

Streetcar OMF Evaluation

Nicollet-Central Transit Alternatives

March 2014



Prepared for:

City of Minneapolis

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Introduction

The proposed Nicollet-Central streetcar line will need to include a support facility to accommodate operations and vehicle storage and maintenance. The basic requirements for this facility must be reflected in the assessment of project impacts, including capital costs, right-of-way acquisitions, and environmental/land use considerations. This technical memorandum summarizes a preliminary assessment of the Nicollet-Central streetcar operations and maintenance facility (OMF) requirements and an initial investigation of potential OMF sites.

OMF Assumptions and Requirements

Key assumptions and requirements for the Nicollet-Central streetcar OMF include the following:

- The OMF will provide operations, storage and maintenance capacity for the 10-12 streetcar vehicles required for the LPA initial segment (Lake Street to 5th Street NE).
- The facility and site will be configured for future expansion to support the full Nicollet-Central streetcar line, which is assumed to require a fleet of 20 streetcar vehicles.
- The system will utilize a typical 66-foot long low-floor modern streetcar vehicle.
- The main OMF building will include accommodations for the following functions: vehicle cleaning, inspection and sanding; vehicle washing; routine minor mechanical and electrical repair/replacement of vehicle equipment; storage and handling of vehicle spare parts and assemblies; vehicle lifts; overhead bridge crane; truck loading dock; shop traction power system; operations management, supervision and dispatching; employee break room; and employee locker rooms.
- Major vehicle repair functions will be performed off-site at the existing Metro Transit Hiawatha LRT Operations & Maintenance Facility, including repair and overhaul of bogies (e.g., traction motors, gearboxes); wheel truing; and carbody repair and painting.
- In addition to the main OMF building, the OMF site will need to include areas for yard trackwork; an enclosed and heated vehicle storage barn; a traction power substation; employee parking; wayside equipment storage; and stormwater management.

Based upon these requirements, a prototype Nicollet-Central streetcar OMF has been identified. The prototype OMF is shown in Appendix A, and has the following characteristics:

- The main OMF building is approximately 175 feet long and 100 feet wide, with 17,500 square feet on the ground floor and an additional 4,000 square feet on an elevated mezzanine level for repair and storage of rooftop vehicle equipment.
- The main OMF building includes an indoor service and wash track for daily inspection, cleaning and sanding (one car position) and exterior washing (one car position) of the in-service vehicles. If possible, the service and wash track should have double-ended drive-through access for greater operational efficiency.
- The main OMF building includes two indoor shop tracks (four car positions) for out-of-service vehicles undergoing running repair and heavy repair. The shop tracks will provide a combination of in-floor pits for undercar work, overhead mezzanines for access to roof-mounted equipment, and equipment for lifting vehicles and replacing bogies.
- Streetcar vehicle storage will be provided by a combination of the main OMF building and an enclosed car barn. The main OMF building will hold up to four vehicles without disrupting the daily service and wash track. The remainder will be parked in a separate car barn sized for eight vehicles, based on a total initial

Nicollet – Central Transit Alternatives

fleet of 10-12 vehicles. The car barn configuration will permit future expansion for storage of eight additional vehicles, based upon the 20-vehicle fleet required for the full Nicollet-Central streetcar line.

Preliminary Site Screening

One of the initial objectives of this investigation was to identify sites within the corridor that are potential candidate locations for the Nicollet-Central streetcar OMF. Based upon the assumed requirements and characteristics of the prototype facility, the initial guidelines for identification of preliminary candidate sites included the following:

- Candidate sites should be adjacent to (within ½ mile) the proposed Nicollet-Central streetcar alignment, and preferably within the limits of the LPA initial streetcar segment (from Lake Street to 5th Street NE).
- To accommodate the initial fleet of 10-12 vehicles, the prototype OMF configuration would require a rectangular site of approximately 3.0 acres, with 600' minimum length and 220' minimum width.
- To accommodate an ultimate fleet of 20 vehicles, the prototype OMF configuration would require a rectangular site of approximately 3.6 acres, with 600' minimum length and 260' minimum width.
- A streetcar OMF has land use characteristics that typically would be described as light industrial. Candidate sites should have compatible zoning and adjacent land uses.
- Vacant, underutilized or publicly owned parcels should be considered due to potentially lower acquisition and/or site preparation costs.

The identification of and preliminary screening of potential Nicollet-Central Streetcar OMF sites was completed using a combination of the following information and resources:

- GIS analysis of large (2.5+ acre) industrial zoned parcels within ½ mile of the proposed streetcar route.
- Aerial map survey of large (2.0+ acre) vacant or underutilized properties within ½ mile of the proposed route.
- Findings from the previous streetcar OMF site assessment completed during the 2008 *Minneapolis Streetcar Feasibility Study*.
- Feedback and suggested refinements noted during a series of preliminary OMF site review sessions with staff from Minneapolis Public Works and Minneapolis Community Planning and Economic Development.

The preliminary screening effort resulted in a total of 12 potential OMF sites that appeared generally consistent with the initial guidelines and were recommended for additional evaluation. These 12 preliminary OMF sites are identified on the maps in Appendix B and described below:

NC-01: Fillmore Street Site

The Fillmore Street site is located at 1600 Fillmore St NE, approximately two blocks south of 18th Ave NE. The location is 0.1 miles from the proposed mainline streetcar tracks on Central Avenue, but is approximately 1.3 miles from the LPA initial streetcar segment. This potential OMF site is approximately 4.5 acres and requires full or partial acquisition of three privately owned parcels. The property currently serves multiple uses, including Dunbar armored vehicle service fronting on Fillmore Street, a small renovated industrial building fronting on Polk Street, and surface parking for 1515 Central, a multi-tenant renovated industrial building fronting on Central Avenue. The site is zoned industrial (I1/I2), and is bounded by single family residential properties to the north, parkland to the east and south, and commercial/industrial properties to the west.

NC-02: Harrison Street Site

The Harrison Street site is located at 347 Harrison St NE, approximately two blocks north of Hennepin Avenue. The location is 0.3 miles from the proposed mainline streetcar tracks along Central Avenue, and approximately 0.5 miles from the LPA initial streetcar segment. This potential OMF site is approximately 5.3 acres and requires full or partial acquisition of seven privately owned parcels. The property currently is occupied by a CenturyLink utility service facility, semi trailer storage, and surface parking areas. The property also is used for truck access to the rear loading docks of adjacent warehouse buildings. The site is zoned industrial (I1), and is bounded by railroad tracks to the north and east, and industrial buildings to the south and west.

NC-03: Northrup King Site

The Northrup King site is located at 1500 Jackson St NE, adjacent to the Northrup King Building. The location is 0.2 miles from the proposed mainline streetcar tracks along Central Avenue, but is approximately 1.2 miles from the LPA initial streetcar segment. This irregular shaped potential OMF site is approximately 4.7 acres and requires partial acquisition of a single privately owned parcel. The property currently is occupied by three warehouse buildings. The site is zoned industrial (I2), and the adjacent Northrup King Building is a former industrial facility that is now occupied by numerous art studios, galleries and other similar tenants. Besides the Northrup King Building to the east, the site is bounded by railroad tracks.

NC-04: 14th Avenue Site

The 14th Avenue site is located at 854 14th Ave NE, approximately three blocks north of Broadway. The location is directly adjacent to the proposed mainline streetcar tracks along Central Avenue, but is approximately 1.0 miles from the LPA initial streetcar segment. This potential OMF site is approximately 4.1 acres and requires full acquisition of 11 privately owned parcels. The west half of the property is occupied by a trucking business, and contains four warehouse buildings and open storage for semi trailers. The east half of the site is occupied by single and multi-family residential buildings and the Ideal Diner restaurant. The site is zoned industrial (I1/I2), and is bounded by commercial properties to the north and east, a municipal ice arena to the south, and railroad tracks to the west.

NC-05: Federal Reserve Site

The Federal Reserve site is located at 24 2nd Ave N, one block north of Washington Avenue. The location is 0.2 miles from the proposed mainline streetcar tracks along Hennepin Avenue, and is within the limits of the LPA initial streetcar segment. This irregular shaped potential OMF site would occupy approximately 2.2 acres of a larger parcel owned by HCRRA. The available property at this location currently is used for surface parking; the remainder of the HCRRA parcel has been devoted to other existing uses, including a segment of the Cedar Lake Trail and an entrance for the adjacent Federal Reserve Bank facility. The site is zoned commercial (C3A), and is bounded by the Cedar Lake Trail and railroad tracks to the north and west, the Federal Reserve Bank to the east, and a combination of commercial and residential condominium properties to the south.

NC-06: 4th Street Viaduct Site

The 4th Street Viaduct site is located at 400 6th Ave N, approximately three blocks south of Washington Avenue. The location is 0.7 miles from the proposed mainline streetcar tracks along Hennepin Avenue, and is within the limits of the LPA initial streetcar segment. This potential OMF site lies beneath and adjacent to the 4th Street viaduct, a long elevated highway structure connecting the Minneapolis CBD to I-94 North. An OMF facility at this location would occupy approximately 5.5 acres of existing MnDOT and city right-of-way, extending from 5th Ave N to approximately 8th Ave N. The property currently is leased for use as surface parking. The site is zoned as

Nicollet – Central Transit Alternatives

Downtown Service District (B4S-1), and is bounded by North Loop residential condominium properties to the north, the Ford Center to the east, and industrial properties to the south and west.

During the preliminary screening phase it was noted that there is ongoing mixed use redevelopment activity on several former industrial properties in the vicinity of the 4th Street Viaduct OMF site. In addition to these broad redevelopment initiatives, the North Loop Small Area Plan describes a potential long-term vision that would eliminate the elevated viaduct structure and restore the at-grade street grid through this area. That future scenario would significantly reduce the advantages of this location as an OMF site.

NC-07: Superior Plating Site

The Superior Plating site is located at 315 1st Ave NE, between University Avenue and 5th St NE. The location is directly adjacent to the proposed mainline streetcar track along 1st Ave NE, and is within the limits of the LPA initial streetcar segment. This potential OMF site is approximately 5.7 acres and requires acquisition of nine privately owned parcels. The property is occupied by the former Superior Plating industrial facility, surface parking, and an auto repair business. The site is zoned commercial (C2), and is bounded by railroad tracks to the north, commercial properties to the east and south, and a residential condominium development to the west.

During the preliminary screening phase it was noted that there is significant interest in a large-scale private sector commercial or mixed use redevelopment project on the Superior Plating site, and that the current owner is seeking a permit for demolition of the vacant Superior Plating facility. There also is an ongoing environmental remediation effort on this site to address existing groundwater and soil contamination.

NC-08: I-35W Site

The I-35W site is located at 351 Buchanan St NE, approximately two blocks north of Hennepin Avenue. The location is 0.7 miles from the proposed mainline streetcar tracks along Central Avenue, and approximately 0.9 miles from the LPA initial streetcar segment. This irregular shaped potential OMF site is approximately 4.5 acres and lies within MnDOT right-of-way that was acquired during construction of I-35W. The property currently is vacant. The site is zoned residential (R1A/R5), and is bounded by I-35W to the east and single family residential properties to the south, west and north.

NC-09: School Bus Site

The School Bus site is located at 936 Hennepin Ave E, approximately three blocks west of I-35W. The location is 0.6 miles from the proposed mainline streetcar tracks along Central Avenue, and is approximately 0.8 miles from the LPA initial streetcar segment. This potential OMF site is approximately 4.5 acres and requires acquisition of three privately owned parcels. The property is occupied by surface parking and three industrial/warehouse buildings used for a school bus storage and maintenance facility, along with a separate small commercial building fronting on Hennepin Avenue. The site is zoned industrial (I2), and is bounded by a mix of commercial and residential properties to the north, a commercial development to the east and south, and railroad tracks to the west.

NC-10: K-Mart Site

The K-Mart site is located at 2901 Nicollet Avenue, between Lake Street and the Midtown Greenway. The location is directly adjacent to the proposed mainline streetcar tracks along Nicollet Avenue, and is within the limits of the LPA initial streetcar segment. This potential OMF site is approximately 3.5 acres and requires partial acquisition of a single privately owned parcel. The property is occupied by a K-Mart retail store and associated surface parking. The site is zoned commercial (C3S), and is bounded by the Midtown Greenway to the north, the Nico Products industrial facility to the east, commercial properties to the south, and a residential development to the west.

During the preliminary screening phase it was noted that there is an ongoing initiative to reconnect Nicollet Avenue between 29th Street and Lake Street. Restoration of this roadway segment will require demolition of the existing K-Mart store, but it also will result in two full blocks of vacant land for redevelopment. The proposed OMF site is located on the block east of the restored Nicollet Avenue. The east side of the K-Mart site is preferred for the OMF because the adjacent land uses are assumed to be more compatible (i.e., industrial vs. residential).

NC-11: Nicollet Garage Site

The Nicollet Garage site is located at 10 West 32nd St, between Blaisdell Avenue and Nicollet Avenue. The location is directly adjacent to the proposed mainline streetcar tracks along Nicollet Avenue, and is approximately 0.1 miles from the LPA initial streetcar segment. This potential OMF site is approximately 5.2 acres and is owned by Metro Transit. The property currently is occupied by the Nicollet Garage, a Metro Transit bus operations base and service facility. The site is zoned commercial (C2), and is bounded by a commercial property to the north, a mix of commercial and residential properties to the east and south, and a large multi-family residential development to the west.

During the preliminary screening phase it was noted that a streetcar OMF would likely displace most or all of the existing bus functions at the Nicollet Garage. Metro Transit has suggested that their remaining bus facilities would not have sufficient capacity to accommodate those displaced buses, and replacement of the lost bus storage and maintenance capacity at a different site would be a significant concern.

NC-12: Heywood II Site

The Heywood II site is located at 550 10th Ave N, approximately four blocks south of Washington Avenue. The location is 1.1 miles from the proposed mainline streetcar tracks along Hennepin Avenue, and is within the limits of the LPA initial streetcar segment. This potential OMF site is approximately 8.2 acres and is owned by Metro Transit. This property is generally vacant, although it was acquired for construction of the proposed Metro Transit Heywood II bus facility expansion. The site is zoned industrial (I2), and is bounded by commercial and industrial properties on all sides.

During the preliminary screening phase Metro Transit indicated that ongoing planning for the Heywood II bus facility has not included provisions for a streetcar OMF on the site, and that the property already acquired for the Heywood II project will be fully utilized.

Evaluation of Potential Sites

The preliminary screening process identified 12 potential sites for a Nicollet-Central Streetcar OMF. That initial screening effort was focused almost entirely upon on a limited set of screening parameters (parcel size, distance from alignment, zoning, existing land use), along with some subjective refinement based upon existing development and feedback from City staff.

The next step in this OMF investigation was to conduct a more detailed evaluation of the 12 preliminary sites using an expanded set of evaluation criteria. The goal of this secondary screening process was to support a recommendation for a limited number of candidate sites that might be carried forward into subsequent phases of the project.

There are many possible criteria that could have been considered for this secondary screening effort. To be most effective, the selection and application of the evaluation criteria was conducted as a collaborative exercise with City of Minneapolis (Public Works and CPED) and Metro Transit staff. For the Nicollet-Central Streetcar OMF, the selected evaluation measures included the following:

Nicollet – Central Transit Alternatives

- Property Acquisition Considerations
- Land Use Compatibility and Impacts
- Potential Environmental and Historic Considerations
- Mainline Streetcar Track Connection
- Site Characteristics and Constraints

This secondary screening process was primarily a qualitative exercise, due to the nature of the evaluation measures. Each measure was defined to encompass a broad range of potentially relevant factors. This “pros and cons” approach provided a better opportunity to identify and consider any known advantages or challenges that may be unique to a given site.

Property Acquisition Considerations

This evaluation measure was a preliminary assessment of property acquisition issues for each site. The potential considerations included relative capital cost impacts, existing ownership status, impacts to existing property users, and the “opportunity cost” of any future use of the site for other purposes.

Land Use Compatibility and Impacts

This evaluation measure was a high-level review of the proposed facility’s compatibility with existing and planned land use characteristics of the site and adjacent properties; consistency with zoning designations, overlay districts and other related City policies; and implications for ongoing redevelopment initiatives. It also considered the likelihood of significant mitigation requirements for impacts to surrounding land uses or environmental resources, and potential opportunities for mixed use development at some locations.

Potential Environmental and Historic Considerations

This evaluation measure was a high-level assessment of significant environmental factors and mitigation requirements that could be anticipated at each site. Potential environmental considerations included proximity to known sources of soil or groundwater contamination, wetland and floodplain delineations, stormwater management. Known cultural, historic or archeological resources were identified for each site.

Mainline Streetcar Track Connection

This evaluation measure was a qualitative examination of the required track connection between the OMF site and the mainline revenue streetcar tracks. The analysis considered the mainline track connection distance and route, and any unique or significant conditions that might affect its feasibility or cost. It also considered the potential OMF site location in relation to the LPA initial streetcar segment between Lake Street and 5th St NE. The distance of non-revenue track required for the OMF connection should be minimized because it can be just as costly to build, operate and maintain as mainline revenue track, but it doesn’t provide any corresponding benefit.

Site Characteristics and Constraints

This evaluation measure addressed various physical characteristics of each site and how they might impact the design, construction and operation of the initial (10-12 vehicle) and expanded (20 vehicle) streetcar OMF. Key characteristics included the size and shape of the property, existing terrain/grades on and around the site, and the locations and elevations of existing buildings or other structures. It also considered potential opportunities for additional future expansion of the streetcar OMF beyond the 20-vehicle capacity required for the full Nicollet-

Central route. Although a larger facility is not being evaluated in this Nicollet-Central study, the potential ability to serve multiple streetcar lines with a single OMF could be beneficial in the future.

Recommended Candidate Sites

The findings of the OMF site evaluation are summarized in Appendix C. Based upon these results, three of the preliminary OMF sites are being recommended as candidates for additional analysis during subsequent phases of work on a Nicollet-Central Streetcar line:

NC-02: Harrison Street Site

The Harrison Street OMF site is recommended as a candidate for additional consideration. One important advantage of this site is that an OMF would be consistent with the current industrial zoning designation (I1/I2), and it would be compatible with the surrounding industrial land uses. In addition, the Harrison Street OMF site has a relatively short mainline track connection. The site is located only 0.5 miles beyond the end of the LPA initial streetcar segment at 5th Street NE. The analysis also shows that the 5.3-acre area identified for the Harrison Street site is large enough to accommodate the initial (10-12 vehicle) and expanded (20 vehicle) Nicollet-Central streetcar fleet. (Note that if even greater OMF capacity is desired to support multiple streetcar lines in the future, this site could be enlarged onto several abutting industrial properties. Extending the Harrison Street OMF site south to Hennepin Avenue could provide a total contiguous area of up to 13.6 acres.)

Some remaining concerns about the viability of the Harrison Street OMF site will require additional investigation during the next phase of work. Those unresolved issues include:

- The 0.5-mile mainline track connection along Harrison Street and Hennepin Avenue requires additional engineering analysis of potential impacts to roadway geometrics, traffic operations and available right-of-way.
- A streetcar OMF at the Harrison Street site would displace an existing CenturyLink utility vehicle base, and would eliminate an existing truck access route to the loading docks of the adjacent warehouse buildings. The potential costs and other impacts of these displacements have not been studied. It appears that the proposed OMF site and nearly all of the property in the immediate area is owned by a single entity (11.8 of 13.6 acres), and it's possible that the owner would insist on a full buyout rather than compensation for the loss of loading dock access. As noted above, an OMF site that large could support multiple interconnected streetcar lines, but the additional property acquisition costs would be far greater than necessary for the initial or expanded Nicollet-Central line.

NC-04: 14th Avenue Site

The 14th Avenue OMF site is recommended as a candidate for additional consideration. One of the primary advantages of this site is that an OMF would be compatible with the current industrial zoning designation (I1/I2) and the surrounding land uses. It has been noted that an OMF on the 14th Avenue site would displace several existing residential, commercial and industrial properties that are not consistent with the current land use plan for this area. The 14th Avenue site also has the advantage of being located directly adjacent to the proposed mainline streetcar tracks along Central Avenue. The analysis indicates that the 4.1-acre size of the 14th Avenue OMF site seems to be adequate for both the initial (10-12 vehicle) and expanded (20 vehicle) Nicollet-Central streetcar fleet. (Note that additional future expansion of this OMF site to support multiple streetcar lines would be unlikely. The site is bounded by streets and railroad tracks on three sides, and expansion to the south would require removal of the municipal ice arena.)

Nicollet – Central Transit Alternatives

There are some unique concerns about the proposed 14th Avenue OMF site that will require more detailed investigation during the next phase of work. Those issues include:

- Use of the 14th Avenue OMF site would require acquisition and assembly of many individual parcels from numerous owners, and displacement of several active residential, commercial and industrial land uses. Although the resulting redevelopment would be more consistent with current land use plans for the site, the property acquisition process and potential risks to the project need to be thoroughly considered.
- Current City policy calls for mixed use development at the location of the 14th Avenue site. Planning for this OMF location will need to explore opportunities to support that objective, particularly in the area of the site that fronts on Central Avenue. This might be accomplished through a joint development initiative, or by an OMF site configuration that preserves the desired space for future development by others.
- Although it is directly adjacent to the future mainline streetcar tracks along Central Avenue, the 14th Avenue OMF site is located about one mile beyond the end of the LPA initial streetcar segment at 5th St NE. Considering that the LPA initial segment from Lake Street is only 3.5 miles long, the costs and impacts of constructing and operating an additional mile of non-revenue track along Central Avenue would most likely outweigh any benefits of the site itself. It appears that the 14th Avenue OMF site would be more compatible with an initial operating segment that terminates at 14th Ave NE, or perhaps Broadway.

NC-07: Superior Plating Site

The Superior Plating OMF site is recommended as a candidate for additional consideration. The primary advantage of the Superior Plating site is that the location is directly adjacent to the proposed mainline streetcar tracks, and lies within the limits of the LPA initial streetcar segment. Another important feature is the size and shape of the Superior Plating site. The full site is approximately 5.7 acres, which is more than adequate to accommodate the initial (10-12 vehicle) and expanded (20 vehicle) Nicollet-Central streetcar fleet.

Because of its large size and prime location, the Superior Plating OMF site offers a potentially viable and effective opportunity for a large-scale mixed use or shared use redevelopment project. For example, the streetcar OMF could be configured to act as a buffer along the existing railroad corridor, and the remainder of the site could be reserved for private development fronting on 1st Ave NE. Another potential shared use approach might be to permit construction of private development over the top of a ground-level OMF. (Note that the opportunity for future expansion of this site to support multiple streetcar lines would not exist, unless the additional space is set aside during the initial site planning process.)

There are some important remaining questions about the viability of the Superior Plating OMF site that will require additional investigation during the next phase of work. Those potential concerns include:

- The Superior Plating site currently has a commercial (C2) zoning designation. Additional consultation with City of Minneapolis CPED staff is recommended to assess the probability that a streetcar OMF would be allowed at this location.
- The Superior Plating site is regarded as a highly valued property that has significant potential for private sector mixed use redevelopment. Although it may be feasible to effectively integrate a streetcar OMF with other development objectives on this site, a private owner/developer is unlikely to see any benefit. A more likely scenario would be to acquire the entire 5.7 acre site, delineate the OMF requirements, and then pursue some type of private development initiative for the remainder. Before continuing with additional analysis of the Superior Plating site as a candidate site for the Nicollet-Central streetcar OMF, it may be important to consider the potentially significant cost and complexity of acquiring this privately-owned property and implementing a large-scale mixed use redevelopment project.

- Continue to investigate the environmental issues on the Superior Plating site, which is known to have significant soil and groundwater contamination that will require some level of remediation. The current owner has initiated a clean-up effort on the site, but the scope of that work has not been confirmed. Note that different pollutant remediation targets may apply, depending on the proposed use of the property.

Candidate Sites Not Recommended

The remaining nine preliminary OMF sites are not being recommended for additional analysis and consideration at this time, based on the findings of this investigation. The preliminary OMF sites not recommended include:

NC-01: Fillmore Street Site

One of the primary disadvantages of the Fillmore Street OMF site is that there is no unobstructed route for the mainline track connection from Central Avenue. The most viable mainline track connection would require acquisition of additional right-of-way or easements from adjacent single-family residential properties. Additional concerns about the Fillmore Street site include the potential cost of private property acquisition, displacement of existing businesses, and potential impacts to the surrounding parkland and residential properties.

NC-03: Northrup King Site

The primary concern with the Northrup King OMF site is the potential impact to cultural resources. This site lies within the boundaries of the former Northrup King & Company complex. Cultural resources research for this study has indicated that the entire Northrup King complex was previously deemed eligible for listing on the National Register of Historic Places. Other concerns noted about the Northrup King site include the potential cost of private property acquisition; displacement of existing businesses; the need for additional right-of-way for the mainline track connection; and the irregular shape of the parcel, which would limit the functionality of the site for an OMF.

NC-05: Federal Reserve Site

The most significant disadvantage of the Federal Reserve OMF site is its small size and irregular shape. The available area is only 2.2 acres, which is far less than the requirements identified for the prototype Nicollet-Central streetcar OMF (3.0 acres for the initial fleet and 3.6 acres for the expanded fleet). Additional disadvantages of this site include potential incompatibility with zoning and adjacent residential land uses, a location that falls within two districts listed on the National Register of Historic Places, and a potentially significant elevation difference compared to the mainline tracks on Hennepin Avenue.

NC-06: 4th Street Viaduct Site

This analysis has concluded that the 4th Street Viaduct site is not a viable candidate for the Nicollet-Central streetcar OMF, primarily because of its unique site characteristics and constraints. There are other examples of smaller streetcar OMF sites located under freeway structures in other US cities, including Portland and Atlanta. Unlike those examples, the proposed 4th Street Viaduct site does not provide enough vertical clearance under the bridge to fit the required vehicle maintenance and storage buildings. The site does include a relatively narrow strip of right-of-way that is not beneath the viaduct, but some of that area is used for an alley and other portions are unusable because of steep terrain.

Additional concerns about the proposed 4th Street Viaduct OMF site include potential incompatibility with land use plans and the long-term redevelopment vision for the surrounding area, and the relatively long distance (0.7 miles) for connection to the mainline tracks along Hennepin Avenue.

Nicollet – Central Transit Alternatives

NC-08: I-35W Site

One of the key issues with the I-35W OMF site is the need to construct mainline connection tracks under the existing BNSF/Hennepin Ave bridge. Requirements for OCS vertical clearances under this bridge would force the restriction of Hennepin Avenue roadway traffic down to a single lane in each direction. Other significant disadvantages of the I-35W OMF site include incompatibility with zoning and adjacent single family residential properties, a mainline track connection distance that is greater than 0.5 miles, and an irregular shape that would limit the functionality of the site for an OMF.

NC-09: School Bus Site

Like the I-35W site, a key issue with the School Bus OMF site is the need to construct mainline connection tracks under the existing BNSF/Hennepin Ave bridge. Requirements for OCS vertical clearances under this bridge would force the restriction of Hennepin Avenue roadway traffic down to a single lane in each direction. Other significant disadvantages about this site include the potential cost of private property acquisition, displacement of existing businesses, and a mainline track connection distance that is greater than 0.5 miles.

NC-10: K-Mart Site

The most significant disadvantage of the K-Mart OMF site is that it is not large enough to accommodate a viable shared use redevelopment. The assumed restoration of Nicollet Avenue will bisect the existing K-Mart property, leaving a 3.5-acre parcel as the proposed OMF site. Although that parcel size would most likely be adequate for the initial and expanded Nicollet-Central OMF, there almost certainly would not be excess land to set aside for shared use private development on the same block. One key goal for the mixed-use redevelopment of the K-Mart property has been creation of a ground-floor retail environment along the restored Nicollet Avenue. A streetcar OMF at this location would essentially preclude any other ground-floor development on this block.

NC-11: Nicollet Garage Site

The Nicollet Garage OMF site is not being recommended at this time because of the significant costs and impacts that would be associated with replacement/relocation of the existing bus operations and service functions. Metro Transit has indicated that the remaining Metro Transit bus facilities do not have available capacity to accommodate the loss of the Nicollet Garage. Additional concerns about this site include potential incompatibility with adjacent single family residential land uses, and potential costs related to demolition or renovation of the existing structure.

NC-12: Heywood II Site

One of the most significant concerns about the Heywood II OMF site is the 1.1-mile distance for connection to the mainline streetcar tracks along Hennepin Avenue, which is much greater than the preliminary site screening guideline of 0.5 miles. This length of non-revenue track would add to the costs and potential impacts associated with the Nicollet-Central line, with no corresponding benefit to revenue service.

The initial appeal of the Heywood II OMF site was that the property is already owned by Metro Transit, and the property acquisition savings would offset the costs of the longer non-revenue track connection. In addition, feedback from Metro Transit has confirmed a general desire to promote efficiency through consolidated maintenance and operations facilities. However, Metro Transit also has indicated that the property acquired for the planned Heywood II bus facility would not be sufficient to accommodate the addition of a streetcar OMF. The resulting need for additional property acquisition, combined with the excessive connection track length, has led to removal of the Heywood II site from further consideration for the Nicollet-Central OMF.

Although the Heywood II OMF site is no longer considered cost-effective in this analysis of an independent Nicollet-Central streetcar route, it has been noted that most of the required non-revenue connection track follows Washington Avenue between Hennepin Avenue and 10th Ave N. This segment of Washington Avenue is included as part of the Broadway streetcar route, which is being studied separately. The feasibility of a larger OMF at this location to support both streetcar routes should be examined as part of the Broadway streetcar OMF planning process.

Nicollet – Central Transit Alternatives

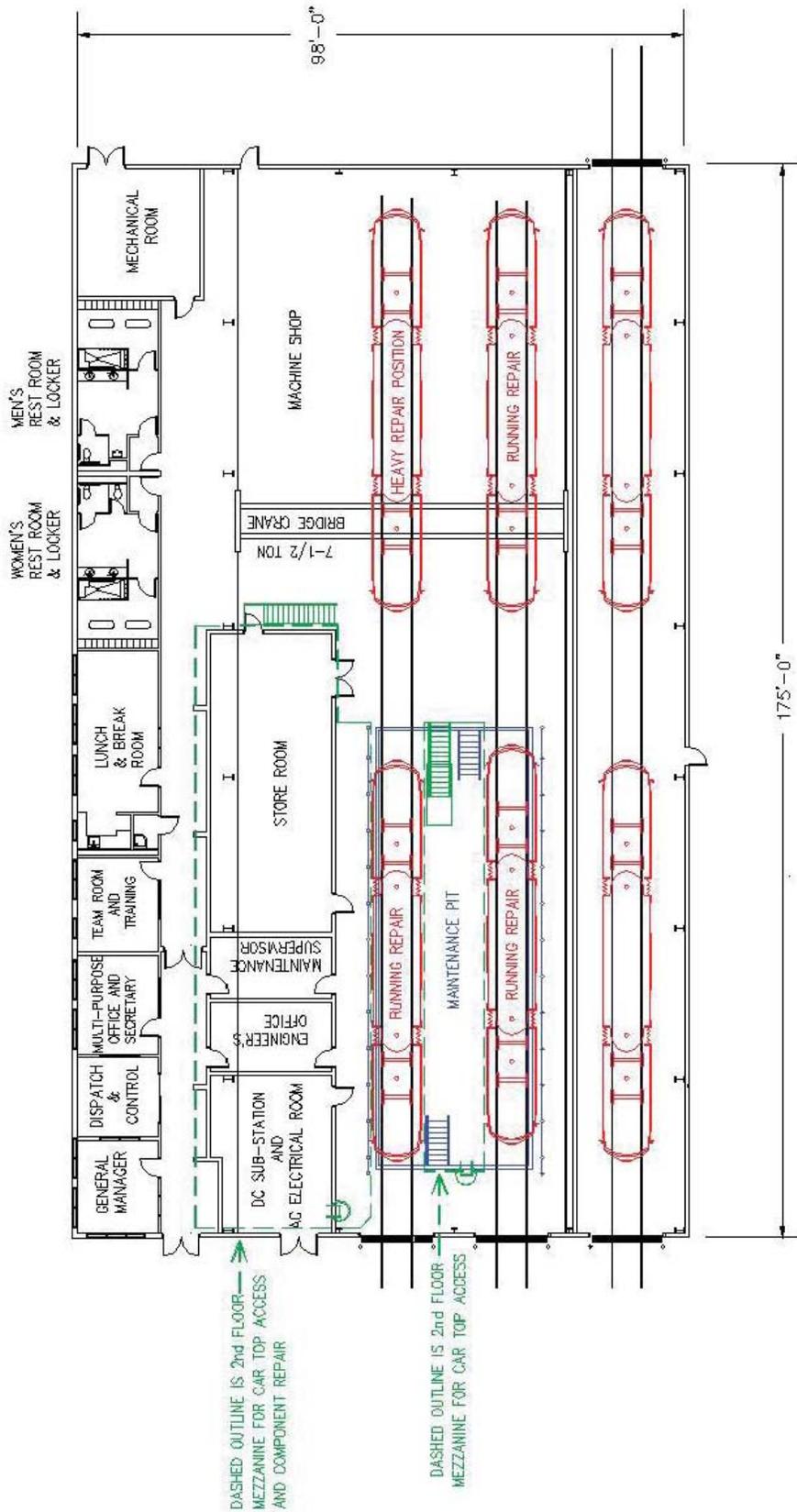


Appendix A: Prototype Streetcar OMF

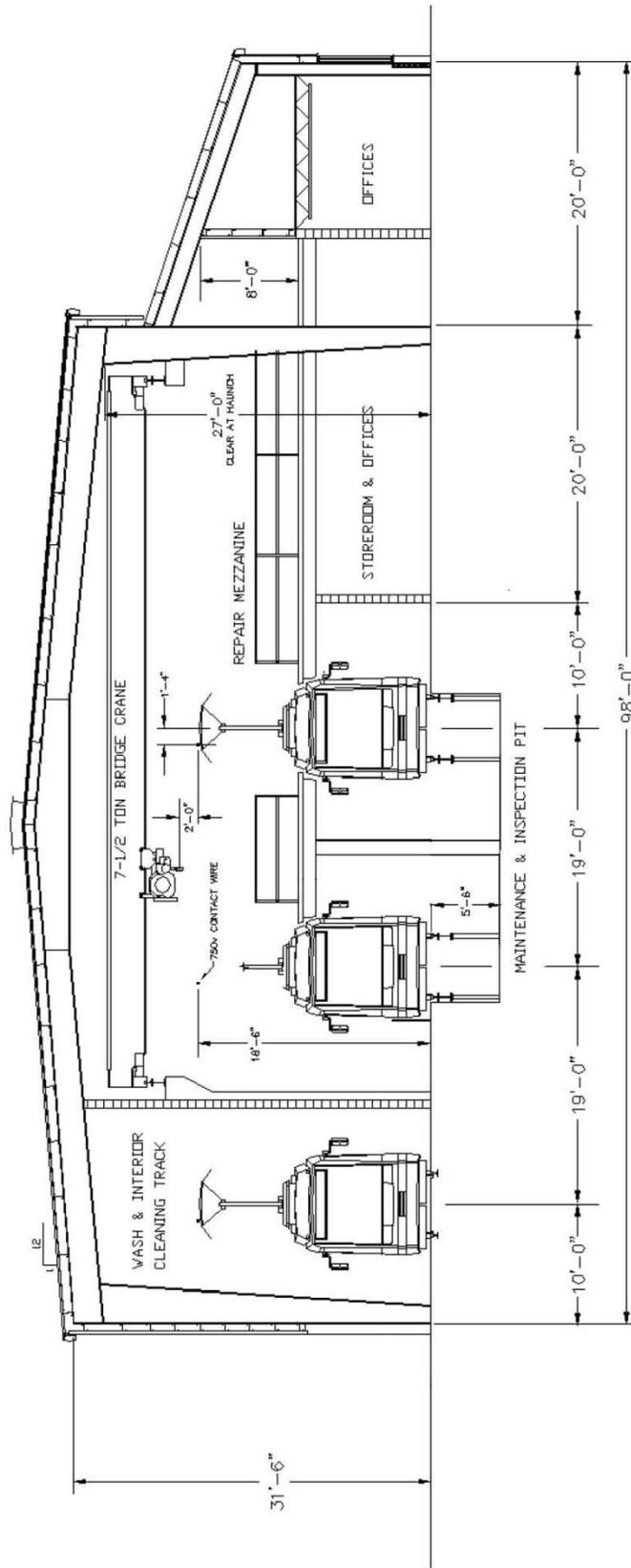
OMF Layout

OMF Section

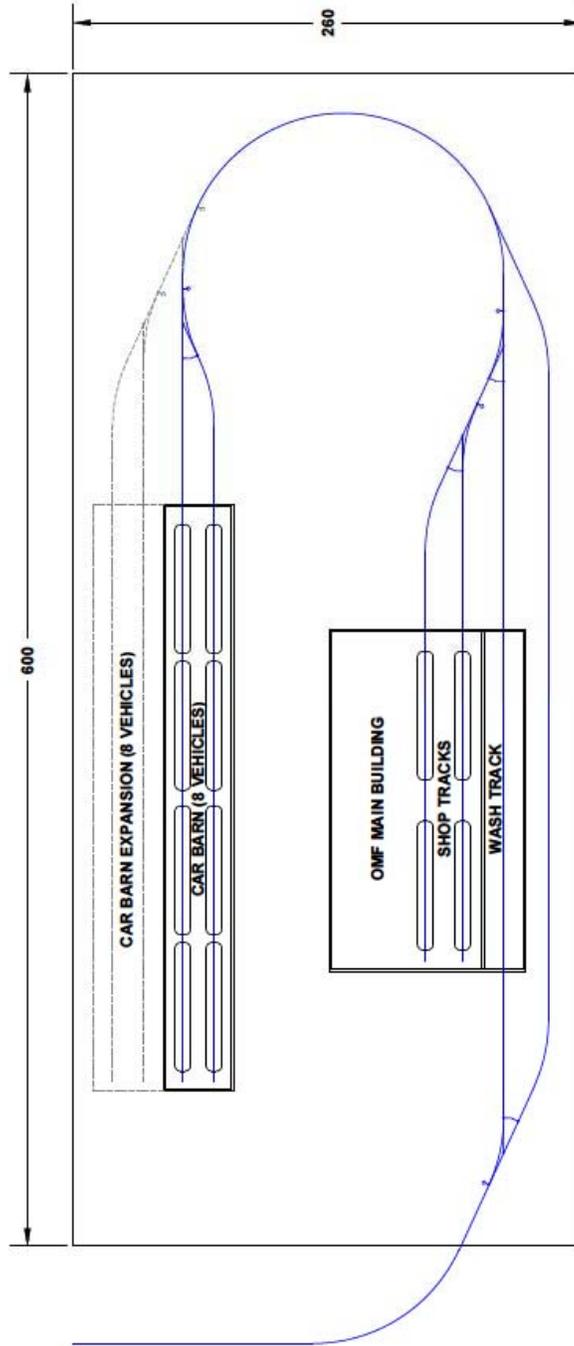
OMF Site



PROTOTYPE STREETCAR OMF LAYOUT



PROTOTYPE STREETCAR OMF SECTION



PROTOTYPE STREETCAR OMF SITE

Appendix B: Preliminary OMF Site Exhibits

NC-01: Fillmore Street Site

NC-02: Harrison Street Site

NC-03: Northrup King Site

NC-04: 14th Avenue Site

NC-05: Federal Reserve Site

NC-06: 4th Street Viaduct Site

NC-07: Superior Plating Site

NC-08: I-35W Site

NC-09: School Bus Site

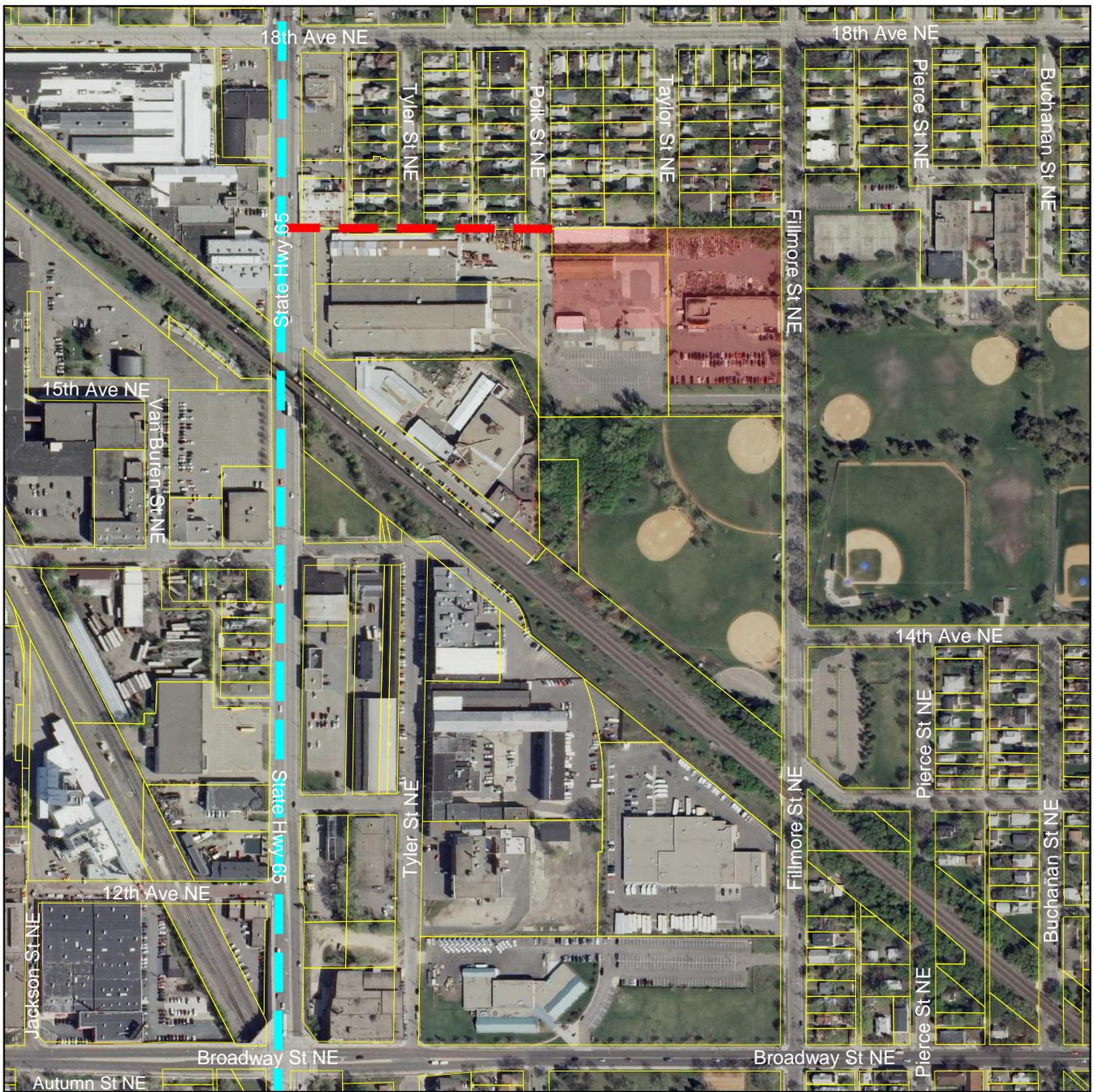
NC-10: K-Mart Site

NC-11: Nicollet Garage Site

NC-12: Heywood II Site

Nicollet – Central Transit Alternatives





Nicollet-Central Transit Alternatives Preliminary Streetcar OMF Site Identification



Scale: 1" = 400 ft.

SITE: NC-01: FILLMORE STREET SITE
1600 Fillmore St NE
Minneapolis, MN 55413

OWNER: Private

ZONING: Industrial

PARCEL ID: 1302924220006 / 1302924220090 / 1302924220091

AREA: 4.51 acres

DESCRIPTION: The Fillmore Street site is 0.1 miles from the mainline streetcar tracks on Central Avenue, but is approximately 1.3 miles from the LPA initial streetcar segment. This site is approximately 4.5 acres and requires full or partial acquisition of three privately owned parcels. The property currently serves multiple uses, including an armored vehicle business fronting on Fillmore Street, a small renovated industrial building fronting on Polk Street, and surface parking for a multi-tenant renovated industrial building fronting on Central Avenue. The site is bounded by residential properties to the north, parkland to the east and south, and commercial/industrial properties to the west.



**Nicollet-Central Transit Alternatives
Preliminary Streetcar OMF Site Identification**



Scale: 1" = 400 ft.

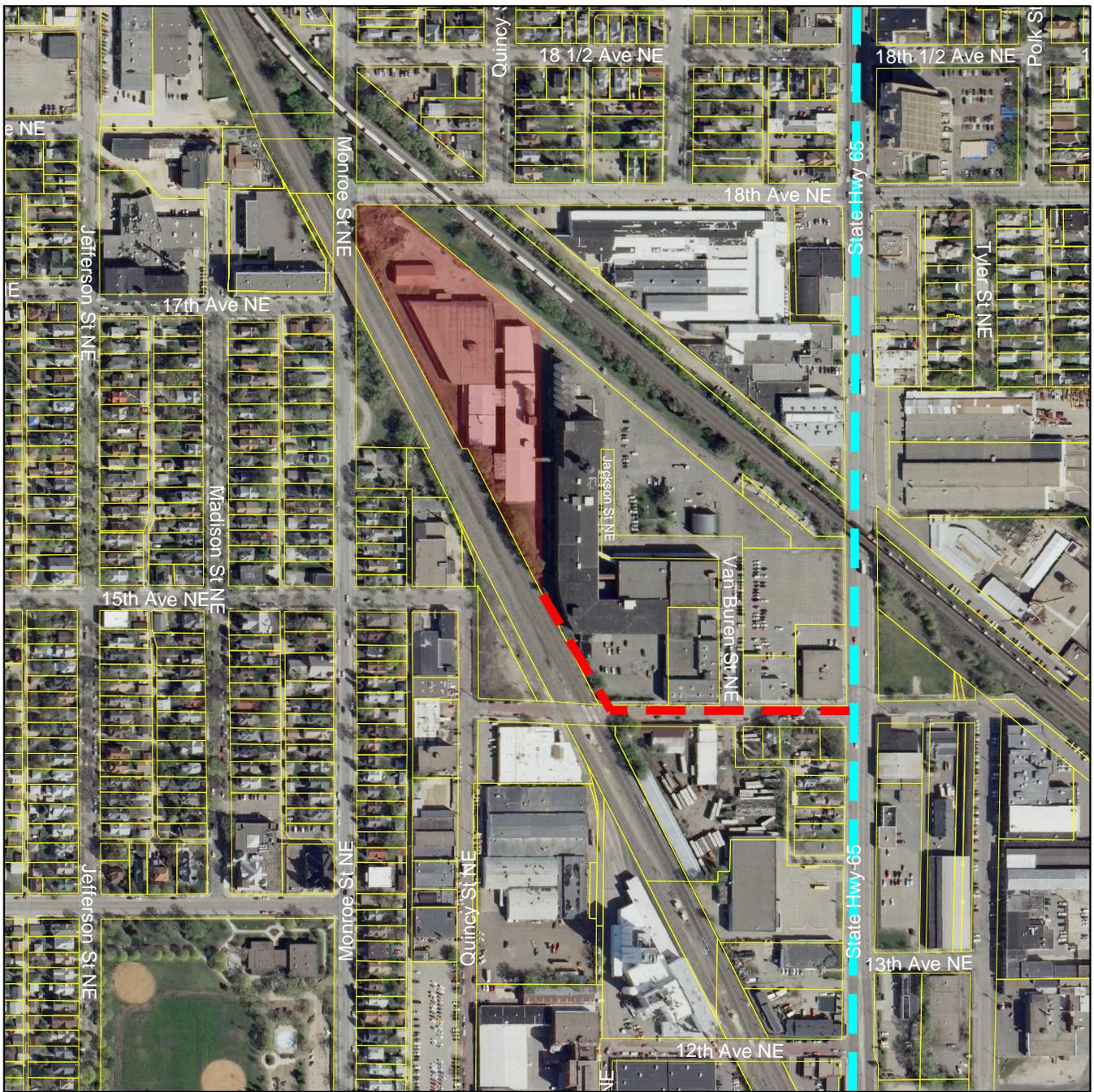
SITE: NC-02: HARRISON STREET SITE
347 Harrison St NE
Minneapolis, MN 55413

OWNER: Private
ZONING: Industrial

PARCEL ID: 1302924330043 / 1302924330048 / 1302924330041 / 1302924330042 /
1302924330100 / 1302924330098 / 1302924330096

AREA: 5.34 acres

DESCRIPTION: The Harrison Street site is 0.3 miles from the proposed mainline streetcar tracks along Central Avenue, and approximately 0.5 miles from the LPA initial streetcar segment. This site is approximately 5.3 acres and requires full or partial acquisition of seven privately owned parcels. The property currently is occupied by a telecommunications company utility vehicle base, semi trailer storage, and surface parking. It also is used for truck access to the rear loading docks of adjacent buildings. The site is bounded by railroad tracks to the north and east, and industrial buildings to the south and west.



Nicollet-Central Transit Alternatives Preliminary Streetcar OMF Site Identification



Scale: 1" = 400 ft.

SITE: NC-03: NORTHRUP KING SITE
1500 Jackson St NE
Minneapolis, MN 55413

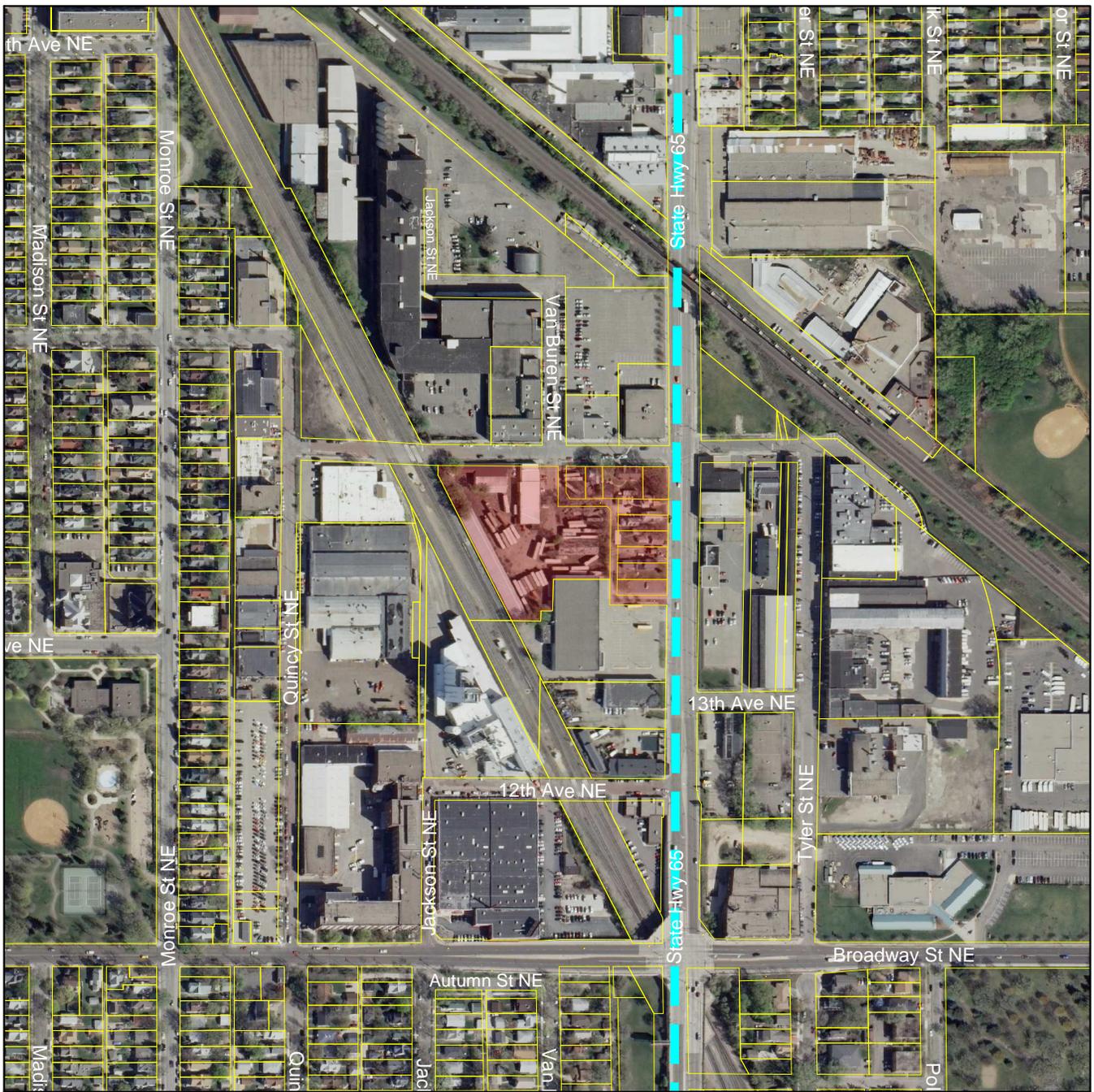
OWNER: Private

ZONING: Industrial

PARCEL ID: 1402924110005

AREA: 4.70 acres

DESCRIPTION: The Northrup King site is 0.2 miles from the proposed mainline streetcar tracks along Central Avenue, but is approximately 1.2 miles from the LPA initial streetcar segment. This irregular shaped site is approximately 4.7 acres and requires partial acquisition of a single privately owned parcel. The property currently is occupied by three warehouse buildings. The adjacent Northrup King Building is a former industrial facility that is now occupied by numerous art studios, galleries and other similar tenants. Besides the Northrup King Building to the east, the site is bounded by railroad tracks.



**Nicollet-Central Transit Alternatives
Preliminary Streetcar OMF Site Identification**



Scale: 1" = 400 ft.

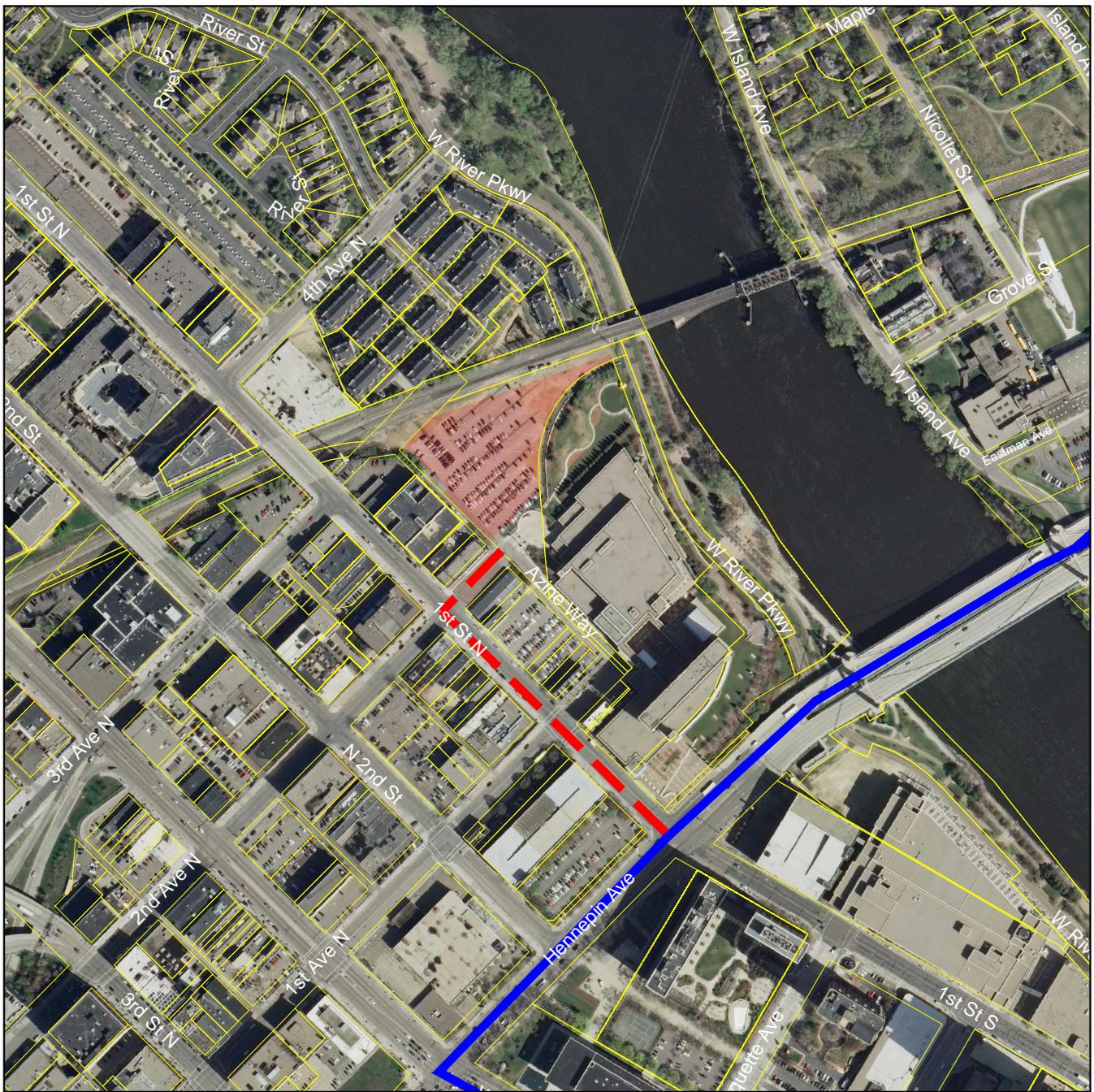
SITE: NC-04: 14TH AVENUE SITE
854 14th Ave NE
Minneapolis, MN 55413

OWNER: Private
ZONING: Industrial

PARCEL ID: 1402924140102 / 1402924140055 / 1402924140056 / 1402924140086 /
1402924140087 / 1402924140048 - 1402924140053

AREA: 4.08 acres

DESCRIPTION: The 14th Avenue site is directly adjacent to the proposed mainline streetcar tracks along Central Avenue, but is approximately 1.0 miles from the LPA initial streetcar segment. This site is approximately 4.1 acres and requires full acquisition of 11 privately owned parcels. The west half of the property currently is occupied by a trucking business, and contains four warehouse buildings and open storage for semi trailers. The east half of the site is occupied by single and multi-family residential buildings and a restaurant. The site is bounded by commercial properties to the north and east, a municipal ice arena to the south, and railroad tracks to the west.



**Nicollet-Central Transit Alternatives
Preliminary Streetcar OMF Site Identification**



Scale: 1" = 400 ft.

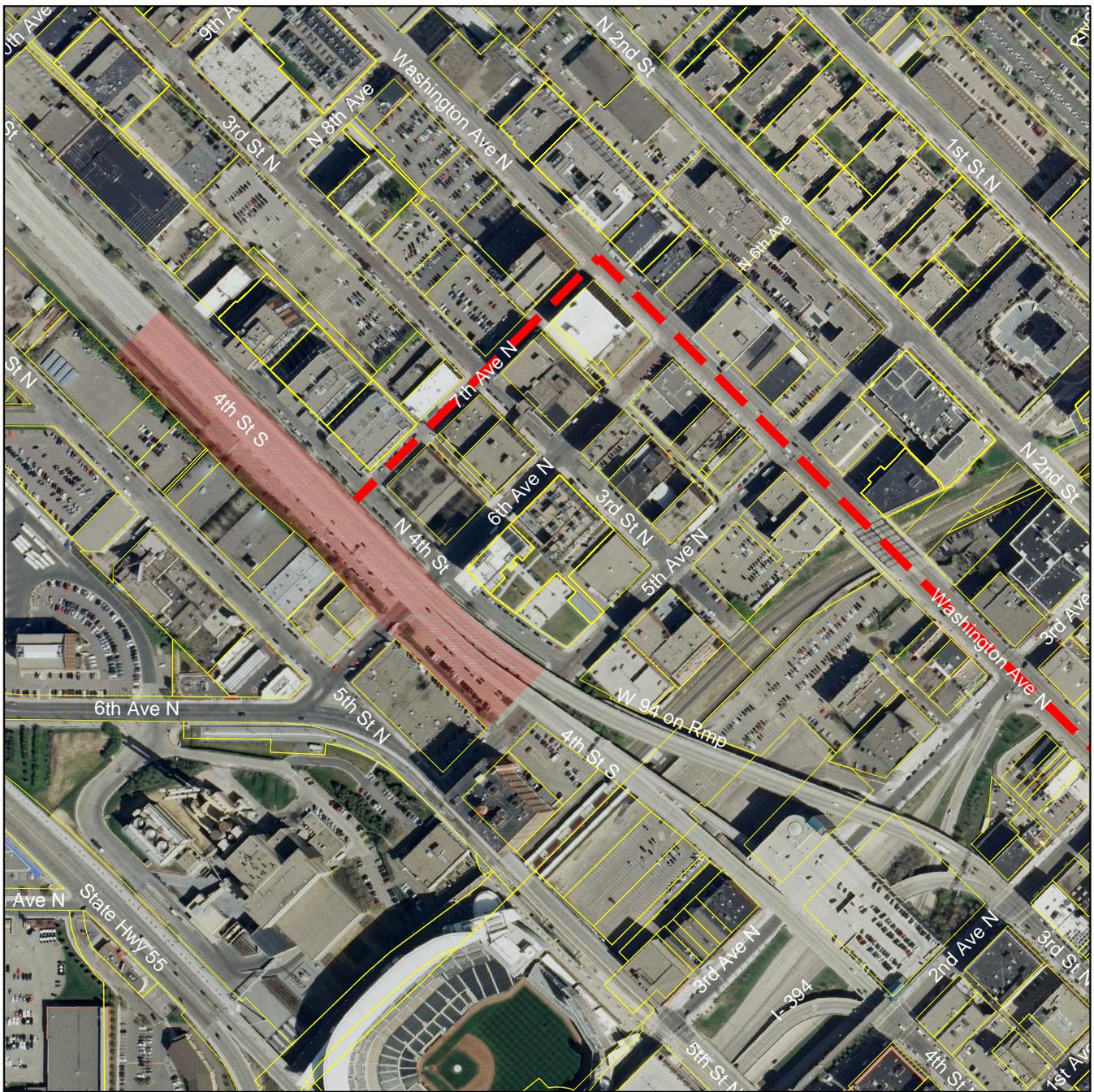
SITE: NC-05: FEDERAL RESERVE SITE
24 2nd Ave N
Minneapolis, MN 55401

OWNER: HCRRA
ZONING: Commercial

PARCEL ID: 2202924140634

AREA: 2.21 acres

DESCRIPTION: The Federal Reserve site is 0.2 miles from the proposed mainline streetcar tracks along Hennepin Avenue, and is within the limits of the LPA initial streetcar segment. This irregular shaped site is approximately 2.2 acres on a portion of a parcel owned by HCRRA. The available property at this location is used for surface parking; the remainder of the parcel has been devoted to other uses, including a segment of the Cedar Lake Trail and an entrance to the adjacent Federal Reserve Bank. The site is bounded by the Cedar Lake Trail and railroad tracks to the north and west, the Federal Reserve Bank to the east, and commercial and residential condominium properties to the south.



Nicollet-Central Transit Alternatives Preliminary Streetcar OMF Site Identification



Scale: 1" = 400 ft.

SITE: NC-06: 4TH STREET VIADUCT SITE
400 6th Ave N
Minneapolis, MN 55401

OWNER: MnDOT
ZONING: Downtown Service

PARCEL ID:

AREA: 5.48 acres

DESCRIPTION: The 4th Street Viaduct site is 0.7 miles from the proposed mainline streetcar tracks along Hennepin Avenue, and is within the limits of the LPA initial streetcar segment. This site lies beneath and adjacent to the 4th Street viaduct, a long elevated highway structure connecting the Minneapolis CBD to I-94 North. An OMF at this location would occupy approximately 5.5 acres of existing MnDOT right-of-way, and would extend from 5th Ave N to approximately 8th Ave N. The property currently is leased for use as surface parking. The site is bounded by North Loop residential condominium properties to the north, the Ford Center to the east, and industrial properties to the south and west.



**Nicollet-Central Transit Alternatives
Preliminary Streetcar OMF Site Identification**



Scale: 1" = 400 ft.

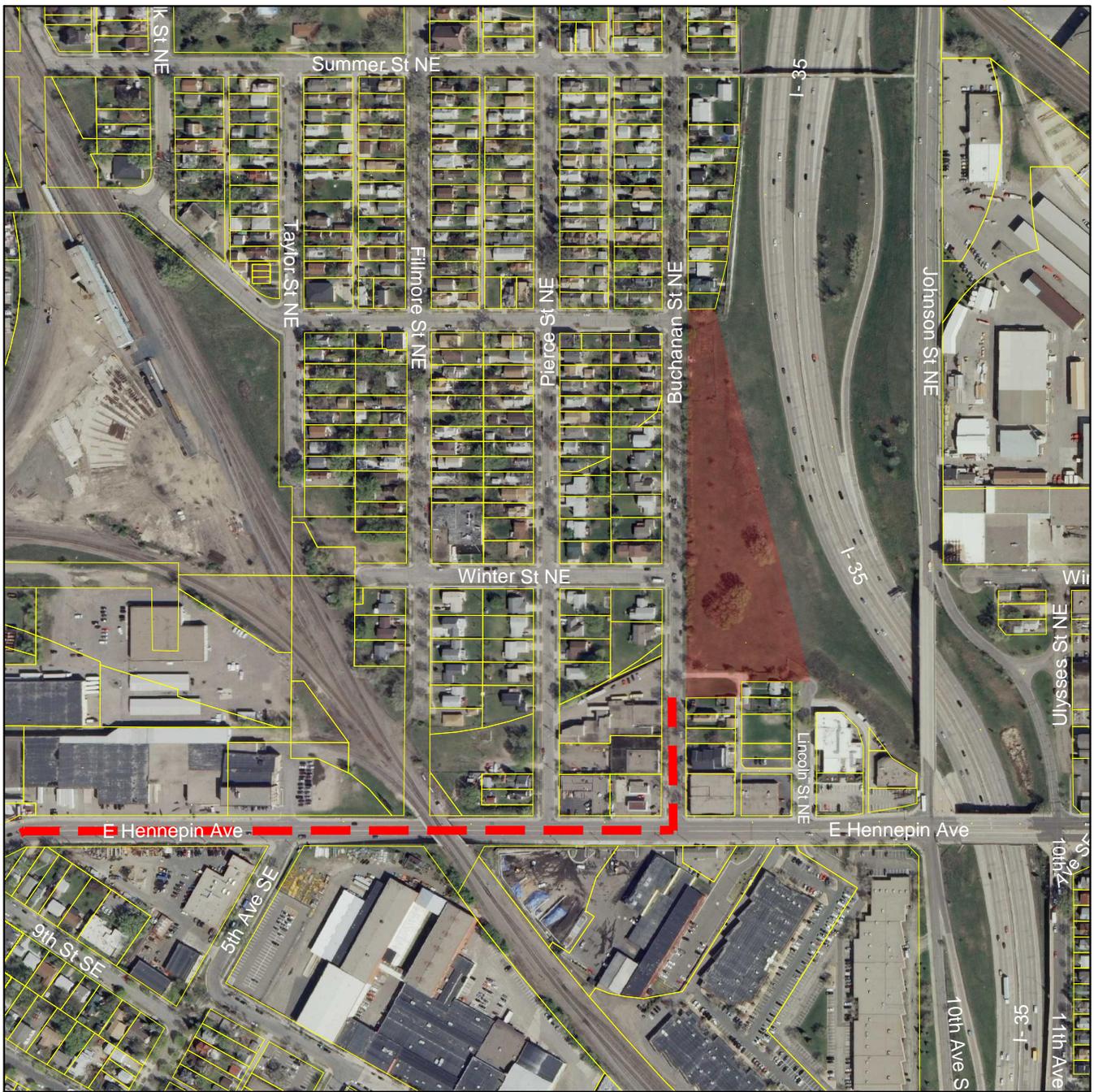
SITE: NC-07: SUPERIOR PLATING SITE
315 1st Ave NE
Minneapolis, MN 55413

OWNER: Private
ZONING: Commercial

PARCEL ID: 2302924120077 - 2302924120080; 2302924120083 - 2302924120085;
2302924120090; 2302924120182

AREA: 5.70 acres

DESCRIPTION: The Superior Plating site is directly adjacent to the proposed mainline streetcar track along 1st Ave NE, and is within the limits of the LPA initial streetcar segment. This site is approximately 5.7 acres and requires acquisition of nine privately owned parcels. The property currently is occupied by the former Superior Plating industrial facility, surface parking, and an auto repair business. The site is bounded by railroad tracks to the north, commercial properties to the east and south, and a residential condominium development to the west.



Nicollet-Central Transit Alternatives Preliminary Streetcar OMF Site Identification



Scale: 1" = 400 ft.

SITE: NC-08: I-35W SITE
351 Buchanan St NE
Minneapolis, MN 55413

OWNER: MnDOT
ZONING: Residential

PARCEL ID:

AREA: 4.46 acres

DESCRIPTION: The I-35W site is 0.7 miles from the proposed mainline streetcar tracks along Central Avenue, and approximately 0.9 miles from the LPA initial streetcar segment. This irregular shaped site is approximately 4.5 acres and lies within MnDOT right-of-way that was acquired during construction of I-35W. The property currently is vacant, and is bounded by I-35W to the east and single family residential properties to the south, west and north.



Nicollet-Central Transit Alternatives Preliminary Streetcar OMF Site Identification



Scale: 1" = 400 ft.

SITE: NC-09: SCHOOL BUS SITE
936 Hennepin Ave E
Minneapolis, MN 55413

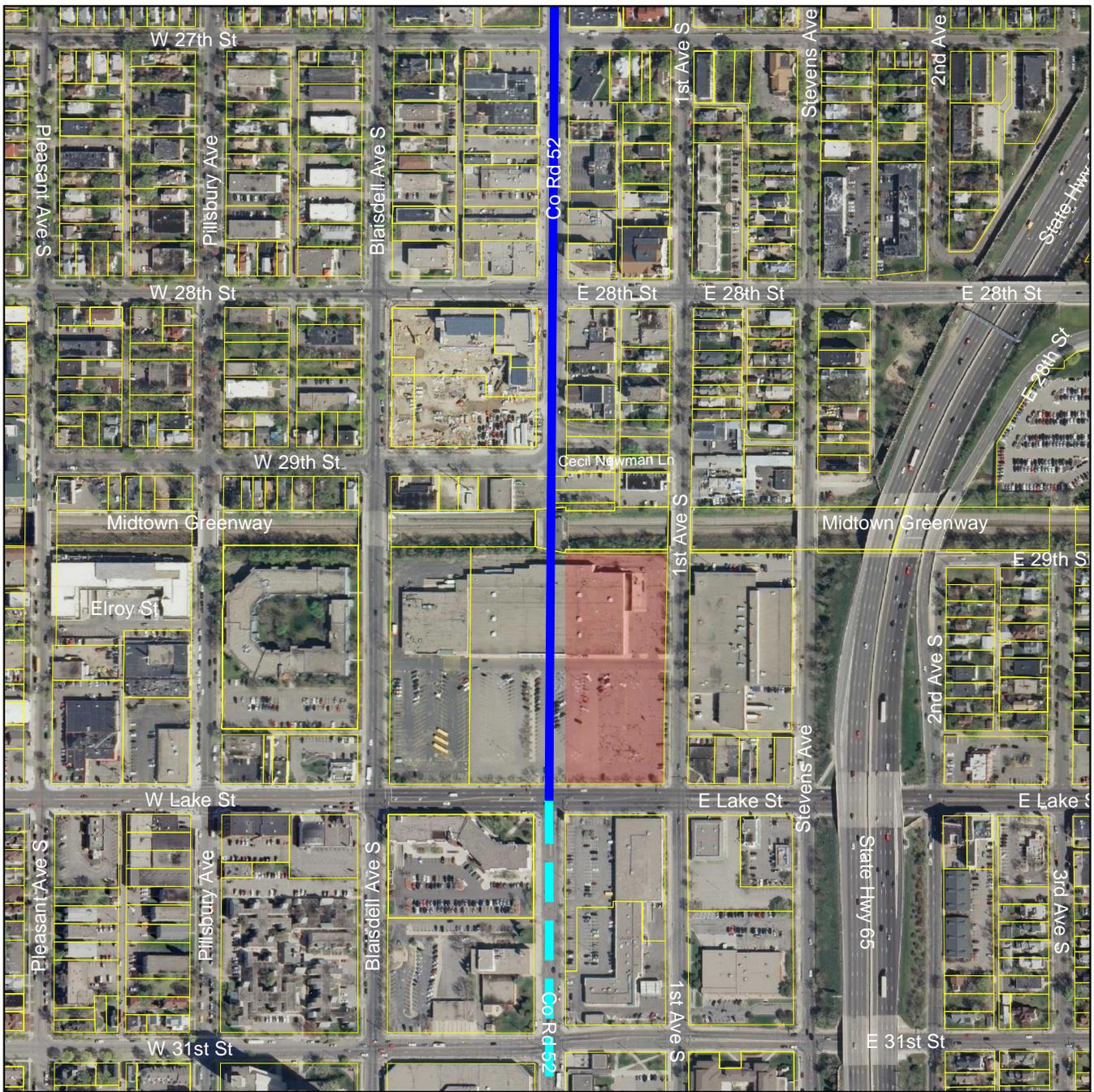
OWNER: Private

ZONING: Industrial

PARCEL ID: 2402924210022 / 2402924210025 / 2402924210026

AREA: 4.50 acres

DESCRIPTION: The School Bus site is 0.6 miles from the proposed mainline streetcar tracks along Central Avenue, and is approximately 0.8 miles from the LPA initial streetcar segment. This site is approximately 4.5 acres and requires acquisition of three privately owned parcels. The property currently is occupied by surface parking and three industrial/warehouse buildings used for a school bus storage and maintenance facility, along with a separate small commercial building fronting on Hennepin Avenue. The site is bounded by a mix of commercial and residential properties to the north, a commercial development to the east and south, and railroad tracks to the west.



Nicollet-Central Transit Alternatives Preliminary Streetcar OMF Site Identification



Scale: 1" = 400 ft.

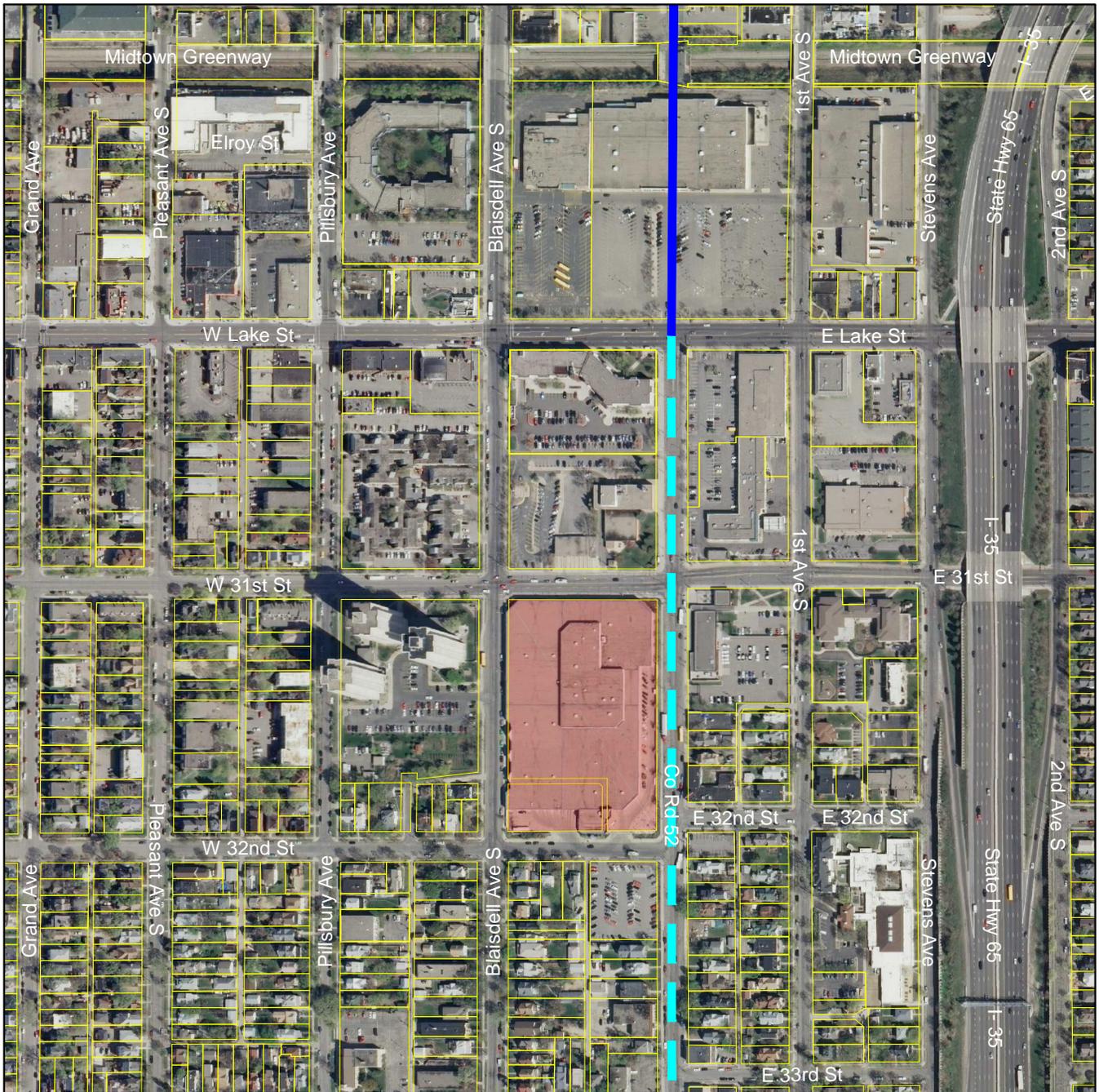
SITE: NC-10: K-MART SITE
2901 Nicollet Ave
Minneapolis, MN 55408

OWNER: Private
ZONING: Commercial

PARCEL ID: 3402924430141

AREA: 3.52 acres

DESCRIPTION: The K-Mart site is directly adjacent to the proposed mainline streetcar tracks along Nicollet Avenue, and is within the limits of the LPA initial streetcar segment. This site is approximately 3.5 acres and requires partial acquisition of a single privately owned parcel. The property currently is occupied by a K-Mart retail store and associated surface parking, but the presumed reconnection of Nicollet Avenue will require demolition of the existing store. The site is bounded by multi-family residential properties to the north, an industrial facility to the east, and commercial properties to the south and west.



Nicollet-Central Transit Alternatives Preliminary Streetcar OMF Site Identification



Scale: 1" = 400 ft.

SITE: NC-11: NICOLLET GARAGE SITE
10 West 32nd St
Minneapolis, MN 55408

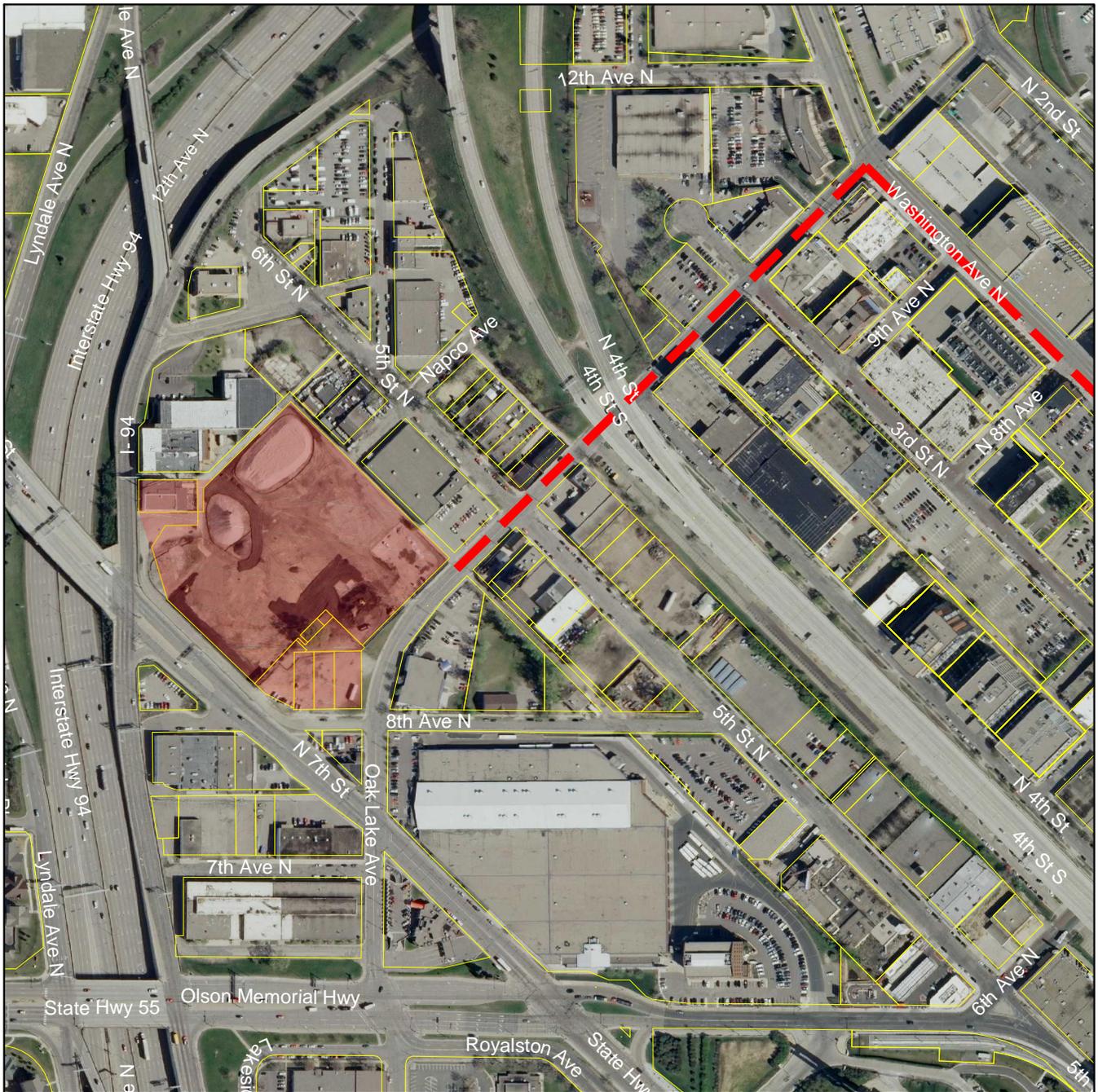
OWNER: Metro Transit

ZONING: Commercial

PARCEL ID: 0302824210283

AREA: 5.19 acres

DESCRIPTION: The Nicollet Garage site is directly adjacent to the proposed mainline streetcar tracks along Nicollet Avenue, and is approximately 0.1 miles from the LPA initial streetcar segment. This site is approximately 5.2 acres and is owned by Metro Transit. The property currently is occupied by the Nicollet Garage, a bus operations base and service facility. A streetcar OMF would displace most or all of the existing bus functions at this location, and accommodations for those buses would need to be addressed. The site is bounded by a commercial property to the north, a mix of commercial and residential properties to the east and south, and a multi-family residential development to the west.



Nicollet-Central Transit Alternatives Preliminary Streetcar OMF Site Identification



Scale: 1" = 400 ft.

SITE: NC-12: HEYWOOD II SITE
550 10th Ave N
Minneapolis, MN 55411

OWNER: Metro Transit

ZONING: Industrial

PARCEL ID: 2202924230099 / 2202924230104 / 2202924230094 / 2202924230132 /
2202924230008 / 2202924230007 / 2202924230006

AREA: 8.21 acres

DESCRIPTION: The Heywood II site is 1.1 miles from the proposed mainline streetcar tracks along Hennepin Avenue, and is within the limits of the LPA initial streetcar segment. This site is approximately 8.2 acres and is owned by Metro Transit. This property is generally vacant, although it was acquired for construction of the proposed Metro Transit Heywood II bus facility expansion. Preliminary design of the Heywood II project has no provision for a streetcar OMF on the site. The site is bounded by commercial and industrial properties on all sides.

Appendix C: Preliminary OMF Site Evaluation Findings

Property Acquisition Considerations

Land Use Compatibility and Impacts

Potential Environmental and Historic Considerations

Mainline Streetcar Track Connection

Site Characteristics and Constraints

Nicollet – Central Transit Alternatives



Site	Property Acquisition Considerations
NC-01: Fillmore Street	<ul style="list-style-type: none"> - Requires full or partial acquisition of several privately owned parcels. - Requires displacement of current commercial uses on the site, including Dunbar Armored Inc.
NC-02: Harrison Street	<ul style="list-style-type: none"> - Requires full or partial acquisition of several privately owned parcels. - Requires displacement of current industrial uses on the site, including a semi trailer storage yard and a CenturyLink utility vehicle facility. - Site is used for truck access to loading docks behind adjacent businesses.
NC-03: Northrup King	<ul style="list-style-type: none"> - Requires partial acquisition of a privately owned parcel. - Requires displacement of current warehousing activity on the site.
NC-04: 14th Avenue	<ul style="list-style-type: none"> - Requires acquisition of numerous privately owned parcels. - Requires displacement of current residential, commercial and industrial uses on the site, including Jacobsen Transfer Company and the Ideal Diner.
NC-05: Federal Reserve	<ul style="list-style-type: none"> - The property is owned by HCRRA. - Requires displacement of current surface parking on the site.
NC-06: 4th Street Viaduct	<ul style="list-style-type: none"> - The site lies within MnDOT right-of-way. - Requires displacement of current surface parking on the site. - Requires removal of existing alley that is currently used by adjacent businesses fronting on 5th Street.
NC-07: Superior Plating	<ul style="list-style-type: none"> - Requires full or partial acquisition of several privately owned parcels. - Requires displacement of current industrial and commercial uses on the site, including Superior Plating and Baraka Auto Service. - The Superior Plating facility is no longer in use, and the current owner has proposed demolition in anticipation of large-scale private redevelopment.
NC-08: I-35W	<ul style="list-style-type: none"> - The site lies within MnDOT right-of-way. - The property is vacant. - Use of this right-of-way would preclude a potential I-35W interchange at Hennepin Avenue.
NC-09: School Bus	<ul style="list-style-type: none"> - Requires acquisition of several privately owned parcels. - Requires displacement of current industrial and commercial uses on the site, including Minnesota Central School Bus Co.
NC-10: K-Mart	<ul style="list-style-type: none"> - Requires partial acquisition of a privately owned parcel. - Requires displacement of the current commercial use on the site. There is ongoing discussion about the restoration of Nicollet Ave through the K-Mart property. Restoration of Nicollet Ave would require removal of the existing K-Mart building, but also is seen a significant opportunity for large scale private redevelopment.
NC-11: Nicollet Garage	<ul style="list-style-type: none"> - The property is owned by Metro Transit. - Requires displacement of some or all of the Metro Transit bus capacity at the existing Nicollet Garage. Locating and constructing a comparable facility for the displaced buses is a significant challenge for this site.
NC-12: Heywood II	<ul style="list-style-type: none"> - The property is owned by Metro Transit. - The site consists of multiple properties that have been acquired and cleared for construction of the Metro Transit Heywood II facility expansion. The Heywood II expansion is under design, and project planning has not included provisions for a streetcar OMF on the site. It appears very likely that addition of a streetcar OMF to the Heywood II project would require acquisition of adjacent properties.

Nicollet – Central Transit Alternatives

Site	Land Use Compatibility and Impacts
NC-01: Fillmore Street	<ul style="list-style-type: none"> - Industrial zoning (I1/I2). - Adjacent to single family residential properties and parkland. - Two listed or eligible historic properties are within ¼ mile of the site.
NC-02: Harrison Street	<ul style="list-style-type: none"> - Industrial zoning (I1). - Nine listed or eligible historic properties are within ¼ mile of the site.
NC-03: Northrup King	<ul style="list-style-type: none"> - Industrial zoning (I2). - Lies within the NE Arts District. - Nine listed or eligible historic properties are within ¼ mile of the site.
NC-04: 14th Avenue	<ul style="list-style-type: none"> - Industrial zoning (I1/I2). - Lies within the NE Arts District. - Four listed or eligible historic properties are within ¼ mile of the site. - Existing residential properties on this site are not consistent with current land use planning for the area. - Land use plans call for mixed use development at this location.
NC-05: Federal Reserve	<ul style="list-style-type: none"> - Commercial zoning (C3A). - Lies within the Minneapolis Warehouse Historic District and the St. Anthony Falls Historic District. - Adjacent to residential condominium properties. - Six listed or eligible archeological sites are within ¼ mile of the site. - 110 listed or eligible historical properties are within ¼ mile of the site. - Site has potential for impacts to the Mississippi River viewshed.
NC-06: 4th Street Viaduct	<ul style="list-style-type: none"> - Downtown Service District zoning (B4S-1). - Adjacent to residential condominium properties. - 51 listed or eligible historical properties are within ¼ mile of the site. - Current land use plans call for mixed use redevelopment of this area, and there is a long-term vision that would eliminate the viaduct and restore the street grid.
NC-07: Superior Plating	<ul style="list-style-type: none"> - Commercial zoning (C2). - Adjacent to residential condominium properties. - 17 listed or eligible historical properties are within ¼ mile of the site. - Current land use plans call for large-scale mixed use redevelopment of this site.
NC-08: I-35W	<ul style="list-style-type: none"> - Residential zoning (R1A/R5). - Adjacent to single-family residential properties. - Eight listed or eligible historical properties are within ¼ mile of the site.
NC-09: School Bus	<ul style="list-style-type: none"> - Industrial zoning (I2). - Six listed or eligible historical properties are within ¼ mile of the site.
NC-10: K-Mart	<ul style="list-style-type: none"> - Commercial zoning (C3S). - 21 listed or eligible historical properties are within ¼ mile of the site. - Current land use plans call for large-scale mixed use redevelopment of this site, following the Nicollet Avenue reconnection.
NC-11: Nicollet Garage	<ul style="list-style-type: none"> - Commercial zoning (C2). - Adjacent to single-family and multi-family residential properties. - 19 listed or eligible historical properties are within ¼ mile of the site.
NC-12: Heywood II	<ul style="list-style-type: none"> - Industrial zoning (I2). - Three listed or eligible historical properties are within ¼ mile of the site.

Site	Potential Environmental and Historic Considerations
NC-01: Fillmore Street	<ul style="list-style-type: none"> - No significant environmental issues have been noted on the site. - No significant cultural resource issues have been noted on the site.
NC-02: Harrison Street	<ul style="list-style-type: none"> - No significant environmental issues have been noted on the site. - No significant cultural resource issues have been noted on the site.
NC-03: Northrup King	<ul style="list-style-type: none"> - No significant environmental issues have been noted on the site. - Initial cultural resources research indicates that the Northrup King complex (including this site) has been deemed eligible for listing on the National Register of Historic Places.
NC-04: 14th Avenue	<ul style="list-style-type: none"> - No significant environmental issues have been noted on the site. - No significant cultural resource issues have been noted on the site.
NC-05: Federal Reserve	<ul style="list-style-type: none"> - No significant environmental issues have been noted on the site. - This site lies within the Minneapolis Warehouse Historic District and the St. Anthony Falls Historic District. Both districts are listed on the National Register of Historic Places.
NC-06: 4th Street Viaduct	<ul style="list-style-type: none"> - No significant environmental issues have been noted on the site. - No significant cultural resource issues have been noted on the site.
NC-07: Superior Plating	<ul style="list-style-type: none"> - This site is known to have significant soil and groundwater contamination, and will require costly remediation. The full extent of the contamination may not be clear until the existing Superior Plating facility is removed. - Different pollutant remediation targets may apply, depending on the proposed use of the property. It's possible that an OMF would require less remediation than a residential development at the same location. - No significant cultural resource issues have been noted on the site.
NC-08: I-35W	<ul style="list-style-type: none"> - No significant environmental issues have been noted on the site. - No significant cultural resource issues have been noted on the site.
NC-09: School Bus	<ul style="list-style-type: none"> - No significant environmental issues have been noted on the site. - No significant cultural resource issues have been noted on the site.
NC-10: K-Mart	<ul style="list-style-type: none"> - No significant environmental issues have been noted on the site. - No significant cultural resource issues have been noted on the site.
NC-11: Nicollet Garage	<ul style="list-style-type: none"> - No significant environmental issues have been noted on the site. - No significant cultural resource issues have been noted on the site.
NC-12: Heywood II	<ul style="list-style-type: none"> - No significant environmental issues have been noted on the site. - No significant cultural resource issues have been noted on the site.

Nicollet – Central Transit Alternatives

Site	Mainline Streetcar Track Connection
NC-01: Fillmore Street	<ul style="list-style-type: none"> - Distance to mainline route is 0.1 miles. - Site is 1.3 miles beyond the LPA initial streetcar segment. - Connection to mainline likely would require acquisition of additional right-of-way or easements from adjacent residential properties.
NC-02: Harrison Street	<ul style="list-style-type: none"> - Distance to mainline route is 0.3 miles. - Site is 0.5 miles beyond the LPA initial streetcar segment.
NC-03: Northrup King	<ul style="list-style-type: none"> - Distance to mainline track is 0.2 miles. - Site is 1.2 miles beyond the LPA initial streetcar segment. - Connection to the mainline likely would require acquisition of additional right-of-way or easements from the adjacent railroad.
NC-04: 14th Avenue	<ul style="list-style-type: none"> - Site is directly adjacent to mainline streetcar track. - Site is 1.0 miles beyond the LPA initial streetcar segment.
NC-05: Federal Reserve	<ul style="list-style-type: none"> - Distance to mainline track is 0.2 miles. - Site is within the limits of the LPA initial streetcar segment. - There is a potentially significant elevation difference between this site and the mainline tracks along Hennepin Avenue.
NC-06: 4th Street Viaduct	<ul style="list-style-type: none"> - Distance to mainline track is 0.7 miles. - Site is within the limits of the LPA initial streetcar segment. - Requires streetcar tracks on the existing BNSF/Washington Ave bridge.
NC-07: Superior Plating	<ul style="list-style-type: none"> - Site is directly adjacent to mainline streetcar track. - Site is within the limits of the LPA initial streetcar segment.
NC-08: I-35W	<ul style="list-style-type: none"> - Distance to mainline tracks is 0.7 miles. - Site is 0.9 miles beyond the LPA initial streetcar segment. - Requires streetcar tracks under the existing BNSF/Hennepin Ave bridge. OCS clearance requirements would limit roadway traffic to a single lane in each direction.
NC-09: School Bus	<ul style="list-style-type: none"> - Distance to mainline tracks is 0.6 miles. - Site is 0.8 miles beyond the LPA initial streetcar segment. - Requires streetcar tracks under the existing BNSF/Hennepin Ave bridge. OCS clearance requirements would limit roadway traffic to a single lane in each direction.
NC-10: K-Mart	<ul style="list-style-type: none"> - Site is directly adjacent to mainline streetcar track. - Site is within the limits of the LPA initial streetcar segment.
NC-11: Nicollet Garage	<ul style="list-style-type: none"> - Site is directly adjacent to mainline streetcar track. - Site is 0.1 miles beyond the LPA initial streetcar segment.
NC-12: Heywood II	<ul style="list-style-type: none"> - Distance to mainline track is 1.1 miles. - Site is within the limits of the LPA initial streetcar segment. - Require streetcar tracks on the existing BNSF/Washington Ave bridge.

Site	Site Characteristics and Constraints
NC-01: Fillmore Street	<ul style="list-style-type: none"> - Proposed 4.5 acre site appears to meet the general size, shape and terrain requirements of the initial and expanded prototype OMF. - Requires removal of two existing buildings.
NC-02: Harrison Street	<ul style="list-style-type: none"> - Proposed 5.3 acre site appears to meet the general size, shape and terrain requirements of the initial and expanded prototype OMF. - Requires removal of two existing buildings, along with access to truck loading docks behind adjacent businesses.
NC-03: Northrup King	<ul style="list-style-type: none"> - Proposed 4.7 acre site has an irregular shape that would require an altered OMF arrangement and a potential reduction in functionality or efficiency. - Requires removal of three existing buildings.
NC-04: 14th Avenue	<ul style="list-style-type: none"> - Proposed 4.1 acre site appears to meet the general size, shape and terrain requirements of the initial and expanded prototype OMF. - Requires removal of 12 existing buildings.
NC-05: Federal Reserve	<ul style="list-style-type: none"> - Proposed 2.2 acre site has an irregular shape and is too small to accommodate the prototype OMF.
NC-06: 4th Street Viaduct	<ul style="list-style-type: none"> - Proposed 5.5 acres site appears to be large enough to accommodate the initial and expanded prototype OMF. - The existing viaduct structure provides a vertical clearance of less than 20 feet in most areas of the site. The available clearance is not sufficient for the height of the streetcar OMF shop and car barn buildings. - A portion of the site contains an alley that is used by adjacent businesses fronting on 5th Street. - The site includes some areas with steep slopes.
NC-07: Superior Plating	<ul style="list-style-type: none"> - Proposed 5.7 acre site appears to meet the general size, shape and terrain requirements of the initial and expanded prototype OMF. - Requires removal of two existing buildings.
NC-08: I-35W	<ul style="list-style-type: none"> - Proposed 4.5 acre site has an irregular shape that would require an altered OMF arrangement and a potential reduction in functionality or efficiency.
NC-09: School Bus	<ul style="list-style-type: none"> - Proposed 4.5 acre site appears to meet the general size, shape and terrain requirements of the initial and expanded prototype OMF. - Requires removal of four existing buildings.
NC-10: K-Mart	<ul style="list-style-type: none"> - Proposed 3.5 acre site appears to meet the general size, shape and terrain requirements of the initial and expanded prototype OMF. - Requires removal of one existing building.
NC-11: Nicollet Garage	<ul style="list-style-type: none"> - Proposed 5.2 acre site appears to meet the general size, shape and terrain requirements of the prototype OMF. - Requires removal (or potential renovation) of the existing Nicollet Garage building.
NC-12: Heywood II	<ul style="list-style-type: none"> - Proposed 8.2 acre site appears to meet the general size, shape and terrain requirements of the prototype OMF. - Site is mostly vacant, but will be fully utilized by the planned Metro Transit Heywood II facility expansion.

Nicollet – Central Transit Alternatives

