RAMSEY COUNTY

# Rice Street Visioning Study

## DRAFT Concept Screening Report

**Subject:** DRAFT Concept Screening Report

**Date:** March 18, 2022

**To:** Nick Fisher, PE, Project Manager, Ramsey County

**From:** Scott McBride, PE, Project Manager, Bolton & Menk, Inc.

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**Project:** Rice Street Visioning Study

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# PURPOSE

The purpose of this report is to outline the toolbox and concept evaluation process for the Rice Street Visioning Study, and document the results of the Level 1, Level 2, and Level 3 Screenings. A three-part concept evaluation process was undertaken to identify and evaluate Rice Street toolbox options and more detailed improvement concepts. The initial evaluation, called the Level 1 Screening, was focused on dismissing concepts and toolbox options that did not meet the project's purpose or goals and objectives. Remaining concepts were then moved forward into a Level 2 evaluation that compared the benefits and trade-offs of each in more detail. The Level 3 Screening focused on how the remaining concepts fit into the length of the corridor to determine the recommended Rice Street vision.

The existing conditions, purpose and need framework, goals and objectives, public engagement, and traffic analysis which serve as the foundation for the concept screenings are documented in separate technical memorandums and therefore, will not be repeated here.

# EVALUATION PROCESS

## MULTIMODAL ROADWAY IMPROVEMENT OPTION TOOLBOX

After receiving public feedback on the existing conditions along the Rice Street Corridor, Bolton & Menk developed a toolbox of both traditional and nontraditional roadway improvement options that spanned across the pedestrian, bicycle, vehicle, transit, land use, and streetscape realms. The improvement options toolbox was vetted with project agencies and stakeholders before applying to locations on the corridor. The result was a revised toolbox of 47 creative and fundable strategies for the Rice Street corridor in Saint Paul that align with the project's overall purpose and goals.

## PUBLIC AND AGENCY PARTICIPATION

Public and agency participation has guided the development of the improvement options toolbox and will be critical to the success and results of the Rice Street Visioning Study. Input from affected local agencies and the public will give credibility to key decisions made during the project. The following summarizes the public outreach to date. For a fuller accounting of all the engagement events and activities, see the separate engagement summary document.

### *Project Management Team (PMT)*

The study was led by a PMT comprised of planning and engineering staff from Ramsey County, City of Saint Paul, Metro Transit, and the Bolton & Menk team. The PMT met monthly to manage and deliver the project to consider all public, stakeholder, and elected official input.

### *Community Liaisons*

The project team includes St. Paul-based members who were hired to further connect with the community, including area cultural groups. The team of liaisons was hired after conversations with the community. The role of the liaisons is broad and includes connecting with community organizations, connecting the project team with Rice Street residents, hosting pop up events and focus group discussions, and more.

### *Policy Advisory Committee (PAC)*

The PAC consists of elected and appointed officials, and management staff from agencies and local organizations. This committee assisted with the decision making of activities and issues and provided

recommendations to the project team. The team provided periodic updates to the PAC via electronic communications and virtual meetings.

### *Neighborhood and Business Meetings*

These meetings were held with identified community groups to provide updates and engage in dialogue. They were spaced to correspond with project milestones, allowing for both input and follow-up from previous engagement. The purpose of these meetings was to share general information on the project (which included design assumptions, traffic assessments, geometric layout information), and to ask the public for input on the project.

### *Public Engagement*

**2019:** The project team listened to and talked with community members at community festivals, open houses, and various meetings with area representatives at the Rice Street Library, Rice-Larpenteur Alliance, Rice Street Gardens, InProgress Art Gallery and Neighbor Works. Additionally, we made numerous one-on-one connections with key community leaders and groups to better understand community needs and connect with people.

**2020**: From August to December 2020, the project team gathered feedback on specific strategies that could be used to improve the project area. These tools were released in five separate topic groups: pedestrian and bicycle, transit, streetscape, vehicle traffic, and neighborhood design improvements. Members of the public were given the opportunity to learn about each topic and provide their feedback via an online survey. After these online topics were released, the project team held an open house in November to discuss results and share potential roadway design options.

**2021:** July & November open houses. A July online open house was held to discuss three final draft road layout concepts for Rice Street and gather additional community feedback. In November, an additional online open house was held to share the recommended design for Rice Street, vet the design, and gather any further feedback on the concept.

**2022:** March open house. A final online open house is planned to present the recommended concept and implementation plan.

## SCREENING & EVALUATION PROCESS

This section describes the steps used to evaluate the concepts developed for the study. The evaluation process is based on the project goals and objectives developed through the Project Management Team (PMT) as shown in **Tables 1 & 2** below.

### *Project Goals*

Due to the broad approach and the Purpose & Need for Rice Street, it was determined to not conduct the corridor evaluation phase using a conventional cross section alternatives analysis. This was primarily to ensure the Study accomplished the following:

- Showed a clear differentiation from the previous study, and that this is not a repackaging of old alternatives in a new process
- Demonstrated transparency of the process, accountability to public feedback, and openness to innovative approaches for the corridor

- Addressed project goals that extend beyond the roadway corridor, and may not typically be included in corridor alternatives analysis
- Allowed for the possibility there may not be a singular typical cross section – i.e., that the treatment may need to vary along the corridor to meet community needs

Instead, the project first began with an evaluation of a series of tools and strategies which may be appropriate for screening Rice Street concepts.

The evaluation findings of these tools and strategies were then combined with key engagement findings to establish a preliminary list of project goals and screening criteria. Reflecting the holistic purpose of the Vision Study, goals and criteria were sorted to address both *Transportation* and *Community* needs:

***Table 1. Transportation Goals and Objectives***

| Goal | Measure |
|---|---|
| **Safe Pedestrian Accommodations** | Pedestrian Level of Service |
| | Reduced Crossing Distance |
| | Pedestrian Level of Traffic Stress |
| | Improved visibility of pedestrians to drivers |
| | Reduced pedestrian-vehicle conflict points |
| | Safe Routes to School compatibility |
| **Safe Bicycle Connections** | Connections to existing and planned bike routes |
| | Separated bicycle routes along the corridor |
| | Bicycle Level of Traffic Stress |
| **Improved Transit Service** | Improved transit facilities |
| | Improved transit service reliability |
| | Potential to accommodate future enhanced transit service |
| | Integration of transit with multimodal connections on the corridor |
| **Safe Traffic Operations** | Upgraded intersection treatments to improve traffic safety |
| | Reduced traffic speeds |
| | Reduced intersection crash rate and severity |
| | Reduced corridor crash rate and severity |
| | Travel time reliability along Rice Street |
| | Access to Rice Street |
| | Intersection Level of Service |
| | Reduced vehicle to vehicle conflict points |
| **Welcoming Streetscape** | Improved pedestrian scale lighting |
| | Enhancements reflect the unique history and character of corridor |
| | Provides opportunity for public gathering space |
| | Enhancements are supported by the surrounding community |
| | Allows flexibility in curbside uses |
| | Plan for sustainable streetscape maintenance |

### *Table 2. Community Goals and Objectives*

| Goal | Measure |
|---|---|
| **Economic Development and Business Support** | Supports mitigation plan for construction phase impacts |
| | Updates to parking requirements and availability near businesses |
| | Aligns with identified business opportunities and needs |
| | Identification of resources and partnerships to support business vitality |
| | Ease of freight access - retail |
| | Ease of freight access - industrial |
| **Workforce Development and Business Support** | Supports identified local workforce needs |
| | Ease of employment access for workers |
| | Supports workforce development and job placement |
| **Healthy Community** | Supports active living for non-motorized modes |
| | Supports identified public health resources and partnerships in the area |
| **Public Safety** | Well-lit and maintained public spaces |
| **Sustainability Goals** | Private property impacts |
| | Private property impacts |
| | Constructability/long term maintenance |
| | Public support to carry forward |
| | Agency support to carry concept forward |

## *Level 1 Screening*

Many options and roadway concepts were discussed at the project outset. The Level 1 Screening aimed to reduce the number of concepts to a smaller set for further evaluation. The Level 1 Screening process included reviewing concepts against the project purpose, goals, and objectives, and eliminating options that were not consistent with necessary project outcomes.

## *Level 2 Screening*

After the Level 1 Screening, remaining concepts were developed into typical sections for further review and evaluation. The subsequent Level 2 Screening process included in-depth comparison of alternatives through an evaluation matrix that focused on further assessing concepts against project goals and objectives. The evaluation matrix, in combination with public engagement completed to date, was used to further eliminate concepts from consideration, while determining which concepts will be further vetted through the Level 3 Screening.

## *Level 3 Screening*

The Level 3 Screening took all remaining concepts from the Level 2 Screening and developed them into geometric layouts. A full-corridor review of the advantages and disadvantages of each alternative was completed, with public and agency feedback used to select the preferred alternative.

## SCREENING ANALYSIS

**Table 3** below details the final set of the study goals and screening criteria, approved by the PMT. These goals and criteria were used to conduct a fatal flaw screening for Level 1, and again in the Level 2 process to evaluate concepts in detail.

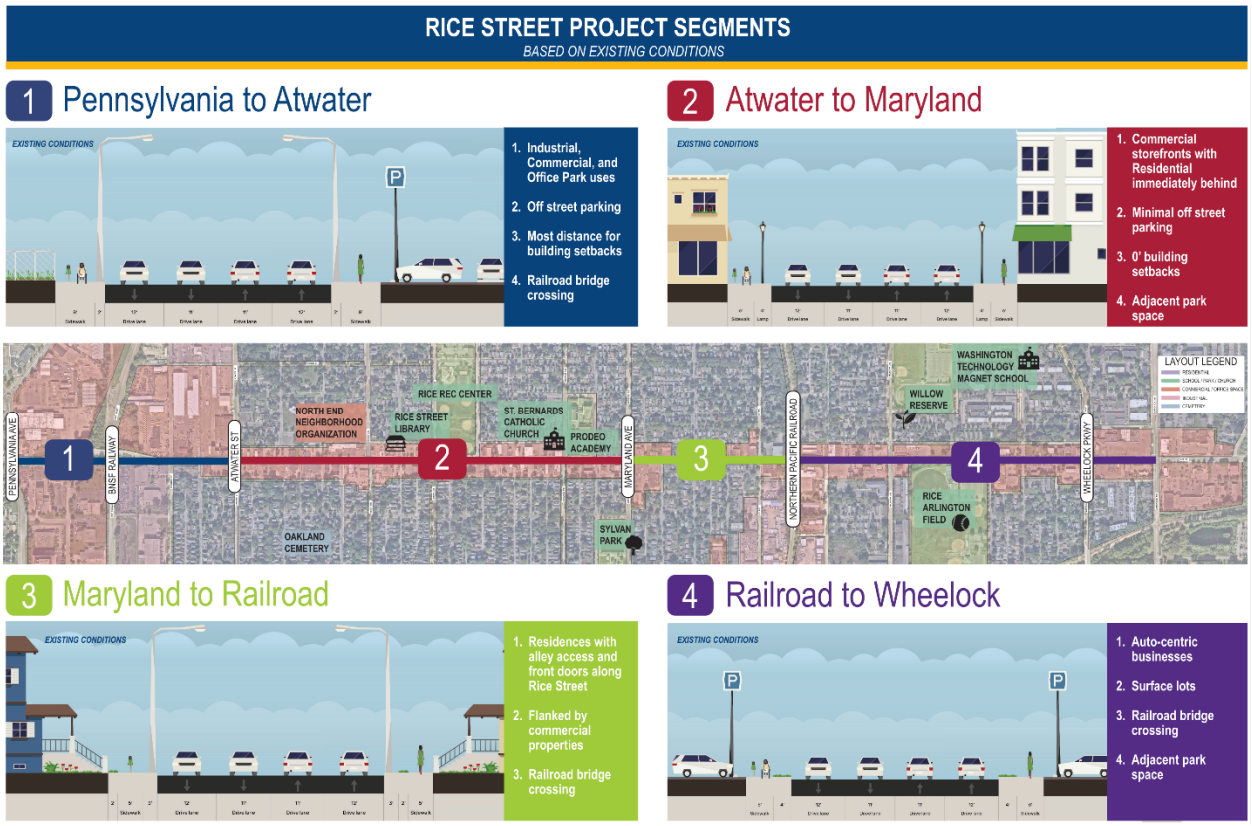
***Table 3. Goals and Measures***

| Goal | Screening Criteria |
|---|---|
| **1. Pedestrian Accommodations** | Pedestrian level of service |
| | Reduced crossing distance |
| | Pedestrian level of traffic Stress |
| | Improved visibility of pedestrians to drivers |
| | Reduced pedestrian-vehicle conflict points |
| | Safe Routes to School compatibility |
| **2. Bicycle Connections** | Connections to existing and planned bike routes |
| | Separated bicycle routes along the study area |
| | Bicycle level of traffic stress |
| **3. Improved Transit Service** | Improved transit facilities |
| | Improved transit service reliability |
| | Potential to accommodate future enhanced transit service |
| | Integration of transit with multimodal connections |
| **4. Traffic Operations** | Upgraded intersection treatments to improve traffic safety |
| | Reduced traffic speeds |
| | Reduced intersection crash rate and severity |
| | Reduced corridor crash rate and severity |
| | Travel time reliability along Rice Street |
| | Access to Rice Street |
| | Intersection Level of Service |
| | Reduced vehicle to vehicle conflict points |
| **5. Welcoming Streetscape** | Improved pedestrian scale lighting |
| | Enhancements reflect the unique history and character |
| | Provides opportunity for public gathering space |
| | Enhancements are supported by the surrounding community |
| | Allows flexibility in curbside uses |
| | Plan for sustainable streetscape maintenance |
| **6. Economic Development and Business Support** | Supports mitigation plan for construction phase impacts |
| | Updates to parking requirements and availability near businesses |
| | Aligns with identified business opportunities and needs |
| | Identification of resources and partnerships to support business vitality |
| | Ease of freight access |

| Goal | Screening Criteria |
|---|---|
| **7. Workforce Development and Business Support** | Supports identified local workforce needs |
| | Ease of employment access for workers |
| | Supports workforce development and job placement |
| **8. Healthy Community** | Supports active living for non-motorized modes |
| | Supports identified public health resources and partnerships in the area |
| **9. Public Safety** | Well-lit and maintained public spaces |
| **10. Sustainability Goals** | Private property impacts |
| | Cost/benefit analysis |
| | Constructability/long term maintenance |
| | Public support to carry forward |
| | Agency support to carry concept forward |

To aid in screening and evaluation, the project team divided the study area into four segments. These segments were derived based approximately on land uses, traffic considerations, and built form character. Further, this segmentation was done to accommodate the possibility that even once a preferred concept was selected, variations may be required on a segment-by-segment, or even block-by-block basis.

**Figure 2 – Rice Street Segment Map**



## *Level 1 Screening Analysis*

Based on the Level 1 Screening process, the following options were eliminated from further consideration.

### *Table 4. Level 1 Screening of Toolbox Options*

| Dismissed Options | Conflicting Goals | Reason Dismissed* |
|---|---|---|
| **1. Offset Median Refuge Island** | *4 and 10* | *a)* Right-of-way constraints (over median refuge island)<br>*b) Access challenges* |
| **2. Pedestrian Underpass/Overpass** | *10* | *a)* Right-of-way constraints (over pedestrian crosswalk) |
| **3. Center Aligned Separated Bike Lane** | *4 and 10* | *a)* Right-of-way constraints (over other types of bike lanes)<br>*b)* Access challenges along Rice Street |
| **4. Bike Boulevard** | *2* | *a)* Traffic volumes too high |
| **5. Two-Stage Turn Queue Box** | | *a)* Too similar to Bicycle Boxes to be own category |
| **6. Dedicated Median Bus Lanes** | *4 and 10* | *a)* Right-of-way constraints<br>*b)* Access challenges along Rice Street |
| **7. Floating Bus Stop** | *10* | *a)* Right-of-way constraints |
| **8. Back-in Angled Parking** | *10* | *a)* Right-of-way constraints (over parallel parking) |
| **9. Roundabout** | *10* | *a)* Right-of-way constraints (over signalized intersection) |

## *Level 2 Screening Analysis*

The Level 2 Screening analysis was initiated to consider the purpose and need topics and to assess whether a concept had any fatal flaws. A fatal flaw was understood as either not meeting the purpose and need or project goals or having an unmitigable negative impact. The roadway concepts developed for Level 2 screening analysis are shown in **Appendix A**. Based on technical analysis and feedback from the PMT, PAC, and the public, the Level 2 Screening was completed to identify those alternatives that can meet the project's goals. **Table 5** below identifies the alternatives from the Level 2 Screening that were recommended to be carried forward into the detailed Level 3 evaluation.

### *Table 5. Level 2 Screening of Concept Alternatives*

| Concept Options | Alignment with Project Goals |
|---|---|
| **Concept 2**<br>3-lane, Two-way Cycle Track, No Parking | *a)* Supports bicycle and traffic operations goals<br>*b)* Can support portions of pedestrian, transit, and streetscape goals |
| **Concept 3**<br>3-Lane, Sidepath, No Parking | I. Supports traffic operations and streetscape goals<br>II. Can support portions of pedestrian, bicycle, and transit goals |
| **Concept 7**<br>3-Lane, Parking on One Side, No Bike | *a)* Supports pedestrian, transit, traffic operations, and streetscape goals<br>*b)* Does not support bicycle goals |

Alternatives that have been eliminated from further consideration are included in **Table 6** below.

### *Table 6. Level 2 Screening – Eliminated Corridor Concepts*

| Dismissed Concepts | Conflicting Goals | Reason Dismissed |
|---|---|---|
| **Concept 1**<br>3-Lane, Bike Lane, No Parking | Goals #1-5 | *a)* Minimum bicycle, pedestrian and roadway widths<br>*b)* Large amount of impervious |
| **Concept 4**<br>2-Lane, Wide Sidewalk, No Bike, No Parking | Goals #2-4 | *a)* No left turn lanes<br>*b)* No bicycle facilities<br>*c)* Median area could be better used elsewhere |
| **Concept 5**<br>2-Lane, Cycle Track, No Parking | Goals #3,4 | *a)* No left turn lanes<br>*b)* Minimized bicycle and pedestrian widths to achieve a left turn lane |
| **Concept 6**<br>2-Lane, Parking Both Sides, No Bike | Goals #2-4 | *a)* No left turn lanes<br>*b)* No bicycle facilities |

During the January 2021 PMT meeting, attendees confirmed results from the Level 2 Screening.

## *Level 3 Screening Analysis*

The Level 3 screening analysis was conducted from February 2021 through November 2021 for each remaining concept. Three concepts were progressed from the Level 2 Screening and renamed for clarity and ease of communication.

- **"Concept A" (former Concept 2): 3-Lane, Sidewalks, Separated Bike Lane One Side, Boulevard, Parking Bays**
- **"Concept B" (former Concept 3): 3-Lane, Sidewalk, Shared Use Path, Boulevard, Parking Bays**
- **"Concept C" (former Concept 7): 3-Lane, Sidewalks, Boulevard, Parking Bays**

Concept visuals and details that were used for public engagement and general communication of concept details and differences are included in **Appendix B**.

To identify a final preferred concept, each remaining concept was screened against further technical analysis, minimum and preferred design standards, public engagement findings, alignment with project goals, and detailed feedback from the PMT and PAC. Additional as-needed stakeholder meetings were held to vet specific elements of each concept.

Based on findings from the Level 3 Screening process, Concepts A and C were dismissed from consideration, as noted in **Table 7**.

### *Table 7 – Level 3 Screening Dismissed Concepts*

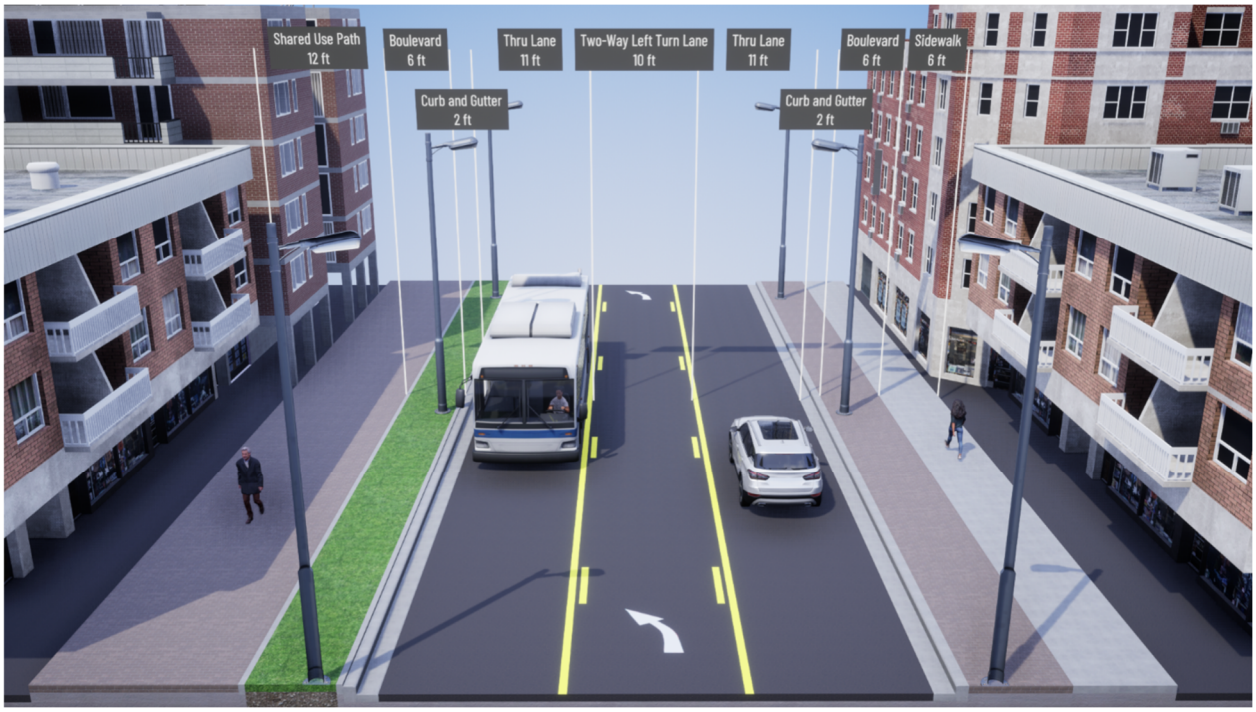
| Dismissed Concepts | Reason for Dismissal |
|---|---|
| **Concept A**<br>3-lane, Two-way Cycle Track, No Parking | *a)* Difficulty in accommodating future BRT facilities, while maintaining safe and comfortable bicycle facilities<br>*b)* Didn't allow for parking<br>*c)* Minimal space for corridor greening/streetscape<br>*d)* Limited space for corridor lighting, signing and amenities |
| **Concept C**<br>3-lane, Wide Sidewalk, Parking, No Bike Facility | *a)* No bike facilities meant it didn't meet the multimodal needs of the corridor |

During the November 2021 PMT meeting, attendees confirmed results from the Level 3 Screening and selected Concept B to be the preferred concept, as noted in **Table 8**.

## *Table 8 – Preferred Concept*

| Preferred Concept | Reason |
|---|---|
| **Concept B**<br>3-Lane, Sidewalk, Shared Use Path, Boulevard, Parking Bays | *a)* Prioritizes bike and pedestrian accessibility over cars<br>*b)* New dedicated bike accommodation<br>*c)* Improved pedestrian access and crossings<br>*d)* When compared with Concept A's cycle track, the shared use path is:<br>*1)* More flexible in public realm space, allowing for greening/streetscaping<br>*2)* Better fit with accommodating future BRT facilities<br>*3)* More able to include on-street parking |

**Figure 3 – Rendering of Preferred Concept B**



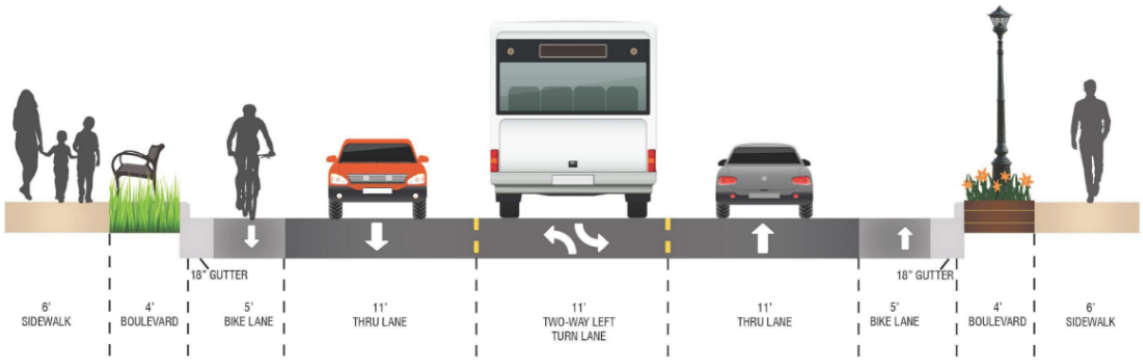

## IMPLEMENTATION FRAMEWORK + TIMING

Crafted in parallel to the roadway concepts was an implementation plan to guide the staging and alignment of the design and construction of the preferred concept. More detail is provided in the project's Implementation Plan.

# Appendix A – Level 2 Screening Concepts

# Concept 1

**3-Lane Roadway, Bike Lanes**

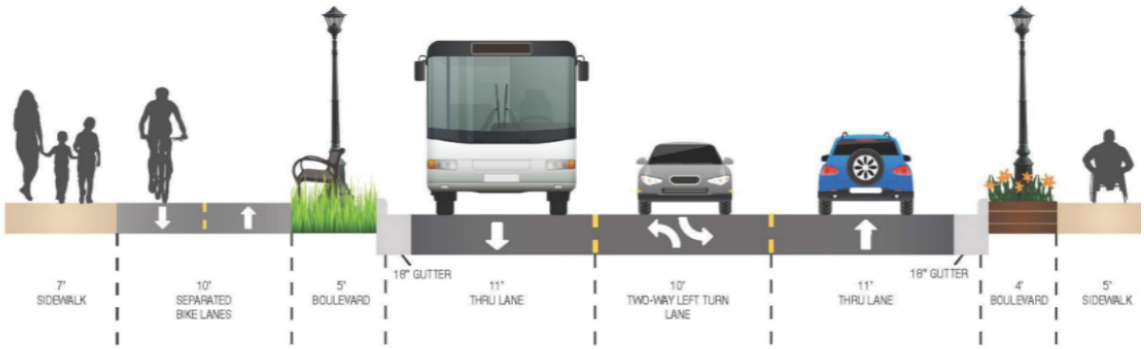



## Key elements

- 3-lane roadway with 11' lanes
- 6' sidewalks, 5' bike lanes, and 4' boulevards
- OPTION: Omit center lane, add 1-sided parking

# Concept 2

**3-Lane Roadway, 2-Way Separated Bike Lane**




## Key elements

- 3-lane roadway with 11' lanes
- 6' sidewalks, 3-6' boulevards
- Two-way 10' separated bike lane
- OPTION: Omit center lane, add 1-sided parking

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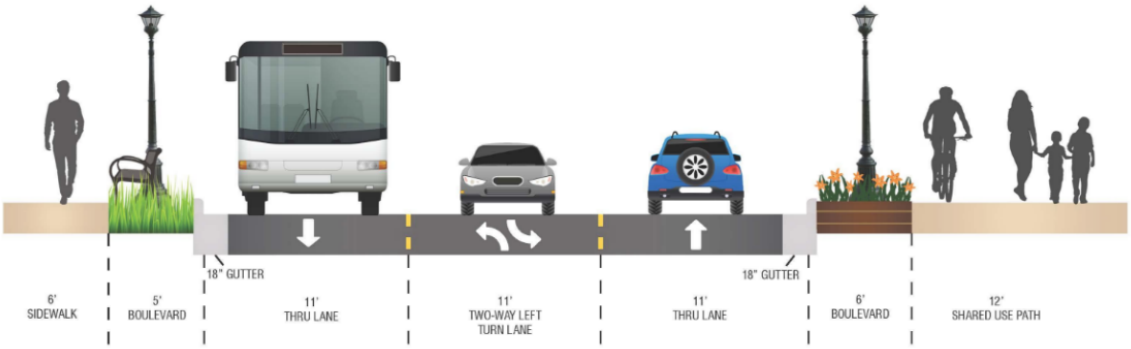
# Concept 3

**3-Lane Roadway, Shared Use Path**



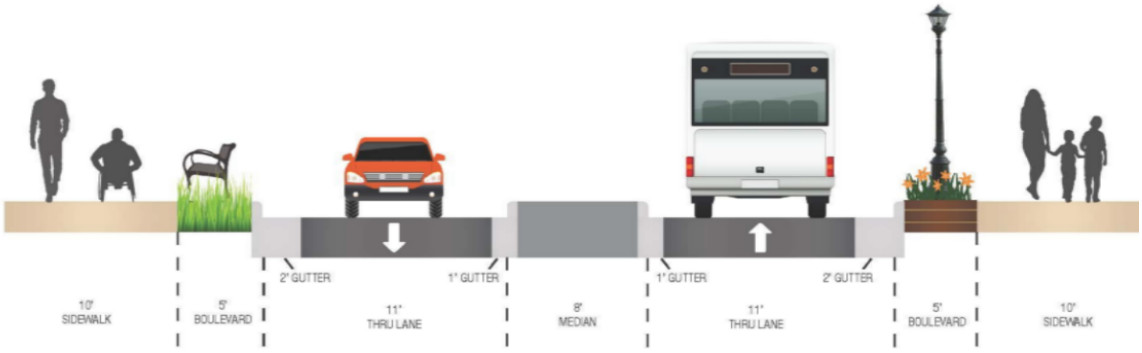

## Key elements

- 3-lane roadway with 11' lanes
- 7' sidewalk, 4' boulevards
- 14' shared use side path

- OPTION: Omit center lane, add 1-sided parking

# Concept 4

**2-Lane Roadway, Median, Wide Sidewalks**




## Key elements

- 2-lane roadway with 12' lanes
- 6' median, can be pedestrian refuge
- 10' sidewalks, 5' boulevards

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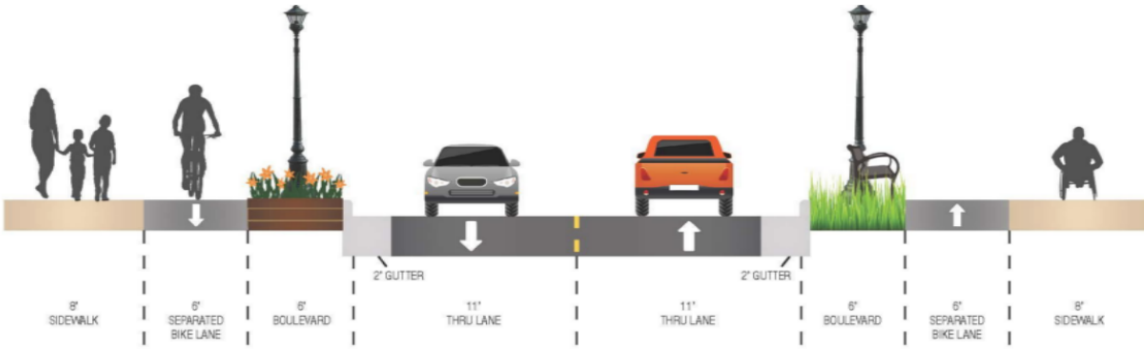
# Concept 5

**2-Lane Roadway, Separated Bike Lanes**

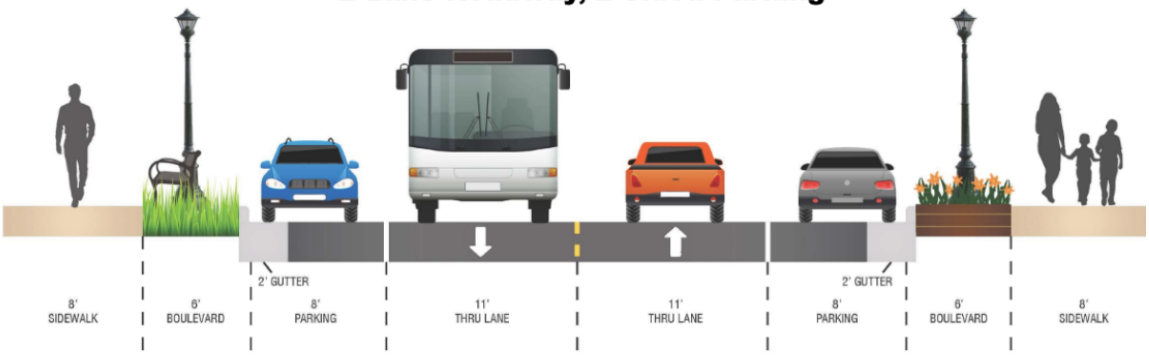



## Key elements

- 2-lane roadway with 12' lanes
- 8' sidewalks, 5' boulevards
- 6' 1-way separated bike lanes on each side

# Concept 6

**2-Lane Roadway, 2-Sided Parking**




## Key elements

- 2-lane roadway with 12' lanes
- 8' sidewalks, 5' boulevards
- 8' parking lanes on both sides

- <u>OPTION</u>: Bump-outs at intersections

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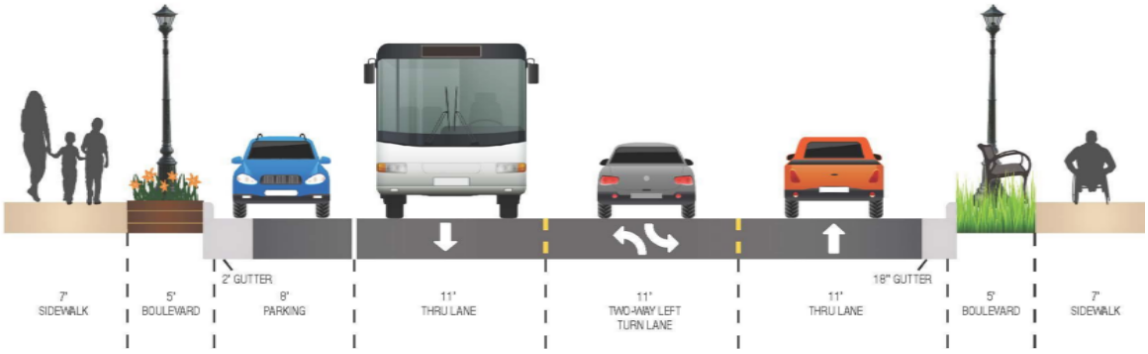
# Concept 7

**3-Lane Roadway, 1-Sided Parking**




## Key elements

- 3-lane roadway with 11' lanes
- 7' sidewalks, 5' boulevards
- 8' parking lane on one side

- OPTIONS: Bump-out or medians at intersections

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# Appendix B – Level 3 Screening Concepts

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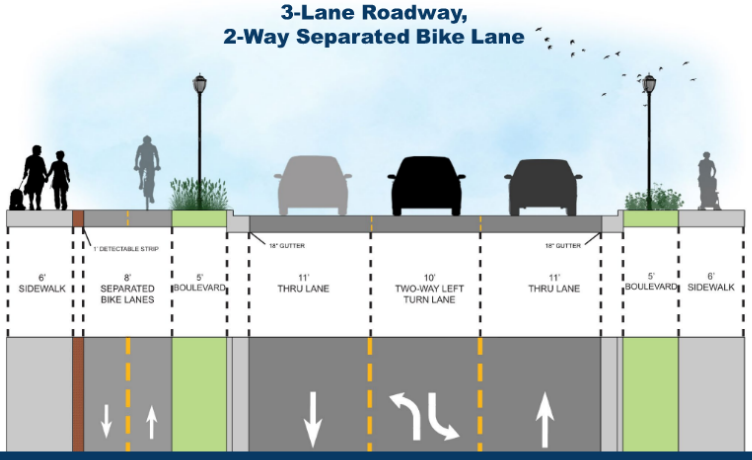
# Concept A

**3-Lane Roadway,**
**2-Way Separated Bike Lane**




## Key elements

- 3-lane roadway with 11' thru lanes and a 10' turn lane
- 6-foot sidewalks, 5-foot boulevards
- Two-way 8-foot separated bike lane

**MONTANA AVE & RICE STREET** | CONCEPT A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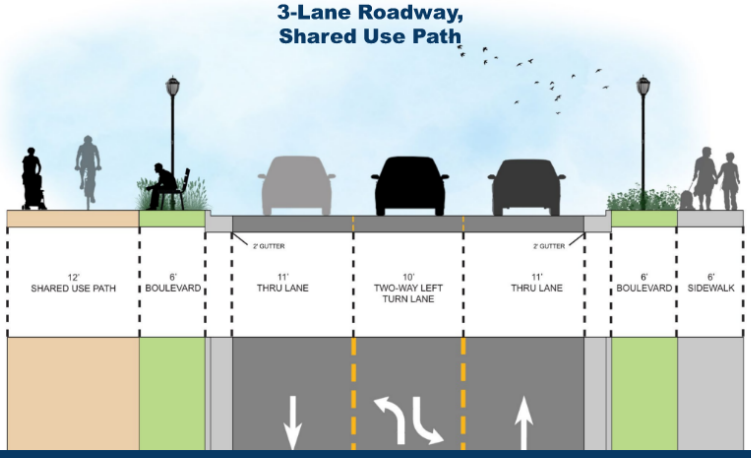
# Concept B

**3-Lane Roadway, Shared Use Path**




## Key elements

- 3-lane roadway with 11' thru lanes and a 10' turn lane
- 6-foot sidewalk, 6-foot boulevards
- 12-foot shared use side path

**MONTANA AVE & RICE STREET** | CONCEPT B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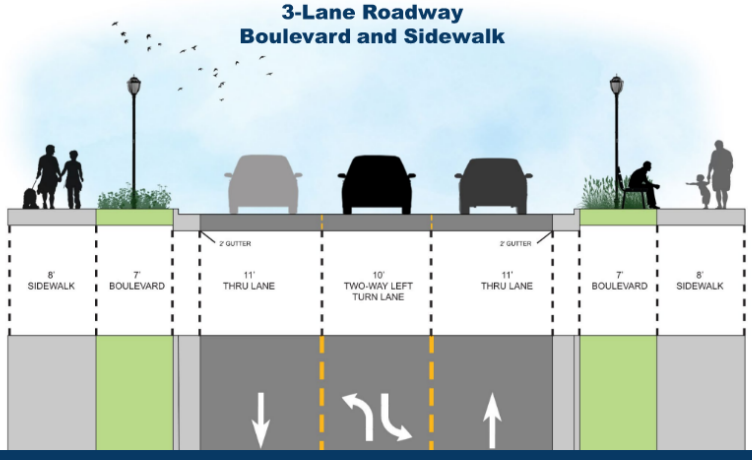
## Concept C

**3-Lane Roadway**
**Boulevard and Sidewalk**




# Key elements

- 3-lane roadway with 11' thru lanes and a 10' turn lane
- 8-foot sidewalks, 7-foot boulevards

**MONTANA AVE & RICE STREET** | CONCEPT C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