2 EXISTING ROUTE STRUCTURE AND SERVICE LEVELS

In the Study Area, as in most of the Metro Transit network, there are two distinct route structures. The 'base' service structure operates all day and the 'peak' service structure operates just during weekday rush hour periods.

Base Route Structure

The base route structure in the Study Area is designed to provide a variety of transportation needs. The overall structure is both radial, that is oriented to downtown St. Paul and/or Minneapolis, and a grid of cross-town routes perpendicular to the radial routes. These crosstown routes are spaced about 1-2 miles apart. Crosstown routes in St. Paul extend north and south though crosstown routes in Minneapolis extend east and west. To the north of University Avenue, most of these routes extend to the Roseville area where they terminate at Rosedale Shopping Center at the transit center located there. Rosedale Transit Center is a timed-transfer focal point where eight local routes connect.

Peak Route Structure

During peak hours, the base network remains, generally with improved service levels, and is overlaid by additional peak-only commuter routes. Peak-only routes from the Highland area of St. Paul offer local pick-up from these neighborhoods then operate express service to the University of Minnesota and downtown Minneapolis and Saint Paul. These routes operate in addition to base local routes, either on the same street or on close parallel streets. For example, on Snelling Avenue, Route 84 provides base local service and Route 144 provides peak commuter service. On Cleveland Avenue, Route 87 provides base local service and on Cretin Avenue, a close parallel street, Route 134 provides peak service. On Lake Street/Marshall Avenue, Route 21 provides base local service and Route 53 provides peak service to downtown Saint Paul.

OFF-STREET FACILITIES

Regionally, major off-street transit facilities consist of transit centers and park-and-ride facilities.

Transit Centers

There are no major transit centers in the Study Area. However, Rosedale Transit Center in Roseville is an important destination and transfer point just to the north of the Study Area.

• ***Rosedale Transit Center*** – Located on the east side of the shopping center, just southwest of Snelling Avenue and Co Rd B-2. It is served by routes 32, 65, 84, 87, 223, 225, 227, 260, 264, 272 and 801.

Park and Ride lots

There is one small 60 space park and ride lot in the Study Area at Como and Eustis in St. Paul. Park and ride activity is not encouraged in this corridor given the current and expected future transit service density and land uses. This study does not include consideration of park & ride service or facilities.

ON-STREET FACILITIES

Regionally, while there are thousands of bus stops, major on-street transit facilities consist of large waiting shelters with passenger comfort and informational amenities and dedicated rights of way for transit vehicles.

Transit Waiting Shelters

There are many transit waiting shelters in the Study Area, and major facilities are in place in both downtowns and at the University of Minnesota.

Dedicated Transit Rights of Way

There are some significant dedicated transit rights of way in the Study Area. Bus lanes are in place on Cedar, Minnesota, 5th and 6th streets in Downtown St. Paul and on 4th Street, Marquette and 2nd Avenue S. in Downtown Minneapolis. Downtown Minneapolis also has the light rail right of way on 5th Street. There is a bus-way connecting the Minneapolis and St. Paul campuses of the University of Minnesota.

REGIONAL TRANSIT STANDARDS

While several factors influence the propensity to use transit, the primary predictors of transit productivity are density of development at the origin and destination of trips. Transit markets in the seven county Twin Cities region are identified using the Transit Market Index, which is calculated using three primary factors: 1) population density, 2) employment density, and 3) automobile availability. The Transit Market Index measures the potential market for transit services in a given area. Different types and levels of transit services are appropriate for each transit market area.

The region has five distinct Transit Market Areas, shown in **Figure 3**, that are determined based on the Transit Market Index for a given location and nearby areas. Transit Market Area I has the highest density of population, employment, and people without access to automobiles. Because of this, Market Area I is able to support intensive transit service.
Transit Market Area II has high to moderately high population and employment densities yielding a market area that is conducive to fixed route transit operations, but not as intensive as in Market Area I.

Appendix G of the 2030 Transportation Policy Plan outlines service design standards for routes based on the market area they service. Transit Market Area I standards for service include:

- 15-minute peak and 30 minute off-peak minimum frequency on radial routes to downtown30-minute peak and off-peak, minimum frequency on cross-town routes
- Maximum desired distance between radials routes is ½ mile;
- Maximum desired distance between cross-town routes is 1 mile.

Most of the rest of the Study Area lies in Transit Market Area II and the guidelines for service are as follows:

- 30-minute peak and 60-minute off-peak minimum frequency on radial and cross-town routes;
- Maximum desired distance between radials routes is 1 mile;
- Maximum desired distance between cross-town routes is 2 miles;

Most of the Study Area within one mile north and south of University Avenue between the University of Minnesota and the State Capitol and including Downtown St. Paul and Downtown Minneapolis lies in Transit Market Area I, and opportunities exist to add significantly more population. The City of St. Paul

is pursuing policies that are supportive of intensification of the corridor's population density, especially between about Fairview Avenue and Rice Street. Minneapolis is planning for more jobs concentrated in the southeast area of the city, mainly to the north of University Avenue. Primary emphasis therefore will be focused on the parts of the Study Area that are covered by Transit Market Area I.

STUDY AREA ROUTE COVERAGE AND LEVEL OF SERVICE

Transit route coverage and hours of service in the Study Area on weekdays generally meet service standards defined in the 2030 Transportation Policy Plan, with a few major exceptions.

Along University Avenue itself, Route 16 operates every 12 minutes at peak times and every 10 minutes midday and early evening. Route 50 operates every 12 minute at peak times and very limited service at other times. Route 16 service operates 24 hours a day. The University Avenue corridor is comprised of denser, more mature neighborhoods with a better established, traditional transit riding patterns.

In the remainder of the Study Area, coverage and frequency varies by time of day and day of the week. During the weekday peak periods, coverage is good. During off-peak times, however, many routes do not operate or operate only limited hours, with several significant corridors or streets that do not have service at certain off-peak times. Some areas have relatively low populations or population densities that do not generate enough ridership to need more service, but other areas in this category do have good densities, but lack service.

These areas are discussed and illustrated below.

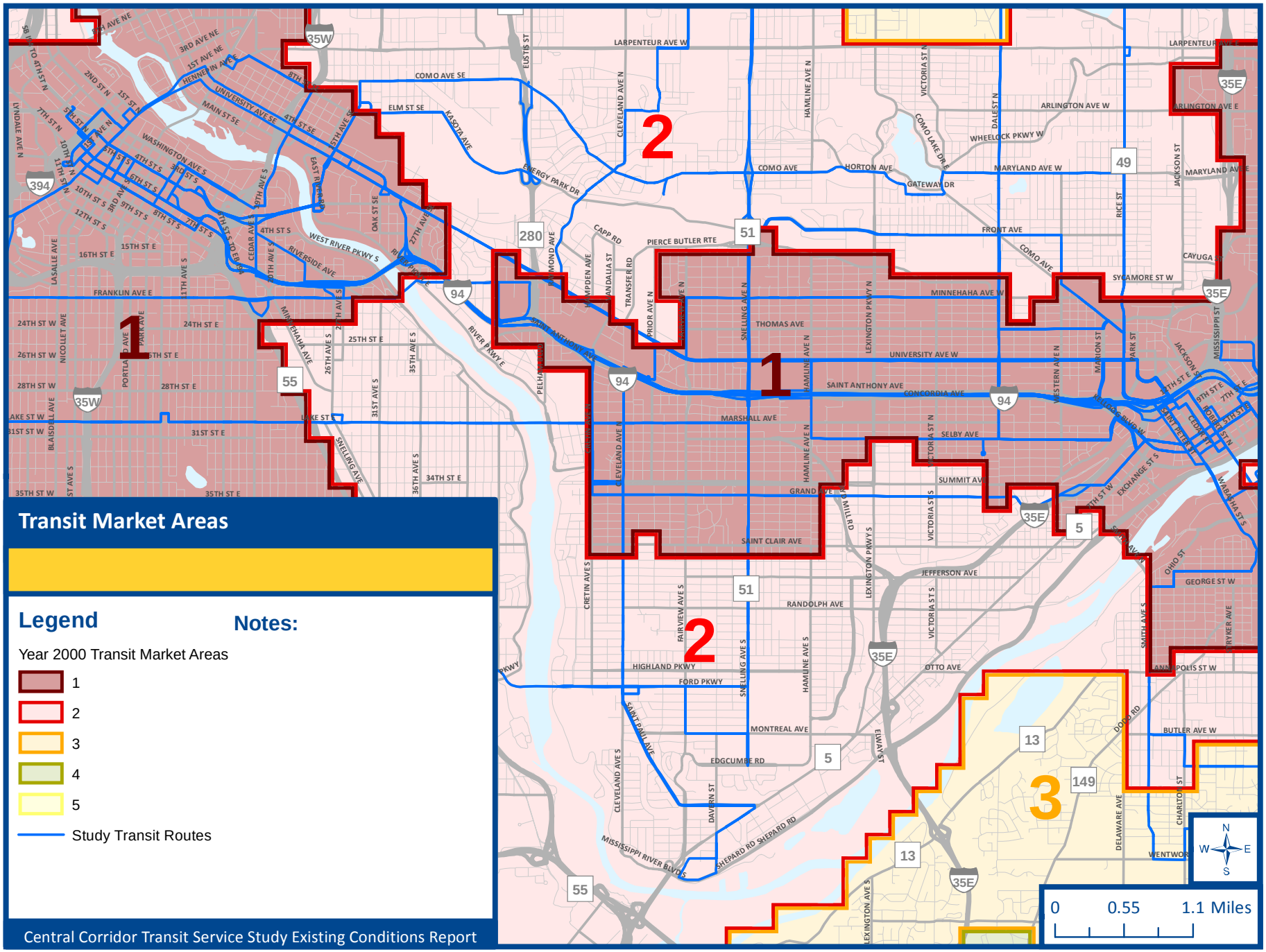
• **Weekday Peak Periods** (**Figures 4** and **6**) – Coverage is good in the Study Area during peak periods, and there are time-saving commuter express and limited-stop routes that overlay or closely parallel local routes:

Route 53 provides service to downtown St. Paul for commuters living along Lake Street, Marshall Avenue, and Snelling Avenue. Frequencies range from 20 to 30 minutes. This route provides a faster alternative to Route 21.

Route 94 provides express service between the two downtowns via I-94. About half the trips make stops at Snelling Avenue and on Marion Street with the remaining trips operating non-stop from downtown to downtown.
Frequencies range from 5 to 10 minutes. This route provides a faster alternative to routes 16 and 50.

Route 134 provides service to downtown Minneapolis for commuters living along Cleveland and Cretin avenues. Limited service also connects Minneapolis residents with Cretin Avenue destinations such as the University of St. Thomas. Frequencies range from 10 to 30 minutes.

Figure 3-Map of Central Corridor's Transit Market Areas



Route 144 provides service to downtown Minneapolis via the University of Minnesota Minneapolis Campus for commuters living along Snelling Avenue South. Frequencies range from 15 to 30 minutes.

Route 262operates as a limited stop route on Rice Street and extends to the northern suburbs of Circle Pines, Lexington, and Blaine. Frequency is every 30 minutes.
Local routes supplemented by these commuter lines have peak frequencies of every 10 to 30 minutes.

• **Weekday Midday** (**Figure 5**) – Coverage is good - essentially the same as in the peak periods in the Study Area, with the exception of Cretin Avenue between Marshall Avenue and I-94, which has no off-peak service. Local route frequencies range from every 10 minutes (Route 16) to every 40 minutes (Route 8), and almost all the others have frequencies of every 20 to 30 minutes. Route 84 and Route 94 have 15-minute frequency.

• **Weekday Evenings** (**Figure 7**) – Coverage in the Study Area is less than during the midday. Most urban routes operate evenings, but there are some gaps in service, even in some areas that are part of Transit Market Area I:
- Route 8 ends service at 6:30 pm.
- Route 62 operates hourly after 9:00 pm.
- Route 65 operates hourly after 6:00 pm.
- Route 67 operates hourly after 7:00 pm.
- Route 87 ends service at 7:00 pm.

Route 16 runs every 15 minutes. Routes 84 and 94 run every 30 minutes into the late evening.
Travel by transit is easy and convenient along the major corridors in the Study Area such as Snelling Avenue and University Avenue during the daytime and evening hours when many workers and students make trips.

• **Owl** (**Figure 8**) – Daily coverage in the Study Area is limited to Route 16, with hourly service from 1:00 to 5:00 am.

• **Saturday Daytime** (**Figure 9**) – Coverage in the Study Area is less on Saturdays than on weekdays. Virtually all urban routes operate Saturdays, except routes 8 and 87, leaving some small pockets of Transit Market Area I without coverage.
Frequencies vary more widely on Saturdays, and there are low frequencies in some areas that are part of Transit Market Area I, notably:
- Route 65 operates hourly and from about 8:00 am to 7:00 pm.
- Route 67 operates hourly and from about 7:30 am to 8:30 pm.

Route 16 maintains 10-minute frequency, and Route 84 has 15-minute frequency.
Route 94 has 30- minute frequency on Saturdays. These routes offer attractive service for the many shoppers making errands in the Study Area.

• **Saturday Evenings** (**Figure 10**) – Coverage in the Study Area is significantly less on Saturday evenings and this results in service gaps in Transit Market Area I:
- Routes 65 and 67 have no service after about 8:00 pm.

- Route 62 operates hourly after 7:00 pm.
- Route 16 maintains 15 to 20 minute frequency; most other routes have 30-minute service.

• **Sunday Daytime** (**Figure 11**) – Coverage is the same as it is on Saturdays. Most routes, even sections in Transit Market Area I, have lower frequency on Sunday than on Saturday, with most routes having frequencies that are below standards for Transit Market Area I.
- Routes 62, 63, 65, and 67 operate hourly.
- Route 65 has no service before about 11:00 am and Route 67 has no service before 8:30 am.
Route 16 has 15-minute frequency, Route 21 has 20-minute service, and the other high performing routes - 84 and 94 have 30-minute frequency. These routes offer attractive service for the many shoppers making errands in the Study Area.

• **Sunday Evenings** (**Figure 12**) – Coverage is less than during Saturday evenings, leaving longer gaps in service, leaving major discrepancies from service expected in Market Area I. Route 16 has 20-minute service and Routes 21 and 84 have 30-minute frequency, but Route 94 drops to hourly service.
- Route 65 has no service after about 6:00 pm.
- Route 67 has no service after about 6:30 pm.

Figure 4-Map of Transit Service Frequencies Weekday AM Peak

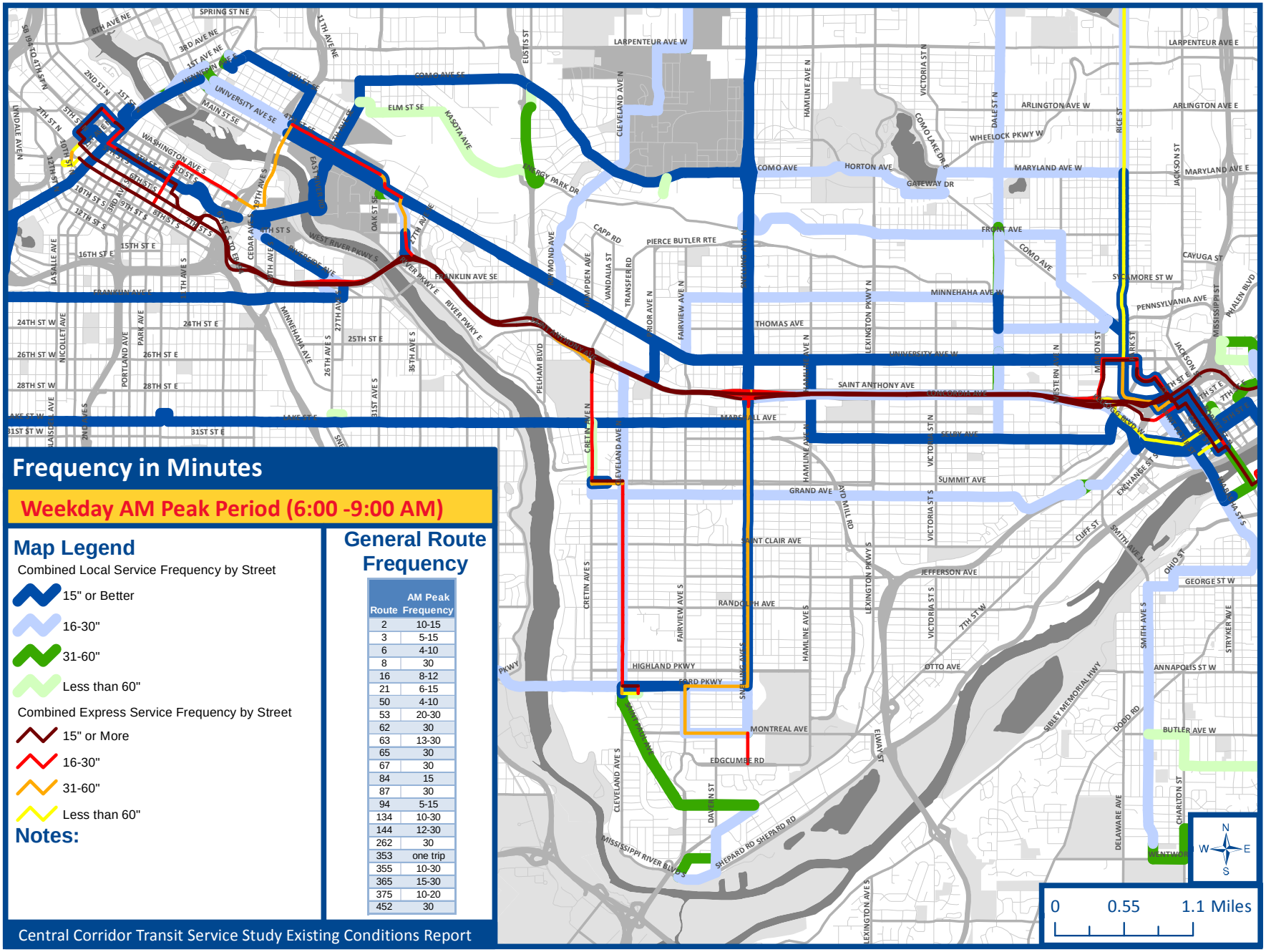


Figure 5-Map of Transit Service Frequencies Weekday Midday

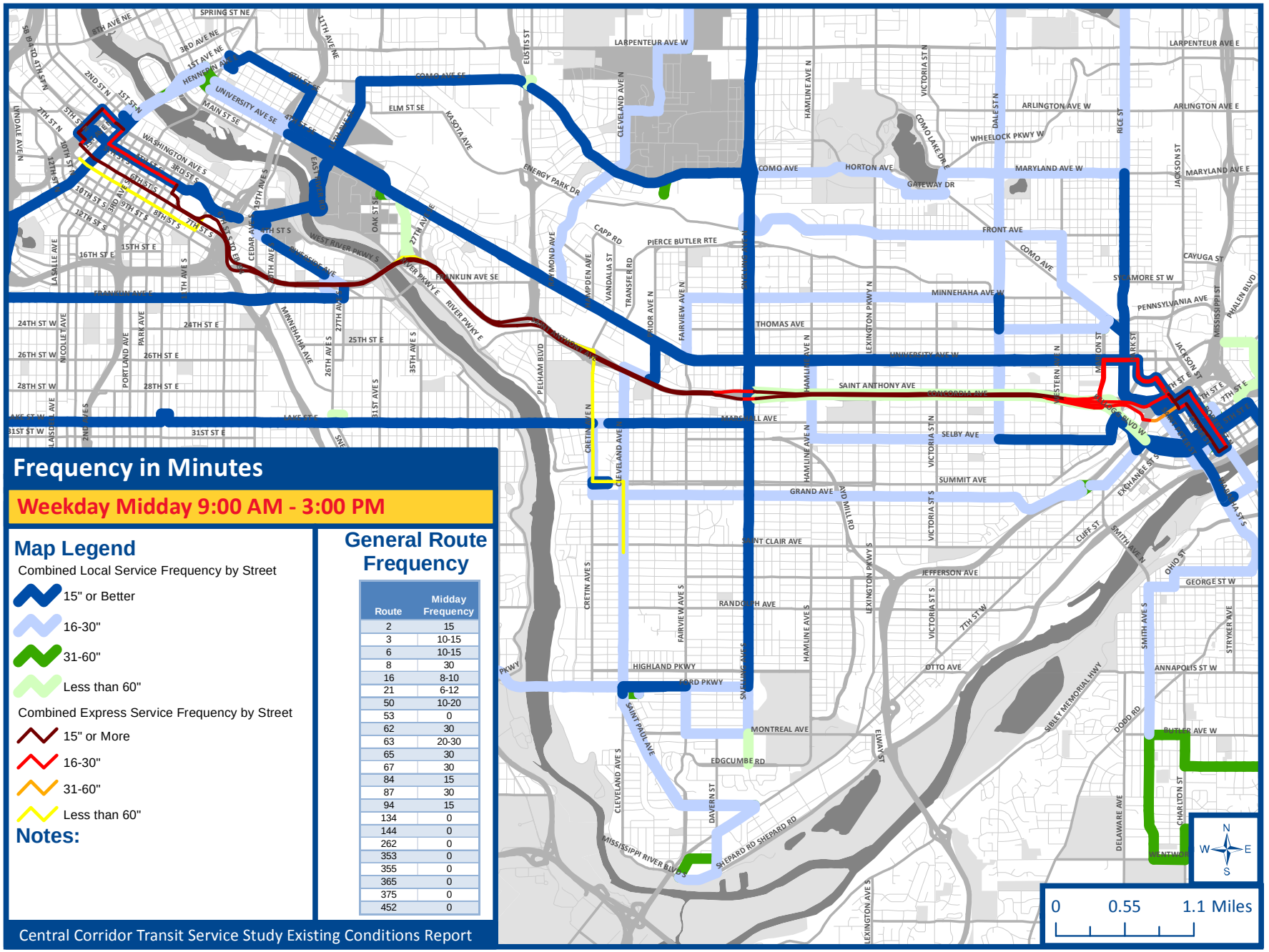


Figure 6-Map of Transit Service Frequencies PM Peak

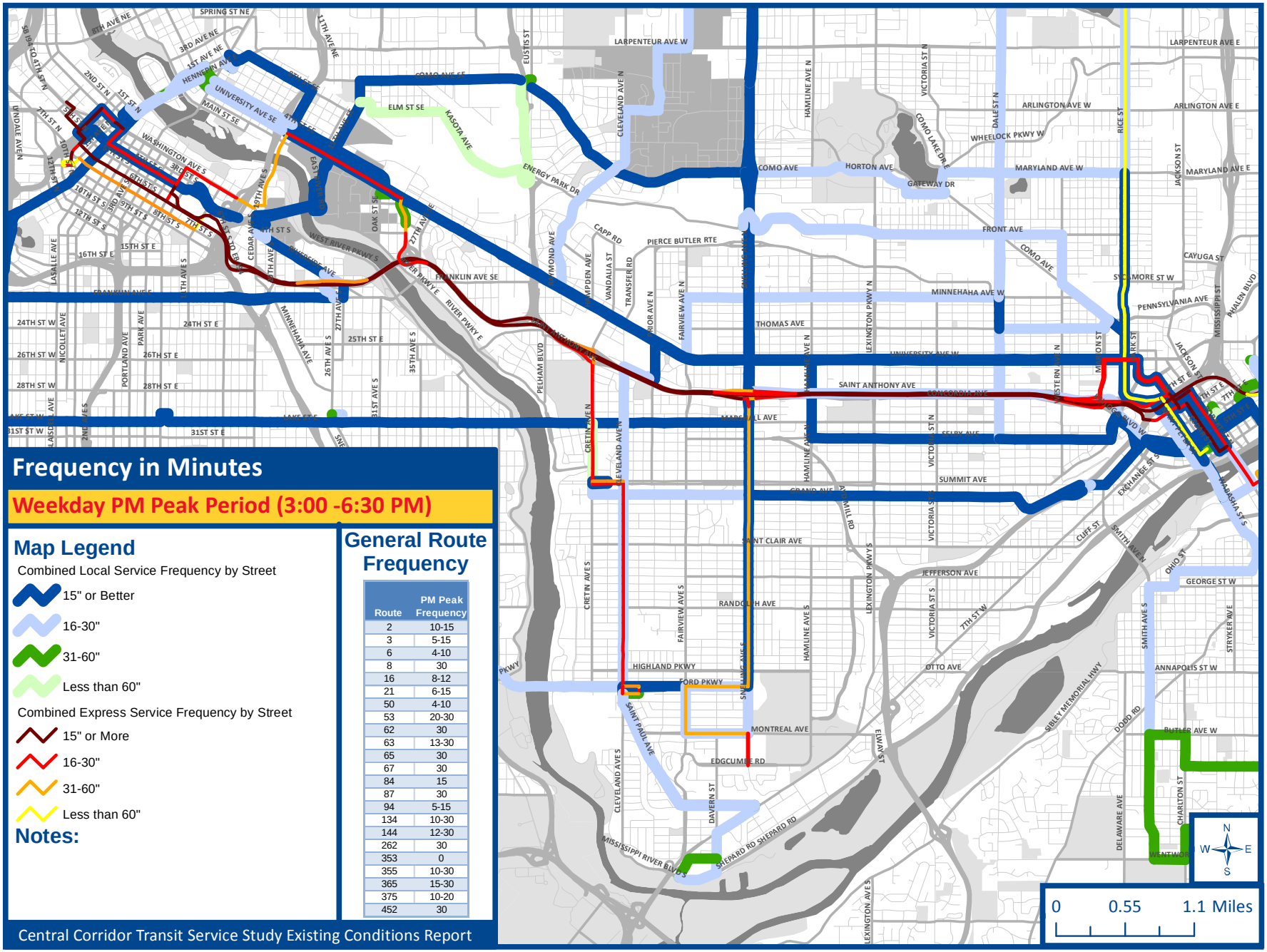


Figure 7-Map of Transit Service Frequencies Weekday Evening

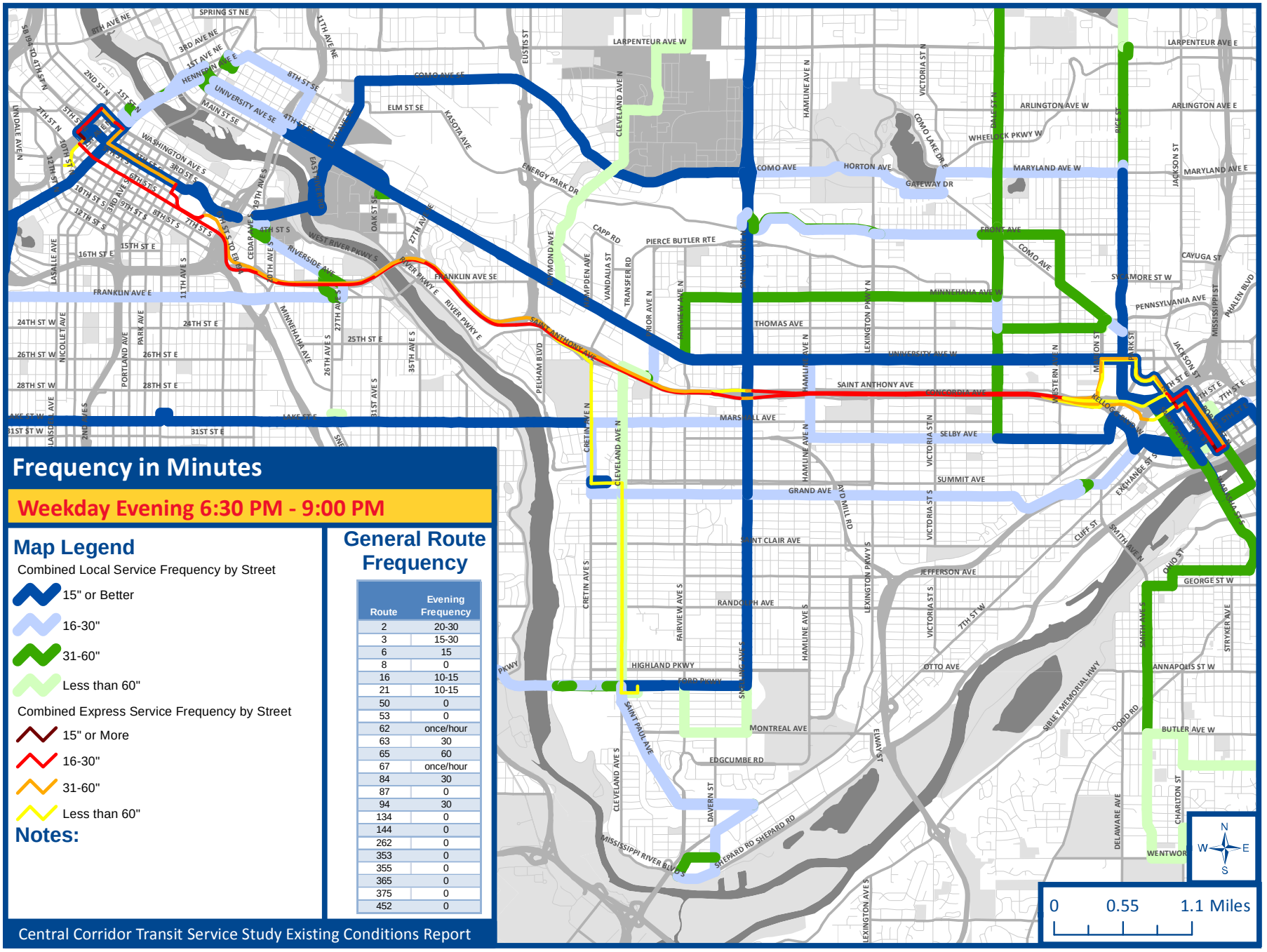


Figure 8-Map of Transit Service Frequencies Daily Owl (Between 1:00 and 5:00 AM)

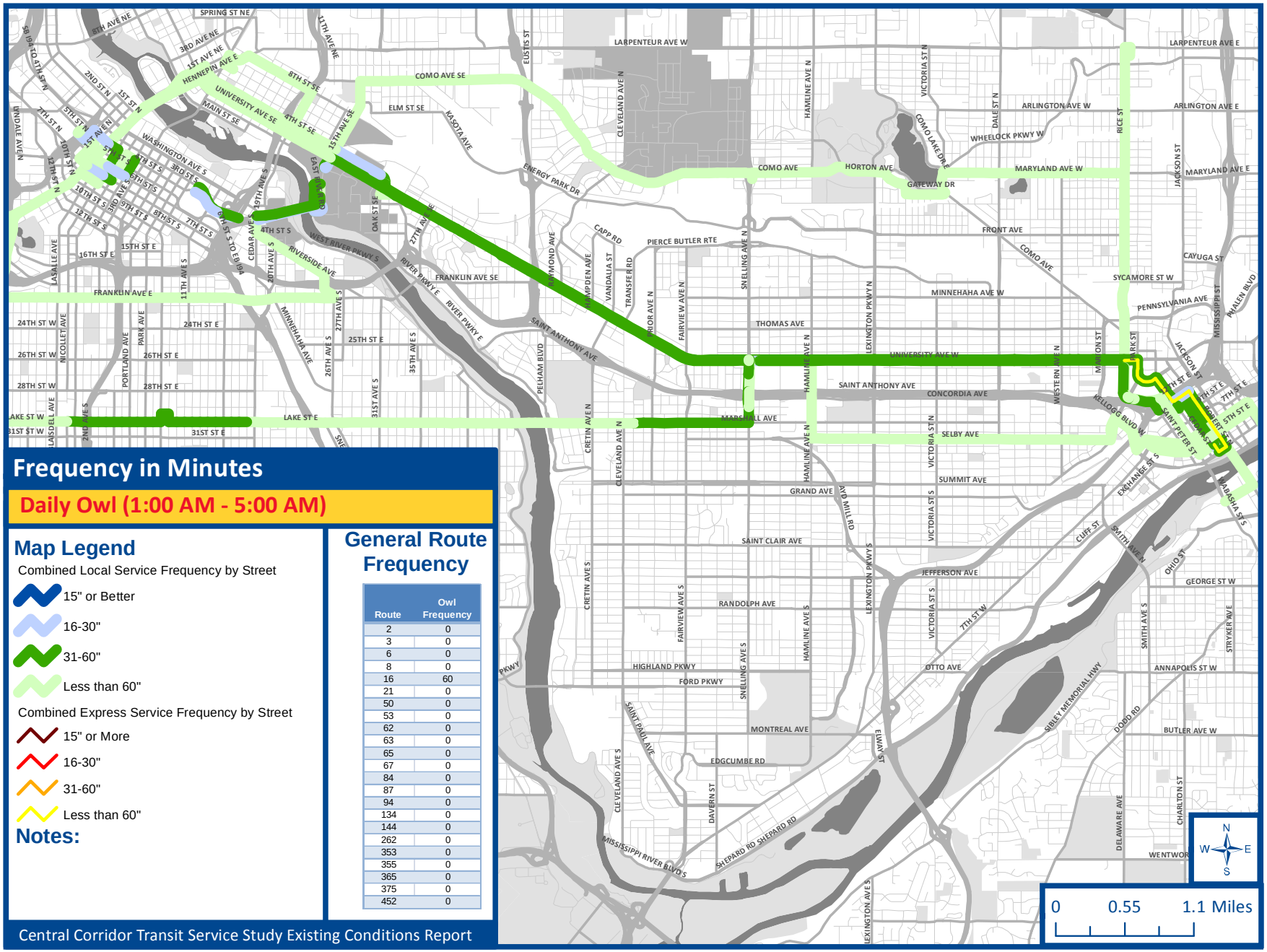


Figure 9-Map of Transit Service Frequencies Saturday

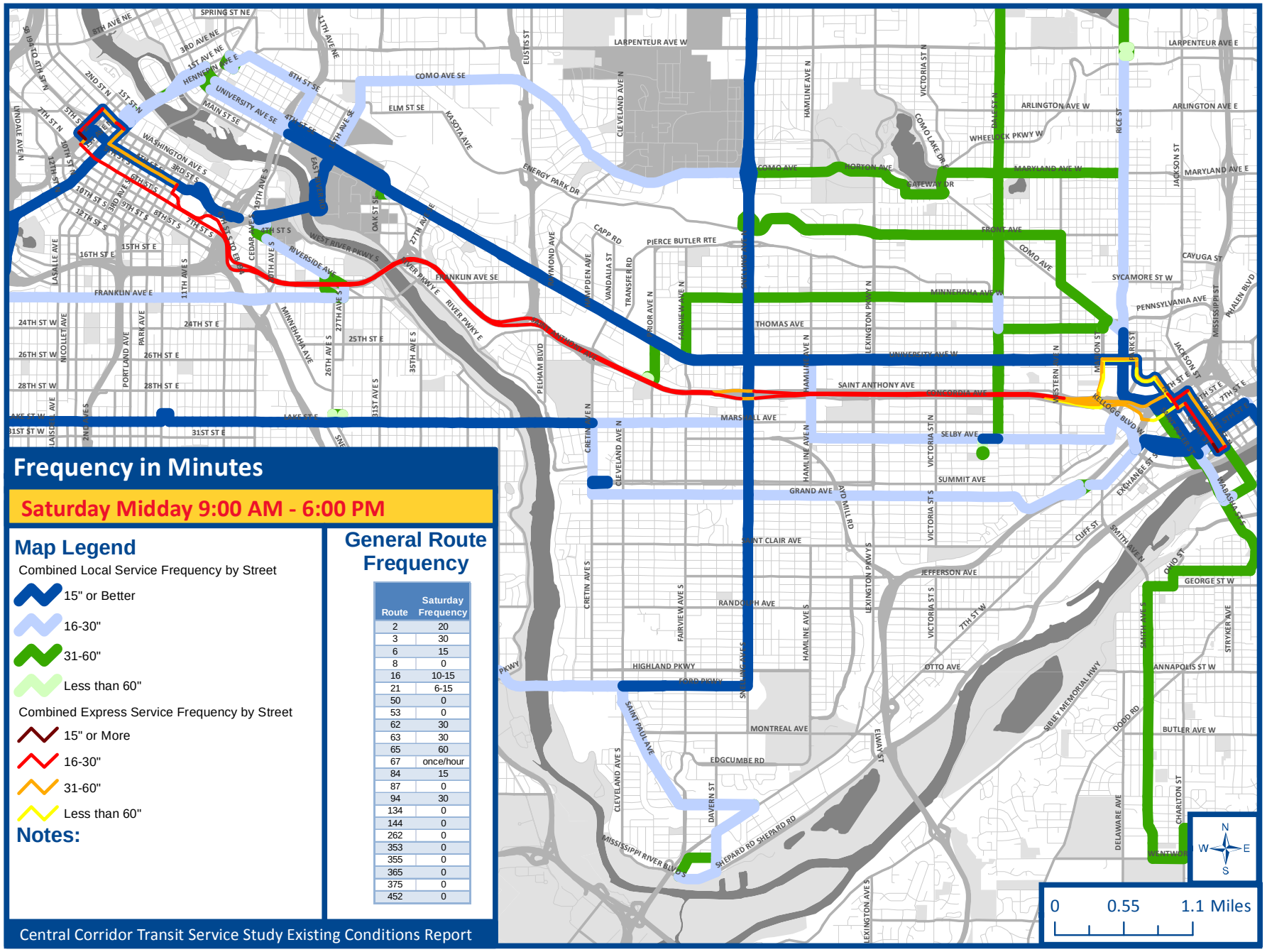


Figure 10-Map of Transit Service Frequencies Saturday Evening

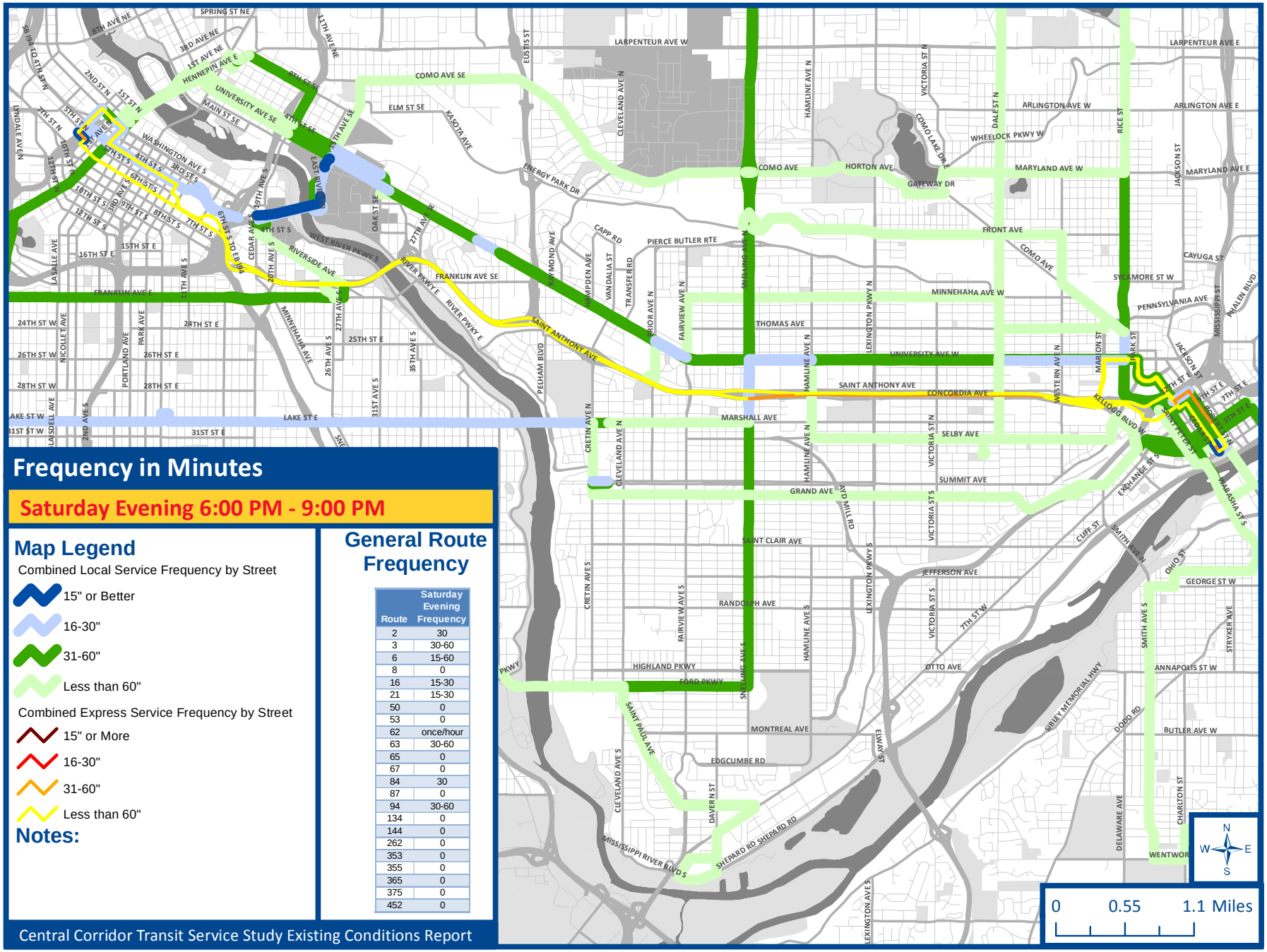


Figure 11-Map of Transit Service Frequencies Sunday

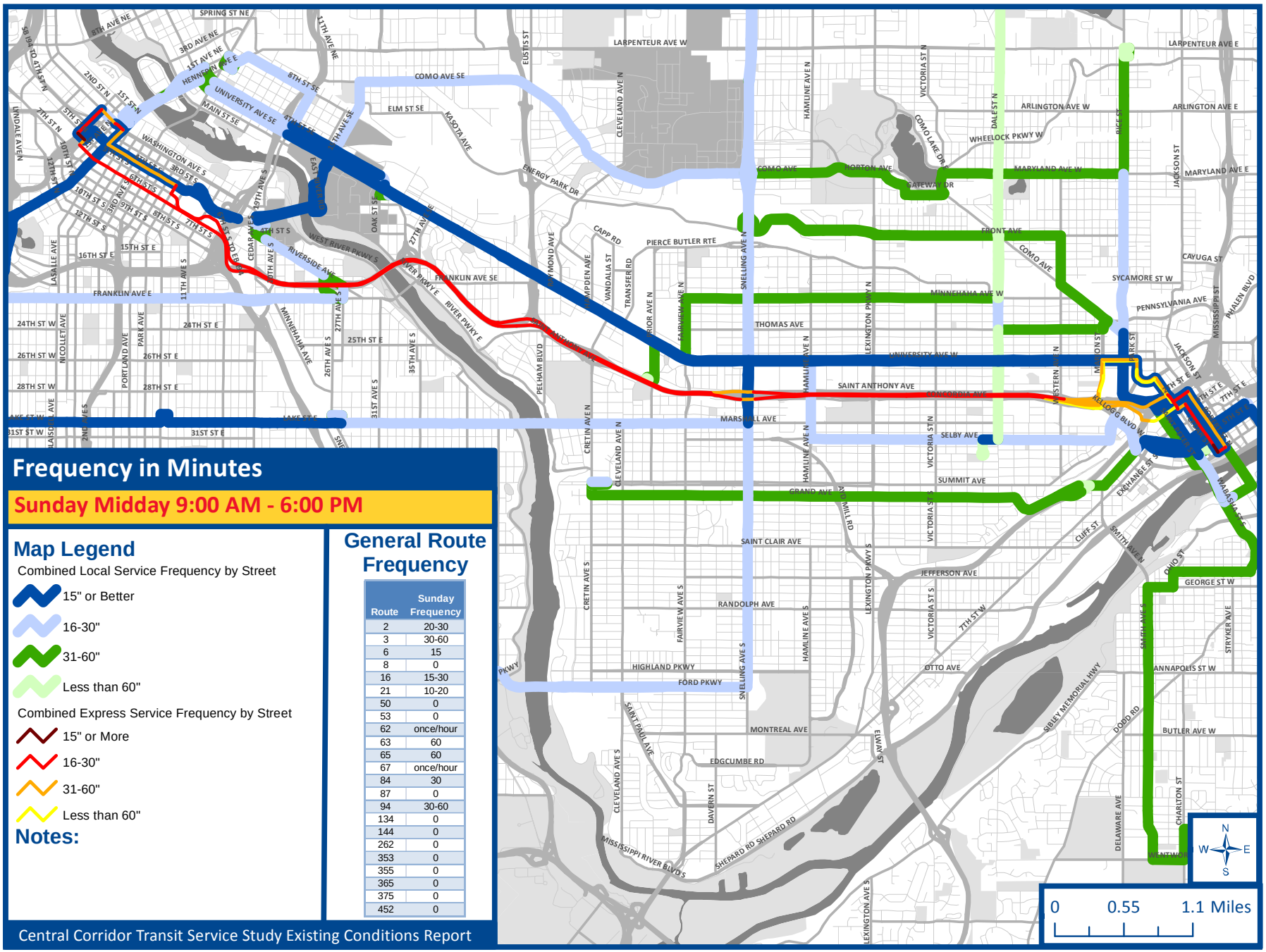
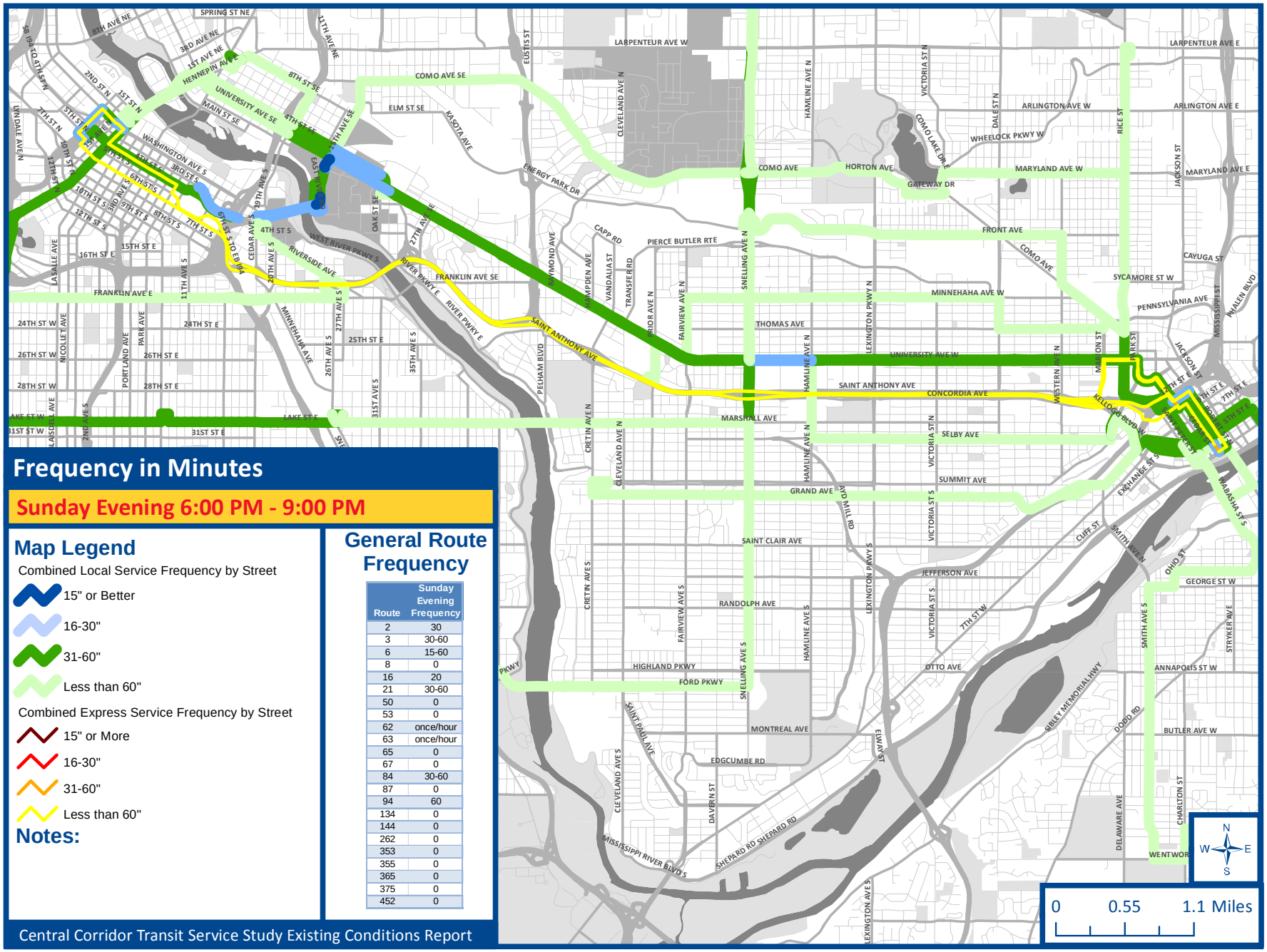


Figure 12-Map of Transit Service Frequencies Sunday Evening



SERVICE FREQUENCIES

The trunk service frequencies for Study Area routes are summarized in the following table.

FREQUENCIES

Route	AM Peak	Midday	PM Peak	Evening	Owl	Saturday	Saturday Evening	Sunday	Sunday Evening
2	10-15	15	10-15	20-30	0	20	30	20-30	30
3	5-15	10-15	5-15	15-30	0	30	30-60	30-60	30-60
6	4-10	10-15	4-10	15	0	15	15-60	15	15-60
8	30	30	30	0	0	0	0	0	0
16	8-12	8-10	8-12	10-15	60	10-15	15-30	15-30	20-60
21	6-15	6-12	6-15	10-15	0	6-15	15-30	10-20	30-60
50	4-10	10-20	4-10	0	0	0	0	0	0
53	20-30	0	20-30	0	0	0	0	0	0
62	30	30	30	once/hour	0	30	once/hour	once/hour	once/hour
63	13-30	20-30	13-30	30	0	30	30-60	60	once/hour
65	30	30	30	60	0	60	0	60	0
67	30	30	30	once/hour	0	once/hour	0	once/hour	0
84	15	15	15	30	0	15	30	30	30-60
87	30	30	30	0	0	0	0	0	0
94	5-15	15	5-15	30	0	30	30-60	30-60	60
134	10-30	0	10-30	0	0	0	0	0	0
144	12-30	0	12-30	0	0	0	0	0	0
262	30	0	30	0	0	0	0	0	0
353	one trip	0	0	0	0	0	0	0	0
355	10-30	0	10-30	0	0	0	0	0	0
365	15-30	0	15-30	0	0	0	0	0	0
375	10-20	0	10-20	0	0	0	0	0	0
452	30	0	30	0	0	0	0	0	0

BUS STOP SPACING

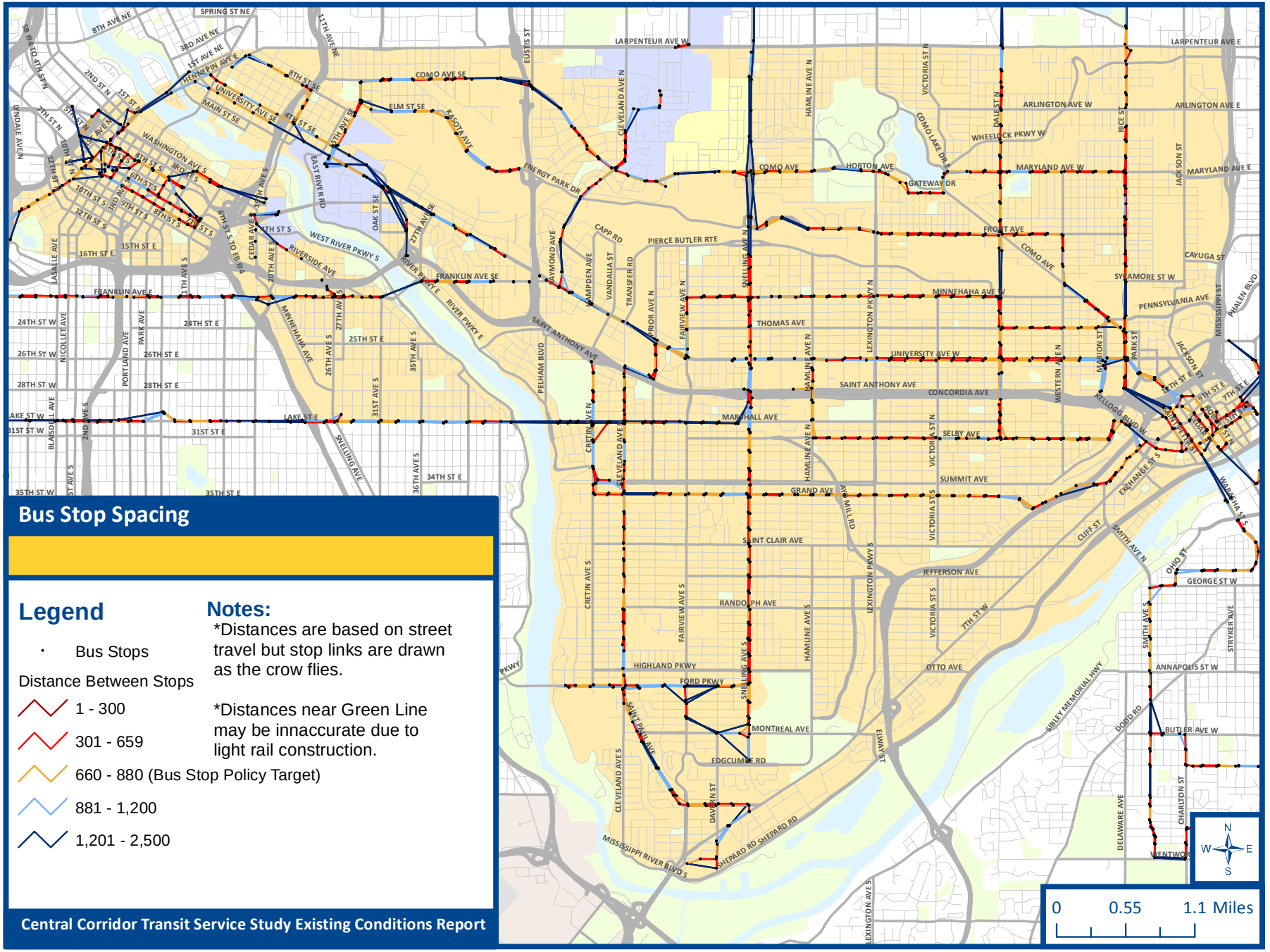
The bus stop spacing standard applicable for the Study Area calls for six to eight stops per mile.

• ***North-South Routes (e.g. Routes 65, 84 and 87)*** – The north-south routes tend to stop at every other cross street. These blocks, however, are shorter at 16 blocks to the mile. Therefore, stop spacing on many of these routes or route segments are in compliance with stop-spacing standards.

• ***East-West Routes (e.g. Routes 3, 16, 63 and 67)*** – The east-west routes usually stop at every cross street. In Minneapolis and St. Paul, these are relatively long blocks at 8 blocks to the mile. Therefore, most of the east-west portions of these routes or route segments are in compliance with bus stop-spacing standards.

Please see Figure **13** for the map showing bus stops in the Study Area.

Figure 13-Map of Transit Stop Spacing



BUS SERVICE SPEEDS AND TRAVEL TIMES

Bus service speeds and travel times are affected by a number of factors. Slow traffic, frequent red lights and close bus stop spacing may result in lower bus speeds. Bus-only lanes, transit advantages such as queue jumps and ramp-meter bypasses and free flow traffic result in higher bus speeds.

Local buses and express buses operate at significantly different speeds and provide different travel times. **Figure 14** presents the travel time from downtown St. Paul to downtown Minneapolis by local and express bus service. The exhibit indicates that travel times from downtown to Minneapolis on local bus routes vary from approximately 50 minutes on Route 50 in the midday to approximately 63 minutes on Route 16 in the PM peak period. Although Route 3 on Como and Maryland avenues is a longer route, the route has a faster average speed, making the downtown-to-downtown trip in less time than Route 16. The travel time for Express Route 94 bus service, shows higher bus speeds and much lower travel times between the downtown areas reflecting the routing of buses on I-94. Travel time from downtown St. Paul to Minneapolis is about 23 minutes in the midday. In the PM peak period Route 94C has a an estimated travel time of 31 minutes and Route 94D has an estimated travel time of 29 minutes.

Figure 14-Map of Travel Time from Downtown to Downtown