

TH 336/CSAH 11 CORRIDOR MANAGEMENT PLAN

DRAFT REPORT

Prepared For:
Mn/DOT, FMCOG, Clay County, and Local Government Partners

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1.0 CORRIDOR VISION

The Minnesota Department of Transportation (Mn/DOT), Clay County and other study partners have made significant investments in the TH 336/CSAH 11 corridor. They want to ensure that future development and/or other changes will not significantly affect the safety and mobility of the corridor or negatively impact the sensitive aquifer area just east of TH 336. To address these concerns in a proactive manner, study partners, including Mn/DOT, Clay County, the Fargo-Moorhead Council of Governments (FM-COG), the cities of Moorhead and Dilworth, and adjacent townships initiated a study to define a future vision for this corridor. The vision was developed in such a way that regional and local transportation goals are achieved, in concert with previously established development and conservation goals.

1.1 CORRIDOR FUNCTION

Trunk Highway 336 is an important transportation connection between US Highway 10 and Interstate 94. Standing alone, this two-mile segment of principal arterial roadway would likely not be discussed in the context of statewide transportation investment priorities. However, TH 336, together with TH 10 and I-94, facilitates east-west movement connecting Fargo-Moorhead to Detroit Lakes, the Twin Cities and beyond. This corridor serves as a conduit for moving agricultural, commercial and manufactured products, and carries recreational travelers between the lakes in west-central Minnesota and the Fargo-Moorhead area.

In recognition of the role TH 336 plays in local and regional mobility, Mn/DOT has identified it as a medium-priority interregional corridor. CSAH 11 is not classified in Mn/DOT's Interregional Corridor System; however, it has been designated as a collector in the local transportation network by the FM-COG. Just as important to understanding future corridor performance, CSAH 11 and TH 336 are planned as part of a future metropolitan perimeter road system, further strengthening a vision of a high-speed, high-mobility corridor. In fact, corridor partners have recommended a preliminary performance goal of 65 miles per hour for the entire corridor. While meeting this goal is not required in every part of the corridor, the partners would like to achieve this on average over the entire corridor.

1.2 CORRIDOR PERFORMANCE

Current performance levels for the corridor were estimated using the travel time formula developed for the Interregional Corridor System. Travel time estimates suggest that existing performance along TH 336 is slightly below the targeted speed of 55 miles per hour. Improvements currently under construction, such as an interchange at the junction of TH 10 and TH 336, a new interchange connecting I-94 and TH 336, and reconstruction of TH 336 as a four-lane divided highway will improve existing performance. These improvements also indicate that TH 336 will perform above the IRC target speed of 55 miles per hour in the future, as long as traffic signals are not allowed to proliferate along the central portion of the corridor.

1.3 CORRIDOR PRESERVATION

Prior to the current reconstruction project, Mn/DOT acquired all necessary right of way for the TH 336 corridor improvements by purchasing nearly 200 acres of land. Thus, all necessary ROW for TH 336 is secure, with the exception of land for a potential future interchange or overpass at 12th Avenue South (see page 28)

CSAH 11, south from I-94 to 80th Avenue South, and north from TH 10 to 90th Avenue North, has been designated for future classification as a Minor Arterial Roadway in the Clay County *Minnesota Extraterritorial Corridor Preservation Planning Study*. These same segments of CSAH 11 have also been classified as a Corridor Preservation Route in the study. This designation carries with it some implications regarding future access control on the roadway, as well as right of way guidelines for corridor preservation.

Future right of way width standards for a minor arterial roadway (Clay County Design Standards) indicate a width of 150 feet for CSAH 11, although recommendations in the *Extraterritorial Corridor Preservation Study* indicate that a 200-foot right of way is desirable for CSAH 11 to satisfy its future role as a metropolitan beltway. Existing CSAH 11 right of way width ranges from 66 to 130 feet in those Corridor Preservation segments within the TH 336/CSAH 11-corridor study area (see page 24).

1.4 CORRIDOR ACCESS GUIDELINES

Mn/DOT has established guidelines for access spacing on its trunk highway system. These guidelines are characterized by category of roadway. Working from the corridor vision, as described above, the category into which the TH 336/CSAH 11 corridor falls is Category 2A, or a Medium-Priority Interregional Corridor – Rural/Exurban/Bypass Area. Access standards for a Category 2A roadway dictate full access (median opening) at one-mile or greater intervals, and right-in/right-out access at no greater than half-mile intervals (if analysis of future traffic indicates performance would not be degraded, full access may be granted at half-mile intervals). Traffic signals are strongly discouraged on Medium-Priority Interregional Corridors.

According to the Clay County Land Development Ordinance, no direct access for driveways is permitted on minor arterial roadways. Full movement access spacing and minimum signal spacing standards are not discussed in Clay County's design standards. FM-COG's Access Management Guidelines state that desired spacing on functionally classed roadways should be at 1,320 feet or greater.

2.0 CORRIDOR SETTING

Establishing and assessing existing conditions is an important part of planning for the future. The TH 336/CSAH 11 Corridor defines the eastern edge of the FM-COG's planned metropolitan ring road system. Population projections developed by the FM-COG in its *2002 Metropolitan Area Surveillance and Monitoring Report* are presented below for the Fargo-Moorhead Metropolitan Area, Clay County, and the cities of Moorhead and Dilworth. Projections for Moorhead and Glyndon townships were developed by the *Clay County Comprehensive Plan* (July 2002).

**TABLE 1
Population Projections**

Jurisdiction	2000 Census	2010	2020	2030	% Change 2000 - 2010	% Change 2000 - 2030
Fargo-Moorhead Metropolitan Area ⁽¹⁾	140,717	157,011	173,858	192,916	12	37
Clay County	51,229	51,485	52,224	52,974	0	3
Moorhead	32,177	32,950	35,512	37,082	2	15
Dilworth	3,001	3,089	3,395	3,708	3	24
Glyndon Township	281	347	342	NA	23	NA
Moorhead Township	442	556	549	NA	26	NA

⁽¹⁾ Includes the cities of Fargo, Moorhead, West Fargo and Dilworth

Although the Fargo-Moorhead area is anticipated to see steady growth (12 percent between 2000 and 2010, and 37 percent between 2000 and 2030), it is apparent by examining the table above that most of this growth will occur across the Red River in Fargo and West Fargo, North Dakota. The City of Moorhead is projected to see rather more modest levels of growth, increasing its population from 2000 levels by 2 percent from 2000 to 2010 (32,177 to 32,950) and by 15 percent from 2000 to 2030 (32,177 to 37,082). Of even greater interest to the TH 336/CSAH 11 Corridor study area are projections for Clay County’s population level. Clay County is projected to have negligible levels of growth between 2000 and 2010 (0.005 percent, or a total of 256 persons), and, between 2000 and 2030, a 3 percent level of growth (or a total of 1,745 persons). Although both Glyndon and Moorhead townships are projected to experience high rates of growth (23 percent and 26 percent respectively), the absolute numbers of new residents is relatively low with 66 persons in Glyndon Township and 114 persons in Moorhead Township.

Population projections indicate a very modest level of growth in the TH 336/ CSAH 11 Corridor study area. Although metropolitan growth projected for the greater Fargo-Moorhead metropolitan area will likely lead to increased traffic volumes on the TH 336 corridor (due to its interregional mobility function), it is unlikely that high growth pressures will affect the land immediately surrounding the highway corridor.

2.1 TRAFFIC ISSUES

Mn/DOT’s construction project currently underway on TH 336 will address many operational issues identified in previous planning studies. This project includes reconstruction of TH 336 from a two-lane to a four-lane roadway with paved shoulders and turning lanes at major intersections, reconstruction of the I-94/TH 336 interchange to facilitate traffic flow, construction of a new interchange and railroad overpass at TH 10/TH 336, and reconstruction of local access/frontage roads in the vicinity of the TH 10/TH 336 interchange and along TH 10. Upon completion, public road access on TH 336 will be limited to three points between I-94 and TH 336. These points are planned as full accesses and will occur at County Road 79/TH 336, the planned location for a future extension of 12th Avenue (as identified by the FM-COG Transportation Plan), and the entrance to Northern Grain Company/TH 336.

**TABLE 2
Traffic Volumes**

	CSAH 11 (South of I-94)	TH 336 (South of CR 79)	TH 336 (South of TH 10)	CSAH 11 (North of TH 10)
2000 AADT	820	7,900	6,200	930
2020 AADT	2,500	8,500	8,500	2,000

⁽¹⁾ *Source:* FM-COG's 1998 Short- and Long-Range Metropolitan Transportation Plan

2.2 SAFETY ISSUES

Safety issues have been extensively documented in the TH 336/CSAH 11 Corridor study area. These issues arose:

- Deficient roadway geometrics: two-lane configuration with narrow travel lanes and shoulders, and deteriorating pavement conditions,
- Conflicts between automobiles and very high levels (34 percent of ADT) of truck traffic, and
- Conflicts at the at-grade intersection of TH 336 and the BNSF main rail line (just south of TH 10).

All of these safety issues will be addressed when the project currently under construction on TH 336 is completed.

From 1991 to 2001, a total of 14 crashes occurred on TH 336. Two of these crashes resulted in fatalities.

2.3 FREIGHT ISSUES

The TH 336 corridor carries extremely high volumes of truck traffic. Recent (2000) data from Mn/DOT indicate that trucks represent 34 percent of ADT on TH 336, or 1,790 trucks per day. One of the purposes for designating TH 336 and CSAH 11 as a portion of a future metropolitan perimeter road system is to preserve its function as a rural bypass for trucks and farm implements.

2.4 AGRICULTURAL GOODS MOVEMENT

Seven-ton spring load restrictions are in place for CSAH 11 south of I-94, which limits the use of the road for some farmers. Ten-ton load restrictions are in place for CSAH 11 north of TH 10.

2.5 BICYCLE/PEDESTRIAN ISSUES

A bicycle lane is currently provided on CSAH 11 north from TH 10 to CSAH 18. The FM-COG's *Metropolitan Bicycle and Pedestrian Plan* (December 2000) defines bicycle lanes as facilities for the preferential or exclusive use of bicyclists designated by striping, signing, or marking a portion of the roadway.

In the future, the entirety of the TH 336/CSAH 11 Corridor is planned to have a continuous bicycle lane/shared-use path. A bicycle lane constructed along CSAH 11 south from I-94 to the Clay County border is shown as part of long-range (2006–2020) planned improvements in the FM-COG's *Metropolitan Bicycle and Pedestrian Plan*. Along TH 336, a shared-use path, is listed by the FM-COG in their *Bicycle and Pedestrian Plan* as part of planned, short-range (2001–2005) improvements. This path is defined as a bicycle and pedestrian facility physically separated from motorized vehicular traffic by an open space or barrier. If 12th Avenue is extended east, the FM COG's plan indicates that a shared-use path will be provided for pedestrian and bicyclist use.

In addition, Mn/DOT has identified plans to construct a shared-use path along TH 10 from 34th Street to Buffalo State Park. This project is also listed as a short-range improvement in FM-COG's plan.

2.6 TRANSIT ISSUES

No regularly scheduled public transit, including fixed-route bus service, currently serves the TH 336/CSAH 11-corridor study area. Clay County Rural Transit does operate within rural Clay County, providing dial-a-ride services to the cities of Hawley and Barnesville. Clay County Rural Transit also provides commuter route services from the Fargo-Moorhead area to Hawley, Glyndon, Dilworth and Detroit Lakes. Clay County Rural Transit does not offer any transit services specifically along the TH 336 corridor.

2.7 RAIL ISSUES

The BNSF railroad mainline runs parallel to and immediately south of TH 10 and crosses TH 336 at-grade; however, when TH 336 improvements are completed, this at-grade crossing will be eliminated with a new highway overpass of the railroad. This rail line is quite heavily used, with an average of over 55 trains per day passing through the corridor study area.

2.8 ENVIRONMENTAL ISSUES

Primary sources of potable drinking water for the City of Moorhead are provided by the Buffalo Aquifer and the Red River. The Buffalo Aquifer runs along just east of TH 336/CSAH 11 and is approximately one-half mile wide and six miles long. Concerns have already been raised regarding possible contamination of the aquifer resulting from operations at a truck stop near the interchange of I-94/TH 336 and a former truck stop located south of I-94 on CSAH 11. The Department of Natural Resources prepared a hydrogeologic assessment of the area in 2000 that defines the Buffalo Aquifer as a sensitive area for wellhead protection. The City, in cooperation with Clay County, area townships, landowners, and the Minnesota Department of Health, is

preparing a wellhead protection plan intended to prevent contamination of the aquifer. The plan is focused on monitoring, public education and land use control, and is expected to be adopted in fall 2003. Implementation of the plan will be carried out primarily through County and Township zoning and permitting.

2.9 WETLANDS

Based on Natural Resource Conservation Service (NRCS) mapping and observations made during visits to the project corridor as part of developing an Environmental Assessment (EA) for the TH 336 reconstruction project, there is only one officially designated wetland within the vicinity of the TH 336 corridor. This low-lying, narrow and isolated wetland is located approximately 2,000 feet east of TH 336.

2.10 CONTAMINATED SITES

There are four known contaminated or potentially contaminated sites in the corridor study area. Two of these sites are located in proximity to the intersection of TH 10/TH 336 and the other two are located in proximity to the I-94/TH 336 interchange. The sites located in proximity to the I-94/TH 336 interchange are former truck stops. Both have been contaminated with petroleum products and wastewater pond seepage. The south site was tax-forfeited to the state in 1996, and more than \$1.3 million dollars in state funds have been expended to remove petroleum contaminants from the site. Preliminary tests indicate that the other site, a recently closed truck stop located on the north side of I-94 at Highway 336, has as much as 18 feet of fuel resting on top of the water in the Buffalo Aquifer.

2.11 HISTORICAL, ARCHAEOLOGICAL AND CULTURAL RESOURCES

While developing an EA during the project development process for TH 336, the Mn/DOT Cultural Resources Unit completed an architectural-historical reconnaissance survey for the TH 336 corridor and determined that there are no potentially significant architectural resources within the Area of Potential Effect (APE) for the project. The Cultural Resources Unit also determined that there is a low potential for undisturbed archaeological sites of significance within the corridor.

2.12 ENVIRONMENTAL JUSTICE

As discussed in the EA prepared for the TH 336 Reconstruction project, census data indicated that there is a low percentage of minority and low-income persons within the corridor study area, and a finding was made that no populations of low-income or minority persons exist (as defined in Environmental Justice guidelines developed by Mn/DOT). Given this determination, it is unlikely that Environmental Justice considerations will need to be made during the TH 336/CSAH 11 corridor study.

2.13 EXISTING LAND USE

Land use in the immediate vicinity of the TH 336/CSAH 11 Corridor is predominantly agricultural, with some isolated commercial/industrial development in the vicinity of the intersection TH 10/TH 336 and the interchange at I-94/TH 336. These businesses include a grain elevator located southeast of the TH 10/TH 336 intersection, a gravel pit located on the east side of TH 336 and a recently closed truck stop located at the I-94/TH 336 interchange.

Other notable land uses in the area include the Moorhead Municipal Airport, which was constructed in 1996 to serve the area's business and industrial needs. Currently, it has one runway that is 4,000 feet long and 75 feet wide, and can accommodate nighttime landings with pilot-activated lights on the runway. The airport also has a helicopter landing pad and a chemical loading facility is provided for crop-spraying airplanes.

2.14 FUTURE LAND USE

Future study area land use, as depicted in the *Clay County Comprehensive Plan*, indicates that the TH 336/CSAH 11 Corridor study area will continue in predominantly rural, agricultural use. Land in "General Rural" areas is intended to accommodate agricultural land uses and supporting services. Non-farm, residential development may occur at densities of one unit per 40 acres. Moorhead has no plans to extend urban services to the TH 336/CSAH 11 study area.

Areas in which other land uses are indicated in the County's Plan are discussed as follows:

- An area of "Special Concern" is indicated in the Clay County Future Land Use Map east of TH 336/CSAH 11 and extending throughout the study area. This area is an aquifer recharge area that does not currently have special regulations placed on it through the County's zoning ordinance. However, the *Clay County Comprehensive Plan* states that this area "should be examined more carefully when development or a change in land use is proposed." It will be important for the County to ensure sound land use practices in this area to minimize potential groundwater contamination.
- Future urban development is planned adjacent to TH 10 extending east from Dilworth to TH 336. On the south side of TH 10 a general commercial area has been platted, ending at TH 336. On the north side of TH 10, a single-family residential area is shown as part of a Planned Growth Area for Dilworth. This residential growth area will end at CSAH 11. Planned Growth Areas are outside of existing urbanized areas in the direct path of urban growth. Future development in these districts should be at urban densities and occur in as orderly and contiguous a manner as possible.

2.15 ZONING

Clay County's zoning map, found in its *Comprehensive Plan*, supports the future land use plan described above. Almost the entirety of the TH 336/CSAH 11 Corridor study area is zoned as an "Agricultural Preservation" area, defined as "those areas of the County where it is necessary and desirable, because of the nature of the soils, economic importance of agriculture, availability of water and/or high agricultural productivity...to protect such land from encroachment by nonagricultural development."

Other zoning districts in the Corridor Study area include a landing field overlay surrounding the Moorhead Municipal Airport, a Highway Commercial Area designated in the area immediately south of TH 10 east of Dilworth to TH 336, and a district described as “Limited Highway Commercial in Sensitive Area” denoted on the east side of CSAH 11 south of I-94 on a site that previously was home to a convenience store/truck stop.

3.0 PUBLIC AND AGENCY INVOLVEMENT

Due to the wide range of issues involved in the TH 336/CSAH 11 Corridor Management Plan, public and agency involvement was crucial in identifying study area issues, in defining a future corridor vision, and in providing general guidance throughout the process. Participation was first initiated through the identification of a Steering Committee, consisting of representatives from Mn/DOT; Clay County; the Fargo-Moorhead Council of Governments (FM-COG); the cities of Moorhead, Dilworth and Glyndon; Glyndon, Moorhead, Elmwood and Moland townships; and officials from MPCA, MnDNR, the Minnesota Department of Health, the Buffalo-Red River Watershed District, and the Clay County Soil and Water District. The Steering Committee guided the public involvement process by assisting in the identification of key stakeholders, and by reviewing and commenting on the technical portions of the study. See Appendix A for a list of Steering Committee members.

3.1 STAKEHOLDER MEETINGS

Two group meetings took place during the day on November 20, 2002, and on March 12, 2003, involving property owners with land within one-half mile of the study area. These stakeholders were contacted via mail and telephone. The first small group meeting allowed property owners to discuss ideas or concerns they had about how future development along the corridor would affect their property. The second meeting introduced the preliminary findings of the corridor plan and draft recommendations. Stakeholder input facilitated the development of a vision for future land use along the corridor.

3.2 PUBLIC OPEN HOUSES

Two informational Open Houses for the general public were held on the evenings of November 20, 2002, and March 12, 2003, in Dilworth. The open houses were advertised to the public in the *Forum*. Although a formal presentation was made during each open house, attendees were welcome to stop by at any time to discuss issues related to the study area. The first open house focused on identifying corridor issues while the second presented preliminary study findings. Comment cards were available for individuals who felt more comfortable explaining their concerns in written form, or who wanted to mail additional comments at a later date.

4.0 CORRIDOR GROWTH SCENARIOS

A key part of the TH 336/CSAH 11 Corridor Management Plan was defining the impact on corridor performance of possible development. In order to understand the range of possible impacts, several different future land use scenarios were developed. Study area land use scenarios were defined with input received from adjacent landowners invited to the focus group meeting held November 20, 2002, from people attending a public open house held that same evening, and from the Study Steering Committee at a meeting held November 21, 2002. The Steering Committee desired that land use scenarios be consistent with the corridor vision, i.e. a high-speed rural by-pass, and with outstanding corridor resource issues, particularly with protection of the Buffalo Aquifer.

Specific constraints identified in developing future land use scenarios included the following:

1. The City of Moorhead's 50-year urban service boundary does not extend into the Corridor Study Area (defined as extending one mile on either side of the TH 336/CSAH 11 roadway).
2. Clay County's Comprehensive Plan strongly encourages agricultural land preservation, and identifies the Buffalo Aquifer as a Special Concern Area.
3. The City of Dilworth and Clay County's future land use maps indicate future commercial and residential development along TH 10 to TH 336, but future land uses adjacent to TH 336/CSAH 11 were expected to remain as agricultural, with the exception of isolated non-agricultural uses that are already in place.
4. The City of Moorhead's Public Service's draft Wellhead Protection Program seeks various land use limitations within the Corridor Study Area, particularly on the east side of TH 336.
5. The Minnesota Department of Transportation's Interregional Corridor policies significantly limit access and traffic signal proliferation along TH 336.

4.1 LAND USE OPTIONS

After taking the above considerations into account, the Steering Committee prepared the following land use scenarios, described below and illustrated in the figures that follow:

4.1.1 Very Limited Growth Scenario

This scenario accounted for growth in the City of Moorhead consistent with Moorhead's 1997 Comprehensive Plan, as well as consistent with recent initiatives, such as the construction of a new Middle School in the vicinity of 34th Street and 12th Avenue South. In the City of Dilworth, new residential growth was assumed east of 7th Street NE. Assumptions for this scenario are summarized below in Table 3 and depicted in Figure 1.

TABLE 3
Very Limited Growth Land Use Assumptions

	Commercial	Residential	New Middle School
City of Moorhead	162 acres	346 acres	1,300 students
City of Dilworth	49 acres	263 acres	NA

NOTE: The acres of new commercial and residential development summarized above are not meant to include all development anticipated to occur within Dilworth and Moorhead, but rather that development assumed to occur within the study area.

4.1.2 Limited Growth Scenario

A limited growth scenario was defined accounting for planned land uses in the City of Dilworth and Moorhead consistent with the City of Moorhead’s 1997 Comprehensive Plan, City of Dilworth’s 1998 Comprehensive Plan and Clay County’s 2002 Comprehensive Plan. This scenario differed from the Very Limited Growth scenario by assuming a greater expansion of residential and commercial growth in the City of Dilworth and to the east, paralleling TH 10. Assumptions for this scenario are summarized below in Table 4 and depicted in Figure 2.

TABLE 4
Limited Growth Land Use Assumptions

	Commercial	Residential	New Middle School
City of Moorhead	162 acres	346 acres	1,300 students
City of Dilworth	93 acres	495 acres	NA

NOTE: The acres of new commercial and residential development summarized above are not meant to include all development anticipated to occur within Dilworth and Moorhead, but rather that development assumed to occur within the study area.

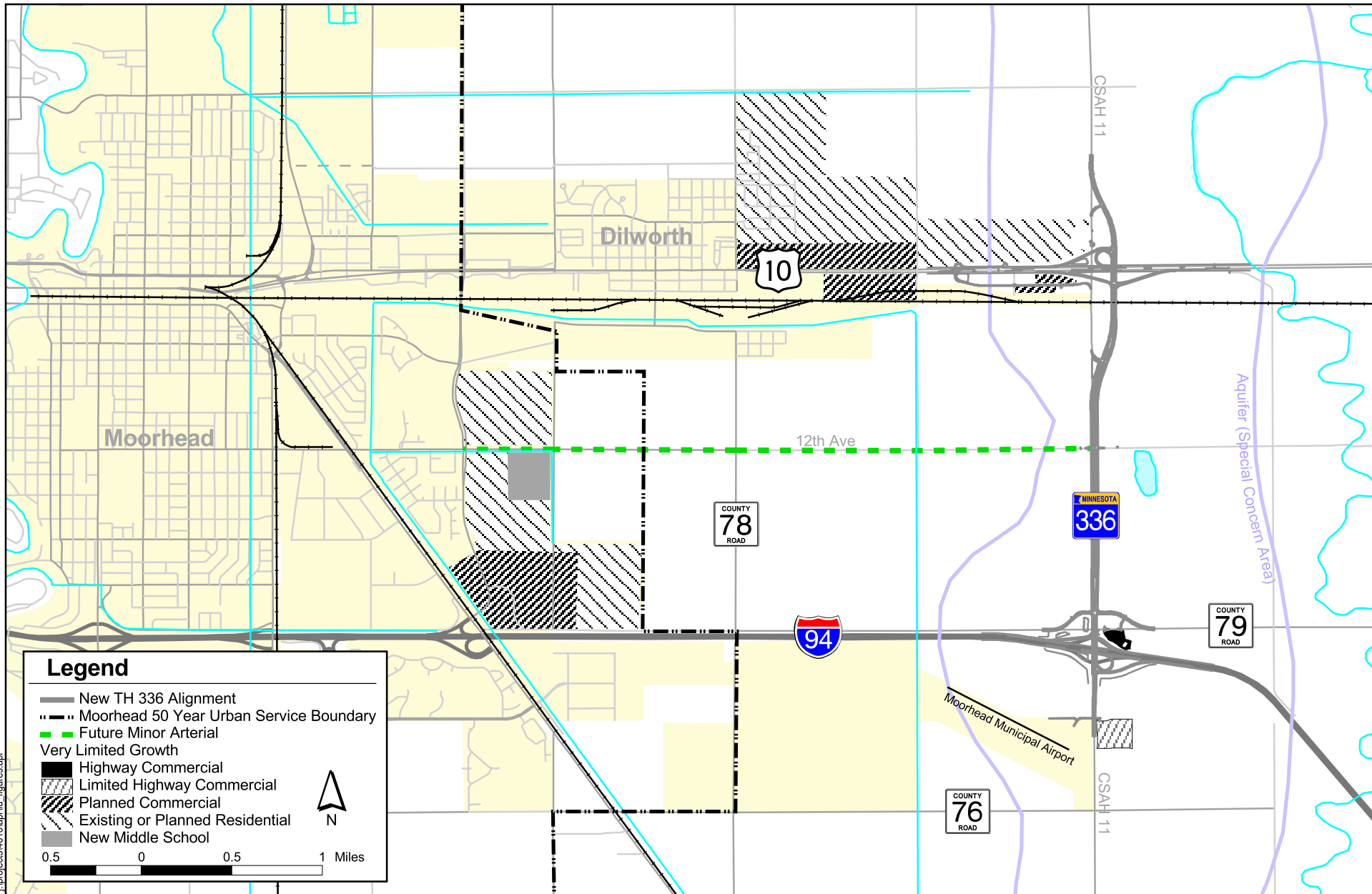
4.1.3 Moderate Growth

Under this scenario, the growth assumptions included in the Limited Growth scenario were carried forward along with some additional commercial development assumed to occur near the City of Dilworth, south of TH 10 between the Dilworth’s city limits and the currently zoned commercial Goldberg property. Assumptions for the scenario are summarized in Table 5 and depicted in Figure 3.

TABLE 5
Moderate Growth Land Use Assumptions

	Commercial	Residential	New Middle School
City of Moorhead	162 acres	346 acres	1,300 students
City of Dilworth	136 acres	495 acres	NA

NOTE: The acres of new commercial and residential development summarized above are not meant to include all development anticipated to occur within Dilworth and Moorhead, but rather that development assumed to occur within the study area.



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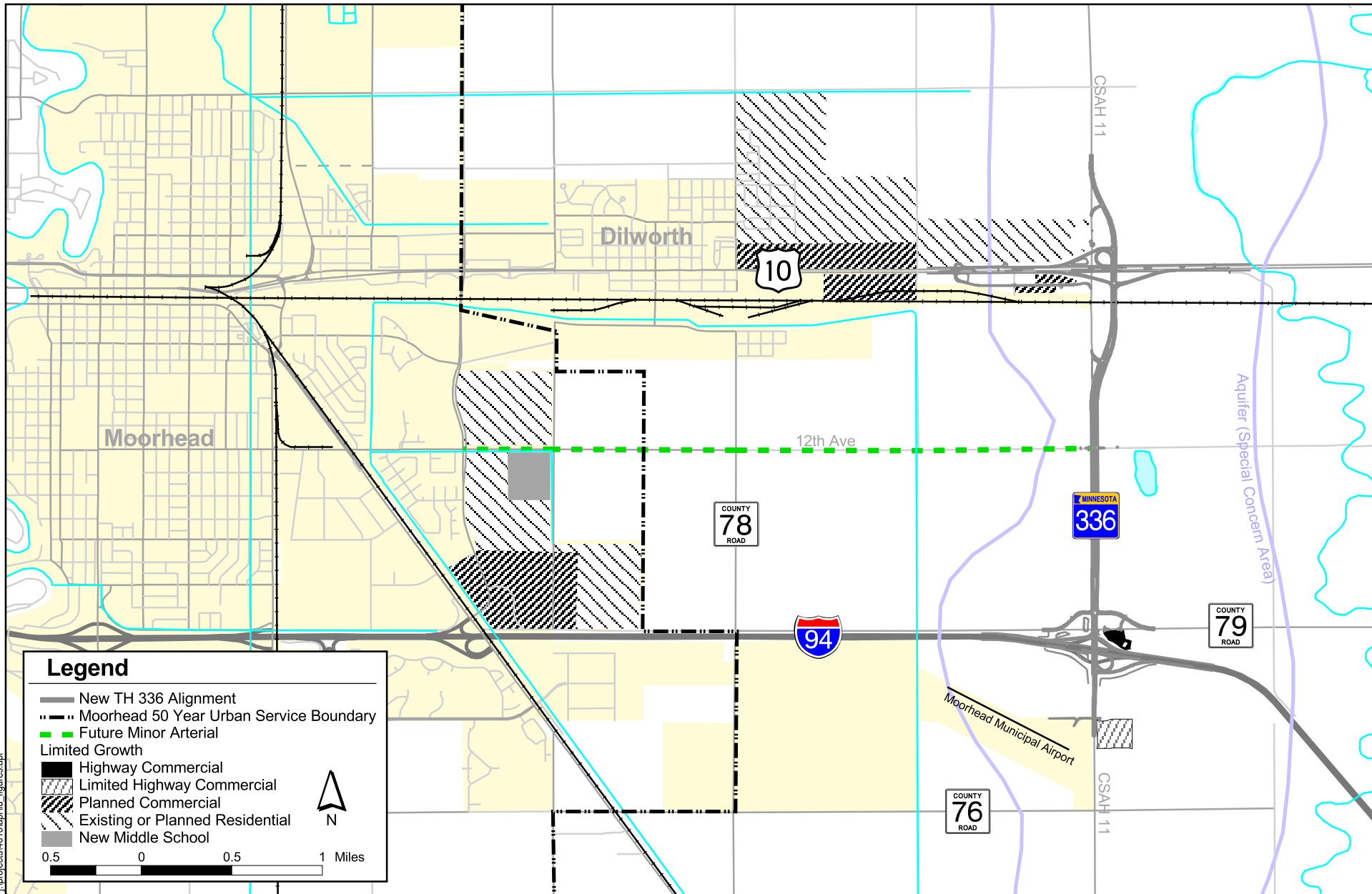
VERY LIMITED GROWTH LAND USE SCENARIO

TH 336/CSAH 11 CORRIDOR MANAGEMENT PLAN

Clay County

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Figure 1



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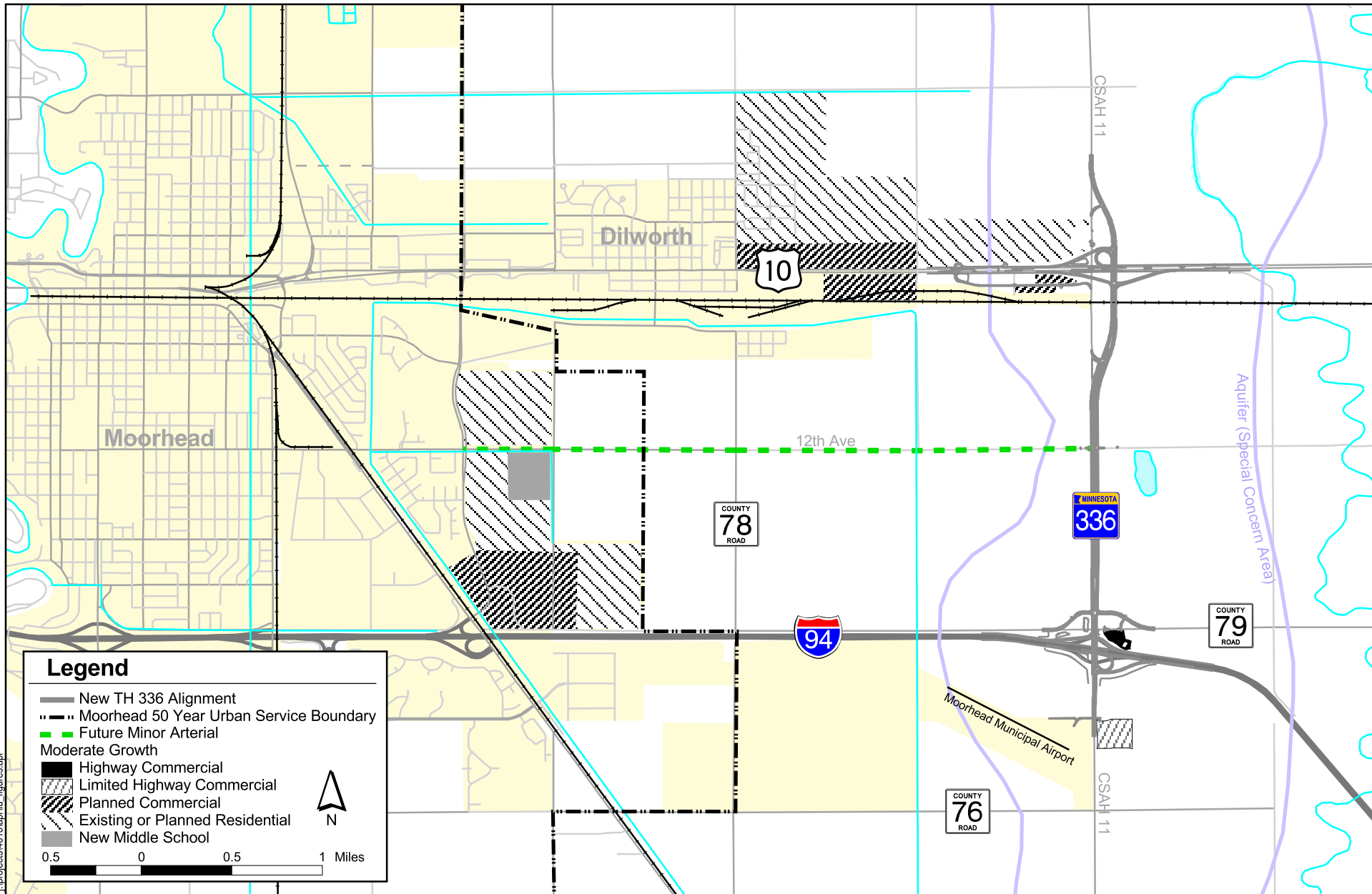
LIMITED GROWTH LAND USE SCENARIO

TH 336/CSAH 11 CORRIDOR MANAGEMENT PLAN

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Figure 2



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MODERATE GROWTH LAND USE SCENARIO

TH 336/CSAH 11 CORRIDOR MANAGEMENT PLAN

Clay County

Figure 3

4.1.4 Growth Scenario Findings and Recommendations

1. Local decisions regarding the future land use along and near the corridor will undoubtedly have an effect on its transportation functions and performance.
2. Three land use scenarios were developed by the Steering Committee after public and landowner input. The Committee desired that the scenario be consistent with the corridor's vision (i.e., a high-speed rural bypass). Additionally, five specific constraints were considered in preparing the corridor's future land use scenarios. The three scenarios included:
 - Very Limited Growth
 - Limited Growth and
 - Moderate Growth.
3. The Limited Growth scenario was selected by the Steering Committee. This scenario provides for 255 acres of new commercial and 841 acres of new residential growth for Moorhead and Dilworth. All Moorhead's growth, as well as the new Middle School, would be contained within the City's present 50-year utility service boundaries. Growth in Dilworth would be located outside, but adjacent to the present city limits, primarily north of TH 10 to TH 336. The Steering Committee considered this level of growth to reflect a 50-year, full-build development plan. This preferred land use scenario most accurately reflected current and future land uses as presented in the Moorhead, Dilworth and Clay County adopted Comprehensive Plans. Further, it addressed the specific resource concerns identified early in the study process.

5.0 ANALYSIS OF IMPACTS

After defining the land use scenarios, the next step was to analyze the impacts on the transportation system resulting from this future growth. It is important to note that the scope of this study did not account for any other impacts, such as social or environmental impacts, that may result from additional development. Other planning studies and/or public policy initiatives, particularly the City of Moorhead’s Wellhead Protection Program, may result in policies that limit growth in the corridor study area. However, this study was primarily concerned with defining the impacts of growth on the existing and future transportation system, particularly the TH 336/CSAH 11 Corridor.

5.1 TRAFFIC IMPACTS

Traffic projections were developed for the Moderate Growth land use scenario for the year 2030. This scenario was chosen as a “worst case” scenario, understanding that if operations on TH 336 were acceptable under this scenario, then they would certainly be acceptable under the remaining, less intense future land use scenarios. Future traffic volumes were arrived at by adding in the impact of trips generated by the Moderate Growth land use scenario to trips forecast on study area roadways (TH 336, TH 10 and I-94) by the FM-COG for the year 2020. The ITE Trip Generation Manual was used to develop numbers of trips per day for the new development summarized in Tables 3–5. A key assumption was the intensity of development. New residential development was assumed to occur at an average density of three houses per acre of land with 2.5 persons per household. New commercial development was assumed to occur at 25 percent of total area being gross leasable area (i.e., for every acre of land designated for future commercial development, one quarter of an acre would be leasable space). For every acre of gross leasable area, it was assumed that 11 employees would be needed.

(Sources: FM-COG and the City of Dilworth)

Assuming the development intensities as described above, trip generation rates for study area development were calculated and are summarized below in Tables 6 and 7.

TABLE 6
Moderate Growth Land Use Scenario – City of Moorhead

TAZ	Land Use Type	Size		Daily Trips	AM Peak Trips		PM Peak Trips	
					In	Out	In	Out
144	Low-Density Residential	216	Acres	5,622	138	307	390	201
	General Commercial	162	Acres	75,532	1,106	707	3,159	3,423
	New Middle School	1,300	Students	1,885	333	252	192	185
146	Low-Density Residential	130	Acres	3,385	83	185	235	121
Total	-	508	Acres	86,424	1,660	1,450	3,977	3,929

TABLE 7
Moderate Growth Land Use Scenario – City of Dilworth

TAZ	Land Use Type	Size		Daily Trips	AM Peak Trips		PM Peak Trips	
					In	Out	In	Out
75	Low-Density Residential	115	Acres	3,005	74	164	209	108
76	General Commercial	85	Acres	39,822	583	373	1,666	1,804
	Low-Density Residential	380	Acres	9,906	243	541	688	354
136	General Commercial	43	Acres	20,280	297	190	848	919
137	General Commercial	8	Acres	3,538	52	33	148	160
Total	-	632	Acres	76,551	1,248	1,300	3,558	3,346

5.1.1 Trip Distribution

After forecasting future trips, the next step in the process is to assign them to the local street network. The FMCOG, with assistance from the Advanced Traffic Analysis Center (ATAC), provided direction for this task. Since the focus of this corridor management plan is TH 336/CSAH 11, the analysis of future operations focused on traffic operations on this road segment. Generally, most people will choose the most convenient route possible to any given destination, involving the least time driving. Using the FM-COG traffic model, which distributes traffic based on local development patterns, the ATAC indicated that approximately 17 percent of all trips generated by development in growth areas (summarized in Table 7) near the City of Dilworth would be expected to use TH 336 on part of their journey. Since persons making trips from the development assumed to occur in the City of Moorhead (summarized in Table 6) would typically be heading west for the majority of their trip making, none of these trips was distributed onto TH 336/CSAH 11.

5.1.2 Future TH 336 Operations

A roadway with a section type similar to TH 336 (four-lane divided with a wide median) can comfortably carry up to 32,000 ADT with no impairment to operations (vehicles moving at free-flow speeds). Above 32,000 ADT, such a facility may experience some reduced travel speeds in peak hours, and above 40,000 ADT, it would likely experience reduced travel speeds in peak hours, depending upon level of access and side-street traffic demand. After distributing trips onto TH 336 and modeling future traffic operations, the analysis showed that volumes would be below the 32,000 level, which would suggest that TH 336 would continue to function well under the Moderate Growth (most intense) land use scenario (see Table 8).

TABLE 8
TH 336 Operations Under Moderate Growth Land Use Scenario

TH 336 Operations Moderate Land Use Scenario	
2030 ADT	21,500
TH 336 Operations	Below Capacity

5.1.3 Future TH 336 Operations with 12th Avenue Development

In the City of Moorhead, 12th Avenue is classified as a Minor Arterial roadway to its intersection with Clay County Road 81. Beyond that it is not part of the FM-COG’s classification system, and the road terminates east of Clay County Road 78 with a path, which then reconnects to a gravel road extending to TH 336 (approximately two miles). However, FM-COG’s Long-Range System Plan does call for an extension of 12th Avenue east to intersect with TH 336. In fact, Mn/DOT has planned for a future connection of TH 336 with 12th Avenue and this design was built into its reconstruction design for the highway.

It was the desire of the Study Partners to define the possible impacts of an intersection of 12th Avenue with TH 336, given the potential for a traffic signal installation at this at-grade intersection, if traffic generated by future development warranted it. As stated earlier, Mn/DOT’s access policies for Medium-Priority Interregional Corridors strongly discourage the installation of traffic signals. Further, the Steering Committee’s preliminary Vision Statement for the TH 336/CSAH 11 Corridor did not accommodate signal installation on the TH 336 corridor. For this reason, an additional step in the traffic analysis was taken to identify development thresholds that might trigger a signal installation.

Future trips generated along 12th Avenue were assumed to access TH 336 via an at-grade intersection of 12th Avenue and TH 336. Three variables were examined in terms of future operations, the results of which are reported below in Table 9. First, TH 336 daily volume estimates were compared to facility capacity thresholds to determine if this facility would continue to operate acceptably. Next, traffic volumes on 12th Avenue, combined with traffic volumes on TH 336, were examined to determine if they reached thresholds where, with no traffic signal in place, drivers would begin to take significant risks due to limited gaps in the traffic stream based on the USDOT’s “Highway Capacity Manual”. (Figure 4 depicts risk categories by side-street and mainline volumes for a section type (four-lane with wide medians) similar to TH 336.) The last level of analysis was to determine whether potential volumes on 12th Avenue, combined with estimated volumes on TH 336, warranted the installation of a traffic signal on TH 336.

TABLE 9
Impacts of 12th Avenue Development on TH 336 Traffic Operations

Commercial Development ⁽¹⁾		Additional Volume on 12th Avenue Due to development	Volume on TH 336 ⁽²⁾	Capacity Evaluation	Gap Availability ⁽³⁾	Signal Justification ⁽⁴⁾
1	Acre	500	21,700	Below	Good (low risk)	No
5	Acres	2,300	22,700	Below	Poor (high risk)	No
10	Acres	4,700	23,900	Below	Poor (high risk)	No
20	Acres	9,300	26,200	Below	Poor (high risk)	Yes
40	Acres	18,700	30,900	Below	Poor (high risk)	Yes
80	Acres	37,400	40,200	Above	Poor (high risk)	Yes

(1) Assumes commercial development adjacent to 12th Avenue at 1/4 gross leaseable area to one acre.

(2) Assumes no future development in the City of Dilworth beyond that which is included in the Comprehensive Plan.

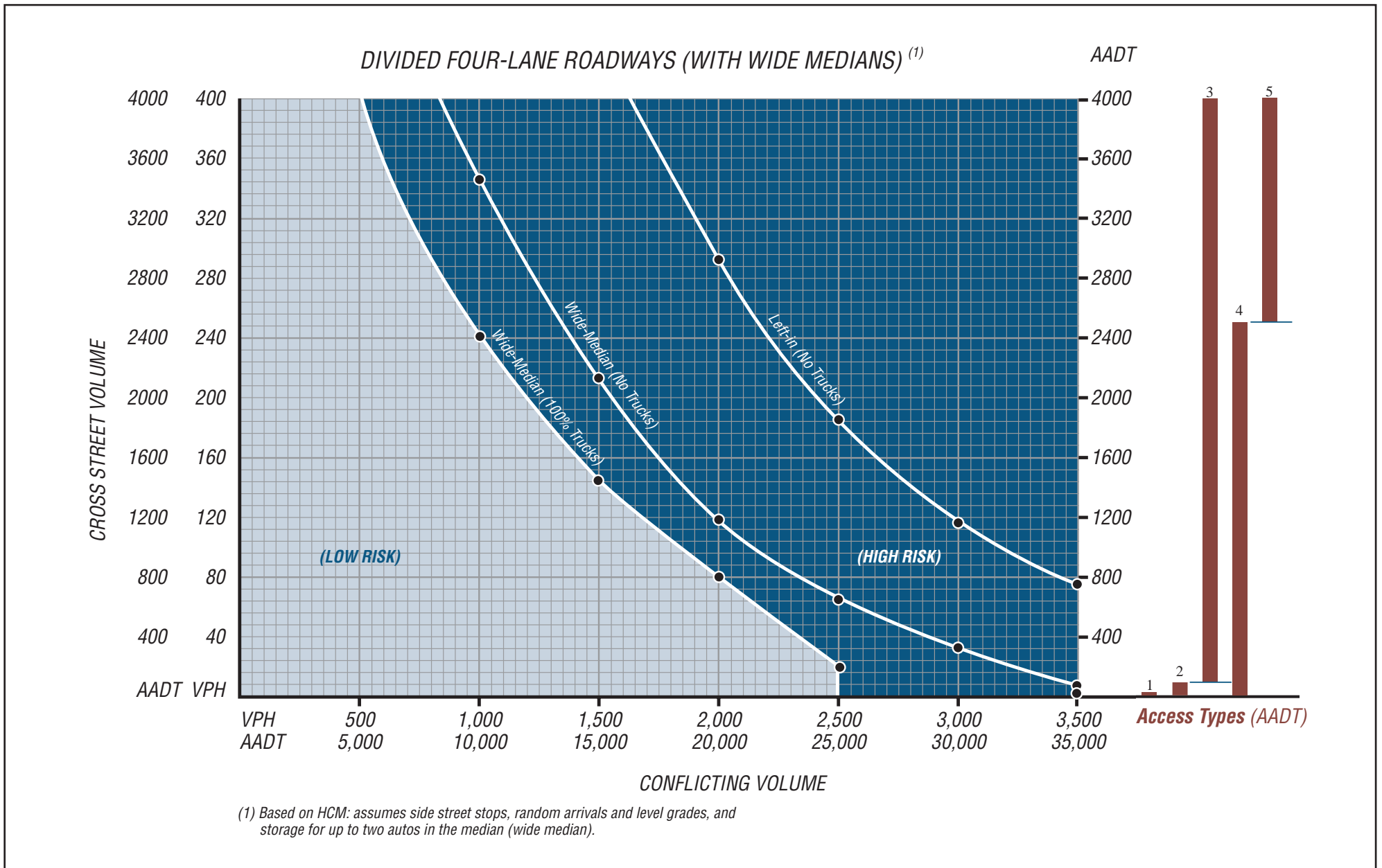
(3) Peak-Hour Analysis Based on HCM: assumes side street stops, random arrivals, level grades and storage for up to two autos in the median (wide median). See attached graph "Divided Four-Lane Roadways (with Wide Medians)."

(4) Based on SRF practice and values developed as part of Investigation TAU 390, "Guide to Estimating Traffic Signal Warrants and Tests of ADT Estimates," Minnesota Highway Department, June 1965

As can be seen in Table 9, the ability to place additional development along 12th Avenue while providing an at-grade intersection that functions without installation of a traffic signal on TH 336 is quite limited. With five acres of commercial development, the availability of gaps in traffic on TH 336 is degraded to the point that drivers seeking to merge into traffic from 12th Avenue begin to face risks in doing so. At 20 acres of commercial development, side-street traffic operations degrade to the point that a traffic signal installation on TH 336 is warranted. At 80 acres of commercial development along 12th Avenue, TH 336 capacity begins to be strained. It is important to note that the system operations, as summarized above, assume that all trips generated by future development along 12th Avenue would access TH 336. This is the most logical scenario, if there is isolated development along the corridor (not part of the expansion of the existing urbanized area from Moorhead or Dilworth).

5.1.4 Traffic Operations Findings and Recommendations

1. Adequate capacity exists on TH 336/CSAH 11 to handle future development assumed under all land use scenarios identified by the Study Committee.
2. As 12th Avenue is extended east from the current city limits of Moorhead, it should be done in a manner consistent with the expansion of urban services and consistent with the provision of an adequate system of supporting local and collector streets. It is recommended that Moorhead enforce the orderly expansion of its city limits, and limit the potential for "leapfrog" development that can strain existing roadway infrastructure and potentially impact critical resources, such as the Buffalo Aquifer.



3. Depending on the outcome of Moorhead's Wellhead Protection Plan, additional development limitations beyond Clay County's agricultural preservation zoning may be in place for the corridor study area, particularly on the east side of TH 336. Limiting the potential for development adjacent to TH 336 will ensure adequate operations of this corridor well into the future, and will limit the potential for a future signal installation at the intersection of 12th Avenue and TH 336.
4. If an at-grade intersection of 12th Avenue and TH 336 is constructed in the future, every effort should be made to ensure that this intersection continues to operate without warranting installation of a traffic signal, including development limitations in this area, as well as providing for an adequate system of local and supporting roads. Consideration should also be given to preserving sufficient right of way at the planned intersection of 12th Avenue/TH 336 soon for the possible construction of an interchange/overpass in the future. In this way, should a traffic signal at this intersection ever be warranted, the installation of a signal would be consistent with Mn/DOT's IRC policies for signal installations on Medium-Priority IRC corridors, namely, that installation is strongly discouraged but acceptable in instances where plans are in place to replace the signal with a grade separation.

5.2 ROADWAY ACCESS AND CORRIDOR PRESERVATION

In order to facilitate movement along a roadway, it is important to control the flow of traffic between the road and the surrounding land by managing access. All roadways attempt to strike a balance between two basic traveling needs, the need to get onto the road and into adjacent development, and the need to move safely and efficiently on the roadway itself. These needs are called respectively, access and mobility. Along any roadway, these needs compete with each other. For this reason, transportation authorities classify highways according to function, namely their primary role in either providing mobility for through trips or providing access to adjacent development.

In recognition of the role TH 336 plays in local and regional mobility, Mn/DOT has identified it as a Medium-Priority Interregional Corridor. CSAH 11 is not classified in Mn/DOT's Interregional Corridor System; however, it has been designated as a collector in the local transportation network by the FM-COG, and will likely be reclassified a minor arterial in its updated Metropolitan Transportation Plan. Just as important to understanding future corridor performance, CSAH 11 and TH 336 are planned as part of a future metropolitan perimeter road system, further strengthening a vision of a high-speed, high-mobility corridor. In fact, as noted earlier, corridor partners have recommended a preliminary performance goal of 65 miles per hour for the entire corridor. While this goal is not required to be met in every part of the corridor, the partners would like to achieve this on average over the entire corridor. Clearly, this vision indicates a corridor in which direct roadway access should be limited.

5.2.1 Access Guidelines

Mn/DOT has established guidelines for access spacing on their trunk highway system. These guidelines are characterized by category of roadway. Accepting the TH 336/CSAH 11 vision as a high-mobility corridor, the category into which the TH 336/CSAH 11 corridor falls is Category 2A, or a Medium-Priority Interregional Corridor – Rural/Exurban/Bypass Area. Guidelines for these facilities are as follows:

- Primary, full-movement intersections spaced at one-mile intervals
- Right-in/right-out access spaced at half-mile intervals
- Traffic signals are strongly discouraged

Further, Clay County’s Access Management Guidelines state the following for Minor Arterial Roadways:

- Intersections spaced at 500-foot intervals
- No direct access for driveways is permitted

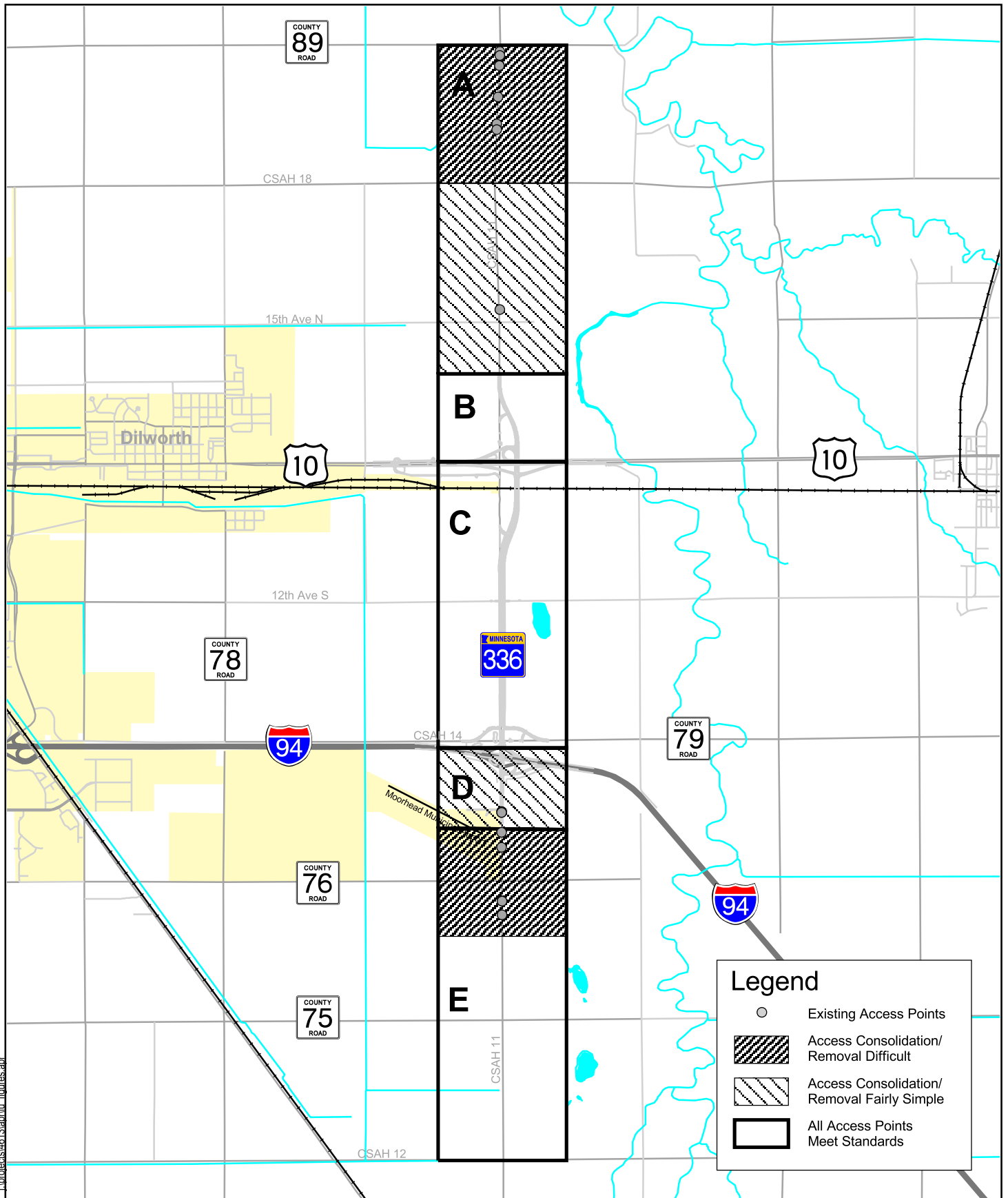
The FM-COG’s Access Management Guidelines state that desired spacing on functionally classed roadways in less developed areas should be at 1,320 feet or greater.

Existing access along TH 336/CSAH 11 is depicted in Figure 5. Table 10 summarizes these access points by type, indicates which accesses meet or do not meet standards, and gives an indication of the anticipated level of difficulty to be experienced in attempting to replace the access points that are not meeting standards.

5.2.2 Access and Corridor Preservation Strategies for TH 336

Current access along reconstructed TH 336 meets Mn/DOT guidelines. Full-median access is limited to two points along the corridor, at the realigned CR 79/CSAH 14 and at “old” TH 336, allowing the original roadway to function as an access road to development adjoining it. In the future, with an extension of 12th Avenue to the east from Moorhead, Mn/DOT would allow a full-median opening at its intersection with TH 336. All other access along TH 336 was purchased and eliminated during the project development process for the corridor reconstruction.

Regarding right of way, Mn/DOT, prior to the TH 336 reconstruction project, purchased approximately 170 acres of land along the corridor and around the two interchange improvements. Thus all necessary ROW for TH 336 project elements has been acquired.



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CORRIDOR ACCESS

TH 336 / CSAH 11 CORRIDOR MANAGEMENT PLAN

Clay County

Figure 5

**TABLE 10
TH 336/ CSAH 11 Access Summary**

SEGMENT	EXISTING ACCESS POINTS	ACCESSES NOT MEETING CONCEPT	TYPE OF ACCESS ⁽¹⁾				REPLACEMENT DIFFICULTY LEVELS 1-3 ⁽²⁾		
			Public	Private Commercial	Private Residential	Municipal	1	2	3
A End of Four-lane to 43rd Avenue North	11	8	3/0	0/0	8/8	0/0	2	0	6
B TH 10 to end of Four-lane	1	0	1/0	0/0	0/0	0/0	0	0	0
C I-94 to TH 10	3	0	3/0	0/0	0/0	0/0	0	0	0
D End of Four-lane to I-94	3	2	1/0	1/1	0/0	1/1	2	0	0
E 60th Avenue South to end of Four-lane	7	4	3/0	1/1	3/3	0/0	1	0	3
Totals	23	13	11/0	2/2	11/11	1/1	5	0	9

(1) Type of access meeting spacing concept/followed by number not meeting spacing concept

(2) Access consolidation and/or removal was separated into three categories with 1 being the easiest to accomplish and 3 being the most difficult. These rankings are categorized as:

Level 1: Eliminating one access point when the property has two, or shifting the access point to a side road when the property borders both the main road and the side road

Level 2: Building a shared driveway or building a short driveway to a side road when the property does not border both the main road and the side road.

Level 3: Building a frontage road.

5.2.3 TH 336 Access Findings and Corridor Preservation Recommendations

1. Since TH 336 is currently in compliance with all adopted access guidelines, and since Mn/DOT purchased access control as part of the right of way acquisition process for road reconstruction, no recommendations for access changes are necessary.
2. In order to ensure operations on the TH 336 corridor in the future, local agencies should pursue official mapping and other right of way protection strategies at the intersection of TH 336 and 12th Avenue. These efforts should be aimed at preserving a “footprint” for future construction of an interchange or overpass of 12th Avenue and TH 336.

5.2.4 Access and Corridor Preservation Strategies for CSAH 11

The ultimate vision for Clay CSAH 11 is to become a link in the future metropolitan beltway system for the Fargo-Moorhead metropolitan area. Also, based on the results of discussions between Clay County and Mn/DOT, a jurisdictional transfer may occur, which would re-route TH 75 onto CSAH 11. As such, important issues are access control and ensuring that poorly planned access does not proliferate. Public road access is presently (for the most part) spaced at approximately one-mile intervals consistent with section lines. This spacing more than meets the FM-COG’s guidelines of full-access spacing at 1,320 feet, as well as Clay County’s standards of 500 feet. However, CSAH 11 does not meet access guidelines as described above due to private driveways having direct roadway access. This contravenes Clay County policies established for minor arterials.

Although existing public road spacing meets access spacing criteria, it is important to remember that this corridor is currently almost entirely rural in character and predominantly in agricultural use. Should development pressures intensify, then road access proliferation is a danger. Using FM-COG’s present access criteria, full-access points could be granted every quarter mile. Under Clay County’s criteria, full-access could be granted at every 1/10 of a mile (or 500 feet), about the distance of a typical city block. It is the position of the TH 336/CSAH 11 Steering Committee that these standards are not adequate to ensure the future functionality of a high-speed, high-mobility corridor as envisioned for TH 336/CSAH 11.

Although new private driveway access to CSAH 11 should be strongly discouraged in the future, it should be acknowledged that the present characteristics of CSAH 11 in the study area (existing ADT of under 1,000) would not indicate that current levels of access pose any extraordinary safety or traffic concern. As such, it is the position of the Steering Committee that existing private driveway access should remain in place until such time as road reconstruction and/or the purchase of roadway rights of way to improve CSAH 11 occur.

According to the Clay County Land Development Ordinance right of way standards for principal arterial, minor arterial and collector roadways are 150 feet for each. According to County Work Sheets, the current right of way for segments of CSAH 11 range from 66 feet to 130 feet. The most limited existing right of way is at the north end of CSAH 11 from CSAH 22 south to CSAH 18 (66 feet). From CSAH 18 to TH 10, the right of way expands to 130 feet, and then south of I-94, the CSAH 11 right of way is 120 feet to CSAH 12. Thus additional right of way is needed along CSAH 11 merely to meet County standards.

In December 2001, the County adopted the *Extraterritorial Corridor Preservation Planning Study*. This study noted that the County had the potential to be the pivotal jurisdiction in corridor preservation matters. However, the study identified some issues relative to the implementation of current County ordinances. One of these observations, pertinent to CSAH 11 is that the County sometimes avoided right of way acquisition in favor of requiring that specific building setbacks be maintained. The study felt this policy was not always prudent, and it recommended the County, instead, secure additional right of way dedication during the platting process. Specifically, the study recommended that, at a minimum, dedication be pursued along all arterial roadways.

Further, the study recommended that Clay County implement a corridor preservation signage program, similar to that of its neighbors in Fargo and Cass County, North Dakota. These signs are typically placed along mile line arterials in the urbanizing area. The purpose of the signs is to notify existing and prospective developers and land buyers that the corridor may someday carry higher traffic volumes, and may require capacity improvements. A number of such sign locations are recommended along CSAH 11, due to its future role as a metropolitan perimeter roadway. This signage system has proven to be an effective and innovative method of corridor preservation around Fargo. It is recommended that such signage be installed as soon as possible along CSAH 11.

Additionally, the *Corridor Preservation Planning Study* calls for a 200-foot corridor for future expansion of CSAH 11 to serve as a future agricultural bypass of the Fargo-Moorhead metropolitan area. The *Planning Study* also recommends that CSAH 11 be improved to a four-lane facility. However, based on 2020 forecasts for CSAH 11, and assuming a certain volume of traffic on existing TH 75 (approximately 2,000 vehicles per day) would divert from TH 75 to the future bypass, volumes on CSAH 11 would still not exceed 5,000 ADT, an amount that can be easily accommodated by a well-designed two-lane roadway with turn lanes and limited access.

Based on these assumptions and the established carrying capacities of a three-lane roadway with good access management, it is quite possible that the County could accommodate the future traffic volumes noted for the bypass without having to acquire the additional right of way necessary for a four-lane facility.

5.2.6 CSAH 11 Access and Corridor Preservation Findings and Recommendations

1. The FM-COG should pursue reclassification of CSAH 11 as a Minor Arterial Roadway in its new Long-Range System Plan.
2. The FM-COG should consider adding a new access category to its Access Management Guidelines that encompasses a rural bypass route. Further, Clay County should consider only allowing access on this type of facility (CSAH 11) consistent with Mn/DOT's Access Management Guidelines for Medium-Priority Interregional Corridors (namely, full-median access limited to one-mile intervals with right-in/right-out access at half-mile intervals). In so doing, a consistent and coherent corridor type will be established between TH 336, CSAH 11 and other future roadways anticipated to part of this bypass route, specifically CSAH 26 and CSAH 12.

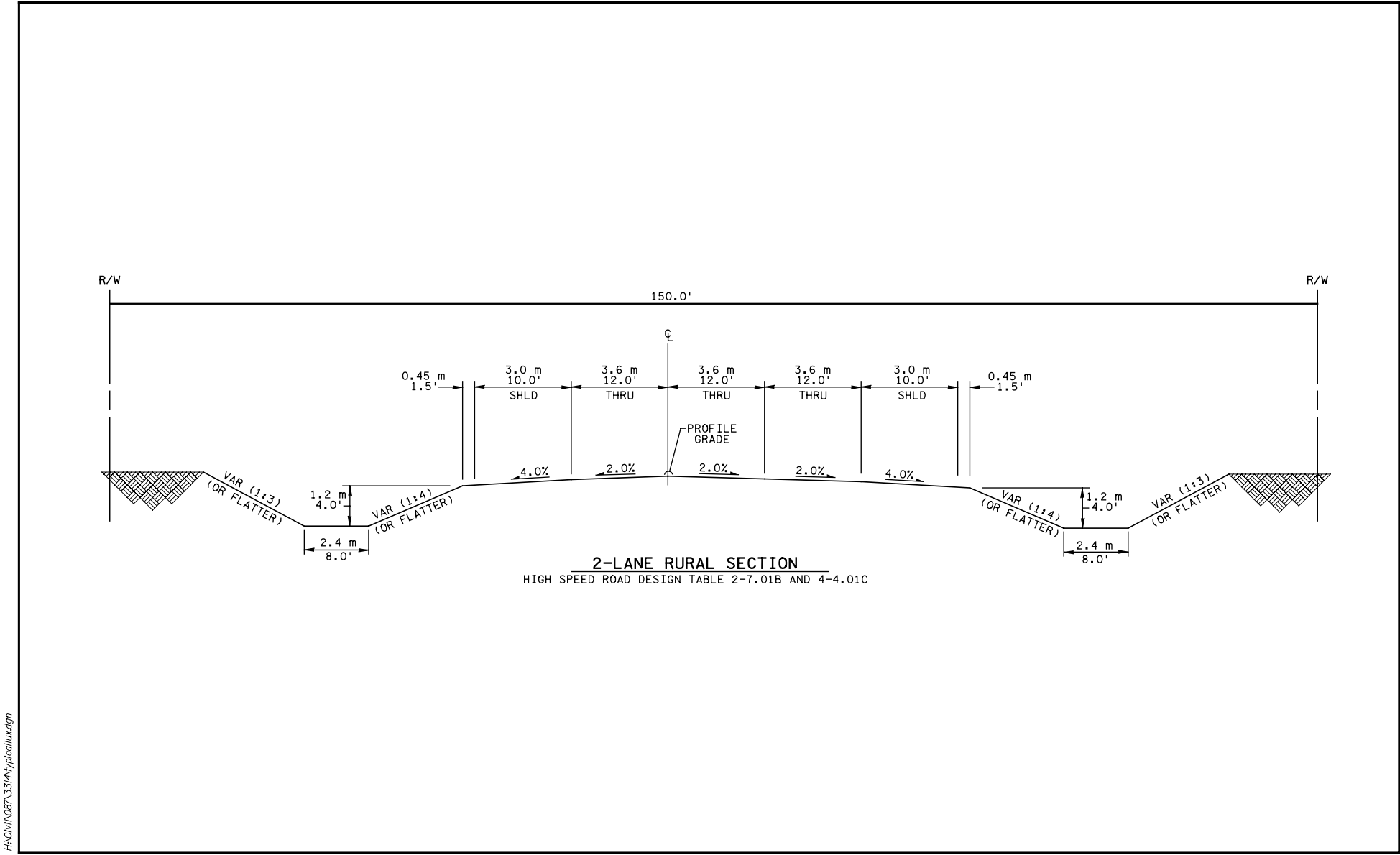
3. Access to CSAH 11 for all future development should be provided only from a public street. No new direct private property access should be considered.
4. Existing private access may be continued until such time as significant road reconstruction occurs (e.g., expanding CSAH 11 to a multi-lane facility.) At that time, consideration should be given to consolidation of access or to providing access via other local streets and service roads, or to limit driveway access to right-in/right out, if practicable.
5. It is recommended that local road authorities consider a two-lane section type, with a center turn lane where needed, as the preferred design for a CSAH 11 as a rural bypass (see Figure 6). In so doing, the land needed for future right of way will be reduced, and a 150-foot corridor would be sufficient for future preservation. Further, the corridor preservation signage should be installed along CSAH 11 as soon as practical. Finally, the County should secure sufficient right of way during the platting process for CSAH 11.

5.2.7 Access and Corridor Preservation Strategies for 12th Avenue

Access spacing along 12th Avenue South, east from 34th Street, currently meets FM-COG's standards of 1,320 feet for minor arterial roadways. As Moorhead and Dilworth expand to the east, consistent with the extension of urban services, it is anticipated that 12th Avenue will be extended and improved. (The first section of this improvement is planned for 2003 to serve the new Moorhead Middle School site.) Currently, 12th Avenue is an unimproved, gravel road from its intersection with 34th Street to its intersection with CR 78, with an average right of way of 66 feet. Eastward from the CR 78 intersection, 12th Avenue terminates to a path, and then continues as a gravel road to its intersection with TH 336. As 12th Avenue is extended and improved, north-south access points should be planned and spaced consistent with FM-COG standards.

In addition to planning for future access, sufficient right of way should be preserved for future improvements to 12th Avenue. It is anticipated that 12th Avenue will continue to be classified as a minor arterial in the FM-COG's Long-Range Transportation Plan. Therefore, a 150-foot right of way will be required to serve 12th Avenue's intended role as an arterial road. This right of way will be sufficient to construct a two-lane section with turn lanes provided at major intersections. Although extensions of 12th Avenue may not be constructed for many years (Moorhead's 50-year urban service boundary currently ends approximately one and one-half miles east of 34th Street), by preserving the corridor now for these future improvements, the Cities of Moorhead and Dilworth, and Clay County can ensure that future improvements can be made in a timely and cost-effective manner, as they are needed.

To assist in the corridor preservation and future roadway extensions, Clay County may wish to add 12th Avenue South to its County State Aid Highway (CSAH) system and begin collecting "need" funds from the State for future improvements. It should be noted that Clay County currently has five miles of CSAH miles "in the bank," which they could use to collect "needs" funds for 12th Avenue improvements, without having to go through an approval process with the State Screening Board.



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TYPICAL 2-LANE RURAL SECTION (WITH SUFFICIENT R/W FOR TURN LANE PROVISIONS)

TH 336/CSAH 11 CORRIDOR MANAGEMENT PLAN
 CLAY COUNTY

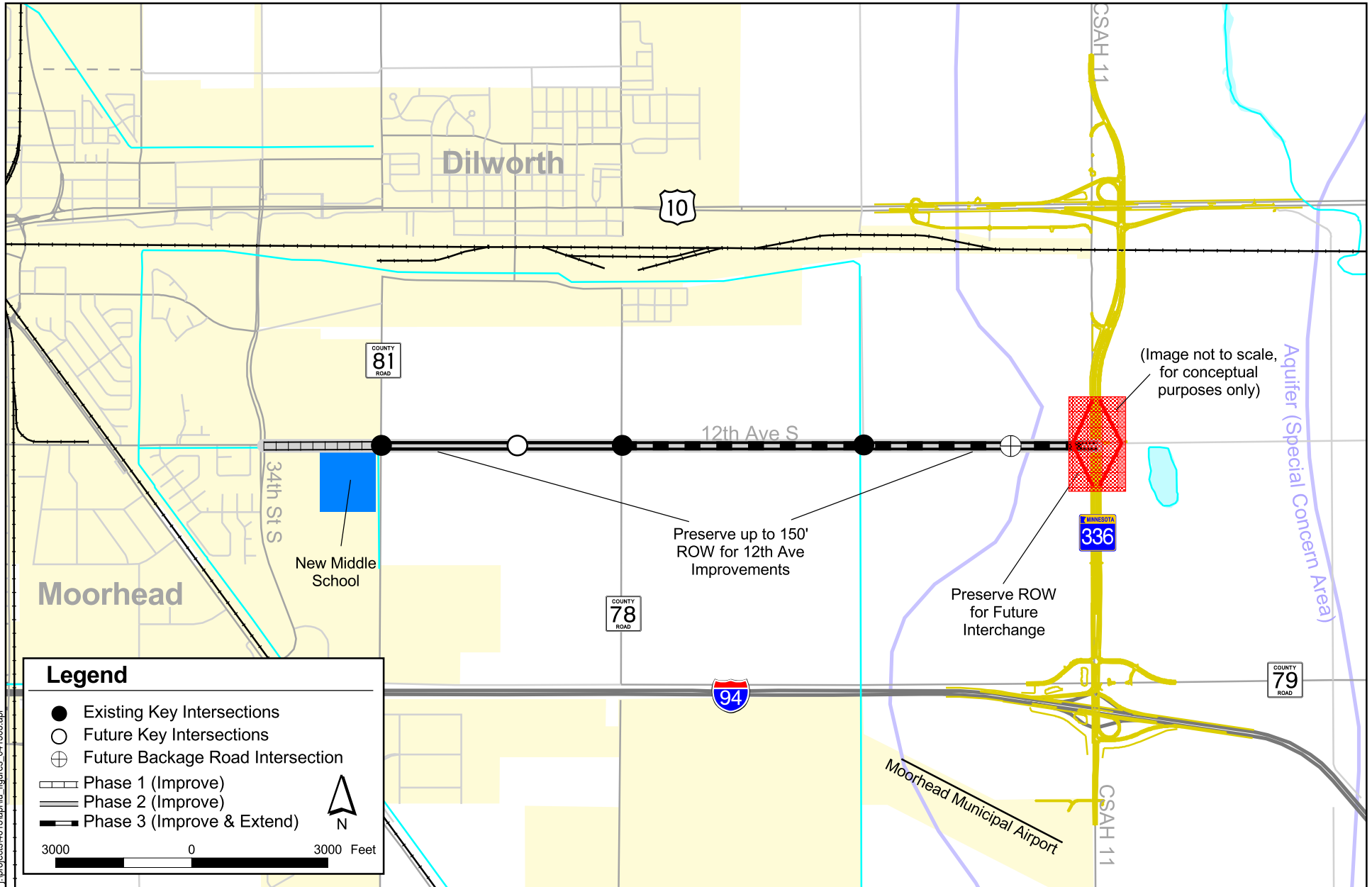
Figure 6

5.2.8 12th Avenue Access and Corridor Preservation Findings and Recommendations

1. Consistent with the future expansion of Moorhead's Urban Services Boundary, 12th Avenue should be improved and extended eastward. As these extensions occur, they should be done in logical increments (as illustrated in Figure 7).
2. Local agencies should pursue official mapping and other right of way preservation strategies for the 12th Avenue Corridor. A two-lane section type should be considered, with turn lanes provided as needed, for the preferred design for an extension of 12th Avenue. A 150-foot right of way would be sufficient for the planned functions of this future corridor, including a Class 1 bicycle path (as recommended by the FM-COG Bicycle and Pedestrian Plan), as well as all necessary drainage requirements. The installation of "Future Corridor" signs would also help ensure limited access, harmonious adjacent land uses and appropriate building setbacks.
3. All future access onto 12th Avenue should be spaced at 1,320-foot intervals, consistent with the FM-COG's Access Policies.
4. As discussed in Section 5.2.3 of this Plan, local agencies should also pursue official mapping and right of way preservation for an interchange at the intersection of TH 336 and 12th Avenue. Although depicted in Figure 7 of this report, it must be noted that the footprint of land shown for this interchange is not to scale and is presented for conceptual purposes only. Should official mapping be pursued for this interchange, conceptual design of this improvement would have to be completed to the point at which right of way needs would be known, based on further engineering investigation of this site. It should also be noted that the interchange spacing on TH 336, which presently has interchanges at I-94 and TH 10 (approximately two miles distant) might violate Mn/DOT standards for facilities of this type. Therefore, a 12th Avenue interchange may not be feasible based on this criterion, or based on calculations of cost-effectiveness, unless the current TH 336 access to the grain elevator was eliminated, with this area being served instead by a backage road from 12th Avenue South.
5. Clay County should add a portion of 12th Avenue South to its County State Aid Highway (CSAH) system.

5.3 LOCAL SYSTEM PLANNING

A preliminary examination of local roadway system concepts supporting future land use in the City of Dilworth is depicted in Figure 9. This concept is meant to provide a general indication of how the City of Dilworth can build from its existing system of local and arterial streets in such a way as to support the land use scenarios described in this corridor management study. A proposal for a residential development east of 7th Street NE in Dilworth, known as the Woodbridge Addition, has been presented to the City Council. This area is also shown in Figure 9.



12TH AVENUE IMPROVEMENTS

TH 336 / CSAH 11 CORRIDOR MANAGEMENT PLAN

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Clay County

Figure 7

In general, local streets can be platted according to two typical types of patterns. As shown below in Figures 8A and 8B, these are a grid system pattern and a pattern resulting in more curvilinear streets terminating in cul de sacs. FM-COG's draft *Metropolitan Transportation Plan (2000-2030)* states as a goal of their system development that they support using "a grid street pattern for arterials and collectors to more evenly disperse traffic, build more collectors and through arterials." The concept depicted in Figure 9 supports this goal.

Figure 8A: (grid pattern)

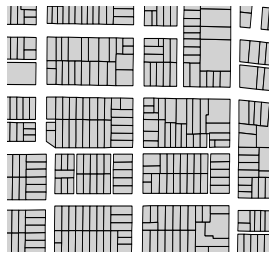
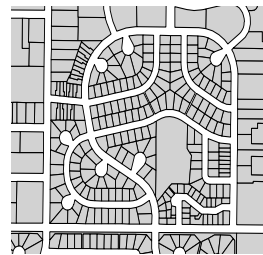
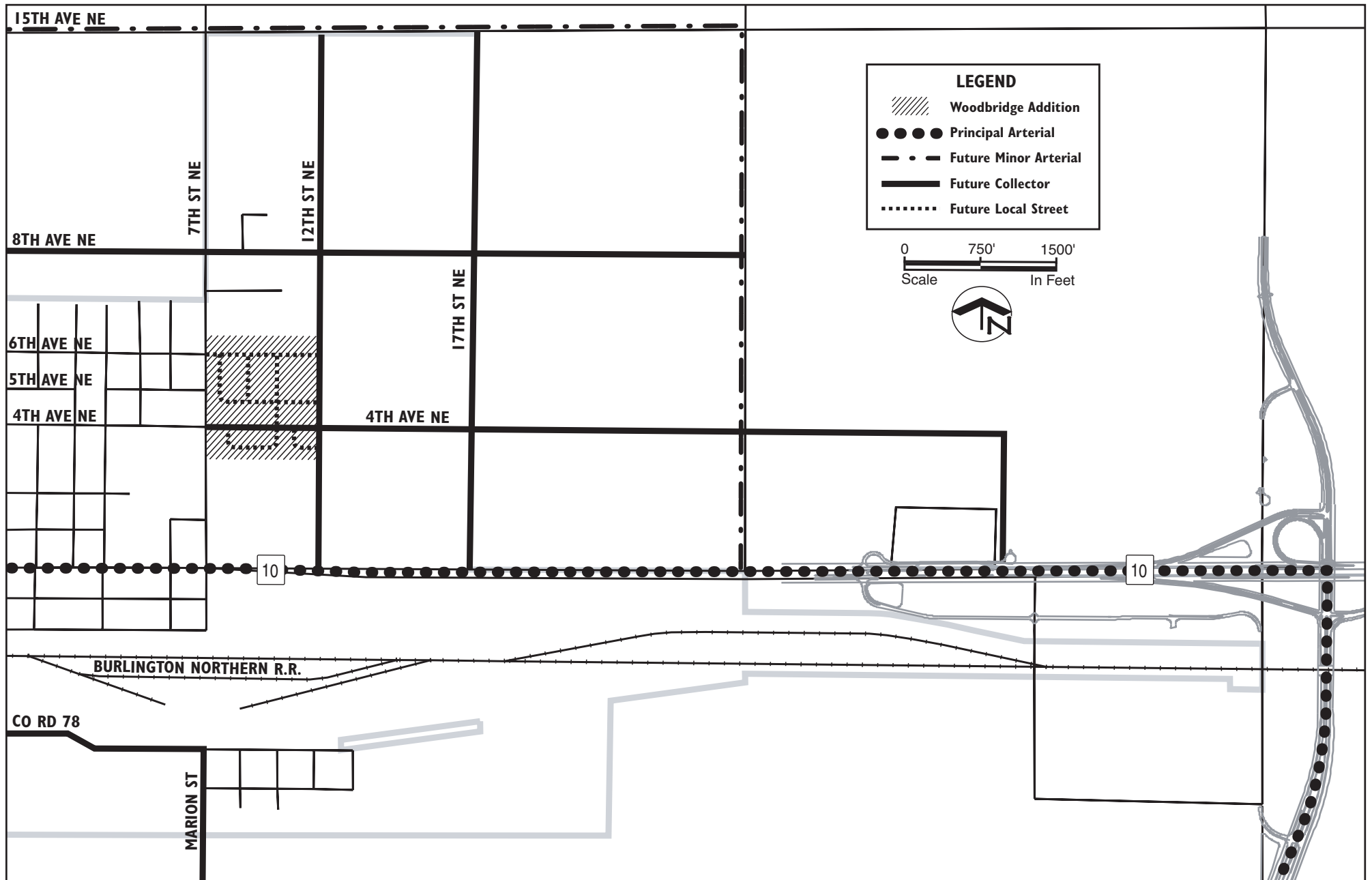


Figure 8B: (curvilinear pattern)



5.3.1 Local System Recommendations

1. The City of Dilworth should continue to develop its system of local and collector streets consistent with patterns already established. As depicted in its future transportation system plan (Figure VI-4 in their 1998 Comprehensive Plan), this includes constructing 15th Avenue at the northern city limits as an arterial, with new segments of 4th Avenue and 8th Avenue serving as collector streets.
2. As platted in the "Woodbridge Addition," 12th Street NE should be constructed as a collector street serving this development.
3. As future development warrants, the City of Dilworth should develop new north-south streets on a grid pattern to provide an adequate system of collector and arterial streets. In general, collector streets should be spaced at approximately half-mile intervals, with arterials spaced at approximately one-mile intervals, in accordance with metropolitan guidelines.
4. Current access spacing on TH 10 does not meet FM-COG's access spacing guidelines for Principal Arterial roadways. As Dilworth develops to the east, access to TH 10 should be limited to the 1,320-foot (quarter-mile) spacing recommended by the FM-COG.



5.4 ANCILLARY CORRIDOR ISSUES

Ancillary corridor issues were reviewed with local agencies in order to understand where the interests and positions of decision-making bodies intersected. These issues include the potential turnback of TH 75 from Mn/DOT to local road authorities, groundwater protection of the Buffalo Aquifer, the extension of urban services eastward from Moorhead, the County's agricultural preservation policies and access control of the TH 336/CSAH 11 Corridor.

Known positions on these various issues, by agency, are summarized in Table 11. These positions were gleaned from already existing written policies, as well as telephone interviews conducted with agency staff.

5.5 CONSISTENCY WITH OTHER ADOPTED PLANS AND POLICIES

The land use scenarios and access strategies summarized in this Plan are consistent with and supportive of plans and policies already in place for the TH 336/CSAH 11 Corridor study area. Land uses as described in the scenarios are consistent with those already planned for the Cities of Dilworth and Moorhead, while leaving the majority of the study area in agricultural use, is consistent with Clay County's Comprehensive Plan. By limiting development adjacent to TH 336/CSAH 11 and leaving it in agricultural use, the recommendations of this Corridor Management Plan are also consistent with draft objectives included in the City of Moorhead's Wellhead Protection Plan. By preserving the future functionality of TH 336, this corridor management study is consistent with Mn/DOT's Interregional Corridor Study and with the Department's Access Management Guidelines.

TABLE 11
Local Jurisdictional Positions on Ancillary Corridor Issues

	TH 75 Turnback	Aquifer Protection	Urban Utility Extension	Agricultural Preservation	Limited Access
Moorhead Public Service	No position	FOR protection, minimize growth to save aquifer	IF there is development, there should be municipal services	FOR preservation	FOR limited access "keep traffic moving"
City of Moorhead	Not in favor, but no "official position" yet	Strongly support	Does not support providing urban services outside boundary	Support	Favor limited access
City of Dilworth	No formal position. Need more information	Aquifer is out of city limits, but since they are buying water from Moorhead, they are FOR protection and have sent a resolution to Clay County seeking to reject a conditional use permit in the area.	An agreement exists between both cities	Because of aquifer concerns, development in the area should be closely monitored, but they have no formal opinion	No formal opinion
Clay County	Currently reviewing with Mn/DOT	Support	Only support if extension occurs along with an orderly annexation agreement	Strongly support	Support, as proposed
Mn/DOT	Currently pursuing discussions with the County	Defer to local jurisdiction	Defer to local jurisdiction	Defer to local jurisdiction	Very interested, wish there could be fewer access points
Moorhead Township	No position	Want aquifers protected, but the aquifer in question is not in their jurisdiction	No problem as long as they don't have to pay for it	Township supports agricultural preservation in general	Neutral
Glyndon Township	Haven't discussed it	Support protection	Haven't discussed it	Support agricultural preservation	Haven't discussed it

6.0 CORRIDOR MANAGEMENT PLAN

This chapter of the TH 336/CSAH 11 Corridor Management Plan summarizes all the previous findings and recommendations, and prioritizes actions for each jurisdiction to take in order to implement the recommendations.

6.1 GENERAL TH 336/CSAH 11 RECOMMENDATIONS

1. In recognition of the role TH 336 plays in local and regional mobility, Mn/DOT has identified it as a Medium-Priority Interregional Corridor. CSAH 11, since it is a county road, is not classified by Mn/DOT's Interregional Corridor system; however, it has been designated as a collector in the local transportation network by the FM-COG, and will likely be reclassified as a minor arterial in the MPO's updated Long-Range Plan.
2. Just as important to understanding future corridor performance, CSAH 11 and TH 336 are planned as part of a future metropolitan perimeter road system, further strengthening the vision of a high-speed, high-mobility corridor.
3. Corridor partners have recommended a performance goal of 65 miles per hour for the TH 10 and TH 336 corridors. While this goal is not required to be met on every link of the two corridor segments, the partners would like to achieve this on average over the entire TH 10-TH 336 corridor. Clearly, this vision indicates a corridor in which direct roadway access should be limited.
4. Specific land use constraints along TH 336 have been identified by previous local planning efforts, and these were respected by the Steering Committee in its preparation of possible future land development options. Such constraints include aquifer protection, agricultural preservation policies, future land use plans' recommendation on development and non-development areas, IRC limited access and traffic signal policies, and urban service extensions.
5. On March 13, 2003, the Steering Committee recommended that among the three possible land use scenarios presented that the Limited Growth scenario be used by local governments as the preferred land use plan for the subarea. This option was selected since it most accurately reflected current and future land uses as included in Moorhead, Dilworth and Clay County adopted Land Use Plans.

6.2 TH 336 RECOMMENDATIONS

1. Adequate capacity exists on TH 336/CSAH 11 to handle future development under all land use scenarios identified by the Steering Committee.
2. At such time that 12th Avenue is extended east from Moorhead, it should be done consistent with the expansion of urban services and consistent with the provision of an adequate system of supporting local and collector streets. Limiting "leapfrog" development is recommended and can be accomplished by the appropriate cities' enforcing orderly expansion of their urban limits, and the County maintaining its agricultural preservation policies.

3. Depending on the outcome of Moorhead’s Wellhead Protection Plan, additional development limitations beyond Clay County’s agricultural preservation zoning may be in place for the corridor study area, particularly on the east side of TH 336. Limiting the potential for development adjacent to TH 336 will ensure adequate operations of this corridor well into the future, and will limit the potential for a future signal installation at the intersection of 12th Avenue and TH 336.
4. In order to ensure satisfactory traffic operations on the TH 336 corridor in the future, local agencies should pursue official mapping and other right of way protection strategies at the intersection of TH 336 and 12th Avenue. These efforts should be aimed at preserving a “footprint” for future construction of an interchange or overpass at 12th Avenue and TH 336. In this way, should a traffic signal at this intersection ever be warranted, the installation of a signal would be consistent with Mn/DOT’s IRC policies for signal installations on Medium-Priority IRC corridors, namely, that installation is strongly discouraged but acceptable in instances where plans are in place to replace the signal with a grade separation.

6.3 CSAH 11 RECOMMENDATIONS

1. The FM-COG should pursue reclassification of CSAH 11 as a Minor Arterial roadway in its new long-range system plan. Further, FM-COG should consider adding a new access category to their guidelines that encompasses rural bypass routes. Finally, Clay County should consider CSAH 11 as a rural bypass route and utilize access spacing consistent with Mn/DOT’s Access Management Guidelines for Medium-Priority Interregional Corridors (i.e., full-median access limited to one-mile intervals, with right-in/right-out access at half-mile intervals). In doing so, a consistent and coherent corridor will be established for CSAH 11 and TH 336.
2. Access to CSAH 11 for all future development should be provided only from a public street. No new direct private property access to CSAH 11 should be considered. Existing private access should be permitted until such time as significant road reconstruction occurs. At that time, consideration should be given to consolidation of accesses, limiting driveway access to right-in/right-out, or accessing CSAH 11 via other local streets, if practicable.
3. It is recommended that local road authorities consider a two-lane section type, with a center turn lane where needed, as the preferred design for CSAH 11 to function as a rural bypass. In so doing, the land needed for future right of way will be reduced, and a 150-foot corridor would be sufficient for future preservation. Further, “Future Corridor” preservation signage should be installed along CSAH 11 as soon as practical. Finally, the County should secure sufficient right of way during the platting process for CSAH 11.

6.4 12TH AVENUE RECOMMENDATIONS

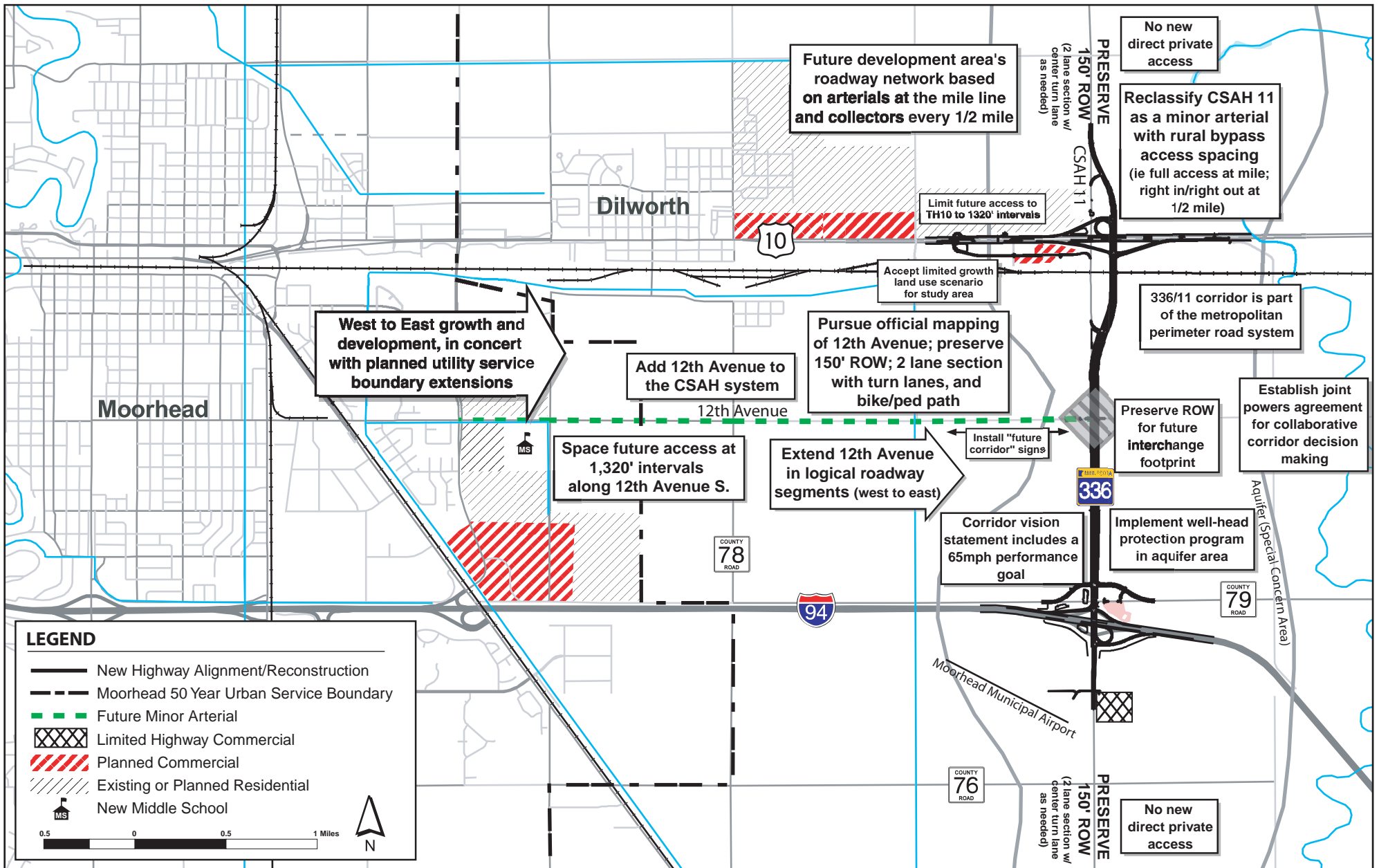
1. Local agencies should pursue official mapping and other right of way preservation strategies for the 12th Avenue corridor. A two-lane section type should be considered, with turn lanes provided, as needed, for the preferred design for an extension of 12th Avenue. A 150-foot right of way would be sufficient for the planned functions of this future corridor, including a Class 1 bike path (as recommended by the FM-COG) Bicycle and Pedestrian Plan) as well as all necessary drainage requirements. The installation of “Future Corridor” signs would also help ensure limited access, harmonious adjacent land uses, and appropriate building setbacks.
2. All future access onto 12th Avenue should be initially spaced at 1,320-foot intervals, consistent with FM-COG’s Access Policies, and upon annexation and future development, the subsequent urbanization may permit closer access spacing later, or encourage alternative access methods (shared access, backage roads, internal circulation).
3. Clay County should add a portion of 12th Avenue South to its County State Aid Highway (CSAH) system.

6.5 TH 336/CSAH 11 CORRIDOR MANAGEMENT ACTION PLAN

Table 12 presents a proposed action plan implementing the Management Plan recommendations as summarized above and, where possible, these actions are graphically depicted in Figure 10. Actions are organized by jurisdiction and by immediate, short- and long-term timeframes. In instances where actions are attributed to a Joint Powers Board, Section 7 of this report should be referenced for an explanation of what this board is intended to be and how it may function.

**TABLE 12
TH 336/CSAH 11 Corridor Management Action Plan**

Timeframe	Responsibility	Activity
Immediate (within 1 year)	FM-COG	Reclassify CSAH 11 as a Minor Arterial roadway in the new FM-COG Plan
		Incorporate Mn/DOT's rural bypass access spacing parameters into metropolitan access guidelines
	Clay County	Prohibit new direct private property access on CSAH 11; allow current private access until major reconstruction occurs; and then consider consolidation, alternative access or right-in/right-out if appropriate
		Install corridor preservation signage along CSAH 11
		Install "Future Corridor" signs along 12th Avenue
		Add a portion of 12th Avenue South to the County's CSAH System
		Incorporate Moorhead's Wellhead Protection Plan recommendations into pertinent local zoning and subdivision ordinances
	Dilworth/ Clay County	Utilize the "Limited Growth" land use scenario for the sub area's future land use plan, thereby limiting development along TH 336
Affected Local Governments	Prepare joint powers agreement (JPA), per suggestions provided in the Corridor Management Plan, prepare the corridor's overlay district as part of the JPA, and secure each affected jurisdiction's approval	
Affected Local Governments	Establish Joint Powers Board with duties described in Section 7	
Short term (2-5 years)	Moorhead/ Clay County/ Dilworth	Preserve a 150-foot right of way and complete official mapping along 12th Avenue
		Space future access along 12th Avenue at 1,320 foot intervals
	Clay County/ Mn/DOT	Preserve ROW for the possible future construction of the 12th Avenue/TH 336 interchange
		Pursue official mapping for the 12th Ave/TH 336 interchange
	Clay County	Permit access on CSAH 11 consistent with Mn/DOT rural bypass guidelines
	Dilworth	Continue developing Dilworth's system of local and collector streets, for the planned growth area north of TH 10 and to 336, consistent with the Corridor Plan's recommendations (see Section 5.3 and Figure 9)
Limit access of Dilworth's development area to 1,320-foot spacing along TH 10		
Long term (6-10 years)	Moorhead/Dilworth	Enforce the orderly expansion of Moorhead and Dilworth's city limits
	Clay County/ Mn/DOT	Ensure that the 12th Avenue and TH 336 intersection continues to operate without the need for a traffic signal
	Clay County	Consider a two-lane section type, with a turn lane for the CSAH 11 as the preferred design to function as a rural bypass, and preserve 150-foot right of way



7.0 COLLABORATIVE DECISION-MAKING PROCESS

The Steering Committee believed that preparation and adoption of the TH 336/CSAH 11 Corridor Management Plan was an important action; however, for the Plan to be most effective, the Committee felt it should also propose a collaborative decision-making process to implement the plan. The Committee felt this process must address the complex interjurisdictional nature of the study area. Further, it should provide a method for the cooperative implementation of the Plan, especially as implementation relates to the official land regulation powers currently held by several political subdivisions. This decision-making process should also assure that all current regulatory authorities continue to have a voice in the future development along the corridor. Also, the Committee felt the collaboration process should define roles, responsibilities and timeframes for conversion to a new decision-making process, if agreeable, so that jurisdictions and landowners have advanced notice and information on the new process, and can adjust accordingly.

7.1 CURRENT GOVERNANCE WITHIN STUDY AREA

Previous studies have noted the complexity of overlapping jurisdictional powers in this general urban growth area (i.e., the eight townships surrounding the Cities of Dilworth and Moorhead). Most recently, the *Minnesota Extraterritorial Corridor Preservation Planning Study* (December 2001) discussed this issue. The Planning Study primarily focused on such issues as right of way preservation, access management, functional classification and pavement-width standards. While not proposing any new alternate decision-making model, it did discuss the existing jurisdictional regulatory situation. It noted that Cities, Townships and the County have or could exercise zoning, subdivision, platting and planning powers in the area, and that these decisions could affect the transportation network. It made suggestions for each jurisdiction to consider concerning specific amendments to their respective regulatory practices to improve corridor preservation activities. Implementation of these suggestions has not been fully achieved at this time.

The study area for the TH 336/CSAH 11 Corridor Management Plan is somewhat smaller than the 2001 Plan's scope; however, the complexity of overlapping governance powers is more concentrated. Table 13 presents the seven jurisdictions that exert some form of decision-making in the corridor area. These jurisdictions include four townships, two cities and Clay County. Additional special purpose agencies, such as the Buffalo-Red River Water District and the County Soil Conservation District also have powers that indirectly affect land development, and therefore, the transportation network. Further, State regulatory agencies (e.g., Minnesota Pollution Control Agency, Department of Health and Department of Natural Resources) also have interest and powers that apply to the corridor. Finally, Moorhead Public Service, as part of its draft Wellhead Protection Program, is proposing 19 specific land use-related measures be adopted by appropriate jurisdictions to protect the Buffalo Aquifer. For these reasons, the above groups' representatives were included or added to the Corridor Management Steering Committee early in the study process.

TABLE 13
Governance Matrix for Study Area

Jurisdiction	Zoning Ordinances	Subdivision Regulations
Moorhead Township	Yes	NONE
Glyndon Township	Yes	NONE
Moland Township	NONE	NONE
Elmwood Township	NONE	NONE
Clay County	Clay County zoning covers all areas of the County including Moorhead and Glyndon Townships, even though they have their own ordinances	Has authority within townships except for areas within Dilworth and Moorhead extraterritorial boundaries
Dilworth	Within the city limits	Within the city limits and extraterritorial boundaries
Moorhead	Within the city limits	Within the city limits and extraterritorial boundaries

Table 13 documents the overlapping zoning powers of the Moorhead and Glyndon Townships, and Clay County. Additionally, the two cities exercise subdivision authority within their extraterritorial areas, even though this area is in the County, and the County subdivision powers cover all four townships.

Planning, zoning and subdivision powers regulate new development, building expansion, platting, land use, and various layout and design factors including important transportation system elements (e.g., right of way, access, street width, etc.) Thus, any management of the TH 336/CSAH 11 Corridor and ancillary roadways will be greatly affected by these land development regulatory powers. Further, the multi-jurisdictional nature of corridor suggests that complications could arise in implementing the TH 336/CSAH 11 Corridor Plan recommendations, unless a collaborative decision-making process among these sovereign jurisdictions is established. The Steering Committee early in the study process identified overlapping jurisdictional powers as an issue that must be addressed by this study.

7.2 EXAMPLES OF GENERAL COOPERATIVE DECISION-MAKING OPTIONS

The Steering Committee discussed various general models to achieve more collaborative decision-making in the study area, as it relates to implementation of this Plan's corridor management recommendations.

One option discussed was periodic staff coordination meetings to apprise each of upcoming issues/developments. A current example of this model, in the Fargo Moorhead area, is the as-needed meetings among floodplain administrators held to coordinate planning and regulatory activities, and to cooperatively establish mitigation and emergency preparedness efforts.

A second model considered by the Steering Committee was the product of the 1997 Fringe Area Land Use and Transportation Study for Cass County. This collaborative, informal communication method was proposed and sporadically implemented by Fargo, West Fargo and Cass County in an effort to maintain the long-range recommendations of the planning effort. By cooperative agreement, contained in the Plan's recommendations, staff and elected leaders from the jurisdictions were scheduled to meet when changes to the extraterritorial area's land use or transportation plans were proposed by one of the planning partners. This process provided for improved communications regarding development, but it did not bind any of the governments to joint implementation of the discussion and conclusions. This mechanism over time lost its effectiveness as a dispute resolution process.

Another model examined by the Steering Committee, which requires more formal arrangements, but is recognized by State statutes, is a joint powers agreement between participating entities. Currently, two examples exist that have direct applicability to the TH 336/CSAH 11 Corridor Management Plan and its affected jurisdictions.

One is a joint powers agreement that was approved by Moorhead, Clay County and Moorhead Township regarding zoning for the municipal airport, located in the southern end of the study area. The jurisdiction of this joint zoning board pertained to the area designated as "Area A." Here the joint board, composed of representatives from the three entities, adopted zoning regulations for the airport. The administration of the regulations was provided by Moorhead.

Procedural provisions of the Moorhead zoning ordinance applied, and all approvals, permits, appeals, etc. were processed through the City of Moorhead zoning administration, the Moorhead Planning Commission and Moorhead City Council. If non-Moorhead entities on the joint zoning board desired to appeal a City decision, they were considered interested parties and were provided the right to appeal. All non-Moorhead joint power entities agreed to waiver and withdraw their independent zoning authority for “Area A.” This agreement also contained provisions for a designated “Area B.” Here, the zoning regulations and the administration of zoning were maintained by the jurisdiction containing the property in question. However, provisions in the agreement noted that if “Area A” was annexed by Moorhead, then this agreement was terminated. The airport area (i.e., Area A) was annexed into the City in the late 1990s.

A somewhat similar and currently in affect joint powers agreement addressing shared land use planning and regulatory powers is the City of Moorhead-Oakport Township-Clay County joint powers agreement. This agreement was prepared in 1990, as part of the orderly annexation process for the area. In this example, not only are land use planning, zoning, subdivision, building and fire code regulations addressed, but also utility services, bikeway/pedestrian paths/parks, street design and drainage issues. This agreement establishes a joint powers board composed of the elected officials from the affected entities. The Board exercises all regulatory administration and planning powers for Joint Powers Territory, and the Board utilizes Moorhead’s pertinent ordinances and codes, as extended into this area.

Any changes or amendments to these regulations for the Joint Powers Territory must be approved by all three entities’ governing bodies before they can take effect. Further, Clay County and Oakport Township mutually agreed to exclude from this area the application of their own ordinances and codes pertaining to zoning, subdivision, land use and building regulations.

Also, for the Joint Powers Territory, the County and Townships agreed to contract with Moorhead on a fee basis for administration, enforcement and support services. The joint powers agreement provides a specific zoning map and district regulations (rural residential and transitional) for the area with permitted uses, accessory uses, conditional uses, lot and setback requirements, exceptions, etc. Also specific subdivision regulations are provided by Moorhead for the Joint Powers Board to administer. These regulations address cost of improvements, easements, street design and drainage. Further, building and health rules, wastewater treatment service and water service provisions are included in the joint powers agreement, and the Joint Powers Board has the authority to approve these permits or services. This joint powers agreement has functioned well over the past decade and remains in effect.

7.3 SPECIFIC MANAGEMENT OPTIONS APPLICABLE TO THE TH 336 CORRIDOR

After a review of these general cooperative decision-making examples, the Steering Committee developed and discussed seven specific land management options most applicable to the TH 336 Corridor. These options reflect a variety of comments received at previous Steering Committee meetings. Listed below are the options prepared by the Committee for further consideration:

1. Maintain existing situation (see Table 13 in the TH 336/CSAH 11 Corridor Management Study Area for a matrix of governance powers).
2. Maintain the existing situation, but the County would establish a special overlay zoning district for the target area. Within this district, any rezoning would require a conditional use permit, and the permit process would require the County to seek input from Moorhead and Dilworth governing bodies before the County Planning Commission and Board could approve any rezoning.
3. Establish a Joint Powers Agreement between Clay County, the City of Dilworth and the City of Moorhead for the target area, with the understanding that Clay County would continue to administer its zoning ordinance for the area, but it would utilize the TH 336/CSAH 11 Corridor Management Plan's Limited Growth Scenario (which reflects the County's current zoning map). Before a rezoning or plat approval could occur, the two cities governing bodies must agree, and then if Clay County also finds the actions advisable, it could occur. (Glyndon Township would not be involved in the concurrence process, since as currently practiced, the Township already has zoning powers; however, these are superseded by the County's zoning powers, if conflicts arise.)
4. Establish both a Joint Powers Agreement and Joint Powers Board among the two cities, the township and the County. The Joint Powers Board would review rezones and make recommendations back to the four entities. In turn, the non-County entities' governing bodies could take positions on this recommendation, and notify the County Planning Commission and Board of their points of view. The County would consider, but as now, it would have ultimate authority on any rezoning actions. Further, the County's current official controls would of course remain in force and would be the basis for land management decisions, and County staff would administer the County zoning ordinance as they do now; however, they would use the Corridor Management Plan's Limited Growth Scenario as the land use plan for the target area.
5. Establish a Joint Powers Agreement among the four affected governments, and organize a Joint Powers Board that is autonomous and has full decision-making authority over the target area. New zoning and subdivision ordinances would be cooperatively established for the target area, and approved prior to their enforcement by all participants. Further, the Corridor Management Plan's Limited Growth Scenario would be utilized as the land use plan for the official control decisions, and County staff would provide support and administration services (or if they are short-staffed, either city could perform the staff functions).

6. Exercise the legal option (MN Statute 462.357) for either or both cities to extend their zoning powers into the unincorporated territory lying within two miles of each city's limits; however, by state law these options could only be implemented if the County and Glyndon Township withdraw their current zoning powers from the area. If both cities exercised this option, their extraterritorial zoning powers would overlap; thus, they would need to cooperatively establish zoning power boundaries for each city or agree to some kind of mutual zoning decisions process between them for the overlap area. Under this option, it is envisioned that the cities would extend their current zoning ordinance provisions and zoning districts to the area, and of course, the respective city staff and city planning commissions would administer their ordinances. However, these zoning districts and zoning decisions be implemented in accordance with the Corridor Management Plan's Limited Growth scenario.
7. Annexation of important sensitive areas within the target are by either or both cities, thereby simplifying the land management and official control decision-making process.

The Steering Committee, based on a review of the specific options available and the members' own local experiences, by consensus, indicated support for a joint powers agreement as the most appropriate decision model to implement the TH 336/CSAH 11 Corridor Management Plan. Among the joint power options, they felt the Oakport-Moorhead-Clay County Agreement was the most suitable example. However, the Steering Committee members believed that input from senior level County and City staff should be sought on the specifics of this proposal.

7.4 PREFERRED COOPERATIVE DECISION MAKING MODEL FOR THE CORRIDOR

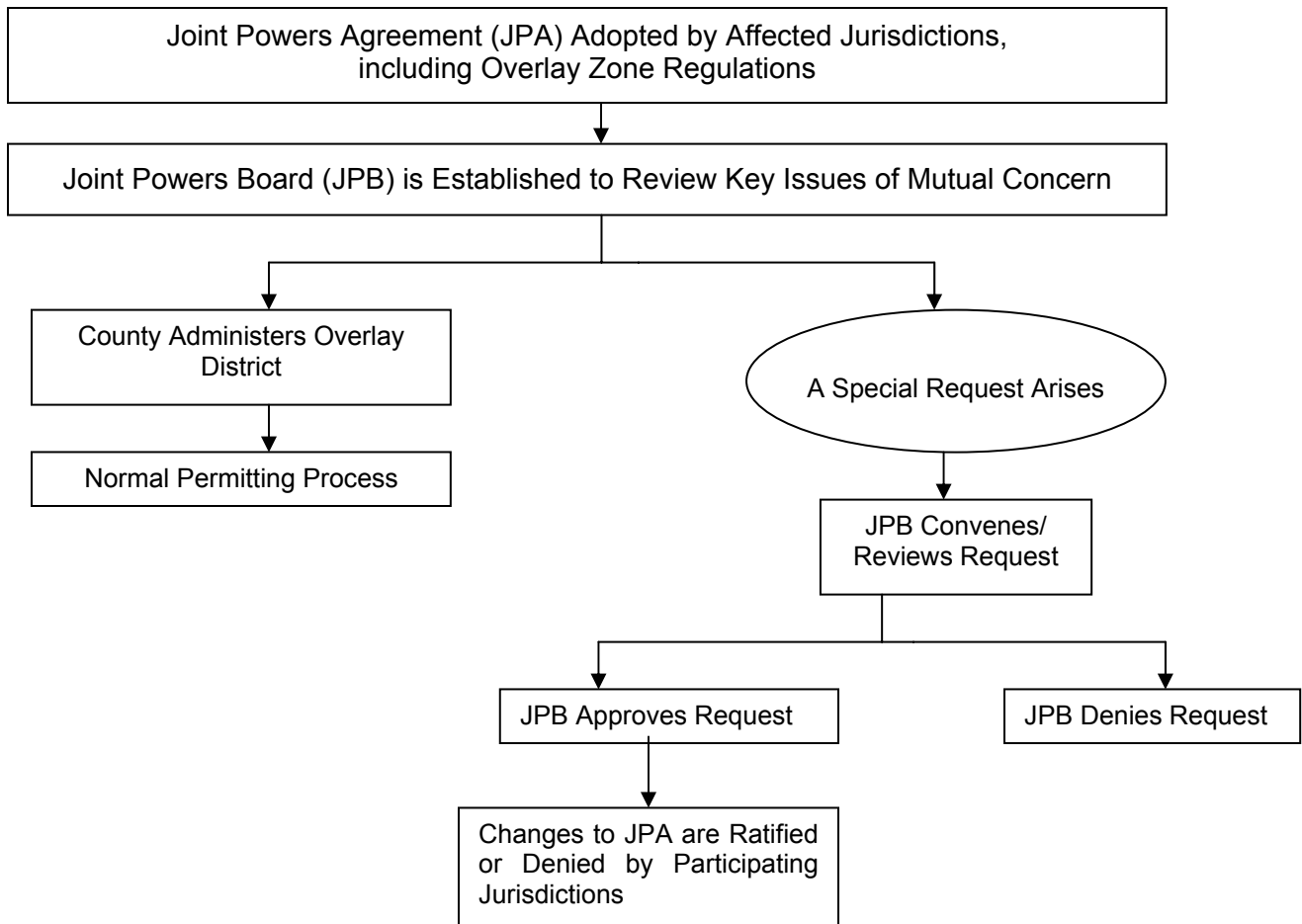
Based on the options presented by the Steering Committee, a cooperative decision-making process was further discussed and mutually agreed to by the Clay County Administrator, the Dilworth City Administrator and the Moorhead City Manager. This process was further revised after input from planning commissions and government bodies. Fundamental elements of the decision-making framework include:

- Preparation and execution of a Joint Powers Agreement (JPA) between Clay County, the City of Dilworth, the City of Moorhead and Glyndon Township. The JPA, among other things, would:
 - Provide a preamble that explains the justification, need, purpose and functions of the proposed intergovernmental collaborative decision process and its effect on land use decisions that impact this critical transportation corridor
 - Establish a Joint Powers Board (JPB) to consider special situations.
 - Establish a new overlay-zoning district for the corridor, which would reflect the "Limited Land Use" scenario provided in the Corridor Management Study.
 - The overlay district would clearly define its objectives, for example:
 - Protection for groundwater supplies
 - Support for the County Comprehensive Plan's agriculture preservation policies
 - Respect for the Moorhead fifty year utility service boundary

- Preservation of Mn/DOT's major transportation investments
- Compliance with each City's Comprehensive Plan policies and recommendations
- Promotion of orderly and contiguous municipal growth
- Provision for unique economic development opportunities, if approved as a special situation by the JPB
- The overlay district would affect land one-mile on either side of TH 336/CSAH 11 between CR 76 and 15th Avenue North.
- The overlay zone would be prepared jointly by the planners/zoning administrators from each of the four jurisdictions and must be approved by each jurisdiction's governing body before this collaborative decision-making process is established and implemented.
- If annexation occurs within the target area, that section of the overlay district would be withdrawn from the JPA's cooperative decision-making process, while the process would continue for the remaining area until such time as the parties decide further adjustments are necessary.
- The day-to-day administration of overlay district regulations would be by the County, its staff, planning commission, governing body and established appeals process, with the County issuing building permits, making conditional use permit request findings, completing certificates of zoning compliance, and enforcing rules regarding violations/penalties.
- However, in instances where certain development criteria are met, or key exceptions requested, which differs from the objectives of the overlay district, then the Joint Powers Board (JPB) established by the JPA would meet to discuss the matter. Such triggers or requests might include:
 - Urban utilities or services that extend beyond either City's planned service boundary are desired or required
 - Certain development size, or density or non-permitted uses are proposed
 - Land development activities that are not permissible under the Wellhead Protection Program are requested
 - Potential threats to the aquifer or the transportation facilities are possible from the proposal
 - A special exception to the land use plan or overlay district's rules are requested
 - A zoning reclassification for a portion of the overlay district is proposed
 - A conditional use permit is requested

- The Joint Powers Board would be constituted (per MN Statute 462.3585) with equal representation from the four affected jurisdictions and these representatives would be appointed from the governing bodies. (Moorhead Public Service and Mn/DOT could provide ex-officio membership.) The JPB would convene to hear the request, and make a determination on the request.
- In instances where a determination by the JPB affects the JPA in any way, said changes must be ratified by each of the participating jurisdictions (Clay County Board of Commissioners, Dilworth City Council, Moorhead City Council and Glyndon Town Board).
- The following “decision tree” represents the process and possible outcomes of this collaborative decision model:

CORRIDOR COLLABORATIVE DECISION MODEL



7.5 DECISION-MAKING OPTIONS, FINDINGS AND RECOMMENDATIONS

1. Governance issues in the area, especially as they relate to interjurisdictional land use planning, zoning, subdivision ordinances are complex and some overlapping powers are evident in the Corridor Managements study area. Land management decisions can have significant effects on the transportation network, and due to the multi-jurisdictional nature of the corridor, some type of collaborative decision-making process should be established to insure the recommendations of the TH 336/CSAH 11 Corridor Management Plan are successfully implemented.
2. A variety of cooperative decision-making examples already used in the area were reviewed, and the Steering Committee, based on members' past experience and knowledge of the jurisdictions, developed a list of seven specific options for further consideration by senior administrative staff of each City and the County, and then planning commissions and governing bodies of affected jurisdictions.
3. County and City staff recommend a collaborative decision-making process, which has been tailored to the unique situation found along the TH 336 Corridor. This framework for cooperative decisions assures all interests are equally involved in managing the corridor's growth. The process would be established by a joint powers agreement and it would utilize an overlay zoning district for the target area that reflects the limited land use scenario recommended by the Corridor Management Study, as well as defined objectives for the corridor. A joint powers board, composed of equal representation from Moorhead, Dilworth, Glyndon Township and Clay County, would consider special situations, or require special exceptions to the overlay district. Any board decisions that would affect the original agreement, in any way, would have to be ratified by each of the four participating jurisdiction governing bodies.

APPENDIX A

CORRIDOR VISION STATEMENT

APPENDIX A

TH 336/CSAH 11 CORRIDOR VISION STATEMENT

The TH 336/CSAH 11 corridor is an important transportation connection between US Highway 10 and Interstate 94. In addition, it links the Fargo-Moorhead regional trade center to western Minnesota. The corridor provides access to important services and manufacturing in Fargo-Moorhead; serves as a conduit for moving agricultural, commercial and manufactured products; and facilitates recreational movement between the lakes in west-central Minnesota and the Fargo-Moorhead regional trade center.

As a result of the role the TH 336/CSAH 11 corridor fulfills, the safe and efficient movement of people and goods is of primary importance to the economy of Minnesota and North Dakota, as well as all of the communities and areas that the corridor serves. In an effort to maintain and/or enhance the safety and performance of the corridor, TH 336 has been classified as a Medium-Priority Interregional Corridor. CSAH 11 is not classified in Mn/DOT's Interregional Corridor System; however, it has been designated as a collector in the local transportation network by the Fargo-Moorhead Council of Governments. The Council's long-range transportation plan also includes the 336/11 corridor as the eastern segment of a metropolitan perimeter road system. Further, Mn/DOT is in discussions with Clay County regarding the possibility of rerouting US 75 onto the 336/11 corridor.

Current performance levels for the corridor were estimated using the travel time formula developed for the Interregional Corridor System. Travel time estimates suggest that existing performance along TH 336 is slightly below the targeted speed of 55 miles per hour. Improvements currently under construction, such as an interchange at the junction of TH 10 and TH 336, a new interchange connecting Interstate 94 and TH 336 and reconstructing TH 336 as a four-lane facility will improve existing performance. These improvements also indicate that TH 336 will perform above the target speed of 55 miles per hour in the future, as long as traffic signals are not allowed to proliferate along the central portion of the corridor.

To preserve/improve the current performance and safety of TH 336/CSAH 11 and to plan for the future needs of the corridor, the corridor partners have recommended a performance goal of 65 miles per hour for the entire corridor. While this goal is not required to be met in every part of the corridor, the partners would like to achieve this average speed over the entire corridor. This goal will be achieved by addressing poorly performing areas of the corridor through the current capital investment program and by future land use and access planning.

Improvements to and development along the corridor should also consider the corridor context. This includes preserving prime agricultural land and remaining sensitive to natural resources in the area such as the aquifer that provides drinking water for the Moorhead area. It also includes respecting the community values of those living and working along the corridor, as well as understanding the public cost that would be incurred from leap-frog development patterns.

APPENDIX B

STEERING COMMITTEE ROSTER

APPENDIX B

STEERING COMMITTEE ROSTER

Jack Cousins, Chairman	Clay County Engineer
Bruce Albright	Buffalo-Red River Watershed District
Jack Frederick	Minnesota PCA
Mike Howe	Minnesota Dept. of Health
Kevin Kassenborg	Clay County Soil and Water District
Wade Kline	FM Metro COG
Arvid Leiseth	Moorhead Township
Tim Magnusson	Clay County Planning Department
Cliff McLain	Moorhead Public Service
Bob Merritt	Minnesota DNR
Brad Monson	Mn/DOT - District IV
Dave Pederson	City of Glyndon
Jeff Schaumann	Moorhead Planning Department
Trygve Skolness	Moland Township
Terry Thompson	Glyndon Township
Stan Thurlow	City of Dilworth
Bob Zimmerman	Moorhead Public Works Department

APPENDIX C

**ENDORSEMENT
RESOLUTION**

**RESOLUTION
TO
ENDORSE TRUNK HIGHWAY 336/ CSAH 11 CORRIDOR
STUDY AND MANAGEMENT PLAN**

WHEREAS, Minnesota's State Transportation Plan recognizes the significance of interregional highway corridors in providing citizens and businesses throughout the State of Minnesota with high quality access to recreational, educational, employment and health care opportunities, and to the transport of products and services produced by our local economy to regional, national and global markets; and,

WHEREAS, Trunk Highway 336 has been identified by the Minnesota Department of Transportation as a Medium Priority Interregional Corridor that enhances the economic vitality of the State, and providing essential access for northwestern Minnesota and eastern North Dakota counties and cities to major economic markets and cultural centers including the Fargo-Moorhead metropolitan area; and,

WHEREAS, community leaders, property owners, and road authorities have identified growing travel demand and development pressure as a concern with potential negative consequences for mobility and safety along the TH 336/CSAH 11 Corridor, with the potential to degrade the performance level now provided by the corridor, with resulting implications for the economy and quality of life of the region; and,

WHEREAS, the Minnesota Department of Transportation has undertaken a \$25 million reconstruction program for the TH 336 Corridor to upgrade safety, resolve auto-rail conflicts, improve traffic flow and facilitate heavy truck and agricultural equipment movement, and all jurisdictions desire to protect this major transportation system improvement; and,

WHEREAS, the Fargo-Moorhead Metropolitan Council of Governments and its member jurisdictions have prepared and adopted the Metropolitan Transportation Plan which, since 1986, has identified Trunk Highway 336 and CSAH 11 as an important segment of the designated Metropolitan Beltway System thus documenting the corridor's critical role in the movement of people and goods around the metropolitan area; and,

WHEREAS, expanded economic development is an important objective for Clay County and its jurisdictions, and the TH 336/CSAH 11 Corridor offers, with appropriate planning and inter-jurisdictional cooperation, future opportunities for such growth, if it does not conflict with identified physical, environmental and infrastructure constraints, and

WHEREAS, the TH 336/ CSAH 11 Corridor exhibits certain sensitive environmental issues such as overlaying the Buffalo Aquifer which supplies municipal and rural drinking water, and bisecting prime agricultural lands, therefore it is recognized that the corridor's future management plan must transcend transportation issues, and should also consider existing and future land use plans, urban service boundaries, existing agricultural preservation policies, multi-jurisdictional regulations, and groundwater protection programs.

WHEREAS, it is imperative at this critical time, with major investments underway and continued growth occurring in the region, that a long-term vision for the Trunk Highway 336/CSAH 11 Corridor be established, and that steps are identified and initiated to:

1. Preserve the function of the corridor through advanced planning, not only for the Trunk Highway 336/CSAH 11 Corridor but also for the local supporting street systems and land use and development patterns; and,
2. Establish a plan of action for the development of cooperative planning and programming activities which will proactively address current and future needs; and,
3. Secure the needed funding to pursue the vision established for the Trunk Highway 336/CSAH 11 Corridor.

NOW THEREFORE BE IT RESOLVED, the TH 336/CSAH 11 Corridor Management Plan's recommendations reflect the input of the Corridor Steering Committee, abutting property owners, interested citizens, state transportation officials, and relevant resource agencies and it should be considered a valuable resource for corridor partners; however adoption of this endorsing resolution does not imply approval of any of the land use scenarios discussed in the Plan; rather, adoption of this resolution will serve as the first step in initiating a process to establish a collaborative decision making model for the TH 336 Corridor, which will ultimately determine the sub area's land use, interjurisdictional governance structure and corridor development activities.

FURTHERMORE BE IT RESOLVED, the (insert City, County, Township, etc.) of (insert name of city, county, township, etc.), if affected, agrees to establish and participate in the recommended collaborative decision making process presented in the Corridor Management Plan so as to address all critical multi-jurisdictional issues that may arise in the future.

FURTHERMORE BE IT RESOLVED, the (insert City, County, Township, etc.) of (insert name of city, county, township, etc.) recognizes the regional significance of the corridor in supporting the regional economy and intends to incorporate the appropriate elements of the Trunk Highway 336/CSAH 11 Corridor Management Plan's vision, strategies and policies into updates of the (insert City's County's Township's, etc.) land use and transportation plans, as well as zoning and subdivision ordinances.

FURTHERMORE BE IT RESOLVED, the (insert City, County, Township, etc.) of (insert name of city, county, township, etc.) endorses the vision and corridor management plan for Trunk Highway 336/CSAH 11.

BE IT FURTHER RESOLVED, the (insert City, County, Township, etc.) of (insert name of city, county, township, etc.) is committed to working in partnership with Mn/DOT and the other corridor partners to achieve the vision and implement the pertinent recommendations of the Trunk Highway 336/CSAH 11 Corridor Management Plan.

Approved and adopted by:

name
Chairman, Clay County Board of Commissioners

name
President, Glyndon Township Board

name
Mayor, City of Dilworth

name
Mayor, City of Moorhead