

TRAVEL DEMAND MANAGEMENT PLAN

for

Bennett Lumber Site Redevelopment

in

Minneapolis, MN

March 3, 2011



Creating extraordinary
Communities

TRAVEL DEMAND MANAGEMENT PLAN

Bennett Lumber Site Redevelopment

MINNEAPOLIS, MN

March 3, 2011

Prepared For:

JPG-OFP, LLC & Aurora-Uptown, LLC

c/o Zeller Realty Group
950 LaSalle Plaza
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RLK Project No. 2010-209-M

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I. INTRODUCTION

JPG-OFP, LLC & Aurora-Uptown, LLC, plan to redevelop the existing Bennett Lumber Company site in the Lowry Hills East Neighborhood in the City of Minneapolis (Figure 1). The site consists of three parcels -- the eastern parcel, the central parcel and the western parcel. The site boundary for the eastern and central parcels extends from the Midtown Greenway north to midway point between West 29th Street and West 28th Street, and for all three parcels from Fremont Avenue South on the west to Colfax Avenue South on the east. On the western parcel, the site boundary extends northward to West 28th Street for the eastern half of the block. Current plans for the approximately 4.78-acre site call for the completion of 710 apartments.

This Travel Demand Management Plan outlines the ways in which the proposed redevelopment will help Minneapolis achieve their goals of enhancing the local transportation system. These goals are achieved by proper land use selection, site design and implementation of specific vehicular demand reduction strategies to encourage use of alternate modes of travel, enhance pedestrian friendliness, and achieve a balance in the needs of all users of the transportation system.

II. LAND USES AND ZONING

The eastern and central parcels and the south half of the western parcel are currently zoned as:

R5, Multiple-Family District (High Intensity), this district “is established to provide an environment of high density apartments, congregate living arrangements and cluster developments on lots with a minimum lot area of five thousand (5,000) square feet and at least seven hundred (700) square feet of lot area per dwelling unit. In addition to residential uses, institutional and public uses and public services and utilities may be allowed”.

The northern portion of the western parcel is currently zoned as:

R3, Multiple-Family District (Medium Intensity), this district “is established to provide an environment of predominantly single and two-family dwellings, cluster developments and smaller multiple-family developments on lots with a minimum of five thousand (5,000) square feet and at least one thousand five hundred (1,500) square feet of lot area per dwelling unit. In addition to residential uses, institutional and public uses and public services and utilities may be allowed”.

To establish a single zoning classification for the site and to be consistent with the comprehensive plan, the entire site is proposed for rezoning as:

R6, Multiple Family District, this district “is established to provide an environment of high density apartments, congregate living arrangements and cluster developments on lots with a minimum of five thousand (5,000) square feet of lot area and at least four hundred (400) square feet of lot area per dwelling

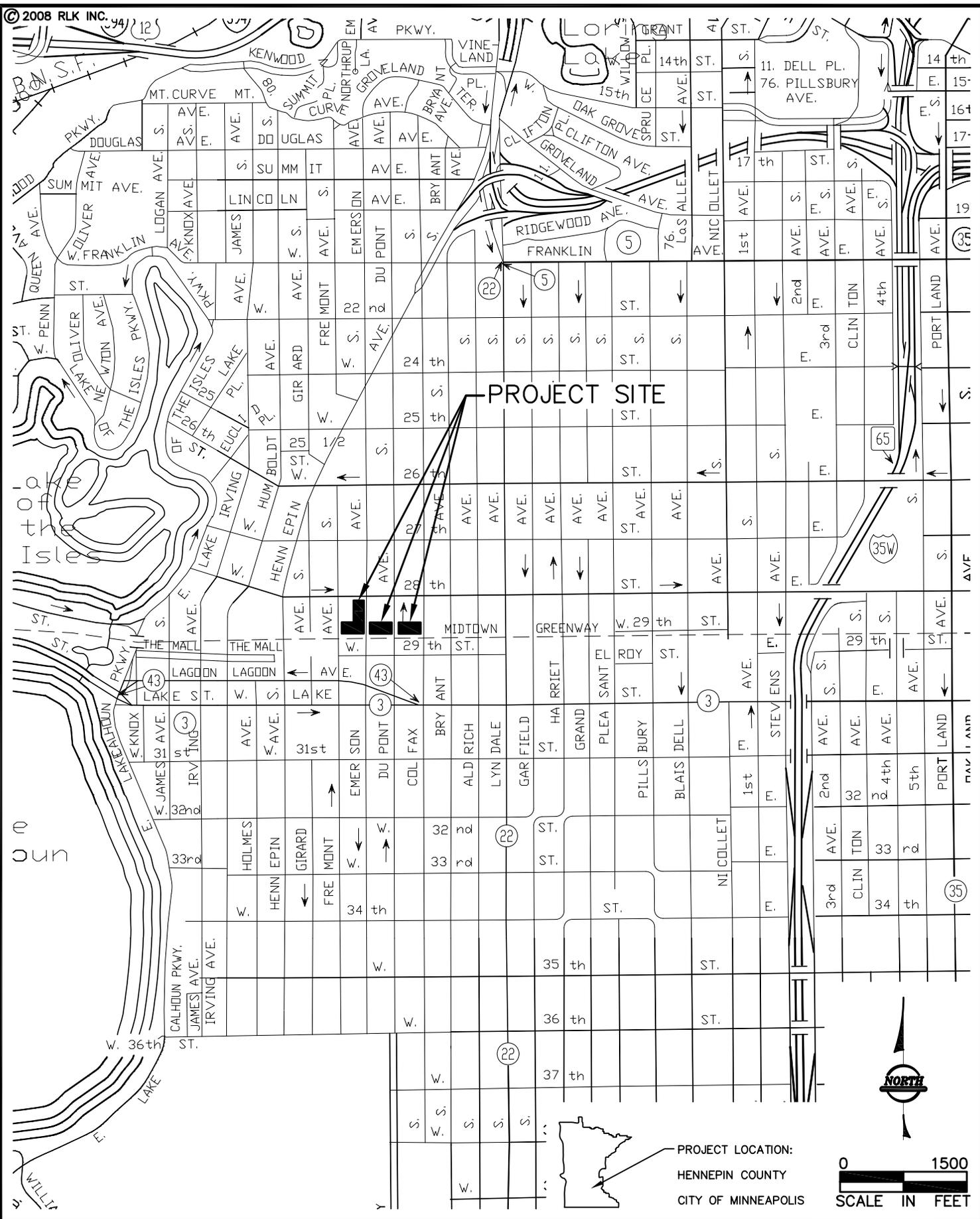
unit. In addition to residential uses, institutional and public uses and public services and utilities may be allowed.”

Redevelopment of the site will result in the changes in land use shown in Table 1. The proposed residential land uses fit the intent of the proposed zoning requirements for the site.

Table 1
Land Use Changes with Proposed Redevelopment

Previous Land Uses¹	Proposed Land Uses
East Parcel	East Parcel
Warehouse (39,000 s.f.)	Residential (230 units)
Lumber yard (17,000 s.f.)	
Central Parcel	Central Parcel
Lumber yard (101,000 s.f.)	Residential (250 units)
Western Parcel	West Parcel
Warehouse and Retail (10,500 s.f.)	Residential (230 units)

1. East & Central Parcels defined in the previous 2005 Bennett Lumber Site TDMP prepared for Sherman Associates by Alliant Engineering.



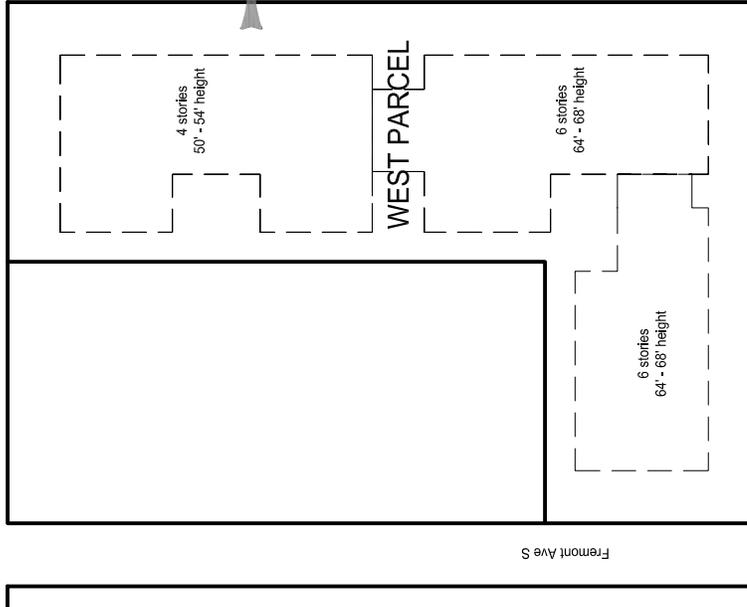
BENNETT LUMBER SITE

VICINITY MAP

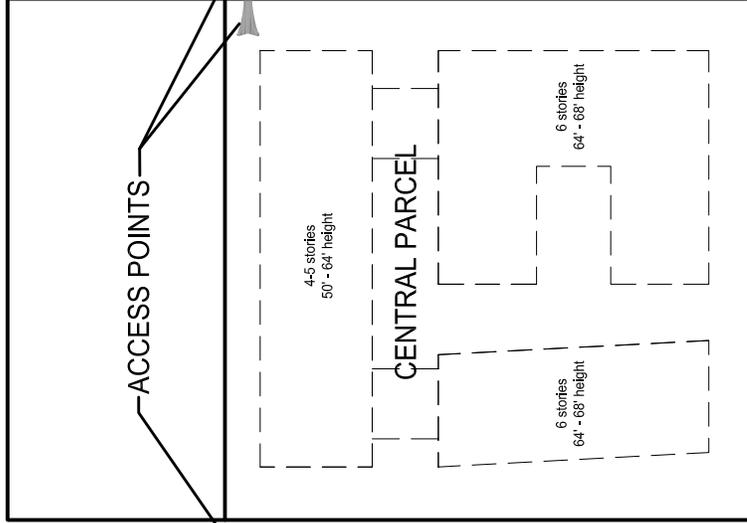
Bennett Lumber Redevelopment
Site Plan: West, Center, East parcels

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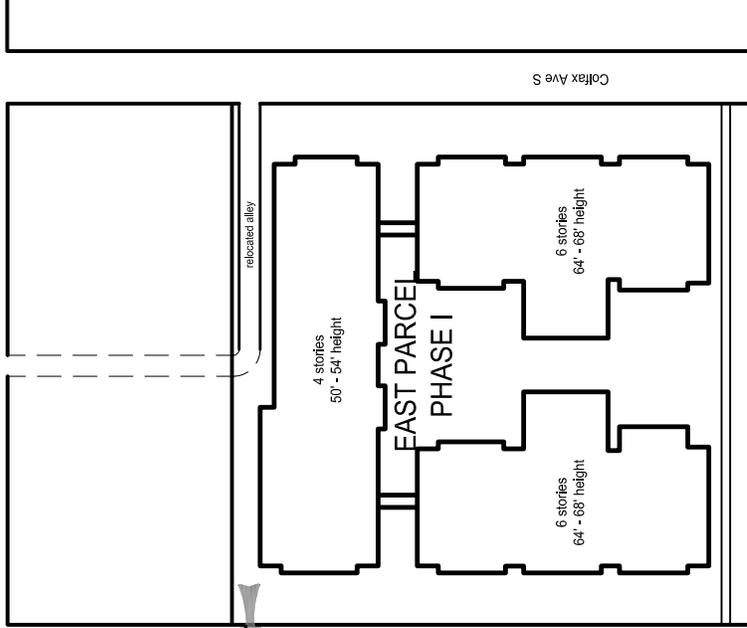
28th Street West



WEST PARCEL
Parcel Area: +/- 1.9 Acres
Unit Count: 230
Parking: 238 stalls



CENTRAL PARCEL
Parcel Area: +/- 1.9 Acre
Unit Count: 250
Parking: 270 stalls



EAST PARCEL
Parcel Area: +/- 1.85 Acre
Unit Count: 230
Building Area: 220,000 GSF residential
Parking: 242 stalls

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Bennett Lumber Housing Redevelopment

Concept Site Plan

Figure
2

Date
11/17/10

III. PEDESTRIAN, BICYCLE AND TRANSIT

The Bennett Lumber Redevelopment site is located adjacent to the Midtown Greenway bicycle and pedestrian trail, and one block away from a primary bus route corridor, Lake Street, and three blocks away from another, Hennepin Avenue. These pedestrian, bicycle and transit amenities, along with its location approximately two miles south of downtown, suggest the site is ideally situated to facilitate alternative modes of transportation.

Figure 3, Bicycle Route Network, shows the connectivity of the Midtown Greenway bicycle and pedestrian network. This system would enable residents to commute to downtown, venture out west to Hopkins and St. Louis Park for work or recreation and to nearby shopping, dining and entertainment. The Midtown trails also connect to Target Field, the Metrodome, Northstar and Hiawatha Light Rail lines and West River Road.

To promote biking as an alternative mode of transportation, the developer will provide one bicycle storage space per dwelling unit in the parking garages and outdoor bicycle racks.

Pedestrian traffic is encouraged on the bicycle and pedestrian trails through the presence of a designated pedestrian lane and traversable gardens. In addition, pedestrian travel is welcome on the system of sidewalks that connect the site to surrounding Uptown neighborhoods and the nearby retail areas.

Figure 4 schematically diagrams bus routes serving the site. Quick access to Downtown Minneapolis, the University of Minnesota, Edina, Northeast Minneapolis, South Minneapolis, and St. Paul is available seven days per week. Other locations are accessible via transfer at the Uptown Transit Station approximately three blocks to the west of the site. The nearest bus stops are approximately one block south of the site at the Emerson Avenue and Lagoon Street intersection. Transit routes serving the area making stops near the site are as follows:

Route 6; A local route with stops serving areas from Edina to the University of Minnesota via Downtown Minneapolis. Service is offered 7 days per week, all year. Buses on this route run from 4:30 AM to 2:30 AM with average time between busses ranging from 5 to 15 minutes depending on the time of day and day of week.

Route 12; A local/limited route connecting Minnetonka in the western suburbs to downtown Minneapolis via Uptown. Service is offered 7 days per week year round. Buses on this route run from 5:00 AM to 1:00 AM with lead times varying from 15 to 30 minutes depending on the time and day of week.

Route 17; A local route with stops serving areas from Hopkins to Northeast Minneapolis via St. Louis Park, Uptown and Downtown Minneapolis. Buses on this route run from 5:00 AM to 1:00 AM with average time between busses ranging from 5 to 30 minutes depending on the time of day and day of week.

Route 21; A route with local stops serving areas from the Uptown Transit Station in Minneapolis to Downtown St. Paul via Lake Street, Marshall Avenue and Selby Avenue. Service is offered 7 days per week, all year. Buses run from 4:00 AM to 2:00 AM with average lead times varying between 10 to 60 minutes depending on the time of day and day of the week.

Route 23; A local route with stops serving areas from the Highland Park neighborhood of St. Paul to Uptown via South Minneapolis. Busses on this route run from 5:00 AM to 11:00 PM with lead times varying from 15 to 30 minutes depending on the time of day and day of week.

Route 53; A limited-stop route serving areas from the Uptown Transit Station in Minneapolis to Downtown St. Paul via Lake Street, Marshall Avenue and Interstate 94. Service is offered 5 days per week (Monday-Friday) from 6:00 AM to 7:00 PM. Time between busses is approximately 10 to 12 minutes.

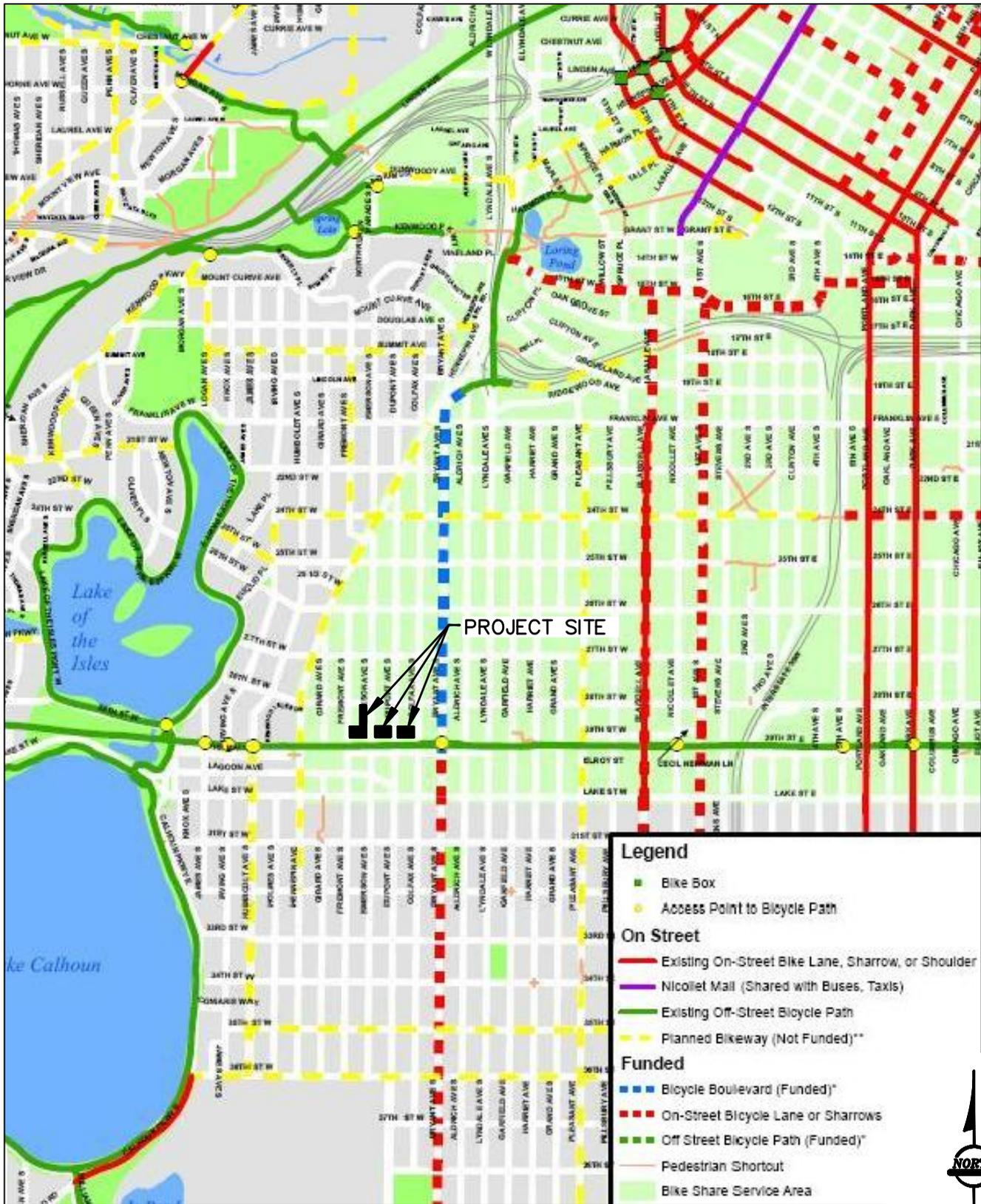
Route 114; A local route connecting Edina (Southdale Mall) with the University of Minnesota via Excelsior Boulevard and Hennepin Avenue. Service is offered 5 days per week from 7:00 AM to 6:30 PM. Time between busses varies from 15 to 60 minutes depending on the time of day.

Route 115; A local route serving areas from the University of Minnesota to Lyndale Avenue South. This route only operates outbound every 30 minutes from campus to Uptown during weekday evenings from 6:30 PM to 10:30 PM

In addition to the many existing bus routes, the Midtown Greenway has great future transit opportunity. The Hennepin County Regional Rail Authority owns the greenway and has designated it as a transit corridor. Studies are underway to locate and design the ultimate Southwest LRT Corridor which includes one alignment along the Midtown Greenway, as well as a connector between the Hiawatha Light Rail and Uptown. The final decisions on these preferred routes are forthcoming.

Currently, the parcels of the Bennett Lumber site do not fall within the Transit Overlay District as defined on the City of Minneapolis' website. Nevertheless, residents of these proposed apartments will be significant users of transit and the Midtown Bikeway Corridor. The proximity of these proposed apartments to the array of alternative transportation options makes a case for the inclusion of this area into the Transit Overlay District.

Regarding bicycle parking, Table 541-3 -- Bicycle Parking Requirements of the Minneapolis Zoning Code, multiple-family dwellings with five or more units shall have a ratio of 1 space per 2 dwelling units. The East Parcel will have 223 units, and 1 bike parking stall is proposed per unit, resulting in a total of 223 bike parking spaces to be provided. Bicycle parking will be per code for the future Central and West parcels (480 units total) which will result in 1 bike parking stall per two units, or 240 bike spaces. Therefore, a total of 463 bike parking spaces shall be provided over the three parcels.



NOTES

LOCATION OF BICYCLE FACILITIES IS APPROXIMATE.
 DATA FROM CITY OF MINNEAPOLIS WEB PAGE, MARCH, 2010.

Oct 15, 2010 12:56pm G:\IPG--OFF and Aurora--Uptown\2010--209--M\Technical Data\Traffic\Figures\03--Bike Routes.dwg

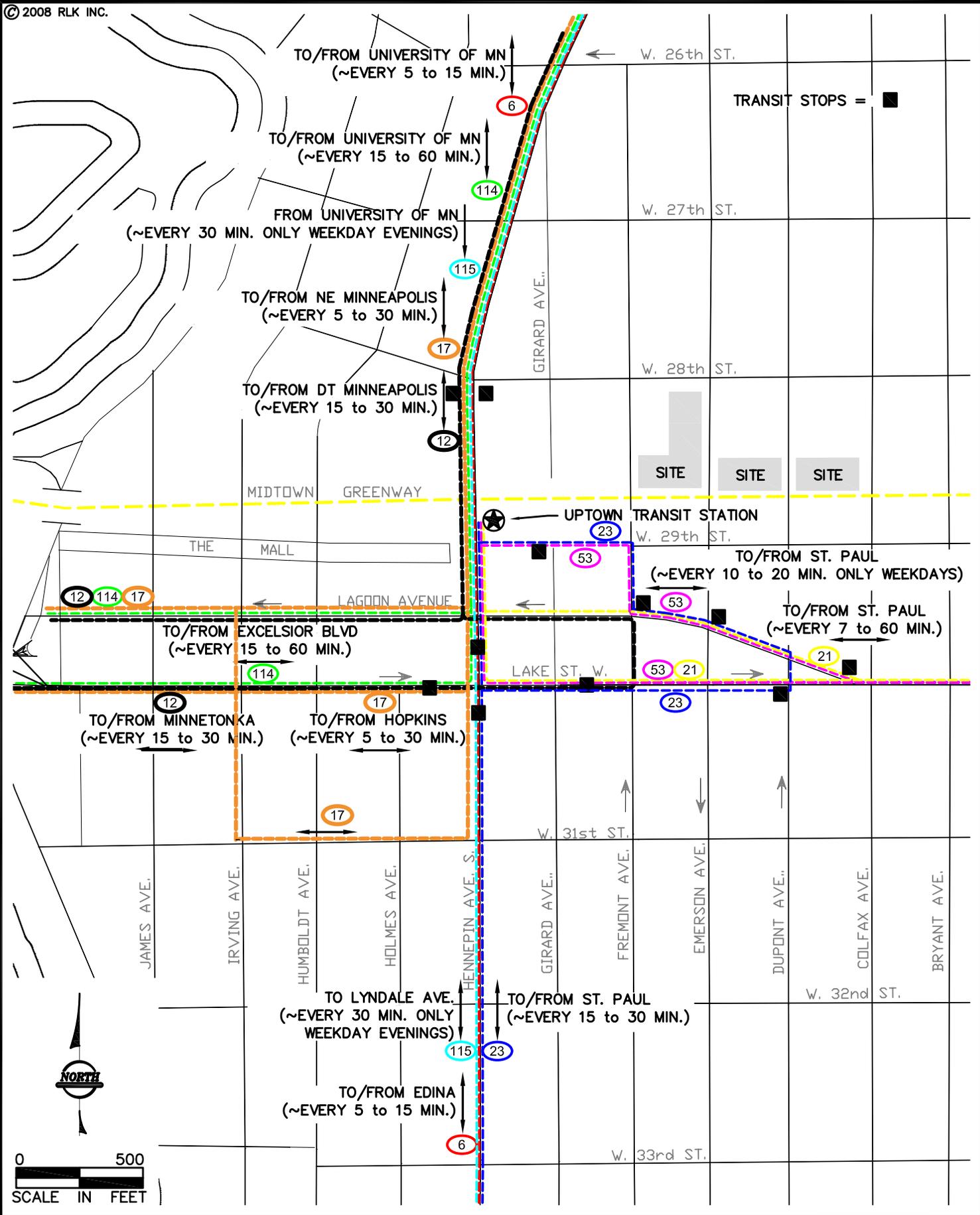


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**BENNET LUMBER SITE
 BICYCLE ROUTE NETWORK**

Figure #
3
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BENNETT LUMBER SITE BUS ROUTES

Figure #
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Project #
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IV. PARKING

A. Parking Requirements per Minneapolis City Code

The parking demand is anticipated to be accommodated on-site. Seven hundred sixty-two underground parking spaces are proposed, 238 of these spaces are provided on the west parcel, 270 spaces are proposed on the central parcel, and 254 spaces are provided on the east parcel.

The number of parking spaces needed for the proposed redevelopment was calculated using two different sources. The first source is Minneapolis City Code. Based on these requirements, 710 stalls will be necessary to serve the site. Table 2 details the parking requirements per Minneapolis City Code.

Table 2
Required Parking Guidelines per Minneapolis City Code

Land Use	Size	Requirement	Required Spaces
Residential	710 Units	1 space/dwelling unit	710
TOTALS			710

B. Parking Requirements per Institute of Transportation Engineers

The second source to calculate the number of required parking spaces, for comparison purposes only is Parking Generation, 4th Edition, published by ITE. Calculations using this source are identical to the Minneapolis City Code requiring 1 parking space per dwelling unit for a total of 710 required spaces.

V. TRAFFIC OPERATIONS

Traffic operations at the site access points and nearby intersections were studied to determine whether the addition of site-generated traffic would have adverse impacts. As identified in the 2006 Bennett Lumber Site Redevelopment prepared for Sherman Associates with the cooperation of the City of Minneapolis, the intersections most likely to be affected were:

- West Lake Street & Dupont Avenue South
- West Lake Street & Emerson Avenue South
- West Lagoon Street & Emerson Avenue South
- West 28th Street & Emerson Avenue South
- West 28th Street & Dupont Avenue South

These intersections were also studied in the 2008 Bennett Lumber Site Redevelopment TDMP and TIS, prepared for Bennett Housing Partners, LLC, by RLK Incorporated.

New for this study, the intersection of Lagoon and Hennepin was reviewed for traffic impacts.

To forecast the impact of site-generated traffic, existing operations at these intersections were first reviewed. Traffic to be generated by the proposed site plan was then estimated, and added to the roadway network. Operations at the intersections were again reviewed and compared to existing conditions. In general, results of the operational analysis show that the addition of site-generated traffic to the local roadway network does not result in unacceptable, congested or unsafe operations. One intersection, at Dupont and Lake Street, exhibits significantly increased delay, but modifications to the existing signal timing plans mitigated much of the issue at that intersection.

Within the next five years, as development in this area continues, modifications and updates to the traffic signal timings are recommended. These modifications will improve the traffic operation through the network, and especially along the Lake/Lagoon Corridor.

A full traffic impact study detailing the methodology and results of the analysis has been completed and is attached as Appendix A.

VI. TRAVEL DEMAND MANAGEMENT STRATEGIES

A. City of Minneapolis Transportation Policy Points

The following policy points for transportation are included in Chapter 2 of the Minneapolis Plan for Sustainable Growth¹:

- Policy 1: Encourage growth and reinvestment by sustaining the development of a multi-modal transportation system.
- Policy 2: Support successful streets and communities by balancing the needs of all modes of transportation with land use policy.
- Policy 3: Encourage walking throughout the city by ensuring that routes are safe, comfortable, pleasant, and accessible.
- Policy 4: Make transit a more attractive option for both new and existing riders.
- Policy 5: Ensure that bicycling throughout the city is safe, comfortable and pleasant.
- Policy 6: Manage the role and impact of automobiles in a multi-modal transportation system.
- Policy 7: Ensure that freight movement and facilities throughout the city meet the needs of the local and regional economy while remaining sensitive to impacts on surrounding land uses.
- Policy 8: Balance the demand for parking with objectives for improving the environment for transit, walking and bicycling, while supporting the city's business community.
- Policy 9: Promote reliable funding and pricing strategies to manage transportation demand and improve alternative modes.
- Policy 10: Support the development of a multi-modal Downtown transportation system that encourages an increasingly dense and vibrant regional center.
- Policy 11: Minneapolis recognizes the economic value of Minneapolis-St. Paul International Airport and encourages its healthy competition to reach global markets in an environmentally responsible manner.

B. Goal of the Travel Demand Management Plan

The purpose of this Travel Demand Management (TDM) plan is to assist the City of Minneapolis to

¹ http://www.ci.minneapolis.mn.us/cped/docs/02_Transportation_100209.pdf

achieve their overall transportation goals discussed earlier. The plan encourages residents, employees and visitors to utilize alternative modes of transportation other than driving alone. This Travel Demand Management plan identifies actions to manage and minimize the vehicle trips and parking generation by the development.

C. Specific Travel Demand Management Strategies

This section outlines specific Travel Demand Management strategies to be implemented by the owner/end user/property manager/etc. of this site. The strategies detail the responsibilities of the site's responsible party in addressing the issues regarding transportation cited above.

JPG-OFP, LLC & Aurora-Uptown, LLC, and their successors, by accepting the responsibility of implementing the items below, desire to help Minneapolis to achieve their goals of enhancing the local transportation system. Implementation of the items noted will help to encourage use of alternate modes of travel, enhance pedestrian friendliness, and achieve a balance in the needs of all users of the transportation system.

JPG-OFP, LLC & Aurora-Uptown, LLC, and their successors agree to the implementation of the following measures:

General

1. The owners and/or property managers of the development will appoint designated TDM Liaisons to coordinate the various TDM strategies that require ongoing attention. The responsibilities of the TDM Liaison would include upkeep of transit information displays and other communications, carpool program coordination, sale of discounted transit passes, and/or administration of a shared car program, as appropriate for each individual land use. (More detail on individual programs is provided below.)
2. The owner/TDM Liaison of the apartment building will maintain a display of commuter information in common areas for residents/employees. Information should include items such as transit schedules, Metro Transit commuter/carpool program information (Rideshare and the Guaranteed Ride Home), and bicycle/pedestrian commuter information or maps.
3. The owners/property managers of the site shall maintain clear, well-lit sidewalks for pedestrian ease of use.
4. Sidewalks impacted by construction shall be rebuilt with ADA-compliant tactile dome curb ramps, encouraging use by pedestrians of all abilities.
5. The owners and/or TDM Liaison will work to achieve a mode share goal percentage of 45% non-single-occupant-vehicles for the residential development.

Transit/Carpool

1. The location of the site, near the Midtown Greenway bicycle and potential light-rail corridor within the heart of Uptown and all its related amenities offers a tremendous opportunity to utilize alternative modes of transportation to and from the site.
2. Appropriate signage shall be placed on-site directing users to the Midtown Greenway corridor.

3. Seven Metro transit bus routes (6, 12, 17, 21, 53, 114 and 115) provide service to the site. The nearest bus stops are along Emerson Avenue and Lagoon Street and are within 1 block.
4. The property manager/TDM liaison for the apartment building will manage the building's involvement in a shared car program for residents' use. The "HOURCAR" system, detailed at www.hourcar.org is an example of such a program.

Bicycles

1. The apartment building shall provide a bicycle storage area within the parking garage which will provide adequate space to accommodate one bicycle per dwelling unit for the East Parcel. (NOTE: the City standard is 1 bike stall for every 2 units.) The bicycle storage area will be conveniently located to provide easy access to the Midtown Greenway. Exterior bike racks will be provided for guests.

Deliveries

1. Owners/property managers shall develop and maintain a policy that provides for truck and service deliveries to occur outside of peak traffic times. This would not include FedEx/UPS-type deliveries.

Parking

1. On-site parking will only be used by residents and their invited visitors. No parking spaces shall be used or sold to anyone that does not own, rent or lease property in the development. This does not allow the development site to sell parking to the general public. Any such change must result in an amended TDM Plan.

**TRAVEL DEMAND MANAGEMENT PLAN
BENNETT LUMBER SITE REDEVELOPMENT
UPTOWN MINNEAPOLIS, MN**

PLAN APPROVAL

JPG-OFF, LLC & Aurora-Uptown, LLC

By: _____

Dated: _____

3.2.11

JPG-OFF, LLC & Aurora-Uptown, LLC
c/o Zeller Realty Group
950 LaSalle Plaza
800 LaSalle Avenue
Minneapolis, MN 55402

Minneapolis Community and Economic Development Department

By: _____

Dated: _____

CPED Planning Director

Printed Name and Title

Minneapolis Public Works Department

By: _____

Dated: _____

Traffic and Parking Services

Printed Name and Title

APPENDIX A: Traffic Impact Study

TRAFFIC IMPACT STUDY
BENNET LUMBER SITE REDEVELOPMENT
MINNEAPOLIS, MN

January 14, 2011

Prepared For:

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c/o Zeller Realty Group
950 LaSalle Plaza
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I. INTRODUCTION

JPG-OFP, LLC & Aurora-Uptown, LLC, plan to redevelop the existing Bennett Lumber Company site in the Lowry Hill East Neighborhood in the City of Minneapolis (Figure 1). The site is divided into three parcels, the east parcel, the central parcel and the west parcel. The north-south site boundary extends from the Midtown Greenway north to midway point between the Midtown Greenway and West 28th Street for the East and Central Parcels, while the West Parcel is bounded by 28th and 29th Streets. Fremont Avenue South forms the western boundary and Colfax Avenue South forms the eastern boundary. Current plans for the approximately 5.6-acre site call for the completion of 710 apartments.

The project will include the redevelopment of the existing Bennett Lumber Company land uses on the east and central parcels as defined in the previously approved Bennett Lumber Site TDMP, prepared in August 2006 for Sherman Associates, by Alliant Engineering, Inc, and by the Bennett Lumber Site Traffic Impact Study, by RLK Incorporated in 2008. In addition to the previous studies, the west 1.9 acre parcel is included in this 2010 study.

The east parcel consists of the following land uses as described in the August 2006 TDMP, and the 2008 TIS:

- Vacant property, with all buildings removed. Acreage is estimated at 1.8 acres and a dead end public alley.

The central parcel contains the following existing land uses:

- Vacant lumber yard.
- Warehouse with light manufacturing and sales.

The west parcel consists of the following land use:

- Warehouse and former retail/wholesale lumber store.
- Two loading docks on Fremont Avenue South.
- Eighty parking stalls.

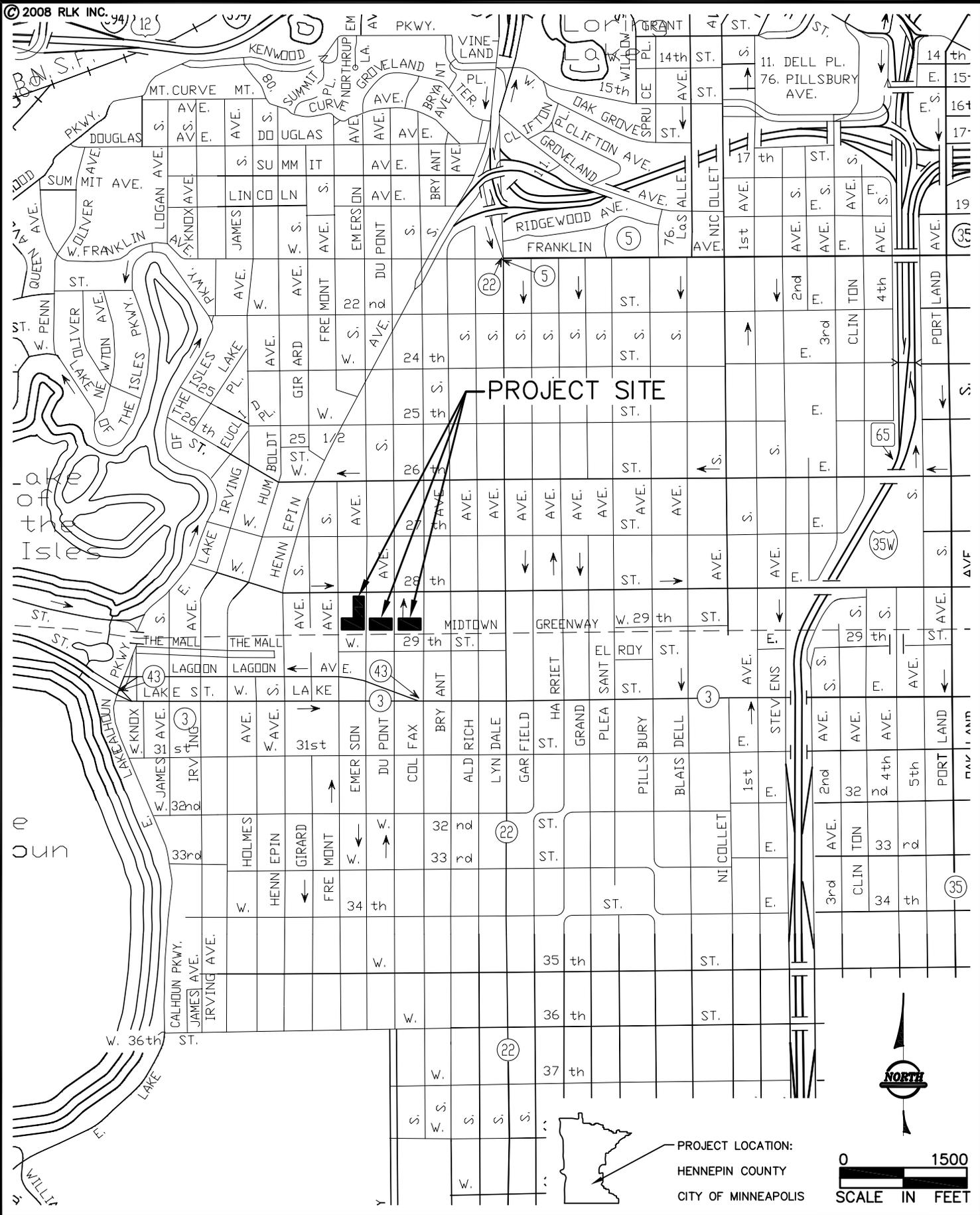
Figure 2, the Concept Site Plan, illustrates the proposed layout of the site and access locations. Access is proposed at two locations, at Dupont Avenue South for the east and central parcels, and along Emerson Avenue South for the west parcel.

The purpose of this study is to evaluate the impact of traffic generated by the proposed development on the operations and safety of the adjacent roadway network. The study will detail the existing and future traffic volumes and operations at studied intersections. Recommendations regarding geometric and/or traffic control improvements to accommodate the additional traffic and improve safety are included. This study is intended to provide support to a comprehensive Travel Demand Management Plan that will address related traffic issues, such as pedestrian and transit compatibility.

This report considers two alternatives for the site. These two alternatives are:

1. **The No-Build alternative.** This alternative assumes the site will maintain its current land uses while the surrounding area continues to develop.
2. **The Build alternative.** The East Parcel is projected to be completed in 2012. At this point, it is unknown when market conditions will warrant completion of the Central and West Parcels. Typically, the year after full build-out is used for design purposes to allow traffic patterns to readjust after construction. Nevertheless, for analysis purposes, 2015 is assumed as the design year for this study.

In order to assess the traffic impacts associated with the proposed redevelopment, a two-step approach is presented in this report. After providing an inventory of the existing conditions of the roadway network in Sections II, Section III presents analysis of the predicted No-Build conditions. After establishing the No-Build scenario as a means for comparison, Build scenarios analysis is covered in Section IV. Conclusions are presented in Section VI.



PROJECT LOCATION:
HENNEPIN COUNTY
CITY OF MINNEAPOLIS



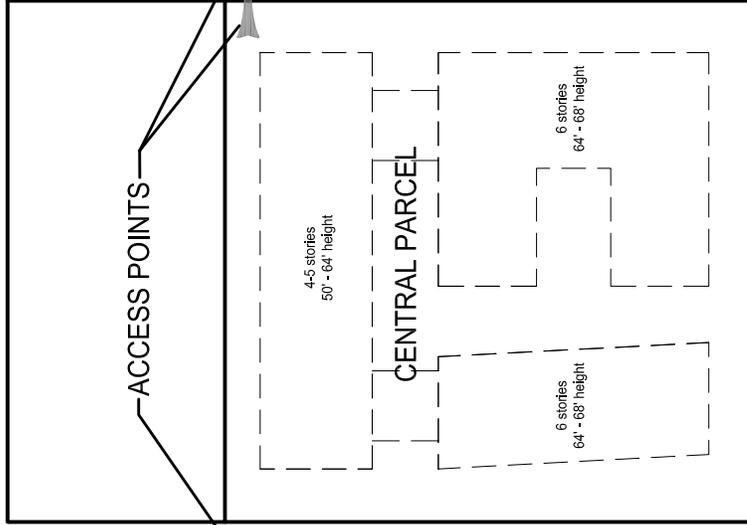
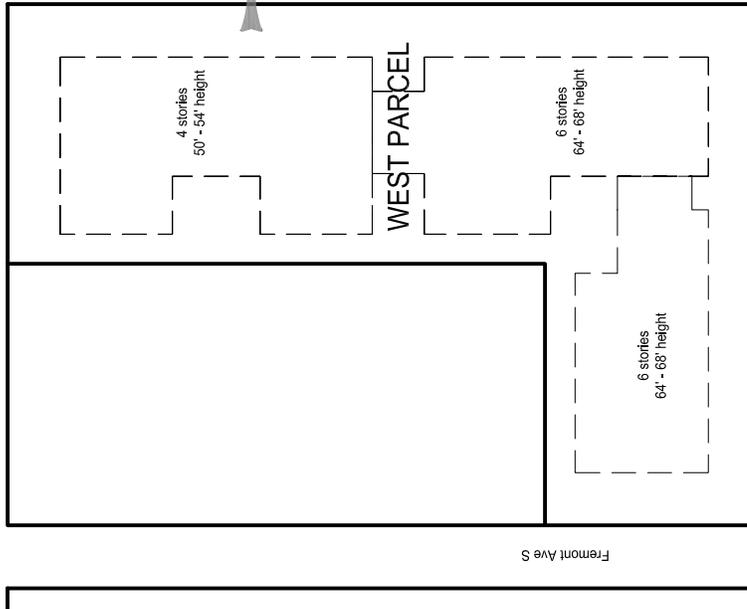
BENNETT LUMBER SITE

VICINITY MAP

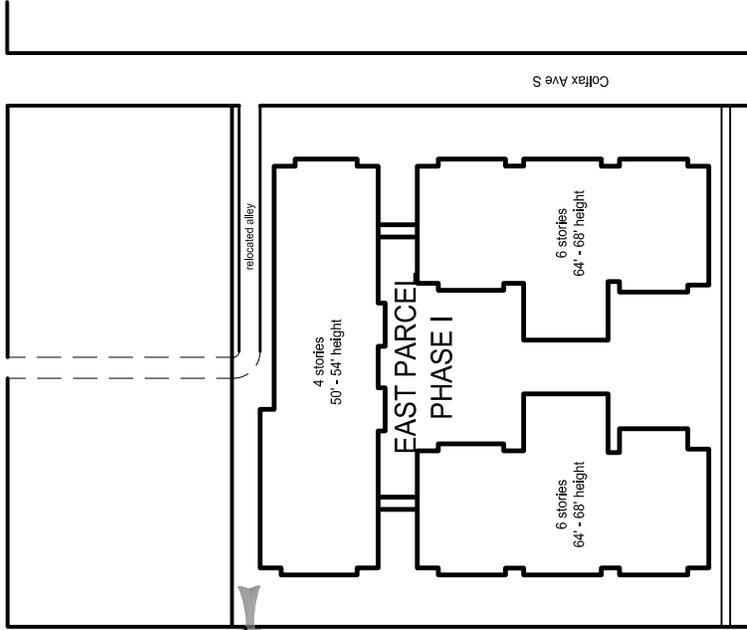
Bennett Lumber Redevelopment
Site Plan: West, Center, East parcels

RLK Inc.
ESG Architects Inc.

28th Street West



ACCESS POINTS



WEST AND CENTRAL PARCELS ILLUSTRATE BUILDING MASSING FOR EAW ONLY.



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Bennett Lumber Housing Redevelopment

Concept Site Plan

Figure
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Date
11/17/10

II. EXISTING TRAFFIC CONDITIONS

A. Data Collection

The existing conditions of the nearby roadway system were documented by a field inventory conducted by RLK Incorporated on February 12, 2008. The purpose of the inventory was to identify features that affect roadway capacity, including intersection traffic control, lane designations, turn lane storage bay lengths, speed limits, etc. The following study area intersections from the previously approved Bennett Lumber Site TDMP, prepared in August 2006 for Sherman Associates, by Alliant Engineering, Inc, were considered for this analysis:

- West Lake Street/Lagoon Avenue and Dupont Avenue South
- Lagoon Avenue and Emerson Avenue South
- West Lake Street and Emerson Avenue South
- West 28th Street and Emerson Avenue South
- West 28th Street and Dupont Avenue South
- Lagoon Avenue and Hennepin Avenue South

It is noted that the existing (2010) signal timings for the signalized study area intersections were obtained from the City of Minneapolis.

B. Existing Traffic Volumes

Over the past five years, there have been several TDMPs and traffic analyses done in the Lowry Hill East/Uptown area. These analyses used 2010 as the No-Build versus Build year for their traffic impact studies. These analyses also included the impacts of various background developments in their traffic projections.

In late summer 2010, RLK Incorporated conducted peak hour turning movement counts at selected intersections in the area. The results of these turning movement counts show that the 2010 No-Build traffic volumes projected in the previous studies at these nearby intersections were slightly greater than the 2010 actual turning movement volumes recorded at selected intersections. Therefore, rather than recount the intersections in the study area, RLK requested that City Traffic staff at the City of Minneapolis allow the 2010 No-Build traffic projections be utilized in the current studies as a "worst case" for 2010 Existing Condition Traffic Volumes. The City of Minneapolis staff concurred.

Thus, the 2010 AM and PM peak hour traffic volumes, existing geometrics, and traffic controls for the study area intersections are illustrated on Figure 3.

C. Functional Classifications of Existing Study Area Roadways

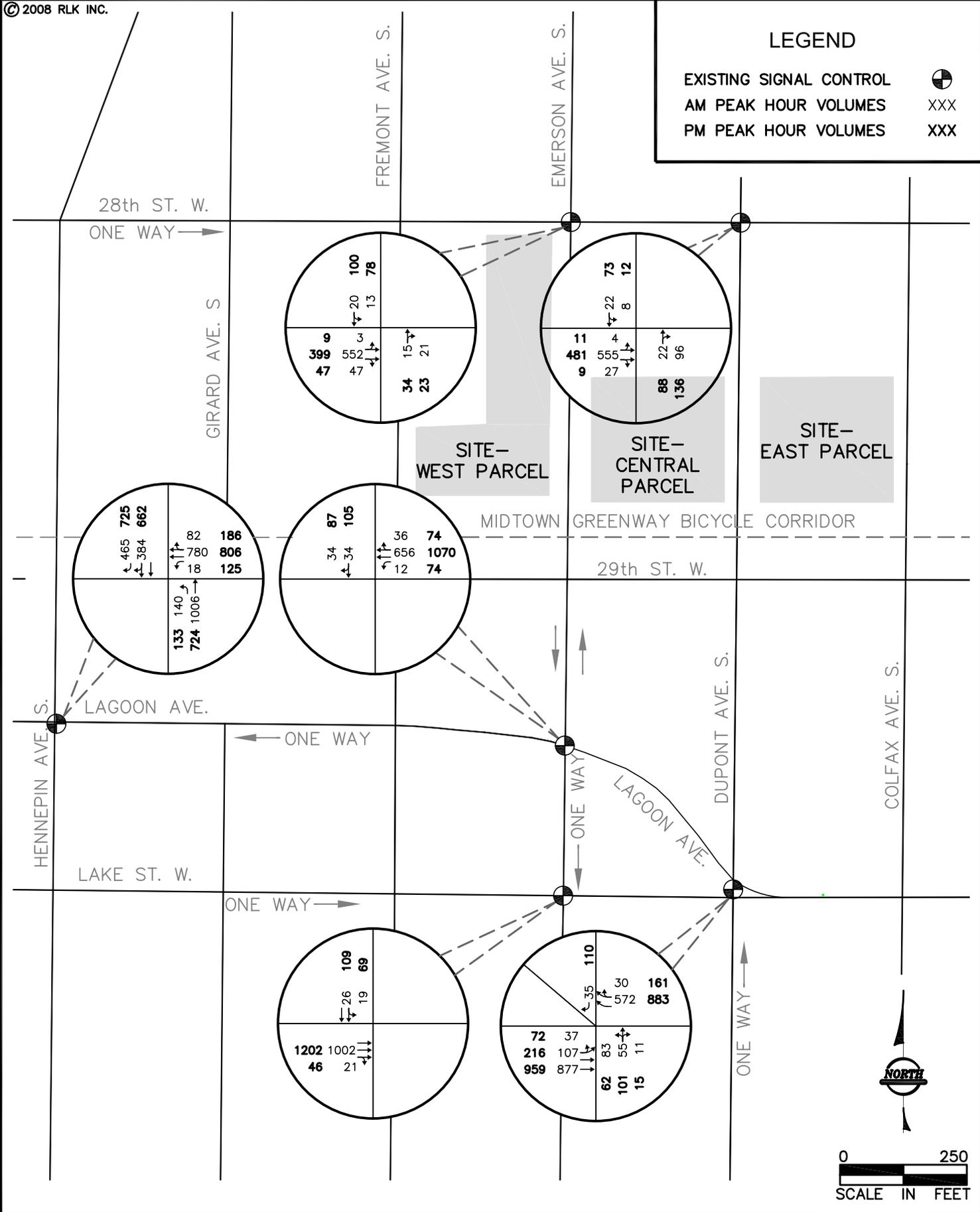
According to the Met Council Functional Classification Map (March 2009), the study area roadways of Lake Street, Lagoon Avenue and Hennepin Avenue are A-Minor Arterial Roadways. 28th Street is classified as a B-Minor Arterial. Emerson and Dupont Avenues in this area are classified as Major Collectors. Fremont and Colfax Avenues are classified as Local Streets. Signalized intersections include 28th & Emerson, 28th & Dupont, Emerson & Lagoon, Emerson & Lake, Dupont & Lake, and Lagoon & Hennepin. The access drives from the developments are proposed to have side-street stop control.

LEGEND

EXISTING SIGNAL CONTROL 

AM PEAK HOUR VOLUMES XXX

PM PEAK HOUR VOLUMES XXX



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BENNETT LUMBER SITE
2010 TRAFFIC VOLUMES

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III. NO-BUILD ALTERNATIVE

To address the impacts of a development on the surrounding roadway system, it is necessary to first analyze traffic conditions that would be present on the roadway system without the inclusion of the proposed development. This is considered the No-Build scenario, and serves as a basis with which to compare Build scenarios.

A. Background Growth

To remain consistent with previous studies completed for the Uptown area, an annual background growth rate of one percent (1%) was used for this study.

In addition to the annual background growth rate, site-generated traffic from several nearby redevelopment projects expected to be completed by 2010 were included in the 2010 No-Build conditions as directed by the City. The site-generated traffic, assuming the respective distribution throughout the study area as detailed in each of the associated Travel Demand Management Plans (TDMPs), was incorporated in the 2010 No-Build conditions. Figure 4 illustrates the location of these nearby redevelopment projects with respect to the proposed site.

As part of the assumed 2010 Existing Traffic Volumes are trips from the following redevelopments that are now in place:

- Midtown Lofts
- Urban Village (Tract 29, Aldrich to Bryant)
- Lumen on Lagoon
- LynLake Aldrich (Blue) Apartments
- The Murals (2833 Lyndale)

Some additional redevelopment projects which were assumed to have been completed by 2010 remain undone. Nevertheless, it is assumed that the following projects will be completed by the time the Bennett Lumber Redevelopment project is complete. Therefore, trip generation from the following parcels is preserved in the analysis:

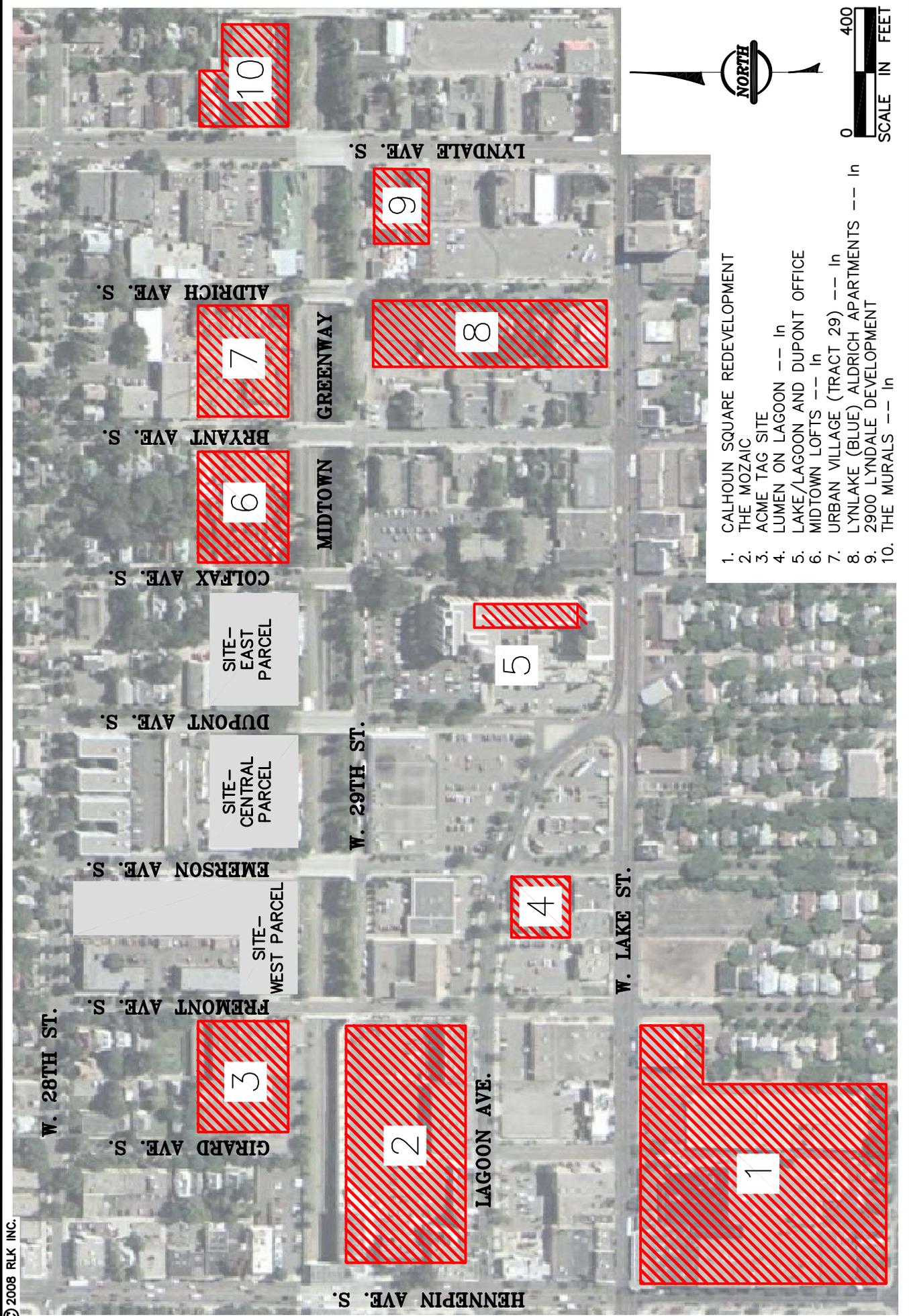
- Calhoun Square Redevelopment
- Lake/Lagoon and Dupont Office
- 2900 Lyndale Mixed Use Development
- The Moziac Development – on the Ackerberg property
- Acme Tag Site

The 1% annual rate of growth assumed for background traffic as well as the site-generated traffic from the above detailed projects was applied to 2010 traffic volumes to arrive at the estimate of the 2015 No-Build peak hour traffic volumes, shown on Figure 5.

B. Anticipated Improvements for No-Build Conditions

Previous TDMPs had suggested that signal timings be updated along the Lake Street/Lagoon Avenue Corridor. These timings have now been updated by the City of Minneapolis, and these new timings are in place today.

As a standard practice, it is recommended that the City monitor traffic signal timings as developments change along the corridor. As new developments are completed, and new traffic patterns evolve, traffic volumes and signal operations should be assessed for any fine-tuning of signal timings in the area.



1. CALHOUN SQUARE REDEVELOPMENT
2. THE MOZAIC
3. ACME TAG SITE
4. LUMEN ON LAGOON --- In
5. LAKE/LAGOON AND DUPONT OFFICE
6. MDTOWN LOFTS --- In
7. URBAN VILLAGE (TRACT 29) --- In
8. LYNLAKE (BLUE) ALDRICH APARTMENTS --- In
9. 2900 LYNDALE DEVELOPMENT
10. THE MURALS --- In

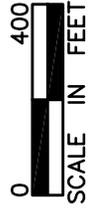


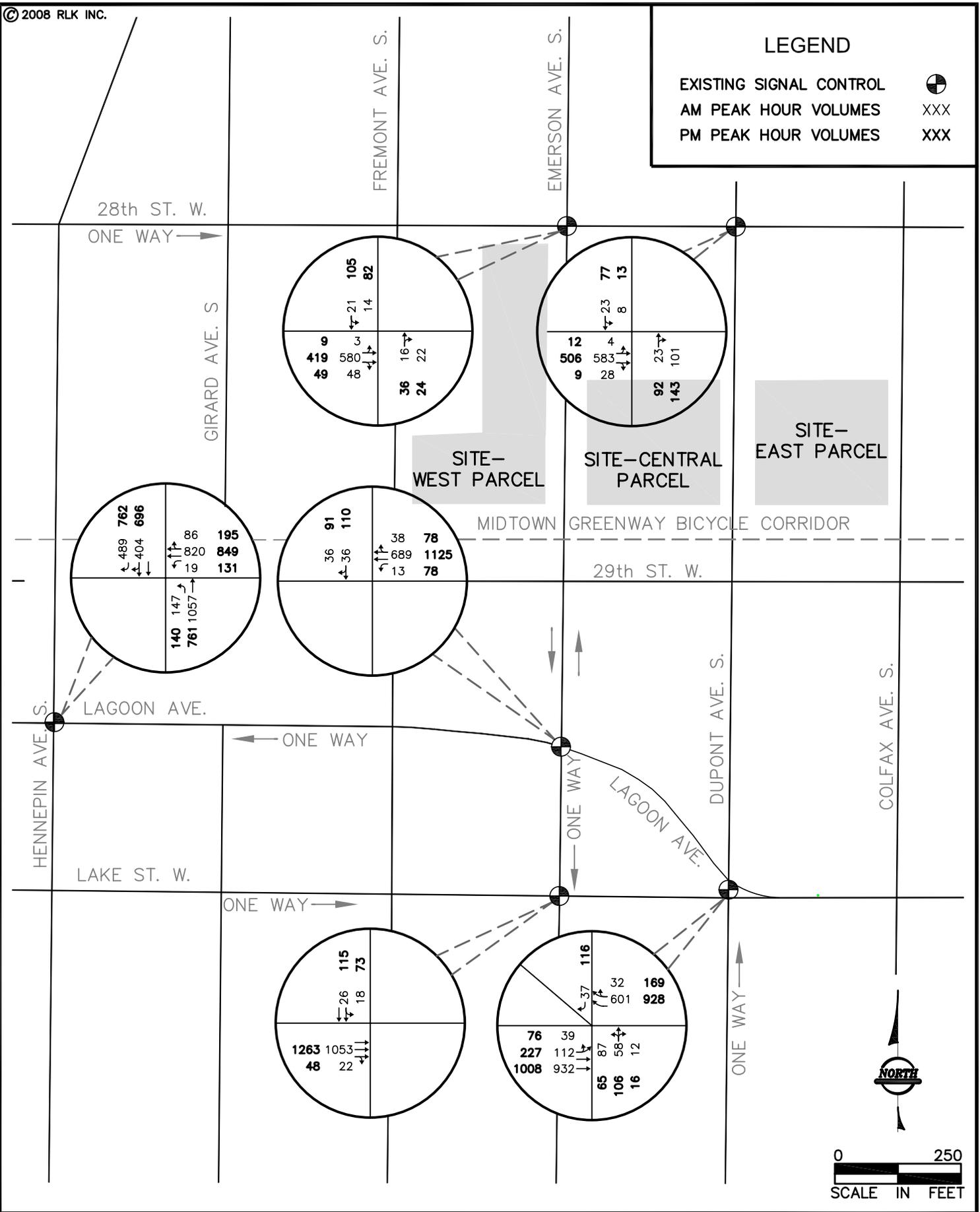
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BENNETT LUMBER SITE PLANNED DEVELOPMENTS

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2015 NO-BUILD TRAFFIC VOLUMES

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C. Operational Analysis Methodology

Traffic operations for peak hour conditions within the study area were analyzed using the industry-standard SYNCHRO/SimTraffic software package, which uses the data and methodology contained in the 2000 Highway Capacity Manual, published by the Transportation Research Board. The software model was calibrated using existing conditions before being used to assess future conditions.

The operating conditions of transportation facilities, such as traffic signals and stop-controlled intersections, are evaluated based on the relationship of the theoretical capacity of a facility to the actual traffic volumes on that facility. Various factors affect capacity, including travel speed, roadway geometry, grade, number and width of travel lanes, and intersection control. The current standards for evaluating capacity and operating conditions are contained in the 2000 Highway Capacity Manual (HCM). The procedures describe operating conditions in terms of a Level of Service (LOS). Facilities are given letter designations from “A,” representing the best operating conditions, to “F,” representing the worst. Generally, Level of Service “D” represents the threshold for acceptable overall intersection operating conditions during a peak hour.

The acceptable threshold for a particular movement at an intersection depends on both the priority assigned to that movement and its traffic volume. In general, the higher the priority and the higher the traffic volume, the more stringent the acceptable threshold will be. For example, the acceptable threshold for a high-priority/high-volume suburban movement might be “C,” while LOS “F” on a low-priority/low-volume urban movement might be appropriate.

For side-street stop-controlled intersections, a key measure of operational effectiveness is the side-street LOS. Long delays and poor LOS can sometimes result on the side street, even if the overall intersection is functioning well, making it a valuable design criterion. Again, depending on priority and traffic volume, acceptable side-street LOS can range from “D” to “F.”

A final fundamental component of operational analyses is a study of vehicular queuing, or the lineup of vehicles waiting to pass through an intersection. An intersection can operate with an acceptable level of service, but if queues from the intersection extend back to block entrances to turn lanes or accesses to adjacent land uses, unsafe operating conditions could result. The 95th percentile queue, or the length of queue with a 5% chance of occurring during the peak hour, is considered the standard for design purposes.

D. Results of Analysis – No-Build Scenario

In general, the existing roadway infrastructure, in terms of roadway cross sections and intersection control, has the capacity to support the area through the 2015 design year.

Tables 1a and 1b, which summarize the results of the 2015 No-Build operational analysis, include the LOS for each study area intersection. Note that the signal timings and coordination have been updated along the Lake Street/Lagoon Avenue corridor since the 2008 analysis. Signal timings utilized in this analysis reflect these new timings, as provided by the City of Minneapolis. The complete operational analysis output is available upon request.

Table 1a
Results of Year 2015 No-Build Analysis – AM Peak Hour

Intersection	Level of Service¹	Notes/95th Percentile Queues²
W. 28 th St. & Emerson Ave.	C	Queues ranging from 15' to 226'.
W. 28 th St. & Dupont Ave.	A	Adequate queue lengths.
Lagoon Ave. & Emerson Ave.	B	Queues ranging from 56' to 216'.
W. Lake St. & Emerson Ave.	A	Adequate queue lengths.
Lagoon Ave./W. Lake St. & Dupont Ave.	C	Queues ranging from 29' to 301'.
Lagoon Ave. & Hennepin Ave.	B	Queues ranging from 78' to 284'.

1. Overall LOS reported from Synchro.
2. 95th percentile queues are a result from an average of 5 SimTraffic simulations.

Table 1b
Results of Year 2015 No-Build Analysis – PM Peak Hour

Intersection	Level of Service	Notes/95th Percentile Queues
W. 28 th St. & Emerson Ave.	B	Adequate queue lengths.
W. 28 th St. & Dupont Ave.	A	Adequate queue lengths.
Lagoon Ave. & Emerson Ave.	C	Queues ranging from 100 to 351'
W. Lake St. & Emerson Ave.	A	Queues ranging from 70 to 392'
Lagoon Ave./W. Lake St. & Dupont Ave.	D	Queues ranging from 65 to 487'
Lagoon Ave. & Hennepin Ave.	C	Queues ranging from 108 to 315'

Results of the analysis contained in Tables 1a and 1b indicate that all study area intersections are projected to operate at acceptable overall LOS with adequate 95th percentile lengths for 2015 No-Build conditions.

IV. BUILD ALTERNATIVE

A. Site-Generated Traffic

The volume of vehicle trips generated by the proposed redevelopment was estimated for the weekday AM and PM peak hours using the data and methodologies contained in the 8th Edition of Trip Generation, published by the Institute of Transportation Engineers (ITE). The estimated volume of site-generated trips is summarized in Table 2. Mid-rise apartments are defined by ITE as having between three and ten floors. This development is projected to have between four and six floors.

Table 2
Trip Generation Estimates¹ – Proposed Land Uses

Land Use	ITE Land Use Code	Size	Trips Generated:						Weekday ADT ²
			AM peak			PM Peak			
			Rate	Enter	Exit	Rate	Enter	Exit	
Mid-Rise Apartments	223	710 Units	0.30	66	147	0.39	161	116	2,876
Totals				66	147		161	116	2,876
				213			277		

1. Per the data and methodologies in Trip Generation, 8th Edition, published by ITE.
2. Weekday ADT based on rates averaged between ITE Land Use Code 220 and 223 for AM and PM Peak Hours and the interpolated for daily trips

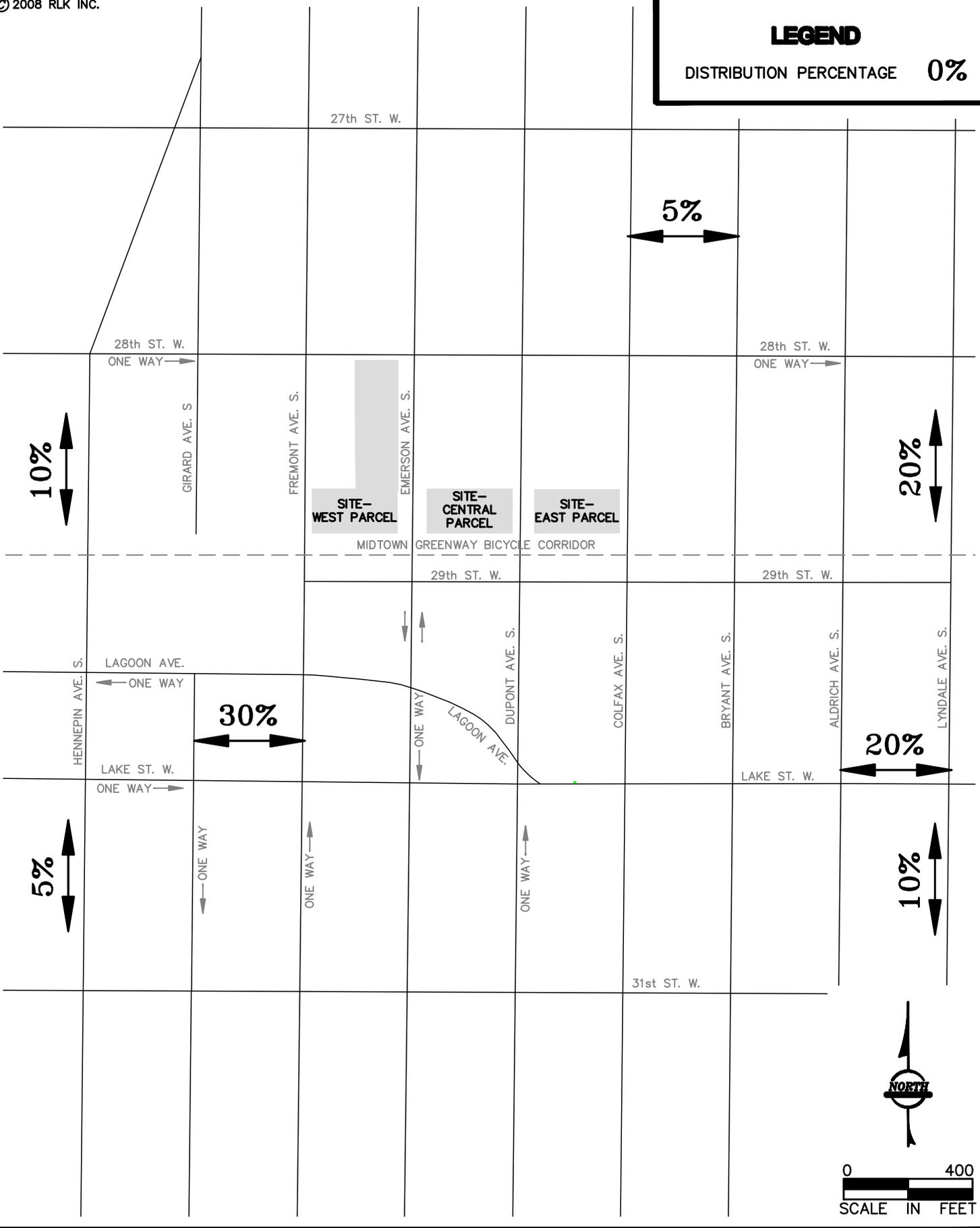
Because the access points for this Bennett Lumber Redevelopment remain along Emerson and along Dupont, the distribution of site-generated traffic to and from the adjacent street system is consistent with previous TDM Plans completed in the vicinity of the proposed site, and is as follows:

- 10% to/from the North/Northwest via Hennepin Avenue
- 20% to/from the North/Northeast via Lyndale Avenue
- 5% to/from the East via West 26th Street and West 28th Street
- 20% to/from the East via West Lake Street
- 10% to/from the South/Southeast via Lyndale Avenue
- 5% to/from the South/Southwest via Emerson Avenue and Hennepin Avenue
- 30% to/from the West via West Lake Street and Lagoon Avenue

This distribution pattern is illustrated on Figure 6. The estimated changes in traffic volumes at study area intersections expected as a result of the proposed development are shown on Figure 7, Trip Assignment. The 2010 Build scenario volumes result when the trip assignment volumes are combined with the No-Build traffic volumes, detailed in Figure 8.

LEGEND

DISTRIBUTION PERCENTAGE 0%



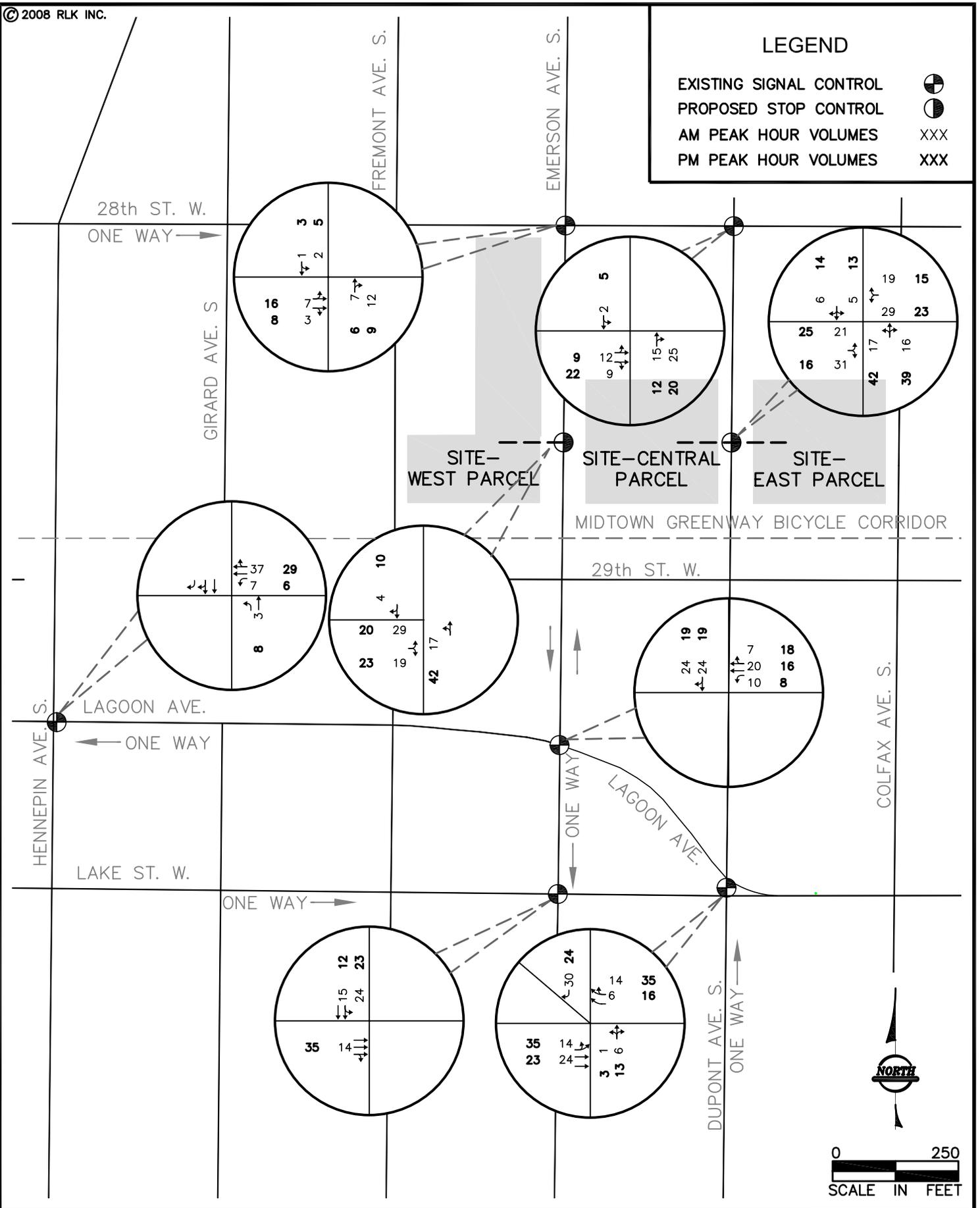
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**BENNETT LUMBER SITE
 TRIP DISTRIBUTION**

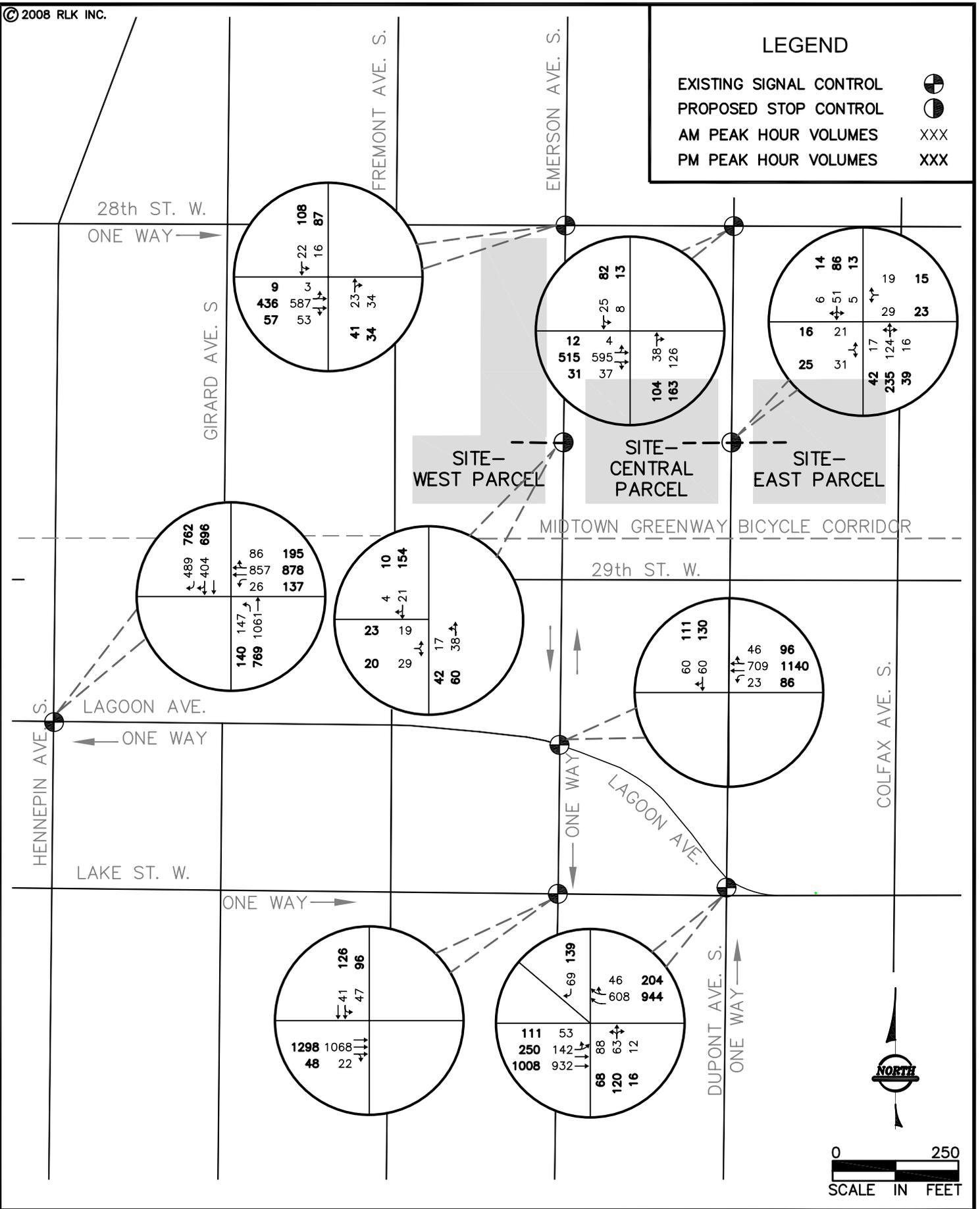
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BENNETT LUMBER SITE TRIP ASSIGNMENT

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2015 BUILD TRAFFIC VOLUMES

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B. Results of Analysis – Build Scenario

This section contains the results of the intersection operational analyses and provides recommendations for mitigating project-related traffic impacts, as necessary.

A summary of the results for 2015 Build conditions is provided in Tables 3a and 3b, below. These intersections were tested using the 2010 current signal timings before any additional optimization. Results shown in the following tables reflect optimized signal timings.

It should be noted that the East Parcel is the only parcel with a time frame for development, which is scheduled to start in 2011. For analysis purposes, this traffic study is assuming the entire project, 710 units on all three parcels, will be completed by 2015.

**Table 3a
Results of Year 2015 Build Analysis – AM Peak Hour**

Intersection	Level of Service¹	Notes/95th Percentile Queues²
W. 28 th St. & Emerson Ave.	B	Queues ranging from 47' to 159'.
W. 28 th St. & Dupont Ave.	A	Adequate queue lengths.
Emerson Ave. & West Access	a/a	Queues ranging from 0' to 10'.
Dupont Ave. & East Access	a/a	Queues ranging from 0' to 10'.
Lagoon Ave. & Emerson Ave.	B	Queues ranging from 27' to 314'.
W. Lake St. & Emerson Ave.	B	Queues ranging from 15' to 203'.
Lagoon Ave./W. Lake St. & Dupont Ave.	C	Queues ranging from 36' to 268'.
Lagoon Ave. & Hennepin Ave.	B	Queues ranging from 35' to 233'.

1. LOS reported from Synchro. Lowercase LOS denotes unsignalized intersections with worst movement LOS following overall LOS.
2. 95th percentile queues are a result from an average of 5 SimTraffic simulations.

**Table 3b
Results of Year 2015 Build Analysis – PM Peak Hour**

Intersection	Level of Service	Notes/95th Percentile Queues
W. 28 th St. & Emerson Ave.	B	Queues ranging from 70 to 105'
W. 28 th St. & Dupont Ave.	A	Queues ranging from 61 to 141'
Emerson Ave. & West Access	a/b	Queues ranging from 0' to 46'.
Dupont Ave. & East Access	a/b	Queues ranging from 0' to 45'.
Lagoon Ave. & Emerson Ave.	B	Queues ranging from 130 to 458'
W. Lake St. & Emerson Ave.	B	Queues ranging from 34 to 233'
Lagoon Ave./W. Lake St. & Dupont Ave.	D	Queues ranging from 100' to 673'
Lagoon Ave. & Hennepin Ave.	C	Queues ranging from 71 to 570'

Review of the AM and PM peak hour Build conditions indicate that nearly all study area intersections and proposed site accesses are projected to operate at acceptable levels of service with adequate 95th percentile queue lengths with the addition of site-generated traffic.

C. Traffic Analysis of R-6 Densities

Although the developer is proposing a density of 710 mid-rise apartment units, an assessment was done to determine the traffic impacts of maximized R-6 apartment unit densities in this study area. Table 4 illustrates the trip generation potential of this higher density.

Table 4
Trip Generation Estimates¹ – R-6 Maximized Land Uses

Land Use	ITE Land Use Code	Size	Trips Generated:						
			AM peak			PM Peak			Weekday ADT ²
			Rate	Enter	Exit	Rate	Enter	Exit	
Mid-Rise Apartments	223	972 Units	0.30	91	202	0.39	221	160	3,948
Totals				91	202		221	160	3,948
				293			380		

3. Per the data and methodologies in *Trip Generation, 8th Edition*, published by ITE.

4. Weekday ADT based on rates averaged between ITE Land Use Code 220 and 223 for AM and PM Peak Hours and the interpolated for daily trips

Tables 5a and 5b reflect the traffic operations for the study area intersections based on trips generated by these maximized R-6 mid-rise apartment densities.

Table 5a
Results of Year 2015 MAXIMIZED R-6 Build Analysis – AM Peak Hour

Intersection	Level of Service ¹	Notes/95 th Percentile Queues ²
W. 28 th St. & Emerson Ave.	B	Queues ranging from 56' to 144'.
W. 28 th St. & Dupont Ave.	C	Queues ranging from 34' to 277'.
Emerson Ave. & West Access	a/a	Queues ranging from 0' to 52'.
Dupont Ave. & East Access	a/a	Queues ranging from 0' to 56'.
Lagoon Ave. & Emerson Ave.	B	Queues ranging from 93' to 225'.
W. Lake St. & Emerson Ave.	B	Queues ranging from 17' to 189'.
Lagoon Ave./W. Lake St. & Dupont Ave.	C	Queues ranging from 59' to 248'.
Lagoon Ave. & Hennepin Ave.	B	Queues ranging from 53' to 287'.

1. LOS reported from Synchro. Lowercase LOS denotes unsignalized intersections with worst movement LOS following overall LOS.

2. 95th percentile queues are a result from an average of 5 SimTraffic simulations.

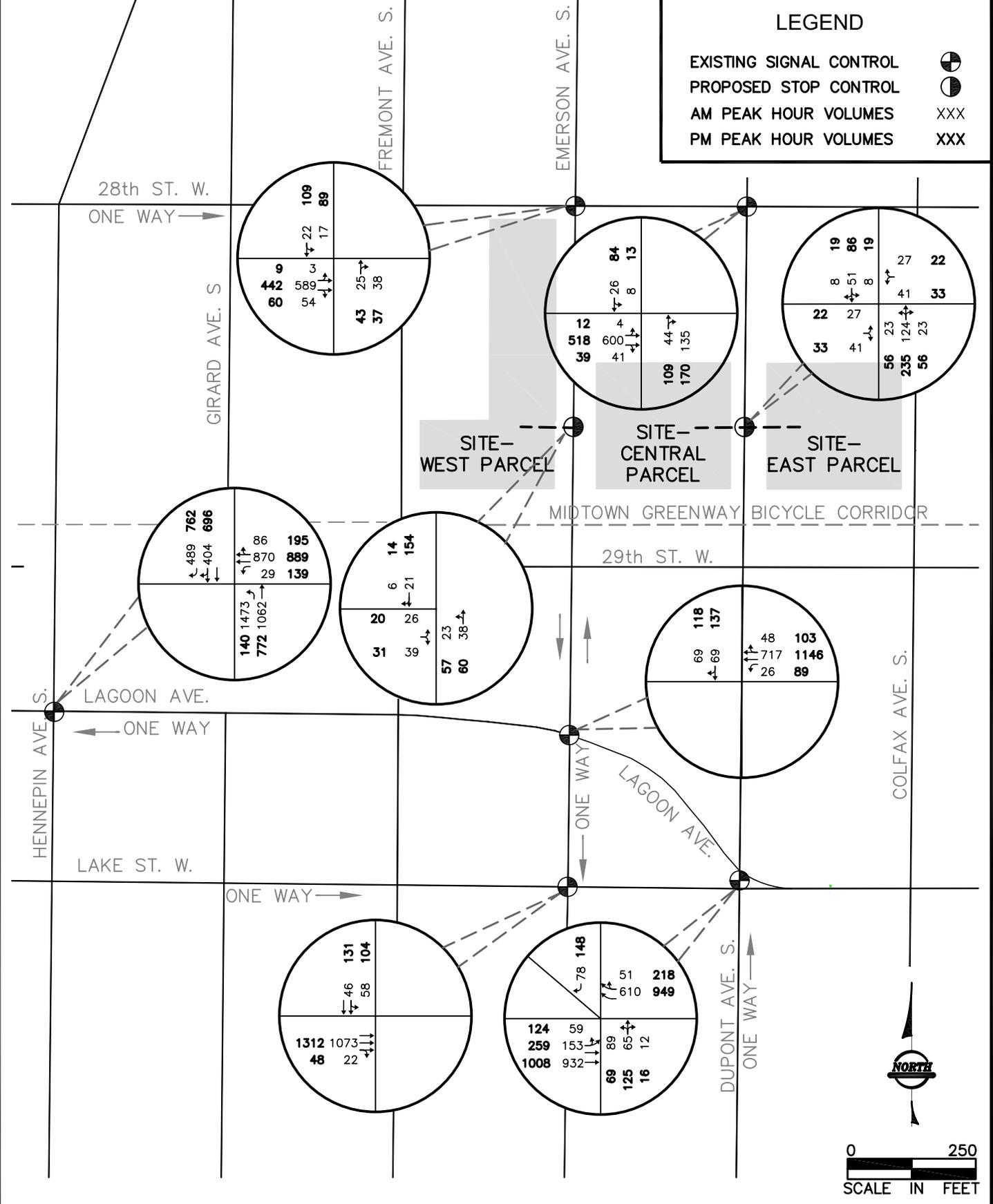
Table 5b
Results of Year 2015 MAXIMIZED R-6 Build Analysis – PM Peak Hour

Intersection	Level of Service	Notes/95 th Percentile Queues
W. 28 th St. & Emerson Ave.	B	Queues ranging from 52' to 137'.
W. 28 th St. & Dupont Ave.	A	Queues ranging from 64' to 142'.
Emerson Ave. & West Access	a/b	Queues ranging from 0' to 52'.
Dupont Ave. & East Access	a/b	Queues ranging from 0' to 49'.
Lagoon Ave. & Emerson Ave.	B	Queues ranging from 31 to 174'
W. Lake St. & Emerson Ave.	B	Queues ranging from 6' to 153'
Lagoon Ave./W. Lake St. & Dupont Ave.	D	Queues ranging from 113' to 613'
Lagoon Ave. & Hennepin Ave.	C	Queues ranging from 103 to 354'

Results of this analysis shows no changes in levels of service and only nominal changes in 95th Percentile queues. The addition of these higher density trips on the adjacent street system will not create adverse traffic impacts above the levels anticipated for the proposed 710 unit development scenario.

LEGEND

- EXISTING SIGNAL CONTROL
- PROPOSED STOP CONTROL
- AM PEAK HOUR VOLUMES XXX
- PM PEAK HOUR VOLUMES XXX



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2015 MAX R-6 BUILD VOLUMES

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D. Safety

The sight lines of the proposed accesses on Emerson Avenue and Dupont Avenue were reviewed in the field. Similar to many other access locations on local neighborhood streets in the Uptown area, on-street parking could possibly obstruct the sight lines for exiting vehicles making it difficult to see through traffic. Due to the low traffic volumes and speeds on Emerson Avenue and Dupont Avenue and driver familiarity of this type of traffic situation in the Uptown area, no on-street parking restrictions near the site accesses are recommended. However, if safety and operational issues arise for vehicles exiting the site, it is suggested this concept be monitored in the future to determine if there is a need to restricted on-street parking on Emerson Avenue and Dupont Avenue surrounding the site accesses.

V. CONCLUSIONS

The preceding analysis has evaluated the potential traffic impacts of the proposed Bennett Lumber Redevelopment on the operations of the study area intersections surrounding the site in Uptown, Minneapolis.

Two scenarios, a No-Build and a Build scenario, were analyzed and compared to assess the development's impact of vehicular traffic to the roadway system. A design year of 2015 was chosen, corresponding to the year after build-out of the site. Current plans for the approximately 5.6-acre site call for the completion of 710 apartments.

The redevelopment is expected to result in approximately 2,876 new trips on the study area roadway per average weekday. Peak hour trips were estimated at 213 during the AM peak hour and 277 during the PM peak hour. Growth in background traffic at an annual rate of 1.0% was accounted for along with additional traffic from redevelopment projects in the area which were analyzed assuming a 2015 completion date.

Results of the operational analyses indicate that study area roadways and intersections will continue to operate acceptably without improvements for the Build scenario. As is the City's maintenance and operation standard, the City is recommended to update and implement optimized signal timings within the study area as conditions warrant.

These findings represent a mid-rise apartment trip generation for the study area. Background traffic was based on a 1.0% annual growth rate, despite the economic slowdown which has limited development growth. Many recent studies have utilized 0.5% annual growth rate to better replicate less aggressive traffic growth. With the adjacent Midtown Greenway and Uptown Transit Station, there are multiple transportation options available to the future residents of the Bennett Lumber redevelopment. Combined with proposed traffic demand management schemes, 2015 traffic will be mitigated.