North Lake Shore Drive
Corridor Planning Committee/ Task Force Meeting #7

October 16, 2017

Welcome

Meeting Agenda

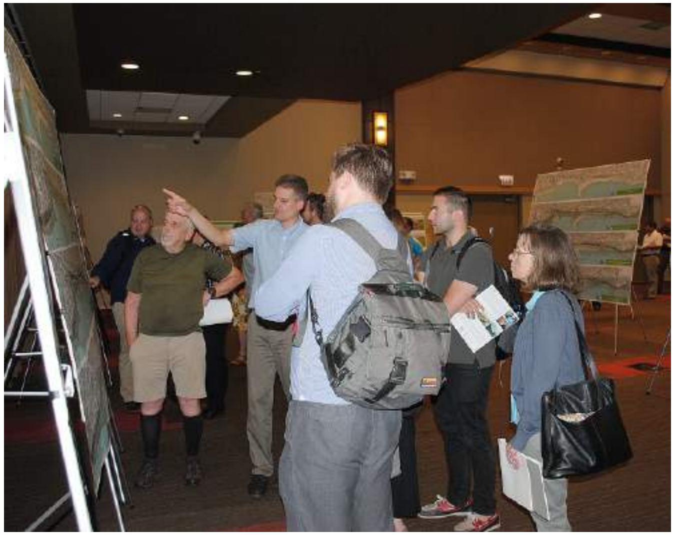
- Introductions
- Project Update
- Transitways and Managed Lanes
  - Breakout Session
- Level 2 Screening Criteria Review
- Lakefront Trail Update
- Next Steps

CPC/TF Meeting #6 Recap

- Meeting held May 18, 2017
- 63 Attendees
- Context Tailored Treatments Alternatives Workshop

Public Meeting #3

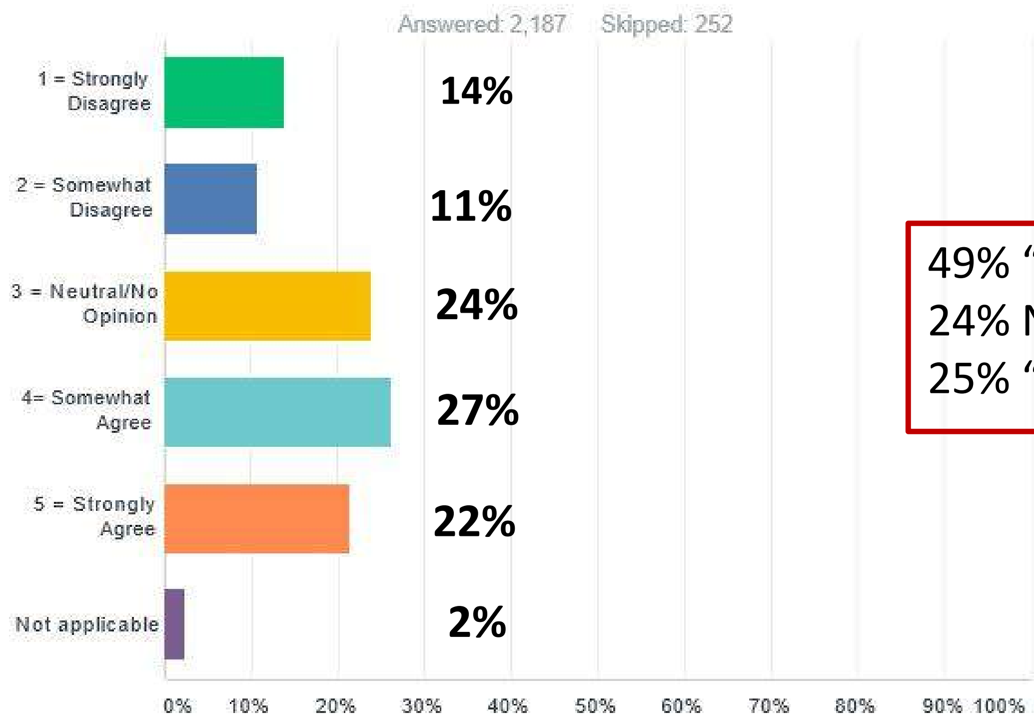
- Meeting held July 12, 2017
- 262 Attendees
- Exhibits and PowerPoint:
  - Study Background/Phase I Process
  - Initial Range of Alternatives
  - Level 1 Screening
  - Context Tailored Treatments Alternatives
- 280 Comments received
- **2,439 Surveys received**



Electronic Survey

- **Sample Question with Responses:**

Q11 Creating new vehicle access to Addison going to/from the south on North Lake Shore Drive would be beneficial for access to the park and circulation.



49% "Agree"
24% No Opinion
25% "Disagree"

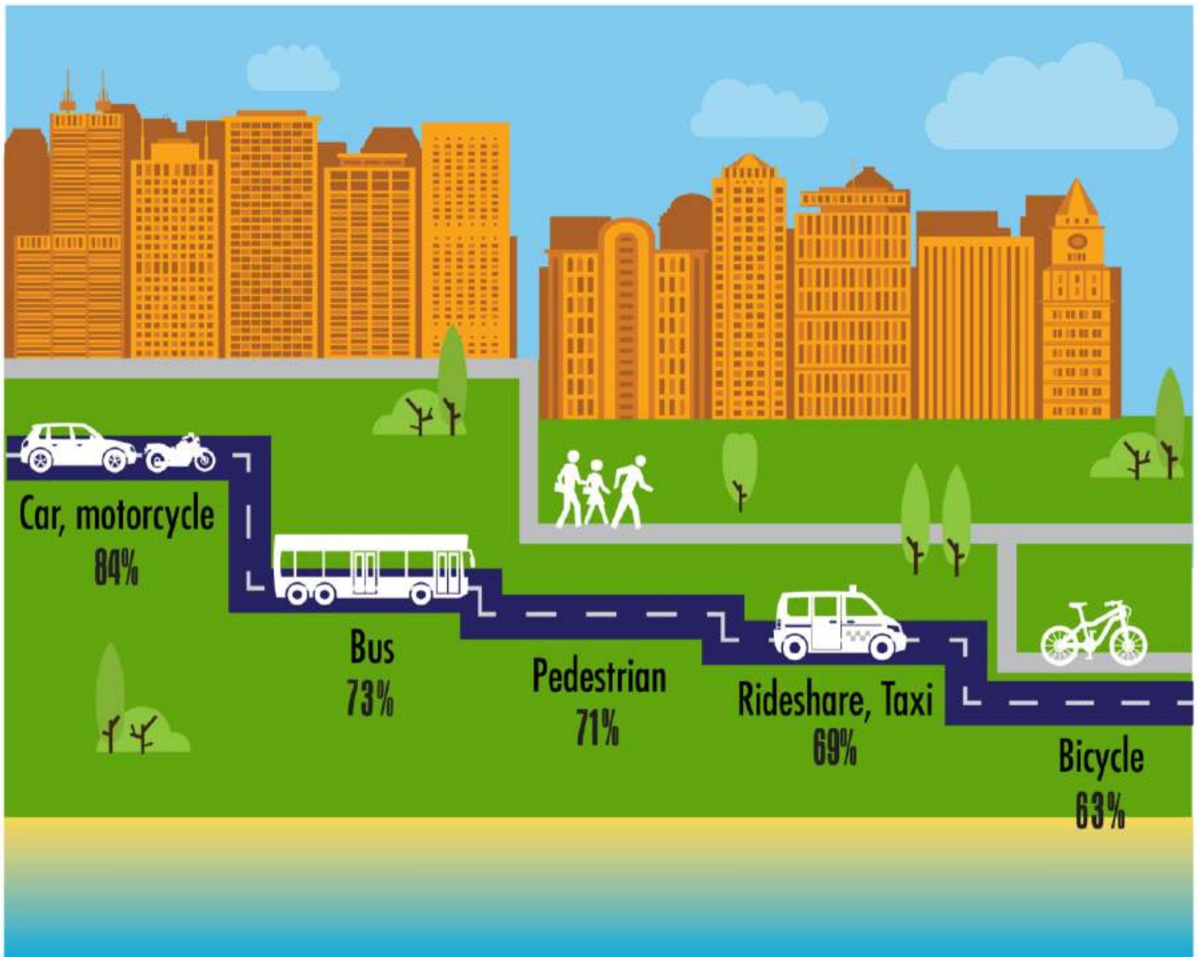
Survey Review

- NLSD users are multi-modal
- NLSD bus riders and motor vehicle users are both more likely to ride the bus if travel times are reliable and consistent
- Majority of NLSD bus riders' destination is downtown, while the majority of NLSD motor vehicle users' destination is other locations
- Maintaining a mix of lake, park, and city views while traveling along NLSD/Lakefront Trail is important
- Adding vehicle access at Addison is favored

Example Survey Feedback

Q15: Modes of Transportation Used Along the North Lake Shore Drive Corridor in the Past Year (Top 5 Responses)

2,143 Answered   Respondents made multiple selections



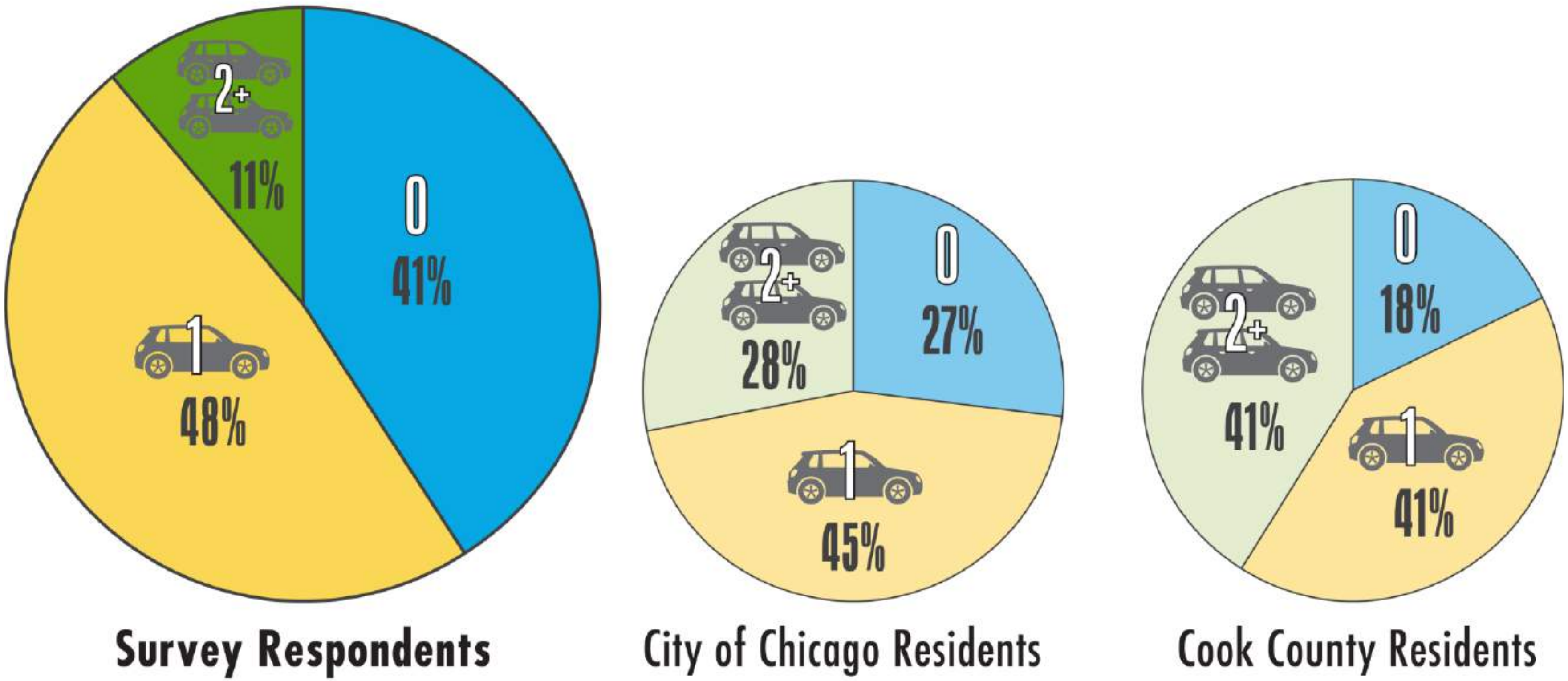
Additional responses: Other (2%) I don't use North Lake Shore Drive (0.10%)

Stakeholder input will influence further analysis and decision-making

Illinois Department of Transportation CDOT

Example Survey Feedback

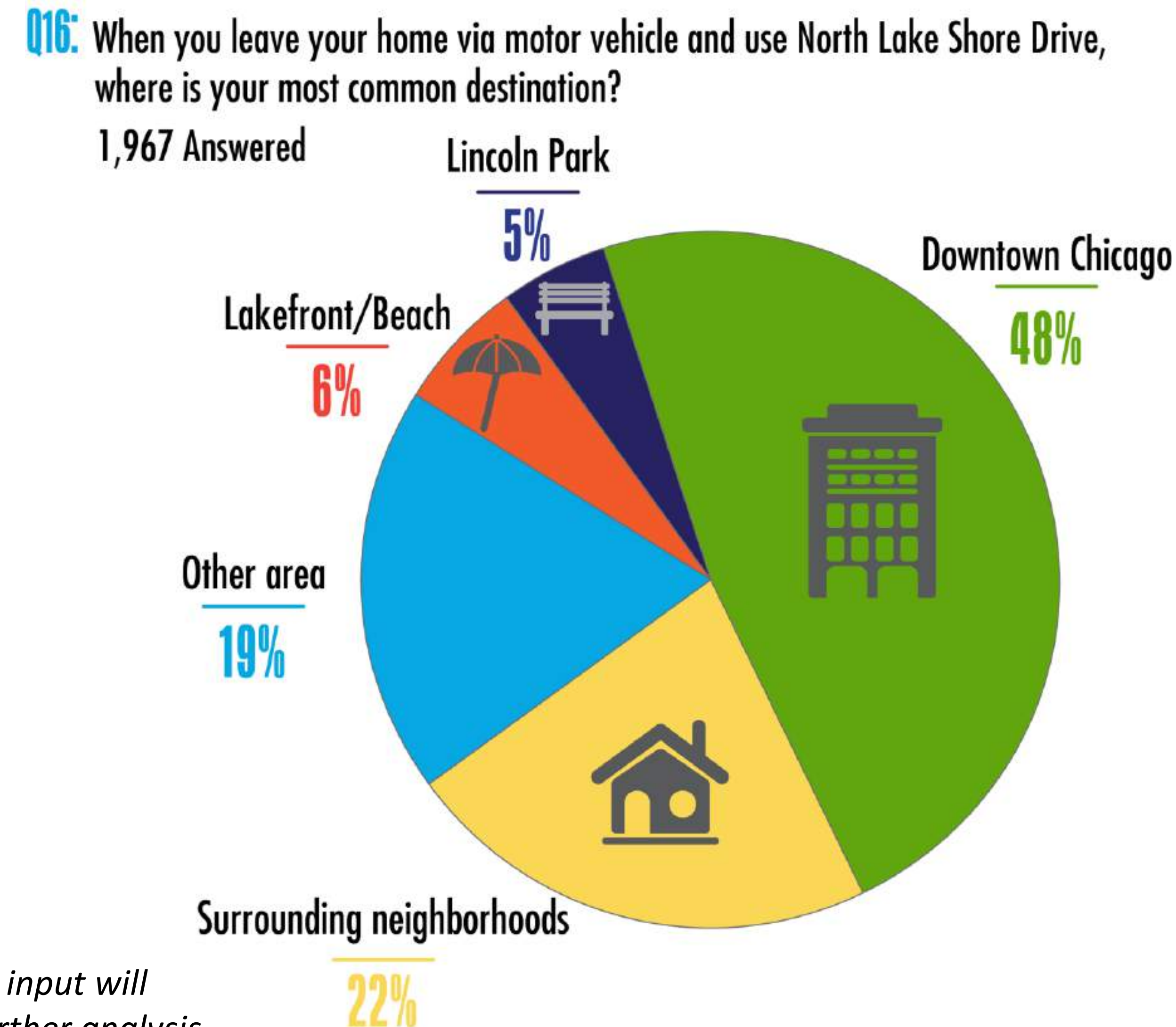
Q3: How many vehicles do you own?
2,439 Answered



City of Chicago and County data received from 2011 – 2015 American Community Survey, U.S. Census Bureau's American Community Survey Office.

Stakeholder input will influence further analysis and decision-making

Example Survey Feedback



Stakeholder input will influence further analysis and decision-making

Example Survey Feedback

Q21: Which of these factors would help make riding the bus along North Lake Shore Drive a better option for you?

1,094 Answered

Stakeholder input will influence further analysis and decision-making

Level 1 Screening Summary

INITIAL RANGE OF ALTERNATIVES CATEGORY	INITIAL RANGE OF ALTERNATIVES
No-Action	
Transitways	
Managed Lanes	
Tunnels and Causeways	
Context Tailored Treatments	

Context Tailored Treatments

Previous Meetings:

INITIAL RANGE OF ALTERNATIVES CATEGORY	ALTERNATIVES TO BE EVALUATED FURTHER
Context Tailored Treatments	Corridor Modernization
	Compressed Roadway
	Frontage Drive

Context Tailored Treatments Alternatives were presented for feedback at Task Force #6 and Public Meeting #3

Transitways and Managed Lanes

Today's Meeting:

INITIAL RANGE OF ALTERNATIVES CATEGORY	ALTERNATIVES TO BE EVALUATED FURTHER
Transitways	Transit Advantages at Junctions
	Bus on Shoulder - Right
	Dedicated Transitway - Left
	Dedicated Transitway - Off Alignment
Managed Lanes	High Occupancy Vehicle Lane
	High Occupancy Toll Lane
	Express Toll Lane
	Bus Only Lane
	Express Reversible Lanes
	Toll Lanes

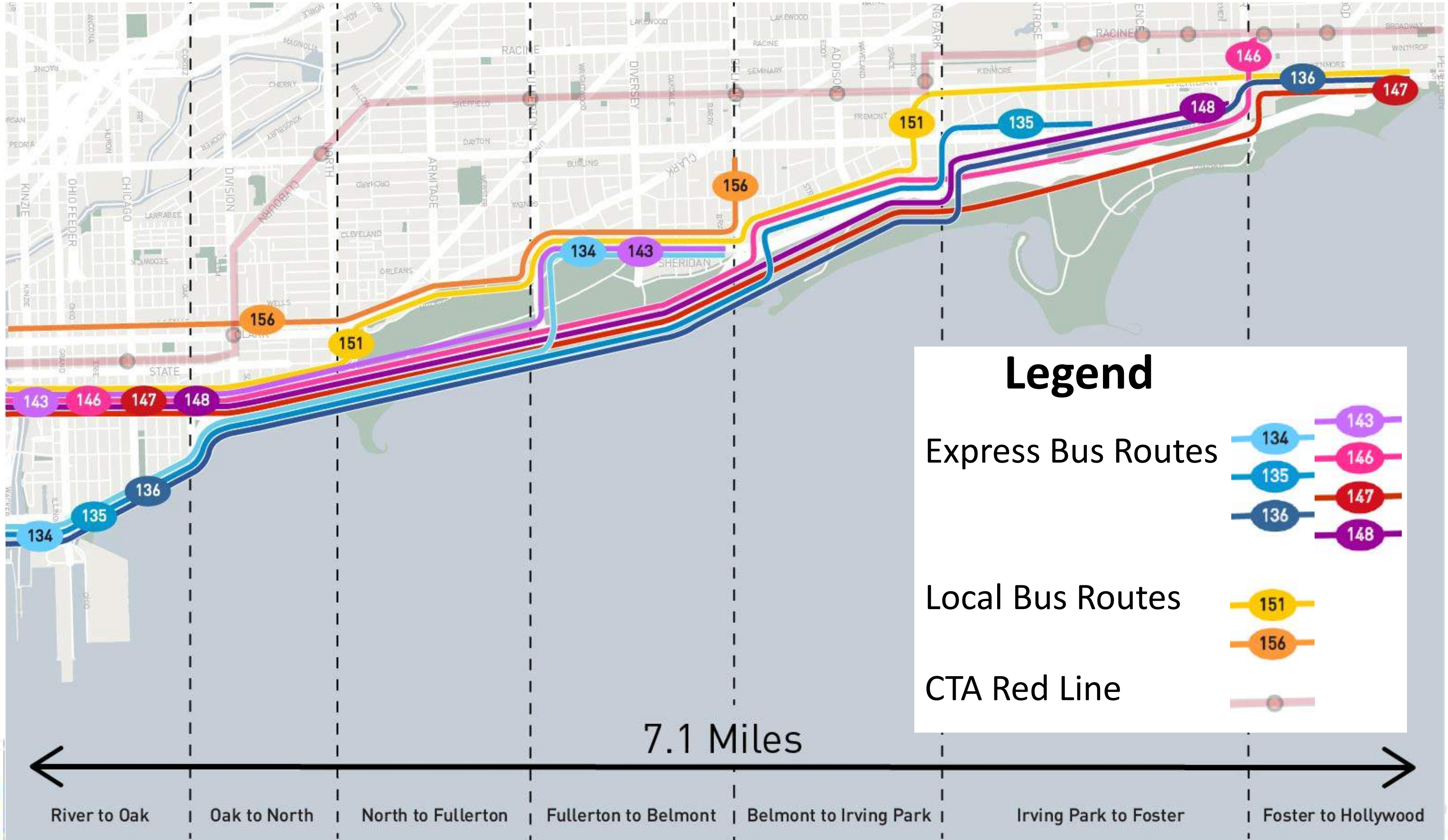
Transitways and Managed Lanes

Two categories of transit improvement options are under consideration for combination with CTT alternative(s):

- **Transitways** *(Options that* ***add dedicated transit space*** *in addition to existing general purpose lanes to improve bus mobility).*
- **Managed Lanes** *(Options that* ***convert one or more existing general purpose lanes*** *to a managed lane to provide high mobility for buses and potentially some autos)*

Review of Existing Transit Conditions

Transit Service Overview



Transit Facts

- Approximately 69,000 transit trips on 9 corridor bus routes every weekday
- Weekday transit trips account for approximately 1 in 5 of all passenger trips on NLSD (Higher during peak periods)
- Most transit trips take place in peak periods when speed and reliability experience the greatest variability

Need for Transit Improvements

- NLSD is the busiest bus corridor in the CTA system.
- Belmont/Lake Shore Drive is the busiest CTA bus stop during the AM peak period.
- Transit trips along NLSD are projected to grow 15-20% by 2040.

Need for Transit Improvements

Customer Experience

- Speeds on Outer Lake Shore Drive vary between 11 and 40 mph, depending on time of day and overall congestion levels.
- This means the same trip can take 3 to 4 times longer during congested times than at uncongested times.
- Variability also causes gaps and bus bunching, which can increase wait times and crowding.
- Approximately 60% of NLSD transit trips take place during peak periods, when speeds are slowest and most variable.

Example: Customer Experience: #147 AM Travel Times:

Uncongested
8 Minutes
Average at 6 AM

Typical
18 Minutes
Average at 8 AM

Bad Day
31 Minutes
95th Percentile at 8 AM

Overview of Transitway Alternatives

Transitway Alternatives

INITIAL RANGE OF ALTERNATIVES CATEGORY	ALTERNATIVES TO BE EVALUATED FURTHER
Transitways	Transit Advantages at Junctions
	Bus on Shoulder - Right
	Dedicated Transitway - Left
	Dedicated Transitway - Off Alignment

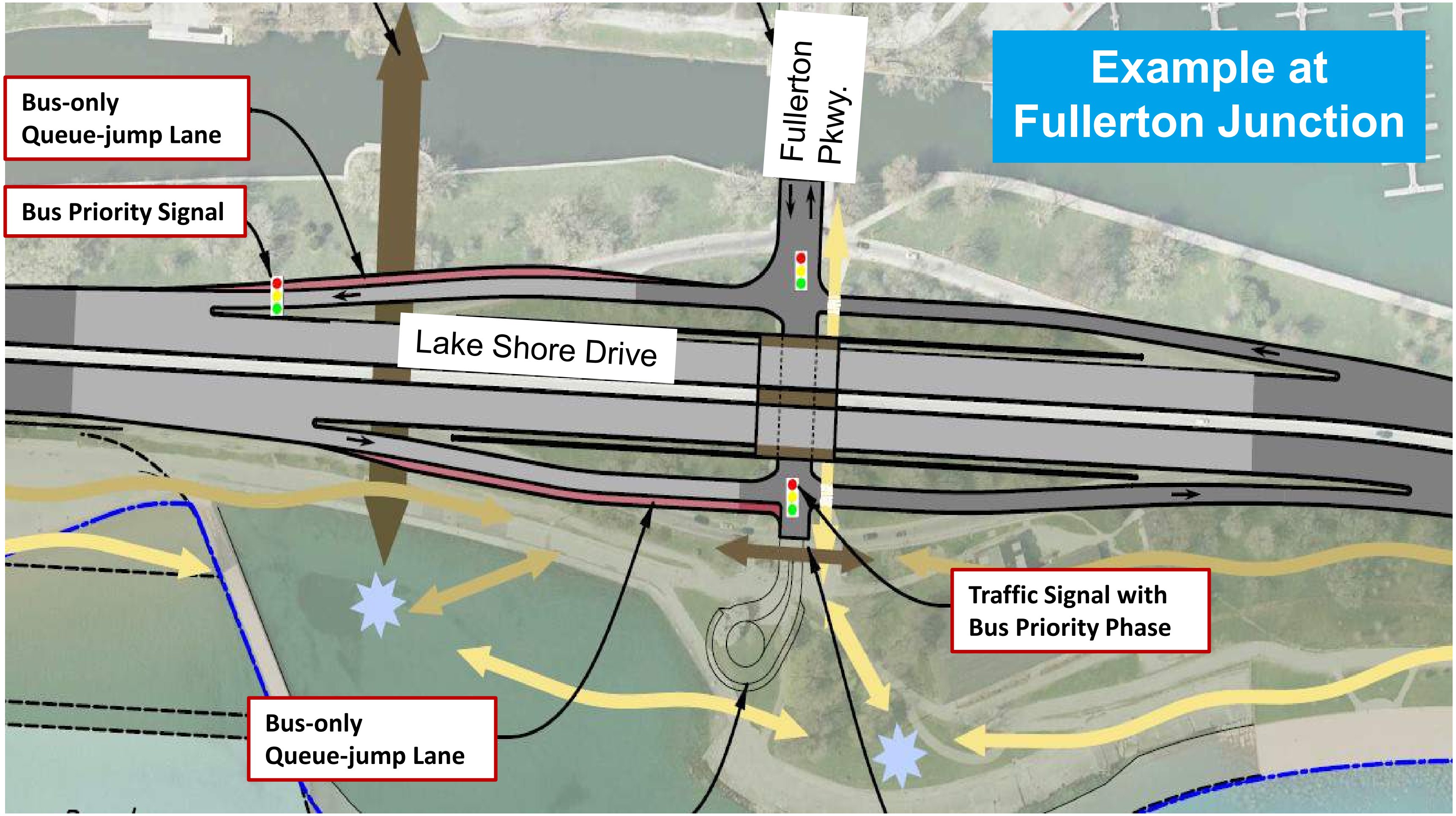
Transit Advantages at Junctions


Bus on Right Shoulder


Dedicated Transitway on Left


Dedicated Transitway - Off Alignment

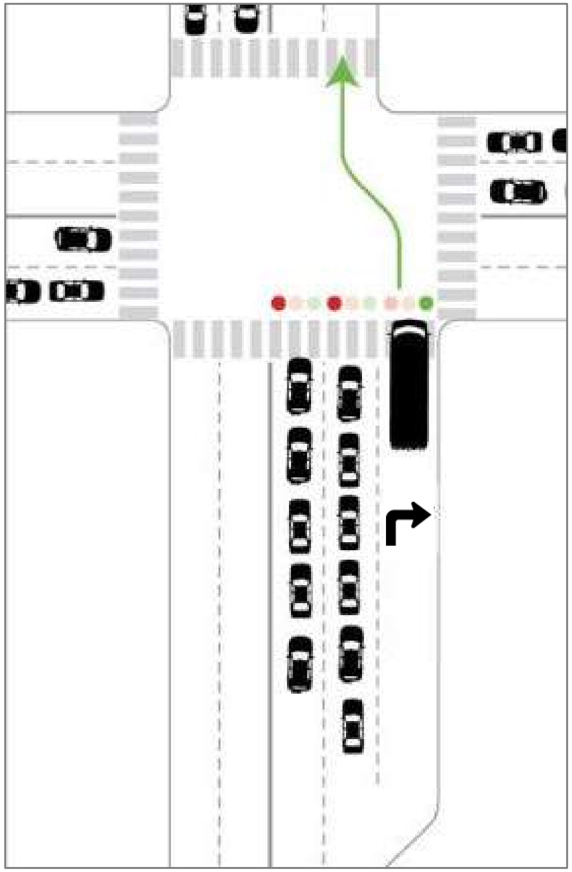
Transit Advantages at Junctions



Transit Advantages: Queue Jump Lanes

- Short lane that allows buses to bypass queues of general traffic
- Located at, or prior to, a junction or signalized intersection

Jeffery Ave at Anthony Ave, Avalon Park



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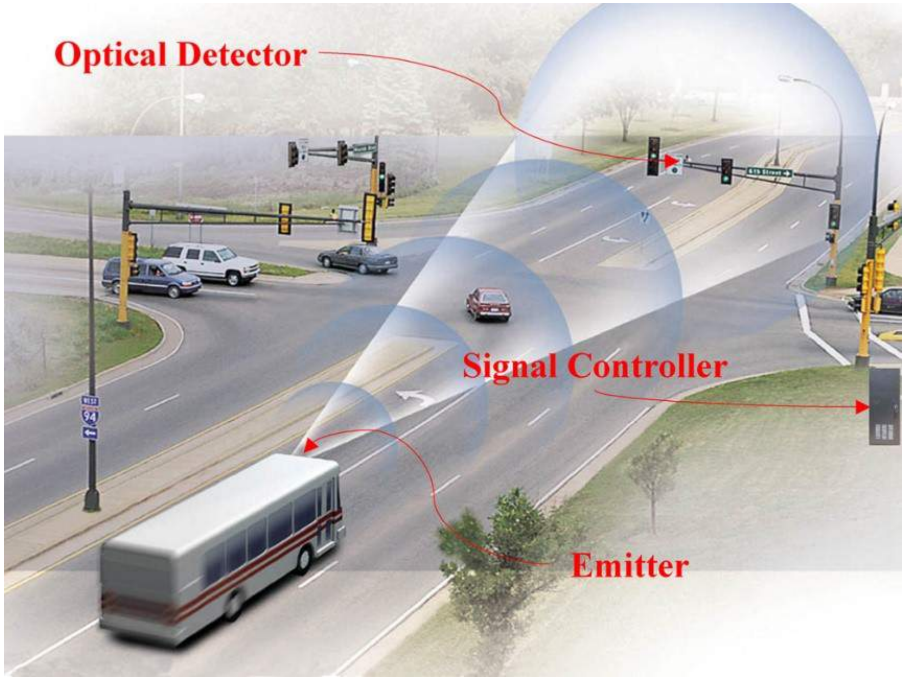
Transit Advantages: Transit Signal Priority

- Reduces bus wait time at traffic signals by holding green lights longer or shortening red lights
- TSP lowers intersection dwell time for transit vehicles, lowering overall runtime



Typical Section Between Junctions

*Existing Typical Section Looking North**

***NLSD between Grand and Montrose Avenues is depicted.**

Bus on Right Shoulder

*Proposed Typical Section Looking North Between Junctions**

Corridor Modernization Concept with Bus on Right Shoulder

***NLSD between Grand and Montrose is depicted.**

Dedicated Transitway on Left

Proposed Typical Section Looking North Between Junctions*

Corridor Modernization Concept with Dedicated Transitway Left Side

***NLSD between Grand and Montrose is depicted.**

Dedicated Transitway Off Alignment

*Proposed Typical Section Looking North Between Junctions**

Corridor Modernization Concept with Dedicated Transitway Off Alignment

***NLSD between Grand and Montrose is depicted.**

Summary of Transitway Alternatives

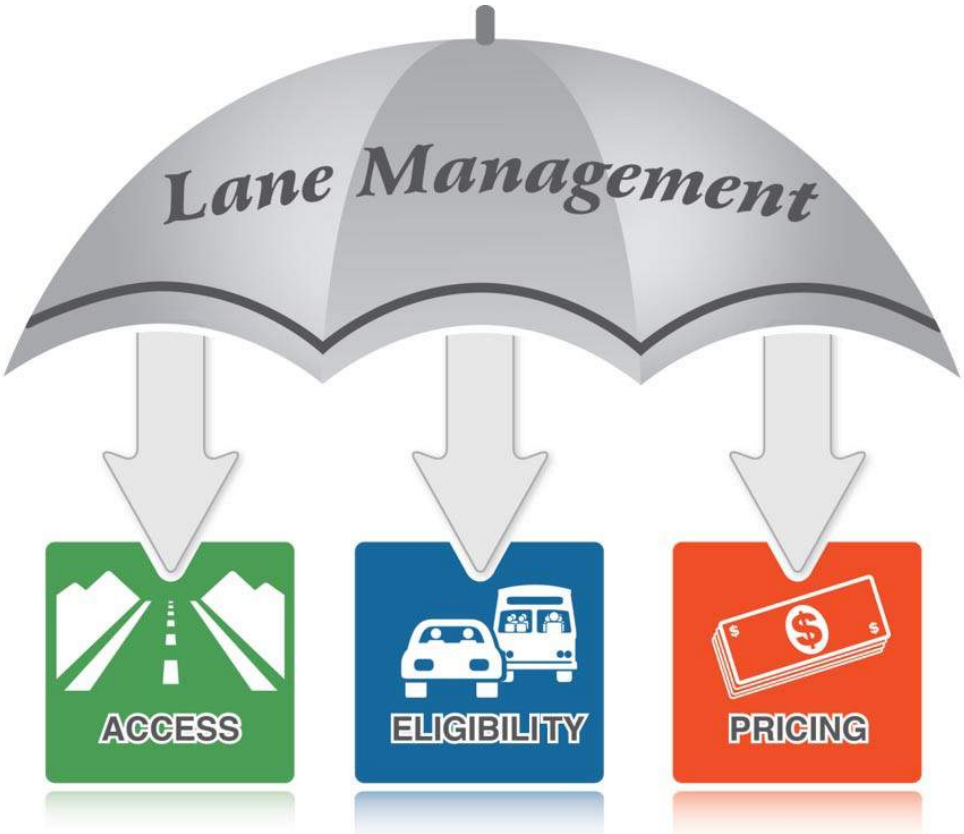
- Bus on Right Shoulder
  - Multi purpose auxiliary lane on right shoulder
- Dedicated Transitway on Left
  - Transit lanes in center of Drive avoid obstructions to enhance transit operations
  - Bus-only ramps at select junctions
- Dedicated Transitway Off Alignment
  - Transit lanes on separate alignment avoid obstructions to enhance transit operations
  - Bus-only ramps to connect to transitway

Overview of Managed Lane Alternatives

Managed Lanes Definition

What are Managed Lanes?

Lanes that use one or more operational strategies to manage traffic demand and operate more efficiently than general purpose lanes.



Pricing / Tolling Discussion

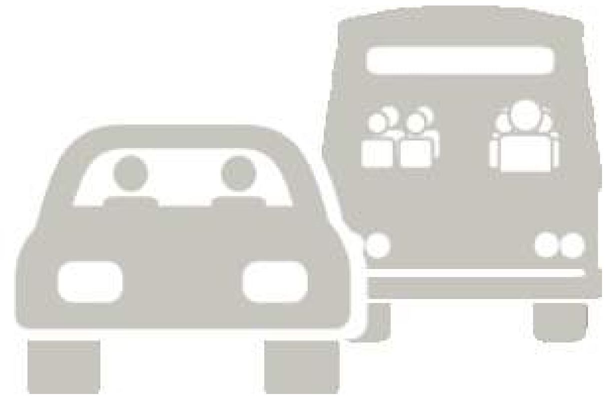
- The NLSD project is looking at tolling as a strategy for both funding and/or traffic management
- There are two types of pricing / tolling strategies:
  - Pricing only managed lanes to provide a reliable trip for buses and autos
  - Tolling all lanes as a direct and sustainable revenue source
  - Both can be compatible with one another
- NLSD is working with CMAP and will further coordinate with planning efforts in the region to analyze tolling expressways as a long term operational sustainability strategy

Managed Lanes Benefits

- Trip time reliability
- Time savings
- Improved mobility
- Improved transit service
- Congestion management
- Long term sustainability and adaptability

Managed Lane Considerations

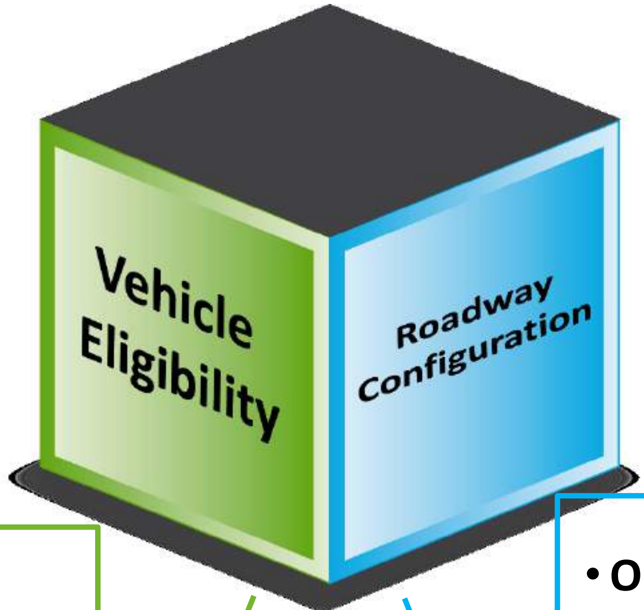
- Vehicle eligibility determination
- Access
- Pricing
- Economic Equity
- Enforcement
- Unique features of NLSD
- Traffic impacts on local streets



Managed Lanes

INITIAL RANGE OF ALTERNATIVES CATEGORY	ALTERNATIVES TO BE EVALUATED FURTHER
Managed Lanes	High Occupancy Vehicle Lane
	High Occupancy Toll Lane
	Express Toll Lane
	Bus Only Lane
	Express Reversible Lanes
	Toll Lanes

Managed Lanes Roadway Configurations



- High Occupancy Vehicle (HOV) Lane
- High Occupancy Toll (HOT) Lane
- Express Toll Lane
- Bus Only Lane
- Express Reversible Lanes
- Toll Lanes

- **Option A** – Three-plus-One Managed Lane
- **Option B** – Two-plus-Two Managed Lanes
- **Option C** – Three-plus-Two Reversible Managed Lanes
- **Option D** – Four-plus-One Moveable Contraflow Lane

Managed Lane Access

- **Junction spacing challenges**
  - Close junction spacing limits ability to safely weave into and out of managed lanes
  - Direct express bus access needed at 6 junctions
- **Continuous vs. Direct managed lane access**
  - Continuous access is not feasible for NLSD
  - Direct access to/from managed lanes needed to avoid unsafe weaving
  - Number of managed lane access points must be limited for high mobility and travel time reliability

Potential
Managed Lane Alternatives

Managed Lanes

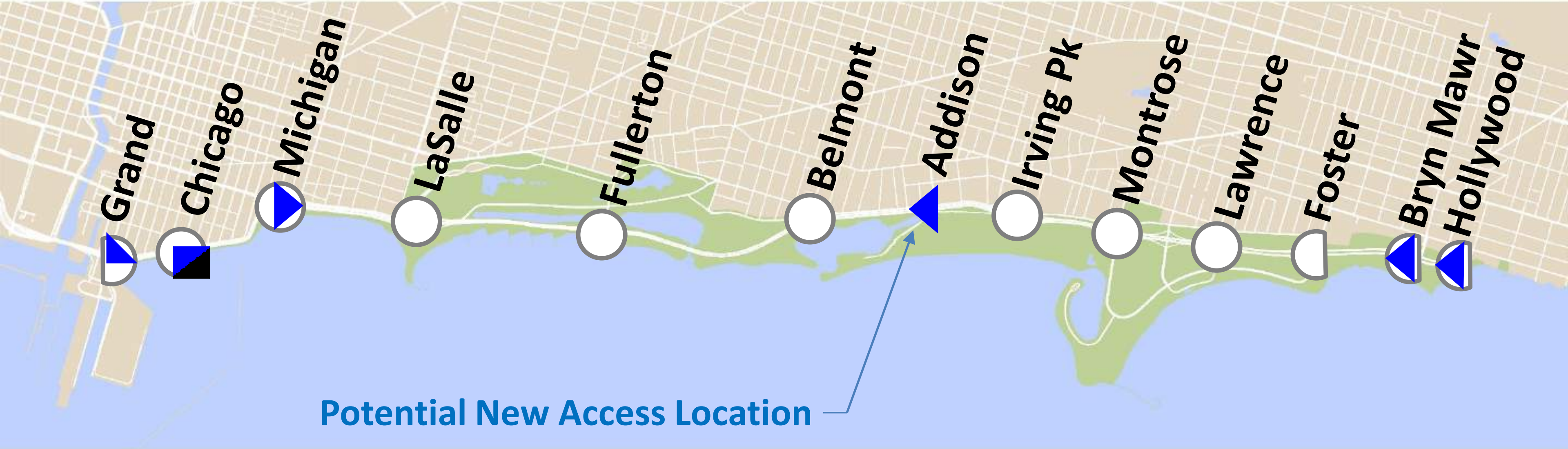
Potential managed lane roadway designs:

- ***Option A*** – Three-plus-One Managed Lane (Bus-only or Bus & Auto)
- ***Option B*** – Two-plus-Two Managed Lanes
- ***Option C*** – Three-plus-Two Reversible Managed Lanes
- ***Option D*** – Four-plus-One Moveable Bus-Only Contraflow Lane (NB and SB, or SB Only)

Existing General Auto Access

Existing General Purpose Auto Access

Potential Managed Lane Access



○ **Existing General Purpose Auto Access to Remain**

◀ **Potential Combined Bus and/or Managed Auto Access**

Express Bus Access

- Existing General Purpose Auto Access to Remain
- Potential Combined Bus and/or Managed Auto Access
- Express Bus-only Managed Lane Access

Typical Section Between Junctions

*Existing Typical Section Looking North**

***NLSD between Grand and Montrose Avenues is depicted.**

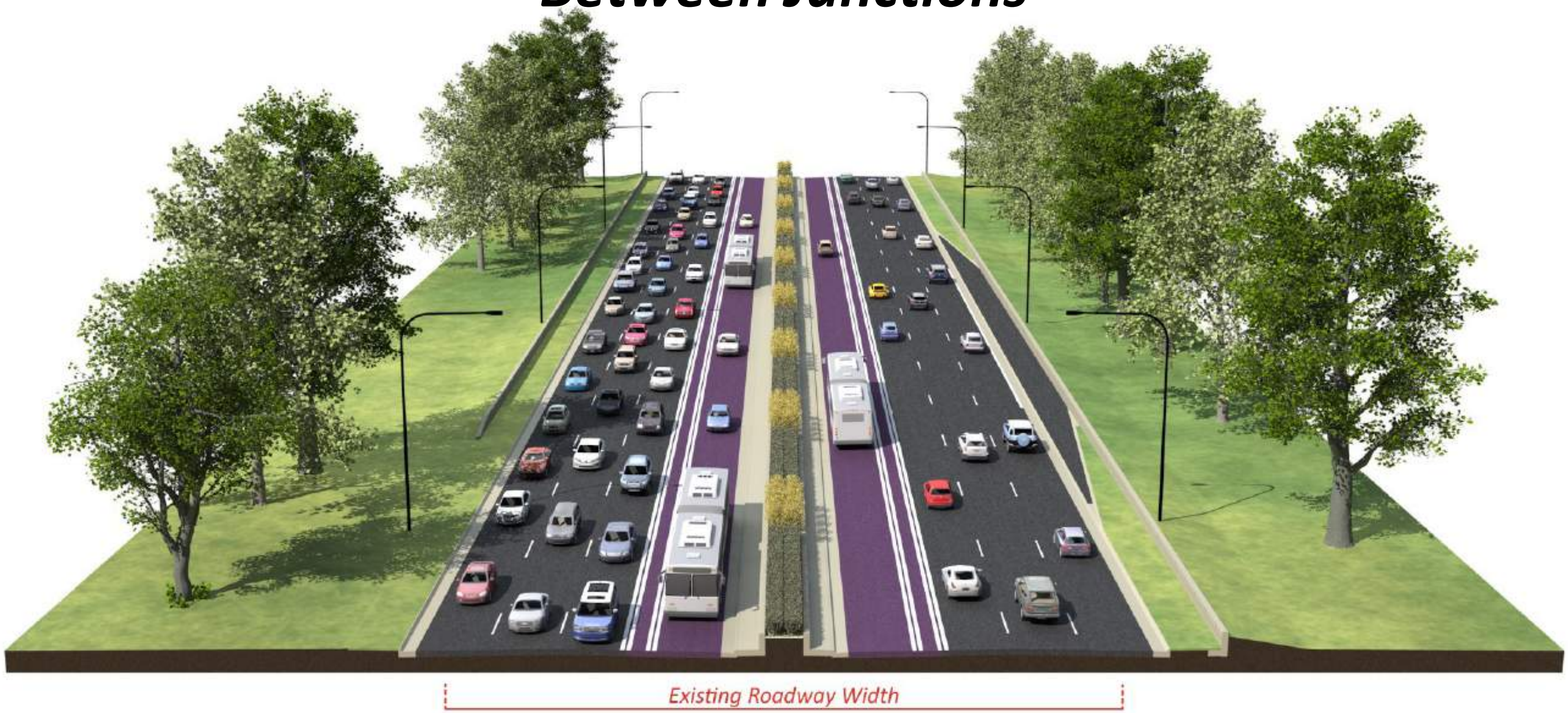
Option A – 3+1 Bus-Only Managed Lane*

*Proposed Typical Section Looking North Between Junctions***

***Converts one general purpose lane in each direction to a *Bus-Only* Managed Lane.**
****NLSD between Grand and Montrose Avenues is depicted.**

Option A – 3+1 Managed Lane*

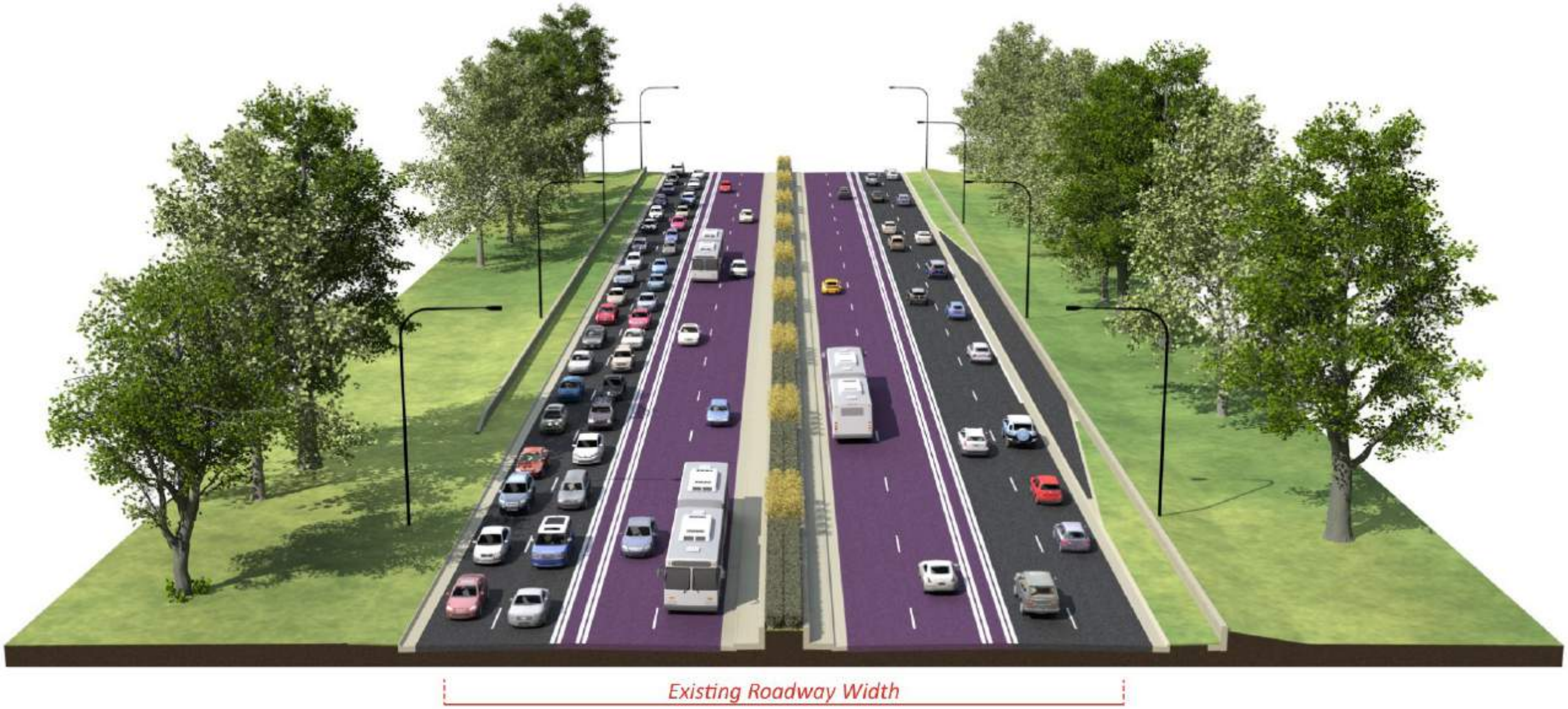
*Proposed Typical Section Looking North Between Junctions***



***Converts one general purpose lane in each direction to a Shared *Bus/Auto M*anaged Lane.**
****NLSD between Grand and Montrose Avenues is depicted.**

Option B – 2+2 Managed Lanes*

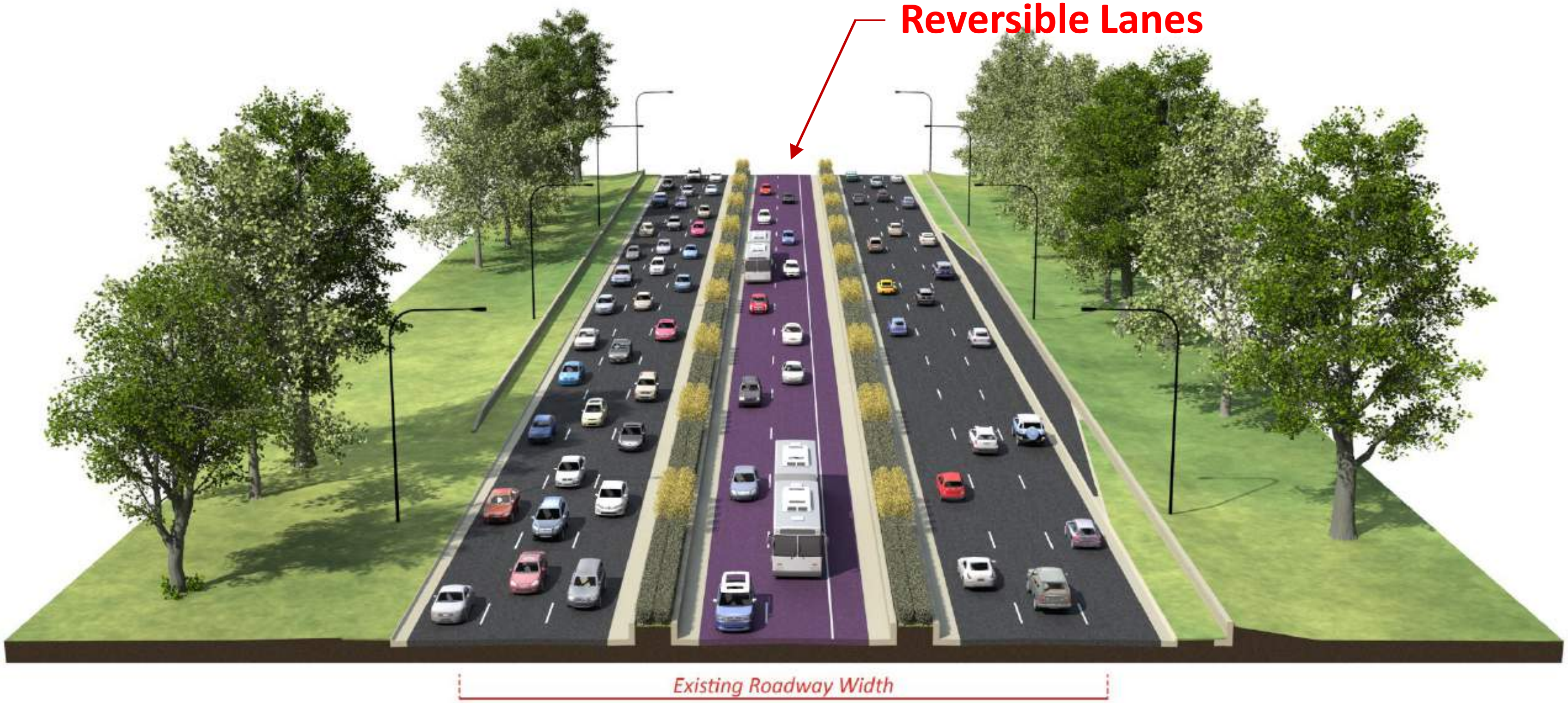
*Proposed Typical Section Looking North Between Junctions***



*Converts two general purpose lanes in each direction to Shared *Bus/Auto M*anaged Lanes.
**NLSD between Grand and Montrose Avenues is depicted.

Option C – 3+2 Reversible Managed Lanes*

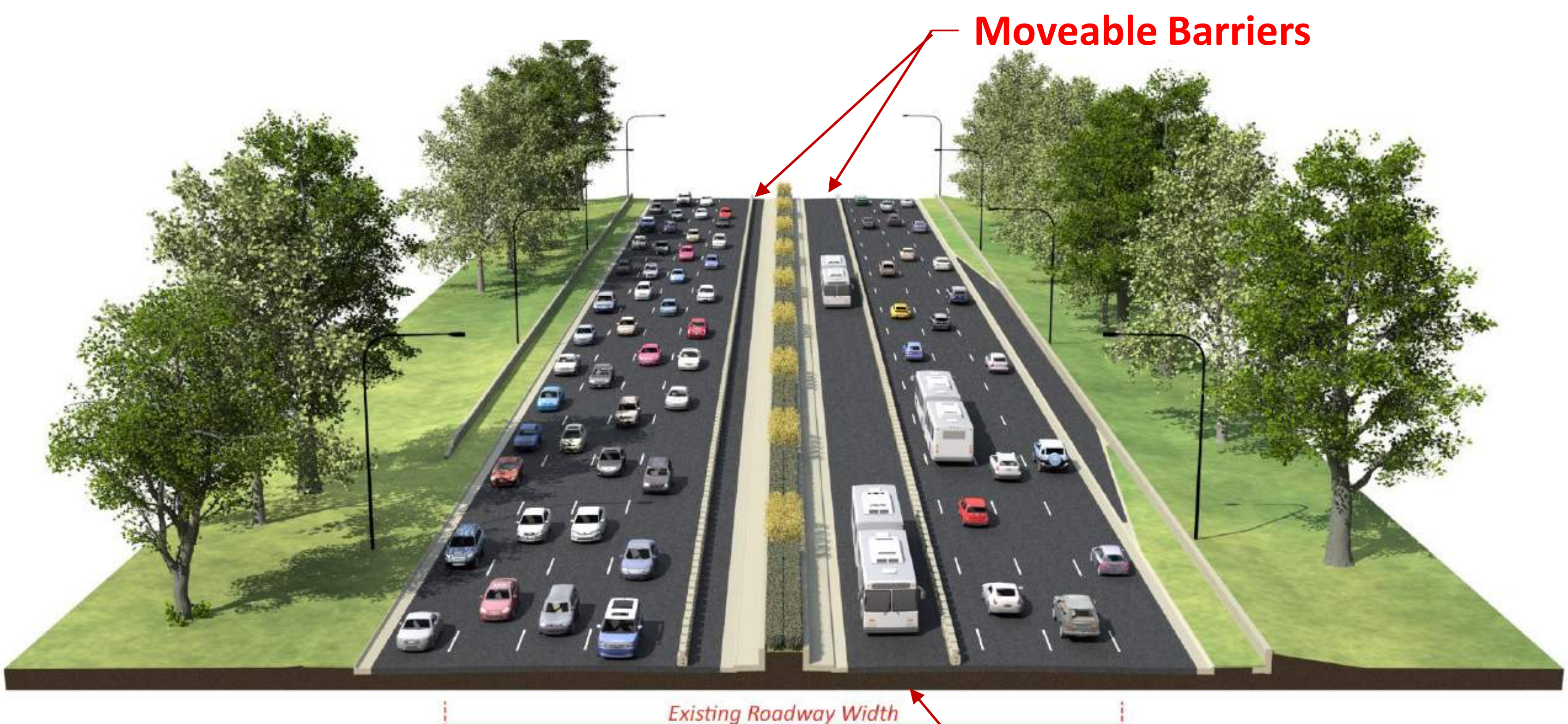
*Proposed Typical Section Looking North Between Junctions***



*Replaces one general purpose lane in each direction with two Reversible Managed Lanes.
**NLSD between Grand and Montrose Avenues is depicted.

Option D – 4+1 Contraflow Managed Lane*

Proposed Typical Section Looking North Between Junctions



***Provides Contraflow Bus-only Lane in off-peak directions via moveable concrete barriers.**

Transitways and Managed Lanes

INITIAL RANGE OF ALTERNATIVES CATEGORY	ALTERNATIVES TO BE EVALUATED FURTHER
Transitways	Transit Advantages at Junctions
	Bus on Shoulder - Right
	Dedicated Transitway - Left
	Dedicated Transitway - Off Alignment
Managed Lanes	High Occupancy Vehicle Lane
	High Occupancy Toll Lane
	Express Toll Lane
	Bus Only Lane
	Express Reversible Lanes
	Toll Lanes

We'd appreciate your comments on:

- Issues/concerns with design elements
- Preferences for design elements
- Locations where additional information needed

Transitways and Managed Lanes Workshop

Breakout 1: 45 min

Break: 10 min

Breakout 2: 45 min

BREAKOUT GROUPS

(color assigned groups)

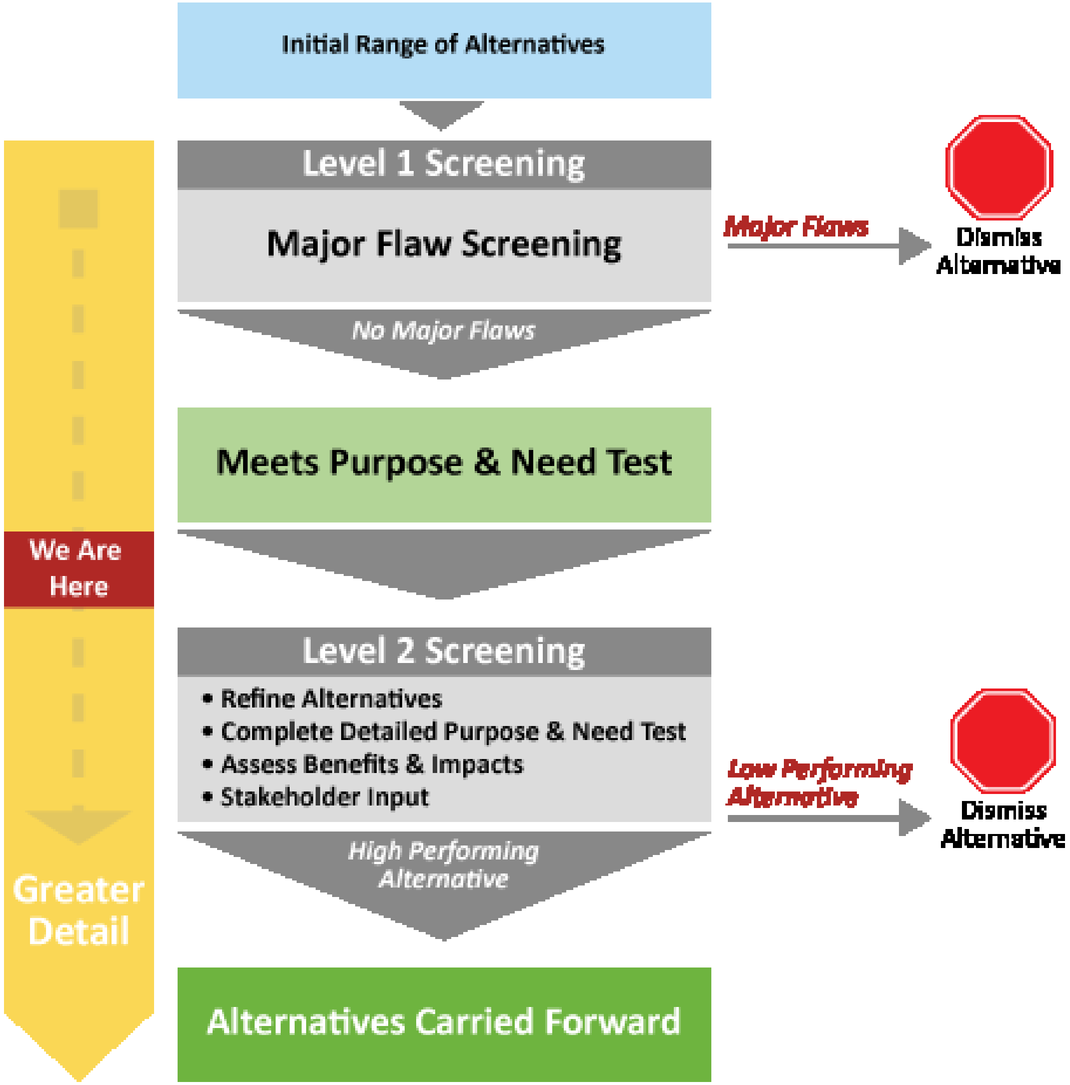
Breakout Feedback Report

Level 2 Screening Criteria Review

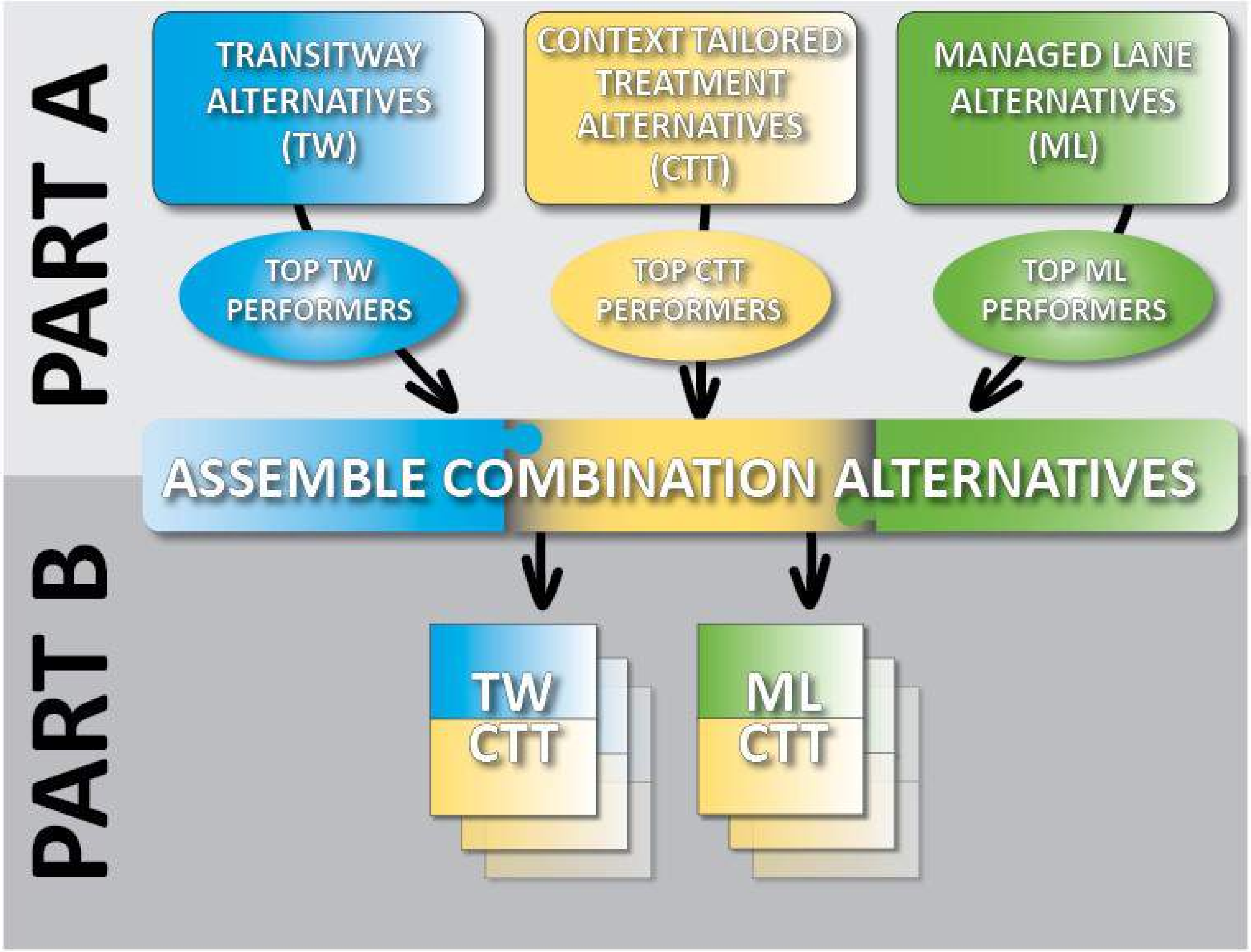
Level 1 Screening Summary

INITIAL RANGE OF ALTERNATIVES CATEGORY	INITIAL RANGE OF ALTERNATIVES	RECOMMENDED FOR DISMISSAL	ALTERNATIVES TO BE EVALUATED FURTHER
No-Action	No-Action	N/A	N/A
Transitways	Transit Advantages at Junctions		Transit Advantages at Junctions
	Bus on Shoulder - Right		Bus on Shoulder - Right
	Dedicated Transitway - Left		Dedicated Transitway - Left
	Dedicated Transitway - Off Alignment		Dedicated 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
	Toll Lanes		Toll Lanes
Tunnels and Causeways	Submerged Express Tunnel in Lake	Submerged Express Tunnel in Lake	
	Land Based Express Tunnel	Land Based Express Tunnel	
	Causeway in Lake	Causeway in Lake	
Context Tailored Treatments	Corridor Modernization		Corridor Modernization
	Compressed Roadway		Compressed Roadway
	Frontage Drive		Frontage Drive

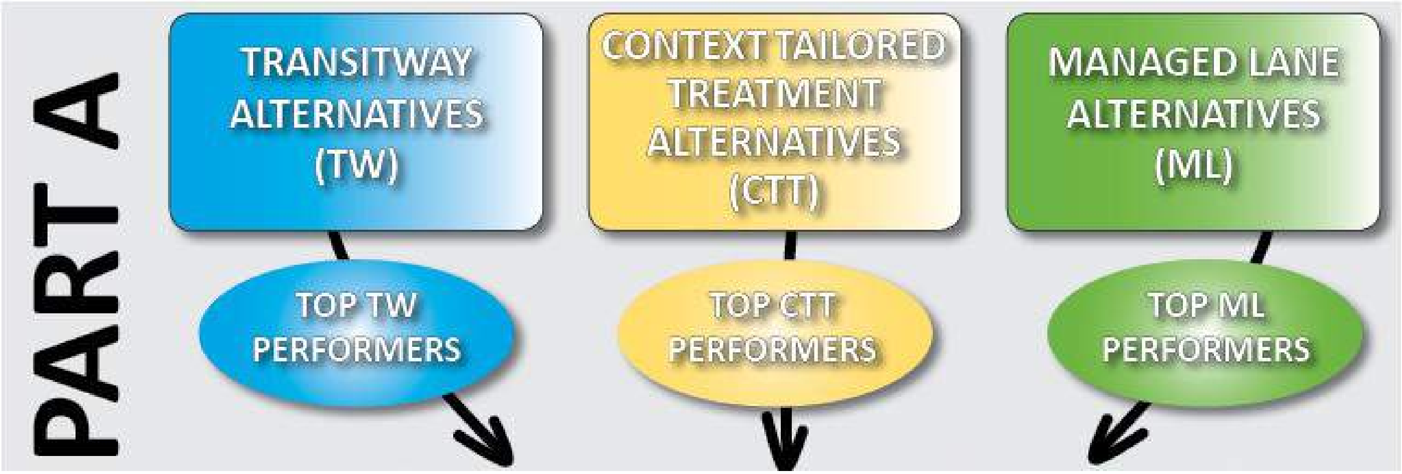
Alternatives Screening Process



Level 2 Screening Process



Level 2 Screening Process



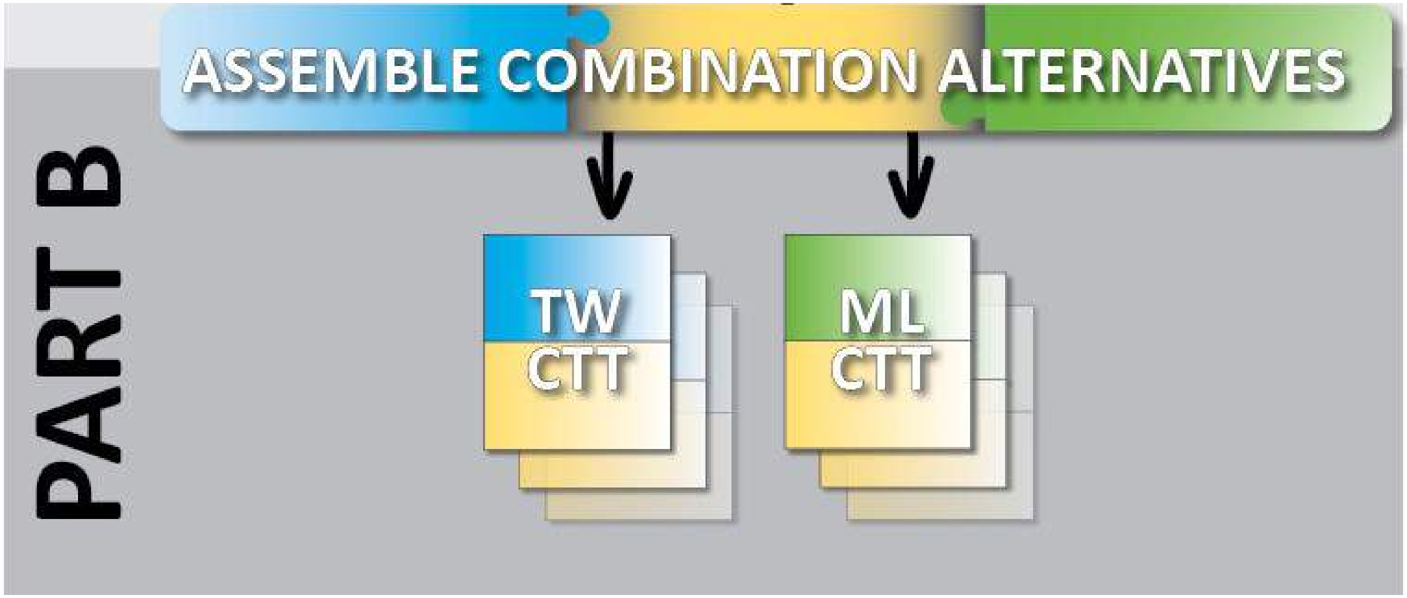
Part A

- Evaluate alternatives within each category (TW, ML, CTT)
- Relative comparisons between alternatives and No Build
- Goal is to select top alternatives in each category for further development and evaluation in Part B

Level 2 Screening Process

Part B

- Create multiple combination alternatives from Part A
- Evaluate combination alternatives with an expanded set of criteria
  - Transportation, Social, Economic, Environmental criteria
- Relative comparisons between alternatives and no build
- Top alternatives will be the *Alternatives Carried Forward*



Part A - Criteria

Criteria	Transitway (TW)	Context Tailored Treatment (CTT)	Managed Lane (ML)
Safety	✔	✔	✔
Mobility	✔	✔	✔
Ridership/Reliability	✔	✔	✔
Access	✔	✔	✔
Visual Effects	✔	✔	✔
Construction Cost	✔	✔	✔
Constructability	✔	✔	✔
Sustainability	✔	✔	✔
Equity	✔	✔	✔

SOURCE:
✔ Purpose and Need
✔ Social/Economic/Environmental Factors

Part B Criteria

Criteria	Combination Alternatives
Safety	✔
Mobility	✔
Ridership/Reliability	✔
Access	✔
Construction Cost	✔
Constructability	✔
Sustainability	✔
Environmental Resource Effects	✔
Park Space	✔
Adjacent Community Effects	✔
Compatibility with Regional and Local Plans	✔

SOURCE:

✔ Purpose and Need

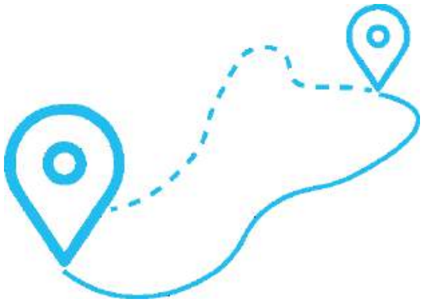
✔ Social/Economic/Environmental Factors

Questions?

Trail Design Status Update

1. Coordination with Chicago Park District.
2. Established overarching principles to guide design.
3. Applying principles to lay out and design of trails.

Lakefront Trail Design: Key Issues

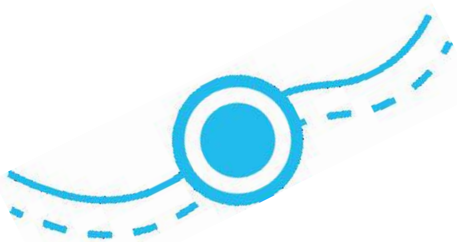


1. Separation & Alignment

- Trail dimensions
- Spacing guidelines
- Method of separation

2. Trail Access

- Grade-separated
- Street-level



3. Trail Junctions

- Landing pads
- Separation from bike trail

Lakefront Trail Design Concept

Montrose Avenue Junction (Looking North)

High Speed Lakefront Trail - Junction **Underpass** Concept

Lakefront Trail Design Concept

Wilson Avenue Junction* (Looking Northwest)

High Speed Lakefront Trail – Junction **Overpass** Concept

*** NLSD access ramps removed**

NLSD Phase I Study Next Steps

- Incorporate feedback and continue analyses
- Task Force #8: Winter 2018
  - Review pedestrian/bike concepts and CTT Level 2 Screening results
- NTTS Meeting: Winter 2017/2018


North Lake Shore Drive
www.northlakeshoredrive.org
Thank You