

**Access Management Plan for the Trans-Canada Highway
Between Winnipeg and Headingley**

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Introduction

The management of development along major highways has always been a significant challenge for transportation professionals. The ability to successfully meet that challenge is usually linked to the degree of integration achieved between the transportation planning and land use planning process. For Manitoba, the integration of those two planning processes has traditionally been relatively weak because of the different provincial agencies and levels of government involved.

Historically, Manitoba Transportation and Government Services (MTGS) has not had a formalized approach for the establishment of cooperative access management plans with local governments. The usual approach has been to undertake a functional design study to identify the future highway upgrading plans and associated long-range access requirements. During the development of the functional design, the local government would be consulted and upon its completion the local government would, by resolution, indicate their support of the plan. Unfortunately, it has often been the case that over time and with changes in the local government, new councils have not felt obliged to support resolutions of a previous councils and it then became difficult to protect for the future highway plans.

This has particularly been the case where MTGS has failed to begin the acquisition of the necessary right-of-way due to the long-range nature of the upgrading plan. As a result, MTGS has often found itself at odds with local governments on development and access issues despite the existence of documented local support for the functional design plan.

For the Trans-Canada Highway between Winnipeg and Headingley, MTGS decided to try a new approach that would effectively integrate the transportation and land use planning processes. It was hoped that this approach would be more effective in ensuring commitment to the highway management plan by the affected local government.

Background

As shown in Figure 1, the Winnipeg to Headingley, portion of the Trans-Canada Highway is approximately 7 km in length and consists of a four lane undivided section of highway with a rural cross-section. The most easterly 6 km has limited development, while the most westerly kilometre passes through the hamlet of Headingley. This piece of highway currently acts as the transition between the rural high-speed highway to the west and the low speed urban arterials of the City of Winnipeg to the east.

Prior to the creation of the Rural Municipality of Headingley, this section of highway was located in the City of Winnipeg and the City and Province had agreed to a by-pass, running to the north of the existing highway as part of the long term upgrading plan for the Trans-Canada Highway.



Figure 1 Study Area

In 1993, the community of Headingley voted to separate from the City of Winnipeg and became the Rural Municipality (RM) of Headingley. The creation of the new municipality changed the status quo as the new RM wished to encourage development whereas the City of Winnipeg had previously frozen development outside the Perimeter Highway. In developing its land use plans, the new RM of Headingley planned to zone the land along both sides of the existing highway to “Highway Commercial” as a means of providing a suitable tax base for the Municipality. The highway by-pass plan developed in the 1980’s was now facing opposition from the new Municipality and, short of purchasing the right-of-way for the new highway, MTGS had no means of protecting the alignment without the cooperation of the Municipality.

To overcome this hurdle, the Department and the Municipality agreed to work cooperatively on an integrated land use development and highway upgrading plan. MTGS would support

highway commercial development, within certain limits, in exchange for the Municipality supporting an on-alignment highway upgrading plan that would accommodate both highway traffic and development-generated traffic. By working together, the two levels of government were able to develop a cost effective “on-alignment” highway upgrading and access management plan that could be implemented in stages as development progressed.

Proposed Design Standards

The existing highway is a four lane undivided roadway with direct property access and a 70 km/h speed limit. Current average annual daily traffic volumes are in the order of 19,000 vehicles per day (vpd), including approximately 25% trucks.

The design standards and cross-section proposed for the highway had to achieve a balance between maintaining a reasonable through traffic flow and providing access to the adjacent land. Direct property access to the highway was not desirable and the shallow depth of the highway commercial zoning was not conducive to the development of an internal road system. In addition, the expected slow and incremental pace of development did not suit development methods that required large up-front costs.

Following a thorough review of the various highway upgrading alternatives, a four lane divided suburban arterial street standard was selected as the best solution. This design would include a raised median, open ditches and paralleling service roads as illustrated in Figure 2. Strategic intersections would be located at approximately 500m to 800m spacing and the Municipality would have to direct all development to the proposed intersections. The speed limit for the highway would remain in the 70 – 80 km/h range and the intersections would be signalized as safety and/or intersection capacity deficiencies warranted. Both MTGS and Headingley formally adopted the proposed functional design in 1996 following a public open house, where 86% of the attendees indicated support for the plan.

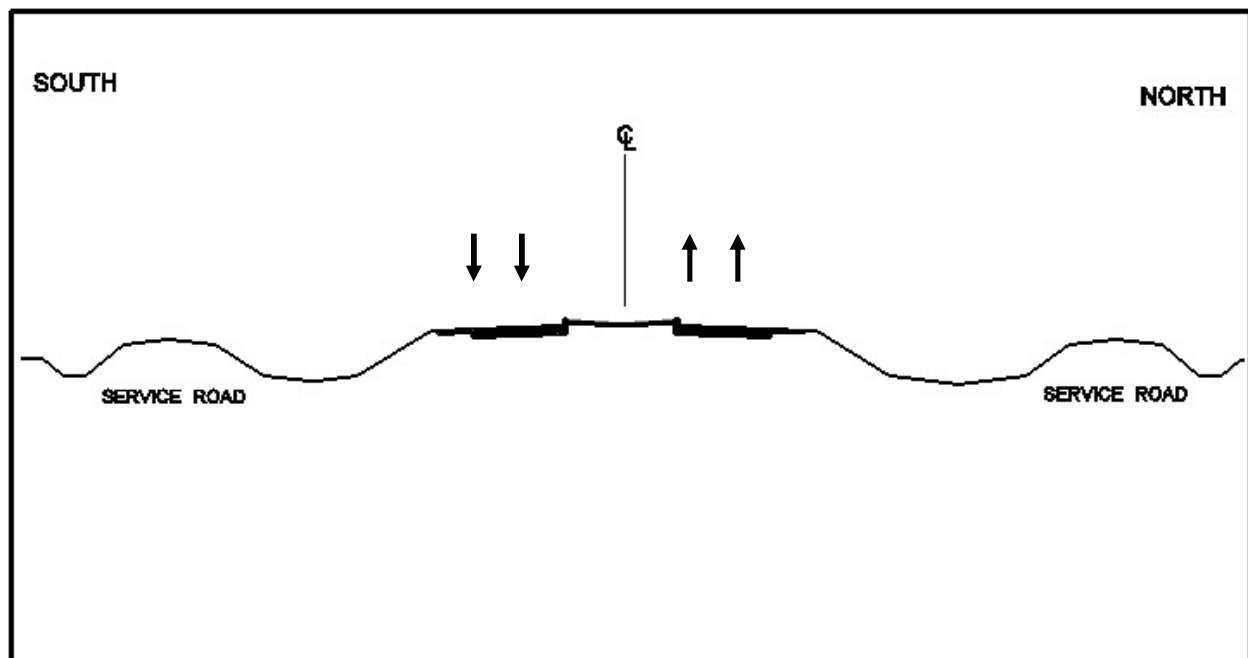


Figure 2 Proposed Cross-Section

Access Management Plan

Given the national importance of the Trans-Canada Highway, the safety implications of unrestricted development, and the expected growth of highway commercial business, a new approach had to be developed to ensure long-term cooperation between the two levels of government. Fortunately, in this case, both MTGS and the Rural Municipality of Headingley recognized the importance of maintaining a safe Trans-Canada Highway, while at the same time allowing for further development of commercial establishments adjacent to the highway.

Both MTGS and Headingley agreed that something more formal than a council resolution would be required to ensure the success of the access management plan. The drafting of a formal Memorandum of Understanding (MOU) between Headingley and Manitoba was seen as the best way to achieve the required level of commitment from both parties. The intent was that the MOU would not only outline the highway upgrading and access management requirements contained in MTGS's proposed design, but would also outline the jurisdictional responsibilities for the various components of the project (highway widening component under MTGS jurisdiction and the service road component under Headingley's jurisdiction). More importantly, this document would provide the means by which both MTGS and Headingley could acquire the right-of-way required for future upgrading and service road construction as development occurred (and prior to the commencement of the highway upgrading project), thereby solidifying both parties' commitment to the long range plan. Finally, the intent was that a formal review period of five years be adopted for the MOU to allow for revisions and adjustments as required throughout the life of the plan.

The development of the MOU was a co-operative, though painstaking, process. As the first document of its kind for MTGS, several drafts and revisions were required over a period of more than four years before the Minister of Transportation & Government Services and the RM of Headingley approved the final document. Despite this long time frame, the high level of trust established between the two levels of government allowed several aspects of the plan to be informally instituted as the need arose due to ongoing commercial development during the drafting of the MOU.

The resulting MOU, adopted in May of 2001, is divided into two main sections. The first part of the document provides a detailed description of the highway upgrading and access management plan based on MTGS's functional design. The second part of the document explicitly describes the implementation process (i.e. right-of-way acquisition and service road construction) under three distinct time frames: prior to highway upgrading, at the time of highway upgrading, and after highway upgrading.

The most innovative and positive aspect of the MOU has been the provision to acquire right-of-way and construct service roads as development progresses but prior to highway upgrading. The MOU differentiates the method to be used for right-of-way acquisition during the re-zoning process and the subdivision process in order to comply with the varied requirements of the

Municipal Act, the Highway Protection Act, and the Planning Act. During the re-zoning process, Headingley acquires the land required for both service road construction and highway widening and Manitoba then purchases the highway-widening component of the land from Headingley. During the subdivision process, Headingley only acquires the land required for service road construction while Manitoba acquires the land required for highway widening directly from the applicant.

The MOU states that it is MTGS's intent to construct the service roads at the time of highway upgrading. However, the MOU also notes that when a section of service road right-of-way has been acquired prior to highway upgrading and development is imminent, MTGS can consider constructing the service road required to access that development in advance. Of course, if government funding and priorities do not permit MTGS to construct the service road in advance, Headingley or the developer have the option of constructing the service road at their own cost.

Implementation

Functional design plans and access management plans can provide a solid basis for future highway development, but the implementation of these plans is the real test of their effectiveness. In the case of the Trans-Canada Highway through Headingley, implementation, in the form of land acquisition and service road construction, has been taking place since the completion of MTGS's functional design in 1996. Much of this work was undertaken in an ad-hoc manner while the access management plan was being developed. Following the completion of the formal access management plan, both land acquisition and service road construction have continued in a much more clearly defined manner. The next logical step in the implementation process, highway upgrading, is now in the planning stages.

The acquisition of highway right-of-way, for both highway widening and service road construction, was provided for early on in the functional design process by securing yearly funding in the highway construction program. This provision, though somewhat unusual for MTGS, was seen as essential to securing Headingley's co-operation in the development of the access management plan. Although it took several years to finalize the access management plan, the process by which right-of-way would be acquired prior to highway upgrading was agreed to early on and was used to acquire a number of parcels of land as they were either re-zoned or subdivided. This process has continued since the formal signing of the plan. To date, a total of 11 individual parcels of land totaling 2.9 hectares have been acquired by the RM of Headingley or by MTGS through this process. These acquisitions represent approximately 14% of the total right-of-way requirements for the highway-upgrading project.

As might be expected, MTGS is generally reluctant to commence construction of service roads prior to the detailed design and construction funding being in place. As noted earlier, this position is reflected in the formal access management plan, which explicitly states that it is MTGS's intent to construct service roads at the time of highway widening. Despite this, MTGS has recognized that there may be cases where a subdivision or re-zoning request will provide an opportunity to consolidate existing accesses by constructing the service road immediately. In these cases, where there is an obvious benefit to be gained in terms of highway operations and

safety, MTGS has financed the construction of service road segments. To date, four service road segments have been constructed. These service roads provide access to a large truck stop, a building manufacturer, and two multi-tenant commercial developments, and have allowed for the immediate or future closure of five highway access points.

The implementation of right-of-way acquisition and service road construction in the pre-highway upgrading period have been important in establishing the credibility of MTGS's future plans for the Trans-Canada Highway with the RM of Headingley. The impact of these activities on overall highway operations and safety has been minor, MTGS has recognized the need to do more. Given MTGS's current funding levels, it was recognized that it would be unlikely that a project as large as the Trans-Canada Highway upgrading project could be programmed for construction in its entirety so another approach was required. As a result, MTGS undertook a study aimed at identifying and prioritizing the critical elements of the overall upgrading plan which, if implemented in the near-term, would solve the most pressing operational and safety problems on the highway.

An examination of traffic volumes, accident histories, and operational problems focused MTGS's attention on one key issue, highway access. The major operational problem on this portion of the Trans-Canada Highway was identified as the left turn, both from the highway to the development and from the development to the highway. In the first case, the lack of a protected left turn bay combined with the high volume of highway traffic leaves the turning vehicle in an uncomfortably exposed and potentially dangerous position. In the second case, the driver has significant difficulty in finding a suitable gap in the four lanes of highway traffic and, out of frustration, is compelled to make a turn using a smaller gap thereby increasing the potential for a collision.

The most cost-effective solution to the problem was quickly identified as the construction of isolated channelized and signalized intersections with connecting service roads to provide access to the intersection for adjacent properties. This solution had already been partially applied (i.e. the construction of a channelized/signalized intersection, but without connecting service roads) previously at the Race Track Road and Bridge Road intersections. In order to identify what combination of intersection channelization/signalization, service road construction and access closure would provide the largest benefit in terms of operations and safety, the following matrix was developed to compare the various critical factors:

INTERSECTION LOCATION	LEFT TURN VOLUME (SADT)	COLLISION HISTORY (1995-1999)	ACCESSES MOVED TO SERVICE ROAD
Bobiche Ave.	482	5	2
Dodd's Road	245	12	0
Bridge Road	Channelized and signalized previously		
Husky / Coverall	355	19	7
Cameron St.	No count available	4	6
John Blumberg G.C.	1070	17	1
Hydro R.O.W	0	3	4
Camp Manitu Rd.	95	10	0

Race Track Rd.	Channelized and signalized previously
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Individual intersection upgrades were then prioritized based on a combination of left turn traffic volume, collision history, and access consolidation as shown below:

1. John Blumberg Golf Course
2. Husky Truck Stop / Coverall
3. Urban section through Headingley (Bobiche Street to Bridge Road)

The remaining intersections were not ranked, as the need to upgrade any of these in isolation would likely only be justified based on new development.

The Department completed the upgrading of the John Blumberg Golf Course intersection in 2005 and will be upgrading the Husky Truck Stop / Coverall intersection in 2006. As a result of a new large development coming on-line in 2006, it was necessary to accelerate the upgrading of the Camp Manitou Road intersection and construct it in 2006 as well.

Conclusion

The creation of the new Rural Municipality of Headingley in 1993 represented not only a challenge for MTGS but an opportunity. By working closely with the municipal government, MTGS was able to coordinate their highway planning process for the Trans-Canada Highway with Headingley's land use planning process.

The establishment of a close working relationship with local officials allowed MTGS to develop a plan for upgrading the existing four-lane undivided highway to a four-lane divided highway with a raised median and service roads to provide access to both existing and future developments. MTGS and the Municipality determined that by providing a limited number of strategically placed intersections and by controlling access, the existing highway could be upgraded to safely accommodate both highway traffic and development-generated traffic for a significant period of time.

The creation of a complimentary access management plan that included provisions to initiate land acquisition and service road construction prior to the programming of the highway upgrading itself, lent a great deal of credibility to the plan in the eyes of local officials. This credibility was vital in ensuring the long-term viability of the overall plan and allowed MTGS to initiate the staged upgrading of selected intersections with the confidence that they will fit into the overall strategy for twinning the Trans-Canada Highway between Winnipeg and Headingley.

The success of integrating the highway and land use planning process has been amply demonstrated in the Headingley example. With this success in mind, MTGS plans to use the model of the access management plan MOU to develop similar agreements with other municipalities bordering major highways in the province.