East Metro Transit Network
Existing Conditions Report

For
East Metro
STRONG

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Introduction

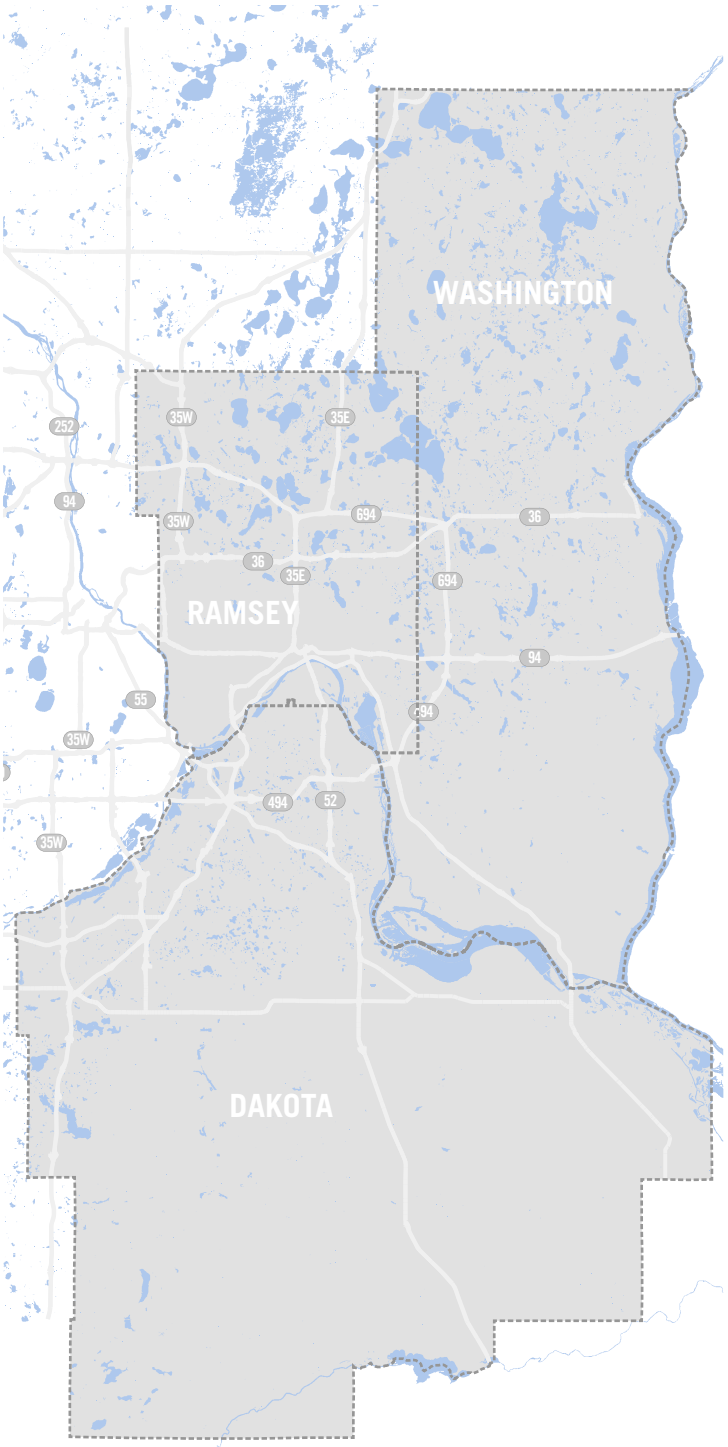
The Twin Cities have long understood the need for a high-quality transit system. Over decades, elected officials and community leaders have advocated for funding and for transit improvements. This has led to projects like the Green Line and St. Paul Union Station that have made transit better and attracted new riders.

Effective transit, though, works as a network, and the rest of the network has not received the attention the new transitways have. Over 70% of Metro Transit's ridership is on bus routes. Many of these bus routes date back a century to streetcar routes, and while the network has been expanded and individual routes have been adjusted, the overall system structure still reflects old development patterns and trip needs. Much of the system is infrequent and thus inconvenient to passengers, and many of the routes are complex and difficult to understand. This has had an impact: ridership on the bus network fell 5% from 2015 to 2016 even as Green Line ridership increased.

This document is a preliminary look at the current transit network in the East Metro region to see how it compares to population and employment, and a summary of what kinds of improvements might be worth examining. It is based on publicly available data (including Metro Transit's excellent GIS files) and this effort has not involved any conversations with stakeholders, public officials or transit agency staff. It does not make any specific recommendations.

This cursory effort does indicate that there are significant opportunities for transit improvement in the transit network. The East Metro has relatively dense residential areas not served by frequent service, multiple employment nodes that are hard to reach with the current network, and opportunities to leverage new transitways (like the Green Line) as well as future transitways to improve the network. Metro Transit has shown that improved local bus service coordinated with major transitway investments can build a more useful and efficient transit network and draw more riders. The A Line bus service, which links to both the Green and Blue lines, has increased ridership in its corridor by 35%. Even bigger improvements can come from systematically looking at the entire network. Houston did this, redesigning all of its local bus routes, and was able to double the people served by frequent service and increase ridership by deploying existing resources more efficiently. Metro Transit's Service Improvement Plan has identified bus routes for added service, but it takes the existing network as a starting point and thus requires significant funding.

A closer look at the network, including workshops, discussion with Metro Transit, and more data analysis could identify specific areas for improvement. East Metro Strong, as an outside advocacy group, is in a position to further advance the transit discussion in the East Metro region and to set the groundwork for future transit improvements that could help current riders, attract new ones, and make the area more economically competitive.



The East Metro Region

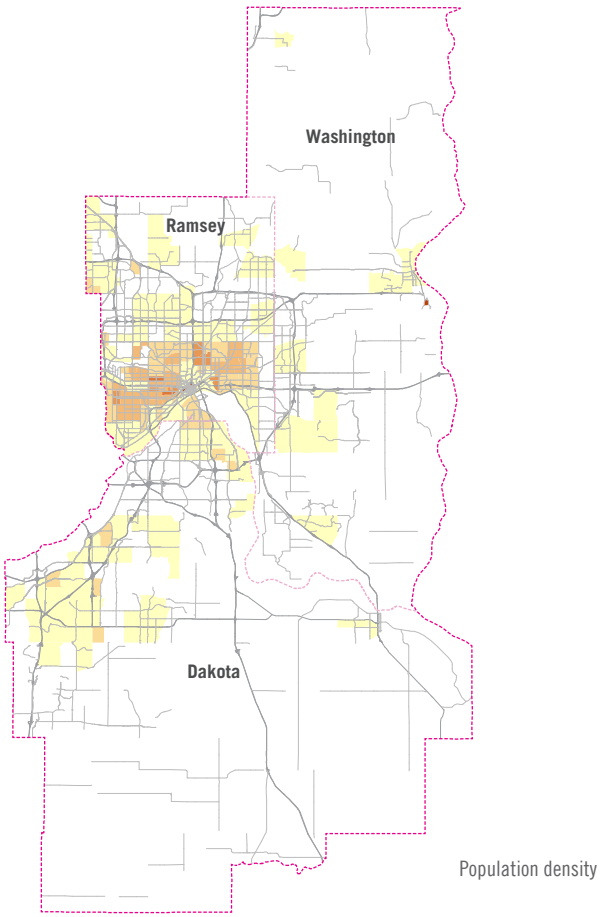
Existing Development Patterns

The key to successful transit is identifying nodes and corridors that have the density of population and jobs to support frequent service. Every transit stop creates a zone ¼-mile in radius within which people are within a 5-minute walk of service. The more people there are in this zone, the more potential ridership there is. The higher the ridership, the more service can be justified. More service, in turn, drives even more ridership.

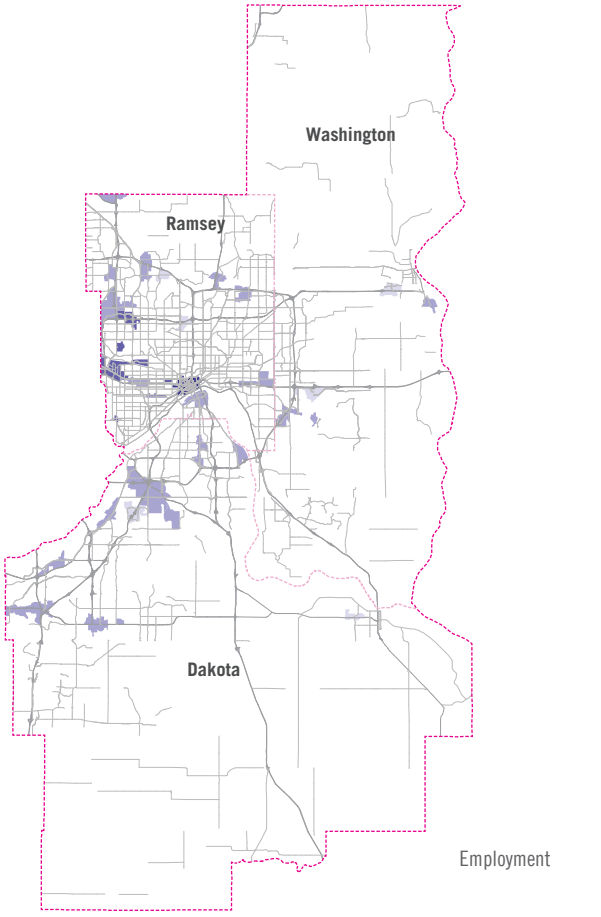
In the East Metro area, the densest population is within the City of Saint Paul. A continuous area bordered by McKnight Road to the east, Larpenteur Avenue to the north, Snelling Avenue and the Mississippi River to the west, and Ford Parkway, 7th Street, and I-94 to the south, has population densities generally over 5,000 people per square mile, with large areas above 10,000. There are also areas of similar density in West St. Paul and South St. Paul. Most of these areas also have street grids, which create fairly direct paths to transit stops.

Employment density is as important as population density: regardless of whether a transit rider walks from home to transit or uses a park-and-ride lot, they must be able to walk to their job on the other end. Downtown Saint Paul is the largest employment center in the East Metro region, but it is not the only one. Several other areas – the Midway Area Grand Avenue, Energy Park, and Rosedale Center – have similar employment densities. There are also multiple suburban job centers, including the 3M campus area in Maplewood and a series of nodes around the 694 and 494 Loops, several of which have more than 10,000 jobs..

Downtown Saint Paul has 86,000 jobs. This is not nearly as big as Downtown Minneapolis – which has 232,000 – but it is one of the 60 largest employment hubs in the entire United States, and one of the 30 densest[1]. It is roughly the same size as Downtown Charlotte and Salt Lake City, both of which have major light rail systems centered in them.



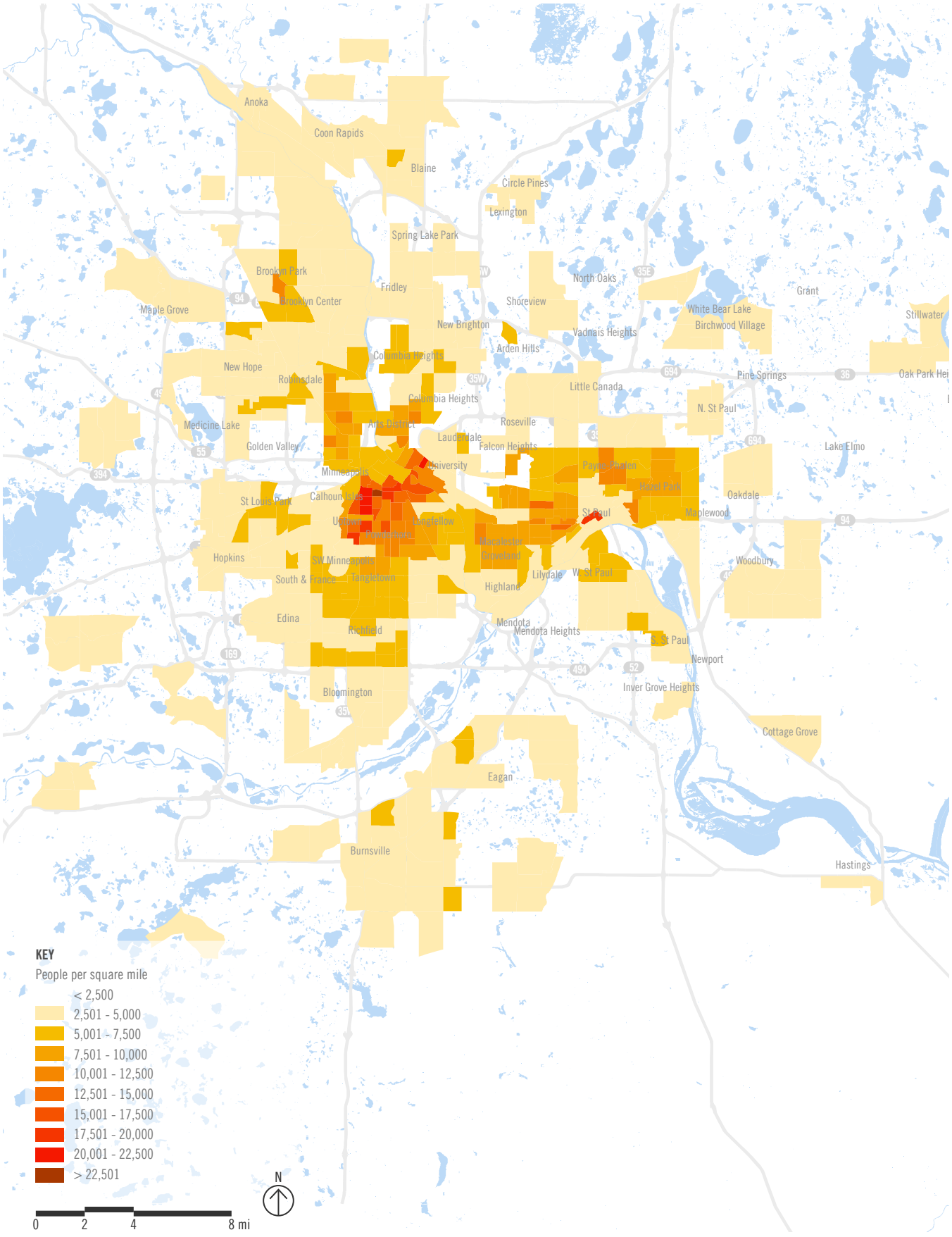
Population density



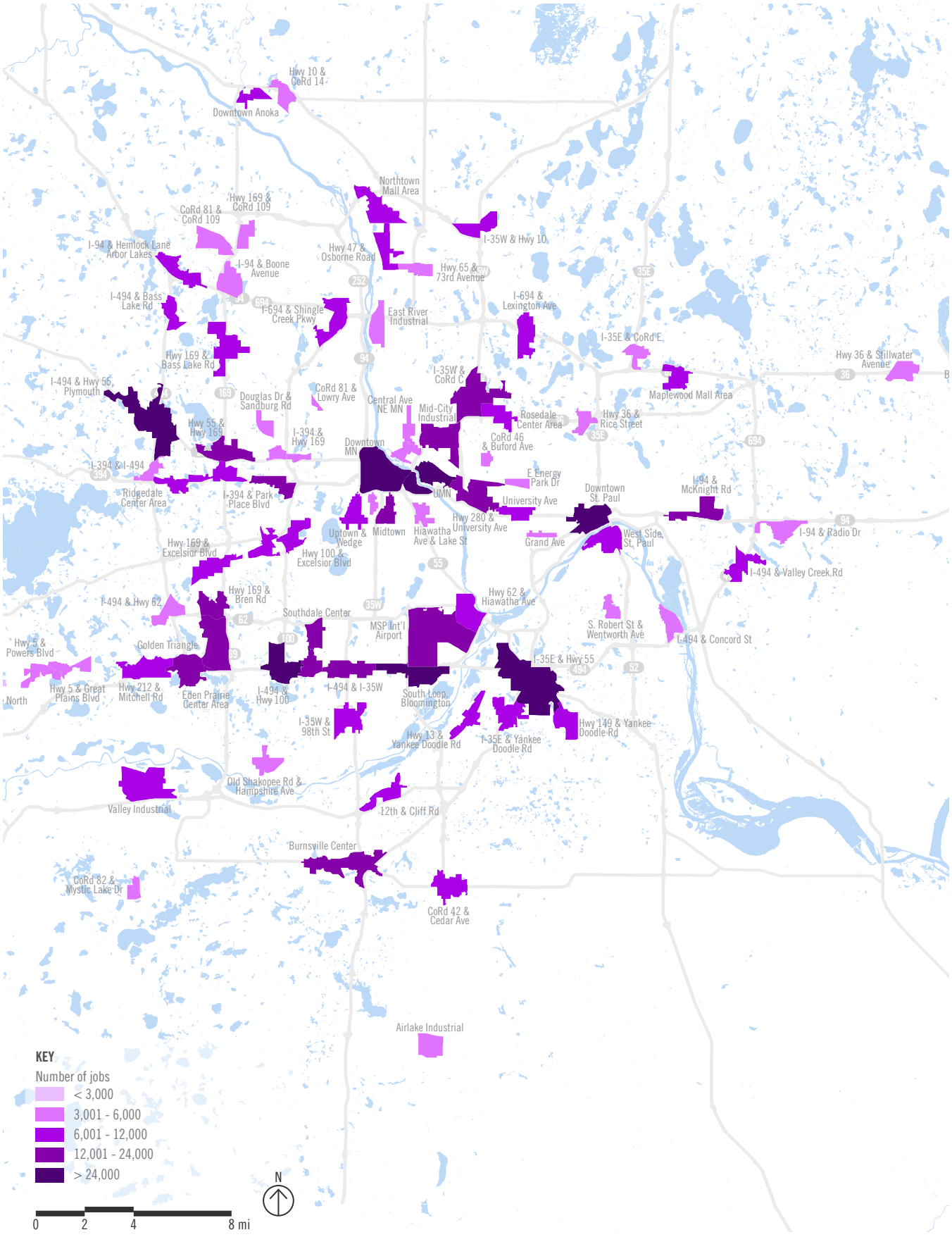
Employment

[1] DOWNTOWN REBIRTH: DOCUMENTING THE LIVE-WORK DYNAMIC IN 21ST CENTURY U.S. CITIES Prepared for the International Downtown Association By the Philadelphia Center City District, Paul R. Levy and Lauren M. Gilchrist, 2014, (http://definingdowntown.org)

Population Density



Employment


Hwy 10 & CoRd 14
Downtown Anoka
Northtown Mall Area
Hwy 169 & CoRd 109
CoRd 81 & CoRd 109
I-94 & Hemlock Lane Arbor Lakes
I-94 & Boone Avenue
Hwy 47 & Osborne Road
I-35W & Hwy 10
Hwy 65 & 73rd Avenue
I-494 & Bass Lake Rd
I-694 & Shingle Creek Pkwy
East River Industrial
I-694 & Lexington Ave
I-35E & CoRd E
Hwy 36 & Stillwater Avenue
Hwy 169 & Bass Lake Rd
I-494 & Hwy 55, Plymouth
Douglas Dr & Sandburg Rd
CoRd 81 & Lowry Ave
Central Ave NE MN
I-35W & CoRd C
Maplewood Mall Area
Mid-City Industrial
Rosedale Center Area
Hwy 36 & Rice Street
Hwy 55 & Hwy 169
I-394 & Hwy 169
Downtown MN
CoRd 46 & Buford Ave
I-394 & I-494
E Energy Park Dr
Downtown St. Paul
I-94 & McKnight Rd
Ridgedale Center Area
I-394 & Park Place Blvd
UMN
University Ave
Hwy 280 & University Ave
Uptown & Wedge
Midtown
Hiawatha Ave & Lake St
Grand Ave
West Side St. Paul
I-94 & Radio Dr
Hwy 169 & Excelsior Blvd
Hwy 100 & Excelsior Blvd
I-494 & Valley Creek Rd
Hwy 169 & Bren Rd
Hwy 62 & Hiawatha Ave
I-494 & Hwy 62
Southdale Center
MSP Int'l Airport
S. Robert St & Wentworth Ave
I-494 & Concord St
Hwy 5 & Powers Blvd
Golden Triangle
I-35E & Hwy 55
Hwy 5 & Great Plains Blvd
Hwy 212 & Mitchell Rd
Eden Prairie Center Area
I-494 & Hwy 100
I-494 & I-35W
South Loop Bloomington
I-35W & 98th St
Hwy 149 & Yankee Doodle Rd
Hwy 13 & Yankee Doodle Rd
I-35E & Yankee Doodle Rd
Old Shakopee Rd & Hampshire Ave
Valley Industrial
12th & Cliff Rd
Burnsville Center
CoRd 82 & Mystic Lake Dr
CoRd 42 & Cedar Ave
Airlake Industrial
KEY
Number of jobs
< 3,000
3,001 - 6,000
6,001 - 12,000
12,001 - 24,000
> 24,000
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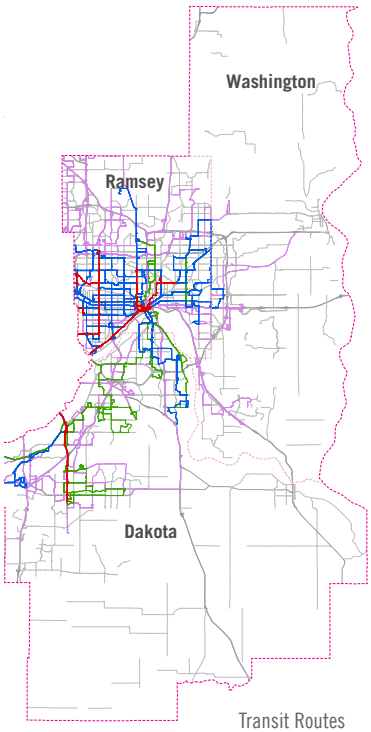
Existing Transit Network

Metro Transit is the primary transit provider in the East Metro region, with some routes operated by MVTA.

While it is easy to break down the transit network by mode, it is more useful to see it as three interconnected systems:



Transit Routes

CORE LOCAL

The Core Local Network is designed to serve all kinds of trips – home to work, home to school, shopping, errands, and leisure trips – 7 days a week. It operates in both directions from early morning to late evening. Stops are spaced fairly closely – every few blocks to every ¼-mile. Service typically operates every 15 minutes during peak hours and every 15 to 30 minutes at other times. Generally, service that operates every 15 minutes or better allows people to ride without worrying about schedules; less frequent service requires more planning.

The core local network in the East Metro includes a rail line (the Green Line), an arterial BRT service (the A-Line), three local bus routes that are designated part of the High Frequency Service Network, and another nine local bus routes. Much of this service is within the city of St. Paul, but several routes extend into northern Ramsey County, Washington County, and Dakota County.

The Core Local Network provides transit that is useful enough that it can be a desirable alternative to driving for all daily trips for some people.

COVERAGE LOCAL

The Coverage Local Network extends the Core Network into areas that have lower transit demand. Due to limited resources, this service generally operates only hourly for much of the day. It is a "lifeline" service, critically important to those who do not have other options, but unlikely to attract people who have a car.

The Coverage Local Network consists entirely of bus routes. Some fill in areas between core local routes while others extend further into low density suburban areas.

EXPRESS

The Express Network is tailored to long-distance commuters. It generally operates during peak hours in peak directions only. Morning service originates at suburban park-and-rides or in suburban neighborhoods, then uses freeways to make fast trips to job centers. The afternoon trips do the reverse. Some routes have as little as 2 trips in the morning and 2 trips in the afternoon; others may be as frequent as every 10 minutes a peak. Some routes do offer mid-day service at lower frequencies and non-peak direction service.

Express service can be provided by buses, by commuter rail (like Northstar in Minneapolis), by BRT, or by light rail. All of the express routes in the East Metro are bus.

Most of the express routes in the East Metro go to or from Downtown St. Paul. A few travel to Downtown Minneapolis. Only a handful serve the other employment centers in the East Metro.

SYSTEM CONNECTIVITY

All three networks should work together. Many coverage riders will make part of their trips on the Core Network. Express riders, too, benefit from connectivity. The local network links the express routes to more jobs on the inner end of the routes. Local routes can also serve as feeders to the express system. Overall, the majority of riders will make a connection from one route to another on their trip.

The transit network in the East Metro is strongly radial. Nearly every route, be it local bus, express bus, or light rail, runs to and from Downtown St. Paul. The downtown area, in particular the 5th, 6th and Cedar/Wabasha corridors, is not only a major transit destination but a major transfer point.

There are other transfer points outside of Downtown St. Paul. Some are transit centers, like Maplewood Mall and Sun Ray. Others are simply intersections, like University and Snelling, where the Green Line meets the A-Line, bus line 16, bus line 21, and bus line 84.

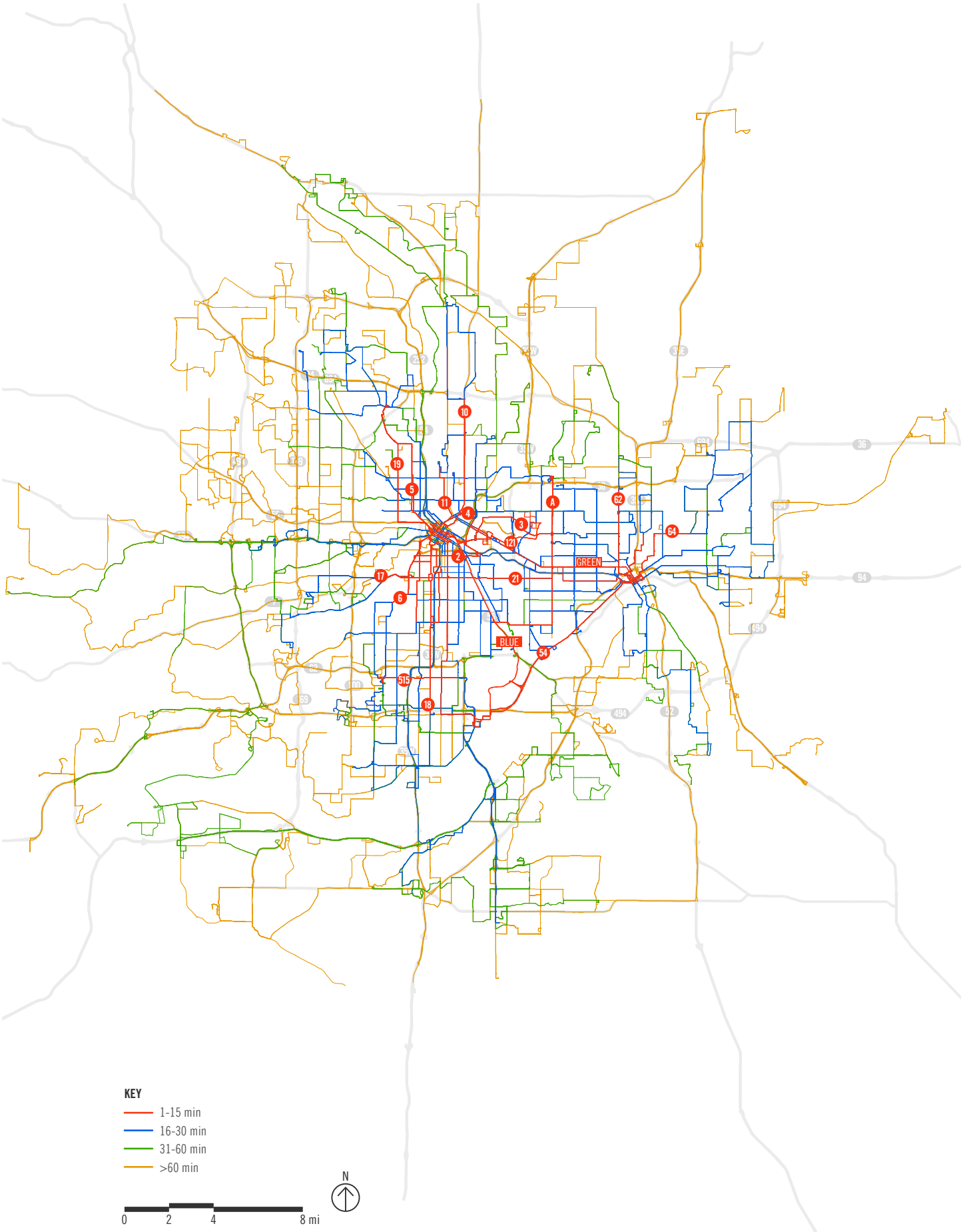
Travel Time Between Major Destinations

DESTINATION

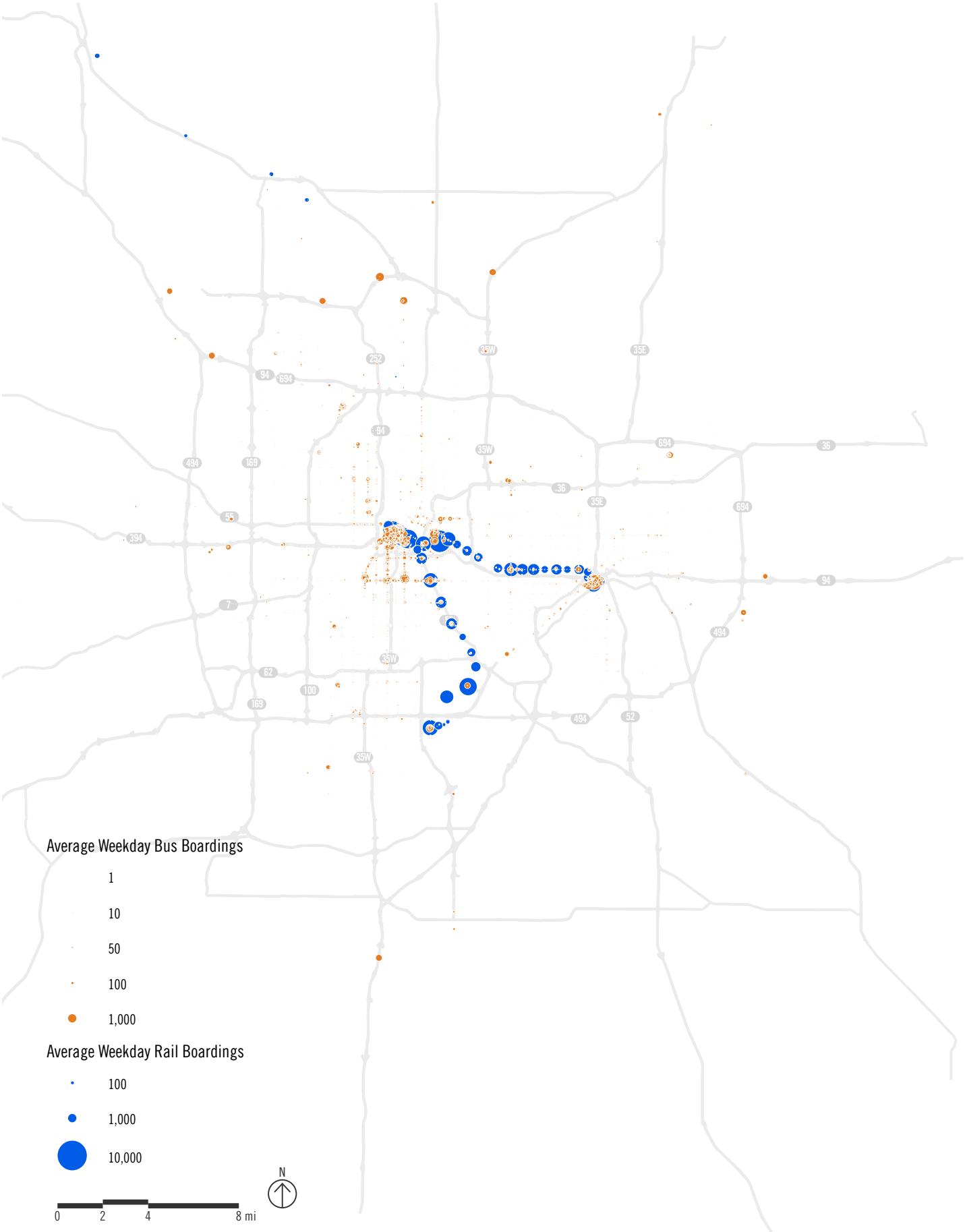
ORIGIN	Downtown Minneapolis	Downtown St Paul	University of Minnesota	MSP Int'l Airport	Grand Avenue	I-94 and Mcknight Rd	Maplewood Mall	North St Paul	Payne-Phalen	Mid-City Industrial	Hwy 55 & I-35E	Bloomington South Lodge	Roseville West	University Ave & Hwy 280
DOWNTOWN MINNEAPOLIS		39	22.5	29	60	71	62.5	96	66	30	68	38	50	22
DOWNTOWN ST PAUL	40		32	34.5	30	35	51.5	42.5	16.5	50	92	44.5	37	26
UNIVERSITY OF MINNESOTA	26.5	33		43.5	42	81.5	98	82.5	56.5	14.5	77.5	47.5	36	11
MSP INTERNATIONAL AIRPORT	31	34.5	42.5		47.5	65.5	80	79	53	47.5	60	14	51	41
GRAND AVENUE	60	27	40	51.5		50	81	72.5	46.5	54	67	61.5	37	30
I-94 AND MCKNIGHT RD	82	33	82.5	68.5	73		0	53	34.5	92	130.5	78.5	80	73
MAPLEWOOD MALL	82	47.5	82.5	82	73	52		19	34.5	31.5	130.5	92	80	76.5
NORTH ST PAUL	91.5	47.5	80.5	83	71	54	16.5		54.5	83.5	128.5	93	80.5	74.5
PAYNE-PHALEN	60.5	20.5	73	55	45	53.5	42.5	33.5		49	103.5	65	52	52
MID-CITY INDUSTRIAL	32	40.5	14.5	53.5	53	74.5	91	79.5	50		127.5	62.5	34	25
HWY 55 & I-35E	70	94	81.5	60	81	0	161	179	115.5	99		69	86	85
BLOOMINGTON SOUTH LODGE	40	44.5	51.5	14	51.5	74.5	90	89	63	58.5	69		60	50
ROSEVILLE WEST	50	64.5	40.5	50	36	77	44.5	50	51	33	84	59		30
UNIVERSITY AVE & HWY 280	23	27	11	40	30	70	85.5	76.5	50.5	24	79	49	38	

In Minutes

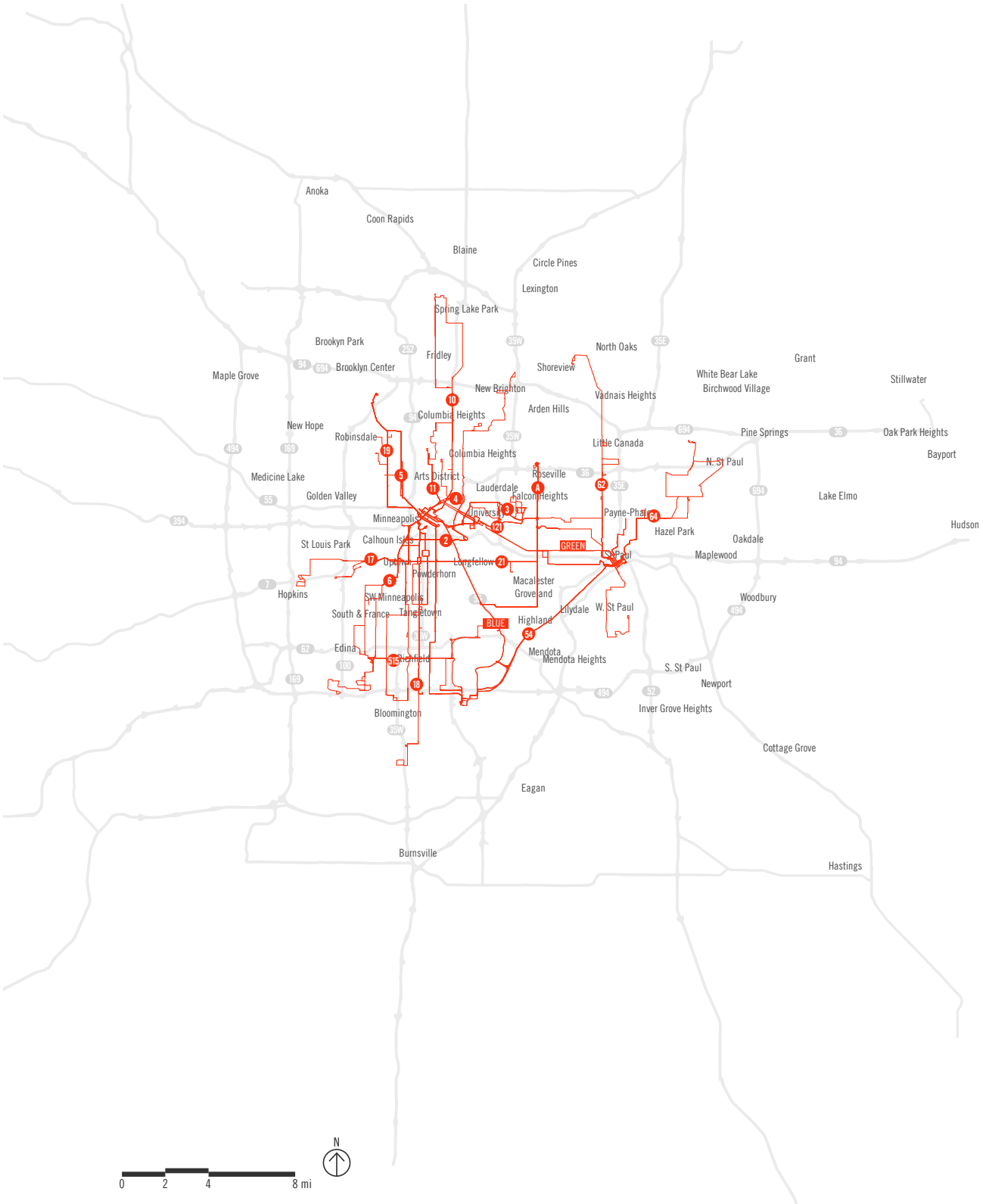
All Transit Service



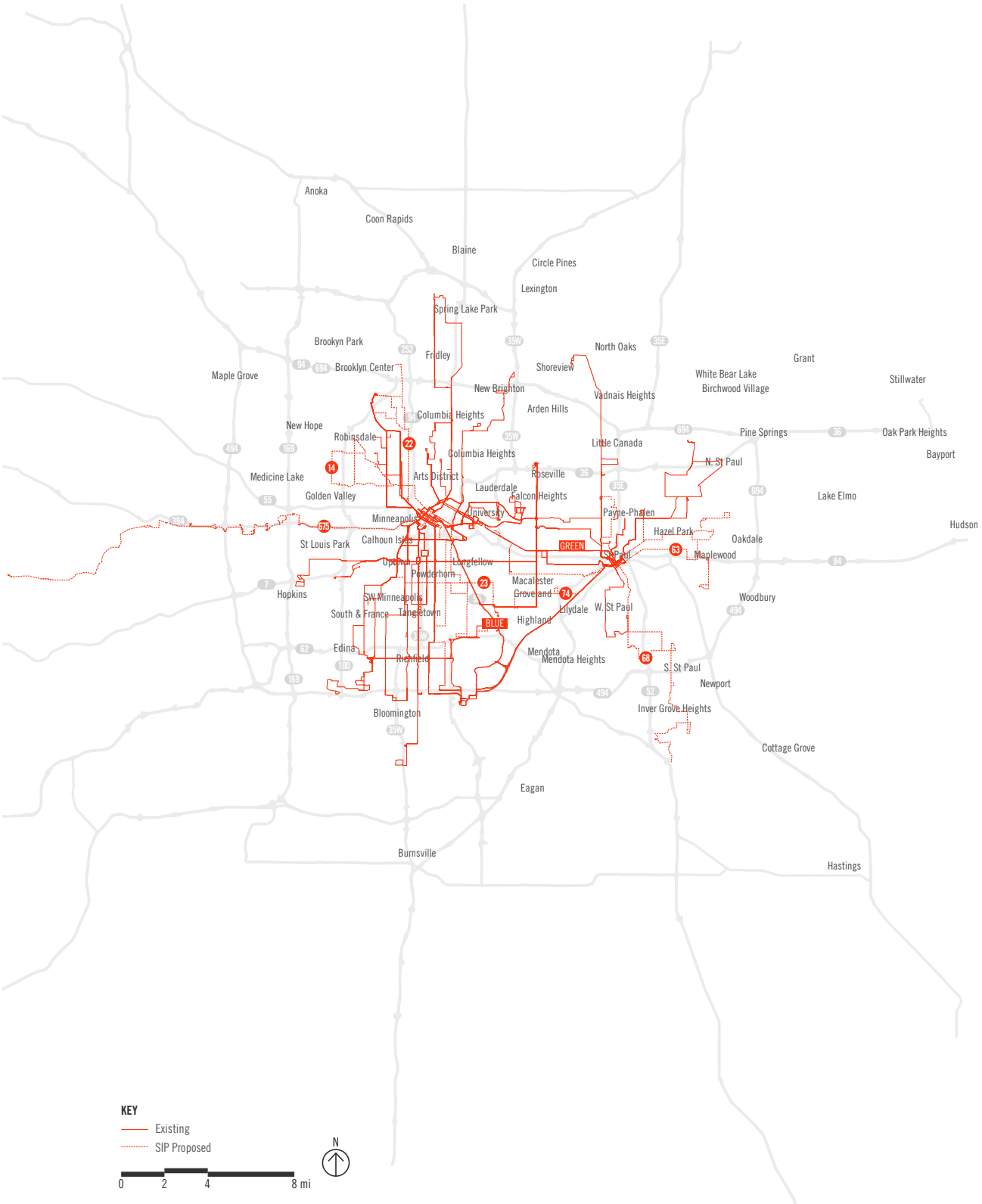
Existing Transit Boardings



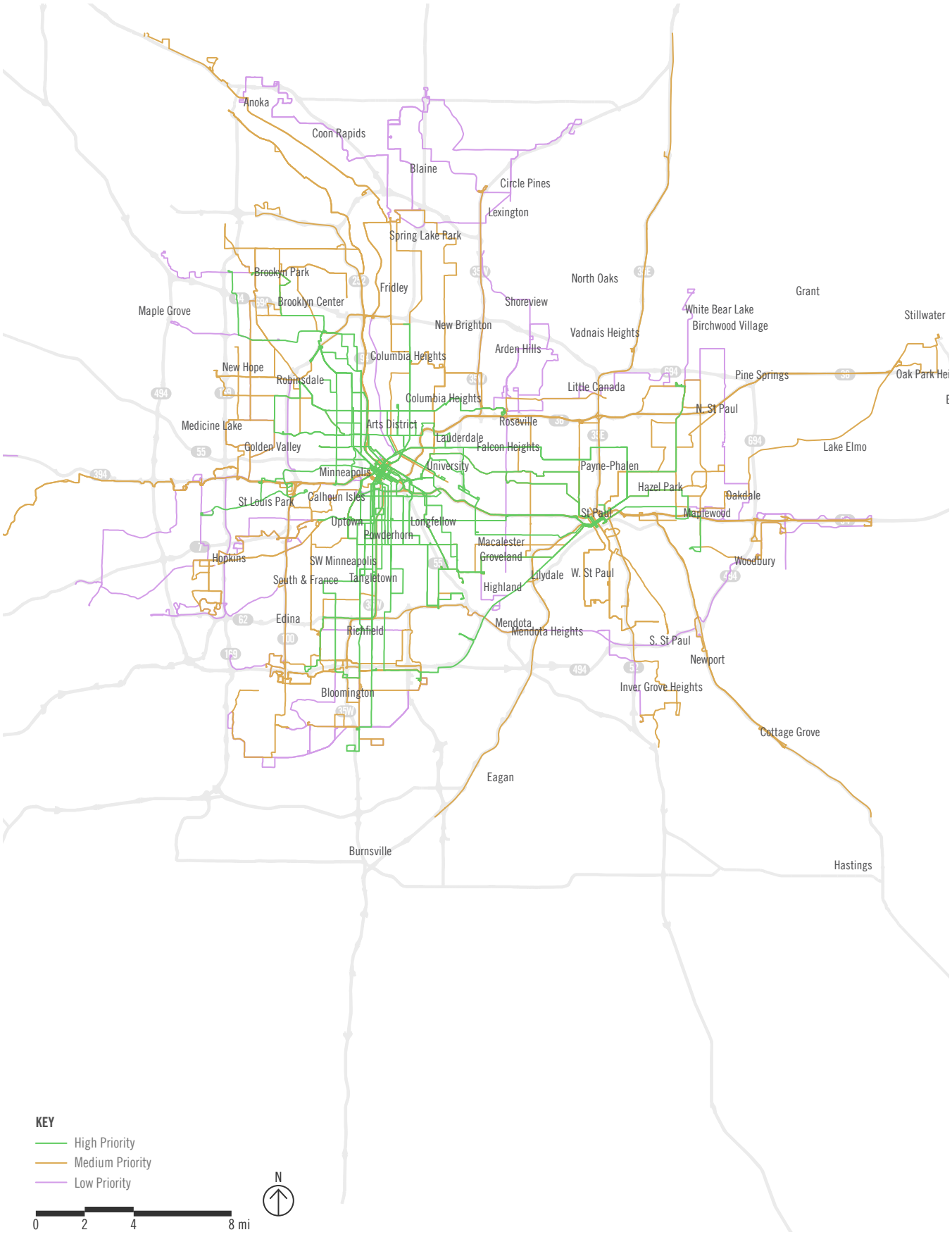
Existing Frequent Mid-Day Transit Service



Proposed Frequent Mid-Day Transit Service



SIP By Rank


Anoka
Coon Rapids
Blaine
Circle Pines
Lexington
Spring Lake Park
Brooklyn Park
Fridley
Brooklyn Center
Maple Grove
New Brighton
Shoreview
North Oaks
Grant
White Bear Lake
Birchwood Village
Stillwater
Vadnais Heights
Arden Hills
Columbia Heights
New Hope
Robinsdale
Little Canada
Pine Springs
Oak Park Hei
Columbia Heights
N. St Paul
Medicine Lake
Arts District
Roseville
Lauderdale
Falcon Heights
Golden Valley
Lake Elmo
Minneapolis
University
Payne-Phalen
Hazel Park
Oakdale
St Louis Park
Calhoun Isles
St Paul
Maplewood
Uptown
Longfellow
Powderhorn
Macalester
Groveland
Hopkins
SW Minneapolis
Woodbury
South & France
Tangletown
Lilydale
W. St Paul
Highland
Edina
Mendota
Richfield
Mendota Heights
S. St Paul
Newport
Bloomington
Inver Grove Heights
Cottage Grove
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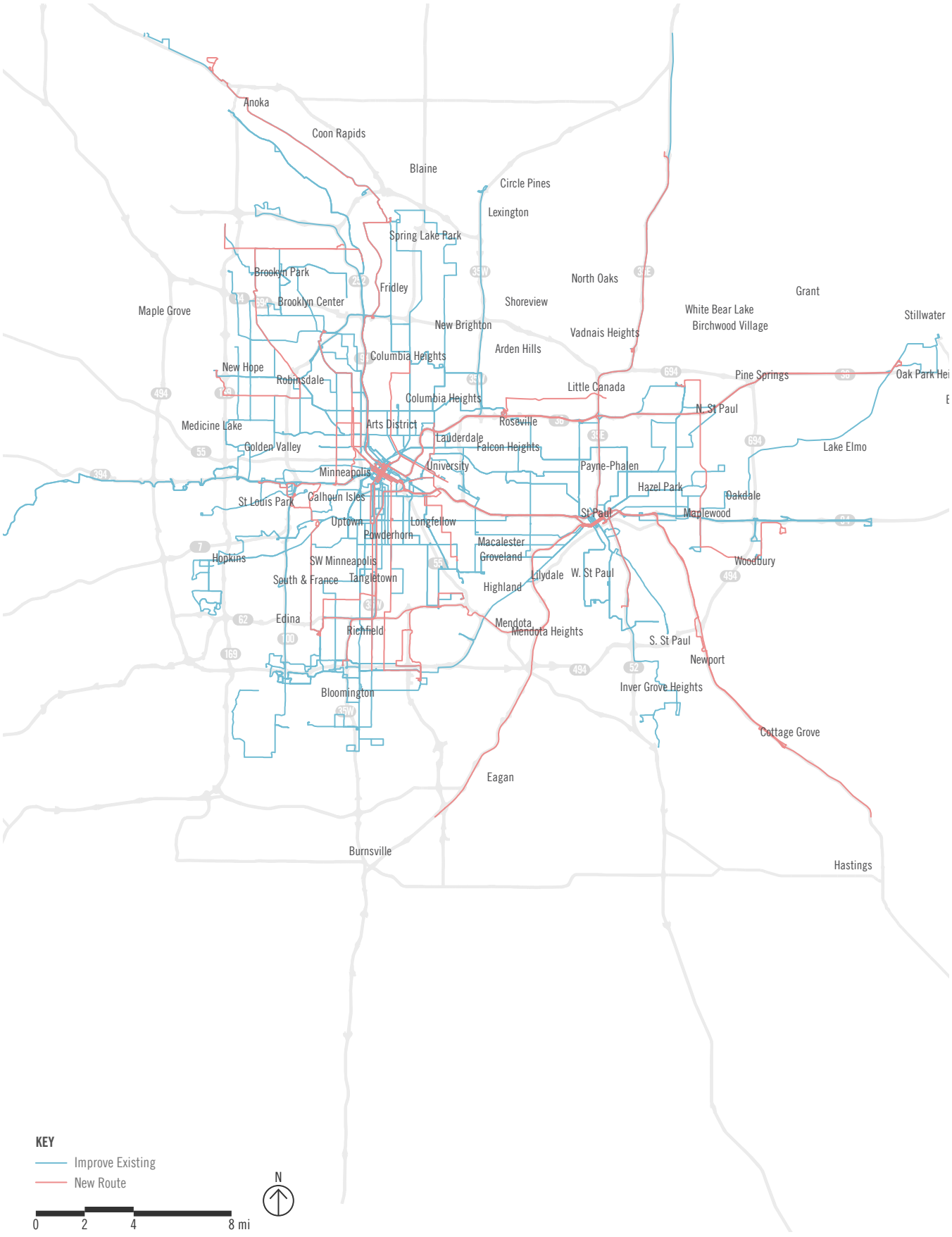
SIP By Type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N. St Paul
Medicine Lake
Golden Valley
Arts District
Roseville
Lauderdale
Falcon Heights
Lake Elmo
Minneapolis
University
Payne-Phalen
Hazel Park
Oakdale
St Louis Park
Calhoun Isles
Uptown
Longfellow
Powderhorn
St Paul
Maplewood
Macalester
Groveland
Hopkins
SW Minneapolis
South & France
Tangletown
Highland
Lilydale
W. St Paul
Woodbury
Edina
Richfield
Mendota
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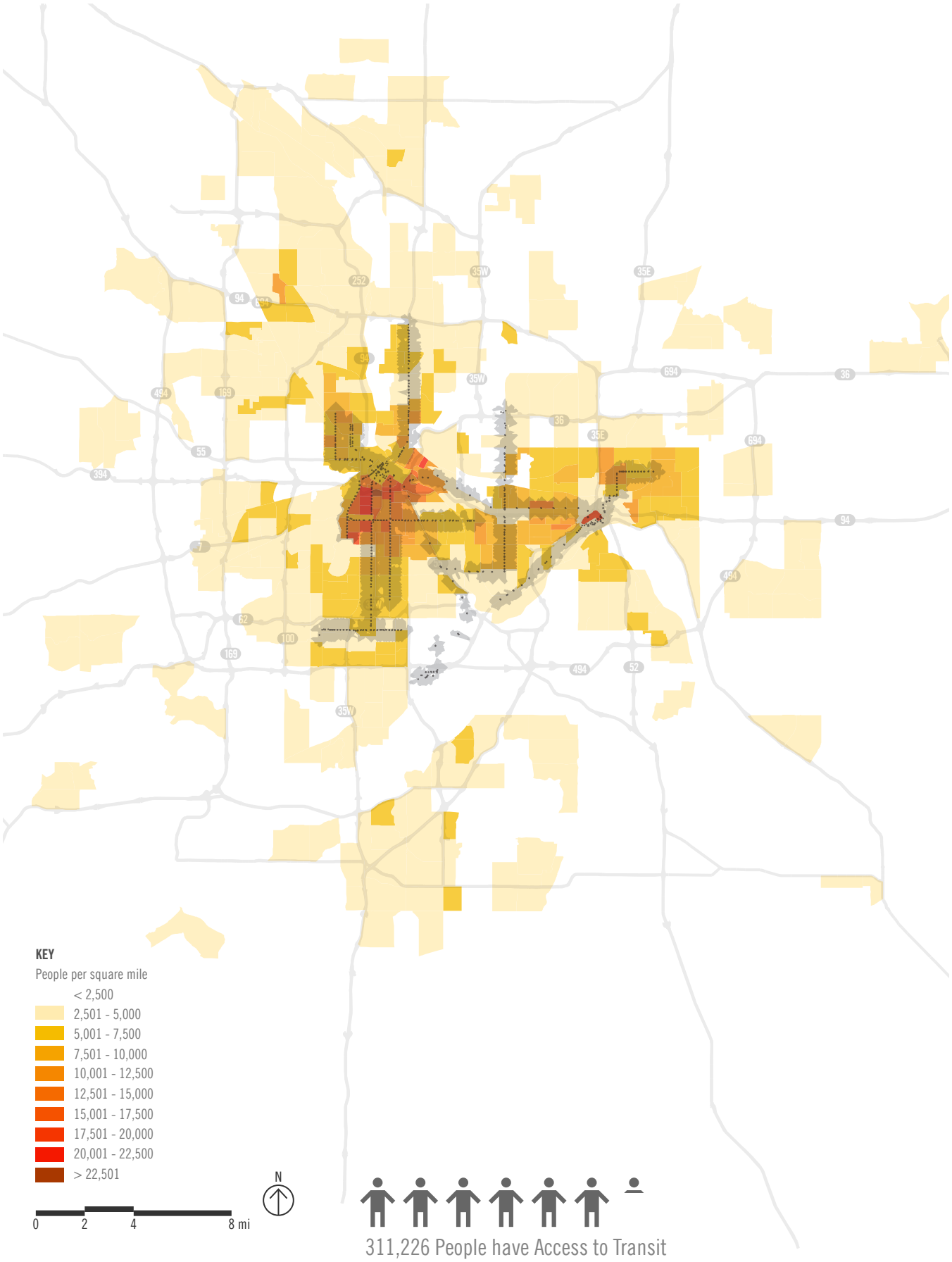
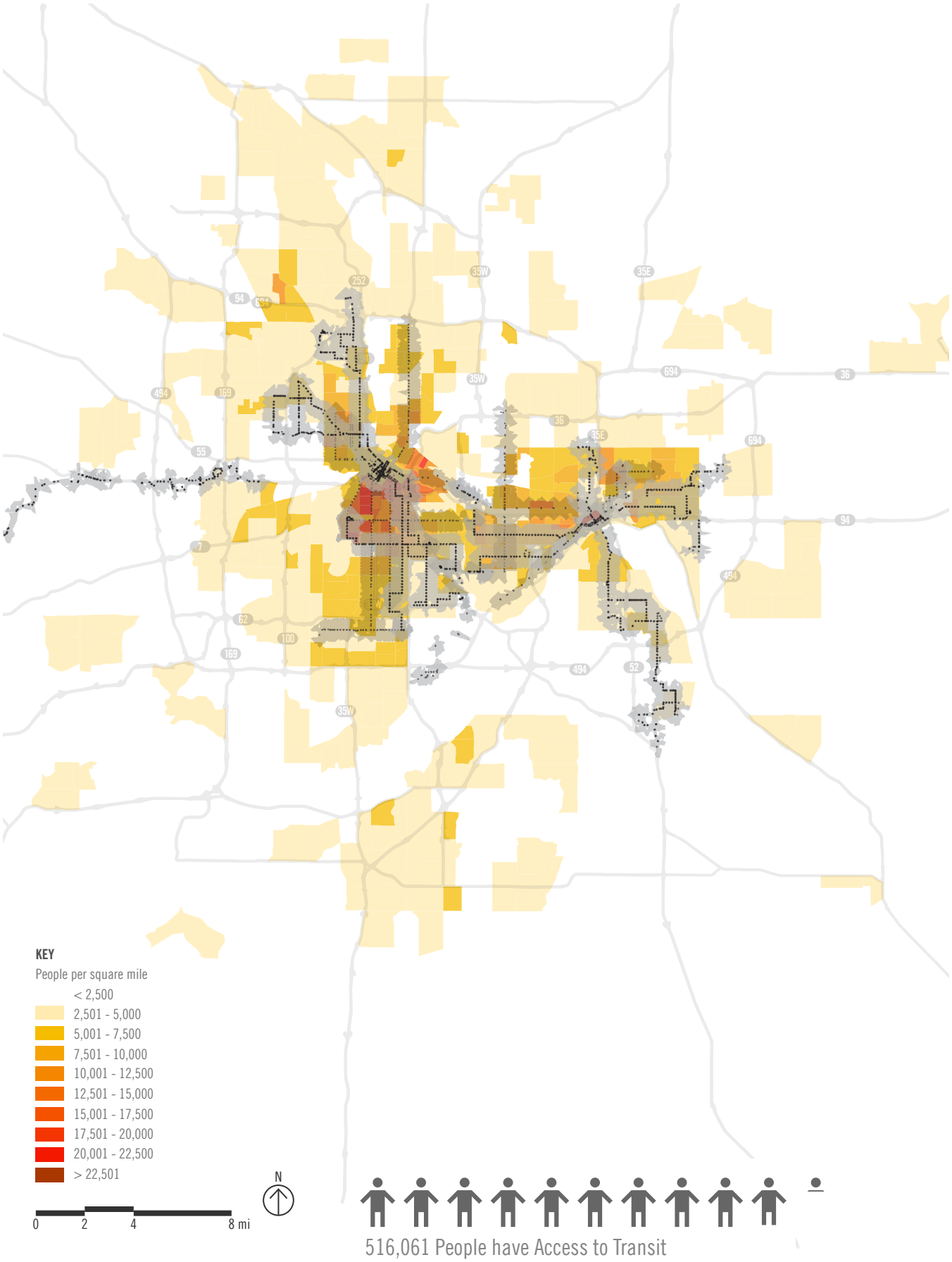
Existing Frequent Route 1/2 Mile Access



Proposed Frequent Route 1/2 Mile Access



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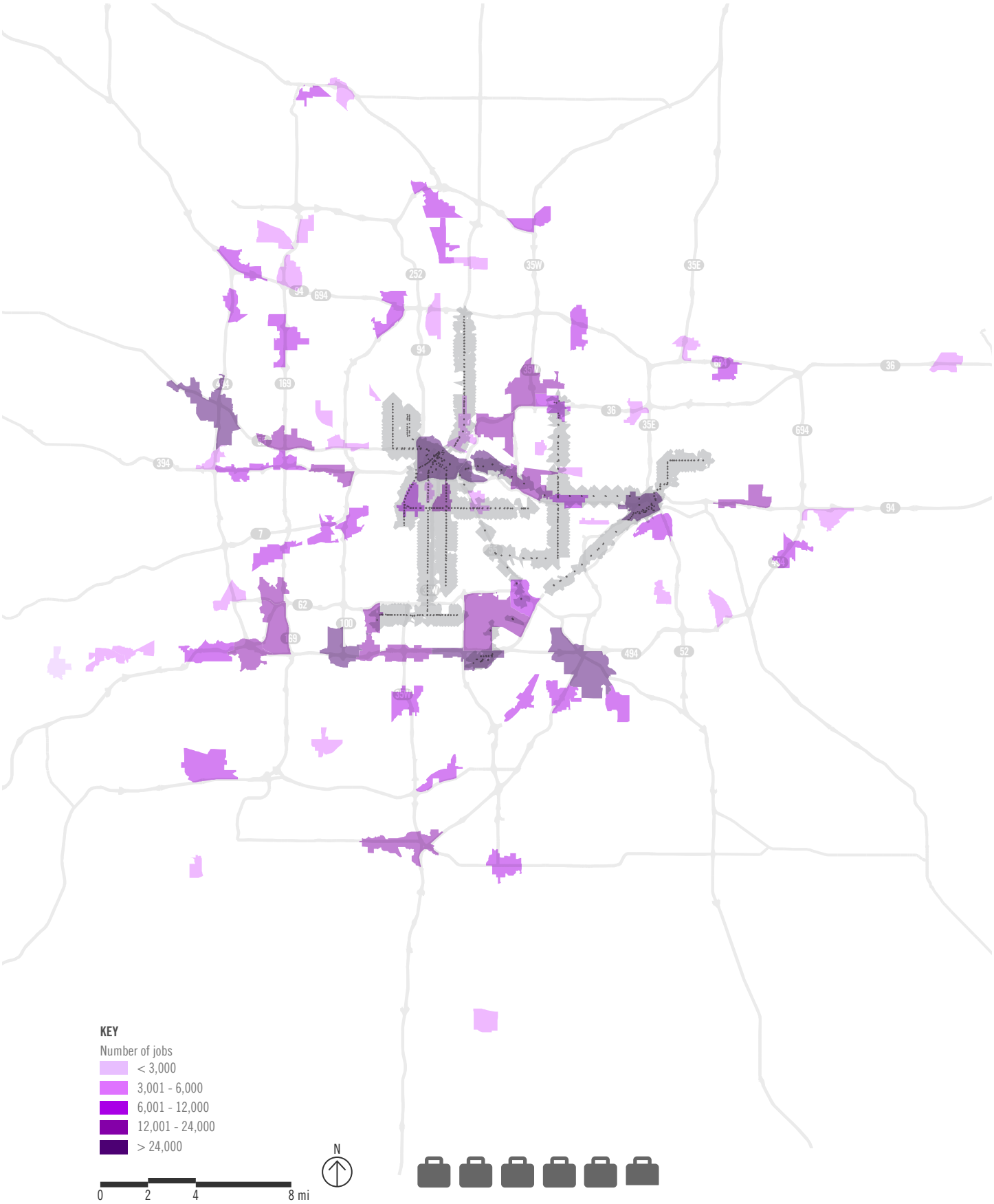
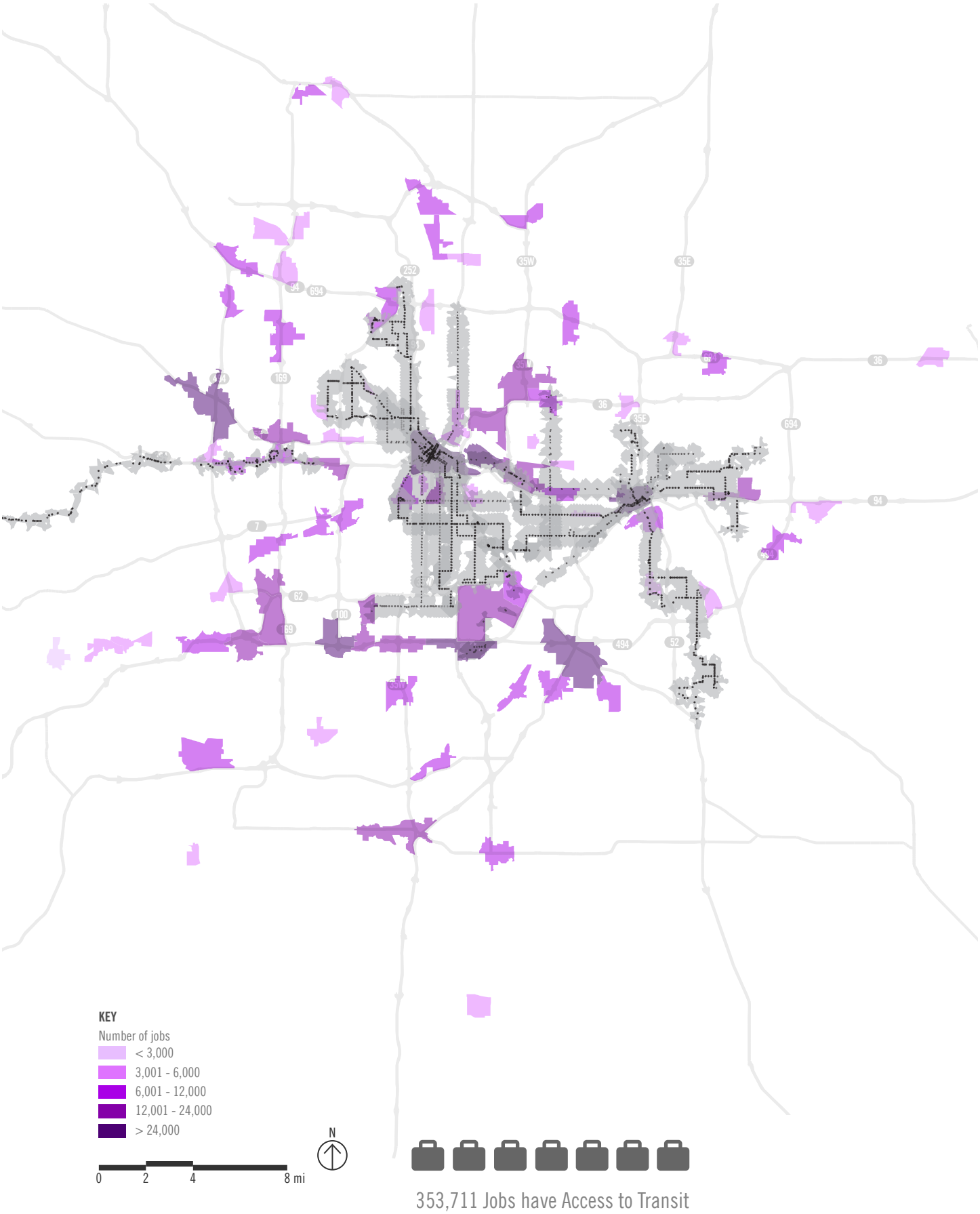


293,465 Jobs have Access to Transit

Proposed Frequent Route 1/2 Mile Access



Strengths and Weaknesses

The Twin Cities generally have a strong and successful transit system. Total transit ridership exceeds that of some significantly larger metropolitan areas. The Green and Blue light rail lines carry 3,200 riders per mile, 50% more than Portland and twice that of Salt Lake City or Charlotte. The A-Line is nationally regarded as a model for improving bus service on arterials.

However, there are reasons to be concerned. Overall system ridership is down 5% from 2015 to 2016 despite a strong economy. New services, like rail and the A-Line, have performed well – both increased ridership in that period – but the existing bus network is losing riders.

The success of the A Line shows that the fundamental issues with transit in the Twin Cities are not based on mode. Buses and rail alike can perform well and attract new riders. The key is providing high quality service – transit which is frequent, fast, reliable, comfortable, and easy to understand where people need it.

Overlaying transit service onto population and employment makes several things readily apparent:

THE HIGH FREQUENCY NETWORK DOES NOT SERVE ALL THE AREAS OF HIGH POPULATION DENSITY.

Currently, the only routes on the designated High Frequency Service Network are the 64 to northeast St. Paul, the 54 along West 7th, the Green Line along University, and the A-Line on Snelling Avenue and Ford Parkway. Route 62 along Rice Street also has service roughly every 15 minutes all day but is not designated as part of the frequent network. Similarly dense areas along 3rd Street East, northeast and southeast of Downtown St Paul, and in West St. Paul and South St Paul do not have frequent service. In general, the East Metro has fewer frequent routes than similarly dense parts of Minneapolis.

The Metro Transit Service Improvement Plan, approved in April 2015, addresses this issue by proposing additional service on several existing bus routes. The High Frequency Service Network proposed in the SIP aligns fairly well with population density.

A-Line at Snelling and University.

THE HIGH FREQUENCY NETWORK DOES NOT SERVE ALL THE AREAS OF HIGH EMPLOYMENT DENSITY.

Downtown St. Paul is connected very well with bus and rail. However, other employment areas are not. Currently, the only areas of dense employment outside of Downtown that have frequent service are those along the Green Line and the A Line. Thus, people working in the East Metro outside Downtown St. Paul are unlikely to find good transit options.

The SIP significantly improves the high frequency network and adds frequent service to several of these employment centers. However, others are not addressed. These include suburban employment areas like Mendota Heights but also urban ones like the Grand Avenue corridor in St. Paul.

THE EXPRESS NETWORK DOES NOT SERVE EMPLOYMENT OUTSIDE OF DOWNTOWN.

The Express Network is focused on Downtown Minneapolis and Downtown St. Paul. Other employment centers do not get the same connections. For example, routes 351, 353, 355, and 375 from the Woodbury and Lake Elmo pass within a few hundred feet of the 3M headquarters on their way to St. Paul, but do not stop. Getting to 3M from either of these suburbs would require taking the bus all the way to St. Paul, then catching a local bus to 3M, a detour of more than 45 minutes.

The radial network structure forces nearly all riders to connect in Downtown St. Paul.

Nearly every bus route in the East Metro runs into Downtown St. Paul. There are few cross-town routes, and the ones that do exist are often infrequent. At some times of day, the fastest transit route between Little Canada and Maplewood, a 15-minute drive, takes an hour and 20 minutes via Downtown; the direct bus, the 223, runs only every 90 minutes and not after 6:00p.m. or on weekdays.

OFF-PEAK SERVICE IS INADEQUATE.

Many bus routes run infrequently or not at all mid-day, evenings, and weekends. For example, the Lone Oak Drive area in Eagen is served by two routes, but both are weekday only and none run mid-day or after 6:30p.m. Employees working late, or in jobs that are not typically 9-to-5, cannot use transit.

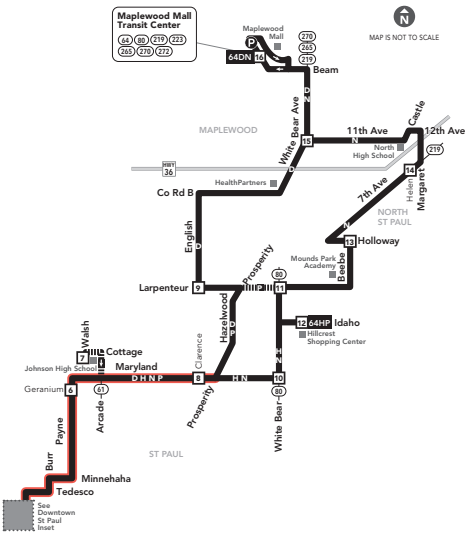
MANY ROUTES ARE CONFUSING.

Many Metro Transit bus routes feature a large number of branches and different service patterns. The 64, for example, is actually four different routes – 64H, 64D, 64P, and 64N. The D and N end at Maplewood Mall, while the H and P end at Hillcrest Shopping Center. The D and P turn off of Maryland on Hazelwood, while the H and N continue to White Bear. On one segment of White Bear the N goes south to get to Downtown while the H goes north. On top of that, two morning trips and two afternoon trips serve Johnson High School, creating another service pattern that is not given a letter.

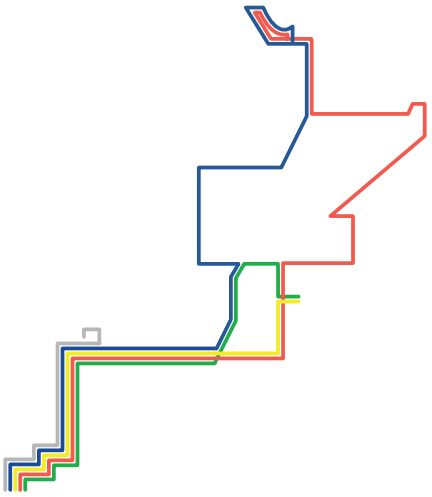
ROUTES HAVE NOT EVOLVED EFFICIENTLY ALONG WITH CITIES.

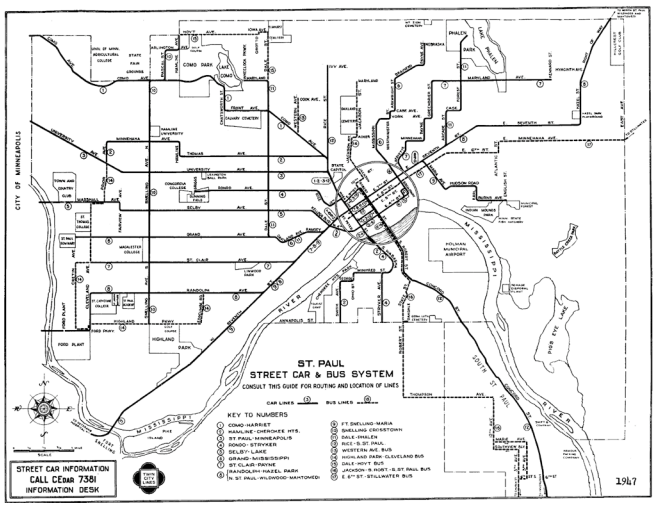
Most transit networks have evolved slowly, adding routes one at a time and occasionally extending or rerouting existing routes. This is true in the East Metro as well. A 1947 streetcar map bears a startling resemblance to today's transit map. The radial network and specific routes have stayed the same over 70 years. The 72 bus, for example, turns from George Street onto Ohio and then Winifred, rather than taking the direct route down George, likely because that's what the #2 streetcar did long ago. In theory, a bus route would be easy to move; in practice, it's easier to change a little as possible.

When systems don't change, but the cities they serve do, transit becomes less useful. The East Metro is a very different place than it was 70 years ago, and in some cases the transit system has not adapted.

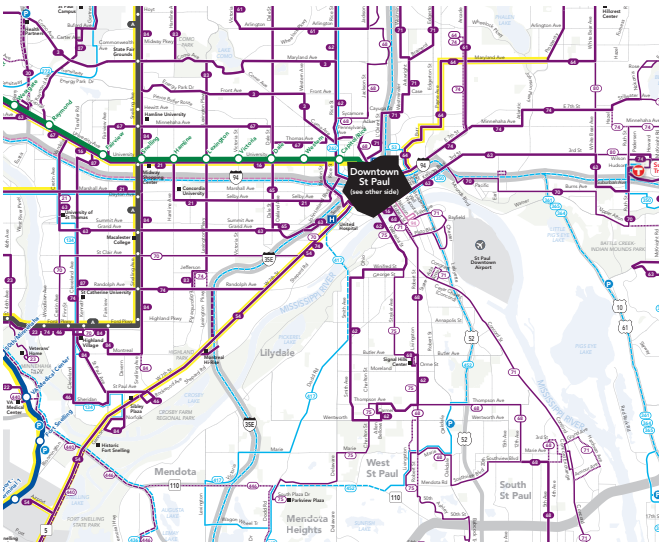


Even with the route map (above), it is difficult to understand route 64, which has 5 different service patterns (below)





1947 streetcar system map.



Current system map: many buses today follow the same paths as the 1947 streetcars.