NORTH GLANBROOK INDUSTRIAL BUSINESS PARK
TRANSPORTATION MASTER PLAN

CLASS ENVIRONMENTAL ASSESSMENT

Hamilton

ecoplans

MRC

August 2006

Committee of the Whole
REPORT 06-016

9:30 a.m.
July 12, 2006
Council Chambers
Hamilton City Hall
71 Main Street West, Hamilton

Present:	Mayor L. Dilanni Councillors B. Bratina, P. Bruckler, C. Collins, T. Jackson, B. Kelly, M. McCarthy, D. Mitchell, S. Merulla, B. Morelli, M. Pearson, T. Whitehead, A. Samson
Absent with regrets:	Councillor M. Ferguson – Illness Councillor D. Braden – Out of Town Councillor McHattie – Out of Town
Also Present:	G. Peace, City Manager P. Barkwell, City Solicitor K. Christenson, City Clerk M. Gallagher, Coordinator

COMMITTEE OF THE WHOLE PRESENTS REPORT 06-016 AND RESPECTFULLY RECOMMENDS:

1. **To Incorporate Certain City Land Into Various Streets by By-law (PW06002(e) (Affects Wards 7, 9 and 11) (Item 4.1)**

   (a) That the following City land be incorporated into the following streets:

Candlewood Drive	Parts 4 and 5 Plan 62R-11998	Ward 9
Fulmar Way	Part 3 Plan 62R-17514	Ward 11
Hampton Brook Way	Parts 5, 6, 7, and 8 Plan 62R-17514	Ward 11
Hollybank Way	Part 1	

	Plan 62R-17514	Ward 11
Pebble Valley Avenue	Part 3 Plan 62R-17522	Ward 11
Rosebury Way	Part 2 Plan 62R-17514	Ward 11
Springstead Avenue	Part 2 Plan 62R-17522	Ward 11
Tanglewood Drive	Blocks 106, 107 108, 109, and 112 Plan 62M-1016	Ward 11
Thames Way	Parts 4, 9, 10, and 11 Plan 62R-17514	Ward 11
Theodore Drive	Parts 5, 6, 7, 8, 9, and 10 Plan 62R-13766 Parts 3 and 6 Plan 62R-17313	Ward 7

(b) That the By-Laws to carry out the incorporation of the said land into the foregoing streets be prepared to the satisfaction of the Corporate Counsel and be enacted by Council;

(c) That the General Manager, Public Works, be authorized and directed to register the By-Laws.

2. **Red Hill Valley Project Financial Status Report – May 2006 (FCS06004f/ PW06004f) (City Wide) (Item 4.2)**

That Report (FCS06004f/PW06004f) respecting Red Hill Valley Project Financial Status Report – May 2006 be received.

3. **Intersection Control List (PW06001(e)) (Item 4.3)**

That the appropriate By-law be presented to Council to provide traffic control as follows:

	Intersection		Stop Direction		Location / Comments / Petition	Ward
	Street 1	Street 2	Existing	Requested		
(a)	Midanbury Way	Thames Way	N/C	E/B Stop	N. of White Church, W. of Up. James	11
(b)	Midanbury Way	Hollybank Way	N/C	W/B Stop	N. of White Church, W. of Up. James	11
(c)	Rosebury Way	Thames Way	N/C	E/B Stop	N. of White Church, W. of Up. James	11
(d)	Thames Way	Provident Way	N/C	N/B Stop	N. of White Church, W. of Up. James	11
(e)	Wills Cres. (N. leg)	Tanglewodd Dr.	N/C	W/B Stop	N. of Binbrook, E of Hwy 56	11
(f)	Wills Cres. (S. leg)	Tanglewood Dr.	N/C	W/B Stop	N. of Binbrook, E of Hwy 56	11
(g)	Wilbur Dr. (S. leg)	Wills Cres.	N/C	S/B Stop	N. of Binbrook, E of Hwy 56	11
(h)	Wilbur Dr. (N. leg)	Wills Cres.	N/C	N/B Stop	N. of Binbrook, E of Hwy 56	11
(i)	Maggie Johnson Dr.	Tanglewood Dr.	N/C	E/B Stop	N. of Binbrook, E of Hwy 56	11
(j)	Green Brook Dr.	Owen Pl.	N/C	E/B Stop	W. of Centennial, N. of King St. E	5
(k)	Overdale Ave.	Sunnycroft Ct.	N/C	E/B Stop	S. of Hwy 5, E of Hwy 6	15
(l)	Ray St. South	George St.	E/B & W/B	All Way	S. of King St. W, W. of Queen	1

4. McMaster Graduate Students Association – University Transit Pass (PW06085) (Item 4.4)

That Council authorize the Mayor and the City Clerk to execute the University Transit Pass Extension Agreement between McMaster Graduate Students Association, McMaster University, and the City for the period September 1, 2006, to August 31, 2007.

5. Permanent Closure of Walkway between 72 and 73 Glenview Place, Hamilton (PW06090/PED06221) (Ward 8) (Item 4.5)

That the application of 1639142 Ontario Inc. to permanently close the public walkway between 72 and 73 Glenview Place, Hamilton and transfer the lands to the abutting owners, be approved, subject to the following conditions:

(a) That the City Solicitor be authorized and direct to prepare a By-law to permanently close the walkway;

(b) That the appropriate By-law be introduced and enacted by Council;

(c) That the Development & Real Estate Division of the Planning and Economic Development Department, be authorized and directed to sell the closed walkway to the owners of 72 and 73 Glenview Place, in accordance with the Procedural By-law for the Sale of Land, By-law No. 04-299;

(d) That the City Solicitor be authorized and directed to register a certified copy of the By-law permanently closing the walkway in the proper Land Registry Office ;

(e) That the By-law permanently closing the walkway not take effect until a certified copy of the By-law is registered in the proper Land Registry Office.

6. **Monthly Status Report of Tenders and Requests for Proposals for May 17, 2006 to June 20, 2006 (FCS06016(d) (City Wide) (Item 4.6)**

That Report FCS06016(d) respecting Monthly Status Report of Tenders and Requests for Proposals for May 17, 2006 to June 20, 2006, be received.

7. **Tenant Advisory Committee meeting of April 21, 2006 (Item 4.7)**

That the April 21, 2006 minutes of the Tenant Advisory Committee meeting, be received.

8. **Tenant Advisory Committee meeting of May 12, 2006 (Item 4.8)**

That the April 28, 2006 minutes of the Tenant Advisory Committee meeting, be received.

9. **Agriculture Action Plan – Phase One – Margaret Walton, Consultant, Planscape (Item 5.1) (No Copy)**

(a) That the presentation on the Agriculture Action Plan – Phase One be endorsed;

(b) That Council continue to support the project's vision, goals, objectives and criteria for success in their next phase of work.

10. **Sewer Use By-law 04-150 Review – Phase 2 and Phase 3 (PW04050b) (City Wide) (Item 5.2)**

(

(a) That the discharge limits for the treatable parameters identified under Phase 2 of the Sewer Use By-law Limit Discharge Review and as described in Report PW04050b remain unchanged in Sewer Use By-law 04-150, as amended ("Sewer Use By-law 04-150");

(b) That the inclusion of organic compounds and the associated discharge limits recommended for all non-treatable parameters under Phase 3 of the Sewer Use By-law Limit Discharge Review, as described in Report PW04050b be incorporated in Sewer Use By-law 04-150;

(c) That Sewer Use By-law 04-150 be amended to implement the new parameter discharge limits contained in subsection (b), in a form satisfactory to the City Solicitor.

11. Cost to Complete the Red Hill Valley Project (PW06087/FCS06075) (City Wide) (Item 5.3)

(a) That the General Manager of Public Works be authorized to award contract C11-122-05 for the Contract Growing, Installation and Maintenance of Plant Materials for the Red Hill Valley Project to the Grand River Employment & Training Inc. (GRETI) in the amount of $5.4 Million ($4.4 Million program with a $1 Million contingency);

(b) That the General Manager of Public Works be authorized to award contract PW-06-243(RHV) for the Red Hill Valley Project Mainline Paving – Mud Street Interchange to QEW Interchange to the lowest bidder in the amount of $30,323,391.13;

(c) That the overall Red Hill Valley Project (RHVP) budget be increased from $429,020,000 to $439,015,000 for expenditures required to complete the project (Appendix A summarizes the costs of remaining works which include $3,000,000 in contingencies and $925,000 in related works undertaken on the behalf of others);

(d) That the budget increase of $9,995,000 be funded from the sources of funding identified in Table 2 of report (PW06087/FCS06075) (no levy impact);

(e) That the Acting Director of the RHVP be authorized to negotiate and award the "Growing of Plant Materials for the RHVP Neighbourhood Tree Planting Program" for the provision of 110,000 trees with GRETI;

(f) That Item K, "Native tree nursery initiative" be deleted from the Outstanding Business List of the Public Works, Infrastructure & Environment Committee.

12. Urban Development Corporation - Hamilton Realty Capital Inc. (PD03106(b)/FCS04076(a)) (Item 5.4)

(a) That the Unanimous Shareholders' Agreement, attached as Appendix 'A' as amended, to Report PD03106(b)/FCS04076(a), be endorsed as the governing document regarding the operation of the Urban Development Corporation, which Corporation will be known as the "Hamilton Realty Capital Inc.", or such other name as the parties to the Agreement may agree, and that the Mayor and Clerk be authorized and directed to execute the Unanimous Shareholders' Agreement;

(b) That concurrently with the execution of the Unanimous Shareholders' Agreement, the Mayor and Clerk be authorized and directed to execute the Management Services Agreement which is appended as Schedule "B" as amended to the Unanimous Shareholders' Agreement attached to Report PD03106(b)/FCS04076(a);

(c) That Council release $2 million from Account # 8200203107 (the "Fund"), originally funded from the Hamilton Future Fund, to the Hamilton Realty Capital Inc. in the form of a loan in accordance with the terms of the Unanimous Shareholders' Agreement; and,

(d) That Council release the balance of funds, in the approximate amount of $180,000 (the "Operating Grant"), from Account # 8200203107, originally funded from the Hamilton Future Fund, to the Hamilton Realty Capital Inc. to fund the operating costs of the Hamilton Realty Capital Inc. at such time as entitled to receive the funding under the Planning Act.

13. Elected Official Remuneration (CM06016) (City Wide) (Item 6.1)

(a) That the expenditure of up to $10,000 from the Tax Stabilization Fund be approved to engage an independent external expert to conduct a review of the base remuneration, including the one-third tax free portion, for elected officials and the method for determining the annual increase in elected officials' remuneration;

(b) That Human Resources receive the results of the review and submit them to the next Council with recommendations as to base remuneration, the one-third tax free portion and the method for determining the annual increase in elected officials' remuneration.

14. 2006 Tax and Rate Operating Variance Report to May 31, 2006 (FCS06059) (Item 6.2)

(a) That the 2006 Tax and Rate Operating Budget Variance Report to May 31, 2006 be received;

(b) That, if required, a department head must submit to Council requests to exceed their 2006 Departmental Budget and provide Council with mitigation options.

15. Tax Appeal Settlement - Jackson Square (FCS06071) (City Wide) (Item 6.3)

That Report FCS06071 respecting Tax Appeal Settlement – Jackson Square, be received.

16. **Participation of Elected Officials in Evaluating Bid Submissions (FCS06072) (City Wide) (Item 6.4)**

(a) That Finance and Corporate Services report FCS06072 respecting Participation of Elected Officials in Evaluating Bid Submissions, be received,

(b) That staff be directed staff to draft a policy for the consideration of the Corporate Administration Committee that would allow participation of Elected Officials in the evaluation of Requests for Proposals in narrowly defined circumstances.

17. **Accounts Receivable Write-Offs, June 2006 (FCS06074) (City Wide) (Item 6.5)**

(a) That the General Manager, Finance & Corporate Services, be authorized to write-off uncollectible accounts receivable in the amount of $52,986.06 as outlined in Appendix "A" to Report FCS06074.

(b) That the schedule of accounts receivable write-offs (under $1,000) as set out in Appendix "B" to FCS06074 be received for information.

18. **Review of Current Purchasing Practices (FCS06073) (City Wide) (Item 6.6)**

That Report FCS06073 respecting Review of Current Purchasing Practices, be received.

19. **2006 Road Capital Funding Reallocation (PW06082) (Wards 11 and 15) (Item 6.7)**

That the General Manager of Public Works be authorized and directed to proceed with the completion of the tender and award of projects approved under the 2006 Road Rehabilitation program utilizing the appropriation adjustments identified on Schedule A.

20. **Accessible Transit Services (ATS) Review (PW05075(a)) (City Wide) (Item 6.8)**

(a) That a Task Force be established to review improvements, look for efficiencies and make recommendations quarterly, to the General Manager of Public Works respecting Accessible Transit Services;

(b) That the Accessible Transit Services governance structure attached as Appendix A to Report PW05075(a), be approved for a period of three months at which time the Accessible Transit Services Steering Committee will reconvene to determine the appropriateness of the new model and/or revise the model based on a report from the Task Force outlining their initial success or further recommendations;

(c) That the above results be incorporated into a competitive RFP process which will be compiled in 2007 with the approved vendor(s) beginning work in 2008;

(d) That the City program be re-branded which, in turn, would allow both DARTS and Vets the opportunity to individually brand their services;

(e) That there are to be no additional costs as a result of any changes made to the program;

(f) That any savings be applied to enhancing the service;

(g) That a Business Analyst (Trapeze software) be hired, subject to acceptance of this review (currently in Budget, awaiting conclusion of review);

(h) That the Director of Transit and the Manager of Transit Fare Administration & ATS be reaffirmed as Public Works staff representatives on the DARTS Board of Directors as non-voting members;

(i) That Transit staff continue to liaise with the Advisory Committee for Persons with Disabilities and the Seniors Advisory Committee to ensure these Advisory 0Committees have access to City staff regarding the City's paratransit program;

(j) That the report prepared by iTrans Consulting, attached hereto as Appendix B to Report PW05075(a), be received for information;

(k) That Outstanding Business Item M, as listed on the Public Works, Infrastructure & Environment Committee Agenda, be removed.

21. Petition – Upgrade Chester and Chesley Streets (Ward 8) (PW06066) (Item 6.9)

That Report PW06066 respecting Petition – Upgrade Chester and Chesley Streets, be received.

22. Request for Traffic Signal at Highway 8 and Winona Road (PW06084) (Ward 11) (Item 6.10)

(a) That a traffic signal be installed at the intersection of Highway 8 and Winona Road as part of the 2007 Traffic Signal Installation Program;

(b) That the estimated installation cost of $100,000 be added to the 2007 Capital Budget for new traffic signals;

(c) That the item relating to the Petition from Winona residents requesting a traffic light at the corner of Highway 8 and Winona Road be removed from the Public Works, Infrastructure & Environment Committee Outstanding Business List.

23. Train Whistle Cessation – Parkside Drive and CPR Crossing (PW06086) (Ward 15) (Item 6.11)

(a) That the City of Hamilton pass a resolution for train whistle cessation at the Canadian Pacific Railway crossing (Mile 65.67, CPR Hamilton Subdivision) and Parkside Drive in the former town of Flamborough;

(b) That the City of Hamilton and the Canadian Pacific Railway cost share the insurance premiums for protection from any third party claims;

(c) That the item relating to Whistle Blowing at Parkside Drive be removed from the Public Works, Infrastructure & Environment Committee Outstanding Business list.

24. Waste Diversion Ontario (WDO) Funding Shortfall – Budget Mitigation (PW06083) (City Wide) (Item 6.12)

(a) That the $700,000 operating budget shortfall resulting from the reduction in the Waste Diversion Ontario (WDO) funding for the City's recycling program be financed from the Recycling Program Reserve, Department ID No. 112270;

(b) That the City of Hamilton appeal the funding allocated by WDO for 2006 at a cost not to exceed $5,000, and that costs associated with the appeal be funded from the Recycling Program Reserve, Department ID No. 112270;

(c) That the Minister of the Environment be respectfully requested to reconsider funding through Stewardship Ontario in lieu of the in-kind advertising provided by the CNA/OCNA to municipalities.

25. North Glanbrook Industrial Business Park Class Environmental Assessment Transportation Master Plan (PW06089) (Ward 11 with City Wide Implications) (Item 6.13)

(a) That the North Glanbrook Industrial Business Park Transportation Class Environment Assessment Master Plan be endorsed;

(b) That the General Manager, Public Works Department, be authorized and directed to file the North Glanbrook Industrial Business Park Transportation Master Plan Schedule "B" projects with the Municipal Clerk for a forty-five (45) day public review period;

(c) That subject to finalization of the forty-five (45) day review period, the General Manager, Public Works Department, be authorized and directed to proceed with the design and implementation of the North Glanbrook Industrial Business Park Class Environmental Assessment Master Plan Schedule "B" projects.

26. 2006/07 Winter Control Program Planning Report (PW06091) (City Wide) (Item 6.14)

That the planned improvements to the Winter Control Program be endorsed to increase program effectiveness, efficiency and customer satisfaction.

27. Conventional Transit Fleet Purchase (PW06092) (City Wide) (Item 6.15)

(a) That, for 2006, staff be authorized to:

(i) Purchase five (5) replacement 40-foot Hybrid (Diesel/Electric) Conventional Transit Low Floor buses from the low bidder, New Flyer Industries, at an upset net unit cost of $553,285 and a total upset net cost to the City of $2,766,425;

(ii) Purchase seven (7) replacement 60-foot Articulated Hybrid (Diesel/Electric) Conventional Transit Low Floor buses from the low bidder, New Flyer Industries, at an upset net unit cost of $822,634 and a total upset net cost to the City of $5,758,438;

(iii) Purchase five (5) replacement 40-foot Diesel Conventional Transit Low Floor buses from the low bidder, New Flyer Industries, at an upset net unit cost of $385,840 and a total upset net cost to the City of $1,929,200;

(iv) Expenditures in the amount of $10,454,063 be directed to the 2006 Capital Project 5300683101 to be funded as follows:

(aa) $1,960,000 Ontario Transit Vehicle program subsidy approved 2006 Capital;

(bb) $3,938,000 Transit Fleet Replacement Reserve approved 2006 Capital;

(cc) $742,500 Development Charges (Articulated bus expansion of Route #10);

(dd) $3,813,563 "One-time" dedicated Federal Gas tax for Transit Capital;

(v) Undertake a Marketing initiative, at the direction of the Transit Master Plan Steering Committee to re-brand the current Beeline Express, Route #10;

(vi) Draw $150,000 from the Provincial Gas Tax reserve on an ongoing basis to offset the additional operating costs of a 60-foot articulated bus when replacing a single 40-foot bus;

(b) That Council pre-approve the 2007 Capital Budget for the purchase of:

(i) Seventeen (17) replacement 40-foot Diesel Conventional Transit Low Floor buses from the low bidder, New Flyer Industries, at an upset net unit cost of $385,840 and a total upset net cost to the City of $6,559,280;

(ii) Two (2) 35-foot Trolley Replica buses, to replace 2 Conventional Transit buses, on the basis of a "sole-source" negotiation at an upset net unit cost of $550,000 and a total net cost to the City of $1,100,000;

(iii) Draw $50,000 from the Provincial Gas Tax reserve for 2007 only to provide for the re-introduction of the Gore-to-Shore shuttle beginning in 2007;

(iv) Investigate the potential for co-funding the Operating costs of re-instating the Gore-to-Shore shuttle with Tourism Hamilton;

(v) Expenditures in the amount of $7,659,280 be directed to the 2007 Capital Project 5300783101 to be funded as follows:

(aa) $3,938,000 Transit Fleet Replacement Reserve per 2007 Budget;

(bb) $1,500,000 Transit Provincial Gas Tax Reserve (12-year bus life);

(cc) $2,221,280 Federal Gas Tax;

(c) That staff be authorized and directed to enter into negotiations with Clean Energy for a contract to provide maintenance and CNG fuel supply for the Mountain Transit Centre CNG fuelling station and report back to Council;

(d) That an activity-based costing model be established to monitor and measure the operating costs for hybrid transit fleet and articulated bus fleet and that a report be brought back to Council, at least annually, in advance of the annual budget process as a prerequisite to any further hybrid or articulated bus purchases.

(e) That this be conditional upon the engines being 2007 technology, that 2 - 40 foot CNG buses be substituted for 2 – 40 foot diesel buses and the funding requirements be adjusted accordingly.

28. Hamilton Museum of Steam and Technology – Additional Storage Facility Requirements (CS06010) (Ward 4) (Item 6.16)

(a) That the construction of a storage facility at the Hamilton Museum of Steam & Technology (HMST) be approved at a cost not to exceed $125,000;

(b) That the costs be financed from the following capital, reserve, and operating accounts:

7100558559		HMST Landscape & Signage Project		$72,000
7100341101		Conservation Centre		$40,000
104080		HMST Reserve		$13,000
		Total		$125,000

29. Grants Sub-Committee Report 06-006 (Item 6.17)

(a) Fee Waiver Request – Hamilton and District Chrysanthemum and Dahlia Society (City Wide) (GRA06005(m))

That the fee waiver in the amount of $1,202 for the Hamilton and District Chrysanthemum and Dahlia Society for the period of September 8, 9 and 10, 2006, to utilize the Main Gymnasium at the Dundas Lions Memorial Community Centre, in order to host their annual show and juried competition, be approved.

(b) Fee Waiver Request – Hamilton Professional Fire Fighters Association (Ward 7) (GRA06005(n))

That the fee waiver in the amount of $290 in rental fees, including insurance fees for a charity baseball tournament at Turner Park on June 25, 2006 for 10 hours, for the Hamilton Professional Fire Fighters Association, be approved.

(c) Fee Waiver Request for Children's International Games Golf Tournament (Ward 5) (GRA06005(o))

That the golf fees for the Children's International Games fund raising tournament at King's Forest Golf Course on June 28th, 2006, be waived.

(d) **Fee Waiver Request for Hamilton Regional Indian Centre (Ward 3) (GRA06005(p))**

That the fee waiver in the amount of $420.50 be approved for the Hamilton Regional Indian Centre for the period of June 23 and 24, 2006, to utilize Gage Park and the Gage Park Bandshell for the celebration of National Aboriginal Day.

30. Firefighter Survival Training Program HES06007 (City Wide) (Item 6.18)

(a) That Council grant Hamilton Emergency Services-Fire (HES-Fire) pre 2007 budget approval to fund the purchase of the required equipment to facilitate the implementation of the mandatory Firefighter Survival Training Program as a Health and Safety requirement,

(b) That HES-Fire enacts Policy 11 through the Purchasing Department for the purchase of the Survival Training Trailer in order to facilitate the implementation of the training by the fourth quarter of 2006;

(c) That the shortfall required to complete the Survival Training Program in the amount of $569,238 be funded from the unallocated Capital Reserve Account #108020.

31. 2006 Community Partnership Program for Special Events – New Applications (City Wide) (GRA06008) (Item 6.19)

(a) That the 2006 Community Partnership Program fund the Albion Community Association Inc. in the amount of $7,239.00 as outlined in Appendix "A" to Report GRA06008;

(b) That 2006 Community Partnership Program fund the Ward 8 Citizens Advisory Group in the amount of $3,000.00 as outlined in Appendix "B" to Report GRA06008;

(c) That the $10,239.00 be funded from the unallocated balance in the Special Events stream.

32. Position Paper entitled Improving the Efficiency of the Blue Box Program – an AMO-AMRC Proposal (Item 7.2)

That the City of Hamilton supports in principle the position paper entitled *"Improving the Efficiency of the Blue Box Program – an AMO-AMRC Proposal"*, (AMO being the Association of Municipalities of Ontario AMRC being the Association of Municipal Recycling Coordinators), including the following recommendations:

(a) The Liquor Control Board of Ontario (LCBO) be directed by the Province of Ontario to implement a Deposit-Refund System for alcohol beverage containers sold by the LCBO;

(b) The LCBO be required by the Province of Ontario to source separate, either at their retail outlets or their central warehouses, the alcohol beverage containers into their individual material types, i.e. flint glass, coloured glass, PET bottles, aluminium cans, and aseptic containers, so that the materials can be recycled by the LCBO for the highest and best use and maximizing the revenue earned from the sale of the collecting materials in order to reduce the cost of the Depot-Return system;

(c) The environmental levy already collected by the Province of Ontario from the wine and spirit manufacturers in Ontario be redirected to assist in the implementation of the Deposit-Refund system and to fund any annual short-fall in the operating costs of the deposit-refund system;

(d) The Province of Ontario amend Ontario Reg. 101/94 under the Environmental Protection Act to remove glass beverage bottles from Schedule 1, Part I of Reg. 101/94 so that municipalities are not mandated to collect coloured glass beverage bottles as part of the mandatory blue box management systems under Section 7 of the Regulation;

(e) The Province of Ontario require that all plastic, glass, steel or aluminium food and beverage containers greater than 4 litres in size sold into the Ontario market be permitted only through a deposit-refund system with the manufacturer or first importer responsible for 100% of the cost of managing the recycling of these containers;

(f) The Province of Ontario require the manufacturer or first importer of any new packaging container proposed to be introduced into the Ontario market to commission a life cycle analysis for the new container to determine the environmental and economic impacts of that container on Ontario's municipal Blue Box Recycling Program and establish remedial measures if the container has detrimental environmental or economic impacts, prior to the introduction of said packaging container;

(g) Copies of this resolution be forwarded to the Association of Municipalities of Ontario (AMO) and the Association of Municipal Recycling Coordinators (AMRC).

33. **Niagara GTA Corridor Economic Impact Analysis Study (Item 7.3)**

WHEREAS Hamilton City Council, on May 11, 2005, passed the following resolution as subsection (a) of Item 5 of PWIE Report 05008 respecting Niagara - GTA Corridor EA Terms of Reference:

"That the Ministry of Transportation be advised that the City of Hamilton strongly supports the need for sustainable transportation solutions in the Niagara to GTA area to address congestion, economic growth, and the long term land use framework for the City of Hamilton;"

AND WHEREAS the Region of Niagara has requested the City of Hamilton to participate in a joint Economic Impact Analysis Study of the Niagara-GTA Corridor;

AND WHEREAS the Economic Impact Analysis Study would be an important component of the Environmental Assessment for the Niagara GTA Corridor;

THEREFORE BE IT RESOLVED that the City of Hamilton jointly undertake the Niagara GTA Corridor Economic Impact Analysis Study with the Region of Niagara;

AND BE IT FURTHER RESOLVED that the City of Hamilton's contribution to this study of $100,000 be funded from the City's Unallocated Capital Reserve No. 108020.

34. Council Sitting as Voting Members on the DARTS Board of Directors (LS06010) (no copy)

(a) That Report LS06010 respecting Council sitting as voting members on the DARTS Board of Directors, be received.

(b) That Report LS06010 not be released as a public document.

35. Signage on the Northbound and southbound side of Fruitland Road

That staff be directed to install the following signage on the Northbound and Southbound sides of Fruitland Road between Barton Street and Highway #8:

"Please Refrain from Use of Jake Brakes"

FOR THE INFORMATION OF COUNCIL:

Announcement

Councillor Merulla addressed the current flooding problems in Ward 4.
He thanked Council and the Public Works staff for their support of the established Task Force. The councillor noted that problems have been identified, plans are in place, work scheduled, however 60 – 80 million dollars in upgrades are required. 2.1 million dollars has been allocated through the budget for the Ottawa and Edgemount area. However the Province and the Federal Government need to recognize and provide additional funding.

The Councillor raised concerns with the City's Risk Management and announced that he will be launching a class action lawsuit against the City on behalf the residents affected by the storms.

(a) **CHANGES TO THE AGENDA (Item 1)**

The Clerk noted the changes to the agenda.

(b) **DECLARATIONS OF INTEREST (Item 2)**

None were declared.

(c) **MINUTES (Item 3)**

(i) The Minutes of the special meeting held on June 12, 2006 be adopted as presented.

(ii) That the Minutes of the special meeting held on June 14, 2006 be adopted as presented.

(d) **PRESENTATIONS**

(i) Agriculture Action Plan – Phase One

Sue Coverdale introduced those members in the audience from the Agriculture Community.

Margaret Walton provided a power point presentation highlighting the Agricultural Plan

(ii) Sewer Use By-law 04-150 Review – Phase 2 and Phase 3 (PW04050b) (City Wide) (Item 5.2)

Jim Harnum provided a power point presentation highlighting the following elements of Phases 2 and 3:

Study Outline
Objectives
Environmental Background Review
Parameter Review
Treatable parameters, new parameters for organic compounds, Phase 2 and Phase 3

Staff were directed to make a future presentation to the Pesticide Committee with respect to the issues raised in the by-law.

(iii) **Cost to Complete the Red Hill Valley Project (PW06087/FCS06075) (City Wide) (Item 5.3)**

Chris Murray provided an overview and introduced Allan Arthur, Mary Gartshore, and Ken Parker of the Six Nations Ecological Restoration Team.

A power point presentation provided highlights of the following:
Haudenosaunee – Hamilton Red Hill Agreements
Six Nations Proposal
Evaluation of the proposal
Peer Review Comments

(iv) **Urban Development Corporation - Hamilton Realty Capital Inc. (PD03106(b)/FCS04076(a)) (Item 5.4)**

Ron Marini and Ron Weston of the firm Feltmate Delibato Heagle provided a power point presentation highlighting the following:

Significant changes since 2004
Unanimous Share Holders Agreement
Management Services Agreement

(e) **The following were referred to staff for a report back to Committee of the Whole:**

(i) **Construction of the lay by on Stone Church (Item 7.1)**

Whereas the commercial business at Upper Paradise Road and Stone Church Road West have seen tremendous growth in their customer base over the past few years, causing several traffic and safety related concerns in the neighbourhood;

And Whereas there have been several discussions with numerous area businesses to expedite their clients through the cash register to create a faster turnover in their parking lots in order to minimize the traffic queues on Stone Church Road.

Therefore be it resolved:'

(a) That Public Works staff be directed to construct a layby to increase parking capacity in the neighbourhood on the southern part of Stone Church Road, east of Upper Paradise;

(b) That the project be financed from a source to be determined by Finance staff.

(ii) **Beasley Park**

That staff be directed to report back on the clean up the contaminated site at Beasley Park and include in the report possible funding sources to remediate the site.

(f) **The following motion was withdrawn:**

(i) Tree removal at 93 Taymall Street (Item 7.4)

That staff be directed, on compassionate grounds, and for hardship reasons, to remove the public street tree in front of 93 Taymall Street.

The meeting adjourned at 3:25 p.m.

Respectfully submitted

Mayor L. Dilanni

M. Gallagher, Co-ordinator
July 12, 2006

AFFECTS
WARD 11

CITY OF HAMILTON

PUBLIC WORKS DEPARTMENT
Capital Planning & Implementation Division

Report to:	Mayor and Members Committee of the Whole	**Submitted by:**	Scott Stewart, C.E.T. General Manager Public Works Department
Date:	June 26, 2006	**Prepared by:**	Gavin Norman, P. Eng. Extension 1322

SUBJECT: **North Glanbrook Industrial Business Park Class Environmental Assessment Transportation Master Plan (PW06089) - (Ward 11 with City Wide Implications)**

RECOMMENDATION:

(a) That the North Glanbrook Industrial Business Park Transportation Class Environment Assessment Master Plan be endorsed;

(b) That the General Manager, Public Works Department, be authorized and directed to file the North Glanbrook Industrial Business Park Transportation Master Plan Schedule "B" projects with the Municipal Clerk for a forty-five (45) day public review period; and,

(c) That subject to finalization of the forty-five (45) day review period, the General Manager, Public Works Department, be authorized and directed to proceed with the design and implementation of the North Glanbrook Industrial Business Park Class Environmental Assessment Master Plan Schedule "B" projects.

Scott Stewart, C.E.T.
General Manager
Public Works

EXECUTIVE SUMMARY:

The City has undertaken the North Glanbrook Industrial Business Park (NGIBP) Master Plan following the *Municipal Class Environmental Assessment* to identify a road network that will support the development of the lands in accordance with the current approved land uses identified in the Secondary Plan for the area. The objectives of this study were to:

- Identify an improved transportation network, including transit opportunities, within the NGIBP area to support the planned future development;
- Reduce the potential for traffic infiltration on residential areas that are not planned to be redeveloped;
- Provide improved direct connections to the adjacent freeways and arterial road network; and
- Allow for flexibility in the proposed network to accommodate long-term growth planned for the Airport as accessibility will be required to/from the east.

Issues related to Development

As traffic volumes on the road network increase with new development in the NGIBP and in the Rymal Road Planning Area (ROPA 9), the existing road network will begin to operate in a more congested state, resulting in longer than normal delays both within the study area and on the adjacent road network.

In addition to congestion and accessibility, there are social issues. Concerns noted by residents in the area include the potential increase in noise and pollution as a result of additional traffic.

Storm water management is a significant consideration for new development in the area and critical for the design of future roads. As such, the City has also initiated a Master Drainage Study for the NGIBP and the Hannon Creek subwatershed to determine an appropriate storm water management plan for the area that will also enhance fish and wildlife habitat. This study is ongoing and its recommendations, expected in early 2007, will be implemented through development of City capital projects and private sector development applications. The NGIBP Master Plan can be approved in advance of this study being completed.

Problem Statement/Analysis and Evaluation/Preferred Network

With trunk services in place, and as development occurs, traffic volumes destined and travelling through the NGIBP are anticipated to more than double over the next 10 to 15 years and increase another 50% on full build-out in 20 to 30 years. Through the GRIDS process, substantial employment development is also planned to occur on lands adjacent to the Airport and as a result there will be a need to provide network connectivity between the Airport and lands to the east.

Five road network alternatives for the NGIBP were developed and evaluated including the Do Nothing alternative. The Preferred Network, made up of improvements to existing roads and new roads, was selected following a detailed analysis and evaluation using a defined set of evaluation criteria,. The Preferred Network is shown in **Appendix A** and described below.

The Master Plan

The Master Plan fulfils the requirements for Schedule B projects and outlines additional study that is required for the Schedule C projects that are identified.

Schedule B Projects

- **Nebo Road** (Rymal Road to future Dartnall Road Extension) – roadway reconstruction (2 lanes) with intersection improvements – 2008 (subject to land acquisition).
- **Twenty Road** (600m west of Nebo Road to future Dartnall Road Extension) – roadway reconstruction (2 lanes) with intersection improvements – 2008 (subject to land acquisition).
- **Glover Road** (Rymal Road to 1950m south) – roadway reconstruction (2 lanes) with intersection improvements – timing dependent on development.

Schedule C Projects

- **Dartnall Road Extension** (Rymal Road to Dickenson Road)

  - widen to 4 lanes from Rymal Road to existing terminus at hydro corridor

  - new 4 lane arterial road from existing terminus to Dickenson Road – 2008 to 2010.

- **Twenty Road** (from future Dartnall Road to Trinity Church Road) – Two-lane collector road on a new alignment – timing dependent on development.
- **Trinity Church Road** – (Rymal Road to future Dartnall Road Extension) two-lane arterial road (protect for four lanes). This study is currently underway as part of the Trinity Church Road Corridor Class EA which includes a future 4 lane extension of Trinity Church Road north of Rymal Road to Stone Church Road recommended in the *Rymal Road Planning Area Class EA* – beyond 2008.

There are not any specific Schedule A projects being recommended in the Master Plan because existing roads within the park require significant upgrades; as such they all fall into the Schedule B or C project category.

The development of the road network will be inherently transit supportive and service can be implemented as development in the area warrants it. Opportunities for extending existing transit routes to the area is feasible and the future intersection of Dartnall Road and Twenty Road has been identified as a transit hub as it is central to the area and in an area that is zoned commercial.

BACKGROUND:

In an effort to spur industrial development and make available "shovel ready lands", the City has undertaken the North Glanbrook Industrial Business Park (NGIBP) Master Plan to identify a road network that will support the development of the lands in accordance with the current approved land uses identified in the Secondary Plan for the area.

The study, following requirements of the Municipal Engineers Class Environmental Assessment, was necessary in order to plan for the expected increase in traffic on roadways within and adjacent to the NGIBP when development occurs. It is anticipated that the opening of the Red Hill Valley Parkway (RHVP) in late 2007 could be an

impetus for the development of these lands. In that regard, objectives of this study were to:

- Identify an improved transportation network, including transit opportunities, within the NGIBP area to support the planned future development;
- Reduce the potential for traffic infiltration on residential areas that are not planned to be redeveloped;
- Provide improved direct connections to the adjacent freeways and arterial road facilities; and
- Allow for flexibility in the proposed network to accommodate long-term growth planned for the Airport as accessibility will be required to/from the east.

Current and Future Land Use

Current land uses in the NGIBP are a mix of industrial/commercial, agricultural and residential. The majority of industry and commercial is located along Nebo Road. Residential is scattered in pockets along Nebo Road south of Twenty Road, Glover Road and along Trinity Church Road. Active agricultural lands within the park are almost all being farmed on a lease basis.

The NGIBP has an approved Secondary Plan which allows redevelopment of the area. The types of land uses envisioned include general industrial, prestige industrial and general commercial. There are currently six Draft Plans of Subdivision within the NGIBP; three are draft approved and three are under review (pending). Approved land uses for the NGIBP area are depicted in **Appendix B.**

Concurrent to the Master Plan, the City is also undertaking a review of the Secondary Plan which will include a review of zoning and zoning boundaries to align with the recommendations of this study.

Issues Related to Development

Traffic

The existing road network currently within the NGIBP carries traffic volumes well below its capacity. In addition, all the intersections are operating at good levels-of-service, with minimal delays being experienced at each of the stop-controlled intersections. Outside the NGIBP, Rymal Road and the Lincoln Alexander Parkway are heavily utilized with congestion being experienced on some segments during the peak hours of travel. The stop-controlled legs of the un-signalized intersections along Rymal Road are also experiencing longer than normal delays.

As traffic volumes on the road network increase as a result of new development in the NGIBP and in the Rymal Road Planning Area (ROPA 9), the existing road network will begin to operate in a more congested state, resulting in longer than normal delays both within the study area and on the adjacent road network.

Network connectivity is a key transportation issue as there are currently no direct connections from the NGIBP study area to the Lincoln Alexander Parkway or the future Red Hill Valley Parkway. Without the provision of direct connections, there will be major impacts on the arterial roads adjacent to the NGIBP secondary plan area as NGIBP development traffic will utilize these arterial roads to access the major corridors.

Providing for good highway connections to support the movement of goods and services will support development of the park.

From a broader perspective, the recently completed Airport Master Plan Update (December 2004) noted that the existing arterial road system does not address the specific needs of the airport. As a result, there will be a long-term requirement to provide improved access to the QEW via a direct connection to the Lincoln Alexander Parkway and the future Red Hill Valley Parkway. As noted in the Airport Master Plan Update, the required direct connection could pass through the NGIBP secondary plan area, thus requiring improvements to the existing infrastructure in the study area. This will be addressed in the City-wide Transportation Master Plan.

Social

In addition to congestion and accessibility, there are social issues. While residential development is rural and somewhat sparse, some of the major corridors that lead into and out of the study area have established homes situated on both sides of the roadway. Concerns noted by residents include the potential increase in noise and pollution as a result of additional traffic and the potential for traffic infiltration on rural collector roads adjacent to the study area that are currently less travelled. Thus, any new or improved arterial transportation corridors leading to and within the study area will need to consider the impact on existing residential properties adjacent to the study area.

Natural Environment

The NGIBP lies primarily within the Hannon Creek Watershed; the Hannon Creek is a tributary to the Red Hill Creek. Storm water management is a significant consideration for new development in the area and critical for the design of future roads. As such, the City has also initiated a Master Drainage Study for the NGIBP and the Hannon Creek subwatershed to determine an appropriate storm water management plan for the area that will also enhance fish and wildlife habitat. Its recommendations, expected in early 2007, will be implemented through development of City capital projects and private sector development applications.

ANALYSIS/RATIONALE:

The study followed the approved environmental planning process for Master Plans under the *Municipal Class Environmental Assessment* (Municipal Engineers Association, 2000) and fulfils the requirements for Schedule B Projects and outlines additional work that is required for the Schedule C Projects that are identified.

Phase 1 of the Class EA Process, Problem or Opportunity

In accordance with the Municipal Class EA, municipal roads projects are categorized as Schedule A, B or C projects. Schedule A projects are pre-approved and do not require a formal EA process, Schedule B projects must complete a screening processing, comprising of the first 2 phases of the Class EA planning and design process and Schedule C projects must complete all 4 phases of the process. There are expected to be a number of Schedule B and C projects resulting from this study. The first phase of the Class EA process is to develop a Problem Statement, and the following has been developed for this study:

Problem and Opportunity Statement

A detailed analysis of existing and future land use conditions was undertaken to get an understanding of transportation needs within the Secondary Plan area that will support development. Results of the analysis indicate that as development occurs, there will be a significant increase in traffic on roadways within and adjacent to the Secondary Plan area and upgrades to the road network will be required.

With trunk services in place, and as development occurs, traffic volumes destined and through the NGIBP are anticipated to more than double over the next 10 to 15 years and increase another 50% on full build out in 20 to thirty years. Through the GRIDS process, substantial employment development is also planned to occur on lands adjacent to the Airport and as a result there will be a need to provide network connectivity between the Airport and lands to the east and major transportation corridors such as the Lincoln Alexander Parkway and the Red Hill Valley Parkway.

The following infrastructure improvements are required within the NGIBP in order to provide the area with a transportation network that supports full development and flexibility to both provide good connections to the Airport and address future needs of the City's goods movement strategy:

- A new 4 lane north - south arterial corridor (two lanes in each direction) between Rymal Road and Dickenson Road;
- Upgrades to existing roads to industrial standards;
- Improved east - west routes with connections to Trinity Church Road; and
- Protection for additional north-south capacity of one lane in each direction.

Phase 2 of the Class EA Process, Alternative Solutions

In order to address the problem statement, the second phase of the Class EA process involves the identification and evaluation of all reasonable and feasible alternatives to address the problem. In addition, a general inventory of the natural, social, cultural and economic environments is undertaken, potential environmental impacts identified and a set of evaluation criteria is developed. The criteria is then used to evaluate the alternative solutions and develop a preferred solution, or set of solutions, to address the problem.

Transportation Network Alternatives

The following principles were used to assist in generating five network alternatives:

- Minimize impacts to known environmental features and social concerns;
- Ensure sufficient capacity available to accommodate future demand for the NGIBP Secondary Plan and possible connections to the Airport;
- Allow for north-south and east-west continuity (good connections to the arterial road and freeway network);
- Develop a road network that complements the existing road network adjacent to the Secondary Plan area; and
- Provide for land parcels of adequate size for future development.

The Network Alternatives considered are shown in **Figure 1.**

Assessment and Evaluation of the Alternatives

The development of evaluation criteria allowed for the assessment and evaluation of the five network alternatives. **Figure 2** provides a summary of the evaluation of network alternatives and the selection of the Preferred Network. The Preferred Network is shown in **Appendix A** and described below.

The Preferred Network is a modified version of the network depicted in the approved Secondary Plan shown in **Appendix B.**

Elements of the Master Plan

The Master Plan is intended to:

- Fulfil the Class EA requirements for any **Schedule B** Projects that are identified (improvements and minor expansions to existing facilities, <$1.5 million); and
- Outline additional work that will be required for any **Schedule C** Projects that are identified (construction of new facilities and major expansion to existing facilities, >$1.5 million).

Schedule B Projects

Project details determined as part of this study (details to be documented in the Master Plan):

- **Nebo Road** (Rymal Road to future Dartnall Road Extension) – roadway reconstruction (2 lanes) with intersection improvements
- **Twenty Road** (600m west of Nebo Road to future Dartnall Road Extension) – roadway reconstruction (2 lanes) with intersection improvements
- **Glover Road** (Rymal Road to approximately 1950m south) – roadway reconstruction (2 lanes) with intersection improvements

Phases 3 and 4 of the Class EA Process, Alternative Design Concepts for the Preferred Solution and Environmental Study Report

Based on the above study approach, three Phase 3 and 4 Class EA studies will follow finalization of the Master Plan. These will include:

Schedule C Projects

Project details to be determined as part of subsequent studies (requiring future consultation and Environmental Study Reports)

- **Dartnall Road Extension** (Rymal Road to Dickenson Road)

  -widen to 4 lanes from Rymal Road to existing terminus at hydro corridor

  -new 4 lane arterial road from existing terminus to Dickenson Road
- **Twenty Road** (from future Dartnall Road to Trinity Church Road) - Two-lane collector road on a new alignment.
- **Trinity Church Road** - (Rymal Road to future Dartnall Road Extension) two-lane arterial road (protect for four lanes). *It is intended that this study be undertaken as part of the Trinity Church Road Corridor Class EA which includes a future 4*

lane extension of Trinity Church Road north of Rymal Road to Stone Church Road recommended in the Rymal Road Planning Area Class EA).

Next Steps and Phase 5 of the Class EA Process, Implementation

The following are the steps necessary to complete the Class EA process for the NGIBP:

- Following Council endorsement, publish a Notice of Study & Project Completion and file the Master Plan on public record for a minimum 30 day review period (a 45 day review period is being recommended because it will be filed during the summer months).
- Subject to the review of any public/agency comments received during the review period and subject to any Part II Order request (bump-up), the Class EA process will be complete for the Schedule B projects resulting from the study, which may then proceed to Phase 5 – Implementation.
- Proceed to Phases 3 and 4 studies, Alternative Design Concepts, as noted above. This will include further consultation for each study (e.g. at least one public meeting per study) and the preparation of an Environmental Study Report for each study documenting the alternative design process.
- Council endorsement of future Environmental Study Reports, publication of a Notice of Completion for each and Filing of Environmental Study Reports on Public Record.

ALTERNATIVES FOR CONSIDERATION:

The Preferred Network has been identified using an evaluation and screening process that fulfils the requirements of the Municipal Engineers Association (MEA) Municipal Class EA document for Master Plans. Municipal projects processed under the Master Plan provisions are considered to be approved under the Environmental Assessment Act provided the projects follow the appropriate planning and design process outlined in the MEA Municipal Class EA document. As noted above, the Master Plan would fulfil EA requirements for Schedule B projects and all Schedule C projects resulting from the study will proceed to the required Phase 3 and 4 processes.

The MEA Municipal Class EA document was approved under the Environmental Assessment Act. If the City does not follow the process outlined in the Municipal Class EA document, the City would be in violation of the document and as a result would have contravened the EA Act. The Minister of the Environment could revisit the approval of a project or take away the City's right to use the Municipal Class EA document.

The Preferred Network is not normally reconsidered at the end of the process unless there is an issue that is proven to affect the outcome of the evaluation process. In that regard, there are two alternatives for Council to consider with respect to the recommendations of this report:

1. To file the North Glanbrook Industrial Business Park Class Environment Assessment Transportation Master Plan Class EA Schedule B projects with the City Clerk for a 45 day public review period and proceed with implementation, subject to comments received and funding approval.
2. To not file the North Glanbrook Industrial Business Park Class Environment Assessment Transportation Master Plan Class EA Schedule B projects with the City

Clerk for a 45 day public review period and, as a consequence, not proceed with implementation.

Should Council not wish to approve the filing of the North Glanbrook Industrial Business Park Class Environment Assessment Transportation Master Plan Class EA Schedule B projects, the Municipal Class EA process would be considered by the provincial government as incomplete and the City will not have approval under provincial environmental legislation to implement the Schedule B improvements required to address servicing issues in the study area or proceed with Schedule C projects. The outcome would be equivalent to the do nothing alternative, which would result in the inability to effectively address both the short-term and the long-term transportation infrastructure needs for the study area. Eventually the City would have to repeat the Class EA process, which would likely result in the same recommendations.

FINANCIAL/STAFFING/LEGAL IMPLICATIONS:

Financial

The implementation of the Preferred Network will be staged in a way to establish service areas to promote development. In that regard, cost to upfront basic servicing to the area will be funded from development charges and the recently announced $20 million in Provincial money specifically for funding the industrial park infrastructure for both the growth related portion and the local portion of each project. Refer to Figure 3 for a draft funding scenario based on the preliminary servicing parameters known today. They may change as circumstances warrant such. The local servicing portion of each project will be recovered as development proceeds from abutting properties taking benefit of the services.

Schedule C Projects

The identified Schedule C projects as noted need to proceed with Phase 3 and 4 requirements of the Class EA prior to final approval and implementation. As such, both the Dartnall Road Extension and Trinity Church Road Corridor studies are proceeding immediately following approval of this Master Plan. Both studies will be funded from Capital Account No. 4030555504. The completion of the Twenty Road realignment and extension project is not as critical; therefore, Schedule C requirements are likely to be completed when development proceeds as part of a development application governed by the Planning Act.

Staffing - N/A

Legal

Municipal Undertakings such as road improvements are subject to the EA Act. This project follows requirements of the Environmental Assessment (EA) Act and the Class EA process of the Municipal Engineers Association Municipal Class Environmental Assessment document (June 2000). The Project File Report for this Class EA has been completed. The City is required to file the report on the public record for a minimum 30-day review period. Staff is recommending a 45-day review period for this study because it's being filed through the summer months when many people are taking holidays. Subject to comments received during the review period, the City will proceed with the implementation phase for the preferred alternative solution.

POLICIES AFFECTING PROPOSAL:

The recommendations in this report will not alter or contravene any established City or Provincial policy. The following is a summary of applicable planning policy.

Regional Official Plan:

The Official Plan states:

- The movement of people and goods is vital to the prosperity of the Region
- An integrated transportation system (combining transit, vehicles, bicycles, air and water transport and pedestrian movements is required.

Former Township of Glanbrook Official Plan:

The Official Plan intends:

- To facilitate the satisfactory movement of both people and goods; and
- To ensure the orderly movement of through traffic.

RELEVANT CONSULTATION:

Project Team: The Project Team, made up of the Ward Councillor and key staff from the Public Works and Planning and Economic Development departments was set up as a complement to the Study Team. The Project Team met on two occasions to provide input on the study findings and to provide strategic direction.

Agencies: Study Commencement and Public Notices were circulated to various government agencies and utilities such as Ministry and Environment, Hamilton Conservation Area and Bell Canada. All comments received have been addressed and are documented in the Project File Report.

Public: Through the course of the study two public information centres were held at key points (June 2005 and May 2006) to allow for input from stakeholders and the public. The general public was notified of the study by way of advertisements in the Hamilton Spectator and the Glanbrook Gazette.

All property owners in the NGIBP and on roads leading in and out of the area were also notified by direct mailing. All comments received have been addressed and reflected in the study recommendations.

CITY STRATEGIC COMMITMENT:

By evaluating the **"Triple Bottom Line"**, (community, environment, and economic implications) we can make choices that create value across all three bottom lines, moving us closer to our vision for a sustainable community, and Provincial interests.

Community Well-Being is enhanced. ☑ **Yes** ☐ **No**
The public are involved in the definition and development of local solutions.

Environmental Well-Being is enhanced. ☑ **Yes** ☐ **No**
A sustainable transportation network provides many options for people and goods movement; vehicle-dependency is reduced.

Economic Well-Being is enhanced. ☑ Yes ☐ No
Investment in Hamilton is enhanced and supported.

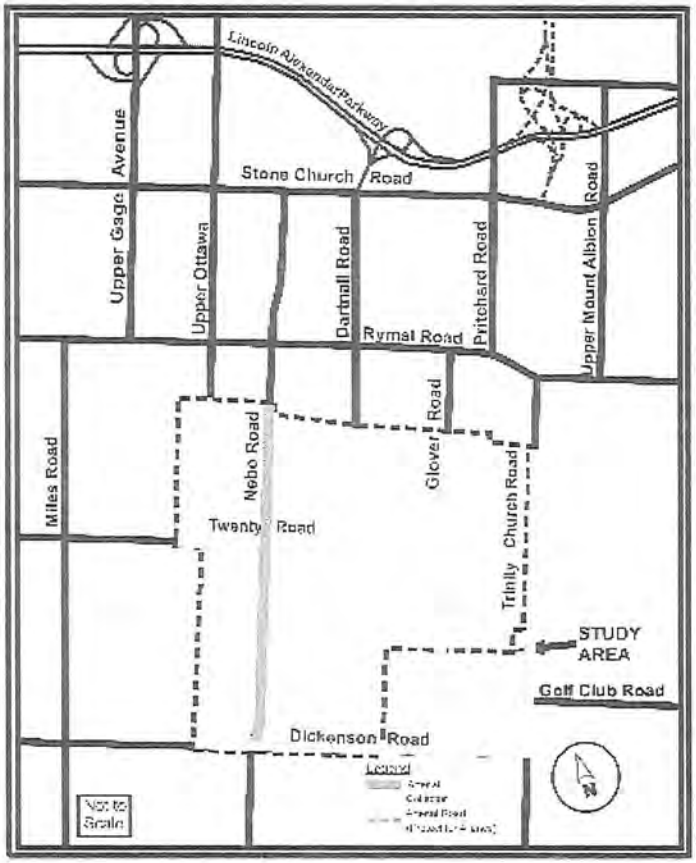
Does the option you are recommending create value across all three bottom lines?
☑ **Yes** ☐ **No**
The Preferred Network creates value across all three bottom lines. Consideration of natural, social, and economic impacts is an integral part of the EA process.

Do the options you are recommending make Hamilton a City of choice for high performance public servants? ☐ **Yes** ☑ **No**
This study does not directly assist in making Hamilton a city of choice for high performance public servants.

Figure 1

NETWORK ALTERNATIVES

Network Alternative One:
DO NOTHING



Network Alternative Two:
SIMPLE GRID

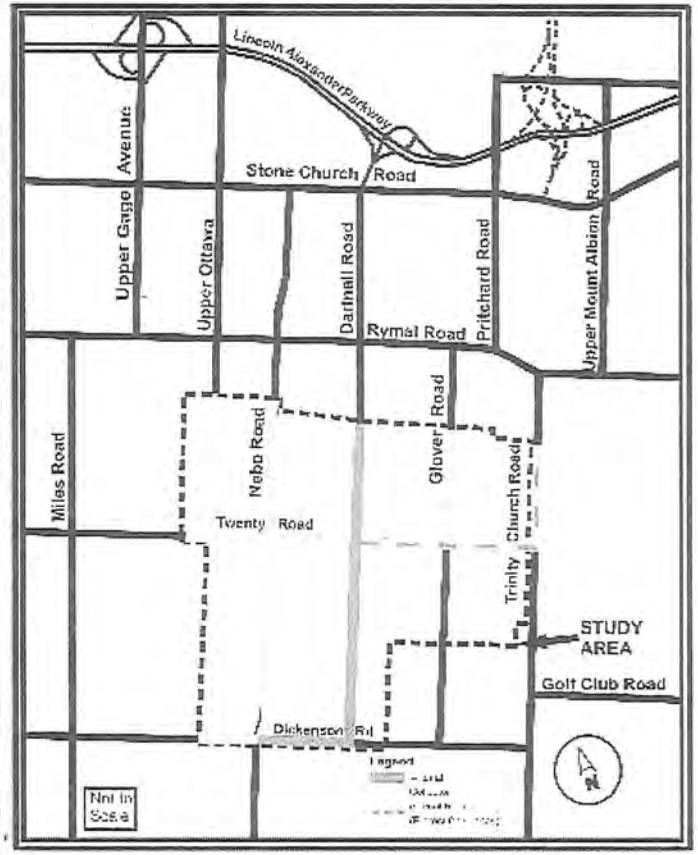
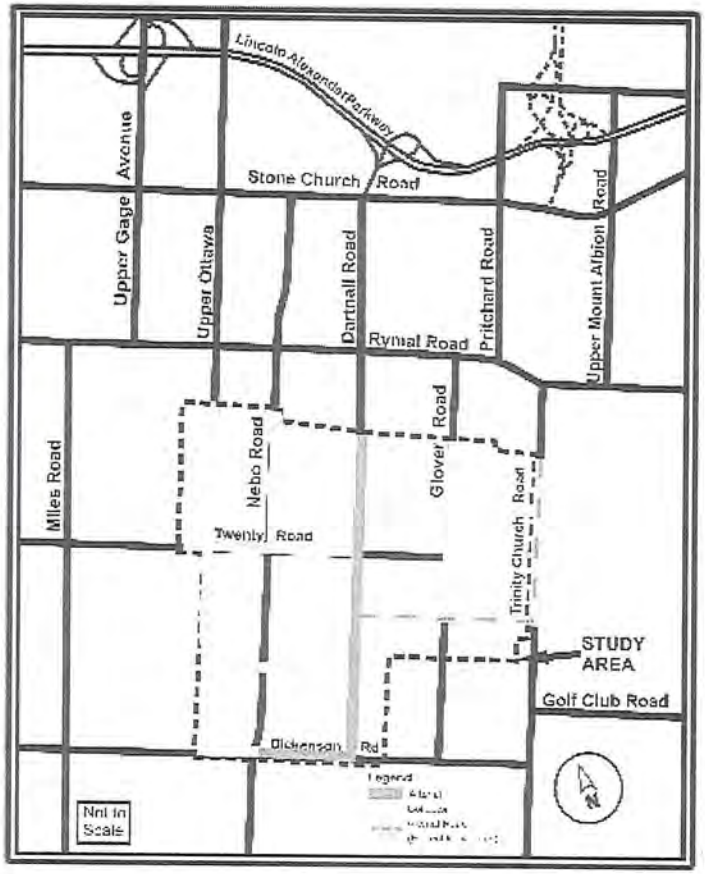


Figure 1 Cont'd

NETWORK ALTERNATIVES

Network Alternative Three:
MODIFIED GRID



Network Alternative Four:
SECONDARY PLAN

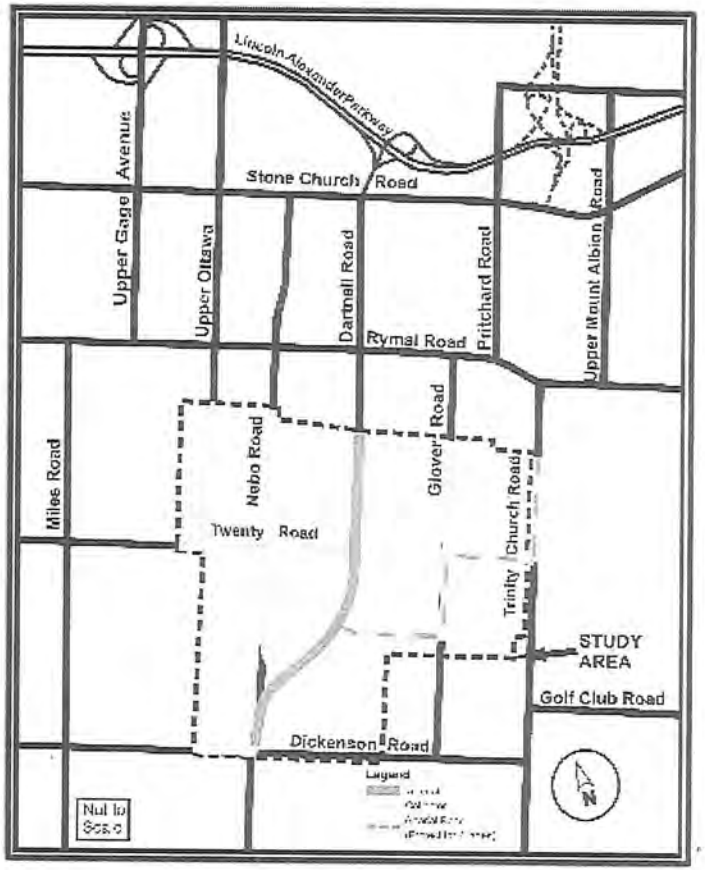
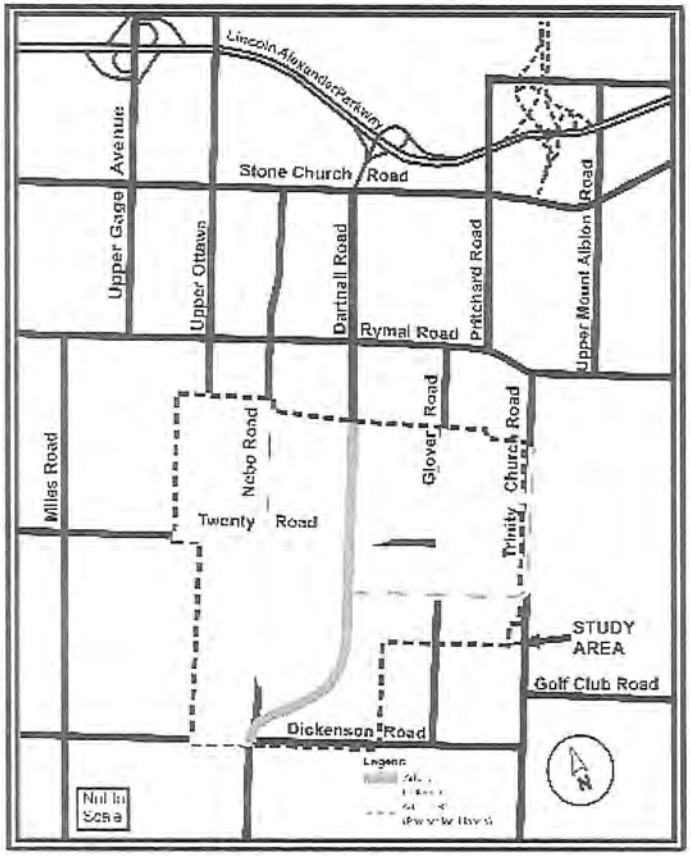


Figure 1 Cont'd

NETWORK ALTERNATIVES

Network Alternative Five:
MODIFIED SECONDARY PLAN



Note: This alternative does not require an Upper Ottawa Street extension as part of the municipal arterial network based on travel demand. This extension may be required as a local road to provide access to specific developments.

Figure 2 – Evaluation Summary

EVALUATION CRITERIA	Alternative 1 Do Nothing	Alternative 2 Simple Grid	Alternative 3 Modified Grid	Alternative 4 Secondary Plan	Alternative 5 Modified Sec. Plan	Comments
Natural						Given the longstanding agricultural land uses and more recent industrial uses there is a general absence of any features of significance. All alternatives would result in similar relatively minor environmental impacts. Alternatives 3 and 5 would result in slightly higher impacts due to potential impacts on groundwater recharge areas.
Social						Alternative 1 results in the highest impact on residential areas due to the high potential for traffic infiltration on residential areas.
Economic						Alternative 5 is preferred as it provides the best access for future development and provides good lot sizing. Alternative 1 is the least desirable as it does not provide sufficient access to lands approved for development. Alternative 4 does not provide for good east-west connectivity and results in more property severances and smaller lot sizing.
Cultural	No Impact					Alternative 1 is slightly preferred as it avoids any impacts to lands with archaeological potential.
Transportation						When considering all aspects of construction staging, accessibility for vehicles, transit, connectivity between the existing and proposed networks and the flexibility to accommodate longer-term travel demands, Alternative 5 best meets these objectives.

Summary of Preferred Network Alternative:

All alternatives result in similar minor natural and social environment impacts and similar transit opportunities.

Alternative 1 does not provide for acceptable traffic operations and therefore was eliminated from further considerations.

Alternatives 2 and 3 provide sufficient capacity however they do not provide for good east-west and north-south continuity.

Alternatives 4 and 5 provide sufficient capacity, good east-west and north-south continuity and good staging opportunities. Alternative 5 provides for better connections to Trinity Church Road with a new east-west road south of Twenty Road; flexibility for longer term access to the airport, and lot sizing than Alternative 4. **Therefore Alternative 5 is preferred.**

Legend

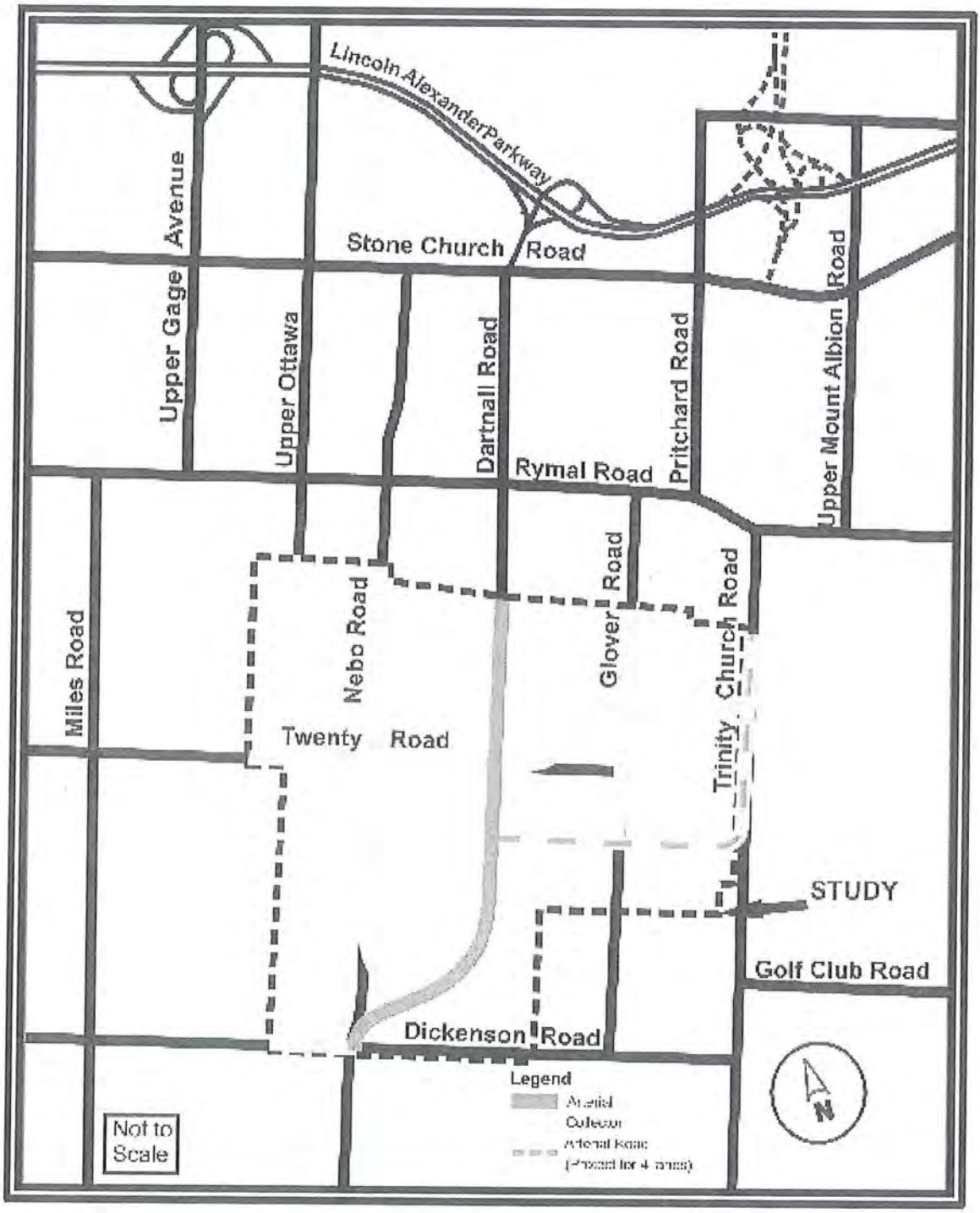
Least Preferred

Most Preferred

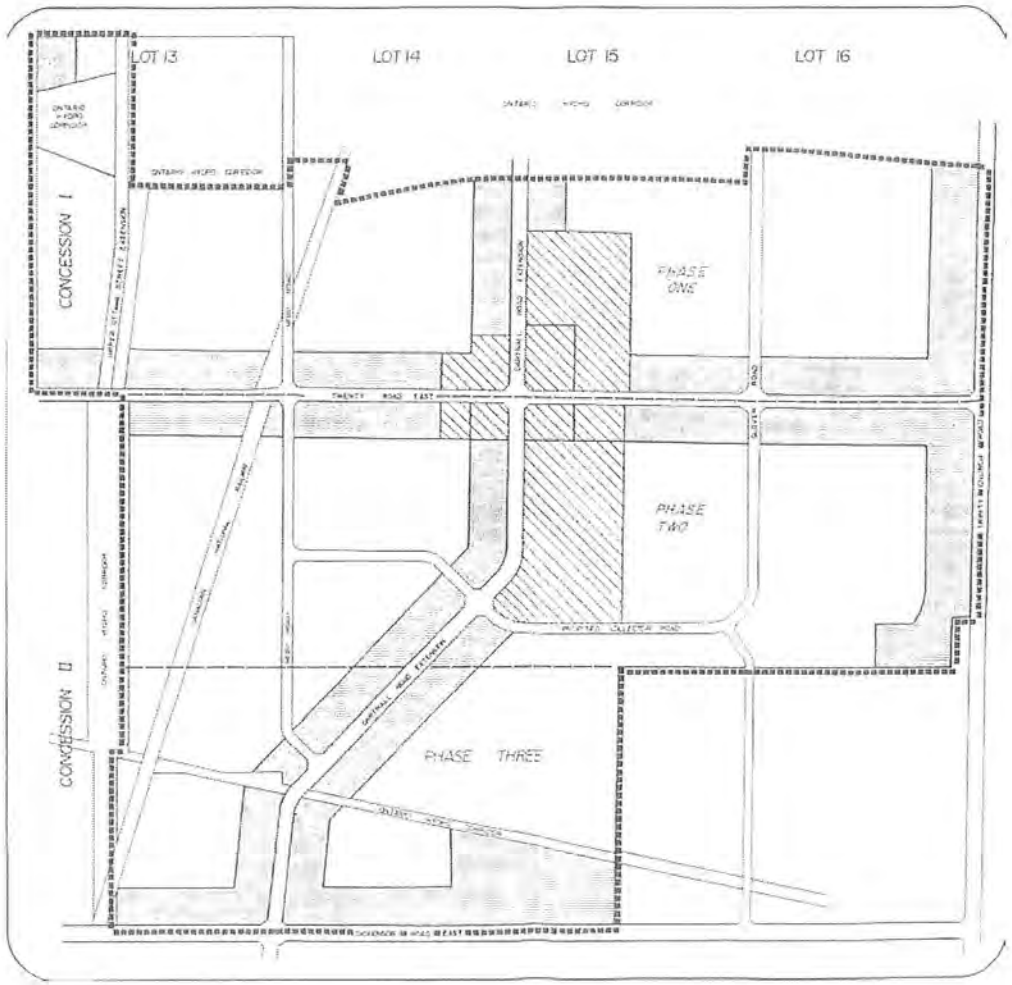
Figure 3 – North Glanbrook Industrial Business Park Draft Funding Scenario

Funding Sources	2005 $(000's)	2006 $(000's)	2007 $(000's)	2008 $(000's)	2009 $(000's)	2010 $(000's)	2011 $(000's)	2012 $(000's)	Totals $(000's)
Roads DC (res)		50	1,000	1,500	190	1,000	1,300	580	5,620
Water DC (res)	1,100	50	325	230	150	225	110		2,190
Sewer DC (res)	-	100	200	1,350	90	200			1,940
Storm DC (res)	-	50	-	200					250
Total DCs	1,100	250	1,525	3,280	430	1,425	1,410	580	10,000
Provincial Funding	-	-	2,850	8,940	800	2,740	3,100	1,570	20,000
Municipal Act Local Share (to be determined)									
City Levy Share	-	-	-	-	-	-	-	-	-
Total	1,100	250	4,375	12,220	1,230	4,165	4,510	2,150	30,000

Appendix A – Preferred Transportation Network



Appendix B – North Glanbrook Industrial Business Park Secondary Plan



LEGEND

Land Use Pattern

Prestige Business/ Industrial

General Industrial

General Commercial

Industrial-Business Park Boundary

Phasing Boundary

Executive Summary

In an effort to spur industrial development and make available "shovel ready lands", the City of Hamilton has undertaken the North Glanbrook Industrial Business Park (NGIBP) Transportation Master Plan to identify a road network that will support the development of the lands in accordance with the current approved land uses identified in the Secondary Plan for the area. The study was necessary in order to plan for the expected increase in traffic on roadways within and adjacent to the NGIBP when development occurs. It is anticipated that the opening of the Red Hill Valley Parkway (RHVP) in late 2007 will be an impetus for the development of these lands. The preferred transportation network is depicted in Figure E-1.

This Master Plan study was undertaken following the environmental planning process for Master Plans under the *Municipal Class Environmental Assessment* (Municipal Engineers Association, 2000). This Master Plan is intended to fulfill the Class EA requirements for Schedule B Projects that are identified and to outline additional work that will be required to implement any Schedule C Projects that are identified. Requests for a Part II Order ('bump-up' to an individual EA) are limited to specific projects identified in the Master Plan, not the Master Plan itself.

Documentation in this Master Plan includes the need and justification for all recommended road improvements identified in the network and functional design details for Schedule B projects.

Recommended Schedule B projects include:

- **Nebo Road** (Rymal Road to future Dartnall Road Extension)
  - roadway reconstruction (2 lanes) with intersection improvements;
- **Twenty Road** (600m west of Nebo Road to future Dartnall Road Extension)
  - roadway reconstruction (2 lanes) with intersection improvements; and
- **Glover Road** (Rymal Road to approximately 1950m south)
  - roadway reconstruction (2 lanes) with intersection improvements.

This EA only completes Phases 1 and 2 of the Class EA process. The remaining phases (i.e. phases 3 and 4) required for Schedule C projects will be completed subsequent to this Master Plan either by the City of Hamilton or the private sector as part of a development application governed by the *Planning Act.*

Further study is required for the following recommended Schedule C projects:

- **Dartnall Road Extension** (Rymal Road to Dickenson Road)
  - widen to 4 lanes from Rymal to existing terminus at hydro corridor
  - new 4 lane arterial road from hydro corridor to Dickenson Road
- **Twenty Road** (from future Dartnall Road Extension to Trinity Church Road)
  - two-lane collector road on a new alignment; and
- **Trinity Church Road** – (Rymal Road to future Dartnall Road Extension)
  - two-lane arterial road (protect for four lanes).

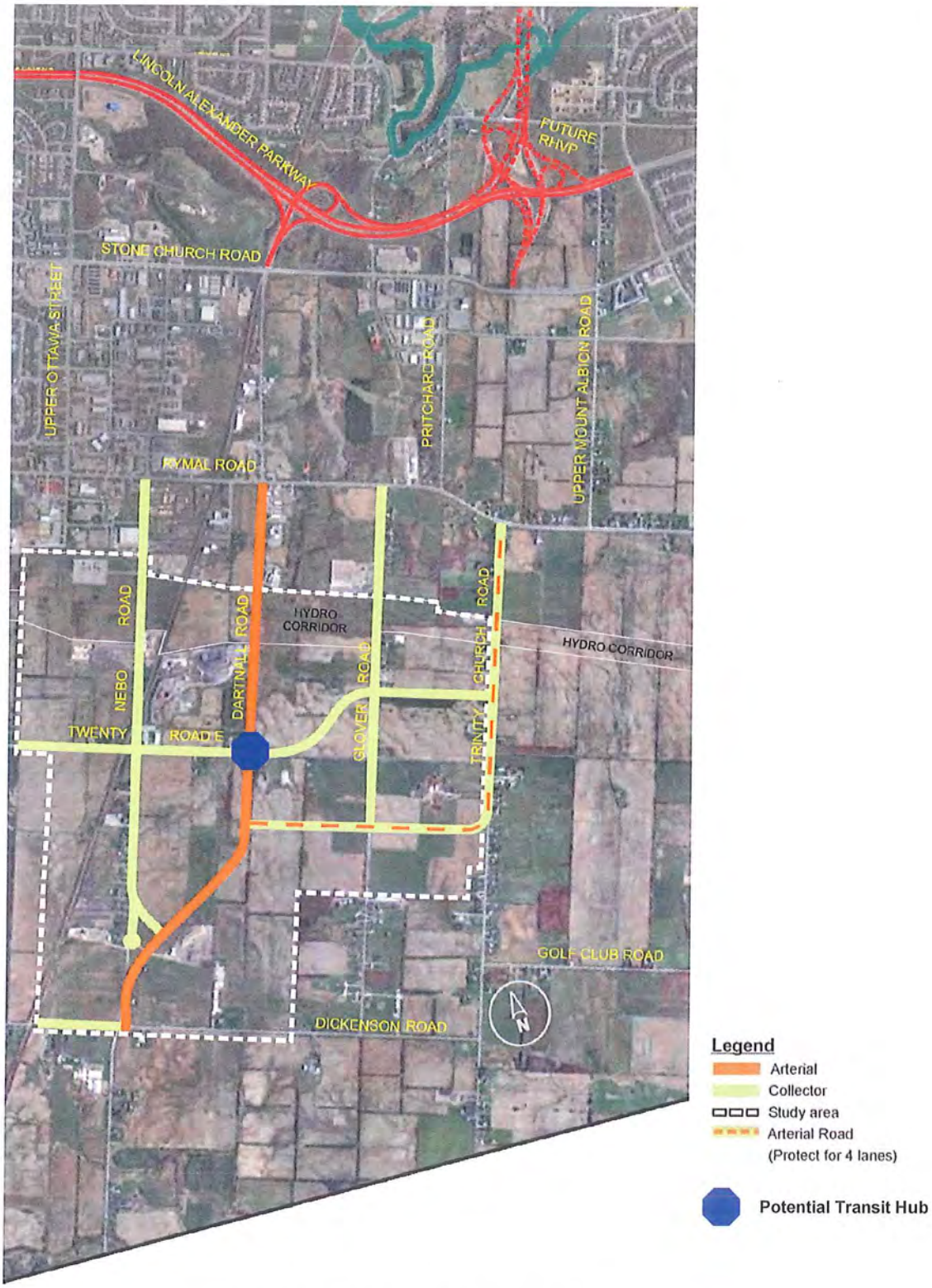


Figure E-1: Preferred Transportation Network

TABLE OF CONTENTS

Page

TABLE OF FIGURES

TABLE OF TABLES

APPENDICES

1.0 Introduction

1.1 Study Overview

In an effort to spur industrial development and make available "shovel ready lands", the City of Hamilton has undertaken the North Glanbrook Industrial Business Park (NGIBP) Transportation Master Plan to identify a road network that will support the development of the lands in accordance with the current approved land uses identified in the Secondary Plan for the area. The study was necessary in order to plan for the expected increase in traffic on roadways within and adjacent to the NGIBP when development occurs. It is anticipated that the opening of the Red Hill Valley Parkway (RHVP) in late 2007 will be an impetus for the development of these lands.

This Master Plan study was undertaken following the environmental planning process for Master Plans under the *Municipal Class Environmental Assessment* (Municipal Engineers Association, 2000). This Master Plan is intended to fulfill the Class EA requirements for Schedule B Projects that are identified and to outline additional work that will be required for any Schedule C Projects that are identified. Project schedules are discussed in Sections 1.2.1 and 1.3.

The objectives of this study were to:

- Identify an improved transportation network, including transit opportunities, within the NGIBP area to support the planned future development;
- Reduce the potential for traffic infiltration on residential areas that are not planned to be redeveloped;
- Provide improved direct connections to the adjacent freeways and arterial road network; and
- Allow for flexibility in the proposed network to accommodate long-term growth planned for the Airport as accessibility will be required to/from the east.

An analysis and evaluation of alternatives resulted in the selection of a Preferred Transportation Network (Figure 4.2.4-1). The Preferred Transportation Network is a modified version of the network depicted in the approved Secondary Plan (Figure 2.0-1).

1.2 Overview of the Planning Process

1.2.1 Overview of the Municipal Class EA Process

Under the provisions of the *Ontario Environmental Assessment (EA) Act* certain types of provincial and municipal undertakings can meet the requirements of the EA Act through the use of an approved environmental planning process referred to as a Class EA.

The Class EA process provides a self-assessing procedure by which a group or "class" of undertakings can be planned and implemented in a way that fulfills the requirements of the EA Act without proponents having to prepare an individual EA for approval. In other words, these undertakings do not require formal submission to the Ontario Ministry of the Environment for approval. Upon completion of the appropriate process, the undertaking is considered approved.

The Municipal Class EA (Municipal Engineers Association, 2000) outlines such a process for a class of municipal projects. The Class EA process for municipal road projects is shown on Figure 1.2.1-1 and includes:

- Phase 1 - identify the problem or opportunity;
- Phase 2 - identify alternative solutions;
- Phase 3 - examine alternative design concepts for the preferred solution;
- Phase 4 - prepare and file an Environmental Study Report; and
- Phase 5 - proceed to detailed design, construction and operation.

The Class EA recognizes that certain undertakings require different degrees of assessment, depending on their environmental effects and defines three schedules of undertakings:

- Schedule A undertakings are considered to be minor in scale and have minimal adverse environmental effects. These undertakings are considered approved without the need for any further assessment and may proceed directly to Phase 5 of the Class EA process.
- Schedule B undertakings are those with some potential for adverse environmental effects. However, existing guidelines, approved policies and other provincial legislation regulate the majority of these effects. These undertakings require the completion of Phase 1 and 2 of the Class EA process.
- Schedule C undertakings are those undertakings with the potential for greater adverse environmental effects and must follow the planning and consultation process outlined in the Class EA (Phase 1-4). The documentation of these processes is presented in an Environmental Study Report (ESR).

The Municipal Class EA process includes an appeal provision to change the status of a project from being subject to the Municipal Class EA process to being subject to an individual EA as per Part II of the EA Act.

A Part II Order (commonly known as a "bump-up") refers to changing the status of a project from being subject to the Class EA process to being subject to an individual EA. The latter requires the submission of a formal document (as required by Section 6 (1) of the EA Act) to the Minister of the Environment for government review and approval.

If concerns regarding a project can not be resolved in discussions with the proponent (for this study, the proponent is the City of Hamilton), then members of the public, interest groups or technical agencies may request the Minister of the Environment to "bump-up" a project to an individual EA. The Minister of the Environment then decides whether a "bump-up" is appropriate or necessary.

If no "bump-up" requests are outstanding by the completion of the review period, the project is considered to have met the requirements of the Class EA and the proponent may prepare contract drawings, proceed to tender and construct the project.

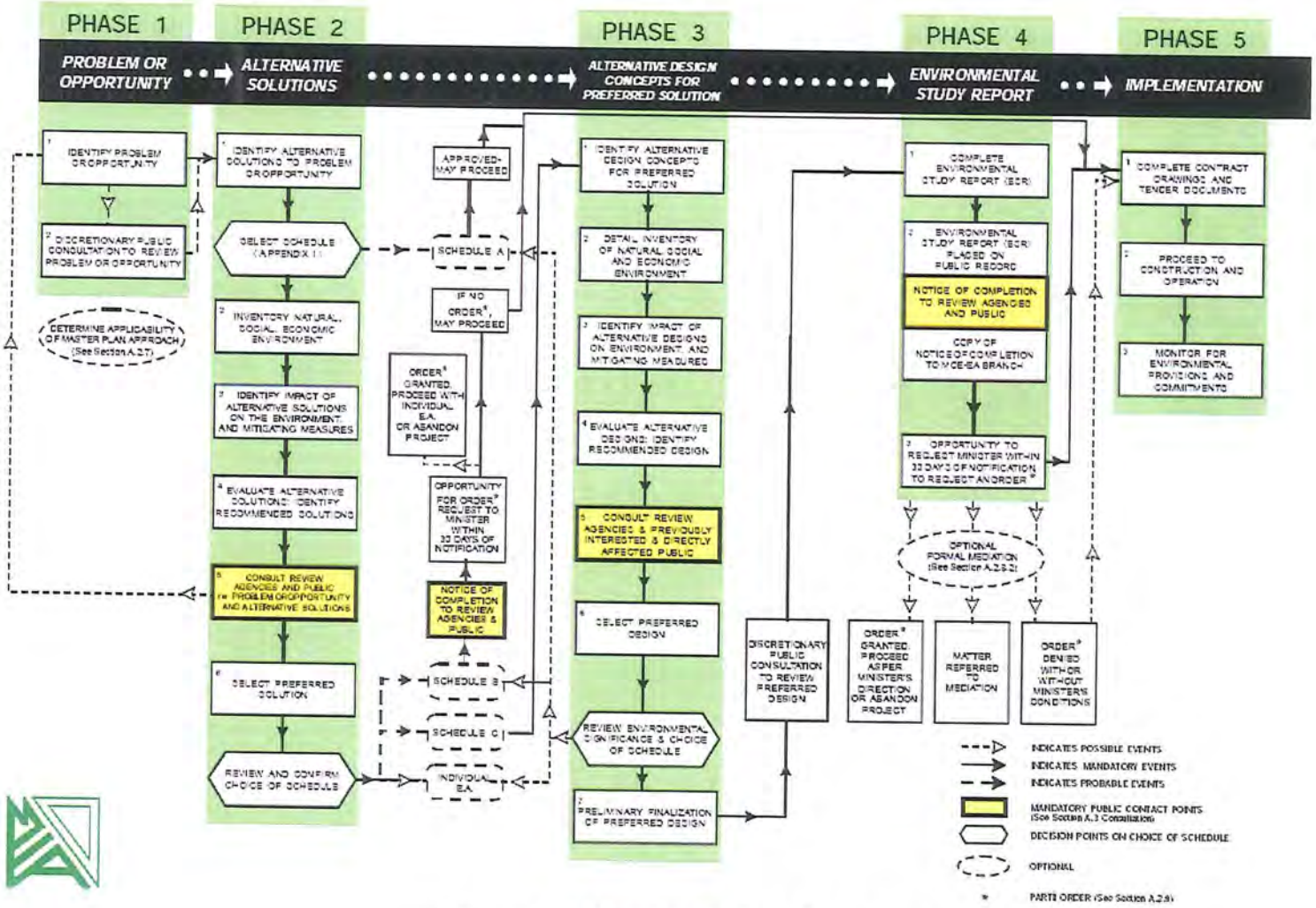


Figure 1.2.1-1: Municipal Class EA Process

1.2.2 Municipal Class EA Master Plan Process

The NGIBP Transportation Master Plan follows the Municipal Class EA Master Plan process. This process requires, at a minimum, the completion and documentation of Phase 1 and 2 of the Class EA process. The Master Plan process allow for the development of long range plans which integrate the infrastructure requirements for existing and future land use with environmental assessment planning principles including public and agency consultation.

Upon the completion of a Master Plan the Master Plan Report is adopted by Council, filed and made available for public review. Requests for a Part II Order ('bump-up' to an individual EA) are limited to specific projects identified in the Master Plan, not the Master Plan itself.

1.3 Elements of the Master Plan

The intent of this Class EA Master Plan is to identify a road network that will support the redevelopment of the study area land in accordance with the current approved land uses for the area.

As discussed in Section 1.2.1, there are three project schedules under the Municipal Engineers Association Class EA process, with each schedule having different requirements to fulfill the environmental planning process. This Master Plan is intended:

- to fulfill the Class EA requirements for any Schedule B Projects that are identified (improvements and minor expansions to existing facilities, less than $1.5 million); and
- to outline additional work that will be required to implement any Schedule C Projects that are identified (construction of new facilities an major expansion to existing facilities, greater than $1.5 million).

Schedule B projects recommended in this study will be able to proceed to Phase 5 (detail design, construction and operation) subject to the approval of this study in accordance with the requirements of the Class EA.

Schedule C projects recommended in this study will require further consultation and preparation of Environmental Study Reports to meet Schedule C requirements. However, this Master Plan serves to fulfill the Phase 1 and 2 components of these future projects.

2.0 Planning Context and Opportunity Statement

Original planning for land use and servicing the NGIBP was defined in the late 1970s, but development of the area has been hindered by poor access and lack of financing for infrastructure which has contributed to the inability to effectively market the park. Types of land uses envisioned include general industrial, prestige industrial and general commercial. The NGIBP Secondary Plan illustrating the approved land uses and future road network is shown in Figure 2.0-1. Additional details regarding the Secondary Plan are provided in Section 3.2.1. It is important to note that the extension of Dartnall Road has always been assumed to be a major infrastructure requirement for the park to develop.

Results of a detailed traffic analysis of existing and future land use conditions indicate that as development occurs, there will be a significant increase in traffic and goods movement on roadways within and adjacent to the Secondary Plan area and upgrades to the road network will be required.

Network connectivity is a key transportation issue as there are currently no direct connections from the NGIBP to the Lincoln Alexander Parkway (LINC) or the future Red Hill Valley Parkway (RHVP). Without the provision of direct connections, there will be major impacts on the roads adjacent to the NGIBP secondary plan area as NGIBP development traffic uses these roads to access the major corridors.

Providing for good highway connections to support the movement of goods and services will support development of the park, but will also address larger city-wide endeavour to promote economic development through implementation of infrastructure in accordance with strategic directions identified in the City's Goods Movement Study (2005).

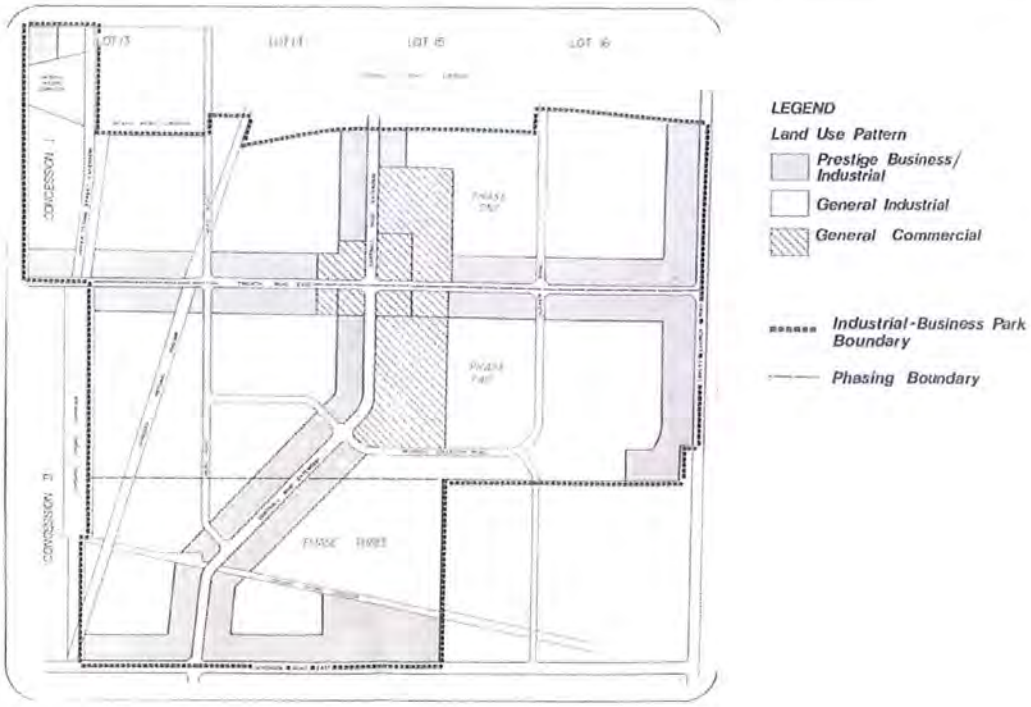


Figure 2.0-1: Secondary Plan

2.1 Study Area

The primary study area for the NGIBP is defined by the limits of the Secondary Plan (Figure 2.0-1) area as shown in the former Township of Glanbrook's Official Plan.

The study area and existing road network are depicted in Figure 2.1-1.

However, since some of the changes contemplated in the study area will have an effect outside the Secondary Plan boundaries, a broader area needed to be considered. Therefore, corridor connections to the RHVP/LINC to the north and the Airport to the west were included in the analysis as were north-south roads that extend through the park north to Rymal Road.

Figure 2.1-1: Study Area

2.2 Problem and Opportunity Statement

A detailed analysis of existing and future traffic based on planned changes in land use was undertaken to gain an understanding of transportation needs that will support development within the Secondary Plan area. A copy of the existing and future conditions analysis report is provided in Appendix A. Results of the analysis indicate that as development occurs, there will be a significant increase in traffic on roadways within and adjacent to the Secondary Plan area and upgrades to the road network will be required. The key findings of the report are documented below and further discussed in Chapter 4.

In order to address the need for upgrades to the road network, a problem / opportunity statement was developed to provide the direction towards which the Transportation Master Plan should be prepared and to further enhance the understanding of issues resulting from future development.

As development occurs, there will be a significant increase in traffic on roadways within and adjacent to the Secondary Plan. It is anticipated that the opening of the Red Hill Valley Parkway in 2007 will be an impetus for the development of these lands. As such, the objectives of this study are to:

- Identify an improved transportation network, including transit opportunities, within the NGIBP area to support the planned future development;
- Reduce the potential for traffic infiltration on residential areas that are not planned to be redeveloped;
- Provide improved direct connections to the adjacent freeways and arterial road network; and
- Allow for flexibility in the proposed network to accommodate long-term growth planned for the Airport as accessibility will be required to/from the east.

As development occurs over the next 10 to 15 years, the traffic volumes destined to and through the NGIBP secondary plan area are anticipated to more than double resulting in the road system serving the NGIBP to be operating in a congested state. In order to provide the NGIBP with a transportation network that provides good operating conditions in the medium term, the following infrastructure improvements are required:

- Additional north-south capacity (one lane in each direction) between Rymal Road and Dickenson Road;
- Upgrades to existing roads to industrial standards; and
- Improved east-west routes with connections to Trinity Church Road.

It is anticipated that the NGIBP will be completely built out over the next 20 to 30 years resulting in destined and through traffic volumes representing an additional 50% increase over the 10 to 15 year traffic projections. In addition to the NGIBP related traffic forecasts, it is anticipated that substantial employment development is to occur on lands adjacent to the airport and that there will be a need to provide network connectivity between the airport and lands to the east and major transportation corridors such as the Lincoln Alexander Parkway and the Red Hill Valley Parkway. Therefore, in the long term, the following additional expansion of the system to meet forecast travel demands is required:

- North-South road capacity (one lane in each direction) from the LINC to Dickenson Road; and,
- Protection for additional north-south capacity (one lane in each direction) south of Rymal Road.

3.0 Inventory of the Existing Environment

3.1 Natural Environment

The existing natural environment features described in the following sections often reflect the influence of human related effects to the land uses within and surrounding the study area. All natural environment information was obtained from applicable sections of the Hannon Creek Subwatershed 2005 Spring Inventory (Philips Engineering Limited, 2005) and the Draft Stream Characterization Report (Totten Sims Hubicki Associates, 2006).

Although the study area is dominated by the cultivated fields of agricultural operations, some natural vegetation is present in association with the Hannon Creek subwatershed. Additional details regarding terrestrial habitat and vegetation are provided in Section 3.1.2.

The Hannon Creek is a tributary of the Red Hill Creek. Red Hill Creek eventually drains into the Hamilton Harbour. Within the NGIBP the Hannon Creek subwatershed presents itself as various tributaries of Hannon Creek, some of which are intermittent. The central corridor of Hannon Creek, within the NGIBP study area, supports direct aquatic habitat while the outlying headwater feeder streams have limited to no habitat value, due mainly to heavy modification from agricultural activities. Additional details regarding aquatic habitat and fisheries within the NGIBP are provided in Section 3.1.1.

3.1.1 Aquatic Environment

Aquatic habitat within the NGIBP is largely associated with the Hannon Creek subwatershed. Figure 3.1.1-1 depicts the existing waterbodies, of which some are intermittent, within the study area.

Fisheries data for the study is primarily limited to upstream studies; in field observations and knowledge of downstream barriers indicate that the only likely fish species within the study area is brook stickleback (*Culaea inconstans*). Due to the presence of downstream barriers it is anticipated that although the study area provides fish habitat fish are typically unable to bypass the downstream barriers. It should be noted that during periods of high flow fish may be able to bypass the downstream barriers and make use of upstream fish habitat.

Although it is anticipated that few, if any, fish occur within the study area, should fish occur within the study area it is anticipated, based on previous downstream studies, that the only fish species present would be brook stickleback.

Although the waterbodies within the study area provide limited to no direct fish habitat, effects (e.g. water quantity and quality) to waterbodies within the NGIBP may result in effects downstream as the study area does contribute flow to downstream fish habitat.

Stream classification was undertaken by Totten Sims Hubicki Associates (TSH) towards the goal of understanding the environmental conditions and related processes throughout the Hannon Creek Subwatershed and NGIBP. In developing an approach to stream classification, the form and function of the stream system by reach was considered using a riparian corridor approach. This approach considers the broad scope of characteristics and processes that affect the health of the stream system throughout the watershed including:

- Environmental – Both aquatic and terrestrial conditions are included, such as the type of aquatic habitat, species (fish and benthic) the condition of riparian vegetation, linkage to other terrestrial features, and ability to provide nutrients to life in the stream;
- Geomorphologic – The overall condition of stream form including structural aquatic habitant, severity of erosion, bedload (sediment carried by the flow the stream at or near the streambed) condition and source of bedload for downstream reaches;
- Hydrologic – Influence on hydrologic response of streams primarily through the floodplain adjacent to the stream and hydraulic characteristics (i.e., ability to detain flows), influence of vegetation and storage of base flows; and
- Hydrogeologic – The presence of recharge and discharge functions either locally or regionally and the associated contribution to base flow and flow detection.

The overall evaluation of the riparian corridor by reach has led to the development of three categories of streams for management within the subwatershed:

1. High Constraint Streams where current form and function are to be preserved.
2. Medium Constraint Streams where the current function is to be preserved.
3. Low Constraint Streams. Could be used to help connect SWM facilities to high constraint and medium constraint streams.

Figure 3.1.1-1 depicts the various stream reaches and classifications.

Typical High (Red) Constraint Stream (Reach HC-1)
- These streams must be protected (and/or enhanced) in their current location
- Current form and function are to be preserved

Observed Karst Feature
- Located on reach HC3-A (upstream of Rymal Road)

Typical Low (Green) Constraint Stream (Reach HC2-C)
- used to help connect SWM facilities to High and Medium Constraint streams

Typical Medium (Blue) Constraint Stream (Reach HC3-C)
- the current function of the stream is to be preserved (environmental, geomorphologic, hydrologic, hydrogeologic)

Typical High (Red/Blue) Constraint Stream (Reach HC3-A)
- Function is to be preserved and has the potential for relocation and enhancement

LEGEND

Hannon Creek Subwatershed
North Glanbrook Business Park
Floodline
Meander Belt Width

Stream Characterization

High Constraint
High Constraint - Potential to relocate
Medium Constraint
Low Constraint
Intermittent Connection

Karst

Observed
Suspected

NORTH

TSH engineers architects planners

CLIENT

Hamilton

PROJECT

Figure 3.1.1-1
Hannon Creek Subwatershed Features and Stream Characteristics

Not to Scale

3.1.2 Terrestrial Environment

The native vascular plant flora of the subwatershed is representative of the transition zone between the Great-Lakes Forest Region and the northerly limit of the Deciduous Forest Region (Rowe, 1972), also referred to as the "Carolinian life zone" (Allen et al. 1990). Due to its high level of urbanization, the Hannon Creek subwatershed does not support a diverse assemblage of vascular plant species or vegetation community types.

The terrestrial habitat within the NGIBP is primarily limited to cultivated field and anthropogenic vegetation. Natural vegetation appears to be associated exclusively with the Hannon Creek subwatershed. A list of vascular plant species of the Hannon Creek subwatershed is provided in Appendix B. It should be noted that the majority of the vegetation resources contained in the subwatershed are concentrated in the northeast half of the subwatershed, along the Escarpment, and outside of the boundaries of the NGIBP.

Wildlife observations within the study area are primarily in relation to the Hannon Creek subwatershed amphibian surveys and breeding bird surveys completed by Dougan & Associates in the spring of 2005.

Four species of amphibians were encountered during the 2005 amphibian surveys. These species included: American Toad (*Bufo americanus*), Western Chorus Frog (*Pseudacris triseriata*), Green Frog (*Rana clamitans*) and Northern Leopard Frog (*Rana pipiens*). None of the four species are designated as "species at risk" federally, provincially or locally. Most of the sites where amphibians were encountered were small in size with few individual present. Some sites were simply roadside ditches or flooded margins of agricultural fields.

A total of 56 bird species were recorded within the subwatershed during the 2005 breeding bird surveys. Almost all of the species exhibited evidence of breeding. Ten of these species are considered significant in the City of Hamilton (Curry, 2003).

3.1.3 Groundwater

There are karst features in the Hannon Creek subwatershed. These features are in the form of "fissures" in the ground that provide drainage to the groundwater system. The karst features have been mapped and classified by significance. Most of the significant karst features are on the west side of the watershed. Figure 3.1.1-1 depicts the observed and expected karsts within and surrounding the NGIBP.

3.2 Social-Economic Environment

3.2.1 Current Land Use

Extensive development of the NGIBP has yet to occur. All existing development is associated with the current road network, i.e. a local road network normally associated with Plans of Subdivision has not been established to date. Development of any kind is sparse and is a mix of industrial, agricultural and residential land uses although all land within the park is currently zoned as industrial or commercial (see Figure 2.0-1). Existing industry is predominately outside the study area north of the hydro corridor adjacent to Nebo Road, Rymal Road, and Dartnall Road.

In the NGIBP, the majority of industry and business is located along Nebo Road with a defined mix of industrial/commercial and residential land use on the west side south of Twenty Road.

Between Nebo Road and Glover Road is a mix of agricultural and residential land uses. In addition there is one institutional property and one relatively large industrial property (Lafarge Canada Inc.) at the northeast corner of Twenty Road and Nebo Road. Between Glover Road and Trinity Church Road land use is similar however there are residential clusters along both Glover Road and Trinity Church Road from the southern limits of the NGIBP south to Dickenson Road.

It should be noted that the majority of active agricultural lands with in the NGIBP are owned by land developers and are being farmed by area farmers under lease agreements. The City of Hamilton owns one parcel, approximately 54 acres in size at the south east corner of Nebo and Twenty Road, which it also leases for farming.

A land use inventory completed in 2005, included in Figure 3.2.1-1, illustrates the existing land uses within the NGIBP.

NORTH GLANBROOK BUSINESS PARK
LAND USE INVENTORY

Figure 3.2.1-1: Current Land Use

3.2.2 Future Land Use

The NGIBP area is approximately 290 ha and, as noted in Chapter 2, has an approved Secondary Plan which allows for redevelopment of the area for general industrial, prestige industrial and general commercial purposes. The current approved land uses for the NGIBP area are depicted in Figure 2.0-1.

Access to the park and servicing have always been a critical hurdle that has prevented development, but once in place it is anticipated that development would commence immediately and take approximately 30 years for full build-out. At full build-out it is anticipated that approximately 7,500 people will be working in the area.

It should be noted that the Secondary Plan is subject to a review and potential changes following any changes to the road network resulting from this study.

3.2.3 Heritage and Archaeology

No heritage features have been identified within the study area.

A Stage 1 Archaeological Assessment has been completed and has identified archaeological potential over most of the study area. There is a potential for historic sites where the proposed roadwork intersects the following historic transportation routes: Rymal Road, Twenty Road, Dickenson Road and Nebo Road. There is also potential for pre-contact sties over most of the study area.

It should be noted that a Stage 2 Archaeological Assessment will be completed prior to construction for lands that have not been previously assessed and cleared of further heritage concerns by the Ministry of Culture.

3.2.4 Utilities

There are two Ontario Hydro corridors within the NGIBP. The larger of the corridors extends along the north boundary of the NGIBP parallel to Rymal Road and is generally a green space with Hydro towers running through it. The second smaller Hydro corridor is located in the south section of the NGIBP, north of Dickenson Road that and runs on a diagonal from east to west, crossing over the Rail Trail. Lands within these corridors are not planned to be developed (see Figure 3.2.1-1). The hydro corridors are depicted in Figure 2.1-1.

Three pipelines are located within the NGIBP. Running along the north boundary of the northern hydro corridor is the TransCanada Pipe Line (natural gas). The southern boundary of the northern hydro corridor is the location of two Trans-Northern Pipelines (oil). The northern hydro corridor is depicted in Figure 2.1-1.

3.3 Transportation Network

An assessment of existing transportation conditions in the study area was undertaken in order to evaluate the ability of the existing transportation network to accommodate future development and to identify issues associated with constructing an upgraded road network. The assessment incorporated a review of road network characteristics, vehicle volumes, and the corresponding operating levels of service. Characteristics of the surrounding road network were also reviewed to determine the function of the broader transportation network and to establish the possible effects of the introduction of additional vehicle volumes to the overall transportation system.

3.3.1 Existing Road Network

The existing road network within and adjacent to the NGIBP is generally comprised of two lane and four lane arterial and collector roadways, The roads, listed below, all provide direct or indirect access to the NGIBP.

Two Lane Roads

East-west

- Stone Church Road [arterial];
- Rymal Road [arterial];
- Twenty Road [collector];
- Golf Club Road [collector]; and
- Dickenson Road [arterial].

North-South

- Miles Road [collector];
- Nebo Road (Rymal Road to Dickenson Road) [collector];
- Dartnall Road (Lincoln Alexander Parkway to Rymal Road) [arterial];
- Dartnall Road (Rymal Road to south terminus) [arterial]
- Glover Road [collector];
- Pritchard Road [collector];
- Trinity Church Road [arterial]; and
- Upper Mount Albion Road [collector].

Four Lane Roads

East-west

- Lincoln Alexander Parkway (to Mud Street Extension / future RHVP) [arterial]; and
- Mud Street [arterial];

North South

- Upper Gage Avenue [arterial];
- Upper Ottawa Street [arterial]; and
- Nebo Road (Stone Church Road to Rymal Road) [collector].

The existing truck route network in the area consists of the roads listed below. The City of Hamilton is currently planning to undertake a truck route network study later in 2006. The results of this study may revise the existing truck route in the vicinity of the NGIBP.

- Rymal Road;
- Upper Mount Albion Road (Rymal Road to Stone Church Road);
- Dartnall Road (Lincoln Alexander Parkway to Rymal Road);
- Upper Ottawa Street (Stone Church Road to Kilbride Road);
- Kilbride Road (Upper Ottawa Street to Nebo Road);
- Upper Gage Avenue (north of Rymal Road);
- Upper Centennial Parkway;
- Stone Church Road (Upper James Street to Upper Mount Albion Road); and
- Mud Street.

Currently there are no designated truck routes within the study area.

3.3.2 Rail Trail

A section of the Trans Canada Rail Trail extends through the study area. Called the "Rail Trail", it lies within an abandoned rail corridor extending generally in a southwest-northeast direction cutting diagonally through the park form a point 400m west of Nebo Road at Dickenson Road, crossing Twenty Road at Nebo Road and terminating at Stone Church Road just west of Dartnall Road.

3.3.3 Existing Traffic Conditions

Existing (year 2005) peak hour traffic volumes within and around the study area indicate several arterial roadways (all outside the NGIBP) are carrying over 700 vehicles per hour in the peak direction including:

- LINC ramps at Dartnall Road / Stone Church Road (approximately 750 vehicles/hour/peak direction)
- Stone Church Road east of Nebo Road (approximately 725 vehicles/ hour/peak direction)
- Rymal Road west of Dartnall Road (approximately 700 vehicles/hour/peak direction)
- Rymal Road east of Dartnall Road (approximately 990 vehicles/hour/peak direction)

Of the existing roadways within the NGIBP, Nebo Road carries upwards of 400 vehicles in the peak hour peak direction, whereas the remaining roads (Twenty Road, Glover Road, Dickenson Road and Trinity Church Road) all carry less than 200 vehicles per peak hour peak direction. The higher volumes exhibited on Nebo Road are a function of the existing roadside development in the study area and that it is a good through route for travel to/from the south The lower volumes on the other roads can be attributed to limited roadside development, lack of connectivity to the existing network, and substandard road geometry.

Transportation policy guidelines established in Phase 1 of the City-Wide Transportation Master Plan (2005) includes planning for the provision of transportation Level of Service (LOS) 'D' (stable operating conditions) for the road network. Depending on the adjacent land uses, level of intersection spacing, access control and signalization, arterial road demands of over 700 vehicles per lane start to approach the LOS 'D' criteria; for collector roads the volume threshold is less given their function and that they have generally unrestricted access.

An operating LOS review of key intersections using Synchro traffic analysis software within and adjacent to the NGIBP was undertaken (see Appendix A). All intersection within the NGIBP are stop-controlled; while most intersections of major roads immediately north of the area are signalized.

The traffic volume review indicates LOS within the NGIBP is very good given the generally low traffic demand and that signalized intersections adjacent to the NGIBP are currently operating at LOS B or better. Intersections operating at or beyond LOS E are along Rymal Road east of Dartnall Road where there can be significant delays for traffic entering from the minor roadways which are stop controlled. It is noted that the traffic operational issues along Rymal Road are currently being addressed in the Rymal Road Planning Area EA Study.

The a.m. and p.m. peak hour intersection Levels of Service are depicted in Figures 3.3.3-1 and 3.3.3-2, respectively.

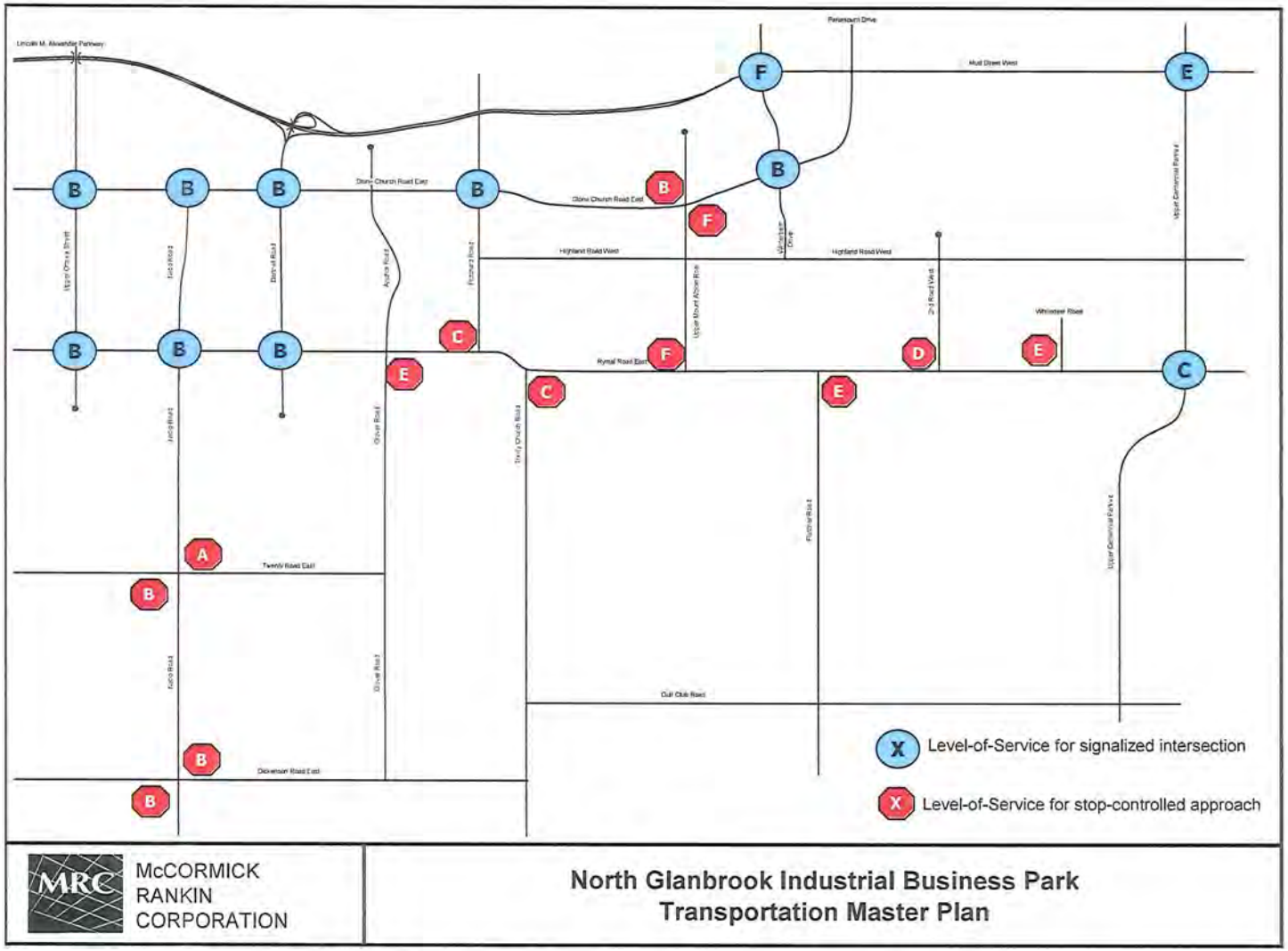


Figure 3.3.3-1: AM Peak Hour Intersection Levels of Service

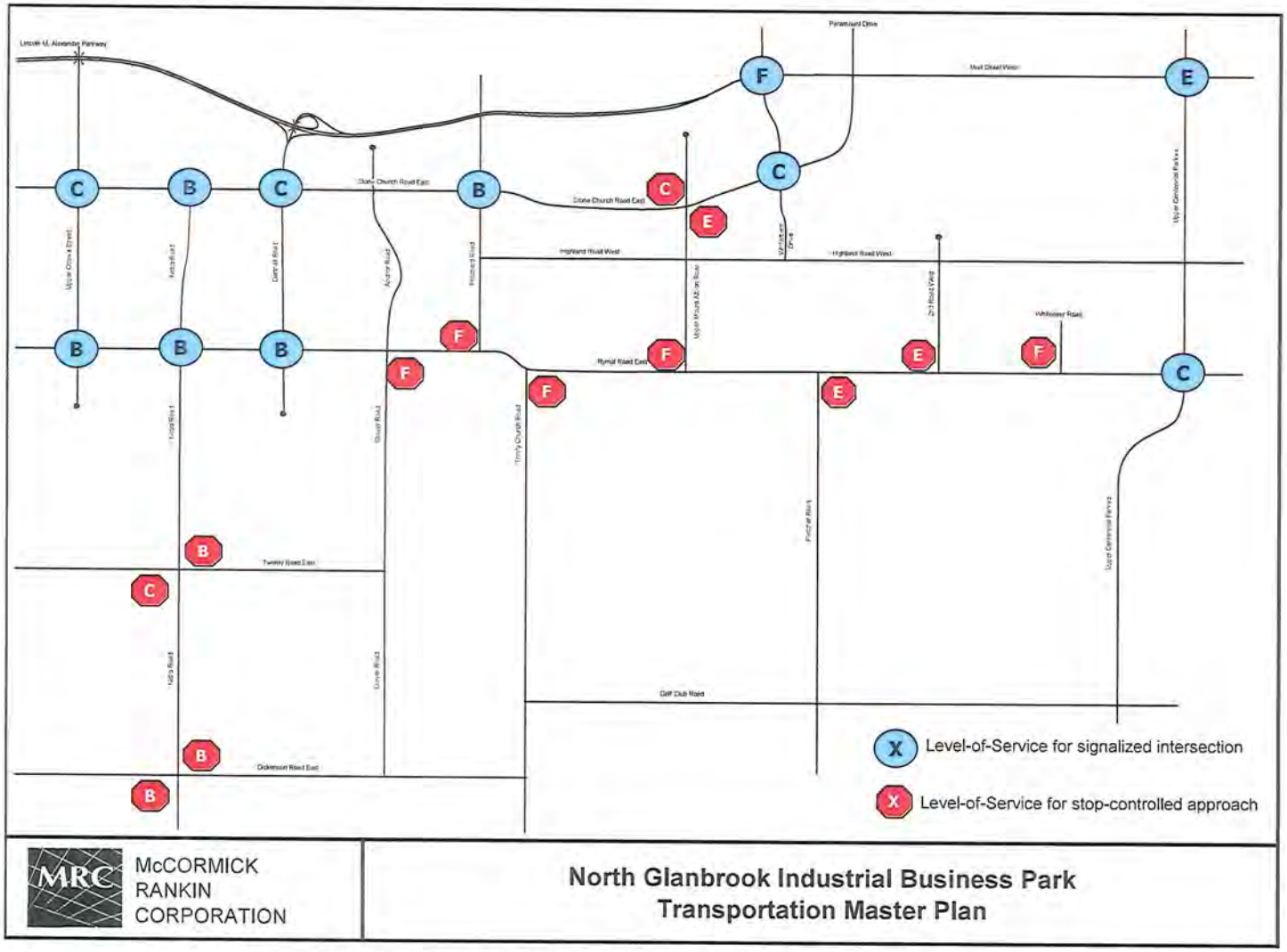


Figure 3.3.3-2: PM Peak Hour Intersection Levels of Service

4.0 Transportation Alternatives

4.1 Rationale for Road Infrastructure Improvements

4.1.1 Future Traffic and Network Requirements

As noted in Section 3.3.3, the review of existing volumes within the NGIBP area indicates that the existing road network currently carries traffic volumes well below the capacity of the transportation system. In addition, all the intersections within the study area are operating at good levels-of-service, with minimal delays being experienced at each of the stop-controlled intersections.

A detailed analysis of future traffic based on planned changes in land use was undertaken to gain an understanding of transportation needs that will support development within the Secondary Plan area. A copy of the existing and future conditions analysis report is provided in Appendix A. Results of the analysis indicate that as development occurs, there will be a significant increase in traffic on roadways within and adjacent to the Secondary Plan area.

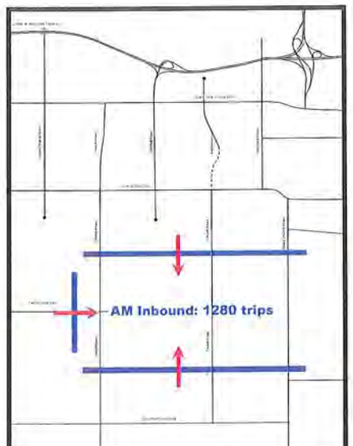
Network connectivity is a key transportation issue. Since Dartnall Road ends north of the hydro corridor there are no direct connections from the NGIBP to the Lincoln Alexander Parkway (LINC) or the future Red Hill Valley Parkway (RHVP). Without the provision of direct connections, there will be major impacts on the roads adjacent to the NGIBP secondary plan area as NGIBP development traffic uses these roads to access the major corridors.

From a broader perspective, the recently completed Airport Master Plan Update (December 2004) noted that the existing arterial road system does not address the specific needs of the airport. The future travel demand analysis identifies a long-term requirement to provide improved access to the QEW via a direct connection to the LINC and the RHVP. As noted in the Airport Master Plan Update, the required direct connection could pass through the NGIBP secondary plan area, thus requiring improvements to the existing infrastructure in the study area to carry long distance through vehicular traffic.

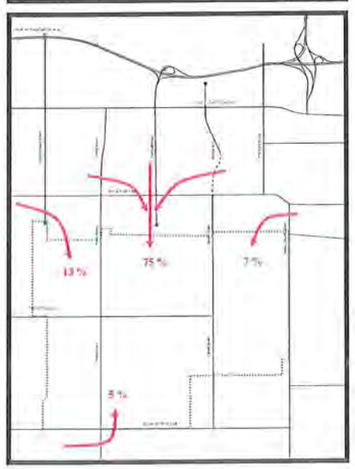
As a result of the projected increase in traffic, upgrades to the road network will be required both within and external to the study area (refer to Appendix A and Section 3.3.3).

Figure 4.1.1-1 depicts and describes the future a.m. peak hour peak direction travel flows and associated transportation infrastructure considerations within the NGIBP Secondary Plan area.

Existing Network:



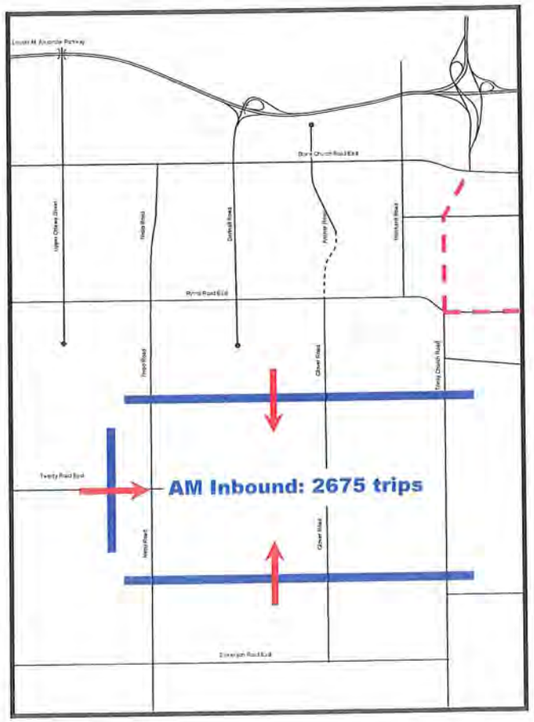
- All roads in the Secondary Plan study area are operating below capacity



Existing Trip Distribution Patterns:

- 75 % of trips are from the north
- 13% of trips are from the west
- 7% of trips are from the east
- 5% of trips are from the south

10-15 Years (50% Buildout):

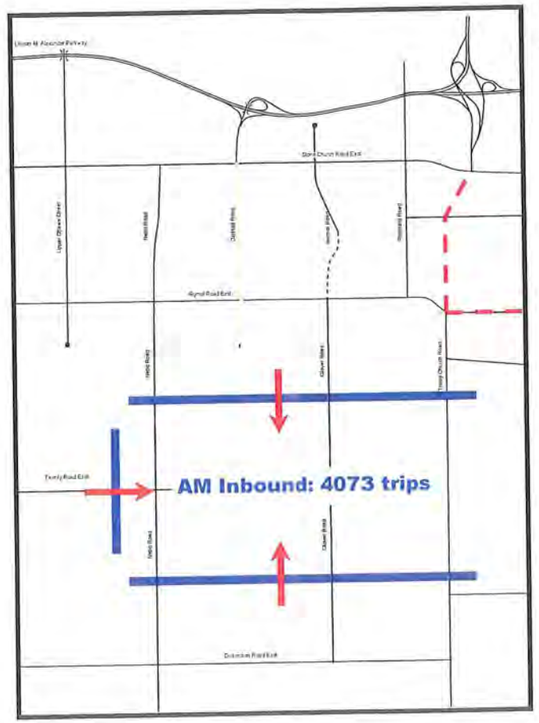


- Existing north-south road network will be operating in a congested state with future travel demands.
- Additional north-south capacity (one lane in each direction) will be required.
- East-west roads provide sufficient capacity; however, improvements are required to provide better network accessibility / flexibility.
- Network connectivity from the Secondary Plan area to major freeways (LINC and RHVP) will be required as existing intersections will be operating in a congested state. Travel demand analysis identified the need for additional north-south capacity in the vicinity Trinity Church Road from the RHVP to Rymal Road (currently being addressed in the ROPA 9 Class EA).

Legend:

▪ ▪ ▪ Improvements currently being studied in the ROPA 9 Class EA

20-30 Years (100% Buildout):



- Future travel demands associated with the Secondary Plan study area will require further north-south capacity (an additional one lane in each direction).
- Development of the airport lands to the west will result in the need for enhanced network connectivity between the Airport and major freeways (LINC and RHVP) to the east possibly along existing corridors of Dickenson Road or Airport Road with provision of a "through" route from the south end of the Secondary Plan area to the Trinity Church Road corridor.
- Road capacity from the Secondary Plan area to the Lincoln Alexander Parkway will have to be enhanced along Dartnall Road.

Legend:

▪ ▪ ▪ Improvements currently being studied in the ROPA 9 Class EA

Figure 4.1.1-1: Existing and Future AM Peak Hour Peak Direction Vehicle Volumes and Associated Needs

4.1.2 Network Requirements within the Study Area

10 to 15 year Time Frame

Traffic volumes on the road network will increase as a result of new development in the NGIBP and in the Rymal Road Planning Area (ROPA 9) east of Trinity Church Road. Over the next 10 to 15 years, the traffic volumes destined to and through the NGIBP secondary plan area are anticipated to more than double resulting in the road system serving the NGIBP to be operating in a congested state. The demand generated by commuters and the movement of goods and services will be such that the implementation of transit or travel demand management techniques on their own will not be sufficient to support planned growth. In order to provide the NGIBP with a transportation network that provides good operating conditions in the medium term, the following infrastructure improvements are required:

- Additional north-south capacity (one lane in each direction);
- Upgrades to existing roads to industrial standards; and
- Improved east-west routes with connections to Trinity Church Road.

15+ Year Time Frame

It is anticipated that the NGIBP will be completely built out over the next 20 to 30 years resulting in destined and through traffic volumes representing an additional 50% increase over the 10 to 15 year traffic projections. In addition to the NGIBP related traffic forecasts, it is anticipated that substantial employment development is to occur on lands adjacent to the airport and that there will be traffic growth on east-west roads between the airport and lands to the east and major transportation corridors such as the Lincoln Alexander Parkway and the Red Hill Valley Parkway. Therefore, in the long term, the following additional expansion of the system to meet forecast travel demands is required:

- North-South road capacity (one lane in each direction); and,
- Protection for additional north-south capacity (one lane in each direction).

In summary, traffic congestion caused by the lack of good roads and road connections will ultimately hinder park development; therefore, improvements to the basic road network beyond which can be provided by the implementation of transit or travel demand management techniques are required.

4.1.3 Network Requirements External to the Study Area

Although the scope of this study is to determine the network needs for the park itself, it is not possible to do so without consideration of the needs on roads and corridors that extend outside the park and connect it to other major transportation facilities (LINC and RHVP) and without consideration of how and when the improvements need to be implemented.

Therefore, the scope of improvements to be recommended in this study that will fulfil requirements for Phase 1 and 2 of the Class EA also consider the portion of roads within the park that extend north to Rymal Road; i.e. Upper Ottawa Street, Nebo Road, Dartnall Road, Glover Road, and Trinity Church Road.

All other network improvements identified in the Existing and Future Conditions Report (Appendix A), however, will need additional study to fulfil Class EA requirements prior to implementation and their timing will need to be considered in conjunction with road improvements recommended in this study and other growth initiatives (ROPA9, airport lands, etc.). Specifically, these external network upgrades include:

- widening of Dartnall Road to four lanes north of Rymal Road
- widening of Rymal Road between Upper Gage Avenue and Upper Centennial Parkway (Highway 20),
- an east-west connection between the south end of the NGIBP and the airport (potentially along Dickenson Road or Airport Road); and
- an extension of Trinity Church Road north of Rymal Road to the RHVP.

The need for the latter has been established as part of the Rymal Road Planning Area (ROPA 9) Class EA.

4.2 Alternative Solutions

4.2.1 Transportation Network Alternatives

As discussed in Section 4.1, a review of traffic volumes and network connectivity resulted in the determination that in the future, as development occurs, the current transportation network within and surrounding the NGIBP is anticipated to experience traffic congestion, beyond which could be reduced with the implementation of transit or travel demand management techniques, without significant upgrades to the road network. An analysis of the traffic volumes and network connectivity concerns identified the need to provide new or upgraded arterial and collector roads to industrial standards leading to and within the study area. In that regard, it was necessary to look at different road network solutions that would be able to address the future transportation demand while also being

compatible with other competing interests in the area such as preservation of natural environment features and the integrity of existing residential areas outside the park boundaries.

While residential development is rural and somewhat sparse, some of the major corridors that lead into and out of the study area have established homes situated on both sides of the roadway. As growth occurs, there will be impacts to adjacent residential land uses predominated by the effects of increase traffic, particularly trucks. Typical concerns also noted by residents include the potential increase in noise and pollution as a result of additional traffic and the potential for traffic infiltration in residential areas.

As a result, new or improved arterial transportation corridors leading to and within the study area will need to be provided that minimize the effect of development on existing residential properties adjacent to the study area. This can be achieved by looking at, for example, alternative route locations for any new roads and defined transition points on roads separating different land uses, such as signing or physical changes to the road cross-section.

Four road network alternatives comprised of arterial and collector roads were developed for the NGIBP which at a minimum would be capable of accommodating future travel demand generated by growth planned for the park. The Do Nothing option, though unable to meet the basic transportation capacity requirements of the park was also included as a network alternative to allow for a baseline comparison of the alternatives to the current transportation network.

Local roads were not explicitly considered in the development of the networks but rather implicitly by recognizing the need for them to provide access to specific development blocks that will be established as part of a Plan of Subdivision. In that light, the orientation and spacing of the arterial and collector roads in each network alternative have regard for the establishment of a local road network to support development of the park and that these roads will feed the future higher order road system.

The following principles were used to assist in generating the network alternatives:

1. Minimize effects to known environmental features and social concerns;
2. Ensure sufficient capacity available to accommodate future demand for the NGIBP Secondary Plan and possible connections to Hamilton Airport;
3. Allow for north-south and east-west continuity;
4. Develop a road network that complements the existing road network adjacent to the Secondary Plan area; and
5. Provide land parcels of adequate size for future development.

Aside from Alternative 1 (Do Nothing) two types of alternatives were developed. Alternatives 2 and 3 were developed using a traditional grid pattern approach for roads which is similar to the how the rest of the City of Hamilton's road network above the escarpment was established while Alternatives 4 and 5 were developed with mind to the considerable planning that has been completed in previous years for the area that resulted in an approved Secondary Plan. In that regard Alternative 4 essentially replicates the major road network identified in the existing Secondary Plan while Alternative 5 is a modified version of Alternative 4 that attempts to accommodate longer term interests of the City with regard to growth and travel in outlying areas.

It is important to note that Alternatives 2 through 5 all include the extension of Dartnall Road through the park south to Dickenson Road. As noted in Section 4.1, future travel demand anticipated to, from, and through the NGIBP requires a direct connection to the LINC/RHVP. Further to that, planned growth of the airport lands in the longer term has identified enhanced connections to the RHVP as an important strategic consideration; therefore, Alternative 5 also includes the potential of Trinity Church Road to be upgraded south of Rymal Road to provide the flexibility in the network to accommodate this future need.

Alternatives 2 through 5 would provide for improved connectivity to the existing road network via several north-south roads and one or two east-west roads. In the north-south direction, Alternative 2 through 4 include:

- Upper Ottawa Street extension to Twenty Road;
- Nebo Road;
- Dartnall Road extension to Dickenson Road;
- Glover Road; and
- Trinity Church Road.

Alternative 5 includes all of the above north-south roads with the exception of the extension of Upper Ottawa Street to Twenty Road. Based on travel demand, it was determined that an extension of Upper Ottawa Street would only be required to provide local road access to specific developments.

In the east-west direction, the alternatives all include an expanded network. In Alternative 2 and 4, Twenty Road is extended directly east to Trinity Church Road, while Alternative 3 and 5 have expanded the east-west network further by including two east-west connections to Trinity Church Road east of the Dartnall Road extension. In Alternative 3 the two connections are spaced evenly between the north and south boundaries of the park and Twenty Road, while Alternative 5 achieves a similar arrangement except the northerly east-west connection is a realignment and extension of Twenty Road.

Figure 4.2.1-1 identifies the network alternatives considered.

Network Alternative One: DO NOTHING

Legend
- Arterial
- Collector
- Study area

Network Alternative Two: SIMPLE GRID

Legend
- Arterial
- Collector
- Study area
- Arterial Road (Protect for 4 lanes)

Network Alternative Three: MODIFIED GRID

Legend
- Arterial
- Collector
- Study area
- Arterial Road (Protect for 4 lanes)

Network Alternative Four: SECONDARY PLAN

Legend
- Arterial
- Collector
- Study area
- Arterial Road (Protect for 4 lanes)

Network Alternative Five: MODIFIED SECONDARY PLAN

Legend
- Arterial
- Collector
- Study area
- Arterial Road (Protect for 4 lanes)

Note: This alternative does not require an Upper Ottawa Street extension as part of the municipal arterial network based on travel demand. This extension may be required as a local road to provide access to specific developments.

Figure 4.2.1-1: Network Alternatives

Revised

4.2.2 Evaluation Criteria

The evaluation criteria developed for the evaluation of the five network alternatives were based on a holistic approach to review the potential environmental effects (natural, social, economic, cultural, and transportation factors) of each alternative. The factor specific evaluation criteria were developed in consideration of general and study area specific potential environmental effects. Natural, social, economic, cultural and transportation factors were considered in the development of key evaluation criteria for each factor. The factor specific evaluation criteria are outlined in the assessment and evaluation table (Table 4.2.3-1).

4.2.3 Assessment and Evaluation of the Alternatives

The development of evaluation criteria allowed for the assessment and evaluation of the five network alternatives. As noted in Section 4.2.1, the Do Nothing option was included in the evaluation as Alternative 1 in order to allow for a baseline comparison of the alternatives to the current transportation network. Table 4.2.3-1 outlines the complete assessment of the network alternatives. Each alternative was assessed based on the factor specific evaluations criteria. The result of the assessment was then reviewed and summarized in an overall evaluation which then allowed for the selection of the preferred alternative.

Effects to the Natural Environment

All five alternatives would result in minor impacts to the natural environment. Although the natural environment within the study area is generally absent of any notable features (e.g. habitat and species of local/provincial/national significance [see Section 3.1]), Alternatives 3 and 5 would result in relatively higher effects due to potential impacts to groundwater recharge areas. Mitigation measures to reduce any potential impacts to the natural environment would be developed in consultation with the appropriate agencies (i.e. Hamilton Conservation Authority, Niagara Peninsula Conservation Authority, Ministry of Natural Resources, and/or the Department of Fisheries and Oceans) as part of the Hannon Creek subwatershed study or the design phase of specific road projects. For example, the potential impacts to creeks and associated riparian vegetation could be effectively mitigated through the use of natural channel design and appropriate riparian vegetation. It is also worth noting that given the low quality of the existing natural features within the study area the resultant mitigation measures will likely result in an enhanced natural environment when considering specific features such as aquatic habitat.

Overall, Alternatives 1, 2 and 4 would result in fewer adverse environmental effects; however, the increased effects resulting from Alternatives 3 and 5 are limited and can be mitigated during design and construction.

Socio-Economic Effects

Alternatives 2 and 3 would result in fewer impacts to existing properties; however, these alternatives both limit the functionality of the network with respect to road connectivity. Alternative 2 does not allow for clearly defined routes, but rather multiple routes which would result in potential conflicts impeding traffic flow). Alternative 3 does not provide a continuous east-west connection; a continuous east-west connection would provide for improved connectivity to the municipal roadway system (freeways and arterial roads) as well as improved goods movement and connections to the airport. It should be noted that Alternatives 4 and 5 result in similar impacts to existing properties; however, Alternative 4 would result in smaller land parcel sizes which may not be conducive to development.

Alternatives 2 and 4 would minimize potential traffic infiltration into residential areas. Although Alternatives 3 and 5 present a moderate potential for traffic infiltration along Trinity Church Road and Glover Road, a transition would be developed to identify the changing land use from that of industrial to residential.

It should be noted that only Alternative 4 conforms to the existing Draft Plans of Subdivision.

Overall, Alternative 5 is preferred as it would provide for the best access to future development and would leave larger land parcels for development.

It should be noted that only Alternative 4 conforms to existing pending and approved draft Plans of Subdivision. Based on the configuration of the recommended road network revisions to all draft plans will be required.

Effects to Cultural Resources

The only anticipated potential impacts to cultural resources are associated with potential archaeological resources outside of the existing disturbed right-of-way. In order to mitigate any potential adverse effects, a Stage 1 Archaeological Assessment has been completed and a Stage 2 Archaeological Assessment will be completed prior to construction for lands that have not been previously assessed and cleared of further heritage concerns by the Ministry of Culture. Potential adverse effects cannot be determined until the completion of the Stage 2 Archaeological Assessments; however, should areas of archaeological sensitivity be identified appropriate follow-up studies and mitigation measures will be undertaken in consultation with the Ministry of Culture.

Effects to Transportation

The evaluation of the alternative networks has indicated that Alternative 1 (Do Nothing) and Alternative 2 (Simple Grid) do not adequately meet the transportation objectives of providing a continuous, connected network nor do they improve accessibility to

development lands and to the existing road network. As a result, these two alternatives are not discussed further.

The evaluation of the remaining three alternative networks has indicated that Alternative 3 (Modified Grid), Alternative 4 (Secondary Plan) and Alternative 5 (Modified Secondary Plan) generally meet the following objectives in:

- Providing improved accessibility to the North Glanbrook Industrial Business Park;
- Providing direct connections to the municipal freeway network;
- Ensuring accommodation of improved transit services;
- Assuring continuity with the existing municipal road network; and,
- Allowing for future road network flexibility to address long range initiatives such as significant employment growth at the airport.

A further review of the three remaining alternative networks shows that Alternative 3 (Modified Grid) is less desirable than Alternatives 4 and 5. The Alternative 3 network indicates restricted connectivity to the municipal road network from a significant block of land south of Twenty Road, which also limits east-west collector flows. Furthermore, there are additional construction costs associated with the extension of Upper Ottawa Street from Twenty Road southwards and eastwards to the Dartnall Road extension.

The comparison between Alternative 4 (Secondary Plan) and Alternative 5 (Modified Secondary Plan) indicates that the Alternative 5 network is more preferred as it provides a more consistent spacing between east-west collector roads, which provides more flexibility in lot sizes for future development, as well as creating more opportunities to access the arterial road system. In addition to accessibility into the North Glanbrook Industrial Business Park and the noted network connectivity, Alternative 5 makes provisions for staging opportunities for future development and road network improvements as it utilizes the existing road network west of Dartnall Road. In addition, the Alternative 5 network achieves these transportation benefits without drastically altering the previously approved Secondary Plan. However, it is of note that the Alternative 5 network would have some impact on the existing draft plans of subdivisions in the lands located between Dartnall Road and Glover Road, north of Twenty Road (existing alignment).

From a serviceability perspective, Hamilton Street Railway (HSR) transit routes 22 (Upper Ottawa), 23 (Upper Gage), and 24 (Upper Sherman) all represent logical opportunities for route expansion in the vicinity of the park. From a functional perspective, Alternatives 1 and 2 would not provide a fluid transit network and would require longer walking distances to the nearest bus stop. Alternatives 3-5 could support a functional transit network with less walking distance between each bus stop.

Summary of Effects to the Environment

As the effects of each alternative were similar and relatively minor for the natural, cultural and socio-economic environments, the transportation considerations became key factors during the evaluation of the alternatives. Alternative 5 was selected as the preferred transportation network as it would provide the best access to future development and good parcel sizes.

As previously noted, Alternative 1 was included in the evaluation to allow for a baseline comparison of the alternatives to the current transportation network. Alternative 1 is not considered feasible because it would not be able to support development of the park from a travel demand perspective. Alternatives 2 and 3 were eliminated as they do not provide for good east-west and north-south continuity. Although Alternative 4, like Alternative 5, provides sufficient capacity, good east-west and north-south continuity and good staging opportunities, it was eliminated as it would not provide as much flexibility for longer term access to the airport and would result in more property severances and smaller lot sizing than Alternative 5.

Table 4.2.3-2 provides a summary of the evaluation of network alternatives and identification of Alternative 5 as the preferred network alternative.

Table 4.2.3-1: Assessment of Alternatives

EVALUATION CRITERIA	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Natural					
Effect on Terrestrial Features	• No major impacts to terrestrial features	• Minor impacts to isolated hedgerows • Fringe impacts to two small woodlots at Twenty Road and Dartnall Road	• Minor impacts to isolated hedgerows • Fringe impacts to two small woodlots at Twenty Road and Dartnall Road • Displacement of approximately 50% of a vegetated area associated with Hannon Creek tributaries North of Twenty Road	• Minor impacts to isolated hedgerows • Fringe impacts to two small woodlots at Twenty Road and Dartnall Road	• Minor impacts to isolated hedgerows • Fringe impacts to two small woodlots at Twenty Road and Dartnall Road • Displacement of approximately 50% of a vegetated area associated with Hannon Creek tributaries North of Twenty Road
Impact Effect on Aquatic Features	• No significant impacts to aquatic features • Potential minor culvert extensions for existing road improvements	• Six creek crossings along extension of Dartnall Road (potential relocation requirement) • Two creek crossings along extension of Twenty Road • Two creek crossings along extension of Upper Ottawa (potential relocation requirement) • Potential minor culvert extensions for existing road improvements	• Six creek crossings along extension of Dartnall Road (potential relocation requirement) • Four crossings along extension of Upper Ottawa (potential relocation requirements) • Four creek crossings along the new E-W road North of Twenty Road • Two creek crossings along the new E-W road South of Twenty Road • Potential minor culvert extensions for existing road improvements	• Six creek crossings along extension of Dartnall Road (potential relocation requirement) • Two creek crossings along extension of Twenty Road • Two creek crossings along extension of Upper Ottawa (potential relocation requirement) • Four crossings along new E-W road South of Twenty Road • Potential minor culvert extensions for existing road improvements	• Six creek crossings along Dartnall Road extension (potential relocation requirement) • Six creek crossings along modified Twenty Road extension (potential relocation requirement) • Two crossings along extension of Upper Ottawa (potential relocation requirement) • Two creek crossings along the new E-W road South of Twenty Road • Potential minor culvert extensions for existing road improvements
Social					
Effect on existing residential areas (Glover/Trinity Church)	• High potential for traffic infiltration into residential areas.	• Minimal potential for traffic infiltration into residential areas.	• Moderate potential for traffic infiltration along Trinity Church Road.	• Minimal potential for traffic infiltration into residential areas.	• Moderate potential for traffic infiltration along Trinity Church Road.
Effect on existing properties	• Minor property impacts.	• 9 backlot impacts along extension of Dartnall Road • 2 backlot impacts along extension of Twenty Road • 1 displacement and 2 backlot impacts along extension of Upper Ottawa	• 9 backlot impacts along extension of Dartnall Road • 5 severances, 2 displacements and 2 backlot impacts along the extension of Upper Ottawa • 1 severance, 2 displacements and 2 backlot impacts new E-W road North of Twenty Road • 3 severances along the new E-W road South of Twenty Road	• 2 severances and 6 backlot impacts along the extension of Dartnall Road • 2 backlot impacts along extension of Twenty Road • 1 displacement and 2 backlot impacts along extension of Upper Ottawa • 4 severances along the new E-W road South of Twenty Road • 1 severance along new Nebo Road turn	• 2 severances and 6 backlot impacts along the extension of Dartnall Road • 1 displacement and 2 backlot impacts along extension of Upper Ottawa • 1 severance, 2 displacements and 2 backlot impacts new E-W road North of Twenty Road • 3 severances along the new E-W road South of Twenty Road • 1 severance along new Nebo Road turn
Effect to recreational areas	• No impact	• No impact	• Upper Ottawa extension crosses the Rail Trail	• No impact	• No impact
Economic					
Effect on Existing Businesses (Nebo Road)	• No direct impact • Additional exposure for local businesses	• No direct impact	• Displacement of approximately 2 businesses at Nebo Road crossing	• No direct impact	• No direct impact
Consistency with existing approved plans (OPs, Secondary Plans, existing draft plans etc.)	• Does not provide sufficient access to lands approved for development	• Provides access to lands approved for development • Provides a continuous E-W road • Less control over internal circulation of road system	• Provides access to lands approved for development • Does not provide a continuous E-W road	• Provides access to lands approved for development • Provides a continuous E-W road	• Provides access to lands approved for development • Provides a continuous E-W road

EVALUATION CRITERIA	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Cultural					
Effect on Heritage/Archaeological Potential	• No impacts to heritage features • No impacts to lands with archaeological potential as no lands outside the existing right-of-way are impacted	• No impacts to heritage features • Moderate impacts to lands with archaeological potential	• No impacts to heritage features • Moderate impacts to lands with archaeological potential	• No impacts to heritage features • Moderate impacts to lands with archaeological potential	• No impacts to heritage features • Moderate impacts to lands with archaeological potential
Transportation					
A. Road safety on roads adjacent to Secondary Plan Area *(Indirect access / left turns)*	• Indirect access to Secondary Plan Area, requiring three major left turn movements • Moderate impacts	• Direct access to Secondary Plan Area via five major N/S roads • Minor impacts	• Direct access to Secondary Plan Area via five major N/S roads • Minor impacts	• Direct access to Secondary Plan Area via five major N/S roads • Minor impacts	• Direct access to Secondary Plan Area via five major N/S roads • Minor impacts
B. Accessibility to development lands *(Major streets to local streets)*	• Will require extensive local road network to serve the large parcels of land located between the existing road network • Moderate impacts	• Grid system requires complementary local road network to serve parcels of land located between the collector / arterial road network • Moderate impacts	• Modified grid network provides good coverage of development lands within Secondary Plan Area and minor local network • Minor impacts	• Secondary Plan network provides good coverage of development lands within Secondary Plan Area and minor local network • Minor impacts	• Modified Secondary Plan network provides good coverage of development lands within Secondary Plan Area and minor local network • Minor impacts
C. Connectivity to municipal freeway network *(Direct access)*	• Indirect access to major interchange at Dartnall Road, which requires additional left / right turn movements • Moderate impacts	• Grid network provides direct access to the municipal parkway but is serviced by only one direct route • Minor impacts	• Direct access to the municipal parkway network is provided through direct routes to the Dartnall interchange and to the Red Hill Valley Parkway interchange • No impacts	• Secondary Plan network provides direct access to the municipal parkway but is serviced by only one direct route • Minor impacts	• Direct access to the municipal parkway network is provided through direct routes to the Dartnall interchange and to the Red Hill Valley Parkway interchange • No impacts
D. Connectivity to existing municipal road network adjacent to Secondary Plan Area *(Road linkages)*	• Major N/S and E/W roads intersecting the study area are not directly linked with the road network proposed in this alternative (e.g., Upper Ottawa Street, Dartnall Road) • Moderate impacts	• Northern section of Secondary Plan Area is directly linked to major N/S roads intersecting study area; however, lower section of study area will require an extensive local road network to obtain connectively to municipal road network • Moderate impacts	• Extension of Upper Ottawa Street to Dartnall Road results in a disjointed network • Minor impacts	• Proposed road network provides adequate coverage of the development lands • No impacts	• Proposed road network provides adequate coverage of the development lands • No impacts
E. Flexibility to adapt to future network changes and provide access to airport *(Trinity Church / RHVP)*	• Direct arterial connections to the municipal parkways are not provided • Moderate impacts	• Direct connections to the Dartnall interchange (1) and the Red Hill Valley Parkway (1) are provided • Minor impacts	• Direct arterial connections to the Dartnall interchange (1) and the Red Hill Valley Parkway (2) are provided • Minor impacts	• Direct connections to the Dartnall interchange (1) and the Red Hill Valley Parkway (1) are provided • Minor impacts	• Direct arterial connections to the Dartnall interchange (1) and the Red Hill Valley Parkway (2) are provided • Minor impacts
F. Ability to effectively service with transit *(Collector street layout)*	• Road network is disjointed and does not provide a fluid network for transit services requiring longer walking distances to nearest bus stop • Moderate impacts	• Road network does not provide adequate coverage of the Secondary Plan Area requiring longer walking distances to nearest bus stop • Moderate impacts	• Road network provides adequate coverage of Secondary Plan Area with less walking distance to nearest bus stop • Minor impacts	• Road network provides adequate coverage of Secondary Plan Area with less walking distance to nearest bus stop • Minor impacts	• Road network provides adequate coverage of Secondary Plan Area with less walking distance to nearest bus stop • Minor impacts
G. Network staging opportunities *(Utilization of existing road ROW)*	• Network will require an extensive local road network to support any development • Moderate impacts	• Network has restrictive staging opportunities and will require extensive local road network to support development • Moderate impacts	• Network does not utilize existing roads and will require extensive local road network to support development • Moderate impacts	• Network provides for staging opportunities with the provision of additional E/W roads to be implemented when the need occurs • Minor impacts	• Network provides for staging opportunities with the provision of additional E/W roads to be implemented when the need occurs • Minor impacts
H. Road Benchmark Construction Costs *(Urban vs. rural)*	• Urban upgrade costs: $11.5 M • Rural upgrade costs: $7.2 M • Moderate impacts	• Urban upgrade costs: $16.3 M • Rural upgrade costs: $12.5 M • Moderate impacts	• Urban upgrade costs: $19.8 M • Rural upgrade costs: $14.7 M • Moderate impacts	• Urban upgrade costs: $17.0 M • Rural upgrade costs: $12.9 M • Moderate impacts	• Urban upgrade costs: $17.8 M • Rural upgrade costs: $13.5 M • Moderate impacts
I. Total km required for maintenance *(Arterial and collector)*	• Arterial km: 2.7 km • Collector km: 7.6 km • Minor impacts	• Arterial km: 3.1 km • Collector km: 10.8 km • Moderate impacts	• Arterial km: 3.1 km • Collector km: 14.3 km • Moderate impacts	• Arterial km: 2.8 km • Collector km: 12.2 km • Moderate impacts	• Arterial km: 2.8 km • Collector km: 12.5 km • Moderate impacts

Table 4.2.3-2: Summary of Evaluation of Alternatives and Selection of Preferred Alternative

EVALUATION CRITERIA	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Comments
Natural						Given the longstanding agricultural land uses and more recent industrial uses there is a general absence of any features of significance. All alternatives would result in similar relatively minor environmental effects. Alternatives 3 and 5 would result in slightly higher effects due to potential effects on groundwater recharge areas.
Social						Alternative 1 results in the highest effect on residential areas due to the high potential for traffic infiltration on residential areas.
Economic						Alternative 5 is preferred as it provides the best access for future development and provides good lot sizing. Alternative 1 is the least desirable as it does not provide sufficient access to lands approved for development. Alternative 4 results in more property severances and smaller lot sizing.
Cultural	No Impact					Alternative 1 is slightly preferred as it avoids any effects to lands with archaeological potential.
Transportation						When considering all aspects of construction staging, accessibility for vehicles, connectivity between the existing and proposed networks and the flexibility to accommodate longer-term travel demands, Alternative 5 best meets these objectives.
Summary of Preferred Alternative:						All alternatives result in similar minor natural and social environment effects and similar transit opportunities. Alternative 1 does not provide for acceptable traffic operations and therefore was eliminated from further considerations. Alternatives 2 and 3 provide sufficient capacity; however, they do not provide for good east-west and north-south continuity. Alternatives 4 and 5 provide sufficient capacity, good east-west and north-south continuity and good staging opportunities. Alternative 5 provides for better connections to Trinity Church Road with a new east-west road south of Twenty Road; flexibility for longer term access to the airport, and lot sizing than Alternative 4. **Therefore, Alternative 5 is preferred**.

Legend

Most Preferred Least Preferred

4.2.4 Preferred Transportation Network

Based on the assessment and evaluation of the transportation network alternatives, the modified secondary plan alternative (transportation network Alternative 5) was selected as the preferred transportation network. Figure 4.2.4-1 depicts the preferred transportation network.

As discussed in Section 4.2.3, Alternative 5 was selected as the preferred alternative based on consideration of natural, social, economic, cultural and transportation criteria. Overall, Alternative 5 was selected as the preferred transportation network as it provides sufficient system capacity, east-west and north-south network continuity, good staging opportunities and flexibility for longer term network access to the airport.

This transportation network features the following industrial standard arterial and collector roads:

- **Nebo Road (30m ROW)** – two-lane collector road from Rymal Road to future Dartnall Road Extension;
- **Dartnall Road (36 m ROW*)**– four-lane arterial road from Rymal Road to Dickenson Road;
- **Glover Road (26 m ROW)** – two-lane collector road from Rymal Road to approximately 1950m south;
- **Trinity Church Road (36 m ROW*)** – two-lane arterial road from Rymal Road to future Dartnall Road Extension (protect for four lanes);
- **Twenty Road (30 m ROW)** – two-lane collector road from 600m west of Nebo Road to Trinity Church Road.

* *All the above right-of-way widths are identified in the Regional and Local Official Plans; however, it is being recommended that a potentially wider ROW for both Dartnall Road and Trinity Church Road be considered to allow for design considerations that will be investigated in subsequent Class EA studies required for these projects to deal with stormwater management (see Chapter 8 for future study requirements).*

The following provides a discussion of the preferred alternative and how the preferred transportation network works along with ongoing and future plans for development.

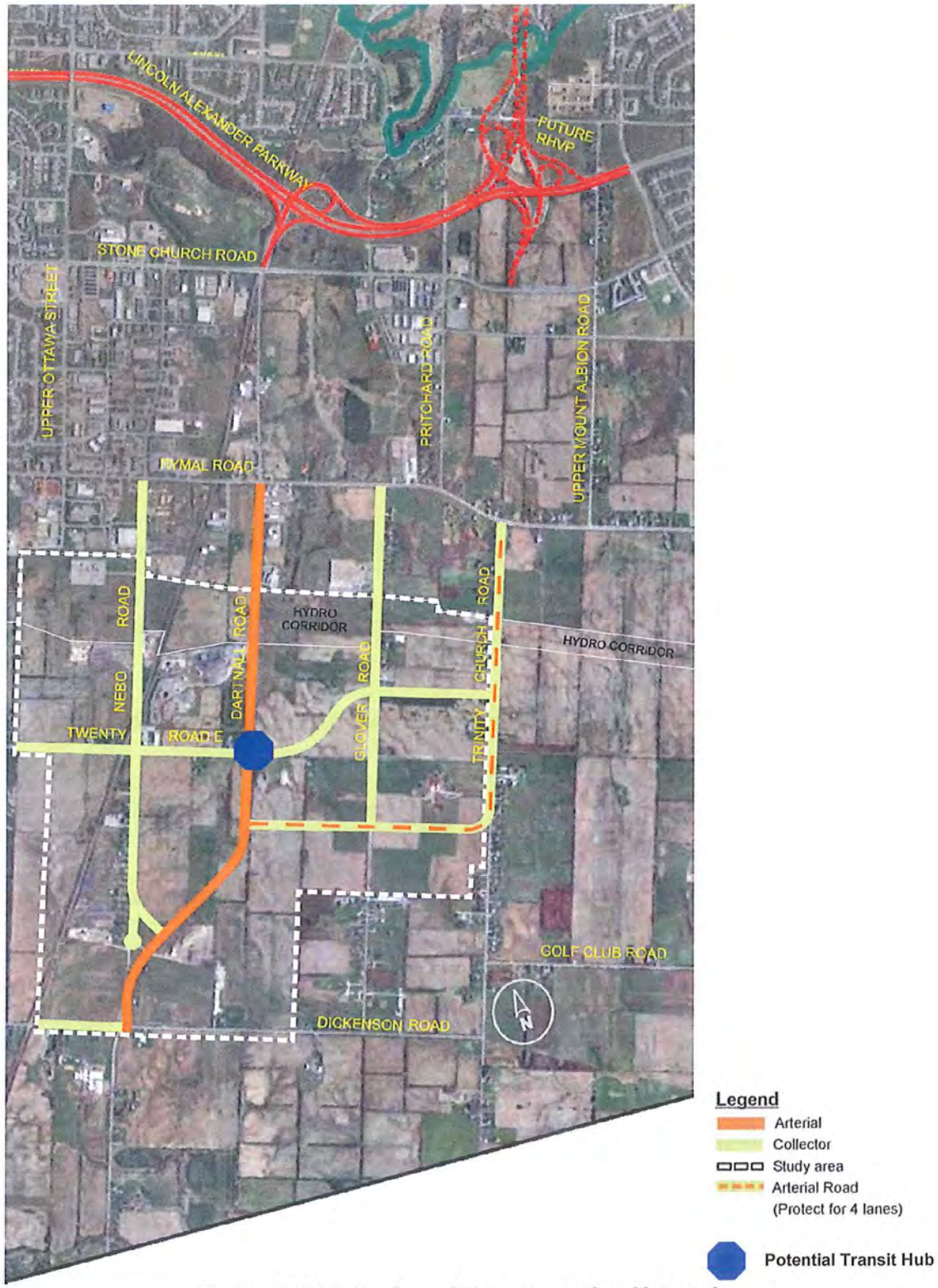


Figure 4.2.4-1 Preferred Transportation Network

Staging/Implementation

As noted in Section 4.2.3, the preferred transportation network allows for good staging since existing roads can be used and local roads are not immediately required which presents cost-saving opportunities. For example, infrastructure need not be constructed (and maintained) until development is imminent. In addition, the design of the preferred transportation network included consideration for the establishment of a local road network to support development of the park and to feed the future higher-order road system.

Figure 4.2.4-2 illustrates a conceptual staging plan for development within the NGIBP. It should be noted that this plan does not illustrate or provide a directive for staging within the NGIBP but does provide some guidance as to how the lands could develop with provision of basic servicing to the area that will be implemented from north to south (e.g. extension of Dartnall Road, sanitary sewer extension from existing outlets to the north, etc.).

Staging will be dictated both by market/development demand and ability to acquire land and will be planned with consideration given to the Hannon Creek Master Drainage Plan.

With consideration to the conceptual staging of development occurring from north to south it is recommended that the following road network upgrades be implemented, as noted in Table 4.2.4-1, based on anticipated travel demand.

Table 4.2.4-1: Implementation Schedules

Project	Scope of Work	Time Frame
Nebo Road – Rymal Road to Dartnall Road Extension	Reconstruct two lanes	0-5 years
Twenty Road – Phase 1 west of Nebo Rd. to Dartnall Rd. Extension	Reconstruct two lanes (Nebo to Dartnall in Dartnall Ph.1; w. of Nebo beyond 5 yrs.)	0-5 years
Twenty Road – Phase 2 Dartnall Rd. Extension to Trinity Church Rd.	New two lane road (existing section to become part of local network if required)	5-10 years
Glover Road – Rymal Road to approx. 1950m south	Reconstruct two lanes	5-10 years
Dartnall Road Extension Phase 1– Existing terminus to Twenty Road	New two lane road (could be advanced as four lanes initially; requires widening of existing section south of Rymal)	0-5 years
Dartnall Road Extension Phase 2– Twenty Road to Dickenson Road	New two lane road (could be advanced as four lanes initially and in first phase)	5-10 years
Dartnall Road Extension Phase 3– Rymal Road to Dickenson Road	Widen to four lanes (if not completed in first two phases)	15+ years
Trinity Church Road – Rymal Road to Dartnall Road Extension	Reconstruct / New two lane road (requires further study; possible new route – dependent on section n.of Rymal - see Chp. 8)	10+ years

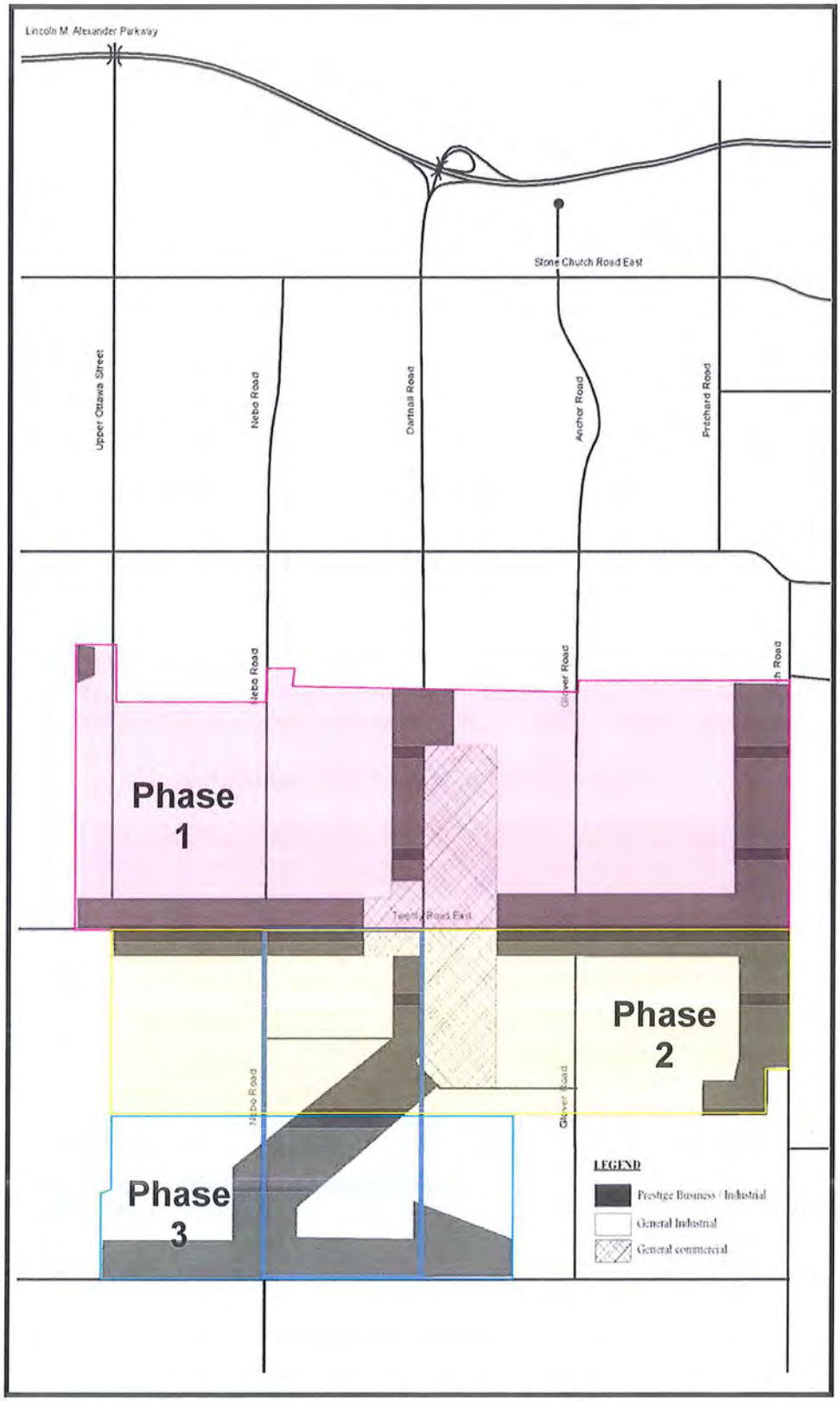


Figure 4.2.4-2 Conceptual Network Staging

Arterial Roads

Dartnall Road - The Dartnall Road Extension and widening can be cost-effectively constructed in stages. In order to open the NGIBP for development and to provide opportunities to begin servicing on other roads (e.g. Nebo Road, Glover Road) the first stage of construction could end at Twenty Road. Depending on financing and other considerations to be reviewed in Phase 3 and 4 of the Dartnall Road Class EA (see below) it may be more appropriate to construct the road to four lanes from the onset. This would require the existing section of Dartnall Road south of Rymal Road to be widened at the same time.

Trinity Church Road - Trinity Church Road including the east-west extension to the Dartnall Road Extension is a longer term project tied to development in the park as well as growth occurring at the airport. As development in the park should have been well established by the time for this upgrade is needed, it's feasible and maybe more appropriate to have it constructed as development proceeds as part of a Plan of Subdivision. If driven by airport growth, it may be more appropriate for the City of Hamilton to acquire lands and construct the road in one stage.

Because they are major projects, the construction, improvement and widening of both Trinity Church Road and the Dartnall Road Extension cannot commence until both projects meet Schedule C requirements (Phases 3 and 4) of the Class EA, including further consultation and preparation of Environmental Study Report. It should be noted that this Master Plan serves to fulfil Phases 1 and 2 components of these studies. Please refer to Figure 1.2.1-1 for additional details regarding the Class EA phases and Section 8.1 for future study requirements.

Collector Roads

Nebo Road and Glover Road can be reconstructed as development warrants, although the City of Hamilton could advance works on Nebo Road to provide access to more serviced land and to set the stage for development to continue with servicing of the area. In that regard, the need for Glover Road upgrades and the extension of Twenty Road easterly are longer term and likely better to proceed as part of a development application (i.e. not constructed by the City). The timing of Twenty Road west of Nebo Road is also viewed as a longer term development-driven initiative, the need of which could be driven by development applications if not advanced by the City.

Local Roads

As noted in Section 4.2.3, additional local roads will be required to provide access to specific developments and generally will be constructed as part of a Plan of Subdivision application. For example, although the preferred network does not require an Upper Ottawa Street extension as part of the arterial/collector road network, an Upper Ottawa Street extension may be

required as a local road within a Plan of Subdivision. In addition Upper Ottawa need not extend through the main hydro corridor in order to provide access to properties abutting Twenty Road; access to this area is better served from Twenty Road via Dartnall or Nebo Road.

Figure 4.2.4-3 (plan and profile) depict the Nebo Road improvements from Rymal Road to the Dartnall Road Extension. Figures 4.2.4-4 (plan and profile) depict Twenty Road improvements between Nebo Road and the Dartnall Road Extension.

Details of the Glover Road roadway reconstruction are depicted in Figure 4.2.4-5 (plan and profile).

The typical rural and urban cross-sections are depicted in Figures 4.2.4-6 and 4.2.4-7 (collector) and Figures 4.2.4-8 and 4.2.4-9 (arterial).

Goods Movement

The roadway connectivity and accessibility of the preferred transportation network provides for increased and improved opportunities for goods movement to, from and within the NGIBP. As discussed in Chapter 2, the provision for good highway connections to support the movement of goods and services will support development of the park, but will also address larger city-wide endeavour to promote economic development through implementation of infrastructure in accordance with strategic directions identified in the City's Goods Movement Study (2005).

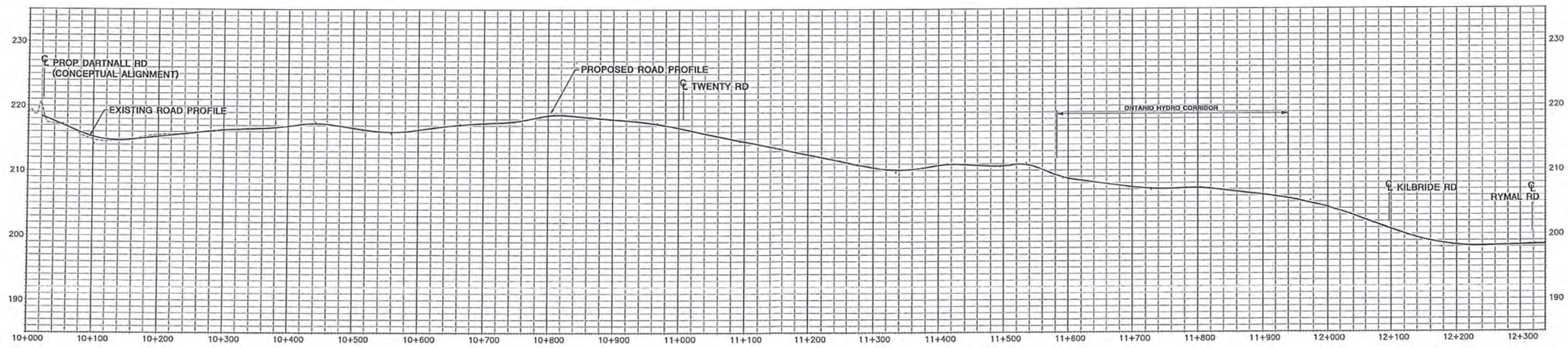
Growth Planning

The City of Hamilton has completed a Growth Related Integrated Development Strategy (GRIDS) (May 2006) to "...identify a broad land use structure, associated infrastructure, economic development strategy and financial implications for the growth options to serve Hamilton for the next 30 years[1]". GRIDS includes recognition and planning towards future development and growth within and surrounding the NGIBP. The preferred transportation network will provide the connectivity, capacity and staging opportunities necessary to efficiently and effectively develop the NGIBP while giving due consideration to GRIDS and growth planning within the City of Hamilton.

[1] GRIDS Study Design, 2003

Figure 4.2.4-3

Scale 1:7000



McCORMICK RANKIN CORPORATION

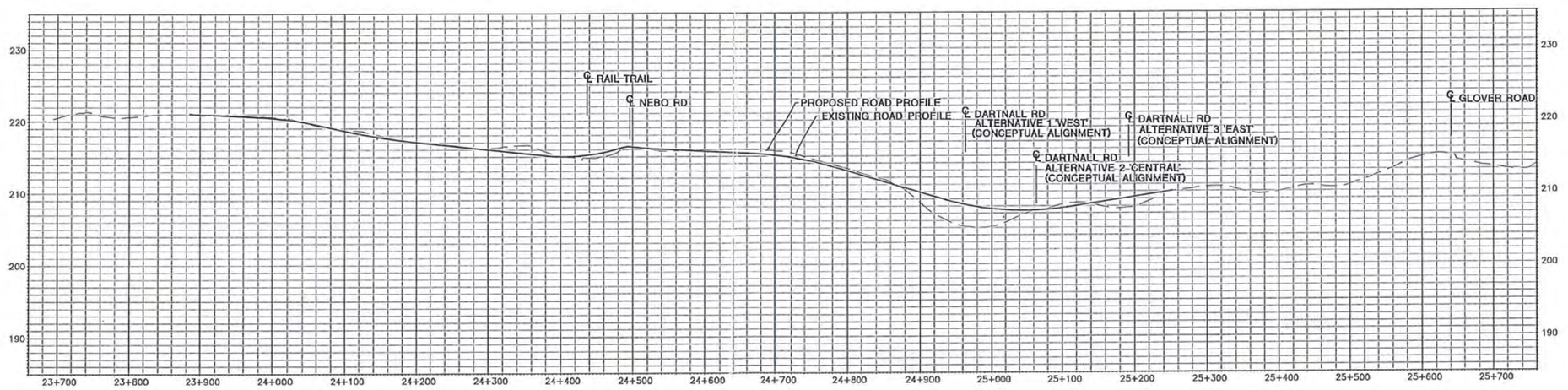
ecoplans Limited

NEBO ROAD

Hamilton

Figure 4.2.4-4

Scale 1:7000



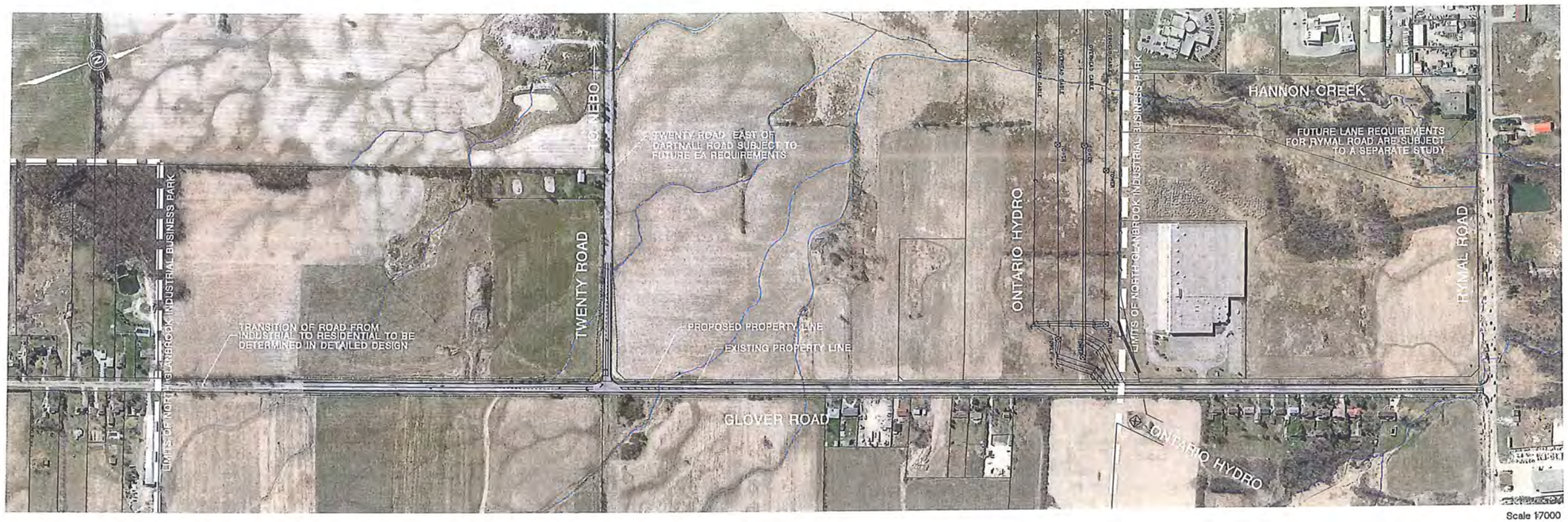
McCORMICK RANKIN CORPORATION

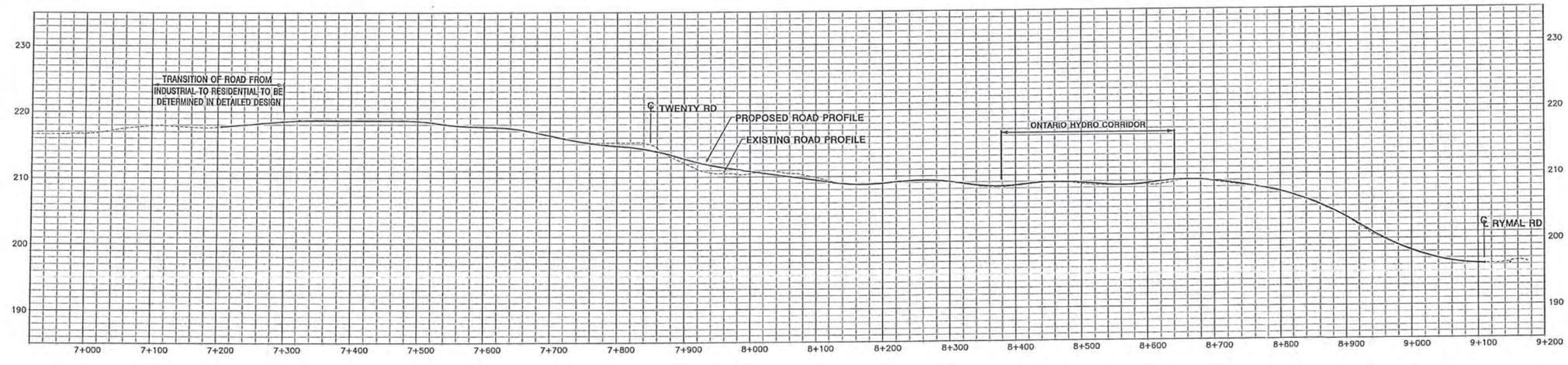
ecoplans Limited

TWENTY ROAD

Hamilton

Figure 4.2.4-5





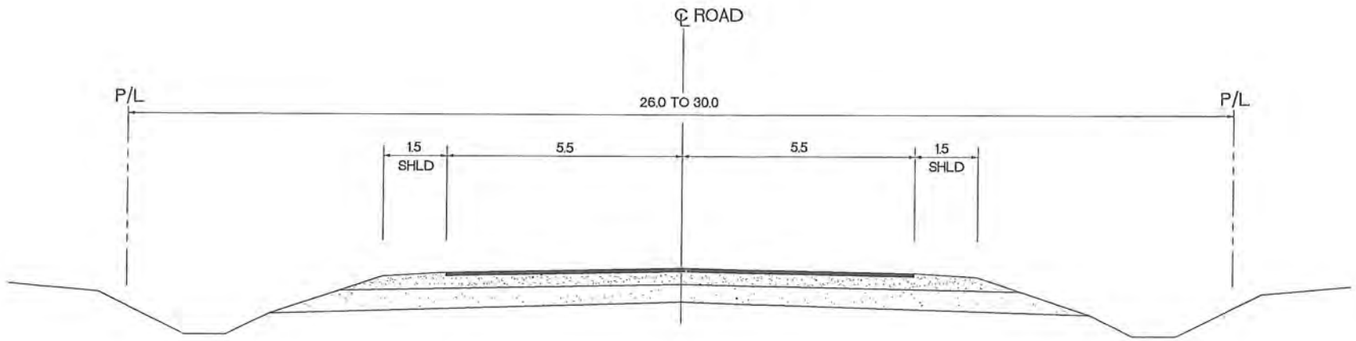
McCORMICK RANKIN CORPORATION

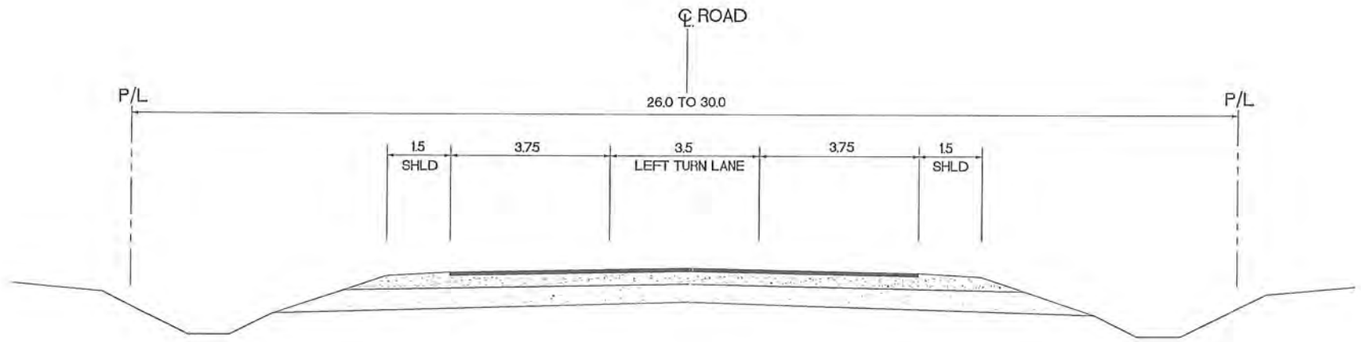
ecoplans Limited

GLOVER ROAD

Hamilton

Figure 4.2.4-6





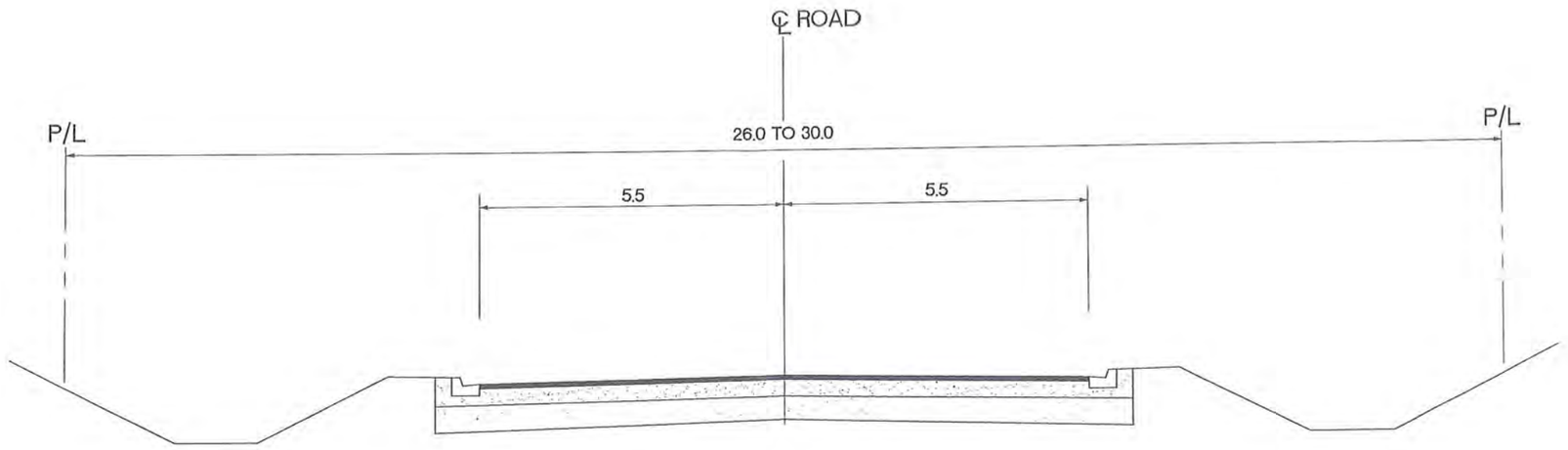
McCORMICK RANKIN CORPORATION

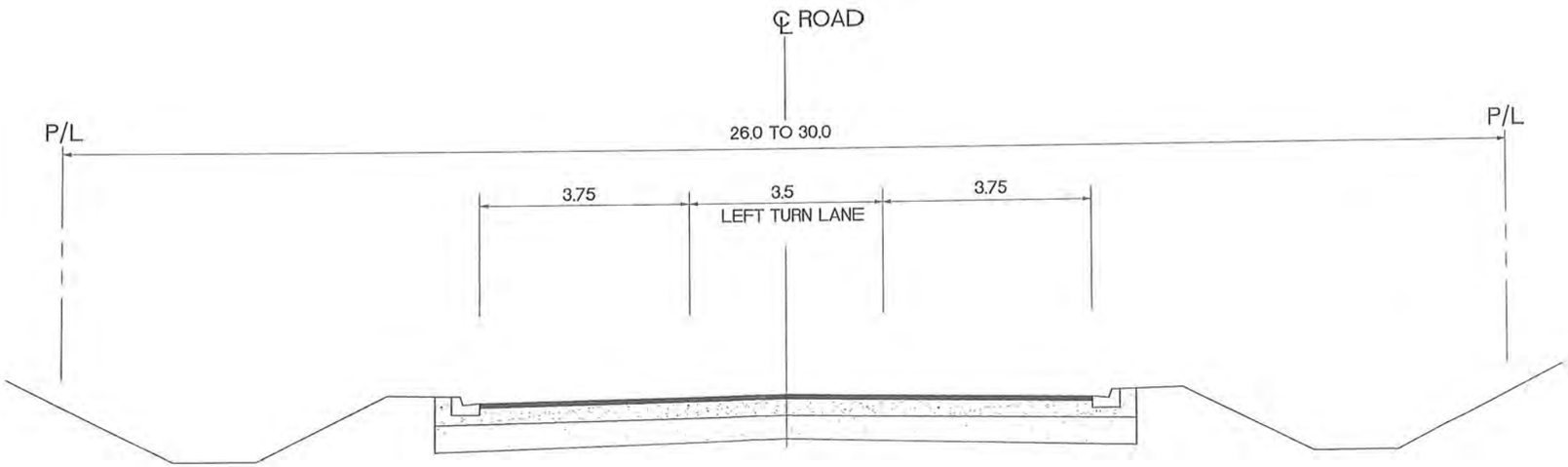
ecoplans Limited

COLLECTOR - TYPICAL RURAL SECTION
(GLOVER ROAD, NEBO ROAD AND TWENTY ROAD)

Hamilton

Figure 4.2.4-7





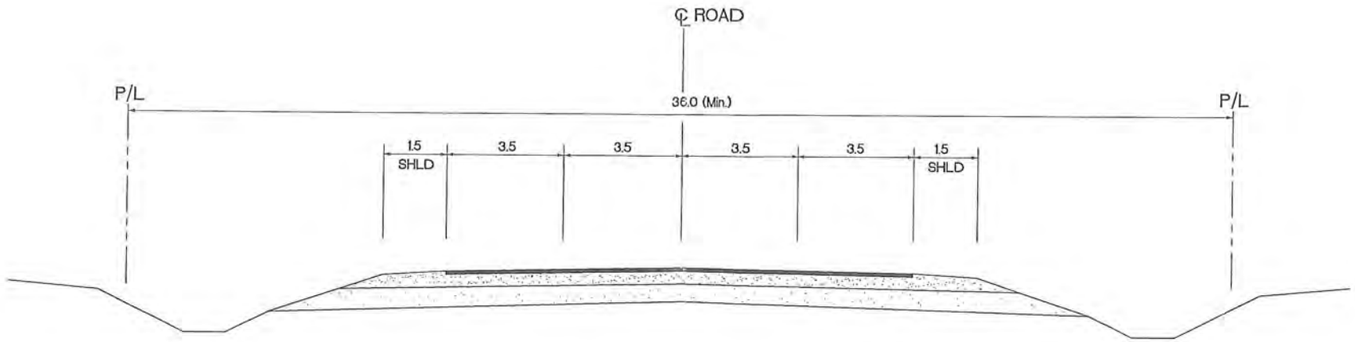
McCORMICK RANKIN CORPORATION

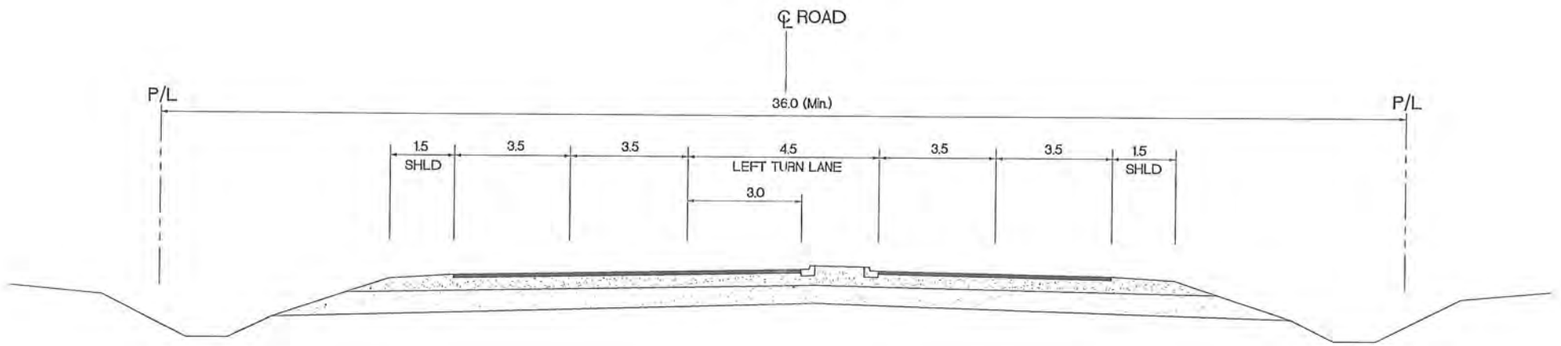
ecoplans Limited

COLLECTOR - TYPICAL URBAN SECTION
(GLOVER ROAD, NEBO ROAD AND TWENTY ROAD)

Hamilton

Figure 4.2.4-8





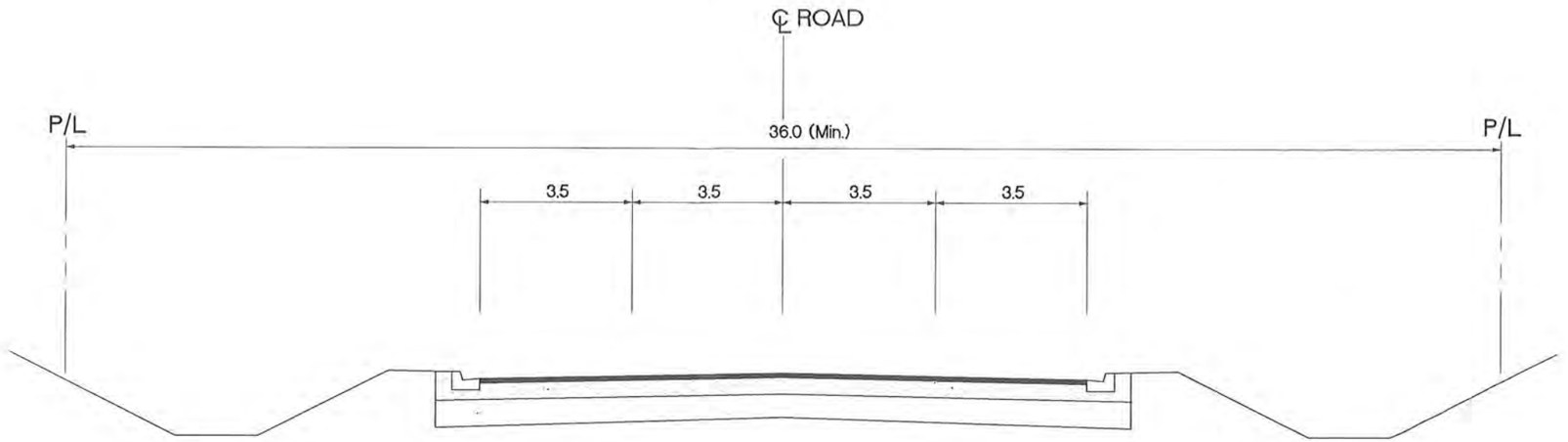
McCORMICK RANKIN CORPORATION

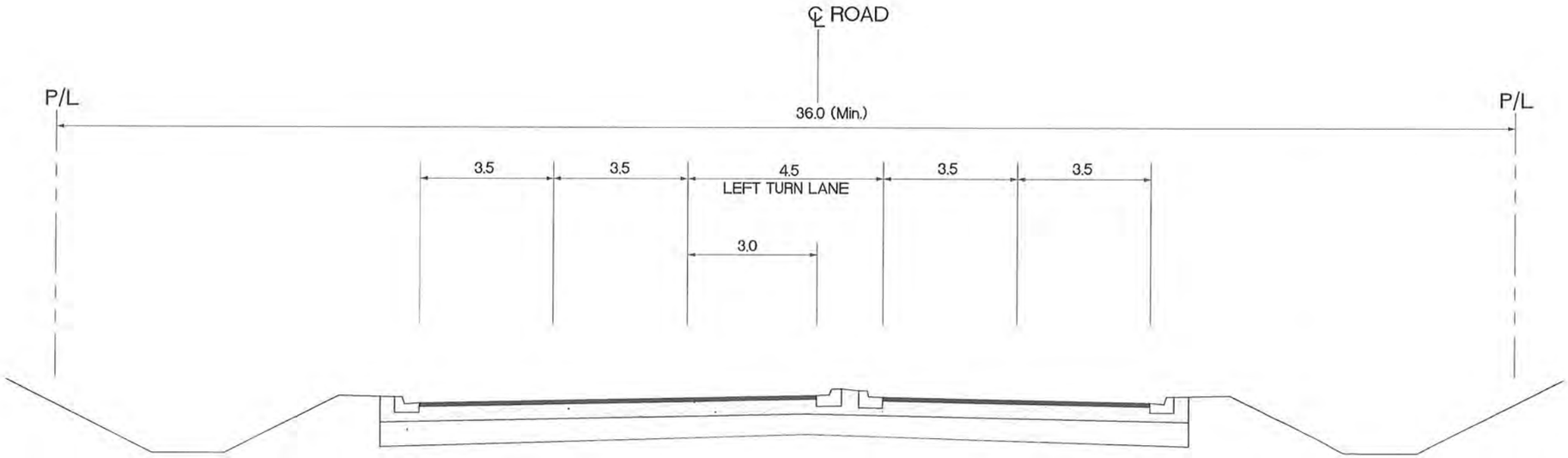
ecoplans Limited

ARTERIAL - TYPICAL RURAL SECTION
(TRINITY CHURCH ROAD AND DARTNALL ROAD)

Hamilton

Figure 4.2.4-9





McCORMICK RANKIN CORPORATION

ecoplans Limited

ARTERIAL - TYPICAL URBAN SECTION
(TRINITY CHURCH ROAD AND DARTNALL ROAD)

Hamilton

4.2.4.1 Other Considerations

Transit

From a functional perspective, the preferred network is capable of supporting the extension of existing Hamilton Street Railway (HSR) transit routes into the NGIBP, as development warrants and from a serviceability perspective, HSR transit routes 22 (Upper Ottawa), 23 (Upper Gage), and 24 (Upper Sherman) all represent logical opportunities for route expansion in the vicinity of the park. The expansion of HSR service into the park would need to be coordinated at a future point in time and would potentially be triggered by an identified demand established by significant build out of the park or by the need of a potential major user(s). In addition, the future intersection of the Dartnall Road Extension and Twenty Road has been identified a potential future transit hub as it is centrally located within the NGIBP and within an area zoned commercial. This potential future transit hub is noted on Figure 4.2.4-1.

Truck Routes

Although the current truck route network (described in Section 4.1) in the vicinity of the NGIBP does not utilize the existing road network within the study area, future truck routes should be considered within and surrounding the park to allow for improved goods movement to, from and through the park. As noted in Section 4.1, the City of Hamilton is currently planning to undertake a truck route network study later in 2006. The results of this study may result in revisions to the existing truck route network in the vicinity of the NGIBP. The connectivity of the preferred transportation network would be amenable to the incorporation of a truck route.

Traffic Infiltration

As discussed in Section 4.2.4, the preferred transportation network may result in traffic infiltration into residential areas. In that regard there are two locations where the interface of industrial zoned land uses with residential zoned land uses need to be considered. At the south boundary of the NGIBP a transition treatment will need to be developed to identify the changing land use from that of industrial to residential along Glover Road south of Twenty Road. This may also need to be considered for future studies. For Glover Road the design of a transition will be a requirement of a future Plan of Subdivision and will include public input to determine the most suitable treatment. Examples of possible treatments include: distinguishing landscape/road designs and 'no heavy truck' and 'local traffic only' signs.

Future Land Use and Existing Draft Plans of Subdivision

There are currently six Draft Plans of Subdivision within the NGIBP; three are draft approved and three are under review (pending). Based on the configuration of the recommended road network revisions to all draft plans will be required.

5.0 Environmental Effects and Mitigation

The potential environmental effects and proposed mitigation measures discussed in this section are limited to the Schedule B projects:

- **Nebo Road** (Rymal Road to future Dartnall Road Extension) – roadway reconstruction (2 lanes) with intersection improvements;
- **Twenty Road** (600m west of Nebo Road to future Dartnall Road Extension) – roadway reconstruction (2 lanes) with intersection improvements; and
- **Glover Road** (Rymal Road to approximately 1950m south) – roadway reconstruction (2 lanes) with intersection improvements.

Potential environmental effects and proposed mitigation for the Schedule C projects will be determined during future studies as this study has not developed the design alternative details required to fulfill Phase 3 of the Class EA process:

- **Dartnall Road Extension** (Rymal Road to Dickenson Road)
  - widen to 4 lanes from Rymal to existing terminus at hydro corridor
  - new 4 lane arterial road from hydro corridor to Dickenson Road
- **Twenty Road** (from future Dartnall Road Extension to Trinity Church Road)
  - two-lane collector road on a new alignment; and
- **Trinity Church Road** – (Rymal Road to future Dartnall Road Extension)
  - two-lane arterial road (protect for four lanes).

5.1 Potential Environmental Effects – Nebo Road Improvements

Table 5.1-1 provides a general overview of potential project specific long-term environmental effects resulting from the Nebo Road roadway reconstruction work and intersection improvements (Schedule B).

Table 5.1-1: Summary of Potential Effects – Nebo Road Improvements

CRITERIA	POTENTIAL EFFECTS
Natural	• No direct fisheries impacts • Minor disturbance to adjacent habitat
Cultural	• No anticipated impacts to archaeological resources or heritage features
Socio-Economic	• Minor property requirements for grading • Property required at intersection of Nebo Rd. and Twenty Rd.

The improvements to Nebo Road include road reconstruction to a two-lane industrial collector road within a 30 m ROW from Rymal Road to the future Dartnall Road Extension south of Twenty Road. Improvements include upgraded intersections at Rymal Road, Twenty Road and the Dartnall Road Extension. Intersection improvements at Rymal would likely occur as part of the road reconstruction project while the improvements at Twenty Road and the future Dartnall Road extension would be implemented as part of the Dartnall project. Due to the limited extent of this project, and the focus of work primarily within the existing disturbed right-of-way, this project is not anticipated to have any long-term adverse effects to the natural, cultural or socio-economic environments. Please refer to Table 5.4-1 for a summary of general construction/operation related effects and proposed mitigation.

5.2 *Potential Environmental Effects – Twenty Road Improvements*

Table 5.2-1 provides a general overview of potential project specific long-term environmental effects resulting from the modifications to Twenty Road from west of Nebo Road to the Dartnall Road Extension (Schedule B).

Table 5.2-1: Summary of Potential Effects – Twenty Road Improvements

CRITERIA	POTENTIAL EFFECT
Natural	• Culvert replacement and extension at Hannon Creek crossing • Minor disturbance to adjacent habitat
Cultural	• No anticipated impacts to archaeological resources or heritage features
Socio-Economic	• Minor property requirements for grading • Potential displacement of residences depending on the alignment of the future Dartnall Road Extension

The improvements to Twenty Road include road reconstruction to a two-lane industrial collector road within a 30 m ROW from the west boundary of the park approximately 600m west of Nebo Road to the future Dartnall Road Extension. Improvements include an upgraded intersection at Nebo Road. The intersection improvement could be completed as part of the Dartnall Road Extension project which includes the reconstruction of Twenty Road westerly to Nebo Road if Dartnall Road is only extended to Twenty Road in the first stage. Due to the limited extent of this project, and the focus of work primarily within the existing disturbed right-of-way, this project is not anticipated to have any long-term adverse effects to the natural, cultural or socio-economic environments. Please refer to Table 5.4-1 for a summary of general construction/operation related effects and proposed mitigation.

5.3 Potential Environmental Effects – Glover Road Improvements

Table 5.3-1 provides a general overview of potential project specific long-term environmental effects resulting from the Glover Road roadway reconstruction work (Schedule B).

Table 5.3-1: Summary of Potential Effects – Glover Road Improvements

CRITERIA	POTENTIAL EFFECT
Natural	• No direct fisheries impacts • Minor disturbance to adjacent habitat
Cultural	• No anticipated impacts to archaeological resources or heritage features
Socio-Economic	• Minor property requirements for grading • Disturbance to residents due to industrial traffic entering residential areas[1]

[1] A transition treatment will be developed to identify the changing land use from that of industrial to residential along Glover Road south of Twenty Road.

The roadway improvements for Glover Road include reconstruction to a two-lane industrial collector road within a 26 m ROW from Rymal Road to approximately 1,950m south of Rymal Road. Intersection improvements include upgrades at Rymal Road and future Twenty Road. Both of these upgrades would likely occur prior to the reconstruction of Glover Road itself as part of the planned reconstruction of Rymal Road and the extension of Twenty Road which will likely proceed as part of a Plan of Subdivision.

A transition treatment will also need to be developed to identify the changing land use from that of industrial to residential along Glover Road south of Twenty Road. The design of this transition will be a requirement of a future Plan of Subdivision in the NGIBP and will include public input to determine the most suitable treatment. Examples of possible treatments include: distinguishing landscape/road designs and 'no heavy truck' and 'local traffic only' signs.
Due to the limited extent of this project, and the focus of work primarily within the existing disturbed right-of-way, this project is not anticipated to have any long-term adverse effects to the natural, cultural or socio-economic environments. Please refer to Table 5.4-1 for a summary of general construction/operation related effects and proposed mitigation.

5.4 Potential Environmental Effects and Mitigation

Table 5.4-1 outlines the potential environmental effects and proposed mitigation measures for the Schedule B projects. If the proposed mitigation measures are implemented there should be no residual significant adverse environmental effects. However, it should be noted that the proposed mitigation measures should be further refined during detail design.

Table 5.4-1: Summary of Potential Effects and Proposed Mitigation

CRITERIA	POTENTIAL EFFECT	PROPOSED MITIGATION
Natural		
Aquatic Species and Habitat	- Habitat impacts (water quality) due to sedimentation and soil erosion during construction	- Standard sediment and erosion control measures will be followed - Mitigation measures to reduce any potential impacts to the natural environment will be developed in consultation with the appropriate agencies (i.e. Hamilton Conservation Authority, Niagara Peninsula Conservation Authority, Ministry of Natural Resources, and/or the Department of Fisheries and Oceans) as part of the Hannon Creek subwatershed study or the design phase of specific road projects - Prepare a spill response plan
Terrestrial Species and Habitat	- Disturbance of adjacent habitat - Disturbance to migratory bird breeding	- Construction material to be handled and stored on site to avoid impacts to adjacent habitats - Identify and protect migratory bird habitat during breeding season. Abide by the *Migratory Birds Convention Act* and regulations under the Act
Air Quality	- Localized decrease in ambient air quality for short term during construction	- Ensure construction equipment is maintained in good operating condition to prevent unnecessary emissions - Minimize dust emissions through the use of dust control measures
Noise	- Short-term noise associated with construction vehicles and activities	- Ensure construction equipment is maintained in good operating condition to prevent unnecessary noise

over...

CRITERIA	POTENTIAL EFFECT	PROPOSED MITIGATION
Noise cont'd	- Minor impacts to localized noise conditions	- Restrict construction activities to hours prescribed by local noise bylaw - Review noise conditions and abatement requirements for all new development
Groundwater	- Water quality impacts due to spill associated with construction	- Prepare a spill response plan
Surface Water	- Water quality impacts due to sedimentation and soil erosion or spills during construction -	- Standard sediment and erosion control measures will be followed - Prepare a spill response plan
Cultural		
Archaeological Resources	- Impacts to archaeological resources during construction	- Stage 1 Archaeological Assessment has been completed and a Stage 2 Archaeological Assessment will be completed prior to construction for lands that have not been previously assessed and cleared of further heritage concerns by the Ministry of Culture - Should areas of archaeological sensitivity be identified appropriate follow-up studies and mitigation measures will be undertaken in consultation with the Ministry of Culture - If construction operations expose any items that may indicate an archaeological find the work in the area will be suspended immediately and the Ministry of Culture will be contacted
Socio-Economic		
Business	- Impacts to business operation	- Minimize service/access disruptions during construction using standard City protocol and procedures
Property over...	- Disruption to private property access during construction - Disturbance to property owners during construction	- Minimize access disruptions during construction using standard City protocol and procedures - Minimize nuisance impacts to property owners during construction using standard City protocol and procedures

CRITERIA	POTENTIAL EFFECT	PROPOSED MITIGATION
Property cont'd	- Disturbance to residents due to industrial traffic entering residential areas	- Terminus treatment at Glover Road and the new east-west road to prevent industrial traffic from entering the residential area. The design of this treatment will be developed during future studies. Design input will be requested from the public. Examples of possible treatments include: distinguishing landscape/road designs and 'no heavy truck' and 'local traffic only' signs.
Recreation	- Disruption to Rail Trail access during construction	- Minimize access disruptions during construction using standard City protocol and procedures
Traffic, Movement of Goods Services, Emergency Services	- Service or traffic disruption to during construction (e.g. temporary road or lane closures) - Traffic demands will be improved through reconstruction/construction of roads within the NGIBP	- Minimize service/access disruptions during construction using standard City protocol and procedures - Emergency Services will be notified in advance of construction using standard City protocol and procedures

6.0 Public and Agency Consultation

6.1 Public Consultation

Two Public Consultation Centres (PICs) were held as part of the public consultation for this Master Plan. Both PICs were held at the Trinity United Church (Trinity Church Road near Rymal Road). The PICs were well attended and the majority of the attendees resided within or nearby the study area. The following sections describe the comments submitted at each PIC, including a description of revisions made to the transportation network prior to finalizing the preferred transportation network.

The public was notified of the project and PICs via newspaper notices published in the Hamilton Spectator and the Glanbrook Gazette. In addition, notification letters were distributed to stakeholders and local residents. A copy of the newspaper notices and the notification letters are provided in Appendix C.

6.1.1 Public Information Centre #1 (June 2005)

PIC#1 was an open house format with display boards presenting the network alternatives considered, the evaluation of alternatives and the preliminary preferred network. Appendix D summarizes the results of the PIC including all the comments received.

Most comments submitted related to future traffic on Trinity Church Road and effects on existing residents including:

1. former Township of Glanbrook Council's commitment for berms to protect homes on Trinity Church Road from noise and pollution and limiting access from Trinity Church Road to the park;
2. concerns about traffic infiltration within the residential area on Glover Road south of Twenty Road;
3. requests to have roads routed behind the houses on Trinity Church Road and all service roads kept within the Industrial Business Park;
4. concerns about former Township of Glanbrook Council's commitment to zone the land as "light prestige industrial/business" (concerned that this will not be the case); and
5. concerns regarding potential effects should an abattoir (slaughter house) locate within the Industrial Business Park.

In addition to the comments received, representatives of Trinity Church Road residents presented two alternative plans for the future Trinity Church Road corridor.

In order to address concerns raised after the first Public Information Centre, the Project Team made the following revisions prior to finalizing the recommended network:

- Identified the need for a transition on Glover Road south of Twenty Road that signifies the change in land use from that of industrial to residential. Refer to Section 5.3 for details regarding the transition.
- Established a study area for the future Schedule C Class EA for Trinity Church Road which will allow several alternative routes to be considered that do not follow the existing Trinity Church Road alignment including routes within the North Glanbrook Industrial Business Park boundaries.
- Extended the limits of recommendations for north-south roads northerly to Rymal Road.

6.1.2 Public Information Centre #2 (May 2006)

PIC#2 was an open house with display boards presenting the comments from the first PIC, the preferred network, details of the Schedule B projects and study areas for Schedule C projects. Appendix D summarizes the results of the PIC including all the comments received.

In addition to written comments summarized in Appendix D, the following provides a general overview of attendee verbal comments during the PIC:

1. Interest in future zoning changes and land use plans within the North Glanbrook Industrial Business Park;
2. Concern regarding the displacement of agricultural land for more industrial land;
3. Concern regarding direct link between the North Glanbrook Industrial Park and the Red Hill Valley Parkway, especially along Trinity Church Road; and
4. Alignment concerns specific to certain landowners.

6.2 Agency Consultation

A letter was distributed to external agencies to provide notification of study commencement and to request input. A sample copy of the notification letter is provided in Appendix C. The letter was circulated to the following agencies:

- Department of Fisheries and Oceans;
- Ministry of the Environment;
- Ministry of Agriculture, Food and Rural Affairs;
- Ministry of Culture;
- Ministry of Tourism and Recreation;
- Ministry of Natural Resources;
- Hamilton Conservation Authority;
- Niagara Peninsula Conservation Authority;
- Bell Canada;
- Hydro One; and
- TransCanada Pipelines Limited.

Appendix D summarizes the agency comments received to date.

Notification letters inviting agency representatives to attend both PIC#1 and PIC#2 were distributed. No agency representatives attended PIC#1 or PIC#2.

An agency meeting was held in December 2005 to jointly discuss this study and the ongoing Hannon Creek Subwatershed Study (Master Drainage Plan). As these projects have overlapping study areas it was deemed suitable to introduce the projects to the agencies during a joint meeting. This meeting was attended by representatives from the Ministry of the Environment, Ministry of Natural Resources and the Hamilton Conservation Authority.

7.0 Process to Amend the Master Plan

During the implementation of the NGIBP it may be necessary to amend this Master Plan for one or more of the following reasons:

- Extend the applicability of the Master Plan beyond five years, if there is a delay in implementing a project;
- Major changes to the original assumptions;
- Major changes to components of the Master Plan; and
- Significant new environmental effects.

Where an Addendum is required, the following process will be followed:

- The City of Hamilton will review the Master Plan to ensure that the project and mitigation measures remain valid within the current planning context;
- The City of Hamilton will document any circumstances necessitating the amendment, the environmental implications and what can be done to mitigate any negative environmental effects;
- Interested stakeholders and agencies will be notified of any amendments to the Master Plan;
- The City of Hamilton will file a Revised Notice of Completion on the public record and will include a 30-day addendum review period and an explanation of the public's right to request a Part II Order for those elements of the project that are subject to the addendum; and
- If no Part II Order requests are outstanding by the completion of the review period, the addendum is considered to have met the requirements of the Class EA and the proponent may prepare contract drawings, proceed to tender and construct the project.

8.0 Next Steps for Project Implementation

8.1 Elements Requiring Further EA Approvals

This EA only completes Phases 1 and 2 of the Class EA process. The remaining phases (i.e. phases 3 and 4) required for Schedule C projects will be completed subsequent to this Master Plan either by the City of Hamilton or the private sector as part of a development application governed by the *Planning Act*.

Further EA Approvals are required for the following Schedule C projects:

1. **Dartnall Road Extension** (Rymal Road to Dickenson Road) – New four-lane arterial road and widening to four lanes of existing two lane section.
2. **Twenty Road** (from future Dartnall Road Extension to Trinity Church Road) – Two-lane collector road on a new alignment.
3. **Trinity Church Road** (Rymal Road to future Dartnall Road Extension) - Two-lane arterial road (protect for four lanes).

These studies will require future consultation and preparation of Environmental Study Reports.

The study areas for these future studies are outlined in Figures 8.1-1 – 8.1-3.

The extension of Trinity Church Road north of Rymal Road was adopted by Council in May 2006 as part of the Rymal Road Planning Area (ROPA 9) Class EA. With approval of the Trinity Church Road improvements south of Rymal Road it is necessary that the Schedule C requirements for both projects be undertaken under one Class EA in order that further planning is not done in a piecemeal manner. The study area for this future study is shown in Figure 8.1-3.

Additional improvements required outside of the Secondary Plan study area identified in the Existing and Future Conditions Analysis Report (Appendix A) will be subject to future studies and will include the following:

- Rymal Road widening to four lanes west of Trinity Church Road (subject to Schedule C requirements);
- Rymal Road widening to four lanes from Trinity Church Road to Upper Centennial Parkway (currently being addressed by ROPA9 Class EA);
- Dartnall Road widening from two to four lanes from Rymal Road to Stone Church Road (subject to Schedule C requirements); and
- Improved east-west road connection(s) to the airport south of the NGIBP.

Figure 8.1-1: Future Study Area - Dartnall Road Extension (Schedule C Project)

Figure 8.1-2: Future Study Area - Twenty Road from Dartnall Road to Trinity Church Road (Schedule C Project)

Figure 8.1-3: Future Study Area - Trinity Church Road Improvements (Schedule C Project)

8.2 Five Year Review Requirements

A time lapse may occur between the filing of this Master Plan and the implementation of the preferred transportation network. In this situation the proposed project and the environmental mitigation measures may no longer be valid.

The Class EA indicates that a Master Plan should be reviewed every five years to determine the need for a detailed formal review and/or updating. As such, should the period of time from filing of the Notice of Completion of the Master Plan in the public record to the proposed commencement of construction of the project exceed five years, the proponent shall review the planning and design process and current environmental setting to ensure that the project and mitigation measures are still valid given the current planning context. This review shall be recorded as an addendum to the Master plan. The addendum shall be place on the public record and will undergo a 30-day addendum review period. A Notice of Filing of Addendum shall be placed on the public record and shall include the public's right to request a Part II Order during the 30-day addendum review period. If no Part II Order requests are received by the end of the 30-day review period the proponent will be free to proceed with implementation and construction.

9.0 Class EA Principles

This Master Plan is intended to identify a road network that will support the development of lands in accordance with the current approved land uses identified in the Secondary Plan (Figure 2.0-1) for the area. This study was undertaken following the environmental planning process for Master Plans under the *Municipal Class Environmental Assessment* (Municipal Engineers Association, 2000). This Master Plan is intended to fulfill the Class EA requirements for Schedule B Projects that are identified and to outline additional work that will be required to implement any Schedule C Projects that are identified (Municipal Class EA Master Planning Process Approach #2).

This Master Plan followed a planning process that incorporates the following environmental assessment principles:

Table 9.0-1: Overview of Planning Principles Incorporated in the NGIBP Transportation Master Plan

PRINICIPLE	HOW PRINCIPLE WAS ADDRESSED	REFERENCE
Consultation with affected parties early in the planning process so that decision making is cooperative	Public, stakeholder and agency consultation was undertaken throughout the study and included two Public Information Centres and one external agency meeting.	Chapter 6
Consideration of a reasonable range of alternatives	A reasonable range of alternatives was considered, including a "Do Nothing" alternative.	Chapter 4
Identification and consideration of the effects of each alternative on all aspects of the environment	The study included an inventory of the existing natural, cultural and socio-economic environment. The following principles were used to assist in generating the network alternatives: 1. Minimize effects to known environmental features and social concerns; 2. Ensure sufficient capacity available to accommodate future demand for the NGIBP Secondary Plan and possible connections to Hamilton Airport; 3. Allow for north-south and east-west continuity;	Chapters 3 & 4 over...

PRINICIPLE	HOW PRINCIPLE WAS ADDRESSED	REFERENCE
Cont'd	4. Develop a road network that complements the existing road network adjacent to the Secondary Plan area; and 5. Provide land parcels of adequate size for future development.	Chapters 3 & 4
Systematic evaluation of advantages and disadvantages of identified alternatives to determine their net environmental effects	Each alternative was assessed based on the factor specific evaluations criteria. Natural, social, economic, cultural and transportation factors were considered in the development of key evaluation criteria for each factor. The result of the assessment was then reviewed and summarized in an overall evaluation which then allowed for the selection of the preferred alternative. The evaluation criteria developed for the evaluation of the five network alternatives were based on a holistic approach to review the potential environmental effects (natural, social, economic, cultural, and transportation factors) of each alternative. The factor specific evaluation criteria were developed in consideration of general and study area specific potential environmental effects.	Chapter 4
Provision of clear and complete documentation of the planning process followed, to allow "traceability" of decision making with respect to the project	The study objectives were considered in all aspects of the study including development of alternatives, technical assessment, evaluation criteria/process and consultation. Documentation in this Master Plan includes the need and justification for all recommended road improvements identified in the network and functional design details for Phase 1 and Phase 2 of the Class EA process.	Entire Transportation Master Plan Report Planning Context and Opportunity Statement outlined in Section 2.0

APPENDIX A

EXISTING AND FUTURE CONDITIONS ANALYSIS REPORT

Hamilton

NORTH GLANBROOK INDUSTRIAL BUSINESS PARK

TRANSPORTATION MASTER PLAN

EXISTING AND FUTURE CONDITIONS REPORT

MRC

August 2006

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

W:\6k\6011 North Glenbrook Industrial Area-TMP\6011.500 Transportation\6011.505 Technical Report\6011 al - NGIBP Existing and Future Conditions Report - rev060809.doc

1. INTRODUCTION

1.1 Study Purpose

A Transportation Master Plan was prepared for the North Glanbrook Industrial Business Park, henceforth referred to as NGIBP, to identify new transportation infrastructure and improvements to existing infrastructure required to service future development in the area. The preparation of the Transportation Master Plan, henceforth referred to as the TMP, followed the approved environmental planning process for Master Plans under the *Municipal Class Environmental Assessment (2000)*, (Class EA). Under Phase 1 of the Class EA process, the identification or a description of a problem / opportunity statement is required. As a result, McCormick Rankin Corporation was retained to undertake the existing and future conditions analysis to determine existing and future issues in support of a problem / opportunity statement. This report provides an overview of the study area, details existing and future conditions, identifies existing and future issues and documents the resulting problem / opportunity statement.

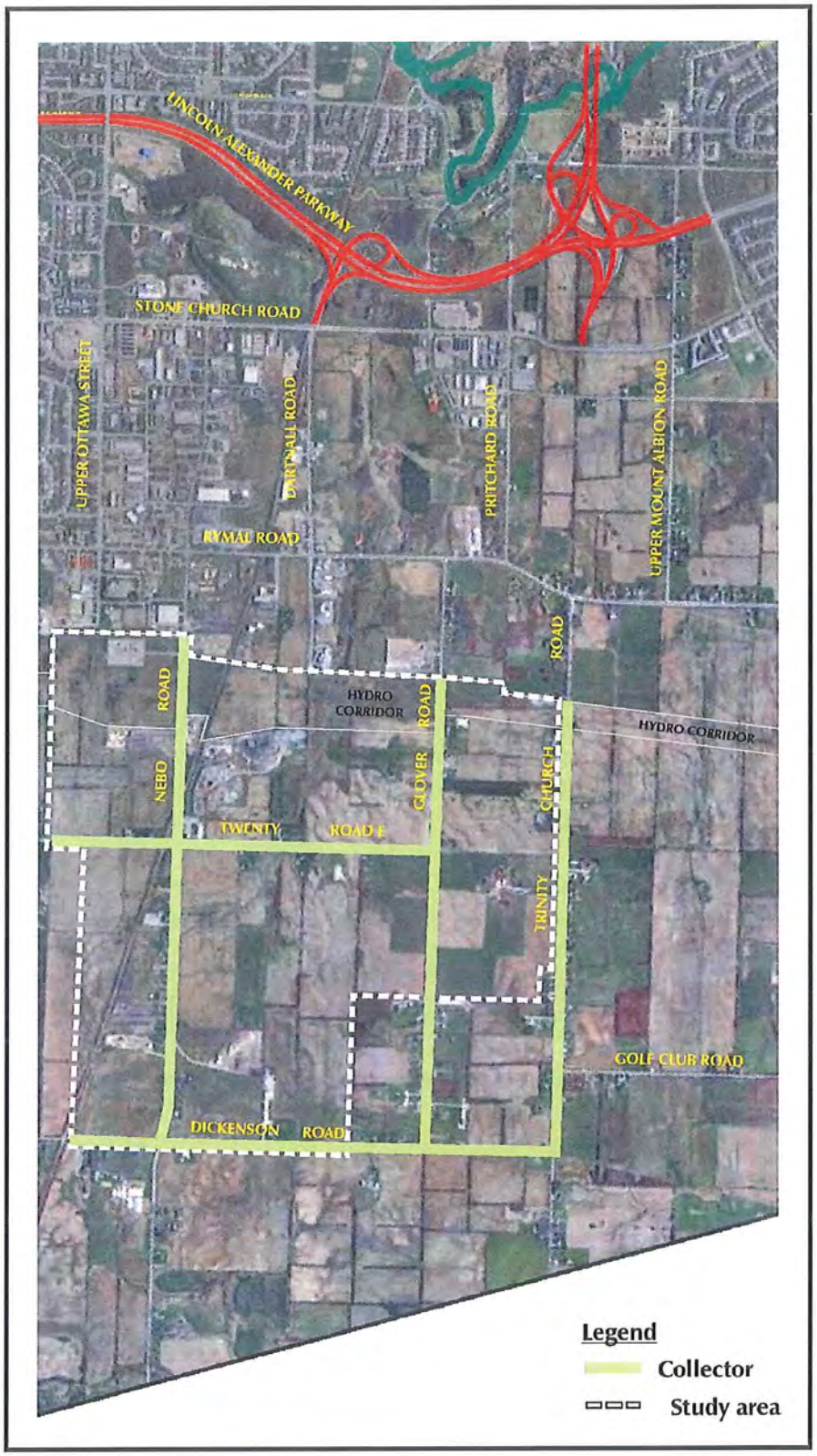
1.2 Study Area

The study area assumed the Industrial-Business Park Boundary identified in the current approved Secondary Plan for the North Glanbrook Industrial Business Park. The main boundaries of the study area are Trinity Church Road to the east, north of the hydro corridor to the north, west of Upper Ottawa Street to the west and Dickenson Road to the south. Additional parcels of land that were included in / excluded from the study area include the inclusion of a parcel of land north of the hydro corridor just west of Upper Ottawa Street and the exclusion of a parcel of land from west of Glover Road to Trinity Church Road and from Dickenson Road to approximately midway between Dickenson Road and Twenty Road East. The identified study area is displayed in Figure 1.

A review of the City of Hamilton Official Plan (February 2001), Subsection B.3.1 and Schedule F, and the City of Hamilton Road Classification Policy Paper (January 2005), Exhibit 2.1, indicated that the study area does not contain any inter-regional highways or arterial roads. Based on the definition of a collector road, as defined in the Official Plan and noted below, the roads within the study area are all collector roads.

"Collector roads will function as connecting road links between arterial and local roads. They generally carry lower traffic volumes than arterial roads and may provide direct access to abutting properties;"

Figure 1. Study Area



The network of collector roads, which generally have right-of-way widths between 20 and 26 m, has been identified with a green colour in Figure 1 and includes the following roads:

- Nebo Road (north boundary to Dickenson Road)
- Glover Road (north boundary to Dickenson Road)
- Trinity Church Road (north boundary to south boundary)
- Twenty Road East (west boundary to Glover Road)
- Dickenson Road (west boundary to east boundary)

The City of Hamilton Official Plan Schedule F has also indicated that Dartnall Road and Trinity Church Road should have designated right-of-way widths of 36 m. In addition, Exhibit 2.1 in the City of Hamilton Road Classification Policy Paper identified a proposed arterial in the study area extending from the intersection of Nebo Road and Dickenson Road northerly to the intersection of Dartnall Road and Rymal Road.

With the completion of the Hamilton-Wentworth Official Plan in June 2005, the identified arterial road network (Map No. 6 – Transportation) was reviewed to verify / confirm road classification assumptions noted in the less recent documents. Road classifications within the study area have remained the same with the exception of Dickenson Road, which is identified as an arterial road in the Regional Official Plan.

Existing land uses, as identified in the land use inventory prepared by Planning & Economic Development and as shown in Figure 2, include some industrial / business, institutional and residential land uses. However, the majority of the land is vacant.

1.3 Surrounding Area

While the study area is contained within the Industrial-Business Park boundary identified in the Secondary Plan, the identification of issues associated with existing and future vehicle volumes is not contained within the study area, as existing and future volumes will require access into the study area via the surrounding road network. The extent of the surrounding road network that was assessed as part of this study is identified in Figure 3.

It is of note that a Class Environmental Assessment (Class EA) study was occurring concurrently in the area adjacent to the NGIBP study area, referenced as the Rymal Road Planning Area, also identified in Figure 3. Proposed development in this area was designated mainly as residential with commercial development interspersed throughout the development area. General impacts of the proposed development as a result of additional vehicle volumes on the road network are included in this analysis.

Figure 2. North Glanbrook Industrial Business Park Land Use Inventory

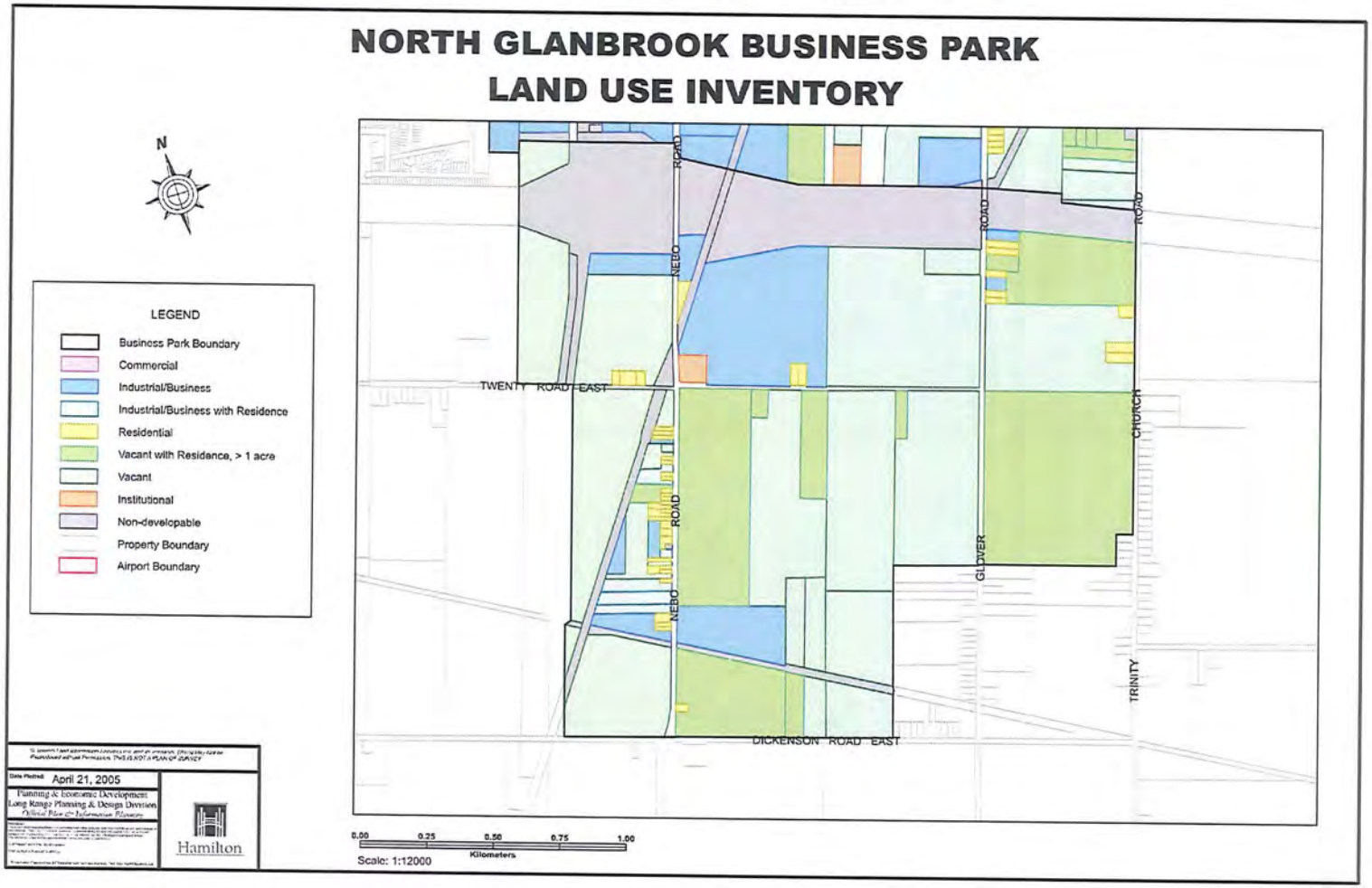
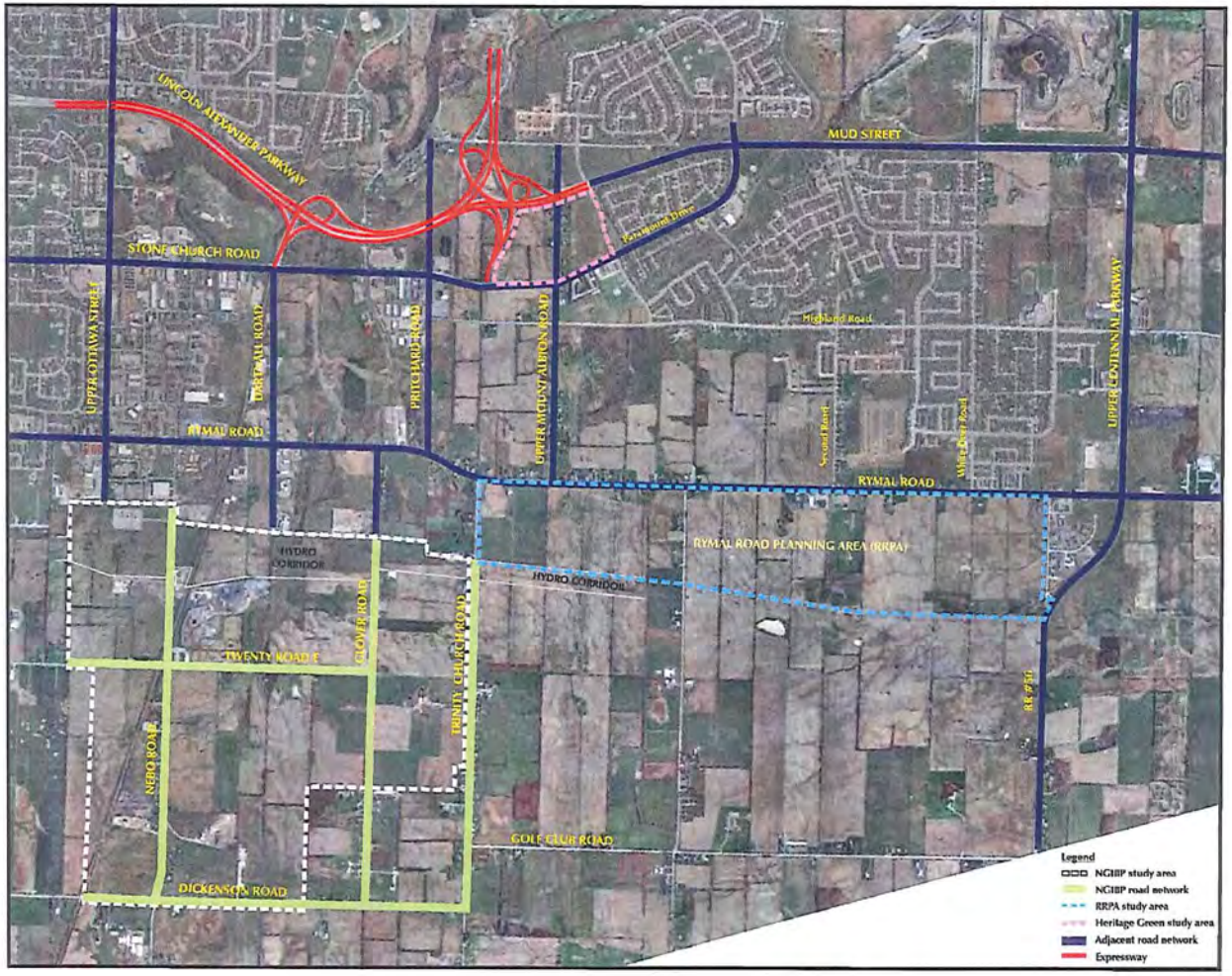


Figure 3. Surrounding Road Network



A review of the City of Hamilton Official Plan (February 2001), Subsection B.3.1 and Schedule F, and the City of Hamilton Road Classification Policy Paper (January 2005), Exhibit 2.1, indicated that the adjacent road network contains inter-regional highways and arterial roads that can service the study area, as defined below (as per the City of Hamilton Official Plan).

"INTER-REGIONAL HIGHWAYS provide strategic links in the ROAD NETWORK. Their primary function is to carry traffic into, through and out of the City and the Region. INTER-REGIONAL HIGHWAYS such as Queen Elizabeth Way, Highway 403, Centennial Parkway and Rymal Road will have full or partially-controlled access to abutting lands;"

"ARTERIAL ROADS will function as strategic links in the overall ROAD NETWORK. These Regional Roads will carry relatively large volumes of short and long-distance traffic in and through the City. ARTERIAL ROADS provide some access to abutting properties;"

Right-of-way widths are 60m in areas where there is complete control of access to abutting land use and 26m to 36m in areas where there is partial or no control of access.

Based on these definitions, the following roads in the road network adjacent to the study area were identified as inter-regional highways or arterial roads. The remaining roads that have not been listed are either collector roads or local roads.

- Upper Ottawa Street – arterial road
- Dartnall Road (Rymal Road to the Linc) – arterial road
- Fletcher Road – arterial road
- Upper Centennial Parkway – inter-regional highway / arterial road
- Lincoln Alexander Parkway (the Linc) – arterial road
- Mud Street – arterial road
- Stone Church Road East – arterial road
- Paramount Drive (Upper Mount Albion Road to Mud Street) – arterial road
- Rymal Road – inter-regional highway / arterial road

The most updated official plan document, the Hamilton-Wentworth Official Plan (June 2005), has indicated that Fletcher Road is a collector / local road, as opposed to the arterial road classification identified in the City of Hamilton Official Plan.

2. EXISTING CONDITIONS

An assessment of existing transportation conditions in the study area was undertaken to further understand the existing transportation system and to identify existing issues. The assessment incorporated a review of existing road network characteristics, vehicle volumes on the road network and the corresponding operating levels of service. The existing characteristics of the surrounding road network were also reviewed to determine the function of the broader transportation network and to establish the possible impacts of the introduction of additional vehicle volumes to the overall transportation system.

2.1 Description of Data

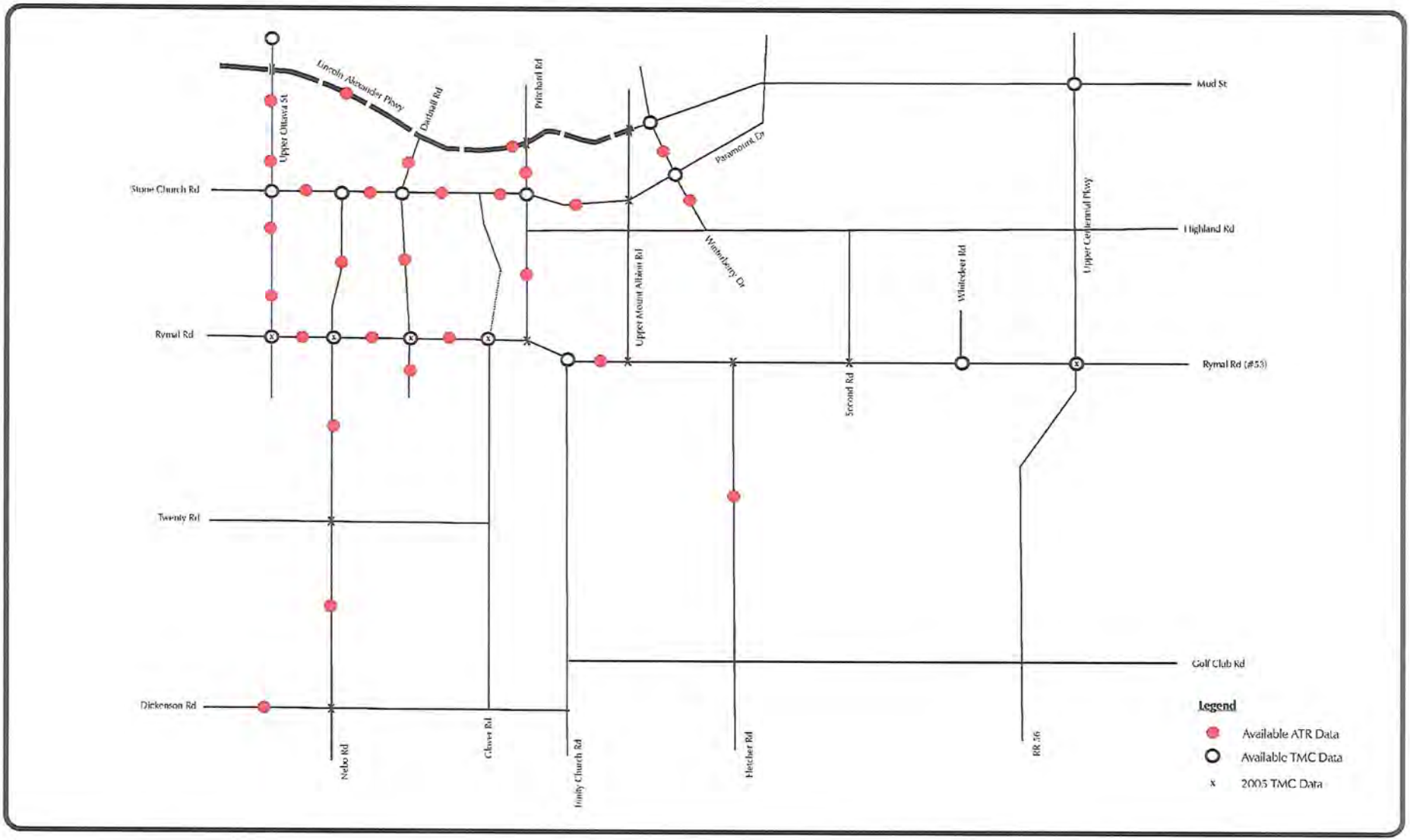
Background data were provided from various sources at the initiation of the study. The following is a list of the data received and utilized as part of the existing conditions analysis:

- AM, PM and 24-hour total vehicle volumes and truck volumes on major roadways were provided by the City of Hamilton for 1999
- 24-hour Automatic Traffic Recorder (ATR) counts of volumes and available vehicle classifications for specific locations between 1999 and 2004 were provided by the City of Hamilton
- Turning movement counts for specific intersections between 1996 and 2004 were provided by the City of Hamilton
- Existing traffic signal phasing and lane configurations for specific intersections were provided by the City of Hamilton
- NGIBP Secondary Plan land use patterns were provided by the City of Hamilton
- Access to the 2001 City of Hamilton EMME/2 model was provided by the City of Hamilton
- Additional turning movement counts for intersections along Rymal Road and Twenty Road were undertaken by the City of Hamilton

A summary of the locations at which ATR and turning movement counts were available is provided in Figure 4.

A review of the available traffic data noted that the majority of the traffic counts were undertaken prior to 2003 and that key locations within the study area did not have available data. In order to obtain base year traffic volumes representative of existing conditions, additional turning movement counts were undertaken by the City. The counts were performed during the last week of April 2005 at intersections along Rymal Road and Nebo Road. As a note, counts were not undertaken at the intersections of Trinity Church Road and Whitedeer Road with Rymal Road as counts were available for the years 2003 and 2004, respectively. While counts were requested for the intersection of Glover Road and Rymal Road, counts were not recorded due to ongoing construction. A summary of the locations where additional turning movement counts were obtained in April 2005 are also identified in Figure 4.

Figure 4. Locations of Count Data



2.2 Study Area Road Network Characteristics

A field review of the study area and environs was undertaken on Tuesday, May 3, 2005 to obtain an understanding of the existing transportation infrastructure and the general operations of the existing network. During the field review, corridor lane configurations and roadway speeds for the EMME/2 model were confirmed, intersection lane configurations for intersection levels-of-service analysis were noted and a photo inventory was obtained for future reference. The road network and the intersections that were reviewed are displayed in Figure 5 with the photo inventory list included in Appendix A. A summary of the number of lanes for the major roads, posted speeds and signalized intersections within and around the study area are summarized in Tables 1 and 2.

Table 1. Existing E-W Roads – Lanes, Posted Speeds and Signalized Intersections

EAST-WEST ROADS			
Road	**# of lanes**	**Posted Speed** (km/h)	**Signalized Intersections**
Lincoln Alexander Parkway to Dartnall Road	4	80	
Lincoln Alexander Parkway to Mud Street	2	70	
Mud Street	4	70	- Winterberry Drive - Paramount Drive - Isaac Brock Drive - 1st Road W - Upper Centennial Parkway
Stone Church Road	2	50	- Upper Ottawa Street - Nebo Road - Dartnall Road - Pritchard Road
Paramount Drive	2	50	- Winterberry Drive - Mud Street
Highland Road	2	50	- Upper Centennial Parkway
Rymal Road (Upper Gage to Dartnall)	2	60	- Upper Gage Avenue - Upper Ottawa Street - Nebo Road - Dartnall Road
Rymal Road (Dartnall to Upper Mount Albion)	2	70	
Rymal Road (Upper Mount Albion to Swayze)	2	80	
Rymal Road (Swayze to Upper Centennial)	4	60	- Upper Centennial Parkway
Twenty Road	2	60	
Golf Club Road	2	60	
Dickenson Road	2	60	

Figure 5. Inventory of Road Network and Intersections

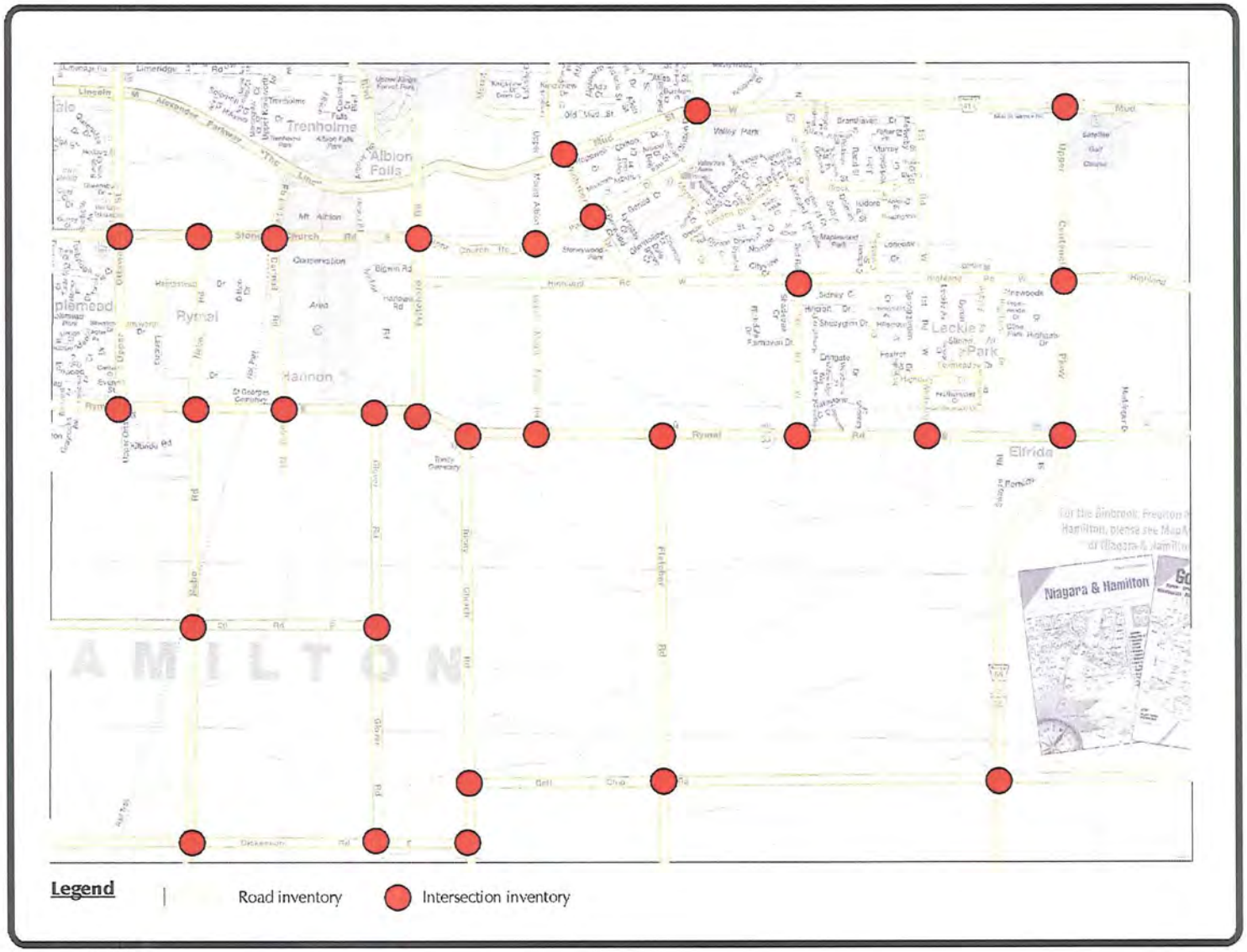


Table 2. Existing N-S Roads – Lanes, Posted Speeds and Signalized Intersections

NORTH-SOUTH ROADS			
Road	**# of lanes**	**Posted Speed** (km/h)	**Signalized Intersections**
Upper Ottawa Street	4	50	- Stone Church Road - Rymal Road
Nebo Road (Stone Church to Rymal)	4	60	- Stone Church Road - Rymal Road
Nebo Road (Rymal to Dickenson)	2	60	
Dartnall Road (Linc to Stone Church)	4	50	- Stone Church Road
Dartnall Road (Stone Church to south terminus)	2	50	- Rymal Road
Glover Road	2	60	
Pritchard Road	2	50	- Stone Church Road
Trinity Church Road	2	60	
Upper Mount Albion Road	2	50	
Fletcher Road	2	60	
2nd Road W	2	40	
Upper Centennial Parkway	4	80	- Mud Street - Highland Road - Rymal Road
Highway 56	2	80	

2.2.1 Existing Volumes

Existing turning movement and link volumes within and around the study area were summarized for the base year of 2005 to obtain an overview of vehicle volumes on the existing road network. As noted earlier, turning movement counts were performed in the Spring of 2005 along Rymal Road and Nebo Road. Previous counts that were available at other locations within and adjacent to the study area were factored to represent 2005 conditions based on average annual traffic increases observed (2.8% per annum).

In the process of summarizing turning movement volumes to obtain representative 2005 base year volumes, it was observed that vehicle volumes along Rymal Road were considerably lower than previous years' counts. Reports from the consultant performing the count and from the field review of the study area indicated that Rymal Road was undergoing construction (watermain replacement) between Upper Mount Albion Road and Dartnall Road. As a result of the construction activity, the count data was observed to be lower than historical traffic count data for this section of Rymal Road.

Based on an understanding of general growth along existing roadways in the area, historical traffic count data were factored up to provide a representative 2005 base in areas where data were available. At locations where previous years' counts were unavailable, turning movement volumes were estimated based on available adjacent 2005 link volumes. As the 2005 base year existing conditions volumes were estimated, the base year volumes were referenced as the 2005 synthesized volumes. A detailed description of the methodology by which the 2005 synthesized volumes were estimated is included in Appendix B. Figure 6 provides a summary of the 2005 synthesized turning movement volumes within and adjacent to the study area.

Using the 2005 synthesized turning movement counts, 2005 synthesized link volumes in and around the study were also estimated. Figure 7 provides a summary of the 2005 synthesized link volumes within and adjacent to the study area.

2.2.2 Existing Levels of Service

In the peak hour peak direction of travel within the study area, the existing road network in the NGIBP carries up to approximately 400 total vehicles. Under an assumed planning capacity of approximately 650 vehicles for collector roads, all existing roads in the study area are operating below capacity.

Outside of the NGIBP, the major arterials were reviewed to determine traffic flow patterns under existing conditions. Using an assumed planning capacity of approximately 1000 vehicles on arterial roads, the 2005 synthesized volumes indicated that Rymal Road is operating near or at capacity east of Dartnall Road to approximately 2nd Road West. The remaining arterials in the extended study area are operating below capacity

Intersection levels-of-service (LOS) were calculated for major intersections within and adjacent to the study area to determine the level of efficiency of traffic flow. The level of service designation reflects the average vehicular delay, where a LOS 'A' reflects a short delay, while a LOS 'F' reflects a long delay. The analyses were performed using the Synchro traffic signal analysis software. The intersection LOS results are displayed in Figures 8 and 9, for the AM and the PM peak hours, respectively. As a note, in a two-way stop-controlled intersection, levels-of-service are only provided for the approaches which are stop-controlled as the approaches without stop-controls are operating under free-flow conditions (no delay). Detailed Synchro outputs are included in Appendix C.

Figure 6. 2005 Synthesized Turning Movement Volumes – AM and PM Peak Hours

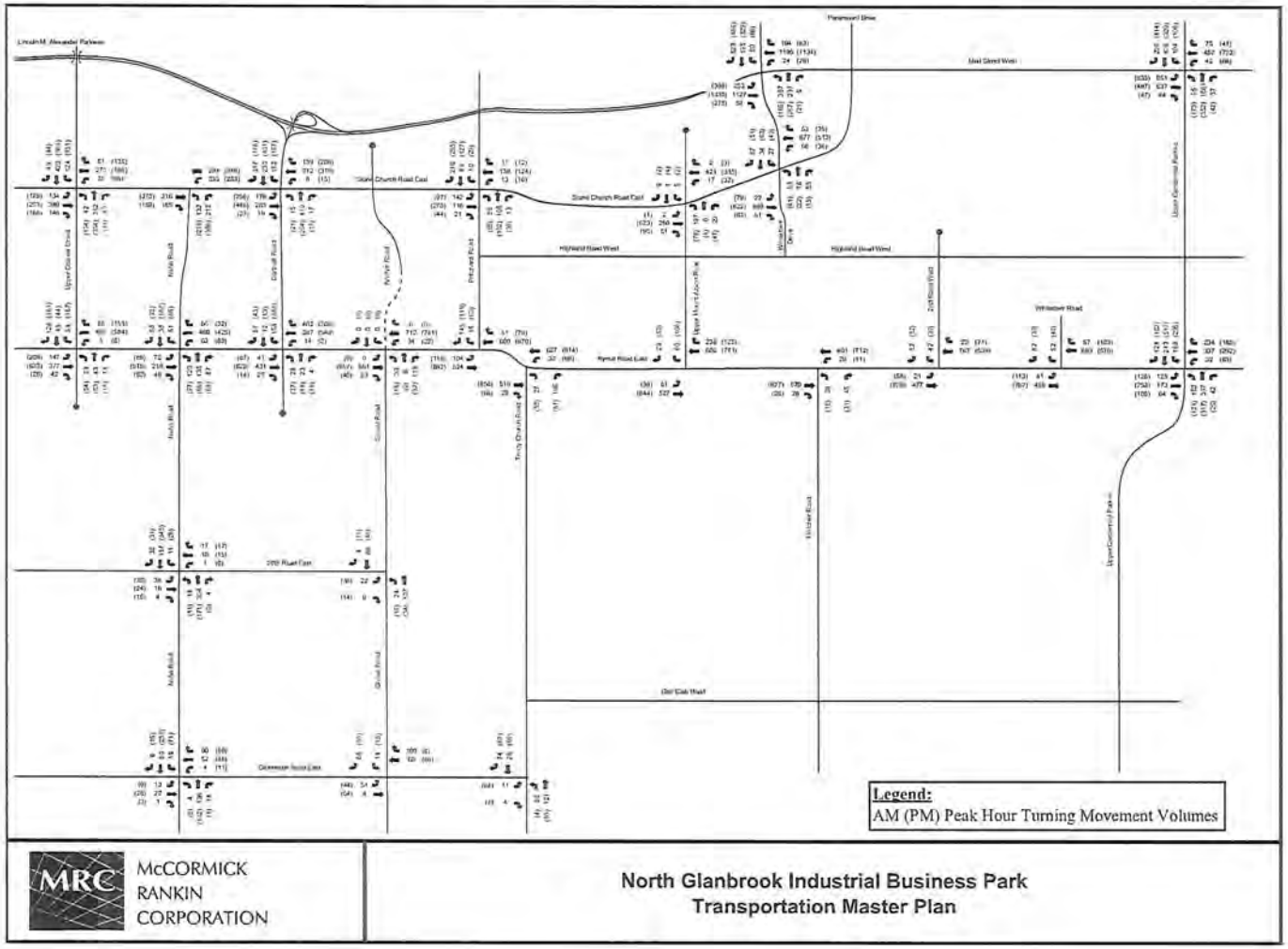


Figure 7. 2005 Synthesized Link Volumes – AM and PM Peak Hours

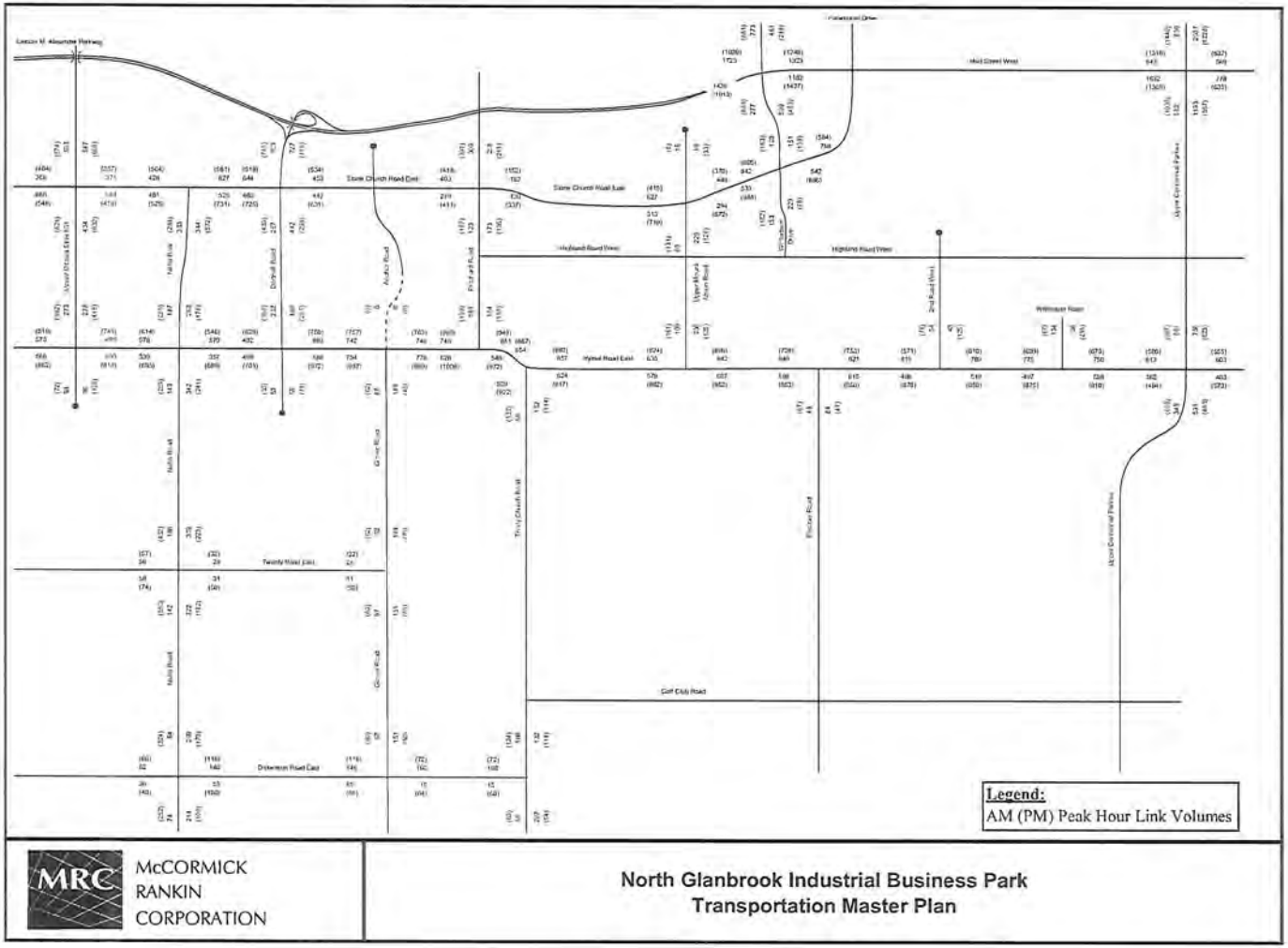


Figure 8. AM Peak Hour Intersection Levels-of-Service

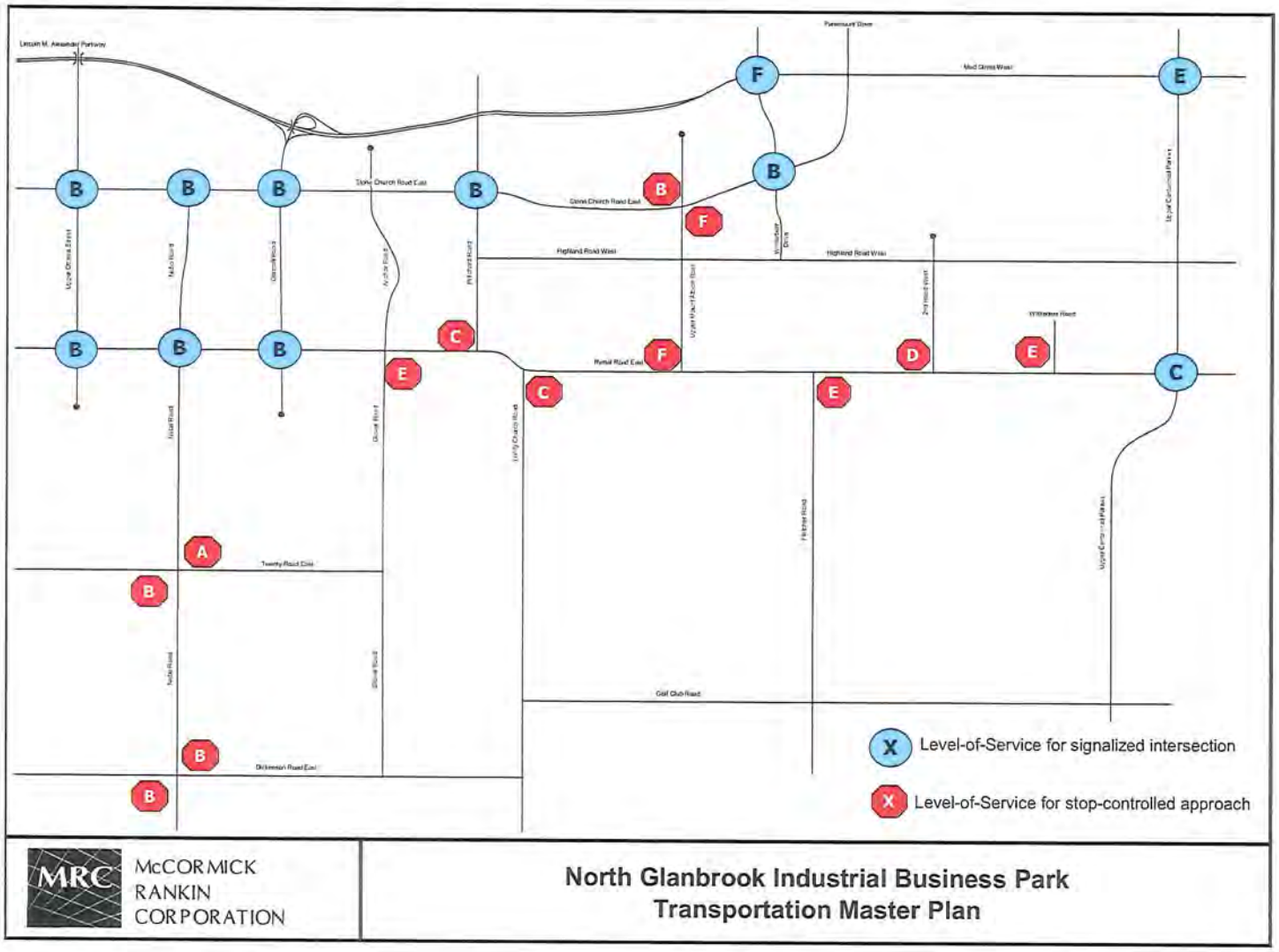
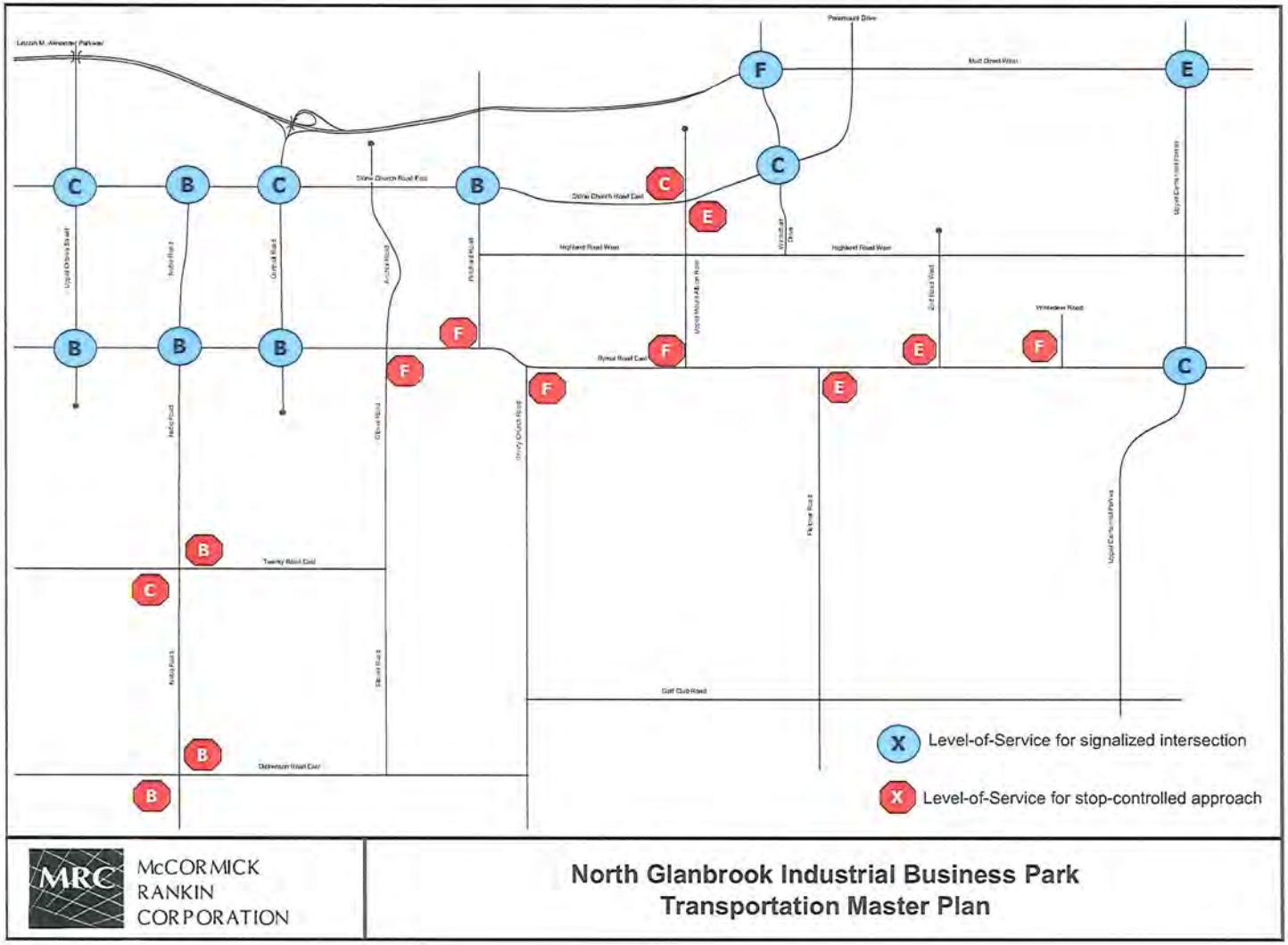


Figure 9. PM Peak Hour Intersection Levels-of-Service



2.3 Existing Issues

The review of existing traffic volume flows in the NGIBP area indicates that the existing road network currently carries traffic volumes well below its capacity. In addition, all the intersections within the study area are operating at good levels-of-service, with minimal delays experienced at each of the stop-controlled intersections.

A review of the existing volumes on the road network adjacent to the study area indicates that Rymal Road and the Lincoln Alexander Parkway are highly utilized, with congestion being experienced on some roadway segments during the peak hours of travel. While the majority of the signalized intersections are operating at good levels-of-service, the intersections of Mud Street and Winterberry Drive and Mud Street and Upper Centennial Parkway are operating in a congested state during the peak travel hours. The stop-controlled legs of the unsignalized intersections along Rymal Road are also experiencing longer than normal delays. As vehicle volumes on the road network are increased as a result of new development in the NGIBP and RRPA study areas, the existing road network will most likely begin to operate in a more congested state, resulting in longer than normal delays in the study area and on the adjacent road network without transportation infrastructure improvements.

With respect to the issues of network connectivity, there are currently no direct connections from the study area to the Lincoln Alexander Parkway (Linc) and the Red Hill Valley Parkway (RHVP). Without the provision of direct connections, there will be increased traffic using the adjacent arterial road system and increased turning movements at key intersections.

In addition to congestion and accessibility issues, social issues also need to be taken into consideration as part of the development of the NGIBP. While there are a minimal number of residential units within the study area, some of the major corridors that lead into / out of the study area have established residential developments situated on both sides of the roadway. Concerns noted by residents at the initial Public Information Centre included the potential increase in noise and air pollution as a result of additional traffic in the study area and the potential for traffic infiltration on rural collector roads adjacent to the study area that are currently less travelled. Thus, new or improved transportation corridors leading to and within the study area are required to minimize the impact of development traffic on existing residential properties adjacent to the study area.

From a regional perspective, the recently completed Airport Master Plan Update (December 2004) noted that the existing regional road system does not address the specific needs of the airport. As a result, there is a long-term requirement to provide improved access to the QEW via a direct connection to the Linc and the RHVP. The Airport Master Plan Update (ref: Exhibit 4.11) noted that a direct transportation connection could pass through the NGIBP study area; thus, the NGIBP roadway infrastructure planning needs to consider the impacts to longer distance through traffic.

In order to quantify future road network requirements and to address existing issues, an analysis of future conditions was undertaken, as discussed in the following sections.

3. FUTURE CONDITIONS

Two different methodologies were employed to determine future vehicle volumes in the study area and on the adjacent road network. The first method applied a typical traffic impact spreadsheet model approach, which determined future vehicle volumes on the road network in the study area and the adjacent road network only, based on the assignment of background growth and development traffic to the road network. The second method applied a travel demand analysis, referenced as the EMME/2 model in this report, where future vehicle volumes on the road network in the study area and the adjacent road network were determined from the assignment of a future City of Hamilton origin-destination trip table to an assumed City of Hamilton future road network. While both analysis approaches provided estimates of future vehicle volumes, the spreadsheet model was mainly used to determine the north-south capacity requirements in the NGIBP and intersection levels-of-service and the EMME/2 model was used to verify the spreadsheet model, determine traffic flow patterns within the NGIBP and assess longer term travel flows. The following sections describe in further detail the two approaches, the assumptions under each method and the volumes resulting from each of these methods for the 2021 and 2031 horizon years. Furthermore, future issues and the resulting future network and corridor requirements are identified.

3.1 Traffic Impact Spreadsheet Model Approach

The spreadsheet model assumed a base network comprised of the existing road network, which was bounded by the Linc / Mud Street to the north, Upper Centennial Parkway to the east, Dickenson Road to the south and Upper Ottawa Street to the west. The 2005 synthesized turning movement volumes provided the base year volumes for the analysis. For the required horizon years of 2021 and 2031, base year volumes were increased to each respective horizon year using an assumed annual growth rate of approximately 1%. The designated land uses and the approximate acreage for each land use, as provided in the Secondary Plan for the NGIBP area, were then used to determine the total number of trips that would be generated by the NGIBP during the AM and PM peak hours. Using trip distribution patterns that were obtained from the City of Hamilton EMME/2 model for the industrial park area to the north of the NGIBP area, the generated trips were assigned throughout the base network based on the assumed originating locations of the trips. The sum of the existing volumes, the background growth and the development traffic provided for the future horizon year traffic volumes on the adjacent road network and major north-south roads entering the NGIBP area. The following sections describe in further detail the assumptions that were made for the development of the spreadsheet model and the resulting link volumes.

3.1.1 Model Assumptions

The assumptions used within the spreadsheet model are categorized into the following categories: background growth, development land uses, trip generation, trip distribution and network. These assumptions provided the basis of the development of the spreadsheet model and the assignment of trips to the future road network.

3.1.1.1 Background Growth

A component of future vehicle volumes on the road network is the background growth associated with existing volumes currently on the road network. This background growth is largely associated with growth in population and employment in areas external to the study area. As a result, future year (2021) population and employment numbers as obtained from the City of Hamilton's Planning and Development Department website were used to estimate background traffic growth rates.

In the *Background on Land Use and Travel Patterns Policy Paper* (2005) prepared for the City of Hamilton, population and employment numbers for 2001 and 2021 for the Regional Municipality of Hamilton were provided, as shown in Table 3.

Table 3. Regional Municipality of Hamilton – Existing and 2021 Demographics

Demographic	2001	2021	Total Growth (%)	Annual Growth (%)
Population	498,122	566,796	13.8 %	0.7 %
Employment	192,370	229,627	19.4 %	1.0 %

Based on these numbers, population and employment are expected to increase on average by approximately 0.7% and 1.0% per annum, respectively to 2021. As existing vehicle volumes are influenced by increase in both population and employment, the average growth rate per annum for background growth was estimated to be approximately 0.83%.

3.1.1.2 Development Land Uses

Documentation on the gross acreage available in the North Glanbrook Industrial Business Park area was provided in the form of a Secondary Plan exhibit of the NGIBP area. The exhibit, shown in Figure 10, identified that the type of development in the NGIBP would be limited to general commercial, general industrial and prestige business / industrial. In addition, the exhibit also indicated that the development of the NGIBP lands could possibly be developed in three phases, as highlighted on Figure 10. The associated acreage designated to each type of land use for each development phase was estimated from the provided exhibit and summarized in Table 4.

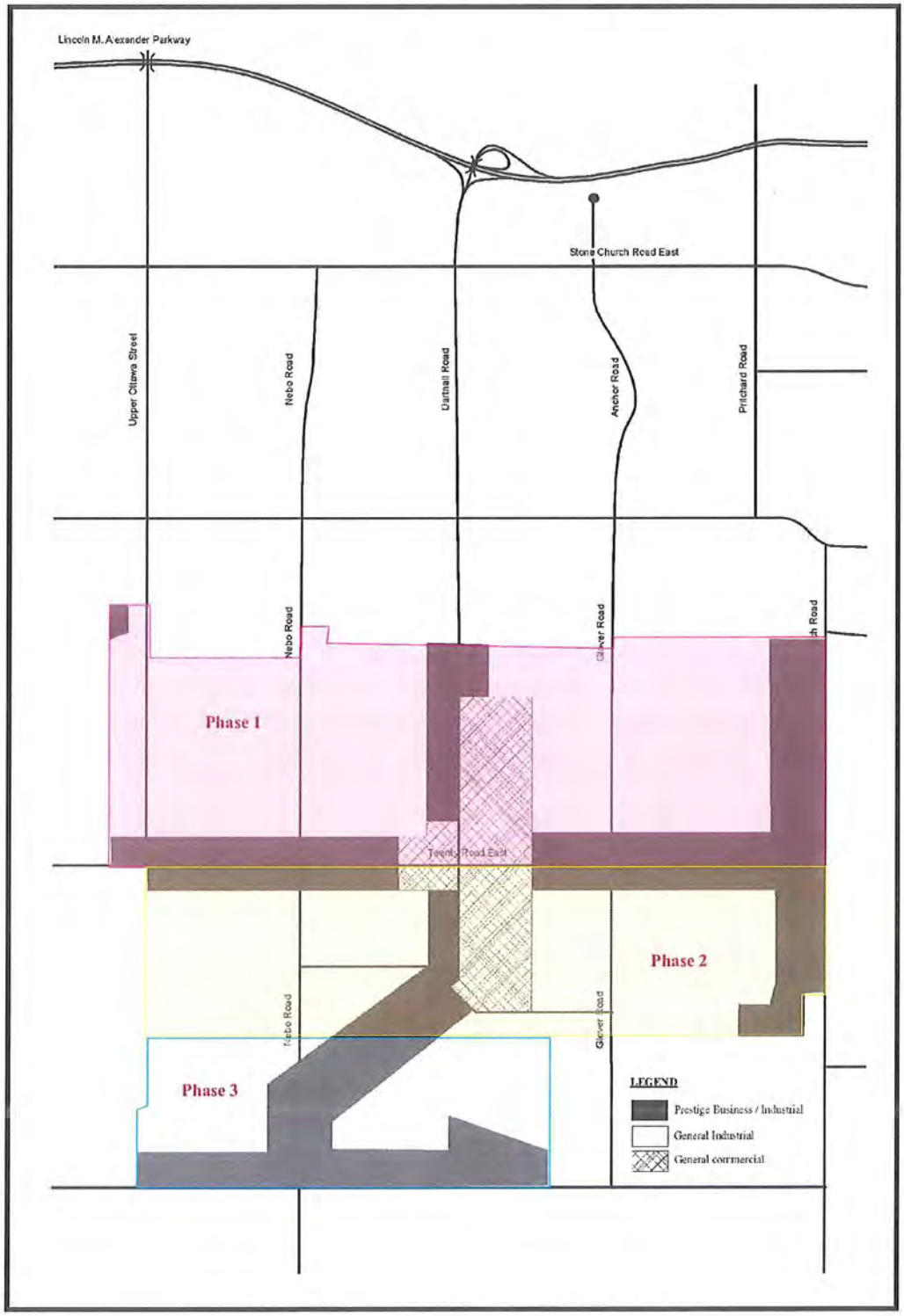
Table 4. NGIBP Secondary Plan – Estimated Gross Acreage per Land Use Type associated with Development Phases

Development Area	Prestige Business / Industrial	General Industrial	General Commercial
NGIBP – Phase 1	66	186	24
NGIBP – Phase 2	63	193	36
NGIBP – Phase 3	66	82	0
Total Gross Acres	**195**	**461**	**60**

Table 4 indicates that the NGIBP study area would have approximately 715 acres (gross) available for future development. As the development is likely to occur in phases, this study assumed the phasing presented in the Secondary Plan, with approximately 276 acres (gross) developed in the first phase, approximately 292 acres (gross) developed in the second phase and the remaining 148 acres (gross) developed in the third phase. Each

development phase was assumed to be completed for the respective planning horizons of 2011, 2021 and 2031.

Figure 10. NGIBP Secondary Plan – Land Use Designations and Phasing



3.1.1.3 Trip Generation

The total number of trips generated by the proposed development was estimated from the amount of land available for development and trip rates provided in the Institute of Transportation Engineers (ITE) Trip Generation Rates manual (Edition 7). Assumptions regarding the amount of developable land and the associated trip rates are described below.

Total Developable Land:

As noted in the previous section, the total land available for development was approximately 715 acres. However, this total available land (gross acreage) includes land that will be required for roads, landscaping, natural features and stormwater management, etc. As a result, the total acreage of available land was reduced by the following percentages to account for the aforementioned items:

- 25% for roads
- 20% for landscaping, natural features, stormwater management, etc.

While general "rule of thumb" estimates assume a 15% reduction for landscaping, etc., this study assumed a higher reduction of 20% as the City has indicated that the property will be sold in large parcels, which may require on-site stormwater management facilities. Following this reduction, the amount of developable land is approximately 55% of the total available land. This reduction was applied to land uses that had been designated as general industrial and prestige business / industrial.

For land use that was designated for commercial purposes, the amount of total developable land was reduced by an additional 40% to provide for the large number of parking spaces that are associated with typical commercial developments, such as shopping centres. Thus, of the total available land designated as general commercial, approximately 33% was assumed developable for trip generation purposes.

Trip Rates:

The assumed land uses and the total developable acres for each type of land use was used as a basis for estimating the number of trips that would be generated from the NGIBP area. The trip rates were obtained from the Institute of Transportation Engineers (ITE) Trip Generation manual (7th Edition). The specific land uses described in the ITE manual assumed for each of the proposed land uses identified for the NGIBP are summarized in Table 5.

Table 5. Trip Generation Land Use Assumptions

NGIBP Land Use Designation	ITE Land Use	ITE Trip Rate Code
Prestige business / industrial	Industrial park	130
General industrial	Manufacturing	140
General commercial	Shopping Centre	820

These land use designations result in peak hour trip rates ranging from 7.44 vehicle trips per acre and 8.84 vehicle trips per acre.

Horizon Year Development:

Development patterns throughout the Hamilton area suggest that available land becomes fully developed over a long period of time. A field review of the industrial area to the north of the NGIBP indicated that approximately half of the land was still vacant although these lands were initially developed over 30 years ago. Furthermore, the employment data for 2001 and 2021 obtained from the City of Hamilton's EMME/2 model indicated that the employment in 2021 would be approximately double of that in 2001 for this industrial area to the north. As the NGIBP is also a major industrial development, it will most likely have similar development patterns. As the industrial area to the north is only half developed and is expected to double in employment by 2021, it was assumed that the NGIBP will be approximately 50% developed within the 10 to 15 year time frame and full build out (100% development) will occur within the 20 to 30 year time frame.

Trips Generation Summary:

Based on the land use assumptions and the associated trip generation rates noted previously, the amount of developable land from the three development phases and the total number of trips generated in the AM peak hour and the PM peak hour under a 50% build out scenario and a 100% build out scenario are summarized in Tables 6 and 7, respectively.

Table 6. Trips Generated (50% build out) – 10 to 15 year horizon

Phase	Available Land	Developable Land			AM Peak Hour Trips			PM Peak Hour Trips		
	Total (acres)	Industrial (acres)	Manufacturing (acres)	Commercial (sq. ft.)	In bound	Out bound	Total	In bound	Out bound	Total
1	376	18	79	173,870	760	121	881	645	734	1379
2	182	17	25	260,805	418	107	525	491	612	1103
3	148	18	22	0	295	40	335	137	232	369
Total	**716**	**53**	**126**	**434,675**	**1473**	**268**	**1741**	**1273**	**1578**	**2851**

Table 7. Trips Generated (100% build out) – 20 to 30 year horizon

Phase	Available Land	Developable Land			AM Peak Hour Trips			PM Peak Hour Trips		
	Total (acres)	Industrial (acres)	Manufacturing (acres)	Commercial (sq. ft.)	In bound	Out bound	Total	In bound	Out bound	Total
1	376	36	157	347,740	1451	209	1660	1171	1303	2474
2	182	35	51	521,609	747	174	921	825	1018	1843
3	148	37	45	0	562	74	636	265	423	686
Total	**716**	**108**	**253**	**869,349**	**2760**	**457**	**3217**	**2261**	**2744**	**5005**

The trips generated under the 50% and 100% build out scenario were also used to estimate the employment densities in the NGIBP. Calculations indicated that there are

approximately 9 employees per developable acre in the 50% build out scenario and approximately 19 employees per developable acre in the 100% build out scenario. A review of published estimates of employment density for the City of Hamilton shows that the assumptions undertaken in this study provide employment densities that are consistent with future expected employment densities. A memo further detailing employment density assumptions and verification of the assumptions is included in Appendix D.

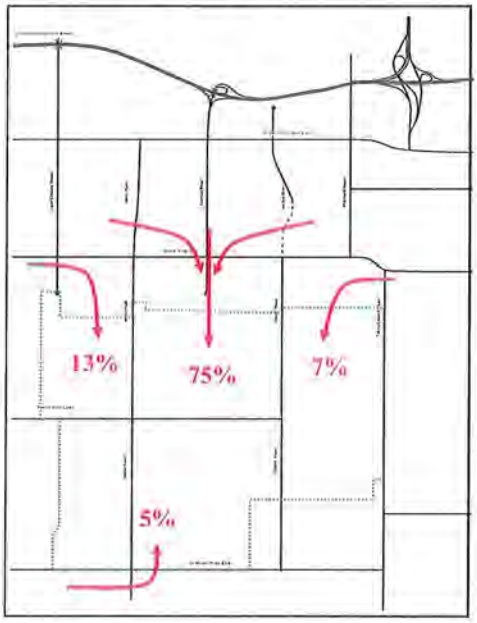
3.1.1.4 Trip Distribution

The distribution patterns for trips destined to the NGIBP were assumed to be similar to the distribution patterns observed for the industrial area north of the NGIBP. As a result, the City of Hamilton's EMME/2 model was reviewed to determine the origins of all trips destined to the industrial area. Based on an understanding of trip origins destined to the industrial area, the following trip distribution patterns for trips entering the study area were assumed:

- 75% of all trips are from the north (assume 75% use the Linc and Dartnall Road, with the remainder using local north-south roads)
- 13% of all trips are from the west (assume 100% use Rymal Road)
- 7% of all trips are from the east (assume 100% use Rymal Road)
- 5% of all trips are from the south (assume 100% use Dickenson Road)

Figure 11 displays the assumed trip distribution patterns as noted above. On a local level, it was assumed that the majority of the trips would access the study area via Nebo Road (30% of all trips) and Dartnall Road (30% of all trips), with the remaining trips using Glover Road and Trinity Church Road. The estimated number of trips generated by development in the NGIBP area was then assigned to each of the noted links based on the trip distribution assumptions.

Figure 11. Assumed Trip Distribution Patterns

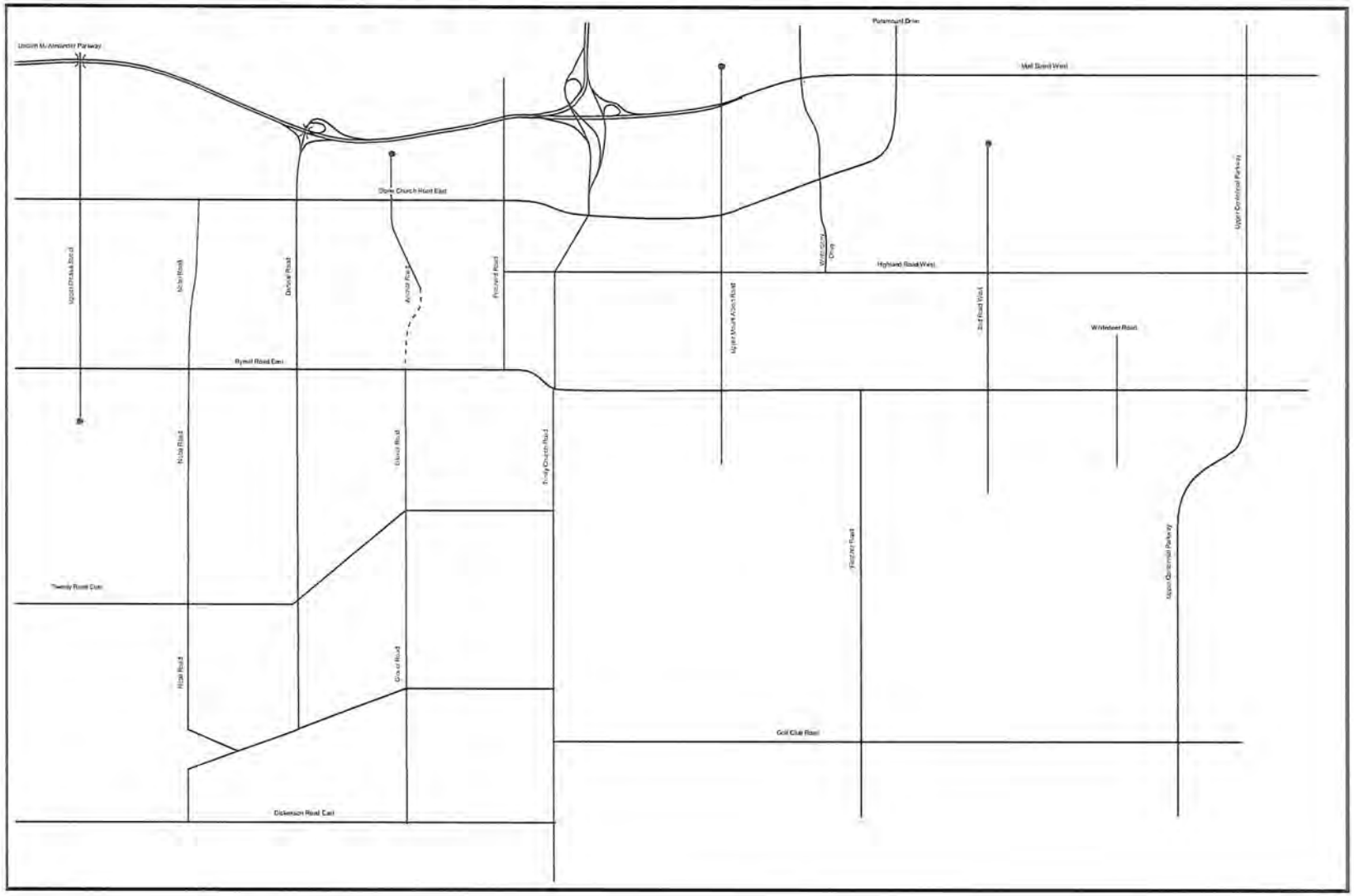


3.1.1.5 Network Assumptions

Two network scenarios were developed for the assignment of future year (2021 and 2031) volumes in the spreadsheet model. The first network scenario assumed that future development volumes would be assigned to the existing network. This scenario was used to identify the north-south lane deficiencies in the existing network to carry future traffic volumes entering the NGIBP area and intersection issues. The second network scenario assumed a future network which included an extension of Dartnall Road from Rymal Road to Dickenson Road. The future road network that was developed for the horizon years of 2021 and 2031 for the second network scenario in the spreadsheet model is shown in Figure 12.

For the purposes of determining future intersection issues, a proposed configuration of collector / arterial roads within the study area was included as part of the assessment. The future configuration was based on a network alternative that was developed as part of the alternative development component of the Transportation Master Plan study process. As a note, potential improvements to the road network in the Rymal Road Planning Area, based on previous reports and an understanding of the RRPA Class EA study direction, were also included into the analysis.

Figure 12. Spreadsheet Model – 2021 and 2031 Assumed Road Network



3.1.2 Future Volumes and Lane Deficiency Issues

Future horizon year volumes for 2021 and 2031 were initially assigned to the existing road network based on the trip generation and trip distribution assumptions described earlier to determine existing north-south lane deficiencies. The resulting total inbound / outbound vehicle link volumes for the AM / PM peak hour of travel for each of the respective horizon years are summarized by screenline in Figure 13. Details of the assigned volumes are included in Appendix D.

Under existing conditions, three collector roads provide access into the North Glanbrook Industrial Business Park from the north and the south, while one collector road provides access from the west. These roads, which include Trinity Church Road, Glover Road, Nebo Road and Twenty Road, were assumed to have a planning capacity of approximately 650 vehicles per lane. As various assumptions were used as a basis for the assignment of vehicle volumes to the road network, the evaluation of capacity deficiencies was based on a screenline assessment of the road network, rather than individual roads. A comparison of screenline volumes and available capacity is provided in Table 8.

Table 8. Comparison of Future Peak Direction Screenline Volumes with Existing Available Capacity

Screenline	2021		2031		Directional Capacity
	AM Inbound	PM Outbound	AM Inbound	PM Outbound	
North	1800	2073	3029	3237	1950
South	745	765	858	934	1950
West	130	191	186	281	650

The comparison of screenline volumes with available capacity indicates that sufficient capacity is available for access into the NGIBP via the west and the south. However, as the trip distribution assumptions indicated, the majority of the trips are accessing the study area via the north. As a result, by 2021, or within the 50% buildout time frame, the north-south roads entering the NGIBP from the north will be operating in a congested state. Therefore, an additional lane of capacity (one lane in each direction) will be required within this time frame. As the development becomes fully developed (100% build out), the additional lane of capacity provided at the 50% build out time frame, will not provide sufficient capacity to carry the additional trips. As a result, another lane of north-south capacity will be required upon full build out, for a total of two additional north-south lanes in the study area. Table 9 provides a summary of the north screenline supply and demand analysis that identifies the required infrastructure improvements in terms of collector road or arterial road capacity improvements.

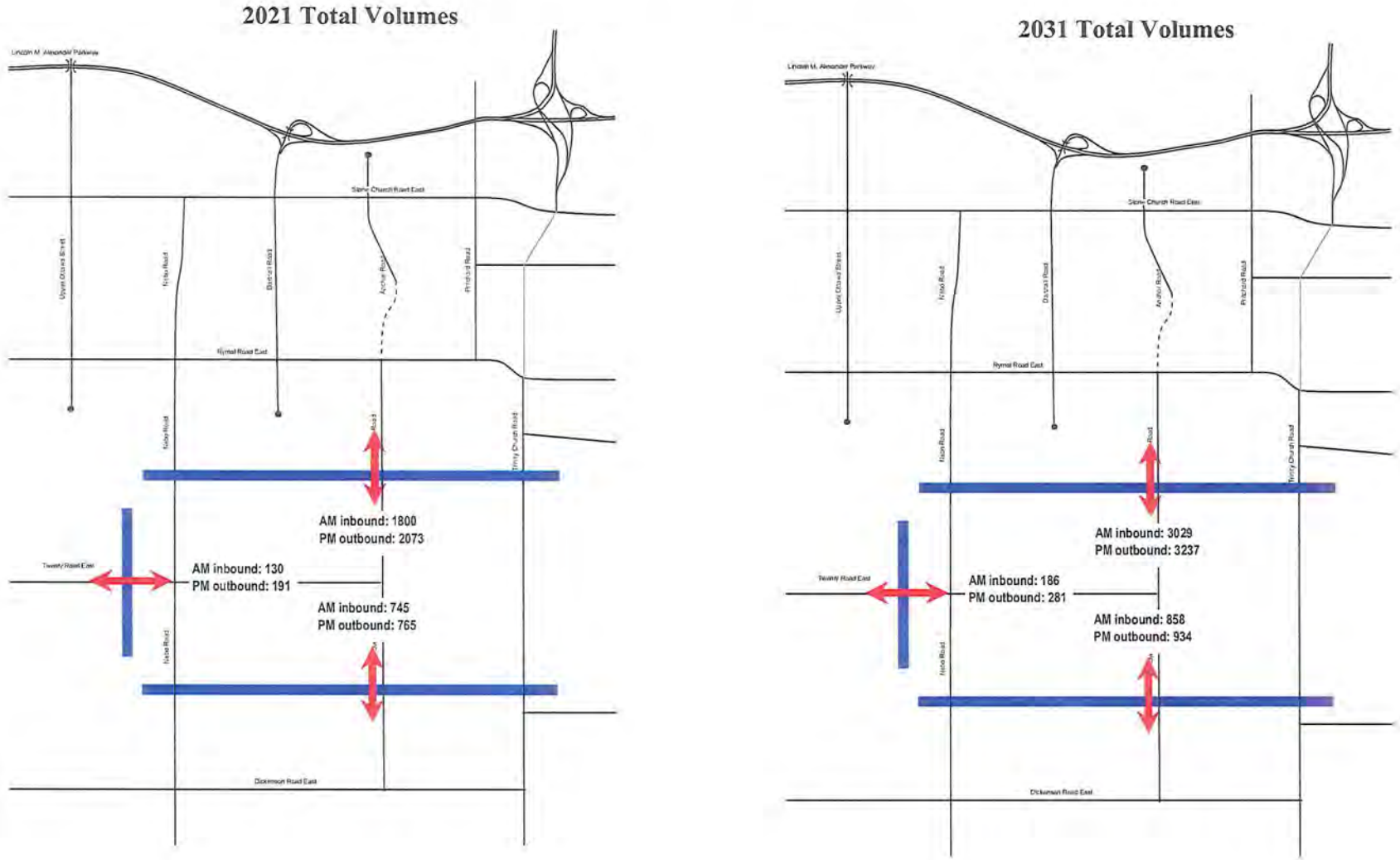
Table 9. Summary of North Screenline Supply / Demand

North Screenline	Collector Road System		Collector / Arterial Road System	
	2021	2031	2021	2031
Base capacity	1950	2600	1950	2950
PM outbound	2173	3237	2173	3237
Volume / capacity	1.11	1.25	1.11	1.10
Adjusted capacity	2600[1)]	3200	2950[2)]	3950
Adjusted volume / capacity	0.84	1.01	0.74	0.82

Assumptions:

1) Collector road lane capacity of 650 vehicles per hour.
2) Arterial road lane capacity of 1000 vehicles per hour.

Figure 13. NGIBP Screenline Volumes



3.1.3 Future Intersection Issues

Following the identification of lane deficiencies, an assessment of intersection issues was also undertaken based on future turning movement volumes that were estimated for various intersections within and adjacent to the NGIBP. The following three intersection scenarios were evaluated:

- Scenario 1: Future volumes on existing road network and existing signal timings
- Scenario 2: Future volumes on improved road network (additional north-south capacity) and existing signal timings
- Scenario 3: Future volumes on improved road network (additional north-south capacity), improved intersection design and improved signal timings

These alternative scenarios were designed for the purpose of identifying intersection issues resulting from approach lane deficiencies, intersection capacity issues and potential intersection improvements to address future capacity issues. A summary of the AM and PM peak hour 2021 levels-of-service (LOS) for each of the intersections within and in close proximity to the NGIBP, where possible, under each of the scenarios is provided in Tables 10 and 11, respectively. As a note, unsignalized intersections were not provided with an overall LOS. Instead, congested stop-controlled movements were noted in the tables. Detailed summaries of the turning movement volumes and the associated Synchro outputs are included in Appendices E and F, respectively.

Table 10. Summary of AM Peak Hour 2021 Intersection LOS Alternative Scenario Analysis

	Scenario 1:		Scenario 2:		Scenario 3	
Intersection	Intersection LOS	Critical Movements	Intersection LOS	Critical Movements	Intersection LOS	Critical Movements
Nebo Road and Rymal Road	E	WBL (F)	B		B	
Dartnall Road and Rymal Road	D	EBL (F)	D	WBTR (E) NBL (E) SBTR (F)	B	
Glover Road and Rymal Road	-	NBLTR (F) SBLTR (F)	-	NBLTR (F) SBLTR (F)	A	
Pritchard Road and Rymal Road	-	SBLR (F)	-	SBLR (F)	A	
Nebo Road and Twenty Road	-	EBLTR (F) WBLTR (F)	-	EBLTR (E)	A	
Dartnall Road and Twenty Road	-	-	-	No issues	-	No issues
Glover Road and Twenty Road	-	No issues	-	No issues	-	No issues

The AM peak hour analysis indicates that the intersection operating levels of service significantly improve with Network Scenario 3. With the PM peak hour travel being over 50% greater than the AM peak hour, the intersection analysis is more focussed on the PM peak hour conditions presented in Table 11.

Table 11. Summary of PM Peak Hour 2021 Intersection LOS Alternative Scenario Analysis

	Scenario 1:		Scenario 2:		Scenario 3	
Intersection	**Intersection LOS**	**Critical Movements**	**Intersection LOS**	**Critical Movements**	**Intersection LOS**	**Critical Movements**
Nebo Road and Rymal Road	F	EBTR (F) WBL (F) NBLTR (F) SBL (E)	D	WBL (F) NBL (F)	B	WBL (E)
Dartnall Road and Rymal Road	F	EBL (F) WBTR (F) SBL (F) NBL (E)	F	EBL (F) EBTR (E) WBTR (F) NBL (F) NBTR (E) SBLTR (F)	B	
Glover Road and Rymal Road	-	NBLTR (F) SBLTR (F)	-	NBLTR (F) SBLTR (F)	C	
Pritchard Road and Rymal Road	-	SBLR (F)	-	SBLR (F)	D	EBL (F)
Nebo Road and Twenty Road	-	EBLTR (F) WBLTR (F)	-	EBLTR (F) WBLTR (E)	B	
Dartnall Road and Twenty Road	-	-	-	EBLTR (F)	-	No issues
Glover Road and Twenty Road	-	No issues	-	No issues	-	No issues

A review of the existing intersection LOS indicated that the existing intersections would not be able to carry future vehicle volumes, as noted in the Scenario 1 column for the PM peak hour. Under Scenario 1, vehicles accessing the NGIBP area mainly utilize the Nebo Road and Rymal Road intersection, as Dartnall road terminates just south of Rymal Road under existing conditions. As a result, the Nebo Road and Rymal Road intersection experiences significant delays. Major delays are also experienced at the Dartnall Road and Rymal Road intersection as vehicles heavily utilize the SBL and the NBL turning movements to access the study area. As noted under existing conditions, the stop-controlled movements along Rymal Road and Nebo Road are also operating in a congested state.

In Scenario 2, the road network is improved by providing direct access from the Linc into the NGIBP area via the extension of Dartnall Road as an initial 2-lane roadway from the existing south terminus to Dickenson Road. This network improvement results in significantly reduced delays at the intersection of Nebo Road and Rymal Road, improving to a LOS D operating condition. However, the intersection of Dartnall Road and Rymal Road now experiences the longest delays as a majority of the volumes entering the study area pass through this intersection. Without intersection improvements at the Dartnall Road and Rymal Road intersection, it is anticipated that this intersection will operate at a congested state (LOS F). As per Scenario 1, the stop-controlled

movements along Rymal Road experience extensive delays as do the stop-controlled movements on Twenty Road with Nebo Road and Dartnall Road.

Thus, to address the operational issues noted in Scenarios 1 and 2, intersection and lane improvements were implemented in Scenario 3. The improvements that were implemented into the intersection analysis of Scenario 3 are summarized below:

- Signalize the following intersections:
  - Glover Road and Rymal Road with separate left turn lanes on Rymal Road
  - Pritchard Road and Rymal Road with a separate WB right turn lane and a separate EB left turn lane on Rymal Road
  - Nebo Road and Twenty Road
- Provide two (2) through lanes along Rymal Road at its intersection with Nebo Road
- Provide two (2) through lanes for all approaches at the intersection of Dartnall Road and Rymal Road
- Change the 2-way stop-control at the intersection of Dartnall Road and Twenty Road to a 4-way stop controlled intersection

These proposed improvements would provide a good operating level of service for all key intersections providing access to the NGIBP.

To address the 2031 horizon year impacts a further analysis was undertaken to determine necessary intersection improvements. Although the intersections along Rymal Road did not require additional lanes, the signal timings were changed to allow for protected / permissive left turn movements. Other intersection improvement requirements included the following:

- Provide separate NB and SB left turn lanes at the intersection of Nebo Road and Twenty Road
- Signalize the intersection of Dartnall Road and Twenty Road
- Signalize the intersection of Glover Road and Twenty Road with the provision of separate left turn lanes

3.2 Travel Demand Analysis – EMME/2 Model Approach

The City of Hamilton's 2001 EMME/2 model is a transportation planning model that provides a representation of the existing road network in the City of Hamilton and the associated vehicle volumes on each link. Using this model as a base, future horizon year networks were developed and future horizon year trip tables were assigned to the future year networks to determine future vehicle volumes on roadway links within the study area. The EMME/2 model provides a broader understanding of traffic flows for corridor planning purposes within and adjacent to the NGIBP area as a result of development and background traffic in association with growth throughout the City of Hamilton. As part of the process, the existing model road network in the study area and the surrounding area was reviewed and revised and the existing model was calibrated to specific screenlines adjacent to the study area. Using this updated existing model as a base, future road networks were developed and future trip tables were updated to include additional volumes resulting from proposed development, which were then assigned to the future road networks. The assumptions associated with the development of the EMME/2 model and the resulting future year volumes are described in the following sections.

3.2.1 Model Assumptions

The City of Hamilton 2001 EMME/2 model was developed to determine vehicle volume flows mainly on major arterials and freeways within the City of Hamilton and was calibrated on a more regional level. To address the NGIBP study requirements, a calibration of the road network within the vicinity of the study area was undertaken to obtain representative volumes on the existing road network. The existing model was then used as a base to develop future year road networks and trip tables as a result of proposed development. The assumptions associated with the existing network calibration process, future year road networks and future year trip tables are described below.

3.2.1.1 Existing Network Calibration Assumptions

As part of the calibration procedure, the existing 2001 EMME/2 model was reviewed with respect to the road network definition, roadway lane configurations and associated speeds and the placement of centroid connectors.

Road Network:

The 2001 EMME/2 model included the majority of the major arterials and freeways within and adjacent to the study area. A further review indicated that a major north-south road within the NGIBP study area was not included as part of the model. As the study was concerned with future road network requirements in the study area, Glover Road between Dickenson Road and Rymal Road was included into the existing road network. Twenty Road East was also extended easterly from Nebo Road to terminate at Glover Road, as per existing conditions.

It was also observed that a few of the north-south connecting roads, which may have some influence on trip travel patterns resulting from proposed development within and adjacent to the NGIBP, had been excluded. The following two additional north-south

roadway links were included into the existing model, as they were assumed to be necessary for local travel within and adjacent to the study area:

- Second Road between Rymal Road and Highland Road
- Whitedeer Road between Rymal Road and Highbury Drive

Roadway Lane Configurations and Associated Speeds:

As noted in a previous section, a field review of the NGIBP and surrounding area was undertaken to obtain existing roadway lane configurations and speeds. Based on this field review, roadway lane configurations and speeds in the EMME/2 model for the study area and surrounding area were updated to represent existing conditions.

Centroid Connectors:

As part of the calibration procedure, auto volumes that were assigned to the updated existing network were compared with counts at pre-defined screenlines bordering the larger study area. As the model was representative of 2001 volumes, it was assumed that actual vehicle volumes within a two-year time frame would be relatively similar. Following an initial comparison of assigned vehicle volumes and actual traffic counts along the screenlines, it was observed that there were obvious differences in vehicle volumes along major roads in the larger study area. As the road network had been updated, the calibration procedure included a review of the locations of the zone centroid connectors to ensure vehicles were provided with adequate and representative access to the traffic zones in the network.

Screenline Analysis:

Following this step in the calibration process, the modeled volumes were found to be within approximately 10% of actual traffic volumes along the three pre-defined screenlines, with the exception of the non-peak direction (SB) along the east-west screenline. A summary of the screenline results, in total vehicles, are shown in Tables 12 to 14.

Table 12. North-South Screenline: East of Upper Ottawa Street (AM Peak Hour Total Vehicles)

Street	Observed (2001)		Simulated (2001)		% difference	
	EB	WB	EB	WB	EB	WB
Lincoln Alexander Parkway	950	1496	1339	1798	1.41	0.90
Stone Church Road	515	351	51	260	0.10	0.74
Rymal Road	420	427	336	505	0.80	1.18
Total	**1885**	**2274**	**1726**	**2563**	**0.92**	**1.13**

Table 13. North-South Screenline: West of Upper Centennial Parkway (AM Peak Hour Total Vehicles)

Street	Observed (2001)		Simulated (2001)		% difference	
	EB	WB	EB	WB	EB	WB
Mud Street	1506	778	1484	933	0.99	1.20
Rymal Road	421	454	446	483	1.05	1.06
Total	**1927**	**1232**	**1930**	**1416**	**1.00**	**1.15**

Table 14. East-West Screenline: South of Mud Street / the Linc (AM Peak Hour Total Vehicles)

Street	Observed (2001)		Simulated (2001)		% difference	
	NB	SB	NB	SB	NB	SB
Upper Centennial Parkway	1011	538	1326	394	1.31	0.73
1st Road	66	37	38	0	0.58	0
Isaac Brock Road	372	149	507	110	1.36	0.74
Paramount Drive	196	113	89	310	0.45	2.74
Winterberry Drive	525	243	185	249	0.35	1.02
Pritchard Road	243	292	289	131	1.19	0.45
Dartnall Road	689	671	758	524	1.10	0.78
Upper Ottawa Street	518	561	541	344	1.04	0.61
Total	**3620**	**2604**	**3732**	**2062**	**1.03**	**0.79**

3.2.1.2 Future Year Road Network Assumptions

The EMME/2 model was used to assess the future link volumes and to understand traffic flow patterns related to future year road networks that were developed for the horizon years of 2021 and 2031 based on a proposed network alternative developed as part of the Transportation Master Plan process and lane requirements noted from the spreadsheet analysis model. The major network improvements assumed for the future horizon years of 2021 and 2031 within the NGIBP area and the adjacent area are summarized in Tables 15 and 16. While the Secondary Plan indicated an extension of Upper Ottawa Street from the existing terminus to Twenty Road, the spreadsheet model showed that this additional capacity was not required and as a result, this extension was not included in the EMME/2 model.

Table 15. Base 2021 EMME/2 Road Network Assumptions

Network Improvements	# of lanes (both directions)
Extend Dartnall Street south of Rymal Road to Dickenson Road	4
Realign Nebo Road to terminate at the extension of Dartnall Road	2
Extend Twenty Road E easterly to Trinity Church Road	2
New east-west collector road between Dartnall Road and Trinity Church Road	2
Widen Rymal Road between Trinity Church Road and Hwy 20	4
Extend Trinity Church Road north from Rymal Road to new Red Hill Valley Parkway	4
New east-west local road south of Rymal Road between Trinity Church Road and Hwy 20	2

Additional network improvements implemented in 2031 include the following:

Table 16. Base 2031 EMME/2 Road Network Assumptions

Network Improvements	# of lanes (both directions)
Widen Trinity Church Road between east-west collector and Rymal Road	4
Widen Rymal Road between Upper Gage Avenue and Trinity Church Road	4

As a note, the improvements to Trinity Church Road north of Rymal Road, to Rymal Road between Trinity Church Road and Highway 20 and to the east-west local road south of Rymal Road between Trinity Church Road and Highway 20 are included as per the concurrent Rymal Road Planning Area Class EA study.

The 2031 future road network modeled in EMME/2 with assumed number of lanes is shown as a reference in Figure 14.

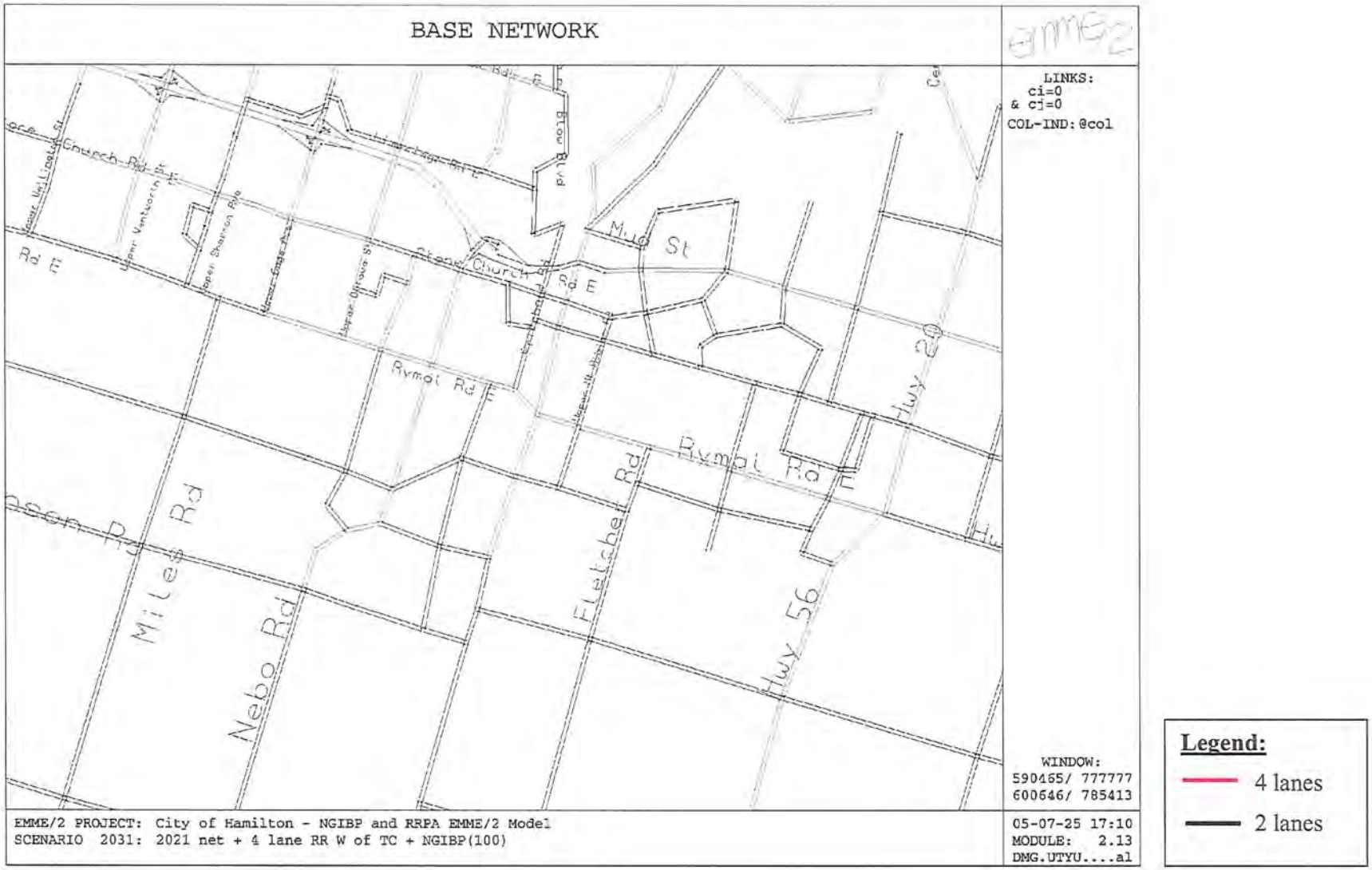
3.2.1.3 Future Year Trip Table Development Assumptions

The 2001 City of Hamilton EMME/2 databank provided 2001 and 2021 trip tables, which included trips originating from and destined to the City of Hamilton and locations external to the City of Hamilton. In order to understand the vehicle volumes on the road network for the future horizon years of 2011, 2021 and 2031, trip tables for 2011 and 2031 were estimated in addition to the trip tables provided in the base databank. The 2011 trip table was interpolated from the 2001 and 2021 trip tables. The 2031 trip table was extrapolated from the 2021 trip table and 2031 population and employment forecasts noted in the document *The Growth Outlook for the Greater Golden Horseshoe* prepared by Hemson Consulting (January 2005).

In addition to determining 2011 and 2031 trip tables, the horizon year trip tables were also updated to include the additional trips that were a result of proposed development within and adjacent to the study area. In particular, additional trips that were included into the trip tables consisted of development traffic from the NGIBP, development traffic from the Rymal Road Planning Area (RRPA) and commercial development traffic from the Heritage Green (HG) area. The additional number of trips that were included into the trip table was obtained from the trips generated in the spreadsheet analysis model.

It was also assumed that the new development volumes would be originating and destined to new traffic zones representative of the new development areas within the EMME/2 model. As a result, origin-destination patterns were developed for each of the new development areas. For the NGIBP, the origin-destination travel patterns were assumed to be the same as the industrial zone north of NGIBP. For the RRPA, the origin-destination travel patterns were assumed to be the same as the adjacent residential zone to the north of the RRPA. For the HG area, the origin-destination travel patterns were assumed to be the same as the industrial zone north of the NGIBP as there were no commercial zones in close proximity to the HG area from which the trip travel patterns could be assumed.

Figure 14. EMME/2 Model – 2031 Assumed Road Network



3.2.2 Future Horizon Year Volumes

Based on the noted network and trip table assumptions, assignment runs were performed for the horizon years of 2021 and 2031 in the EMME/2 model with the assignment results shown in Figures 15 and 16. The assignment results provide an indication of the importance of network connectivity. While four north-south roads provide access into the study area, vehicle volumes mainly utilize Dartnall Road and Trinity Church Road as these two roads provide direct connections to the Lincoln Alexander Parkway and the Red Hill Valley Parkway. Thus, from a network connectivity perspective, the extension of Dartnall Road from its south terminus to Dickenson Road is required. The heavy utilization of Dartnall Road indicates that an arterial roadway is required in this corridor. The EMME/2 model results also show that an additional east-west collector road will be required to service the NGIBP.

These assignment results were reviewed and compared with assignment results from the spreadsheet model. Observations that were noted included the following:

- The total number of AM inbound trips noted by both the spreadsheet analysis model and the EMME/2 model are relatively similar, as shown in Figures 17 and 18.
- The spreadsheet analysis model assumed that the majority of trips entering the NGIBP would enter from the north; however, the EMME/2 model indicated a distribution of between 55% and 60% from the north and between 35% and 40% from the south.
- The spreadsheet analysis model provided an understanding of lane capacity and intersection capacity requirements; however, the EMME/2 model provided an understanding of network flows and network connectivity requirements.

Figure 15. EMME/2 Model – 2021 EMME/2 Auto Volumes

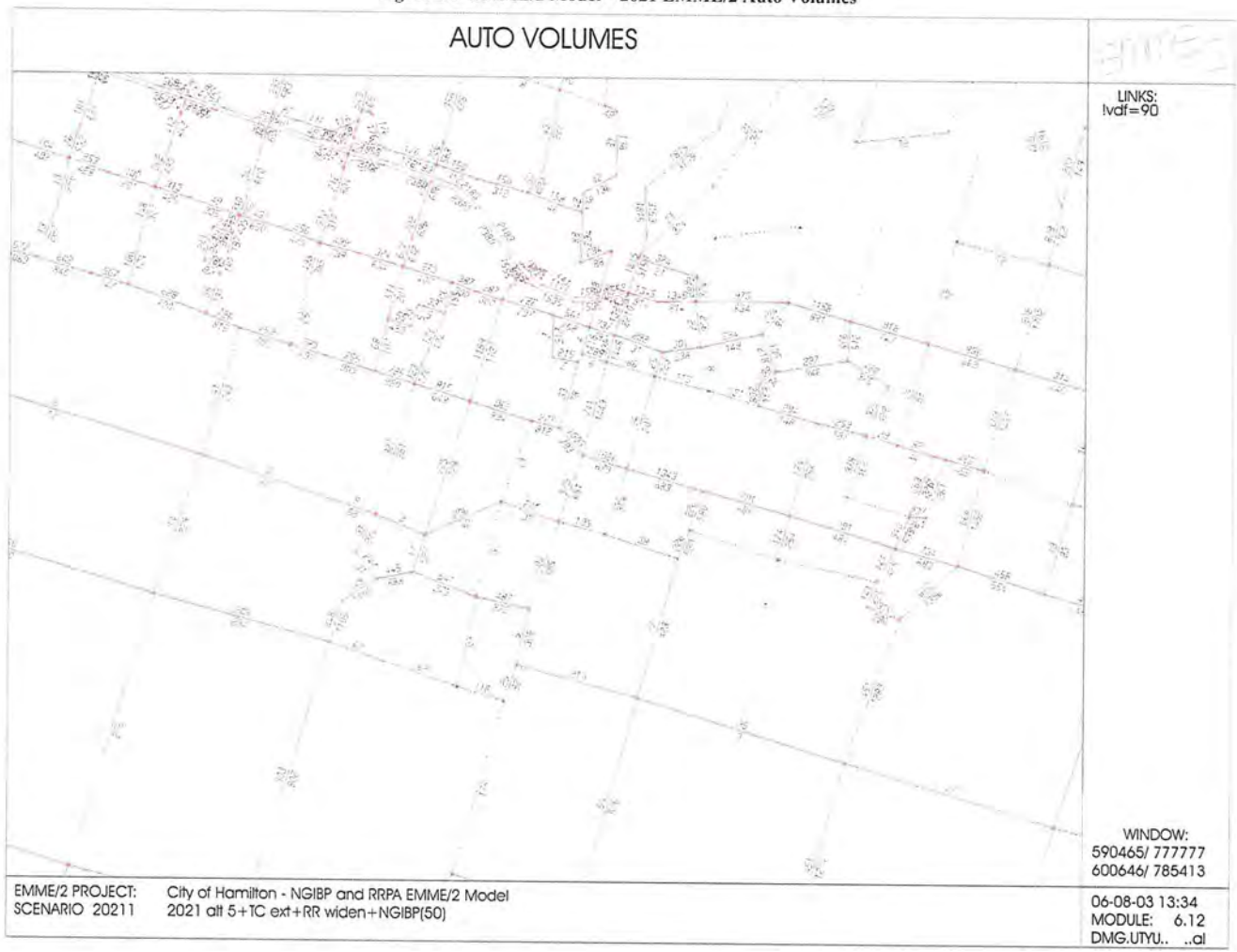


Figure 16. EMME/2 Model – 2031 EMME/2 Auto Volumes

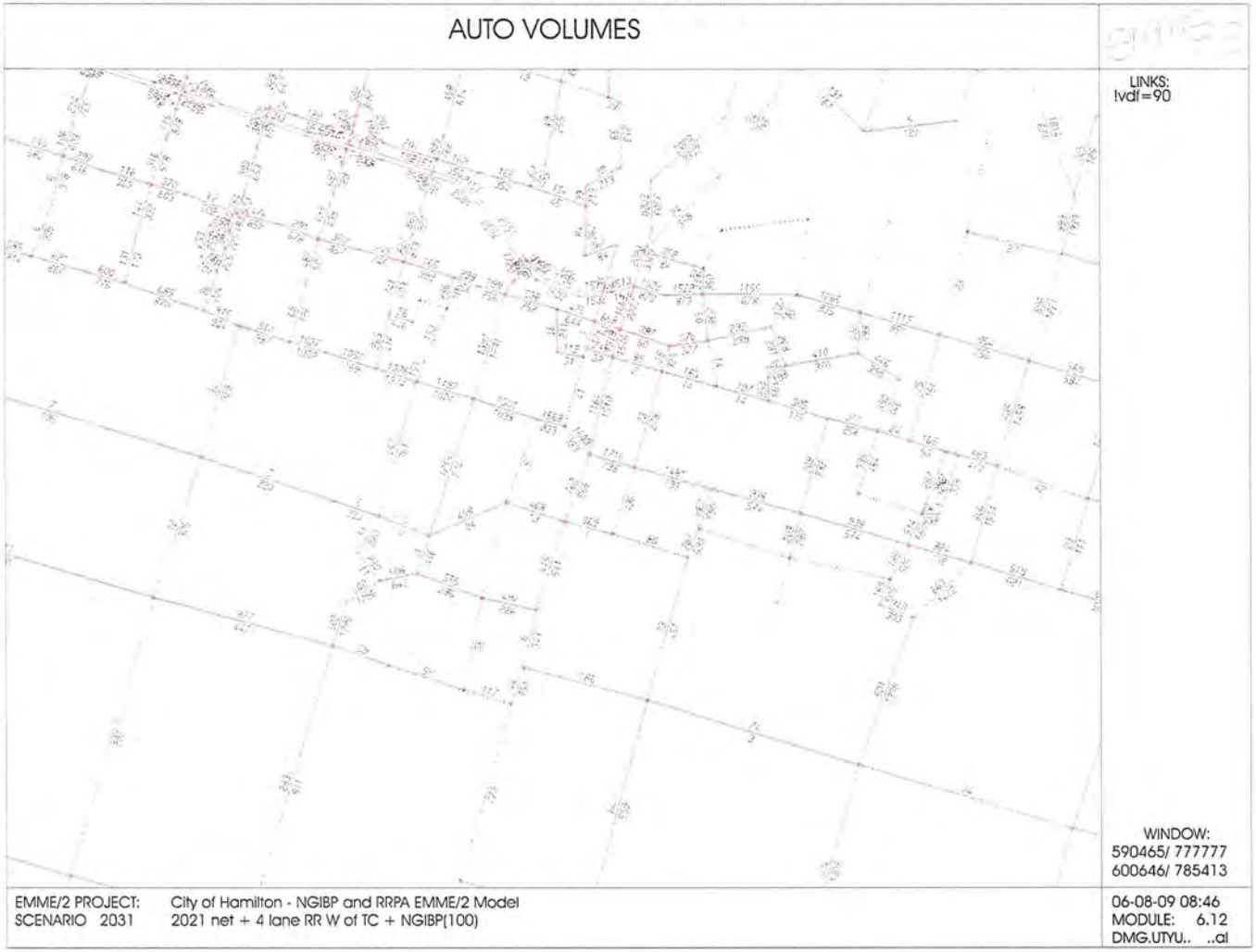


Figure 17. 2021 AM Inbound Volumes

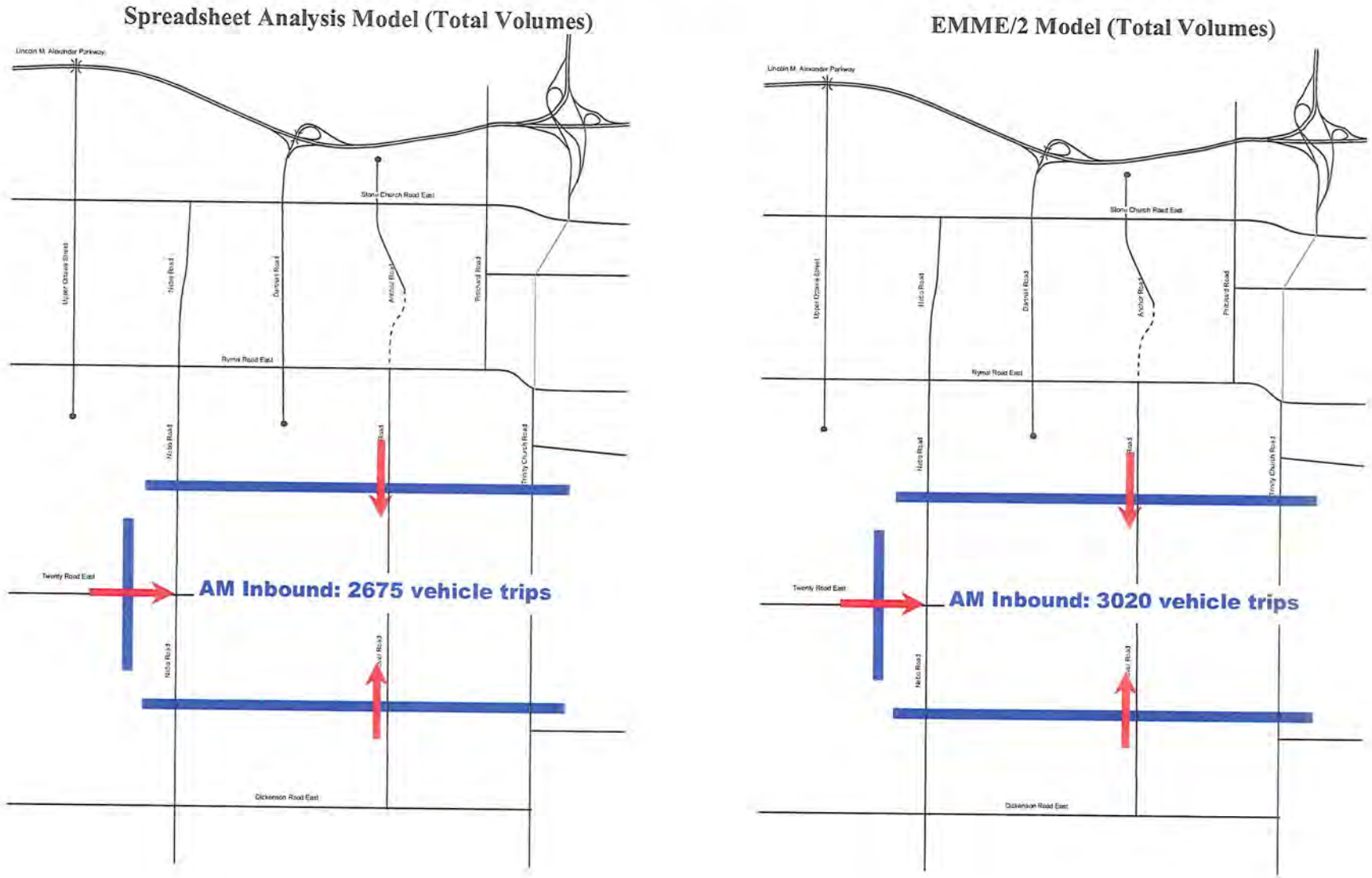
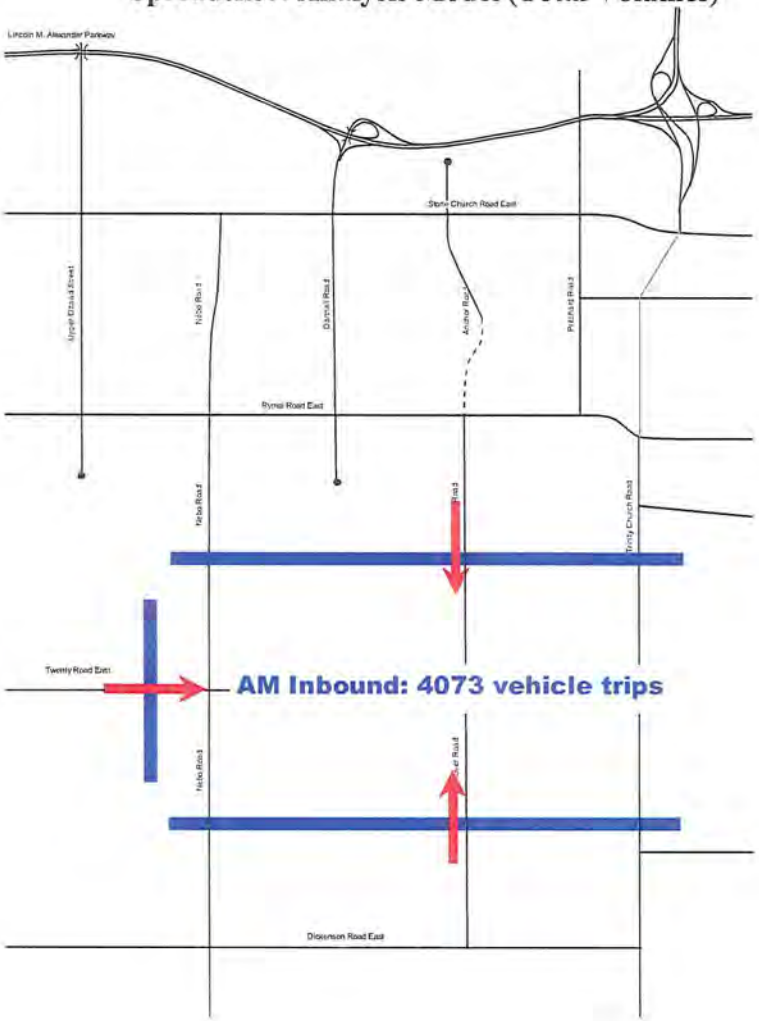
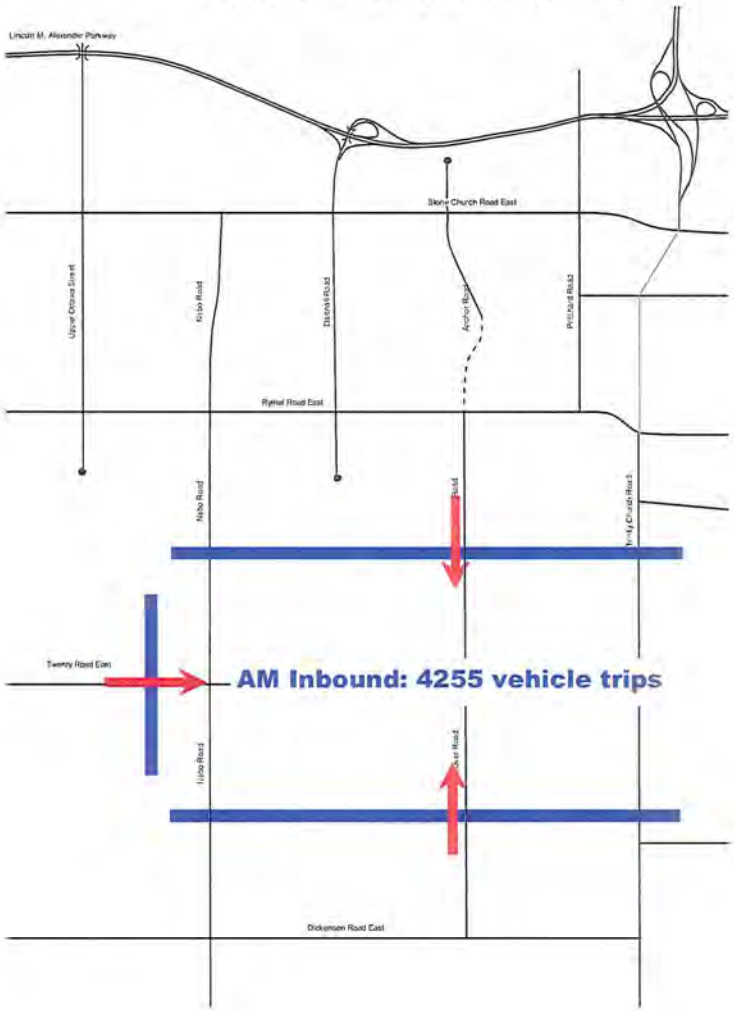


Figure 18. 2031 AM Inbound Volumes

Spreadsheet Analysis Model (Total Volumes)



EMME/2 Model (Total Volumes)



3.3 Future Network Requirements

The understanding of lane capacity requirements, intersection requirements and network connectivity as provided by the spreadsheet analysis model and the EMME/2 model provided the basis for determining future network and corridor requirements for the North Glanbrook Industrial Business Park and the adjacent major roadways. The following sections discuss the network and corridor requirements identified from the two analysis models.

3.3.1 Network Requirements within Study Area

Within the 50% build out time frame (10 to 15 years), the existing north-south road network is forecast to be operating in a congested state. As a result, an additional north-south lane of capacity will be required. East-west roads were observed to provide sufficient capacity; however, improved network accessibility / flexibility is suggested. From a network connectivity perspective, the additional lane of capacity would be best provided through the extension of Dartnall Road from the existing south terminus to Dickenson Road. The extension of Dartnall Road not only provides additional capacity but it also provides direct accessibility to / from the NGIBP to / from major freeways like the Lincoln Alexander Parkway and the Red Hill Valley Parkway. The Dartnall Road extension will also relieve the impact of additional traffic volumes on adjacent intersections leading into the NGIBP.

Within the 100% build out time frame (20 to 30 years), future travel demands associated with the NGIBP will require one more additional north-south lane of capacity and an additional east-west lane of capacity. In addition to development traffic from the NGIBP, the road network will need to be able to accommodate traffic associated with the development of the Airport Lands situated to the southwest of the study area. As noted in the Master Plan for the Airport Lands, the provision of a direct connection, most likely through the North Glanbrook Industrial Business Park, to the Lincoln Alexander Parkway and the Red Hill Valley Parkway, will be required.

3.3.2 Network Requirements External to the Study Area

A review of both the spreadsheet analysis model assignment results and the EMME/2 model assignment results indicates that the road network adjacent to the study area will also require improvements to accommodate the additional development traffic. Recommended network requirements would include the following:

- Widening of Rymal Road between Upper Centennial Parkway and Upper Gage Road to four lanes
- Extension of Trinity Church Road from Rymal Road to the Red Hill Valley Parkway
- Provision of an east-west connection between the south end of the NGIBP area, possibly via Dickenson Road or Airport Road, to the Trinity Church extension

4. PROBLEM / OPPORTUNITY STATEMENT

Based on the assessment of existing and future conditions, existing and future issues resulting from proposed development in the North Glanbrook Industrial Business Park were identified. In order to address these issues, a problem / opportunity statement was developed to provide the direction towards the preparation of the transportation master plan and to further enhance the understanding of issues resulting from future development. The problem / opportunity statement that was presented to the public at the first public information centre was as follows:

> As development occurs, there will be a significant increase in traffic on roadways within and adjacent to the Secondary Plan. It is anticipated that the opening of the Red Hill Valley Parkway (RHVP) in 2007 could be an impetus for the development of these lands. The objectives of this study are to:
>
> - Identify an improved transportation network within the Secondary Plan area to support the planned future development;
> - Reduce the potential for traffic infiltration on residential areas that are not planned to be redeveloped;
> - Provide improved direct connections to the adjacent freeways and arterial road facilities; and,
> - Allow for flexibility in the proposed network to accommodate long-term growth planned for the Airport Lands as they will require accessibility to / from the RHVP.

APPENDICES

APPENDIX A

FIELD REVIEW – PHOTO INVENTORY LIST

W.O. 6011 North Glanbrook Industrial Park Transportation Master Plan

Field Review - Tuesday, May 3, 2005

Photo List and Description

Photo #	Description of Location	Direction of travel	Direction of View
1	Intersection of Nebo Road and Stone Church Road	Westbound	
2	Intersection of Upper Ottawa Street and Stone Church Road	Westbound	
3	Intersection of Upper Ottawa Street and Stone Church Road	Westbound	looking at S approach
4	Intersection of Upper Ottawa Street and Stone Church Road	Westbound	looking at N approach
5	Upper Ottawa Street south of Stone Church Road	Southbound	
6	Upper Ottawa Street north of Rymal Road	Southbound	
7	Intersection of Upper Ottawa Street and Rymal Road	Southbound	looking at S approach
8	Intersection of Upper Ottawa Street and Rymal Road	Southbound	looking at E approach
9	Intersection of Upper Ottawa Street and Rymal Road	Southbound	looking at W approach
10	Rymal Road E between Upper Ottawa Street and Nebo Road	Eastbound	
11	Intersection of Nebo Road and Rymal Road	Eastbound	
12	Nebo Road south of Rymal Road E	Southbound	
13	Intersection of Nebo Road and Twenty Road E	Southbound	
14	Nebo Road south of Twenty Road E	Southbound	
15	Intersection of Nebo Road and Dickenson Road E	Southbound	
16	Dickenson Road east of Nebo Road	Eastbound	
17	Dickenson Road west of Glover Road	Eastbound	
18	Intersection of Glover Road and Dickenson Road	Eastbound	
19	Dickenson Road east of Glover Road	Eastbound	
20	Intersection of Trinity Church Road and Dickenson Road	Eastbound	
21	Intersection of Trinity Church Road and Golf Club Road	Northbound	
22	Trinity Church Road north of Golf Club Road	Northbound	
23	Intersection of Trinity Church Road and Dickenson Road	Southbound	
24	Glover Road north of Dickenson Road	Northbound	
25	Glover Road south of Twenty Road E	Northbound	
26	Intersection of Glover Road and Twenty Road	Northbound	
27	Intersection of Glover Road and Twenty Road	Northbound	
28	Twenty Road E west of Glover Road	Westbound	
29	Intersection of Nebo Road and Twenty Road E	Westbound	

Photo #	Description of Location	Direction of travel	Direction of View
30	Intersection of Nebo Road and Rymal Road	Northbound	looking at S approach
31	Intersection of Nebo Road and Rymal Road	Northbound	looking at N approach
32	Nebo Road north of Lancing Drive	Northbound	
33	Intersection of Nebo Road and Stone Church Road	Northbound	looking at S approach
34	Intersection of Nebo Road and Stone Church Road	Northbound	looking at E approach
35	Stone Church Road west of Nebo Road	Eastbound	
36	Intersection of Dartnall Road and Stone Church Road	Eastbound	looking at W approach
37	Dartnall Road south of Stone Church Road	Southbound	
38	Intersection of Dartnall Road and Stone Church Road	Northbound	looking at S approach
39	Stone Church Road east of Dartnall Road	Eastbound	
40	Intersection of Pritchard Road and Stone Church Road	Eastbound	looking at W approach
41	Stone Church Road east of Pritchard Road	Eastbound	
42	Intersection of Upper Mount Albion Road and Stone Church Road	Eastbound	looking at W approach
43	Intersection of Winterberry Drive and Paramount Drive	Eastbound	looking at W approach
44	Intersection of Winterberry Drive and Paramount Drive	Eastbound	looking at N approach and NB through lanes
45	Winterberry Drive north of Paramount Drive	Northbound	
46	Intersection of Winterberry Drive and Mud Street	Northbound	looking at S approach
47	Intersection of Winterberry Drive and Mud Street	Northbound	looking at W approach
48	Intersection of Winterberry Drive and Mud Street	Northbound	looking at E approach
49	Intersection of Winterberry Drive and Mud Street	Northbound	looking at N approach
50	Mud Street east of Winterberry Drive	Eastbound	
51	Intersection of Paramount Drive and Mud Street	Eastbound	looking at W approach
52	Intersection of Paramount Drive and Mud Street	Eastbound	looking at S approach
53	Paramount Drive south of Mud Street	Westbound	
54	Paramount Drive north of Benwood Court	Westbound	
55	Intersection of Winterberry Drive and Paramount Drive	Westbound	looking at E approach
56	Intersection of Winterberry Drive and Paramount Drive	Westbound	looking at S approach
57	Intersection of Winterberry Drive and Paramount Drive	Westbound	looking at N approach
58	Intersection of Winterberry Drive and Paramount Drive	Westbound	looking at W approach
59	Upper Centennial Parkway south of Highland Road	Southbound	
60	Intersection of Upper Centennial Parkway and Rymal Road	Southbound	looking at N approach
61	Intersection of Upper Centennial Parkway and Rymal Road	Southbound	looking at S approach
62	Rymal Road east of Swayze Road	Westbound	
63	Ryaml Road west of Swayze Road	Westbound	
64	Intersection of Whitedeer Road and Rymal Road	Westbound	

Photo #	Description of Location	Direction of travel	Direction of View
65	Intersection of 2nd Road and Rymal Road	Westbound	
66	Intersection of 2nd Road and Rymal Road	Westbound	
67	Rymal Road west of 2nd Road W	Westbound	
68	Intersection of Fletcher Road and Rymal Road	Westbound	
69	Intersection of Upper Mount Albion and Rymal Road	Westbound	looking at E approach
70	Intersection of Upper Mount Albion and Rymal Road	Westbound	looking at W approach
71	Intersection of Trinity Church Road and Rymal Road	Westbound	looking at E approach
72	Intersection of Trinity Church Road and Rymal Road	Westbound	looking at S approach
73	Rymal Road west of Trinity Church Road	Westbound	
74	Intersection of Pritchard Road and Rymal Road	Westbound	
75	Intersection of Pritchard Road and Rymal Road	Westbound	looking at N approach
76	Intersection of Glover Road and Rymal Road	Westbound	
77	Rymal Road west of Glover Road	Westbound	
78	Intersection of Dartnall Road and Rymal Road	Eastbound	looking at W approach
79	Intersection of Dartnall Road and Rymal Road	Southbound	looking at N approach
80	Intersection of Dartnall Road and Rymal Road	Southbound	looking at N approach
81	Dartnall Road south of Rymal Road	Southbound	
82	Intersection of Dartnall Road and Rymal Road	Northbound	looking at S approach
83	Intersection of Dartnall Road and Stone Church Road	Northbound	looking at N approach
84	Lincoln Alexander Parkway east of Dartnall Road	Eastbound	
85	Lincoln Alexander Parkway passing through structures for Red Hill Creek	Eastbound	
86	Lincoln Alexnader Parkway east of Upper Mount Albion Road	Eastbound	

APPENDIX B

MEMO: METHODOLOGY TO ESTIMATE 2005 BASE YEAR EXISTING CONDITIONS VOLUMES

McCORMICK
RANKIN
CORPORATION

2655 North Sheridan Way
Mississauga, Ontario, L5K 2P8
Tel: (905)823-8500
Fax: (905) 823-8503
E-mail: mrc@mrc.ca
Website: www.mrc.ca

MEMO TO FILE

RE:	North Glanbrook Industrial Business Park Transportation Master Plan
OUR FILE:	6011
PREPARED BY:	Alice Lee
CC:	Jack Thompson
DATE:	Thursday, June 30, 2005
SUBJECT:	Methodology for estimating 2005 Synthesized Volumes

I:\Work Order File\6011 North Glenbrook Industrial Area-TMP\6011.500 Transportation\6011.505 Technical Report\Supporting memos\6011at - Synthesized volumes methodology.doc

Vehicle volumes along Rymal Road were estimated to represent 2005 base year (existing conditions) volumes as the observed 2005 TMCs were much lower in comparison with previous years' counts. The following methodology was used to estimate the 2005 base year volumes:

- Due to low volumes obtained from the 2005 TMCs, historical traffic data in the surrounding area were reviewed to obtain an estimated per annum growth rate for vehicle volumes along Rymal Road.
- Most recent available traffic counts (1999-2004) along Rymal Road were then increased by the estimated per annum growth rate (approximately 2.8%) to obtain synthesized 2005 counts.
- Intersections for which recent traffic counts (1999-2004) were available included the following:
    - Rymal Road at Upper Ottawa Street
    - Rymal Road at Nebo Road
    - Rymal Road at Dartnall Road
    - Rymal Road at Glover Road
    - Rymal Road at Trinity Church Road
    - Rymal Road at White Deer Road
    - Rymal Road at Upper Centennial Parkway
- As a note, synthesized 2005 volumes at Upper Ottawa Street and Upper Centennial Parkway were observed to be lower than the 2005 traffic counts. As a result, the observed 2005 counts were used in the synthesized summary of traffic volumes at these two specific locations.
- Since counts were not available for the following remaining intersections,
    - Rymal Road and Pritchard Road
    - Rymal Road and Upper Mount Albion Road

- Rymal Road and Fletcher Road
- Rymal Road and Second Road

synthesized 2005 turning movement volumes were estimated using a bi-proportional methodology, where existing turning movement (TM) splits are bi-proportionally adjusted to obtain "desired" TM splits based on known existing and "desired" link volumes.

- Assumptions for this method of estimating the 2005 synthesized volumes included the following:
  - Existing link volumes obtained from the 2005 TMCs
  - Existing turning movement splits obtained from the 2005 TMCs
  - "Desired" link volumes assumed to be the 2005 synthesized link volumes adjacent to the intersection of concern
  - In the instances where adjacent link volumes were not available, it was assumed that the link volumes would be similar along Rymal Road between Trinity Church Road and Upper Centennial Parkway

APPENDIX C

EXISTING CONDITIONS – SYNCHRO OUTPUTS

Information contained in this appendix is available on file at the City.

APPENDIX D

MEMO: EMPLOYMENT DENSITY ASSUMPTIONS

McCORMICK
RANKIN
CORPORATION

2655 North Sheridan Way
Mississauga, Ontario, L5K 2P8
Tel: (905)823-8500
Fax: (905) 823-8503
E-mail: mrc@mrc.ca
Website: www.mrc.ca

MEMO TO FILE

RE:	North Glanbrook Industrial Business Park TMP
OUR FILE:	W.O. 6011
PREPARED BY:	Alice Lee
CC:	Jack Thompson
DATE:	Wednesday, June 22, 2005
SUBJECT:	Employment density assumptions

I:\Work Order File\6011 North Glenbrook Industrial Area-TMP\6011.500 Transportation\6011.502 Correspondence\6011.5023 Memos\6011 al - MEMO TO FILE emp per acre.doc

Introduction:

This memo documents the assumptions that were made regarding the estimated number of employees per acre for the development lands in the North Glanbrook Industrial Business Park (NGIBP) area to determine the expected number of employees in the study area. Furthermore, a comparison with published estimates of employees per acre assumptions for the City of Hamilton was undertaken to verify the assumptions noted in this study.

Employment Density Assumptions:

Employment density is estimated from the number of employees in a developed area with respect to the net acreage available for development. The North Glanbrook Industrial Business Park study area is currently undeveloped and estimates of employment numbers and the net acreage available for development were not available / provided during the assessment of study area from a transportation perspective. As a result, various assumptions were made to obtain an estimate of the expected employment density in the NGIBP area and the associated trips that would be generated.

As observed from an available Secondary Plan zoning map of the study area, there were three major land use designations within the study area. These land use designations included general commercial, general industrial and prestige business / industrial. A field review of the study area and environs indicated that the land uses just north of the study area was an industrial zone, which is similar to the proposed land uses in the NGIBP area. It was therefore assumed that the employment density patterns observed in the area to the north of the study area would be similar to that in the NGIBP area.

The employment area to the north of NGIBP was assumed to be bounded by Upper Ottawa Street to the west, Lincoln Alexander Parkway to the north, Trinity Church Road to the east and Rymal Road to the south. The total land area is referenced as gross acres. Land that is actually available for development, which excludes lands that will be used for roads, landscaping, natural features, etc., is referenced as total developable land or net acres. The percentage of land that is

usually set aside for roads is generally assumed to be 20% and the percentage of land usually set aside for landscaping, natural features, etc., is generally assumed to be 25%.

As specific details of the industrial area north of NGIBP were not available during the assessment, the following assumptions / details were used to determine the employment density.

Gross acres (estimated from available mapping): approximately 780 acres (315 ha)
Net acres (less 40% of land): approximately 470 acres (190 ha)

Employment (obtained from City of Hamilton EMME/2 model):

EMME/2 Traffic Zone	Employment 2001	2011	2021
2602	186	453	719
2603	1255	2640	4025
2670	2777	3452	4126
Total	**4218**	**6545**	**8870**

Estimated employment density:

	2001	2011	2021
Employees / acre	**9**	**14**	**19**

During the field review of this industrial area north of the NGIBP area, it was observed that approximately half of the land was still vacant. The employment density estimated from the employment data and the net acreage support this observation as the employment density in 2001 is approximately half of the estimated density in 2021. From observations and these numbers, it can be reasonably assumed that the development of an industrial park occurs in stages. Approximately 50% of net acreage is probably developed within the short-term (10-15 years), whereas the full development of an industrial area may occur within a longer-term (20-30 years). Thus, the initial employment density in the short-term could possibly be approximately 9 employees per net acre, while the ultimate employment density would be approximately 19 employees per net acre.

NGIBP Employment:

Using the available Secondary Plan zoning map, the approximate gross acreage for the NGIBP area was estimated. The gross acreage was further deducted to account for roads, landscaping, natural features, etc., as noted in the previous section to obtain total developable land (net acreage). In the previous section, it was noted that 20% of the gross acreage was removed for landscaping, natural features, etc.; however, this percentage was increased to 25% for the NGIBP area as the City had indicated that they were expecting to sell the land in large parcels, which may result in the requirement for on-site stormwater management. The estimated employment density for 50% buildout and full buildout for the industrial area north of the NGIBP area was used to determine the number of employees that could possibly be generated by the NGIBP, as noted in the following details.

Gross acres: approximately 715 acres
Net acres: approximately 395 acres

Number of employees (50% buildout): approximately 3,500 employees
Number of employees (full buildout): approximately 7,500 employees

To further verify the assumed employment density, the number of trips that had been generated for the NGIBP area using ITE trip rates that were based on the net acreage was used to determine the number of employees that are generally associated with these trips using ITE trip rates. The assumed trip rates, net acreage and the associated trips and employees for the full buildout scenario in the AM peak hour are summarized below.

Generator	Est. Trips / Acre	Acres	2031 Trips
Industrial Park (ITE 130)	8.84	108	955
Manufacturing (ITE 140)	7.44	253	1880
Total		**361**	**2835**

Generator	Est. Trips / Emp	Acres	2031 Employees
Industrial Park (ITE 130)	0.47	108	2030
Manufacturing (ITE 140)	0.40	253	4700
Total		**361**	**6730**

Estimated employment density:

Industrial land use: approximately 18.8 employees / acre
Manufacturing land use: approximately 18.6 employees / acre
Combined land use: approximately 18.6 employees / acre

These estimates show that the trip generation assumptions for the transportation network analysis have a similar employment density as that observed in the industrial area north of the NGIBP area. Therefore, the estimated number of employees based on the estimated employment densities for the area north of NGIBP is reasonable.

Comparison of Assumed Employment Density with City of Hamilton Numbers:

Following the analysis, City of Hamilton documents were reviewed to determine their outlook on employment densities. In a report entitled "Providing Employment Land in Hamilton – Financial Options" prepared by Hemson Consulting Ltd. in June 2003, the study noted that the City of Hamilton currently has an employment density of 11 employees per net acre. However, in the future, they expect their employment density to increase to 15 employees per net acre.

The study also discussed current available vacant industrial land, which included the NGIBP area. The study estimated that there were approximately 570 net vacant employment acres in the

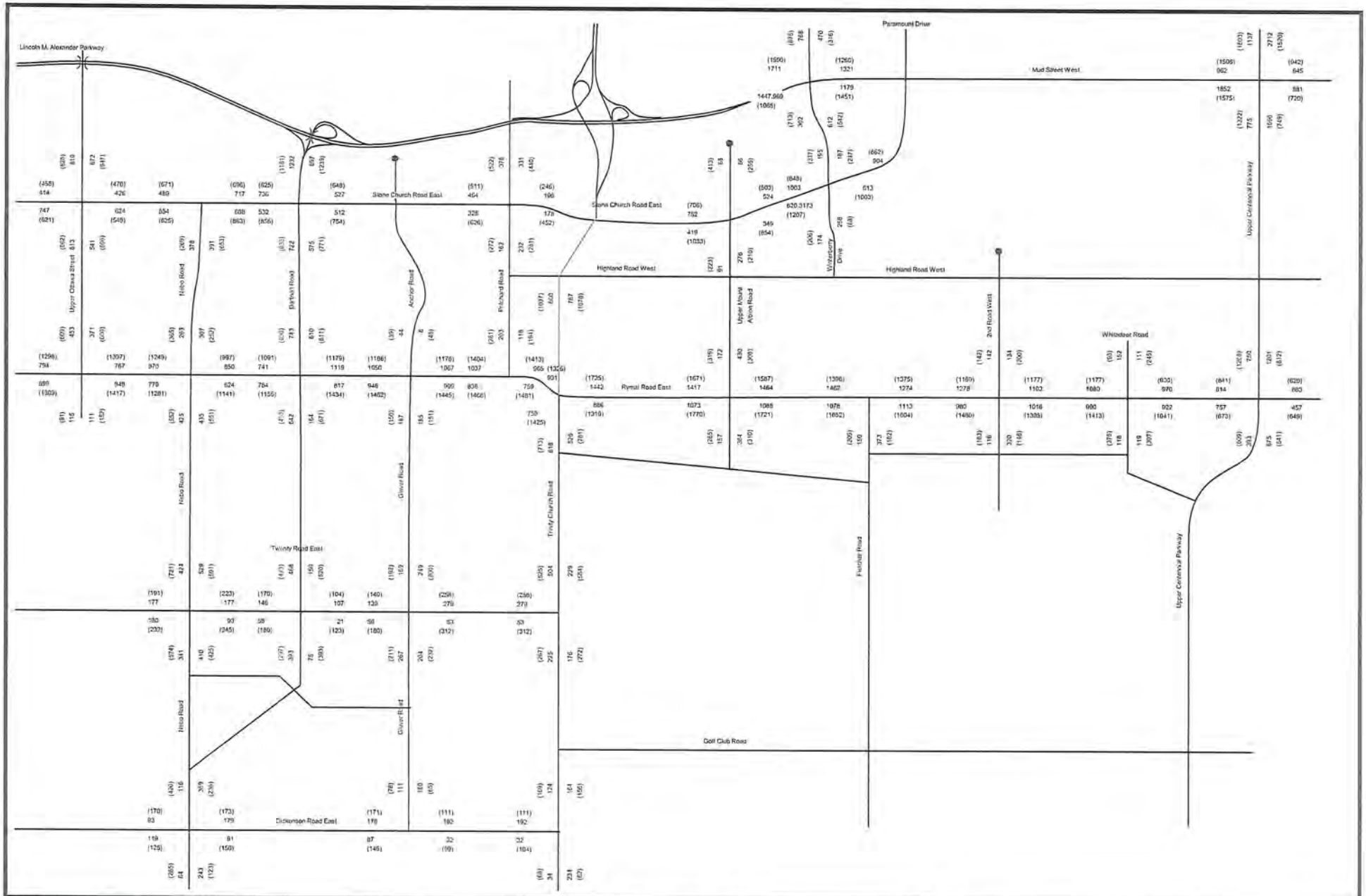
North Glanbrook area. The report also noted that approximately 5% of the land would remain as long-term vacancy and an additional 15% would account for already occupied land. Thus, the net acreage in the NGIBP area is estimated to fall between 455 acres (excluding already occupied and long-term vacant land) and 540 acres (excluding long-term vacant land). Using the expected future employment density of 15 employees per net acre, the total number of employees that could be expected in the NGIBP area could range from 6,830 employees to 8,100 employees. These numbers provide an indication that the assumptions that have been undertaken in the NGIBP TMP study are within the range of City of Hamilton expectations.

Following a progress meeting held with the City on June 14, 2005 the City noted that they had document with the land use inventory of the NGIBP. The document and associated details were received on June 23, 2005 and further reviewed to verify that assumptions to date were valid. The document noted that the net vacant area available for development was approximately 560 acres. Using 15 employees per net acre as the employment density, the number of employees that could be generated in the NGIBP was estimated to be approximately 8,400 employees. While this number is higher than the 7,500 employees estimated by this study, the numbers are still within the same ballpark. In addition, the document did not provide an indication of the percentage of gross acreage that would deducted for roads (though it would appear that approximately 20% was deducted) and the percentage of gross acreage that would be deducted for landscaping, natural features, etc (it would appear that no deductions were made for these features).

The comparison of estimated employment numbers and assumed employment densities with numbers published by the City of Hamilton indicate that the assumptions and resulting estimates are within reason. Therefore, it can be assumed that NGIBP will generate approximately 7,500 employees when a full buildout of the park occurs.

APPENDIX E

2021 & 2031 SPREADSHEET MODEL – LINK VOLUMES

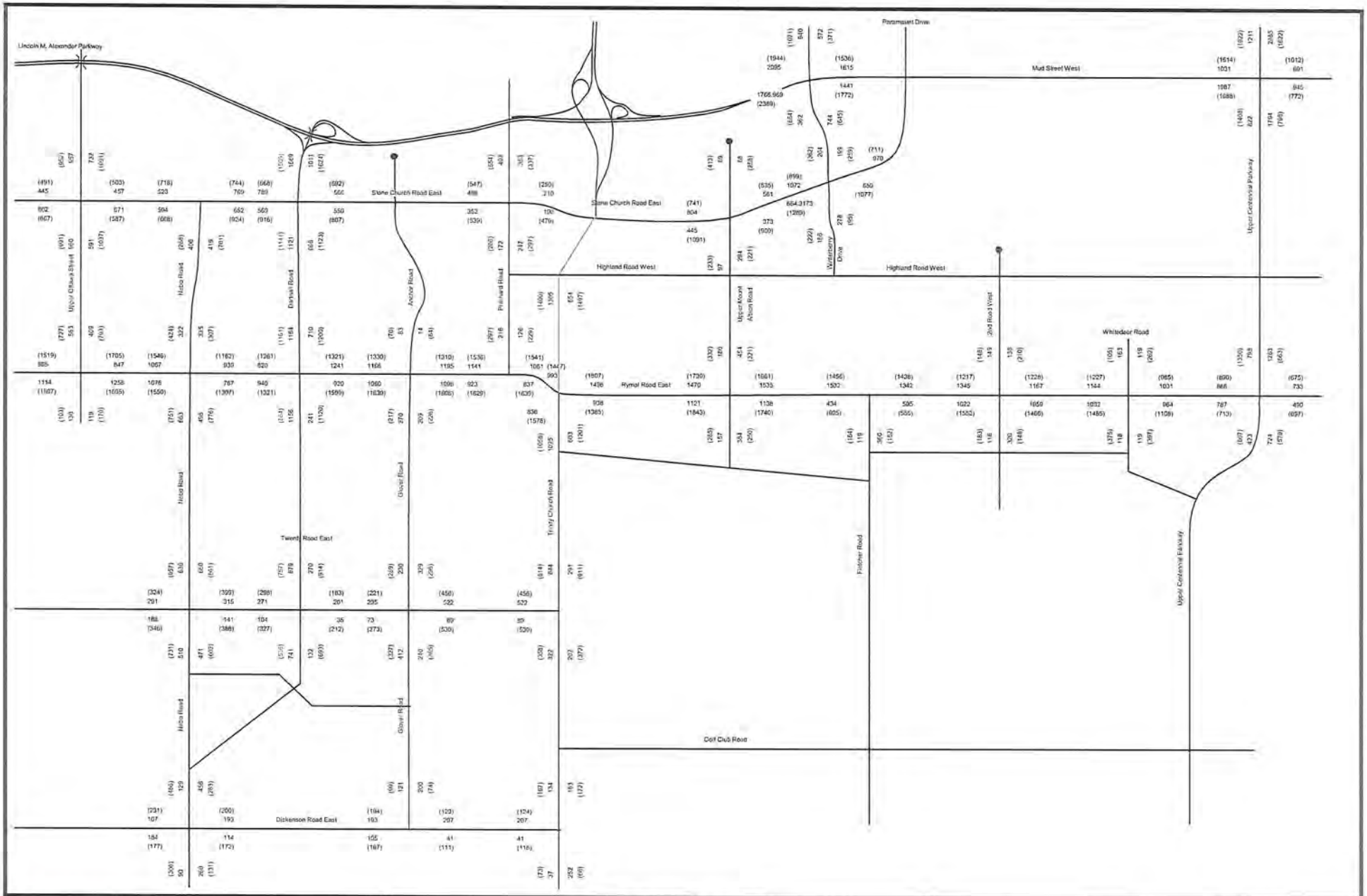


McCORMICK RANKIN CORPORATION

North Glanbrook Industrial Business Park Transportation Master Plan

2021 - Background, RRPA, HG and NGIBP (50%) Development

AM (PM) Peak Hour Link Volumes



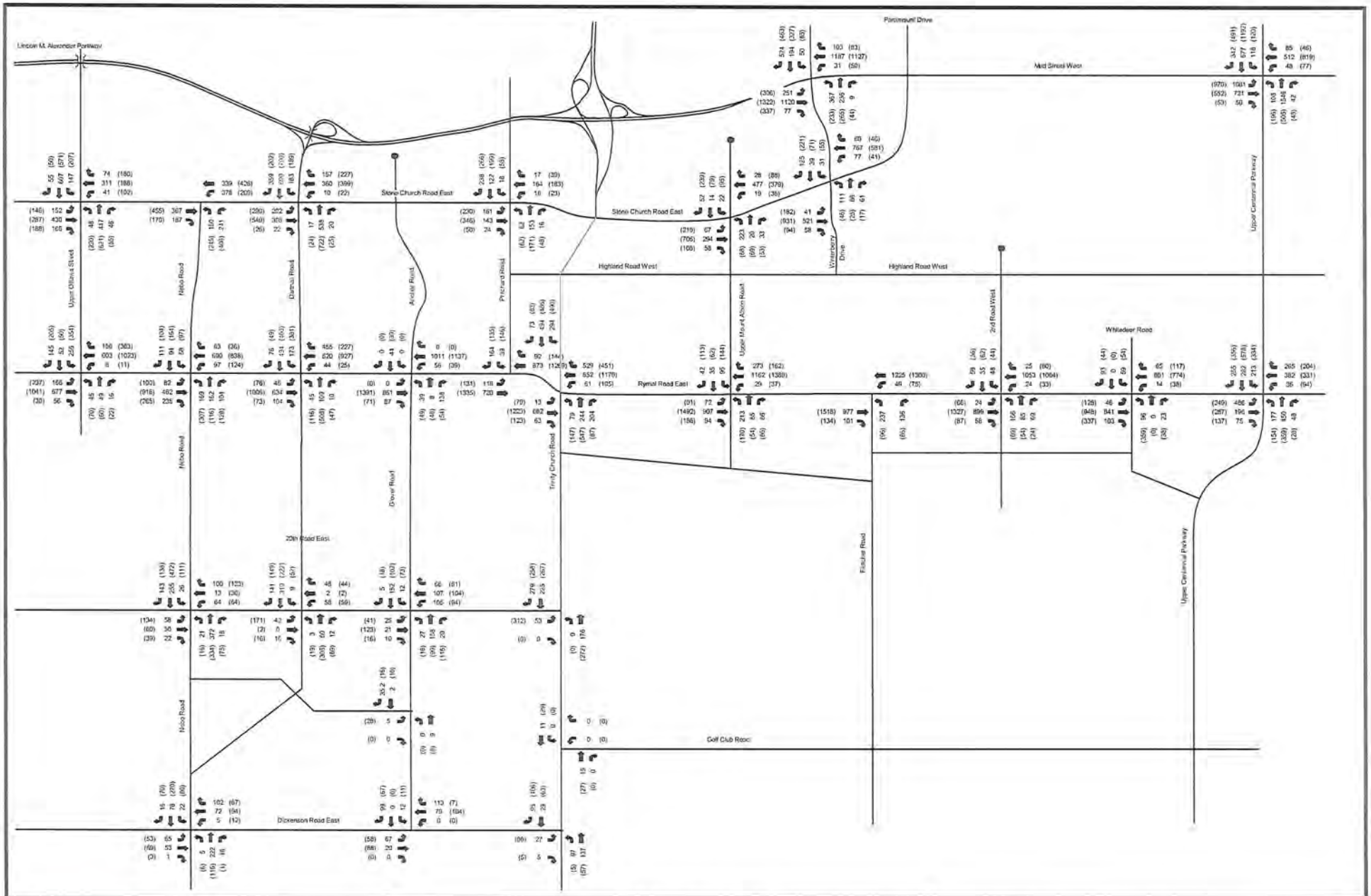
McCORMICK RANKIN CORPORATION

North Glanbrook Industrial Business Park Transportation Master Plan

2031 - Background, RRPA, HG and NGIBP (100%) Devleopment
AM (PM) Peak Hour Link Volumes

APPENDIX F

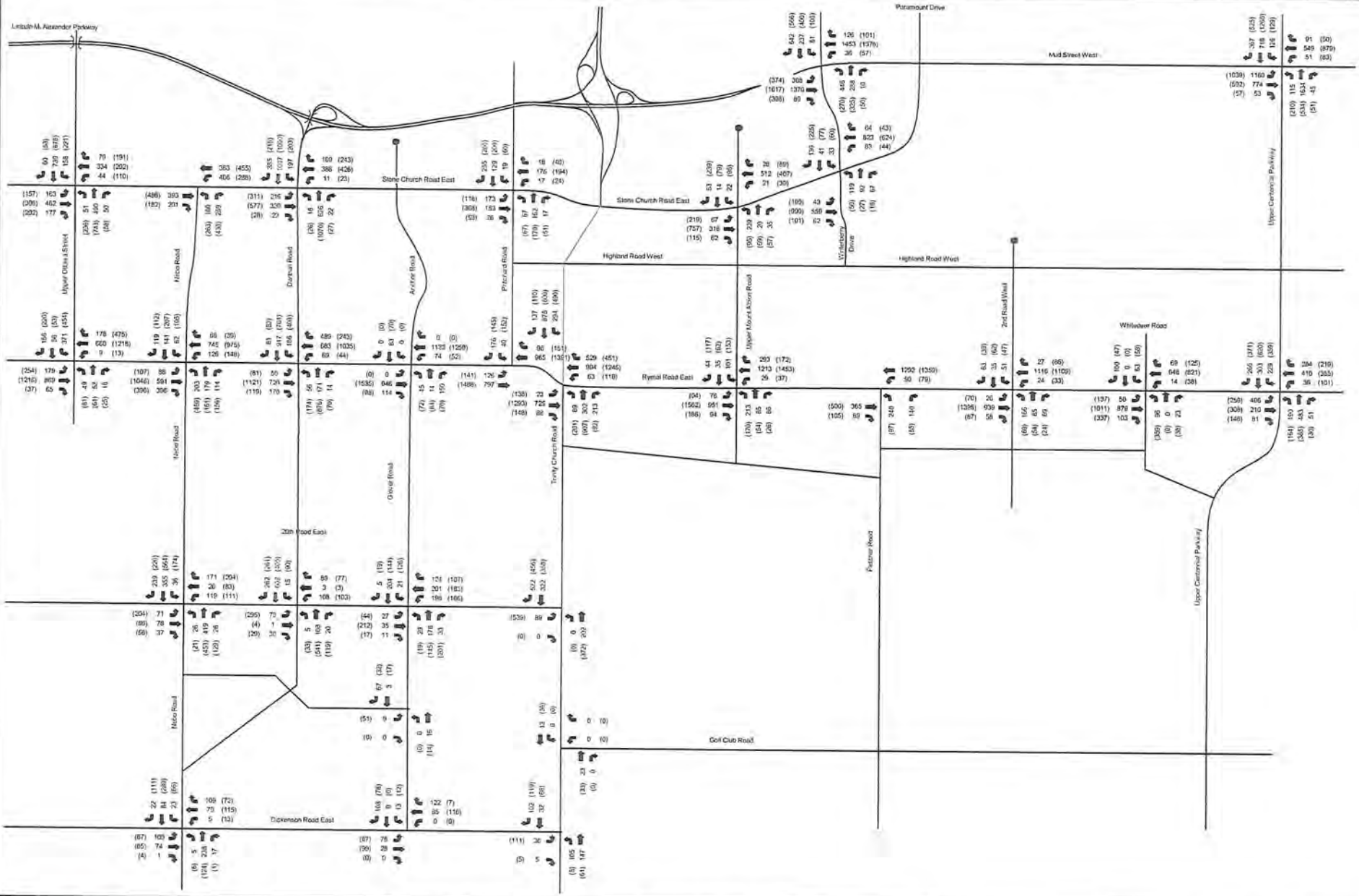
2021 & 2031 SPREADSHEET MODEL – TURNING MOVEMENT VOLUMES



MRC McCORMICK RANKIN CORPORATION

North Glanbrook Industrial Business Park Transportation Master Plan

2021 Background, RRPA, HG and NGIBP (50%) Development
AM (PM) Peak Hour Turning Movement Volumes



McCORMICK RANKIN CORPORATION

North Glanbrook Industrial Business Park Transportation Master Plan

2031 Background, RRPA, HG and NGIBP (100%) Development

AM (PM) Peak Hour Turning Movement Volumes

APPENDIX G

FUTURE CONDITIONS – SYNCHRO OUTPUTS

Information contained in this appendix is available on file at the City.

List of Vascular Plant Species of the Hannon Creek Subwatershed.

SCIENTIFIC NAME	COMMON NAME	Hamilton (Nature Counts Project 2003)	Native Status
Acer negundo	Manitoba Maple		N
Acer platanoides	Norway Maple		I
Acer rubrum	Red Maple		N
Acer saccharinum	Silver Maple		N
Acer saccharum ssp. saccharum	Sugar Maple		
Achillea millefolium ssp. millefolium	Common Yarrow		I
Aegopodium podagraria	Goutweed		I
Agrostis gigantea	Redtop		I
Alisma plantago-aquatica	Broad-leaved Water-plantain		N
Alliaria petiolata	Garlic Mustard		I
Allium canadense var canadense	Wild Garlic		N
Ambrosia artemisiifolia	Annual Ragweed		N
Amelanchier arborea	Downy Serviceberry		N
Anemone canadensis	Canada Anemone		N
Arctium minus ssp minus	Burdock		
Arisaema triphyllum ssp. triphyllum	Jack-in-the-pulpit		N
Asclepias syriaca	Common Milkweed		N
Aster cordifolius	Heart-leaved Aster		N
Aster laevis var laevis	Smooth Blue Aster		N
Aster lanceolatus ssp lanceolatus	Aster		
Aster lateriflorus var lateriflorus	Calico Aster		N
Aster macrophyllus	Large-leaved Aster		N
Aster novae-angliae	New England Aster		N
Barbarea vulgaris	Yellow Rocket		I
Berberis vulgaris	European Barberry		I
Betula papyrifera	Paper Birch		N
Bidens sp	Beggar's Ticks Species		
Brassica nigra	Black Mustard		I
Bromus inermis ssp. inermis	Smooth Brome		I
Bromus tectorum	Downy Chess		I
Carex atherodes	Awned Sedge	Rare	N
Carex bebbii	Bebb's Sedge		N
Carex gracillima	Graceful Sedge		N
Carex granularis	Meadow Sedge		N
Carex pensylvanica	Pennsylvania Sedge		N
Carex radiata	Stellate Sedge		N
Carex spicata	Spiked Sedge		I
Carex stipata	Stalk-grain Sedge		N
Carex stricta	Tussock Sedge		N
Carex vulpinoidea	Fox Sedge		N
Carpinus caroliniana ssp. virginiana	American Hornbeam	Rare	N

Carya ovata var ovata	Shagbark Hickory		N
Centaurea sp	Knapweed Species		
Cerastium arvense ssp arvense	Chickweed		
Chaenorrhinum minus	Common Dwarf Snapdragon		I
Chelidonium majus	Greater Celadine		I
Chenopodium album var album	White Goosefoot		I
Chrysanthemum leucanthemum	Oxeye Daisy		I
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade		N
Cirsium arvense	Crepping Thistle		I
Convallaria majalis	European Lily-of-the-valley		I
Convolvulus arvensis	Field Bindweed		I
Conyza canadensis	Fleabane		N
Cornus amomum ssp obliqua	Silky Dogwood		
Cornus foemina ssp. racemosa	Gray Dogwood		N
Cornus rugosa	Round-leaved Dogwood		
Cornus stolonifera	Red-osier Dogwood		N
Crataegus crus-galli	Cockspur Hawthorn	Rare	N
Crataegus punctata	Dotted Hawthorn		N
Crataegus sp	Hawthorn Species		
Dactylis glomerata	Orchard Grass		I
Daucus carota	Queen Anne's Lace		
Dianthus armeria	Deptford-pink		I
Diervilla lonicera	Northern Bush-honeysuckle		N
Dipsacus fullonum ssp. sylvestris	Common Teasel		I
Echium vulgare	Common Viper's-bugloss		I
Elaeagnus angustifolia	Russian Olive		I
Elaeagnus umbellata	Autum Olive		I
Eleocharis erythropoda	Bald Spikerush		N
Eleocharis sp	Spikerush Species		
Elodea canadensis	Broad Waterweed		N
Elymus hystrix	Bottle-brush Grass		N
Elymus repens	Quack Grass		I
Elymus riparius	River-bank Wild-rye	Rare	N
Elymus virginicus var virginicus	Virginia Wild-rye		N
Epilobium parviflorum	Small-flower Willow-herb		I
Epipactis helleborine	Eastern Helleborine		I
Equisetum arvense	Field Horsetail		N
Equisetum hyemale ssp. affine	Rough Horsetail		N
Erigeron philadelphicus ssp philadelphicus			
Erigeron pulchellus	Robin's Plantain		N
Erythronium americanum ssp. americanum	Yellow Trout-lily		N
Euonymus obovata	Running Strawberry-bush		N
Eupatorium maculatum ssp maculatum	Joe Pye Weed		
Eupatorium perfoliatum	Common Boneset		N
Euphorbia esula	Leafy Spurge		I
Euthamia graminifolia	Grass-leaved Goldenrod		N

Fagus grandifolia	American Beech		N
Festuca pratensis	Meadow Fescue		I
Fragaria virginiana ssp. virginiana	Virginia Strawberry		N
Fraxinus pennsylvanica	Green Ash		N
Galium aparine	Cleavers		N
Galium mollugo	White Bedstraw		I
Galium palustre	Marsh Bedstraw		N
Geranium maculatum	Wild Geranium		N
Geranium robertianum	Herb-robert		I
Geum aleppicum	Yellow Avens		N
Geum canadense	White Avens		N
Geum urbanum	Clover-root		I
Glechoma hederacea	Ground Ivy		I
Glyceria striata	Fowl Manna Grass		N
Hesperis matronalis	Dame's Rocket		I
Hieracium caespitosum ssp. caespitosum	Field Hawkweed		I
Hieracium sp	Hawkweed Species		
Humulus lupulus	Common Hop		I
Hypericum perforatum	St. John's-wort		I
Impatiens capensis	Spotted Jewel-weed		N
Inula helenium	Elecampane		I
Juglans nigra	Black Walnut		N
Juncus dudleyi	Dudley's Rush		N
Juncus effusus ssp solutus			
Leersia oryzoides	Rice Cutgrass		N
Lemna minor	Lesser Duckweed		N
Leonurus cardiaca ssp. cardiaca	Common Motherwort		I
Linaria vulgaris	Butter-and-eggs		I
Lonicera tatarica	Tartarian Honeysuckle		I
Lotus corniculatus	Bird's-foot Trefoil		I
Lysimachia ciliata	Fringed Loosestrife		N
Lythrum salicaria	Slender-spike Loosestrife		I
Maianthemum canadense	Wild-lily-of-the-valley		N
Maianthemum racemosum ssp racemosum	False Solomon's Seal		
Malus pumila	Common Apple		I
Matteuccia struthiopteris var pensylvanica	Ostrich Fern		
Medicago lupulina	Black Medic		I
Melilotus alba	White Sweet Clover		I
Mentha spicata	Spearmint		I
Monarda fistulosa	Wild Bergamot		N
Nasturtium officinale	True Watercress		I
Oenothera biennis	Common Evening-primrose		N
Onoclea sensibilis	Sensitive Fern		N
Ostrya virginiana	Eastern Hop-hornbeam		N
Oxalis acetosella ssp montana			

Hamilton

NOTICE OF STUDY COMMENCEMENT/ PUBLIC INFORMATION CENTRE #1

NORTH GLANBROOK INDUSTRIAL BUSINESS PARK TRANSPORTATION MASTER PLAN

THE PROJECT

The City of Hamilton is undertaking a study to develop a Transportation Master Plan to service the North Glanbrook Industrial Business Park.

THE PROCESS

This study is following the approved environmental planning process for Master Plans under the Municipal Class Environmental Assessment (2000) with the opportunity for public input throughout the study. The intent of the Master Plan is to identify a road network that will support the development of these lands in accordance with the current approved land uses for the area. The Master Plan is intended to fulfill the Class EA requirements for Schedule B Projects that are identified and to outline additional work that will be required for any Schedule C Projects that are identified. Upon completion of the study, a Master Plan report will be completed and filed for public review.

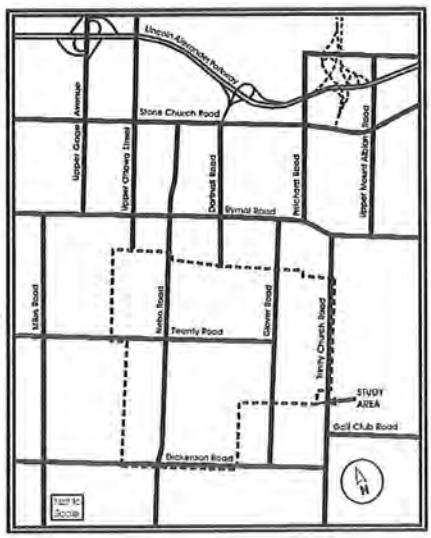
PUBLIC INFORMATION CENTRE

A Public Information Centre (PIC) has been arranged to present network alternatives considered, the evaluation of alternatives and the recommended network. You are encouraged to attend this information centre and to provide us with your views and comments for consideration as the study progresses. A second PIC will be held at a later date to present additional details of the preferred network.

Date: Wednesday, June 29, 2005

Location: Trinity United Church
10 Trinity Church Road (at Rymal Road)

Time: 4:00 p.m. to 8:00 p.m.



COMMENTS

Information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act.* Should you require further information regarding this study, please feel free to contact any of the project team members listed below.

Mr. Gavin Norman, P. Eng.
City of Hamilton Project Manager
Planning and Development Department
71 Main Street West
Hamilton, Ontario L8P 4Y5

Phone: (905) 546-2424 ext 1322
Fax: (905) 546-4202
email: gnorman@hamilton.ca

Mr. Mike Bricks
Consultant Project Manager
Ecoplans Limited
2655 North Sheridan Way
Mississauga, Ontario L5K 2P8

Phone: (905) 823-4988
Fax: (905) 823-2669
email: mbricks@ecoplans.com

With the exception of personal information, all comments will become part of the public record.

Hamilton

April 28, 2006

File #: 30.30.04/72

NOTICE

Re: North Glanbrook Industrial Business Park - Transportation Master Plan and Dartnall Road Extension - Public Information Centre #2

The City of Hamilton is undertaking a study to develop a Transportation Master Plan to service the North Glanbrook Industrial Business Park (see map overleaf for study area).

This study is following the approved environmental planning process for Master Plans under the Municipal Class Environmental Assessment (Class EA) - June 2000, with the opportunity for public input throughout the study. The objective of the study is to identify a road network that will support the development of these lands in accordance with the current approved land uses for the area. The Master Plan is intended to fulfill the Class EA requirements for Schedule B Projects that are identified and to outline additional work that will be required for any Schedule C Projects that are identified. One of the Schedule C projects identified is the extension of Dartnall Road. Upon completion of the study, a Master Plan report will be completed and filed for public review.

The second of three Public Information Centres (PIC) has been arranged to present the Recommended Transportation Network, details of the recommended road projects, outline additional work that will be required for any Schedule C Projects, and present alternative routes being considered for the extension of Dartnall Road. You are encouraged to attend this information centre and to provide us with your views and comments for consideration as the study progresses.

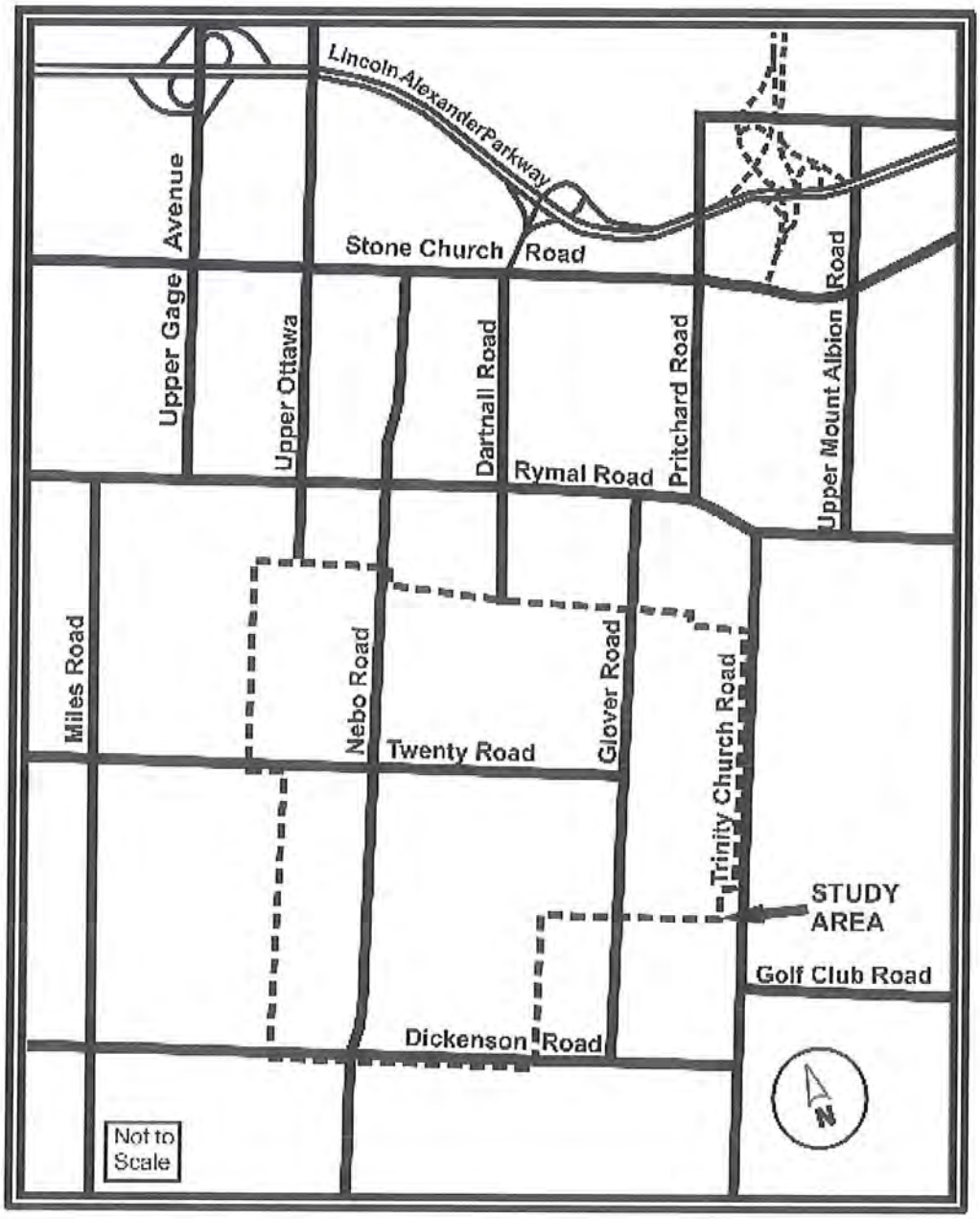
Date:	Tuesday, May 16, 2006
Location:	Trinity United Church 10 Trinity Church Road (at Rymal Road)
Time:	4:00 p.m. to 8:00 p.m.

Following this information centre the City will:

- finalize the Master Plan report, seek endorsement from Council and then file the report for public review in accordance with the Class EA;
- further evaluate the alternative routes for the extension of Dartnall Road and identify a preferred route; and
- present the Preferred Dartnall Road alternative at the third and last PIC.

Should you require further information regarding this study, please feel free to contact any of the project team members listed below.

Mr. Gavin Norman, P. Eng. City of Hamilton Project Manager Planning and Development Department 71 Main Street West Hamilton, Ontario L8P 4Y5 Phone: (905) 546-2424 ext 1322 Fax: (905) 546-4202 email: gnorman@hamilton.ca	**Mr. Mike Bricks** Consultant Project Manager Ecoplans Limited 2655 North Sheridan Way Mississauga, Ontario L5K 2P8 Phone: (905) 823-4988 Fax: (905) 823-2669 email: mbricks@ecoplans.com



APPENDIX D

COMMENT SUMMARIES

The first of two Public Information Centres (PIC) was held on Wednesday, June 29, 2005 from 4:00pm to 8:00pm at the Trinity United Church. This PIC was attended by the following members of the project team:

- Gavin Norman, City of Hamilton
- Mike Bricks, Ecoplans Limited
- Jack Thompson, McCormick Rankin Corporation

The PIC was attended by **76** people (count from sign-in sheet). The majority of the attendees reside within or nearby the study area.

The PIC was an open house with display boards presenting the network alternatives considered, the evaluation of alternatives and the recommended network. Attendees had the opportunity to address and discuss any question or concerns with the project team. Handout copies of the PIC display board and evaluation charts were available.

Comment sheets were provided for submission of comments During the PIC 15 comment sheets were submitted. After the PIC additional comments were received and included one fax, four e-mails and four letters. In addition to written comments, five telephone requests for PIC handouts were received by the City of Hamilton. The following table summarizes the written comments received.

In addition to written comments, the following provides a general overview of attendee verbal comments during the PIC:

- Impact to residential homes along Trinity Church and concerns re: safety, increased traffic and previous Glanbrook bylaw providing a buffer strip between industrial development and Trinity Church Road should be implemented;
- Viability of the North Glanbrook Industrial Business Park;
- Displacement of agricultural land for more industrial land;
- Support for North Glanbrook Industrial Park since the Red Hill Valley Parkway will provide needed access;
- Interest in the extent of future sanitary services in study area;
- Alignment concerns specific to certain landowners; and
- Redirection of traffic away from roads servicing residential homes.

Written Comments From Public Information Centre #1	
Comment Summary	**Number of Comments**
Concerned about previous commitment of berms to protect homes on Trinity Church from noise and pollution	5
Request for copy of PIC handout	4
Concerned about previous commitment for no access from Trinity Church to the Industrial Park.	3
Desire to have the roads go behind the houses at Trinity Church Road and all service roads kept within the Industrial Park	3

Written Comments From Public Information Centre #1	
Comment Summary	**Number of Comments**
Concerned about previous commitment to zone the land as "light prestige industrial/business" – concerned that this will not be the case	2
Provided two alternative plans for the Trinity Church area	2
Concern regarding potential effects should a Maple Leaf processing plan locate within the Industrial Park	2
Support for development of Trinity Church Road, and development in general within Hamilton	1
The best route is the old rail line from Dickenson Road to Airport Road – it would effect the least amount of people	1
Request to be kept up-to-date regarding the Industrial Park	1
Support for Plan 5 – looks like it flows the best	1
Inquiry regarding the proposed speed limit for the roads in the study area	1
Inquiry regarding provisions to ensure that blasting for road construction does not affect well water	1
Inquiry regarding what tree/greening preservation is being considered for privacy, air cleaning, noise block and wind block	1
Inquiry regarding what noise reduction methods will be implemented to protect residents	1
Inquiry regarding the maximum truck weight	1
Request for more information regarding potential improvements to Trinity Church Road north of Rymal Road – specifically in the vicinity of the church	1
Request for more information regarding the effect of the proposals on the intersection of Trinity Church Road and Dickenson Road	1
Request for advise regarding appropriate contact to discuss air quality and pollution from burning at asphalt plan (not related to this project)	1
Dartnall should continue right through to Airport Road since the right-of-way already is provided south of Dickenson Road	1
Desire to leave Nebo alone	1
Desire to build roads to resolve transportation problems within Hamilton– no new industry will come until road are built	1
Desire to avoid development on existing farm land – lots of area to expand downtown	1
Alternative 4 better protects more residences, reduces traffic volume and protects property values as a result of removing the second road south of Twenty Road shown in Alternative 5 – a second E-W arterial within the confines of the Industrial Park would solve the problem for residences on Trinity Church Road	1
Focus on Dartnall Road is well-conceived; Nebo Road should also be give more attention beyond intersection improvements	1
Glover Road should be extended north of Rymal Road into the present Hamilton Industrial Park and linked to Pritchard Road – this would benefit both the Hamilton and Glanbrook Industrial Parks, provide N-S flow and open up land north of Rymal at Glover	1
290 ha is not a 30 year build out – 200ha in large units would be	1

Written Comments From Public Information Centre #1	
Comment Summary	**Number of Comments**
absorbed in 2-3 years; keep zoning as general as possible, expedite the Dartnall Road upgrade and extension and bring services to Dickenson	
Concerned about development on land between Trinity Church and Glover Road	1
All Alternatives fail to reduce traffic infiltration for residential areas along Trinity Church	1
Concerned that link between Red Hill Valley Parkway and Trinity Church Road would not be safe for pedestrians and residents along Trinity Church Road	1
Linking Dartnall Road to Nebo Road would result in heavier traffic, trucks and noise; property values may drop	1
Inquiry regarding concerns along Nebo Road including: idling trucks, City purchase of property, tax rate for businesses, sanitary sewers and sink holes.	1

The second and final Public Information Centres (PIC) for the North Glanbrook Industrial Business Park was held on Tuesday, June 16, 2006 from 4:00pm to 8:00pm at the Trinity United Church. This PIC was attended by the following members of the project team:

- Gavin Norman, City of Hamilton
- Mike Bricks, Ecoplans Limited
- Katie Bright, Ecoplans Limited
- Scott Roberts, McCormick Rankin Corporation

The PIC was attended by **63** people (count from sign-in sheet). The majority of the attendees reside within or nearby the study area.

The PIC was an open house with display boards presenting the comments from the first PIC, the preferred network, details of the Schedule B projects, future study areas for Schedule C projects and three Dartnall Road Extension alignment alternatives. Attendees had the opportunity to address and discuss any question or concerns with the project team. Handout copies of the PIC display boards were available.

Comment sheets were provided for submission of comments. During the PIC 13 comment sheets were submitted. The following table summarizes the written comments received.

In addition to written comments, the following provides a general overview of attendee verbal comments during the Public Information Centre:

- Interest in future zoning changes and land use plans within the North Glanbrook Industrial Business Park;
- Concern regarding the displacement of agricultural land for more industrial land;
- Concern regarding direct link between the North Glanbrook Industrial Park and the Red Hill Valley Parkway, especially along Trinity Church Road; and
- Alignment concerns specific to certain landowners.

Written Comments From Public Information Centre #2	
Comment Summary	**Number of Comments**
Request for copy of PIC handout	7
Request to be kept up-to date regarding the Industrial Business Park and any plans for rezoning	1
Requests that the preferred Dartnall Road Extension alternative be selected to ensure the least amount of disturbance to local residents. Noted that a central Dartnall Road Extension alternative would likely be the cheapest.	1
Request to be added to the project contact list.	1
Concerned regarding connection of the Red Hill Valley Parkway and Lincoln Alexander Parkway with Trinity Church Road.	1
Concerned that connecting Trinity Church Road to the Lincoln Alexander Parkway would result in increased traffic and disruptions as Trinity Church Road would be used as an alternative route to the Airport. Suggested that traffic should be focused along the Dartnall Road Extension.	1
Inquiry regarding on which side the road will pass Trinity Church and the cemetery.	1
Request that the road go around Trinity Church property and parking lot.	1
Request for upgrades to all north-south roads for development.	1
Request that expropriation be avoided.	1

SUMMARY OF AGENCY COMMENTS	
AGENCY	COMMENTS RECEIVED
External Agencies	
Ministry of the Environment Contact: Barbara Ryter	Comment received May 18, 2005 (letter dated May 16, 2005). The Ministry noted requirements under the Municipal Class EA and emphasized public and agency consultation. Included request for one copy of the Notice of Completion with the complete Master Plan Document for review, filing and potential comments.
Ministry of Culture Contact: Neal Ferris	Comment received May 30, 2005 (letter dated May 31, 2005). The Ministry's expresses concerns re: adverse effects that development activities may have on cultural heritage resources. If preferred alternatives will have potential to impact cultural resources a heritage assessment should be conducted as part of the EA and any negative impacts mitigated by either avoidance or documentation. Would be useful to be provided with detailed information and mapping outlining the extent and type of land disturbance anticipated and any areas that may exhibit potential for impacted heritage resources.
Hamilton Conservation Authority Contact: Katherine J. Menyes	Comment received June 2, 2005 (letter dated May 27, 2005). The Hamilton Conservation Authority (HCA) noted that the study area is traversed by tributaries of Hannon Creek and of Twenty Mile Creek; as a result the study area falls within the watershed jurisdiction of both the Hamilton and Niagara Peninsula Conservation Authorities. Also not close proximity to Red Hill Creek Escarpment Valley ESA. The study area includes a portion of the Chippewa Trail (owned by HCA). The HCA wishes that their interests be considered in the development of the future Transportation Master Plan.
TransCanada Pipelines Limited Contact: Wesley Crown (Meridian Planning Consultants)	Comment received June 9, 2005 (letter dated June 1, 2005). TransCanada wishes to be notified of developments and possible impacts to TransCanada's two high pressure natural gas pipelines which cross the study area in an east-west direction. Noted that any development within 200 metres of TransCanada's facilities may affect the safety and integrity of those facilities.
Ministry of Natural Resources Contact: Mike Stone	Comment received June 17, 2005 (letter dated June 15, 2005). The Ministry wishes to participate in subsequent stages of the process and review new information as it becomes available. Noted particular interest in the following: • tributaries of Twenty Mile Creek and Red Hill Creek provincially significant Upper Twenty Mile Creek Wetland Complex (to the west); • provincially significant Eramosa Karst ANSI (to the east) • lands designated as Protected Countryside • Lands identified as part of the Natural Heritage System under the Greenbelt Plan • Niagara Escarpment Plan lands (north of Rymal Road) Also noted that identified bedrock resources are located within the study area and must be protected for long-term use.

SUMMARY OF AGENCY COMMENTS	
AGENCY	COMMENTS RECEIVED
Ministry of Agriculture, Food and Rural Affairs Contact: Dwayne Evans	Comment received December 1, 2005 (letter dated December 1, 2005). The Ministry noted that concerns are focused on the impact of the project on both prime agricultural resource land base and on any agricultural infrastructure in the study area. The Ministry has no comments since the North Glanbrook Industrial Business Park is located within the urban limits of the City of Hamilton.