

City of Minneapolis

DESIGN EXCEPTION REQUEST

FOR

SP 141-091-020

1. 1st Avenue South, 40th Street E and 33rd Street E: Bike lane in lieu of 2nd motorized vehicle lane.
2. 1st Avenue South, 40th Street E and 33rd Street E: One travel lane plus buffer lane on one-way street in lieu of two travel lanes - WEEKEND ONLY.
3. 1st Avenue South, 28th Street E and Franklin Avenue: Two-way width with parking on one-side.
4. 15th Street West, Oak Grove Street to Nicollet Avenue: Two-way width with parking on both sides.
5. Como Avenue, 10th Avenue SE to 15th Avenue SE: Two-way width with parking on both sides.
6. Fremont Avenue N, Plymouth Avenue to Lowry Avenue: Bike lane in lieu of 2nd motorized vehicle lane.
7. Fremont Avenue N, Lowry Avenue to Webber Parkway: Two-way width with parking on one-side.

PROPOSED IMPROVEMENT: This is predominantly a signing and pavement marking project to add an on-street bike lanes to a total of 19 City of Minneapolis streets under Bicycle Operations - Phase 2, which is funded by the Federal Non-Motorized Transportation Pilot Program.

Recommended:

 City of Minneapolis Director of Traffic
 and Parking Services

Date

Reviewed and Recommended:

 District State Aid Engineer

Date

Approved:

 State Aid Engineer
 State Aid For Local Transportation

Date

The purpose of this document is to request an exception for design elements that do not meet the criteria set forth in the standards. A design exception is hereby requested with the following justification and considerations.

Background

In 2007 the City of Minneapolis received an award of 17 grants from the Non-Motorized Transportation Pilot Program (NTP), a source of federal funding aimed at increasing bicycling and walking and decreasing driving. These grants are intended to improve conditions for bicycling along approximately 32 miles of streets. Several innovative changes are being proposed, including some items that will require design exceptions to Mn/DOT State Aid Standards. The design exceptions outlined in the following document will allow for the addition of continuous on-street bicycle lanes to 4 streets in the Bicycle Operations - Phase 2 Project (SP 141-091-020). Approval of the design exceptions will provide an opportunity for agency officials to gather data and review the safety and operational impacts locally of a variety of designs that provide for multi-modal transportation and Complete Streets as intended by the NTP Program.

The proposed designs are the result of a rigorous analysis, design and review process with agency partners including Mn/DOT. Design exceptions are being requested for 5.4 miles of the 32 mile NTP Bicycle Operations Project (Phase 1 and Phase 2). Approval of the following seven design exceptions is requested.

Design Exception 1: 1st Avenue S between 40th Street E and 33rd Street E

Design Standard the Exception is from: 8820.9936 Design Standards, Urban; New or Reconstruction Projects.

Design Element Involved: A bike lane in lieu of a second motorized vehicle lane on a one-way street.

Required Standard: One-way streets must have at least two through traffic lanes.

Proposed "in lieu of" Design: As part of the reconditioning project to modify pavement markings and signage to include on-street bicycle lanes along 1st Avenue S a 7-foot bicycle lane with 4-5 foot buffer is proposed as one of two travel lanes on the seven block one-way segment of 1st Avenue South between 40th Street E and 33rd Street E in lieu of two 11-foot vehicular travel lanes.

Location: 1st Avenue S between 40th Street E and 33rd Street E increases from 29 feet wide to 32 feet wide and is proposed as follows:

- 40th Street E to 38th Street E: 29-feet: 7' Parking, 11' Travel, 4' Buffer, 7' Bike
- 38th Street E to 36th Street E: 30-feet: 7' Parking, 11' Travel, 5' Buffer, 7' Bike
- 36th Street E to 34th Street E: 31-feet: 7' Parking, 12' Travel, 5' Buffer, 7' Bike
- 34th Street E to 33rd Street E: 32-feet: 8' Parking, 12' Travel, 5' Buffer, 7' Bike

The roadway is a residential street with one-way operation in the northbound direction.

Social Impacts

Degree to which the standard is reduced: The request is to allow a bicycle lane to be considered a through traffic lane.

Affect on other standards: See Design Exception 2 below.

Driver expectation/Conformance/compatibility with rest of the road: The roadway is a low volume one-way residential street in the northbound direction. The abutting section of 1st Avenue S to the north is also a northbound one-way street with increased width of 36-feet and is planned to include a bike lane, two through vehicle lanes and a parking lane. The southern terminus of this segment terminates at a T-intersection with 40th Street due to Martin Luther King Park. Due to these constraints on each end of the segment, the one-way operation in the northbound direction and the start of the street, driver expectation while traveling along the roadway should not be violated.

Future Compatibility: 1st Avenue South is an identified bike route on the City of Minneapolis' Bicycle Master Plan. No future work is planned for this roadway that would not be compatible with the proposed design.

Existing & Projected ADT & vehicle mix: The 2008 ADT on this segment ranges from 700 on the south end to 3,500 on the north end. The 2008 estimated daily

bicycle traffic is 260 bicycles per day. This roadway is not a bus route, nor a truck route through this area. There is little to no growth forecast along this developed residential roadway.

Safety/Accidents: Over the three year period between January 1, 2005 and December 31, 2008 the segment experienced 92 crashes.

Economics

Cost: Constructing to standard would require widening of the existing roadway to accommodate a second vehicular travel lane. Expansion of the roadway would result in a reduction in green space (boulevard) at a minimum and might require the purchase of additional right-of-way. Such an expansion of the roadway would require the removal/replacement of signs, curb and gutter, pavement, trees, fire hydrants, drainage structures and traffic signals where present. Such an effort was roughly estimated at \$45,000 per block or \$313,000 for this seven block segment. This is cost prohibitive and not possible with the funding grant of \$150,000 for the 5.4 mile project. Expansion of the roadway is not a feasible improvement therefore would not be considered.

Cost-benefit: A detailed cost benefit analysis was not performed as the project funding is not sufficient to expand the roadway as outlined above. The alternative would be not adding bike lanes to the roadway under which circumstance the project likely would not occur. This would be in conflict with the City's adopted Bicycle Master Plan and the Sustainability Goals set forth by the City.

Environmental Impacts/Encroachments: The additional roadway width required to design to standard would require right-of-way acquisition from residential property owners along a mature city block face. This would have potential negative impacts to the issues of environmental justice and historic preservation. There would also be construction impacts and the removal of several mature boulevard trees would be required negatively impacting the environment.

Adding bicycle lanes under a signing and pavement marking reconditioning project does not have these adverse impacts. Studies have shown that the provision of on-street bike lanes does have a documented positive impact on the safety of cyclists.

Mitigation

All possible safety mitigations must be considered as part of any design exception request and considerations and conclusions should be discussed.

Traffic control: There are no appropriate traffic control devices beyond the installation of bike lane pavement markings and signing. Others were considered but none are appropriate and none will be utilized.

Design betterments: Appropriate betterments were considered but none are appropriate and none will be utilized.

Lighting: No lighting modifications were deemed appropriate and none will be utilized.

Reporting: As a condition of allowing design exceptions the City of Minneapolis will conduct data collection, site reviews and prepare reports regularly to monitor safety and gain understanding of the impacts of the proposed designs. Reporting of data obtained will occur approximately once per year with the assumption that the projects will be constructed in summer and fall of 2010 and the first report will be submitted in January 2012 and annually thereafter for a reporting period of five years. Review will be on-going with formal data collection activities occurring in May and September of 2011 during the first full season of operation and then in September for years 2 through 5 as outlined below.

Data Collection/Reviews:

1. Crashes before and after by type. Review details and reports as needed.
2. Bike volume data collection before and after.

If it is determined that there is a safety or operational issue, the City of Minneapolis will work in conjunction with Mn/DOT Metro State Aid to determine appropriate modifications.

Conclusion: The seven block segment of 1st Avenue South between 40th Street E and 33rd Street E is a low volume residential roadway serving adjacent residential land uses. The addition of a bike lane to this roadway will provide cyclists with a dedicated lane which has documented safety benefits for cyclists. As striped facilities, the bike lane and buffer lane will be able to be entered by emergency vehicles to bypass vehicles as needed. The buffer lane and bike lane will also be able to be entered by vehicles to get around an incident. It is also important to note that the segment is part of a grid system with 300-foot and 600-foot block lengths. Due to the impacts of expanding the roadway to meet standard, building to the level requested is the only practical alternative.

Design Exception 2: 1st Avenue S between 40th Street E and 33rd Street E

Design Standard the Exception is from: 8820.9946 Minimum Design Standards, Urban; Reconditioning Projects, Subpart 2. One-way streets

Design Element Involved: One through travel lane on a one-way street in lieu of two through travel lanes on weekends only.

Required Standard: One-way streets must have at least two through traffic lanes.

Proposed "in lieu of" Design: As part of the reconditioning project to modify pavement markings and signage to include on-street bicycle lanes along 1st Avenue S the following is proposed:

- Allowing the existing weekend parking to occur on the east side of the street in the 7-foot marked bike lane/weekend parking lane and maintain the existing full time parking along the west side of the street between 40th Street E and 33rd Street E (29 to 32 feet wide), and
- Providing a bike lane buffer of 4 to 5-feet wide adjacent to the bike lane/weekend parking lane.

Thus the WEEKEND cross section from west to east is as follows:

- 40th Street E to 38th Street E: 29-feet: 7'Parking, 11'Travel, 4'Buffer, 7'Parking
- 38th Street E to 36th Street E: 30-feet: 7'Parking, 11'Travel, 5'Buffer, 7'Parking
- 36th Street E to 34th Street E: 31-feet: 7'Parking, 12'Travel, 5'Buffer, 7'Parking
- 34th Street E to 33rd Street E: 32-feet: 8'Parking, 12'Travel, 5'Buffer, 7'Parking

in lieu of two through traffic lanes.

Location: 1st Avenue S between 40th Street E and 33rd Street E. The roadway is a residential street with one-way operation in the northbound direction.

Social Impacts

Degree to which the standard is reduced: The standard is reduced by one through traffic travel lane on weekends only providing 15 to 17 feet width for travel if needed through utilization of the proposed bicycle buffer lane.

Affect on other standards: See Design Exception 1 above.

Driver expectation/Conformance/compatibility with rest of the road: The roadway is a low volume one-way residential street in the northbound direction. The abutting section of 1st Avenue S to the north is also a northbound one-way street with increased width of 36-feet and is planned to include a bike lane, two through vehicle lanes and a parking lane. The southern terminus of this segment terminates at a T-intersection with 40th Street due to Martin Luther King Park. Due to these constraints on each end of the segment, the one-way operation in the northbound direction and the start of the street, driver expectation while traveling along the roadway should not be violated.

Future Compatibility: 1st Avenue South is an identified bike route on the City of Minneapolis' Bicycle Master Plan. No future work is planned for this roadway that would not be compatible with the proposed design.

Existing & Projected ADT & vehicle mix: The 2008 ADT on this segment ranges from 700 on the south end to 3,500 on the north end. The 2008 estimated daily bicycle traffic is 260 bicycles per day. This roadway is not a bus route, nor a truck route through this area. There is little to no growth forecast along this developed residential roadway.

Safety/Accidents: Over the three year period between January 1, 2005 and December 31, 2008 the segment experienced 92 crashes.

Economics

Cost: Constructing to standard would require widening of the existing roadway to accommodate a second vehicular travel lane. Expansion of the roadway would result in a reduction in green space (boulevard) at a minimum and might require the purchase of additional right-of-way. Such an expansion of the roadway would require the removal/replacement of signs, curb and gutter, pavement, trees, fire hydrants, drainage structures and traffic signals where present. Such an effort was roughly estimated at \$45,000 per block or \$313,000 for this seven block segment. This is cost prohibitive and not possible with the funding grant of \$150,000 for the 5.4 mile project. Expansion of the roadway is not a feasible improvement therefore would not be considered.

Cost-benefit: A detailed cost benefit analysis was not performed as the project funding is not sufficient to expand the roadway as outlined above. The alternative would be not adding bike lanes to the roadway under which circumstance the project likely would not occur. This would be in conflict with the City's adopted Bicycle Master Plan and the Sustainability Goals set forth by the City.

Environmental Impacts/Encroachments: The additional roadway width required to design to standard would require right-of-way acquisition from residential property owners along a mature City block face. This would have potential negative impacts to the issues of environmental justice, historic preservation and construction impacts. Widening the roadway would also require the removal of several mature boulevard trees negatively impacting the environment.

The proposed design for a bicycle buffer lane adjacent to a bike lane/weekend parking lane will provide cyclists with a comfortable dedicated travel lane with buffer for most days of the week while maintaining the weekend parking desired in the neighborhood. Neighborhood engagement activities showed public support to add bike lanes to this segment of 1st Avenue S but there was not desire to change the current parking practices. There was concern that changes might impact existing disability zones and religious parking needs as well as the neighborhood preference for only one-side parking most days of the week. The addition of the buffer lane gives cyclists additional protection from vehicular traffic and narrows the vehicular travel lane while still allowing enough room for emergency vehicle access.

If the existing parking practices are allowed to be maintained as proposed, adding the bicycle lane striping and bicycle buffer lane under a signing and pavement marking reconditioning project will not have adverse impacts. Studies have shown that the provision of on-street bike lanes does have a documented positive impact on the safety of cyclists.

Mitigation

All possible safety mitigations must be considered as part of any design exception request and considerations and conclusions should be discussed.

Traffic control: Appropriate traffic control devices were considered but none are appropriate and none will be utilized.

Design betterments: Appropriate betterments were considered but none are appropriate and none will be utilized.

Lighting: No lighting modifications were deemed appropriate and none will be utilized.

Reporting: As a condition of allowing design exceptions the City of Minneapolis will conduct data collection, site reviews and prepare reports regularly to monitor safety and gain understanding of the impacts of the proposed designs. Reporting of data obtained will occur approximately once per year with the assumption that the projects will be constructed in summer and fall of 2010 and the first report will be submitted in January 2012 and annually thereafter for a reporting period of five years. Review will be on-going with formal data collection activities occurring in May and September of 2011 during the first full season of operation and then in September for years 2 through 5 as outlined below.

Data Collection/Reviews:

1. Crashes before and after by type. Review details and reports as needed.
2. Bike volume data collection before and after.

If it is determined that there is a safety or operational issue, the City of Minneapolis will work in conjunction with Mn/DOT Metro State Aid to determine appropriate modifications.

Conclusion: The seven block segment of 1st Avenue South between 40th Street E and 33rd Street E is a low volume residential roadway serving adjacent residential land uses. The addition of a bike lane to this roadway will provide cyclists with a dedicated lane which has documented safety benefits for cyclists. As striped facilities, the buffer and bike lanes will be able to be entered by emergency vehicles to bypass vehicles as needed. The buffer lane and bike lane will also be able to be entered by vehicles to get around an incident. It is also important to note that the segment is part of a grid system with 300-foot and 600-foot block lengths. Due to the impacts of expanding the roadway to meet standard, building to the level requested is the only practical alternative.

Design Exception 3: 1st Avenue S between 28th Street E and Franklin Avenue

Design Standard the Exception is from: 8820.9946 Minimum Design Standards, Urban; Reconditioning Projects, Subpart 1. Two-way streets

Design Element Involved: The roadway width of 35 to 36-feet proposed to be comprised of 1.5' Curb Reaction, 10.5-11' Travel, 11' Travel, 5-5.5' Bike and 7' Parking.

Required Standard: Two-way, two-lane collector streets with ADT < 10,000 minimum width with parking on one side is 32-feet. The 32-foot width is comprised of 2' Curb Reaction, 11' Travel, 11' Travel, 8' Parking.

Proposed "in lieu of" Design: As part of the reconditioning project to modify pavement markings and signage to include on-street bicycle lanes and maintain parking along this 35 to 36 foot wide 6 block two-way cross section of 1st Avenue S, a 10.5 to 11 foot vehicular travel lane southbound with 1.5 foot curb reaction distance (1.5 foot gutter) and 7 foot northbound parking lane, is proposed in lieu of an 11 foot travel lane plus 2 foot curb reaction distance and 8 foot parking lane as detailed below.

Location: 1st Avenue S between 28th Street E and Franklin Avenue varies from 35 feet wide to 36 feet wide as follows:

- 28th St to 26th St (2 blocks): 35 feet (1.5' Curb Reaction and 10.5' Travel SB, 11' Travel NB, 5' bike NB, 7' parking NB)
- 26th St to Franklin Avenue (4 blocks): 36 feet (1.5' Curb Reaction and 11' Travel SB, 11' Travel NB, 5.5' bike NB, 7' parking NB)

This segment of 1st Avenue S is a residential street with some small commercial land uses and two-way operation in the northbound direction. The parking turnover through this area is low - more typical of a residential area. The abutting segments have one-way operation in the northbound direction.

Social Impacts

Degree to which the standard is reduced: The standard is reduced by 2 feet for 2 blocks and 1.5-feet for 4 blocks in both directions of travel.

Affect on other standards: NA

Driver expectation/Conformance/compatibility with rest of the road: The roadway is a low volume one-way residential street in the northbound direction. The abutting section of 1st Avenue S to the north is also a northbound one-way street with increased width of 42-feet and is planned to include a bike lane, two through vehicle lanes and parking lanes on both sides. The abutting section of 1st Avenue S to the south is also a northbound one-way street with width of 35-feet and is planned to include a bike lane, two through vehicle lanes and a parking lane. Due to the primarily one way operation of the roadway, this two way segment experiences the majority of traffic in the northbound direction with a split of 90-percent of traffic driving northbound. The adjacent bike lane will be striped providing parked cars with a guide to the

appropriate position in the proposed 7-foot parking lane, thus driver expectation while traveling along and parking on the roadway should not be violated. Due to the one-way operation at each end of the segment and the low southbound traffic volume, driver expectation while traveling and parking along the roadway should not be violated.

Future Compatibility: 1st Avenue South is an identified bike route on the City of Minneapolis' Bicycle Master Plan. No future work is planned for this roadway that would not be compatible with the proposed design.

Existing & Projected ADT & vehicle mix: The 2008 ADT on this segment is 5,500 with southbound ADT of 550 and northbound ADT of 4,900. The 2008 estimated daily bicycle traffic is 260 bicycles per day. This roadway is not a bus route, nor a truck route. There is little to no growth forecast along this developed residential roadway.

Safety/Accidents: Over the three year period between January 1, 2005 and December 31, 2008 the segment experienced 123 crashes.

Economics

Cost: Constructing to standard would require widening of the existing roadway by 1.5 to 2-feet. Expansion of the roadway would result in a reduction in green space (boulevard) at a minimum and might require the purchase of additional right-of-way. Such an expansion of the roadway would require the removal/replacement of signs, curb and gutter, pavement, mature trees, fire hydrants, drainage structures and traffic signals where present. Such an effort was roughly estimated at \$45,000 per block or \$270,000 for this six block segment. This is cost prohibitive and not possible with the funding grant of \$150,000 for the 5.4 mile project. Expansion of the roadway is not a feasible improvement therefore would not be considered.

Cost-benefit: A detailed cost benefit analysis was not performed as the project funding is not sufficient to expand the roadway as outlined above. The alternative would be not adding bike lanes to the roadway under which circumstance the project likely would not occur. This would be in conflict with the City's adopted Bicycle Master Plan and the Sustainability Goals set forth by the City.

Environmental Impacts/Encroachments: The additional roadway width required to design to standard would require right-of-way acquisition from residential property owners along a mature city block face. This would have potential negative impacts to the issues of environmental justice and historic preservation. There would also be construction impacts and the removal of several mature boulevard trees would be required negatively impacting the environment.

Adding bicycle lanes under a signing and pavement marking reconditioning project does not have these adverse impacts. Reducing the parking lane and vehicular travel lane widths on this six block segment is necessary to provide a bike lane that meets the minimum recommended design. Studies have shown that the provision of on-street bike lanes does have a documented positive impact on the safety of cyclists.

Bike and vehicular traffic volume and safety data will be collected as part of this effort if the design exception is granted.

Mitigation

All possible safety mitigations must be considered as part of any design exception request and considerations and conclusions should be discussed.

Traffic control: There are no appropriate traffic control devices beyond the installation of bike lane pavement markings and signing. Others were considered but none are appropriate and none will be utilized.

Design betterments: Appropriate betterments were considered but none are appropriate and none will be utilized.

Lighting: No lighting modifications were deemed appropriate and none will be utilized.

Reporting: As a condition of allowing design exceptions the City of Minneapolis will conduct data collection, site reviews and prepare reports regularly to monitor safety and gain understanding of the impacts of the proposed designs. Reporting of data obtained will occur approximately once per year with the assumption that the projects will be constructed in summer and fall of 2010 and the first report will be submitted in January 2012 and annually thereafter for a reporting period of five years. Review will be on-going with formal data collection activities occurring in May and September of 2011 during the first full season of operation and then in September for years 2 through 5 as outlined below.

Data Collection/Reviews:

1. Crashes before and after by type. Review details and reports as needed.
2. Bike volume data collection before and after.

If it is determined that there is a safety or operational issue, the City of Minneapolis will work in conjunction with Mn/DOT Metro State Aid to determine appropriate modifications.

Conclusion: The six block two-way segment of 1st Avenue South carries significantly less traffic volume in the southbound direction at 10-percent of the ADT or 550 out of 5,500 due to the primarily one-way northbound operation of the roadway on each end of this segment. The addition of a bike lane to this roadway will provide cyclists with a dedicated lane which has documented safety benefits for cyclists. To provide continuous bike lanes through this project and not remove on-street parking, it is requested to allow the reduction of curb reaction distance by 0.5 foot and the reduction of the parking lane by 1-foot for 6 blocks. Further, it is requested to allow the reduction of the travel lane by 0.5 foot for two blocks. Due to the minimal southbound traffic, low parking turnover, and the impacts of expanding the roadway to meet standard, building to the level requested is the only practical alternative.

Design Exception 4: 15th Street West between Oak Grove Street and Nicollet Avenue

Design Standard the Exception is from: 8820.9946 Minimum Design Standards, Urban; Reconditioning Projects.

Design Element Involved: The roadway width of 46-feet is proposed to be comprised of the following:

1. Oak Grove Street to LaSalle Avenue, 4 blocks:
7' Parking WB, 5.5' Bike WB, 10.5' Travel WB, 11' Travel EB, 5' Bike EB, 7' Parking EB
2. LaSalle Avenue to Nicollet Avenue, 1 block:
7.5' Parking WB, 5' Bike WB, 10.5' Travel WB, 10.5' Travel EB, 5' Bike EB, 7.5' Parking EB

Required Standard: Two-way, two-lane collector streets with ADT < 10,000 minimum width with parking on both sides is 38-feet. The 38-foot width is comprised of 8' Parking, 11' Travel, 11' Travel, 8' Parking.

Proposed "in lieu of" Design: As part of the reconditioning project to modify pavement markings and signage to include on-street bicycle lanes along 15th Street West and maintain on-street parking, 10.5 foot travel lanes and 7 to 7.5-foot parking lanes are proposed in lieu of 11-foot travel lanes and 8-foot parking lanes. The proposed bicycle lanes require 10 to 10.5 feet of the total 46-foot street width, reducing the width to 36 to 35.5 feet to accommodate two-side parking and a travel lane in each direction which requires 38-feet per 8820.9946 Minimum Design Standards, Urban; Reconditioning Projects.

Location:

15th Street West between Oak Grove Street and Nicollet Avenue (approximately 5 blocks)

Parking along the entire 5 block (0.4 mile) segment is heavy but the turnover is greater between LaSalle Avenue and Nicollet Avenue. There are also two buses per day traveling eastbound between Oak Grove Street and Willow Street along 15th Street West. Thus the proposal to add bike lanes to both sides of the street provides the additional width to the eastbound travel lane in which buses travel (2/day) and to the parking lane in the area of higher parking turnover.

Social Impacts

Degree to which the standard is reduced: The standard is reduced by 2.5 feet for approximately 4 blocks and 2-feet for 1 block in both directions of travel.

Affect on other standards: NA

Driver expectation/Conformance/compatibility with rest of the road: 15th Street W through this area is adjacent to Loring Park on the north and on the south there is dense multi-family residential with some small commercial land uses. The abutting section of 15th Street West to the immediate east is a

lower volume two-way segment planned for on-street bike lanes as part of this project which extends 1 mile to the east along 15th Street and 14th Street. To the west 15th Street intersects with Lyndale Avenue/Hennepin Avenue which marks the entrance from an arterial roadway onto the collector roadway and into the residential and recreational Loring Park neighborhood. Previous attempts have been made to narrow the roadway cross section in this neighborhood with chevron striping to reduce vehicular speeds. The addition of on-street bike lanes as proposed will result in narrower travel lanes as well as narrower parking lanes. As such the proposed design will be compatible with driver expectation and encourage lower travel speeds through the area.

Future Compatibility: 15th Street West is an identified bike route on the City of Minneapolis' Bicycle Master Plan. No future work is planned for this roadway that would not be compatible with the proposed design.

Existing & Projected ADT & vehicle mix: The 2008 ADT on this segment is 9,600. The 2008 estimated daily bicycle traffic is 160 bicycles per day. This roadway is a bus route with minimal activity - there are only two Metro Transit buses traveling on 15th Street west per day. The two buses travel during the morning hours in the eastbound direction only between Oak Grove Street and Willow Street. The roadway segment is not a truck route. There is little to no growth forecast along this developed residential roadway.

Safety/Accidents: Over the three year period between January 1, 2005 and December 31, 2008 the segment between Oak Grove Street and Nicollet Avenue S experienced 44 crashes.

Economics

Cost: Constructing to standard would require widening of the existing roadway by 2-2.5 feet to accommodate 11 foot vehicular travel lanes and 8 foot parking lanes in both directions in conjunction with bike lanes. Expansion of the roadway would result in a reduction in green space (on either the residential or Loring Park side of the street) at a minimum and might require the purchase of additional right-of-way. Such an expansion of the roadway would require the removal/replacement of signs, curb and gutter, pavement, mature trees, fire hydrants, drainage structures and traffic signals where present. Such an effort was roughly estimated at \$45,000 per block or \$225,000 for this 5 block segment. This is cost prohibitive and not possible with the funding grant of \$150,000 for the 1.6 mile project. Expansion of the roadway is not a feasible improvement therefore would not be considered.

Cost-benefit: A detailed cost benefit analysis was not performed as the project funding is not sufficient to expand the roadway as outlined above. The alternative would be not adding bike lanes to the roadway under which circumstance the project likely would not occur. This would be in conflict with the City's adopted Bicycle Master Plan and the Sustainability Goals set forth by the City.

Environmental Impacts/Encroachments: The additional roadway width required to design to standard would require right-of-way acquisition from a City of Minneapolis

park or residential property owners along a mature city block face. This would have potential negative impacts to the issues of environmental justice and historic preservation. There would also be construction impacts and the removal of several mature boulevard trees would be required negatively impacting the environment.

Adding bicycle lanes under a signing and pavement marking reconditioning project does not have these adverse impacts. Studies have shown that the provision of on-street bike lanes does have a documented positive impact on the safety of cyclists.

Reducing the cross section of this roadway is desirable to not only provide a bike lane, but to reduce speeds. The roadway has a history of resident complaints of excessive speeds due to the existing 15-foot vehicular travel lane widths. This history led to installation of painted chevrons to channelize traffic and narrow the travel lane width. The proposed narrower cross section under the NTP project also has the potential to reduce speeds and such data as well as volume, safety and lane position data will be collected as part of this effort if the design exception is granted.

Mitigation

All possible safety mitigations must be considered as part of any design exception request and considerations and conclusions should be discussed.

Traffic control: There are no appropriate traffic control devices beyond the installation of bike lane pavement markings and signing. Others were considered but none are appropriate and none will be utilized.

Design betterments: Appropriate betterments were considered but none are appropriate and none will be utilized.

Lighting: No lighting modifications were deemed appropriate and none will be utilized.

Reporting: As a condition of allowing design exceptions the City of Minneapolis will conduct data collection, site reviews and prepare reports regularly to monitor safety and gain understanding of the impacts of the proposed designs. Reporting of data obtained will occur approximately once per year with the assumption that the projects will be constructed in summer and fall of 2010 and the first report will be submitted in January 2012 and annually thereafter for a reporting period of five years. Review will be on-going with formal data collection activities occurring in May and September of 2011 during the first full season of operation and then in September for years 2 through 5 as outlined below.

Data Collection/Reviews:

1. Observations of parked vehicles, motorists and cyclist locations in lanes.
2. Crashes before and after by type. Review details and reports as needed.
3. Speed data collection before and after.
4. Bike volume data collection before and after.

If it is determined that there is a safety or operational issue, the City of Minneapolis will work in conjunction with Mn/DOT Metro State Aid to

determine appropriate modifications.

Conclusion: The 4 block segment of 15th Street West between Oak Grove Street and LaSalle Avenue is a collector roadway serving adjacent recreational, residential and small commercial businesses. The Loring Park neighborhood has an active pedestrian and cyclist population. The project will better connect the Loring Bike Bridge and Loring Bike Path to the Loring Park bike paths as well as connecting these facilities to those further to the east along Park and Portland Avenues. The addition of a bike lane to this roadway will provide cyclists with a dedicated lane which has documented safety benefits for cyclists. The trial of the westbound 10.5 foot vehicular travel lane will provide an opportunity to gather data on the operation of a reduced lane width adjacent to a minor bus route. Due to the impacts of expanding the roadway to meet standard, building to the level requested is the only practical alternative.

Design Exception 5: Como Avenue SE between 10th Avenue SE and 15th Avenue SE

Design Standard the Exception is from: 8820.9946 Minimum Design Standards, Urban; Reconditioning Projects.

Design Element Involved: The roadway width of 45-feet is proposed to be comprised of: 7' Parking WB, 5' Bike WB, 10.5' Travel WB, 10.5' Travel EB, 5' Bike EB, 7' Parking EB

Required Standard: Two-way, two-lane collector streets with ADT < 10,000 minimum width with parking on both sides is 38-feet. The 38-foot width is comprised of 8' Parking, 11' Travel, 11' Travel, 8' Parking.

Proposed "in lieu of" Design: As part of the reconditioning project to modify pavement markings and signage to include on-street bicycle lanes along Como Avenue and maintain on-street parking, 10.5 foot travel lanes and 7-foot parking lanes are proposed in lieu of 11-foot travel lanes and 8-foot parking lanes. The proposed bicycle lanes require 10-feet of the total 45-foot street width, reducing the width to 35-feet to accommodate two-side parking and a travel lane in each direction which requires 38-feet per 8820.9946 Minimum Design Standards, Urban; Reconditioning Projects.

Location:

Como Avenue SE between 10th Avenue SE and 15th Avenue SE (approximately 5 blocks)

Parking along the entire 5 block (0.2 mile) segment is heavy but the turnover is typically low. This segment of Como Avenue SE is not a bus route and it is a truck route. The segment is also adjacent to Van Cleave Park on the south side and residential housing on the north side.

Social Impacts

Degree to which the standard is reduced: The standard is reduced by 1.5-foot for approximately 5 blocks on both sides of the street for a total of 3 feet.

Affect on other standards: NA

Driver expectation/Conformance/compatibility with rest of the road: Como Avenue SE through this area is adjacent to Van Cleave Park on the south and on the north there is single and multi-family residential. The abutting section of Como Avenue SE to the immediate east is where the character of the road changes due to the primary movement being a south to east movement between Como Avenue SE and 15th Avenue SE. This area serves residential and commercial traffic as well as many Metro Transit buses. As part of this project the segment to the east is planned to have on-street bike lanes with a short westbound segment of shared vehicle/bicycle lanes between 15th Avenue SE and 18th Avenue SE.

To the west Como Avenue SE terminates at its intersection with 10th Avenue SE which is also planned for on-street bike lanes with another NTP project. These segments of Como Avenue already serve one of the highest volume bike routes in Minneapolis due to the proximity to the University of Minnesota campuses and student housing. The current estimated daily bicycle traffic volume on

Como Avenue SE is 1,140. As such the proposed design will be compatible with driver expectation as there is already a heavy documented cyclist volume and the proposed design will better define for all roadway users where they should be within the roadway.

Future Compatibility: Como Avenue SE is an identified bike route on the City of Minneapolis' Bicycle Master Plan. No future work is planned for this roadway that would not be compatible with the proposed design.

Existing & Projected ADT & vehicle mix: The 2008 ADT on this segment is 5,100. The 2008 estimated daily bicycle traffic is 1,140 bicycles per day. This roadway is not a bus route but is a truck route. There is little to no growth forecast along this developed residential roadway.

Safety/Accidents: Over the three year period between January 1, 2005 and December 31, 2008 the segment experienced 11 crashes.

Economics

Cost: Constructing to standard would require widening of the existing roadway by 3 feet to accommodate 11 foot vehicular travel lanes and 8 foot parking lanes in both directions in conjunction with bike lanes. Expansion of the roadway would result in a reduction in green space (on either the residential or Van Cleave Park side of the street) at a minimum and might require the purchase of additional right-of-way. Such an expansion of the roadway would require the removal/replacement of signs, curb and gutter, pavement, trees, fire hydrants, drainage structures and traffic signals where present. Such an effort was roughly estimated at \$45,000 per block or \$225,000 for this 5 block segment. This is cost prohibitive and not possible with the funding grant of \$50,000 for the 1-mile project. Expansion of the roadway is not a feasible improvement therefore would not be considered.

Cost-benefit: A detailed cost benefit analysis was not performed as the project funding is not sufficient to expand the roadway as outlined above. The alternative would be not adding bike lanes to the roadway under which circumstance the project likely would not occur. This would be in conflict with the City's adopted Bicycle Master Plan and the Sustainability Goals set forth by the City.

Environmental Impacts/Encroachments: The additional roadway width required to design to standard would require right-of-way acquisition from a City park or residential property owners along mature city block faces. This would have potential negative impacts to the issues of environmental justice and historic preservation. There would also be construction impacts and the removal of several mature boulevard trees would be required negatively impacting the environment.

Adding bicycle lanes under a signing and pavement marking reconditioning project does not have these adverse impacts. Studies have shown that the provision of on-street bike lanes does have a documented positive impact on the safety of cyclists.

Reducing the cross section of this roadway is desirable to provide the existing heavy

cyclist volume with a dedicated bike lane in which to travel between the north-south connection of 10th Avenue SE to the Diagonal Trail and beyond into the City of St. Paul on the existing bike lanes east of 23rd Avenue SE. The proposed narrower cross section under the NTP project also has the potential to reduce speeds and such data as well as volume, safety and lane position data will be collected as part of this effort if the design exception is granted.

Mitigation

All possible safety mitigations must be considered as part of any design exception request and considerations and conclusions should be discussed.

Traffic control: There are no appropriate traffic control devices beyond the installation of bike lane pavement markings and signing. Others were considered but none are appropriate and none will be utilized.

Design betterments: Appropriate betterments were considered but none are appropriate and none will be utilized.

Lighting: No lighting modifications were deemed appropriate and none will be utilized.

Reporting: As a condition of allowing design exceptions the City of Minneapolis will conduct data collection, site reviews and prepare reports regularly to monitor safety and gain understanding of the impacts of the proposed designs including the testing of bus traffic on the non-us route segment to gain feedback from Metro Transit. Reporting of data obtained will occur approximately once per year with the assumption that the projects will be constructed in summer and fall of 2010 and the first report will be submitted in January 2012 and annually thereafter for a reporting period of five years. Review will be on-going with formal data collection activities occurring in May and September of 2011 during the first full season of operation and then in September for years 2 through 5 as outlined below.

Data Collection/Reviews:

1. Metro Transit will be invited to test drive and provide feedback on the segment.
2. Observations of parked vehicles, motorists and cyclist locations in lanes.
3. Crashes before and after by type. Review details and reports as needed.
4. Speed data collection before and after.
5. Bike volume data collection before and after.

If it is determined that there is a safety or operational issue, the City of Minneapolis will work in conjunction with Mn/DOT Metro State Aid to determine appropriate modifications.

Conclusion: The 0.2 mile segment of Como Avenue SE between 10th Avenue SE and 15th Avenue SE is a collector roadway serving adjacent recreational and residential land uses. Como Avenue SE already serves one of the highest cyclist volumes in Minneapolis due to the proximity to the University of Minnesota campuses and student housing. The proposed design defines the position all roadway users should be in within the roadway and will also be compatible with driver expectation. To provide

the parking needed by residential and Van Cleave park users and add bicycle lanes exceptions to reduce the standard are being requested. Due to the impacts of expanding the roadway to meet standard, building to the level requested is the only practical alternative.

Design Exception 6: Fremont Avenue North between Plymouth Avenue and Lowry Avenue

Design Standard the Exception is from: 8820.9936 Design Standards, Urban; New or Reconstruction Projects.

Design Element Involved: A bike lane in lieu of a second motorized vehicle lane on a one-way street.

Required Standard: One-way streets must have at least two through traffic lanes.

Proposed "in lieu of" Design: As part of the reconditioning project to modify pavement markings and signage to include on-street bicycle lanes along Fremont Avenue North a 7-foot bicycle lane is proposed as one of two travel lanes on the 1.5 mile one-way southbound segment between Plymouth Avenue and Lowry Avenue in lieu of two 11-foot vehicular travel lanes.

Location: Fremont Avenue North between Plymouth Avenue and Lowry Avenue is 32 feet wide. The roadway is a collector roadway with one-way operation in the southbound direction. The proposed cross section is as follows:

- 7' Bike SB 4' Buffer SB, 12' Travel SB, 9' Parking SB

Social Impacts

Degree to which the standard is reduced: The request is to allow a bicycle lane to be considered a through traffic lane.

Affect on other standards: None.

Driver expectation/Conformance/compatibility with rest of the road: The roadway is a low volume one-way collector roadway in the southbound direction. The abutting section of Fremont Avenue North to the immediate north is a one-way roadway planned for a southbound bike lane and a three-lane to two-lane reduction. At the Lowry Avenue intersection, the leftmost lane will drop south of Lowry Avenue to provide for a single vehicular lane on the segment to the south.

The bike lane adjacent to the west curb is proposed to have a buffer lane on the left between the bike lane and vehicular travel lane. This buffer is designed with chevrons between two longitudinal lines to "buffer" the cyclist. The bike lanes will be clearly marked on the pavement and signed and a parking lane line will be striped to define the lane of vehicular travel.

Future Compatibility: Fremont Avenue North is an identified bike route on the City of Minneapolis' Bicycle Master Plan. No future work is planned for this roadway that would not be compatible with the proposed design.

Existing & Projected ADT & vehicle mix: The 2008 ADT on this segment is 4,300. The estimated daily bicycle traffic was not determined for this route at the time of this document. This roadway is a bus route and is not a truck route

through this area. There is little to no growth forecast along this developed residential roadway.

Safety/Accidents: Over the three year period between January 1, 2005 and December 31, 2008 the segment experienced 126 crashes.

Economics

Cost: Constructing to standard would require widening of the existing roadway to accommodate a second vehicular travel lane. Expansion of the roadway would result in a reduction in green space (boulevard) at a minimum and might require the purchase of additional right-of-way. Such an expansion of the roadway would require the removal/replacement of signs, curb and gutter, pavement, trees, fire hydrants, drainage structures and traffic signals where present. Such an effort was roughly estimated at \$45,000 per block or \$720,000 for this 16 block segment. This is cost prohibitive and not possible with the funding grant of \$150,000 for the 4.7 mile project. Expansion of the roadway is not a feasible improvement therefore would not be considered.

Cost-benefit: A detailed cost benefit analysis was not performed as the project funding is not sufficient to expand the roadway as outlined above. The alternative would be not adding bike lanes to the roadway under which circumstance the project likely would not occur. This would be in conflict with the City's adopted Bicycle Master Plan and the Sustainability Goals set forth by the City.

Environmental Impacts/Encroachments: The additional roadway width required to design to standard would require right-of-way acquisition from residential property owners along a mature city block face. This would have potential negative impacts to the issues of environmental justice and historic preservation. There would also be construction impacts and the removal of several mature boulevard trees would be required negatively impacting the environment.

Adding bicycle lanes under a signing and pavement marking reconditioning project does not have these adverse impacts. Studies have shown that the provision of on-street bike lanes does have a documented positive impact on the safety of cyclists.

Reducing the cross section of this roadway is desirable to not only provide a bike lane, but to reduce speeds. The roadway has a history of resident complaints of excessive speeds. This history led to a recent study of converting the roadway to two-way operation. Ultimately, the neighborhood rejected the conversion but remains interested in reducing travel speeds on the roadway. The proposed narrower cross section and single vehicular travel lane under the NTP project has the potential to reduce speeds and such data will be collected as part of this effort if the design exception is granted.

Mitigation

All possible safety mitigations must be considered as part of any design exception request and considerations and conclusions should be discussed.

Traffic control: There are no appropriate traffic control devices beyond the

installation of bike lane pavement markings and signing. Others were considered but none are appropriate and none will be utilized.
Design betterments: Appropriate betterments were considered but none are appropriate and none will be utilized.

Lighting: No lighting modifications were deemed appropriate and none will be utilized.

Reporting: As a condition of allowing design exceptions the City of Minneapolis will conduct data collection, site reviews and prepare reports regularly to monitor safety and gain understanding of the impacts of the proposed designs. Reporting of data obtained will occur approximately once per year with the assumption that the projects will be constructed in summer and fall of 2010 and the first report will be submitted in January 2012 and annually thereafter for a reporting period of five years. Review will be on-going with formal data collection activities occurring in May and September of 2011 during the first full season of operation and then in September for years 2 through 5 as outlined below.

Data Collection/Reviews:

1. Observations of parked vehicles, motorists and cyclist locations in lanes.
2. Crashes before and after by type. Review details and reports as needed.
3. Speed data collection before and after.
4. Bike volume data collection before and after.

If it is determined that there is a safety or operational issue, the City of Minneapolis will work in conjunction with Mn/DOT Metro State Aid to determine appropriate modifications.

Conclusion: The 1.5 mile segment of Fremont Avenue North between Plymouth Avenue and Lowry Avenue is a low volume collector roadway serving adjacent residential and small commercial businesses as well as a Metro Transit bus route. The addition of a bike lane to this roadway will provide cyclists with a dedicated lane which has documented safety benefits for cyclists. As a striped facility, the bike lane and bike lane buffer area will be able to be entered by emergency vehicles to bypass vehicles as needed. The bike lane will also be able to be entered by vehicles to get around an incident. It is also important to note that the segment is part of a grid system with 300-foot and 600-foot block lengths. Due to the impacts of expanding the roadway to meet standard, building to the level requested is the only practical alternative.

Design Exception 7: Fremont Avenue N between 33rd Avenue N and Webber Parkway

Design Standard the Exception is from: 8820.9946 Minimum Design Standards, Urban; Reconditioning Projects.

Design Element Involved: The roadway width of 40-feet is proposed to be comprised of: 6' Bike SB, 11' Travel SB, 11' Travel NB, 5' Bike NB, 7' Parking NB

Required Standard: Two-way, two-lane collector streets with ADT<10,000 minimum width with parking on one side is 32-feet. The 32-foot width is comprised of 2' Curb Reaction, 11' Travel, 11' Travel, 8' Parking.

Proposed "in lieu of" Design: As part of the reconditioning project to modify pavement markings and signage to include on-street bicycle lanes along Fremont Avenue and maintain one side of on-street parking, 7-foot parking lanes are proposed in lieu of 8-foot parking lanes. The proposed bicycle lanes require 11-feet of the total 40-foot street width, reducing the width to 30-feet to accommodate one-side parking and a travel lane in each direction which requires 32-feet per 8820.9946 Minimum Design Standards, Urban; Reconditioning Projects.

Location:

Fremont Avenue N between 33rd Avenue N and Webber Parkway (approximately 1.5 miles) - 7-foot parking lane on one side of the street (east side).

Parking along the entire segment is approximately 10% to 20% occupancy with low turnover through this primarily residential area. Parking will be removed from one-side of the street with this project since the demand is relatively low. However, there remain needs for on-street parking at existing disability and commercial parking zones along the street which will be maintained with the proposed one-side 7-foot parking lane proposed. This segment of Fremont Avenue N is a bus route and it is not a truck route.

Social Impacts

Degree to which the standard is reduced: The standard is reduced by 1-foot for approximately 1.5 miles on one side of the street.

Affect on other standards: None.

Driver expectation/Conformance/compatibility with rest of the road: Fremont Avenue through this area is primarily a residential roadway with a small business node at two cross streets. The abutting section of Fremont Avenue N to the immediate south is a low volume one-way collector roadway in the southbound direction with a bike lane adjacent to parking along the west curb. As such the proposed design will be compatible with driver expectation as there will be a continuous dedicated bike lane in the southbound direction the entire length along Fremont Avenue N traveling from Webber Parkway to Plymouth Avenue as well as a dedicated northbound bike lane beginning at 33rd Avenue N where the Emerson Avenue bike route enters Fremont Avenue N and continues northward to Webber Parkway.

Future Compatibility: Fremont Avenue N is an identified bike route on the City of Minneapolis' Bicycle Master Plan. No future work is planned for this roadway that would not be compatible with the proposed design.

Existing & Projected ADT & vehicle mix: The 2008 ADT on this segment is 4,900. The estimated daily bicycle traffic was not determined for this route at the time of this document. This roadway is a bus route but is not a truck route. There is little to no growth forecast along this developed residential roadway.

Safety/Accidents: Over the three year period between January 1, 2005 and December 31, 2008 the segment experienced 107 crashes.

Economics

Cost: Constructing to standard would require widening of the existing roadway by 1 foot to accommodate 11 foot vehicular travel lanes and 8 foot parking lanes on one side in conjunction with bike lanes. Expansion of the roadway would result in a reduction in green space (boulevard) at a minimum and might require the purchase of additional right-of-way. Such an expansion of the roadway would require the removal/replacement of signs, curb and gutter, pavement, trees, fire hydrants, drainage structures and traffic signals where present. Such an effort was roughly estimated at \$45,000 per block or \$540,000 for this 12 block segment. This is cost prohibitive and not possible with the funding grant of \$150,000 for the 4.7 mile project. Expansion of the roadway is not a feasible improvement therefore would not be considered.

Cost-benefit: A detailed cost benefit analysis was not performed as the project funding is not sufficient to expand the roadway as outlined above. The alternative would be not adding bike lanes to the roadway under which circumstance the project likely would not occur. This would be in conflict with the City's adopted Bicycle Master Plan and the Sustainability Goals set forth by the City.

Environmental Impacts/Encroachments: The additional roadway width required to design to standard would require right-of-way acquisition from residential and commercial property owners along mature city block faces. This would have potential negative impacts to the issues of environmental justice and historic preservation. There would also be construction impacts and the removal of several mature boulevard trees would be required negatively impacting the environment.

Adding bicycle lanes under a signing and pavement marking reconditioning project does not have these adverse impacts. Studies have shown that the provision of on-street bike lanes does have a documented positive impact on the safety of cyclists.

Reducing the cross section of this roadway is desirable to provide a north-south route through the North Minneapolis with a dedicated bike lanes in which to travel between Webber Parkway on the north end and the east-west routes as well as to Downtown and beyond. The proposed narrower cross section under the NTP project also has the

potential to reduce speeds and such data as well as volume, safety and parking lane position data will be collected as part of this effort if the design exception is granted.

Mitigation

All possible safety mitigations must be considered as part of any design exception request and considerations and conclusions should be discussed.

Traffic control: There are no appropriate traffic control devices beyond the installation of bike lane pavement markings and signing. Others were considered but none are appropriate and none will be utilized.

Design betterments: Appropriate betterments were considered but none are appropriate and none will be utilized.

Lighting: No lighting modifications were deemed appropriate and none will be utilized.

Reporting: As a condition of allowing design exceptions the City of Minneapolis will conduct data collection, site reviews and prepare reports regularly to monitor safety and gain understanding of the impacts of the proposed designs. Reporting of data obtained will occur approximately once per year with the assumption that the projects will be constructed in summer and fall of 2010 and the first report will be submitted in January 2012 and annually thereafter for a reporting period of five years. Review will be on-going with formal data collection activities occurring in May and September of 2011 during the first full season of operation and then in September for years 2 through 5 as outlined below.

Data Collection/Reviews:

1. Observations of parked vehicles and cyclist locations in lanes.
2. Crashes before and after by type. Review details and reports as needed.
3. Speed data collection before and after.
4. Bike volume data collection before and after.

If it is determined that there is a safety or operational issue, the City of Minneapolis will work in conjunction with Mn/DOT Metro State Aid to determine appropriate modifications.

Conclusion: The 1.5 mile segment of Fremont Avenue N between Lowry Avenue N and Webber Parkway is a low volume collector roadway serving adjacent commercial and residential land uses as well as a Metro Transit bus route. The addition of bike lanes to this roadway will provide cyclists with dedicated lanes which has documented safety benefits for cyclists. The proposed design defines the position all roadway users should be in within the roadway and will also be compatible with driver expectation. To provide the limited parking needed by residential and commercial uses along the corridor and add the bicycle lanes an exception to reduce the standard is being requested. Due to the impacts of expanding the roadway to meet standard, building to the level requested is the only practical alternative.