2015 Existing Demand - *CMAP Conformity Analysis 2014 Quarter 3 Update*
2040 No-Action: *GoTo 2040 Travel Demand Forecast - CMAP Conformity Analysis 2014 Quarter 3 Update*

Level 2 Alternative Analysis - Case Study

Forecasted 2040 Transit Travel Patterns

- Approx. 42% of trips in areas A,B, C destined to area D are made by transit (both bus and rail)
- Most congested segment of NLSD is forecasted to have approximately 160,000 daily auto trips
- In 2040 No-Action, the 7 bus routes on Outer Drive will share the road with autos
- Due to area growth, NLSD will experience additional congestion and delay for all users (bus, auto)
- Congestion causes bunching for buses, affecting wait times and travel time reliability



Level 2 Alternative Analysis - Case Study

Consequences of Reduced Capacity to Auto Mobility

- Evaluate mobility impacts with respect to project's Purpose & Need for all users on the NLSD corridor

Three possible options motorists would have to choose when Outer Drive is congested due to the lane conversion alternative:

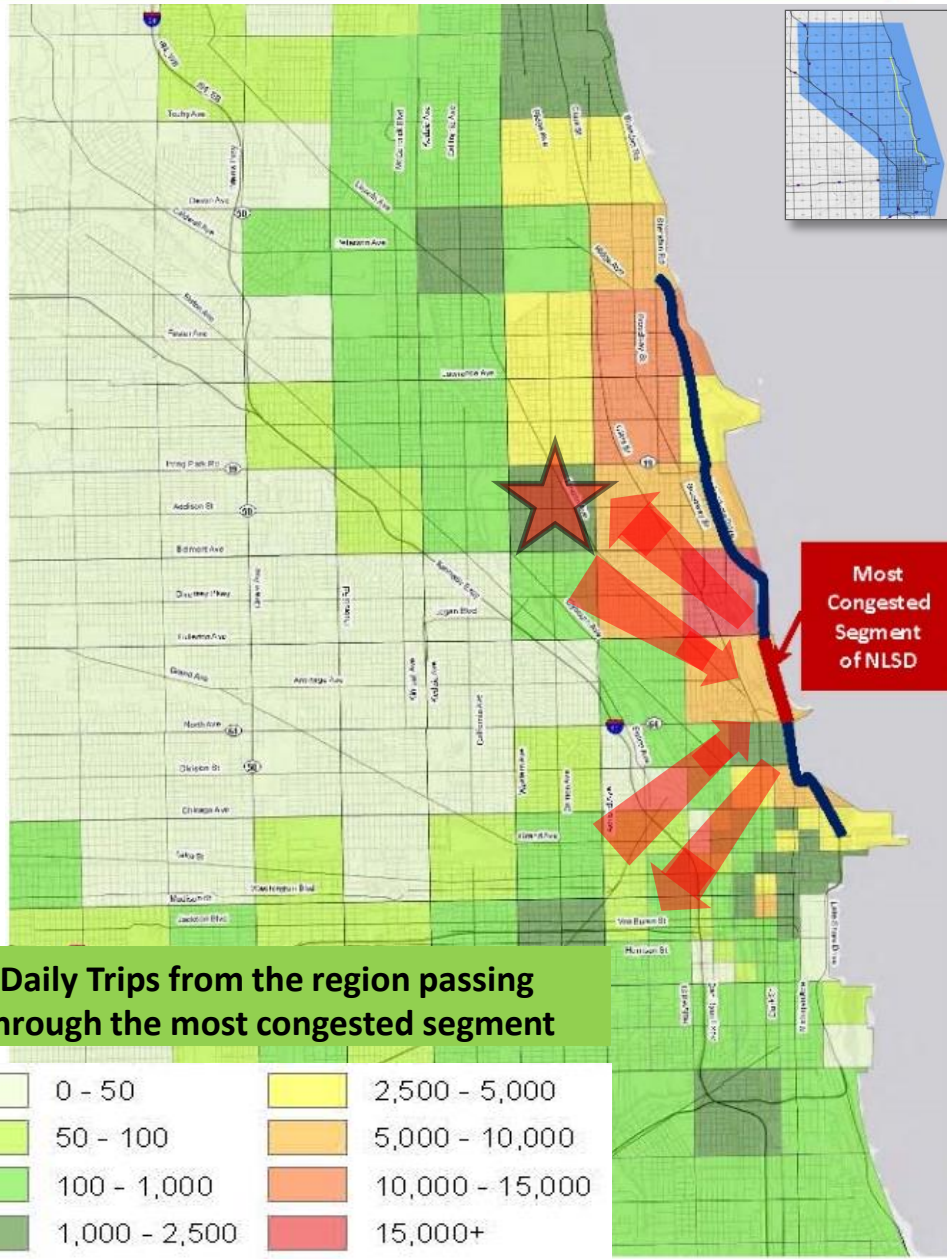
- **ADAPT**: Motorists could choose to use the remaining 3 Outer Drive general purpose lanes *(Reduced from 4 to 3)*
- **AVOID**: Motorists could choose to partially or completely re-route to parallel local streets or expressways, change their times of travel, or not take the trip at all
- **MODE SHIFT**: Motorists could choose to shift their mode of travel to bus, train, bike, or walk

Level 2 Alternative Analysis - Case Study

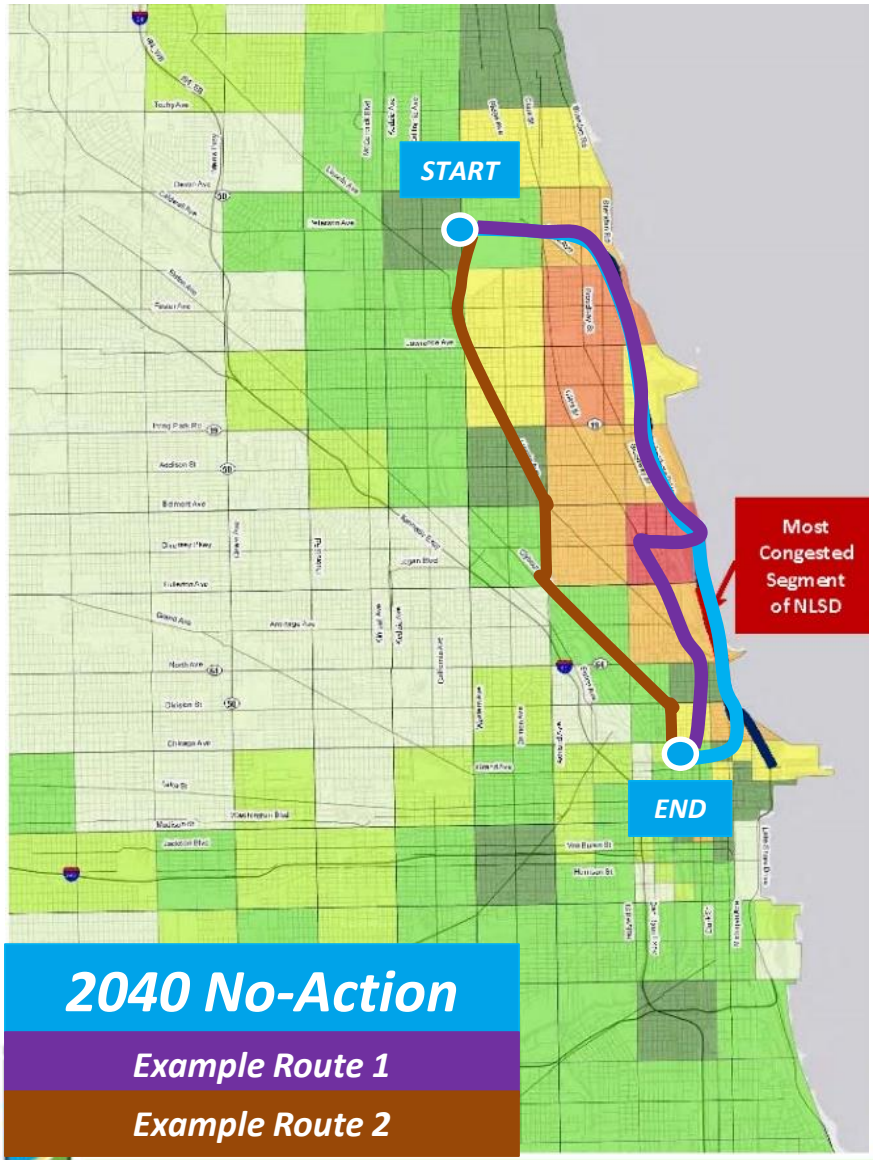
ADAPT

- The 2040 model can predict the volume of motorists that are likely to remain on Outer Drive.
- Greater than 70% of the auto trips on the most congested segment of NLSD would have an origin or destination outside the corridor. *(Ref: Animation click here)*
- Approx. 110,000 daily auto trips would use NLSD for a purpose **other than** the "corridor to downtown" trips.
- These trips would not be directly served by current NLSD bus service.

How will the reduction in capacity affect all users using the NLSD corridor?



Level 2 Alternative Analysis - Case Study



AVOID

- The model can predict the volume of motorists that are likely to avoid Outer Drive and which routes they would take instead.
- Motorists with origins and destinations outside of the NLSD corridor could seek entirely new routes.
- Some motorists may also choose to travel at different times or to not take a trip.

What other roads will be used and what level of impact will that have on all users along those roads?

Level 2 Alternative Analysis - Case Study

MODE SHIFT

- The model can predict the volume of motorists that are likely to shift from auto to transit.

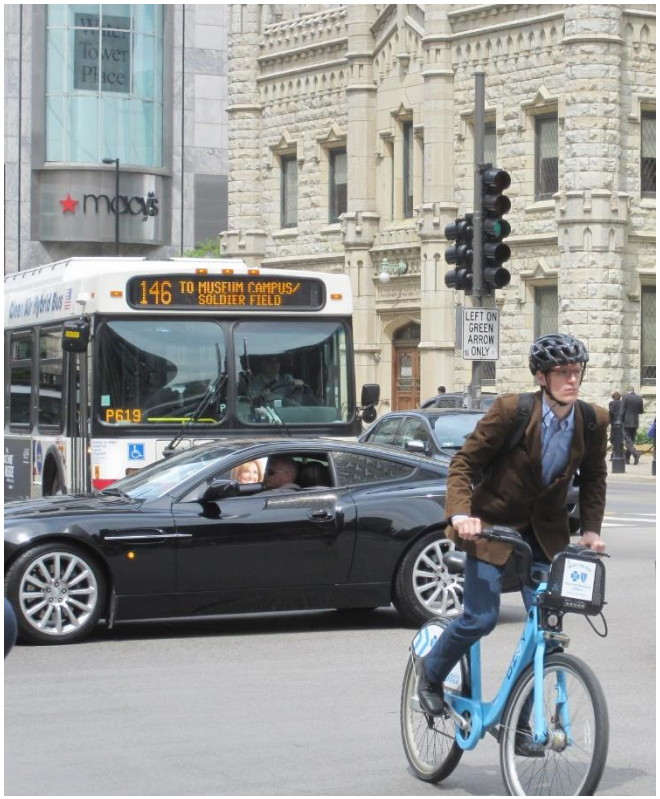
How many people could shift from cars to buses if transit travel times were faster and more reliable under this alternative?

Level 2 Alternative Analysis - Case Study

Findings

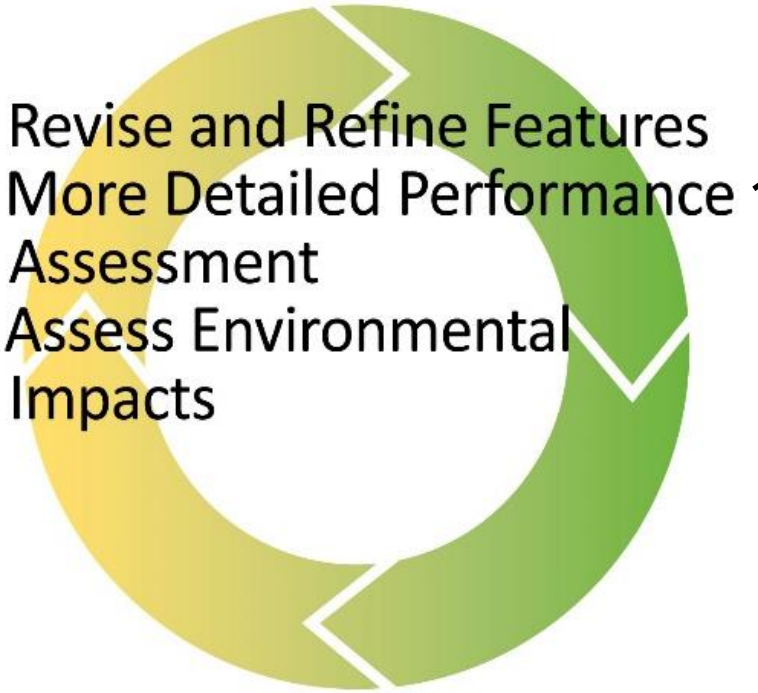
Findings from the ***Bus-only Managed Lane Alternative Case Study*** will be shared with the Task Force when available. Results could include:

- Changes in travel times for all transit options
- Predicted mode shift from autos to transit
- Impacts to traffic volumes, travel patterns and congestion levels



Evaluation Process Summary

Alternatives to be Carried Forward



Comparison to No Action

- **Mobility along NLSD for buses and autos**
- **Changes in regional and local travel patterns**
- **Safety of all users**

Evaluation Process Summary

Each alternative has unique features. Benefits and impacts will be quantified so relative comparisons can be made.

Questions?

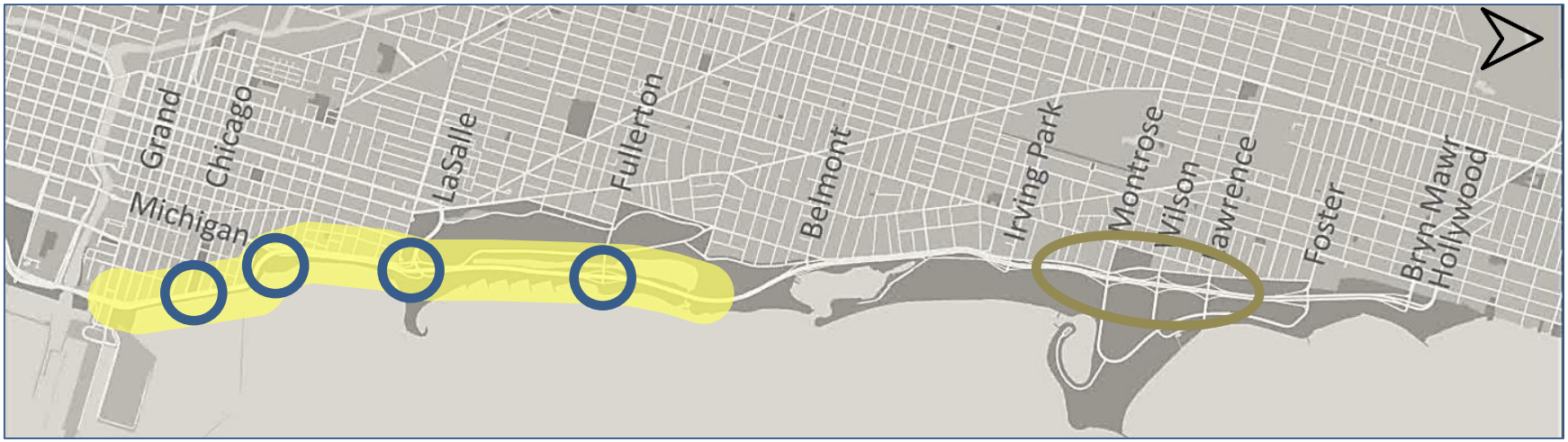
10 Minute BREAK

Junctions Update
&
Montrose/Wilson/Lawrence Case Study

Importance of Junctions

- Confluence of many modes: pedestrian, cyclists, transit & motorists
- Affect safety & mobility for all
- Affect transit service & reliability
- Function as gateways to neighborhoods

Junctions Update

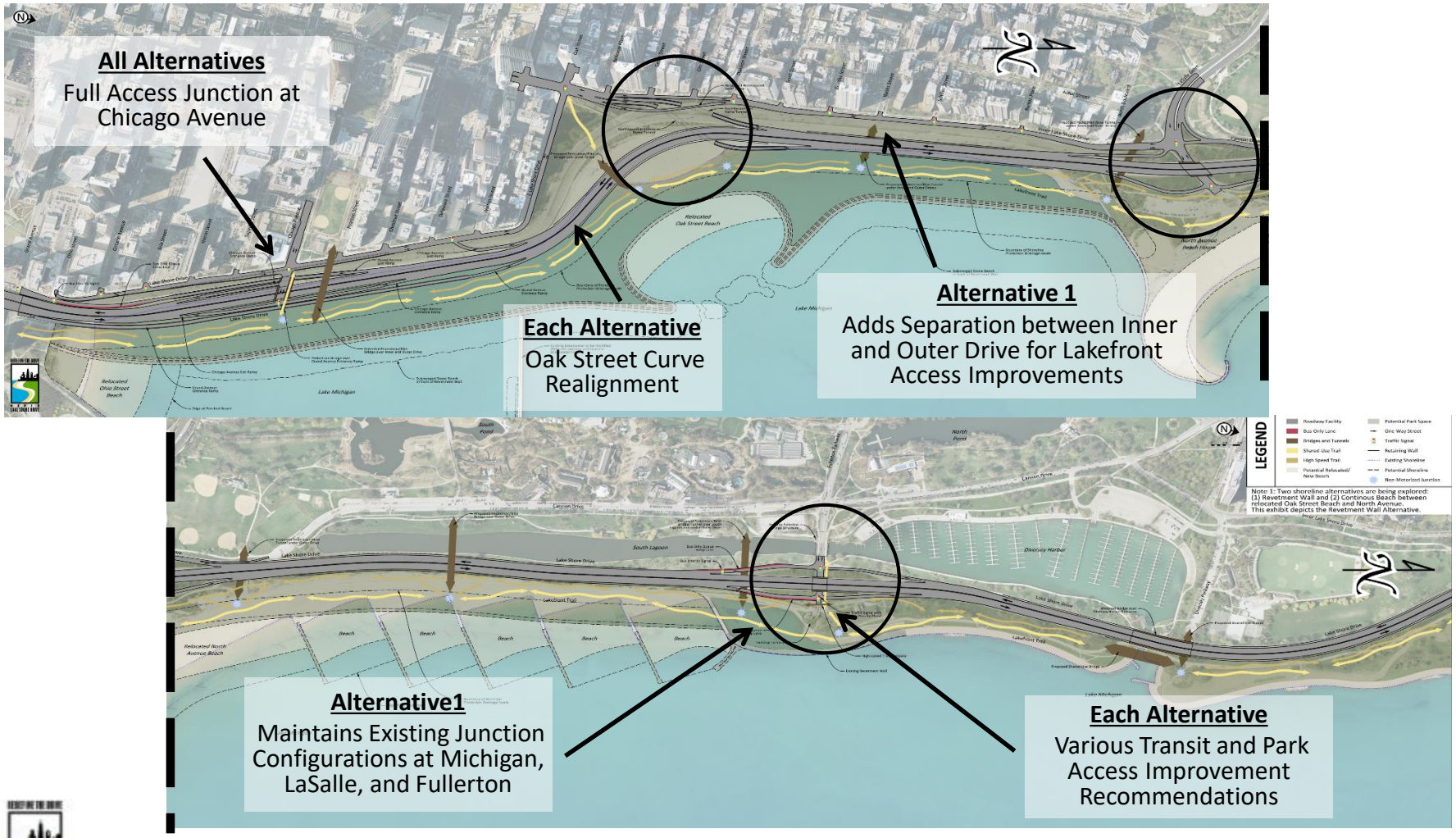


Since Task Force #4:

- Junction evaluations have progressed for Chicago Avenue, Michigan Avenue, LaSalle Drive, and Fullerton Parkway
- Preliminary ***Context Tailored Treatments*** alternatives developed for NLSD from Grand to Fullerton
- Case Study: Montrose/Wilson/Lawrence junction area
- Other junction evaluations ongoing

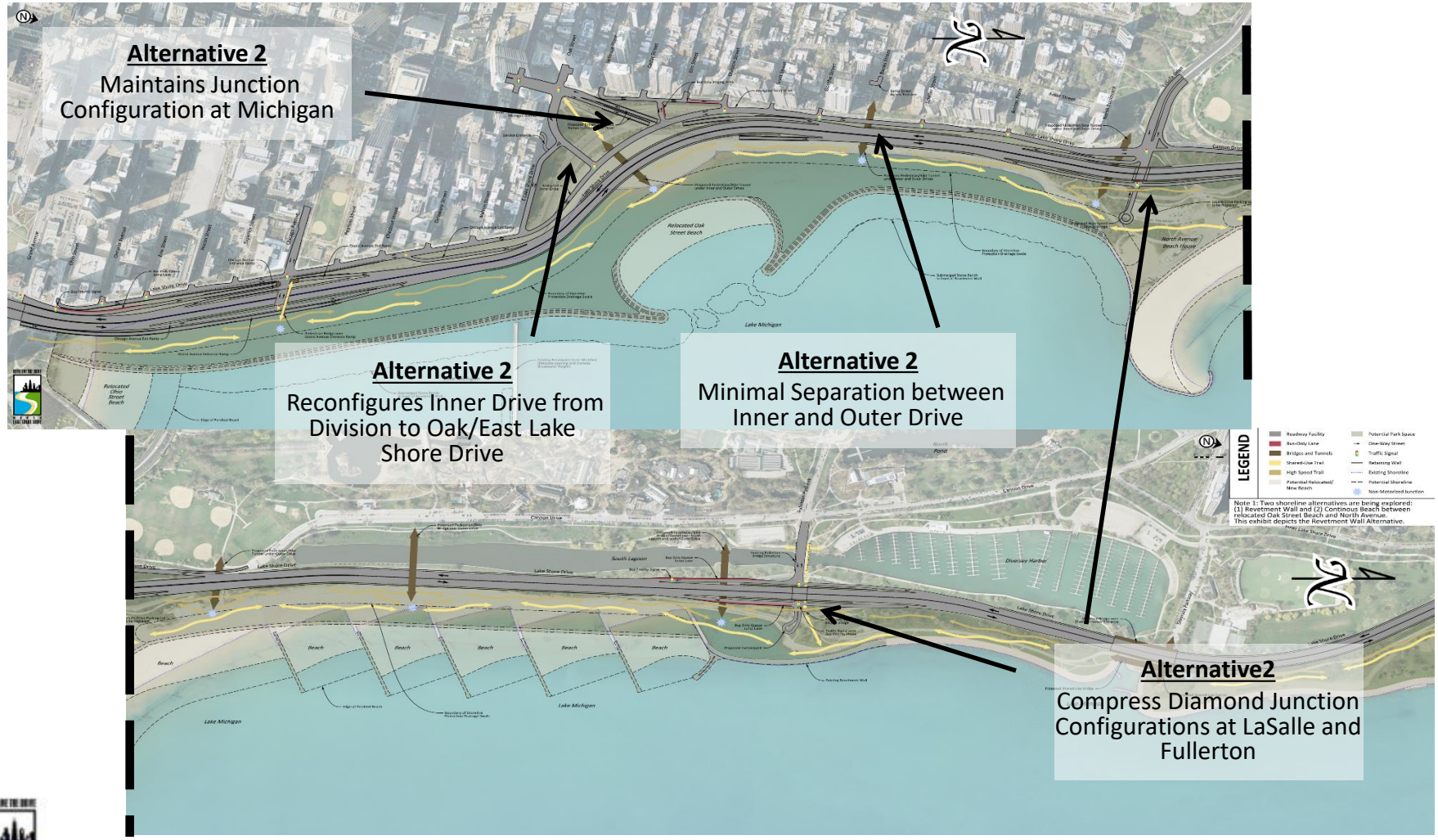
Context Tailored Treatments

Alternative 1: Corridor Modernization Concept



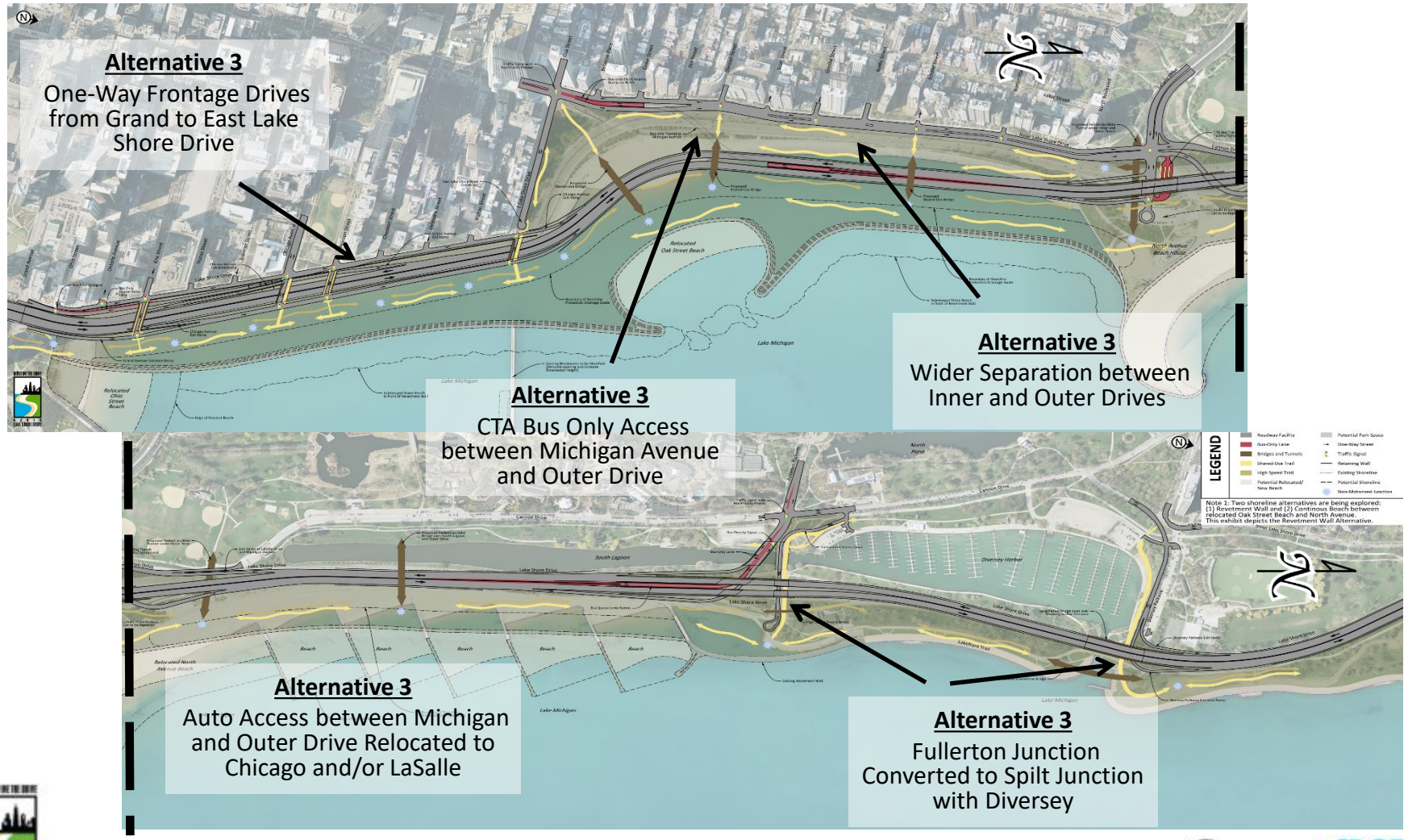
Context Tailored Treatments

Alternative 2: Compressed Diamond Junctions Concept



Context Tailored Treatments

Alternative 3: Frontage Drives Concept



Case Study: Montrose-Wilson-Lawrence

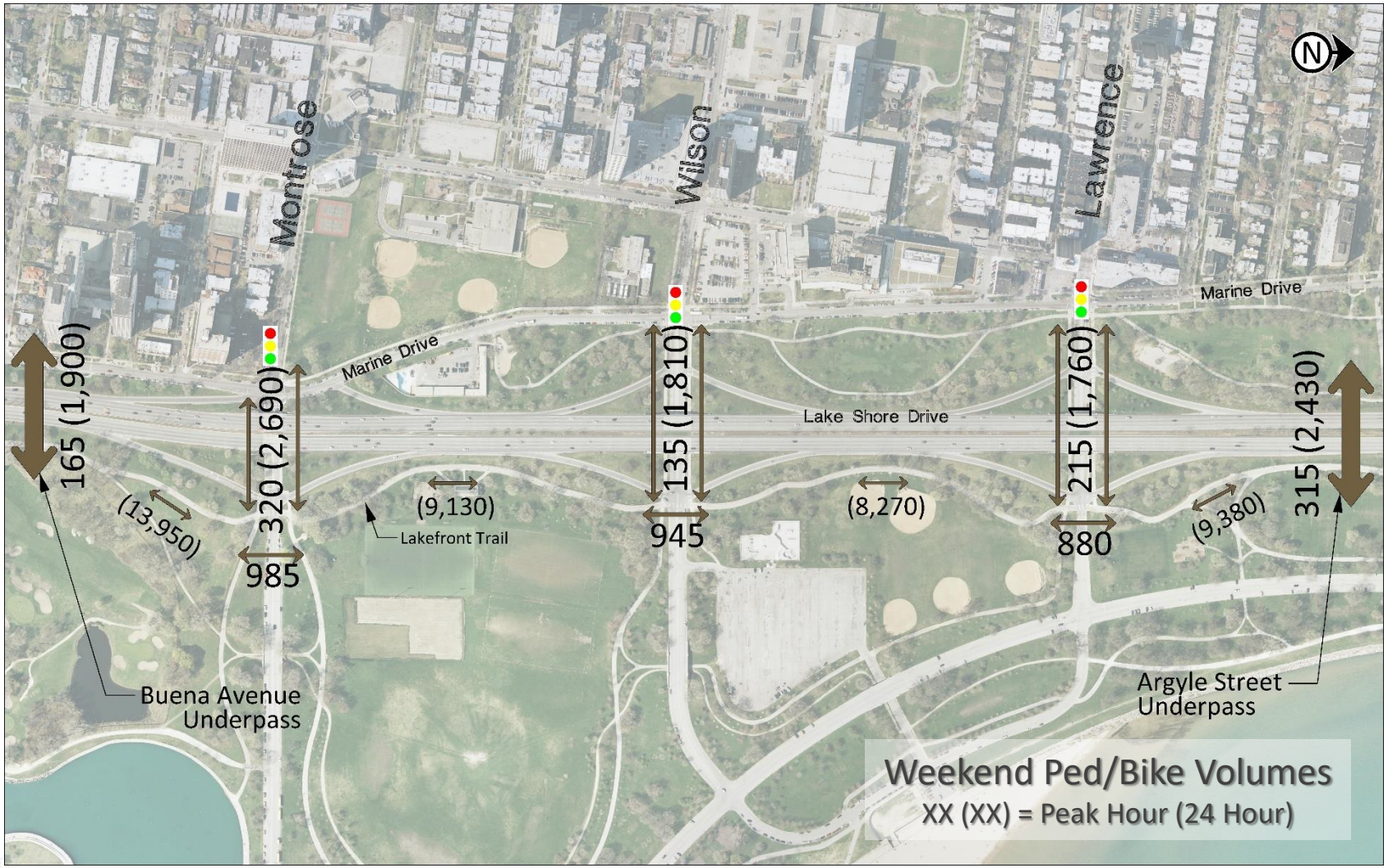
Continuing Junctions Evaluation:

- Concept development stage
- Building Blocks approach
  - Junction configurations – Initial Focus
  - Transit treatments
  - Non-Motorized considerations (Ped-Bike)
  - Shoreline considerations
- Range of junction concepts developed and evaluated for comparative advantages/disadvantages
- Exhibits for these concepts available for review and input

Deficiencies & Needs

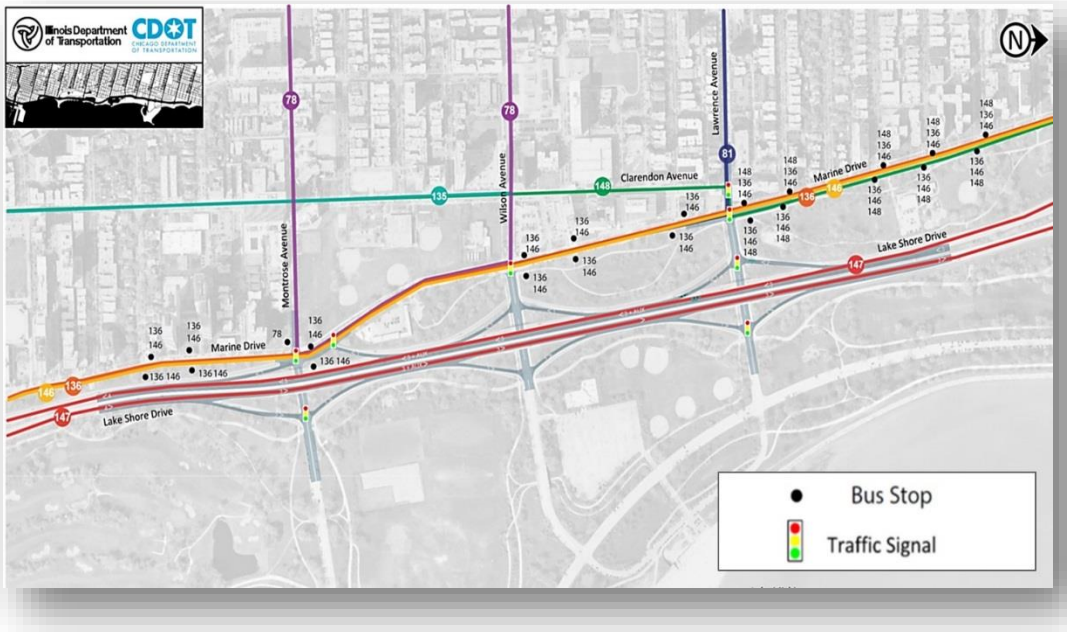
- Close ¼ mile spacing causes traffic conflicts and capacity constraints
- Very active part of Lincoln Park particularly on weekends
- Traffic spikes during frequent events
- High traffic volume with Montrose Harbor
- Ped/bike traffic must cross the junction ramps at grade which are stop sign controlled
- Mode conflicts present safety concerns and congestion
- Transit access to the park and along Marine Drive needs improvement

Ped/Bike Access and Demand



Transit Movements

- 8 bus routes operate on or near NLSD between Montrose and Lawrence:
  - 147 on Outer Drive
  - 136 & 146 on Marine Drive
  - Others on Clarendon and the major streets running E-W



- 136 & 146 experience delays along Marine drive, near Montrose and Lawrence intersections with average runtimes at 5.2 minutes, and up to 11 minutes on bad days
- Runtimes for 147 on weekdays at 8 AM along this section of NLSD range from 3.3 minutes (10 mph) to 6.5 minutes (5 mph)
- Bus staging occurs on Wilson and Montrose Avenues for routes 78, 148, and 135; on Marine Drive for the #81, and on Simmonds Drive for the #78 (summer service)

Junction Context or Setting

Key Features:

- Montrose Harbor
- Montrose Beach
- Cricket Hill
- Soccer Fields
- Softball Fields
- Skate Park
- Sydney R. Marovitz Golf Course
- Lakefront Trail
- Historical NLSD Bridges over Wilson Ave & Lawrence Ave

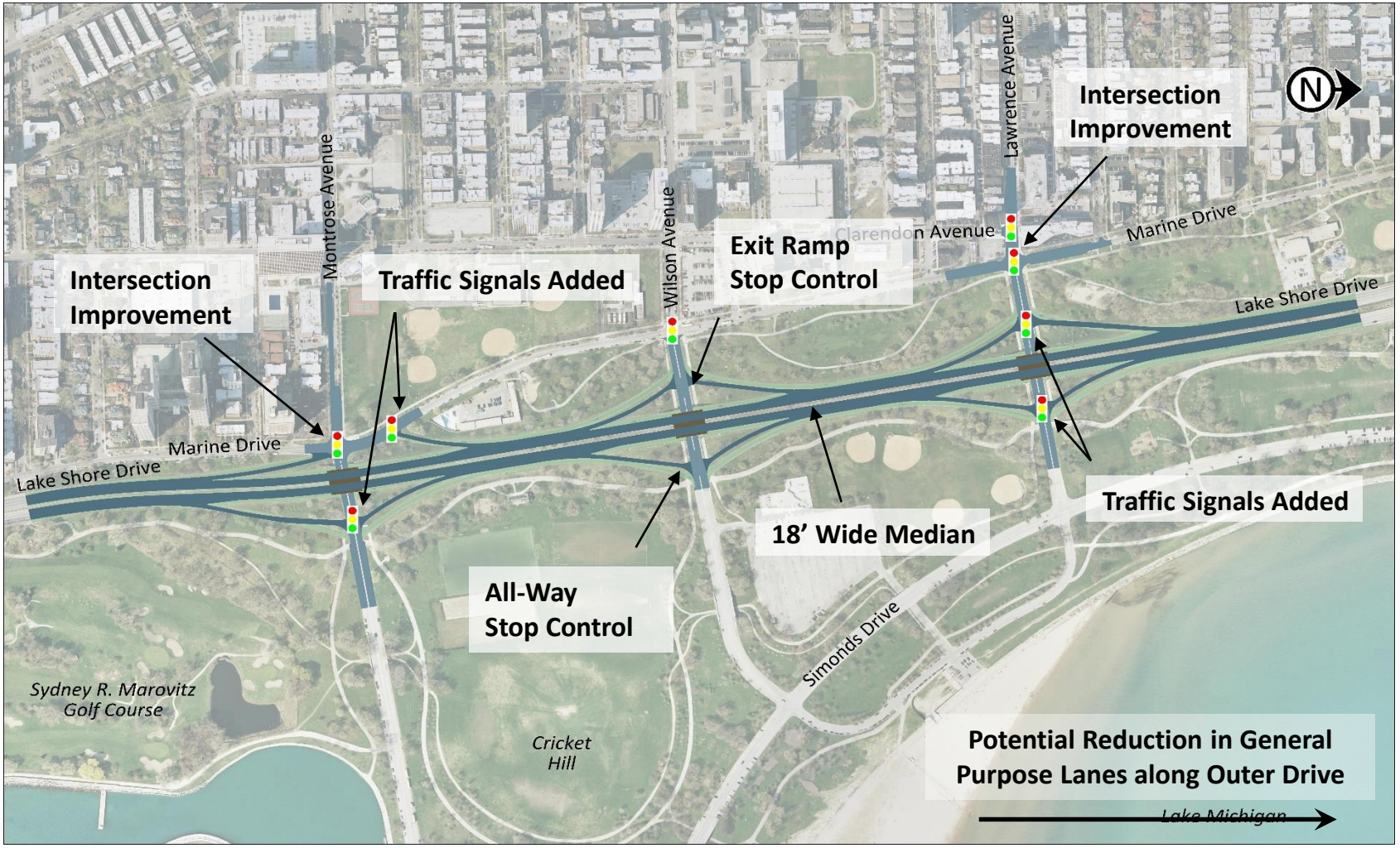
Addressing Purpose & Need

Key Considerations:

- Safety
  - Grade separate the Lakefront Trail from arterials streets at the junctions
  - Reduce conflicts between vehicles and east-west ped/bike traffic flow
- Park Access for Ped/Bike
  - Consider removing Wilson Avenue junction with NLSD but keep overpass to create park access gateway
- Traffic Operations
  - Modernize signals and add turn lanes where required at junction intersections and along Marine Drive intersections
  - Improve arterial street capacity to absorb traffic spikes due to weekend Park use, special events, and Montrose Harbor peak use
- Transit Advantages
  - Access to/from NLSD
  - Access to beach
  - Complement reconstruction of Wilson Red Line stop

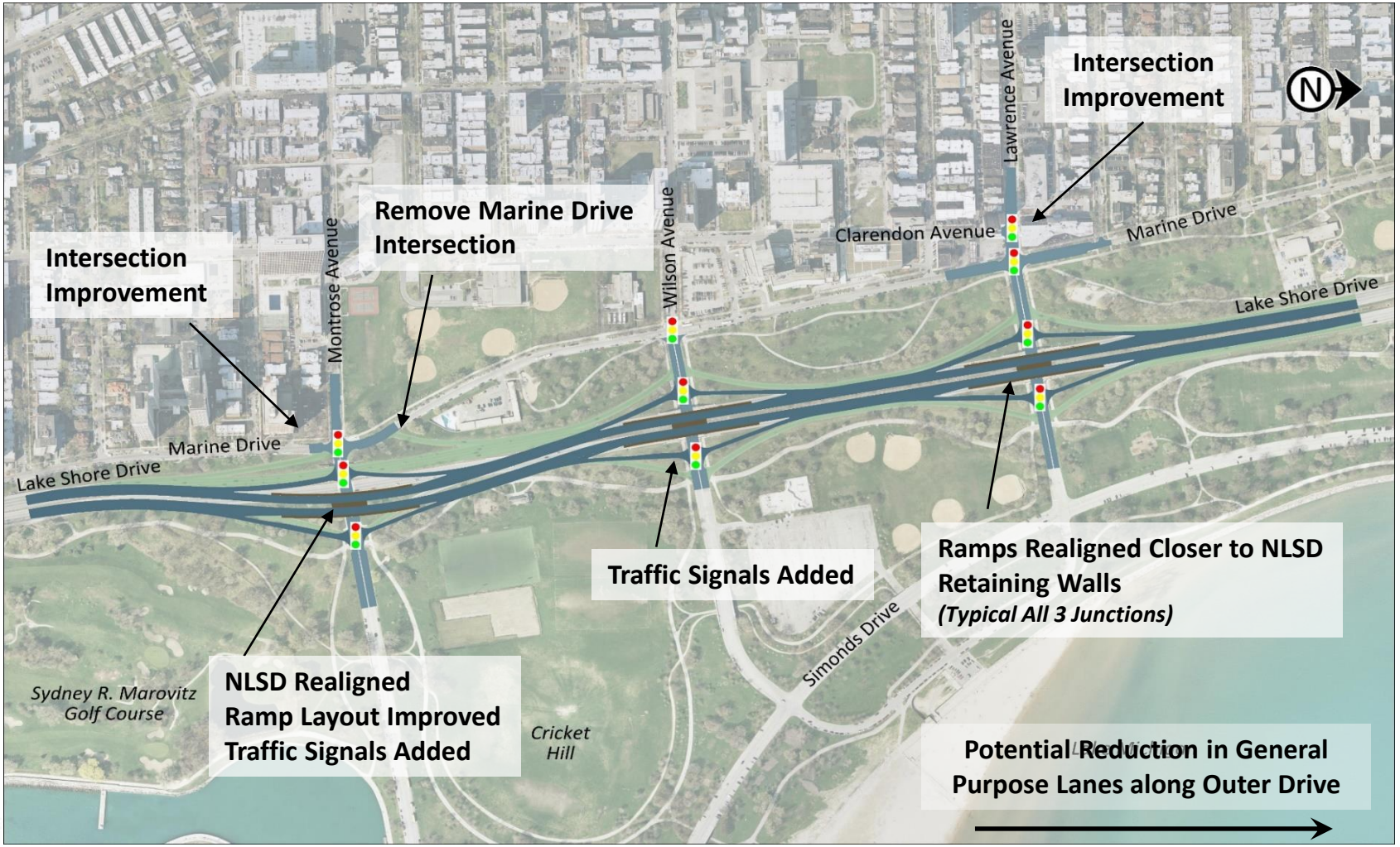
Montrose/Wilson/Lawrence – Concept 1

Conventional Diamond Junctions



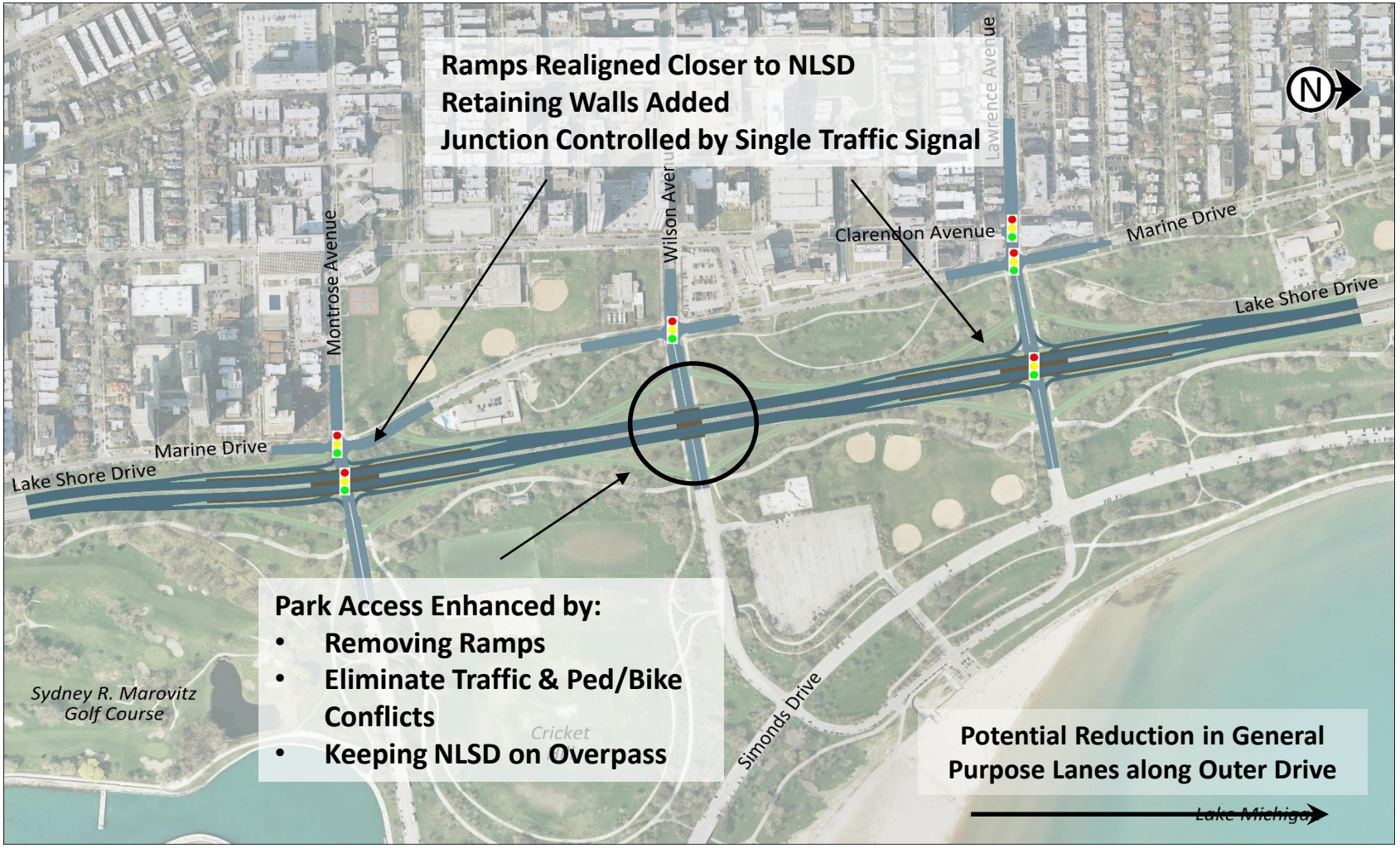
Montrose/Wilson/Lawrence – Concept 2

Compressed Diamond Junctions



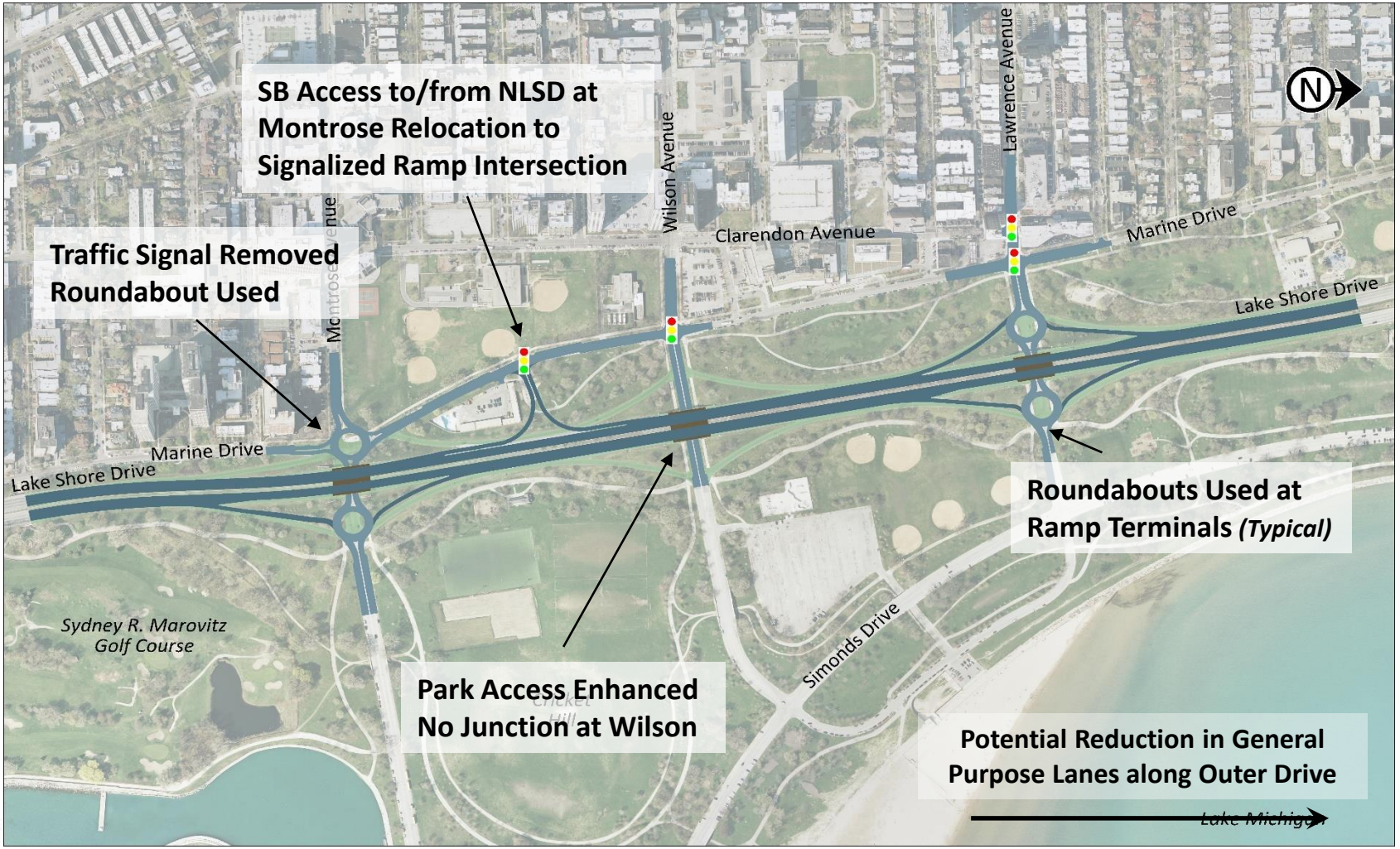
Montrose/Wilson/Lawrence – Concept 3

Single Point Junctions – Montrose and Lawrence



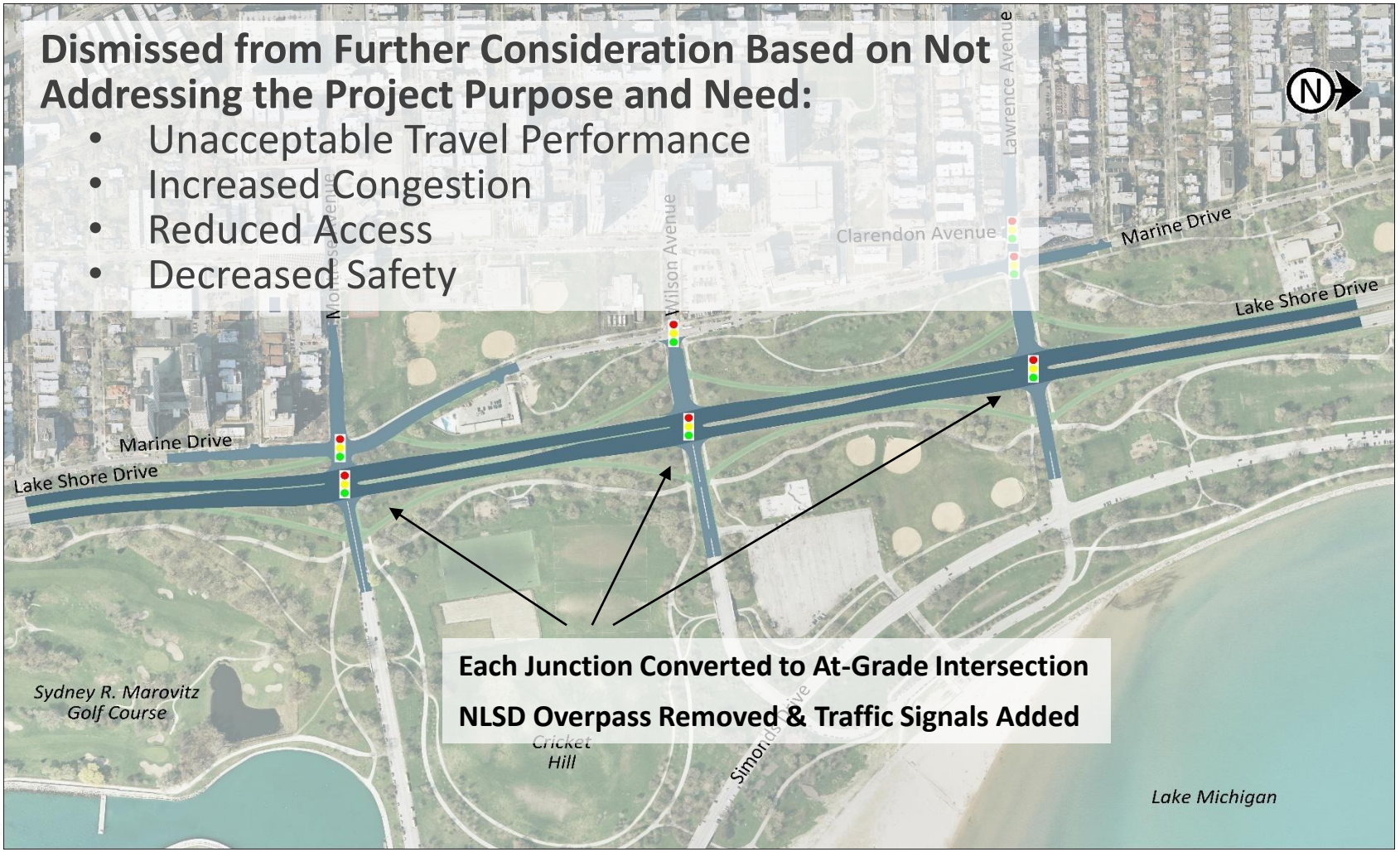
Montrose/Wilson/Lawrence – Concept 4

Double Roundabout Junctions – Montrose and Lawrence

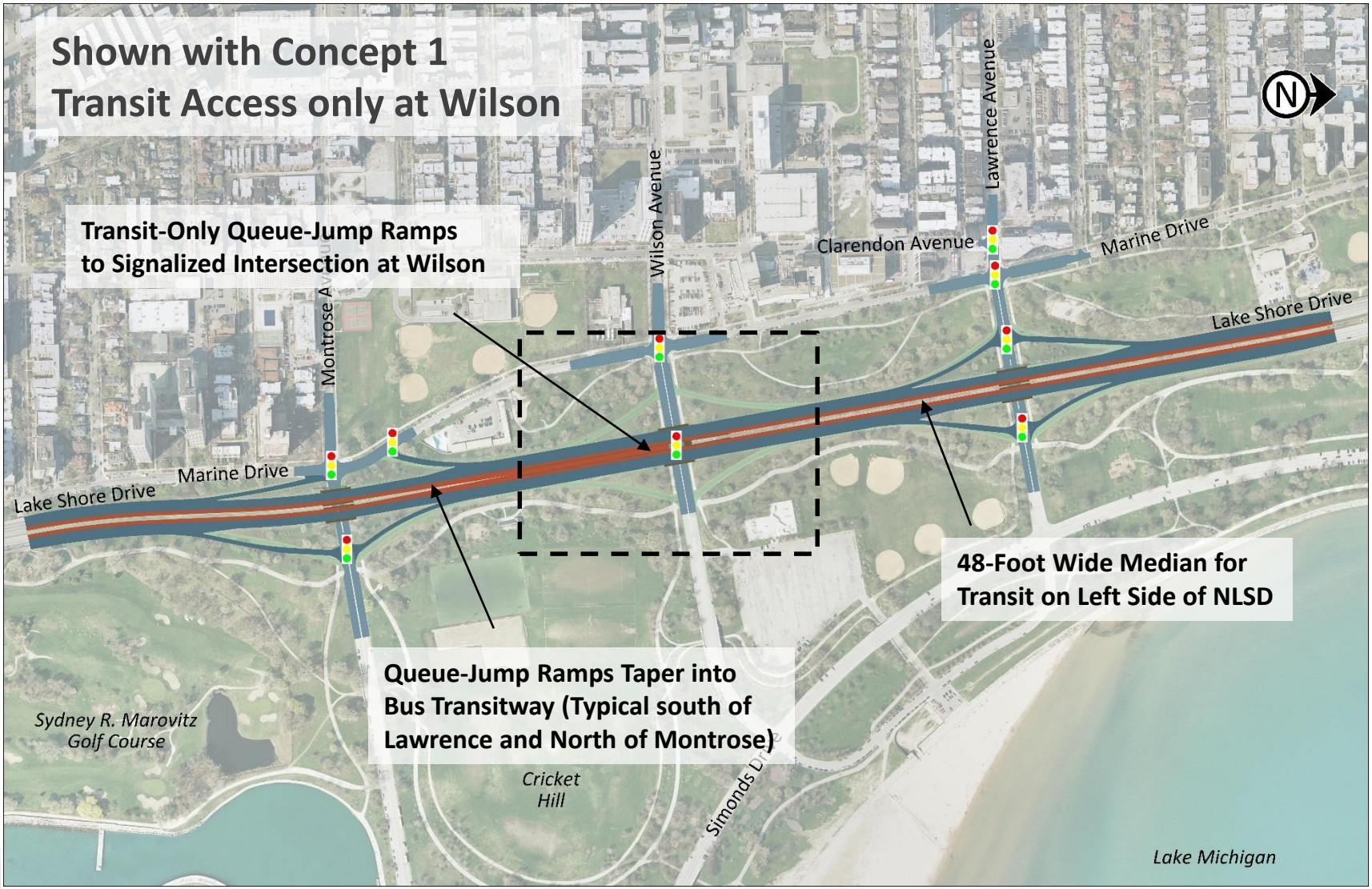


Montrose/Wilson/Lawrence – Concept 5

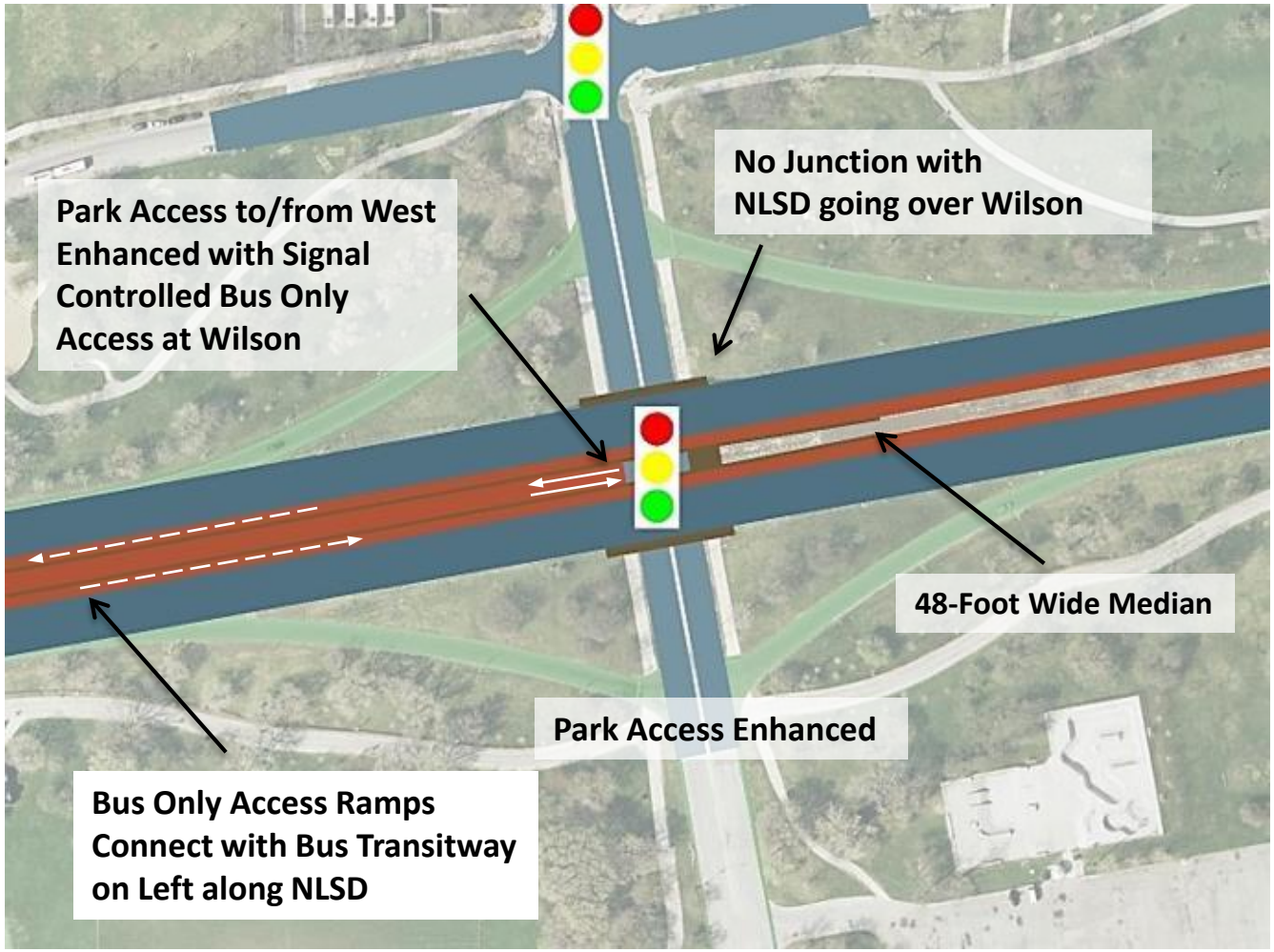
At-Grade Junctions



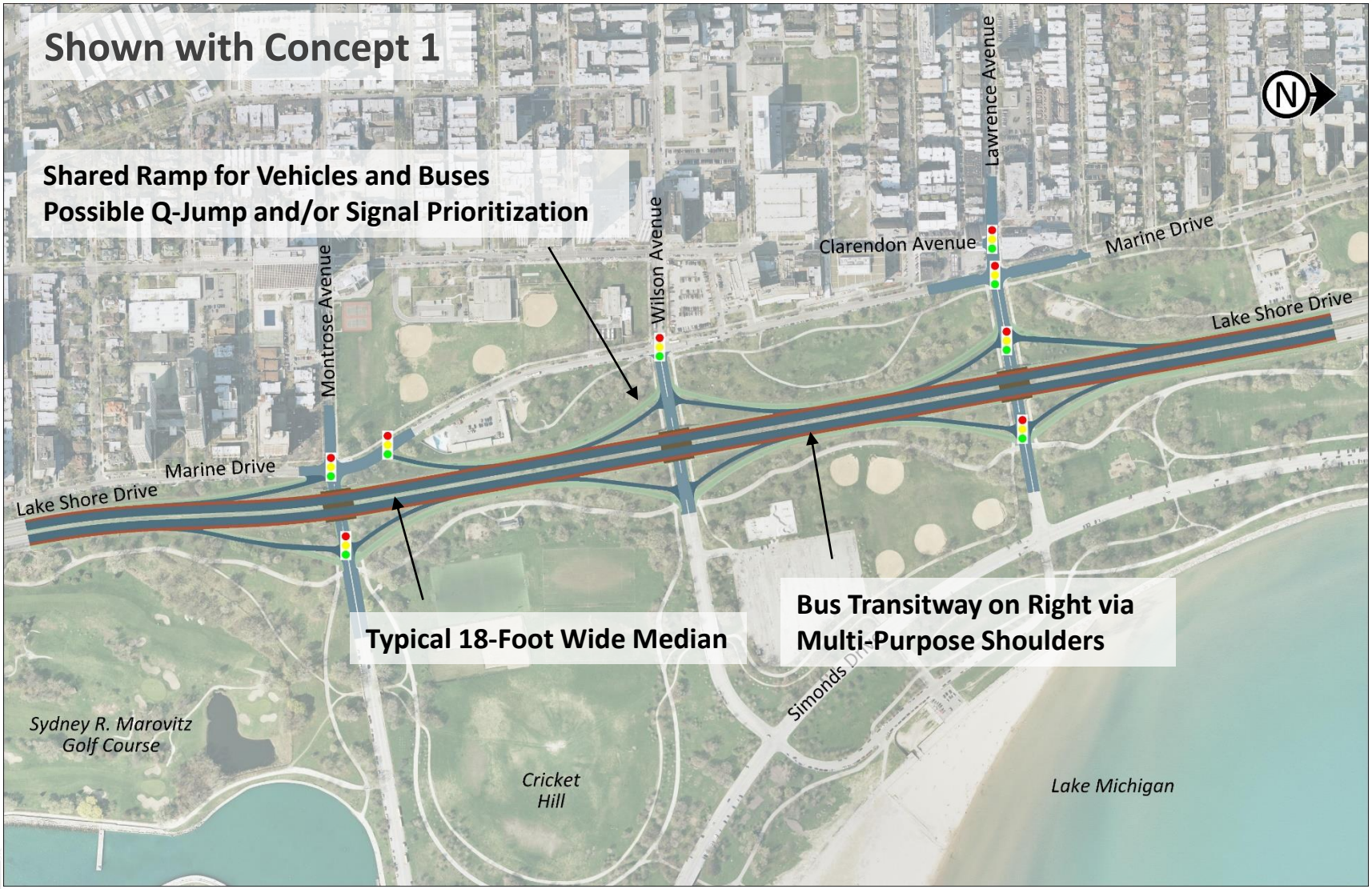
Transit – Left Side



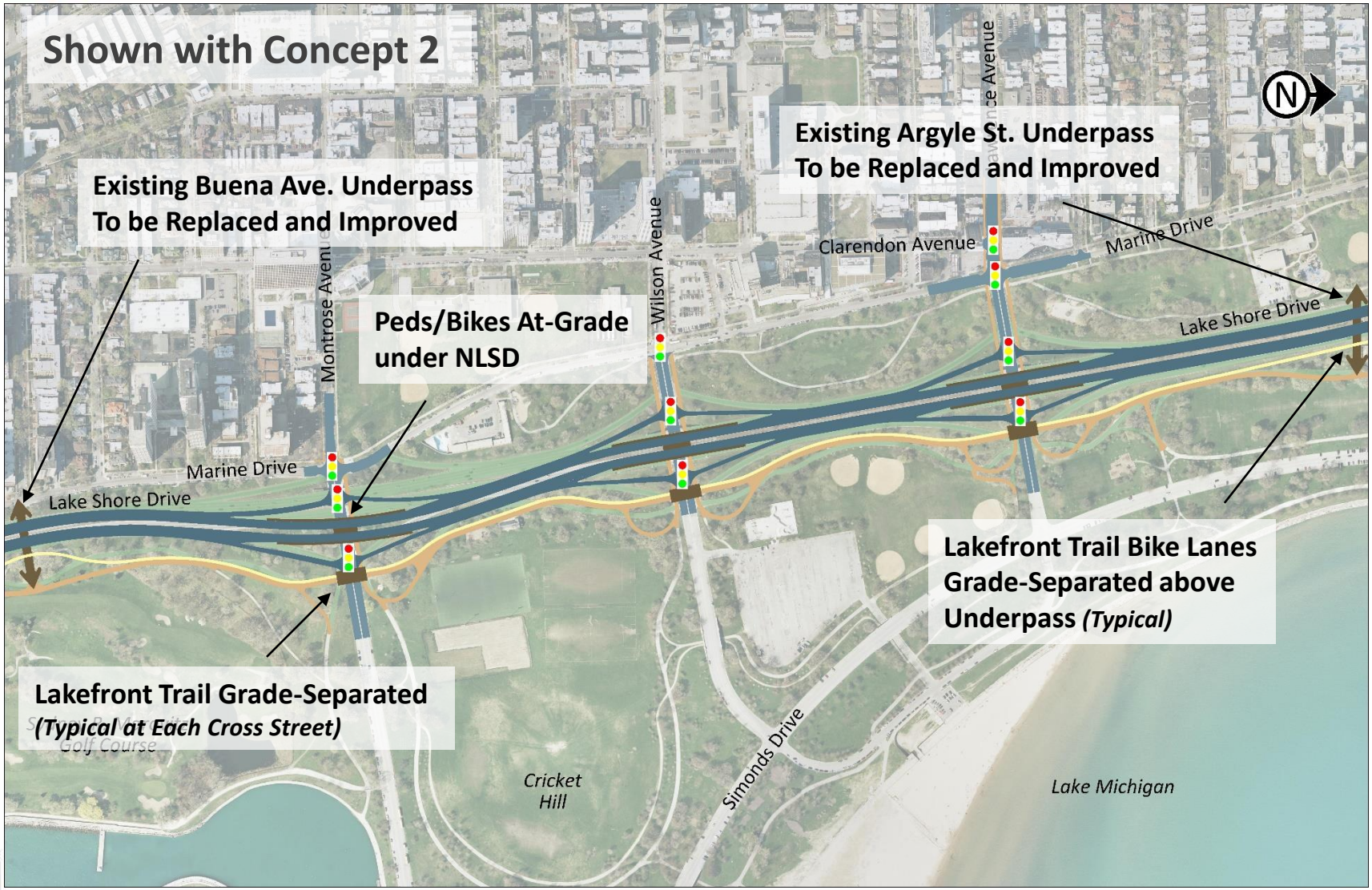
Transit Queue-Jump Ramps Consideration



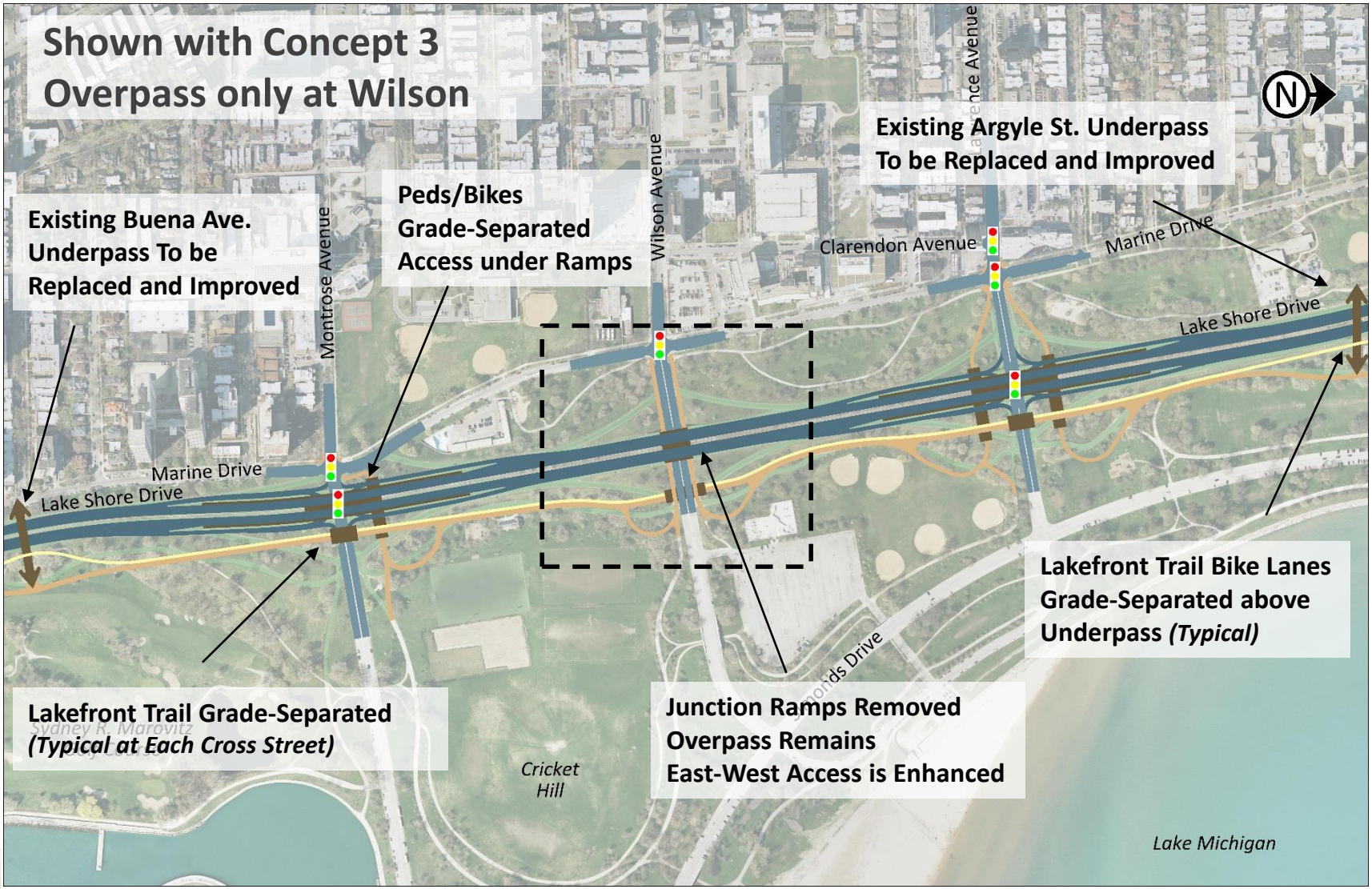
Transit – Right Side



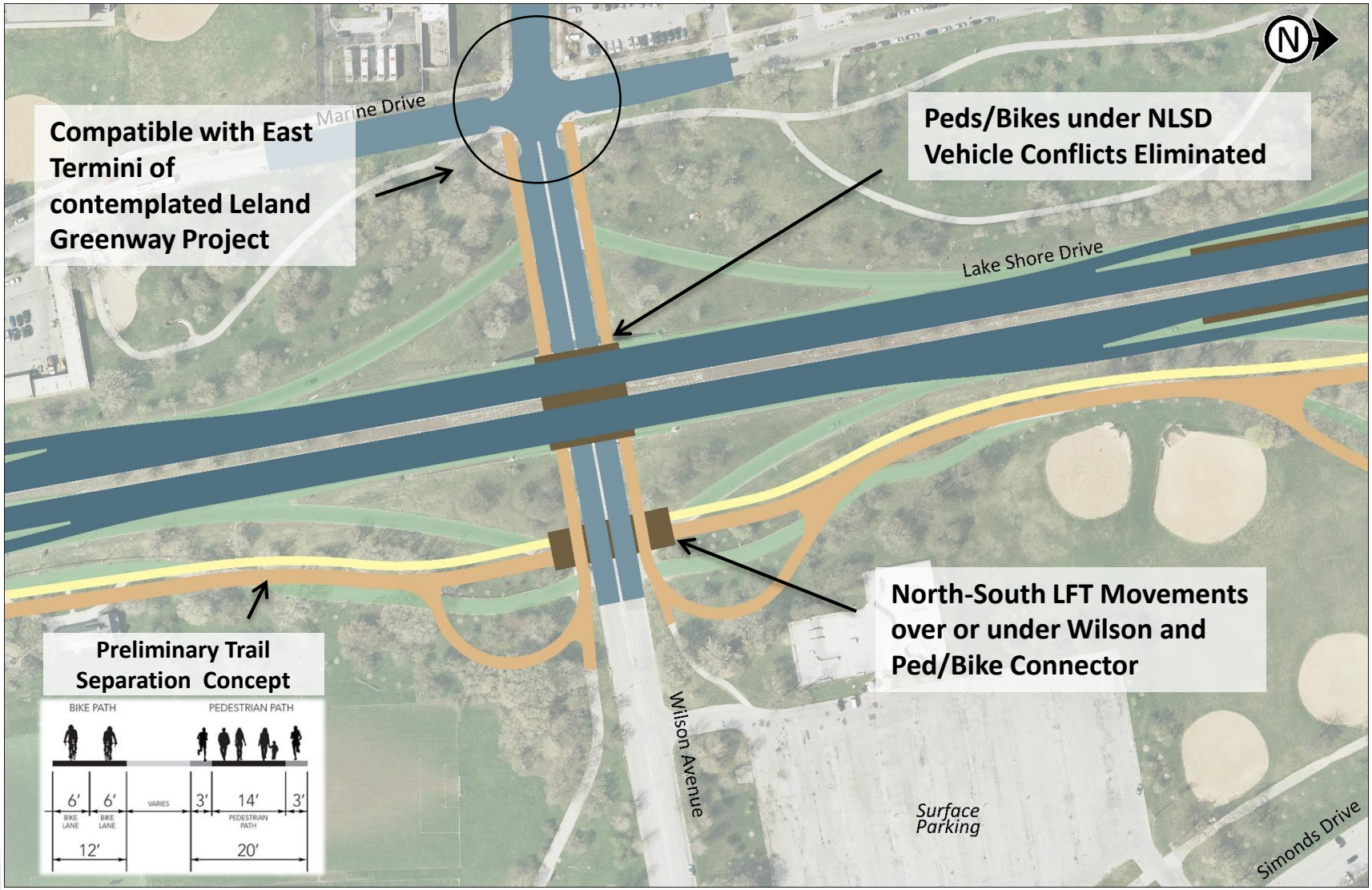
Non-Motorized Access – 3 Junctions



Non-Motorized Access – 2 Junctions



Non-Motorized Access



Montrose/Wilson/Lawrence Junction

Junction Evaluations Next Steps:

- Further evaluation of alternatives performance and safety
- Continue development and evaluation of Ped/Bike access improvements
- Continue development and evaluation of Transit Advantage improvements
- Comparative evaluation of impacts and cost considerations

NLSD Phase I Study Next Steps

- Incorporate feedback and continue analysis
- Continue alternatives development and conduct Level 2 screening
  - Task Force Meetings: Winter 2017
  - Public Meeting #3: 2017

Questions?

JUNCTION, SHORELINE AND NON-MOTORIZED TRAVEL EXHIBITS FOR COMMENT & REVIEW

North Lake Shore Drive

www.northlakeshoredrive.org

Thank You