CHAPTER ONE: STUDY AREA TRANSIT SERVICE AND DEMOGRAPHICS

The first step in preparing a recommended plan for a major service change is to review existing conditions, including existing population and employment demographics, major development patterns, transit service and ridership, and other relevant elements.

CURRENT NETWORK STRUCTURE

As of February 2012, transit service in the Study Area consisted of:

- 14 local and eleven express or limited-stop bus routes
- Over 1700 weekday in-service hours
- Over 90,000 weekday rides or one-third of Metro Transit's system-wide weekday ridership

Among these routes, as in most of the Metro Transit network, there are two distinct route structures. "Base" service operates all day and "peak" service operates only during weekday rush-hour periods. See **Figure 1**.

Base Route Structure

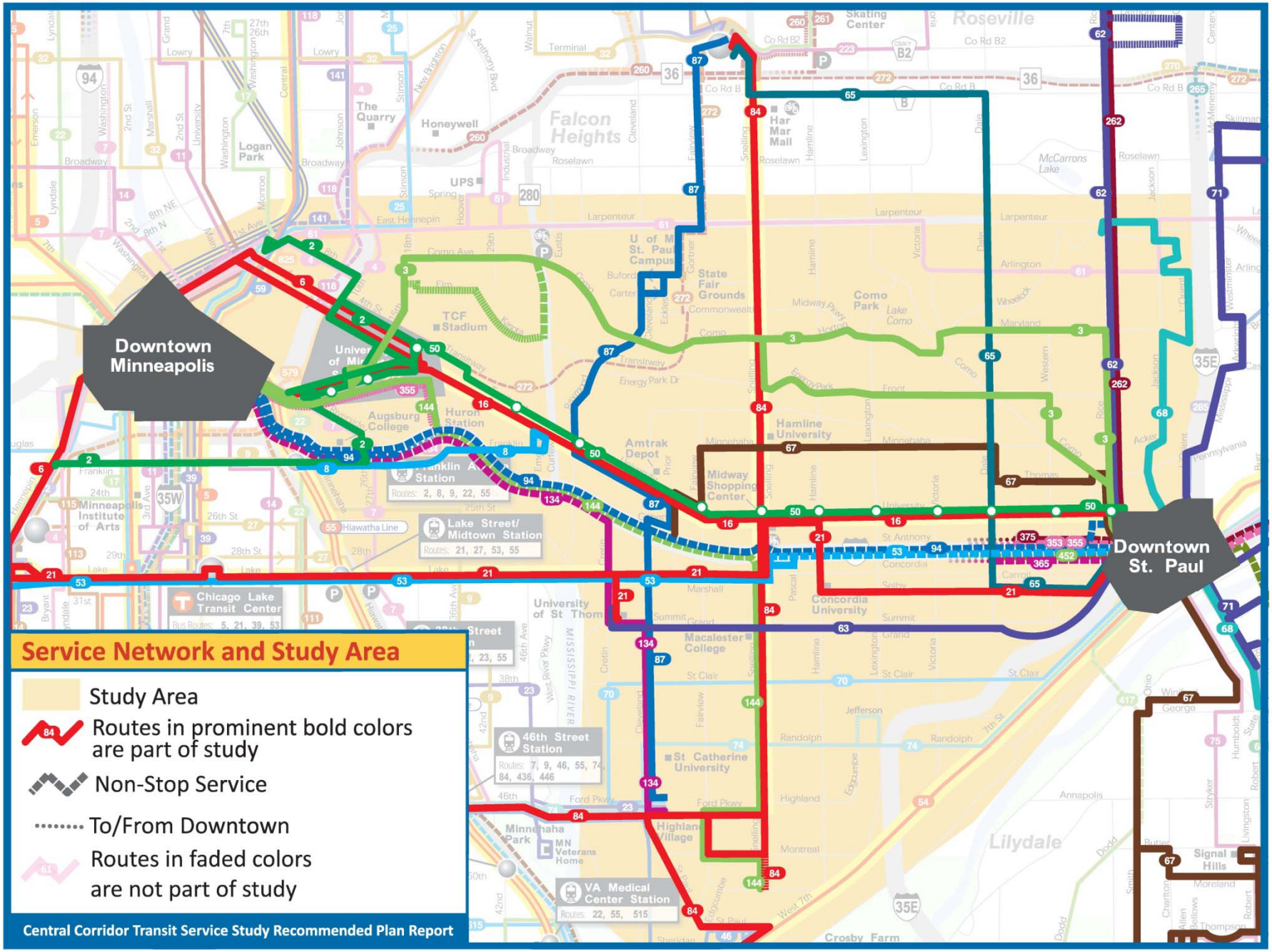
The base route structure in the Study Area is designed to meet a variety of transportation needs. The overall structure is both radial, that is, oriented east-west to downtown St. Paul and/or Minneapolis, and a grid of north-south cross-town routes perpendicular to the radial routes. Radial routes are usually one-half to one mile apart and cross-town routes are spaced about one to two miles apart. North of University Avenue, most of these routes extend to Roseville and terminate at Rosedale Transit Center. Rosedale Transit Center is a timed-transfer point where eight local routes make timed connections.

Most services operating during off-peak periods are local routes that serve six to eight bus stops per mile. There is one all-day express route in the Study Area, linking downtown Minneapolis and downtown St. Paul seven days a week.

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 and Merriam Park areas of St. Paul offer local pick-up from these neighborhoods then operate non-stop to the University of Minnesota and downtown Minneapolis or St. 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 limited-stop commuter service to Minneapolis. On Cleveland Avenue, Route 87 provides base local service and on Cretin Avenue, a close parallel street, Route 134 provides the peak limited-stop service to Minneapolis. On Lake Street/Marshall Avenue, Route 21 provides base local service and Route 53 provides peak limited-stop service to downtown St. Paul.

Figure 1 Existing Service and Study Area



CURRENT SERVICE FREQUENCIES AND HOURS 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 significant exceptions.

Along University Avenue, Route 16 operates every 12 minutes at peak times and every 10 minutes midday and early evening. Route 50 operates every 12 minutes at peak times and very limited service at other times. Route 16 service operates 24 hours a day. In the remainder of the Study Area, coverage and frequency varies by time of day and day of the week. During 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 sufficient densities to warrant additional service.

RIDERSHIP AND ROUTE PERFORMANCE

A comprehensive bus stop-level data collection effort was undertaken to inventory existing transit use and to develop a better understanding of the current travel patterns in the Study Area. The numbers of passengers getting on and off the bus at each stop was surveyed on weekday, Saturday, and Sunday service periods for each route. All of the scheduled bus trips – 1,998 weekday, 751 Saturday and 455 Sunday – were sampled multiple times. Data collection was completed during the winter and spring of 2010. Details about existing service and ridership can be found in the Central Corridor Transit Service Study Existing Conditions Report. Note that while routes 68 and 71 do have minor changes included in this study, they are not included in most of the details or statistics of the report because they operate primarily outside of the Study Area..

On weekdays, 1,568 in-service hours are provided in the Study Area. Approximately 45 percent of in-service hours are provided during the rush hours (6 to 9 a.m. and 3 to 6:30 p.m.), with the remaining 55 percent of hours are provided during at other times. An average of about **90,000** bus boardings occur each weekday, with 19 percent occurring during a.m. rush hours, 38 percent during the midday period and 25 percent during p.m. rush hours. The number of boardings per in-service hour is fairly constant throughout the day which demonstrates that the level of transit service in the Study Area is reasonably well matched with the distribution of demand throughout the day.

On weekends, 897 in-service hours are operated each Saturday and 609 in-service hours each Sunday in the Study Area. Approximately 60 percent of these hours are provided between 9 a.m. and 6 p.m. An average of about 45,600 boardings occur each Saturday, with 65 percent occurring between 9 a.m. and 6 p.m. On Sunday, an average of about 29,400 boardings occur with 70 percent occurring between 9 a.m. and 6 p.m. Like weekdays, the average number of boardings per in-service hour throughout the day on weekends is also fairly even, demonstrating that service is reasonably well matched with demand throughout the day.

Ridership by stop and residential/employment densities in the Study Area are mapped on **Figure 2** –Weekday, **Figure 3** – Saturday and **Figure 4** – Sunday.

DEMOGRAPHICS AND LAND USE

The study area for the Central Corridor Transit Service Study is bounded by the Mississippi River on the south, I-35E on the east, Larpenteur/East Hennepin avenues on the north and by Hiawatha Avenue, East Lake Street and the Mississippi River on the west. The Study Area is almost completely urban, including downtown Minneapolis, downtown St, Paul and the University of Minnesota, and covering many neighborhoods of St. Paul, Minneapolis and the suburbs of Lauderdale, Falcon Heights and Roseville. In the neighborhoods immediately adjacent to the Green Line, the population is around 164,000. The 2010 population of the Study Area is about 245,000 residents and as of 2008 there were about 357,600 jobs. This represents 8.6 percent of the population and 22.4 percent of the employment in the seven-county metropolitan area.

Staff analyzed the various forms of demographics and land use in the Study Area that would be expected to influence transit use, including:

- Population density
- Employment density
- Retail centers
- Youth population
- Seniors population
- Households in poverty
- Minority population
- Major trip generators

In general, the analysis showed that the Study Area is densely developed and has demographic characteristics that are consistent with high transit usage. In addition there are many high traffic activity centers within the study area, most of which are located along University Avenue.

While several factors influence the propensity to use transit, the primary predictors of transit ridership 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 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. **Figure 5** illustrates the transit market areas found in the Study Area.

Transit Market Area I has the highest density of population, employment and people without access to automobiles. Therefore, Market Area I is able to support the most intensive level of transit service. Transit Market Area II has high to moderately high population and employment densities yielding an area that is conducive to fixed-route transit operations, but not as intensive as in Market Area I. 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 in those areas 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 Fairview Avenue and Rice Street. The City of Minneapolis is planning for more jobs to be concentrated in the southeast area of the city, mainly to the north of University Avenue.

The Study Area is particularly known for its concentration of post-secondary educational campuses and the concentrations of student populations, persons aged 20 – 24 years. These are the post-secondary schools are in the Study Area, with full time students, both under-graduate and graduate level: The University of Minnesota – Minneapolis, University of Minnesota – St. Paul, the Associated Colleges of the Twin Cities (ACTC): Augsburg College, Hamline University, Macalester College, St. Catherine's University - St. Paul, St. Catherine's University – Minneapolis, University of St. Thomas – Minneapolis and St. Thomas – St. Paul. Other significant educational institutions include the College of Visual Arts, Concordia University, William Mitchell College of Law and St. Paul College. There are a total of about 91,550 students at all the post-secondary schools in the Study Area. Students are more likely to use and to benefit from improved transit service. **Figure 6** includes a map of these institutions along with population ages 20 to 24 years old.

Figure 2 Weekday Ridership and Density

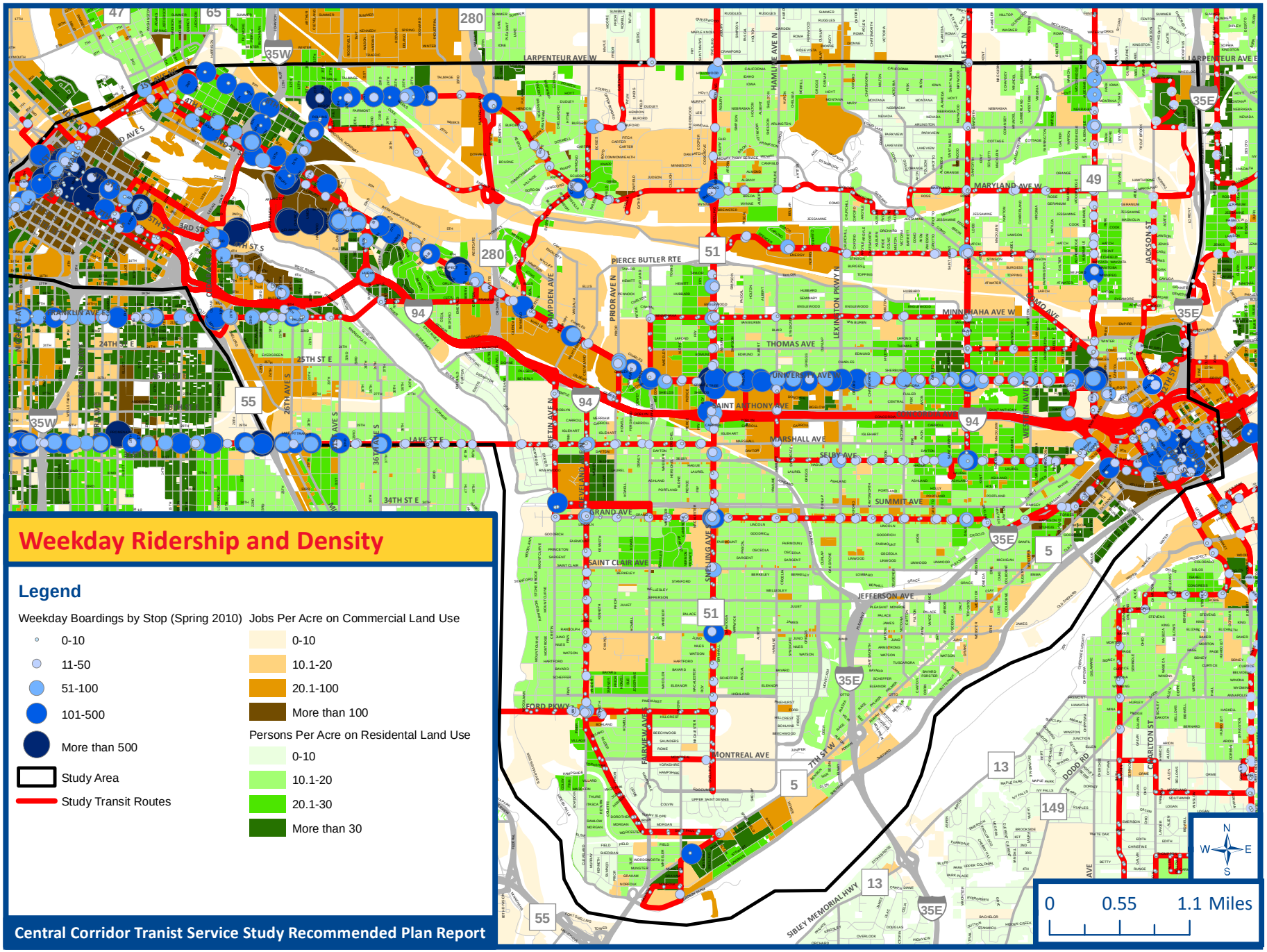


Figure 3 Saturday Ridership and Density

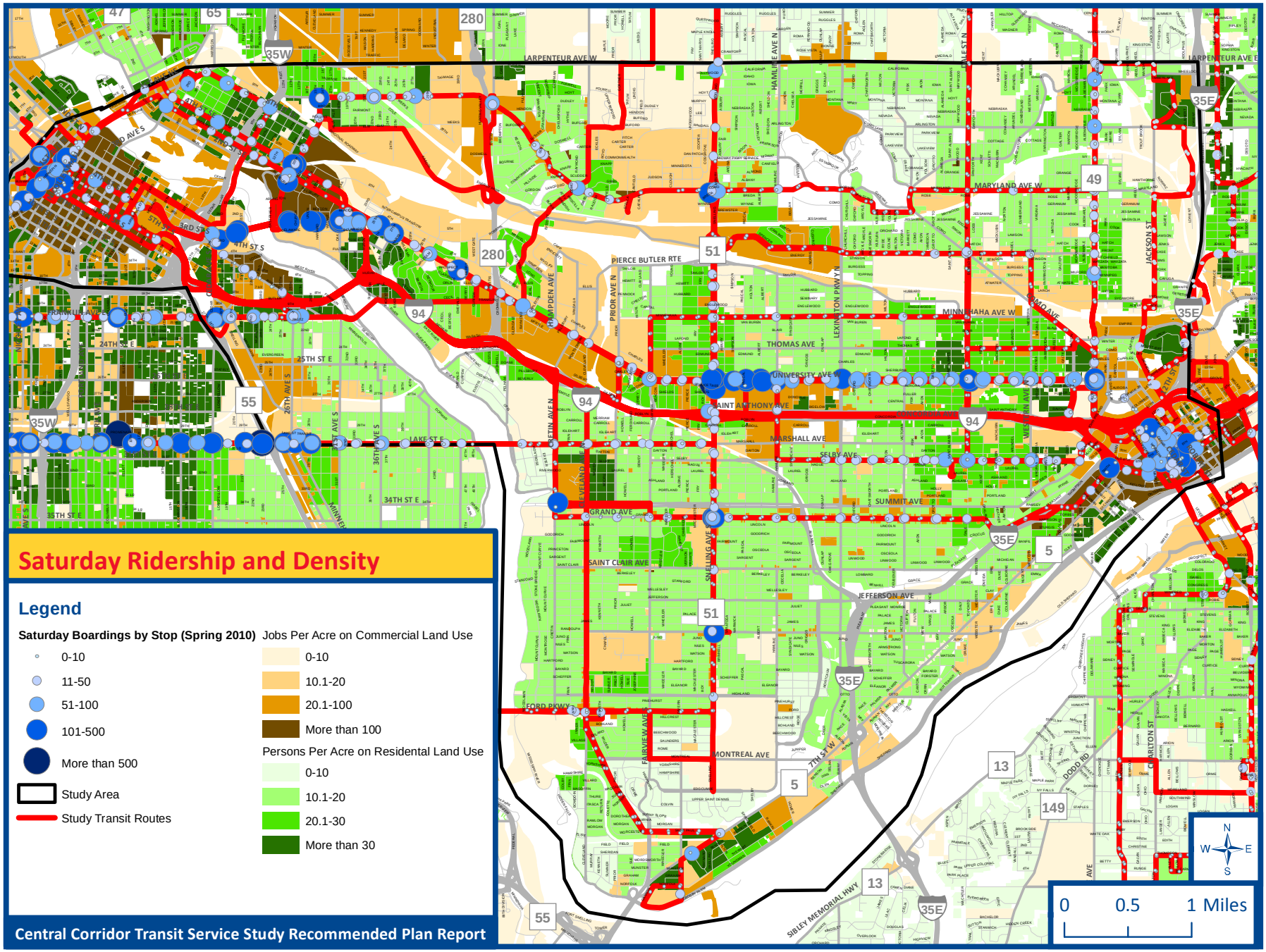


Figure 4 Sunday Ridership and Density

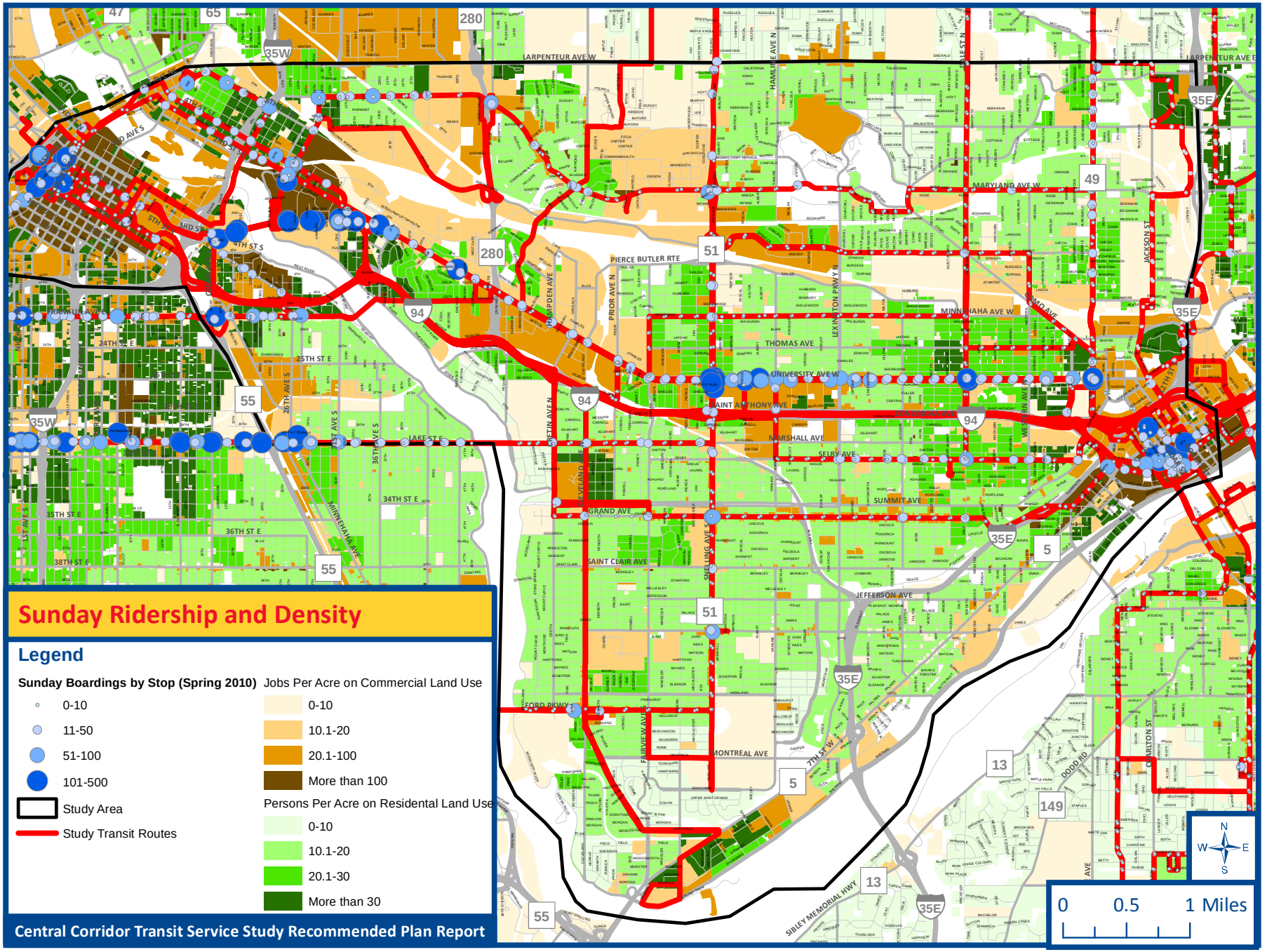


Figure 5 Transit Market Areas

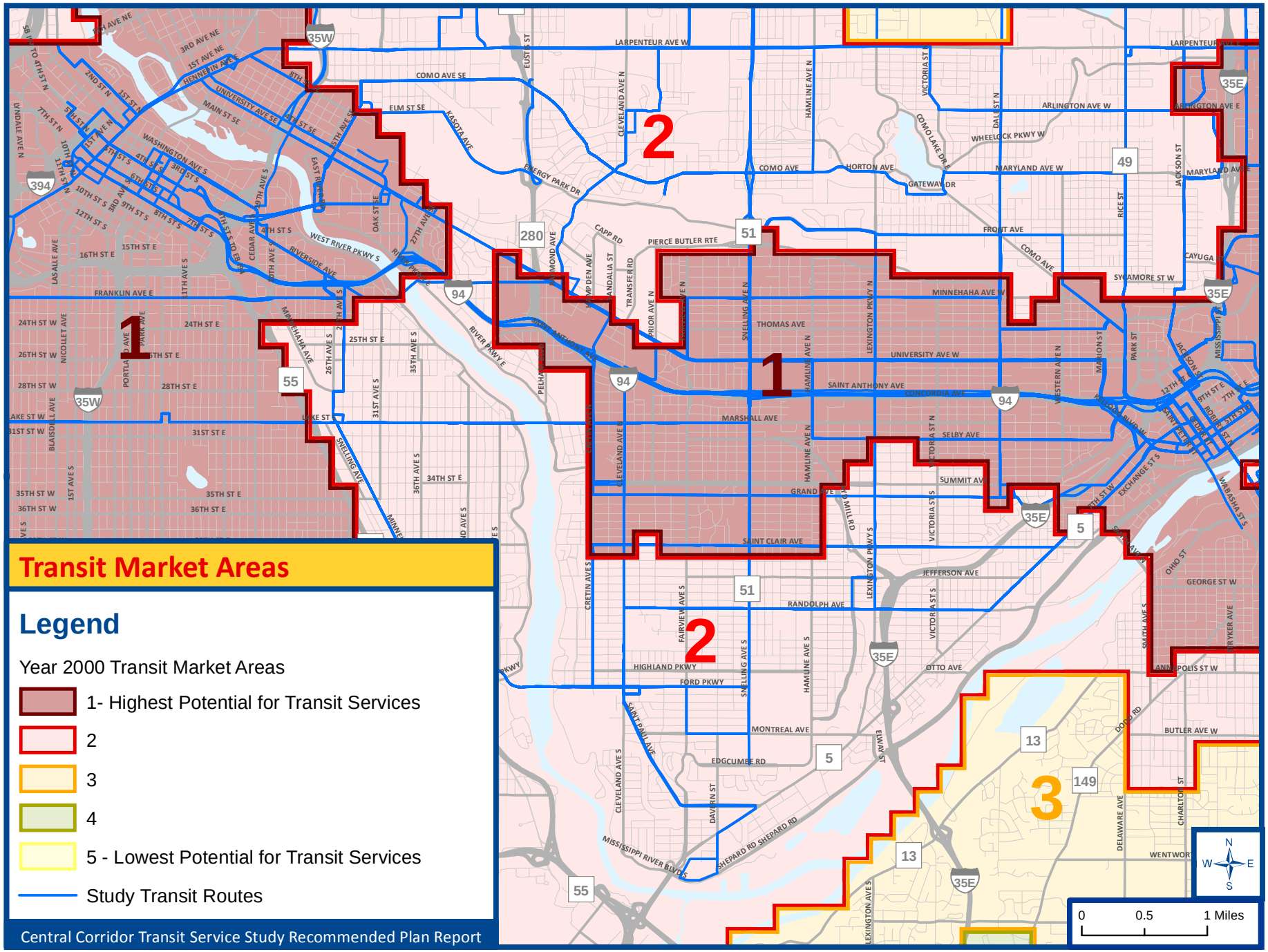


Figure 6 Post Secondary Schools and Population Ages 20 to 24

