TRANSIT ROUTE PLANNING

LOCAL PLANNING HANDBOOK

The quality and design of transit service is an important part of the success of transit. A well-designed transit network supports the regional economy: providing convenient access to jobs, education, shopping and other activities. It can reduce overall costs of living for residents by reducing dependence on automobiles: supporting active, car-free lifestyles for those who chose, and providing those who cannot drive access to the regional economy and civic life. It supports efficiency and sustainability by encouraging denser residential and commercial development along transit corridors. This can reduce pollution, promote other forms of active living and health, and foster better overall quality of life. In short, a well-designed transit network is a vital ingredient to the success of our region and the people, businesses, and communities that call it home.

Regional transit providers must weigh the potential benefits of transit investments against the costs, in order to best manage the system to be cost-effective and efficient. This document provides a brief overview of some of the principles transit planners keep in mind while designing transit routes and service. City staff and policymakers interested in improving transit service available in their community can use these principles as a guide for transit-supportive land use changes. For a more detailed discussion of transit planning and route design, please see Chapter 6 of the 2040 TPP.

LOCAL ROUTE DESIGN

Serve a variety of trip purposes

Routes that serve a variety of different destinations (work, shopping, entertainment, etc) are useful to more people at more times of day than routes serving only one type of destination. These routes will typically have higher ridership overall and more balanced passenger loads resulting in more efficient service. Communities can support this design by encouraging mixed-use developments and corridors zoned for multiple uses including residential, commercial, and office.

Serve strong anchors on either end of the route

Attractive destinations at both ends of a route help to balance passenger loads in both directions so buses travelling one way are not empty while overcrowded in the other direction. Strong anchors also help to distribute ridership along the whole length of the route. Communities can address potential transit anchors in their comprehensive plans by identifying town centers or areas where there is a high concentration of walkable activity, such as a college, and planning for additional intensity in these areas.

Match the level of service to demand

Providing frequent, all-day service in dense areas with high demand for transit can generate increased ridership because the service is more useful and attractive for all types of trips (rather than just work trips). Increased fare revenue from this service allows the provision of additional transit service and ensuring that lower-density areas have a basic level of transit access. See the Transit Market Areas section and Appendix G in the 2040 Transportation Policy Plan for more information about how demand for transit is identified. Communities can address these considerations in their comprehensive plans by discussing the role of the Transit Market Areas and the ways in which their community can strive for a different transit market through land use planning and implementation. A minimum of 10 residential units per acre is needed to support frequent transit service in addition to a mix of non-residential uses.

Keep routes as simple and direct as possible

Routes that follow simple patterns with few turns are easier to understand for transit riders. A network of simple routes makes the whole system easier to use spontaneously with little planning. Routes that do not make a lot of deviations also provide a faster trip for riders and are less expensive to operate for the provider – meaning more service can be provided for the same resources. Communities can support this principle by encouraging development along denser, linear corridors and connecting gaps in the street grid to allow transit to have simple and direct routes in their community.

Avoid duplication of service

Transit routes or corridors should be far enough apart that they do not compete for the same riders. Routes that are too close together will both be less productive and require a greater subsidy per passenger than routes that are spaced correctly. Routes spaced too closely together also tend to result in coverage gaps in other areas. Communities can support this transit design principle by developing a complete street grid that allows for an even distribution of transit routes and a walkable pedestrian network. This enables people to walk to and from transit comfortably and conveniently, which allows for a well-spaced transit network.

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COMMUTER AND EXPRESS ROUTE DESIGN

The principles that guide express route planning are somewhat different than those that guide local routes. Express routes typically focus on bringing work commuters to major regional centers from primarily residential areas, usually with nonstop or limited stop service in between. They are typically anchored by park and ride facilities, which serve to bring large numbers of people together creating artificially high density in otherwise low density residential areas. Congestion and cost of parking at the destination are important factors contributing to the success of express bus routes. See the 2030 Park-and-Ride Plan for more information on express service and park-and-ride planning. When communities are working with transit providers to address park-and-ride needs in their community, it is important to keep these considerations in mind.

TRANSIT NETWORK TRADEOFFS

Balance frequency and coverage

Transit agencies have limited resources to operate transit and must decide how to allocate those resources. The basic tradeoff is between fewer routes concentrated in denser areas providing frequent, more attractive service to a high number of people or more routes spread out over a larger geographic area so that every place has access to some transit but that is infrequent and only used as a last resort for those without another option. In reality, this tradeoff is a spectrum and most transit systems fall somewhere between these two extremes. An effective transit network must find the appropriate balance on the spectrum that meets the community's needs and goals.

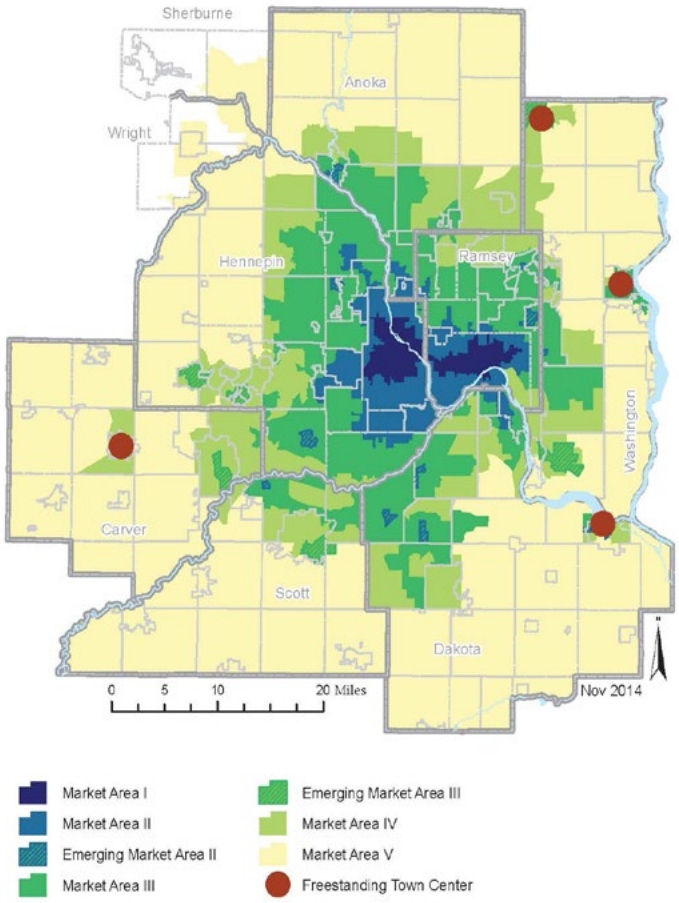

Figure 1- Transit Market Areas in Twin Cities Metropolitan Area

Balance walking distance and travel speed

In general, routes with stops spaced closer together provide shorter walks to access transit but slower travel speeds, resulting in longer travel times for customers and more expense for the transit agency. Routes with stops spaced farther apart provide faster travel times but increase walking distance to transit for some users. Effective transit networks find a balance between these tradeoffs.

Transit Market Areas

Demand for transit service varies across the region based primarily on differences in development density, urban form, and demographics. Transit Market Areas are a tool that incorporates these factors to guide transit planning decisions. They are used as a tool to determine what types and levels of transit service provided to match the level of transit demand in an area and form the basis for the regional transit design guidelines. More information can be found in Appendix G of the 2040 Transportation Policy Plan. Communities are asked to address the Transit Market Areas in their Comprehensive Plans and relate them to the transit in their community, both existing and potential

PLANNING FOR A TRANSIT-FRIENDLY COMMUNITY

Transit fundamentally depends on land use to be successful. Designing communities in a way that supports transit is the best way to ensure that transit service is maintained and continues to improve. A basic understanding of the important factors that contribute to a successful transit network is a great start. For more information about specific planning tools that can help support transit please see the Council's Transit-Oriented Development Resources webpage.

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