North Lake Shore Drive
Phase I Study
Montrose-Wilson-Lawrence Corridor
Community Meeting #2
January 24, 2019

Welcome
Meeting Agenda

• Project Background and Status
• Montrose-Wilson-Lawrence (MWL) Corridor Community Meeting #1 Recap
• Range of MWL Alternatives
• MWL Alternatives Evaluation
• Recommended Top Performing Alternatives for Further Analysis
• Alternatives Workshop

Next Steps
Project Description

• Study area
  - Grand Avenue to Hollywood Avenue
  - 11 neighborhoods, 6 wards
  - 24 bridges and tunnels
  - 12 cross-road junctions

• Over 80 years old and in need of reconstruction
NLSD Study Overview

Phase I
Preliminary Engineering and Environmental Studies

Phase II
Contract Plan Preparation and Right-of-Way Acquisition

Phase III
Construction

✅ Phase I Study anticipated completion: 2021
✅ Phase II and Phase III are not funded
✅ Project Purpose: improve safety, mobility, access, condition/design
✅ Alternatives Evaluation: Context Tailored Treatments (CTT), Transitways, and Managed Lanes (ongoing)
✅ Shoreline, Lakefront Trail improvements

For more information:
http://northlakeshoredrive.org
MWL Coordination Process

• Parallels overall NLSD study process
• Supplements past coordination efforts
• Compatible with overall NLSD Alternatives

• Meeting #1 (October 17, 2018)
  – Existing conditions review and workshop

• Meeting #2 (January 24, 2019)
  – Alternatives evaluation, finalist alternatives workshop

• Meeting #3 (Spring 2019)
  – Recommended Preferred Alternative
Montrose-Wilson-Lawrence Corridor Community Meeting #1 Recap
• Meeting held October 17, 2018
• 41 attendees
• Presentation and Needs Assessment Workshop
• Topics covered:
  – Project Background
  – Existing Conditions on MWL Corridor
  – Comments Received on MWL Corridor
  – Needs and Issues Identification
Comments Received

• Community access very important
• Improve park and transit access
• Lakefront Trail crossings are critical safety issues
• Support for motor vehicle access at Wilson Avenue
• Support for consolidating access between Montrose Avenue and Lawrence Avenue
• Support for dedicated bus lanes, additional green space
• Montrose Avenue had the highest concentration of comments
Montrose-Wilson-Lawrence Corridor
Range of Alternatives
12 Build Alternatives Developed

- Existing layout
- Consolidate access
- Combinations

Organized into 3 groups (similar access)

- Group A: 11-12 movements
- Group B: 10 movements
- Group C: 8 movements

A “movement” is an access route to/from the Outer Drive
Group A Example: 12 movements

Alternative A-1
Group A Alternatives

Alternative A – 1

Montrose Avenue
Wilson Avenue
Marine Drive
Lawrence Avenue

Alternative A – 2

Alternative A - 3

Alternative A - 4
Group B Example: 10 movements

Alternative B-4
Group C Example: 8 movements

Alternative C-3
Group C Alternatives

Alternative C – 1

Alternative C – 2

Alternative C - 3

Alternative C - 4
Questions?
Montrose-Wilson-Lawrence Corridor Alternatives Evaluation
MWL Evaluation Criteria

Evaluation Criteria linked to Purpose and Need, stakeholder feedback

- Safety
- Mobility
- Park Access
- Green Space
MWL Evaluation Criteria

Safety
• Predicted crash frequency and severity (Outer Drive)

Mobility
• Intersection Level of Service (local system)
• Delay (overall MWL system)
• Emergency vehicle travel times to Weiss Hospital

Park Access
• Number of east-west conflict points (bike/ped)

Green Space
• Net change in green space
Safety and Access Improvements

- **Bike/Ped safety improvements, common to all MWL Alternatives**
  - Multi-use paths, bike lanes
  - Lakefront Trail reconstruction
  - Underpasses at Lakefront Trail crossings

- **Transit access improvements, common to all MWL Alternatives**
Junction (Ramp) Spacing and Safety

National Research – shows relationship between junction (ramp) spacing and safety

- Complex maneuvers (changing lanes, accelerating, decelerating, weaving) create safety concerns
- Sufficient distance needed between decision points
National Ramp Spacing Guideline: 1,000 ft

Existing ramp spacing is less than 500 feet

- Early research regarding safety benefits of increased ramp spacing
- Subsequent research: Highway Safety Manual

National Academy of Sciences/Transportation Research Board Report #687
Quantitative analysis tool (Highway Safety Manual)

- Can be used for a variety of roadway types
- Key inputs: design features, traffic volumes
- Key factors: ramp spacing, roadway curvature
- Output: predicted crashes (severity and frequency)
  - Relative comparison of Outer Drive safety performance
Mobility Evaluation

**Intersection Level of Service** – quality of travel flow at signalized intersections, like a report card

**System Delay** – time lost due to congestion on Outer Drive and arterial system

**Emergency Vehicle Travel Times to Weiss Hospital** – measured from points on Outer Drive (south of Montrose, north of Lawrence)
Existing Bike/Ped Volume

- Significant east-west demand
- Lack of existing bike/pedestrian tunnels
- Park access along surface streets

CDOT Bike Map

- Lawrence Avenue and Wilson Avenue are major east-west bike corridors
- Park gateways
Number of east-west conflict points (bike/ped)

- Improving park access a key project purpose and stakeholder concern
- Intersections increase bike/ped safety risk, hinder park access
- Reducing the number of conflict points further enhances bike/ped safety and park access
Opportunities to increase green space
Project is within a historic park
(avoid or minimize impacts)
Ratio Method

- 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
- 12 factors within 4 main criteria
- Maximum score of 120

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<th>New Green Space</th>
<th>Score</th>
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<td>1 acre</td>
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<td>5.2</td>
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<td>20 acres</td>
<td>10</td>
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Alternatives Evaluation - Scoring

Max Score = 120

Safety (2 factors/20 points max)
- Severe Crashes
- Multi-Vehicle Crashes

Green Space (1 factor/10 points max)
- Acres of new green space

Access (1 factor/10 points max)
- Number of E-W Conflict Points

Mobility (8 factors/80 points max)
- Intersection LOS (AM, PM)
- System Delay (AM, PM)
- Emergency Vehicle Travel Times
  - NB, SB, AM, PM
Group A Scoring

Alternative A-3 is recommended for further evaluation

No Action: 51
A-1: 82
A-2: 65
A-3: 100
A-4: 88

- Mobility
- Access
- Green Space
- Safety
Alternative A-3

- Montrose and Wilson Avenue
- Consolidated southbound access
- Northbound Montrose access
- Northbound frontage drive

Montrose Avenue

Wilson Avenue

Marine Drive
Group B Scoring

Alternatives B-3 and B-4 are recommended for further evaluation

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<th>Access</th>
<th>Green Space</th>
<th>Safety</th>
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Recommended Group B Finalists

Alternative B-3

Montrose and Wilson Avenue
Consolidated southbound access
Northbound frontage drive

Wilson Avenue

Montrose Avenue

Marine Drive
Alternative B-4

Montrose and Wilson Avenue
Consolidated southbound access
Northbound exits

Marine Drive

Montrose Avenue

Wilson Avenue
Alternative C-3 is recommended for further evaluation
Recommended Group C Finalist

Alternative C-3

Montrose and Lawrence Avenue
Half Compressed Diamond Junctions
Recommended Finalist Alternatives

Alternative A – 3

Alternative B – 4

Montrose Avenue

Wilson Avenue

Marine Drive

Lawrence Avenue

Alternative B – 3

Alternative C - 3
Questions?
Alternatives Workshop

Please join a table at the back of the room
• Each table will have the same information
• Facilitators will describe the finalist alternatives, answer questions
• Facilitators will record comments
• Fill out a comment form, or mail it by February 20th
• Workshop will conclude at 8:00 PM

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Review the finalist alternatives and provide input:

• Which aspects of the designs do you like?
• Which do you not like?
• What refinements would you suggest?
• Any additional criteria we should take into consideration during the next round of evaluation?

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Next Steps

Refine alternatives based upon stakeholder feedback

- Further evaluation
- Compare remaining alternatives

MWL Community Meeting #3 (Spring 2019)

- Present and discuss recommended preferred alternative