Appendix K

CSAH 1 Local Land Use & Transportation
Technical Memorandum
RICE COUNTY
CSAH 1
CORRIDOR PRESERVATION STUDY

LOCAL LAND USE & TRANSPORTATION
TECHNICAL MEMORANDUM

BMI PROJECT NO. T42.21955
FEBRUARY 20, 2007
1.0 PURPOSE

The County State Aid Highway (CSAH) 1 Corridor Preservation Study purpose is to identify a safe and efficient corridor alignment option for further planning, preservation, and environmental analysis based on an objective evaluation of alternatives, including consideration of:

- Regional transportation system
- Local land use and transportation
- Environmental and cultural resources

The west limit of this study begins at approximately Baldwin Avenue and extends to just east of Trunk Highway (TH) 246. The location of existing CSAH 1 and the study area are illustrated in Figure 1 of the CSAH 1 Corridor Preservation Study Report.

This technical memorandum provides an overview of potential CSAH 1 planning alignment concepts’ compatibility to existing and planned local land use and transportation. The two specific objectives were identified related to local and use and transportation. Specific criteria were identified to evaluate each planning level concept’s ability to achieve the desired objective.

FOCUS AREA 2 – Local Land Use and Transportation

Objective 2.1 – The proposed corridor meets the long-term local transportation mobility needs in the Northfield/Dundas area:

Evaluation Criteria:
1. The proposed corridor and the planned local collector street system are able to be integrated.
2. Proposed corridor provides sufficient access to existing and future land uses, while meeting state and county access spacing guidelines.
3. Corridor does not hinder the City of Northfield’s pursuit of a Cannon River crossing.
4. Corridor provides for future bicycle/pedestrian trail continuity to local and regional trails and in a manner that is compatible with the local and regional roadway systems.

Objective 2.2 – The proposed corridor meets the long-term local land use and infrastructure needs in Dundas and Northfield:

Evaluation Criteria:
1. Corridor provides a reasonable opportunity for future land use planning and development, while considering existing plans and development.
2. Corridor allows for the orderly extension of sewer and water trunk line extensions.
3. Corridor minimizes acreage and number of park land impacts.
4. Corridor minimizes impacts to highly desirable future residential areas.
5. Corridor allows for railroad spur lines for future industrial activities.
2.0 EXISTING PLANS

Within the study area Bridgewater Township, City of Dundas, and City of Northfield each have planning and zoning authority for land within their communities. These communities, as well as Northfield Township are the roadway authority for the roads within their jurisdiction. The following summarizes existing comprehensive land use and transportation plans for the various communities within the study area.

Bridgewater Township adopted in 2006 an interim ordinance for the purposes of studying whether they should assume planning and zoning responsibility from Rice County for their township. Currently, they are in the process of developing a comprehensive plan and zoning ordinance. Generally speaking, it is anticipated that land use in the study area located outside of an orderly annexation agreement area will remain focused on agricultural activities and limited rural residential uses.

The City of Northfield’s orderly annexation agreement with Bridgewater Township includes land north of existing CSAH 1 between TH 3 and TH 246. The City’s 2020 Land Use Plan guides this area for residential land uses. The City of Northfield also has an orderly annexation agreement with Northfield Township. A small portion of this area north of County Road 81 and east of TH 246 is located within the study area, and is guided in the City’s Comprehensive Plan for residential uses.

The City of Dundas’ Future Land Use Map illustrates the City’s current limits and areas within the orderly annexation agreement with Bridgewater Township. North of existing CSAH 1 and west of the railroad tracks land is guided for residential uses. The area south of CSAH 1, east of the southerly extension of Cates Avenue, and west of CSAH 8 (Railway Street) is guided for industrial land uses. East of TH 3, south of CSAH 1, and west of CSAH 22 is guided for residential land uses. Commercial land uses are guided to areas that straddle TH 3. The early settled area in downtown Dundas around the Cannon River is guided for residential and mixed land uses.

Rice County’s 2020 Comprehensive Plan and current Zoning Ordinance govern land use within Northfield Township. Land within the study boundary has a land use designation of Urban Expansion Area. The plan recognizes urban expansion of the Cities of Northfield and Dundas and strives to reduce impediments to urbanization and the extension of public utilities. Land located outside of this 1-mile buffer is guided and zoned for agricultural densities.

Bridgewater Township/Dundas Proposed Arterial Road System map illustrates the future roadway system. On the west side of the City of Dundas there is a vision for maintaining and improving the grid system of roadways already established. This includes the north–south roadways of Baldwin Avenue, Cabot Avenue, Cates Avenue, Dundas Boulevard, and Decker Avenue, together with the east–west roadways of Old Dutch Road, 100th Street, existing CSAH 1, 118th Street and CSAH 8/130th Street. Also supported is connectivity to downtown Dundas by means of Hester Street and its Cannon River crossing and TH 3 access. East of TH 3 the existing CSAH 1 corridor, 115th Street, CSAH 20, and Falk Trail are identified. Based on the illustrative alignment of a future CSAH 1 in the Rice County 2020 Transportation Plan, the City conceptually identified a new alignment for CSAH 1 veering south approximately ½ mile east of Cates Avenue crossing the Cannon River and aligning with 115th Street. The City of Northfield does not indicate any future collector corridors intersecting with existing CSAH 1 (110th Street) in their 1998 Transportation Plan.

Maps illustrating Rice County’s Comprehensive Plan and Zoning Map, the City of Dundas’ Future Land Use Map, Bridgewater Township/Dundas Proposed Arterial Road System, and the City of Northfield’s 2020 Land Use Plan and 1998 Transportation Plan are attached to this memorandum for reference purposes.
3.0 PLANNING ALIGNMENT CONCEPT COMPARISON

Six (6) planning alignment concepts, including some variations of these concepts, were developed to best achieve the corridor objections outlined in Section 2.0 of the overall CSAH 1 Corridor Preservation Study. Planning alignment concepts are included in Appendix D of the CSAH 1 Corridor Preservation Study Report. This technical memorandum discusses each planning alignment concept’s ability to meet the long-term local transportation mobility, local land use, and infrastructure needs in the Northfield/Dundas area.

3.1 LOCAL TRANSPORTATION

The ability to accommodate local traffic through the use of local collector roads is necessary to preserve the function and role of each roadway in the overall roadway network. Planning alignment concepts were evaluated based on their ability to meet this objective, without compromising access spacing or regional mobility. Concepts 1 and 2 achieve this objective based on their ability to accommodate a continuous route between Decker Avenue and CSAH 8 and a frontage road on the east side of TH 3 between Hester Street and CSAH 20. Concept 5 variations are likely to meet this objective, however design challenges with accommodating a grade separated (i.e, overpass or underpass) of the Union Pacific Railroad tracks and maintaining access to CR 78 will need to be considered. Concept 4 will not meet this objective, because of the close proximity of the railroad and CR 78 does not allow for a grade separated railroad crossing while maintaining access to CR 78. Concepts 3 and 6 are unlikely to meet the object due to the inability to achieve a frontage road on the east side of TH 3.

Concepts were evaluated based on their ability to provide sufficient access to existing and future land uses, while still meeting access spacing guidelines. Concepts 1, 2, and 6 would likely achieve this objective. Concept 4 would not achieve the objective due to challenges with providing access to commercial areas in and around the TH 3/Hester Street intersection, as well as the access closures at 1st Street, 3rd Street, and Archibald Street. Concept 3 was not likely to meet the objective due to access closures at 1st Street, 3rd Street, and Forest Street, along with the inability to achieve an eastern frontage road to CSAH 3. Concept 5 provides sufficient access to commercial areas along TH 3 however results in substandard access spacing between TH 3 and Cannon Road. Provided acceptable traffic operations can be met and the Cannon Road access to the concept 5 corridor remain open, this alternative provides good access to existing and future land uses.

The City of Northfield has a desire to maintain the opportunity for a future Cannon River crossing at Jefferson Parkway, and recognizes planning associated with the location of a future CSAH 1 crossing could impact their possibility. The Cannon River in this area is designated by state rules as a recreational wild and scenic river and is afforded special protection under DNR and local shoreland regulations. Generally, the further north a concept is located the better ability it has to attract trips from the City of Northfield and TH 19 to I-35 and negate the need for a crossing at Jefferson Parkway. The further south a concept is located, the less traffic from the City of Northfield will be drawn to the corridor and the more likely a Jefferson Parkway river crossing will be pursued by the City of Northfield. The DNR has indicated their preferred planning alignment concepts are Concept 4, because it makes use of the current crossing on CSAH 1/Hester Street, and Concept 6, because it makes use of TH 3’s existing river crossing. Concepts. As a result, Concepts 1, 2, 3, and 6 would likely result in a need for a river crossing at the Jefferson Parkway, and Concepts 4 and 5 could negate the need. Planning alignment concepts 4 and 5 could be viewed as an advantage by the City of Northfield, as it would provide an opportunity to share in the expense of project costs, while still achieving their goal of providing an alternative route to TH 19 across the Cannon River.

All alternatives are expected to provide future bicycle and trail continuity to local and regional trails in a manner that is compatible with local and regional roadway systems.
3.2 Local Land Use
The ability to provide a reasonable opportunity for future land use planning and development, while considering existing plans and development was reviewed. Concept 1 requires a low number of right-of-way relocations and still allows for industrial and residential development as envisioned in the City of Dundas’ Future Land Use Plan. Concept 1A has less impact on land use planning in the City of Dundas than Concept 1B since the alignment west of TH 3 is mostly located outside of the orderly annexation agreement area. Concept 1B’s alignment further to the north clips into more land guided for urbanization. Concept 1 impact vistas for existing and future residential areas located on top of the bluff east of TH 3 due to significant cuts into the bluff and associated woodlands.

While it would be possible to integrate Concept 2 into Dundas’ future industrial land uses located in the southwest portion of the City, the concept’s diagonal alignment introduces challenges to maximize land use since parcel and building sizes tend to be larger and harder to site than non-residential uses.

Since most of the area along Concept 3 has already developed and will impact and require the relocation of several existing land uses. Both Concept 3A and 3B impact the Dundas baseball field, and Concept 3A requires relocation of the baseball field.

Concept 4 includes several right-of-way relocations to existing homes and commercial businesses along TH 3. Concept 4 also impacts a park located along the Cannon River south and east of Hester Street and Railway Street. Concept 4 impact vistas for existing and future residential areas located on top of the bluff east of TH 3 due to significant cuts into the bluff and associated woodlands.

Concept 5C has less impact to future residential land uses due to the angle of its northward projection occurring outside of the orderly annexation area than Concept 5A and 5B. Concepts 5A and 5B follow a drainage way and bisect an area guided for residential land uses, providing an opportunity to enhance the drainage area and the visual aspects of corridor.

Concept 6 requires a low number of right-of-way relocations and still allows for industrial and residential development as envisioned in the City of Dundas’ Future Land Use Plan

3.3 Infrastructure
Concept 2 is located in very close proximity to a 16” trunk water main, located between Railway Street (CSAH 8) and TH 3. Two trunk sewer mains (two parallel force mains) and a 14” trunk water main are located within the northerly ditch and slope area of existing CSAH 1 right-of-way from Highland Parkway at the Bridgewater Heights subdivision on the east to Cannon Road on the west. These lines go to the north at Cannon Road into Northfield, and have the potential to be impacted under Concept 5, which could result in possible reconstruction/relocation to maintain depth and location requirements. There are trunk water and sewer mains along CSAH 78 serving the Stoneridge Hills Subdivision, on the westerly side of the Cannon River. These mains could be affected under Concept 5 depending on the reconstruction/realignment of CSAH 78 in this area and the specific design associated with Concept 5.

Concepts 1, 2, and 6 may have some impact on the ability to site future railroad spur lines associated with the industrial land uses guided in the southwest corner of the City of Dundas, however it should not impede connection to the main railroad line.
4.0 PREFERRED PLANNING ALIGNMENT

A hybrid of Concepts 5B and 5C was determined to be the Preferred Planning Alignment that would be preserved based its ability to best accommodate the regional transportation system, local land use and transportation, while minimizing impacts on environmental and cultural resources.

The primary objectives that Preferred Planning Alignment achieves as well or better than the other concepts relative to local land use, transportation, and infrastructure include:

- Minimizes impacts to existing and planned land uses
- Provides the opportunity for consideration of higher intensity land uses (e.g. neighborhood commercial) near the intersection of CSAH 1/Hester Street extension (i.e. ½ mile east of Cates Avenue) and/or CSAH 1/Decker Avenue
- Has less bluff and quality wooded area impacts and preserves associated vistas for future residential land uses through use of the existing CSAH 1 alignment
- Achieves desired access spacing on the preferred planning alignment concept, while accommodating local collector roadway spacing
- Provides convenient access to existing and future industrial land uses located in the southwest Dundas city limits
- Provides convenient access to existing commercial land uses along TH 3 via connections to Cannon Road and Jefferson Road.
- Provides an opportunity for integrating corridor with drainage area restoration goals to improve water quality and visual aesthetics of the corridor
PROPOSED FUNCTIONAL CLASSIFICATION

City of Northfield

LEGEND

- Principal Arterial
- Minor Arterial
- Collector

Northfield Transportation Plan

ANFIELD9703.00

April 1998

FIGURE 17
RICE COUNTY COMPREHENSIVE PLAN

Scale: 1: 250,000

Map 3: Comprehensive Plan for Rice County, Minnesota