**OAKDALE AVENUE PROJECT SUMMARY OF ENGINEERING RECOMMENDATIONS**
Oakdale Avenue Bicycle Lanes

Report prepared: 8/26/2015
Open House: 8/11/2015
Public Hearing: 9/2/2015

**PROJECT**

Implementation of bicycle lanes on Oakdale Avenue from Annapolis Street to State Street, and on State Street from Oakdale Avenue to Cesar Chavez Street.

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 Oakdale Avenue and State Street, 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 Oakdale Avenue between Annapolis and State Streets in the fall of 2015. 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 Oakdale Avenue as a component of the scheduled mill and overlay project.

The Saint Paul Bicycle Plan recommends "in-street separated lanes" on Oakdale Avenue within the project limits. Public Works is proposing to implement the recommendations identified in the Bicycle Plan on Oakdale Avenue from Annapolis Street to State Street. To facilitate safe connections and eliminate a gap in bicycle facilities, extending bicycle lanes north to Cesar Chavez Street beyond the boundaries of the mill and overlay is also proposed. 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

Oakdale Avenue between Annapolis Street and State Street is classified as a collector roadway and a Municipal State Aid Route (MSA). AADT within the project limits ranges from 2,525 vehicles per day on Oakdale north of Belvidere, to 8,000 vehicles a day on State Street south of Cesar Chavez. 85$^{th}$ percentile speeds were measured at 32 MPH northbound, and 32 MPH southbound within the project limits. The posted speed limit is 30 mph. The Saint Paul Bicycle Plan identifies this segment of Oakdale as a component of the planned bicycle network, and identifies "in-street separated lanes" as the recommended facility type.

**Oakdale Avenue - Annapolis Street to State Street**

Elements proposed for implementation are:

- Restriping the roadway to add 6' bicycle lanes
- Narrowing of existing vehicular travel lanes to 10'
- Installation of directional and destination signage
- Removal of on-street parking on the east side of Oakdale between Annapolis Street and State Street

**State Street - Oakdale Avenue to Cesar Chavez Street**

Elements proposed for implementation are:

- Restriping the roadway to add 6' bicycle lanes
- Narrowing of existing vehicular travel lanes to 10'
- Installation of directional and destination signage
- No changes proposed to the existing parking capacity

## III. ALTERNATIVES

Public Works' planned mill and overlay extends from Annapolis Street to State Street. Limiting bicycle improvements to the mill and overlay project boundaries was considered, but was ultimately rejected due to the lack of connectivity to existing or planned bikeways at the project's northern terminus. To facilitate safer and more direct connectivity, extending bicycle facilities north to Cesar Chavez Street is proposed. This extension allows for connectivity to the existing bicycle facilities installed on Cesar Chavez Street.

Parking removal to accommodate bicycle facilities was initially identified for the west side of Oakdale between Annapolis and State Streets. Following the public engagement process, however, this proposal was reevaluated as a result of the following conditions identified by Public Works staff:

a) Due to the grade of Oakdale, people bicycling uphill on the west side of the street will be traveling at relatively low speed and will incur a very minimal risk of door zone conflicts with parked vehicles.

b) Conversely, people bicycling downhill on the east side of the street will likely be traveling at higher speeds with less available reaction time to avoid potential door zone conflicts.

c) Estimated legal parking capacity and observed parking utilization was found to be largely similar[1] on both the east and west sides of Oakdale between Annapolis and State Streets

Public Works' initial proposal to remove parking from the west side of Oakdale would maintain parking on the downhill (east) side of the street where the door zone conflict risk is higher. To promote the safest street design for all users of Oakdale Avenue, Public Works final recommendation is to remove parking on the east side of Oakdale between Annapolis and State Street, and not the west side as was initially proposed.

## 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 Oakdale Avenue while allowing for important connections to existing bicycle facilities on Cesar Chavez Street, and proposed facilities on Belvidere and Annapolis Streets. As one of few streets to successfully navigate the bluff and disjointed street grid, Oakdale Avenue is a critical link for facilitating north-south bicycle, pedestrian, and vehicular access across the challenging topography of the West Side. When paired with existing and planned bicycle facilities nearby, 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 Oakdale Avenue is 30 MPH. Speed studies recorded 85$^{th}$ percentile speeds between 30 and 32 mph within the project limits. Narrowing vehicular travel lane widths as proposed will encourage slower speeds, fostering a safer and more accessible roadway for all users. With AADT ranging from 2,525 to 8,000, implementing in-street separated lanes to separate bicycle and vehicular traffic will substantially increase the safety of people bicycling on Oakdale Avenue.

## 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.

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[1] Oakdale Avenue between Annapolis and State: estimated east side parking capacity: 99 spaces, estimated west side parking capacity: 100 spaces, mean observed east side parking utilization: 18.6 vehicles, mean observed west side parking utilization: 19.6 vehicles

To accommodate the installation of dedicated bicycle facilities, on-street parking removal is proposed for the east side of Oakdale Avenue between Annapolis and State Streets. The removal of parking lanes is required to meet minimum standards for bicycle and travel lane widths. No parking removal is proposed between State Street and Cesar Chavez Street.

To capture demonstrative parking demand, Public works conducted eleven parking occupancy counts at representative time periods along Oakdale Avenue (weekday early morning, midday, evening, and Saturday midday and evening). 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 Oakdale. Four parking counts of adjacent side streets between Morton and Curtice Streets were conducted during the weekday morning and evening periods.

Existing legal parking capacity on Oakdale Avenue between Annapolis and State Streets is estimated at 199 spaces, and capacity following the implementation of bicycle lanes is estimated at 100 spaces. The highest observed parking utilization measured 58-parked vehicles between Annapolis and State Streets (Saturday evening, 6 pm - 8 pm), with a mean parking utilization of 38.3 vehicles across the eleven counting periods. 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.

## VI. TIME SCHEDULE

It is anticipated that the bicycle improvements as proposed will be installed concurrent with the planned mill and overlay on Oakdale Avenue, scheduled for fall 2015. This process is anticipated to last approximately 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:

Paul St. Martin, Assistant City Engineer
Email: paul.st.martin@ci.stpaul.mn.us

## 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.

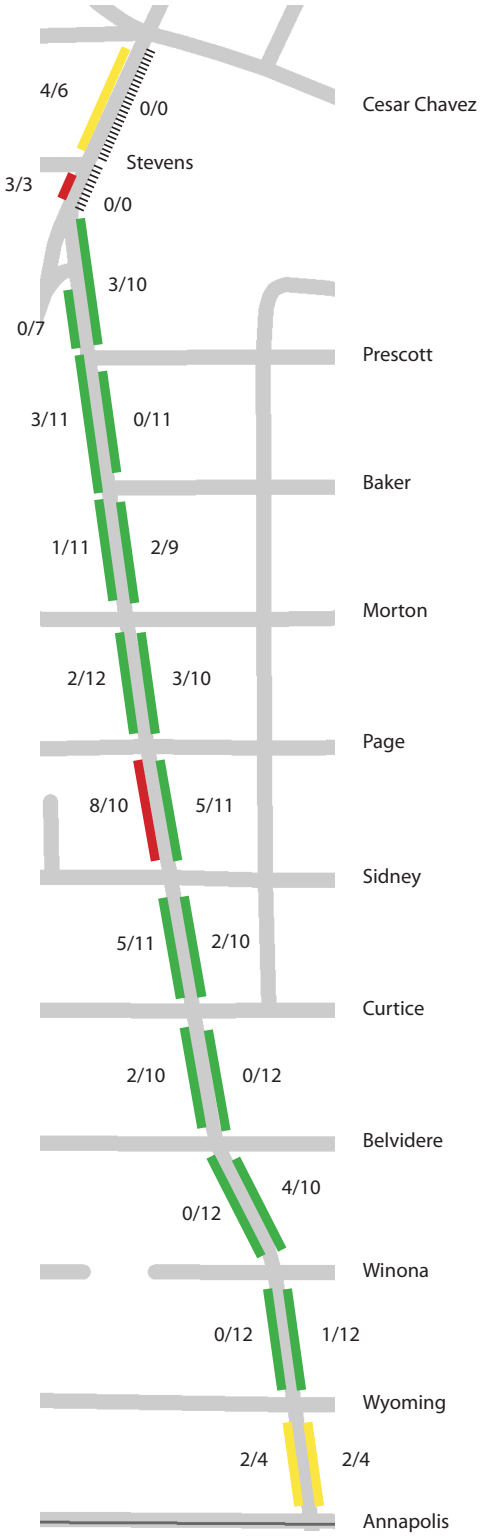
# Appendix

Attached:

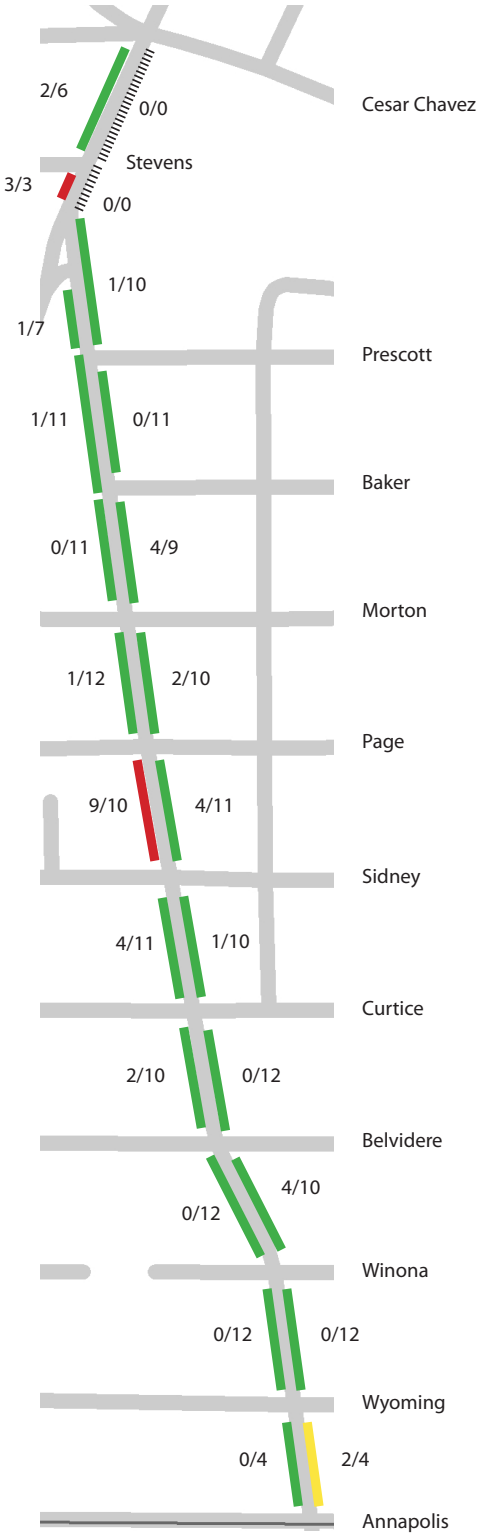
1. Oakdale Avenue Parking Occupancy Count Results
2. Oakdale Avenue Project Map
3. Oakdale Avenue Project Cross-Sections

# State St / Oakdale Ave Parking Counts
# Weekday Early Morning (4 AM - 6 AM)

Date: Tuesday, June 2nd
Time Period: 4AM - 6 AM




Date: Thursday, June 18th
Time Period: 4AM - 6 AM




## Legend

Observed Parking Utilization

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

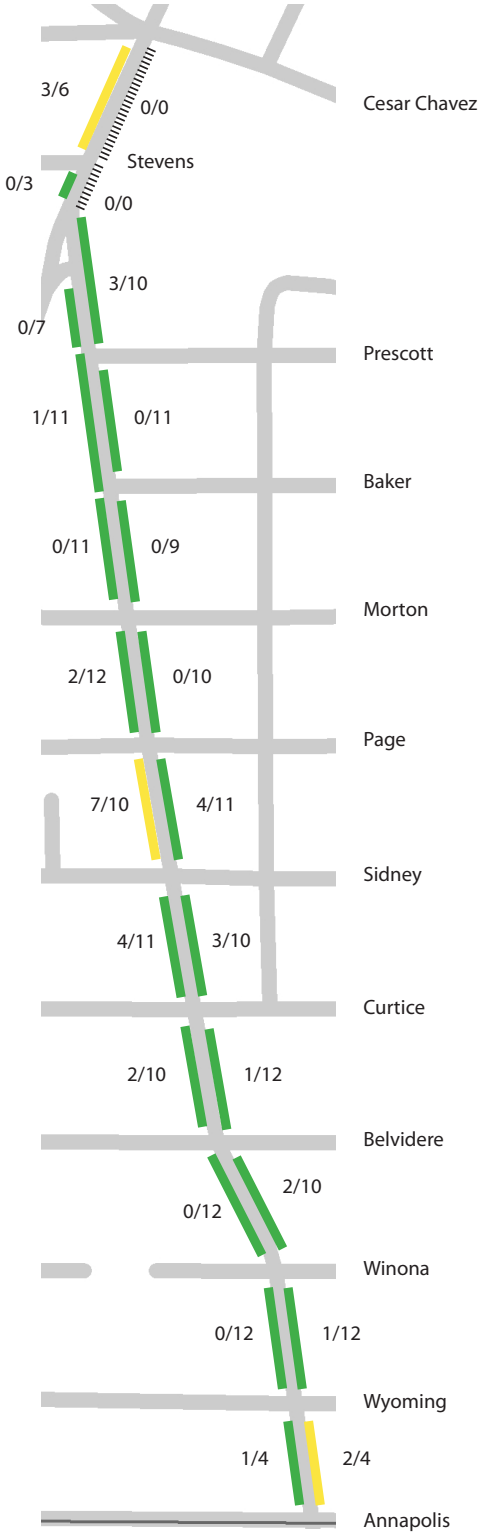
Example: 8/11 =

Observed Parked Cars /
Estimated Legal Parking Capacity

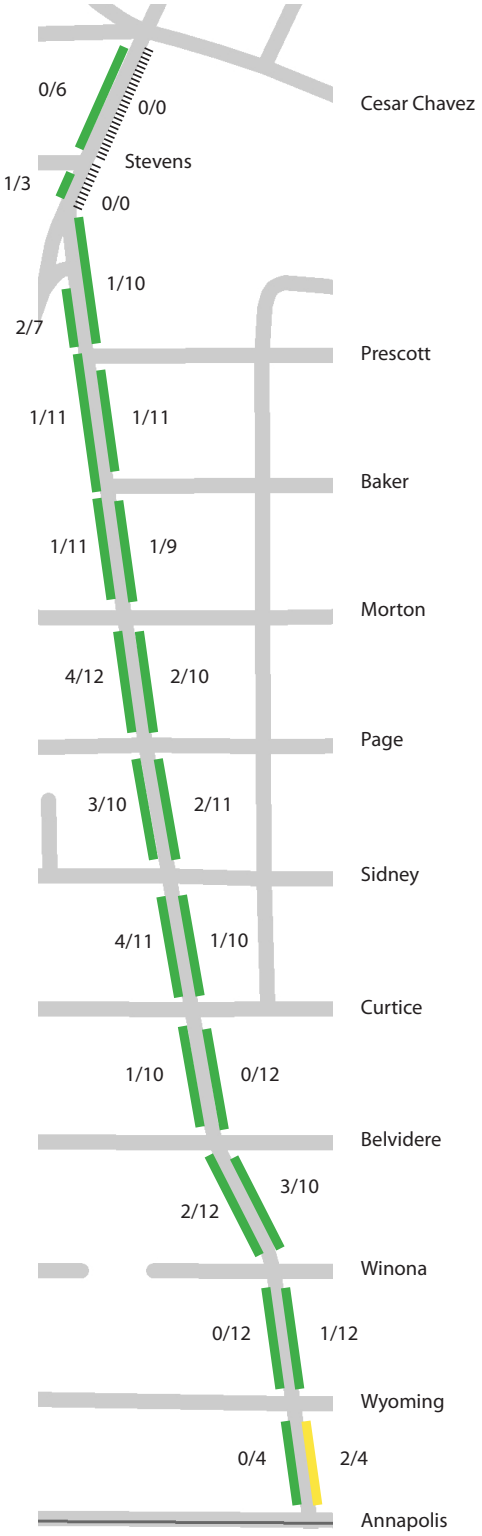
(Observed parking utilization may exceed estimated legal capacity)

# State St / Oakdale Ave Parking Counts
# Weekday Midday (11 AM - 1 PM)

Date: Wednesday, June 3rd
Time Period: 11 AM - 1 PM




Date: Wednesday June 10th
Time Period: 11 AM - 1 PM




## Legend

Observed Parking Utilization

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

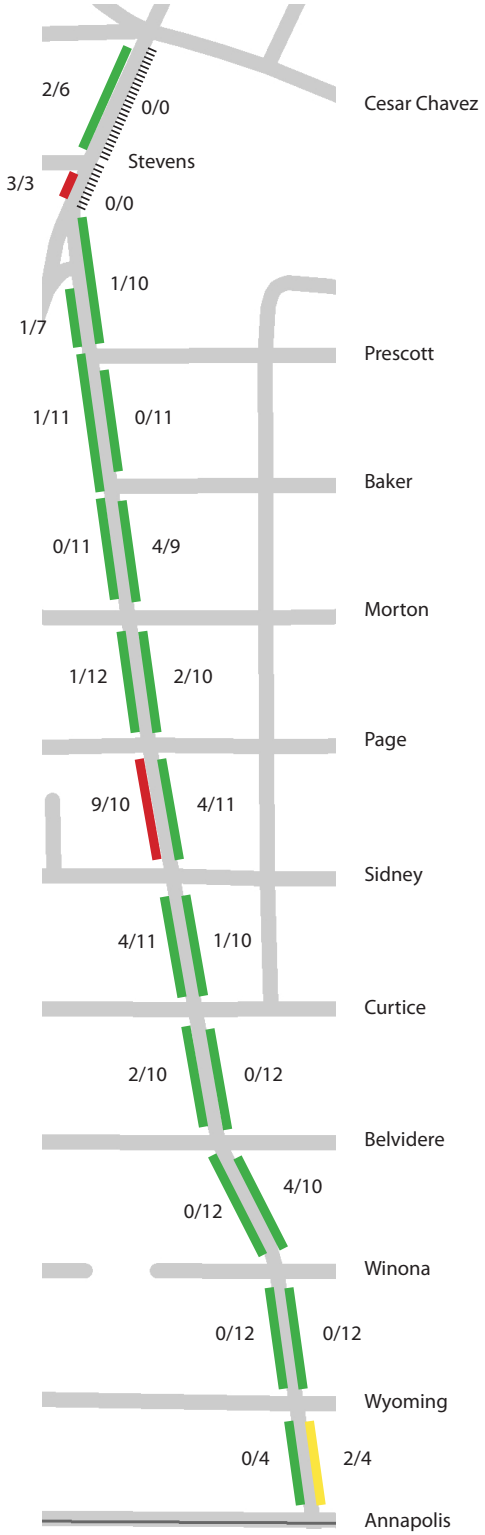
Example: 8/11 =

Observed Parked Cars /
Estimated Legal Parking Capacity

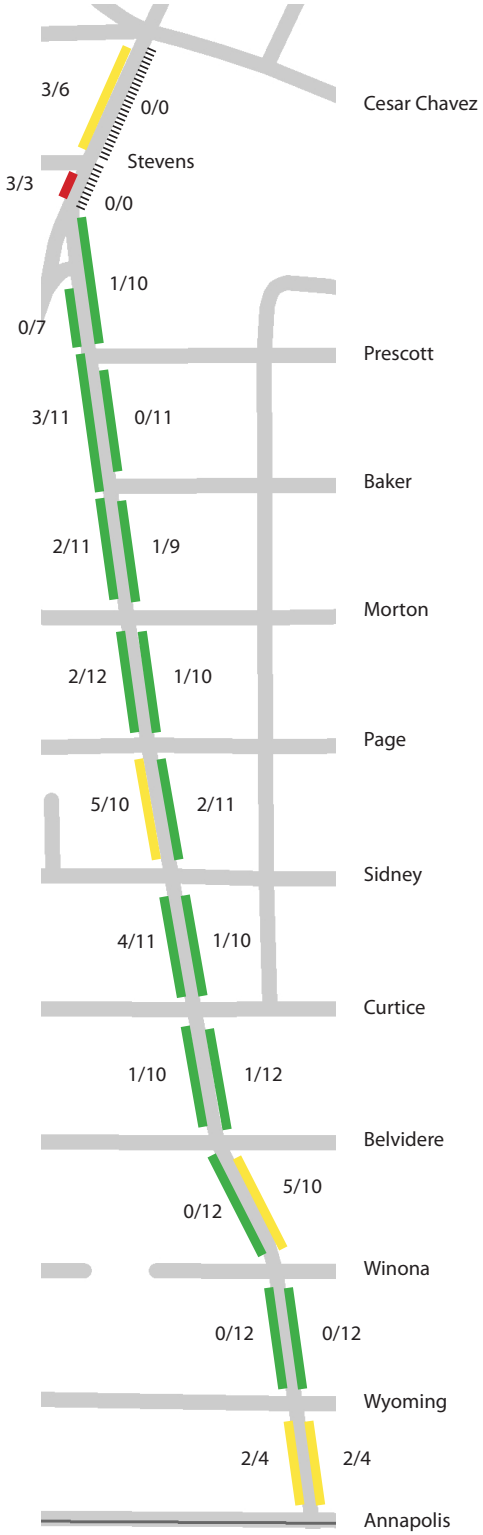
(Observed parking utilization may exceed estimated legal capacity)

# State St / Oakdale Ave Parking Counts
# Weekday Evening (6 PM - 8 PM)

Date: Tuesday, June 16th
Time Period: 6 PM - 8 PM




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




## Legend

Observed Parking Utilization

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

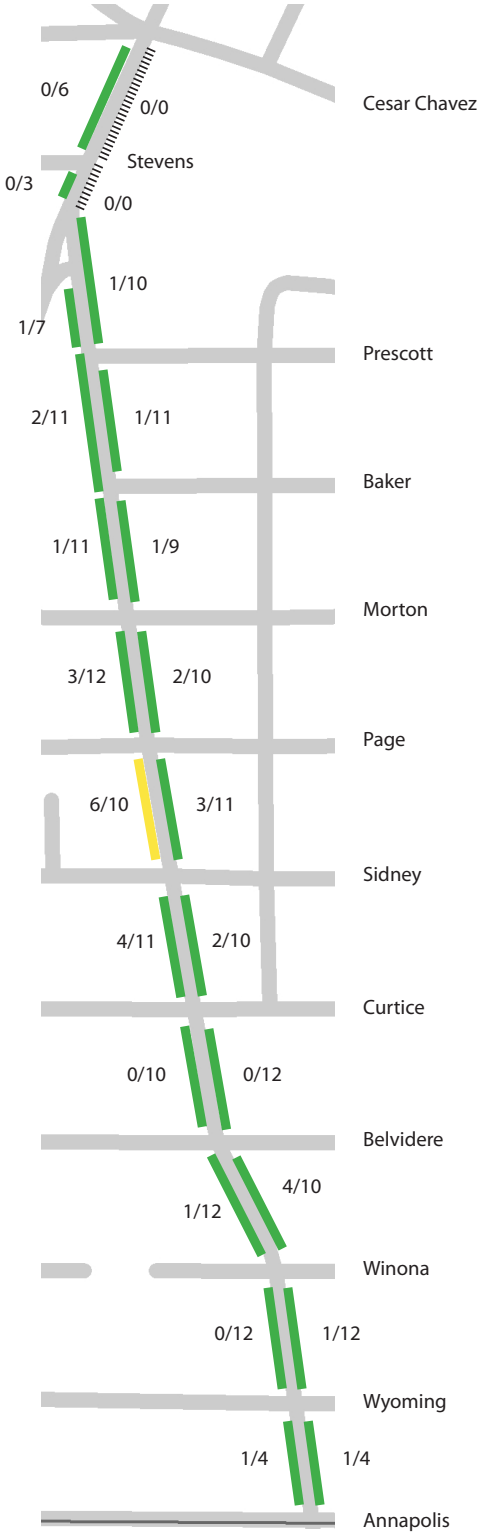
Example: 8/11 =

Observed Parked Cars /
Estimated Legal Parking Capacity

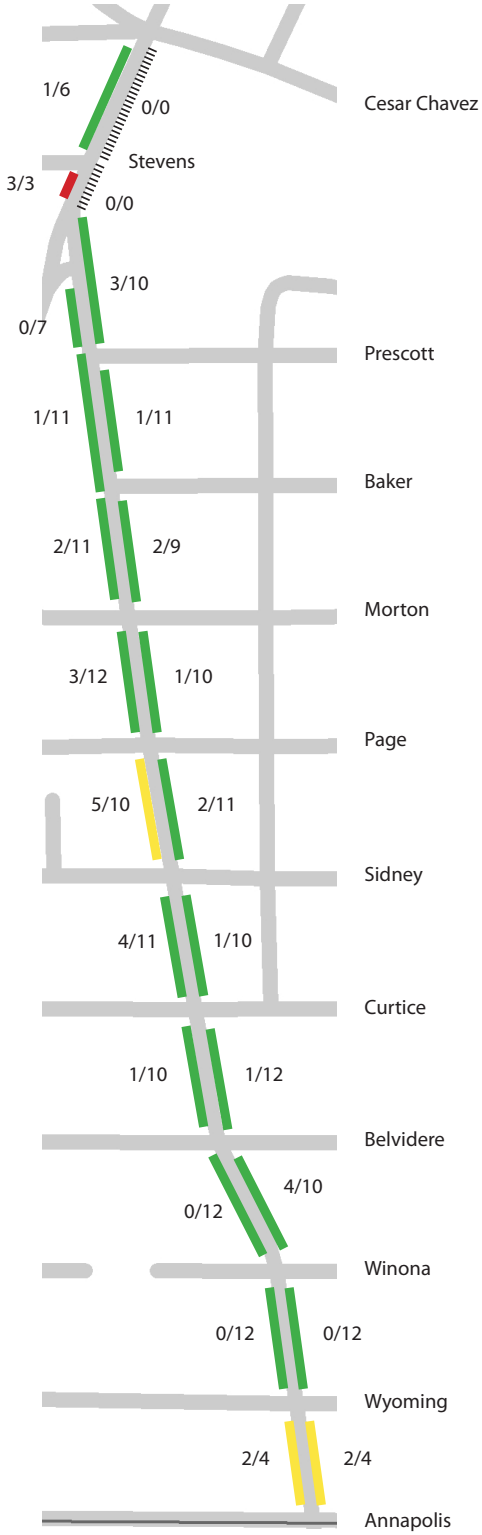
(Observed parking utilization may exceed estimated legal capacity)

# State St / Oakdale Ave Parking Counts
# Saturday Midday (11 AM - 1 PM)

Date: Saturday, June 13th
Time Period: 11 AM - 1 PM




Date: Saturday, June 20th
Time Period: 11 AM - 1 PM




## Legend

Observed Parking Utilization

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

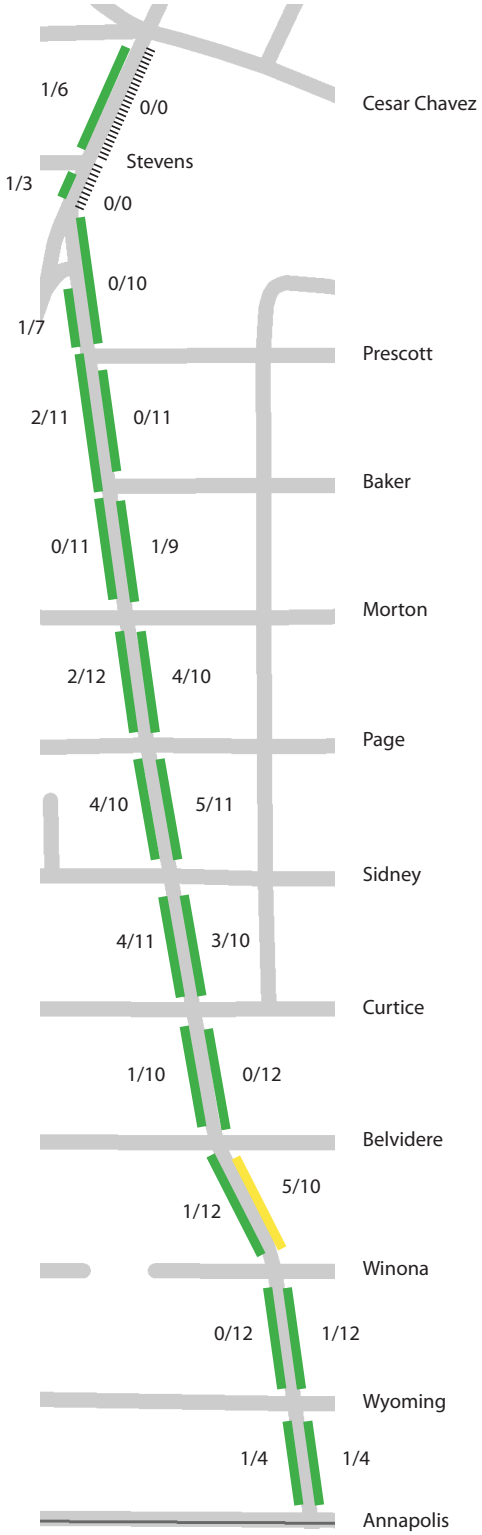
Example: 8/11 =

Observed Parked Cars /
Estimated Legal Parking Capacity

(Observed parking utilization may exceed estimated legal capacity)

# State St / Oakdale Ave Parking Counts
# Saturday Evening (6 PM - 8 PM)

Date: Saturday, June 13th
Time Period: 6 PM - 8 PM




Date: Saturday, June 20th
Time Period: 16 PM - 8 PM

## Legend

Observed Parking Utilization

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

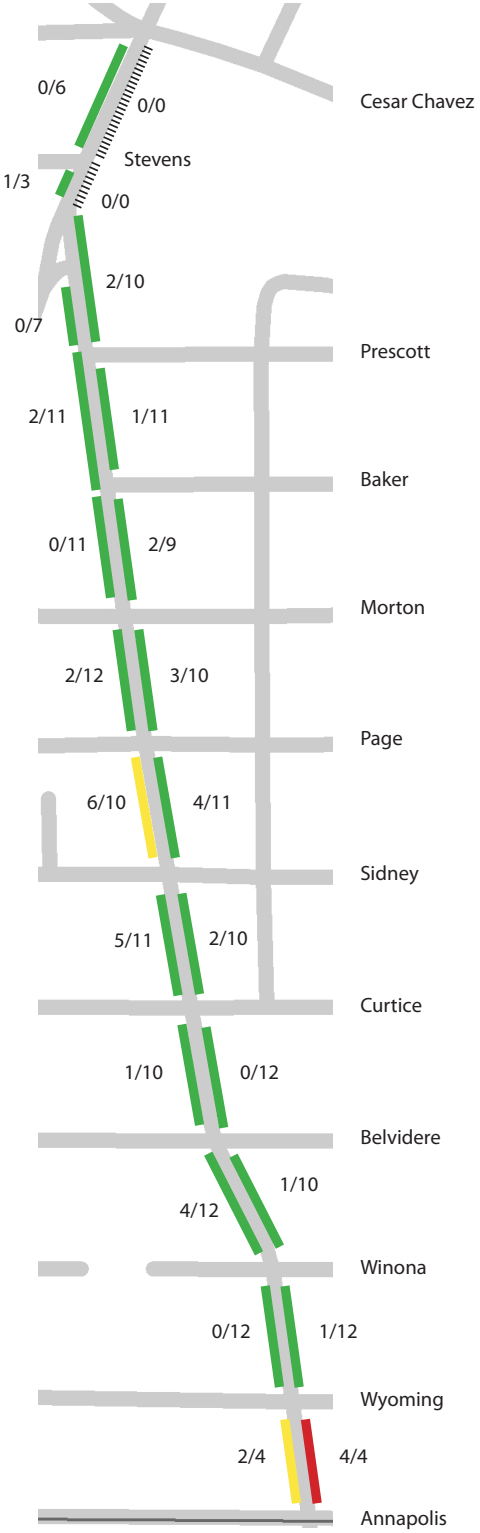
Example: 8/11 =

Observed Parked Cars /
Estimated Legal Parking Capacity

(Observed parking utilization may exceed estimated legal capacity)

# State St / Oakdale Ave Parking Counts
# Sunday Midday (12 PM - 2 PM)

Date: Saturday, June 13th
Time Period: 11 AM - 1 PM




## Legend

Observed Parking Utilization

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

Example: 8/11 =

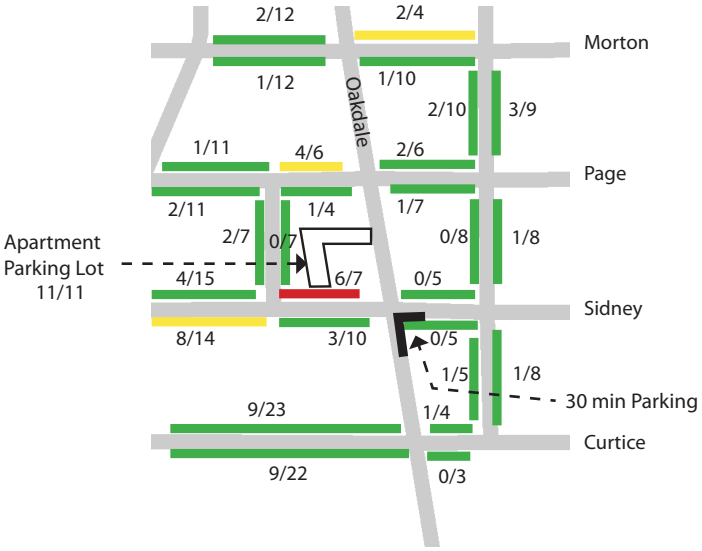
Observed Parked Cars /
Estimated Legal Parking Capacity

(Observed parking utilization may exceed estimated legal capacity)

# State St / Oakdale Ave Parking Counts - Side Streets
# Weekday Early Morning and Evening (4 AM - 6 AM, 6 PM - 8 PM)

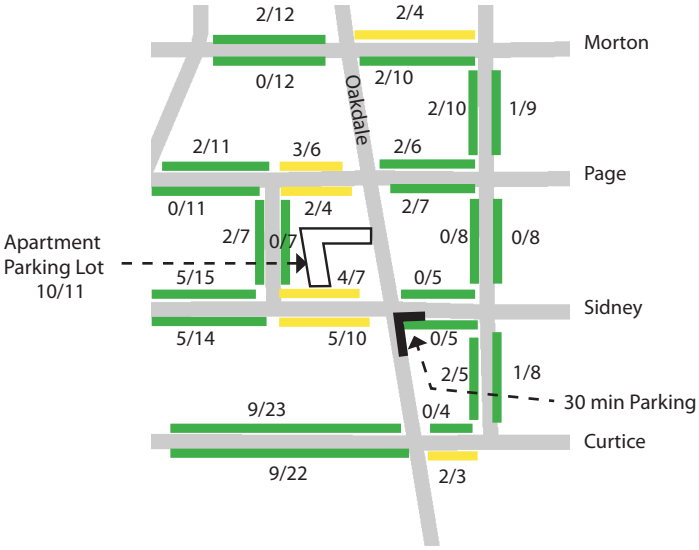
Date: Thursday, June 25th
Time Period: 4 AM - 6 AM

Date: Wednesday, July 8th
Time Period: 4 AM - 6 AM




Date: Wednesday, June 24th
Time Period: 6 PM - 8 PM

Date: Wednesday, July 1st
Time Period: 6 PM - 8 PM




## Legend

Observed Parking Utilization

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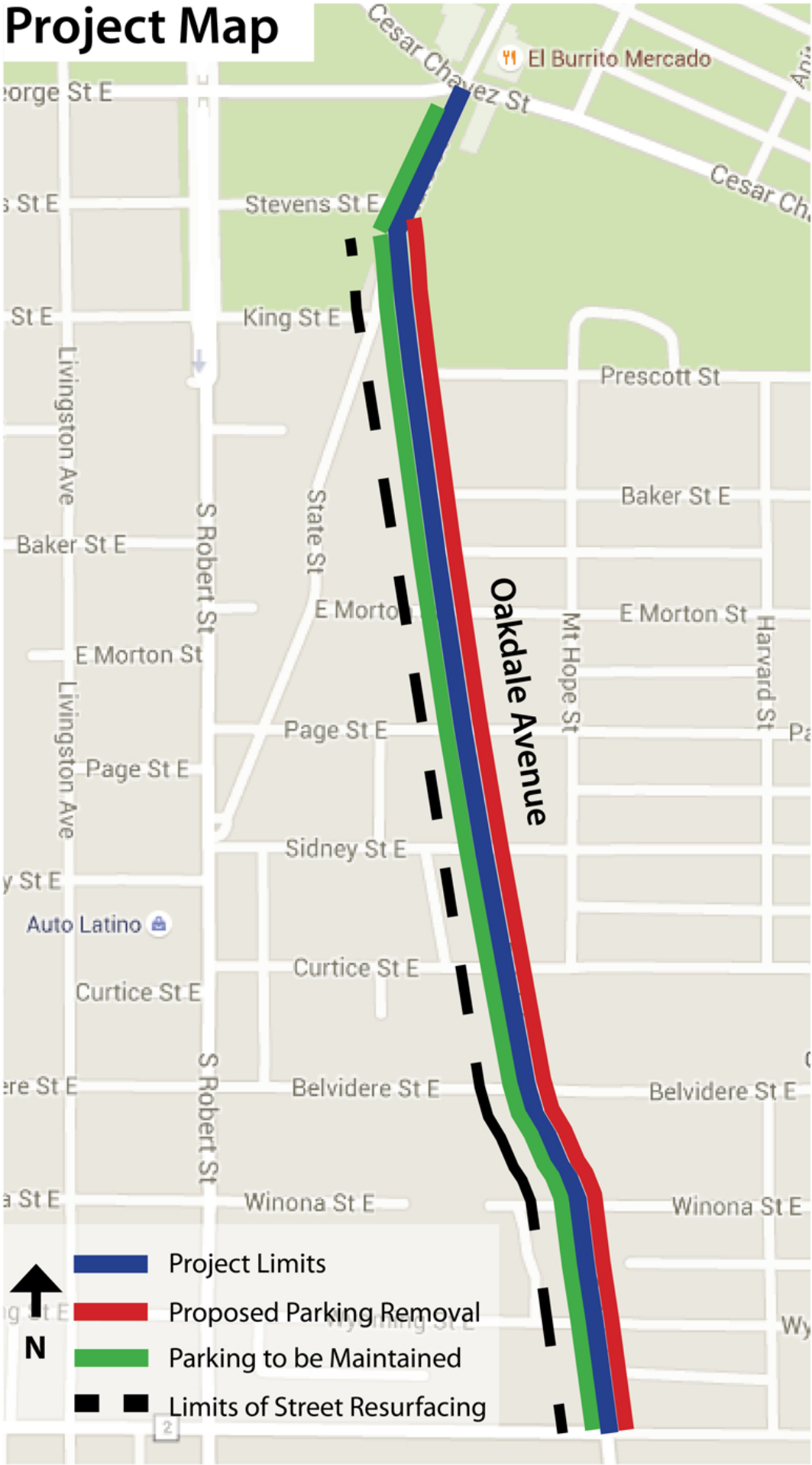
- 0 - 49%
- 50 - 74%
- 75 - 100+%

Example: 8/11 =

Observed Parked Cars /
Estimated Legal Parking Capacity

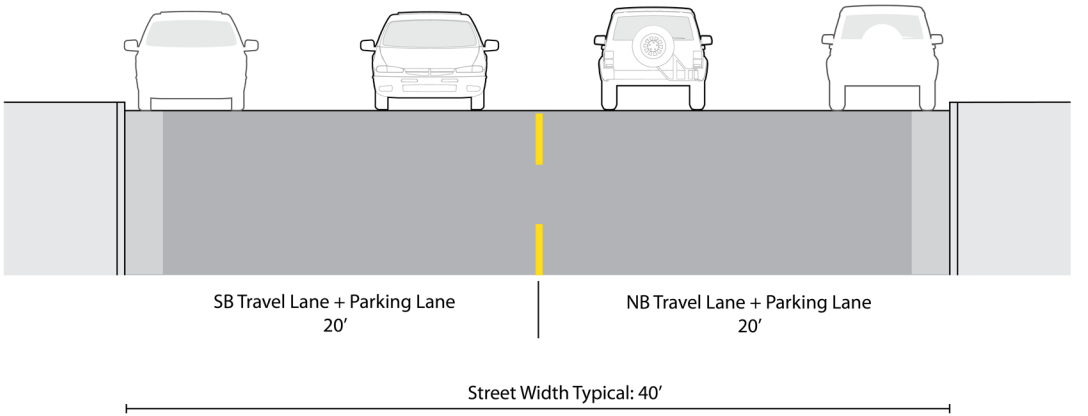
(Observed parking utilization may exceed estimated legal capacity)

# Project Map


Cesar Chavez St
El Burrito Mercado
Stevens St E
King St E
Prescott St
Baker St E
Livingston Ave
S Robert St
State St
E Morton St
Mt Hope St
Harvard St
Page St E
Sidney St E
Auto Latino
Curtice St E
Belvidere St E
Winona St E
Oakdale Avenue
Project Limits
Proposed Parking Removal
Parking to be Maintained
Limits of Street Resurfacing
N

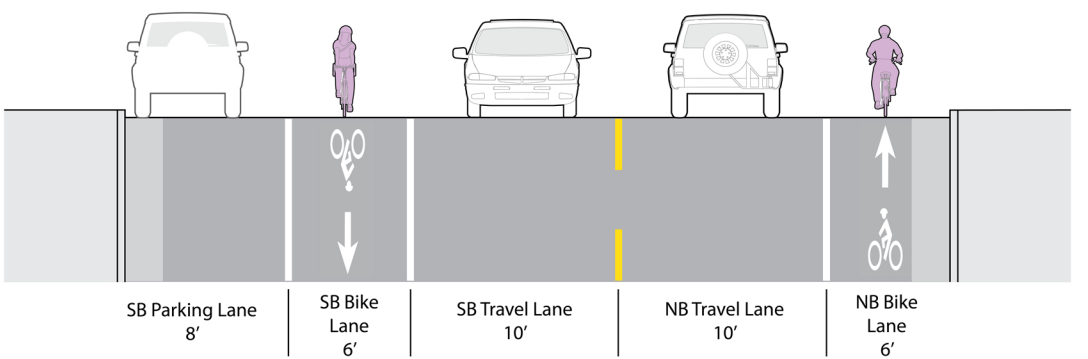
# Oakdale Avenue Bicycle Lanes

## Existing:




- 1 travel lane in each direction
- No existing bicycle facilities
- Parking on both sides

## Proposed:




- 1 travel lane in each direction (narrower to reduce speeding)
- 1 bicycle lane in each direction
- Parking on one side (west)