



Public Works
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To: Board of Public Works, Transportation and Transit Commission,
Common Council
CC: Bill Balke, Public Works Director/City Engineer
From: Andrew McFadden, Transportation Engineer
Date: April 12, 2021
Subject: W. Lacy Reconstruction Cross-section Design

The design of W. Lacy Road from Fitchrona Rd to Seminole Highway is at a critical point in the schedule. Approval of a typical cross-section is needed in April and approval of a transportation project plan is needed in May in order to complete the following:

- Let the construction of the project in late 2021
- Clear trees in construction limits before the big brown bat maternity period from June through August 2022
- Perform the majority of construction from mid-June – August 2022 to avoid impacts to nearby schools.

There has been a lot of public input on this project, with a variety of requests, concerns, and differing opinions on the project needs. A public meeting was held on February 17 to introduce the project to residents. Staff received 20 comments from emails and survey responses, responded to more than 40 follow-up questions after the meeting, and have held two advisory group meetings with residents and corridor users to work through elements of the cross-section. The majority of concerns from nearby residents have been related to impacts to trees, right-of-way impacts, lack of support for sidewalk or seemingly redundant on-street bike lanes, and project costs. This resolution proposes a revised typical section that omits sidewalk on the south side, removes the on-street buffers, and minimizes acquisition of additional right of way.

The original design presented to the public on February 17 consisted of the following:

- 5' sidewalk of south side
- 7' terrace on south side
- 5' bike lanes with 2' painted buffers
- 11' travel lanes
- Raised medians (on a portion of the corridor)
- Variable terrace on the north side
- 10' Shared Use Path on the north side

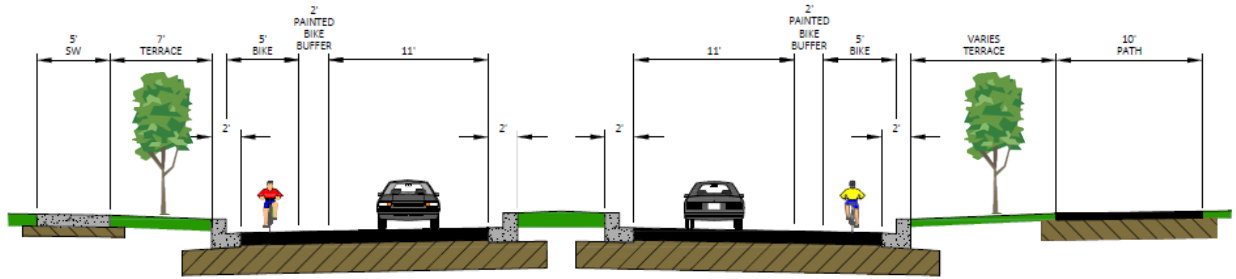


Figure 1: February 17 Cross-Section

Figure 1 presents the February 17 cross-section with raise medians. At the first advisory group meeting on March 31st, residents indicated they would like to see a revised cross-section alternative without sidewalk, buffered bike lanes, and raised medians (except for short pedestrian refuges islands) and with an expanded path along the hill to accommodate high variability in path users' speed.

This information was relayed to the design consultant as the following:

- Grading for S. Side Sidewalk
 - Grading the terrace and future sidewalk area will provide a clear zone for errant vehicles and reduce future regrading if development occurs. This area could be planted with native seed.
- 28' roadway – 26' asphalt surface, 24" Curb and gutter
 - 11' travel lanes and 3' unstriped shoulder area adjacent to both curbs was assumed to provide space for stopped or mail delivery vehicles.
- Spot 75' medians at Rock Ridge Rd., the quarry entrance, and Commerce Park Dr.
- 7' terrace on north side of street
- North side 10' wide shared use path generally, expanding to 12' for approximately 1,900' along the hill centered on Commerce Park Dr.

This alternative was presented and discussed with the advisory group on 4/7. The group requested the alternatives be compared according to three metrics:

- Cost
- Stormwater runoff generated
- High value trees removed

The City Forester identified high value trees in this corridor as Burr Oak, Shagbark Hickory, and Hackberry. Trees of these species rated above poor to fair condition were included in the high-value tree count. A tree survey was conducted in late March 2021 and recorded 112 trees including 41 high value trees. Unfortunately, the initial tree survey only extended 30' from the existing roadway and missed trees further north of the roadway near the quarry that would be impacted by the proposed construction grading.

Table 1 provides the results of the comparison. Note that the high value tree impact is currently marked unknown until the revised tree survey work is performed. To date, no differential high value tree impacts have been found between the alternatives and the extents of grading along the quarry between the Feb 17 and April 7th alternatives are generally less than 10'.

Table 1: Design Alternative Comparison

	Cost	Runoff (CF)	High Value Trees Removed*	New Trees Planted
February 17 Alternative	\$6.35M	777,100	Unknown	270
April 7 Alternative	\$5.71M	642,400	Unknown	270
Difference	\$640K	135,400	Unknown	0
Percent Difference	9%	17.4%	Unknown	0%

A 9% difference in cost and 17.4% difference in runoff between the alternatives are noted in the table.

Based on comments received and information collected to date, staff recommends that a modified version of the April 7 Alternative be approved for this reconstruction project. The modified version would increase the street width from 28' to 30' in order to accommodate on-street bike facilities. The 28' roadway width included in the April 7 design is the narrowest possible while still allowing three vehicles to fit side-by-side in the event of an emergency stopped vehicle. A 30' wide street would provide 5' of painted shoulder for on-street bike lanes and provide greater flexibility for delivery vehicles. For reference, Fitchburg's local streets are typically constructed at 32' widths and WisDOT's [Field Design Manual](#) recommends 32-34' widths for Urban Design Class 2b roads without parking and with 24" curb and gutter.

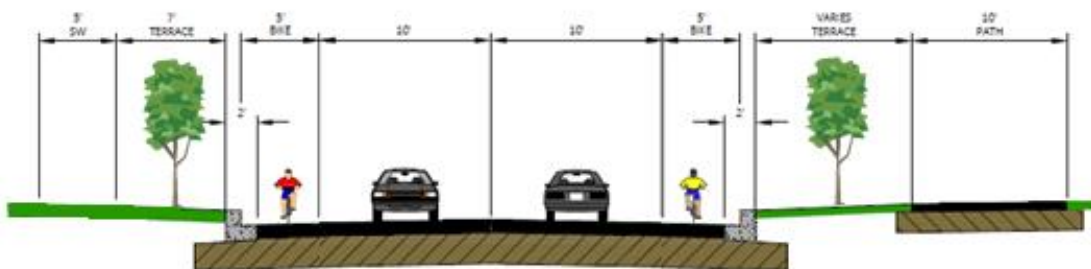
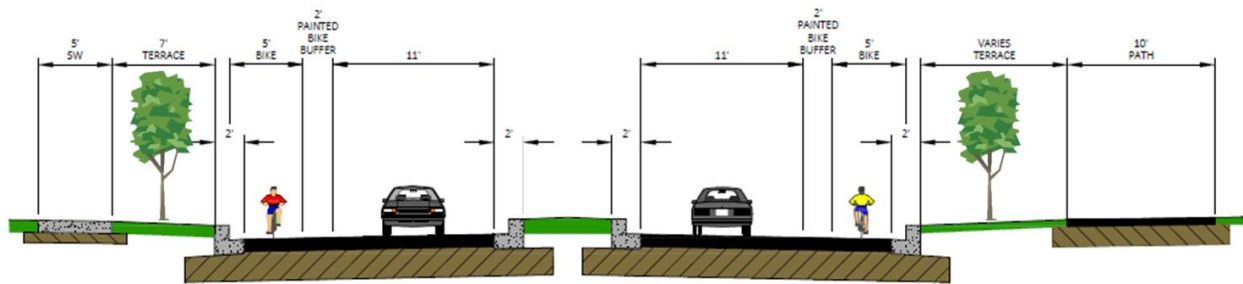


Figure 2: Staff Recommended Cross-Section

Figure 2 provides the revised April 7 alternative that staff is recommending. The 12' path is recommended along the hill centered on Commerce Park Dr. to provide separation between faster and slower path users. Some deviations from the typical cross-section such as short raised medians for pedestrian refuge and turn lanes at major intersections and driveways are planned.

The following page shows the pros and cons of each cross-sectional element. Preliminary designs of the Feb 17 and April 7 designs slides are attached to this memo. Presentations and summaries of the public meeting and advisory group meetings can be found on the project website - <https://www.fitchburgwi.gov/2678/Lacy-Road-Fitchrona-to-Seminole-Hwy>.

Pro and Cons of Cross-section elements



Pros of Terrace

- Buffer between users
- Space for street trees and lighting
- Provides storage for snow
- Can account for grade changes

Cons of Terrace

- Cost of construction
- Cost of maintenance
- Increased cross-section width

Pros of Median

- Channelizes traffic
- Slows some drivers
- Provides pedestrian refuge
- Can account for grade changes

Cons of Median

- Cost - \$575,000
- Increased maintenance
- Some increased runoff
- Requires 20' clear zone
- Increased roadway width

Pros of buffered bike lane

- Separates different users
- On-street bike facilities are consistent with the rest of Lacy
- Flexible space for delivery and road work

Cons of buffered bike lane

- Cost - \$500,000
- Increased pavement and runoff
- Loss of additional trees

Pros of shared use path

- Provides high comfort facility
- Simple trail connections

Cons of shared use path

- Cost
- Increased pavement and runoff
- Loss of additional trees

Pros of sidewalk

- Separates different users
- Provides continuity and access to future development south of Lacy

Cons of sidewalk

- Cost - \$150,000
- Unclear snow removal responsibility
- Unclear near-term usage

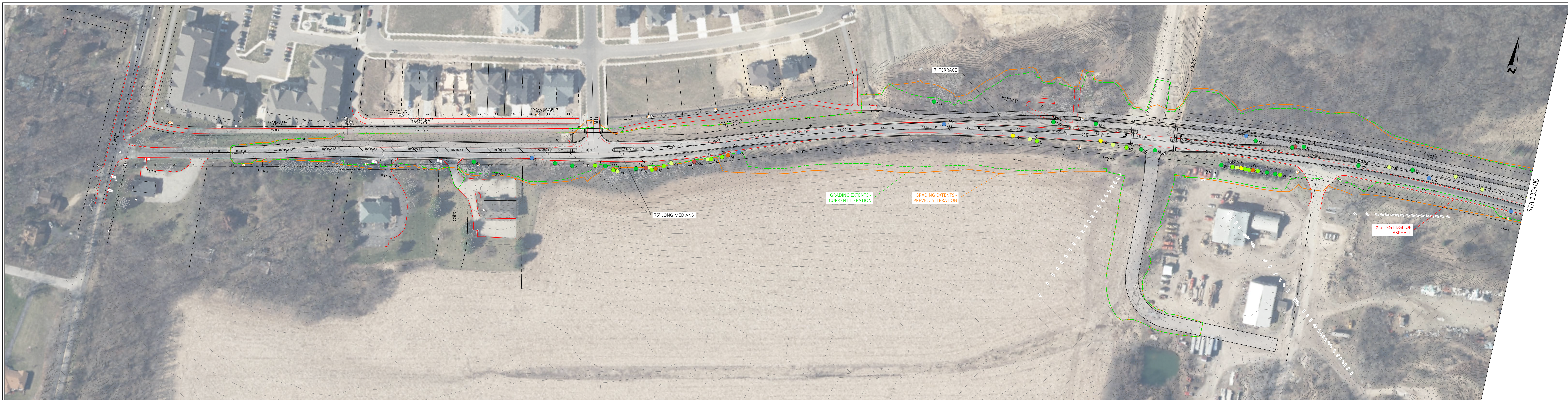


LEGEND	
	PROPERTY LINE
	EXISTING R/W
	PROPOSED R/W
	TEMPORARY LIMITED EASEMENT
	PERMANENT LIMITED EASEMENT

PUBLIC INFORMATION MEETING
LACY ROAD ROAD IMPROVEMENTS
FEBRUARY 17, 2021



NOT FOR CONSTRUCTION



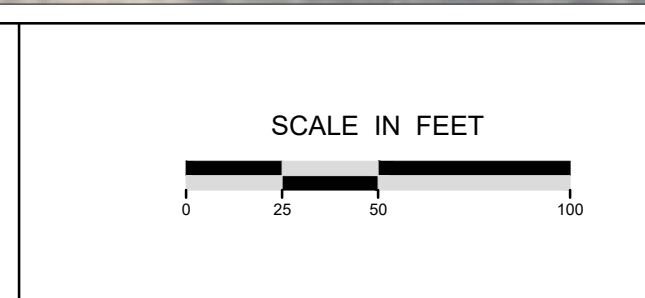
TREE SURVEY	
CONDITION	
DEAD	●
POOR	●
FAIR TO POOR	●
FAIR	●
FAIR TO GOOD	●
GOOD TO FAIR	●
GOOD	●
OTHER	●



DATE: 4/20/2021
 TIME: 10:00 AM
 PROJECT: LACY ROAD WEST RECONSTRUCTION
 DRAWING: OVERALL PLAN
 SHEET: 132+00 TO 132+00

NO.	DATE	BY	REVISION

ISSUE DATE: 4/20/2021
 DESIGN BY: RLM
 DRAWN BY: RLM
 EOR PROJECT NO: 1361
Emmons & Olivier Resources, Inc.
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 COTTAGE GROVE, WI 53027
 P: 920.833.4222
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 WWW.EORINC.COM



LACY ROAD WEST RECONSTRUCTION
 CITY OF FITCHBURG
 DANE CO, WISCONSIN

OVERALL PLAN