3.0 EXISTING SERVICE STRUCTURE

3.1 SERVICE DESIGN STANDARDS

In this section, descriptions of existing services will make reference to transit service design standards. These have been drawn from the Metropolitan Council Transportation Policy Plan and are summarized in the table below.

Areas	Core	Inner Urban / Suburban	Outer Suburban	Rural
Land Use Pattern	Highest concentration of activity, housing and jobs	Moderate concentration of jobs, housing and activities	Generally lower concentrations with intermittent pockets of moderate concentrations	Lowest concentrations of housing and jobs
Service Options	Regular-route locals, all-day expresses, small-vehicle circulators, specialized paratransit, ridesharing	Regular-route locals, all-day expresses, small-vehicle circulators, specialized paratransit, ridesharing	Peak-only express, small vehicle dial-a-ride, midday circulators, paratransit, ridesharing	Dial-a-ride, volunteer driver programs, ridesharing
Frequencies	5-15 minute local and circulator	15-30 minute or 30-60 minute, depending on land use pattern	Peak-period-only expresses, 1-2 hour midday services, dial-a-ride	As needed
Span of Service	18-24 hours per day, 7 days per week	12-20 hours per day, 7 days per week	10-14 hours per day weekdays, limited weekend	8-10 hours per day weekdays
Route Spacing	Locals spaced 0.25-0.5 miles apart	Locals spaced 0.5-1.0 miles apart	Services tied to park-and-ride lots and hubs	Services tied to park-and-ride and park-and-pool lots

These standards are also similar to those included in the 1996 Transit Redesign report, although the 1996 standards generally tend toward the lower end of the ranges mentioned above (e.g. 15-minute service rather than 5-minute service in the Core).

In Sector 8, according to the Transportation Policy Plan, North Minneapolis is included in the "Core" area. Most of the remainder of the built up area (Brooklyn Center, Brooklyn Park, Robbinsdale, Crystal, New Hope and Golden Valley) is in the "Inner Urban/Suburban" area. Champlin and the more northerly portions of Brooklyn Park are in the "Outer Suburban" area.

In addition to the above, the 1996 standards also included a bus stop spacing standard of 8 stops per mile, or 660 feet, for all urban and suburban areas. This not only matches the street grid in much of Sector 8 (8 or 16 blocks to the mile), but is fairly typical for local services in North American transit systems, as shown in the following table (Source: Transit Co-operative Research Program, Report 19):

Environment	Spacing Range	Typical Spacing
Central Core Areas of CBD's	300 to 1000 feet	600 feet
Urban Areas	500 to 1200 feet	750 feet
Suburban Areas	600 to 2500 feet	1000 feet
Rural Areas	650 to 2640 feet	1250 feet

3.2 ROUTE STRUCTURE

In Sector 8, as in most of the Metro Transit network, there are two distinct route structures, namely, one for off-peak periods (the "base" structure) and one for peak periods. These are discussed in more detail below.

Base Route Structure

The base route structure for Sector 8 is generally designed to provide a basic level of service, typically for transit-dependents who do not have ready access to a car or other means of travel. The overall structure is generally radial, oriented to downtown Minneapolis, even though routes mostly use arterial streets that are typically in a grid pattern.

Most suburban routes are structured around timed-transfer focal points at Robbinsdale and Brookdale. Local routes connect local areas to one of these focal points, where they are scheduled to connect with each other and with routes to downtown Minneapolis and other inner-city destinations. In both locations, scheduled connections are made where possible but are not made in all cases, usually due to scheduling constraints.

Some routes also meet at other commercial centers, such as Starlite Center, but their schedules usually are not timed to make direct connections. With one exception (Route 724), the Minneapolis connections to the two main suburban focal points are local North Minneapolis routes, which make all stops in North Minneapolis, resulting in a relatively slow travel time between downtown and the connecting local suburban routes.

An exception to the focal point pattern is North Minneapolis where, as an inner-city neighborhood, transit is more traditionally established and better used. The route structure here is a traditional grid system, with the majority of services being in a north-south alignment, oriented to downtown Minneapolis.

Peak Route Structure

During peak hours, most of the base network remains and is overlaid by additional peak-only commuter routes, providing direct no-transfer service between suburban residential areas and downtown Minneapolis. Many of these routes also serve one or more of the many park-and-ride lots located throughout the suburban areas. Typically, these routes use the freeway network to make relatively quick connections between downtown and the suburban neighborhoods that they serve.

In most cases, peak commuter routes operate in addition to local routes, but in some cases they either fully or partially replace the local routes during peak hours leaving the single routes to serve both local and commuter needs. This can be and usually is an efficient approach, although it sometimes results in service gaps, especially in reverse commute or off-peak directions (e.g. service on Douglas and Winnetka), due to the commuter demands not being complementary with local demands.

3.3 ON-STREET FACILITIES

The major on-street transit facilities consist of transit centers and park-and-ride facilities. These are described in this section.

Transit Centers

There are two major transit centers in Sector 8, which are the transfer and focal points for most local services in the area. They are:

- ***Robbinsdale Transit Center*** (also known as the Hubbard Marketplace) – located in the center of Robbinsdale on Hubbard between 41st and 42nd Avenues; serves routes that cover the major corridors (Winnetka, Douglas, Broadway, 42nd Avenue) in the Crystal, New Hope and northern Golden Valley areas (Routes 715, 716, 717 and the Douglas and Noble branches of Route 19);

- ***Brookdale Transit Center*** – located on the west side of the shopping center, just southeast of Brooklyn Boulevard and Bass Lake Road; serves Brooklyn Center and Brooklyn Park routes (721, 722, 723, 724) including connections to Crystal, New Hope, the Shingle Creek Civic Center employment areas, Starlite Mall and North Hennepin Community College. There are also connections to the University of Minnesota via Route 52K and to the Robbinsdale Transit Center via Route 717.

There are also minor transit focal points, including Starlite Mall, which serve primarily as the terminus point for some local routes.

Park-and-Ride

There are many park-and-ride facilities in Sector 8, with sizes ranging from quite large to quite small. Most are located near freeway entrances and exits to minimize travel times for park-and-ride commuters. They are a critical component to the overall Sector 8 transit network in that the majority of suburban riders on commuter routes during peak periods use park-and-ride to access transit and the usage of most park-and-ride facilities is at or close to capacity. The inventory of park-and-ride facilities in Sector 8 and their respective capacities are listed in Exhibit 3.2.1. The locations of these lots are shown in Exhibit 3.2.2.

A total of approximately 2100 park and ride spaces are available at the lots in the study area. Average daily usage is about 75%; however, utilization varies significantly among the lots.

Exhibit 3.2.1: Park and Ride Lots in Sector 8 Study Area (2001)

City	Location	Capacity	Typical Weekday Usage	Routes Serving Site
Brooklyn Center	Church of Nazarene (Hwy. 252 & 73rd Ave. N.)	43	32	766
Brooklyn Center	65th (65th Ave. N. & Brooklyn Blvd.)	215	215	94G, 760, 723
Brooklyn Park	Brooklyn Evangelical Lutheran (Zane Ave. & 69th Ave. N.)	45	3	716, 724, 760
Brooklyn Park	85th (85th Ave./Hwy.169/Co.81)	131	99	760, 782, 789
Brooklyn Park	73rd (Hwy. 252 & 73rd Ave.)	117	47	766
Brooklyn Park	Noble (95th & Noble)	410	283	766
Champlin	Servant of Christ (Hayden Lake Rd.& West River Rd.)	20	2	766
Champlin	Champlin (117th Ave.& West River Rd.)	147	102	766
Champlin	Dayton Road (Dayton Rd./Colburn Avenue)	75	49	766
Crystal	Praise Christian Center (Colorado & 41st Ave.N.)	15	17	52K, 758, 765
Golden Valley	Spring Gate Shopping Center (Duluth St.& Lilac Dr.)	25	58	19, 758
Maple Grove	Shepherd of the Grove (Hemlock & West Eagle Lk. Dr.)	50	40	780, 789
Maple Grove	Maple Grove Evangelical (8500 Block of Rice Lk. Rd.)	50	45	781, 789
Maple Grove	Word of Life (Bass Lake Rd.& West Fish Lk Rd.)	10	5	788, 789
Maple Grove	Maple Valley Shopping Center (Revere Lane & 97th Ave. N.)	30	20	782, 789
Maple Grove	Crosswinds Church (Weaver Lk. Rd. & W. Fish Lake Rd.)	75	50	783, 789
Maple Grove	Maple Grove Community Center (Weaver Lk. Rd. & Pineview Ln. N.)	400	300	781, 789
Maple Grove	Walmart (CR 30 & Dunkirk Ln. N.)	180	165	784, 789
Robbinsdale	Faith-Lilac (42nd Ave. N. & Welcome)	25	4	715, 716, 764

Note: Typical weekday usage based on survey data from 2000 and ride check data from 2001.

3.4 ROUTE COVERAGE AND HOURS OF SERVICE

Overall, transit route coverage and hours of service in Sector 8 generally meet service standards as outlined in the Metropolitan Council's Transportation Policy Plan and Metro Transit's Routes Standards, with a few exceptions. The transit route coverage in Sector 8 varies by time of day, day of the week and the location. In North Minneapolis, the coverage is good at all times (most areas within a quarter-mile of regular service), since this area is comprised of denser, more mature neighborhoods with a better established, traditional transit riding habit. All major corridors have good service at all times of the day and all days of the week, with service hours typically being from about 6:00 a.m. to shortly after 12:00 midnight.

In other parts of Sector 8, specifically the suburban areas, route coverage varies considerably. During peak periods, coverage is quite good, as can be seen on the Metro Transit system map. During off-peak times, however, many routes do not operate and several significant corridors or streets are without service at certain times. Admittedly, some areas have relatively low populations or population densities and likely would not be able to generate enough ridership to justify the service, but other areas do have fairly good densities and, in some cases, are relatively new areas where off-peak service has not yet been offered.

To illustrate how the route coverage varies, the services that operate during the major time periods, along with their respective levels of service, are shown in a series of map exhibits and are summarized as follows:

- **Weekday Peak Periods** (Exhibit 3.3.1) – Coverage is good in most areas, with the best coverage (closer spacing, more routing options) being in North Minneapolis (e.g. Routes 5, 22, etc.).

  During peak periods, there are many express services that overlay or replace local services on many suburban corridors; however, most suburban express routes operate in the peak direction only. In some cases, local routes provide service in the off-peak direction but some significant corridors do not have any off-peak direction service, even though they have two-way service at other times. These include:

  – Route 19 – Noble branch (a.m. only);
  – Routes 22 and 763 – Brookdale-Humboldt routing, north of 67th Avenue;
  – Route 723 (p.m. only) – no service at all on Brooklyn Blvd. between Noble and 65th Avenue
  – Route 755 – Winnetka, south of 42nd Avenue;

  Note that the Glenwood-Bryant diversion of Route 5 has mid-day service but no peak service in either direction. Also, the Broadway branch of Route 32 does not operate during the a.m. peak, except for one westbound trip.

  Some express routes have particularly long and/or circuitous local sections, which makes the service relatively unattractive for the areas at the outer end of the routes (e.g. Routes 94K, 763).

- **Weekday Mid-Day** (Exhibit 3.3.2) – Coverage is fairly good in most areas, with the best coverage again being in North Minneapolis, where all routes operate during mid-day, with the exception of the portion of Route 32 on Washington from Broadway to Lowry and the 36th Avenue branch.

  In most of the suburban areas, services operate primarily on main arterial streets which, in many cases, results in route spacing of 1 mile. As noted earlier, virtually all services require connections to inner-city local services at designated transit centers (Robbinsdale, Brookdale) to access downtown destinations, although alternate trips of Route 724 extend to downtown during mid-day to provide direct express connections from Brookdale. Suburban services operating during mid-day are summarized as follows:

  – Routes 721, 722, 723 and 724 – connecting at Brookdale;
  – Routes 715, 716 and 717 – connecting at Robbinsdale (Route 717 also goes to Brookdale; Route 715 only routes to Bass Lake Road);
  – Routes 755, 756 and 766 (120-minute service);
  – Douglas and Noble branches of Route 19;
  – Extension of Route 22 to Humboldt and 85th Avenue (3 trips only).

  Several of the above routes provide mid-day service on routes that operate during peak hours only (e.g. Routes 94EGK, 758, 760, 763, 764, 765). Also, there are some minor branches and route diversions where a few trips are offered during peak hours only, which are noted in the frequency tables in the next section.

- **Weekday Evenings** (Exhibit 3.3.3) – Coverage is less than during the mid-day, especially in suburban areas. Virtually all urban routes operate evenings, except Route 32 (Lowry) and the 49th/51st branch of Route 5. Suburban routes operating during weekday evenings are as follows:

  – Routes 722, 723 and 724 – connecting at Brookdale;
  – Routes 715, 716 and 717 – connecting at Robbinsdale;
  – the Douglas and Noble branches of Route 19;
  – one Route 22 trip to Humboldt and 85th Avenue.

  Note that Route 715 operates a few trips on Winnetka north of Bass Lake during evenings but not during the mid-day.

- **Saturday Daytime** (Exhibit 3.3.4) – Coverage is less on Saturdays than on weekdays, especially in suburban areas. Virtually all urban routes operate Saturdays, except Route 32 (Lowry). Suburban routes operating Saturdays are as follows:

  – Routes 722, 723 and 724 – connecting at Brookdale;
  – Routes 715, 716 – connecting at Robbinsdale (120-minute service; both route only to 65th Avenue and Zane);
  – the Douglas branch of Route 19;

Note that Route 715, from Winnetka and Bass Lake to 65th Avenue and Zane operates Saturdays but not on weekdays. Also, there used to be Saturday service on Winnetka between 42nd Avenue and Louisiana Transit Center (Route 755), but this was recently discontinued.

- **Saturday Evenings** (Exhibit 3.3.5) – Coverage is less than weekday evenings and less than Saturday daytime, especially in suburban areas. Virtually all urban routes operate Saturday evenings, except Route 32 (Lowry) and the 49th/51st branch of Route 5. The only Saturday evening service in the suburban areas is Route 724, from Brookdale via Zane and Brooklyn Boulevard to Starlite Center.
- **Sunday Daytime** (Exhibit 3.3.6) – Coverage is less than on Saturday, especially in suburban areas. Virtually all urban routes operate Sundays, except Route 32 (Lowry). Suburban routes operating Sundays are as follows:
  - Routes 722, 723 and 724 – connecting at Brookdale;
  - the Douglas branch of Route 19.
- **Sunday Evenings** (Exhibit 3.3.7) – Coverage is the same as Saturday evenings but is less than Sunday daytime, especially in suburban areas. Virtually all urban routes operate Sunday evenings, except Route 32 (Lowry) and the 49th/51st branch of Route 5. As with Saturdays, the only Sunday evening service in the suburban areas is Route 724.

3.5 SERVICE FREQUENCIES

As with route coverage, service frequency varies by the time of day, the day of the week and the location. Again, service levels in North Minneapolis are quite good at all times of the day and all days of the week (typically, at least 30 minutes daytime and 60 minutes evenings).

In the suburban parts of Sector 8, service levels are generally good during peak periods, but fairly infrequent in most areas during off-peak times, with many operating at 60 minute headways and some even less frequent (120 minutes or more). Many routes have no service at all during low-demand periods, as detailed in the previous section. Again, many areas have relatively low populations or population densities and do not have sufficient ridership demand to justify higher service levels.

The service headways and frequencies for the Sector 8 transit routes are summarized in the following tables.

Exhibit 3.4.1: Service Headways on Urban Routes

Urban Routes	Weekdays				Saturdays		Sundays	
	A.M.	P.M.	Mid	Eve	Day	Eve	Day	Eve
5 – Emerson-Fremont (s. of 26th)	7	5	7.5	10	10	15	15	20
5 – Emerson-Fremont (n. of 26th)	15	10	15	20	20	30	30	40
5 – Penn-26th Ave.	10	10	15	20	20	30	30	40
5 – Glenwood-Broadway	-	-	60	-	-	-	-	-
5 – 42nd Ave. & York	20	15	30	60	60	60	60	60
5 – Penn-Osseo	20	30	30	30	30	60	60	sel. tr.
5 – Osseo (combined)	12	10	12	12	15	20	30	30
5 – 44th Ave.-Osseo	25	15	20	20	30	30	60	40
5 – 49th Ave.-51st Ave.	35	30	60	-	60	-	60	-
14 – Broadway (south of 36th)	10	12	20	30	20	30	30	60
14 – Broadway (north of 36th)	15	24	30	60	30	60	60	120
14 – Noble-Regent	30	24	60	60	60	60	60	120
14 – Corvallis	1 trip	3 trips	-	-	-	-	-	-
19 – Golden Valley Rd.	15	12	20	30	30	30	30	60
20 – Plymouth	25	25	30	60	30	60	60	60
22 – Lyndale	12	12	20	30	20	60	30	60
22 – Humboldt-57th Ave.	24	24	40	60	40	120	60	120
22 – Bryant-Dupont	24	24	40	60	40	120	60	120
22 – Shingle Creek	3 trips	2 trips	3 trips	-	-	-	-	-
32 – Washington-DT	30	30	-	-	-	-	-	-
32 – Lowry-36th Ave.	30	30	-	-	-	-	-	-
32 – Lowry-Broadway	-	60	30	-	-	-	-	-
32 – Lowry-Rosedale	30	30	30	-	-	-	-	-
52 – Univ. of Minnesota	2 trips	2 trips	-	-	-	-	-	-

The transit routes in the sector have been grouped into three categories for the purpose of this analysis:

- Urban - those routes that operate primarily in the north Minneapolis or the more urbanized areas of the other sector municipalities;
- Suburban – those routes that provide primarily local service in those areas of the sector municipalities with lower development densities;

- Express – those routes that provide express connections between sector municipalities and downtown Minneapolis.

As many routes have branches and/or routing variations by time of day or day of the week, the routes are also broken down into their segments, as service levels can vary considerably from one part of a route to another.

Exhibit 3.4.2: Service Headways on Suburban Routes

Suburban Routes	Weekdays				Saturdays		Sundays	
	A.M.	P.M.	Mid	Eve	Day	Eve	Day	Eve
19 – Douglas	40	30	60	60	60	-	60	-
19 – Nevada	4 trips	3 trips	-	-	-	-	-	-
19 – Noble	30	30	60	60	-	-	-	-
22 – Humboldt-85th Ave.	2 trips	-	3 trips	1 trip	-	-	-	-
715 – 42 Ave.-Winnetka	60	60	60	60	120	-	-	-
715 – Winnetka-Broadway	60	60	-	3 trips	-	-	-	-
715 – Winnetka-63 Ave.	-	-	-	-	120	-	-	-
715 – Science Ind. Park	1 trip	1 trip	-	-	-	-	-	-
716 – Douglas-Broadway	60	60	60	60	120	-	-	-
716 – Zane	60	60	60	60	-	-	-	-
717	30	30	60	60	-	-	-	-
721 – Bass Lake-Boone	30	30	60	-	-	-	-	-
721 – Boone-Starlite	2 trips	3 trips	-	-	-	-	-	-
722	30	30	30	30	30	-	30	-
723	60	-	60	60	60	-	60	-
724 – Zane-Brooklyn	30	30	30	30	30	60	60	60
724 – Lakeland-Wyoming	2 trips	4 trips	-	-	-	-	-	-
755 – Highway 55	30	30	60	-	-	-	-	-
755 – Winnetka	6 trips	6 trips	120	-	-	-	-	-
755 – Olympia-Louisiana	2 trips	2 trips	-	-	-	-	-	-
756 – Boone south	30	30	120	-	-	-	-	-
756 – Boone north-Magda	3 trips	3 trips	-	-	-	-	-	-

Exhibit 3.4.3: Service Headways on Express Routes

Express Routes	Weekdays				Saturdays		Sundays	
	A.M.	P.M.	Mid	Eve	Day	Eve	Day	Eve
94E	2 trips	2 trips	-	-	-	-	-	-
94G	2 trips	2 trips	-	-	-	-	-	-
94K	5 trips	5 trips	-	-	-	-	-	-
721-724 – Downtown	2 trips	3 trips	60	-	-	-	-	-
758	4 trips	3 trips	-	-	-	-	-	-
760	8	10	-	-	-	-	-	-
760 – Nedderson	2 trips	2 trips	-	-	-	-	-	-
763	6 trips	6 trips	-	-	-	-	-	-
764	4 trips	4 trips	-	-	-	-	-	-
765	4 trips	4 trips	-	-	-	-	-	-
766 – Hwy. 94-252	7	8	120	-	-	-	-	-
766 – Hwy. 252-Noble	13	14	-	-	-	-	-	-
766 – Hwy. 252-97 Ave.	2 trips	2 trips	-	-	-	-	-	-
766 – W. River Rd.	20	20	120	-	-	-	-	-
766 – 117 Ave-Champlin	1 trip	2 trips	-	-	-	-	-	-
766 – Anoka	1 trip	1 trip	120	-	-	-	-	-

3.6 BUS STOP SPACING

As noted above, the bus stop spacing standard in the 1996 Transit Service Design Standards is 8 stops per mile. As shown in Exhibit 3.6.1, the actual stop spacing for many of the Sector 8 routes is more frequent than this standard, which generally results in reduced travel speeds. Examples are as follows:

- ***North Minneapolis North-South Routes (e.g. Routes 5 and 22)*** – The north-south routes usually stop at every cross street. In North Minneapolis, these are relatively long blocks at 8 blocks to the mile. Thus, most of the north-south portions of these routes meet the standard.

- ***North Minneapolis East-West Routes (e.g. Routes 14, 20, 32)*** – The east-west routes also tend to stop at every cross street. These blocks, however, are shorter at 16 blocks to the mile. Thus, the stop spacing on many of these routes or route segments far exceeds the standard. Stopping every second block for any route operating in the east-west direction would meet the standard and would improve travel times.

- ***Suburban Routes*** – Like the urban routes, the suburban routes also tend to stop at every cross street. The suburban street grid is more varied but much of it is similar to the urban grid, with longer blocks in one direction and shorter blocks in the other direction. Some streets have significant portions where the bus routes are stopping every block at a spacing of 16 stops to the mile. Examples include 36th Avenue, 42nd Avenue, 63rd Avenue and Bass Lake Road in the east-west direction, and Douglas Drive, Winnetka Avenue and Boone Avenue in the north-south direction.

3.7 BUS SERVICE SPEEDS AND TRAVEL TIMES

Bus service speeds and travel times are affected by a number of factors. Speeds of general purpose traffic, frequency and timing of traffic signals and bus stop spacing may result in lower bus speeds, while bus only lanes, ramp meter bypasses and free flow freeway operations result in higher bus speeds.

Local buses and express buses operate at quite different speeds and provide quite different travel times. In order to demonstrate the different speeds and travel times for the two types of bus services, schedule travel times from downtown Minneapolis to transit stops throughout the study area have been determined and plotted as travel time contours in Exhibits 3.7.1 and 3.7.2.

Exhibit 3.7.1 presents the travel time contours during the PM peak period from downtown Minneapolis by local bus service. The exhibit indicates that travel times from downtown to North Minneapolis are approximately 20 minutes; to Robbinsdale Transit Center are approximately 30 minutes; to Brookdale Center approximately 35 minutes; and 45 – 50 minutes to Brooklyn Park. Travel time contours from the downtown are generally uniform across the area, consistent with the uniformity of local service.

Exhibit 3.7.2 presents the travel time contours for the express bus services, indicating higher bus speeds and much lower travel times to serve the area, particularly the suburban areas, reflecting routing of buses on the freeways and limited stop operation. Travel times from the downtown to North Minneapolis are 15 minutes; to Robbinsdale and Brookdale Center less than 25 minutes; 35 minutes to Brooklyn Park and the rest of the service area is reached within 45 minutes or less. The influence of the higher speeds on the freeways, particularly on I-94, are quite evident, indicated by the low travel times to destinations along I-94 on the east and across the central part of Sector 8.

Local bus and express bus services serve different markets and provide different types of service. The local bus services provide accessibility and frequent connections along the route, but are often much slower and less direct than the private auto trip. On the other hand, the express routes provide higher speed service for longer distance travel compared to the local bus and provide good travel times to the downtown. These two different types of services must be accommodated in the transit service plan for Sector 8.