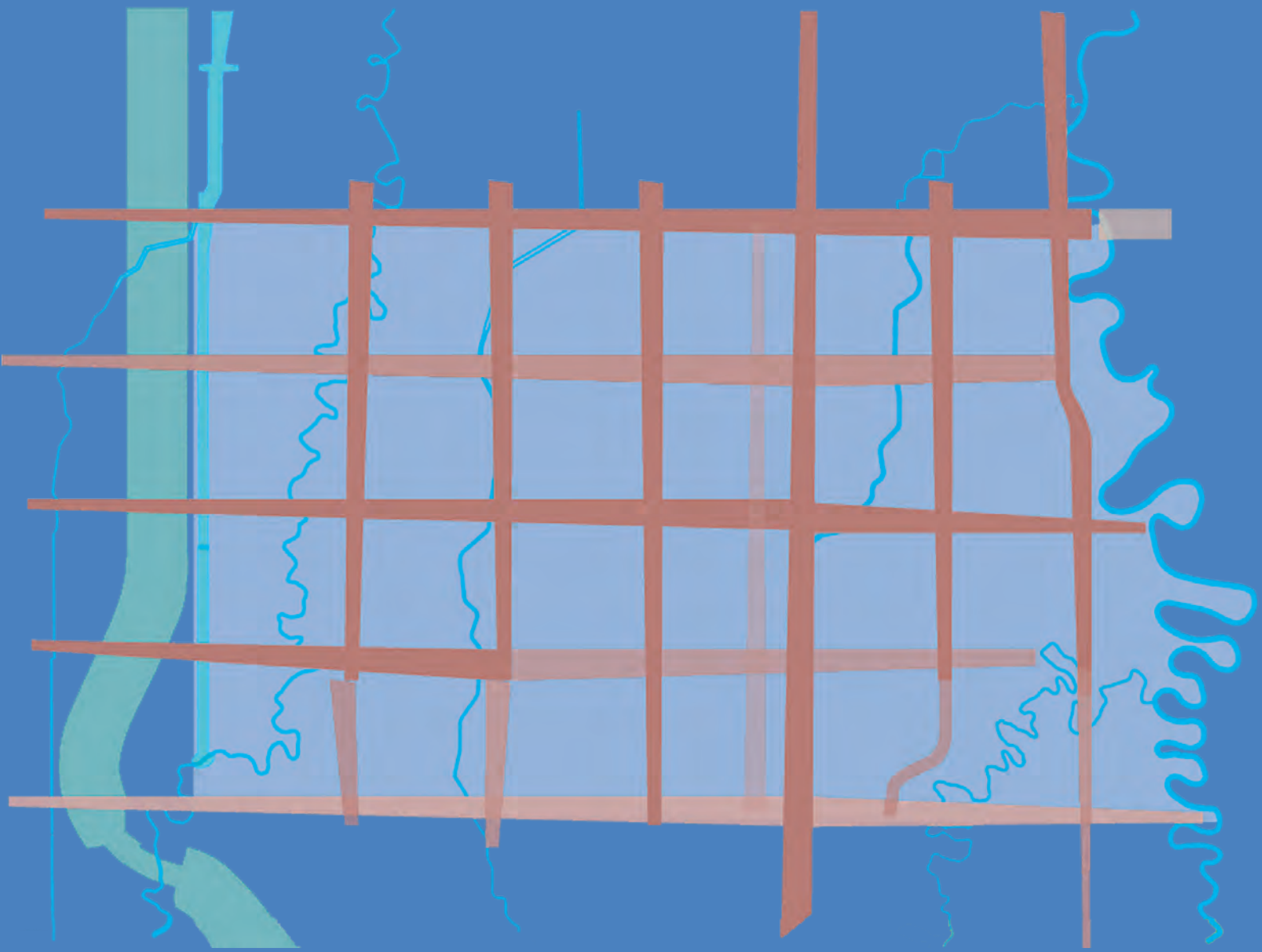


# Southwest Metro Transportation Plan

FARGO-MOORHEAD METROPOLITAN COUNCIL OF GOVERNMENTS



MAY 2016





# Southwest Metro Transportation Plan

Adopted May 2016

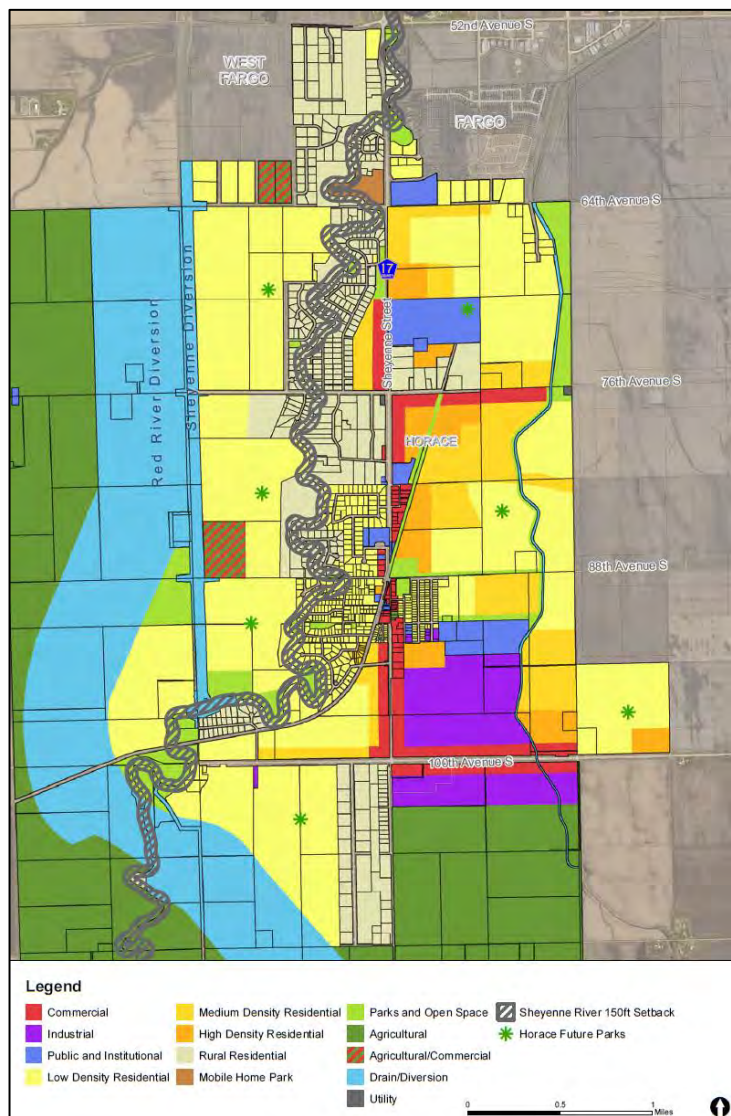


# Executive Summary

Backed by a strong economic climate, the Fargo-Moorhead metropolitan area has grown at a rapid, steady rate in the last two decades. Much of this growth has been concentrated south of Interstate 94 and west of the Red River, where the cities of Fargo, Horace, and West Fargo have continued to expand municipal services, utilities, and transportation infrastructure. As these cities converge, it is imperative to follow a regional transportation plan. Metro COG’s Long Range Transportation Plan (Metro 2040) analyzed metro-wide transportation needs, but was not charged with looking in depth at the future right-of-way and capacity needs of the roadway system where Fargo and Horace will grow together south of 52<sup>nd</sup> Avenue South. The Southwest Metro Transportation Plan (SWMTP) is a thorough and timely document that addresses this planning gap through its comprehensive, coordinated, and long-term approach.

The SWMTP was developed through collaborative effort by stakeholders, planners, and members of the public. A Study Review Committee guided the project from start to finish, meeting six times beginning in May 2014. This group consisted of 16 representatives from Fargo, Horace, Cass County, Stanley Township, and the Fargo-Moorhead Metropolitan Council of Governments. The SRC ensured that planning methods were sound, conclusions were logical, and that the final product would be supported by citizens and administrators.

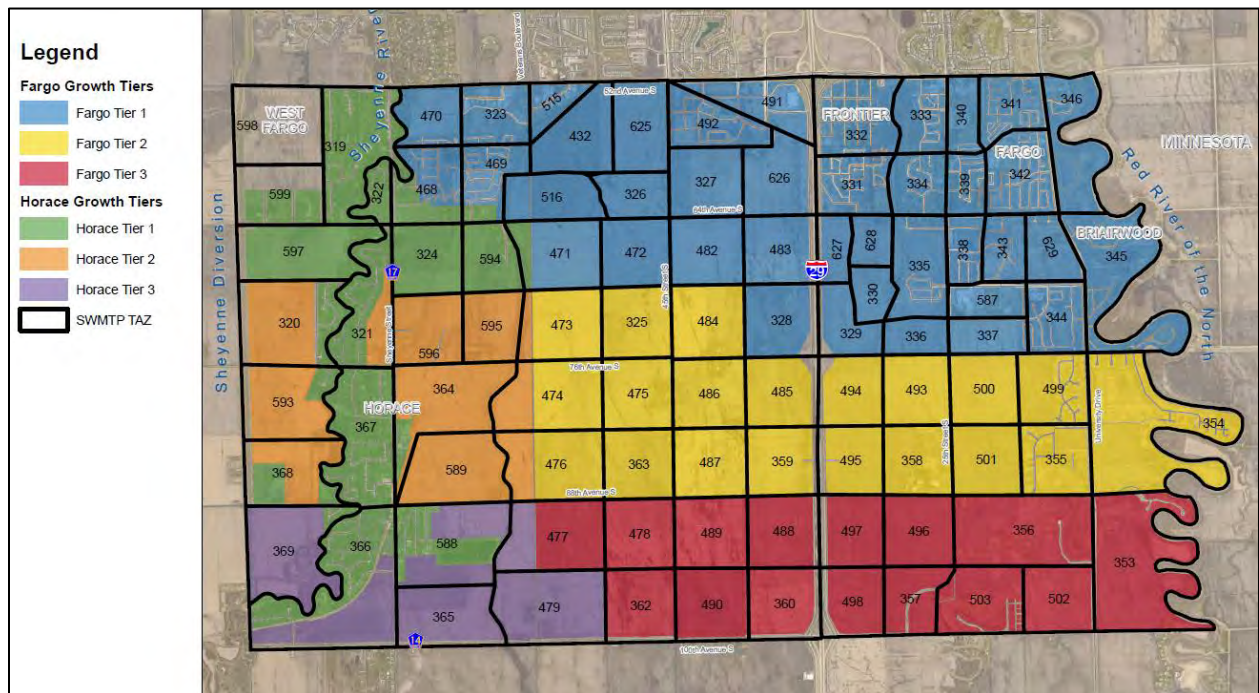
Public involvement was central to the planning process. Three meetings were fully open to the public. Community members were shown alternative network improvements and asked to provide input on what roadway features were important to them. In addition, citizen input was key to creating a travel demand model that would be representative of future land use. To initiate development of the travel



demand model, the City of Horace completed a future land use plan and the City of Fargo updated its future land use plan as it pertains to the study area. Creating these plans with the support of the community was a critical step in formulating realistic assumptions about the location and intensity of future land uses, which were then converted to GIS data to set model parameters.

Urban growth progresses over space and time. The Southwest Metro Transportation Plan has an expansive scope, with a study area encompassing more than 25 square miles and a planning horizon stretching several decades. The rate of growth will not be uniform across this timeline. Initially, growth may be suppressed by many factors, including limited sewer capacity in Horace, limited infrastructure in general, and flooding obstacles across the study area. On the other hand, the completion of a major improvement, such as the proposed interchange at 76<sup>th</sup> Avenue South and I-29, would catalyze development in the study area. When constraints are removed and conditions favorable to growth are put in place, the rate of growth in the study area will accelerate, then peak and follow a natural decline until build-out is complete.

To address phasing, the SWMTP utilizes a set of four growth tiers, each of which is tied to a geographic sub-region and a growth timeframe. Throughout the document, Tiers 1, 2, 3, and 4 are denoted as 2020, 2030, 2040, and 2040+. However, it is important to emphasize that actual development probably won't correspond precisely to these timeframes. Originally, it was assumed that flooding obstacles could be overcome at an early stage of development. If flood protection is delayed, however, the growth figures shown for "2020" may not be reached until a later date, and subsequently Tier 1 would be extended and the need for transportation improvements associated with that tier would be pushed back.



Likewise, the pace of growth may not align neatly with these timelines. If growth proceeds faster or slower than is implied to occur over each ten-year period, it will impact the schedule of roadway improvements. Therefore, it is best to follow the sequence of growth, which should progress generally from north to south, and not target a specific year as a trigger for network improvements. Rather than update growth tier labels throughout the document, the original naming scheme has been maintained.

The SWMTP contains seven chapters and appendices:

1. Plan Introduction
2. Existing Plan Review
3. Existing Conditions
4. Public Involvement
5. Travel Demand Model Development and Validation
6. Model Analysis
7. Findings and Recommendations

Appendices

- A. Planning Level Cost Calculations
- B. 76<sup>th</sup> Avenue Corridor Concept

Chapters 1, 2, and 3 provide background information to orient the reader. This information will help familiarize the reader with the existing planning landscape, and provides context for material that is presented in later chapters. However, the body of plan itself – new analysis, maps, recommendations, etc. – is contained in Chapters 5, 6, and 7. Readers who are more familiar with recent planning efforts in the Fargo-Moorhead growth area may wish to skip to these chapters.

Chapter 1, Plan Introduction, discusses recent growth trends and the impetus for the plan in greater detail. It identifies development opportunities and constraints to regional growth.

Chapter 2, Existing Plan Review, examines other planning documents of project relevance, including the 2007 Growth Plan, Go 2030, and existing corridor studies.

Chapter 3, Existing Conditions, inventories current land use, parcel, and roadway data and assesses baseline network performance. Most importantly, this chapter identifies starting population and household figures for Fargo, Horace, West Fargo, and Cass County. Based on those estimates, the amount of the growth that is expected to occur within each tier was calculated.

Municipality	2020			2030			2040		
	Population	Households	Jobs	Population	Households	Jobs	Population	Households	Jobs
Fargo	29,243	12,274	5,923	46,669	19,598	9,477	58,155	24,427	11,909
Horace	6,019	2,010	330	6,309	2,109	734	6,309	2,109	775
<b>Total</b>	<b>35,262</b>	<b>14,284</b>	<b>6,253</b>	<b>52,978</b>	<b>21,707</b>	<b>10,211</b>	<b>64,465</b>	<b>26,536</b>	<b>12,684</b>

Chapter 4, Public Involvement, describes the proceedings and planning outcomes for each meeting of the Study Review Committee and the three public meetings.

Chapter 5, Travel Demand Model Development and Validation, describes the process of updating, testing, and refining the travel demand model. The travel demand model is a traditional four-step model that allocates jobs and households to traffic analysis zones, generates trips between zones based on socioeconomic forecasts derived from the future land use plans, and assigns trips to the anticipated roadway network in an iterative fashion. Use of the tiered modeling framework allowed for improvements forecasted for one tier to be carried through subsequent tiers in a progressive manner.

Chapter 6, Model Analysis, documents the traffic forecasts and capacity issues. During each growth tier, a capacity analysis was performed to ensure that the new roadway network performed acceptably. Thorough review of model output led to the selection of a “best-fit” roadway network for each tier. Effort was made to optimize network efficiency while minimizing investment costs. Sensitivity analysis was performed to compare the impacts of network alteration at three links: Veterans Boulevard, the 76<sup>th</sup> Avenue South corridor, and the I-29 Interchange at 76<sup>th</sup> Avenue South. Based on these analyses, the extension of Veterans Boulevard is not a critical improvement; north/south volumes can be accommodated on other roadways. The 76<sup>th</sup> Avenue South/I-29 interchange, however, is an important component of the metro area’s future roadway network, and the extension of the 76<sup>th</sup> Avenue South corridor across the Red River, with connectivity to the east and west, has the benefit of reducing volumes on 52<sup>nd</sup> Avenue South and on important north/south corridors such as 25<sup>th</sup> Street and 45<sup>th</sup> Street South.

In Chapter 7, Findings and Recommendations, specific improvements are identified by growth tier on Figures 7.1-7.4. Preliminary cost estimates are provided. With annual costs adjusted for inflation, total project investments are estimated at \$98.9 million in Tier 1, \$158.4 million in Tier 2, and \$282.5 million in Tier 3. Chapter 7 concludes with a corridor observation summary, which highlights potential impediments to corridor expansion.

Chapters 6 and 7 constitute the body of the plan. These chapters contain essential information that would not be available without the use of a travel demand model. Modeling remains the most reliable, cost-effective method to forecast traffic volumes and prioritize network improvements. Good forecasts depend on practical assumptions as well as robust datasets that are representative of the real world. In the coming decades, growth in the southwest metro could unfold in a number of scenarios, all of which are dependent on the growth of the metro area as a whole. While the tiered framework accounts for some local growth restraints, all forecasts in the SWMTP nonetheless represent a straightforward scenario in which the regional economy is stable and metro-area population growth is steady. They assume that the entire study area is developable to build out, with some variation in density accounted for due to differing elevations and fill requirements. Following these assumptions leads to a series of first-order forecasts, which are highly useful for establishing an overall picture of



urban development, but which will require refinement if a significantly different scenario were to occur.

For instance, if the City of Fargo establishes interim flood protection prior to or in lieu of the Red River Diversion Project, it may pursue higher residential densities to maximize its investment in flood resiliency infrastructure. Efforts to concentrate development in certain locations may be associated with minimal development in others. If the pattern or intensity of land use changes significantly, the model will need to be updated. Likewise, if the City of Horace resolves its waste water treatment dilemma sooner rather than later, the model should be updated to reflect accelerated development during earlier growth tiers.

Finally, further study of access management along the 76<sup>th</sup> Avenue corridor is warranted. Currently, the travel demand model assumes ½-mile spacing between intersections. If access points are limited to 1-mile spacing or greater, which has been recommended for an expressway design, this will impact route selection throughout the study area.

As it stands, the SWMTP fills a void in regional planning activities. It will aid policy makers, planners, engineers, and developers as demand for housing and services responds to continued growth pressure in the metropolitan area. The SWMTP should be consulted as other relevant planning documents are updated. These include Metro COG's Long-Range Transportation Plan, the capital improvement programs for Fargo, Horace, and Cass County, those entities' comprehensive plans, and any specific transportation plans, such as transit or bicycle/pedestrian plans, that impact the study area.