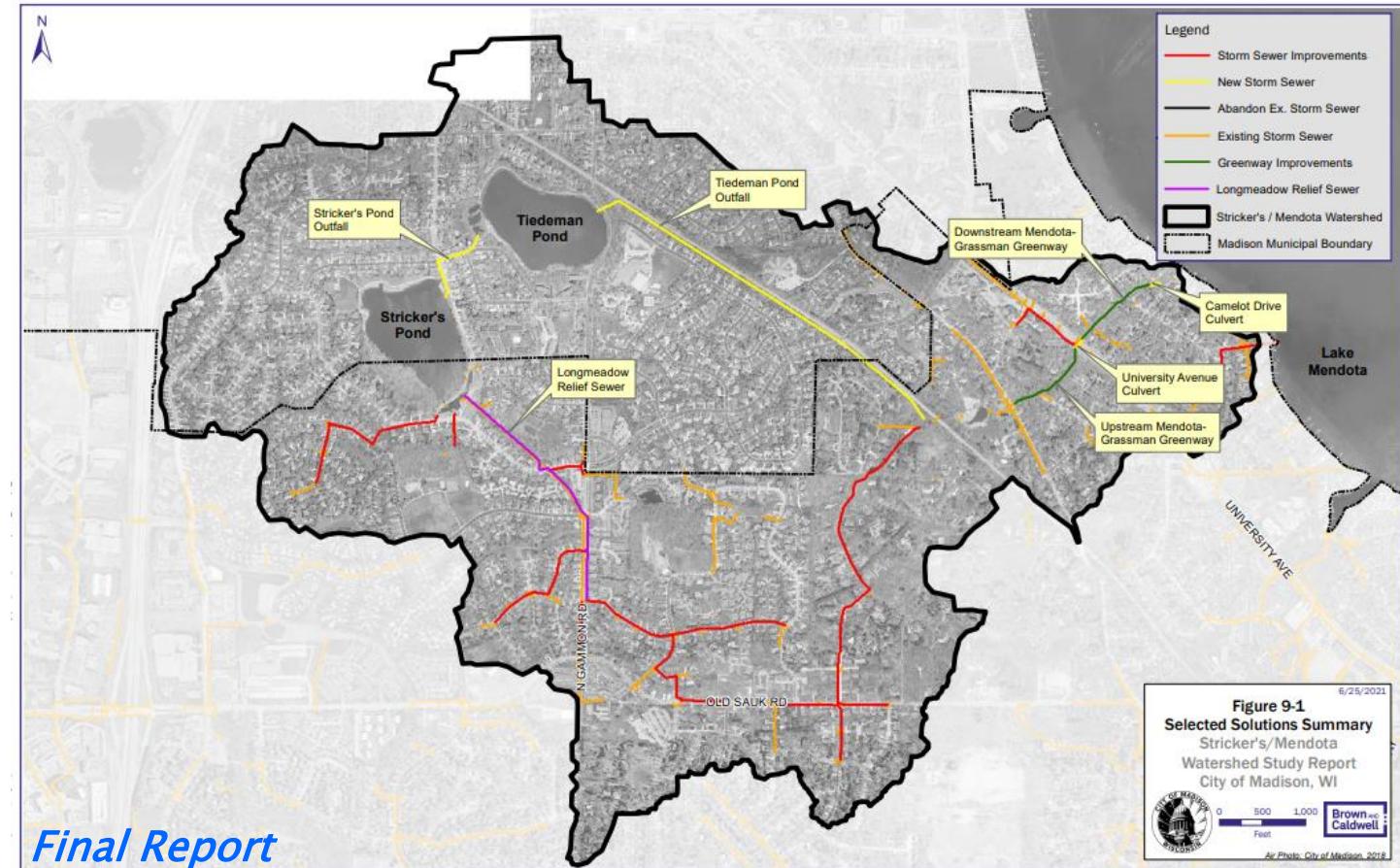
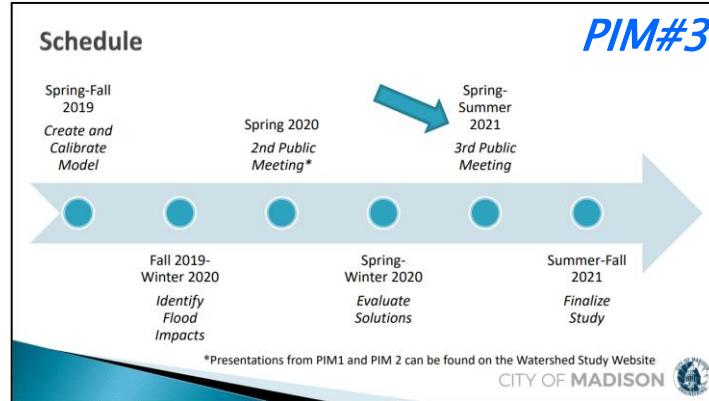


Project from Strickers/Mendota Watershed Study

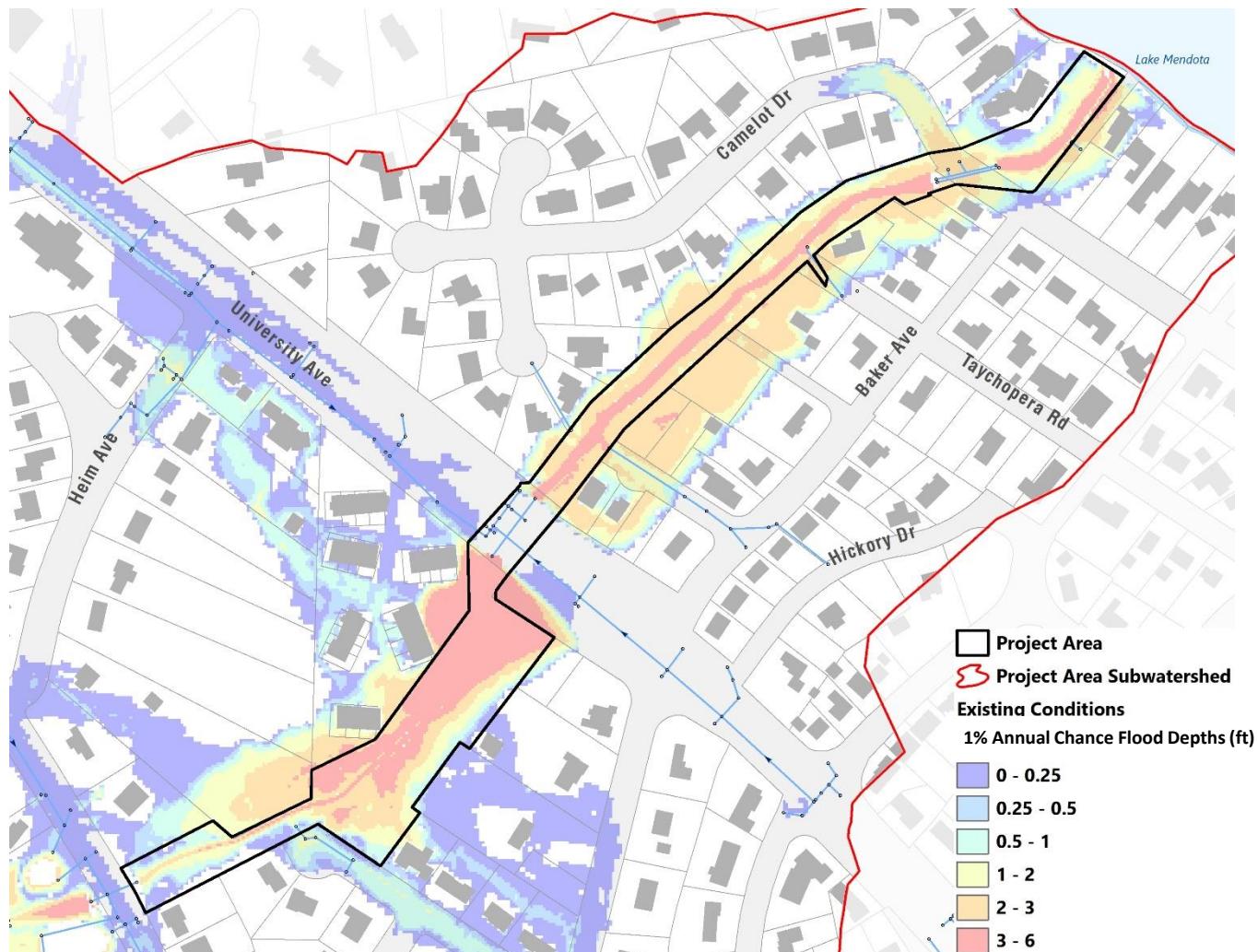


<https://www.cityofmadison.com/engineering/projects/strickers-mendota-watershed-study>

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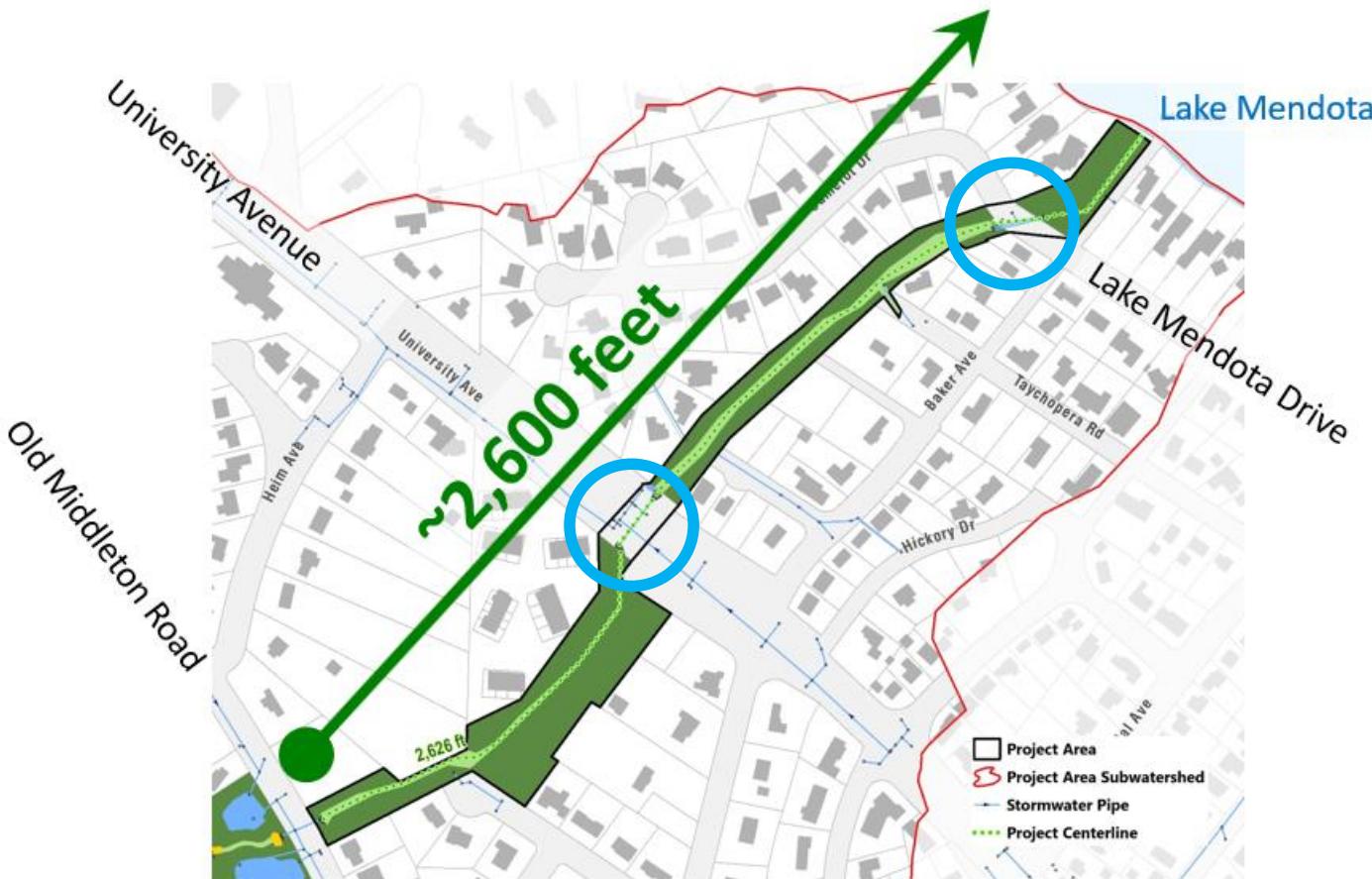
Existing Conditions 1% Annual Chance Flood



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Mendota–Grassman Greenway Project



Flood Mitigation Targets

1% Chance Event (6.66" rain/24 hours)

- No structure (home/building) flooding
- No greenway crossing overflow

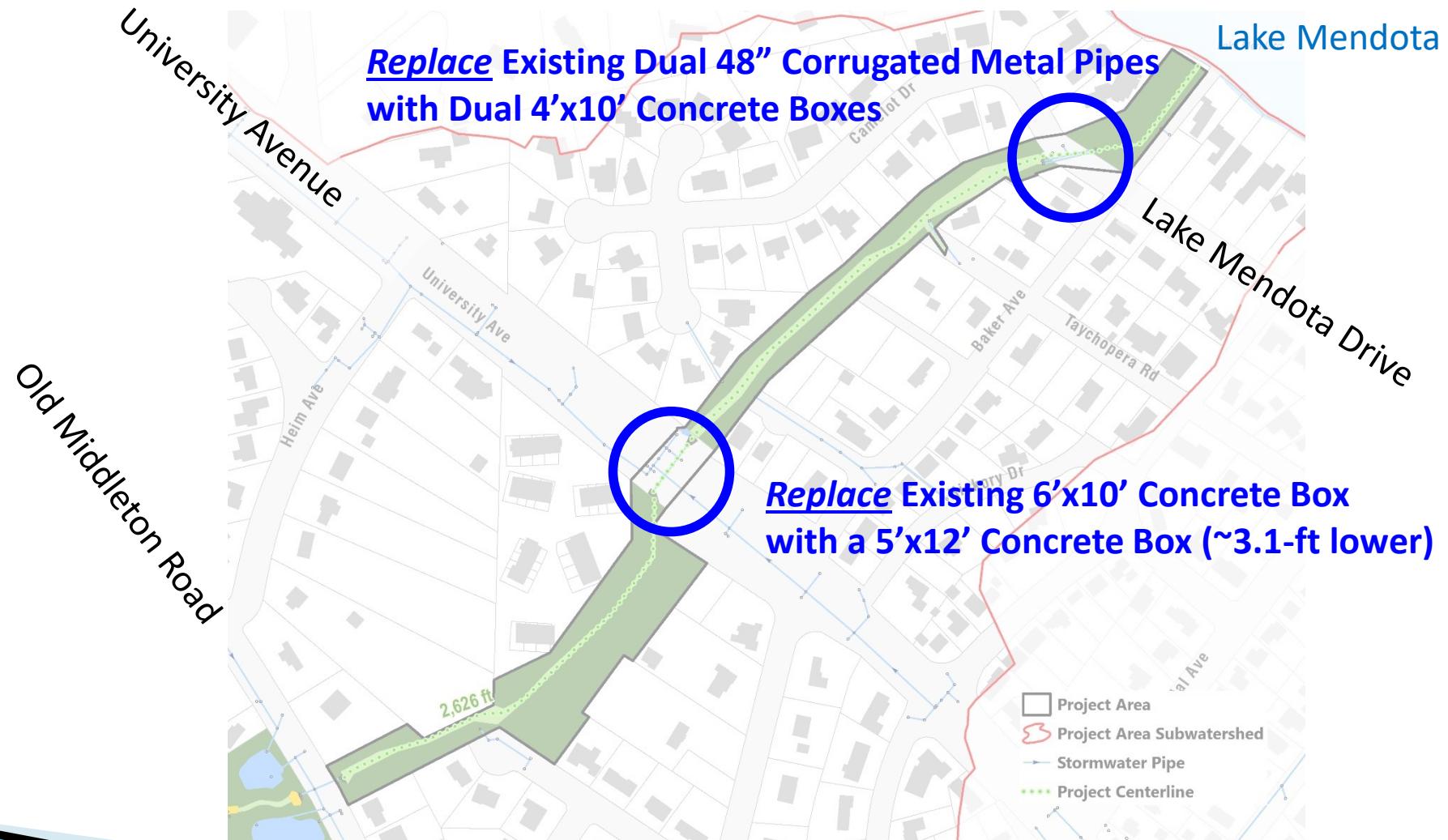
Project Scope

- Increase capacity at University Avenue
- Increase capacity at Camelot Drive
- 2,600 feet of channel improvement

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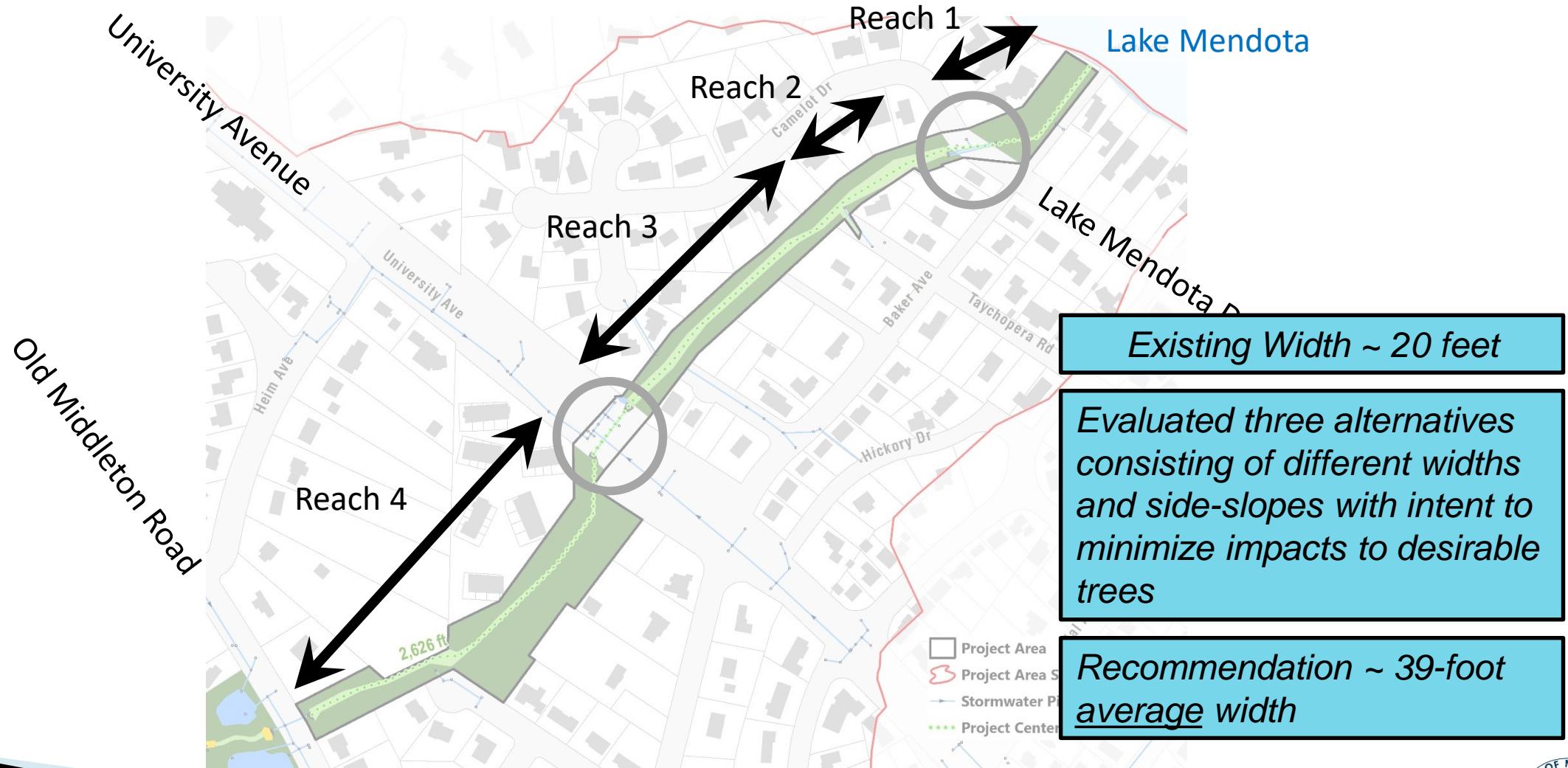
Project Segments – Pipe Work



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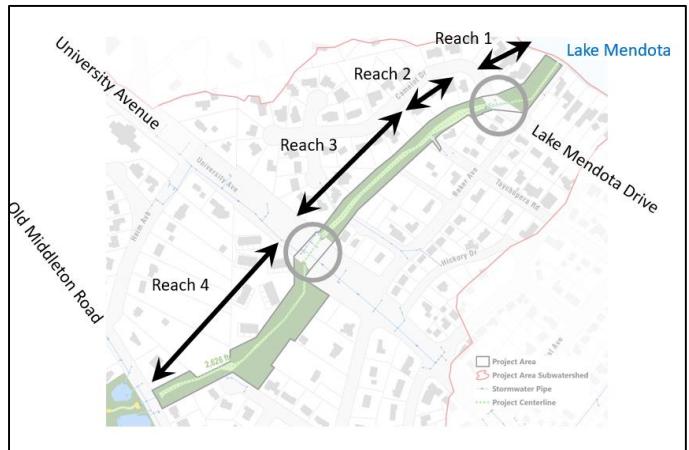
Project Segments – Channel Work



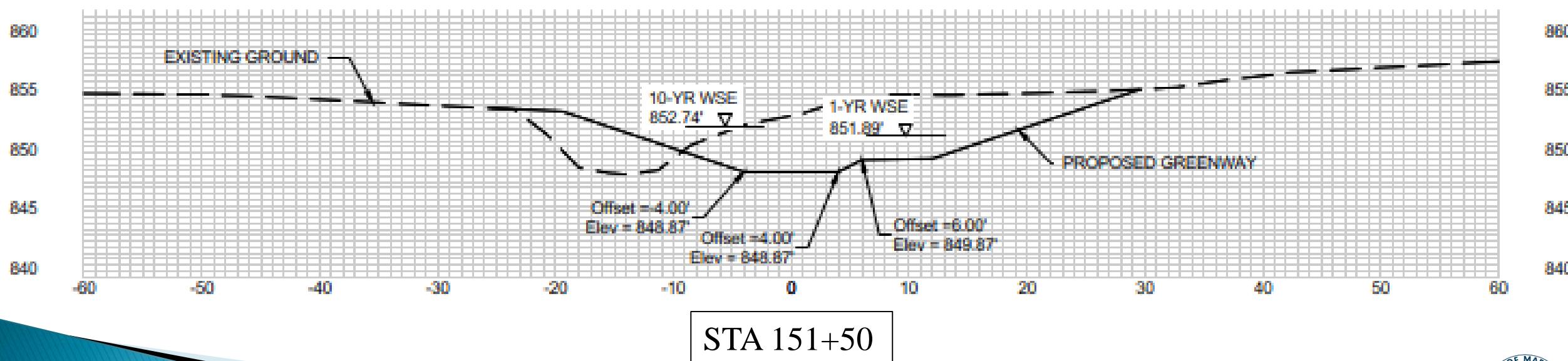
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Reach #1 – Typical Section



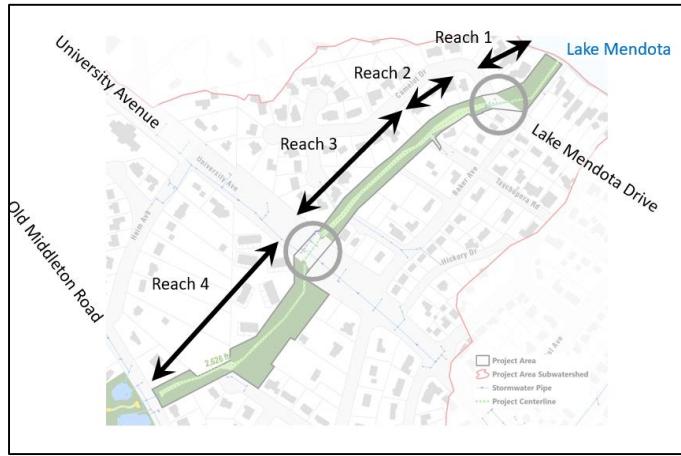
Width at Bottom = 8 ft
Width at Shelf = 19.4 ft
Low Flow Side Slope = 2:1
Main Channel Side Slope = 3:1
Width at Top ~ 53 ft



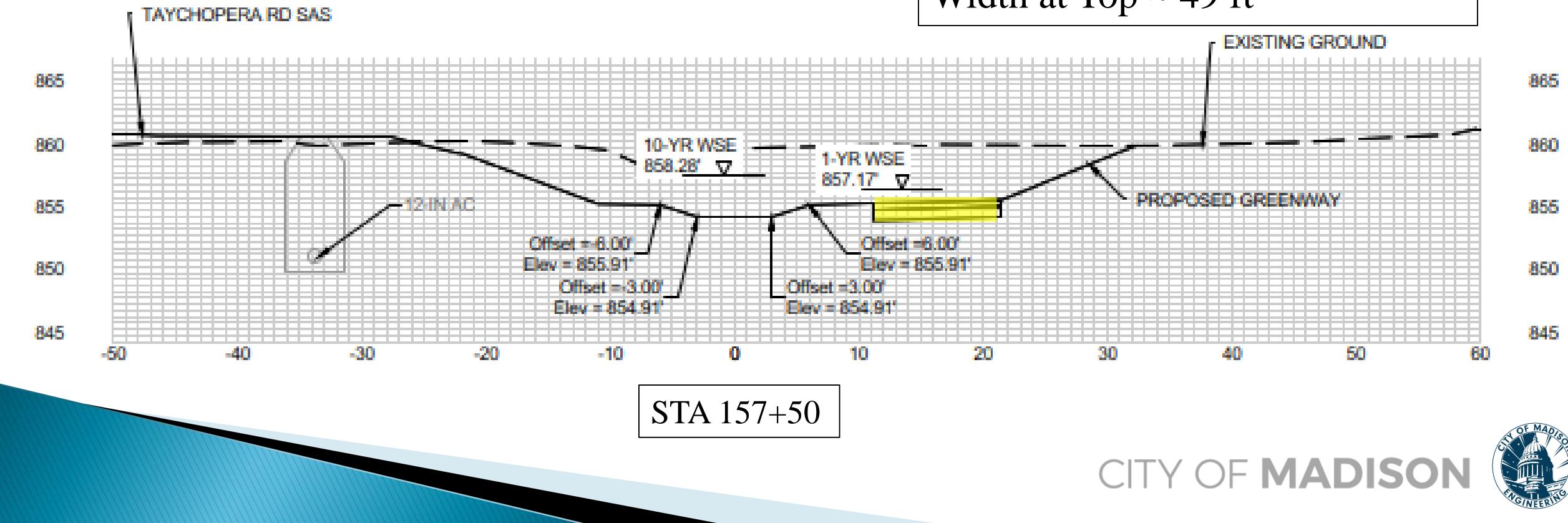
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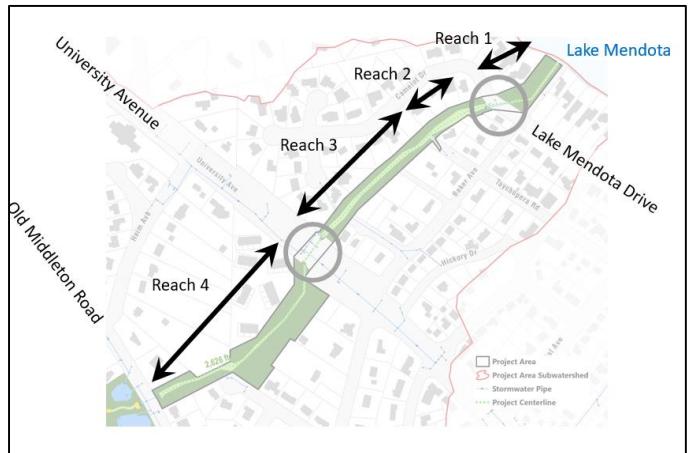
Reach #2 – Typical Section



Width at Bottom = 6 ft
Width at Shelf = 20.6 ft
Low Flow Side Slope = 2:1
Main Channel Side Slope = 2.8:1
Width at Top ~ 49 ft



Reach #3 – Typical Section



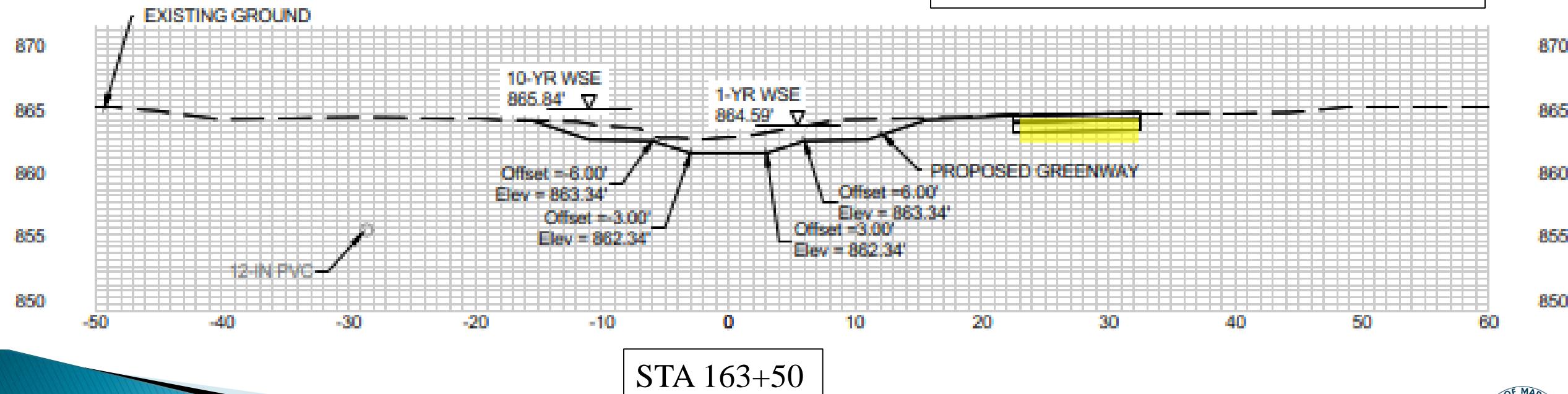
Width at Bottom = 6 ft

Width at Shelf = 22 ft

Low Flow Side Slope = 3.5:1

Main Channel Side Slope = 3:1

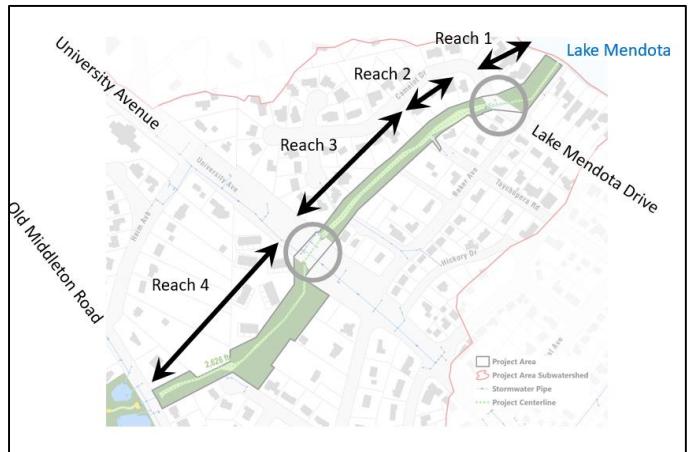
Width at Top ~ 39



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Reach #4 – Typical Section



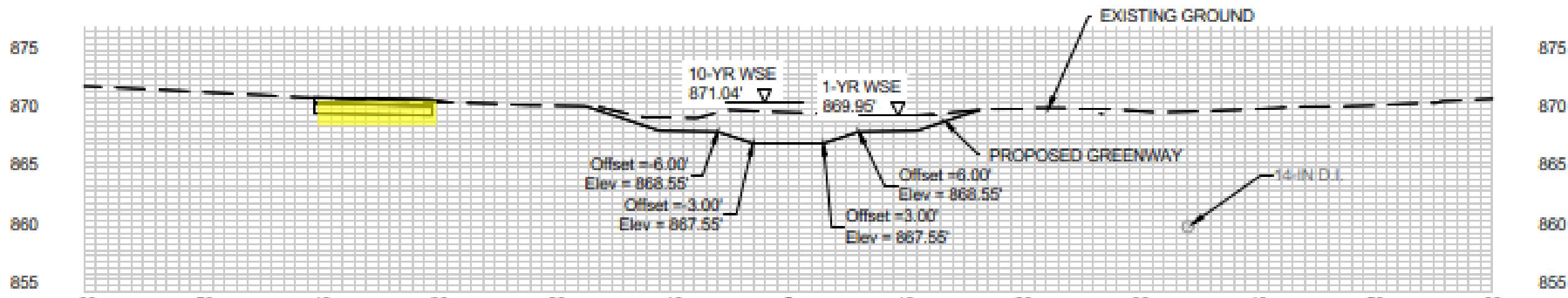
Width at Bottom = 6 ft

Width at Shelf = 22 ft

Low Flow Side Slope = 3:1

Main Channel Side Slope = 3:1

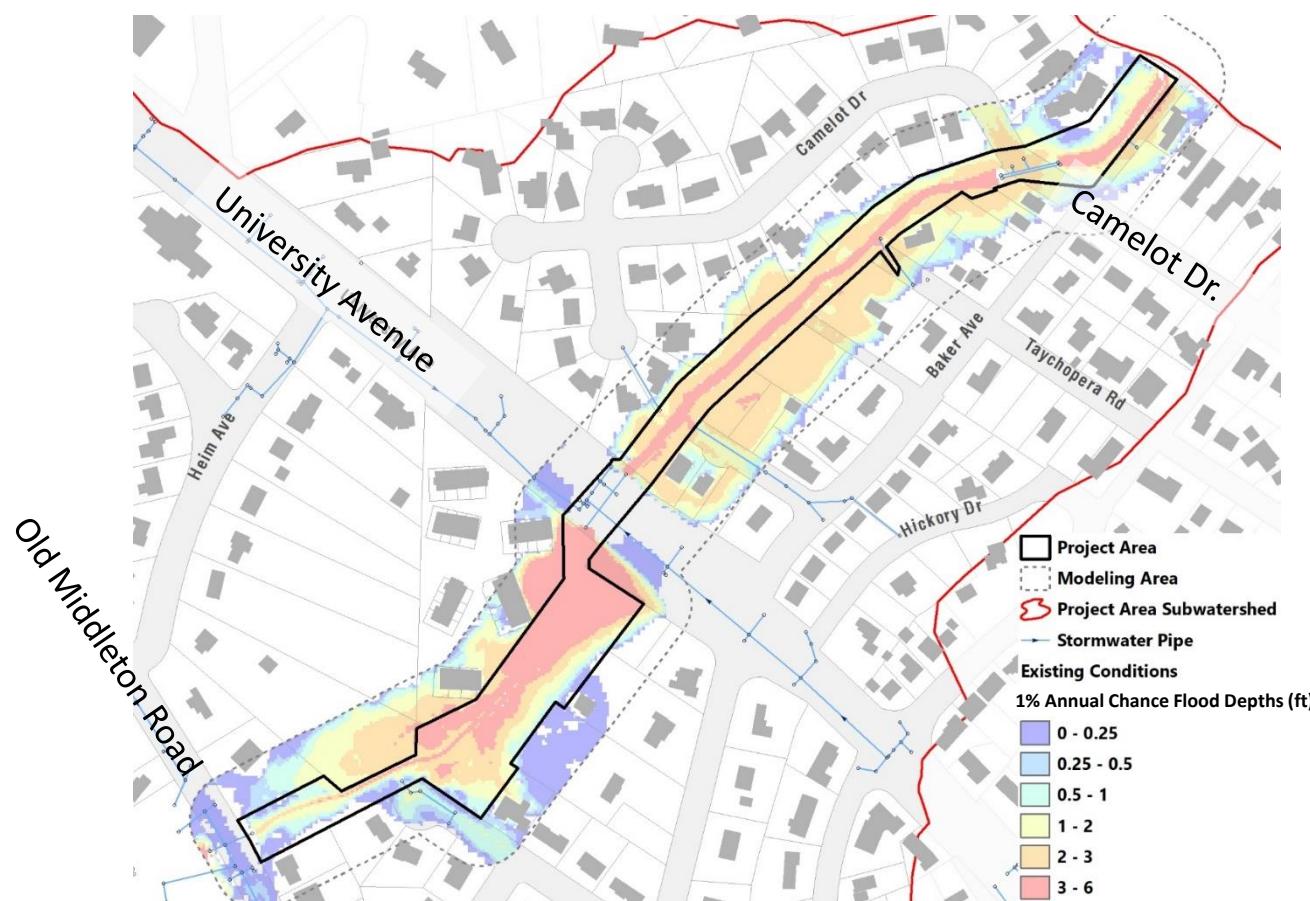
Width at Top ~ 30



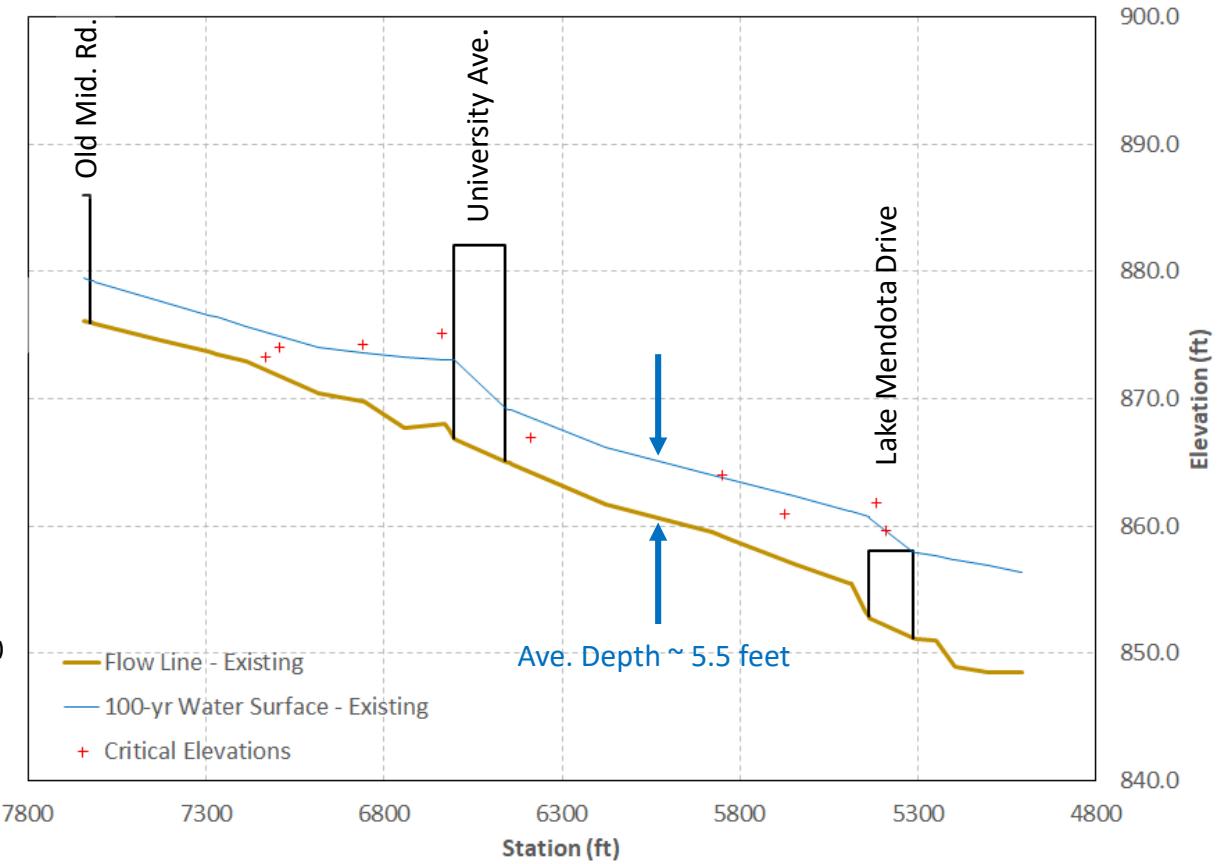
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Targeted Flood Reduction



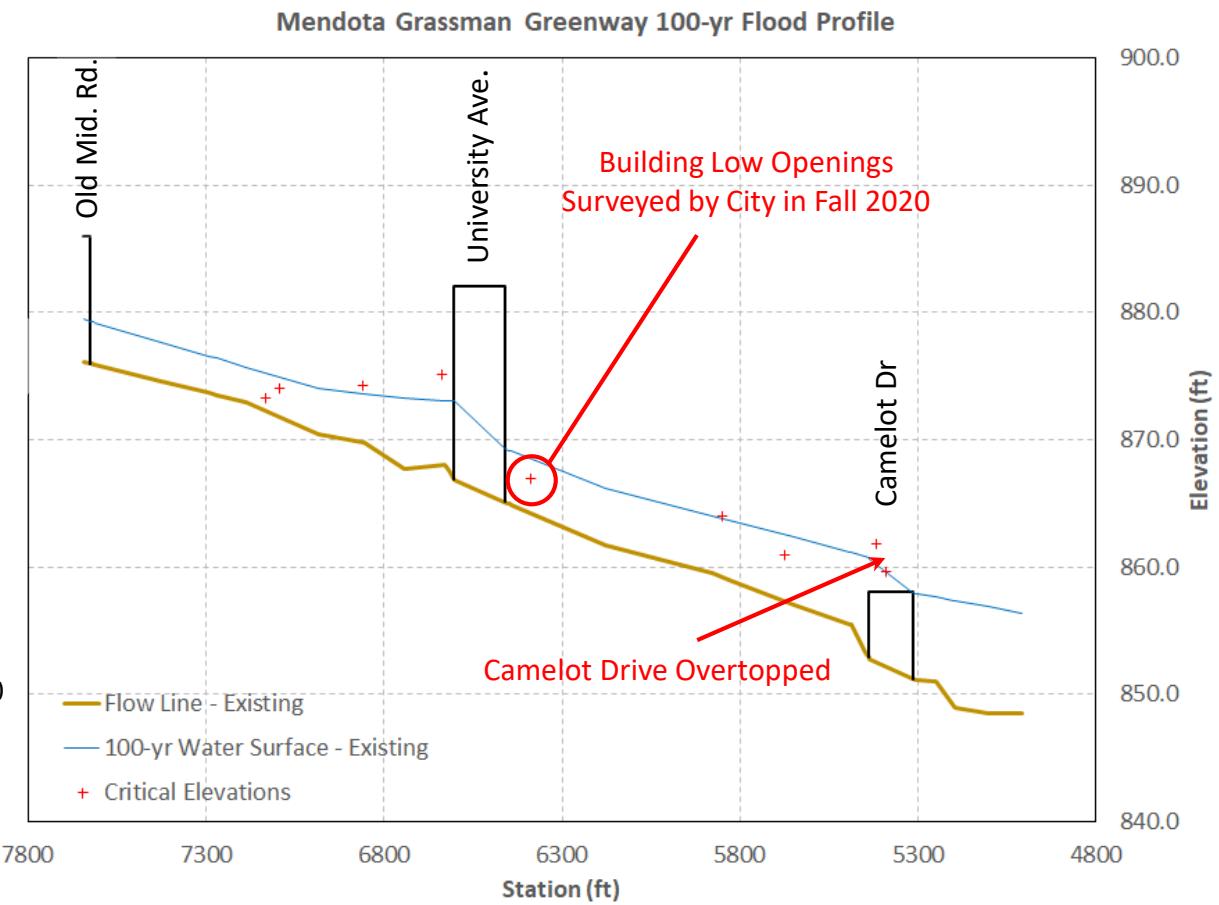
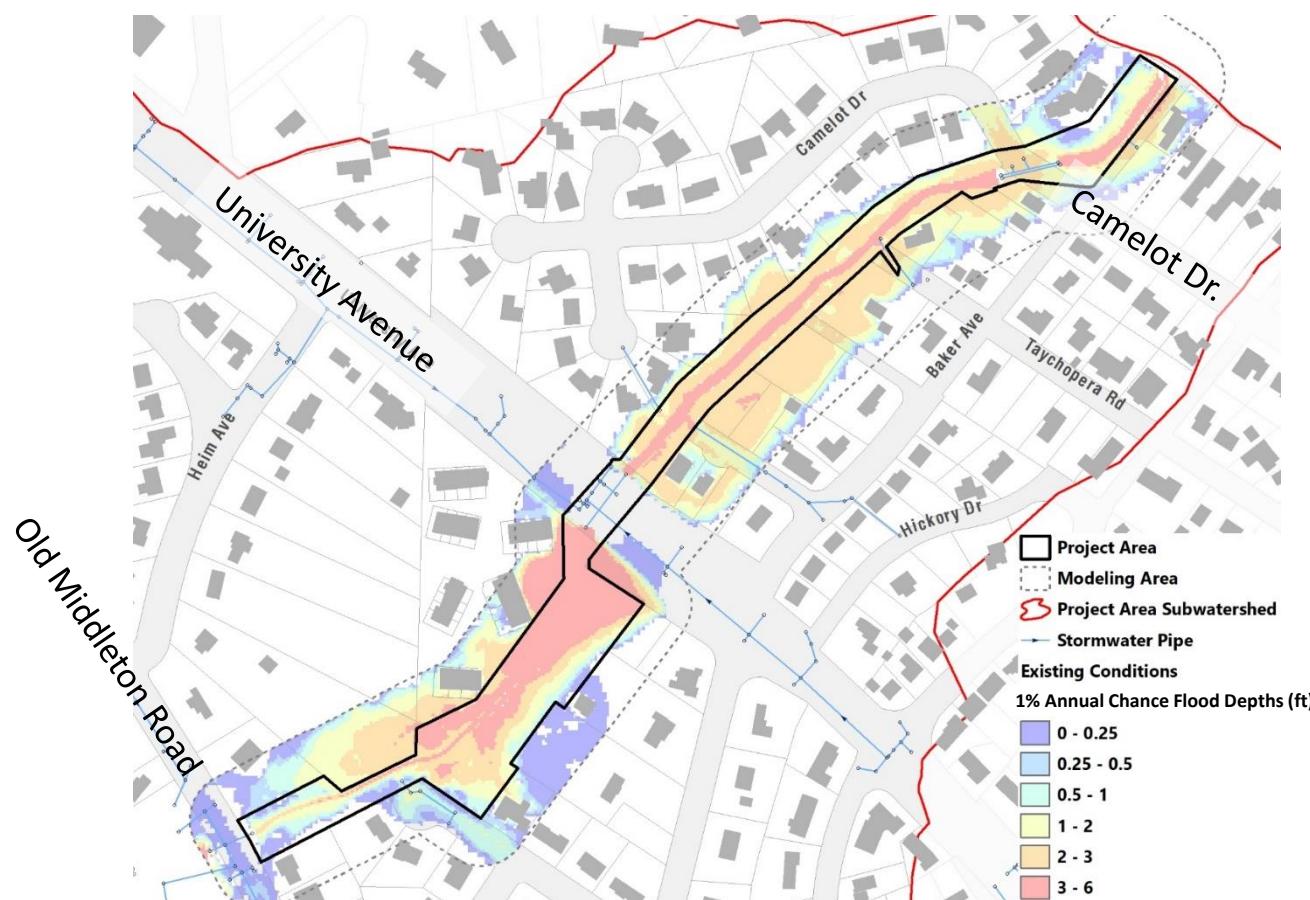
Mendota Grassman Greenway 100-yr Flood Profile



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Targeted Flood Reduction

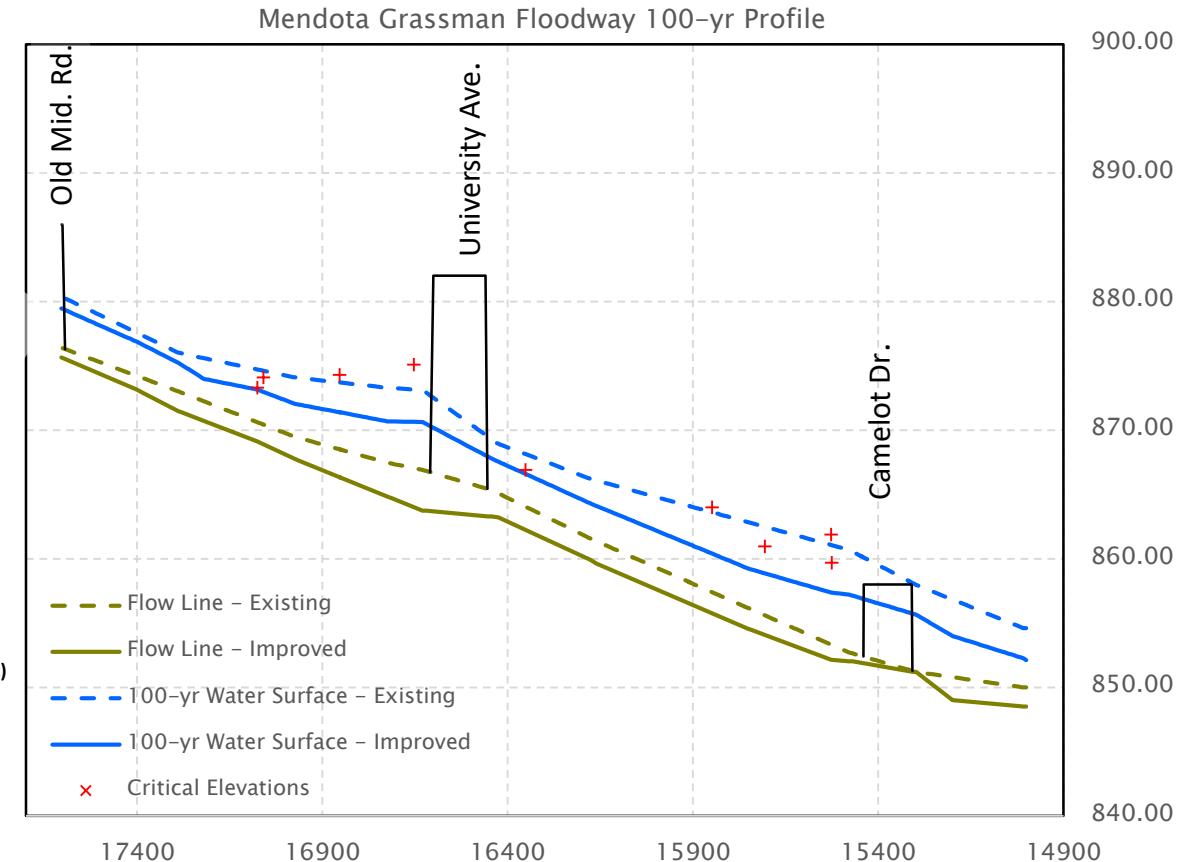
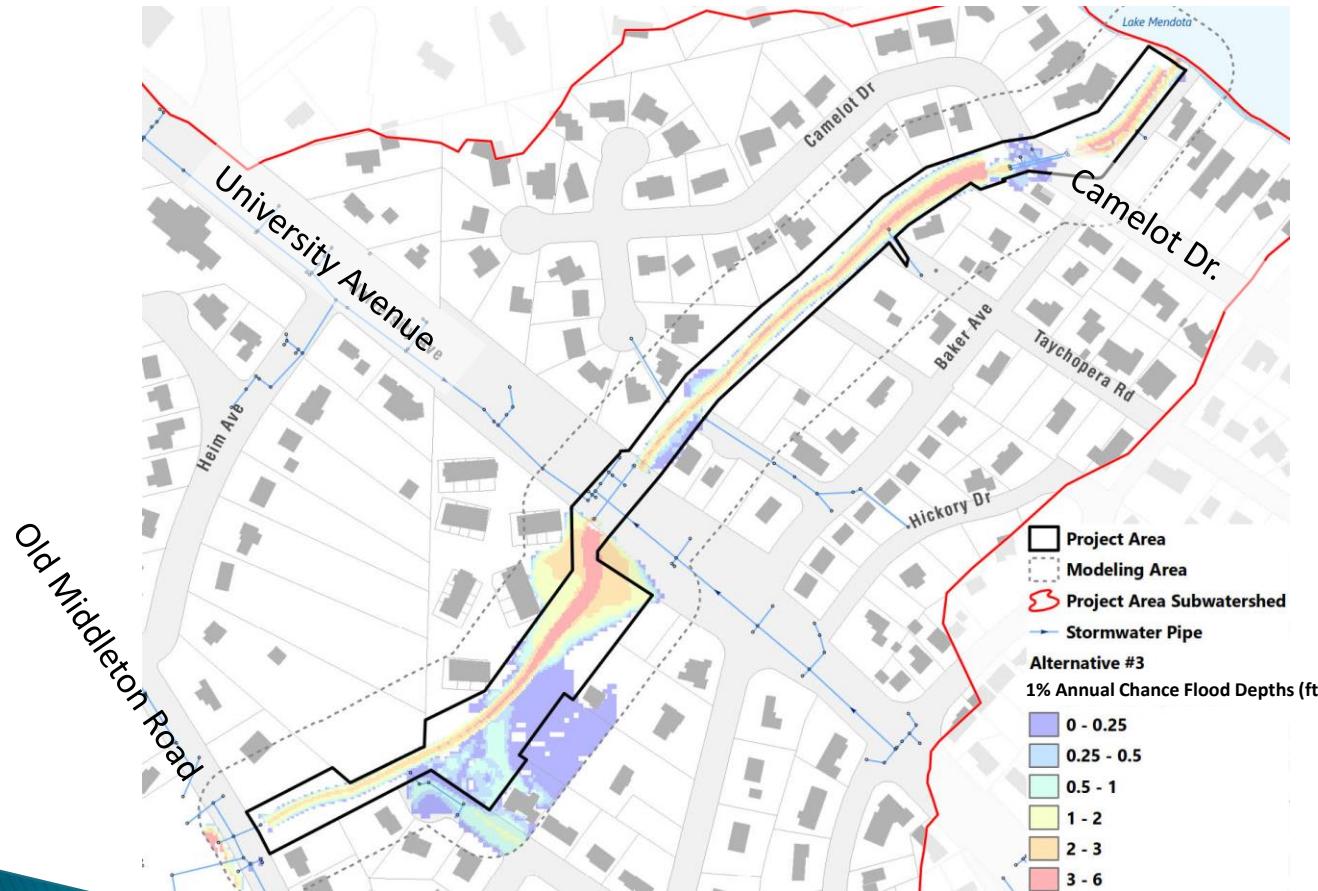


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Current Design - 1% Annual Chance Inundation

Average Inundation Elevation Reduction = 2.2 feet



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Maintenance Access

- ▶ Channel maintenance access
 - Primarily gravel topped with soil/vegetation
 - Some small portions in floodplain are concrete flexamat
 - To maintain channel, prevent blockages that could cause flooding
- ▶ Sanitary Access
 - Gravel
 - Clean sanitary sewer
 - Access sewer in emergencies



Current Vegetation



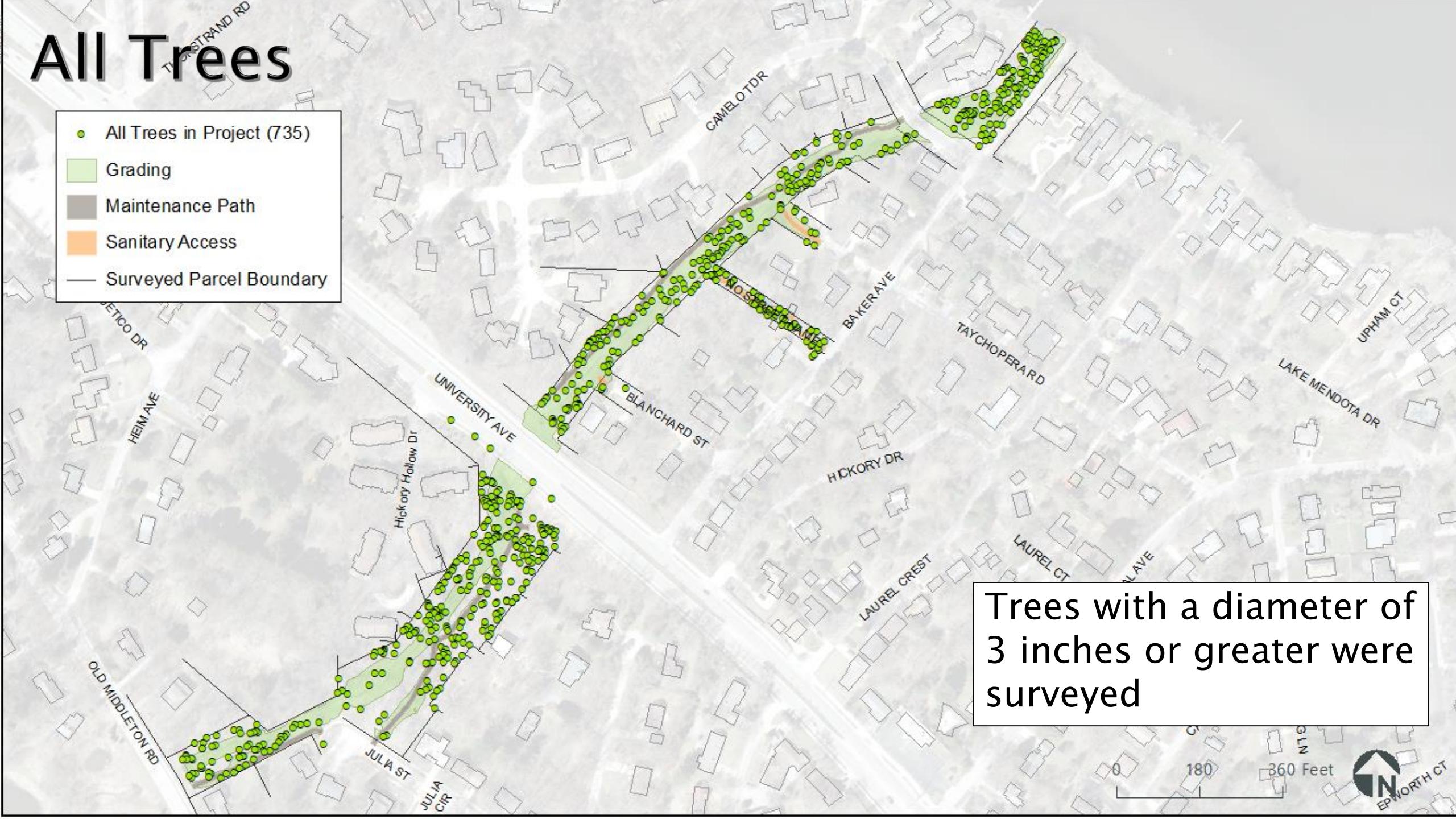
Woody volunteers: ash, buckthorn, box elder, honeysuckle. Little to no oak regeneration. Low herbaceous veg. diversity: Virginia stickseed, Virginia creeper, burdock, curly dock, jewelweed, garlic mustard.

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All Trees

- All Trees in Project (735)
- Grading
- Maintenance Path
- Sanitary Access
- Surveyed Parcel Boundary



Trees with a diameter of
3 inches or greater were
surveyed

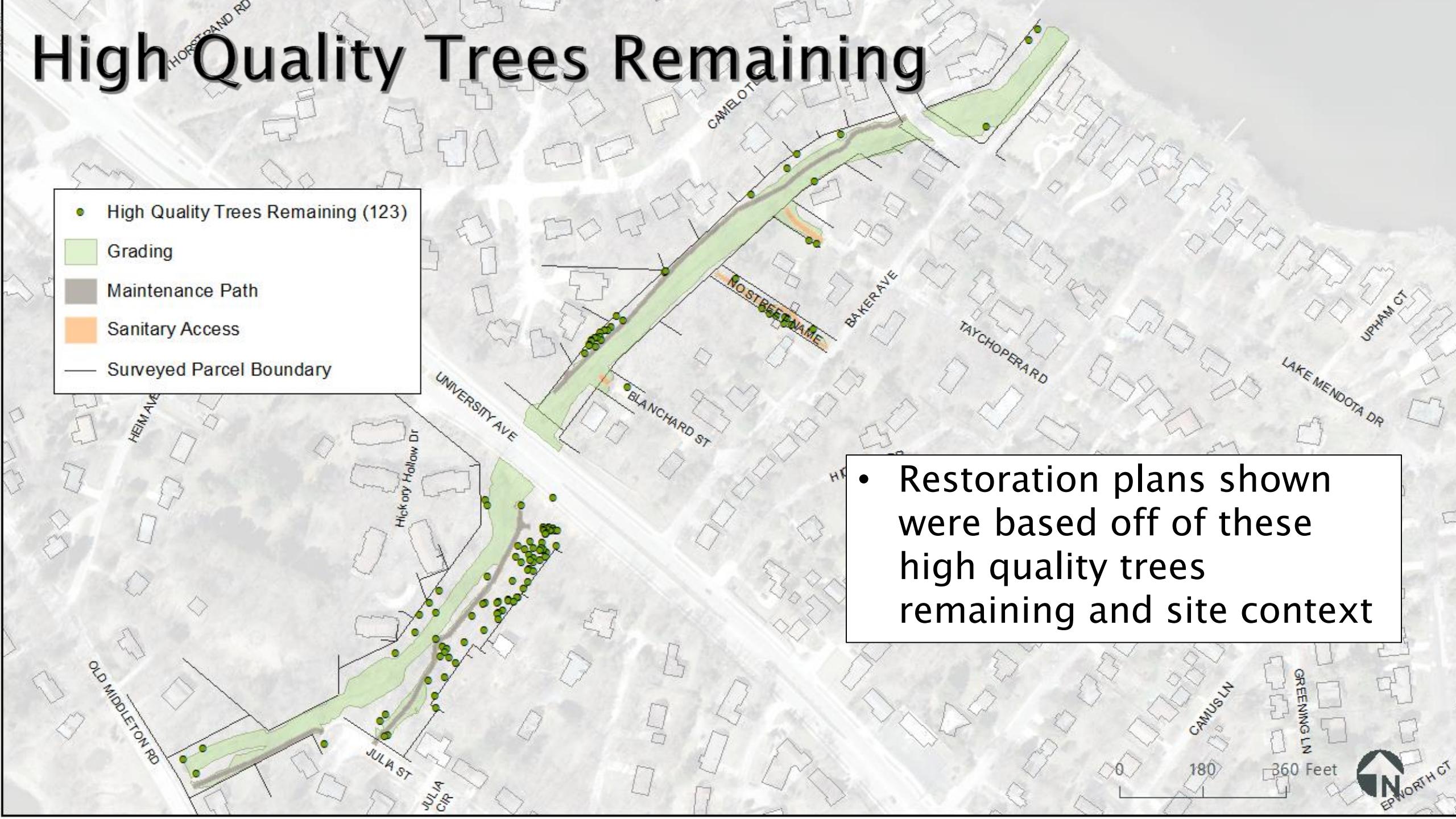
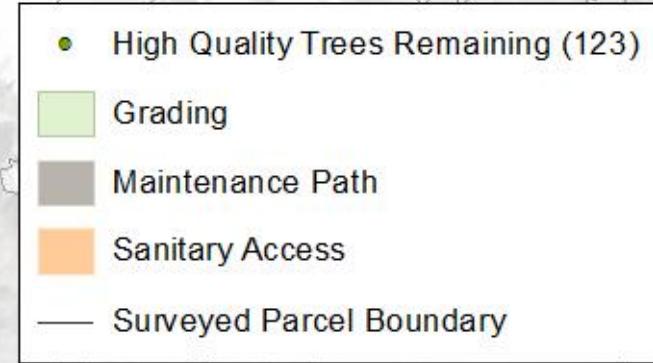


0 180 360 Feet

N

EPWORTH CT

High Quality Trees Remaining



- Restoration plans shown were based off of these high quality trees remaining and site context

Ecological Restoration

Remove Invasive Plants

- density to replicate wetland and sedge meadow ecological conditions that support fluctuating water.

Install native shrubs, forbs and grasses

- within areas of higher velocity to quickly establish root structure to stabilize soil.
- Native forbs and grasses have the root structure necessary to stabilize soil and increase infiltration in wet conditions.

Seed with aggressive native seed

- mixes based on flood tolerances, sun, and soil moisture to create quick forming native understory that is less susceptible to invasive species takeover.

Ongoing removals of invasives

- Include in multi-year ecological restoration contract to get native understory started
- Manage with minimal mowing, prescribed burn, targeted invasive treatment

Ecological Restoration

▶ Benefits

- Biodiversity
 - Insects- Specialist species that need specific habitat plants are particularly helped by ecological restoration (e.g. monarch butterfly)
 - "Ninety percent of the insects that eat plants can develop and reproduce only on the plants with which they share an evolutionary history," Doug Tallamy
 - Habitat
 - Soil Health
 - Reducing erosion and nutrients runoff that enter our lake and impair our waters
 - Carbon Impact
 - Studies are finding that native grasslands act as carbon sinks

Plummeting insect numbers 'threaten collapse of nature'



The Guardian, Feb 10, 2019



How Non-Native Plants Are Contributing to a Global Insect Decline

Yale School of the Environment
E360, December 8, 2020

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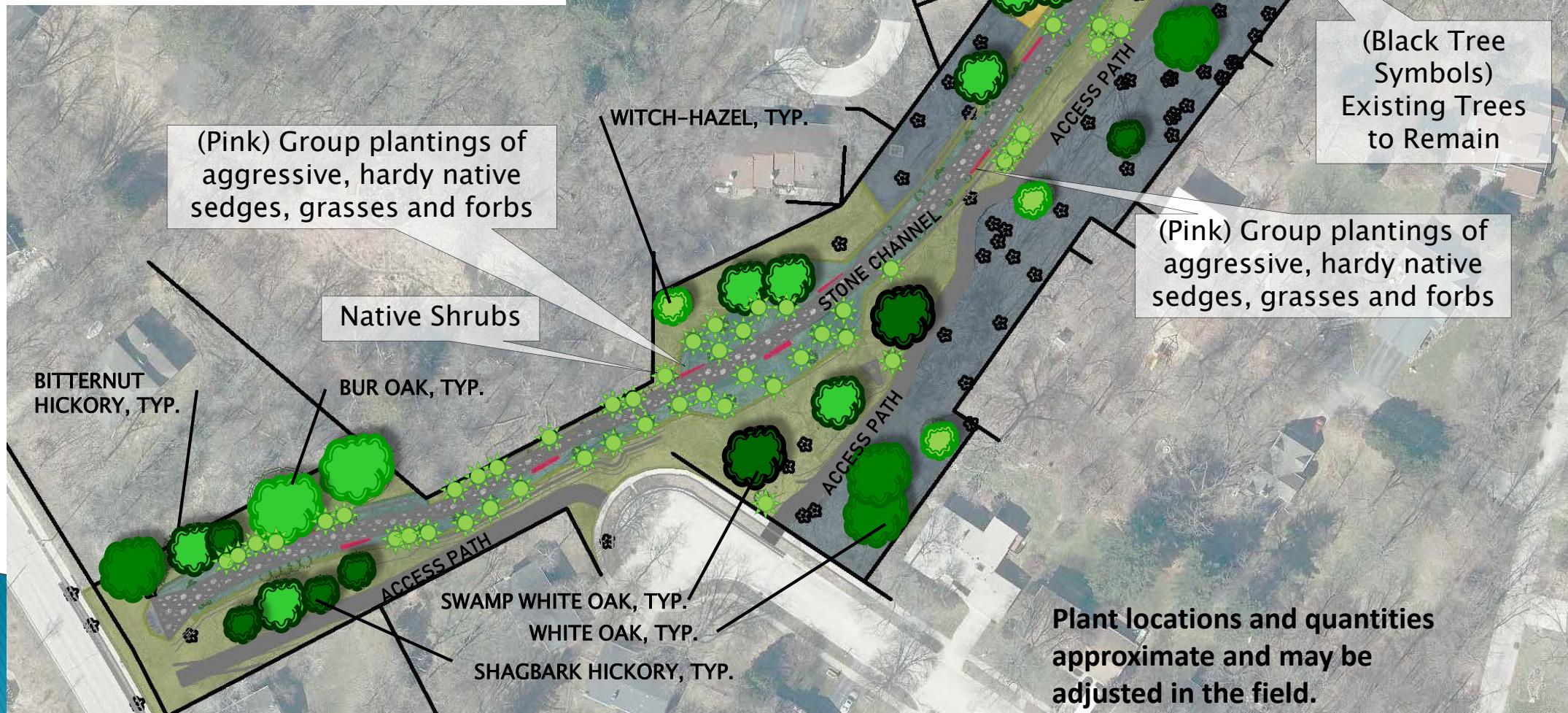
SEED MIX LEGEND

WET AGGRESSIVE MIX (ALONG STONE CHANNEL)

MESIC AGGRESSIVE MIX (SIDE SLOPES)

WOODLAND SEED MIX (AREAS OF DENSE SHADE AND NO DISTURBANCE)

MESIC SUNNY SEED MIX (UPLAND AREAS IN FULL SUN)



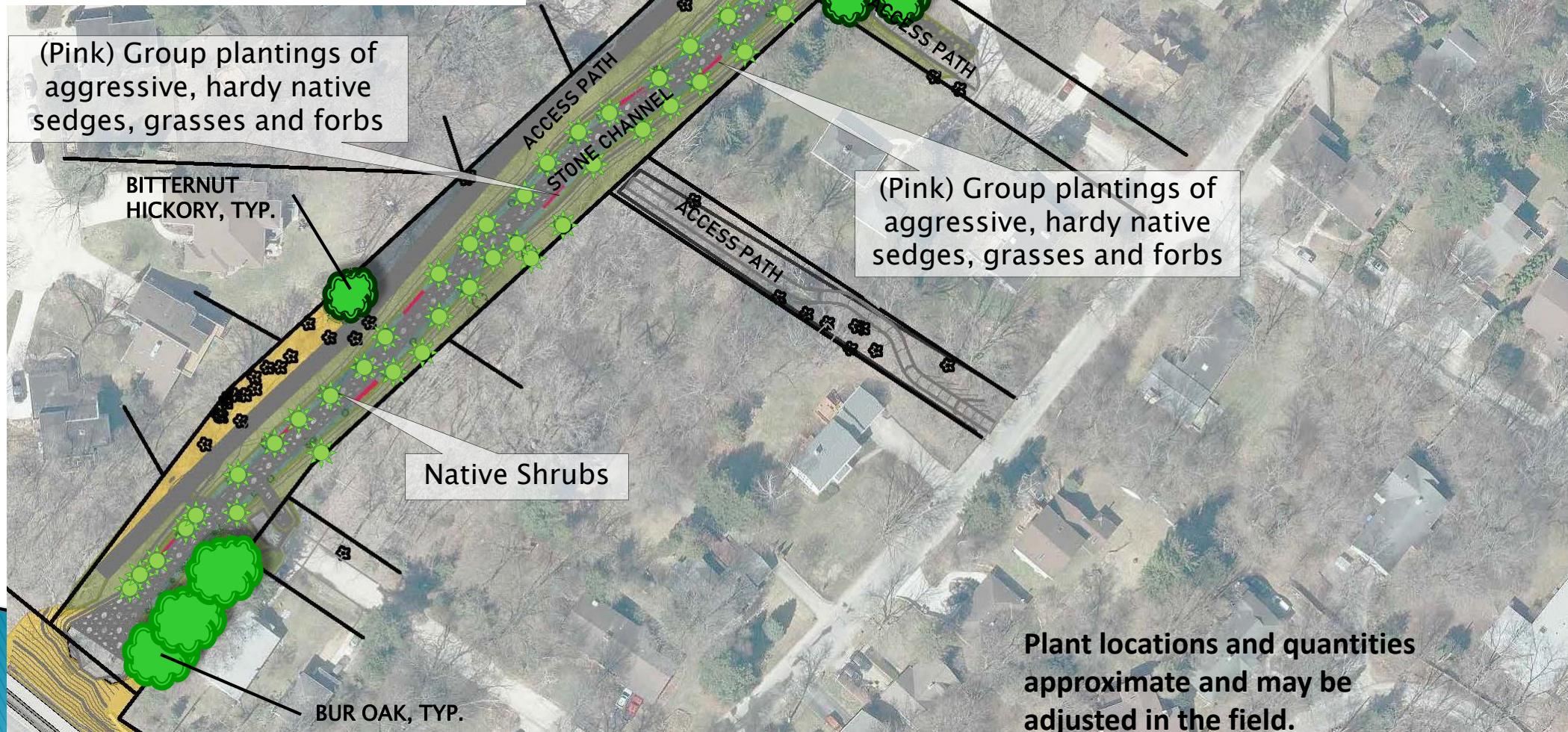
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