



North Lake Shore Drive Phase I Study

**Montrose-Wilson-Lawrence Corridor
Community Meeting #2**

January 24, 2019

Welcome

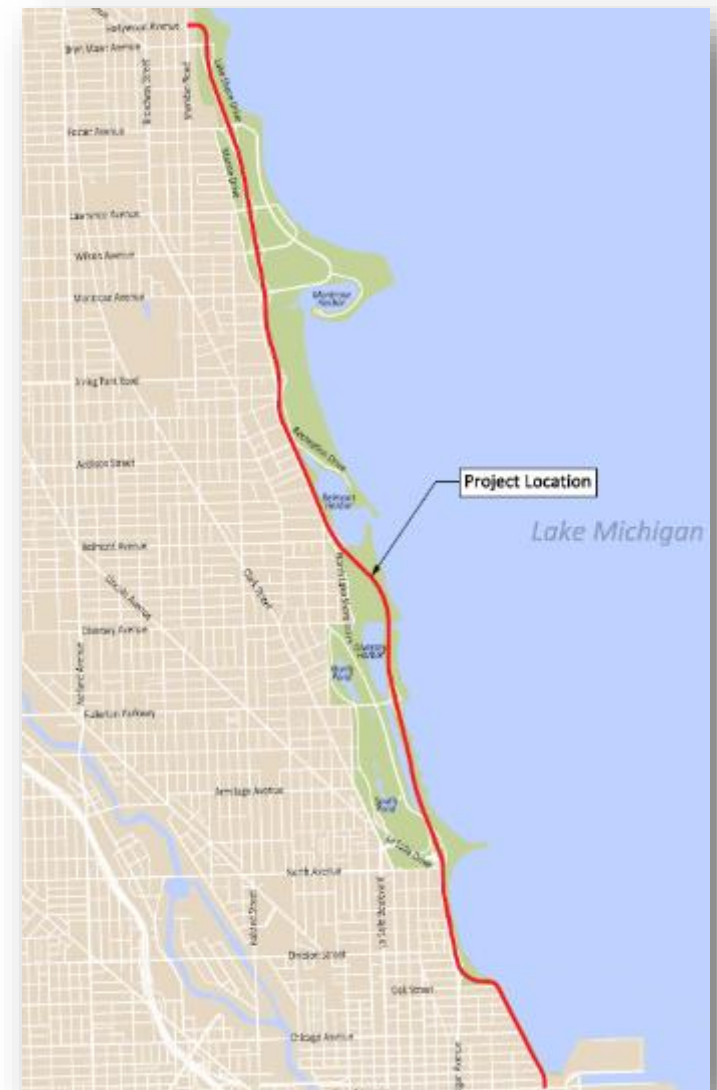


Meeting Agenda

- 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 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



MWL Corridor Community Meeting #1

- 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

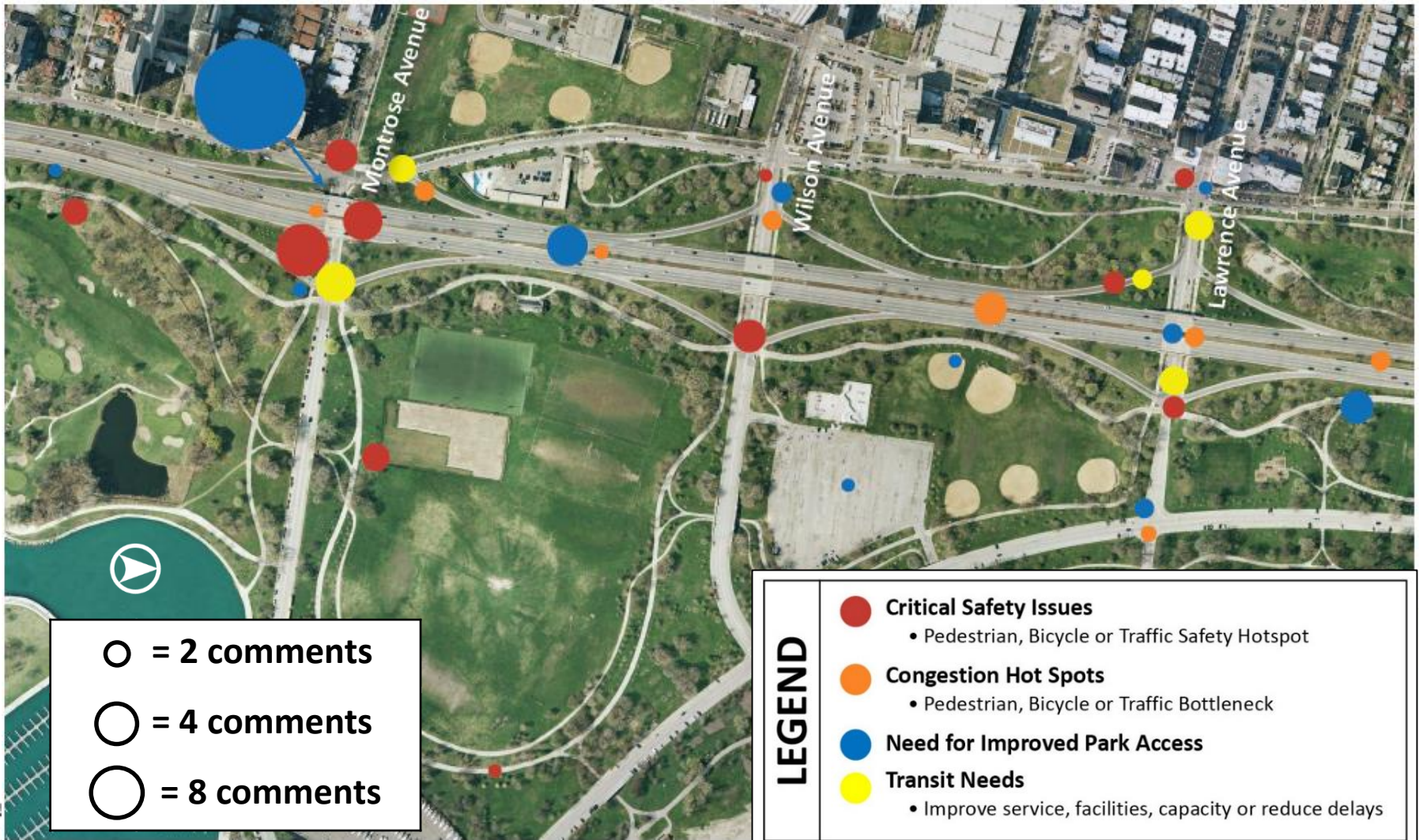


MWL Corridor Community Meeting #1

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

MWL Corridor Community Meeting #1





Montrose-Wilson-Lawrence Corridor Range of Alternatives



MWL Alternatives Development

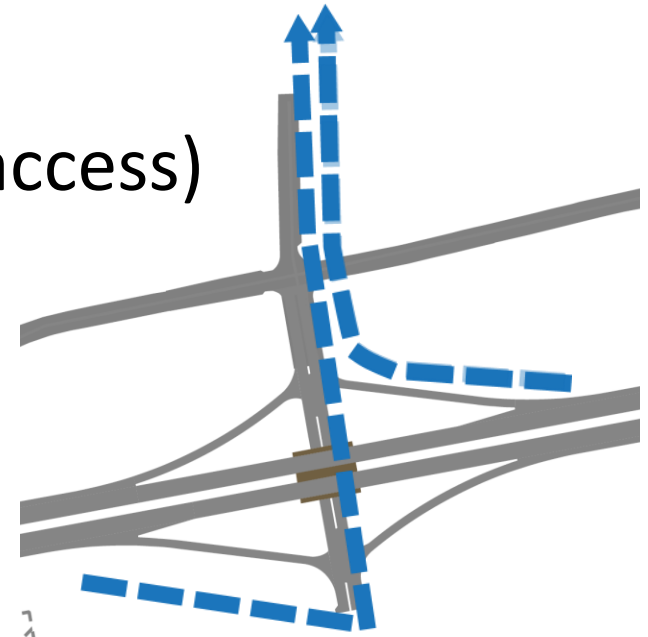
12 Build Alternatives Developed

- Existing layout
- Consolidate access
- Combinations

Organized into 3 groups (similar access)

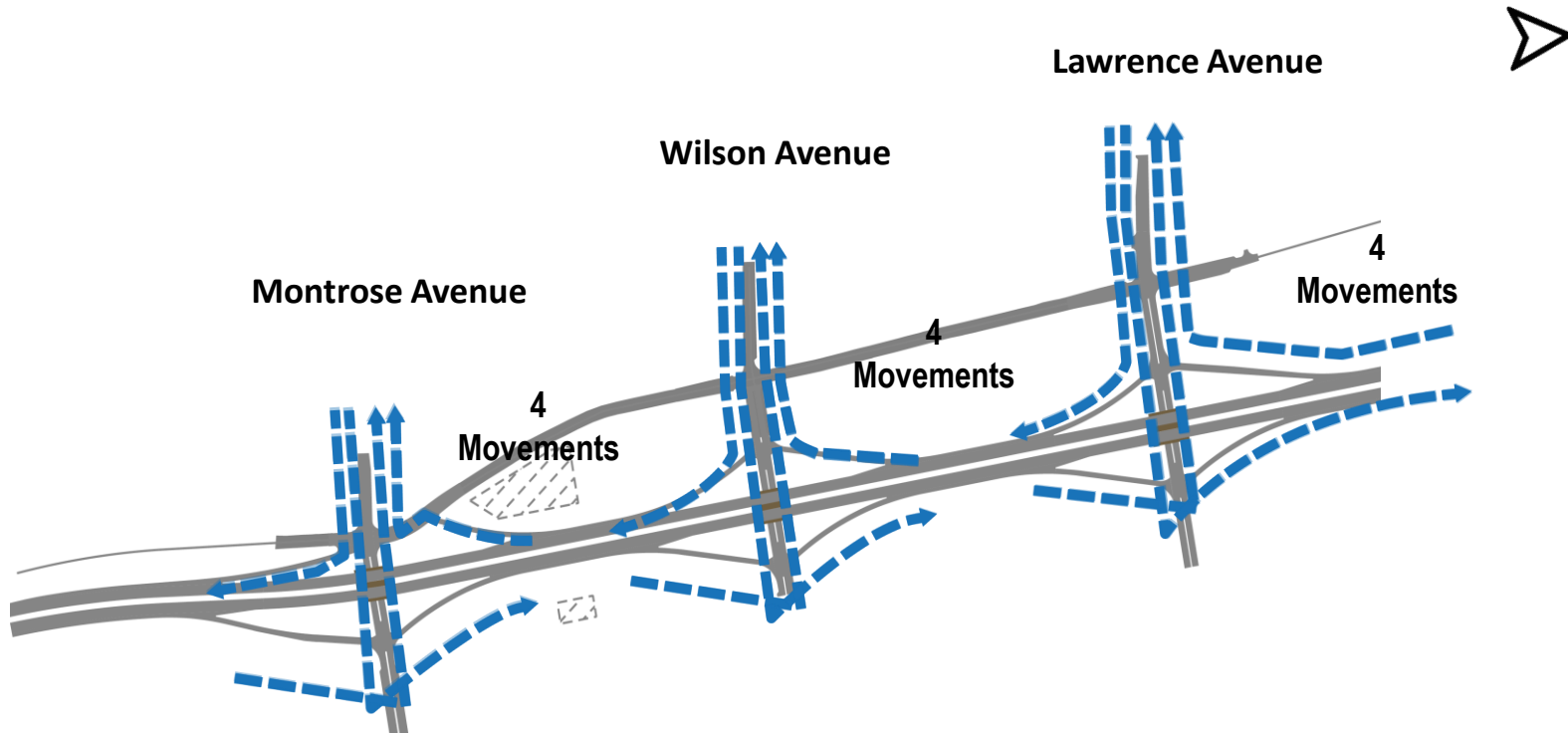
- Group A: 11-12 movements
- Group B: 10 movements
- Group C: 8 movements

A “movement” is an access route to/from the Outer Drive



MWL Alternatives Development

Group A Example: 12 movements

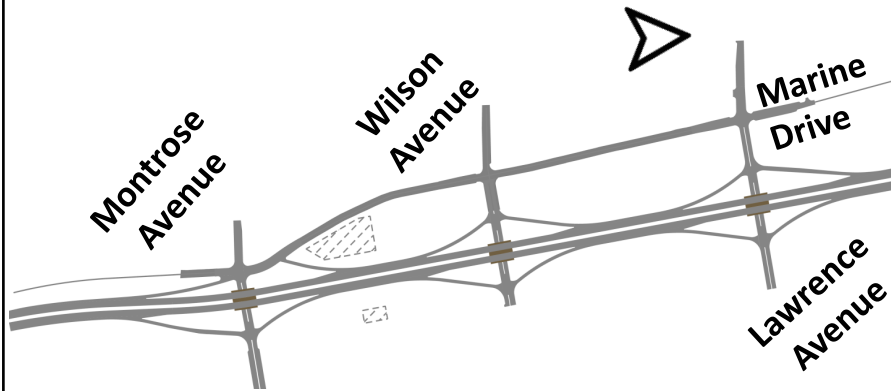


Alternative A-1

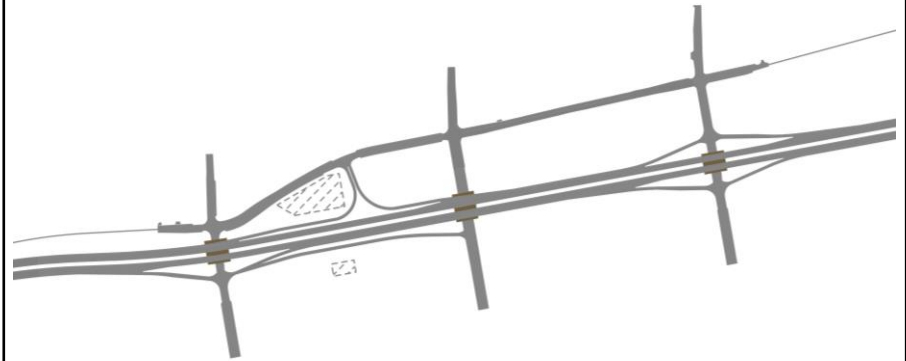


Group A Alternatives

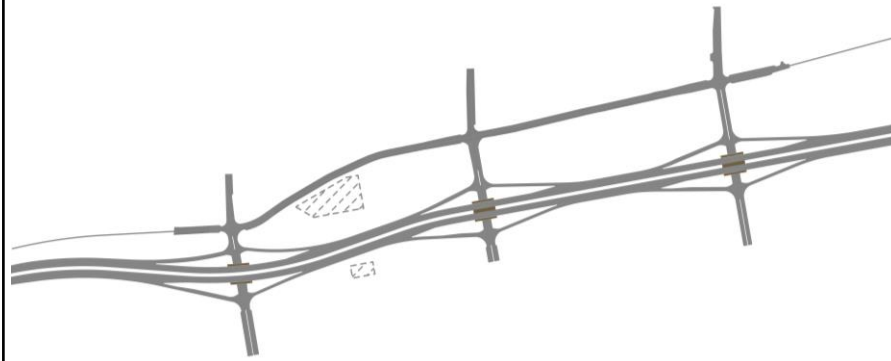
Alternative A – 1



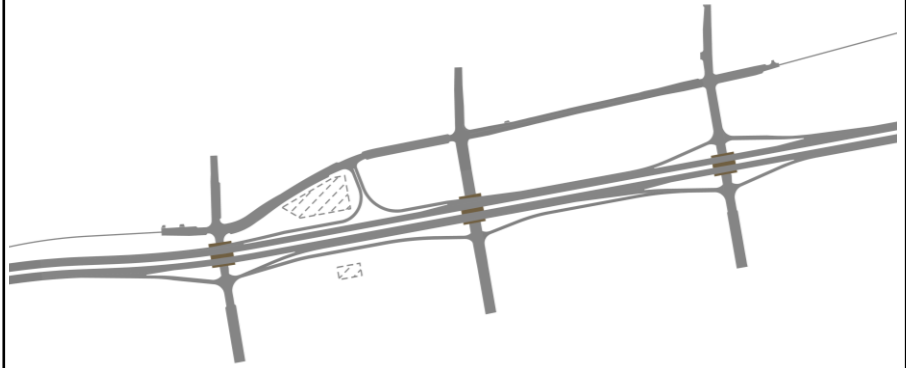
Alternative A - 3



Alternative A – 2

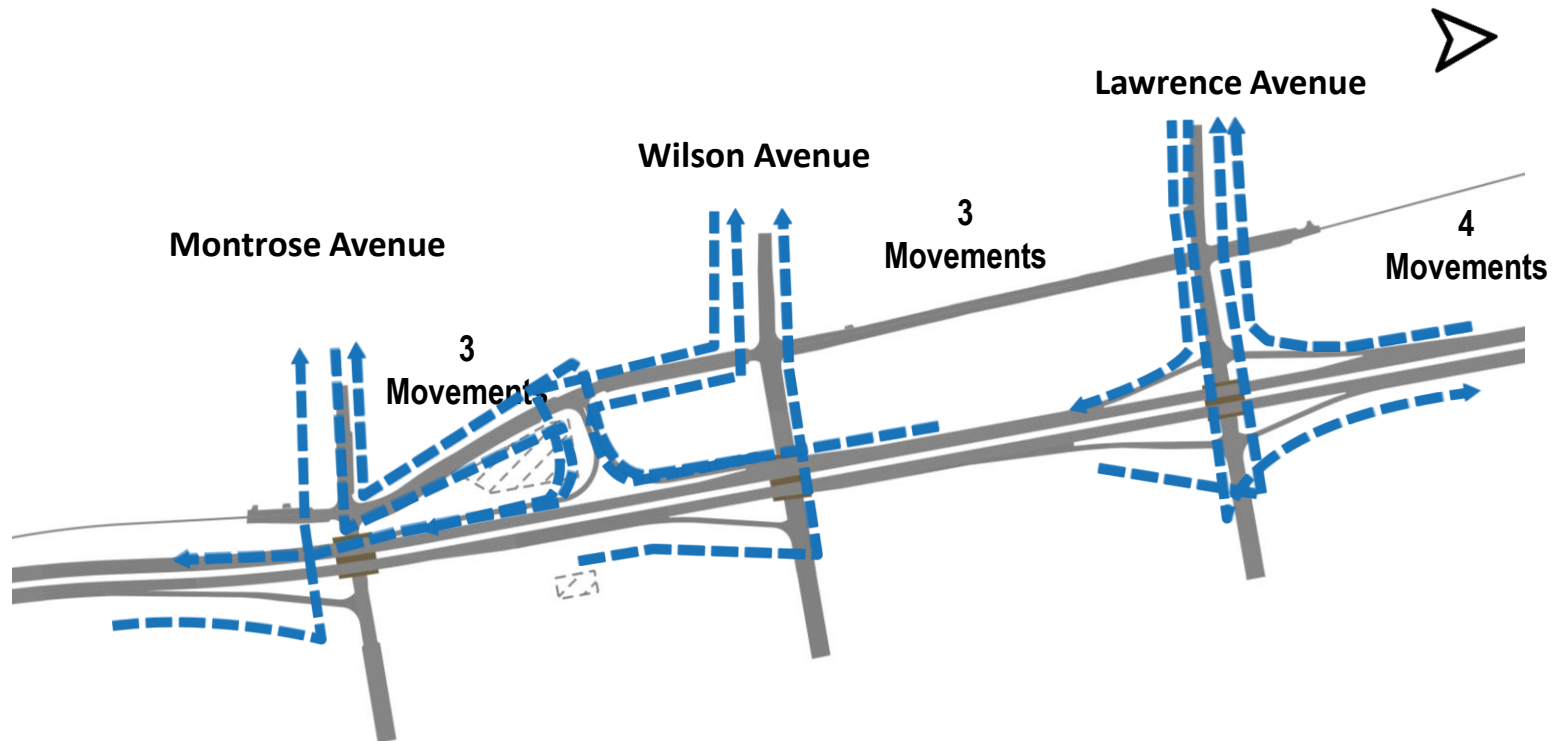


Alternative A - 4



MWL Alternatives Development

Group B Example: 10 movements

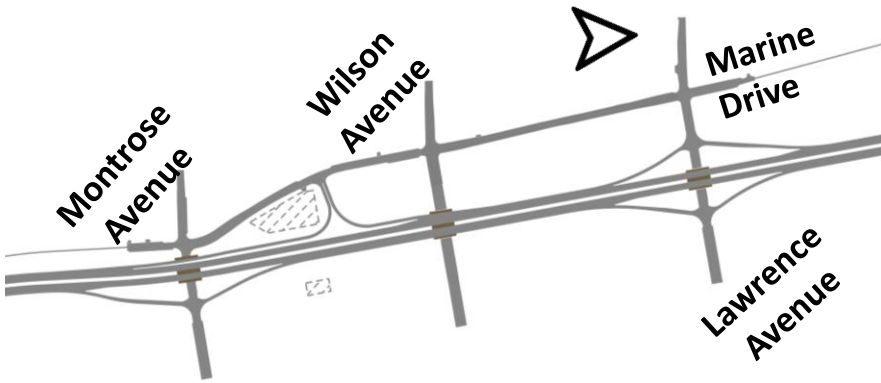


Alternative B-4

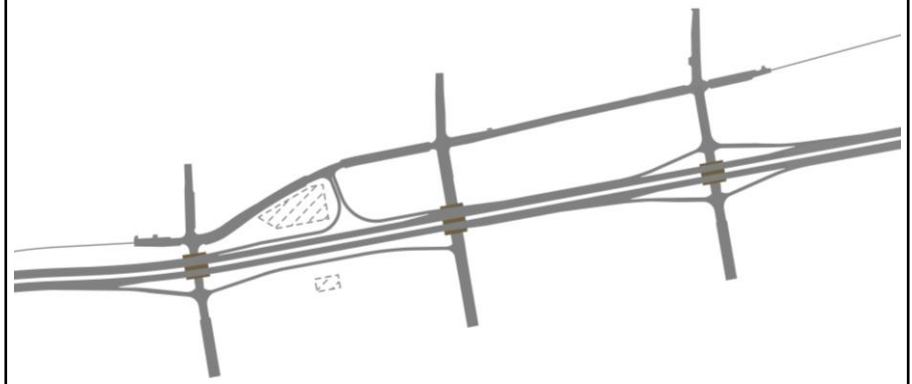


Group B Alternatives

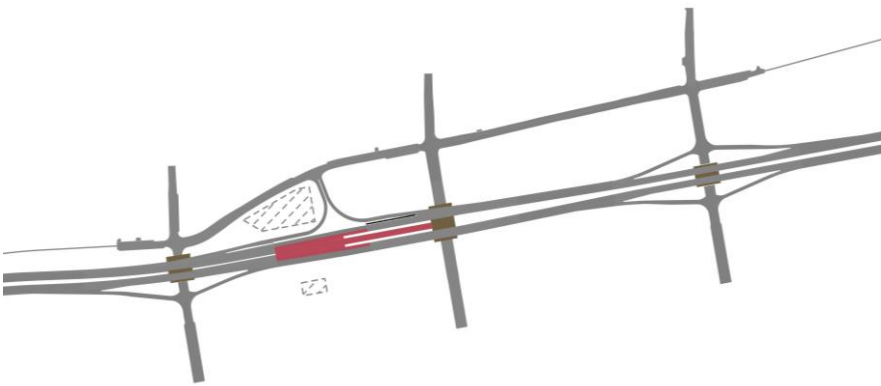
Alternative B – 1



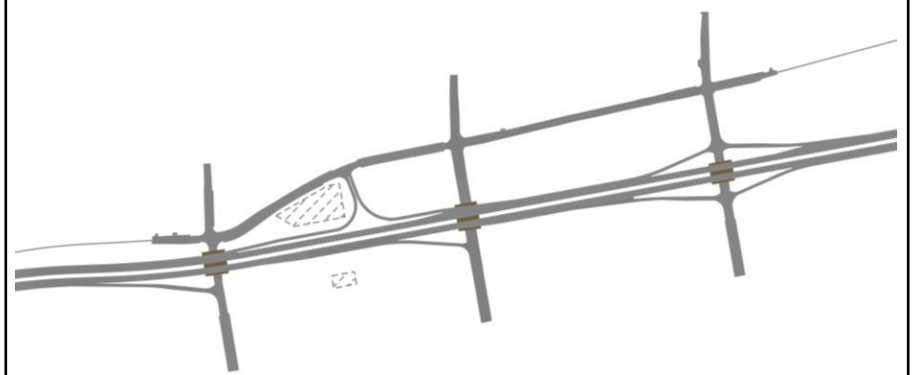
Alternative B - 3



Alternative B – 2

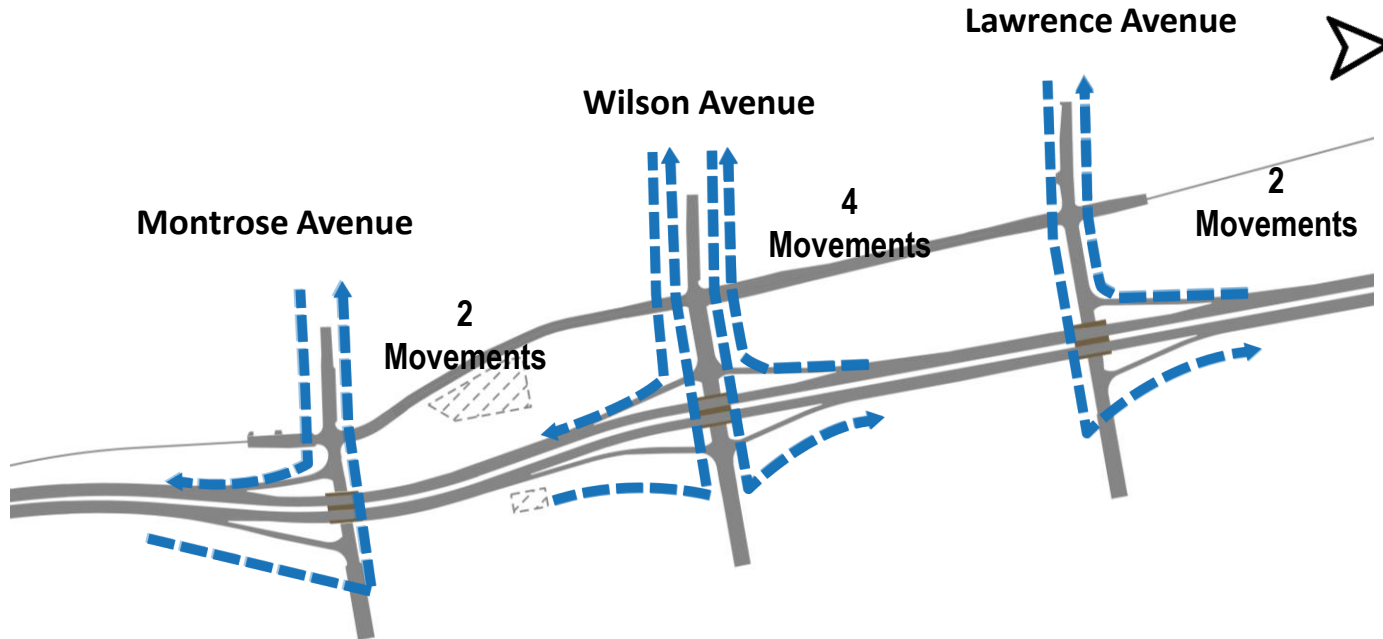


Alternative B - 4



MWL Alternatives Development

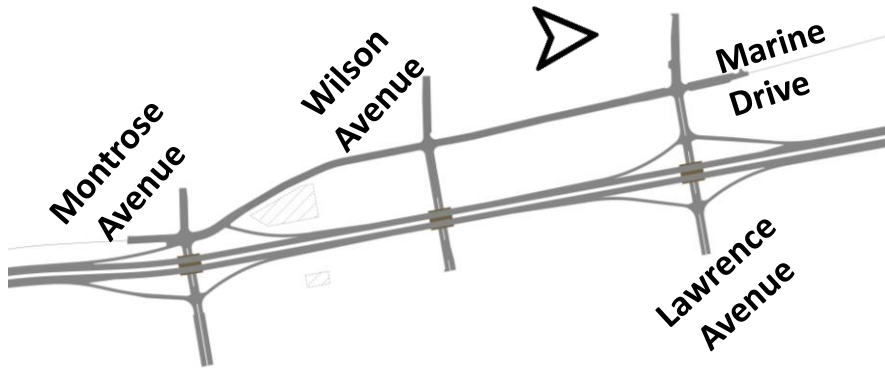
Group C Example: 8 movements



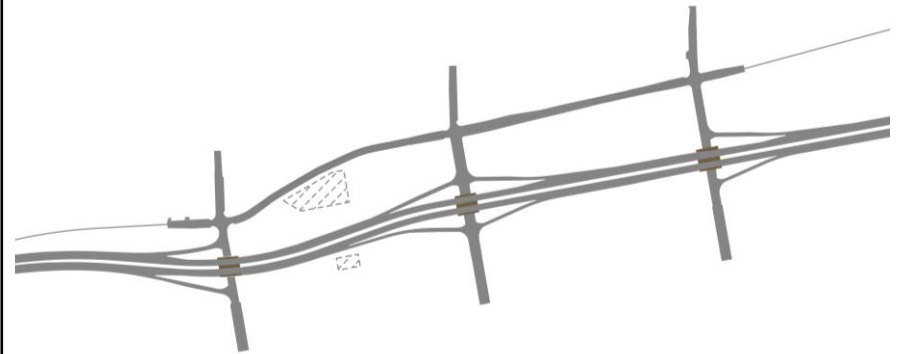
Alternative C-3

Group C Alternatives

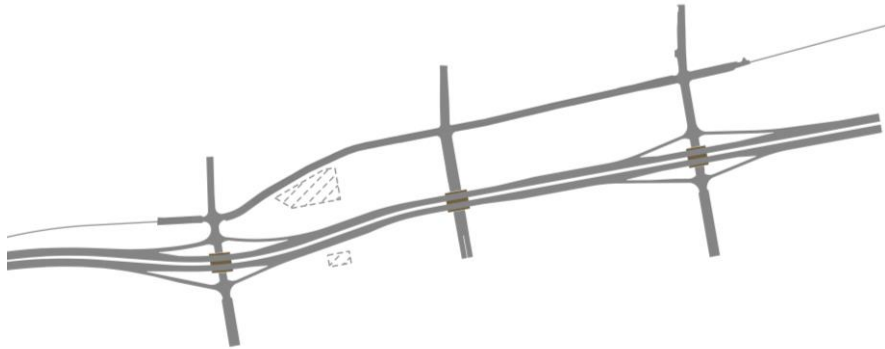
Alternative C – 1



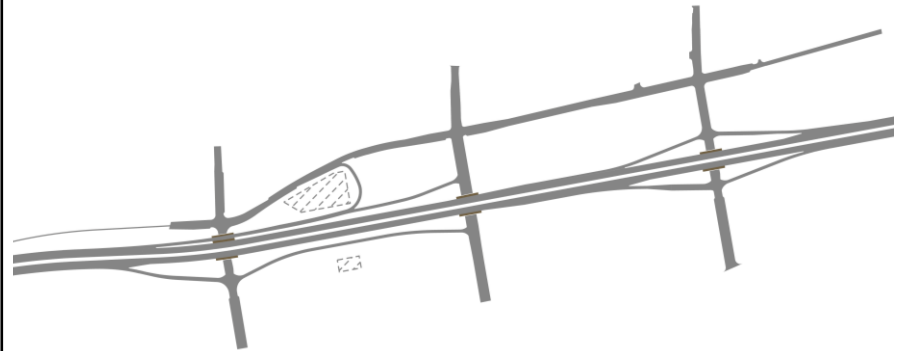
Alternative C - 3



Alternative C – 2



Alternative C - 4







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

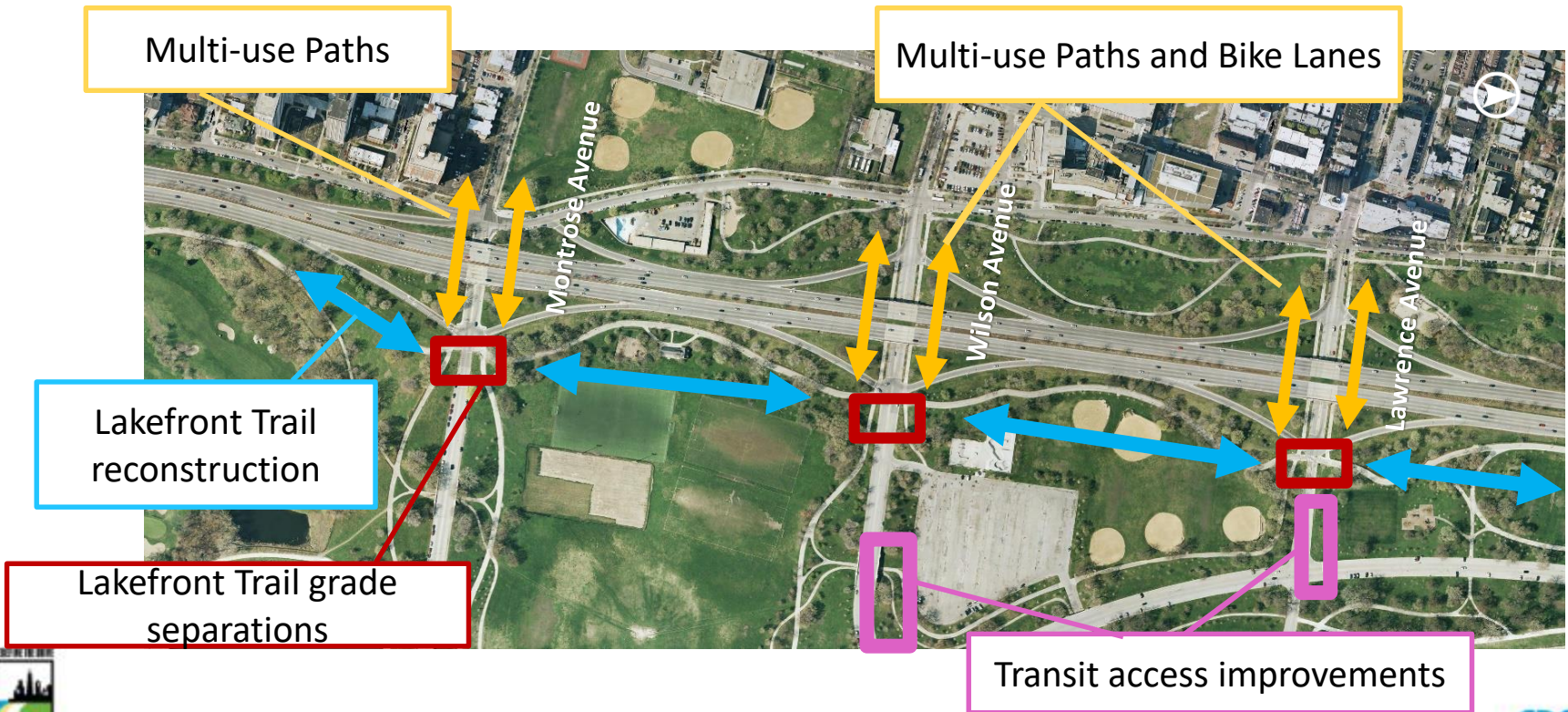
- Number of east-west conflict points (bike/ped)

Green Space

- Net change in green space

Safety and Access Improvements

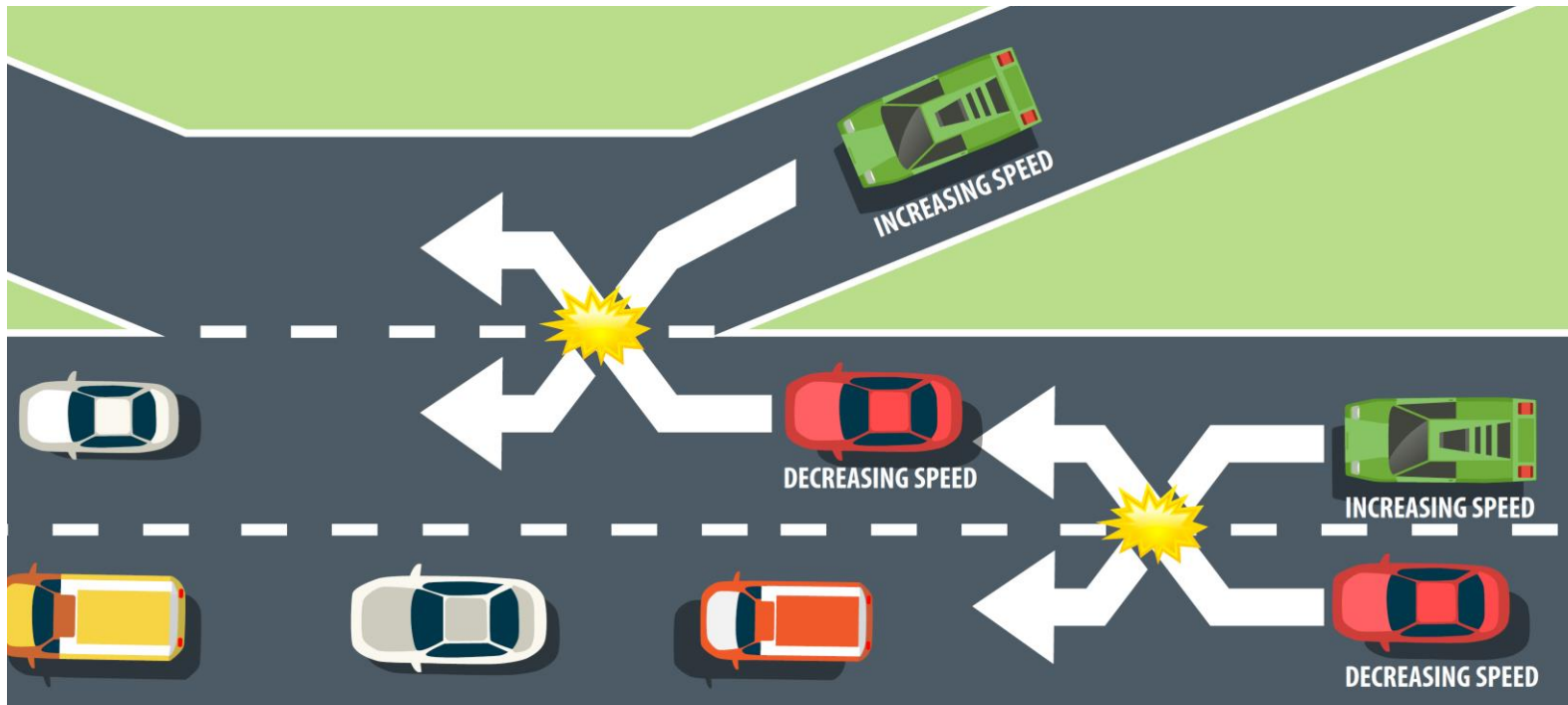
- **Bike/Ped safety improvements, common to all MWL Alternatives**
 - ✓ Multi-use paths, bike lanes
 - ✓ Lakefront Trail reconstruction
 - ✓ Underpasses at Lakefront Trail crossings
- **Transit access improvements, common to all MWL Alternatives**



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



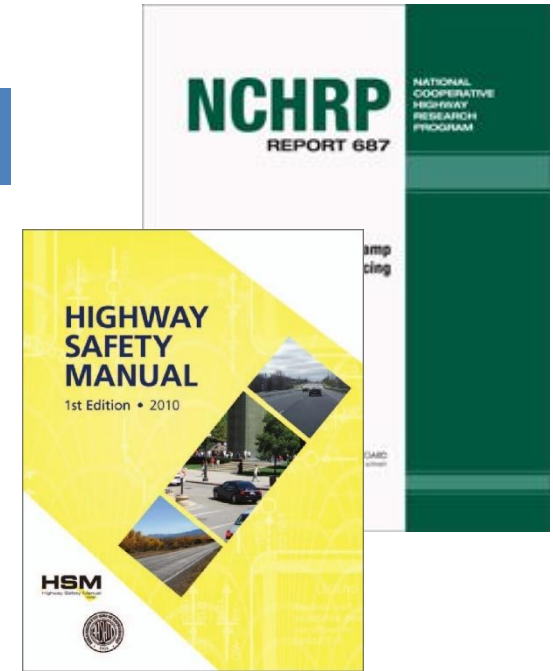
Junction (Ramp) Spacing and Safety

National Ramp Spacing Guideline: 1,000 ft

Existing ramp spacing is less than 500 feet

National Academy of Sciences/Transportation
Research Board Report #687

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









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

Level of Service	Flow Conditions
A	
B	
C	
D	
E	
F	

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

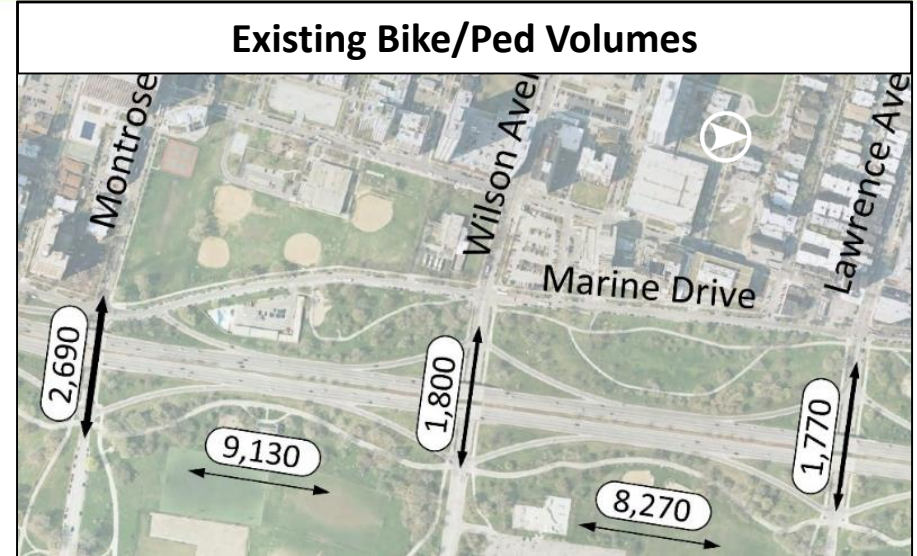


Emergency Vehicle Travel Times to Weiss Hospital – measured from points on Outer Drive (south of Montrose, north of Lawrence)

Park Access Evaluation

Existing Bike/Ped Volume

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



CDOT Bike Map

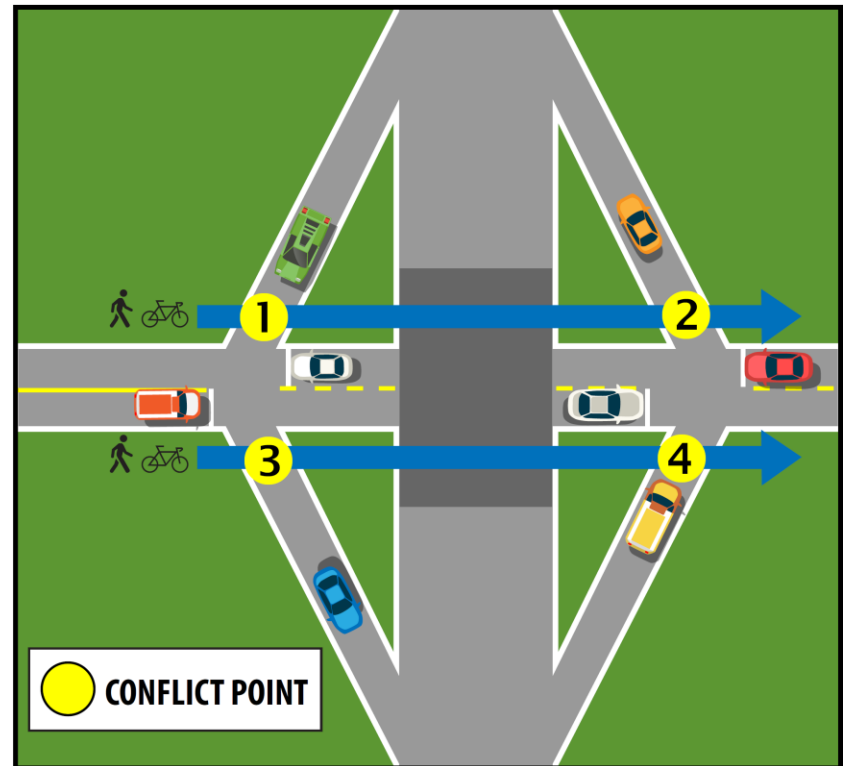
- Lawrence Avenue and Wilson Avenue are major east-west bike corridors
- Park gateways



Park Access Evaluation

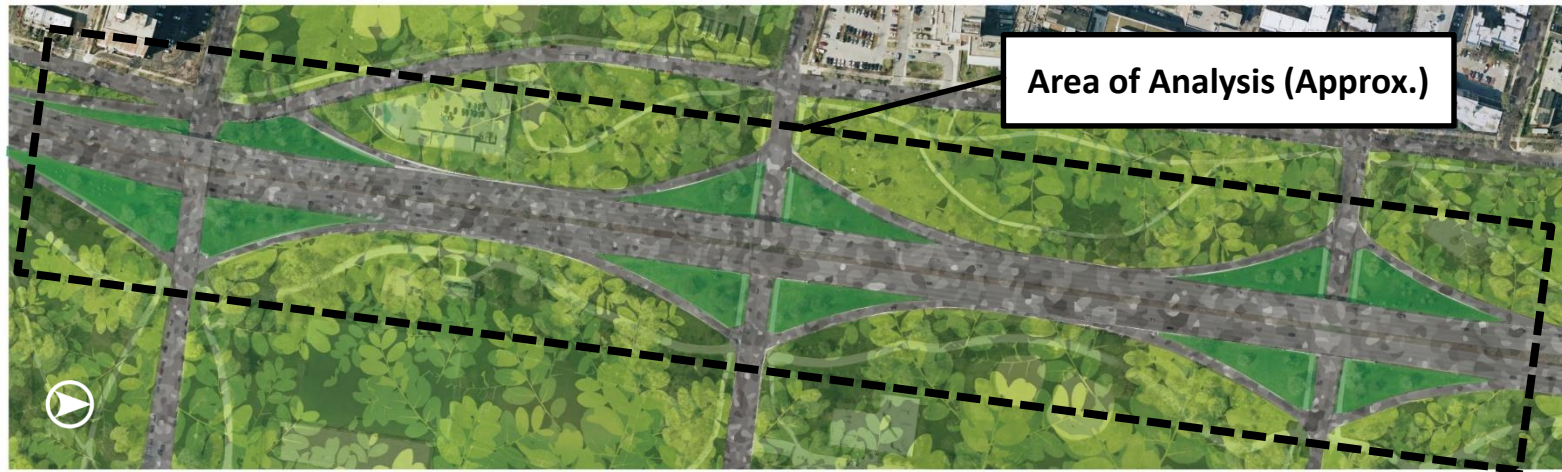
Number of east-west conflict points (bike/ped)

- 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



Green Space Evaluation

Opportunities to increase green space
Project is within a historic park
(avoid or minimize impacts)



Existing Park Space



Existing Pavement



Existing Other Land for
Transportation Use

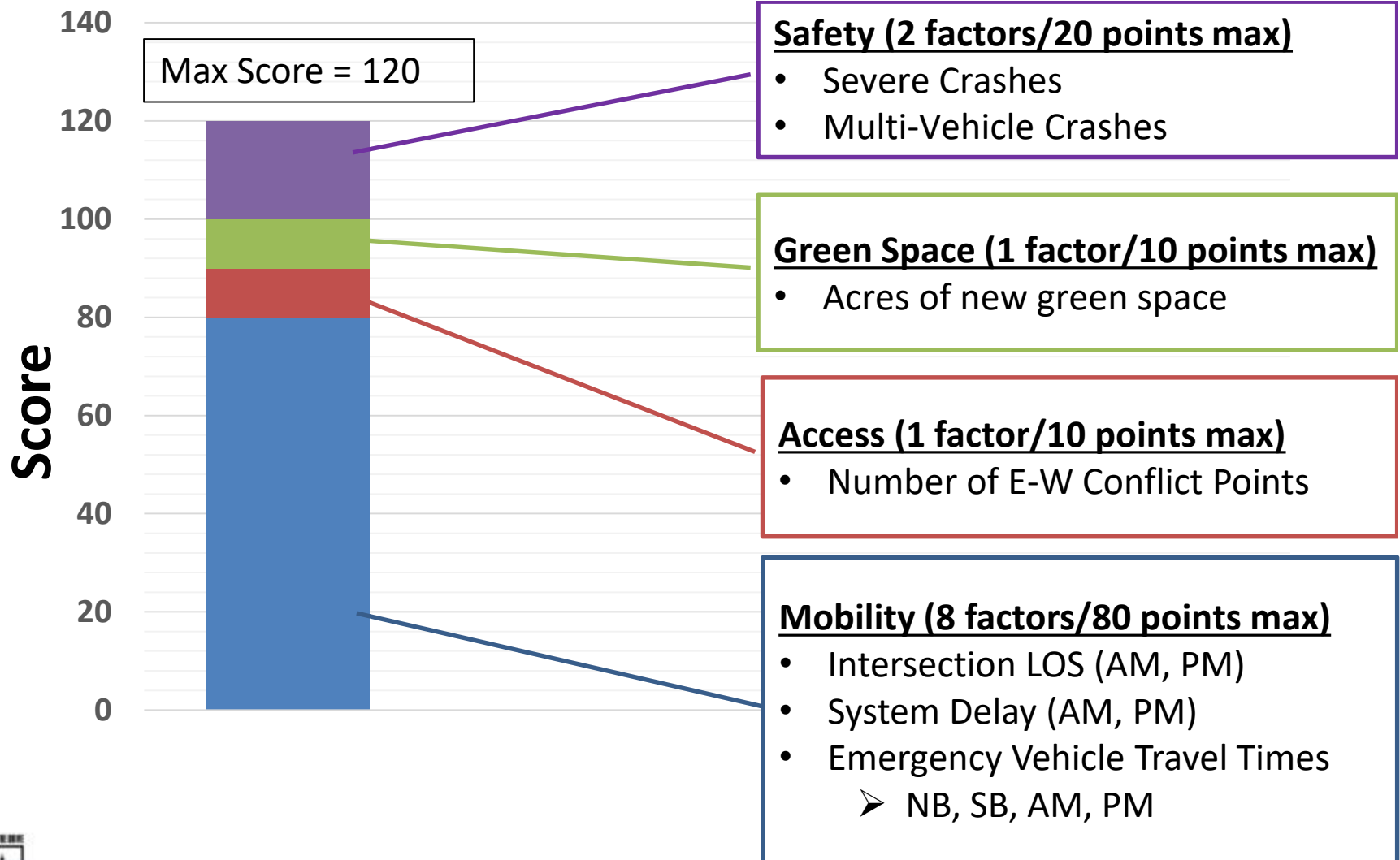
Ratio Method

- 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**

Ratio Example

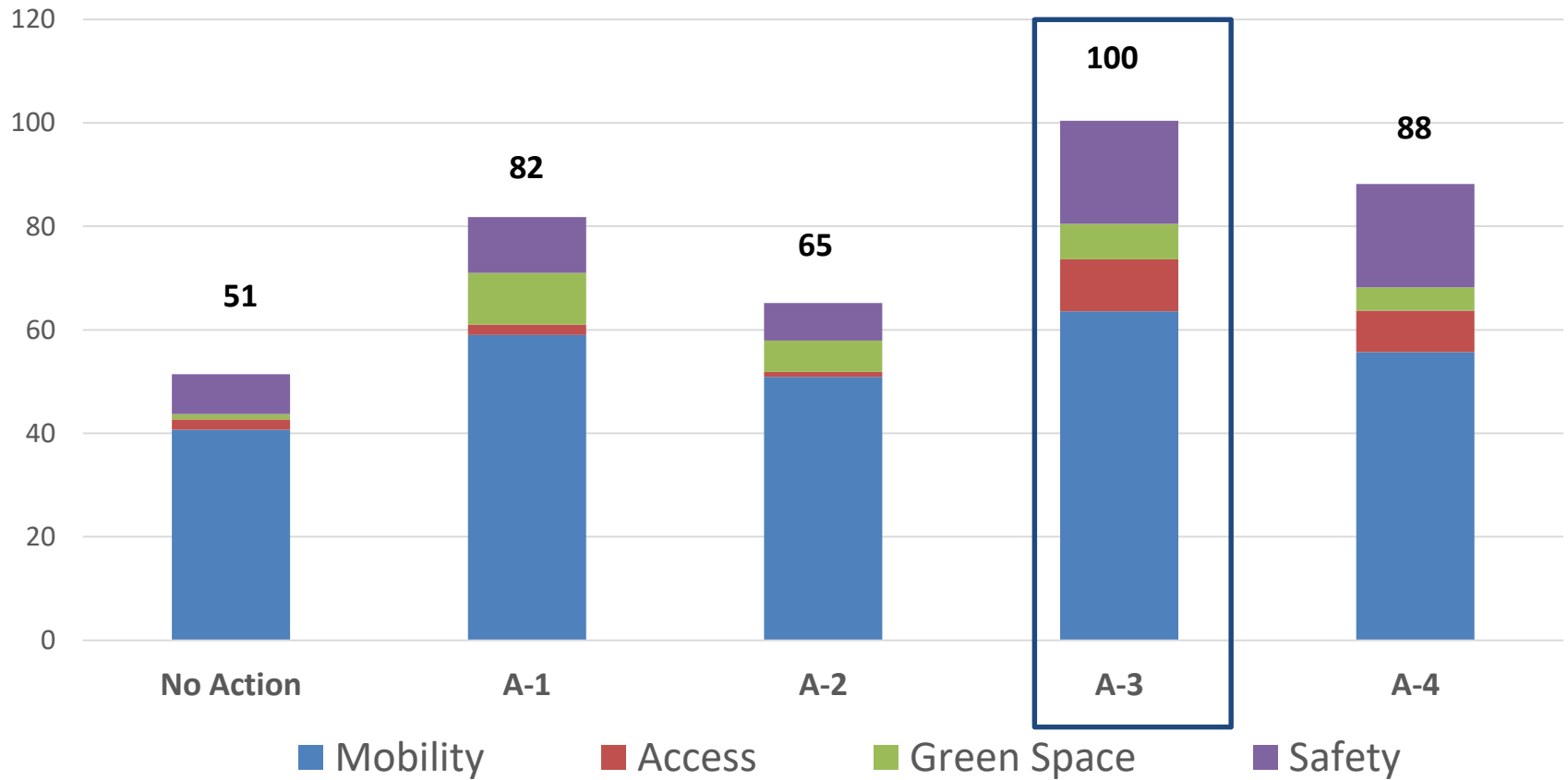
New Green Space	Score
1 acre	1
11 acres	5.2
20 acres	10

Alternatives Evaluation - Scoring



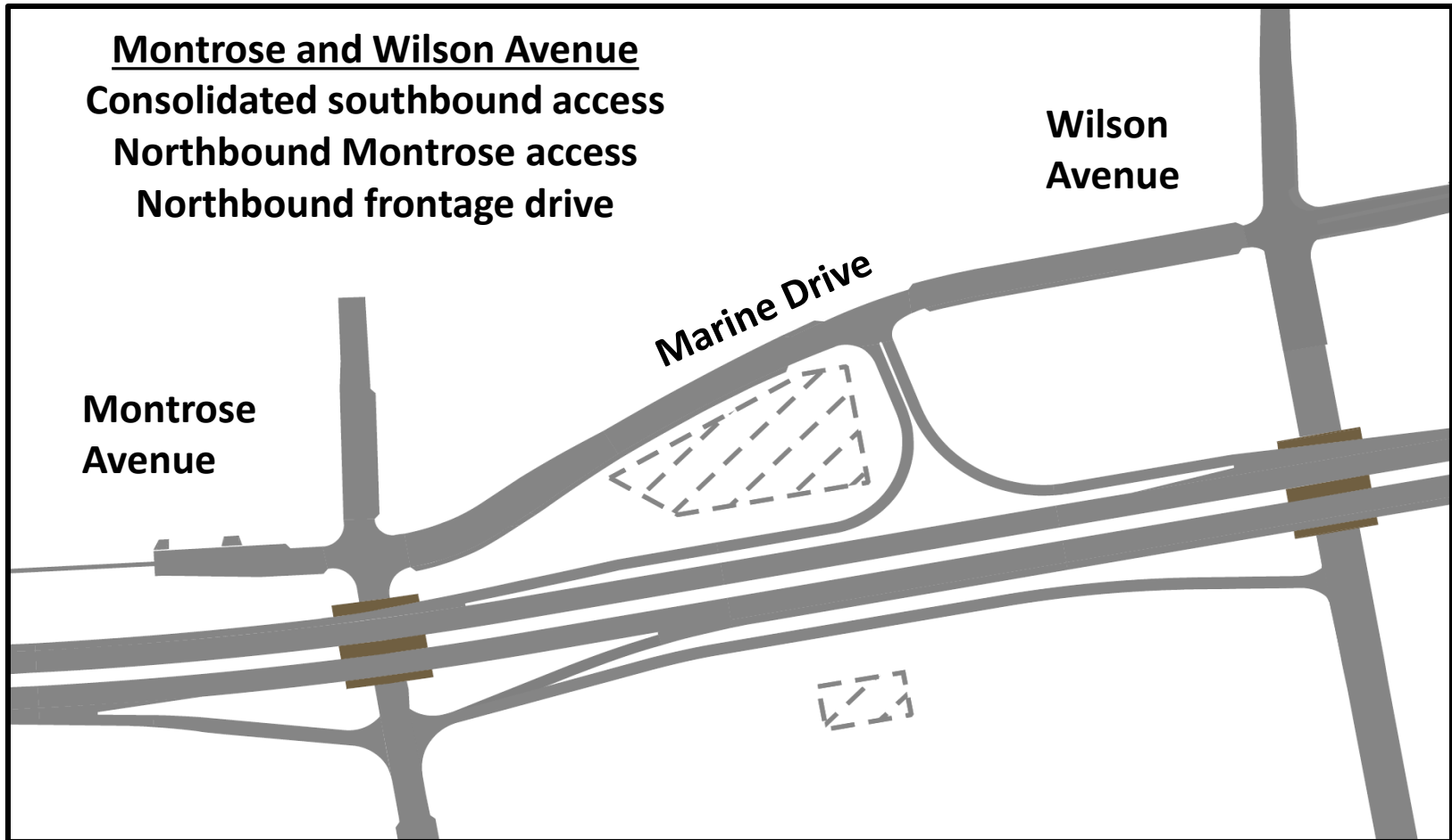
Group A Scoring

Alternative A-3 is recommended for further evaluation



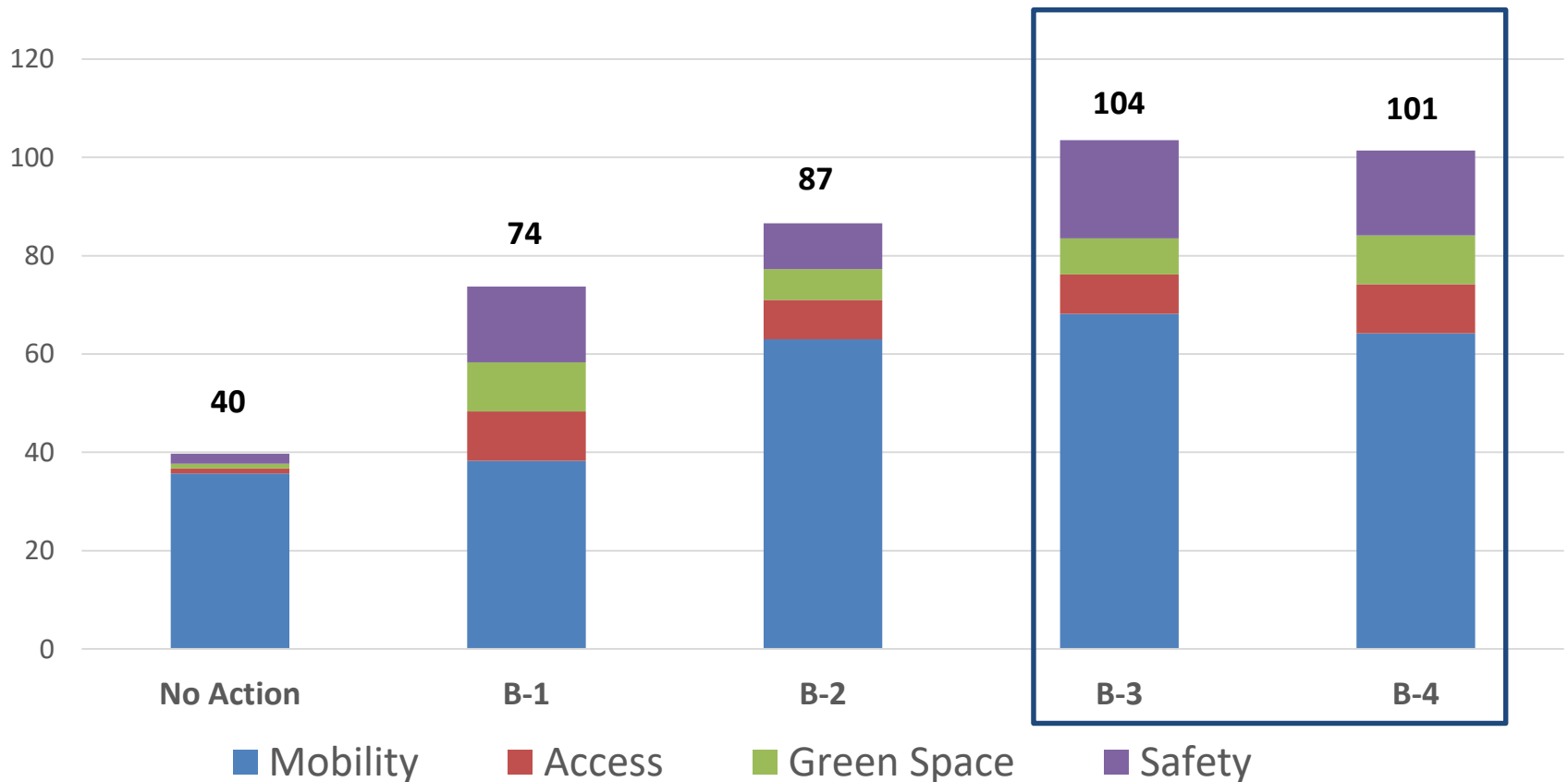
Recommended Group A Finalist

Alternative A-3



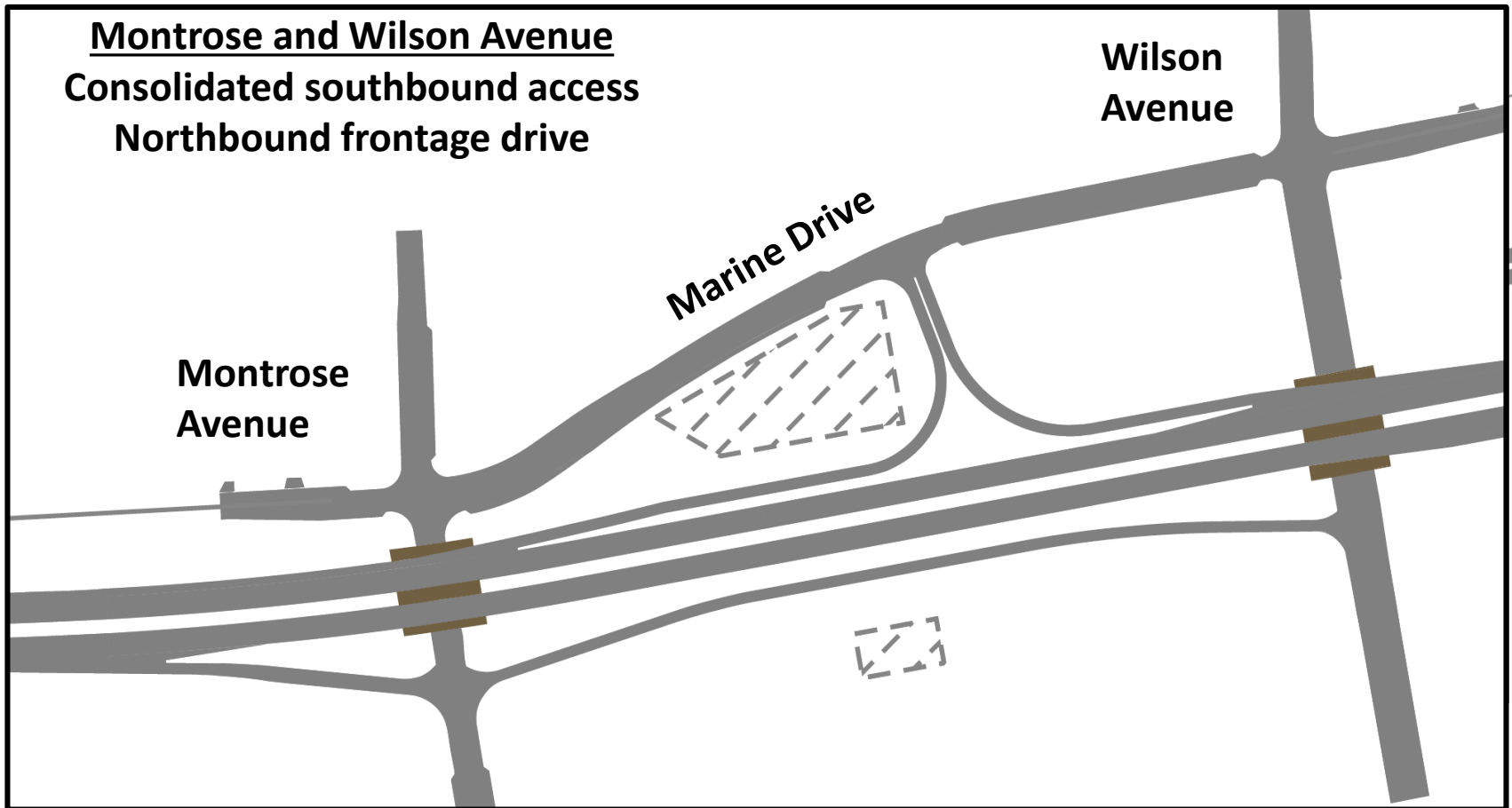
Group B Scoring

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



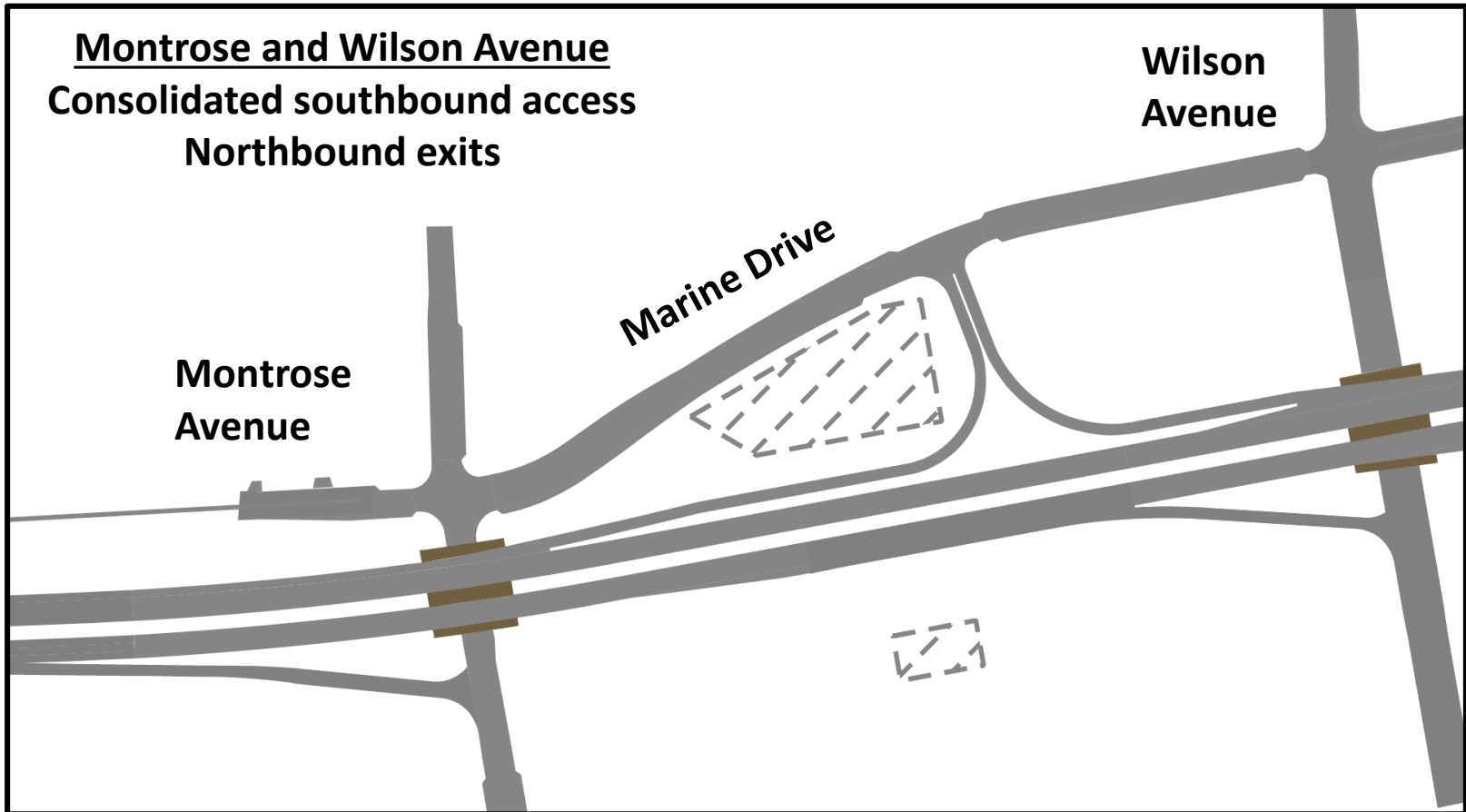
Recommended Group B Finalists

Alternative B-3



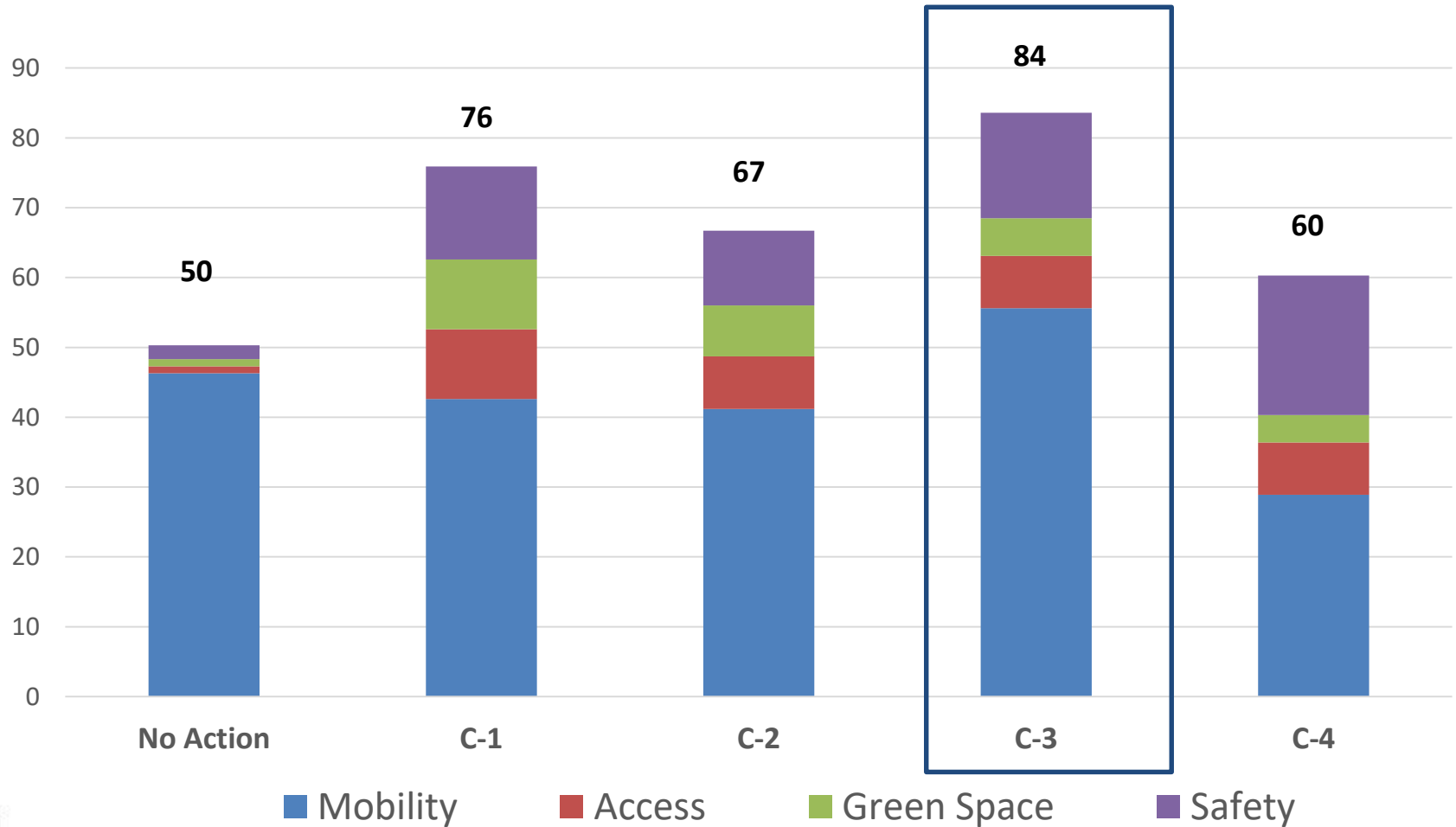
Recommended Group B Finalist

Alternative B-4



Group C Scoring

Alternative C-3 is recommended for further evaluation



Recommended Group C Finalist

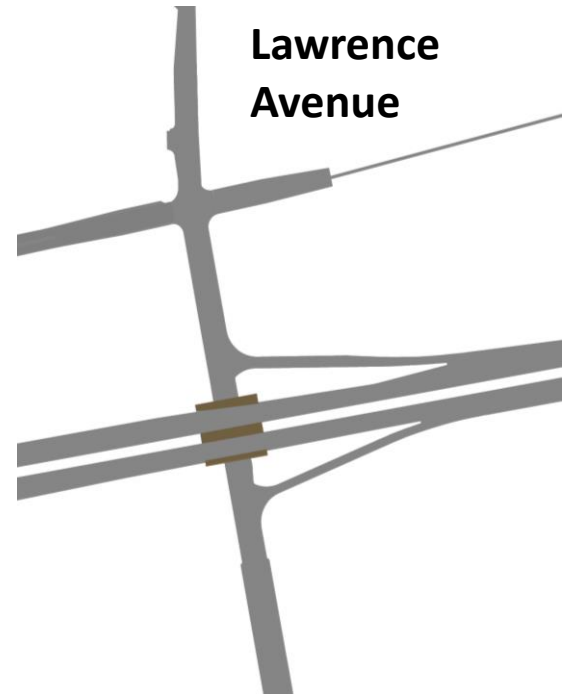
Alternative C-3

Montrose and Lawrence Avenue Half Compressed Diamond Junctions

Montrose
Avenue

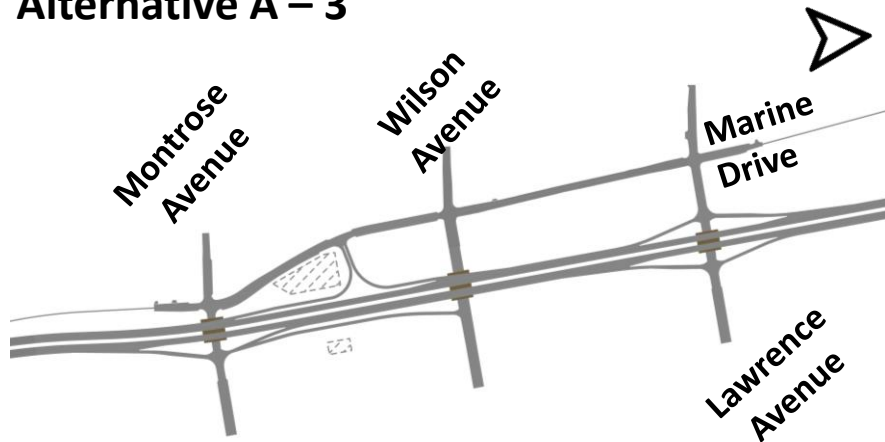


Lawrence
Avenue

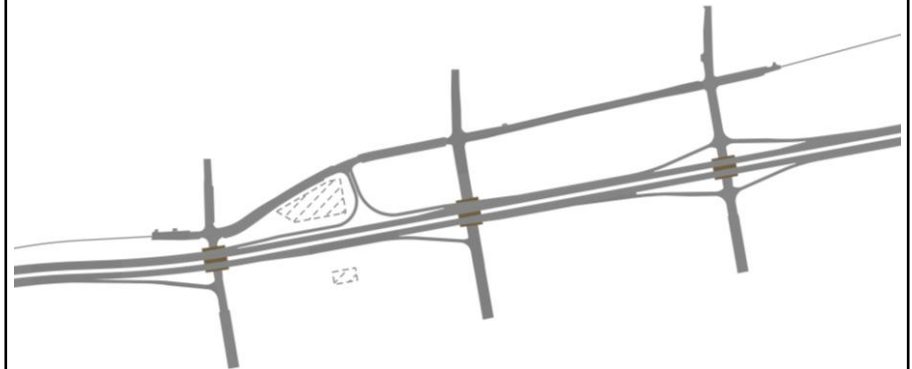


Recommended Finalist Alternatives

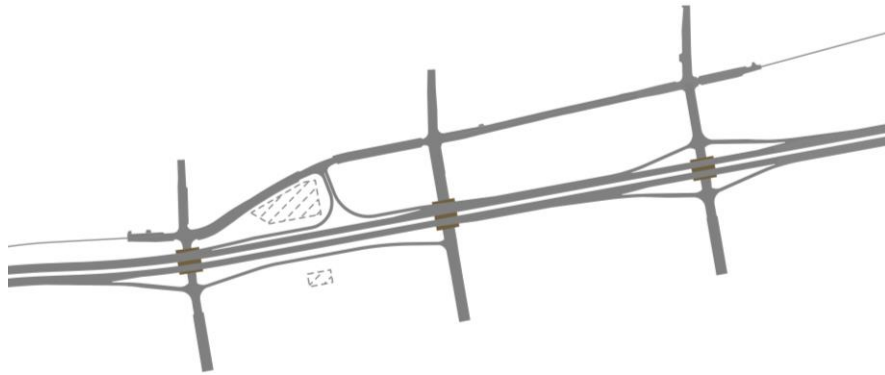
Alternative A – 3



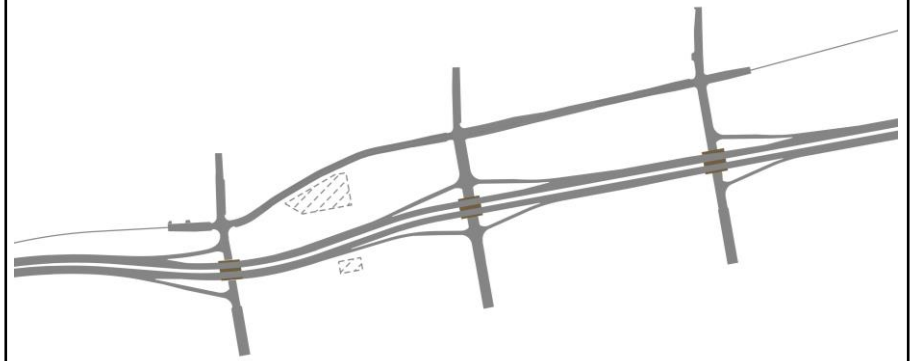
Alternative B – 4



Alternative B – 3



Alternative C - 3







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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Refine alternatives based upon stakeholder feedback

- Further evaluation
- Compare remaining alternatives

MWL Community Meeting #3 (Spring 2019)

- Present and discuss recommended preferred alternative