

HAMLIN AVENUE PROJECT SUMMARY OF ENGINEERING RECOMMENDATIONS

Hamline Avenue Bicycle Lanes

Report prepared: 8/1/2016

Open House: 5/26/2016

Public Hearing: 8/17/2016

PROJECT

Implementation of bicycle lanes on Hamline from University Avenue to Minnehaha Avenue, and the extension of bike lanes on Hamline Avenue from Minnehaha Avenue to Pierce Butler Route.

Improvements to include the installation of dedicated bicycle lanes, pavement markings, signage, and other elements as described below.

PURPOSE

The purpose of this project is to provide an improved north-south bicycle facility on Hamline Avenue, improving the bicycling environment as it relates to safety, accessibility, and connectivity.

I. INITIATING ACTION

The City of Saint Paul Department of Public Works (Public Works) is planning a mill and overlay of Hamline Avenue between University Avenue and Minnehaha Avenue in the fall of 2016. Chapter 9 of the Saint Paul Bicycle Plan identifies incorporating bicycle facilities into larger construction or maintenance projects as the most fiscally efficient way to implement bicycle facilities, and makes the recommendation to “Incorporate implementation of bikeways with routine maintenance projects whenever possible.” To take advantage of the efficiencies associated with implementing bicycle facilities with existing maintenance projects, Public Works is proposing to implement bicycle lanes on Hamline Avenue as a component of the scheduled mill and overlay project.

The Saint Paul Bicycle Plan recommends “in-street separated lanes” on Hamline Avenue within the project limits. Public Works is proposing to implement the recommendations identified in the Bicycle Plan on Hamline Avenue from University Avenue to Minnehaha Avenue. During the engagement process for Hamline Avenue bike lanes, public input was solicited on whether bicycle lanes should be implemented on Hamline Avenue north of the mill and overlay project boundaries in 2016. To facilitate direct connectivity to the bicycle and pedestrian bridge at Hamline north of Pierce Butler Route and to eliminate a gap in bicycle facilities, Public Works is also proposing to implement an optional extension of bike lanes north of the mill and overlay limits on Hamline Avenue between Minnehaha Avenue and Pierce Butler Route. To finance this expansion, funds will be allocated from the city’s 8 to 80 Vitality Fund, a funding source established in 2014 that aims to “create city infrastructure, streets, and public spaces that function for residents ages 8 to 80.”

II. PROPOSED IMPROVEMENTS

Hamline Avenue - University to Minnehaha

Hamline Avenue between University Avenue and Minnehaha Avenue is classified as a collector roadway and a Municipal State Aid Route (MSA). AADT within the project limits ranges from 6,600 to 11,722 vehicles per day. 85th percentile speeds of 33 MPH northbound, and 34 MPH southbound were recorded within the project limits. The posted speed limit is 30 mph. The Saint Paul Bicycle Plan identifies this segment of Hamline as a component of the planned bicycle network, and identifies “in-street separated lanes” as the recommended facility type.

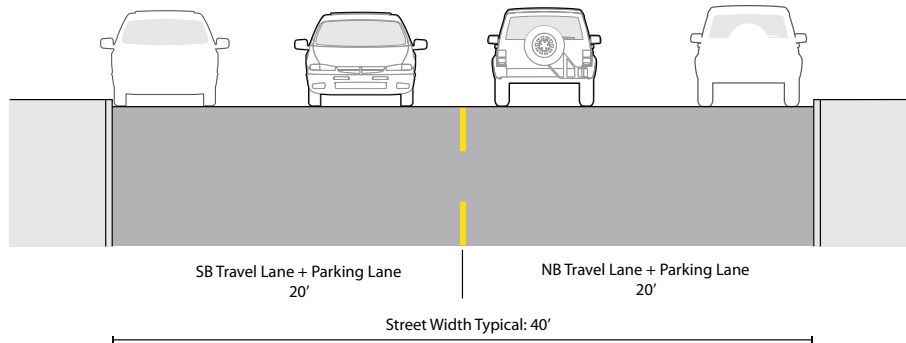
Hamline Avenue - University to Minnehaha

Elements proposed for implementation between University and Minnehaha:

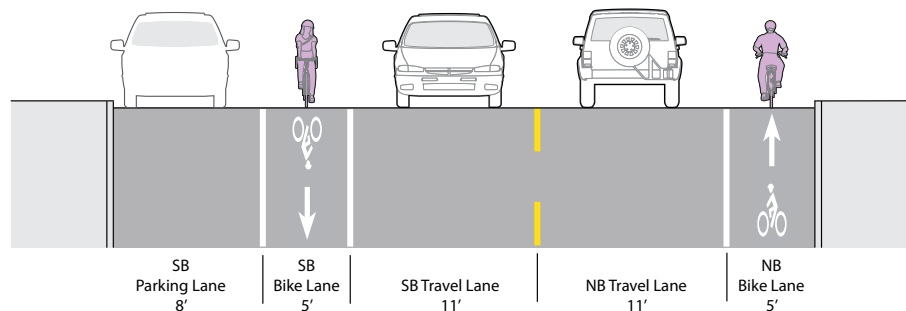
- Restripe the roadway to add 5' bicycle lanes
- Stripe 11' vehicular travel lanes
- Installation of bike lane pavement markings and signage
- Removal of on-street parking on the east side of Hamline between Sherburne Avenue and Minnehaha Avenue, except for the northern half of the block between Van Buren Avenue and Minnehaha Avenue.
- Removal of on-street parking on the west side of Hamline Avenue between Van Create new time-limited parking (1-hour 8 AM-6 PM) on the south side of Thomas Avenue east of Hamline Avenue

Hamline Ave Bike Lanes: University Ave to Minnehaha Ave*

Existing:



Proposed:



*The proposed cross-section of Hamline from University to Sherburne and from Van Buren to Minnehaha differs from the above typical

Hamline Avenue - Minnehaha to Pierce Butler

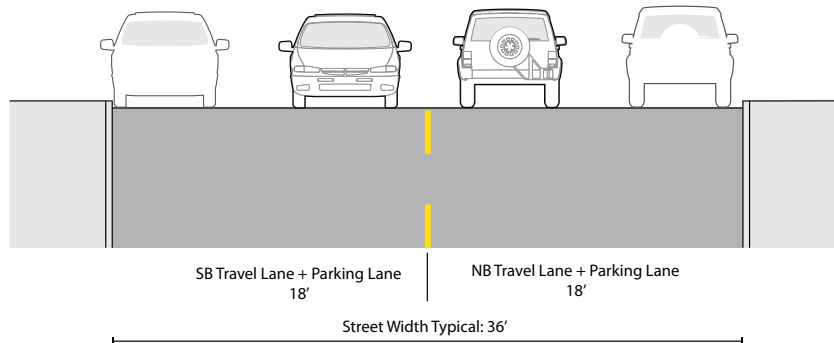
Hamline Avenue between Minnehaha Avenue and Pierce Butler Route is classified as a collector roadway and a Municipal State Aid Route (MSA). AADT within the project limits was measured at 2,825 vehicles per day. 85th percentile speeds of 29-32 MPH northbound, and 29-33 MPH southbound were recorded within the project limits. The posted speed limit is 30 mph. The Saint Paul Bicycle Plan identifies this segment of Hamline as a component of the planned bicycle network, and identifies “in-street separated lanes” as the recommended facility type.

Elements proposed for implementation between Minnehaha and Pierce Butler:

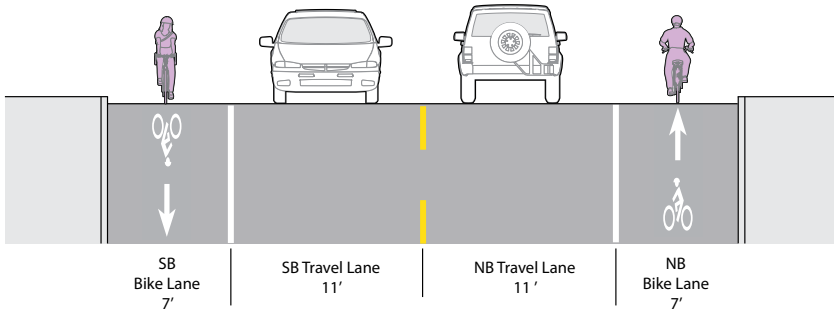
- Restripe the roadway to add 7' bicycle lanes
- Stripe 11' vehicular travel lanes
- Installation of bike lane pavement markings and signage
- Removal of on-street parking on both sides of Hamline between Minnehaha Avenue and Pierce Butler Route

Hamline Ave Bike Lanes: Minnehaha Ave to Pierce Butler Rt

Existing:



Proposed:



III. ALTERNATIVES

Hamline Avenue - University to Minnehaha

Parking removal is proposed for the east side of Hamline Avenue between Sherburne Avenue and Minnehaha Avenue, except for the northern half of the block between Van Buren Avenue and Minnehaha Avenue. Removing parking from the west side of Hamline Avenue instead of the east side was examined, but was rejected due to the presence of more small businesses on the west side of the street within the project limits, as well as an existing daytime parking restriction on the east side of Hamline Avenue between Lafond Avenue and Blair Avenue. The parking surveys performed indicated nearly identical parking utilization on the east and west side of Hamline Avenue (average of 10.3 parked cars on the west side, and 10.6 parked cars on the east side), and estimated parking capacity of 54 spaces on each side of the roadway between University Avenue and Minnehaha Avenue.

Parking removal is also proposed for the west side of Hamline Avenue between Van Buren Avenue and Minnehaha Avenue. This is to accommodate a lane shift to the west between Van Buren Avenue and Minnehaha Avenue. Hamline Avenue narrows and shifts to the west north of Minnehaha Avenue, and a lane shift is proposed between Van Buren Avenue and Minnehaha Avenue to reduce the lane offset and better align motor vehicle and bicycle traffic across the intersection. Not employing a lane shift at this location was considered, but was not pursued as it resulted in motor vehicle and bicycle travel lanes that were significantly offset across the Minnehaha Avenue intersection. To reduce this offset and encourage fewer modal conflict points, employing a lane shift south of Minnehaha Avenue is proposed.

Hamline Avenue - Minnehaha to Pierce Butler

During the engagement process for Hamline Avenue bike lanes, public input was solicited on whether bicycle lanes should be implemented on Hamline Avenue north of the mill and overlay project boundaries in 2016. Feedback was received at the 5/26/2016 project open house, online on Open Saint Paul, and via email to city staff. While feedback was received both in favor and against installing bike lanes north of Minnehaha, Public Works ultimately decided to pursue implementation as a result of the following:

- Implementing bike lanes on Hamline Avenue north of Minnehaha Avenue will provide direct connectivity to the bicycle and pedestrian bridge over the railroad corridor north of Pierce Butler Route
- The Saint Paul Bicycle Plan identifies bike lanes for this segment of Hamline Avenue and installing bike lanes will eliminate a facility gap between Minnehaha and Pierce Butler Route
- Members of the community, including the Hamline Midway Coalition (District Council 11), provided written support for extending bike lanes north of the mill and overlay project boundaries between Minnehaha and Pierce Butler Route

It should be noted that Hamline north of Minnehaha is an optional extension of bike facilities outside of the mill and overlay boundaries, and installing bike lanes here does not yield the same cost efficiencies as implementing within the resurfacing limits. Additionally, Hamline Avenue could likely be widened under a reconstruction scenario to allow for some on-street parking capacity to be maintained (likely only on one side of the street). While installing

bicycle lanes for this segment of Hamline Avenue is proposed for 2016, Public Works also views waiting until this segment is reconstructed as an acceptable alternative.

IV. POSITIVE BENEFITS

The City's Comprehensive Plan and Bicycle Plan strongly support the development of a multi-modal transportation system. Both plans recommend employing a complete streets approach to planning the transportation system, and promote the development of a complete and connected network of bicycle facilities thorough the city.

The project as proposed promotes multi-modal utilization of the roadway, providing a dedicated space for people using bicycles along Hamline Avenue while allowing for important connections to existing bicycle facilities on Charles Avenue, Minnehaha Avenue, and the pedestrian bridge north of Pierce Butler Route. As a contiguous corridor from Pierce Butler Route to Edcumbe Road, Hamline Avenue is a critical north-south connection for non-motorized transportation, providing barrier access across I-94, Ayd Mill Road, and the railroad corridor north of Pierce Butler via the existing bicycle / pedestrian bridge. The proposed bicycle facilities on Hamline also provide direct access to the business nodes at Minnehaha Avenue and Thomas Avenue, on University Avenue, and the Hamline Avenue Green Line light rail station. When paired with existing and planned bicycle infrastructure, the improvements proposed establish the foundation for a complete and connected bikeway system, and allow for bicycling to exist as a practical and feasible means of transportation in Saint Paul.

The posted speed limit on Hamline Avenue is 30 MPH. Speed studies performed on Hamline recorded 85th percentile speeds of 29-33 MPH northbound, and 29-34 MPH southbound within the project limits. Narrowing vehicular travel lane widths as proposed may encourage slower speeds, fostering a safer and more accessible roadway for all users. With AADT ranging from 2,825 to 11,722, implementing in-street separated lanes to separate bicycle and vehicular traffic will substantially increase the safety of people bicycling on Hamline Avenue, encouraging more predictable riding behavior by providing people with a dedicated space to bicycle on the roadway.

V. ADVERSE EFFECTS

Normal issues relative to implementing infrastructure improvement projects will be present. Those issues include, but may not be necessarily limited to, noise, dust, and general disruptions to vehicular traffic.

Hamline Avenue - University to Minnehaha

The typical width of Hamline Avenue between Sherburne Avenue and Minnehaha Avenue is 40', which requires removing parking from one side of the roadway to accommodate the installation of bike lanes. Parking removal is proposed for the east side of Hamline Avenue between Sherburne Avenue and Minnehaha Avenue, except for the northern half of the block

between Van Buren Avenue and Minnehaha Avenue. Parking removal is also proposed for the west side of Hamline Avenue between Van Buren Avenue and Minnehaha Avenue.

To capture demonstrative parking demand, Public works conducted fourteen parking occupancy counts at representative time periods along Hamline Avenue (weekday early morning, midday, evening, overnight) Saturday midday and evening, and Sunday morning). When the total observed parking capacity of a block exceeded the estimated remaining parking capacity following the implementation of bicycle lanes, parking counts of the side streets were performed to measure their potential to absorb overflow parking from Hamline.

Existing legal parking capacity on Hamline Avenue between University Avenue and Minnehaha Avenue is estimated at 108 spaces, and capacity following the implementation of bicycle lanes is estimated at 50 spaces. The highest observed parking utilization measured 36-parked vehicles between Sherburne Avenue and Minnehaha Avenue (weekday evening, 6 pm - 8 pm), with a mean parking utilization of 20.9 vehicles across the fourteen counting periods. This equates to 19.3% of estimated available parking capacity being utilized. Based on the data collected by Public Works, it is anticipated that parking supply following the implementation of bicycle lanes will be sufficient to meet demand. The parking occupancy data is attached in the **Appendix** of this document.

Hamline Avenue - Minnehaha to Pierce Butler

The typical width of Hamline Avenue between Minnehaha Avenue and Pierce Butler Route is 36', which requires removing parking from both sides of the roadway to accommodate the installation of bike lanes. Parking removal is proposed for both sides of Hamline Avenue between Minnehaha Avenue and Pierce Butler Route.

Existing legal parking capacity on Hamline Avenue between Minnehaha Avenue and Pierce Butler Route is estimated at 102 spaces. As this segment of Hamline requires parking removal on both sides of the roadway to install bike lanes, there would be no on-street parking capacity following the implementation of bike lanes. The highest observed parking utilization measured 30-parked vehicles between Minnehaha Avenue and Pierce Butler Route (Saturday midday, 11 am – 1 pm) with a mean parking utilization of 21.4 vehicles across the fourteen counting periods. This equates to 20.9% of estimated parking capacity being utilized. Based on the data collected by Public Works, it is anticipated that the cumulative parking supply on the intersecting side streets is sufficient to absorb the parking demand measured on Hamline Avenue. However, individual blocks may meet or exceed their estimated parking capacity in some instances should Hamline Avenue parking disproportionately redirect to certain block segments. The parking occupancy data collected is attached in the **Appendix** of this document.

VI. TIME SCHEDULE

If approved by City Council on 8/17/2016, it is anticipated that the bicycle improvements proposed for Hamline Avenue between University Avenue and Minnehaha Avenue and the optional extension of bike lanes north to Pierce Butler Route will be installed concurrent with the planned mill and overlay on Hamline Avenue, scheduled for Fall 2016. This process is anticipated to last approximately five to ten days.

VII. COST ESTIMATE

Implementation of bicycle lanes and lane reconfiguration within the limits of the mill and overlay will incur little additional cost beyond the amount already budgeted for resurfacing. Implementation outside of the mill and overlay limits will be funded using the City of Saint Paul's 8 to 80 Vitality fund.

VIII. SOURCE OF ADDITIONAL INFORMATION

For additional information, please contact:

Luke Hanson, Transportation Planning and Safety Division
Email: Luke.Hanson@ci.stpaul.mn.us
Phone: 651-266-6146

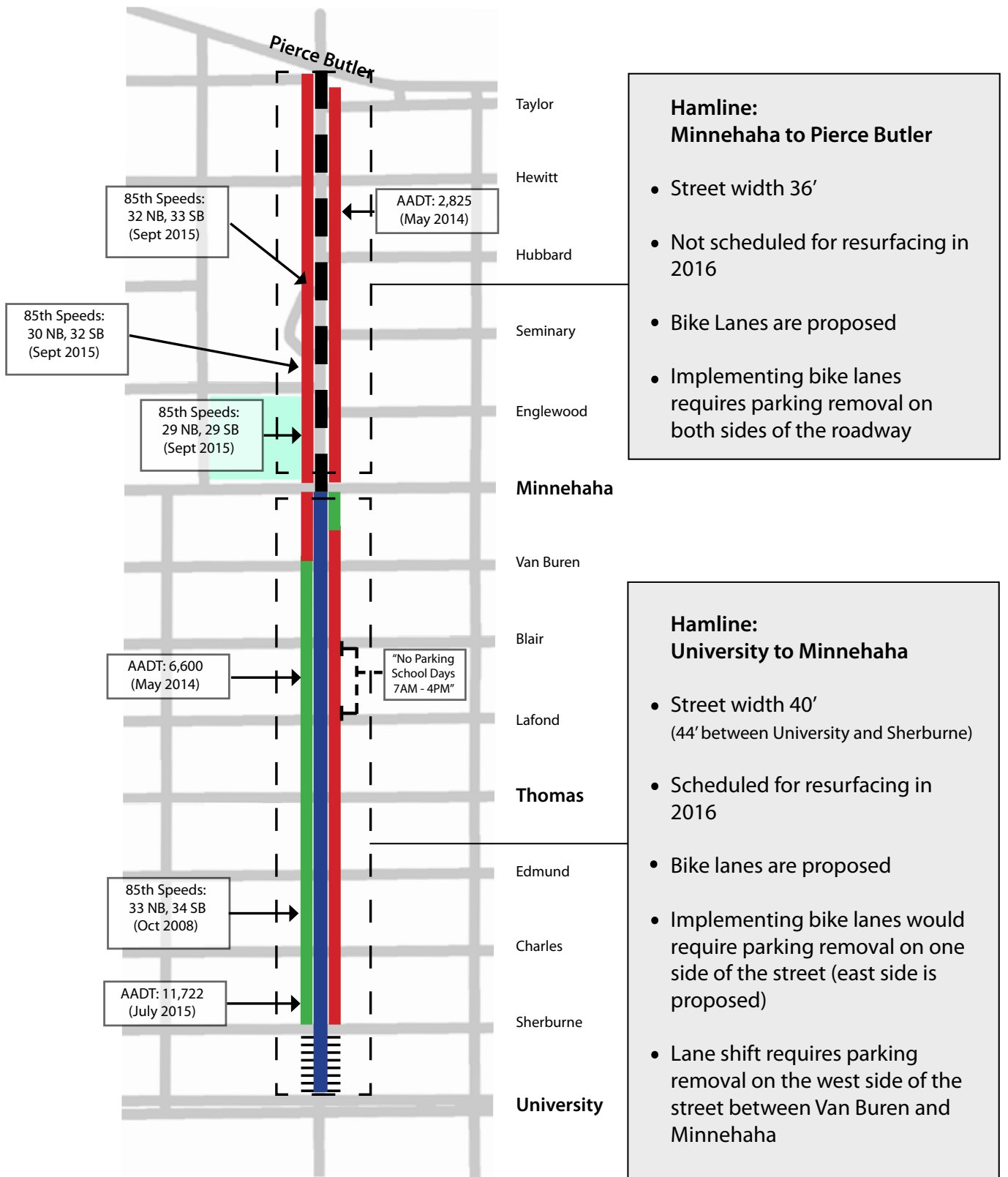
IX. SUMMARY AND RECOMMENDATIONS

The Department of Public Works believes the project submitted herein to be necessary and feasible. The Department's Engineering Recommendation is for approval of the project as proposed.

APPENDIX ITEMS:

- A. Project Map**
- B. Project Cross-Sections**
- C. Parking Occupancy Survey**
- D. Hamline Bike Lanes Design Concept**

Hamline Project Map

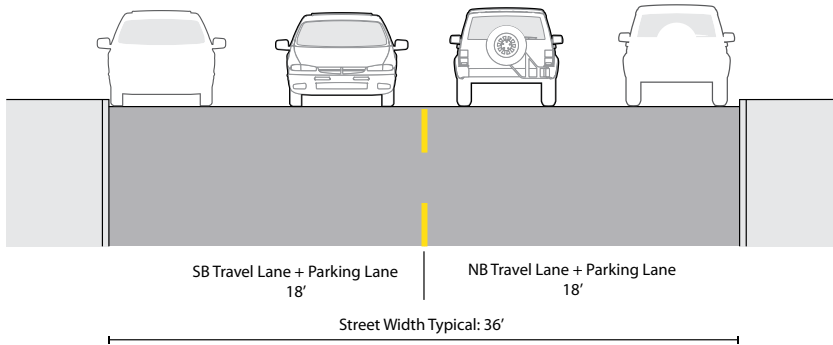


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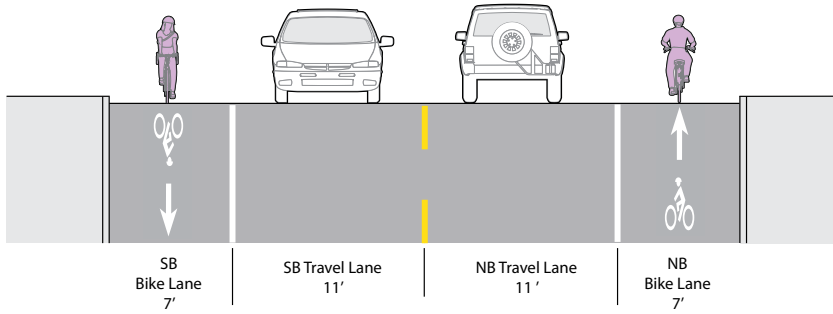
- | | | | |
|---|------------------------------|---|---------------------------------------|
|  | Parking to be Maintained |  | Proposed Extension of Bike Facilities |
|  | Proposed Parking Removal |  | Parking Currently Banned |
|  | Limits of Street Resurfacing | | |

Hamline Ave Bike Lanes: Minnehaha Ave to Pierce Butler Rt

Existing:

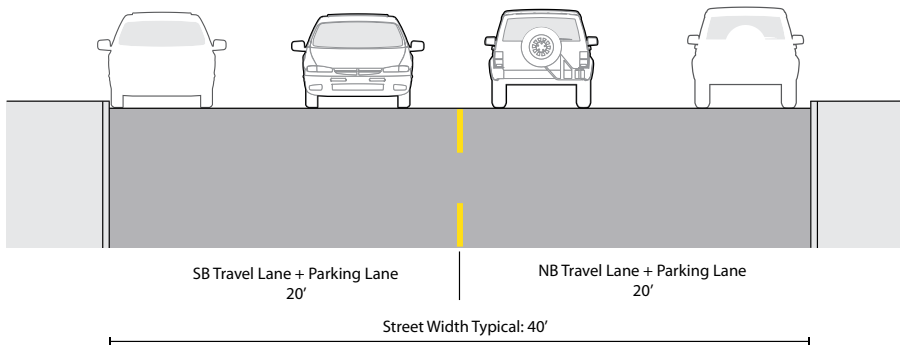


Proposed:

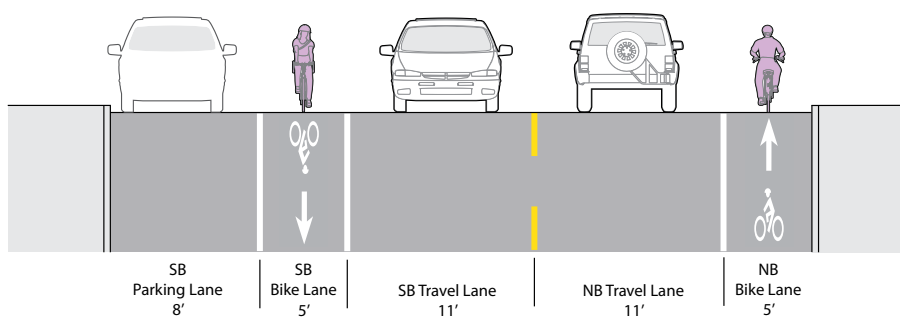


Hamline Ave Bike Lanes: University Ave to Minnehaha Ave*

Existing:



Proposed:



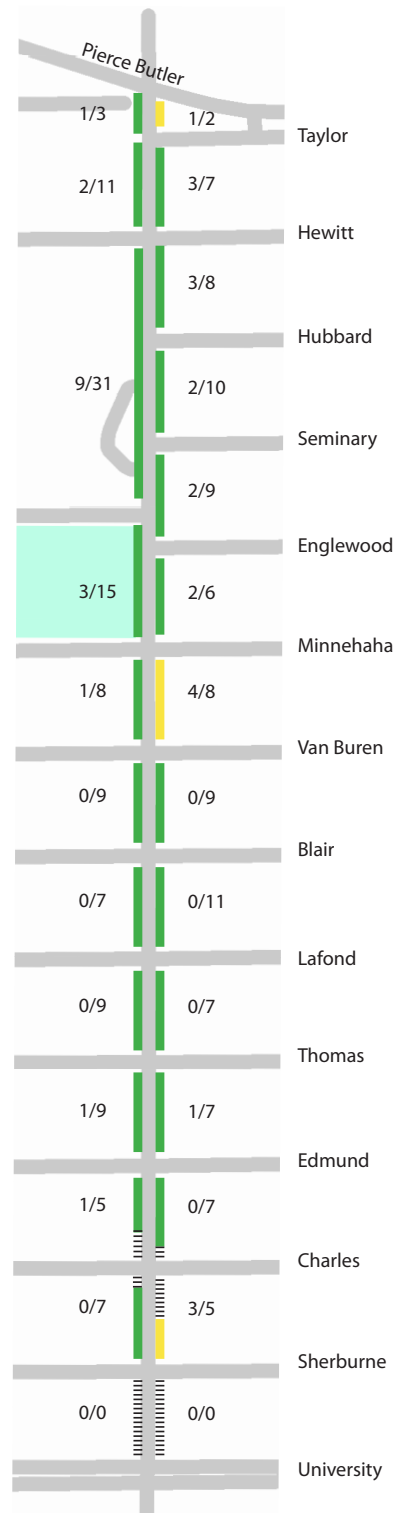
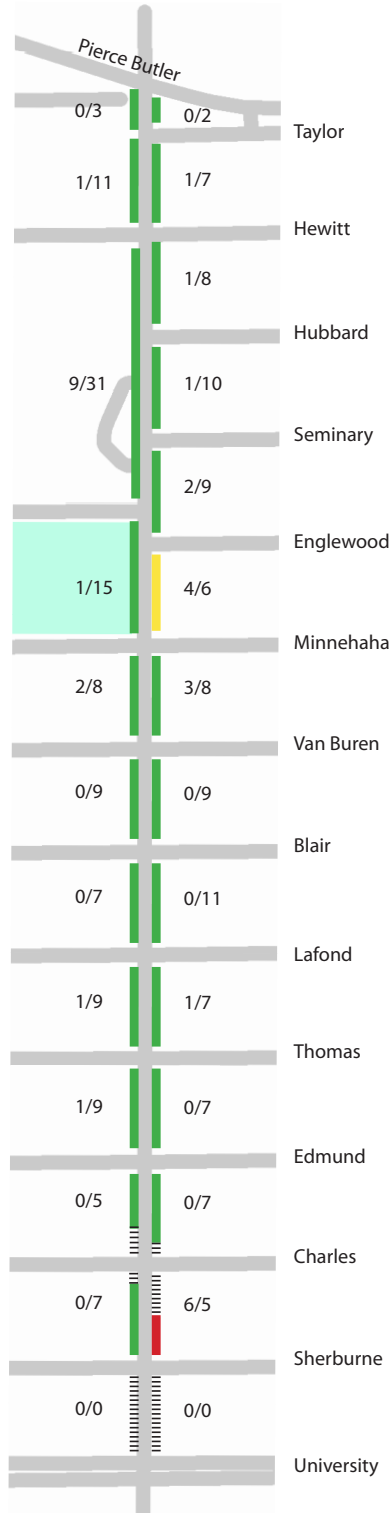
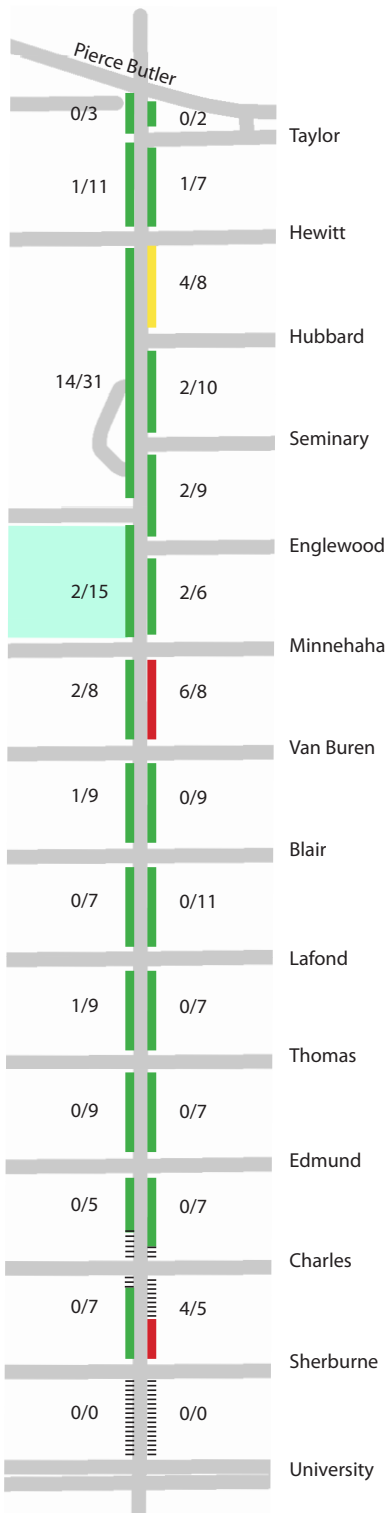
*The proposed cross-section of Hamline from University to Sherburne and from Van Buren to Minnehaha differs from the above typical

Hamline Ave Parking Counts: Weekday Early Morning (4 AM - 6 AM)

Date: Thursday, November 19th
Time Period: 4AM - 6 AM

Date: Thursday, January 14th
Time Period: 4AM - 6 AM

Date: Wednesday, May 25th
Time Period: 4AM - 6 AM



Legend

Observed Parking Utilization

- Signed "No Parking"
- 0 - 49%
- 50 - 74%
- 75 - 100+%

Example: 8/11 =
Observed Parked Cars /
Estimated Legal Parking Capacity

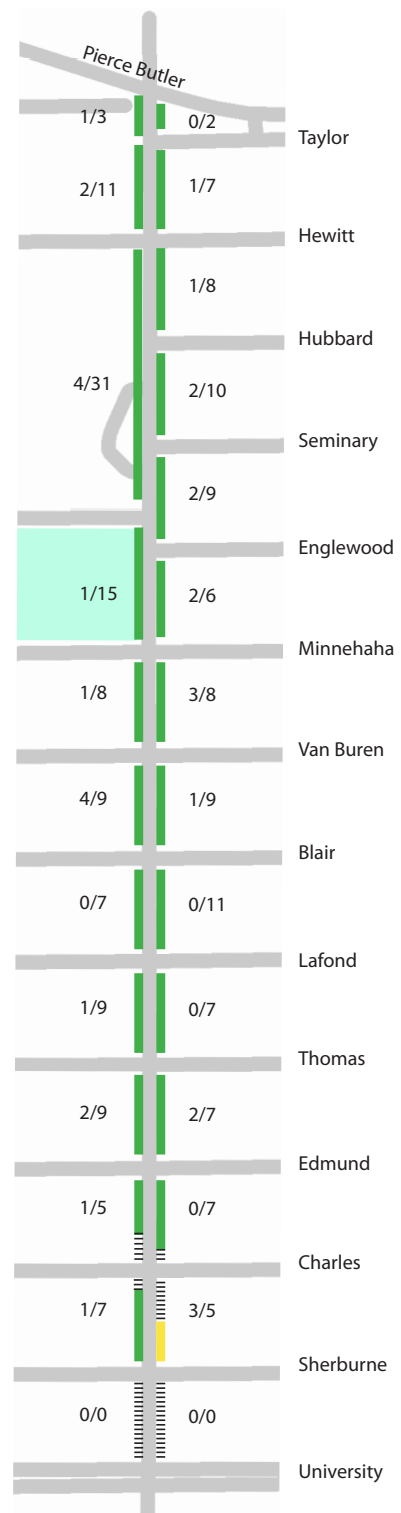
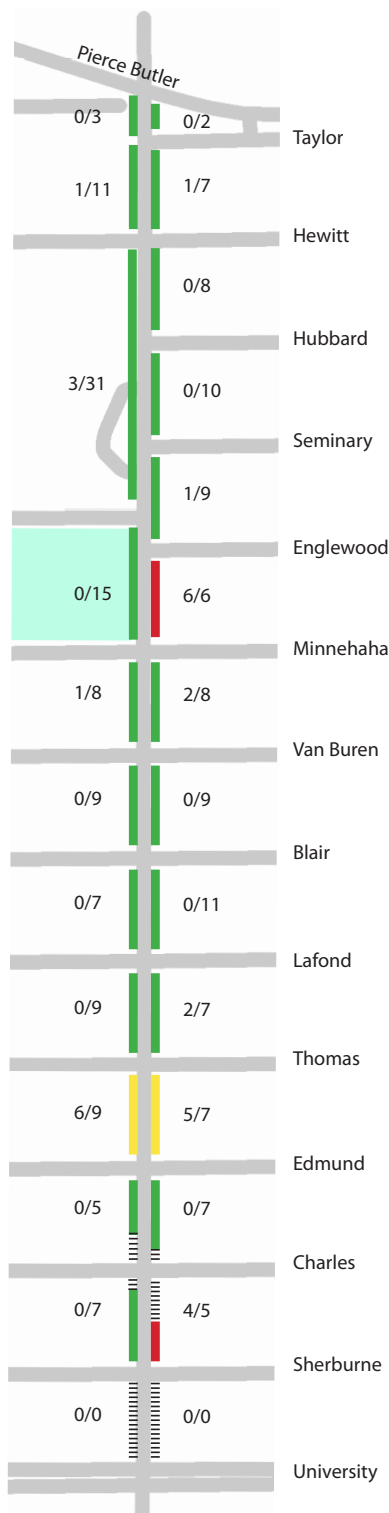
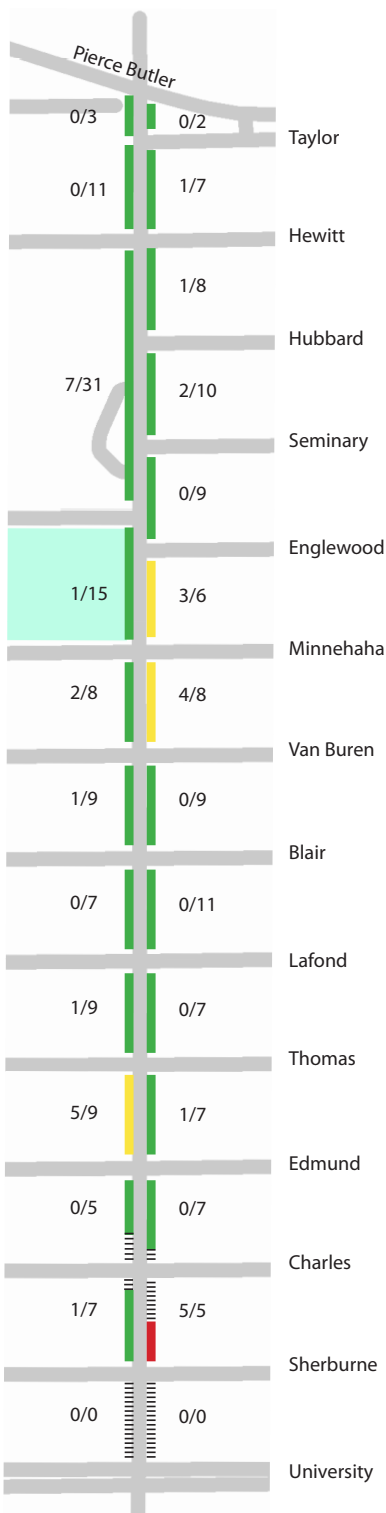
(Observed parking utilization may
exceed estimated legal capacity)

Hamline Ave Parking Counts: Weekday Midday (11 AM - 1 PM)

Date: Wednesday, November 18th
Time Period: 11 AM - 1 PM

Date: Wednesday, January 13th
Time Period: 11 AM - 1 PM

Date: Tuesday, May 10th
Time Period: 11 AM - 1 PM



Legend

Observed Parking Utilization

- ▤ Signed "No Parking"
- █ 0 - 49%
- █ 50 - 74%
- █ 75 - 100+%

Example: 8/11 =

Observed Parked Cars /
Estimated Legal Parking Capacity

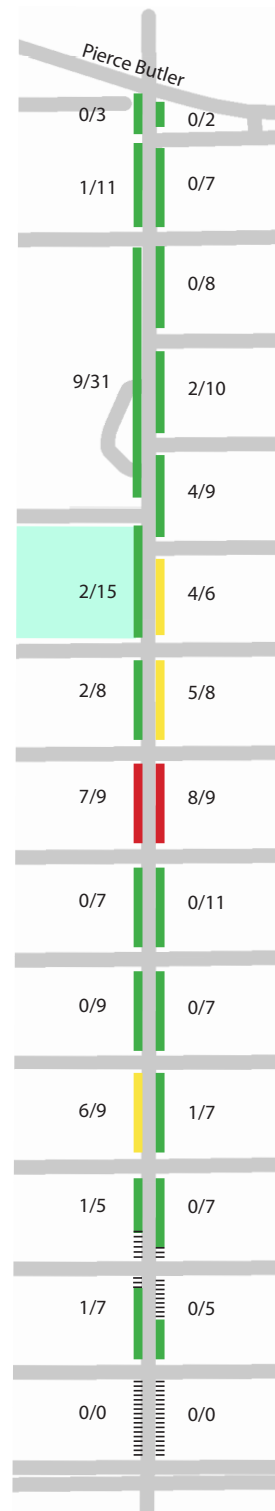
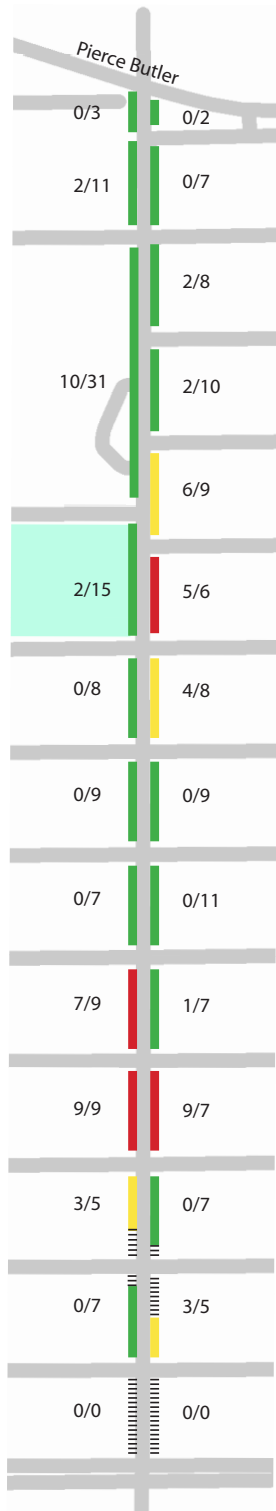
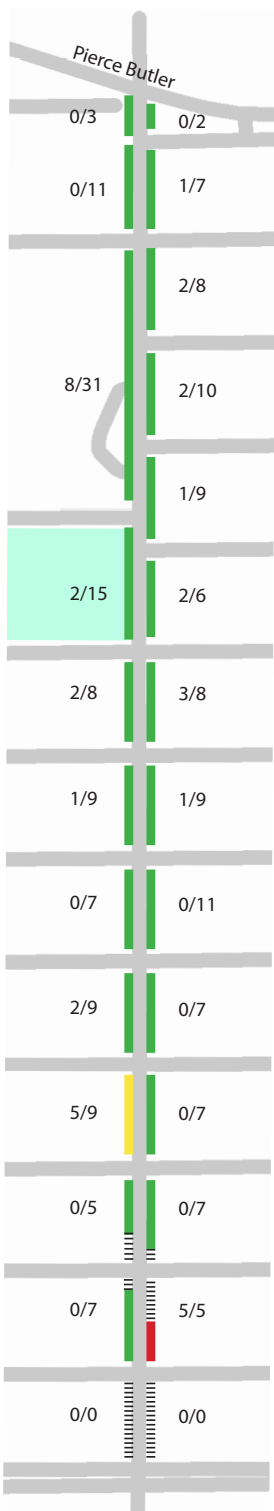
(Observed parking utilization may
exceed estimated legal capacity)

Hamline Ave Parking Counts: Weekday Evening (6 PM - 8 PM)

Date: Wednesday, November 18th
Time Period: 6 PM - 8 PM

Date: Tuesday, December 8th
Time Period: 6 PM - 8 PM

Date: Friday, May 20th
Time Period: 6 PM - 8 PM



Legend

Observed Parking Utilization

- Signed "No Parking"
- 0 - 49%
- 50 - 74%
- 75 - 100+

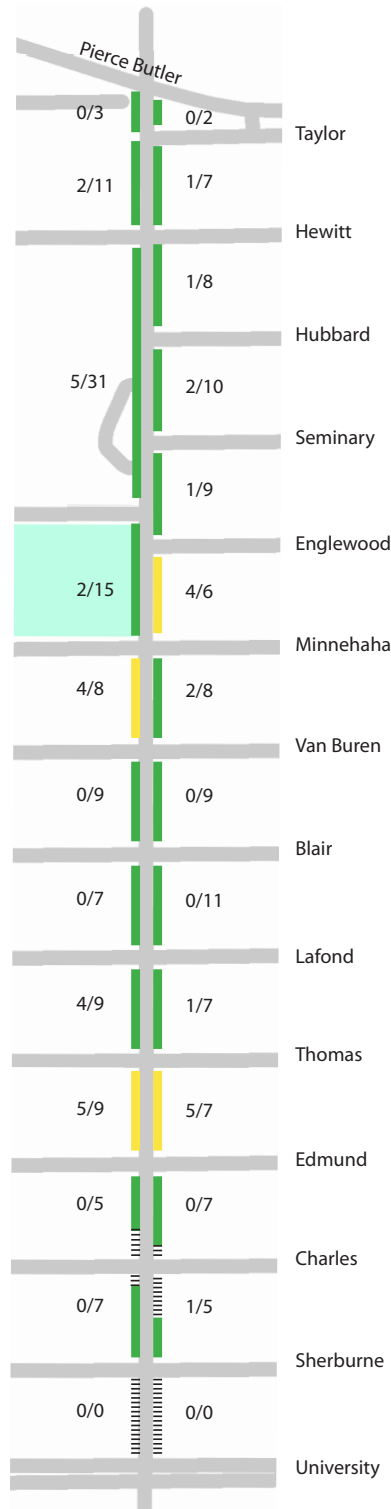
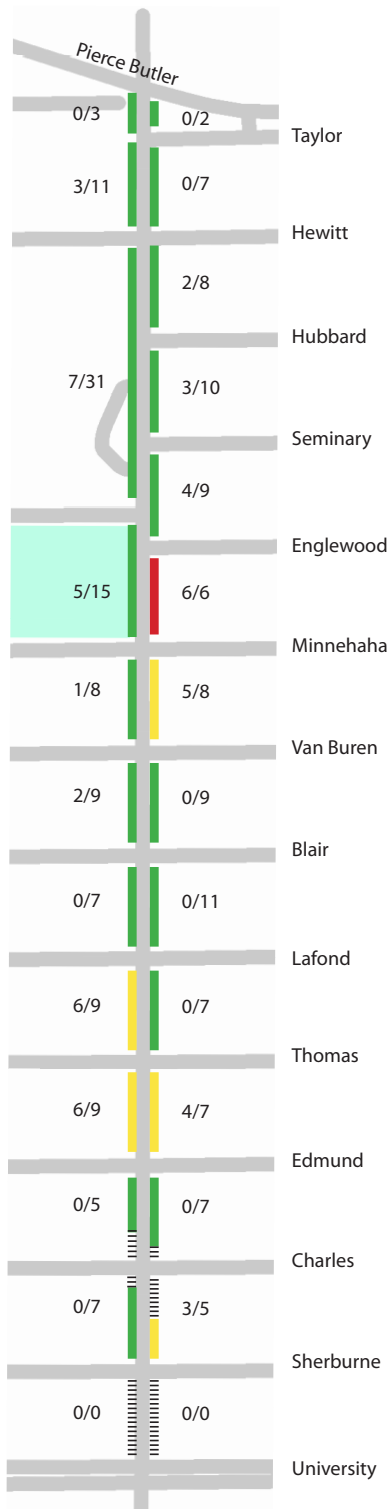
Example: 8/11 =
Observed Parked Cars /
Estimated Legal Parking Capacity

(Observed parking utilization may
exceed estimated legal capacity)

Hamline Ave Parking Counts: Saturday Midday (11 AM - 1 PM)

Date: Saturday, November 21st
Time Period: 11 AM - 1 PM

Date: Saturday, December 12th
Time Period: 11 AM - 1 PM



Legend

Observed Parking Utilization

- Signed "No Parking"
- 0 - 49%
- 50 - 74%
- 75 - 100%

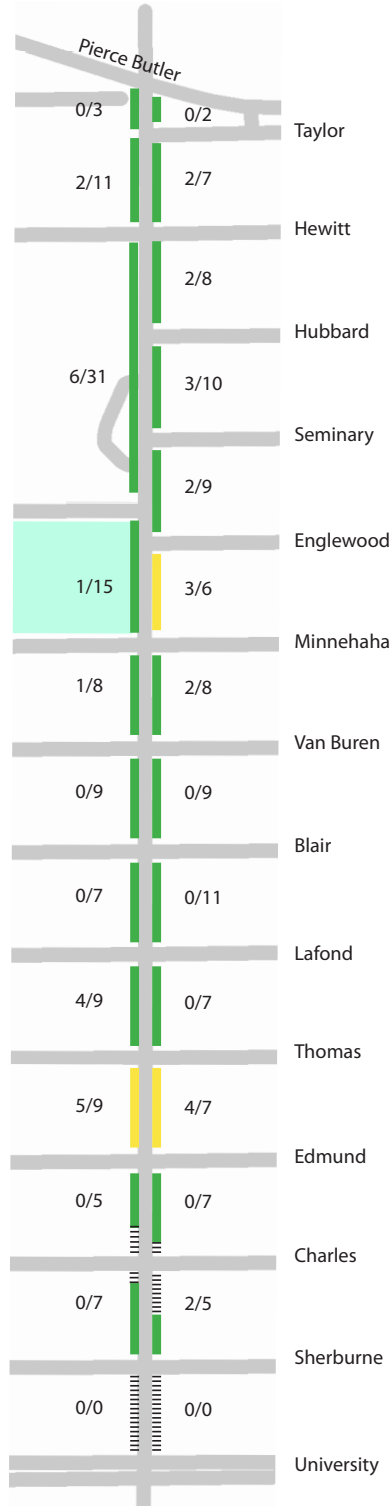
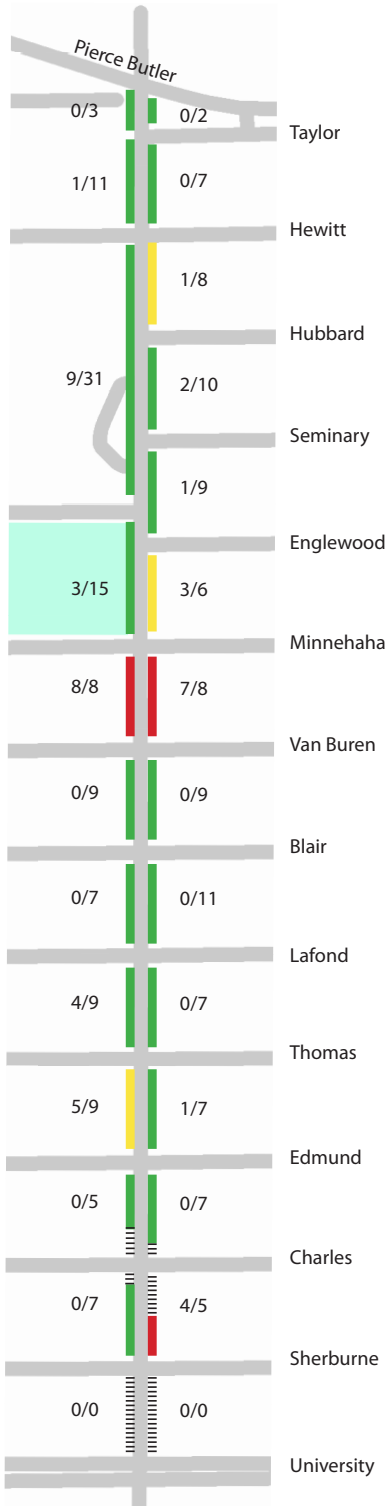
Example: 8/11 =
Observed Parked Cars /
Estimated Legal Parking Capacity

(Observed parking utilization may
exceed estimated legal capacity)

Hamline Ave Parking Counts: Saturday Evening (6 pm - 8PM)

Date: Saturday, November 21st
Time Period: 6 PM - 8 PM

Date: Saturday, December 12th
Time Period: 6 PM - 8 PM



Legend

Observed Parking Utilization

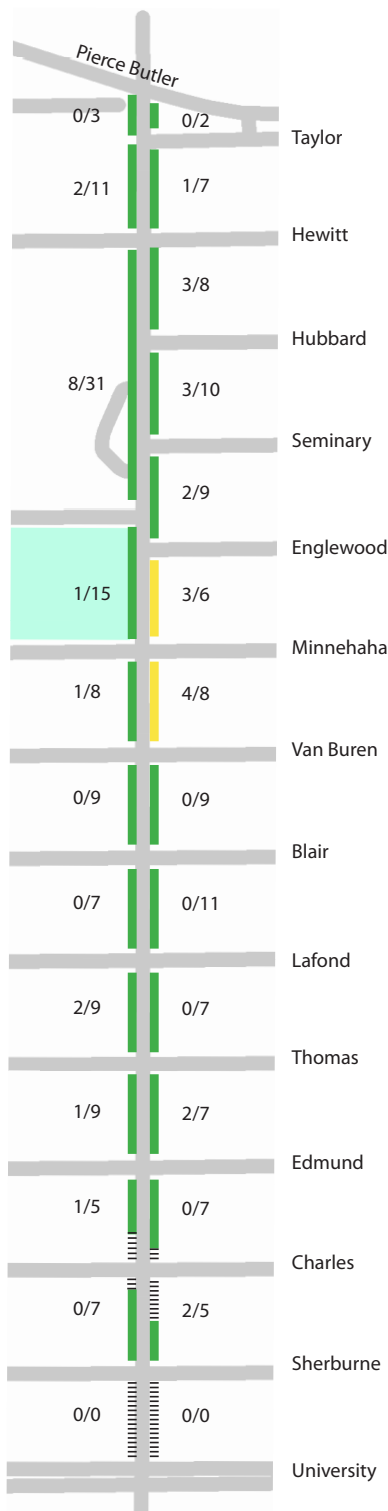
- Signed "No Parking"
- 0 - 49%
- 50 - 74%
- 75 - 100%

Example: 8/11 =
Observed Parked Cars /
Estimated Legal Parking Capacity

(Observed parking utilization may
exceed estimated legal capacity)

Hamline Ave Parking Counts: Sunday Morning (9 - 9:30 AM)

Date: Sunday, May 22nd Time
 Period: 9 AM - 9:30 AM



Legend

Observed Parking Utilization

- Signed "No Parking"
- 0 - 49%
- 50 - 74%
- 75 - 100+

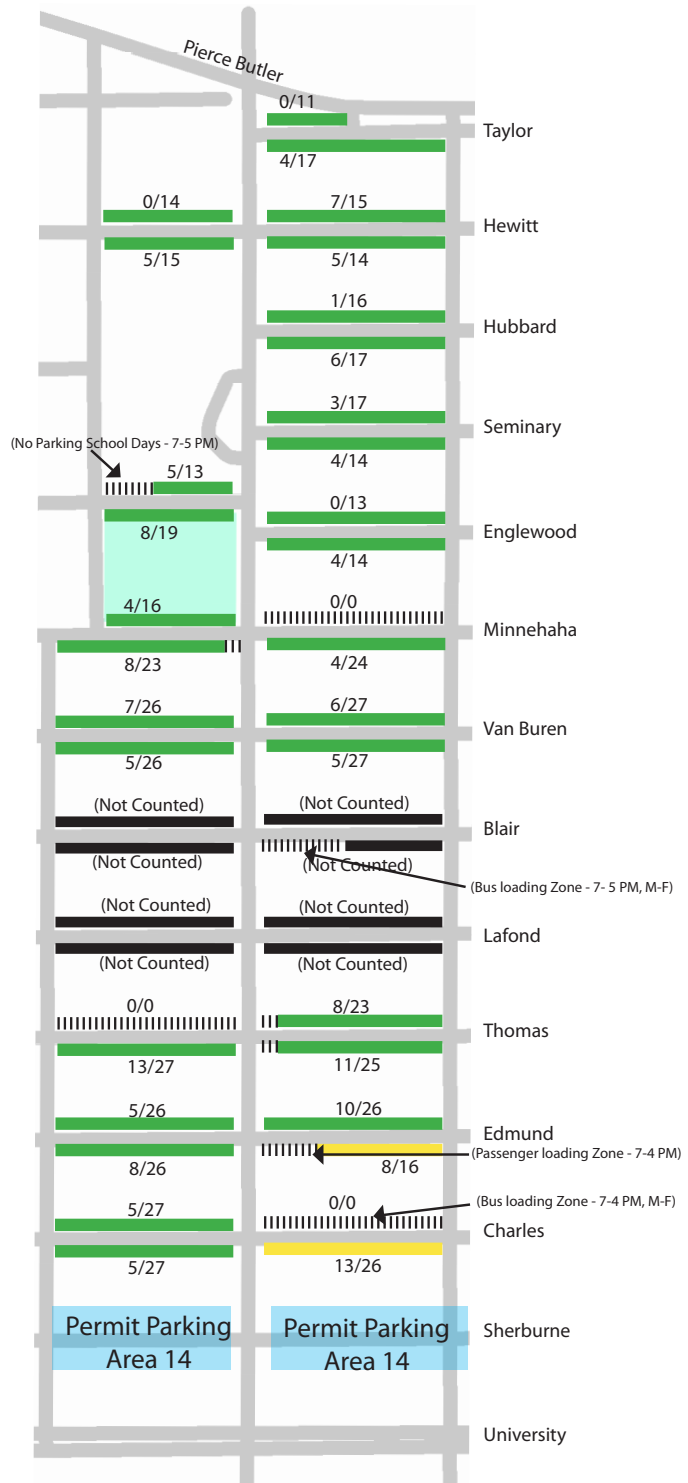
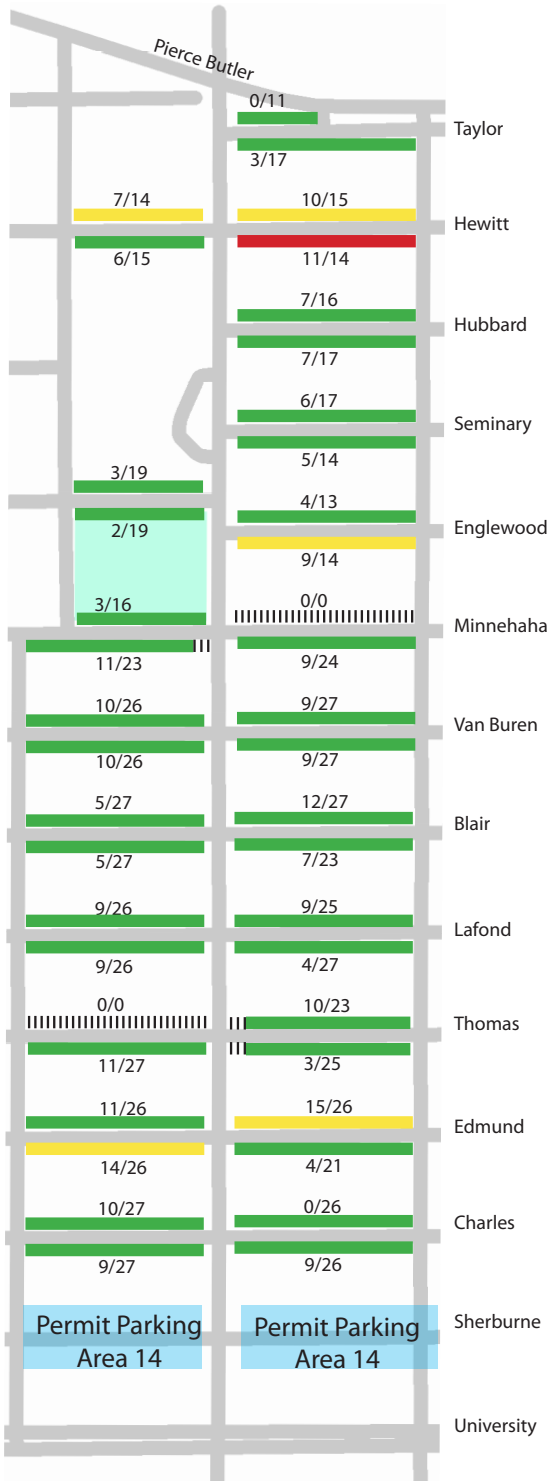
Example: 8/11 =
 Observed Parked Cars /
 Estimated Legal Parking Capacity

(Observed parking utilization may
 exceed estimated legal capacity)

Hamline Ave Parking Counts (Side Streets)

Date: Wednesday, May 25
Time Period: 4 AM - 6 AM

Date: Tuesday, February 16th
Time Period: 11 AM - 1 PM



Legend

Observed Parking Utilization

- Not Counted
- Signed "No Parking"
- 0 - 49%
- 50 - 74%
- 75 - 100%

Example: 8/11 =

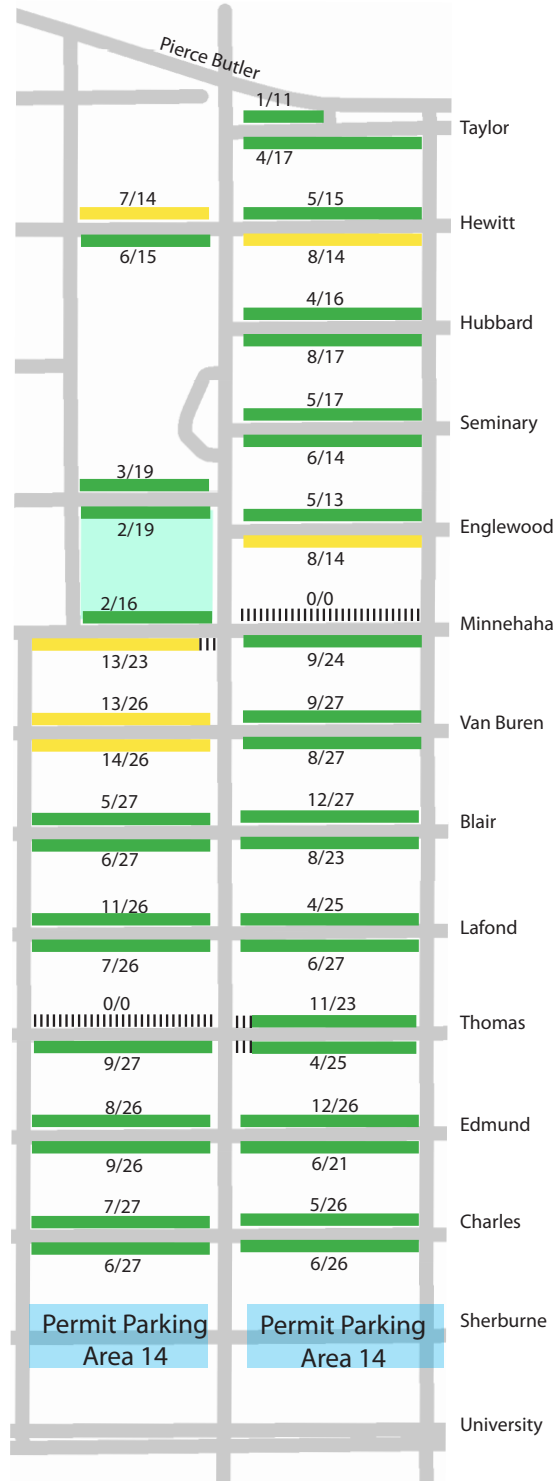
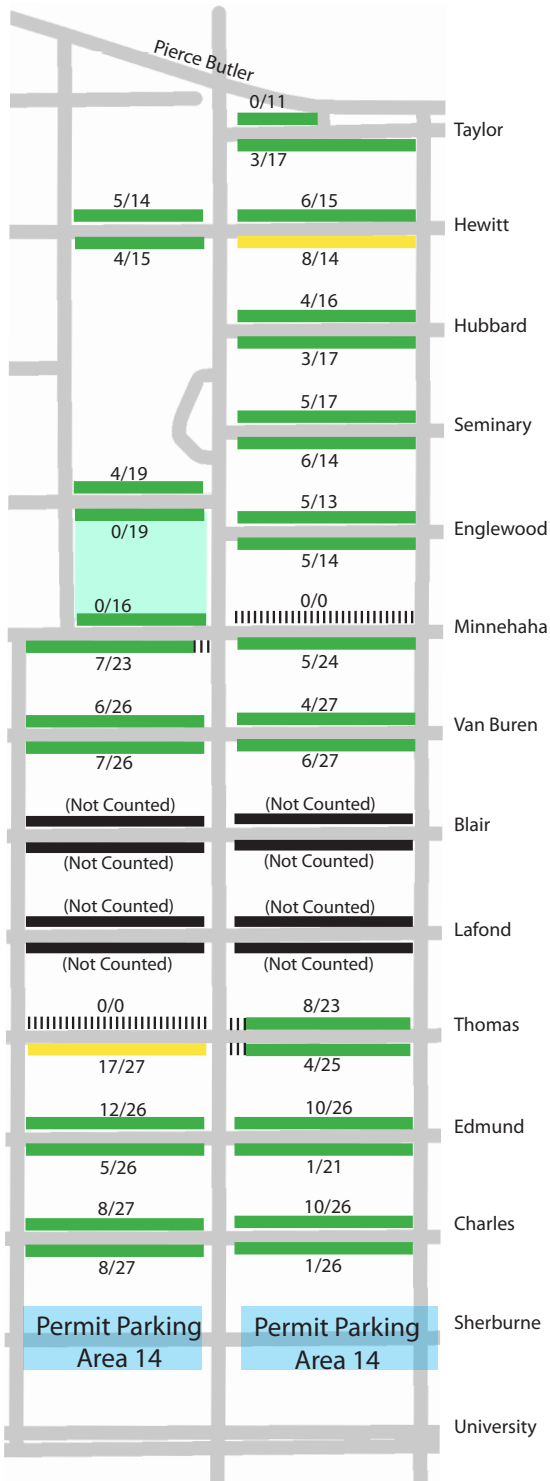
Observed Parked Cars /
Estimated Legal Parking Capacity

(Observed parking utilization may
exceed estimated legal capacity)

Hamline Ave Parking Counts (Side Streets)

Date: Thursday, February 18th
Time Period: 6 PM - 8 PM

Date: Friday, May 20th
Time Period: 7:30 - 8 PM



Legend

Observed Parking Utilization

- Not Counted
- Signed "No Parking"
- 0 - 49%
- 50 - 74%
- 75 - 100+%

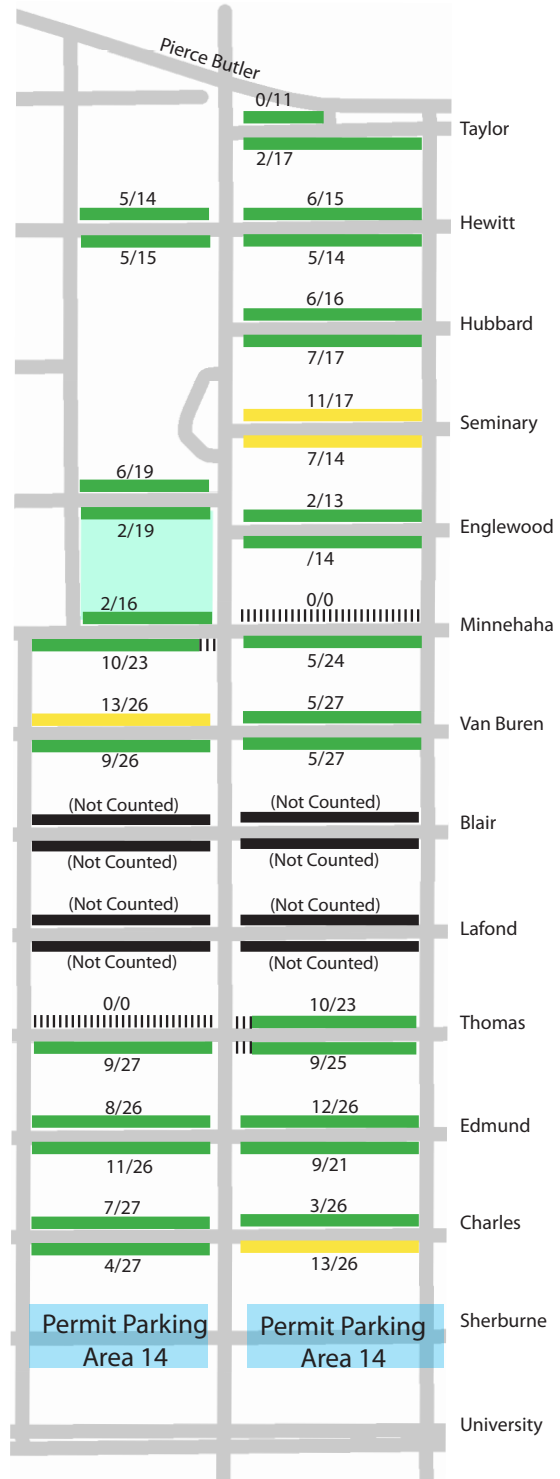
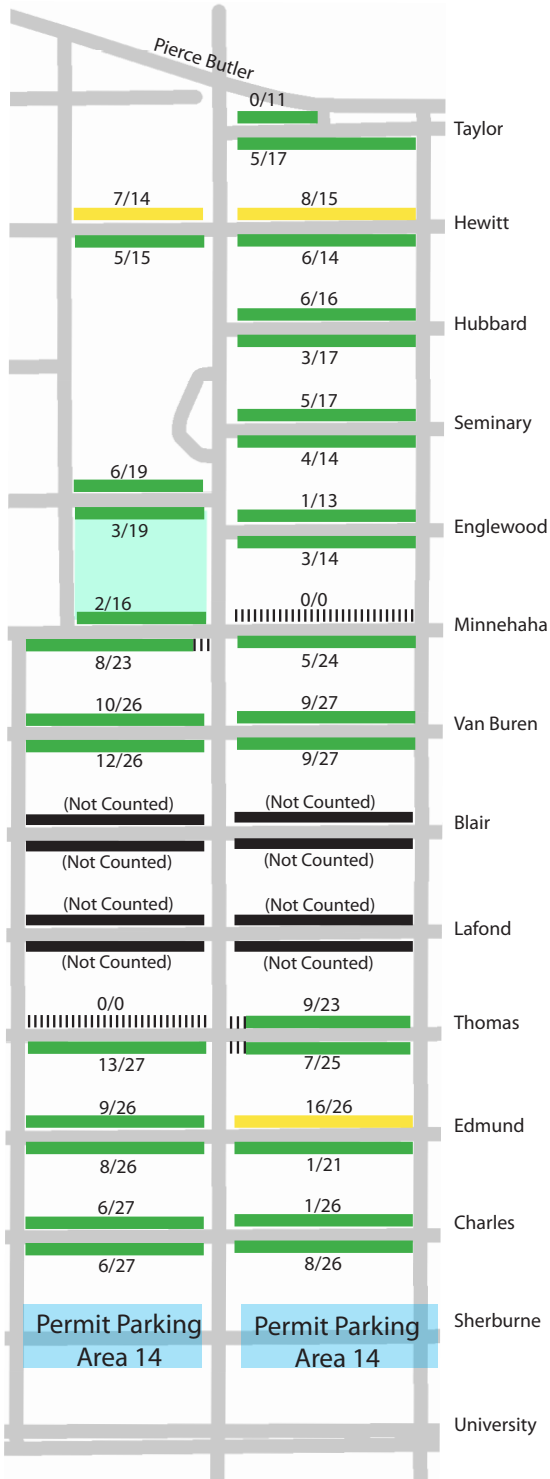
Example: 8/11 =
Observed Parked Cars /
Estimated Legal Parking Capacity

(Observed parking utilization may
exceed estimated legal capacity)

Hamline Ave Parking Counts (Side Streets)

Date: Saturday, January 23rd
Time Period: 11 AM - 1 PM

Date: Saturday, January 23rd
Time Period: 6 PM - 8 PM



Legend

Observed Parking Utilization

- Not Counted
- Signed "No Parking"
- 0 - 49%
- 50 - 74%
- 75 - 100+

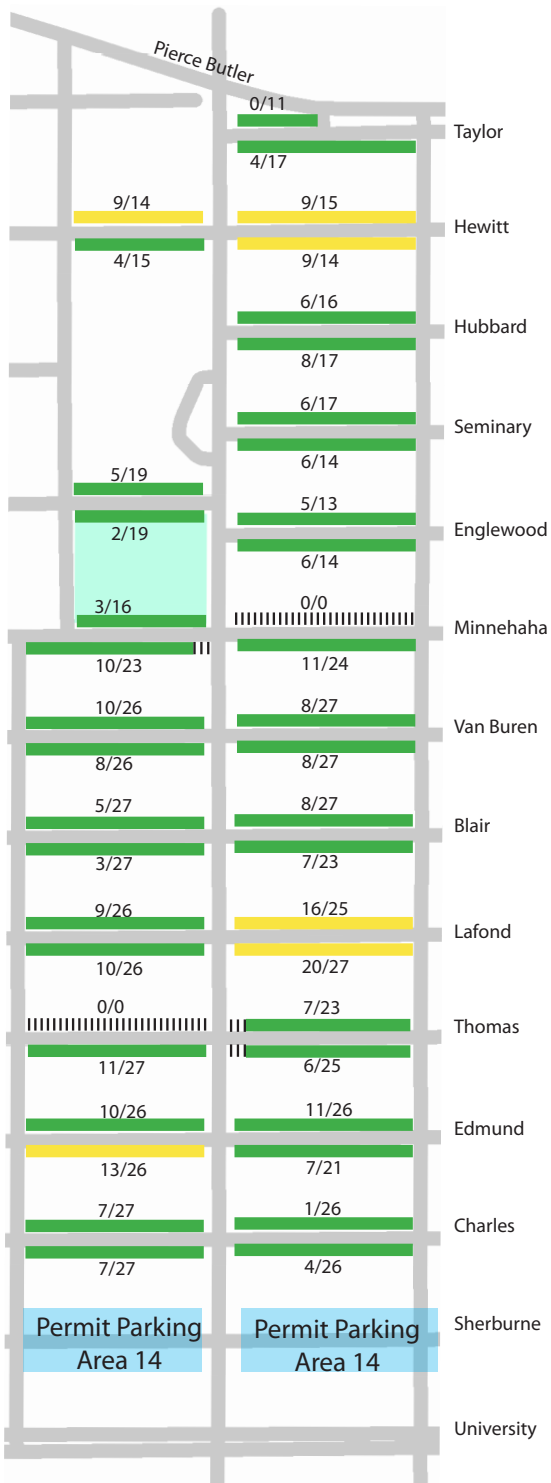
Example: 8/11 =

Observed Parked Cars /
Estimated Legal Parking Capacity

(Observed parking utilization may
exceed estimated legal capacity)

Hamline Ave Parking Counts (Side Streets)

Date: Sunday, May 22nd
 Time Period: 9 AM - 9:30 AM



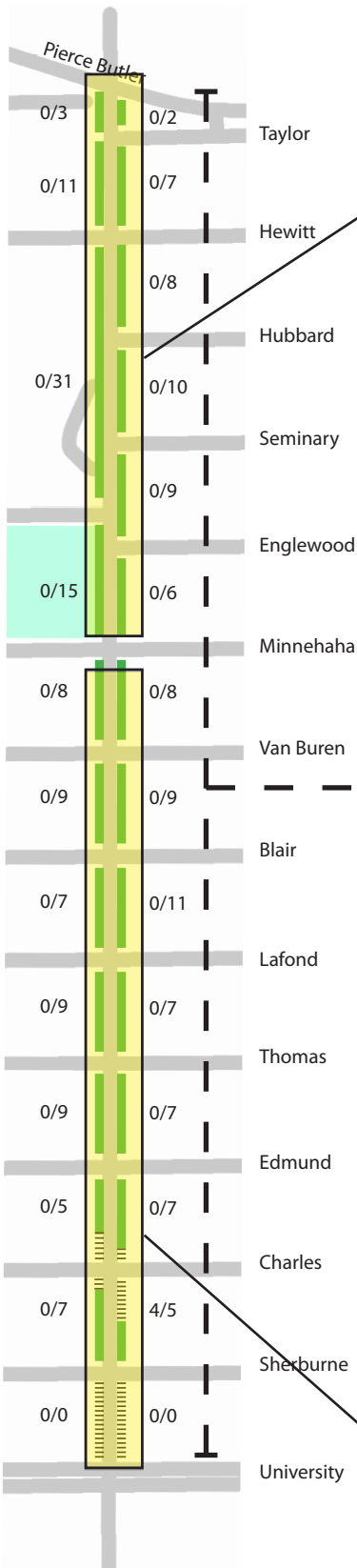
Legend

Observed Parking Utilization

- Not Counted
- Signed "No Parking"
- 0 - 49%
- 50 - 74%
- 75 - 100%

Example: 8/11 =
 Observed Parked Cars /
 Estimated Legal Parking Capacity
 (Observed parking utilization may
 exceed estimated legal capacity)

Hamline Ave Parking Capacity Summary (14 Counts)



Minnehaha to Pierce Butler:

Total Estimated Parking Capacity:

- 102 spaces (both sides of roadway)
- west: 60 spaces
- east: 42 spaces
- Capacity After Bike Lanes: 0 Spaces

Utilization:

- Average: 21.4 parked cars (both sides of roadway)
- west average: 11.1 parked cars
- east average: 10.3 parked cars

University to Pierce Butler:

Total Estimated Parking Capacity:

210 spaces (both sides of roadway)
 west: 114 spaces
 east: 96 spaces

Capacity After Bike Lanes: 54 Spaces
 (located between University and Minnehaha only)

Utilization:

Average: 42.4 parked cars (both sides of roadway)
 west average: 21.4 parked cars
 east average: 20.9 parked cars

University to Minnehaha:

Total Estimated Parking Capacity:

- 108 spaces (both sides of roadway)
- west: 54 spaces
- east: 54 spaces
- Capacity After Bike Lanes: 50 Spaces

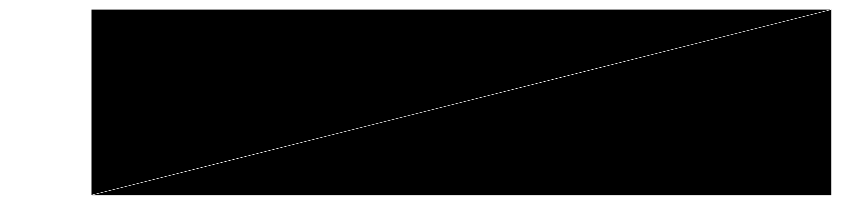
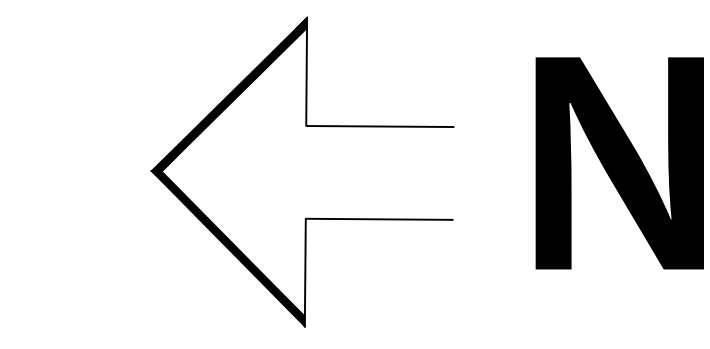
Utilization:

- Average: 20.9 parked cars (both sides of roadway)
- west average: 10.3 parked cars
- east average: 10.6 parked cars

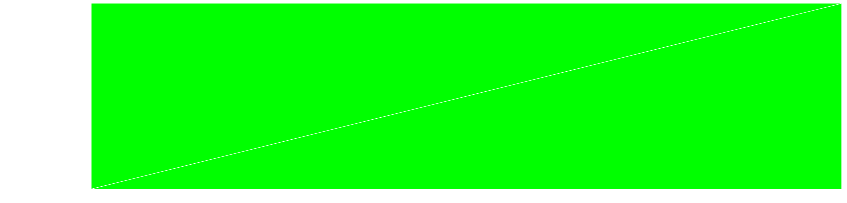


The Most Livable City in America

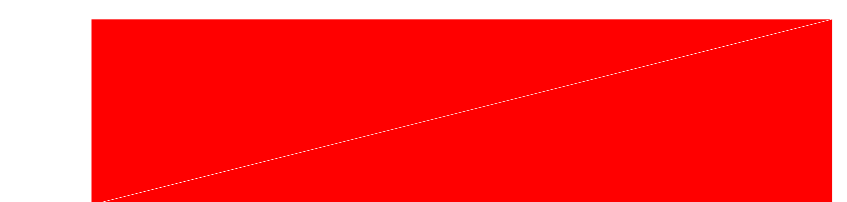
Hamline Avenue Concept: University to Minnehaha (Page 1 of 2)



Parking is prohibited



Existing parking to be maintained



Existing Parking to be removed

DRAFT

Note: The treatments shown are conceptual. All modifications are subject to further engineering and analysis.

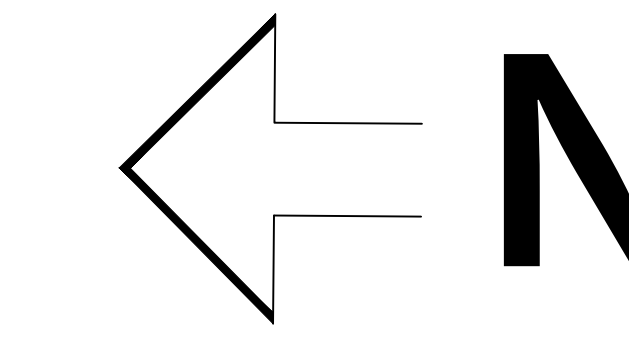




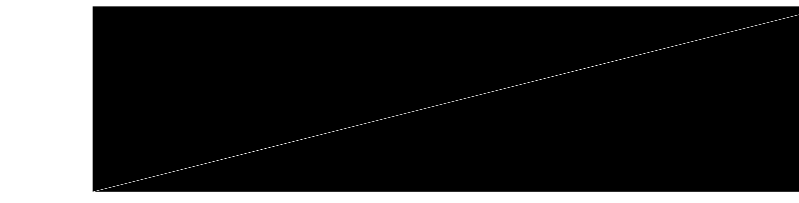
The Most Livable City in America

Hamline Avenue Concept: Minnehaha to Pierce Butler

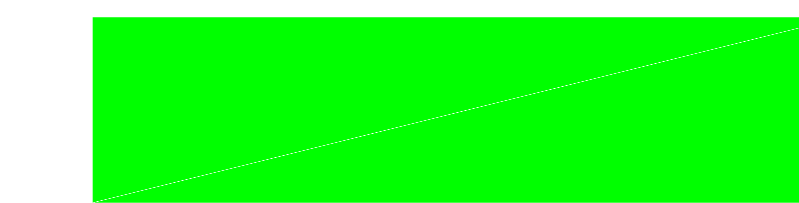
(Page 2 of 2)



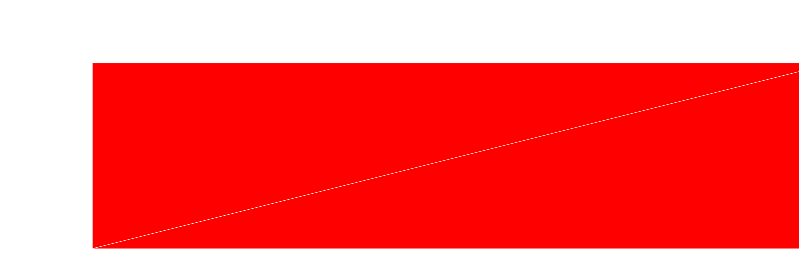
DRAFT



Parking is prohibited



Existing parking to be maintained



Existing Parking to be removed

Note: The treatments shown are conceptual. All modifications are subject to further engineering and analysis.

