

Grand Avenue 2024 Reconstruction

Preferred Concept Layout Review
Transportation Committee 1/9/23



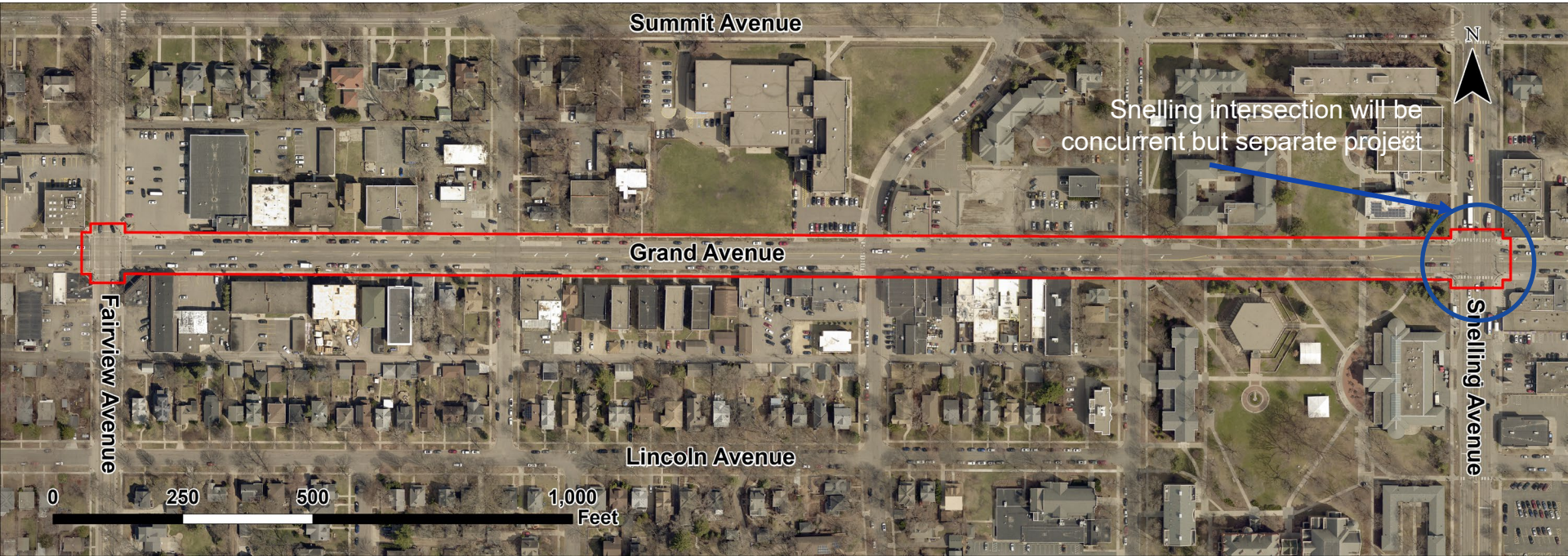
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PUBLIC WORKS

STPAUL.GOV



Grand Avenue Reconstruction

Project Extent:
From Snelling Ave
intersection to Fairview
Ave intersection





Background and context – Engagement Activities

Major engagement activity occurred March-November

- Multiple meetings with corridor stakeholders
 - Macalester College
 - Hidden River Jr High
 - Metro Transit
 - MnDOT
 - Macalester Groveland DC
- 2 Open Houses
 - June and September
- Public events held/attended
 - 2 events held at Macalester College
 - Attended 3 other events on campus
 - Pop up event on Grand Ave
 - Mac-Grove Fest
 - Hidden River PTO and PTC
 - Mac-Groveland Annual Business Roundtable
- Online Surveys + interactive mapping
 - 470 responses from first round
 - 78 responses from second round
- 500+ members of the public engaged in first phase
- 300+ members of the public engaged in second phase





Phase 2 Engagement Results – Fairview Intersection

Fairview Ave Options

- Option 1: No bumpouts
- Option 2: Bumpouts at each quadrant

Public feedback

- No bumpouts: 18%
- Bumpouts: 82%

Mac-Groveland DC rec

- Bumpouts

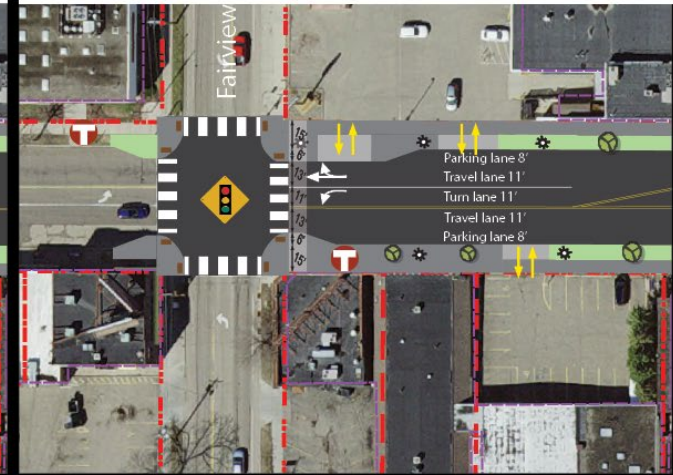
Crash data

- One pedestrian fatality
- One pedestrian injury

Fairview Ave Intersection Option 1



Fairview Ave Intersection Option 2





Phase 2 Engagement Results – Median Options

Median Options

- Option 1: No median
- Option 2: Landscaped median
- Option 3: Hardscaped median

Public feedback

- No median: 34%
- Landscaped median: 57%
- Hardscaped median: 9%

Mac Groveland DC rec

- No median

Crash data

- 1 bike involved crash mid-block
- 7 vehicle crashes mid-block

Other considerations

- On-going maintenance
- Installation costs
- Maneuverability
 - Would limit traffic ability to get around bikes or stopped vehicles
 - Limit EMS ability to maneuver around traffic



Grand Avenue Design Concept Options



Grand Avenue No Median Option



Grand Avenue Median Option (hardscaped)



Grand Avenue Median Option (landscaped)





- Option 1: Bumpouts in each quadrant
- Option 2: Partial intersection median
- Option 3: Full intersection median

- Option 1: 23%
- Option 2: 27%
- Option 3: 50%

Option 2

- 4 pedestrian crashes
- 2 pedestrian injuries

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Grand Ave Macalester Crossings

Macalester College Options

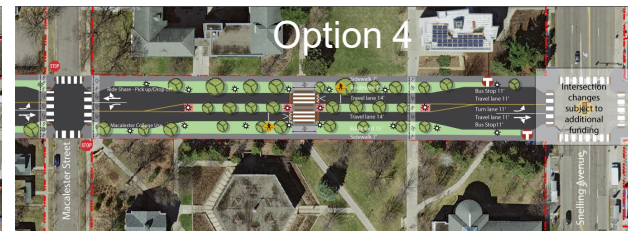
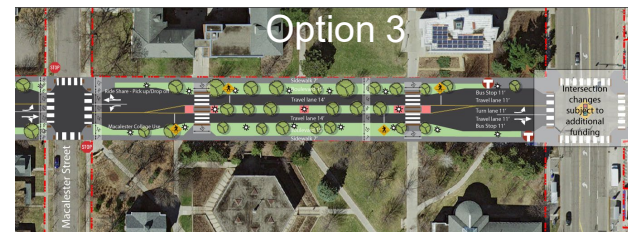
- Option 1: Leave as-is with necessary improvements
- Option 2: CIB Requested Improvements
- Option 3: Improved and consolidated crossings
- Option 4: Centerpiece raised crossing
- Option 5: Tabled crossing

Public feedback

- Option 1: 9%
- Option 2: 14%
- Option 3: 14%
- Option 4: 16%
- Option 5: 47%

Mac-Groveland DC rec:

- Raised crossing (no specific option)





Features of the Concept Design

Consistent with multiple City policies

- Comprehensive Plan
- Pedestrian Plan

Increases space for pedestrians and greenery while not impacting parking

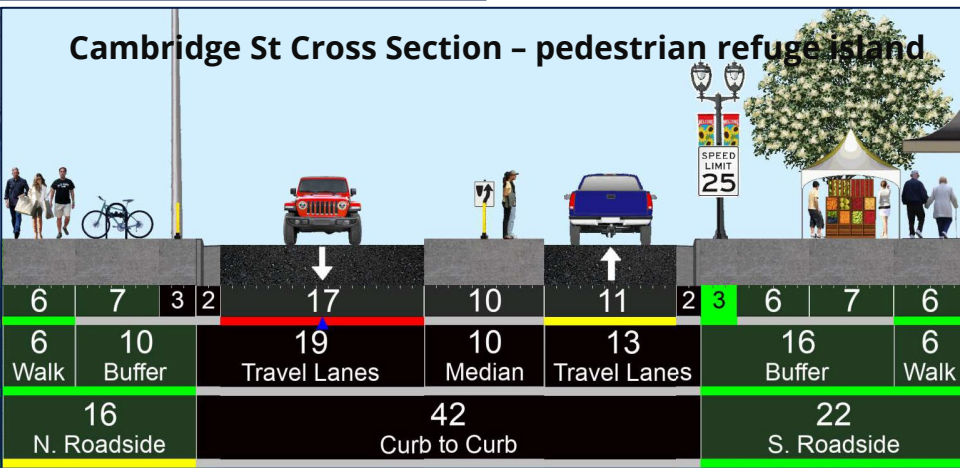
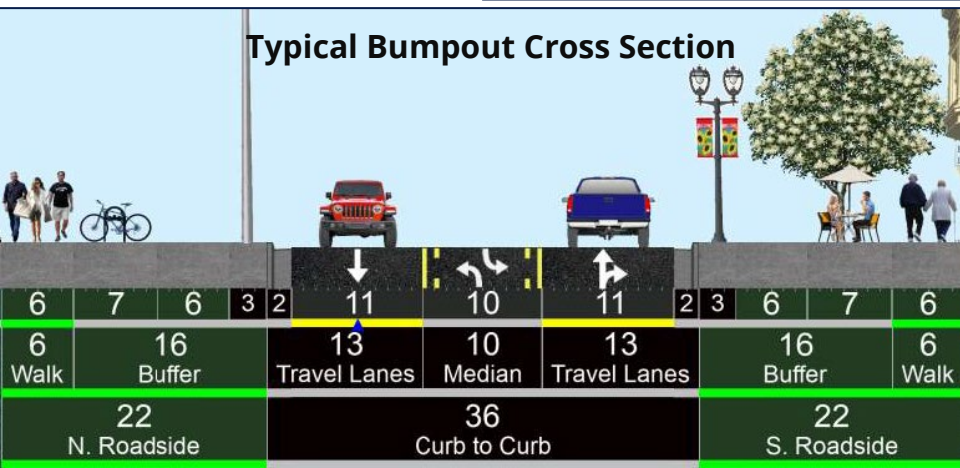
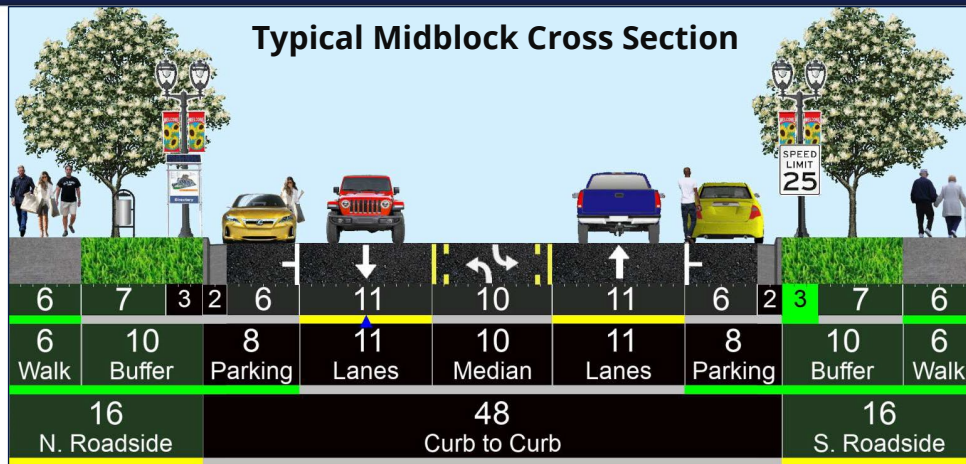
- Curb-to-curb width narrowed from ~55' to 48' (~7' roadway width reduction)
 - 11' through-traffic lanes (narrow from existing)
 - 10' left turn lane (maintain from existing)
 - 8' parking lanes (narrow from existing)
- Total non-vehicle space widened from ~25' to 32'
 - 10' boulevard (widen from existing)
 - 6' sidewalk (maintain from existing)
 - 8' sidewalk in high pedestrian traffic areas

Pedestrian Safety Improvements

- Bumpouts installed at all intersections
- Cambridge Street intersection pedestrian crossing island
- Raised and legal crossings at Macalester College



Preferred Concept Layout – cross sections



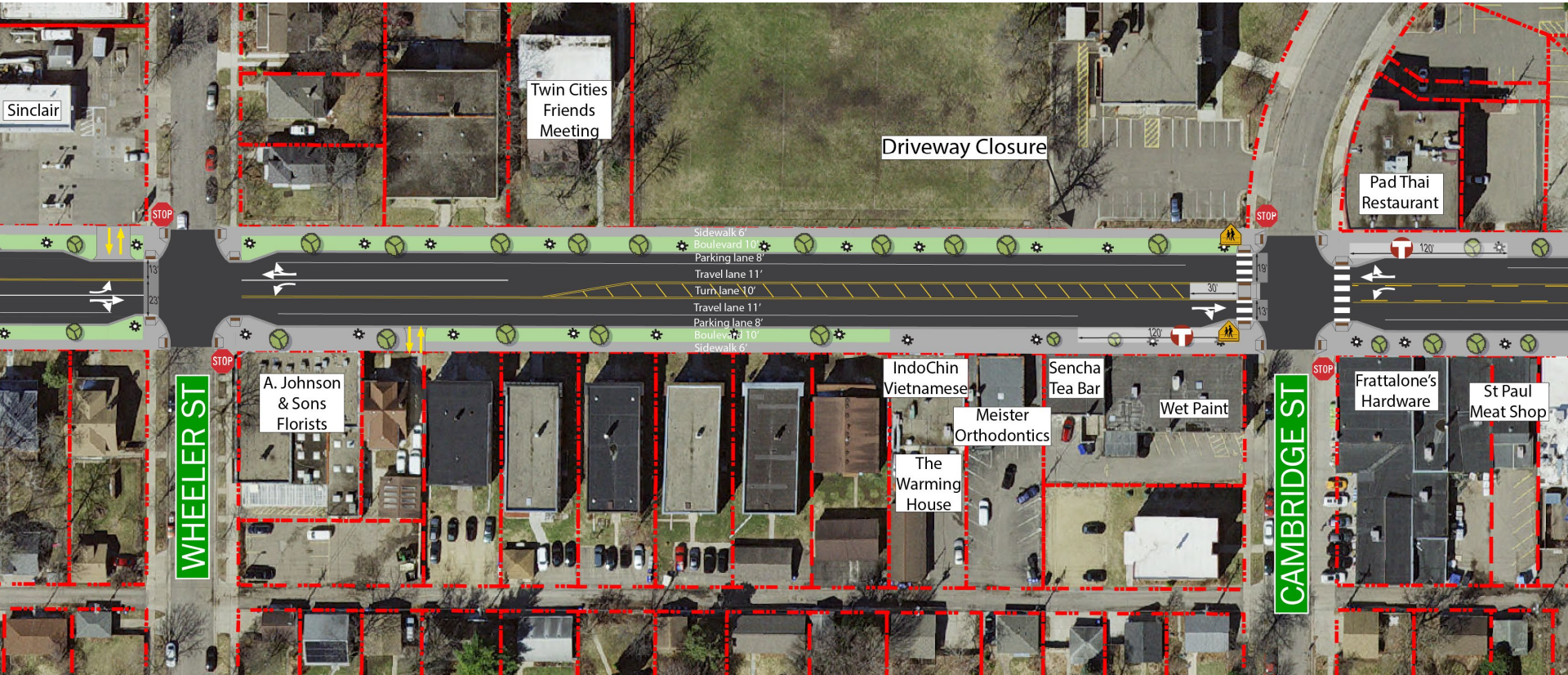


Preferred Concept Layout – Fairview to Wheeler





Preferred Concept Layout – Wheeler to Cambridge





Cambridge St Intersection Additional Data

- Hidden River Jr High located on NW corner of intersection
- Highest concentration of pedestrian crashes in project scope
 - 4 pedestrian crashes at or near intersection
- High student crossing patterns
 - 88 in peak hour (3 PM)
 - West leg of Grand Ave sees significantly more crossing activity than east leg
- Modest bike crossings during typical day
 - 72 bike crossings
- Parent pick-up and drop-off being shifted north
 - Closing Grand Ave parking lot and closing driveways
 - Left turn NB onto Cambridge need will be reduced significantly
 - 94 left turns onto Cambridge north of Grand Ave – 1/5 associated with student drop-off



West leg:
405 crossings
88 peak hour (3PM)
East leg:
101 crossings
20 peak hour (5PM)





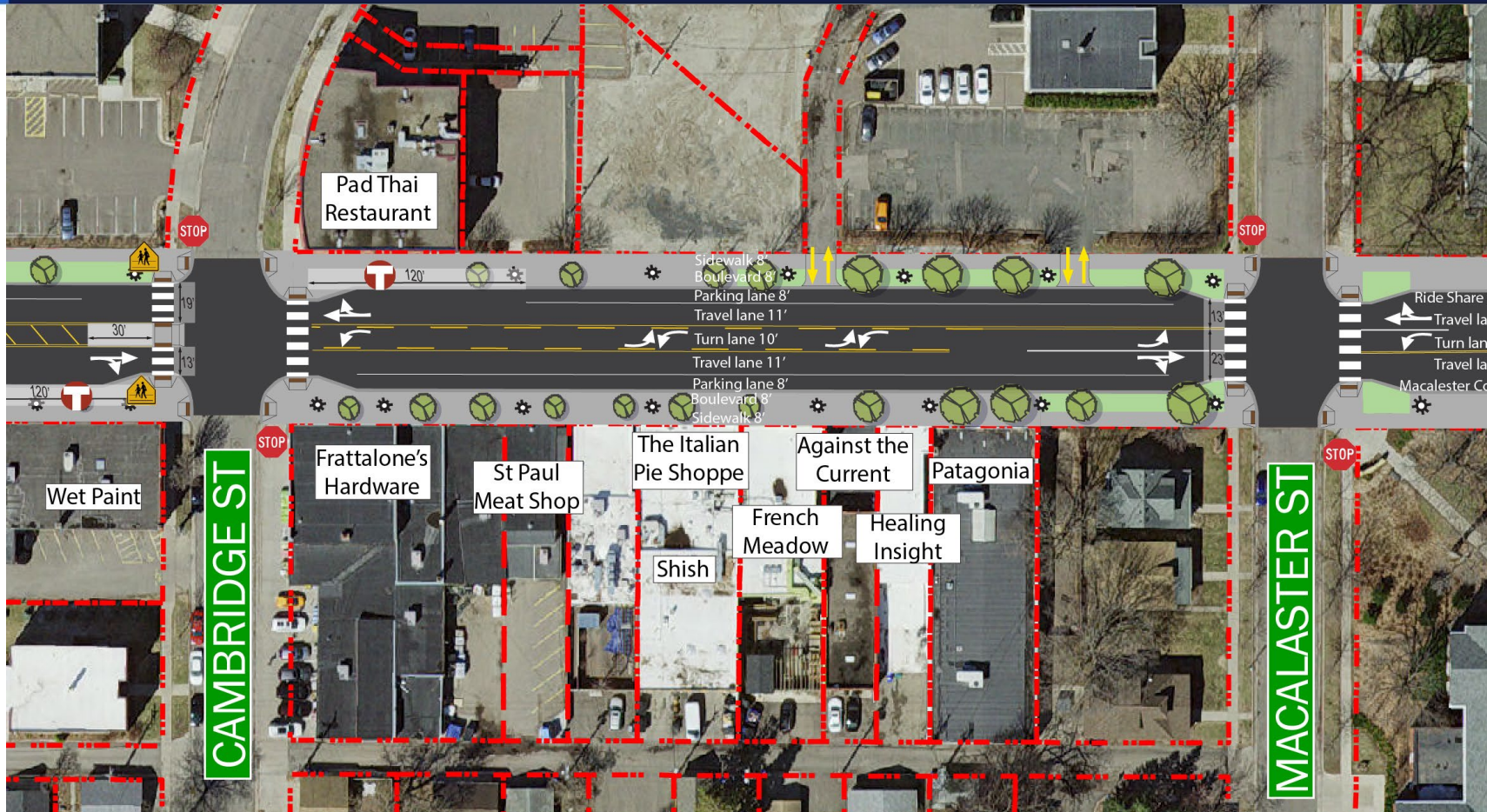
Pedestrian Refuge Island Additional Information

- Similar refuge islands have been successful and shown pedestrian safety improvements
 - FHWA – 36% reduction in pedestrian crashes from refuge islands
 - Many safe routes to school projects feature either bumpouts or pedestrian refuge island – Roosevelt HS SRTS project in Minneapolis pictured to the right
- Proposed refuge island will be wider (10') than typical (6' – 8')
- Lane width (19' including curb and gutter) for westbound traffic will not include bumpout due to turning needs of school buses.
 - There has been early discussion with SPPS for the possibility of using Grand Ave for overflow bus pick up or drop off
 - Bumpout upstream of the intersection for westbound traffic would limit passing of yielding vehicle
- Issue with median design (tapered for plow operations) is a separate issue.



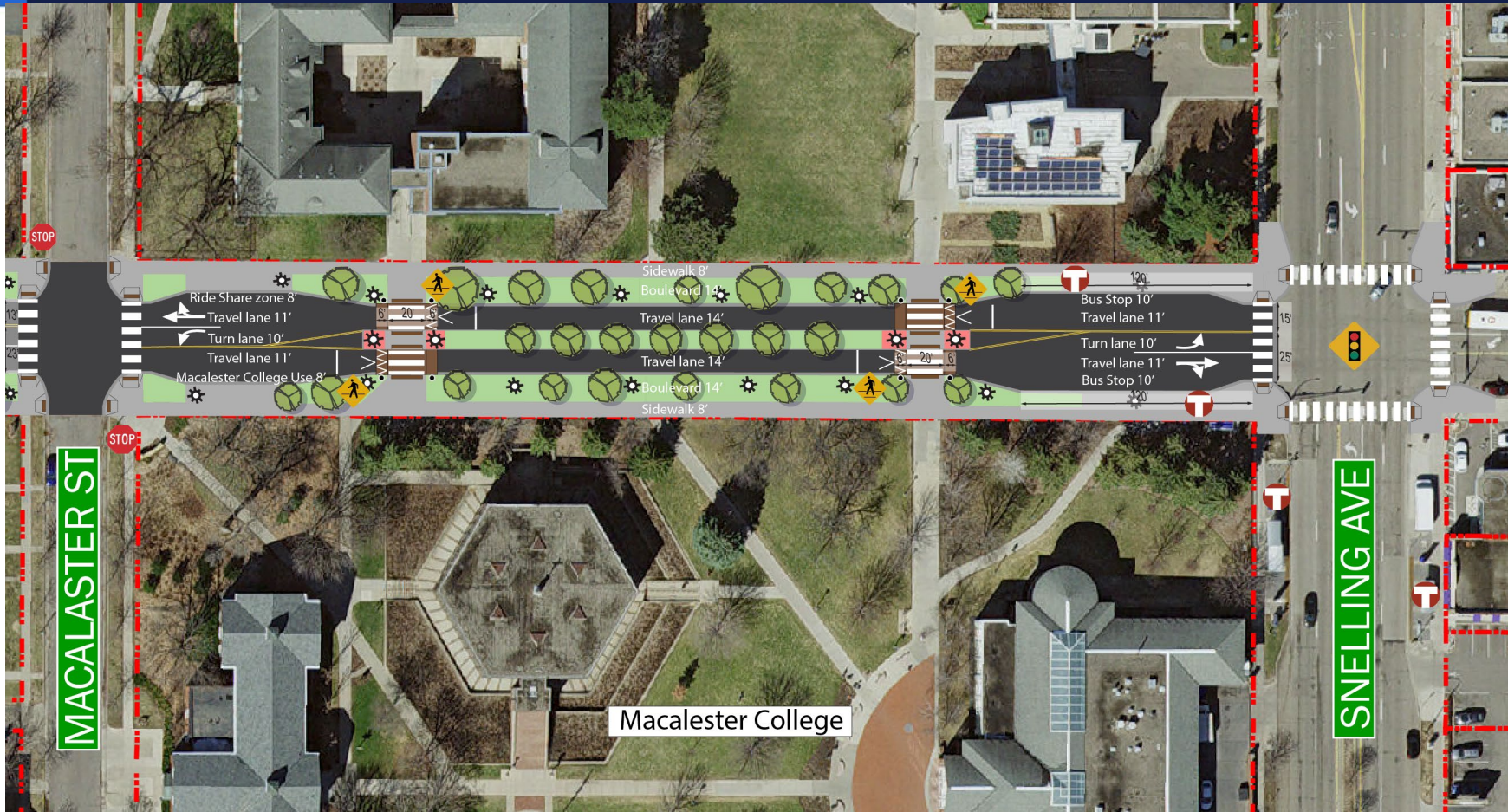


Preferred Concept Layout –Cambridge to Macalester





Preferred Concept Layout – Macalester to Snelling





Macalester College Additional Information

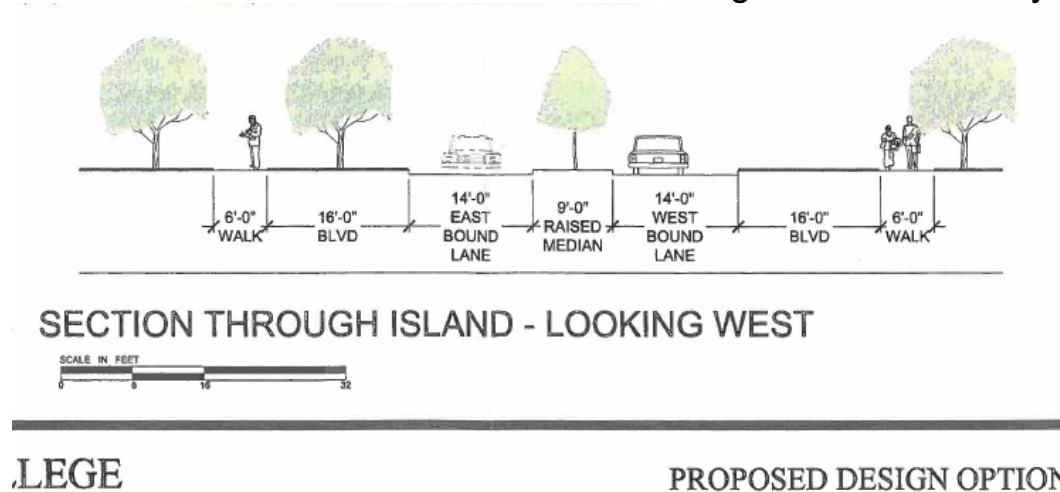
Grand Ave cross section will be narrowed where it can be, but existing lane widths for the median section will be maintained at 14 feet.

There has not been an identified issue over existing lane widths through this section.

Due to the constrained nature of the roadway, 14 feet is the minimum for large vehicles to navigate.

- Grand Avenue is a major bus route, frequently used by trucks for business and other deliveries and used by emergency services.
- 14 feet width includes curb and gutter space
- Additional measures will work to slow motor vehicles through

Original proposed section design for Macalester College from 2003 study





Macalester College Additional Data

Conducted pedestrian crossing counts at each mid-block crossing through Macalester College. (right)

- Some of the highest pedestrian crossing counts in the City.
- Unique situation: Do not have another street with as high sustained crossing patterns anywhere else.
- Highest usage found on west and east crossing

Macalester College conducting campus master plan. (below)

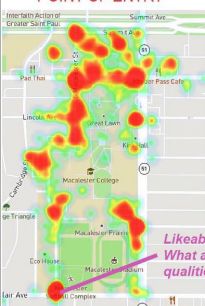
- Typical walking path on campus
- Entry points for those traveling to campus
- Dissatisfaction with existing Grand Avenue situation

Campus Structure

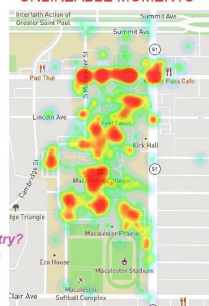
TYPICAL PATH FOR STUDENTS

Point of Entry

POINT OF ENTRY



UNLIKEABLE MOMENTS

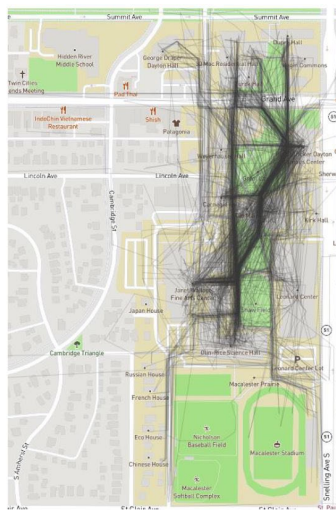


OVERLAPS

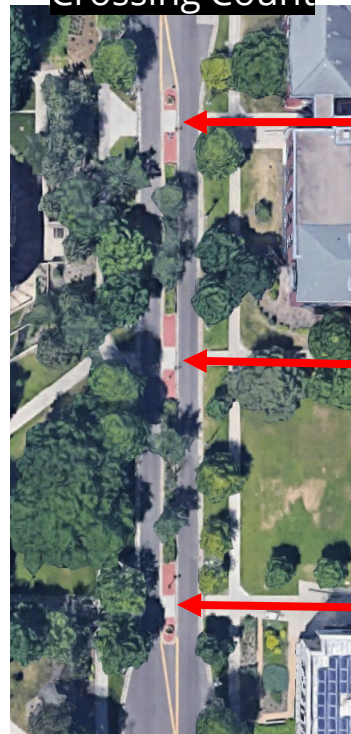


Likeable entry?
What are its
qualities?

What about
parking?



Macalester College Crossing Count



1,892 total crossings
212 peak hour (9AM)

988 total crossings
105 peak hour (6PM)

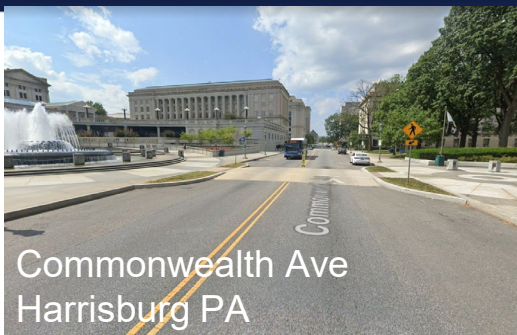
1,744 total crossings
174 peak hour (6PM)



Raised Crossing Examples

There are multiple raised crossings which have been installed at other locations within St Paul, below.

- Maria Ave (Metro State Campus)
- Johnson Pkwy
- Wheelock Pkwy
- Wabasha St



Commonwealth Ave
Harrisburg PA

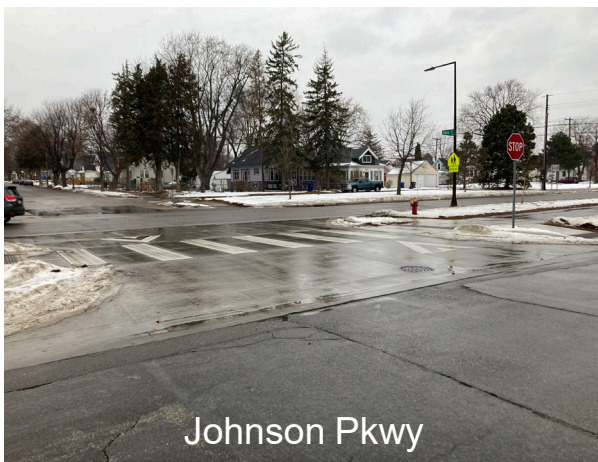


Harrison St
Chicago IL

Raised crossings have been installed on other high traffic corridors at unique locations, examples above.



Maria Ave



Johnson Pkwy



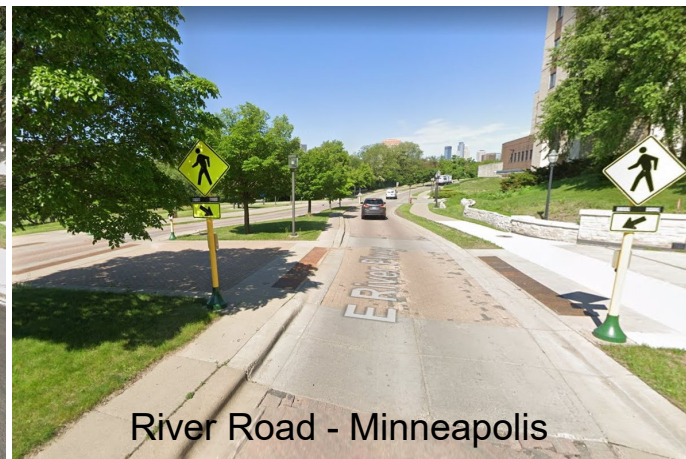
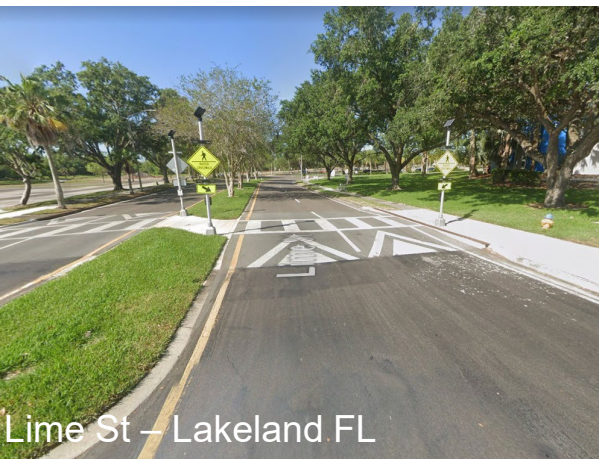
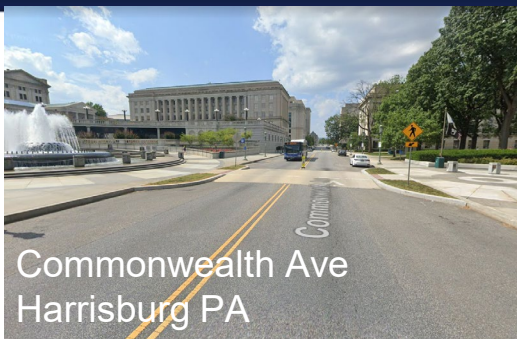
Wabasha St



Raised Crossing Examples

More examples of raised crossings across country

- Lime St – Lakeland FL
- E River Road – Minneapolis
- Prospect St – New Haven CT





Project Timeline

Engagement
Begin - 2022

Preferred Alternative
Review - 2023

Construction
Start - 2024

Phase 1

Phase 2

Final Design and Construction

Phase 2: July-November engagement (produce and review concept design + options)

- July-August – concept and options produced and vetted internally
- September-November – share concept and location options with public, hold conversations and review. Opened survey for concept and location options.
- January '23 – review preferred concept and move to construction designs

Preferred concept layout will be brought to the public in late January '23

- Additional engagement will be done for preferred concept
- Final open house being worked on
 - Hoping to hold in-person at Macalester College

Final design and construction

- City staff create construction designs in 2023
- MnDOT State Aid Review in 2023
- Project will begin in 2024
 - Construction will likely run from May-November '24



Project Contacts

Any further questions or comments can be sent to:

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