

Complete Green Streets Guide

City of Madison

Renee Callaway, Pedestrian Bicycle Administrator

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Why Develop this Guide?

Current policies, practices, and ordinances have moved us to wider street

Right Sized Streets



28 feet wide



48 feet wide

Resident Concerns Over Streets & Safety

Wide streets with low parking utilization lead to people driving fast

Residents want street design changes, even for relatively new streets



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Principles of Complete Green Streets

- Complete Streets are for everyone, no matter who they are or how they travel.
- There is no one design of a Complete Street. Each street design considers the specific context of the community, neighborhood & street.
- A Complete Street is designed & operated in a way that prioritizes safety, comfort, and access for people.
- Green streets are part of a healthy, equitable design that are part of designing for a City's resilience.



Complete Green Streets: Street Design Impact



A process centered in community values



Clear direction on priorities



Defined street types to use as starting point for design



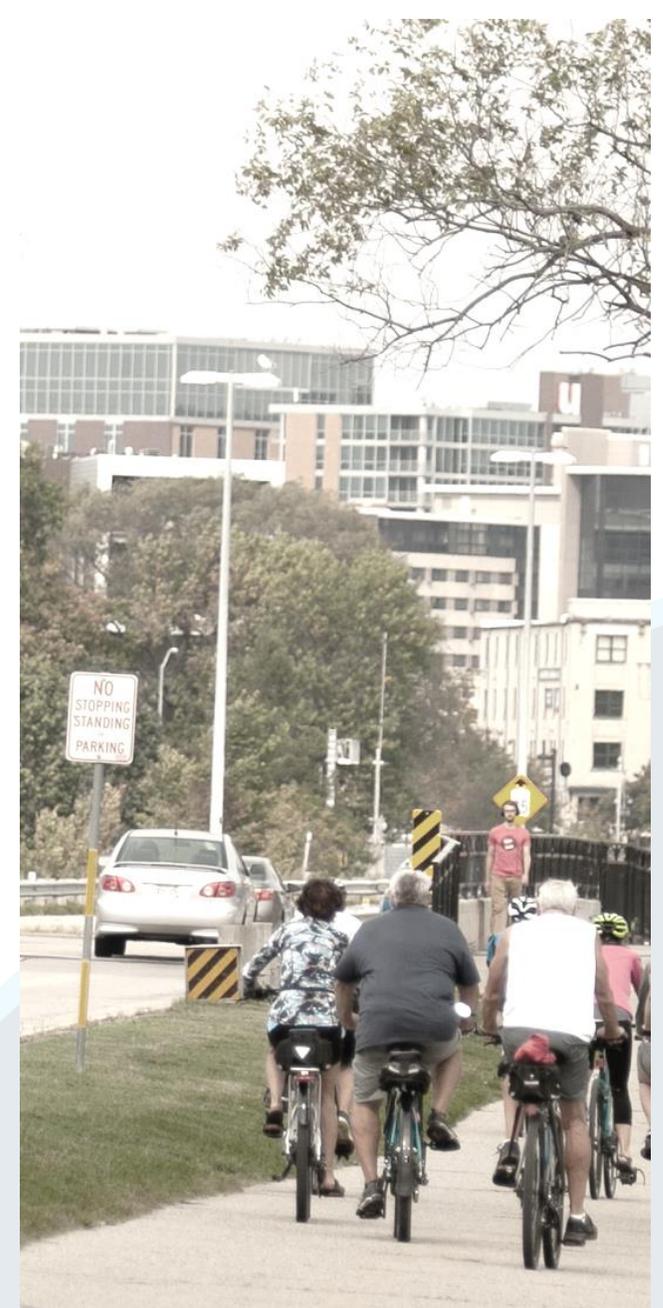
Explicit equity framework and associated process



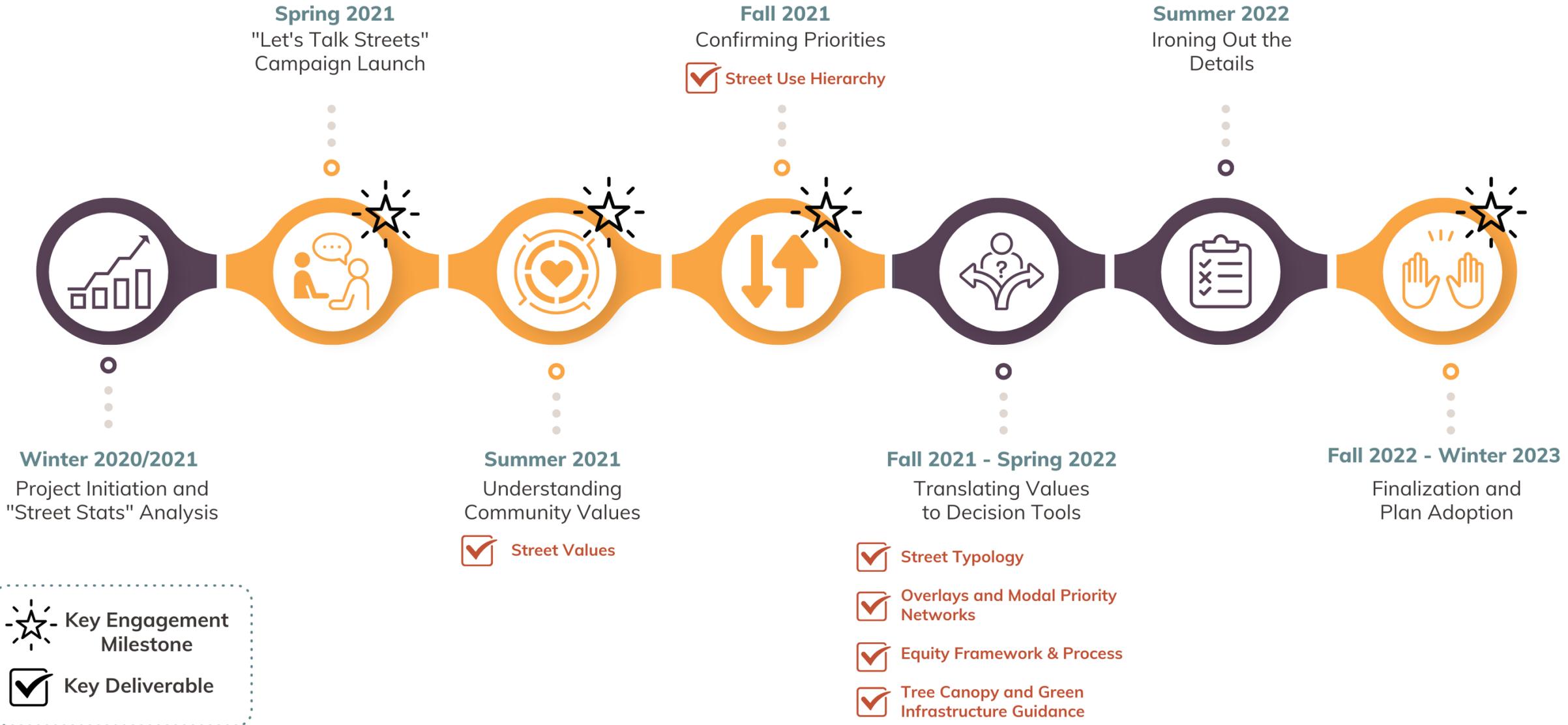
Flexible tool that will evolve over time as Madison evolves

Building Better Streets

- **Human Centered Streets**, acknowledging the travel needs of unprotected users (people walking and biking). A street should provide safe accommodations for everyone.
- **Right-sized Streets**, that are not overbuilt. Streets should be designed for today's needs, with additional right of way reserved for the future if needed.
- **Green Infrastructure**, that helps our right of way become both sustainable and a welcoming public place.



PROJECT TIMELINE



Engagement

Three phases of engagement

- Listening Phase
- Reflecting Phase
- Testing Phase

Online surveys, a virtual open house, a webinar

One survey focused on gathering input from people with disabilities

Online videos

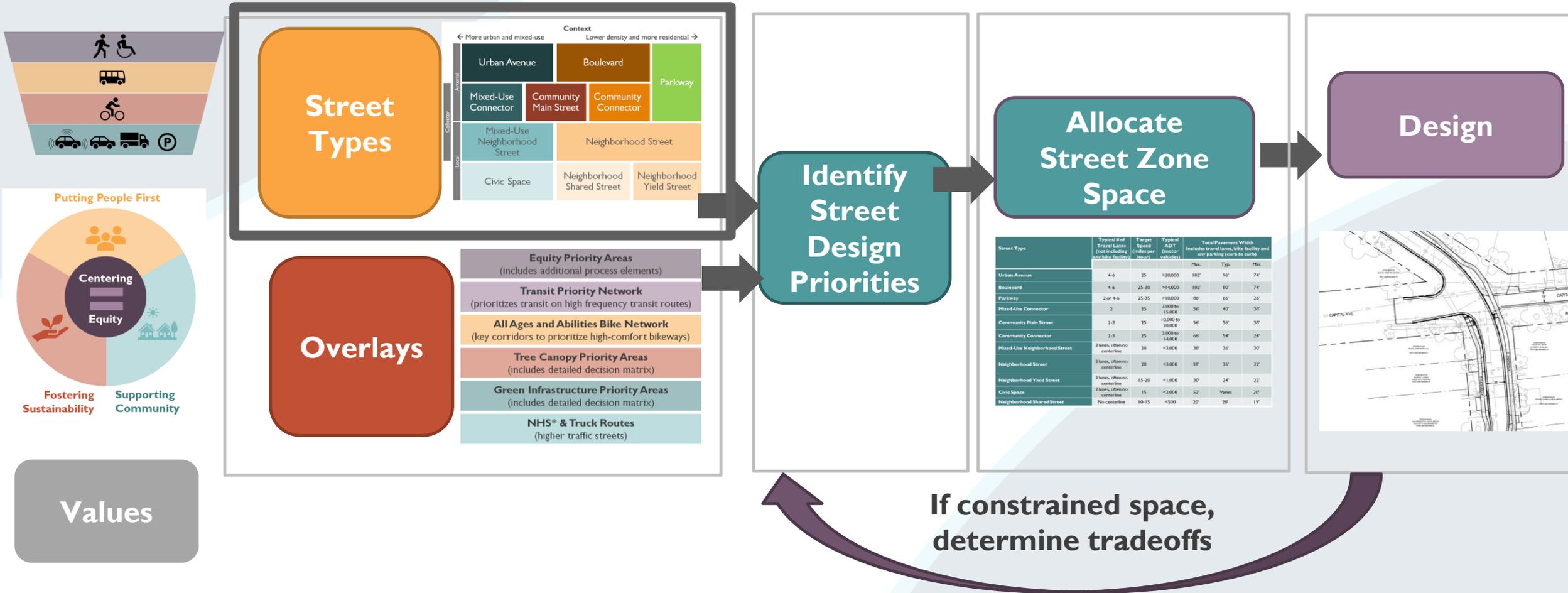
Each phase had focus groups to talk with people of color & low income residents





Guide - Process Overview

Process and elements

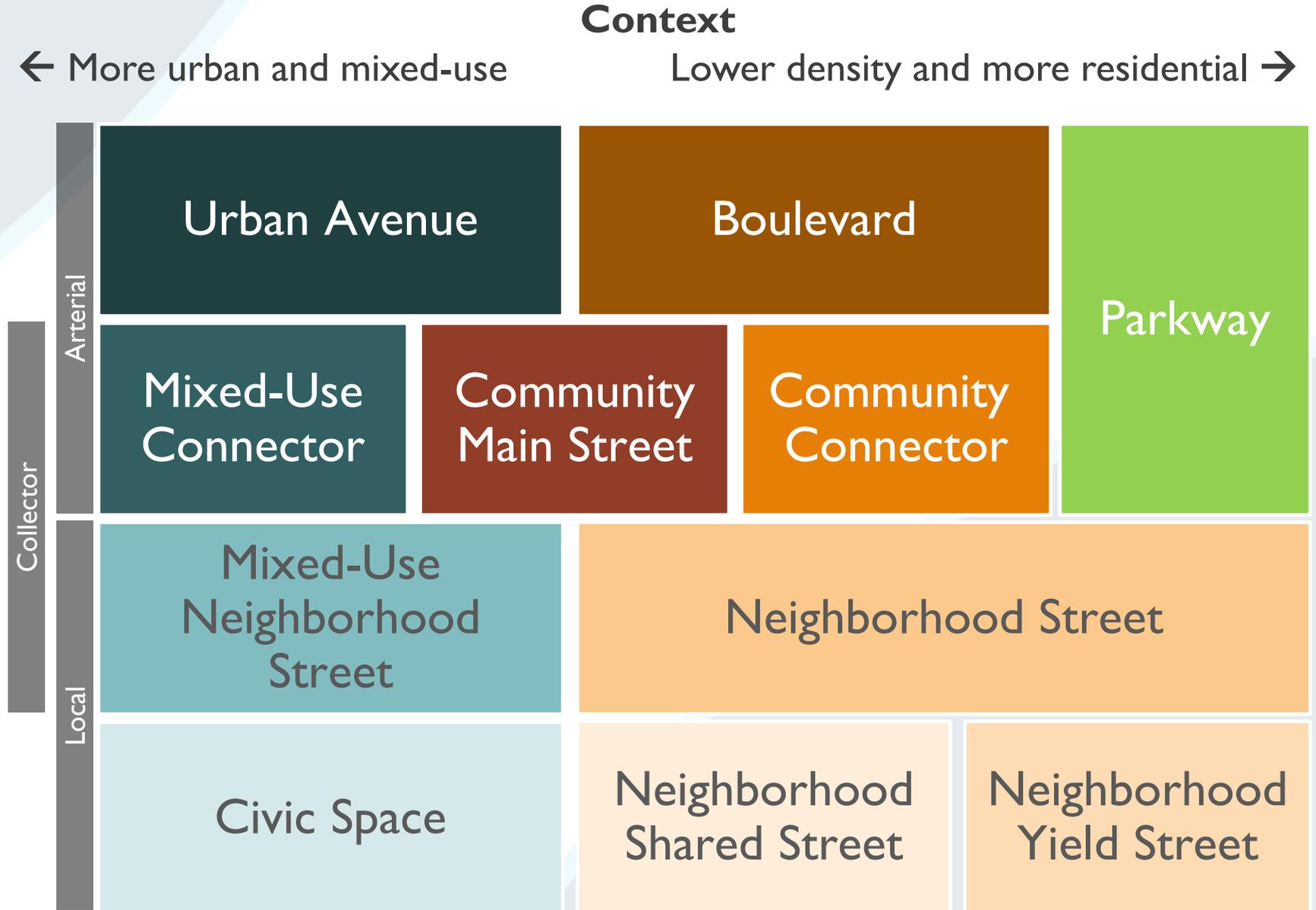


Street Types

CGS is built around a collection of **11 street types** (the typology) that describe the spectrum of current and future streets in Madison. They serve as **starting points for street design**.

The types are based on **context** and the amount of varied activity occurring.

They are intended to be **aspirational**.



Street Zones

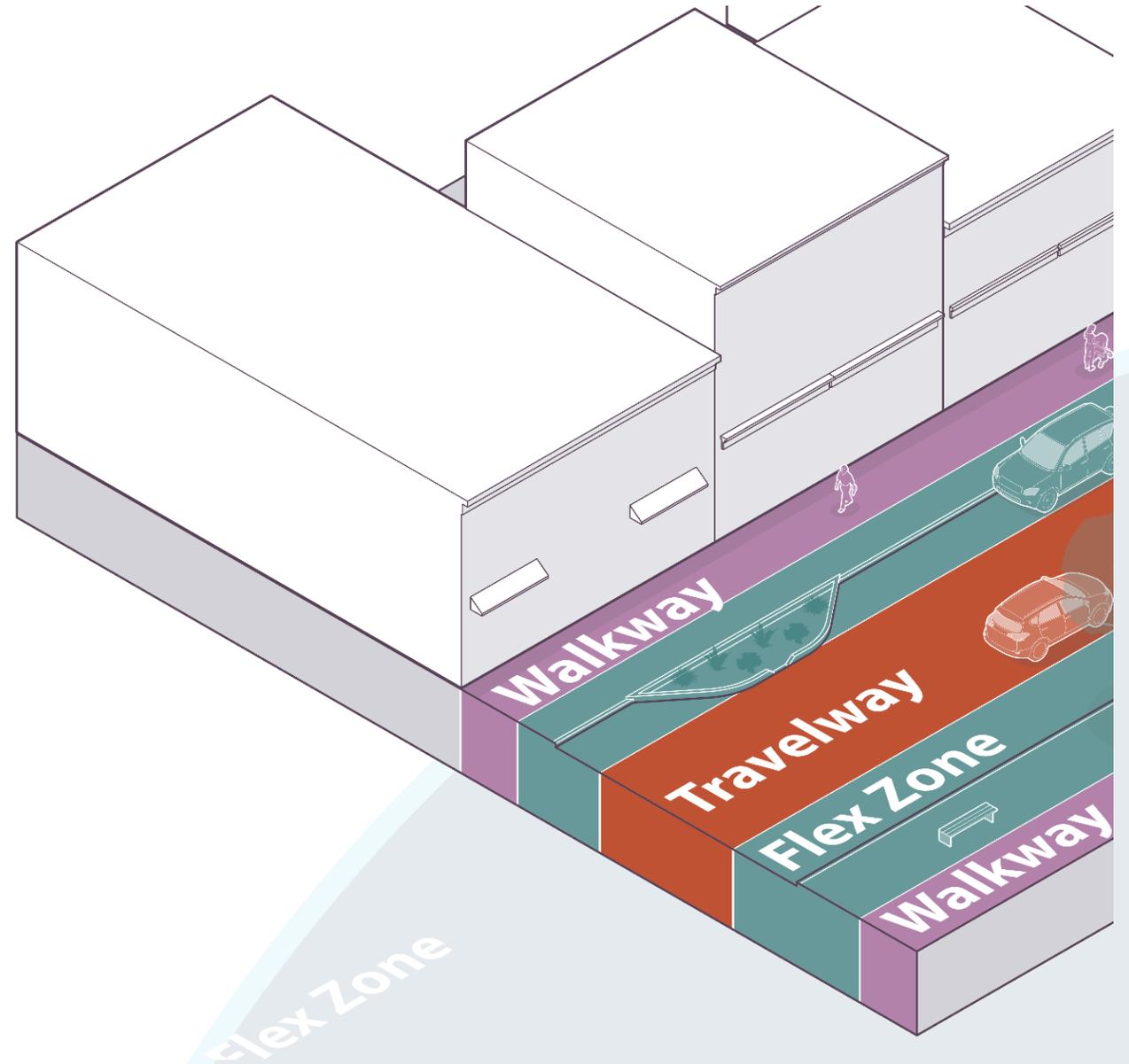
Each street type is divided into zones.

Movement (walking, biking, driving) happens in the walkway and travelway.

Bike facilities might be part of the travelway (lanes or cycletrack) or part of the walkway (a path).

Stationary uses (parking, cafes, trees) occur in the flex zone.

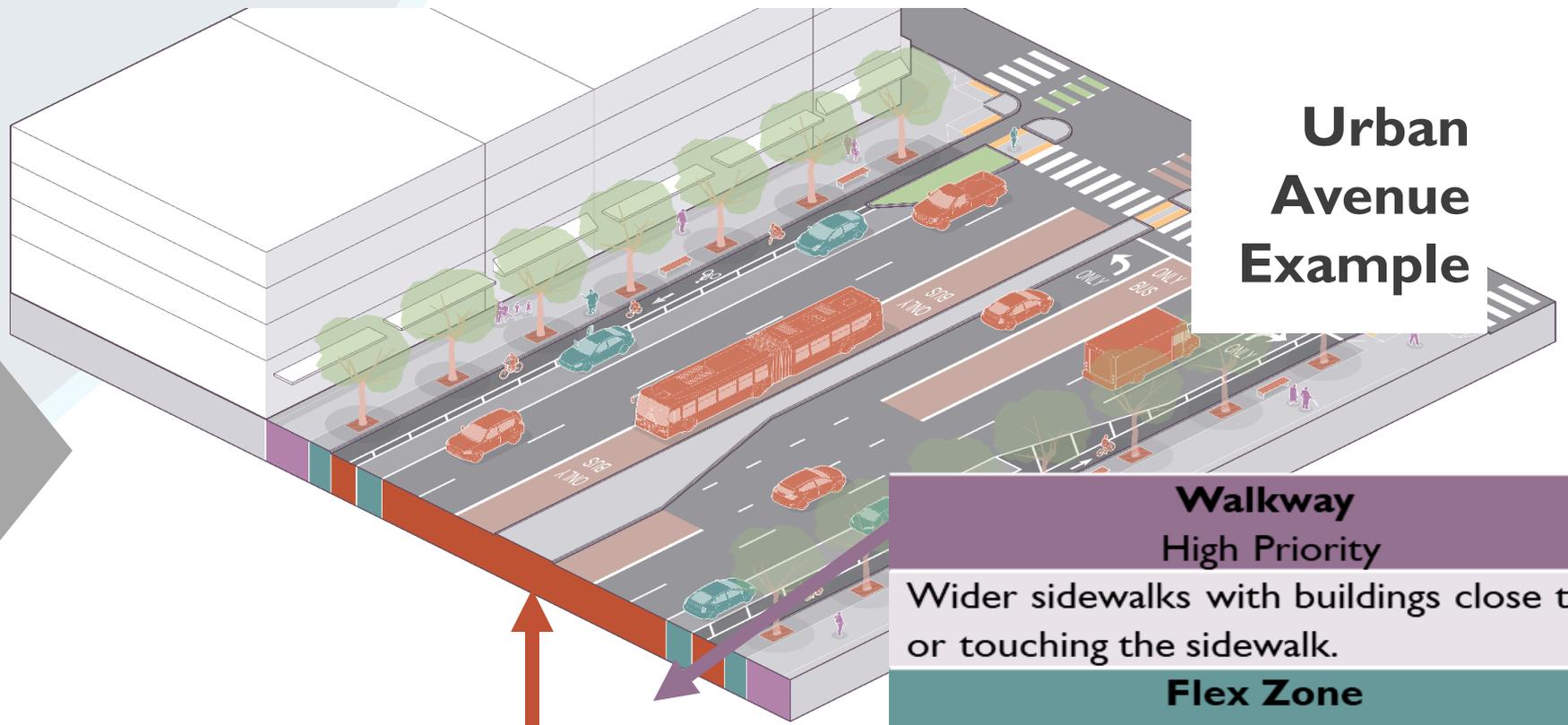
The flex zone can be terrace or part of the roadway.



Street Zones

Each street type graphic identifies the **location and relative size** of each street zone, with color-coding.

Each street type describes the relative **priority** of each zone, as well as what is **typically provided** in each zone, specific to that street type.



Urban Avenue Example

Walkway

High Priority

Wider sidewalks with buildings close to or touching the sidewalk.

Flex Zone

Medium Priority

Street trees, bike racks, and enhanced transit stops. Parallel on-street parking. Loading zones, if needed, should be provided around the corner on intersecting minor streets.

Travelway

High Priority

Dedicated transit lanes, separated bike lanes, often 2 travel lanes per direction, and medians.

Example: Urban Avenue

Major streets that serve as backbones of the street network and convey large numbers of people via multiple modes.

Walkway

High Priority

Wider sidewalks with buildings close to or even at the edge of the right of way.

Flex Zone

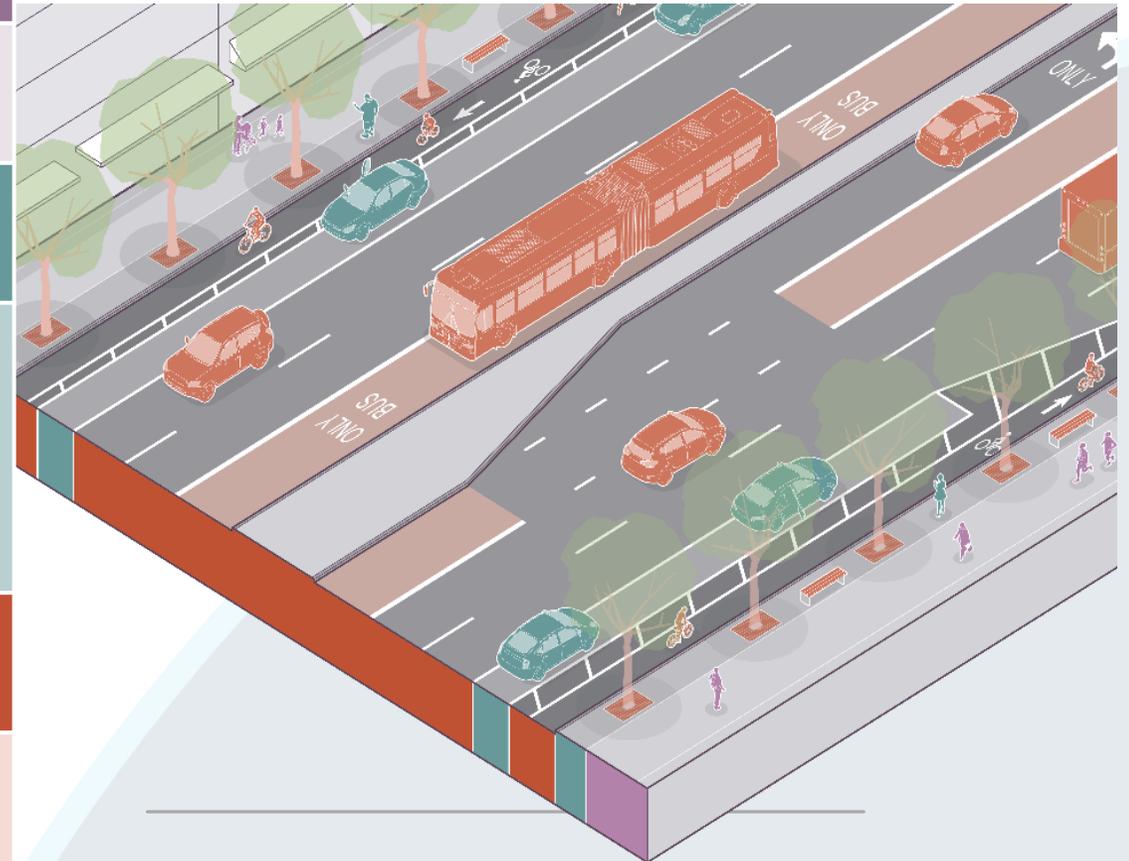
Medium Priority

Street trees, bike racks, and enhanced transit stops. Parallel on-street parking. Loading zones, if needed, should be provided around the corner on intersecting minor streets.

Travelway

High Priority

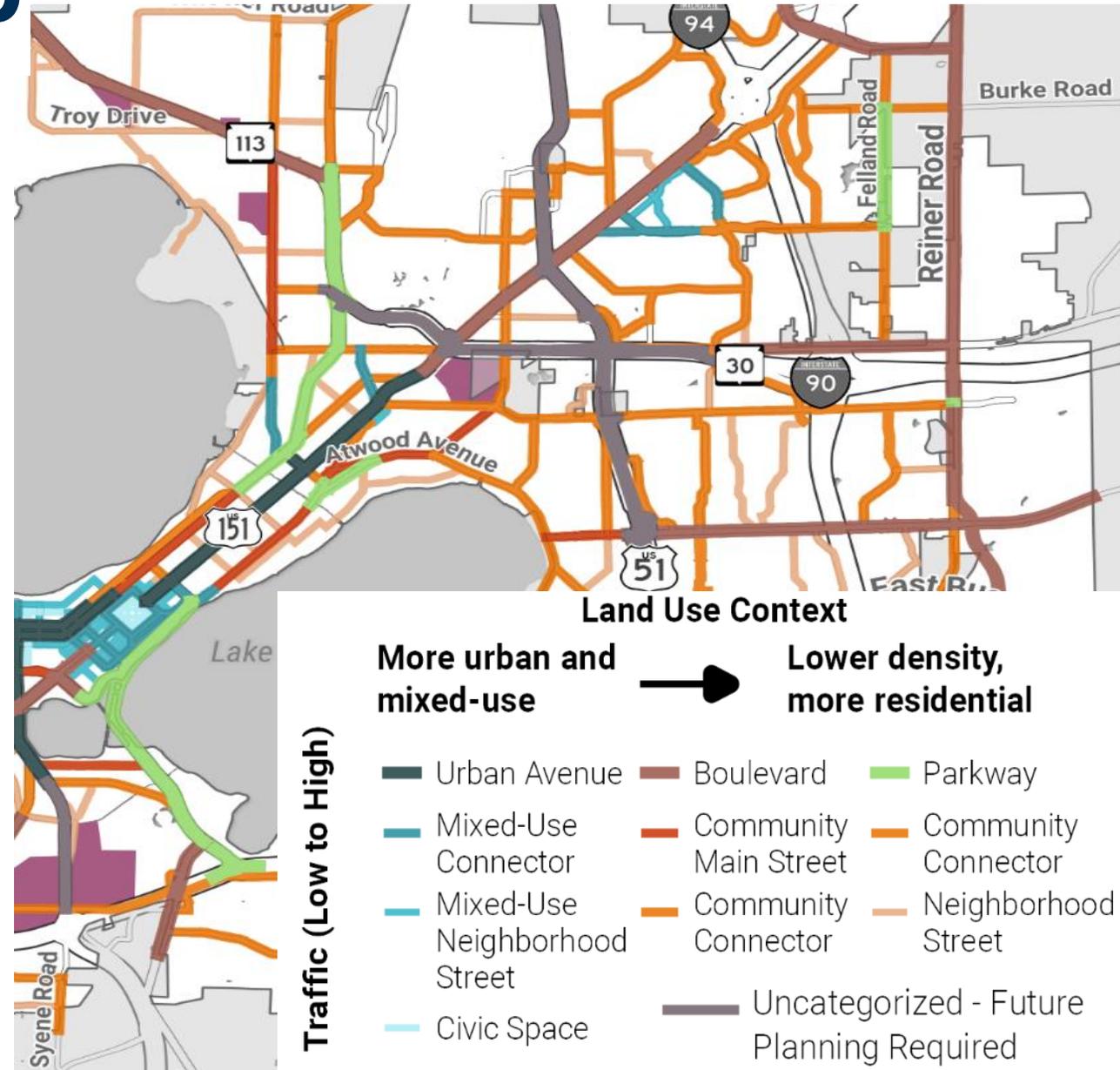
Dedicated transit lanes, separated bike lanes, often 2 travel lanes per direction, and medians.



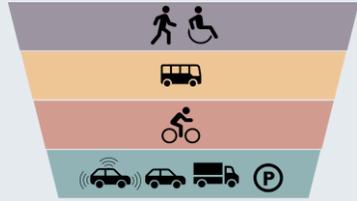
Initial Street Type Map

The street type map will evolve and change over time as development and land use plans change.

Sub-area plans, instead of recommending typical sections, will instead designate a street type that may have multiple cross sections that achieve desired objectives.



Process and elements



Values

Street Types

Context: ← More urban and mixed-use Lower density and more residential →

Arterial	Urban Avenue	Boulevard	Parkway
	Mixed-Use Connector	Community Main Street	
Collector	Mixed-Use Neighborhood Street	Neighborhood Street	
	Civic Space	Neighborhood Shared Street	Neighborhood Yield Street
Local			

Overlays

- Equity Priority Areas** (includes additional process elements)
- Transit Priority Network** (prioritizes transit on high frequency transit routes)
- All Ages and Abilities Bike Network** (key corridors to prioritize high-comfort bikeways)
- Tree Canopy Priority Areas** (includes detailed decision matrix)
- Green Infrastructure Priority Areas** (includes detailed decision matrix)
- NHS* & Truck Routes** (higher traffic streets)

Identify Street Design Priorities

Allocate Street Zone Space

Street Type	Typical # of Travel Lanes (not including turn lanes or bike facility)	Target Speed (miles per hour)	Typical ADT (motor vehicles)	Total Pavement Width (includes travel lanes, bike facility and any parking (curb to curb))		
				Plc.	Typ.	Plc.
Urban Avenue	4-6	25	>20,000	102'	96'	74'
Boulevard	4-6	25-30	>14,000	102'	80'	74'
Parkway	2 or 4-6	25-35	>10,000	86'	66'	26'
Mixed-Use Connector	2	25	3,000 to 15,000	56'	40'	38'
Community Main Street	2-3	25	10,000 to 30,000	56'	56'	38'
Community Connector	2-3	25	3,000 to 14,000	66'	54'	24'
Mixed-Use Neighborhood Street	2 lanes, often no centerline	20	<3,000	38'	36'	30'
Neighborhood Street	2 lanes, often no centerline	20	<3,000	38'	36'	22'
Neighborhood Yield Street	2 lanes, often no centerline	15-20	<1,000	30'	24'	22'
Civic Space	2 lanes, often no centerline	15	<2,000	52'	Varies	20'
Neighborhood Shared Street	No centerline	10-15	<500	20'	20'	19'

Design



If constrained space, determine tradeoffs

Overlays

- Overlays influence design decisions and the priority of various elements.
- Each street type describes the influence of each overlay.

Equity Priority Areas
(includes additional process elements)

Transit Priority Network
(prioritizes transit on high frequency transit routes)

All Ages and Abilities Bike Network
(key corridors to prioritize high-comfort bikeways)

Tree Canopy Priority Areas
(includes detailed decision matrix)

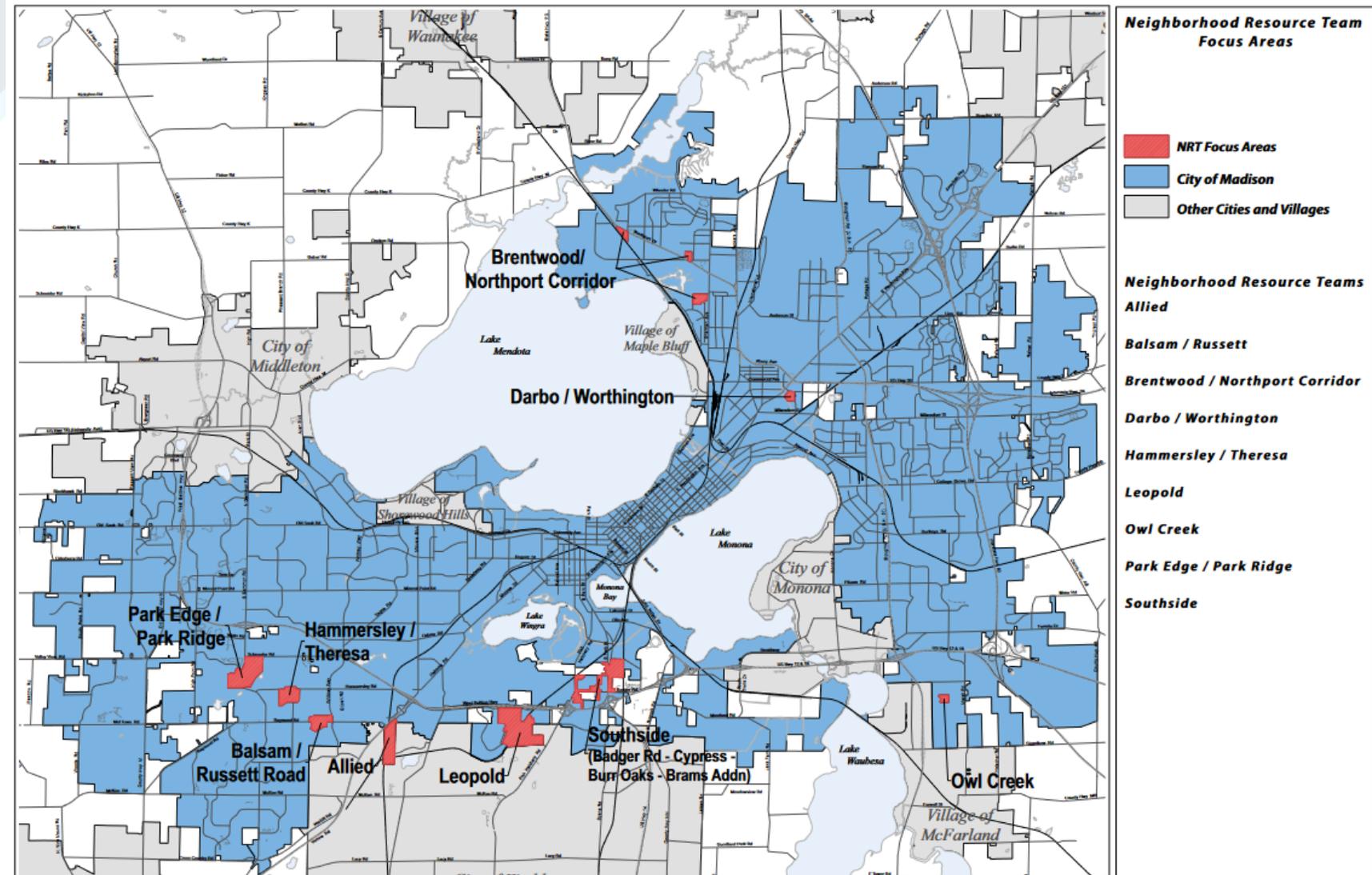
Green Infrastructure Priority Areas
(includes detailed decision matrix)

National Highway System & Truck Routes
(higher traffic streets)

Equity Priority Areas

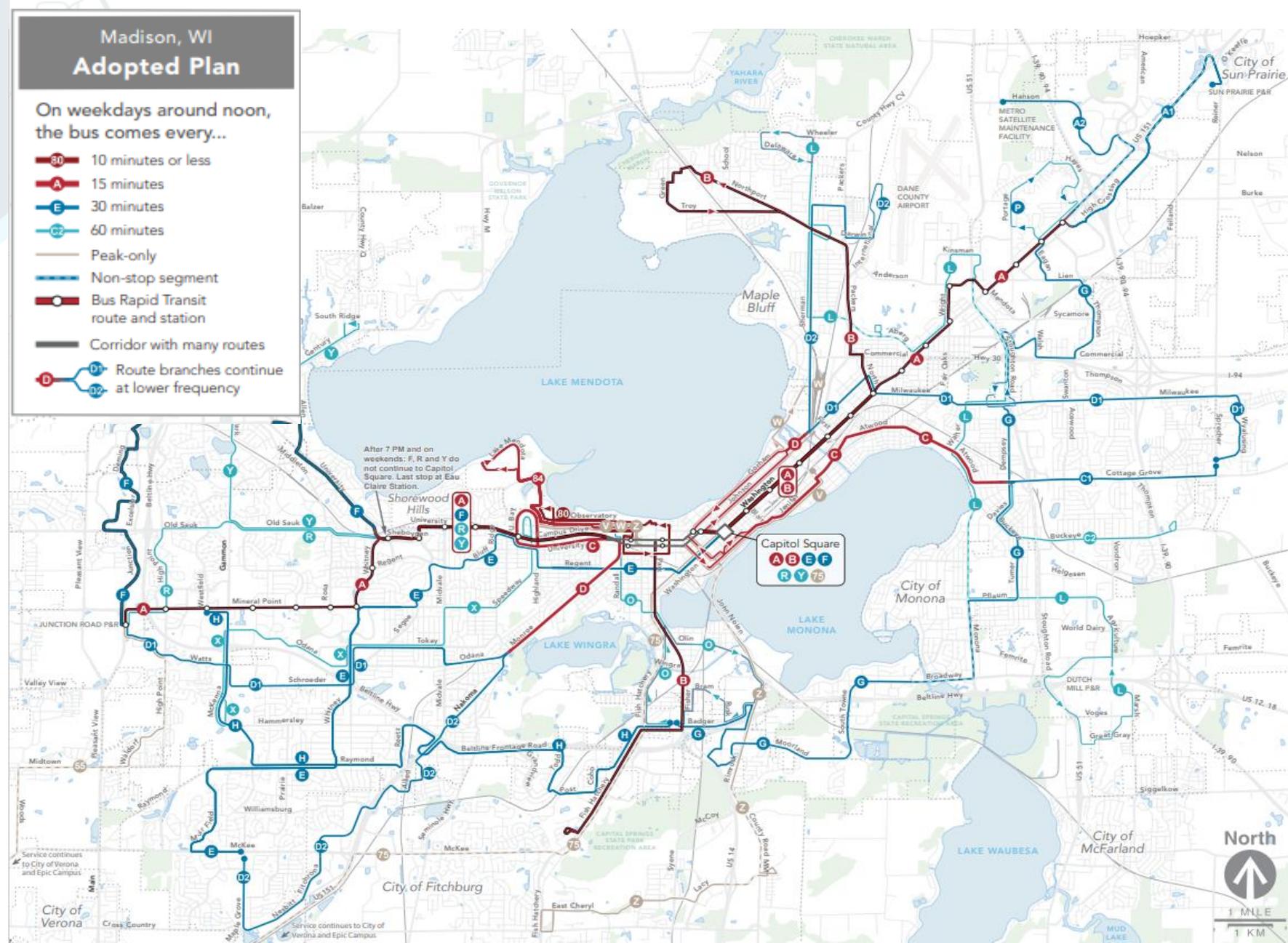
Consult the Map of Equity Priority Areas (EPAs)

- Initial map based on Neighborhood Resource Team (NRT) areas
- City project started that will identify additional areas based on demographic data



Transit Priority Network

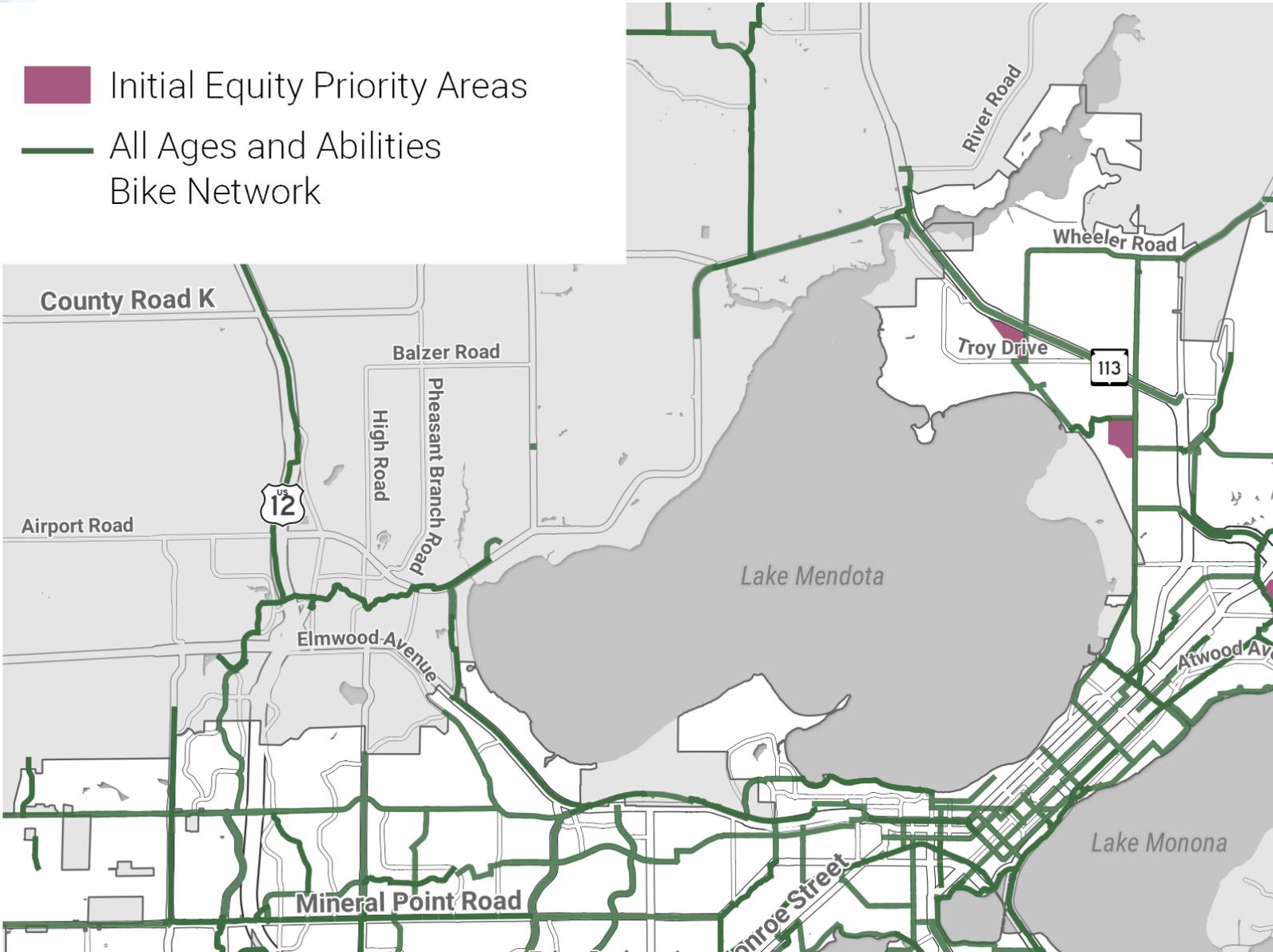
- Transit Priority based on approved routes
- Priority streets would have 15 minute service on weekdays, midday



All Ages Ability Bike Network

All Ages Ability Bike Network

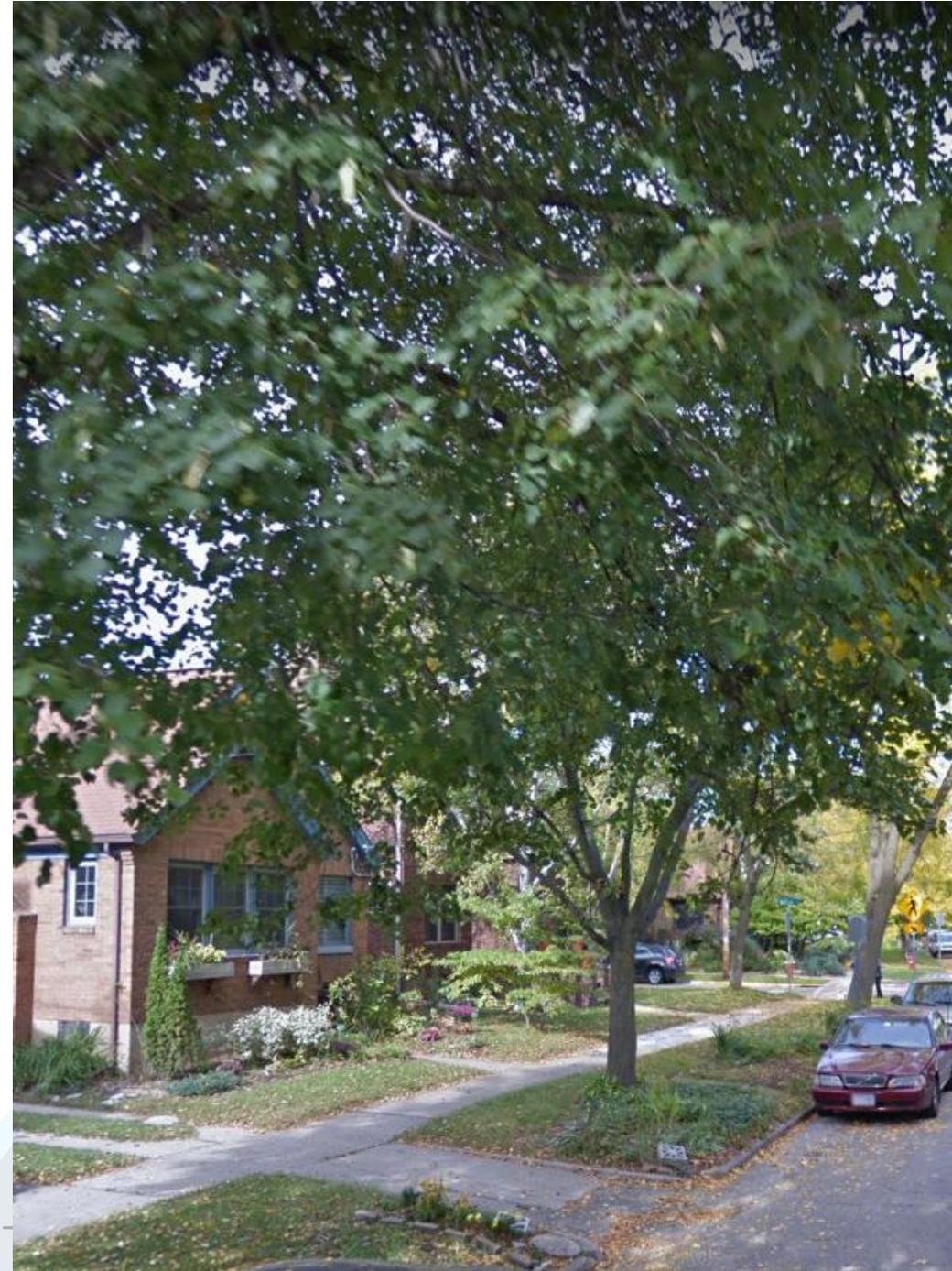
- Considered most critical for creating a complete network.
- Designed for all ages and abilities.
- Start with interim map & finalize in 2023
- Updates to map approved by Transportation Commission



Tree Canopy priority

Purpose & Goals

- Reach citywide goal of 40% tree canopy coverage.
- Identify areas with low existing tree canopy coverage to prioritize space in Flex Zone for trees and/or consider use of suspended pavement
- Identify appropriate solutions for planting trees while reducing conflicts with other right-of-way priorities.
- Support for [Urban Forestry Task Force Report](#)

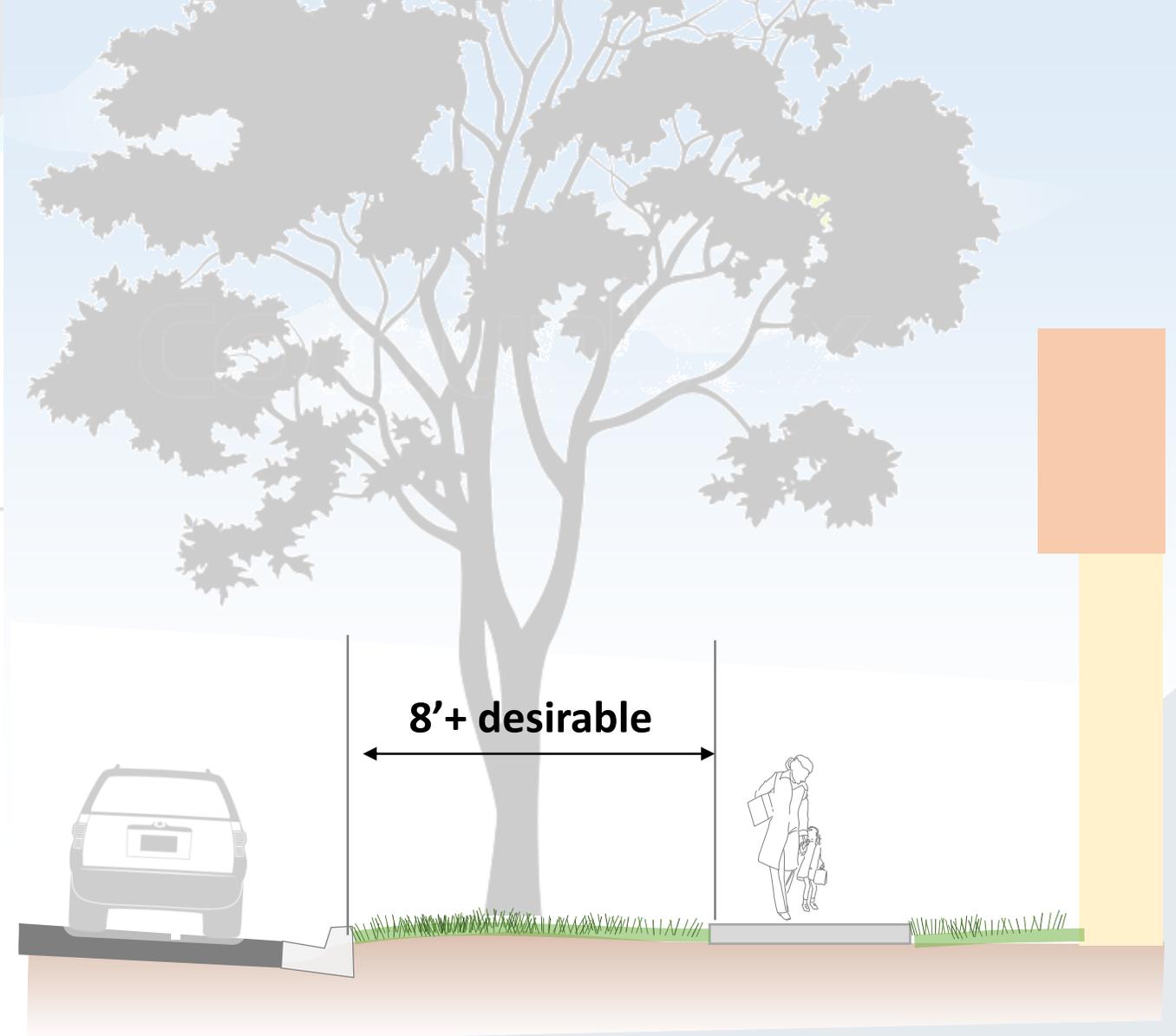


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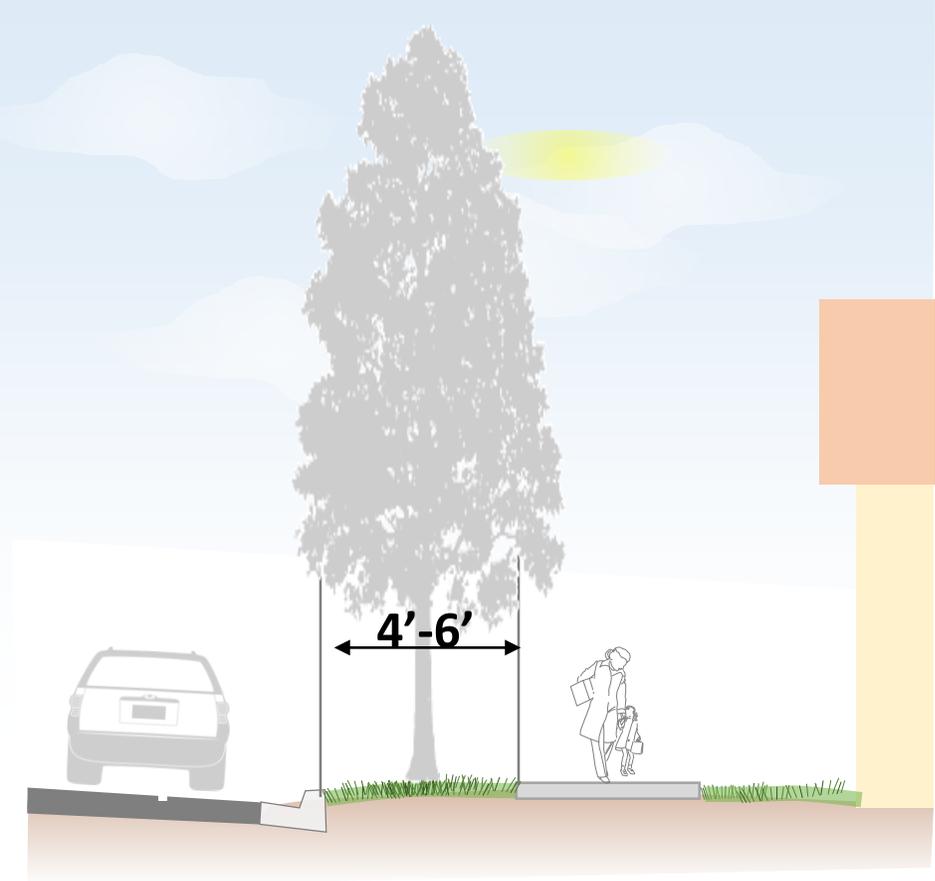
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Tree Canopy Priority

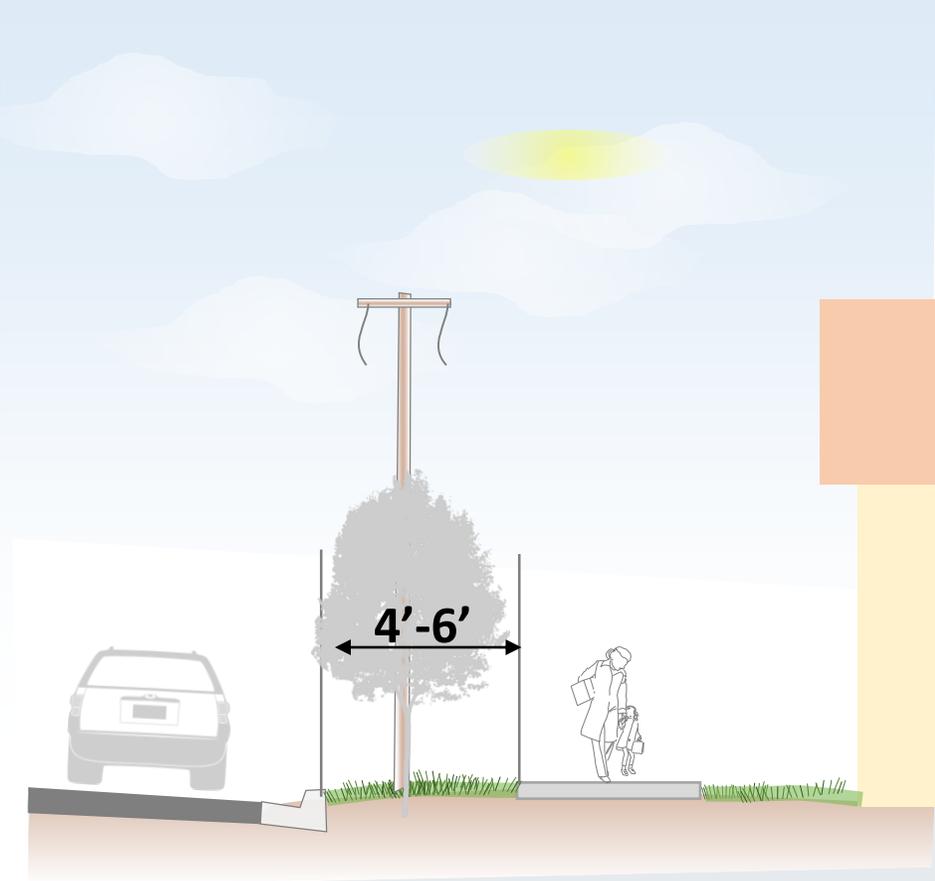


**Reconstruction
Canopy Trees**

Tree Canopy Retrofit

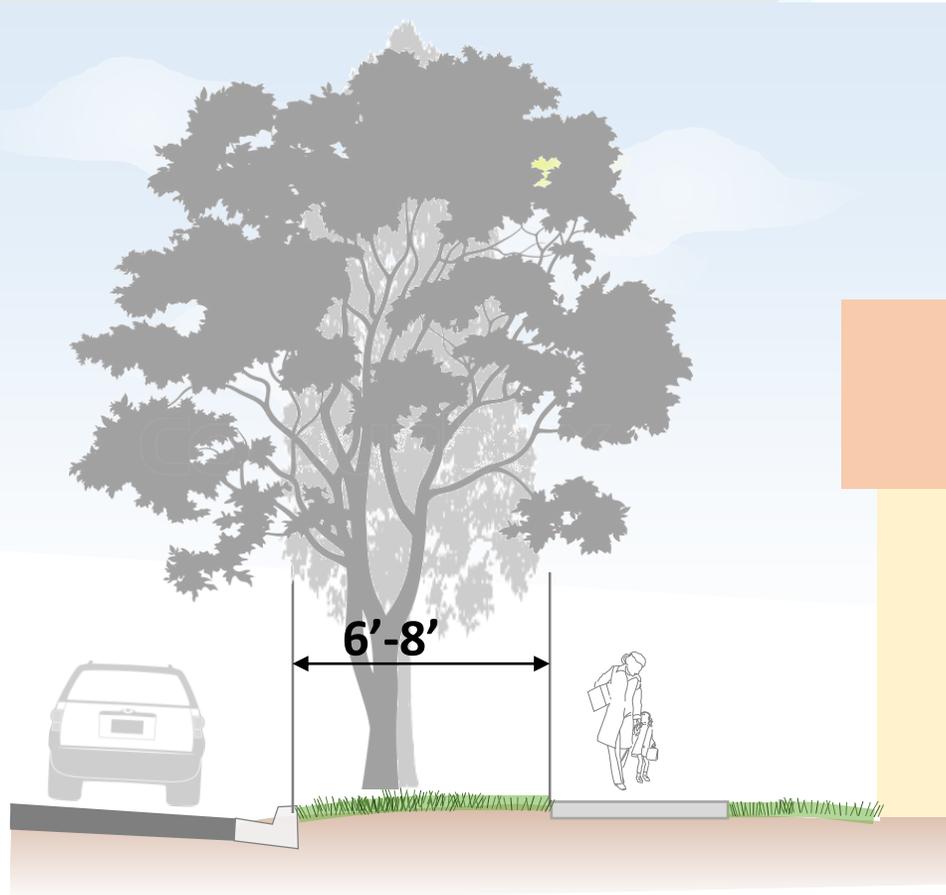


Retrofit
No Utility Conflicts
Narrow Trees

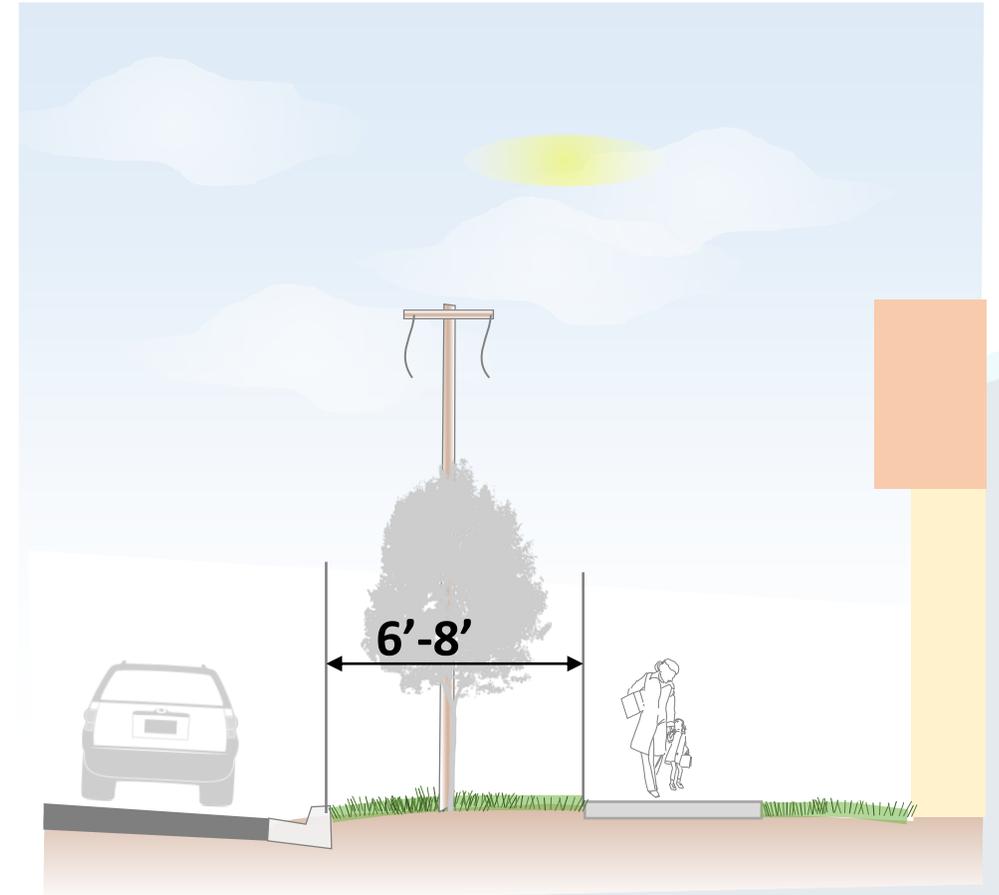


Retrofit
Utility Conflicts
Ornamental Trees

Tree Canopy Retrofit



Retrofit
No Utility Conflicts
Narrow or Large Trees

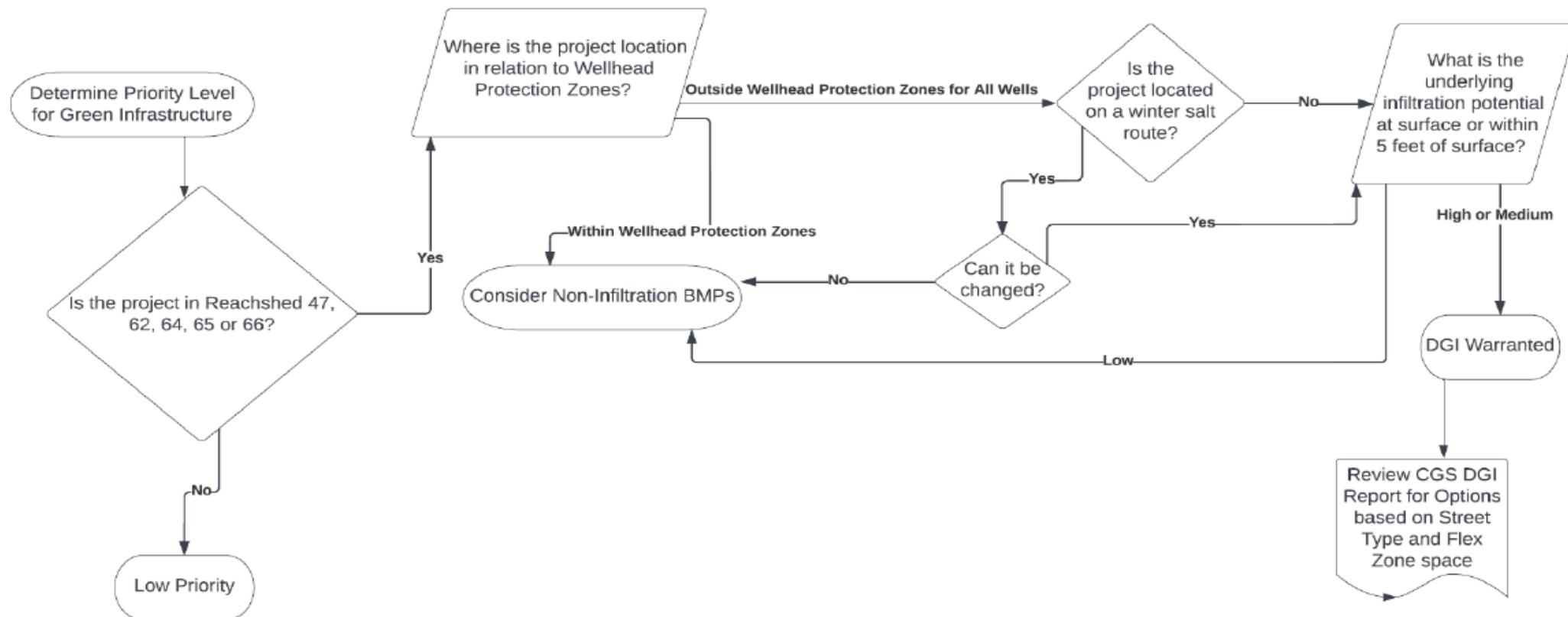


Retrofit
Utility Conflicts
Ornamental Trees

Green Infrastructure Priority

Purpose & Goals

- Identify appropriate and viable locations for distributed green infrastructure (DGI) for stormwater management and water quality improvement and appropriate engineering solutions.



Green Infrastructure Priority

- Identify appropriate distributed green infrastructure (DGI) for stormwater management and water quality improvement and appropriate engineering solutions.

Table 14 Nonpermeable Pavement Green Infrastructure Use Per Street Type

		Street Type ¹	Bioretention Basin	Bioswale	Terrace Rain Garden	Traffic-Calming Rain Garden Bump Out	Rock Vault	Filter Strip	Stormwater Planter	Catch Basin	Coanda Screen	Rain Basin
		○ Yes ● Maybe ■ No										
Collector	Arterial	Urban Avenue	●	■	■	■	■	●	●	○	○	■
		Boulevard	○	■	●	■	■	○	●	○	○	●
		Parkway	○	■	●	■	■	○	●	○	○	●
		Mixed-Use Connector	●	■	■	●	■	■	○	○	○	■
		Community Main Street	●	■	■	●	■	■	○	○	○	■
		Community Connector	●	●	■	●	■	●	●	○	○	■
	Local	Mixed-Use Neighborhood Street	●	●	○	○	●	●	○	○	○	○
		Neighborhood Street	○	●	○	○	○	●	●	○	○	○
		Neighborhood Yield Street	●	●	○	○	○	●	●	○	○	○
		Neighborhood Shared Street	●	●	●	●	●	●	●	○	○	●

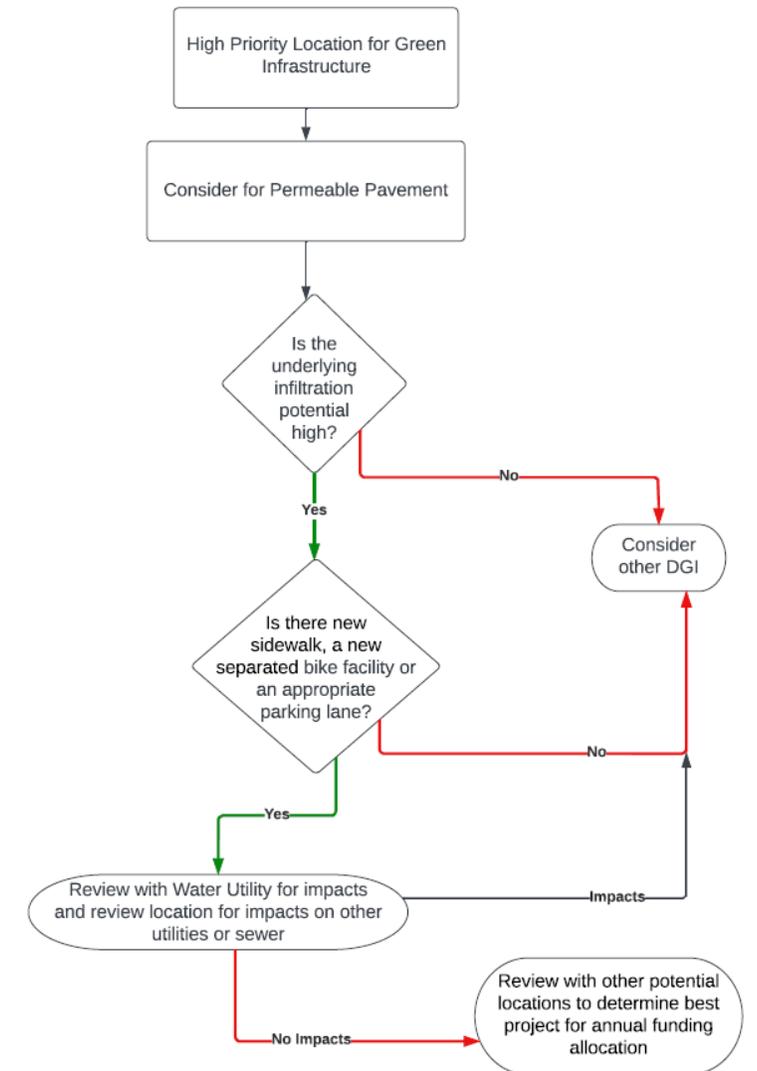
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Green Infrastructure Priority

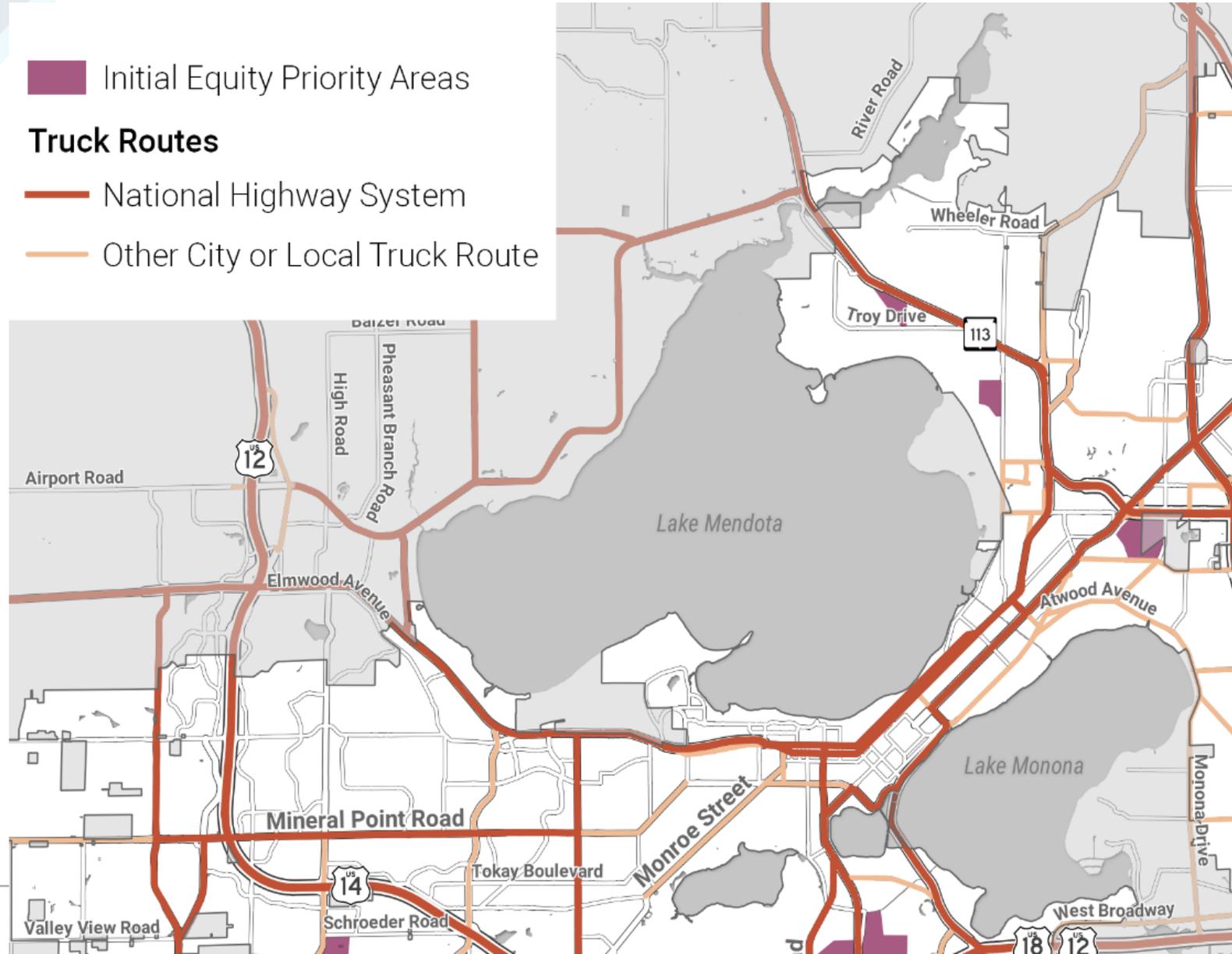
- Identify appropriate distributed green infrastructure (DGI) for stormwater management and water quality improvement and appropriate engineering solutions.



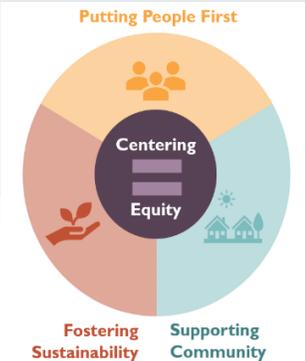
National Highway System & Truck routes

Changes to NHS routes only occur through collaboration with WisDOT and the Greater Madison MPO.

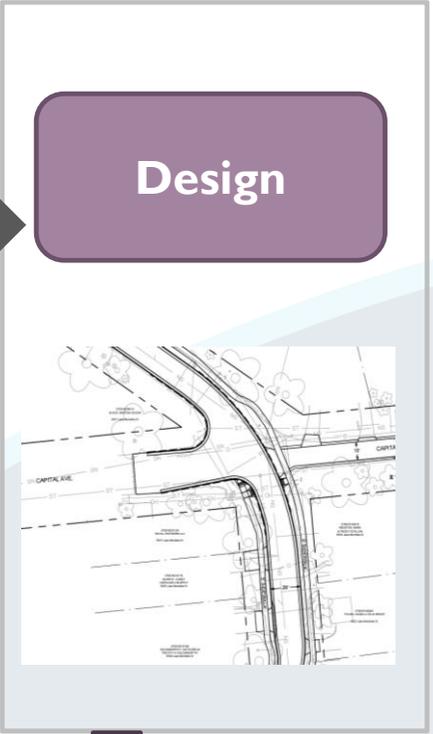
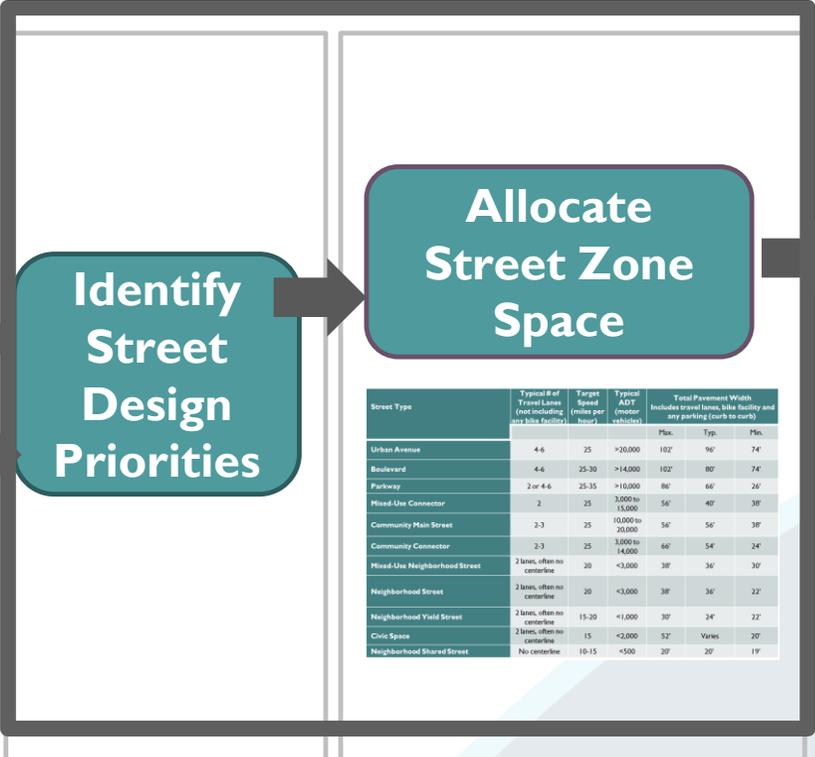
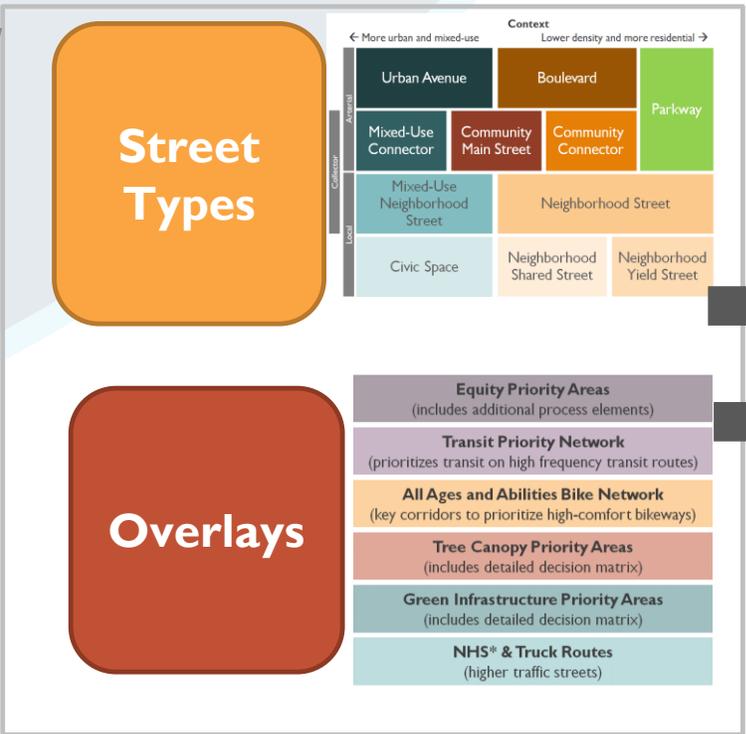
Truck routes must be able to accommodate larger vehicles.



Process and Elements



Values



If constrained space, determine tradeoffs

Street Zone Allocation Charts

Chart with widths for each street zone

- May be typical widths and/or minimum/maximums

ROW based on preferred widths for each zone

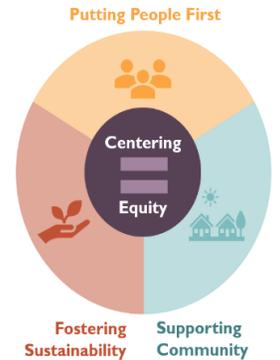
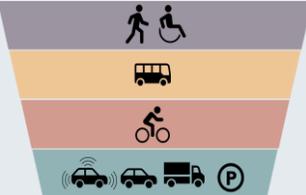
Street Type	Total Walkway Width (per side) ^a		Total Flex Zone Width (per side) ^b		Total Travelway Width ^c			Total Right-of- Way Width		Typical ADT (motor vehicles)
	Pref.	Min.	Pref.	Min.	Max.	Typ.	Min.	Typ.	Min.	
Urban Avenue	9'	6'	15'	10'	102'	96'	76'	150'	108'	>20,000
Boulevard	7' if sidewalk	6'	15'	10'	102'	80'	76'	146'	108'	>14,000
Parkway	14' ^d	6'	20'	12'	62'	60'	22'	128'	58'	>10,000
Mixed-Use Connector	9'	6'	19'	8'	38'	38'	28' ^e	94'	56'	3,000 to 15,000
Community Main Street	9'	6'	18' ^f	9'	56' ^f	36'	36'	90'	66'	10,000 to 20,000
Community Connector	7' ^g	6' ^g	15'	9'	36'	36' ^g	26'	80'	56'	3,000 to 14,000
Mixed-Use Neighborhood Street	9'	6'	19'	9'	22'	20'	20'	78'	50'	<3,000
Neighborhood Street	6'	6'	15'	10'	22'	20'	18'	64'	50'	<3,000
Neighborhood Yield Street	6' ^h	6' ^h	17'	10'	16'	16'	14'	62'	46'	<1,500
Civic Space	13'	10'	19'	13'	Varies	Varies	20'	Varies	66'	<2,000
Neighborhood Shared Street	7' ⁱ	6' ⁱ	Varies	Varies	Varies	NA	NA	Varies	Varies	<500

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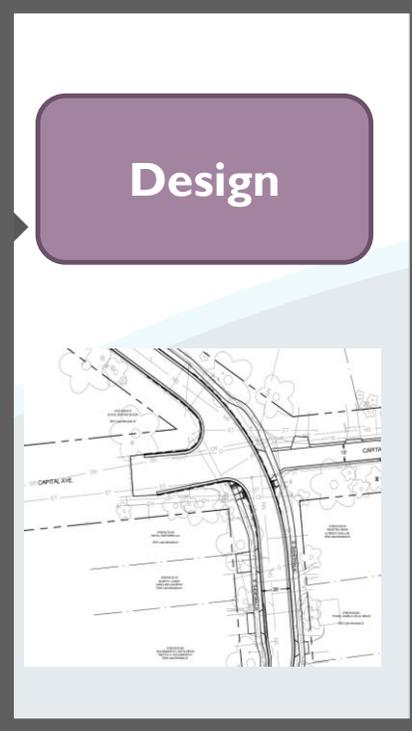
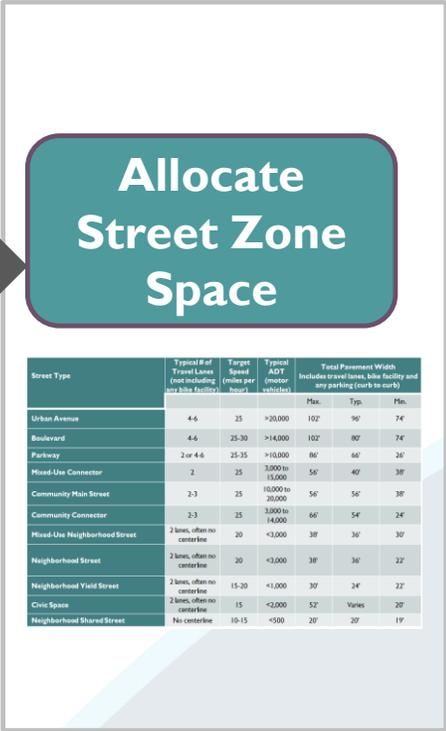
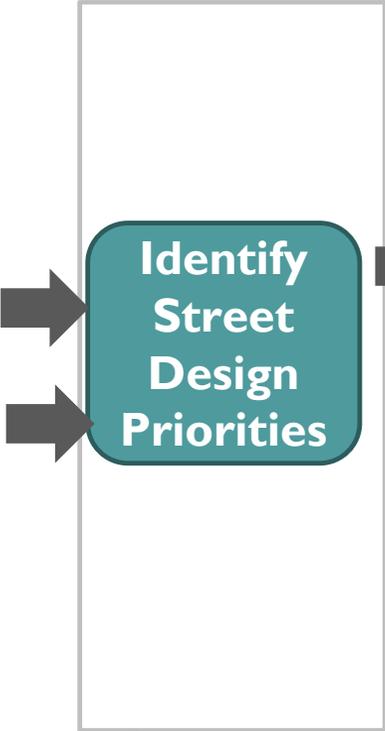


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Process and Elements



Values



If constrained space, determine tradeoffs

Resolution

The Board of Public Works shall have the ability to approve updates to the tree canopy and green infrastructure priority overlays.

Revision to Sections 16 and 33 of the Madison General Ordinances to be consistent with the Complete and Green Streets Policy Guide.

- Subdivision Ordinance
- Committee Responsibilities

Questions?

Renee Callaway, Pedestrian Bicycle Administrator

ReCallaway@cityofmadison.com

www.cityofmadison.com/transportation/initiatives/complete-green-streets

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