THE TOWN OF PELHAM

ENGINEERING AGREEMENT

with

Matrix Innovations Inc.

for

Haist Street and Lookout Street Improvements
Fonthill, Ontario

AGREEMENT MADE IN TRIPLICATE THIS 16th of November, A.D. 2004

- BETWEEN -

The Town of Pelham
20 Pelham Town Square
P.O. Box 400
Fonthill, Ontario, L0S 1E0

Hereinafter called the "Owner"

- AND -

Matrix Innovations Inc.
261 Martindale Road, Unit 17
St. Catharines, Ontario, L2W 1A2

Hereinafter called the "Consultant"

WHEREAS the Owner intends to undertake Improvements to Haist Street and Lookout Street, hereinafter called the "Project" and has requested the Consultant to furnish professional services as set forth in Article 3 in this Agreement;

NOW THEREFORE WITNESSETH that in consideration of the mutual covenants contained herein, the Owner and the Consultant agree as follows:

ARTICLE 1 - GENERAL CONDITIONS

1.01 Retainer

The Owner hereby retains the services of the Consultant in connection with the Project and the Consultant hereby agrees to provide the services as set forth in Article 3 in this Agreement, under the general direction and control of the Owner.

1.02 Services

The services to be provided for the Project by the Owner are set forth in Article 2 and by the Consultant are set forth in Articles 3 and such services as changed, altered, added to or deleted from, under Section 1.08 are hereinafter called the "Services".

1.03 Compensation

The Owner shall pay the Consultant in accordance with the provisions set forth in Article 4.

1.04 Staff and Methods

The Consultant shall use standard principles and shall skillfully and competently perform the Services and shall employ only skilled and competent staff as approved by the Owner. The Consultant's staff will be under the supervision of a senior member of the Consultant.

1.05 Ownership of Document

The Owner acknowledges the plans and specifications, including all documents on electronic media, as instruments of professional service of the Consultant, who shall be deemed the author of the drawings and data, and shall retain all common law, statutory law and other rights, including copyrights. The plans and specifications prepared under this Agreement become the property of the Owner upon completion of the services and payment in full of monies due to the Consultant. The Owner agrees to waive any claim against the Consultant arising from any unauthorized reuse or modification of the plans and specifications.

In addition, the Owner agrees, to the fullest extent permitted by law, to indemnify and hold the Consultant harmless from any damage, liability or cost, including reasonable attorneys' fees and costs of defense, arising from any reuse or modification of the plans and specifications by the Owner or any person or entity which acquires or obtains the plans and specifications from or through the Owner without the prior written authorization of the Consultant. The Consultant makes no warranties, either expressed or implied, of merchantability and fitness for any

particular purpose. In no event shall the Consultant be liable for any loss of profit or any damages.

It is understood that sealed and signed mylars or vellum drawings govern over electronic files.

1.06 Patents

All concepts, products or processes produced by or resulting from the Services rendered by the Consultant in connection with the Project, or which are otherwise developed or first reduced to practice by the Consultant in the performance of his Services, and which are patentable, capable of trademark or otherwise, shall be and remain the property of the Consultant.

The Owner shall receive a perpetual, royalty fee, non-transferable, non-exclusive license to use the concepts, products or processes for the purpose for which they are intended.

1.07 Records and Audit

(a) In order to provide data for the calculation of fees on a time basis, the Consultant shall keep a detailed record of the hours worked by and salaries paid to his staff employed for the Project. All invoices shall be verified and signed by a signing officer of the Consultant.

(b) The Owner may inspect and audit the books, payrolls, accounts and records of the Consultant during regular office hours with respect to any item which the Owner is required to pay on a time scale or disbursement basis as a result of this Agreement.

(c) The Consultant, when requested by the Owner, shall provide copies of receipts with respect to any disbursement for which the Consultant claims payment under this Agreement.

1.08 Changes and Alterations and Additional Services

With the consent of the Consultant, the Owner may in writing at any time, delete, extend, increase, vary or otherwise alter the Services forming the subject of the Agreement. No such change shall require the execution of a formal amendment to this agreement. The additional staff and services employed thereon by the consultant will be compensated in accordance with Article 4.

1.09 Suspension or Termination

The Owner may at any time by notice in writing to the Consultant, suspend or terminate the Services or any portion thereof at any stage of the Project. Upon

receipt of such written notice, the Consultant shall perform no further Services other than those reasonably necessary to close out the Consultant's Services. In such an event, the Consultant shall be entitled to payment in accordance with Section 3.1 for any of the Consultant's staff employed directly thereon together with such expenses and disbursements allowed in accordance with Section 3.1.

If the Owner is in default in the performance of any of the Owner's obligations set forth in this agreement, the Consultant may, by written notice to the Owner, require such default be corrected. If, within 30 days of receipt of such notice, such default shall not have been corrected, the Consultant may terminate this agreement. In such event, the Consultant shall be paid by the Owner for all services performed and for all disbursements incurred pursuant to this agreement and remaining unpaid as of the effective date of such termination.

If the Consultant is practicing as an individual and dies before his Services have been completed, this Agreement shall terminate as of the date of his death, and the Owner shall pay for the Services rendered and disbursements incurred by the Consultant to the date of such termination.

1.10 Insurance

The Consultant covenants and agrees to indemnify and save harmless the Owner, its officers, officials, employees and agents from all claims, actions, causes of action, losses, expenses, fines, costs (including legal costs), interest, or damages of every nature and kind whatsoever arising out of negligence, errors, omissions or willful misconduct of the Consultant, its officers, officials, employees, agents and subcontractors, or any of them, attributable to or connected with the performance, non-performance or purported performance of the Consultant's obligations pursuant to this Agreement, except to the extent that same is attributable or caused by the negligence of the Owner, its officers, officials, employees and agents, or any of them. This indemnity shall be in addition to and not in lieu of any insurance to be provided by the Consultant in accordance with Article 1.10 of this Agreement. Further, this indemnity shall survive the expiration or early termination of this Agreement and continue in full force and effect.

The Consultant agrees to purchase and maintain a policy of insurance providing coverage in the amount of not less than One Million Dollars ($1,000,000.00) for professional liability. This policy shall contain a provision that the insurer shall not cancel or materially change coverage as would affect this Agreement without providing the Owner at least thirty (30) days prior written notice. Further, this policy will be otherwise satisfactory to the Owner, and covering a period ending not sooner than one (1) year after completion of construction of the works or Project contemplated by this Agreement. A Certificate of Insurance originally signed by authorized insurance representatives, or, if required by the Owner, a certified copy of the policy, shall be delivered to the Owner prior to the

commencement of the engineering services to be provided in accordance with this Agreement and for all policy renewals thereafter during the time that this Agreement is in force and effect, within sixty (60) days of their renewal date. All insurance coverage to be provided by the Consultant shall be primary and not call into contribution any other insurance coverage available to the Owner. The Consultant shall not do or omit to do anything which would impair or invalidate the insurance policies.

1.11 Contracting for Construction

Neither the Consultant nor any person, firm or corporation associated or affiliated with or subsidiary to the Consultant shall tender for the construction of the Project, or have an interest either directly or indirectly in the construction of the Project.

1.12 Assignment

Neither party may assign this Agreement without the prior consent in writing of the other.

1.13 Approval by Other Authorities

Unless otherwise provided in this Agreement, where the work of the Consultant is subject to the approval or review of an authority, department of government, or agency other than the Owner, such applications for approval or review shall be the responsibility of the Consultant, but shall be submitted through the offices of the Owner and unless authorized by the Owner in writing, such applications for approval or review shall not be obtained by direct contact by the Consultant with such other authority, department of government or agency. Payment of the Consultant's fee shall not be contingent on receipt of said approval if the application was deemed to be complete by the Owner.

1.14 Principals and Executives

The use of Principals and Executives on a time basis by the Consultant shall only be for those services as identified in Article 3.1 in this Agreement.

1.15 Specialized Services

The Consultant may engage others for specialized services provided that prior approval is obtained, in writing, from the Owner and may add a mark-up as described in the Summary of Fees and Disbursements in the attached Appendix "A" to cover office administration costs when claiming reimbursement from the Owner, plus the cost of the additional insurance incurred by the Consultant for the specialized services.

1.16 Review of Services

The Owner, or persons authorized by the Owner, shall have the right, at all reasonable times, to inspect or otherwise review the Services performed, or being performed, under the Project and the premises where they are being performed.

1.17 Publication

The Consultant agrees to obtain the consent in writing of the Owner before publishing or issuing any information regarding the Project.

1.18 Confidential Data

The Consultant shall not divulge any specific information identified as confidential, communicated to or acquired by the Consultant, or disclosed by the Owner in the course of carrying out the Services provided for herein. No such information shall be used by the Consultant on any other project without the approval in writing of the Owner.

This requirement shall not prohibit the Consultant from acting to correct or report a situation, which the Consultant may reasonably believe to endanger the safety or welfare of the public, provided that the Consultant notifies the Owner of what is intended.

1.19 Time

The Consultant shall perform the Services expeditiously to meet the requirements of the Owner and shall complete any portion or portions of the Services in such order as the Owner may require and the Owner shall have the right to take possession of and use any completed or partially completed portions of the work notwithstanding any provisions expressed or implied to the contrary.

The Owner shall give due consideration to all designs, drawings, plans, specifications, reports, tenders, proposals and other information submitted by the Consultant, and shall make any decisions which he is required to make in connection therewith within a reasonable time so as not to delay the work of the Consultant.

1.20 Staff Change

All work performed in respect of the Project shall be undertaken by persons named in Appendix 'A' attached hereto. Persons of equivalent qualifications may be substituted with the written consent of the Owner.

1.21 Monthly Reporting of Progress

When requested by the Owner, the Consultant shall provide the Owner with a written summary of the portion of the Services completed in the preceding month.

1.22 Conflict of Interest

During the conduct of this assignment, the Consultant shall disclose to the Owner any other assignments, which may give rise to a potential conflict of interest. If in the opinion of the Owner, a conflict of interest is deemed to exist, the Consultant shall refuse the other assignment or give such undertaking as may be satisfactory to the Owner. Otherwise, the Owner may at its discretion, terminate the services to be provided by the Consultant under this Agreement.

1.23 Notices

Any notice required under this Agreement to be served may be served personally or by registered mail addressed to the party to be served at the addresses shown in this Agreement and, if served by registered mail, shall be deemed to be served on the second day after the day of mailing.

1.24 Indemnification

The Consultant shall indemnify and save harmless the Owner from and against all claims, actions, losses, expenses, costs or damages of every nature and kind whatsoever which the Owner, the employees, officers or agents of the Owner may suffer as a sole result of the negligence of the Consultant, the employees, officers or agents of the Consultant in the performance of this agreement.

The Owner agrees to hold harmless, indemnify and defend the Consultant from and against any and all claims, losses, damages, liability and costs of defense arising out of or in any way connected with the presence, discharge, release or escape of contaminants of any kinds, excluding only such liability as may solely arise out of the negligence of the Consultant in the performance on consulting services to the Owner within the Project.

1.25 Dispute Resolution

Both parties to this Agreement shall attempt to resolve all claims, disputes and other matters in question arising out of or relating to this Agreement or breach thereof by mediation.

Failing resolution by mediation, all claims, disputes and other matters in question shall be referred to arbitration.

No person shall be appointed to act as arbitrator who is in any way interested, financially or otherwise, in the conduct of the work on the project or in the business or other affairs of either the Owner or the Consultant.

The award of the arbitrator shall be final and binding upon the parties.

The provisions of the Ontario Arbitrations Act shall apply.

1.26 Limitation of Liability

The Consultant's liability for Owner's damages will, in the aggregate, not exceed the value of the amount stipulated in Clause 1.10. This Provision takes precedence over any conflicting Provision of this Agreement or any document incorporated into it or referenced by it.

The limitations of liability will apply whether Consultant's liability arises under breach of contract or warranty; tort, including negligence; strict liability; statutory liability; or any other cause of action, and shall include Consultants officers, affiliated corporations, employees and subcontractors.

1.27 Force Majeure

The Consultant shall not be liable or deemed to be at fault under this Agreement for failure to provide Services where said failure has been caused by forces outside the reasonable control of Consultant including, but not limited to acts of God, fire, accidents, flood, war, riot, governmental laws, acts or regulations, strikes, walkouts, and acts of Owner. In such event, the project schedule and compensation shall be equitably adjusted.

1.28 Plans, Specifications, Designs and Cost Estimates

Any and all plans, specifications, drawings and designs furnished by the Consultant will be prepared on the assumption that all information supplied by the Owner or on behalf of the Owner by any person or persons other than the Consultant is correct and the Consultant shall not be liable for any loss or damage arising from any inaccuracy in such information. The Owner shall immediately notify the Consultant of any discrepancies or inaccuracies in such information as they become apparent. The Consultant shall be entitled to make any necessary change or changes in his plans, specifications, drawings or designs at the Owner's expense if any such information should be erroneous or inaccurate.

Construction cost estimates provided by the Consultant are opinions of probable construction costs based on the judgment of design professionals and are provided for the Owner's general guidance. Exact construction costs will be determined only when tenders have been received for the project.

The Consultant shall, to the best of his ability, interpret building codes and by-laws as they apply to the Project, and shall correspond such interpretation to the Owner. It is expressly acknowledged and agreed by the Owner that as the Project progresses, the interpretation of building codes and by-laws by any public authority may differ from the interpretation of the Consultant, through no fault of the Consultant. Any extra cost necessary to conform to the interpretation placed upon the codes and by-laws or to confirm to changes or differences in interpretation by such authorities during or after execution of the Project will be paid by the Owner in the event that the Consultant has received a prior approval or authorization from such authorities in respect of such interpretations.

1.29 Contract Administration and Co-ordination

The Consultant's administration and co-ordination functions provided herein shall pertain only to the extent that the services contemplated in Article 3.1 have been rendered on the project.

Authority for general co-ordination of the Project shall reside in the Consultant only to the extent provided for in this Agreement.

All notices, instructions, requests, claims or other communications by the Contractor, by the Consultant or by the Owner to one another shall be made by or through the Consultant.

The Consultant shall make recommendations on all claims of the Owner and of the Contractor, and on all matters relating to the interpretation of the Contract Documents.

No acceptance or approval by the Consultant of the Work or of the services of the Contractor or the Consultants, whether expressed or implied, shall relieve the Contractor or the Consultants from their responsibilities to the Owner for the proper performance of such Work or services, and further, the Consultant shall not be responsible to the Owner or the Contractor or the Sub-Consultants for the means, methods, techniques, sequences, procedures and use of equipment, of any nature whatsoever, whether approved by the Consultant or not, which are employed by the Contractor or by the Consultants in executing or designing any phases of the Project, or for placing into operation any plan or equipment, or for safety precautions and programs incidental thereto.

1.30 Site Services During Construction

It is understood and agreed that the Consultant's basic services under this Agreement are for design services and include site services to inspect the Contractor's performance only to the extent as indicated in Article 3.1. The Owner acknowledges the importance of such services and should the Owner decide to proceed with the construction and have such services performed by a party other than the Consultant,

the Owner shall assume responsibility for interpretation of the contract documents and for construction inspection.

In addition, if the Consultant does not perform full-time site services, the Owner shall, to the fullest extent permitted by law, indemnify and hold the Consultant harmless from any loss, claim, or cost, including reasonable attorneys' fees and costs of defense, arising or resulting from the performance of such services by other persons or entities and from any and all claims arising from modifications, clarifications, interpretations, adjustments, or changes made to the Contract Documents to reflect changed field or other conditions, except for claims arising from the sole negligence or willful misconduct of the Consultant.

1.31 Job Site Safety

The Consultant is responsible solely for his or her own and his or her own employees' activities on the job site, but this shall not be construed to relieve the Owner or any construction contractors from their responsibility for maintaining a safe job site. Neither the professional activities of the Consultant nor the presence of the Consultant or his or her employees and subcontractors shall be construed to imply the Consultant has any responsibility for methods of work performance, superintendence, sequencing of construction, or safety in, on or about the job site, and warrants that this intent shall be made evident in the Owner's agreement with the General Contractor. The Owner also warrants that the Consultant shall be made an additional insured under the General Contractor's general liability insurance policy.

1.32 Hazardous Materials

Both parties acknowledge that the Consultant's scope of services does not include any services related to hazardous or toxic materials except where such services are specifically described in Article 3.1. In the event the Consultant or any other party encounters hazardous or toxic materials at the jobsite, or should it become known in any way that such materials may be present at the jobsite or any adjacent areas that may affect the performance of the Consultant's services, the Consultant may, at his or her option and without liability for consequential or any other damages, suspend performance of services on the project until the Owner retains appropriate specialist consultant(s) or contractor(s) to identify, abate and/or remove the hazardous or toxic materials, and warrant that the jobsite is in full compliance with applicable laws and regulations.

The Owner agrees, notwithstanding any other provision of this Agreement, to the fullest extent permitted by law, to indemnify and hold harmless the Consultant, his or her officers, partners, employees, agents and consultants from and against any and all claims, suits, demands, liabilities, losses, or costs, including reasonable attorneys' fees and defense costs, resulting or accruing to any and all persons, firms and any other legal entity, caused by, arising out of or in any way connected with the detection, presence, handling, removal, abatement, or disposal of any hazardous or

toxic substances, products or materials that exist on, about or adjacent to the jobsite, whether liability arises under breach of contract or warranty, tort, including negligence, strict liability or statutory liability or any other cause of action.

ARTICLE 2 - RESPONSIBILITIES OF THE OWNER

The Owner shall:

a) Make available to the Consultant all relevant information required by the Consultant, and shall instruct the Consultant fully as to the Owner's requirements, including design objectives, constraints and criteria, special equipment and systems, site requirements and construction budget. The Consultant shall be entitled to rely upon the accuracy and completeness of all such information and data furnished through the Owner or Owner's consultants whether such consultants are engaged at the request of the Consultant or not.

b) Engage consultants directly, when so required by the Consultant, to perform services necessary to enable the Consultant to fully carry out the Consultant's duties, such services to include a legal survey of the site, site services data, geotechnical reports and appropriate testing.

c) Give the Consultant authority to act as the Owner's agent in all matters falling within the scope of the Consultant's services.

d) Promptly review all documentation submitted by the Consultant, and inform the Consultant of decisions in time for the orderly progress of the Consultant's services and of the work.

e) Obtain all required consents, approvals and licenses and permits from authorities having jurisdiction.

f) Arrange and make provision for the Consultant's entry and access to public and private property and the project site in the performance of the duties.

g) Arrange and pay for tender advertising and any necessary legal, financial or insurance counseling services required for the project.

h) Designate in writing a representative to have authority to transmit instructions to and receive information from the Consultant.

i) Immediately notify the Consultant whenever the Owner, or the Owner's representative, becomes aware of a defect or deficiency in the work or the contract documents.

ARTICLE 3 - CONSULTANT'S SERVICES PROVIDED UNDER THIS AGREEMENT

3.1 The Consultant shall perform services described in Appendix 'A' in connection with this project.

ARTICLE 4 - BASIS OF PAYMENT

4.1 Basis of Payment

4.1.1 Fees Calculated on a Time Basis

a) The Owner shall pay the Consultant a fee, calculated on a time basis, for that part of the Services described in Article 3. Fees on a time basis shall be calculated in accordance with the Consultant's hourly rate schedule in force at the time the chargeable work is performed.

b) The current year hourly rate schedule included in Appendix "A" shall only be revised with prior approval in writing from the Owner.

c) The total fee to complete this assignment is not to exceed Total Fee including disbursements estimated at Disbursements Amount exclusive of G.S.T. This is described in the Summary of Fees and Disbursements in the attached Appendix "A".

4.1.2. Time Expended

All time expended on the assignment, whether in the Consultant's office, at the Owner's premises, or elsewhere, shall be chargeable. Except for construction inspectors, travel time shall also be chargeable. This also includes, but is not limited to, stenographic and clerical staff engaged in the preparation of reports and specifications, and duties directly related to the project.

4.1.3 Computer Services

With prior approval in writing from the Owner, computer services, except where a computer is used for design under the percentage fee scale or for the Consultant's normal office administration and accounting, shall be considered a reimbursable expense.

4.1.4 Reimbursable Expenses

In addition to the fee, the Consultant shall be reimbursed at cost plus the cost of additional insurance incurred by the Consultant and as requested by the Owner for all reasonable expenses properly incurred by him in connection

with the project, including but not limited to: vehicle use charges, application and permit fees, travelling and living expenses, long distance telephone, cell phone usage, and fax charges, printing and reproductions, progress photography, advertising for tenders, special delivery, courier, and express charges, overtime premium costs, if approved by the Owner in advance, and approved special consultations.

4.2 Payment

4.2.1 Fees Calculated on a Time Basis

The Consultant shall submit an invoice to the Owner not more frequently than once per month for all Services completed since the last invoice.

All invoices submitted to the Town of Pelham shall include a Project Summary of Engineering Fees form and must show:

- Project Title.
- Category of Services.
- Upset Limits.
- Owner's Project Number.

IN WITNESS THEREOF the parties hereto have caused to be executed those presents by their officers properly authorized in that behalf on the day and year first above written.

SIGNED, SEALED AND DELIVERED

THE CONSULTANT

(Richard Hein, President)

(Richard Goertz, Secretary)

THE TOWN OF PELHAM

(Ron Leavens, Mayor)

(Cheryl Miclette, Town Clerk)

APPENDIX "A"

MIG INNOVATIONS INC.

Proposal for Engineering Services

Haist Street and Lookout Street Improvements

October 7, 2004

MI-04-060P

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1.0 Introduction

This proposal is submitted by Matrix Innovations Inc. in response to the Town of Pelham's proposal call for improvements to Haist Street and Lookout Street from Regional Road 20 to approximately 800 m northerly. Having visited the project area, held discussions with Town staff and reviewed the background documents, our Project Team has prepared the attached proposal for your favourable consideration. This proposal provides our perceptions and ideas on how to approach, conduct, manage and successfully execute the design for the Haist Street and Lookout Street Improvements.

Our approach to this project is to fully address the Town's objectives with both proven technical skill and creative foresight. Collectively, our Project Team has extensive experience in the municipal fields of detail and preliminary road design, road reconstruction works, the design of underground services, and contract administration. Our company also has extensive experience in Municipal Class Environmental Assessments, transportation and traffic studies, roadway safety assessments, and in dealing with the general public on complex projects. Our Partners carry with them, almost 75 years of collective experience within several engineering fields and over 30 years of experience with municipal design works. In addition, our Project Advisor for this study will be available to supplement Matrix Innovations' design experience, if needed, with over 30 years of municipal experience gained from numerous successfully completed projects over the years. Additional details related to our company's experience and the Project Team members can be found in **Appendices A** and **B**.

"The success of this project will require a strategic approach from a visionary, innovative, inter-disciplinary team."

Matrix Innovations is ready for this challenge.

1.1 Background

The Town of Pelham is located in the heart of the Niagara Region, situated between Lake Ontario to the north and Lake Erie to the South. In 1970, the Town of Pelham was created to bring together the five historical communities of Fonthill, Ridgeville, Effingham, North Pelham, and Fenwick. Today, the Town of Pelham covers an approximate area of 127 square kilometers and is integrated into an area that combines farming and a growing commercial base of development. A municipality with over 15,000 residents, Pelham continues to retain its natural beauty with the Niagara Escarpment and the Fonthill Kame providing a topographical uniqueness among the splendid forested areas and rural lands. The Town of Pelham is one of the fastest growing communities in Niagara Region, located close to other communities such as Niagara Falls, Welland, and St. Catharines.

In recent years, the Town of Pelham has undergone a number of development changes including the expansion of the Town's Urban Area Boundaries which has brought with it the continued expansion of both residential and commercial developments. Commercial outlets generally provide services for the traveling public and rely upon vehicular traffic using the Regional Road 20 corridor. Commercial facilities located within the Fonthill area include restaurants and taverns, fast food and coffee shops, gas bars, farm/garden markets, flower shops, wholesale and retail shopping facilities, professional services, automobile dealerships and parking lots. East of Pelham Street there are various facilities that can be characterized as primarily Light Industrial featuring light manufacturing uses. These facilities include carpentry shops, automobile service and repair establishments, building materials facilities, lumber yards and equipment sales and service centres. To the west of Pelham Street (along the Regional Road 20 corridor) the character is generally more commercial

and residential in nature including the existing Fire Hall facilities and an automotive repair centre and car wash facility located to the south of Regional Road 20. Additional established residential areas including single unit family dwellings and a condominium complex on the south side of Regional Road 20 across from Lookout Street.

In the current Town of Pelham Official Plan, the settlement of Fonthill has been identified as the primary focus for full service, urban residential development. With moderate improvements to existing sewer and water services there is sufficient servicing capacity to meet planned growth to 2023. The recent secondary plans for the settlement of Fonthill have significantly increased the supply of residential lands for development. If all of the Secondary Plan Areas were fully developed, they would have the potential to accommodate approximately 2,600 new dwelling units.

In addition to residential development, commercial, retail and institution uses are intended to be focused along the Regional Road 20 corridor and in downtown Fonthill. Recent commercial developments include Sobeys (on Regional Road 20), a commercial strip mall (Weiland Plaza) north of Regional Road 20 between the Log Cabin and the Firehall, and some redevelopment in downtown Fonthill. In terms of residential expansion, construction is underway for a number of residential developments including: the Timmsdale residential development on the south side of Regional Road 20 and west of Lookout Street; The Village of Chestnut Ridge, a 30 acre residential development bordered by Lookout Street to the west, Regional Road 20 to the south and Haist Street to the east and the Niagara Escarpment to the north; the Weiland Terrace residential development on Haist Street north of Regional Road 20; and residential infill projects such as the redevelopment of the Fonthill School site on Pelham Street. Future commercial and residential development is also planned for the lands located within the southwest quadrant of Regional Road 20 and Rice Road, lands north of Regional Road 20 (west of the Firehall), and lands east of Haist Street (north of Regional Road 20).

Significant changes to the transportation network are being planned through the Region of Niagara's *Class Environmental Assessment for Regional Road 20* (completed in 2004) from Highway 406 to Pelham Street. This study examined the widening of Regional Road 20 including various intersection improvements. The Town of Pelham also undertook the *Town of Pelham Urban Core Beautification Strategy* (2002 to 2003) which basically looked at proposed improvements to the general aesthetics of the urban core as part of a broader strategy to revitalize the Villages of Fonthill and Fenwick. Within the project area, the North West Fonthill (Area 1) Traffic Analysis completed in December 2003 examined the need for improvements on Regional Road 20, Lookout Street and Haist Street in response to the planned development within the North West Fonthill Secondary Plan Area.

Other significant areas of importance with the Town of Pelham include the headwaters of Twelve Mile Creek, tender fruit and grape growing fields, and Short Hills Provincial Park.

1.2 Project Area and Context

The North West Fonthill Secondary Plan Area is bound by Regional Road 20 on the south, Lookout Street on the west, Haist Street on the east and Tice Road on the north. Two draft plans of subdivision are being considered within the North West Fonthill Secondary Plan Area – The Village of Chestnut Ridge and Weiland Terrace. Overall, a total of 133 street townhouses, 117 single family residences and a 153-bed retirement special care residence are proposed within this Secondary Plan. The primary means of access to the Chestnut Ridge and Weiland Terrace developments is a collector road system connecting to Haist Street and to Lookout Street. Two connections are proposed to Lookout Street and one connection is proposed to Haist Street. The special care retirement residence will have a separate connection to Lookout Street and an internal connection to the future ambulance centre to be located north of the existing Fire Hall.

Haist Street is a two-lane rural collector roadway with a posted speed limit of 50 km/hr. Haist Street commences in the south at Foss Road and terminates in the north at Metler Road. The road is

generally flat with rolling terrain commencing approximately 400 metres north of Regional Road 20. At this point, the roadway is on a downgrade increasing to approximately 10 percent on approach to Twelve Mile Creek. Residential dwellings are located along both sides of Haist Street up to approximately 300 metres north of Regional Road 20, where the abutting land use becomes predominantly agricultural with some single family residences. The intersection of Regional Road 20 and Haist Street is controlled by traffic signals. Separate left turn lanes (eastbound and westbound) are provided on Regional Road 20.

Lookout Street is a two-lane rural local roadway with a posted speed of 60 km/hr. The roadway commences at Regional Road 20 and terminates in the north at Tice Road. The road grade rises north from Regional Road 20 at a grade of approximately 3 to 7 percent. The crest of the vertical curve is located approximately 550 m north of Regional Road 20. From this point northward, the roadway grade becomes generally flat. The predominant land use abutting Lookout Street is agricultural with occasional residential buildings. The intersection of Regional Road 20 and Lookout Street is unsignalized with STOP control on Lookout Street. A separate left turn lane is provided on Regional Road 20 for eastbound traffic. The separation distance between the intersection of Regional Road 20 and Lookout Street and the intersection of Regional Road 20 and Haist Street is approximately 450 m.

Within the study area, Regional Road 20 (formerly Highway 20) is a three lane arterial roadway with a posted speed of 50 km/h. (The speed limit increases to 70 km/hr west of Lookout Street.) The centre lane is a continuous two-way turn lane between Haist Street and Lookout Street. Regional Road 20 is bounded by highway commercial, institutional and high density residential (apartment complex) uses within the study area.

The planned development of the Village of Chestnut Ridge and the Weiland Lands will impact Lookout Street and Haist Street and the magnitude of these impacts are documented in the *North West Fonthill (Area 1) Traffic Analysis (December 2003)*. Based on the findings from this study, the following improvements were recommended:

Haist Street and Regional Road 20 Intersection

- *Northbound and southbound left turn lanes on the Haist Street approaches; the recommended length of storage was 40 metres and 25 metres, respectively.*
- *Exclusive right turn lane on the westbound approach (Regional Road 20).*

Lookout Street and Regional Road 20 Intersection

- *Exclusive right turn lane on the westbound approach (Regional Road 20).*
- *Installation of traffic signal control by 2007 (anticipated build-out).*

Lookout Street and Haist Street

- *Upgrade to a collector road standard from Regional Road 20 to north of the north accesses to the Village of Chestnut Ridge.*
- *Improve the vertical alignment of Haist Street such that minimum decision, approaching and departing sight distance for a design speed of 60 km/hr can be provided at the new intersections serving the Chestnut Ridge and Weiland Terrace developments.*
- *Improve the vertical alignment of Lookout Street such that minimum decision, approaching and departing sight distance for a design speed of 80 km/hr can be provided at the new intersections serving the Chestnut Ridge and Weiland Terrace developments.*

The study also recommended that the pavement structure requirements for both Haist and Lookout Streets be confirmed through further geotechnical investigation and that those requirements be incorporated into the upgrading of Haist and Lookout Streets.

This project comprises the section of Haist Street from approximately 100 metres south of Regional Road 20 to approximately 800 metres north and the section of Lookout Street from Regional Road 20 to approximately 800 metres north (to be confirmed in the field), as shown in **Figure 1-1**. Improvements are also required on Regional Road 20, with the addition of westbound right turn lanes at the intersection with Haist Street and Lookout Street and the implementation of traffic signal control at Regional Road 20 and Lookout Street. Selected photographs of the project area are provided in **Appendix D**.

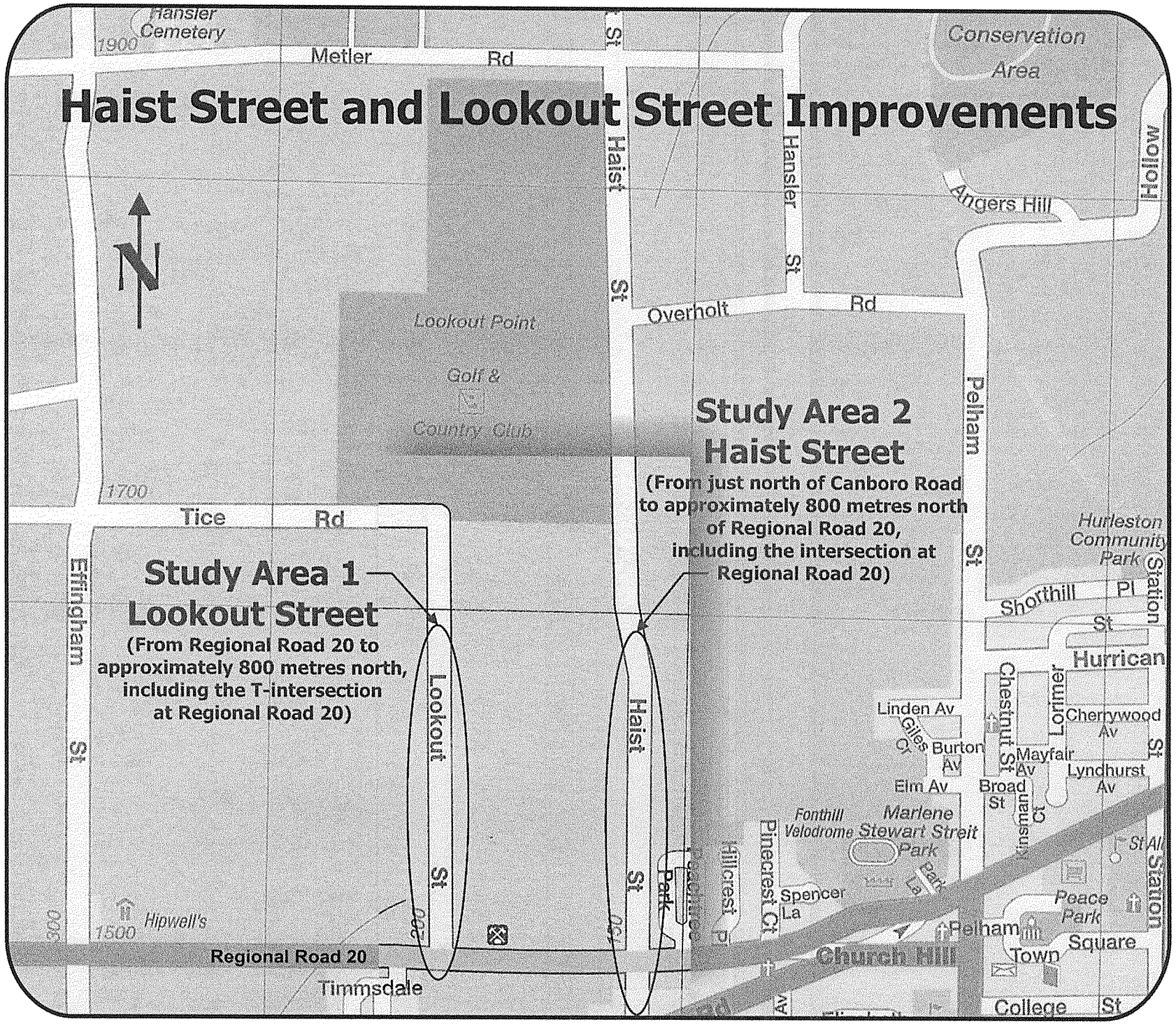


Figure 1-1

Project Study Area

Haist Street and Lookout Street

MATRIX INNOVATIONS INC.

2.0 Understanding of Project Objectives, Issues and Constraints

2.1 Project Objectives

Matrix Innovations Inc. will remain focused on the project objectives throughout the detail design process—ensuring that the Town receives the best possible service and attention to detail. **Figure 2-1** illustrates graphically, how the Project Team intends to achieve the project objectives and meet

> ***"The primary objective for this project is to provide detail design engineering services for the reconstruction and improvements to Haist Street and Lookout Street including underground services and any associated ancillary works."***

the needs of the Town. Essentially, this overall picture summarizes the three parallel pathways that will be initiated and eventually completed by the Project Team. The main thrust of the project will be the design, beginning with the pre-engineering survey and data collection, and then proceeding to the detail design and tender preparation. Parallel to this effort, stakeholder and technical agency communications along with any necessary public consultation will be integrated into the ongoing and daily project management of the study to ensure that the project objectives are achieved and the expectations of the Town are met. As the detail design process moves forward, "inputs" that are received from relevant stakeholders, technical agencies and the public will be addressed and transferred into the main stream of the project detail design process and a number of "outputs" will be produced based on these inputs. The outputs are represented in **Figure 2-1** as documented reports and drawings. Ultimately, the focus will shift away from the three parallel events and culminate in reaching the project goal.

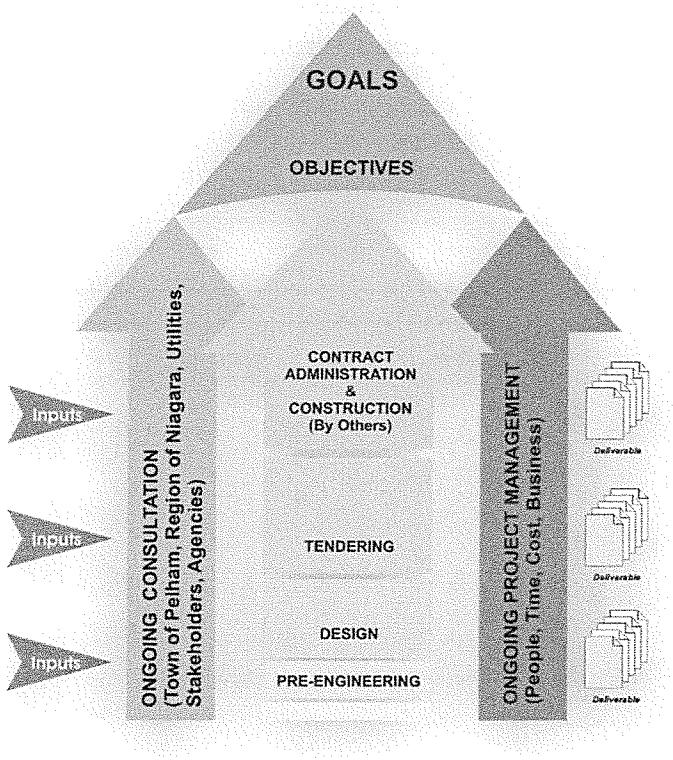


Figure 2-1 Project Goals & Objectives

2.2 Project Issues and Constraints

There are a number of issues and constraints that will need to be addressed in this project. Matrix Innovations has reviewed the available documentation, visited the project site and has discussed the project with Town staff to gain a better understanding of the issues and constraints and the required deliverables. The following outlines our understanding of the issues and constraints to date.

Road Classification – Haist Street will be transformed from its current rural roadway cross section into an urban roadway cross section. This will require the placement of curb and gutter and storm

sewers. Reconstruction of Haist Street was recently completed from Canboro Road northerly to about one third of the distance to Regional Road 20. Curb and gutter is provided at the intersections (with Regional Road 20 and with Canboro Road) while the remainder of the roadway remains without curb and gutter. Since the project limits for Haist Street commence approximately 100 m south of Regional Road 20, it recommended that curb and gutter be considered for the entire section of Haist Street between Canboro Road and Regional Road 20. This will result in a more consistent and uniform design for Haist Street.

Sensitive Area – Haist Street crosses the Twelve Mile Creek. Because this watercourse will provide outlets for storm drainage, early and constant consultation with the appropriate agencies will be required to ensure compliance with current regulations.

Limit of Construction – Reconstruction of Haist Street from a rural to an urban cross-section will require the widening of the embankment and the lengthening of the culvert at the Twelve Mile Creek watercourse. The limit of reconstruction and the type of road section implemented may require modifications at the crossing location to reduce or eliminate the impact to Twelve Mile Creek area.

Pavement Condition – The existing asphalt pavement on Haist Street and Lookout Street are well travelled with visible evidence of pavement distress. Based on field observations, it is apparent that the pavement distress is much more pronounced along Lookout Street. The structural adequacy of the existing pavements will need to be evaluated to ensure that it can handle an increased future traffic loading from planned area developments.

Municipal Services on Lookout Street – There is an existing 150 mm diameter watermain on Lookout Street from Regional Road 20 to approximately 250 m northerly. The existing watermain will be replaced and extended by a larger watermain servicing the proposed subdivision to the east. Alternative locations for the watermain will be investigated during the design process to ensure disruption to existing services is minimized and conflicts with other services and utilities will be avoided. Placing the new watermain in the same location as the existing may be the best alternative to minimize disruptions and conflicts. This will however require the placement of temporary water lines in order to maintain service to the residents. Sanitary sewers and storm sewers do not exist and are not planned as part of this project.

Municipal Services on Haist Street – There are cast iron watermains on both sides of the road under or near the edges of pavement. Both watermains terminate north of Regional Road 20. The west watermain terminates at about 180 m north of Regional Road 20 while the east watermain terminates at about 275 metres north of Regional Road 20. Preliminary designs include the abandonment of both watermains and the installation of a new, larger watermain to service the existing residences and the new subdivisions to the west. The sanitary sewer is located under the westerly edge of pavement commencing at about 400 m north of Regional Road 20 and extending southerly beyond Regional Road 20 toward Canboro Road. We will review the existing plan and video information to determine if localized repairs are necessary during the construction. Storm sewers will be required on Haist Street to provide an outlet for the roadway runoff due to the urbanization of Haist Street. The selection of the storm sewer location will consider all other utilities to reduce or eliminate the number of conflicts. Preliminary plans are to construct a new storm sewer and install catchbasins (as part of the curb and gutter system) and connect to the storm pond within the Chestnut Ridge subdivision. Due to the elevation change, there will be drainage at the northern limit of the study area carried to roadside ditches and then discharging directly to the tributary of the Twelve Mile Creek.

Utilities on Lookout Street – Hydro is overhead along the east side of the roadway until about 550 metres north of Regional Road 20 where it crosses to the west side. The reconstruction and widening may require the relocation of several hydro poles. There are existing underground Bell and Cable trunk services located within the right-of-way. An existing gas main is located near the western right-of-way limit. We will coordinate with the utilities should relocation of the existing

cables be deemed necessary for this project. Coordination with the utilities will be key to avoiding disruption to these major underground facilities that service the existing transmission and cell towers to the north.

Utilities on Haist Street – Hydro is located overhead on the west side of Haist Street throughout the project limits. The reconstruction and widening may require the relocation of several hydro poles. An existing gas main is located on the east side of the roadway right-of-way. Any reconstruction must maintain the existing cables and services.

Trees – There are a number of existing trees located in proximity to travel way in many locations. The possible removal of some of these trees may be needed to satisfy safety concerns or to accommodate the reconstruction and/or widening (especially if significant changes are made to the roadside environment including the ditches).

Vertical Alignment – The need to improve the roadway vertical alignment along both Haist Street and Lookout Street has been identified in previous studies. Lowering the roadway at the crests is required to ensure that minimum decision and intersection sight distances for the selected design speeds are achieved. This may require considerable grading, additional property requirements and may adversely impact several existing trees. As noted by others, if the desired alignment improvements are neither possible nor practicable, then the locations of the future intersections (to Chestnut Ridge and Weiland Terrace developments) will need to be revised to meet (or exceed) minimum sight distance requirements. In any event, the vertical alignment will be improved to ensure that the stopping sight distance on Haist Street and on Lookout Street are met or exceed prevailing guidelines for the selected design speed.

Horizontal Alignment – The alignment of Haist Street is generally straight until about 400 metres north of Regional Road 20. At this point, the alignment veers slightly to the right (eastward) for northbound travel followed by a series of slight shifts resulting in a subtle curvilinear alignment for northbound travel. It would be desirable to improve the horizontal alignment to reduce or eliminate the curvilinear horizontal alignment of Haist Street. This is particularly important in the area where the roadway commences the downgrade towards the Twelve Mile Creek crossing.

Design and Posted Speeds – The recommended changes to the vertical alignment are based on a design speed of 60 km/h (10 km/h over posted speed) for Haist Street and of 80 km/h (20 km/h over posted speed) for Lookout Street. The selection of design and posted speeds will be reviewed based on prevailing standards of practice. We will also assess whether or not it is appropriate to reduce the posted speed limit on Lookout Street from 60 km/hr to 50 km/hr.

Traffic Signal Control – The traffic signals at the intersection of Haist Street and Regional Road 20 are owned and maintained by the Region of Niagara (as the senior road authority). Some modifications to the operation of these signals may be required in response to changes to the configuration of the intersection. Further, the need for traffic signal control at the intersection of Lookout Street and Regional Road 20 has been established by previous studies. As part of this project, consideration should be given to installing the underground services (i.e. duct work, etc.) prior to the installation of traffic control signal infrastructure. This installation will be undertaken by the Region as the intersection falls under the Region's jurisdiction.

Sidewalks on Haist Street – There is an existing sidewalk on the east side of Haist Street from about 275 metres north of Regional Road 20 to Canboro Road. Pedestrian signals and cross-walk markings are also provided at the intersection of Haist Street and Regional Road 20. Sidewalks will be provided on one side of Haist Street along the entire section that will be 'urbanized'. Sidewalks may be considered for both sides due to the proposed residential development on the west side of Haist Street which may increase pedestrian movements along this side of Haist Street towards Regional Road 20.

Sidewalks on Lookout Street – Pedestrians were observed walking along Lookout Street during our field investigation. Although Lookout Street will be reconstructed with a rural cross-section,

consideration will be given to providing a sidewalk or multi-use path along the east side of Lookout Street towards Regional Road 20 to improve pedestrian safety. The type of pedestrian facilities to be provided, if any, will be determined in consultation with the Town over the course of the project.

Other Issues – Through discussions with Town staff, technical agencies and stakeholders, any additional issues not defined in this proposal will be incorporated into the project. A number of these issues will be obtained via consultation with Town staff and affected agencies and possibly individual meetings with key relevant stakeholders. It is understood by the Project Team that this project will need to focus on the aforementioned issues and other issues that arise during the design to achieve the project goal.

3.0 Project Approach

This section of the proposal describes Matrix Innovations' overall project approach which will be implemented and carried forward to provide the Town with a successful design. Our work program has been prepared to achieve the objectives of this project and to ensure the project is conducted to in accordance with Town requirements.

"A plan that clearly focuses its direction on the project objectives, and targets the goals that must be reached through a combination of technical, management, communications, and business management experience."

The work schedule shows that the design can be completed by the end of December 2004, assuming that there are no undue delays caused by elements beyond the control of the Project Team. The Project Team involved in this project is discussed in **Section 5.0**.

3.1 Work Program

The general approach of the Project Team's work program and proposed work schedule is presented as follows:

A. Pre-Engineering Phase

M-1 – Startup Meeting – The first activity associated with this project is to confirm the work program and the critical path provided in this proposal. This will be completed through an initial meeting with the Town's Project Team to discuss the proposed work program, schedule and budget, and other issues not identified through the proposal preparation process. At this point, the Town's Project Coordinator will review the work program and schedule to determine if modifications are required to the scope of the work and the timing. If required, a revised work program and critical path will be prepared by the Project Team. The modified work program will form a description of the scope of services to be provided including a revised schedule of activities. An Agreement will be prepared on the basis of the approved work program, schedule and budget.

At the initial meeting, the Project Team will review concerns and criteria related to the project area and prepare a "study profile". Development of the study profile will rely on information provided by Town of Pelham staff, as well as information from previous and/or relevant studies. The factors that will be considered in developing an accurate profile of the project area will include, but not be limited to, the following:

- Existing and future infrastructure;
- Existing and future deficiencies in traffic capacity, roadway cross-section, alignment and structural adequacy;
- Existing safety concerns and issues;
- Need and justification for infrastructure improvements;
- Design Criteria; and
- Purpose of the project, project goals, and objectives.

The Project Team will develop the list of technical agency and utility company staff to be contacted. Following the initial meeting, the Project Team will contact the technical agency and utility representatives to either confirm or determine who will be the contact person for the project. Matrix Innovations will maintain and update these lists for the duration of the project. Continuous contact

with the technical agencies and utility companies will be an ongoing process throughout this project. This will ensure that all existing information is obtained relating to existing and proposed services and utility plants.

Matrix Innovations will develop a Quality Assurance (QA) Plan in conjunction with the Town to address both key project processes and project deliverables. Our QA process and recommended QA Plan for this project are outlined in **Section 4.5**.

A-1 – Data Collection - During the initial phase, all relevant background information will be assembled, reviewed and assessed for current validity. Wherever possible, Matrix Innovations will utilize existing data from the agencies involved. All reports will be reviewed and useful data will be extracted. As well, relevant recommendations contained within these studies will be documented and evaluated within the context of this project. The type of information that will be assembled will include, but not necessarily be limited to: As-built information, utility plans, current site plans, underground services (as applicable), etc.

Available information will be reviewed and evaluated to determine its relevance and current validity within the context of this project. For example, recommended intersection improvements at Lookout Street/Regional Road 20 and Haist Street/Regional Road 20 are based on 2007 traffic projections. It may be prudent to evaluate the needs of 2011/2021 traffic demands on the design of these intersections. Deficiencies and gaps in the available data will be identified and discussed with Town staff. It is our understanding that any additional and critical data/information beyond that which is currently available will be provided by the Town. We have made no allowance in our fee estimate for collection of additional data, except for the field survey portion of the study.

The review of relevant information will provide a general knowledge to the Project Team of the existing infrastructure and possible 'red flags' which could influence the design and construction.

A-2 and A-3 – Topographic Survey and Base Plan Preparation - The success of any engineering project depends upon the accuracy of the base plan information. With this in mind, Matrix Innovations cannot stress enough the importance of reliable field data and the background information to be obtained at the onset of this project. Matrix Innovations will retain Suda & Maleszyk Surveying Inc. to obtain the topographical information for the project area in digital format. Once the existing base plan has been compiled, we will complete a full field review to ensure that all the pertinent information for the area has been correctly indicated on the base plan prior to performing any design.

The field survey will extend to 3.0 metres behind property line on each side of the roadway and will include front building corners. The survey will generally include centreline road, edge of asphalt, curbs, ditches, trees, sidewalks, utilities, valves, hydrants, waterboxes, bell pedestals, hydro poles, street lights, front building corners, swales, catchbasins, manholes, sewer inverts (if "as-built" plans are not available), legal right of way etc. All topographic surveying will be completed using UTM Coordinates. Base plans will be prepared using AutoCAD. Attempts will be made to locate property bars in the field to confirm their locations according to plans provided, however, no allowance has been made in our proposal to set new legal survey bars in the field.

A-4 – Geotechnical Review – A geotechnical investigation will be performed to determine the subsurface conditions. Boreholes will be drilled to a maximum depth of 5.0 metres, since the new services are assumed to be constructed to a depth not exceeding 4.0 metres. Recommendations for excavation, backfill and for the pavement structure will also be included in the geotechnical report and implemented in the proposed design.

A-5 – Consultation with Technical Agencies and Utility Companies - Project Team members will consult with Technical Agencies and Utility Companies to offer an opportunity to solicit comments and suggestions concerning their issues and concerns within the project area. Also the Utility Companies can inform us of any potential replacements, relocations or new plant within the

project area. The base plans will also be submitted to the Utility Companies to provide them with current ground information, and allow for markup of any underground plant.

It has been our experience that the needs of agencies can best be addressed through small group meetings, including the receipt of all project notifications.

A-6 – Preliminary Design and Drawings – The design for road improvements will be initiated by means of establishing horizontal and vertical alignments and the preparation of typical road sections. Revisions to the profiles will be determined to ensure the stopping sight distance along the roadway and the sight distance at the future intersections meet or exceed prevailing design guidelines for the selected design speed. Cross sections will be prepared every 25 metres to determine impacts on adjacent properties, and physical objects, i.e. trees, hydro poles, utilities. The cross sections will also be used to review the drainage. It is assumed that ditches will be provided along Lookout Street and curb and gutter with storm sewers will be provided along Haist Street. If required, alternatives will be presented to the Town including preliminary cost estimates to arrive at a recommended road improvement concept. The preliminary design will be shown on the base plan in sufficient detail to present to the Town.

B. Design Phase

B-1 & B-2 – Detail Design and Drawings – The design for road improvements will be completed within current codes, specifications and regulations. The contract drawings will detail the proposed work including the contract limits, removals, new construction, underground services, utility relocations, construction notes, typical sections and details. Contract drawings will be prepared to Town of Pelham standards and provide sufficient detail for tendering. The Contract drawings will be stamped and signed by an Ontario Professional Engineer.

B-3 – Utility Relocations – We will coordinate with the Utility Companies to determine the plant that needs to be relocated as a result of the proposed construction, and arrive at a recommended relocation scheme.

B-4 – Submit MOE Applications – We will prepare and coordinate all necessary approval applications for this project. Ministry of the Environment Approvals will be filed for all newly constructed sewers and watermain replacement if required. Application fees will be paid for directly by the Town.

C. Tendering Phase

C-1 – Prepare Contract Documents – Contract documents will be prepared including the Form of Tender and Special Provisions detailing all construction items and municipal standards to be employed by the Contractor on the project. The documents will be prepared in Microsoft Office 2000 format.

C-2 – Calculate Quantities and Prepare Cost Estimate – We will update the preliminary cost estimate based on the calculated final tender quantities. Preliminary cost estimates for each roadway will be derived from similar contracts recently administered by Town.

C-3 – Prepare Tender Packages – The tender documents and drawings will be copied, with sufficient copies made available for tendering. Hard copies and digital files of the Contract Drawings and Documents will be provided to the Town.

C-4 – Council Presentation – The final contract drawings will be presented to Council for their approval. Matrix Innovations Inc. will assist Town staff with the presentation and will be available to answer any questions.

C-5 & C-6 – Assistance during Tendering and Bid Recommendation – During the tender period, Matrix Innovations Inc. will respond to all inquiries on behalf of the Town, review the submitted tenders for accuracy and completeness, and prepare a bid recommendation for consideration by Town Staff.

3.2 Project Deliverables

The following deliverables will be prepared and submitted to the Town for review and comments:

- Contract Drawings;
- Contract Documents including Tender Form, Specifications, and Special Provisions;
- Cost Estimates for each roadway;
- MOE Applications; and
- Tender Package(s).

4.0 Project Management

Matrix Innovations' plan for good quality management starts with an overview of the life cycle of a typical project. A project's life cycle begins with identifying and analyzing a need or problem, considering the various alternatives for addressing that need, analyzing the feasibility and impacts

"Matrix Innovations, together with the Town, will proceed through two phases of the project life cycle that are most critical to a project's success—Planning and Execution."

of implementing the chosen alternative, procuring funding, and evaluating the risks. During the *Planning Phase*, the detailed aspects of the project are determined, coordinated, and documented. The *Execution Phase* begins when the execution of these plans are carried out.

The Pre-Engineering portion of this project will begin with the documentation developed within this proposal. The proposal and associated plans to be developed form the roadmap for the project from initiation to completion. It is therefore important that the proposal document not only form an answer to a Request for Proposal but extend beyond these bounds to outline how plans will be created for managing all major aspects of the project, including such things as communications, risk, resource allocation, and implementation, among others. Project management often confuses the work of the planning phase with the creation of a Work Breakdown Structure (WBS), leading to the neglect of the rest of the general best practice plans. The planning phase sets expectations for staff and stakeholders, and must include their buy in. The planning phase facilitates as well as documents these agreements.

While some projects combine plans for all aspects of project execution in a single Project Plan, Matrix Innovations will prepare individual plans for each aspect of the project as outlined under other sections of this proposal (i.e. Communications and Quality Assurance). Matrix Innovations will coordinate and set aside ample time and resources to plan properly and pay attention to the interdependencies of the various plans, making sure that when a change is made to one plan, the impacts are carried through to the other plans as needed. We understand the principles of project management and how to apply those principles to develop and execute an efficient and effective work program that will address the needs of the project and the requirements of the Town, including:

- The project "roadmap" in the form of this proposal;
- Understanding and implementing project management elements;
- Providing solid project leadership and coordination over the duration of the project;
- Assembling a professional, reliable, and dedicated Project Team;
- Implementing "project statusing" to measure the project against the plan; and
- Implementing a Quality Assurance program to ensure process/product delivery and address project variances.

4.1 Communications Plan—Planning for Success

Matrix Innovations believes clear, organized communication is central to the success of any project, especially when multiple teams, groups and organizations are involved. Communications refer to the specific behavior along with techniques used to motivate, lead, delegate, and report back to all participants working on the project. There are three clear *communication channels* that Matrix Innovations normally establishes on all of its projects—Upward, Downward, and Lateral—once the

project has started. Managing and improving these channels can dramatically increase a project's chances for success.

The key to maintaining successful communications throughout a project is to keep information flowing in the right direction. Simply put, communication affects performance. Therefore, Matrix Innovations has assembled a team of high-performance members who understand that every project needs entrenched and effective communications so that the desired results are achieved. Without well-established channels, it is likely that the project will fail. In turn, our project management team will also strive to reach these higher standards. Our project managers have excellent communications skills that include being able to effectively present the issues, listen and act on feedback, and foster harmony among team members.

Our project communications will be tailored to the specific requirements of this project and outline the roles and responsibilities of project participants in the review, approval and dissemination of information about key project issues, processes, events, documents and milestones. Methods and effictiveness of project communications will be revisited as the project progresses. Any significant change in the project will prompt a review of our communciaton strategies. We will provide both internal and external communication on a regular basis to sustain the momentum on the project and to fulfill the organizational reporting requirements—***communication is a key success factor for all projects***.

4.2 Project Leadership and Coordination

Matrix Innovations believes that accountability is paramount with project management over the life cycle of a project. Accountability cannot be delegated. There must be one person whose responsibility is to make a project work—*the Project Manager*. A project manager is accountable and responsible for integrating a variety of disciplines, accomplishing important goals, making a difference, and seeing the result of one's work.

Matrix Innovations will follow a project management process that focuses on the complete scope of work for this project. This means that we will focus clearly on the work that must be done in order to deliver on the requirements within the project scope. We understand that the art of project management, projects, and management framework are integrative and that they require focusing on goals or objectives, balancing competing demands, and leveraging feedback to ensure that goals or objectives are achieved, given the competing demands. We also recognize that project constraints—scope, time, cost—provides the framework for evaluating competing demands, integrating management processes and their interactions, and ultimately achieving project objectives and goals.

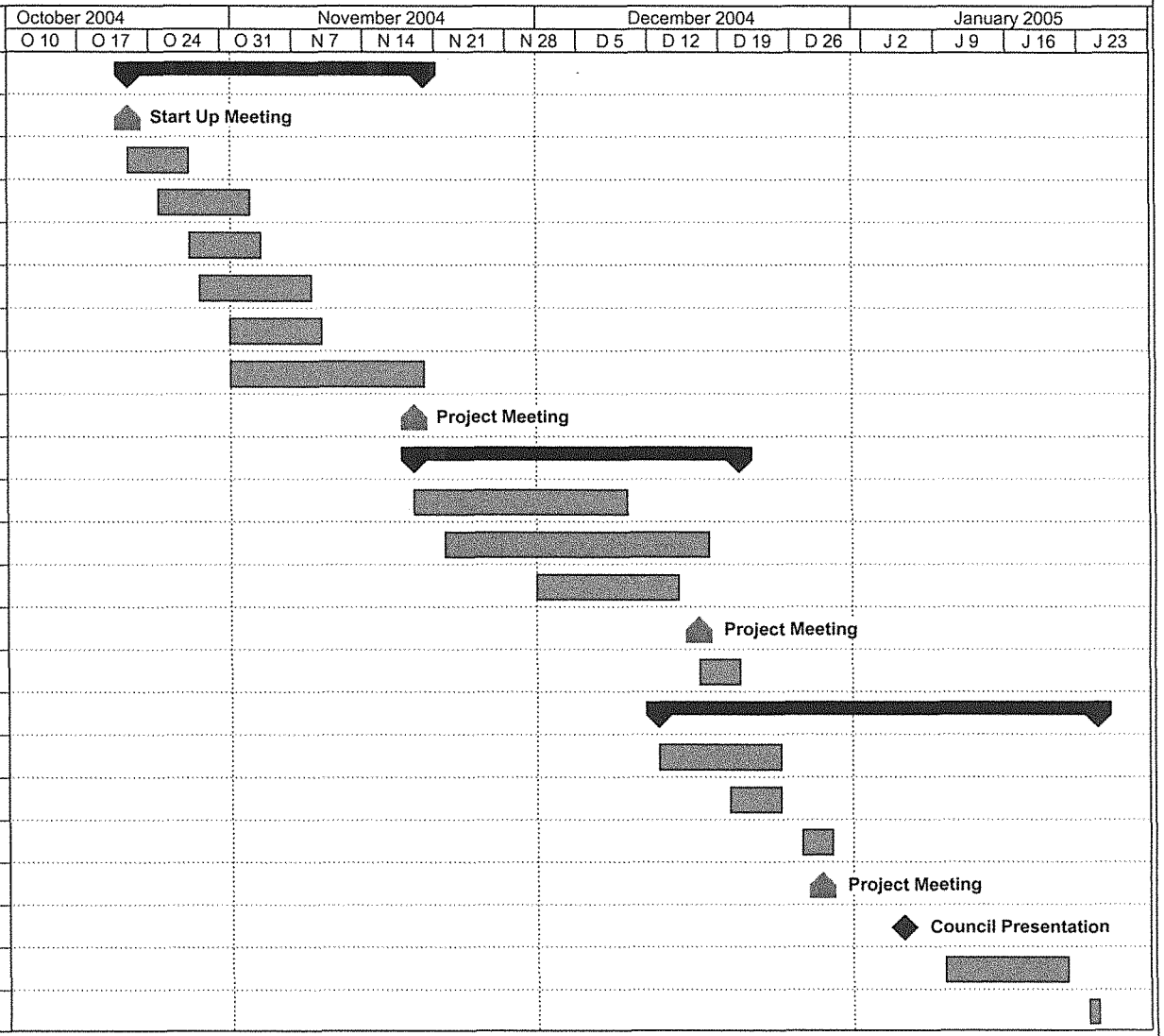
By incorporating the various project management elements and following our management framework, while still recognizing that people are, and will remain, the "most important aspect" necessary for a project's success, Matrix Innovations will provide the necessary leadership and project coordination to deal with the complexities of this project. The project manager and team members will not only be empowered to simply address the change and complexity of this project but will be able to leverage change and complexity for a competitive advantage by delivering a successful project.

4.3 Project Schedule

A preliminary Project Schedule has been prepared for this project and is shown as **Figure 4-1**. The Gantt Chart format was used to facilitate easy modification of the schedule by separating the project into tasks and milestones and the time anticipated to complete each task. The schedule will be reviewed, refined and revised at the start of the project so that target dates for specific tasks and the overall project are met. The schedule will also be reviewed at each Project Meeting to ensure that the critical path dates are met. The Tender Package can be assembled by the end of December 2004 based on previous experience with similar types of studies.

MATRIX INNOVATIONS INC.

Haist Street and Lookout Street Improvements
Town of Pelham



No.	Task Name
A	**Pre-Engineering Phase**
M-1	Startup Meeting
A-1	Data Collection
A-2	Topographic Survey (if required)
A-3	Prepare Base Plans
A-4	Geotechnical Review (Investigation if required)
A-5	Consult with Technical Agencies and Utility Companies
A-6	Preliminary Design and Drawings
M-2	Project Meeting
B	**Design Phase**
B-1	Detail Design
B-2	Contract Drawings
B-3	Utility Relocations Recommendations (if required)
M-3	Project Meeting
B-4	Submit MOE Applications
C	**Tendering Phase**
C-1	Prepare Contract Documents
C-2	Calculate Quantities and Prepare Cost Estimate
C-3	Prepare Tender Packages
M-4	Project Meeting
C-4	Council Presentation
C-5	Assistance during Tendering
C-6	Bid Recommendation

Revised Study Schedule (10-22-04)

4.4 Project Budget

The project budget is provided in a separate document to this proposal (**Envelope #2**). The budget represents an upset limit based on the project design and work program provided within this proposal.

4.5 Quality Assurance

Matrix Innovations' Plan for quality assurance embodies currently accepted practices for project control to ensure that each project is delivered appropriately in accordance with the plan set out under the Town's Terms of Reference and the agreed upon proposal for engineering services. The key element to project control is *Process Control*. Matrix Innovations consistently strives to take the initiative in planning against project deviations, to head off forces that might cause deviations, to make corrections very quickly when a deviation does occur, and finally, to redirect the project team to capitalize on a deviation when correction is a less feasible option. As the backbone to the Quality Assurance (QA) Plan, process control is a dual system designed and implemented to reduce risk. Matrix Innovations focuses on the project objectives by building the project's process control path and staying on it. We employ both "baseline controls" and "performance controls" on each project. This means that we utilize both proactive and reactive controls during the life of a project where necessary. The QA Plan is a tool that will assist Matrix Innovations to deliver the highest possible quality result within committed resources, schedule and budget. The QA Plan describes the strategy and methods the project will deploy to ensure two things:

- That the project is being managed, developed, and deployed in a sound, reasonable way; and
- That the project's deliverables are of acceptable quality before they are delivered to the client.

Matrix Innovations will develop a QA Plan in conjunction with the Town that will address both key project processes and project deliverables. We will establish clear criteria for specifically defining quality at each key checkpoint or for each deliverable and outline roles and responsibilities for the key quality assurance evaluator(s). Obtain agreement on the points in time that quality reviews will occur and how and to whom the findings will be reported to. Essentially, the QA documentation will ensure the following:

- Identification of all relevant project stakeholders;
- Identification of an independent and experienced Quality Assurance Auditor;
- Definition of the Quality Assurance Plan components;
- Development of a routine Quality Assurance report schedule and the definition of reporting formats;
- A commitment to the QA process from key players; and
- Establishment of routine QA meetings.

The QA Plan will be developed as a living document that will be updated as the project proceeds.

5.0 Project Team Qualifications and Relevant Experience

Having reviewed the Terms of Reference we have ensured that the entire Project Team is aware of the scope and undertakings of this assignment. Our initial approach to assembling the Project Team was to identify partners with technical expertise, experience, local knowledge and project management skills to ensure a successful project outcome. To that end, the Matrix Innovations' team has the necessary local experience, project management experience, and individual team participant experience to carry out the detail design for Haist Street and Lookout Street improvements. The following sections outline both our qualifications and relevant experience related to these areas.

"We recognize the need for a strong and experienced Project Team to assess the needs of the project area, provide management and technical inputs, implement a successful process, and provide positive communications."

5.1 Company Experience

As Prime Consultant, Matrix Innovations Inc. is a leading-edge multi-disciplined engineering consulting firm offering superior services and quality engineering products to a wide range of clients using a fresh approach and a simple philosophy. Our company bases its services on an improved quality of life for our clients. Our core values embrace a company-client partnership of innovation, trust, commitment, and respect to fulfill our clients' expectations—this is the Matrix vision. Matrix Innovations spans five key areas including Municipal Engineering, Transportation Planning, Traffic Engineering, Value Engineering, and Project Management. Our partners bring an overlapping and diverse range of skills to each and every project to remain flexible and attuned to our clients' requirements. Our skill set includes master transportation planning, traffic operations, road safety engineering, and municipal engineering (including preliminary and detailed design) which make up key components of this project.

Denco Engineering Ltd. was established in 1985, with a commitment to ensuring that the expectations of the clients are met or exceeded. With offices located in the Niagara Peninsula and the Ottawa Valley the primary focus is on municipal engineering, with many of the projects involving municipal infrastructure renewal, including sewers, watermains, and roadways. Denco offers a full range of services to both private and public sector clients. These services include planning, preliminary design, detailed design, contract administration and field inspection. Excellent working relationships and a thorough knowledge of the specific requirements of various government agencies enables Denco to expedite project approvals. Extensive field related experience in contract administration and inspection ensure projects are successfully managed during construction.

Suda & Maleszyk Surveying Inc. has been practicing land surveying in the Niagara Region since April of 1990. The company offers a wide range of services including boundary surveys, construction layout and topographic surveys. Suda & Maleszyk is managed by both partners Dean Brown B.Sc. and Alex Maleszyk O.L.S. Dean has been with the company since the beginning and is the Office and Projects Manager and the client's contact. Alex handles the day to day field operations together with other business and Land Surveying related duties. Together they bring many years of experience to serve client survey requirements.

Consoil Quality Control was incorporated in 1991 to service the testing and inspection needs of the Niagara Peninsula and the surrounding area. Consoil is comprised of a well qualified team of

Professional Engineers, Certified Administrative Managers, Certified Engineering Technologists, C.S.A. certified concrete technicians and C.C.L.I. certified aggregate and asphalt technicians. Consoil Quality Control specializes in the field of construction materials testing, inspection, earth sciences and environmental engineering. Consoil maintains a C.S.A. certified concrete laboratory, C.C.I.L. certified aggregate and asphalt laboratory, and geotechnical testing facilities. Consoil Quality Control specializes in the field of construction materials testing, inspection, earth sciences and environmental engineering. Consoil maintains a C.S.A. certified concrete laboratory, C.C.I.L. certified aggregate and asphalt laboratory, and geotechnical testing facilities.

Additional information in the form of company profiles are provided in **Appendix A** should the reader wish to learn more about these diverse and interesting companies.

5.2 Project Management Experience

For effective management, there has to be a single individual with responsibility for the coordination and management of each phase of the project and all Project Team inputs. The designated Project Manager will have that responsibility and will be accountable to the Town for all of the work executed by the Project Team. For this project, **Rick Hein, P.Eng., AVS**, will be the Project Manager. Rick will work closely with Town staff and with the Matrix Innovations' team to successfully complete this project and to ensure that all deliverables are provided on time and within the specified budgetary requirements. As Project Manager, Rick will direct the project team and related sub-consultants through the technical and scheduling requirements to meet the project objectives as mutually agreed upon at the project initiation meeting. All Project Team members will report directly to Rick to ensure that the project is completed promptly, efficiently and professionally.

Rick Hein has been directly involved with a broad range of projects both as a Project Manager and at the technical level. In his role as Project Manager, Rick will be involved in all facets of this project. He will coordinate with the Town's Project Manager/Coordinator to ensure that the goals and objectives for the technical aspects of the project and the project schedule are met. He will provide a single point of contact and accountability for the Town in terms of the management of this project. Rick will incorporate any input from the sub-consultants, from the technical agencies, and from the public consultation process and ensure that it is integrated into the process to achieve the results that are expected during the course of the project. It is always the goal of Matrix Innovations to ensure that superior project management is provided for each and every client.

Some relevant projects that Rick Hein has managed and areas of expertise include:

- Reconstruction and Widening of Regional Road 20 in Town of Pelham, Regional Municipality of Niagara;
- Dorchester Road Class Environmental Assessment, City of Niagara Falls;
- Casino Roads Class Environmental Assessment, City of Niagara Falls;
- Derry Road (Regional Road 7) Improvements, Regional Municipality of Halton;
- Road Safety Audit (RSA) for Bronte Road, Regional Municipality of Halton;
- Detail design of two lane highways and residential/industrial subdivisions; and
- Construction project management of roads, underground works, and bridges.

5.3 Project Team Experience

Ultimately, the quality of the work is a function of the people who do it. From our experience, the greater the involvement of senior people, the better the quality of work and the higher the probability of success. Typically in a professional firm, the greatest technical skills and experience reside with the most senior people. In view of the importance of this project and the challenges it presents, our Project Team will provide a senior inter-disciplinary team with highly relevant experience. Senior professionals have been assembled to form a Project Team that has the technical experience, expertise and insight required to deal with the complex issues to be addressed in this project. The

organization of the Project Team for this study is provided in **Figure 5-1**. This figure outlines the reporting structure of the team, including subconsultants and specialists. Resumes for each member of the Project Team are provided in **Appendix B**. **Appendix C** contains relevant past experience for team members. Additional detail for each of the Project Team members follows:

Rick Hein, P.Eng., AVS (Project Manager) - Rick is a founding partner of Matrix Innovations Inc. and has 14 years experience in project management and engineering. Rick's in-depth exposure to a wide range of projects, in several different fields of civil engineering, gives Rick the ability to fuse the technical aspects of a project with a client's specific needs to furnish complete and solid results. Rick's experience and knowledge allow him to provide a "ground up approach" toward engineering projects, encompassing planning, and design and construction methodologies. He continually strives to expand the boundaries of traditional engineering practices through application of current developments and techniques within his field. His project liaison experience with both public and private sector clients, as well as his involvement with stakeholders, has provided him with an appreciation of the need for good lines of communications at all levels.

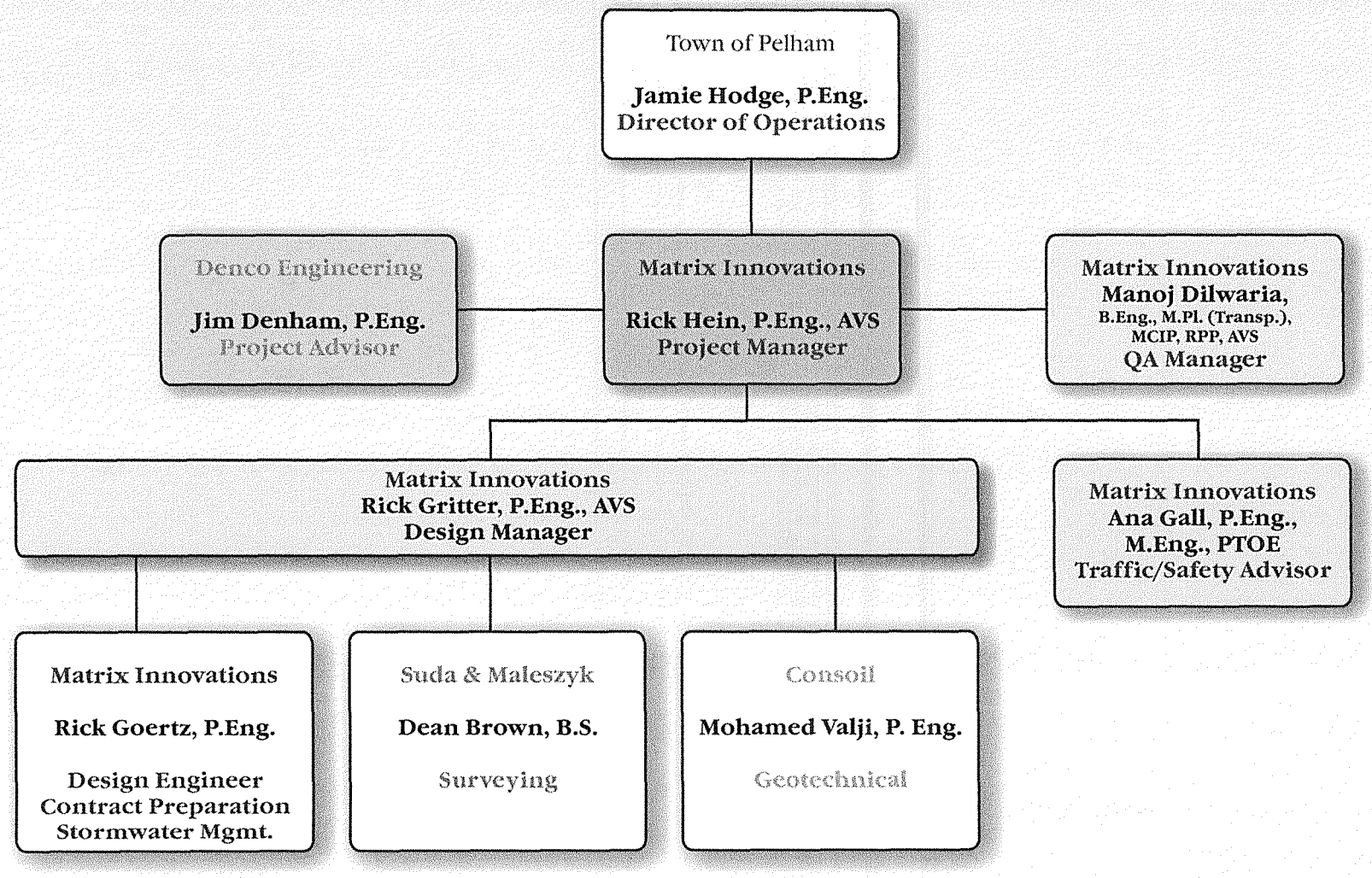
Relevant project experience ranges from Class Environmental Assessment and Preliminary Design Studies to Traffic Operations Studies and Parking Studies. Selected studies include Reconstruction and Widening of Regional Road 20 in Town of Pelham (Region of Niagara); Regional Road 50 (Glenridge Avenue) Class Environmental Assessment (Region of Niagara); Dorchester Road Class Environmental Assessment (City of Niagara Falls); Casino Roads Class Environmental Assessment (City of Niagara Falls); and Derry Road (Regional Road 7) Improvements (Region of Halton). Rick's past experience working for a large contractor and also for several municipal design firms has provided Rick with a solid understanding of the detail design process and what needs to be done to achieve the goals of a solid design that is practical and fits within desired objectives.

Rick Gritter, P.Eng., AVS (Design Manager) – Rick Gritter is a founding partner of Matrix Innovations Inc. Rick has had extensive experience in the management and design of transportation facilities. Rick has not only managed many Ministry of Transportation Ontario (MTO) and Municipal projects, but has also been directly involved with the designs as project designer/engineer. Rick brings considerable design expertise, gained over the course of the last 20 years in the design of various municipal and provincial transportation road networks, to the Project Team. Rick will complete the road geometrics and be responsible for the preliminary and detailed road design. Selected projects for Rick includes: Class Environmental Assessment for the Proposed Improvements to Derry Road from Fifth Line to Ninth Line (Region of Halton); Reconstruction of Guelph Line through Lowville (Region of Halton): Class Environmental Assessment of Steeles Avenue from Winston Churchill Boulevard to Hurontario Street (Region of Peel); Tremaine Road Reconstruction from Lower Base Line to 2 km northerly (Region of Halton), Bronte Road Preliminary Design Road Safety Audit (Region of Halton); and several intersection improvements for the Region of Peel.

Rick Goertz, P.Eng. (Design Engineer and Contract Preparation) – Rick Goertz is a founding partner of Matrix Innovations Inc. Rick's areas of expertise include preliminary and detail design, sanitary sewers, watermains and storm sewers, storm water management, subdivision and site plan development. He is well versed in Class Environmental Assessments, Preliminary and Detail Design Projects, Municipal Design, Construction and Contract Administration, and Value Engineering assignments. In his role as Design Engineer, Rick will be responsible for coordinating the field survey and geotechnical investigation, the preparation of base plans, completing the drainage design and preparation of contract drawings and documents. Relevant experience includes: Regional Road 50 (Glenridge Avenue) Class Environmental Assessment (Region of Niagara), St. Catharines; Dorchester Road Class Environmental Assessment (City of Niagara Falls); Regional Road 27 Slope Stabilization and Road Reconstruction (Region of Niagara); Shriner's Creek Storm Sewer Crossing under QEW, Niagara Falls; Fairview-Louth Church Redevelopment, St. Catharines; and CAA Commercial Development, St. Catharines.

Project Organizational Chart - Figure 5-1

Haist Street and Lookout Street Improvements
Town of Pelham



MATRIX INNOVATIONS INC.

Ana Gall, P.Eng., M.Eng., PTOE (Traffic/Safety Advisor) - Ana Gall is a founding partner of Matrix Innovations Inc. and has over 16 years of traffic engineering experience. Ana brings considerable experience in traffic operations and road safety engineering to the Project Team. Her professional assignments include transportation needs assessments, safety evaluations, collision analysis, collision investigation and reconstruction, and site/area traffic impact assessments. Ana has completed a number of traffic impact assessments in the Town of Pelham and has reviewed previous traffic analyses for the North West Fonthill Secondary Plan Area. Ana will be involved in establishing and assessing current traffic and safety conditions, future traffic demands for the purpose of design and will complete a safety assessment of the preferred design. Ana has completed a number of operational and safety reviews along Niagara Roads, recently completed a Preliminary Design Road Safety Audit of Bronte Road for Halton Region and is currently working on the Preliminary Design Road Safety Audit for Trafalgar Road (Halton Region). Her most recent assignments include Regional Road 50 (Niagara Street) Operations and Safety Review; Regional Road 42 (Ontario Street) Operations and Safety Review; Regional Road 81 (York Road) Area Traffic Study; Mountain Street (Grimsby) Safety Review and safety audits along Bronte Road and Tremaine Road for Halton Region.

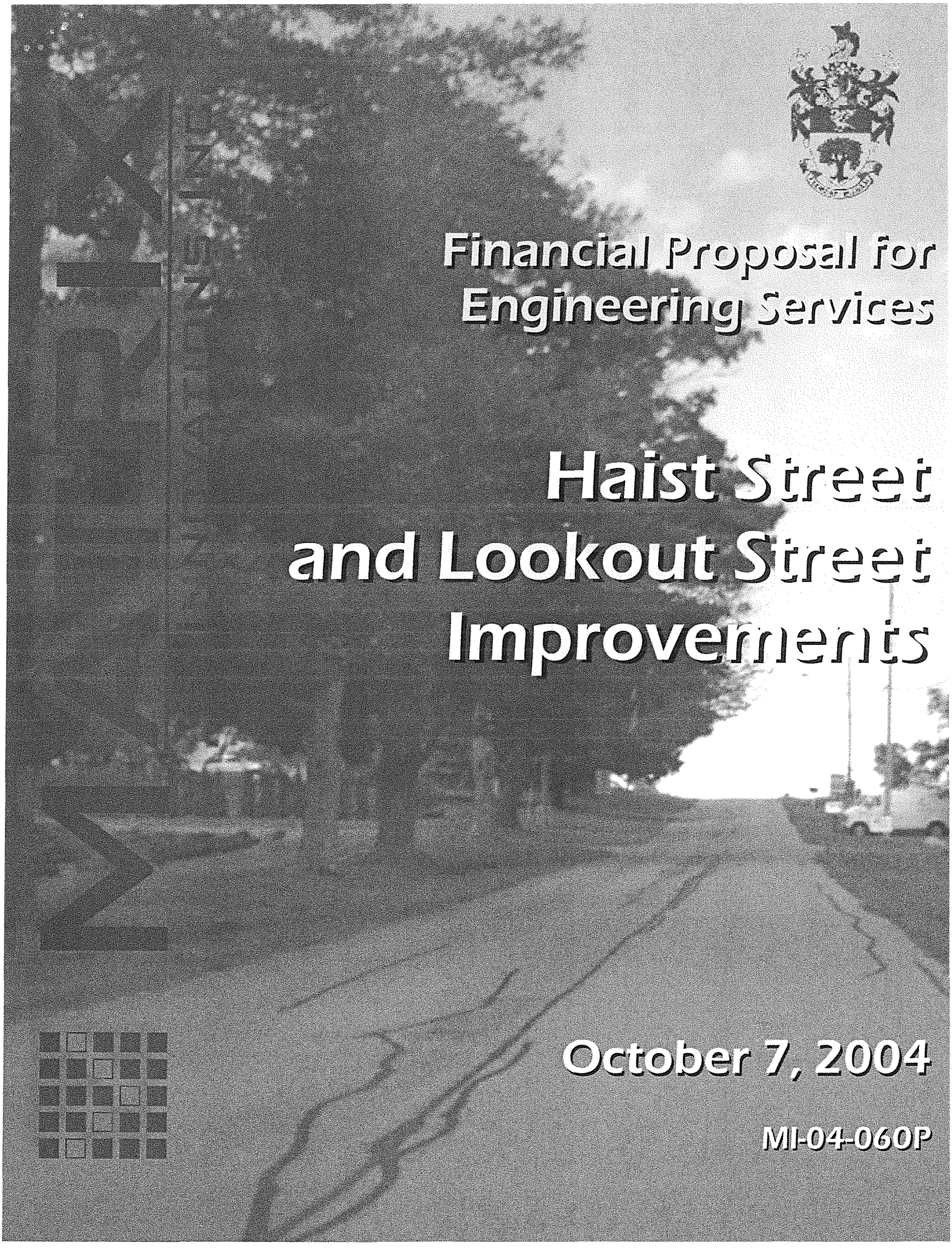
Manoj Dilwaria, B.Eng., M.Pl. (Transp.), MCIP, RPP, AVS (QA Manager) - is a founding partner of Matrix Innovations Inc. with over 15 years of experience in project management, transportation planning and engineering gained in Canada and internationally. He combines both international and local experience to provide a unique management style that stresses going beyond the everyday solutions to a problem. As an independent entity, Manoj will help develop and ensure the quality control throughout this study. Relevant project experience for Manoj includes a number of Environmental Assessment Studies for transportation projects and numerous traffic operations studies. Selected relevant experience includes Reconstruction and Widening of Regional Road 20 in Town of Pelham (Niagara Region); Regional Road 50 - Glenridge Avenue Class Environmental Assessment (Niagara Region); Regional Road 42 (Ontario Street) Operations and Safety Review (Niagara Region); Dorchester Road Class Environmental Assessment (City of Niagara Falls); and Casino Roads Class Environmental Assessment (City of Niagara Falls).

Jim Denham, P.Eng. – Denco Engineering - (Project Advisor) – Jim Denham founded Denco Engineering 20 years ago and has provided municipal engineering services and contract administration throughout Niagara Region. Jim will use his extensive experience to bear as he reviews the project to ensure technical accuracy and constructability. Along with his commitment to technical accuracy, Jim strives for constant and never ending improvement in the quality of service. Selected projects include: Niagara Boulevard & Queen Street Municipal Services Improvements (Niagara-on-the-Lake); Regent Street and Victoria Street Municipal Services Improvements (Niagara-on-the-Lake); Chestnut Street Municipal Services Improvements (St. Catharines); Dorchester Street, King Street & Regent Street Sanitary Sewer Replacement (Niagara-on-the-Lake); Ball Avenue Municipal Services Improvements (St. Catharines); Pelham Road Municipal Services Improvements (St. Catharines); Front Street, Nelles Street & John Street Sanitary Sewer Replacement (Niagara-on-the-Lake); Pearl Ann/Tremont Municipal Services Improvements (St. Catharines); John Street Municipal Services Improvements (St. Catharines); and Wellington, Regent, Cynthia, York & St. David's Street Sanitary Sewer Replacement (Thorold).

Dean Brown B.S. – Suda & Maleszyk Surveying Inc., Ontario Land Surveyors (Field Survey) - Dean Brown will conduct the field survey work for this project offering a wide range of services including boundary surveys, construction layout and Topographic surveys. Dean has had a solid background in Regional and City survey work over the past 15 years. Relevant experience includes: Glenridge Avenue Class EA, Region of Niagara; Reconstruction and Widening of Regional Road 20, Town of Pelham; Regional Road 27, Reconstruction and Slope Stabilization; and numerous residential, commercial and institutional developments.

Mohamed Valji, P. Eng. – Consoil Quality Control and Construction Management Inc. (Geotechnical) – Mohamed Valji is a director at Consoil Quality Control and has 19 years of

experience in construction material testing and inspection. Mohamed has significant experience in developing and managing construction material testing and inspection programs for various projects in Niagara including projects with various local municipalities. He has also established and executed quality control/assurance programs for numerous Ministry of Transportation projects with Niagara Region.



Financial Proposal for Engineering Services

Haist Street and Lookout Street Improvements

October 7, 2004

MI-04-060P

FEE SCHEDULE (Financial Proposal for Engineering Services)
Haist Street and Lookout Street Improvements - Town of Pelham

MATRIX INNOVATIONS INC.

No.	Name / Position / Billing Rate	MATRIX INNOVATIONS INC. PROJECT TEAM														TOTAL HOURS		SUB-CONSULTANTS				TOTAL EXPENSES		GRAND TOTAL	
		Rick Hein Project Manager 110		Rick Gritter Design 110		Rick Goertz Contract Prep 100		Ana Gall Traffic 100		CAD Tech. and Support Staff 60		Manoj Dilwaria QA Manager 100		Jim Denham Advisor 120				Suda & Maleszyk Survey 90		Consoil Geotech 100		SUBS	MATRIX DISB.		
		Hrs.	$	Hrs.	$	Hrs.	$	Hrs.	$	Hrs.	$	Hrs.	$	Hrs.	$	Hrs.	$	Hrs.	$	Hrs.	$	$	$	Hrs.	$
A	**Pre-Engineering Phase**																								
M-1	Startup Meeting	2	220	2	220	2	200									6	640						50	6	690
A-1	Data Collection	2	220	8	880	8	800			8	480					26	2,380							26	2,380
A-2	Topographic Survey					2	200			4	240					6	440		9,500			9,500		6	9,940
A-3	Geotechnical Review					2	200									2	200				4,000	4,000		2	4,200
A-4	Prepare Base Plans					2	200			24	1,440					26	1,640						100	26	1,740
A-5	Consult with Agencies and Utility Companies	2	220	4	440	8	800	4	400	8	480					26	2,340							26	2,340
A-6	Preliminary Design and Drawings	1	110	4	440	4	400	2	200	40	2,400	2	200	2	240	55	3,990						50	55	4,040
M-2	Project Meeting	2	220	2	220											4	440						100	4	540
	Sub-total	**9**	**990**	**20**	**2,200**	**28**	**2,800**	**6**	**600**	**84**	**5,040**	**2**	**200**	**2**	**240**	**151**	**12,070**		**9,500**		**4,000**	**13,500**	**300**	**151**	**25,870**
B	**Design Phase**																								
B-1	Detail Design	1	110	40	4,400									4	480	45	4,990							45	4,990
B-2	Contract Drawings	1	110	4	440	8	800	4	400	80	4,800	4	400			101	6,950						200	101	7,150
B-3	Utility Relocations			4	440	4	400			4	240					12	1,080							12	1,080
M-3	Project Meeting	2	220			2	200									4	420						50	4	470
B-4	Submit MOE Applications					8	800			4	240					12	1,040						100	12	1,140
	Sub-total	**4**	**440**	**48**	**5,280**	**22**	**2,200**	**4**	**400**	**88**	**5,280**	**4**	**400**	**4**	**480**	**174**	**14,480**						**350**	**174**	**14,830**
C	**Tendering Phase**																								
C-1	Prepare Contract Documents			8	880	8	800							2	240	18	1,920						100	18	2,020
C-2	Calculate Quantities and Prepare Cost Estimate			16	1,760	16	1,600									32	3,360							32	3,360
C-3	Prepare Tender Packages	2	220	8	880	8	800			16	960	4	400			38	3,260						300	38	3,560
M-4	Project Meeting	2	220	2	220	2	200									6	640						100	6	740
C-4	Council Presentation	2	220													2	220						50	2	270
C-5	Assistance during Tendering	1	110	4	440	4	400							4	480	13	1,430							13	1,430
C-6	Bid Recommendation	1	110	2	220											3	330							3	330
	Sub-total	**8**	**880**	**40**	**4,400**	**38**	**3,800**			**16**	**960**	**4**	**400**	**6**	**720**	**112**	**11,160**						**550**	**112**	**11,710**
	TOTAL HOURS	**21**	**2,310**	**108**	**11,880**	**88**	**8,800**	**10**	**1,000**	**188**	**11,280**	**10**	**1,000**	**12**	**1,440**	**437**	**37,710**		**9,500**		**4,000**	**13,500**	**1,200**	**437**	**$52,410**
																							GST		**$3,669**
																							GRAND TOTAL (INCL GST)		**$56,079**

FIGURE F-3