West Broadway Transit Study

North Loop Alternatives

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for

Metro Transit

1. Introduction

The West Broadway Transit Study is currently evaluating improved transit service alternatives from downtown Minneapolis to Robbinsdale. The two alternatives include Bus Rapid Transit (BRT) from downtown Minneapolis to the Robbinsdale METRO Blue Line Station and/or streetcar from downtown Minneapolis to North Memorial Hospital. The downtown section of the alignment runs through the North Loop neighborhood, a neighborhood northwest of the central Minneapolis business district. Two viable streets with various options where transit improvements could be implemented include Washington Avenue and 2nd Street North. The Concept Development of Alternatives memo presented the various alignment options within the North Loop area, but did not make any recommendations for a preferred routing alternative.

This North Loop Alternatives memo describes the various alternatives in further detail, and informs decision makers on the advantages and disadvantages of each alignment alternative to aide in the selection of a locally preferred alternative.

2. Alignment Alternatives

Various alignment alternatives have been studied for the North Loop as part of the West Broadway Transit Study. Previous evaluations eliminated two-way transit on N 2nd Street in the North Loop from consideration, primarily due to economic development opportunities and the advantages of Washington Avenue. There are two alignment alternatives remaining for the West Broadway Transit Study in the North Loop area, described below.

The first alternative is two-way transit along Washington Avenue from the Nicollet Hotel block at Hennepin Avenue, continuing north to 10th Avenue N where it transitions to N 2nd Street. The alignment then continues north on N 2nd Street to West Broadway Avenue. Streetcar service would interline with the Nicollet Central alignment at the Nicollet Hotel block and continue south on Nicollet Avenue. BRT service would operate on Hennepin Avenue to downtown Minneapolis where it would circulate through the central business district.

The second alternative is one-way transit operating as a paired couplet along N 2nd Street and Washington Avenue in the North Loop. BRT service would operate in a clockwise fashion by heading eastbound on N 2nd Street to Hennepin Avenue, southbound on Hennepin Avenue to Washington Avenue, westbound on Washington Avenue, and northbound on 10th Avenue N, where it transitions to N 2nd Street and continues north to West Broadway Avenue. Streetcar would also operate in a clockwise fashion along the same alignment as BRT on N 2nd Street and Washington Avenue. Streetcar would interline with the Nicollet Central streetcar line near the Nicollet Hotel Block. Due to the couplet configuration, eastbound streetcar track would interline one block to the north of the Nicollet Hotel Block, at the Hennepin Avenue and 2nd Street N intersection.

A map of the two North Loop alternatives is shown in Figure 1 below.

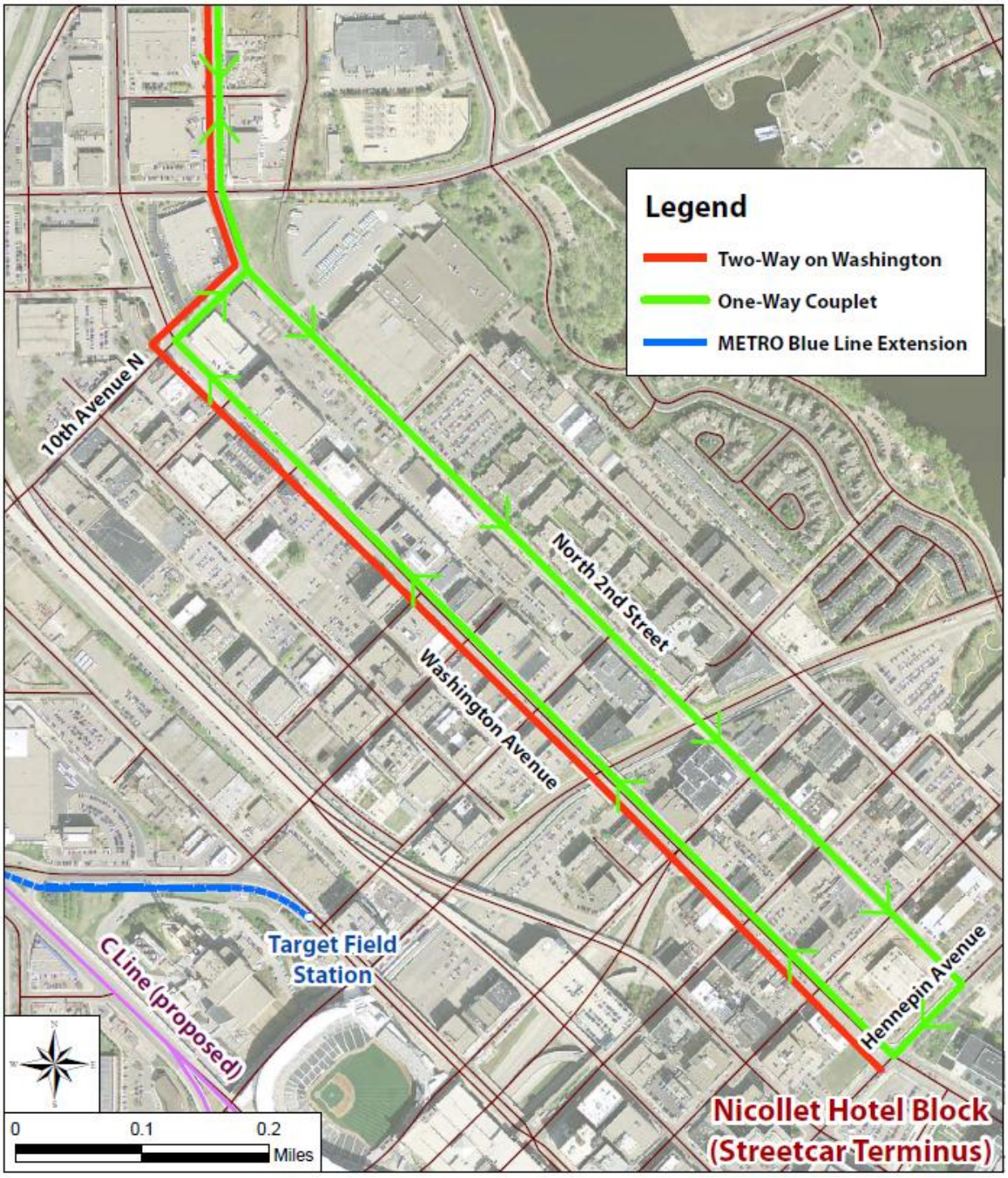

Figure 1: North Loop Alternatives

3. Key Evaluation Metrics

The "Two-way Option" and the "Couplet Option" were evaluated and compared in order to determine their associated advantages and disadvantages. Both options were analyzed using various performance metrics, which are listed below:

- Capital Cost
- Accessibility and Connectivity
- Corridor Land Use
- Economic Development Potential
- Traffic Impacts

Both options are described in the context of each metric to allow for an "apples-to-apples" direct comparison.

Capital Cost

The Two-way Option on Washington Avenue would allow construction to be consolidated to a single street, rather than requiring construction on two streets. This consolidation has inherent cost savings. Traffic control and construction staging can be implemented more efficiently for both BRT and streetcar alternatives. The streetcar alternative would require the complete reconstruction of the roadway to allow for utility relocations and construction of necessary streetcar systems.

Utility relocations are a major cost category for implementation of streetcar. Utility relocation costs were calculated on a per track foot allowance, and were found to be higher for the couplet due to the narrower right-of-way on N 2nd Street and the inherent additional costs to execute utility work on two corridors. Washington Avenue was found to be sufficiently wide to accommodate utility relocations within the existing right-of-way for the Two-way Option.

A major capital cost differentiator between the two streetcar alignment alternatives is the required modification to existing bridges. The Two-way Option requires bridge reinforcement or modifications on Washington Avenue over the BNSF freight rail tracks. The Couplet Option requires modifications on both bridges on Washington Avenue and N 2nd Street over the BNSF freight rail tracks. Staging and mobilization, traffic control, required materials, and other construction costs make the Couplet Option more expensive for bridge modifications than the Two-way Option.

Since Washington Avenue is the historic streetcar route through the North Loop, there were added cost allowances to remove old streetcar tracks. The BRT alternative included cost allowances to remove old tracks at station locations.

The Couplet Option with streetcar operating in a clockwise fashion requires a crossover track configuration near the 10th Avenue and 2nd Street intersection. This special track-work has an additional capital cost and requires additional maintenance.

Since eastbound track interlines one block to the north of the Nicollet Hotel Block, the alignment length for the Couplet Option is slightly shorter than the Two-way Option. However, it was found that the

Couplet Option has higher capital costs due to its added utility relocation allowances, roadway reconstruction costs, bridge modification costs, and communication allowances. A summary of the infrastructure costs for two streetcar options through the North Loop is shown in Table 1.

Table 1: Capital Costs for North Loop Alternatives

Two-Way Option	One-way Couplet Option	Cost Difference
$29,518,800	$31,348,400	$1,829,600

Accessibility & Connectivity

The street grid within the North Loop is not fully completed, and lacks several connections between Washington Avenue and N 2nd Street. Currently, there is no public street connection between 5th Avenue and 10th Avenue, a span of approximately two-fifths of a mile. A public walkway connects Washington Avenue and N 2nd Street underneath the 700 N Washington building and near the Soltva apartment building, but is presently poorly marked.

The Two-way Option would avoid the connectivity issues that exist in the Couplet Option by placing all transit improvements on Washington Avenue in the North Loop. However, due to these broken connections, the Two-way Option may limit access to the residential areas north of N 2nd Street. Washington Avenue has more frequent street connections to the west, which provides for better pedestrian accessibility.

The Couplet Option would allow downtown-bound transit riders from the multi-family residential developments on N 2nd Street to more easily access the transit service. However, the broken street connections in the North Loop make the westbound transit connections to the N 2nd Street neighborhoods more difficult. For the Couplet Option to be successful, additional pedestrian connections between Washington Avenue and N 2nd Street would need to be constructed through already developed parcels.

Two-way transit service has been proven to be more user-friendly and intuitive to new or infrequent riders compared to a one-way couplet. A couplet could potentially have a negative impact on ridership numbers in the North Loop.

A map showing the lack of connectivity between Washington Avenue and N 2nd Street in the North Loop is shown in Figure 2 below.

Figure 2: North Loop Pedestrian Connectivity

Corridor Land Use

The center of activity and neighborhood center of gravity is located just to the south of Washington Avenue. While residential uses have increased in the past five years, Washington Avenue has also seen a large increase in retail, office, and restaurant tenants in the ground levels of new and refurbished buildings. Washington Avenue at 5th Avenue North is also three blocks away from Target Field and the newly-constructed Target Field Station. With the advent of the nearby ballpark and the increased retail presence, Washington Avenue has established itself as the North Loop's main entertainment corridor.

Transit improvements along Washington Avenue in the Two-Way Option would help enhance the multi-use activity along the corridor. North Loop residents, downtown transit commuters, and out-of-area patrons would be able to utilize the two-way transit on Washington to access the destination points in the nearby vicinity.

Meanwhile, N 2nd Street lacks the retail components and entertainment destinations found on Washington Avenue, but instead contains dense residential uses. Focusing transit on Washington would miss key residential points along the N 2nd Street corridor. Concentrating transit investment on Washington would invigorate a continually diversifying area, and solidify Washington Avenue as the

main entertainment hub of the North Loop, while allowing N 2nd Street to maintain its medium density neighborhood character. Direct access to the entertainment center of the North Loop on Washington Avenue could potentially draw increased ridership from downtown.

Economic Development Potential

The North Loop neighborhood has grown in population significantly since the 1990's, and has seen a surge of development recently. The majority of development has been concentrated on surface parking lots and refurbishing old industrial warehouses into residential and commercial spaces. Many developable and underutilized parcels still exist in the North Loop, with the majority located south and west of Washington Avenue.

One of the benefits of transit operating on a one-way couplet is the potential to spur redevelopment over a larger total area. However, the majority of land along N 2nd Street has been recently redeveloped and now consists of various residential and commercial uses. Several key parcels on N 2nd Street ripe for redevelopment include land near the Star Tribune distribution facility at the intersection of 2nd Street and 8th Avenue North, and surface lots near 1st and 2nd Avenues. Zoning regulations limit the redevelopment density in the historic districts on the east side of the North Loop. Therefore, the benefit of increased redevelopment area is reduced for the one-way couplet on N 2nd Street.

Most of the parcels ripe for redevelopment in the North Loop are on Washington Avenue or to the southwest. The Two-way Option on Washington Avenue is closer to the center of the area of highest potential redevelopment in the North Loop, providing a better amenity and increased benefit for a transit investment than N 2nd Street.

A map showing the surface lots in the North Loop that could potentially be redeveloped is shown in Figure 3 below.

Figure 3: North Loop Surface Lots

Traffic Impacts

Hennepin County is restriping Washington Avenue through the North Loop in August 2015, and will be adding paint-protected bike lanes between 5th Avenue and Plymouth Avenue. Vehicular lanes will be reduced from four (two in each direction) to three (one in each direction with a center turn lane), and will maintain curbside on-street parking. Buses currently are and will be able to move across the bike lane and parking lane to access curbside bus stops.

Two-way transit service on Washington will bring the advent of bumpout transit stops, whether it be streetcar or arterial BRT. Transit vehicles will stop briefly in the only thru lane at the station to allow passengers to board, while improving travel time and reducing delay caused by exiting and re-entering the travel lane. Dwell times at stations are greatly reduced over local bus service with the use of off-board fare collection, near level boarding platforms, and passenger boarding operations occurring at all doors. With the implementation of improved transit service on Washington Avenue, bike lanes and on-street parking could be exchanged to provide parking-protected bike lanes, while more easily facilitating separated bike lanes passing behind floating transit stops.

N 2nd Street is a corridor maintained by the City of Minneapolis. There is currently one vehicular lane, one bike lane, and one parking lane in each direction. Local transit service does not currently exist on 2nd Street between Hennepin Avenue and 8th Avenue North; the route 7 bus contains N 2nd Street stops at 8th and 10th Avenues.

Bumpout transit stops on both Washington and N 2nd Street will have increased impacts to traffic due to the fact that transit vehicles are stopping in the only thru lane. Two-way transit on Washington Avenue will have a higher impact to traffic than the one-way couplet option due to the higher traffic volumes on Washington Avenue. The smaller right-of-way on N 2nd Street (compared to Washington) also poses constraints for the existing bike lane, which may need to operate in a mixing zone at transit stops.

4. Summary

The table below summarizes the key differences of the two alignment options for each of the key evaluation metrics discussed above.

Screening Criteria	Two-Way on Washington	One-Way Couplet
Capital Cost	Cost savings due to efficiency of construction.	Higher costs for bridge modifications. Potential reduced cost for utility relocations.
Accessibility & Connectivity	Better connectivity to center of North Loop development west of Washington Avenue.	Requires additional connections through developed parcels between Washington Avenue and N 2nd Street.
Corridor Land Use	Higher amenity for entertainment district on Washington Avenue.	Closer connection to multi-family residential developments on N 2nd Street.
Economic Development Potential	Improved access to center of redevelopment areas on or west of Washington Avenue. Higher density development potential.	N 2nd Street has limited parcels available for redevelopment, with restrictions on density.
Traffic Impacts	Higher traffic impacts due to higher traffic volumes.	Limited roadway width could present challenges for on-street bike lanes with transit stops.