North Lake Shore Drive
Task Force Meeting #10
March 9, 2020

Welcome
Meeting Agenda

• Introduction
• Study Overview
• Level 2 Screening Update
• Managed Lanes (ML) Alternatives Review
  – ML Overview
  – ML Alternatives Evaluation and Results
  – ML Alternatives Workshop
• Next Steps
• Community Meetings
  – Montrose-Wilson-Lawrence Avenue Corridor
  – Diversey Parkway to Irving Park Road Corridor
  – Northern Terminus Traffic Study (NTTS)

• Community Outreach
  – Fifth Third Bike the Drive
  – Chicago Public Libraries

• Continued Project Study Group coordination
Task Force Meetings #10 and #11

• Task Force Meeting #10 (today)
  – Present Managed Lanes Alternatives evaluation
  – Managed Lanes Alternatives workshop
  – Post Meeting Comment Period through March 23, 2020 (two weeks)

• Task Force Meeting #11 (late spring 2020)
  – Review stakeholder comments, updates as applicable
  – Recommend Top Performing Managed Lanes Alternative(s)
  – Public Meeting #4 Preview

Public Meeting #4 will be held in the summer of 2020
Purpose and Need

**Purpose:** To improve the NLSD multi-modal transportation facility.

**Improvement Needs:**
- Improve safety for all users
- Improve mobility for all users
- Address infrastructure deficiencies
- Improve access and circulation

*Purpose and Need Statement is basis for evaluating alternatives.*
Alternatives Development & Evaluation

We are here
Alternatives Screening Process

- **Initial Range of Alternatives**
  - **Level 1 Screening**
    - **Major Flaw Screening**
      - **No Major Flaws**
        - **Level 2 Screening**
          - Refine Alternatives
          - Stakeholder Input
          - Purpose and Need Evaluation
          - **High Performing Alternative**
            - Alternatives Carried Forward
            - **Level 3 Screening**
              - **Preferred Alternative**

  - **Major Flaws**
    - Dismiss Alternative

  - **Low Performing Alternative**
    - Dismiss Alternative
Level 2 Screening Update
## Level 2 Screening

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Meeting held March 12, 2018
69 Attendees
Lakefront Trail & Park Access Concepts Workshop
Context Tailored Treatments Alternatives Update
**Task Force #8 - March 2018**

**Recommended Context Tailored Treatments Top Performing Alternative with Transit Advantages**

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**Managed Lanes**

- Express Toll Lane
- Express Reversible Lanes
- Toll Lanes
Level 2 Screening

Context Tailored Treatments
Top Performing Context Tailored Treatments with Transit Advantages*

*NLSD between Grand and Montrose Avenues is depicted.
## Level 2 Screening

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Task Force Meeting #9 Recap

• Meeting held July 10, 2018
• 53 Attendees
• Context Tailored Treatments Alternatives Update
• Transitways Alternatives Workshop
## Alternative to be Carried Forward

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**Task Force #9 – July 2018**

**Recommended Transitways Top Performing Alternative**
Level 2 Screening

Transitways
Dedicated Transitway – Left*

*NLSD between Grand and Montrose Avenues is depicted.

Alternative to be Carried Forward
## Level 2 Screening

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**Task Force #10 – TODAY**  
Review Managed Lanes  
Level 2 Screening

**Task Force Meeting #11 – May 2020**  
Recommend Top Performing Managed Lane Alternative(s)
Managed Lanes Overview
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.
Managed Lanes Benefits

Benefits

• Improved transit service
• Improved mobility
• Trip time reliability
• Increased efficiency of existing corridor
• Potential operational cost recovery
Managed Lanes Alternatives Review
Managed Lanes

Options that convert one or more existing general purpose lanes to a managed lane to provide high mobility for buses and some autos.

Eligibility standards which restrict the use of lanes to specific users

Physical configuration of the roadway
Vehicle Eligibility

• High Occupancy Vehicle Lane
• High Occupancy Toll Lane
• Bus Only Lane
• Express Toll Lane
• Express Reversible Lanes
• Toll Lanes

• 3+1 Bus Only Lane
• 3+1 Managed Lane
• 2+2 Managed Lanes
• 3+2 Reversible Managed Lanes
• 4+1 Contraflow Bus Only Lane
## Vehicle Eligibility

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To ensure free flow of transit and autos in the managed lanes, it is recommended to dismiss HOV and HOT.

These options are dismissed from further consideration

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These options fit within the Managed Lanes alternatives currently being evaluated.

Tolling as a funding/financing strategy will be considered in Level 3 Screening.
Roadway Configuration

- High Occupancy Vehicle Lane
- High Occupancy Toll Lane
- Bus Only Lane
- Express Toll Lane
- Express Reversible Lanes
- Toll Lanes (Level 3 Screening)

- 3+1 Bus Only Lane
- 3+1 Managed Lane
- 2+2 Managed Lanes
- 3+2 Reversible Managed Lanes
- 4+1 Contraflow Bus Only Lane

Presented at Task Force Meeting #7
## Managed Lanes Alternatives

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Managed Lanes Alternatives

Existing Typical Section Between Junctions
Managed Lanes Alternatives

3+1 Bus Only Lane*

*Converts one general purpose lane in each direction to a Bus-Only Managed Lane.
Managed Lanes Alternatives

3+1 Managed Lane*

*Converts one general purpose lane in each direction to a Shared Bus/Auto Managed Lane.
Managed Lanes Alternatives

2+2 Managed Lanes*

*Converts two general purpose lanes in each direction to Shared Bus/Auto Managed Lanes.
Managed Lanes Alternatives

3+2 Reversible Managed Lanes*

*Replaces one general purpose lane in each direction with two Reversible Managed Lanes.
Managed Lanes Alternatives

4+1 Contraflow Bus Only Lane*

*Provides Southbound Contraflow Bus-only Lane via moveable concrete barrier for A.M. Peak Period. Buses would operate in General Purpose Lanes with CTT Transit Advantages in P.M. Peak Period.
General Purpose Lanes Access

Existing Conditions

Existing Access – Full
Existing Access – Partial

Proposed Access

Proposed New Access - Full
Proposed New Access – Partial

Varies by Alternative
3+1 Bus Only Lane Access

Proposed General Purpose Lane Access

Proposed Managed Lanes Access

Bus Only Access
3+1 ML, 2+2 ML and 3+2 RML Access

Proposed General Purpose Lane Access

Proposed Managed Lanes Access

Bus/ Auto Access

Bus Only Access
Managed Lanes Access

Example Junction: 3+1 Bus Only Lane

General Purpose Lane Ramps

Managed Lane Ramps
Managed Lanes Alternatives
Evaluation & Results
Managed Lanes Evaluation

Managed Lane Evaluation Tools

CMAP Travel Demand Model
- “Macro” performance

VISSIM Model
- “Micro” performance
- Extensive calibration efforts
- Results based upon average of 20 model runs for both “average” and “poor” conditions

Average and Poor Conditions
- Based upon historical NLSD data
- Average conditions - good weather, no speed reduction (70% of the time)
- Poor conditions – bad weather, average speed reduced by 12% (30% of the time)

Managed Lanes Evaluation
Methodology
1. Major Flaw Review
2. Ratio scoring, comparison to No Action Alternative
3. Select highest performer(s)
Managed Lanes Evaluation – Major Flaw Review

Major flaw review

• Unique project setting, early environmental considerations
• Goal: identify and dismiss alternatives with distinguishing or relatively higher impacts

Most constrained area is between Irving Park Road and Montrose Avenue
3+2 Reversible Managed Lanes Alternative (3+2 RML)

The 3+2 RML Alternative is the widest of all ML alternatives
- Two barrier medians are required

The 3+2 RML Alternative footprint was reduced as much as possible
- Landscaped median eliminated
The typical 3+2 RML cross section would **encroach up to 25 feet** into the Golf Course.

Even with minimization techniques, the 3+2 RML cross section would encroach **up to 13 feet** into the Golf Course.

**No other NLSD Alternative encroaches into the Golf Course.**

**Other alternatives avoid this impact while addressing the Purpose and Need.**
Managed Lanes Evaluation – Major Flaw Review

- The typical 3+2 RML cross section would **encroach up to 25 feet** into the Golf Course.
- Even with minimization techniques, the 3+2 RML cross section would **encroach up to 13 feet** into the Golf Course.
- No other NLSD Alternative encroaches into the Golf Course.
- Other alternatives avoid this impact while addressing the Purpose and Need.

**It is recommended to remove this alternative from further consideration, based on Major Flaws.**
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Managed Lanes Evaluation Criteria

1. **Transit Mobility (bus travel times)**
   - A.M. and P.M. peaks
   - Average and poor conditions
   - Lower travel times favored

2. **Transit Reliability**
   - A.M. and P.M. peaks
   - Travel time range between average and poor conditions
   - Smallest range favored

3. **Total Person Throughput**
   - Total auto and transit riders in NLSD corridor
   - A.M. and P.M. peaks
   - Greatest throughput favored
4. **Vehicular Mobility**
- A.M. and P.M. peaks
- Average and poor conditions
- Lower travel times favored

5. **Daily Traffic Volume Change**
- Converting GP Lanes to Managed Lanes will change traffic volumes on the Outer Drive
- There may be traffic attracted or diverted
- Relative least amount of *traffic diversion or attraction* favored
Transit Performance Analysis

- Includes all 7 CTA express bus routes on the Inner and Outer Drives, between Grand Avenue and Foster Avenue
- Travel times are a combined average of all routes
Transit Mobility – Average Conditions

Summary
All Build Alternatives reduce bus travel times compared to the No-Action

Bus Travel Time (minutes)*

*AM peak hour in southbound direction; average of all routes
Transit Mobility – Poor Conditions

Summary
All Build Alternatives reduce bus travel times compared to the No-Action

*AM peak hour in southbound direction; average of all routes
Transit Reliability – All Conditions

Summary
All Build Alternatives substantially reduce travel time ranges compared to the No-Action

Bus Travel Time (minutes)*

*AM peak hour in southbound direction; average of all routes
**Summary**

- The 3+1 ML and 4+1 CBOL Alternatives are the relative best.
- The 2+2 ML Alternative is the relative worst.

*AM peak hour in southbound direction*
Summary

- The 3+1 ML and 4+1 CBOL Alternatives are the relative best.
- The 2+2 ML Alternative is the relative worst.

*AM peak hour in southbound direction*
Vehicular Mobility – Average Conditions

Managed Lanes

No-Action

3+1 Bus Only Lane

3+1 Managed Lane

2+2 Managed Lanes

4+1 Contraflow Bus Only Lane

Motor Vehicle Travel Time (minutes)*

*AM peak hour in southbound direction
Vehicular Mobility – Poor Conditions

Managed Lanes

No-Action

3+1 Bus Only Lane

3+1 Managed Lane

2+2 Managed Lanes

4+1 Contraflow Bus Only Lane

Summary

All Build Alternatives reduce vehicular travel times compared to the No-Action

Motor Vehicle Travel Time (minutes)*

*AM peak hour in southbound direction
Total Person Throughput – Peak Hour

Summary

All Build Alternatives increase person throughput as compared to the No-Action

*AM peak hour in southbound direction; PM peak hour in northbound direction; reflects LaSalle Drive to Fullerton Avenue
Daily Volume Change: 3+1 BOL

3+1 Bus Only Lane

Traffic Diverted

Traffic Attracted to NLSD

Relatively high diversion

Hollywood Avenue
Irving Park Road
Belmont Avenue
Grand Avenue

Maximum Diversion (10,000)

Zero Change

Maximum Attraction (20,000)
Daily Volume Change: 3+1 ML

- 3+1 Managed Lane
- Hollywood Avenue
- Irving Park Road
- Belmont Avenue
- Grand Avenue

Traffic Diverted to NLSD
- Relatively low diversion
- Maximum Diversion (10,000)

Traffic Attracted to NLSD
- Moderate attraction
- Maximum Attraction (20,000)

Zero Change
Daily Volume Change: 2+2 ML

2+2 Managed Lanes

Traffic Diverted to NLSD

Relatively high diversion

Moderate attraction

Zero Change

Maximum Diversion (10,000)

Maximum Attraction (20,000)
Daily Volume Change: 4+1 CBOL

4+1 Contraflow Bus Only Lane

- Hollywood Avenue
- Irving Park Road
- Belmont Avenue
- Grand Avenue

Traffic Diverted | Traffic Attracted to NLSD

Moderate diversion

Relatively high attraction

Zero Change

Maximum Diversion (10,000)

Maximum Attraction (20,000)
Managed Lanes – Composite Score

Ratio Method

Scoring provides a composite, data driven result

Ratio Scoring Methodology

• Score individual criteria for each alternative; worst performing alternative is scored as 1, best performing alternative is scored as 10

• Proportional scores for everything in between

• Add individual scores to create overall score for each alternative

• Nine criteria, for a maximum score of 90

Example

<table>
<thead>
<tr>
<th>Travel Time Savings</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 minute</td>
<td>1</td>
</tr>
<tr>
<td>11 minutes</td>
<td>5.3</td>
</tr>
<tr>
<td>20 minutes</td>
<td>10</td>
</tr>
</tbody>
</table>
Managed Lanes – Composite Score

Score

No-Action 3+1 Bus Only Lane 3+1 Managed Lane 2+2 Managed Lane 4+1 Contraflow Bus Only Lane

Traffic Volume Change
Total Person Throughput
Vehicular Mobility - ML (Poor)
Vehicular Mobility - ML (Average)
Vehicular Mobility - GPL (Poor)
Vehicular Mobility - GPL (Average)
Transit Reliability
Transit Mobility (Poor)
Transit Mobility (Average)
Managed Lanes Workshop

Break: 10 min
Workshop: 60 minutes
Breakout Feedback Report

BREAKOUT GROUPS
(color assigned groups)
## Managed Lanes

<table>
<thead>
<tr>
<th>Lane Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Occupancy Vehicle Lane</td>
</tr>
<tr>
<td>High Occupancy Toll Lane</td>
</tr>
<tr>
<td>3+1 Bus Only Lane</td>
</tr>
<tr>
<td>3+1 Managed Lane</td>
</tr>
<tr>
<td>2+2 Managed Lanes</td>
</tr>
<tr>
<td>4+1 Contraflow Bus Only Lane</td>
</tr>
<tr>
<td>3+2 Reversible Managed Lanes</td>
</tr>
</tbody>
</table>

Recommend to carry forward 1 to 2 alternatives for Level 3 Screening at Task Force Meeting #11
• Review Feedback & Confirm Potential ML Alternatives to be Carried Forward
• Task Force Meeting #11: Late Spring 2020
  – Present ML Alternatives to be Carried Forward
  – Review Level 3 Screening Process and Public Meeting Preview
• Public Meeting #4: Summer 2020

Please provide comments by March 23 to be included as part of the meeting record.
Thank You

Please join us in the back of the room to review the CTT and TW refinements

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