Knutson Drive Resurfacing/Reconstruction & Green Avenue Resurfacing

Transportation Commission
City of Madison Engineering Division
December 13, 2023

CITY OF **MADISON**

Presentation Overview

- **Project Location**
- Meeting Purpose
- Complete Green Streets
- Transit Network
- Speedy Study
- Parking Study
- Proposed Street Design
- Proposed Street Design Options
- Proposed Utility Design
- Proposed Stormwater Management
- Questionnaire Results
- Forestry Information

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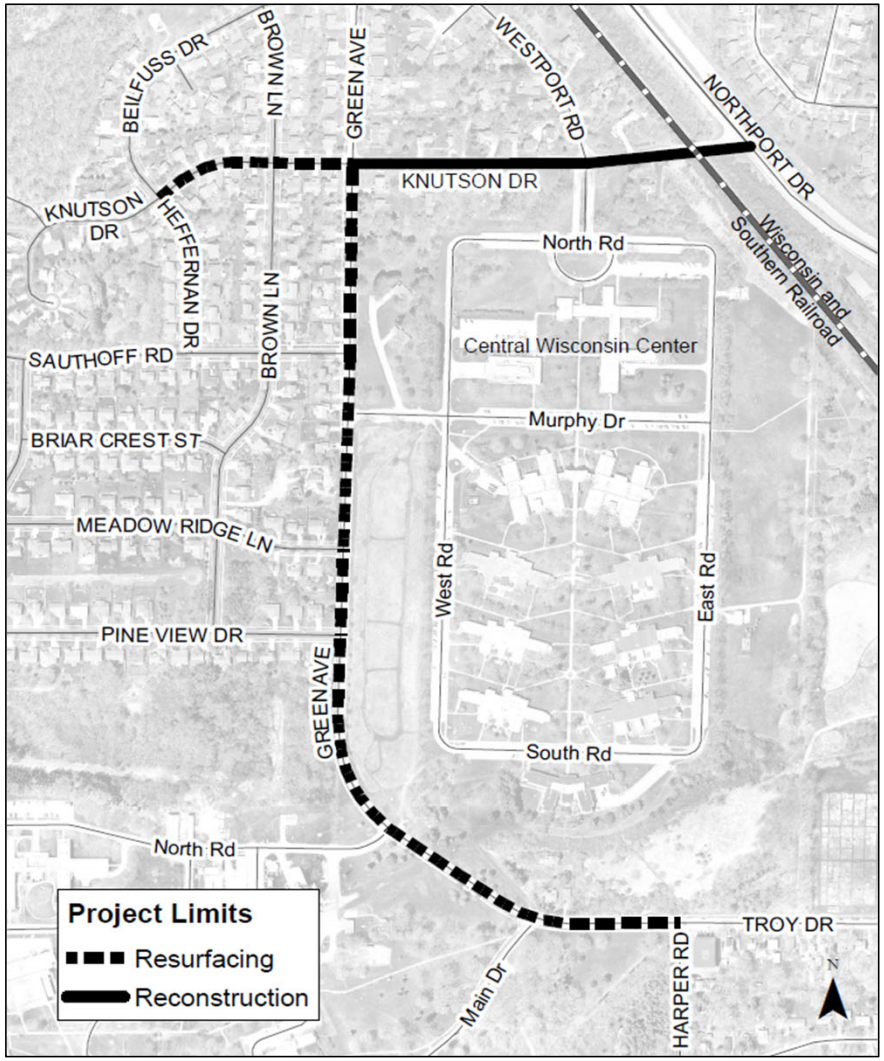
Project Location

- District 18



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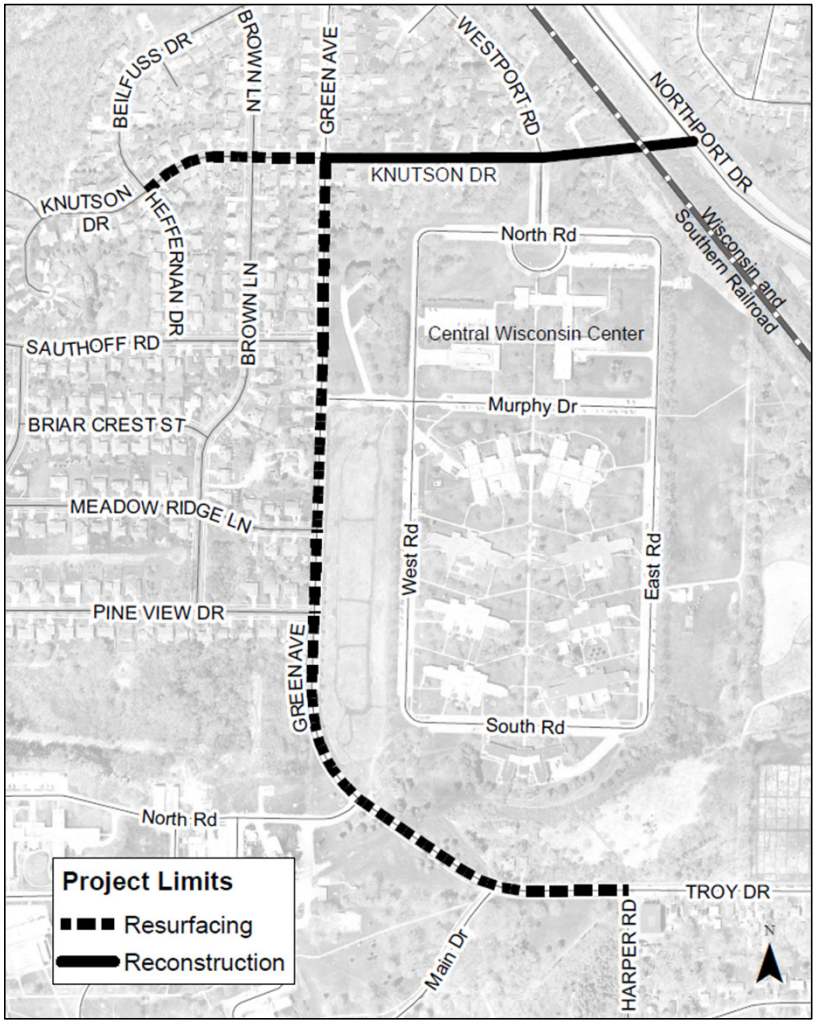
Meeting Purpose

- Inform the commission about the upcoming 2024 construction project
- Inform the commission about public engagement & questionnaire results
- To gain commission feedback for the street layout options for the reconstruction portion



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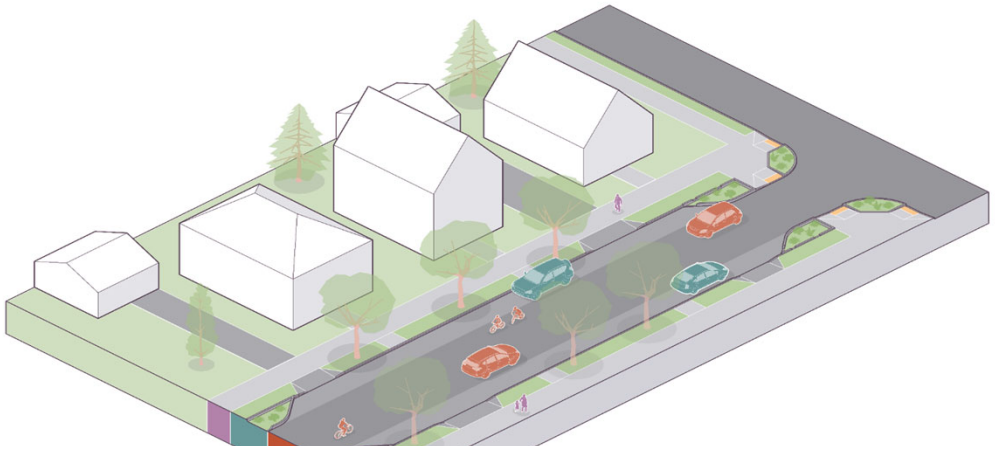
COMPLETE GREEN STREETS – STREET TYPE

Neighborhood Street

Context: Residential neighborhood
Description: Wider neighborhood streets. Includes some higher-traffic streets and transit routes that should be designed to prioritize neighborhood quality of life. Allows two drivers to pass each other without stopping.
Target Speed: 20 mph or less



Zone Priorities and Preferred Elements for Each Zone

Walkway High Priority	**Flex Zone** Medium Priority	**Travelway** Low Priority'	**Additional Considerations**
Standard sidewalks, with landscaping between the sidewalk and homes or buildings. May shift closer to or farther from the street to avoid impacting canopy trees.	Landscaped terrace with street trees. May straddle the walkway when the walkway is close to the street to avoid impacting existing canopy trees. On-street parking on one or both sides common.	Two-way travel without lane markings. No dedicated bikeway unless traffic volumes are above 3,000 ADT.	Speed management, parking demand to determine type and amount of on-street parking.

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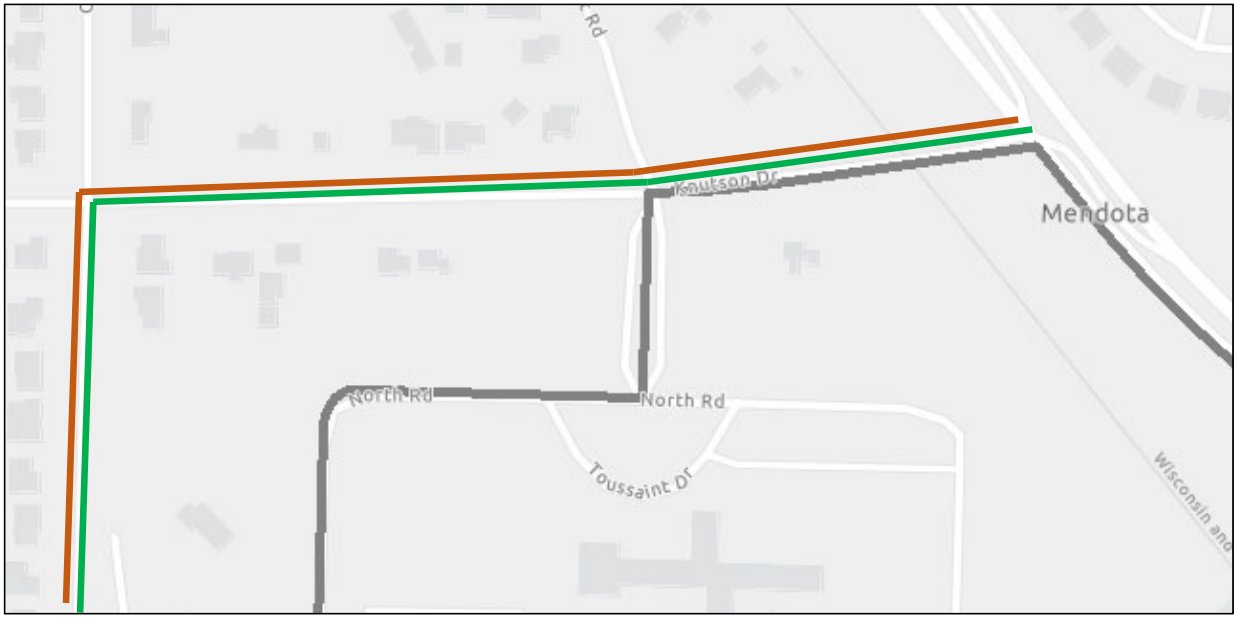
Transit Network



Transit Network

Metro Transit Routes

Service Limited / Weekends Only

- Metro Transit local route
  - Marion Road (Central Wisconsin Center) to Northport Drive
  - Route will be revised after project
    - Green Avenue to Knutson Drive to Northport Drive
- Future Bus Rapid Transit (BRT) route
  - High-quality, fast, and cost effective bus route
  - Green Avenue Northport Drive
  - Metro local route will be removed

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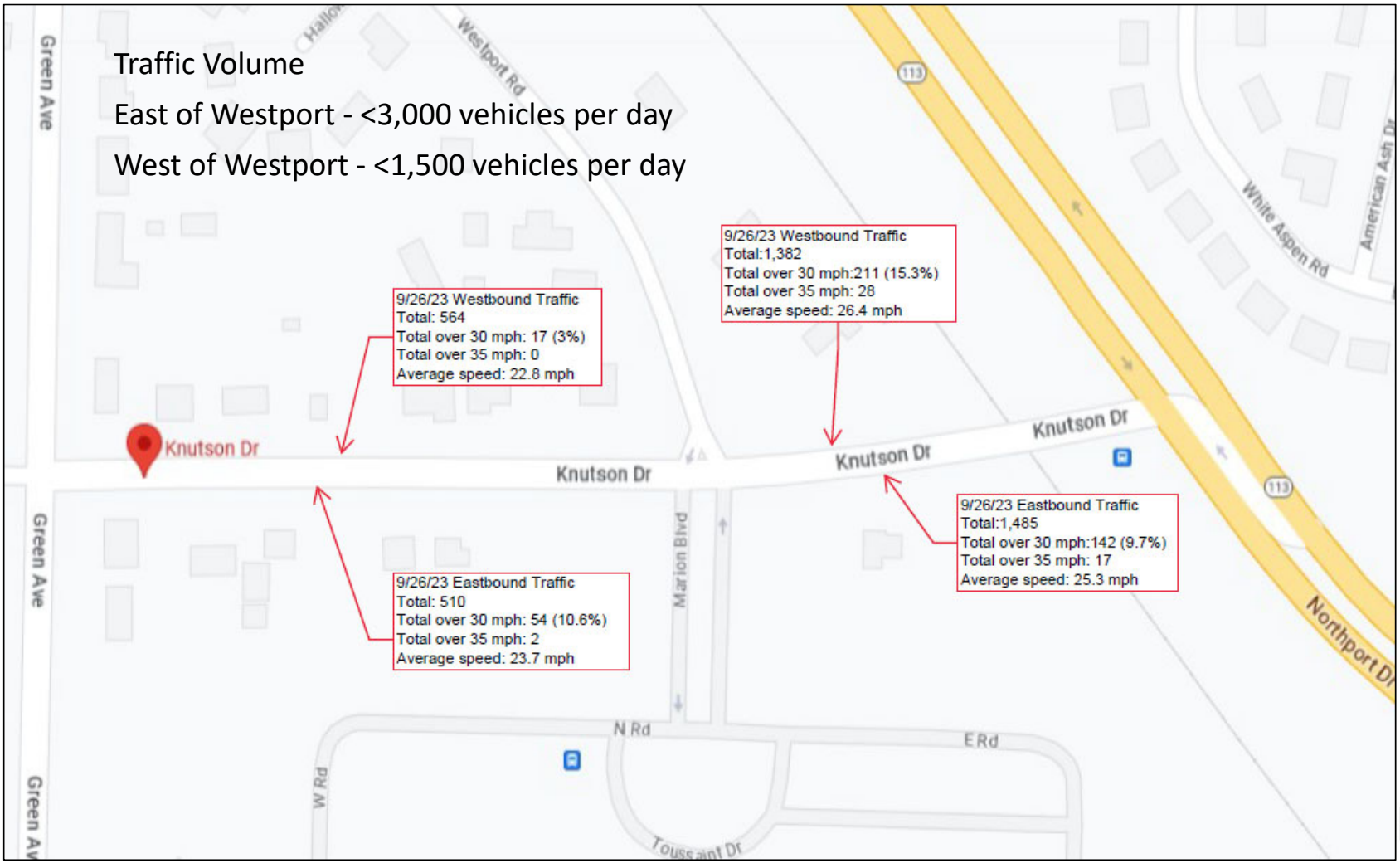
Speed Study


Traffic Volume
East of Westport - <3,000 vehicles per day
West of Westport - <1,500 vehicles per day
9/26/23 Westbound Traffic
Total: 564
Total over 30 mph: 17 (3%)
Total over 35 mph: 0
Average speed: 22.8 mph
9/26/23 Westbound Traffic
Total:1,382
Total over 30 mph:211 (15.3%)
Total over 35 mph: 28
Average speed: 26.4 mph
9/26/23 Eastbound Traffic
Total: 510
Total over 30 mph: 54 (10.6%)
Total over 35 mph: 2
Average speed: 23.7 mph
9/26/23 Eastbound Traffic
Total:1,485
Total over 30 mph:142 (9.7%)
Total over 35 mph: 17
Average speed: 25.3 mph
Knutson Dr
Knutson Dr
Knutson Dr
Green Ave
Green Ave
Westport Rd
Marion Blvd
N Rd
E Rd
W Rd
Toussaint Dr
White Aspen Rd
American Ash Dr
Northport Dr
113
113
N

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Parking Study

- Data collected in July 2023 – Green Ave to Northport Dr
  - Weekday daytime
  - Weekday overnight
  - Weekend
- There is no designated parking lane

	North Side	South Side
9 am – 3 pm	0	0
6 pm – 6 am	0	0
Weekend	0	0

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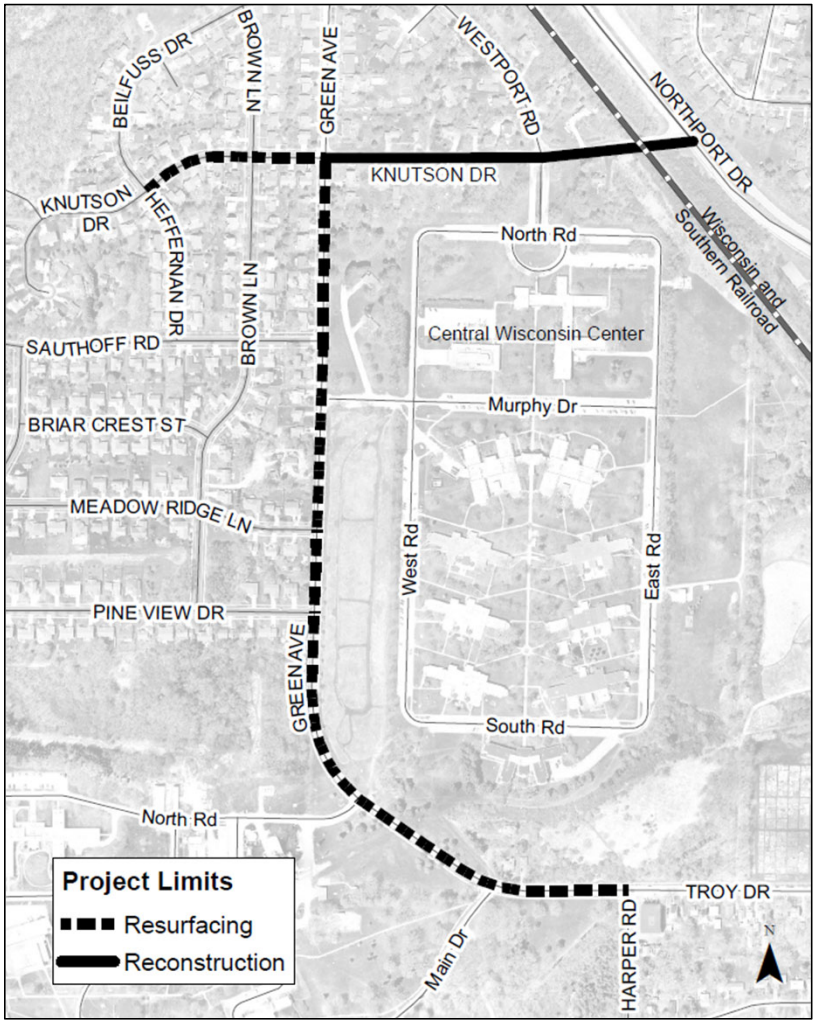
Proposed Street Design

- PIM #1 – Sept. 28, 2023
- PIM #2 – Nov. 29, 2023
- Street reconstruction
  - Knutson Drive (Green Avenue to Northport Drive)
  - Replacement of asphalt pavement, gravel base, and driveway aprons
  - Street design & construction will include new: curb & gutter and sidewalk
- Street resurfacing
  - Knutson Drive (Heffernan Drive/Beilfuss Drive to Green Avenue)
    - Full replacement of asphalt pavement only
      - Gravel base to remain
      - Existing curb and gutter and sidewalk to remain
  - Green Avenue (Knutson Drive to Harper Road)
    - Partial replacement of asphalt pavement only
      - Remove/replace 2-inches



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Proposed Street Design

- Proposed traffic calming for the street:
  - Curb bumpouts
  - Narrow lane widths

Knutson/Westport intersection
proposed bumpouts

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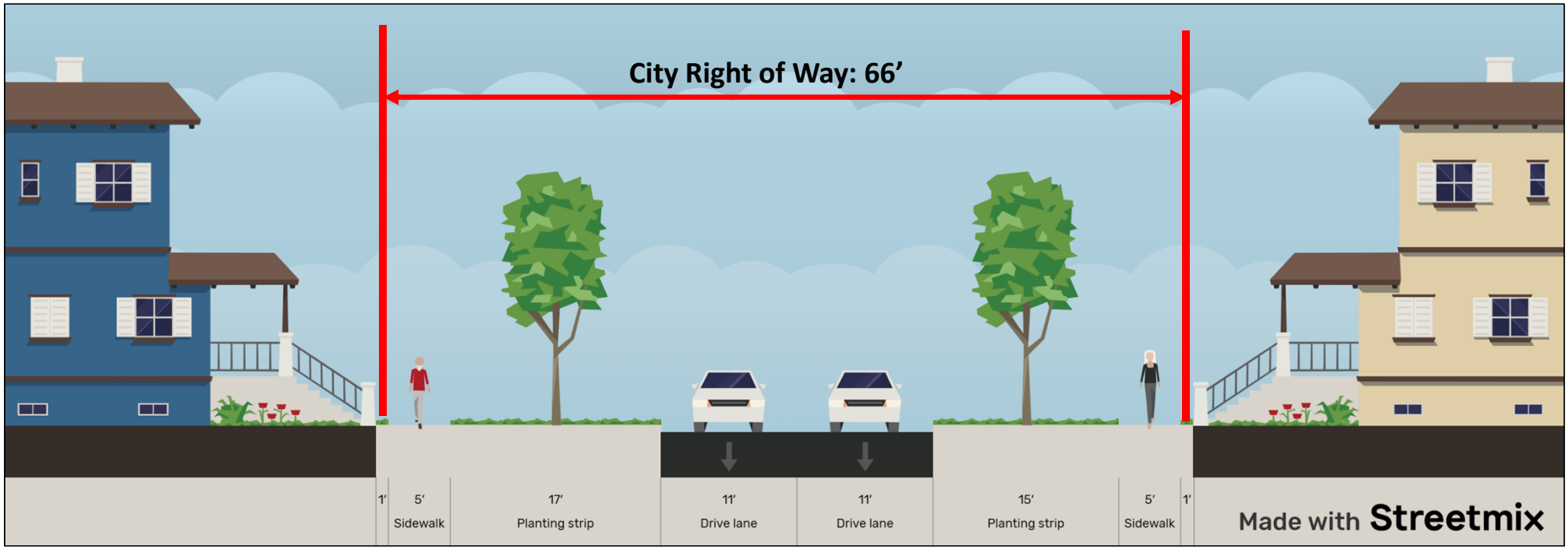
Proposed Street Design Options

- Option 1A – Knutson Drive, Green Avenue to Northport Drive



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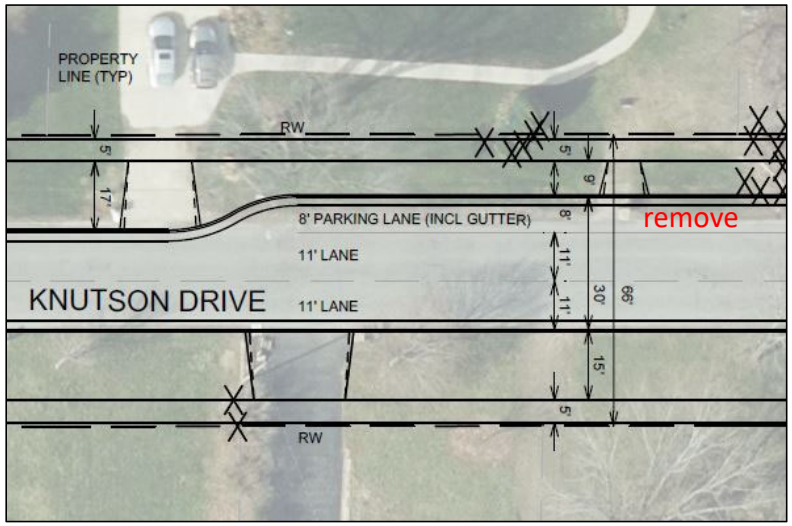
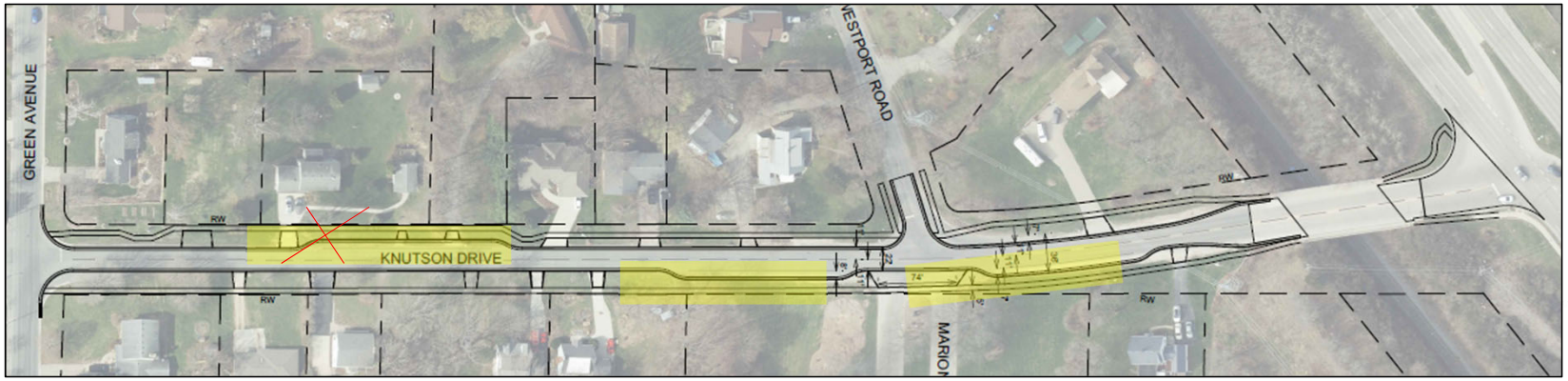
Proposed Street Design Options

- Option 1A – Knutson Drive, Green Avenue to Northport Drive
  - 11’ vehicles lanes
  - Add curb & gutter
  - Replace driveway aprons
  - 5’ sidewalks on both sides
  - Narrow street to lower speeding
  - Maintain majority of trees in the right of way
  - City staff recommendation
- 8’ parking pockets
  - First pocket: 160’, fitting 10 cars
    - Remove after public feedback
  - Second pocket: 140’, fitting 9 cars
  - Third pocket: 130’, fitting 8 cars





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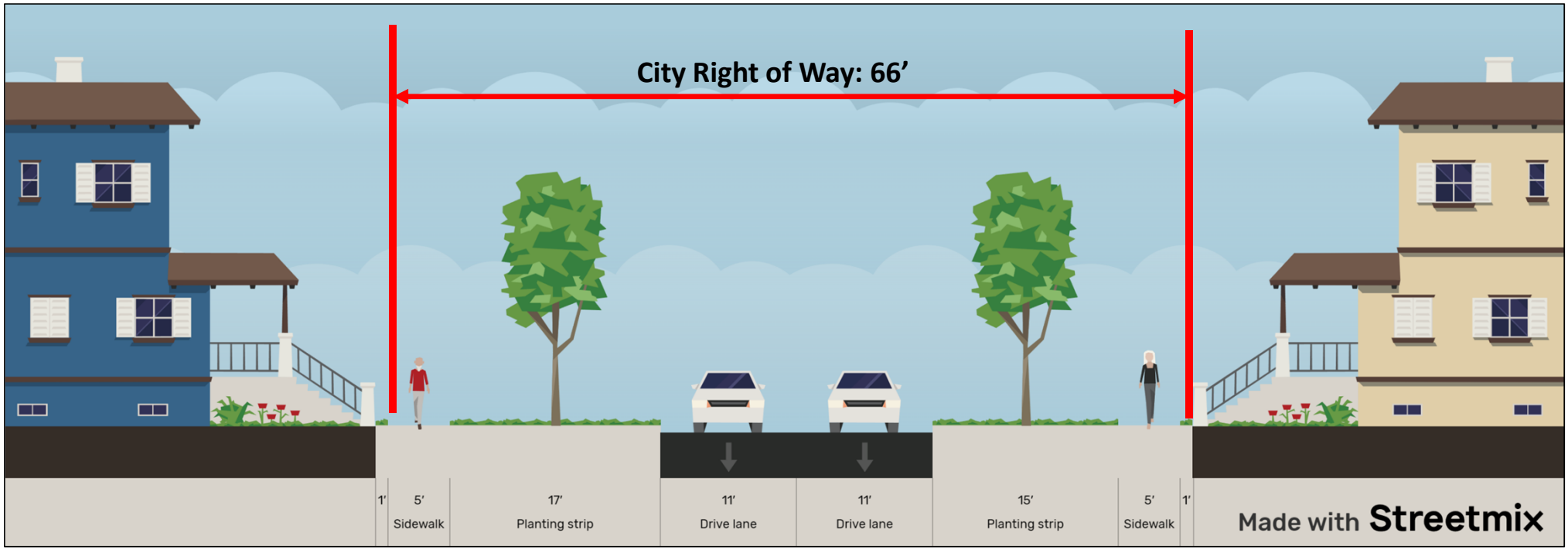
Proposed Street Design Options

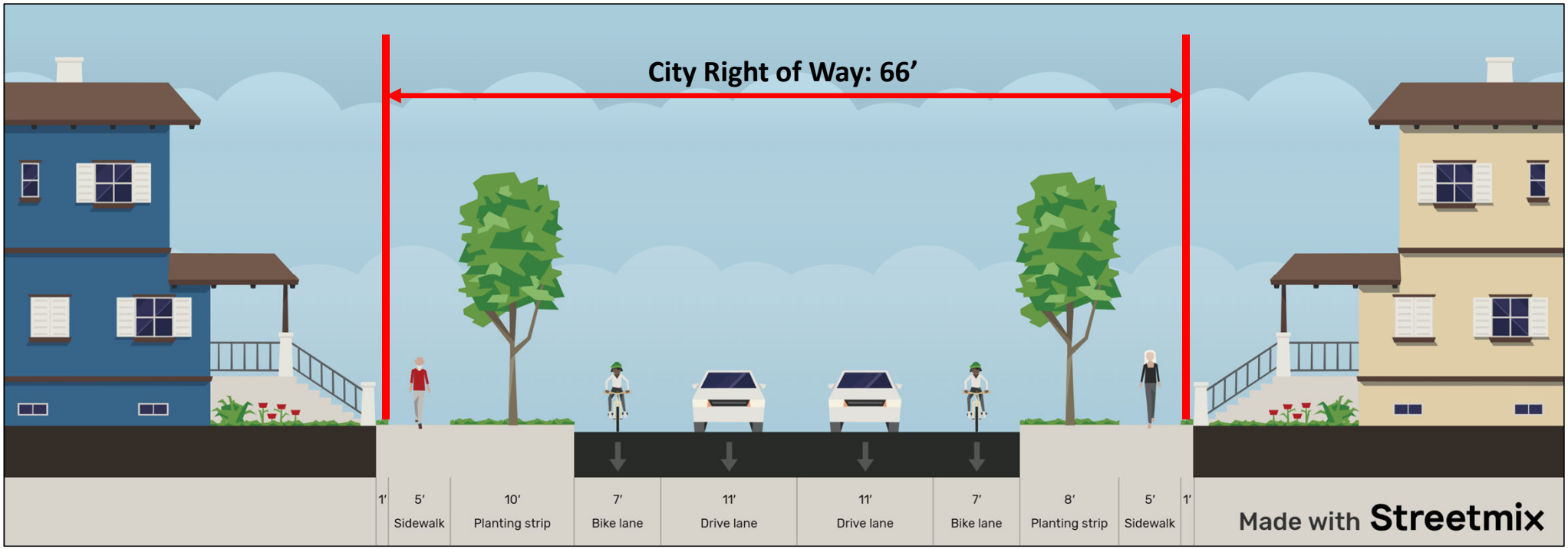
- Option 1B – Knutson Drive, Green Avenue to Westport Drive



CITY OF MADISON

Proposed Street Design Options

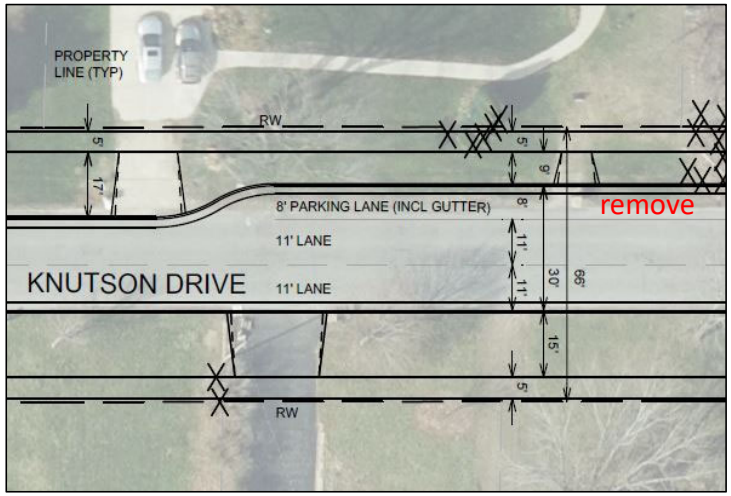
- Option 1B – Knutson Drive, Westport Drive to Northport Drive

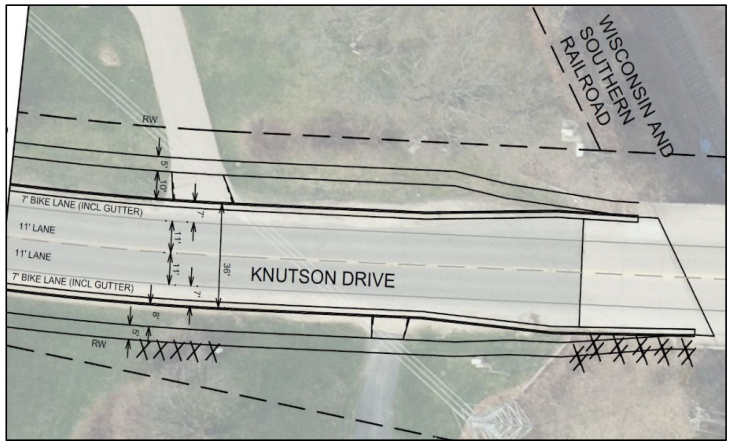


CITY OF MADISON

Proposed Street Design Options

- Option 1B:
  - 11’ vehicle lanes
  - Add curb & gutter
  - Replace driveway aprons
  - 5’ sidewalk on both sides
- Knutson Drive, Green Avenue to Westport Drive
  - 8’ parking pockets (similar as option 1A)
    - First pocket: 160’, fitting 10 cars
      - Remove after public feedback
    - Second pocket: 140’, fitting 9 cars
- Knutson Drive, Westport Drive to Northport Drive
  - 7’ bicycle lanes for higher traffic volumes
  - 3,000 vehicles per day
  - Wider pavement likely to result in higher speeds





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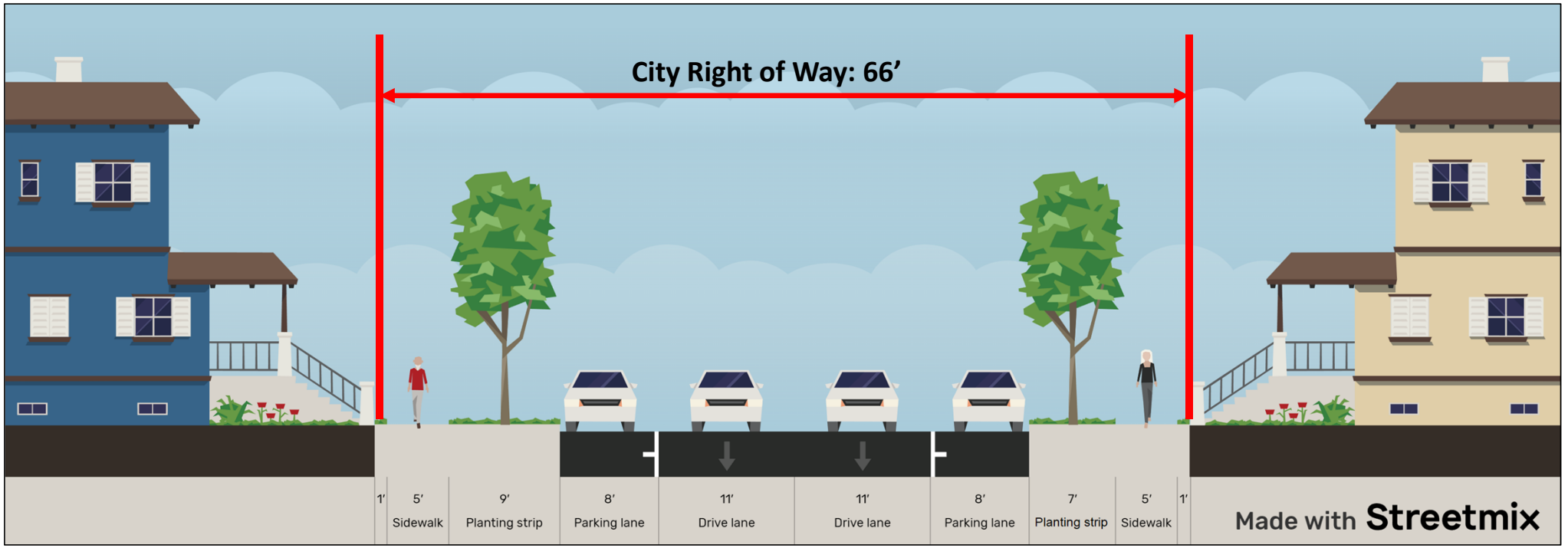
Proposed Street Design Options

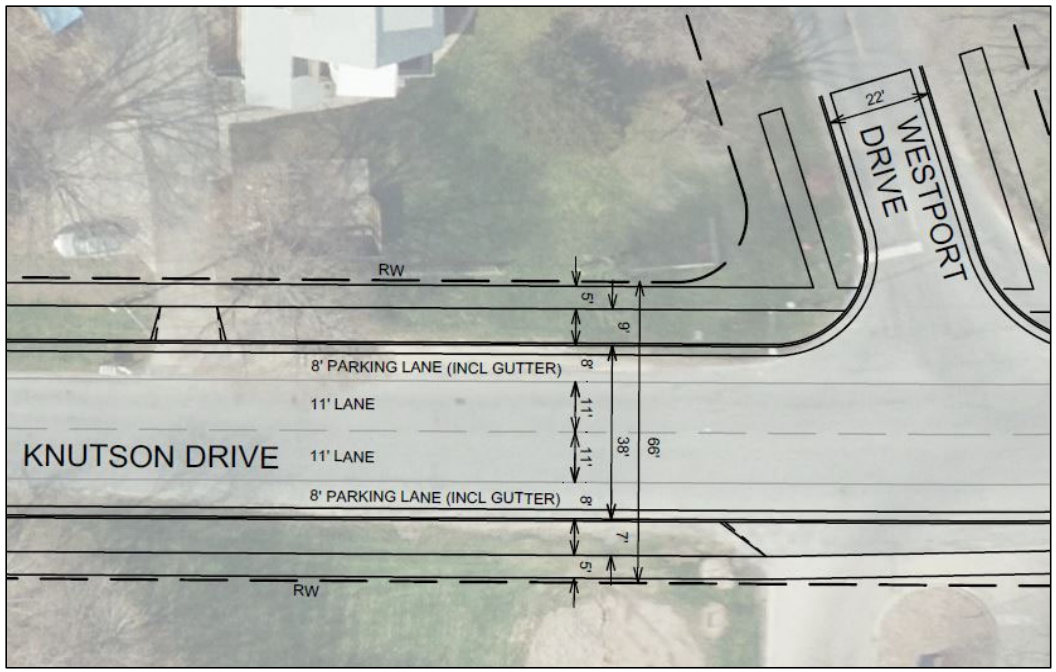
- Option 2A – Knutson Drive, Green Avenue to Northport Drive



CITY OF MADISON

Proposed Street Design Options

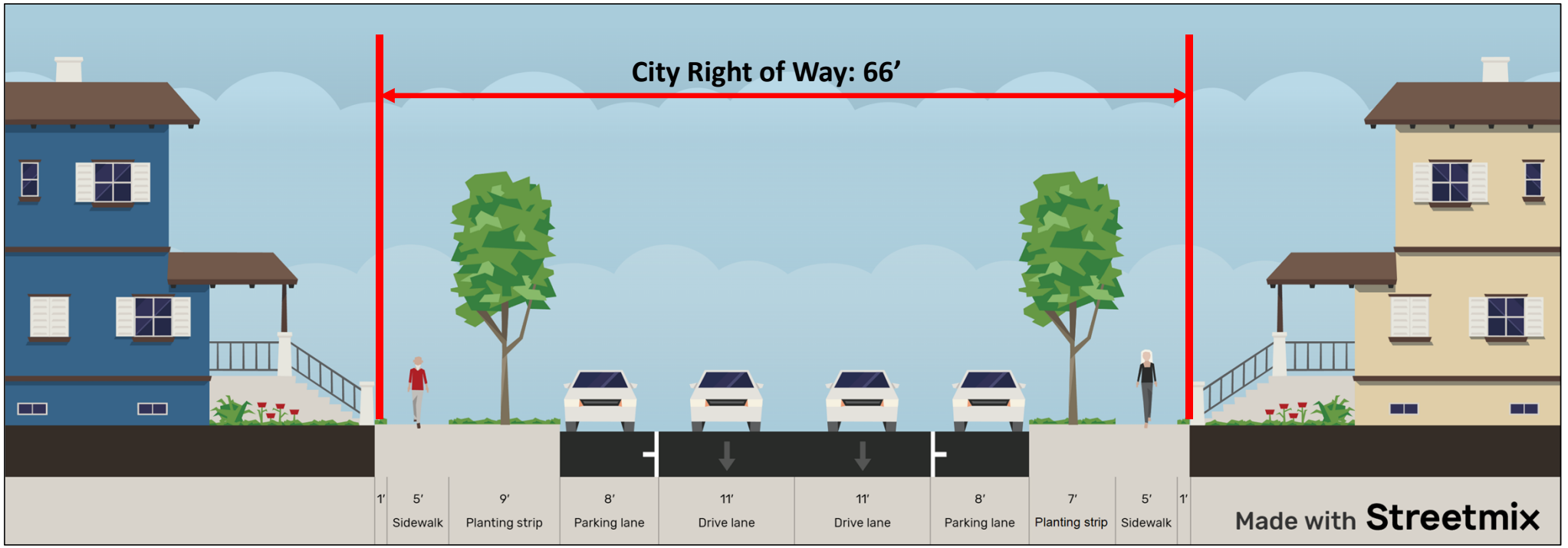
- Option 2A – Knutson Drive, Green Avenue to Northport Drive
  - 11’ vehicles lanes
  - Add curb & gutter
  - 5’ sidewalk on both sides
  - Replace driveway aprons
  - 8’ parking lanes fitting 70 cars on each side of the street
  - Wider pavement likely to result in higher speeds
  - Removes all trees within the right-of-way



CITY OF MADISON

Proposed Street Design Options

- Option 2B – Knutson Drive, Green Avenue to Westport Drive



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Proposed Street Design Options

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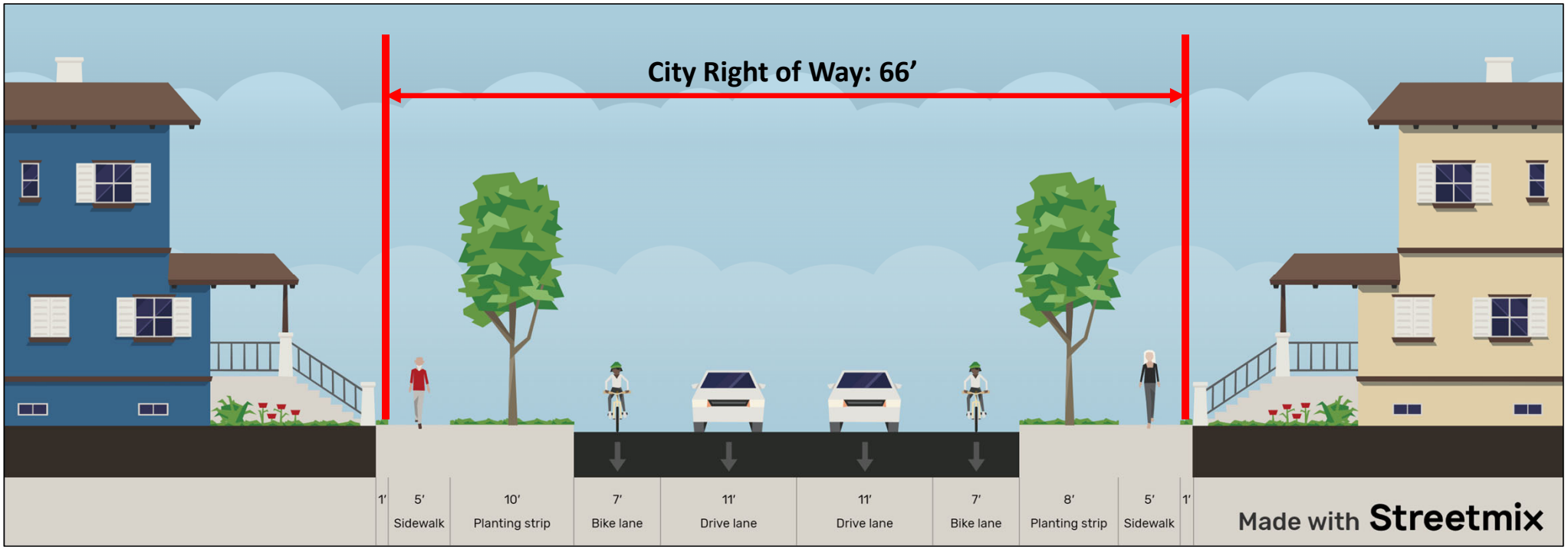
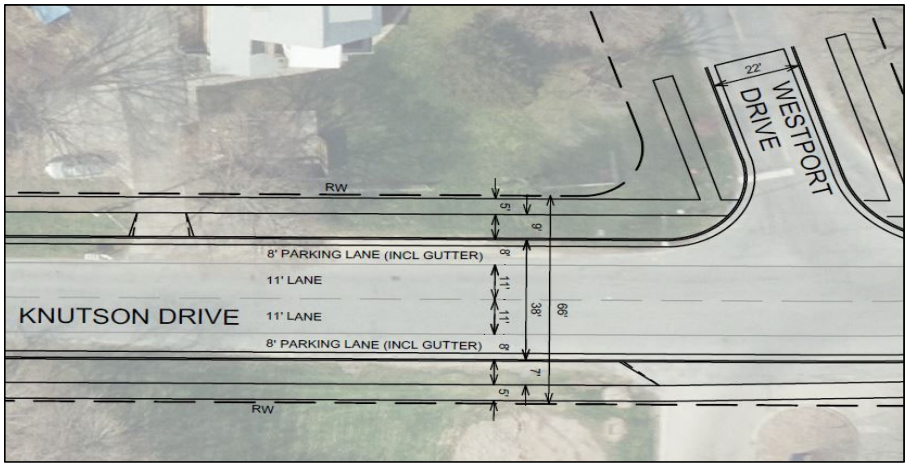
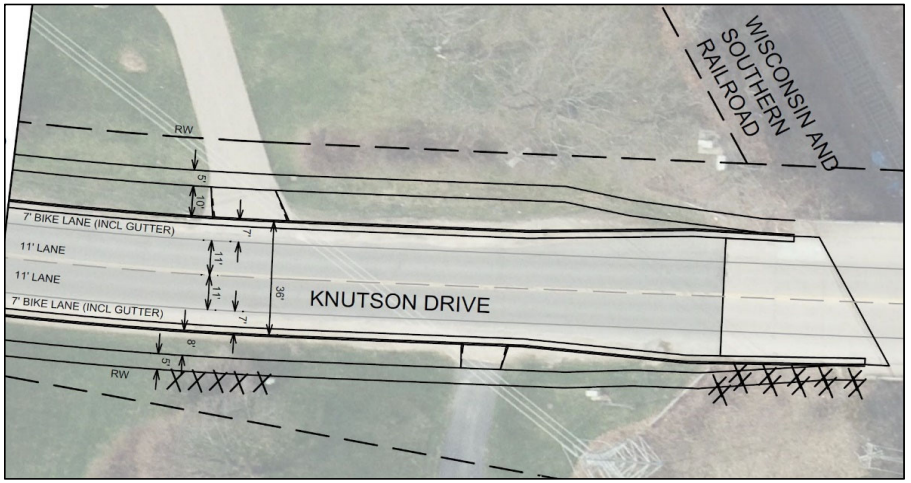


CITY OF MADISON

Proposed Street Design Options

- Option 2B:
  - 11’ vehicle lanes
  - Add curb & gutter
  - Replace driveway aprons
  - 5’ sidewalk on both sides
- Knutson Drive, Green Avenue to Westport Drive
  - 8’ parking lanes fitting 50 cars on each side of the street
- Knutson Drive, Westport Drive to Northport Drive
  - 7’ bicycle lanes for higher traffic volumes
  - 3,000 vehicles per day
  - Wider pavement likely to result in higher speeds





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CITY OF MADISON

Proposed Utility Design

- Knutson Drive and Green Avenue
  - Existing sanitary sewer & laterals to remain (1985)
  - Existing water main to remain (1961)
    - Relocate hydrants as needed
  - Existing storm sewer to remain (Green Ave, 1990s)
  - Installation of storm sewer
    - Heffernan Drive/Beilfuss Drive through Green Avenue to reconstruction portion
  - Bioretention and/or rain gardens (reconstruction portion)
  - Existing street lighting to remain

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Proposed Stormwater Management

- What is Stormwater?
  - Rain and melting snow that flows off street, house rooftops, driveways, and lawns
- Treating stormwater is a requirement for the reconstruction project
  - WDNR requires treatment for rural to urban street changes
    - Possible installation of terrace bioretention basins
      - Maintained by City
      - Underdrain installed
        - Connected to storm sewer
      - Capture sediment and pollutants coming from the street
        - WDNR goal for the project is 40% reduction in sediment
    - Possible installation of terrace rain gardens
      - Maintained by property owner
      - No underdrain installed
      - No WDNR goal

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Proposed Stormwater Management

Potential Location and Size of Required Bioretention
Knutson Dr.

- The north side of the street is required to achieve 40% Total Suspended Solids (TSS) reduction per WDNR statute
- Bioretention with a 400 sf area and 6” of ponding depth can reach this treatment level.

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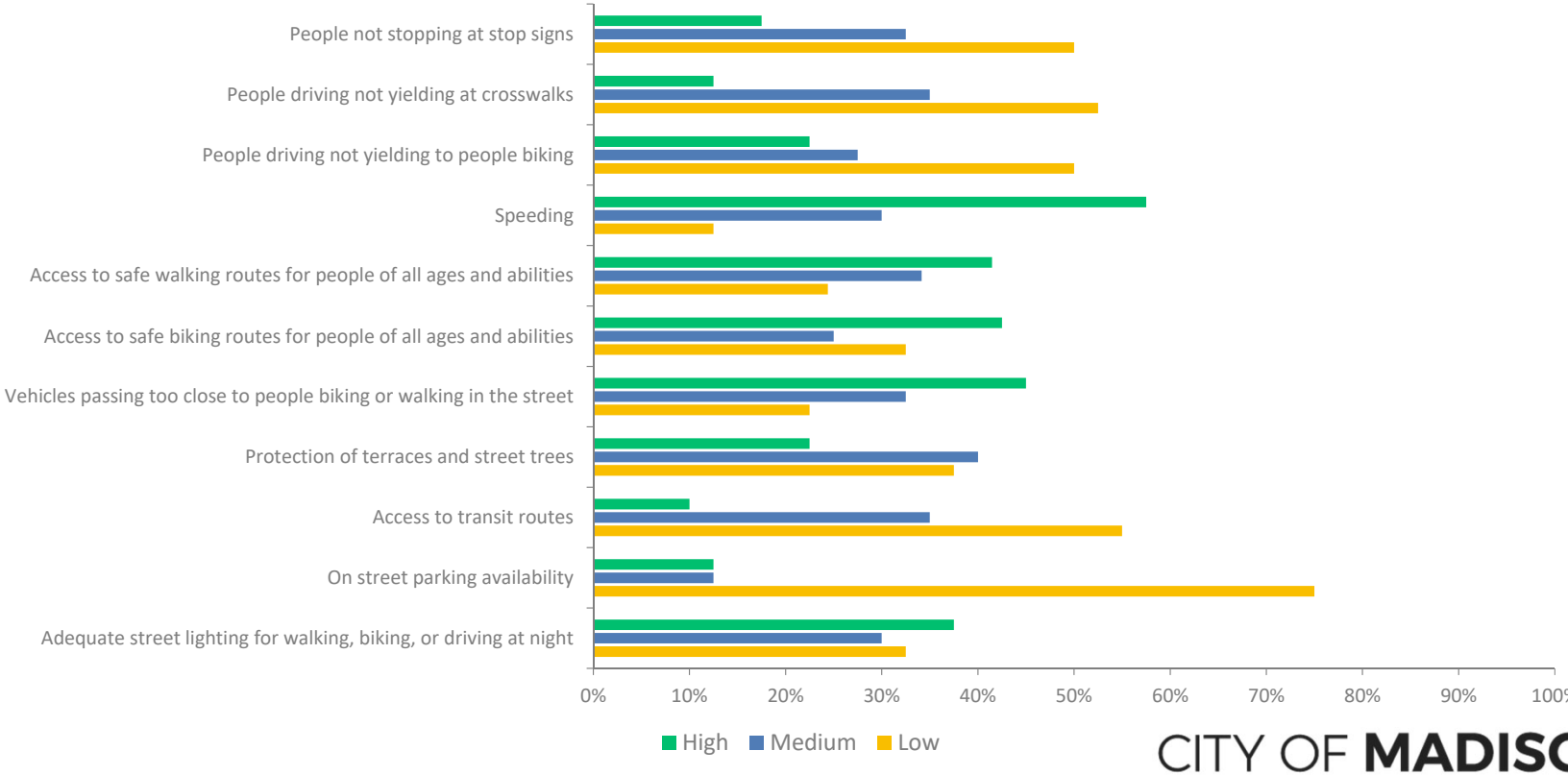
Questionnaire Results

- Questionnaire #1 final results
- Transportation concerns - low, moderate or high
  - 41 responses



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- Questionnaire #1 final results
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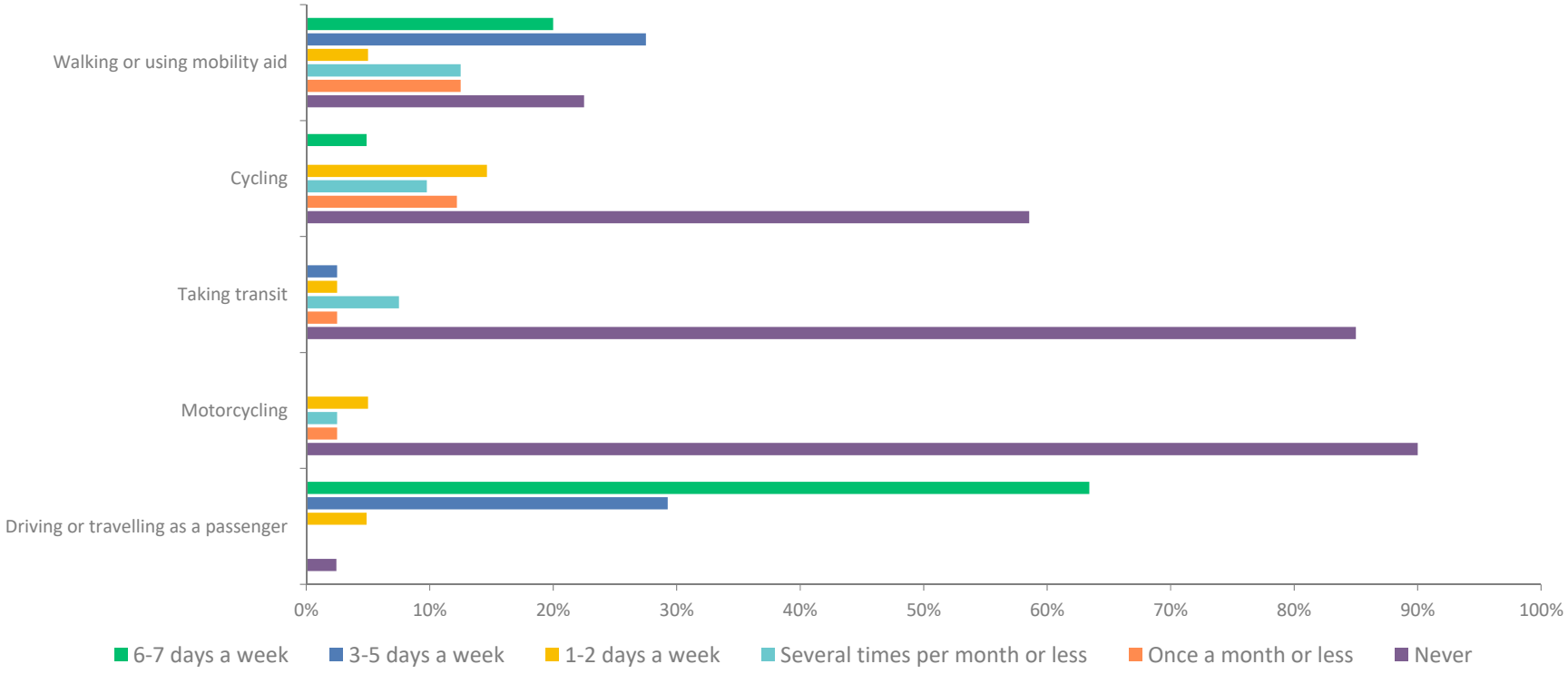
  - 41 responses



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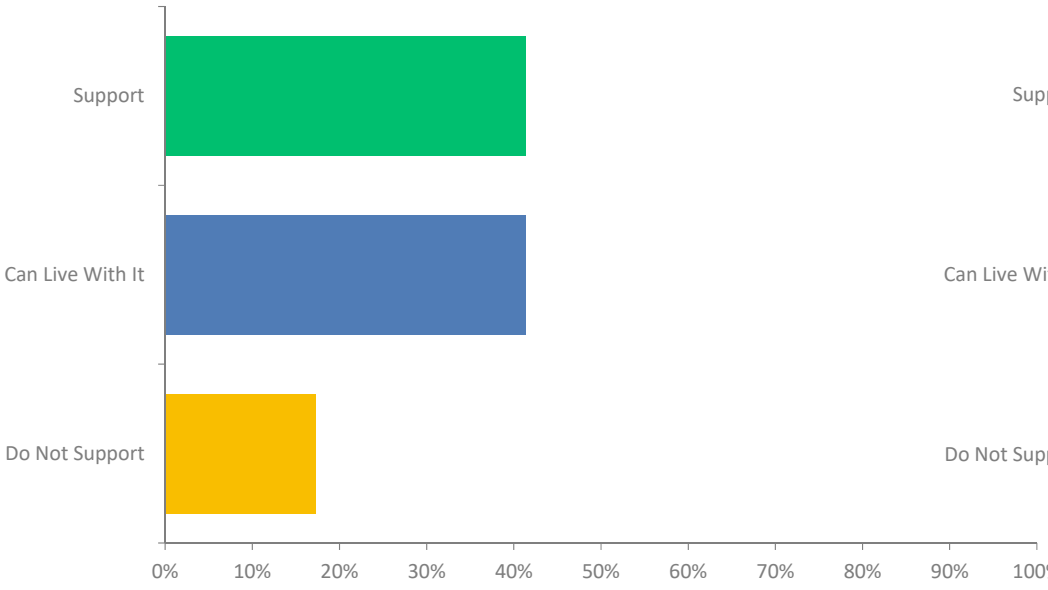
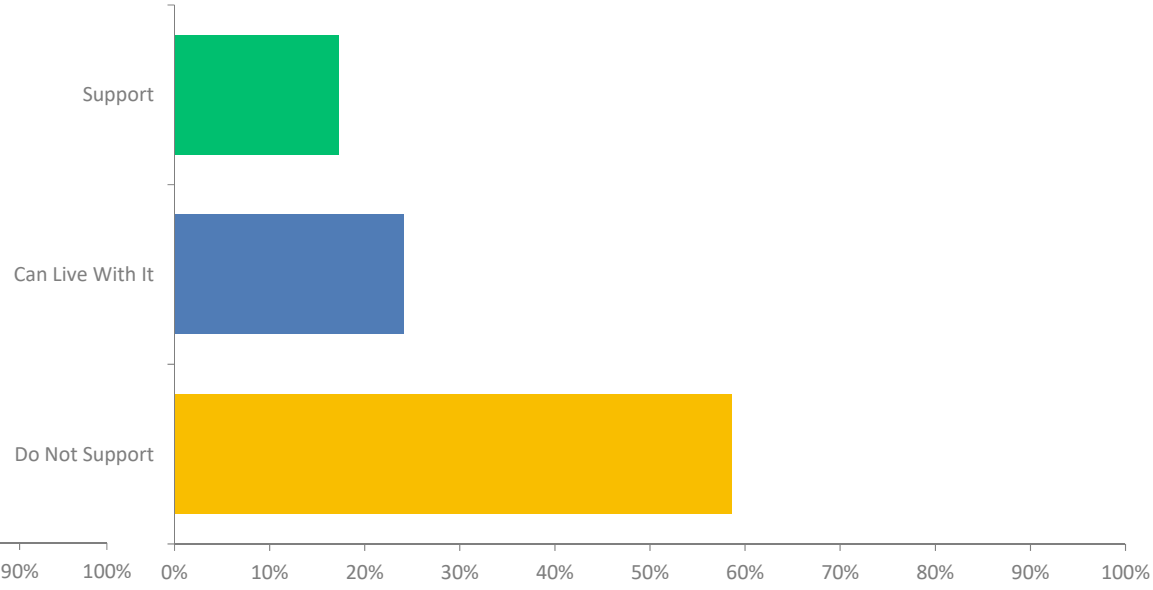
Questionnaire Results

- Questionnaire #2 final results
- Design options
  - 29 responses



Option 1A

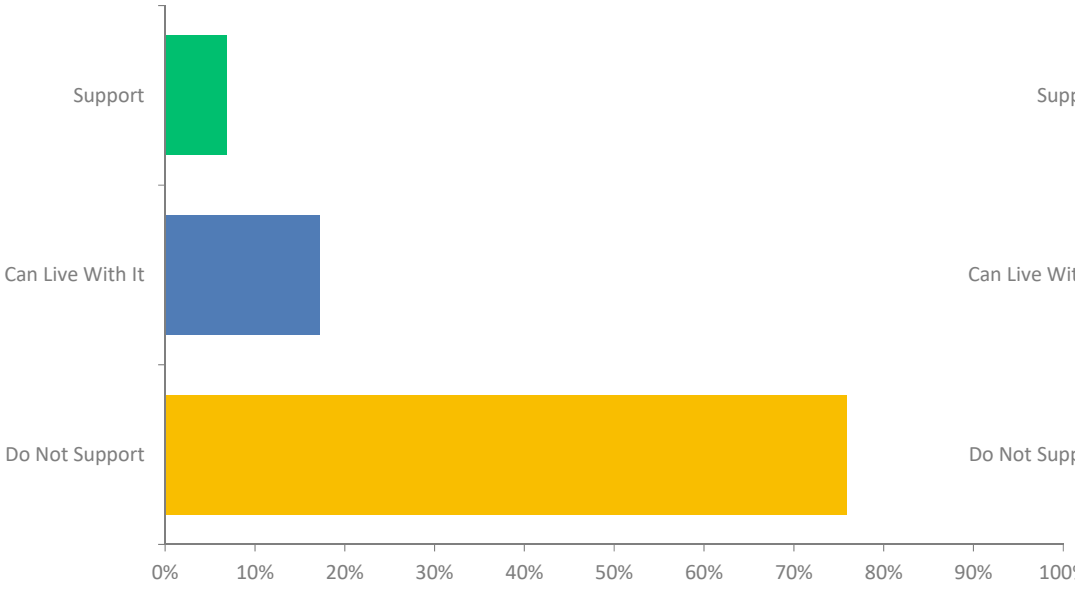


Option 1B

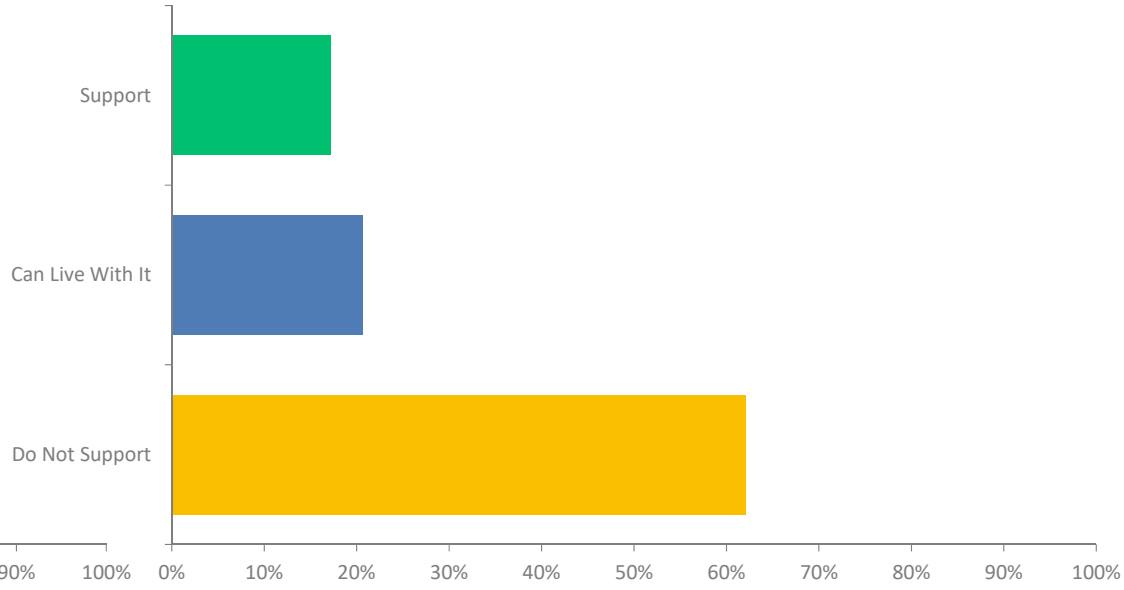
CITY OF MADISON

Questionnaire Results

- Questionnaire #2 final results
- Design options
  - 29 responses



Option 2A



Option 2B

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Forestry Information

- Tree priority score
  - 98 tree equity score, https://www.treeequityscore.org/
  - 46% canopy cover
  - Planting new trees
    - Low priority
  - Maintaining existing trees
    - High priority

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