SUBJECT: Committee of the Whole August 9, 2006 Outstanding Business Item H(i) Request to Hamilton Future Fund for Municipal Wireless (Wi-Fi) Project Funding (FCS06102) (City Wide)

RECOMMENDATION:

That report FCS06102, Committee of the Whole Outstanding Business Item H(i) Request to Hamilton Future Fund for Municipal Wireless (Wi-Fi) Project Funding, be received for information.

EXECUTIVE SUMMARY:

The City of Hamilton and FibreWired filed a joint fund application attached as Appendix A, to the Future Fund for $501,102.98 to develop a Wireless infrastructure in the downtown area (bordered by Barton Street, Main Street, Victoria Avenue, and Queen Street) as well as 5 ‘hotspots’ in the outlying communities. The Future Fund application requested funding for the initial phase of a multiphase Wireless project.

At the meeting of August 9, 2006 Committee of the Whole referred Delegation Requests Item H(i) of Committee of the Whole Report 06-018 (Hamilton Future Fund Report - City of Hamilton – Wireless Infrastructure), back to staff to prepare a presentation providing
additional background information on the Municipal Wireless project and to report back on alternate funding sources.

**BACKGROUND:**

The City of Hamilton is a leader in terms of its telecommunications capabilities. Its public sector fibre optics network is unmatched by any Canadian and very few American municipalities. FibreWired, a subsidiary of Hamilton Utilities Corporation, and a partner in this funding request, was the first municipal agency in Ontario to create a citywide fibre network. FibreWired has continued to advance the telecommunications infrastructure within the City of Hamilton to the extent that it is now one of the most ubiquitous metropolitan fibre optic networks within Canada. The initial early adopters of these cost effective services, included what is known as the “MUSH” sector (Municipality, University, Schools and Hospitals). FibreWired’s business model concurrently grew in the private sector and proved to be equally successful in providing lower cost high speed network access.

As an organization, the City of Hamilton has made extensive use of FibreWired’s optical infrastructure and has facilitated the delivery of electronic services to a broader group of staff and extended on-line services to the public via the City’s web site. Today, the FibreWired network infrastructure provides connectivity to over 4000 city staff at approximately 130 city locations.

On March 7th, 2005, FibreWired initiated an inaugural meeting to discuss building a wireless (Municipal Wireless) network. Participants in these sessions included representatives from Hamilton Emergency Services (ambulance and fire), Police Services, Catholic and Wentworth District School Boards, McMaster University and Mohawk College, The Chamber of Commerce, the City’s Economic Development Division, Hamilton Port Authority, the City’s IT Services Division, the City’s Transit Division, DARTS, and the Hamilton Public Library. This meeting and subsequent meetings served as a forum to define the needs of the individual stakeholders as well as an analysis of the potential applications for this infrastructure.

This Municipal Wireless working group was strongly supportive of a ‘proof on concept' to provide answers to a number of questions. “Phase 1” of this project, would allow participants to experience the use of a wireless technology and define expectations in regards to reliability, mobility, and application response time. It would identify potential efficiencies to be gained from extending applications to mobile workforces. First responders would have the ability to prove whether real-time access to information could decrease their response times and enhance public safety.

The working group subsequently developed a list of some of the potential uses of a Municipal wireless network. This list included functions such as:

- Automated Vehicle Location
- Equipment monitoring, loss control, real time asset management
- Parking management
• Inspections – Building, Public Health, fixed premises
• Public Health Bus network access
• West Nile virus monitoring
• Surveillance cameras
• Real time routing for buses
• Vehicle dispatch
• Campus wide internet access
• Information transfer from ambulance to base hospital
• Streaming video – Police Services
• Extension of the City’s internal IP telephony phone system

The Municipal Wireless working group continues to meet to discuss business needs and possible business models as well as to determine how wireless would:

• Enhance the competitiveness of local businesses
• Enhance the health and safety of our citizens
• Enable a more efficient and effective delivery of government services
• Assist citizens to enhance their lives through education and personal development

In June of 2005, through the efforts and leadership of Councilor Whitehead, the Mayor’s Wireless City Summit was held to raise the profile of wireless network development activity in the City of Hamilton. This was an event that brought information technology innovators together to begin mapping the way to a wireless community. At this time it was recognized that other municipalities were beginning to cut into one of Hamilton’s business advantages – its broadband connectivity. Municipalities in Canada such as Toronto, Waterloo and Fredericton as well as American cities such as Philadelphia, San Francisco and Albuquerque are creating Municipal wireless networks to entice businesses and people into seeing their cities as exciting, interesting places to live and do business. The Mayor’s Summit drew strong support for the initiation of a wireless project. Subsequent meetings were held with community stakeholders to discuss wireless opportunities.

The City of Hamilton and FibreWired filed a joint fund application attached as Appendix A, to the Future Fund, for $501,102.98, to develop “Phase 1” of a Wireless infrastructure to cover an area of the downtown core as well as 5 ‘hotspots’ in the outlying communities.

The Future Fund recommended the approval of:

a) $100,000 as a grant from the Future Fund
b) up to $400,000 be approved as a loan for four years with repayments to start no later than on the first draw of the money with a repayment schedule to be approved by the board.

This recommendation was forwarded to the August 9, 2006 Committee of the Whole meeting for approval. During committee discussions a motion to amend the recommendation was presented:

Revise amount in (a) from $100,000 to $400,000 grant
Revise amount in (b) from $400,000 to $100,000 loan.

After further deliberations, the amended motion was referred back to staff with the following direction:

- staff to make a presentation to the Committee of the Whole in September 2006
- Staff to report back on alternate funding sources.

The proposed “Phase 1” wireless initiative specifically addresses an inaugural wireless infrastructure deployment as a proving ground for wireless access within the downtown core and in the five outlying communities. The intent is to avoid the use of the term “pilot” for this project but rather refer to it as “Phase 1”. The rationale being that this will not be a temporary project but rather the first step in delivering ubiquitous wireless access to the City of Hamilton communities and businesses.

The provision of wireless access would provide opportunities for City staff and its partners to test remote access to existing applications from a fixed hotspot location or from within a City vehicle. It would also enable members of the public and local businesses to access the internet from open areas when a wired connection is not available. As a result, fixed wireless services will improve communications options and speed of delivery for small and medium businesses in the community.

“Phase 1” is expected to last one year and will deliver wireless network services without user access fees. During this phase, and prior to proceeding with any subsequent phases, a business plan will be developed that defines a sustainable business model including subscription fee structures and other anticipated revenue sources. FibreWired will be responsible for leading and managing “Phase 1” of the implementation. At the appropriate times, input and assistance will be sought from the City and other key stakeholders.

**ANALYSIS/RATIONALE:**

Municipal Wireless is seen as a way to bring the internet to large areas of the community, spur economic development and innovation, improve public services, and reach previously underserved populations.

Some of the benefits of a wireless infrastructure are:

- **Economic Development** - wireless broadband networks provide cities with a strong technology infrastructure that can help attract and retain businesses and remain competitive for the future. This strengthens the tax base and helps sustain quality of life.

- **Cost Savings** - municipal entities and departments may reduce costs through service delivery efficiencies.
• **Public Works and Safety** - ubiquitous connectivity can be an important part of a municipal communications infrastructure, enabling city inspectors, utility workers, police, fire, and other municipal field personnel to communicate effectively from anywhere.

• **Bridging the Digital Divide** - broadening the digital wireless technology enables municipalities to maximize the impact to the overall community by ensuring that all residents can have access to affordable high speed internet.

Fredericton, New Brunswick, currently offers its 80,000 citizens free Wi-Fi connectivity throughout most of the city, using overflow bandwidth from the city’s co-op Internet service provider. Now citizens and visitors enjoy enhanced quality life - residents can work outdoors on laptops; tourists can check local entertainment, dining, and shopping on PDA’s; students at the two local universities can find a signal no matter where they want to study, work or play; and city workers can share information more easily.

A wireless infrastructure would provide the necessary “real-world” environment to cultivate research such as the McMaster University’s RFID Applications Lab. An RFID (Radio Frequency Identification) tag is a small object that can be attached to or incorporated into an object, at extremely low cost, allowing it to transmit information over a wireless network. This could assist organizations in better managing their mobile assets. Some municipal uses of RFID include monitoring green cart usage, tracking transfer station vehicles, and general equipment monitoring.

With these intents in mind, the funding for “Phase 1” would build a usable, permanent, ‘proof of concept’ wireless infrastructure in the downtown area bordered by Barton Street, Main Street, Victoria Avenue, and Queen Street. “Phase 1” would also include 5 ‘hotspots’, one in each of the outlying communities. (A wireless ‘hotspot’ is a fixed perimeter based area that, when within range, enables users with a wireless-enabled laptop computer or PDA to access the internet, without the need for any networking cables.) The exact location of the ‘hotspots’ is yet to be determined and will be based on important factors such as technology limitations, building location and proximity, equipment costs, and public accessibility.

The proposed network will allow mobile access for both the public and the private sector in Hamilton. Network services, such as Internet Access will be available to individuals and businesses.

The cost for “Phase 1” is $501,102.98 exclusive of taxes and is broken down as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Expenditures: Wireless Infrastructure</td>
<td>$355,201.72</td>
</tr>
<tr>
<td>Capital Expenditures: Stakeholder Equipment</td>
<td>$40,868.26</td>
</tr>
<tr>
<td>Operating Expenses – One Time: Wireless Infrastructure</td>
<td>$19,725.00</td>
</tr>
<tr>
<td>Operating Expenses – Recurring: Wireless Infrastructure</td>
<td>$85,308.00</td>
</tr>
<tr>
<td>Phase 1 Total</td>
<td>$501,102.98</td>
</tr>
</tbody>
</table>
Staff have explored alternative funding sources and have determined that $400,000 (plus GST) can be funded from the Tax Stabilization Reserve. The remaining $100,000 would be funded as a grant from the Hamilton Future Fund.

In “Phase 1”, internet access will be provided to the public free of charge. All stakeholders will have the opportunity to determine the value that will be received from a wireless infrastructure.

Beyond “Phase 1”, access to the wireless infrastructure could be fee based which would enhance the sustainability of and leverage the wireless technology. Ongoing maintenance could be funded by all stakeholders using the wireless infrastructure. Service levels and access capabilities of subscribers could be managed by site and content. For example, a subscriber may be able to access the myHamilton.ca portal without a fee. Further, no subscription would be required for access to other predetermined sites and content. Other levels of service could be introduced, such as unconstrained (unlimited) Internet Access. These enhanced levels of service could require a pre-defined subscription rate. The subscription could be a one-time cost or usage based.

A number of business models are available and could be implemented including the wholesale commercial model. This model would allow the sale of a portion of the bandwidth to an Internet Service Provider enabling them to provide wireless access for a fee. A successful wholesale commercial model would enhance the sustainability of the wireless infrastructure and provide ever-present access to municipal e-government services.

The concept of “location-based” advertising is available and would connect the user to specific web pages based on their location. This is an effective way to advertise business as well as community services and events.

The proposed Municipal wireless network will be seamlessly integrated with, and will take advantage of, the existing in-ground FibreWired network to greatly reduce the initial and ongoing operational costs of the wireless network. This will also provide participating stakeholders with immediate access for their mobile workforces.

Wi-Fi, or Wireless Fidelity, is being proposed for “Phase 1”. Wi-Fi technology is used generically to refer to WLAN (IEEE 802.11) technology providing short-range, high data rate connections between mobile data devices and access points connected to a wired network. Wi-Fi is able to connect to a wide variety of end-use devices: laptops, PDA’s, security cameras, traffic management systems, meter-readers, location sensors, cell phones and other monitoring equipment. Similar to implementations in other cities, Wi-Fi is the technology of choice for this project.
The attractiveness of Wi-Fi technology as the choice for “Phase 1” is that it is priced for mass-market sales. This lowers the financial risk and also means that end-user equipment is both reasonably priced and widely available. This will assist in driving rapid adoption by the public.

Newer technologies when available, such as WiMax, will be totally complementary to Wi-Fi, easily integrated and will add to the value of Municipal Wireless networks.

The City of Hamilton will own and have care and control of the asset through the guidance of a Steering Committee that will be established upon receiving approval to proceed. As stated in the Hamilton Future Fund application, the Steering Committee would perform the following:

- Approve timelines and monitor implementation of “Phase 1”
- Communicate the initiative to other possible stakeholders within the community
- Establish appropriate Working Committees within 60 days of the first meeting of the Committee
- Assess and report on the success of the “Phase 1” implementation and apply knowledge and lessons learned to the development of a comprehensive business plan
- Define the required service levels of FibreWired in the management and operation of the wireless network for the Stakeholder groups
- Establish the technology roadmap and business plan that provides a strategy to extend this infrastructure beyond “Phase 1” and provides a financial model that will re-invest and sustain in the wireless infrastructure beyond the estimated five-year life-cycle of the technology
- To propose and establish a governance structure to oversee execution of the business plan and strategy.

At the direction of the Steering Committee, FibreWired will manage the implementation and will operate and maintain the entire network, on behalf of the stakeholders, for a period of one-year. (Services beyond year one will be delivered at the then prevailing monthly rates.) As part of these services, FibreWired will provide the necessary connectivity from the wireless network to the optical network, internet access for the general public including a proof of concept for ‘location-based’ advertising and ‘walled garden’ services, wireless network monitoring, sparing and maintenance. In addition, FibreWired will work with the stakeholders to develop a secure wireless access model as well as voice, data and video proof of concept pilots and will ensure the development of a business plan.

To gauge the success of the implementation, a formal evaluation is expected at the conclusion of “Phase 1”. Evaluation criteria will include items such as security, system reliability, bandwidth availability, usage levels, equipment resilience, customer satisfaction, business efficiencies and/or customer service improvements. “Phase 1” would deliver valuable information that could form the basis for a wireless deployment and service strategy on a larger scale throughout the City. It is also at
that time when Council will have the option of determining how the service will be delivered, either through FibreWired or by issuing a request for proposal.

In summary, wireless networks are becoming a mainstream reality for businesses and consumers. Forward thinking cities are acting to deploy city-wide wireless networks that will support the public and private sector and residents living in their communities. Phased deployments are the norm as implementations can be carefully planned with consideration to all facets of sustainability and growth. Essentially, wireless solutions can deliver significant benefits to all sectors of a community that will transform the way people live, work and play.

**ALTERNATIVES FOR CONSIDERATION:**

The Future Fund has recommended the approval of:

a) $100,000 as a grant from the Future Fund
b) up to $400,000 be approved as a loan for four years with repayments to start no later than on the first draw of the money with a repayment schedule to be approved by the board.

At the direction of Council, staff have explored alternative funding sources and have determined that $400,000 (plus GST) can be funded from the City’s Tax Stabilization Reserve. The remaining $100,000 would be funded as a grant from the Hamilton Future Fund.

**FINANCIAL/STAFFING/LEGAL IMPLICATIONS:**

**Financial**

The cost for “Phase 1” implementation including one-year of maintenance is $501,102.98 (excluding taxes).

The cost to maintain the proposed infrastructure after the first year will be approximately $160,000 annually.

**Staffing**

Staff from IT, Legal, and Finance would be involved to deal with project administration, technical issues, budget and finance related activities, and the execution of legal agreements and policies associated with the implementation.

City departments who choose to make use of the wireless network will require staff to coordinate and assist with the implementation of their respective wireless solution.
Legal

Policies and agreements to govern usage of the network as well as support and management of the infrastructure, would be required.

POLICIES AFFECTING PROPOSAL:

No existing policies are impacted by the recommendations in this report.

RELEVANT CONSULTATION:

A number of community stakeholders and City departments have participated in discussions on the concept of a wireless network and how it could be used to enhance services in their respective areas. These consultations included Police Services, Catholic and Wentworth District School Boards, McMaster University and Mohawk College, The Chamber of Commerce, FibreWired, the City’s Economic Development Division, Hamilton Port Authority, Hamilton Emergency Services (ambulance and fire), the City’s IT and Financial Services Division, the City’s Transit Division, DARTS, and the Hamilton Public Library.

CITY STRATEGIC COMMITMENT:

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

Community Well-Being is enhanced. ☑ Yes ☐ No
The proposed “Phase 1” wireless infrastructure provides the opportunity for government, using mobile technologies, to enhance service levels for the betterment of the community. A broader city-wide wireless network could bridge the digital divide through the provision of easily accessible high-speed internet access.

Environmental Well-Being is enhanced. ☑ Yes ☐ No
The wireless network will provide the ability for mobile workforces to eliminate environmental costs associated with driving to and from dispatch locations to both receive and submit daily schedules, email, assignments and reports.

Economic Well-Being is enhanced. ☑ Yes ☐ No
Companies seek out cities that make it easy to do business. Cities with advanced networks can promote themselves to prospective businesses by providing on-line information about the advantages of doing business in the city. In addition to simply publishing information on-line, governments can capitalize on their wireless networks to provide more efficient services. With more convenient access to the internet, governments can capitalize on new and existing on-line services such as on-line permits and one-stop licensing. The proposed downtown wireless network becomes a natural extension to the vision for the myhamilton.ca portal.
In addition to offering the potential to increase the operating efficiencies of both private and public sector mobile workforces, the wireless network has the potential to enhance current research efforts as well as offer excess capacity.

Does the option you are recommending create value across all three bottom lines?  
☐ Yes  ☐ No

Do the options you are recommending make Hamilton a City of choice for high performance public servants?  
☐ Yes  ☐ No

A wireless network will enable City staff to stay connected to the City’s computer systems while away from the office. This enables staff to deliver services in a timelier and effective manner resulting in improved job satisfaction. City of Hamilton staff will have an opportunity to participate in “Phase 1” of the project to test various applications on the wireless network.
Fund Application
Please prepare your fund application using the following criteria guidelines and provide all information to the questions on page 2 of this application.

Applications submitted without complete information and required attachments will be an automatic decline.

Fund Application Guiding Principles
Although the fund application is reviewed by the Future Fund Board of Governors and recommendations are submitted to City Council for consideration, the final decision for any approvals rests with City Council.

Applications to the Hamilton Future Fund will be evaluated by the Board of Governors based on the Mission Statement and Guiding Principles established by the Board (appendix A attached). Only applicants located in and requesting funding for project initiatives in the city of Hamilton, that meet this criteria will be considered.

Hamilton is defined as the amalgamated communities of Ancaster, Dundas, Flamborough, Glanbrook, Hamilton and Stoney Creek.

To that end, HFF Board of Governors will place a priority on granting initiatives where:

- applicant is a not-for-profit, registered charitable organization or leveraged partnership
- funds will be used to create legacy projects/initiatives for present and future Hamiltonians
- project provides a permanent benefit, long-term impact and return on investment
- clear long-term impact for economic growth and/or improved quality of life
- process for timely evaluation and indicators in place for specific measurable results
- HFF will not consider community organizations funded within the previous 3 years.
- Sunset clause - funds will be rescinded if project delayed two years from projected start date
- Ensure equality access to all community organizations requesting funding

Application Deadlines for submissions:
May 1st of each calendar year - submission deadline
June 1st of each calendar year – delegations received before the board
120 days timeframe approval/declines (pending final approval by Hamilton City Council)

Next Steps: Please complete the questions on page 2 and submit to: Hamilton Future Fund, c/o Mary Gallagher, Co-ordinator of Council, Clerk’s Office, 71 Main Street West, Hamilton, Ontario, L8P 4Y5, by fax at (905) 546-2095, by e-mail at mgallagh@hamilton.ca.
Hamilton Future Fund Application

Please prepare your application to HFF by providing the following Information. Applications submitted without complete information and required attachments will be an automatic decline.

1. Provide detailed information about your community organization including:
   - contact person, name, address, phone, email, other locations
   - registered charitable or business number
   - other partners included in this project.

2. Provide attachments to this application:
   - current budget and financial statements (prepared by a certified accountant)
   - registered or incorporated business documentation
   - list of Directors and contact information

Partners

FibreWired Network (Hamilton Hydro Services Inc.)
Jay McMaster
Acting President
77 James Street North, Unit 306.
Hamilton, Ontario.
L8R 2K3
Email: jmcmaster@fibrewired.com
Phone: (905) 317-4777

Created in 1998, FibreWired began providing wide area communications services to critical clients in Hamilton such as the health care sector, municipal government and emergency services. We offer a variety of local high-speed data telecommunications services to businesses and organizations across the City of Hamilton.

FibreWired Hamilton is a wholly owned subsidiary of Hamilton Utilities Corporation

City of Hamilton
Joe Rinaldo
General Manager, Finance and Corporate Services
71 Main St. W.
Hamilton, Ont.
L8P 4Y5
Email: jrinaldo@hamilton.ca
Phone: (905)546-2424 x 6150
3. **Amount of funds requested - include;**
   - total itemized cost of project
   - total operating and capital expenses

### 3.1 Financial Summary

The financial funding for this project includes both the initial capital requirements as well as first year operating expenses for this project. A summary of the funding request is as follows:

- **Total Capital Expenditures:** $396,069.98
- **Total First Year Operating Expense:** $105,033.00
- **Total Funding Request:** $501,102.98

The capital costs of this initiative have been detailed in two sections; Wireless Infrastructure and Stakeholder Equipment.

### 3.2 Detailed Capital Expenditures: Wireless Infrastructure

The following table details the capital costs for FibreWired Network (Hamilton Hydro Services Inc.) to supply, design, install and commission the wireless infrastructure within the downtown area and to provide a wireless hotspot in each of the 5 outlying communities.

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR-LAP1510KITP-A</td>
<td>Cisco Aironet 1500 Series Pole-Top Kit, 2.4 Omni 5 GHz</td>
<td>50</td>
<td>$187,240.00</td>
</tr>
<tr>
<td>AIR-LAP1510KITRS-A</td>
<td>Cisco Aironet 1500 Series Roof-Top Kit, 2.4 Omni 5 GHz</td>
<td>9</td>
<td>$35,661.78</td>
</tr>
<tr>
<td></td>
<td><strong>SUBTOTAL:</strong></td>
<td></td>
<td><strong>$222,901.78</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR-LAP1510KITP-A</td>
<td>Cisco Aironet 1500 Series Pole-Top Kit, 2.4 Omni 5 GHz</td>
<td>5</td>
<td>$18,724.00</td>
</tr>
<tr>
<td>AIR-LAP1510KITRS-A</td>
<td>Cisco Aironet 1500 Series Roof-Top Kit, 2.4 Omni 5GHz</td>
<td>5</td>
<td>$19,812.10</td>
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<tr>
<td></td>
<td><strong>SUBTOTAL:</strong></td>
<td></td>
<td><strong>$38,536.10</strong></td>
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<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR-WLC4404-100-K9</td>
<td>4400 Series WLAN Controller for up to 100 Lightweight APs</td>
<td>1</td>
<td>$28,206.28</td>
</tr>
<tr>
<td>AIR-PWR-CORD-NA</td>
<td>AIR Line Cord North America</td>
<td>1</td>
<td>$1,205.28</td>
</tr>
<tr>
<td>AIR-PWR-4400-AC</td>
<td>4400 Series WLAN Controller AC Power Supply (redundant)</td>
<td>1</td>
<td>$1,205.28</td>
</tr>
<tr>
<td>AIR-PWR-CORD-NA</td>
<td>AIR Line Cord North America</td>
<td>1</td>
<td>$1,205.28</td>
</tr>
<tr>
<td>AIR-WCS-LL-1.0-K9</td>
<td>Cisco WCS w/ Location v3.0 up to 50 Lightweight APs, Linux</td>
<td>1</td>
<td>$4,832.28</td>
</tr>
<tr>
<td></td>
<td><strong>SUBTOTAL:</strong></td>
<td></td>
<td><strong>$34,243.84</strong></td>
</tr>
</tbody>
</table>

**TOTAL ALL MATERIAL:** $295,681.72

**Labour to Design, Install, Configure and Test:** $59,520.00

**TOTAL ALL THE ABOVE:** $355,201.72
3.3 Detailed Capital Expenditures: Stakeholder Equipment

The following equipment will be available to the Stakeholder group during “Phase 1”. This will facilitate a proof of concepts to create greater efficiencies and render better service delivery within the public sector. The budget provides equipment for approximately 20 mobile users including antennas for 10 vehicles.

<table>
<thead>
<tr>
<th>STAKEHOLDER MOBILE WIRELESS EQUIPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART NUMBER</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>N/A</td>
</tr>
<tr>
<td>C3230ENC-1WMIC-K9</td>
</tr>
<tr>
<td>N/A</td>
</tr>
<tr>
<td>N/A</td>
</tr>
<tr>
<td>N/A</td>
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<tr>
<td>CP-7920-FC-K9</td>
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<tr>
<td>SW-CCM-UL-7920</td>
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<tr>
<td>CP-BATT-7920-EXT=</td>
</tr>
<tr>
<td>N/A</td>
</tr>
<tr>
<td>N/A</td>
</tr>
<tr>
<td><strong>TOTAL ALL THE ABOVE:</strong></td>
</tr>
</tbody>
</table>

3.4 Detailed Operating Expenses: Wireless Infrastructure

The following table details the necessary first year operating expenses in support of the above wireless infrastructure. The pricing detailed below describes FibreWired’s services to provide maintenance and monitoring of the wireless equipment in addition to the costs associated with the connectivity from the Rooftop Access Points to FibreWired’s optical network. In addition, recurring charges for Internet access available to the general public has been included.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Qty</th>
<th>Monthly Recurring Charge (UNIT $)</th>
<th>Annual Recurring Charge</th>
<th>Non-Recurring Charge (UNIT $)</th>
<th>Total Non-Recurring Chargeable Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparent</td>
<td>100 Mbps Transparent LAN Service to Downtown Rooftop Access Points.</td>
<td>9</td>
<td>$250.00</td>
<td>$27,000.00</td>
<td>$1,500.00</td>
<td>$13,500.00</td>
</tr>
<tr>
<td>Internet Access</td>
<td>10 Mbps Dedicated Internet Access</td>
<td>1</td>
<td>$500.00</td>
<td>$6,000.00</td>
<td>$450.00</td>
<td>$450.00</td>
</tr>
<tr>
<td>Network RADIUS Proxy Service (Per-Stakeholder Enterprise)</td>
<td>Web Browser Walled Garden Re-Direct for Public Internet Access</td>
<td>1</td>
<td>$295.00</td>
<td>$3,540.00</td>
<td>$2,000.00</td>
<td>$2,000.00</td>
</tr>
<tr>
<td>Operation and Maintenance Network</td>
<td>7/24 x 365 Network Monitoring of Wireless LAN Controller.</td>
<td>1</td>
<td>$20.00</td>
<td>$240.00</td>
<td>$25.00</td>
<td>$25.00</td>
</tr>
<tr>
<td>Operation and Maintenance Network</td>
<td>7/24 x 365 Sparing, Replacement and Upgrades of Wireless LAN Controller</td>
<td>1</td>
<td>$760.00</td>
<td>$9,120.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL ALL THE ABOVE:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>$85,308.00</strong></td>
</tr>
</tbody>
</table>
4. Minimum amount of funding that will allow this project to go forward. Please provide options in case of reduced funding available

- due to the volume of requests for funding only part of this request may be approved.
- please provide project breakdowns and funds required for each component.
- conditions and restrictions may be attached to the funding approval.

4.1 Partial Funding Financial Summary

The geographic area of coverage has been reduced in the downtown area while the hotspots in the five outlying communities are retained.

A summary of the minimum funding request is as follows:

- Total Capital Expenditures: $314,570.72
- Total First Year Operating Expense: $87,043.00
- Total Funding Request: $401,613.72

The following table outlines an option for reduced funding. The capital and operating expense reductions are achieved by means of a smaller geographic area for the wireless infrastructure deployed in the downtown core. The funding request for the proposed equipment necessary for the stakeholders remains unchanged. As outlined in Section 3.3, this budget provides equipment for approximately 20 mobile users including antennas for 10 vehicles.

4.2 Detailed Capital Expenditures: Reduced Wireless Infrastructure

<table>
<thead>
<tr>
<th>DOWNTOWN</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR-LAP1510KITP-A</td>
<td>Cisco Aironet 1500 Series Pole-Top Kit, 2.4 Omni 5 GHz Omni</td>
<td>35</td>
<td>$131,068.00</td>
</tr>
<tr>
<td>AIR-LAP1510KITRS-A</td>
<td>Cisco Aironet 1500 Series Roof-Top Kit, 2.4 Omni 5GHz Sector</td>
<td>6</td>
<td>$23,774.52</td>
</tr>
<tr>
<td>SUBTOTAL:</td>
<td></td>
<td></td>
<td>$154,842.52</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OUTLYING COMMUNITIES</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR-LAP1510KITP-A</td>
<td>Cisco Aironet 1500 Series Pole-Top Kit, 2.4 Omni 5 GHz Omni</td>
<td>5</td>
<td>$18,724.00</td>
</tr>
<tr>
<td>AIR-LAP1510KITRS-A</td>
<td>Cisco Aironet 1500 Series Roof-Top Kit, 2.4 Omni 5GHz Sector</td>
<td>5</td>
<td>$19,812.10</td>
</tr>
<tr>
<td>SUBTOTAL:</td>
<td></td>
<td></td>
<td>$38,536.10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WIRELESS CONTROL</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR-WLC4404-100-K9</td>
<td>4400 Series WLAN Controller for up to 100 Lightweight APs</td>
<td>1</td>
<td>$28,206.28</td>
</tr>
<tr>
<td>AIR-PWR-CORD-NA</td>
<td>AIR Line Cord North America</td>
<td>1</td>
<td>$ -</td>
</tr>
<tr>
<td>AIR-PWR-4400-AC=</td>
<td>4400 Series WLAN Controller AC Power Supply (redundant)</td>
<td>1</td>
<td>$1,205.28</td>
</tr>
<tr>
<td>AIR-PWR-CORD-NA</td>
<td>AIR Line Cord North America</td>
<td>1</td>
<td>$ -</td>
</tr>
<tr>
<td>AIR-WCS-LL-1.0-K9</td>
<td>Cisco WCS w/ Location v3.0 up to 50 Lightweight APs, Linux</td>
<td>1</td>
<td>$4,832.28</td>
</tr>
<tr>
<td>SUBTOTAL:</td>
<td></td>
<td></td>
<td>$34,243.84</td>
</tr>
</tbody>
</table>

TOTAL MATERIAL: $227,622.46

Labour to Design, Install, Configure and Test: $46,080.00

TOTAL ALL THE ABOVE: $273,702.46
4.3 Detailed Operating Expenses: Reduced Wireless Infrastructure

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Qty</th>
<th>Monthly Recurring Charge (UNIT $)</th>
<th>Annual Recurring Charge (UNIT $)</th>
<th>Non-Recurring Charge (UNIT $)</th>
<th>Total Non-Recurring Chargeable Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparent LAN Service</td>
<td>100 Mbps Transparent LAN Service to Downtown Rooftop Access Points.</td>
<td>6</td>
<td>$ 300.00</td>
<td>$ 21,600.00</td>
<td>$ 1,500.00</td>
<td>$ 9,000.00</td>
</tr>
<tr>
<td>Internet Access</td>
<td>10 Mbps Dedicated Internet Access</td>
<td>1</td>
<td>$ 500.00</td>
<td>$ 6,000.00</td>
<td>$ 450.00</td>
<td>$ 450.00</td>
</tr>
<tr>
<td>Identity Management</td>
<td>RADIUS Proxy Service (Per-Stakeholder Enterprise)</td>
<td>1</td>
<td>$ 295.00</td>
<td>$ 3,540.00</td>
<td>$ 2,500.00</td>
<td>$ 2,500.00</td>
</tr>
<tr>
<td>Captive Portal</td>
<td>Web Browser Walled Garden Re-Direct for Public Internet Access</td>
<td>1</td>
<td>$ 95.00</td>
<td>$ 3,540.00</td>
<td>$ 2,500.00</td>
<td>$ 2,500.00</td>
</tr>
<tr>
<td>Network Monitoring</td>
<td>7/24 x 365 Network Monitoring of RAP, PAP wireless devices.</td>
<td>51</td>
<td>$ 20.00</td>
<td>$ 12,240.00</td>
<td>$ 25.00</td>
<td>$ 1,275.00</td>
</tr>
<tr>
<td>Operation and Maintenance</td>
<td>7/24 x 365 Sparing and Replacement of RAP, PAP wireless devices.</td>
<td>51</td>
<td>$ 20.00</td>
<td>$ 12,240.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Network Monitoring</td>
<td>7/24 x 365 Network Monitoring of Wireless LAN Controller.</td>
<td>1</td>
<td>$ 20.00</td>
<td>$ 240.00</td>
<td>$ 25.00</td>
<td>$ 25.00</td>
</tr>
<tr>
<td>Operation and Maintenance</td>
<td>7/24 x 365 Sparing, Replacement and Upgrades of Wireless LAN Controller</td>
<td>1</td>
<td>$ 760.00</td>
<td>$ 9,120.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Network Monitoring</td>
<td>7/24 x 365 Network Monitoring of Wireless Control System.</td>
<td>1</td>
<td>$ 29.00</td>
<td>$ 348.00</td>
<td>$ 25.00</td>
<td>$ 25.00</td>
</tr>
<tr>
<td>Operation and Maintenance</td>
<td>7/24 x 365 Sparing, Replacement and Upgrades of Wireless Control System</td>
<td>1</td>
<td>$ 200.00</td>
<td>$ 2,400.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL ALL THE ABOVE</td>
<td></td>
<td></td>
<td>$ 71,268.00</td>
<td>$ 15,775.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.4 Terms and Conditions

The following outlines conditions and restrictions may be attached to the funding approval. In order to create design and build pricing, the following assumptions have been made within our proposal.

4.4.1 The proposal assumes that FibreWired is provided Municipal Consent to attach the wireless access points to the street lamp or traffic signal arms within the proposed downtown area defined in Appendix “A”. No allowance has been made within our proposal for any monthly or annual recurring fees.

4.4.2 The proposal assumes that the existing street lamp or traffic signal arms are of sufficient rating such that they can accommodate the 5.0 kg static load of the access point. No allowance has been made within this proposal to upgrade, modify or replace any street lamp arms to accommodate the static load of the access points.

4.4.3 No allowance has been made within the Operating Expenses to accommodate any recurring rental charges associated with the rooftop access. The pricing assumes that the nine (9) Rooftop Access Points identified above can be installed on the existing building structures owned by the stakeholders.

4.4.4 The costs indicated are exclusive of all applicable taxes.
5. **Other Funders are contributing to this project – include:**
   - private investors, donors
   - municipal, provincial and federal funding
   - corporate sponsorships/donations
   
   **N.B. include contact names and funding amounts**

FibreWired recognizes the needs for and potential benefits of the wireless infrastructure within the City of Hamilton. As a corporate contribution in kind, FibreWired has provided the following services at the described discounted unit pricing rates for the first year operating expenses.

<table>
<thead>
<tr>
<th>Service</th>
<th>Quantity</th>
<th>Current Unit List Price (Monthly Recurring Charge)</th>
<th>Discount</th>
<th>Proposed Monthly Recurring Charge</th>
<th>Contribution In Kind Included</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Mbps Transparent LAN Service</td>
<td>9</td>
<td>$600.00</td>
<td>50%</td>
<td>$300.00</td>
<td>$32,400.00</td>
</tr>
<tr>
<td>10 Mbps Dedicated Internet Access</td>
<td>1</td>
<td>$2,500.00</td>
<td>80%</td>
<td>$500.00</td>
<td>$24,000.00</td>
</tr>
<tr>
<td>Network Monitoring Of PAP and RAP Devices</td>
<td>69</td>
<td>$39.00</td>
<td>49%</td>
<td>$20.00</td>
<td>$15,732.00</td>
</tr>
<tr>
<td>Operation and Maintenance of PAP and RAP Devices</td>
<td>69</td>
<td>$40.00</td>
<td>50%</td>
<td>$20.00</td>
<td>$16,560.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td>$88,692.00</td>
<td></td>
</tr>
</tbody>
</table>
6. **Provide an overview of this initiative including:**

- description of goals and objectives
- clear business plan for success

The proposed “Phase 1” Wireless Initiative specifically addresses an inaugural wireless infrastructure deployment as a proving ground for wireless access within the downtown core and in the five outlying communities. The provision for wireless access would enable members of the public and local businesses to access the Internet. It would provide opportunities for City staff to test remote access to existing applications from a fixed hotspot location or from within a City vehicle. The intent is to avoid the use of the term “pilot” for this aspect of the project but rather relate to it as “Phase 1”. The rationale being that this will not be a temporary project but rather the first step in delivering ubiquitous wireless access to the City of Hamilton communities and businesses. It is intended as an investment that will be sustainable for many years over the lifecycle of the technology.

Since 1998, the FibreWired Network has continued to advance the telecommunications infrastructure within the City of Hamilton to the extent that it is one of the most ubiquitous metropolitan fibre optic networks within Canada. The initial early adopters of these cost effective services, included what is known as the “MUSH” sector (Municipality, University, Schools and Hospitals). FibreWired’s business model concurrently grew in the private sector and proven to be equally successful.

On March 7th, 2005, the inaugural meeting to discuss building a wireless (WiFi) network took place. This meeting and subsequent meetings served as a forum to define the needs and wants assessments of the individual stakeholders as well as an analysis of the potential applications for this infrastructure.

Participants in these sessions included representatives from Hamilton Emergency Services (ambulance and fire), Police Services, Catholic and Wentworth District School Boards, McMaster University and Mohawk College, The Chamber of Commerce, the City's Economic Development Division and the Hamilton Port Authority, the City's IT Services Division, the City's Transit Division and DARTS, the Hamilton Public Library.

“Phase 1” of this project would allow participants to experience the use of a wireless technology and define expectations in regards to reliability, mobility, and application response time. It would identify potential efficiencies to be gained from enabling applications to mobile workforces while in the field. First responders would have the ability to prove whether applications could decrease their response times by providing them with real-time information and enhancing public safety.

To gauge the success of the implementation, a formal evaluation is expected at the conclusion of “Phase 1”. Criteria will be established prior to commencement of the service and is expected to include items such as security, system reliability, bandwidth availability, usage levels, equipment resilience, customer satisfaction, business efficiencies and/or customer service improvements. “Phase 1” would deliver valuable information that could form the basis for a wireless deployment and service strategy on a larger, ubiquitous scale throughout the City.

In addition to the primary drivers of “Phase 1” for municipal government and first responders services, a wholesale commercial model could be developed that would leverage the wireless technology by reaching a broader base of constituents with enhanced data services to both fixed and mobile (“Hotspot”) wireless subscribers. An example of enhanced services would be location-based advertising for a specific BIA where access to the Internet through a wireless location would provide information specific to that area of the city, based upon real-time data. A successful wholesale commercial model would also enhance the sustainability of the wireless infrastructure and provide ubiquitous access to municipal e-government services.

The attractiveness of WiFi as the technology of choice for “Phase 1” is that it is priced for mass-market sales. This lowers the financial risk. The low cost of WiFi also means that end-user equipment is both cost effective to buy and widely available. This helps to drive rapid adoption. The initial “Phase 1” technology deployment can also be expanded and extended as dictated by demand.
The proposed wireless infrastructure in Hamilton will provide a converged network access capability for both mobile and stationary users. The wireless network will allow for the real-time access to critical network resources and applications, thereby transitioning the traditional mobile workforce from a dispatch service to a fully functional mobile office. Public and private sectors will benefit from instant access and communications.

Cost of operations of the communication service could be reduced using a converged mobile network through the alignment of applications, such as mobile voice and video. Ongoing expenses could be reduced through the elimination of dedicated and proprietary communications platforms and services. For example, usage-based services can be migrated over to a flat-rate “non-usage sensitive” service model. Video, data and voice applications can be consolidated onto a single mobile IP-based network that provides the intelligence to deliver high priority to critical emergency-based voice and video traffic over that of lower priority internet or e-mail traffic.

The existing FibreWired Optical network will be leveraged and will greatly reduce the initial and ongoing operational costs of the wireless network.

The City of Hamilton will own and have care and control of the asset through the guidance of a Council appointed Steering Committee that will be established upon receiving approval to proceed. FibreWired will operate and maintain the entire network, on behalf of the stakeholders, for a period of one-year. As part of these services, FibreWired will provide the necessary connectivity from the wireless network to the optical network, Internet access for the general public including the walled garden, wireless network monitoring, sparing and maintenance. In addition, FibreWired will work with the stakeholders to develop a secure wireless access model as well as voice, data and video proof of concept pilots. Services beyond year one will be delivered at the then prevailing monthly rates.

The proposed network will also allow mobile access for the private sector in Hamilton. Network services, such as Internet Access will be available to individuals and businesses within Hamilton. Individual subscribers can access services through a portal page, and small business will have new options for the connectivity of their offices, static or mobile. Fixed wireless services will improve communications options and speed of delivery for small and medium businesses in the community.

In “Phase 1” Internet access will be provided free of charge. Beyond “Phase 1”, service levels and access capabilities of subscribers can be managed by site and content. For example, a subscriber may be able to access the myHamilton.ca portal without fee. Further, no subscription would be required for access to other predetermined sites and content. Other levels of service could be introduced, such as unconstrained (unlimited) Internet Access. These enhanced levels of service may require a pre-defined subscription rate. The subscription could be a one-time cost or usage based.

City, Provincial and private portals can be accessed from any area of coverage without the need of a physical connection.

This infrastructure could also support current research projects being developed at McMaster University. An example of such a project is the efforts being undertaken in the Radio Frequency Identifications (RFID) Lab by Professor Pankaj Sood. An RFID tag is a small object that can be attached to or incorporated into an object allowing it to transmit information over a wireless network. This could assist organizations in better managing their mobile assets.

Professor Sood’s Lab is on the verge of finalizing a major project with Hamilton Health Sciences (HHS). This would be the first comprehensive implementation of RFID in health care in Canada. The project would be completed in phases. The first phase would be implemented to track high-priced equipment in the hospitals. The second phase of the implementation would track and identify key data regarding patients and the last phase to track key personnel such as nurses and doctors in the hospitals. RFID could help HHS and others to reduce costs associated with theft and to create efficiencies within their business processes.

The existence of the proposed “Phase 1” wireless infrastructure would provide the necessary “real-world” environment to cultivate not only the research efforts being performed the RFID Applications Lab but also other research projects at McMaster University.
The wireless network will be seamlessly integrated into the existing FibreWired optical network. This will provide participating stakeholders currently using the network with immediate access for their mobile workforces.

This proposal will deliver a set of leading edge business technology tools equal to or in advance of any city in the world.

7. **Indicate how will this project be sustainable and provide permanent benefit to Hamiltonians:**
   - explicit, measurable long-term impact
   - a return on investment for the Hamiltonians

Stakeholder organizations from each sector of the community intend to participate in “Phase 1” of the project, using it as a proof of concept that should enable them to meet strategic priorities through a less expensive shared infrastructure.

Stakeholder organizations intend to use the “mobile office” capabilities of the suburban hot spots in order to download software upgrade and information to mobile workers.

The “walled garden” capabilities of hot spots will allow people accessing the Internet to see commercial services available within their immediate physical vicinity. This is a powerful concept being explored by American cities. The same concepts will be tested as a part of “Phase 1”.

At the conclusion of “Phase 1” the market will have been tested for wholesale commercial uses (advertising as well as business use of wireless applications such as high speed access by salesmen to home offices and use by public sector meter readers). A model for on-going wholesale commercial and business uses will be created that is based on experience.

At the conclusion of “Phase 1” the market will have been tested the market for high-speed public use and established the cost for such use. Many municipalities are subsidizing public use or are providing it for free. “Phase 1” will provide input into what these costs might be. Recent focus groups held at McMaster University indicate that wireless access to the Internet is a major component in determining how young people feel about a community.

The stakeholder groups from four different sectors (Business, Public and Personal use, Emergency Services, and Government Services) will all have the opportunity to participate in “Phase 1” and to explore the proof of concept assumptions concerning ubiquitous wireless services.

The goal is to provide service for both personal and business users within the geography covered in “Phase 1”. Uptake will be measured based on Internet bandwidth utilization.

The goal is to create at 2 -3 “walled garden” areas in “Phase 1”.

The budget provides equipment for approximately 20 mobile users within the downtown coverage area. These users will have the opportunity to test response times, vehicle equipment, and assess the capabilities of the “mobile office” concept.
8. Indicate how the project will improve the prosperity of one or more of the following ways:

- enhancing the community’s economic prosperity
- including potential for economic development
- supporting tax competitiveness with neighboring municipalities
- supporting downtown redevelopment
- supporting the development of key economic clusters
- supporting job creation
- enhancing the community’s social fabric
- enhancing community life

Community Well-Being is enhanced.

The proposed “Phase 1” Wireless downtown provides an additional technology infrastructure that enhances the City’s current optical telecommunications facilities provisioned by FibreWired. In addition to offering the potential to increase the operating efficiencies of both private and public sector mobile workforces, the wireless network has the potential to enhance current research efforts as well as offer excess capacity to provide low cost Internet access in an effort to bridge the Digital Divide.

Implementation of hotspots in the 5 outlying communities provides opportunities for mobile workers to increase productivity and improve service.

Environmental Well-Being is enhanced.

The wireless downtown network provides the ability for first responders as well as other private and public sector mobile workforces to eliminate environmental costs associated with driving to and from dispatch locations to both receive and submit daily schedules, email, assignments and reports.

Economic Well-Being is enhanced.

The business model of proposed solution is not primarily focused on marginal revenue services such as low cost Internet access and ubiquity of “Hot Spots”. Albeit, these should be considered by the City as positive economic development benefits, they are merely expectations for a high-tech workforce in a knowledge-based economy and should be considered ancillary. The key business drivers for this project are founded on practical applications that enhance productivity and are part of the differentiators that make Hamilton a leader in this area.

Companies seek out cities that make it easy to do business. Cities with advanced networks can promote themselves to prospective businesses by providing online information about the advantages of doing business in the town and city, including tax policies, land-use policies, permit processes, and more. In addition to simply publishing information online, governments can capitalize on their networks to provide government-to-business services such as online permits and one-stop licensing. The proposed downtown wireless network becomes a natural extension to the vision for the myhamilton.ca portal.

9. Indicate how funds granted from the HFF to this initiative will achieve specific measurable goals.

Describe the process you will use to develop regular evaluation progress reports to be submitted to the HFF Board of Governors starting 6 months into the project. Your process for evaluation will incorporate:

- reporting timeline to match funding request
- specific performance criteria
- clearly-articulated expected outcomes
- indicators for measuring the achievement of expected outcomes
- regular reporting to the HFF Board on the achievement of outcomes.
Once established, the Steering Committee would perform the following:

- Approve timelines and monitor implementation of “Phase 1”.
- Approve business plans.
- Communicate the initiative to other possible stakeholders within the community.
- Establish appropriate Working Committees within 60 days of the first meeting of the Committee.
- Assess and report on the success of the “Phase 1” implementation and apply knowledge and lessons learned to the development of a comprehensive business plan.
- Define the required service levels of FibreWired in the management and operation of the wireless network for the Stakeholder groups (prior to the end of the first year of operation).
- Define the technology roadmap and business plan that provides a strategy to extend this infrastructure beyond “Phase 1” and provides a financial model that will re-invest and sustain in the wireless infrastructure beyond the estimated five-year life-cycle of the technology.
- To propose and establish a governance structure to oversee execution of the business plan and strategy.

The Working Committee’s mandate would be to implement and document project and application specific business plans. Areas to be considered shall include, but not be limited to, the following:

- Extension of the City’s existing IP Telephony infrastructure by means of WiFi enabled handsets and dual mode (cellular and WiFi) enabled handsets.
- Real-time asset management for City assets by means of hardware, software applications and business processes developed by McMaster University.
- Applications to benefit the City’s Building and Restaurant Inspection mobile workforces.
- Applications to benefit the City’s Public Health Nurse mobile workforce.
- Extension of office applications such as graphical crime mapping tools, mug shots and document management to the car for Hamilton Police Services.
- Real-time, full motion video from first responder vehicles to central dispatch.
- Provision of AVL (Automatic Vehicle Location) for municipal and first responder vehicles.
- Open access to the myhamilton.ca community portal and other related portals within the proposed areas.
10. Proposed Schedule

The schedule outlines the critical path for this project as well defining roles and responsibilities of the participants. The schedule has been developed using June 19th, 2006 as the Funding Approval date that will initiate tasks throughout the remainder of the schedule. Two distinct aspects of the Phase 1 project have been identified; Implementation and Proof of Concept. The Implementation Phase includes the design, engineering and deployment tasks associated with the commissioning of the wireless infrastructure and is expected to last three months. The Proof of Concept Phase involves the development of applications pilot projects that leverage the infrastructure and would extend one year from the date of the City’s acceptance of the wireless infrastructure.

A detailed schedule has been provided in Appendix “B”.

11. Recognition of Funding

Internet access will be made available to the general public at each of the wireless access points deployed. In order to access the Internet, this type of wireless subscriber would simply launch their web browser. Once the web browser is started, the subscriber’s home page is automatically redirected to a web portal application. It is this “captive portal” web page presentment to every Internet subscriber that would provide the recognition to the Hamilton Future Fund for their contributions to this project initiative. It would be expected that the Hamilton Future Fund Board of Governors would have final approval as to the branding and messaging content of this page.

12. Next Steps : Presentation to the HFF Board of Governors

Public presentations to the Board will not be automatic however may be requested for applications that are selected as priority funding.

On behalf of the Hamilton Future Fund Board of Governors we appreciate you taking the time and effort to prepare this application for funding. A letter will be sent to the contact person listed on this application to confirm receipt of this request and details around timing for review by the Board of Governors.

Yours truly,
Hamilton Future Fund
Board of Governors
APPENDIX “A”

PROPOSED AREA OF COVERAGE

The following map depicts the proposed locations for the deployment of the fifty (50) Poletop Access Points within the downtown core. The theoretical area of coverage would be bounded by Barton Street to the north, Main Street to the south, Victoria Avenue to the east and Queen Street to the west. This area represents an approximate area of four square kilometers.
APPENDIX “B”

PROPOSED IMPLEMENTATION AND “PHASE 1” SCHEDULE 2006/2007