

KAWARTHA PINE RIDGE DISTRICT SCHOOL BOARD

TO: Program Review Committee

TOPIC: **Instructional Technology Project Plan – Implementation Update**

INITIATOR: John Lawrence, Superintendent of Business and Corporate Services
Catherine Foy, Superintendent of Education: Student Achievement
Ron Plaizier, Chief Information Officer, Information and Communications
Technology

BACKGROUND

1. In February 2010, the Board approved the Instructional Technology (IT) Plan.
2. In June 2010, the contract to provision wiring for the Wireless Project was awarded and work commenced during throughout the summer in targeted schools where there was planned construction.
3. In September 2010, the contract to provision Wireless equipment was awarded and the Purchase order was issued shortly after. Equipment delivery is anticipated by the end of November.

STATUS

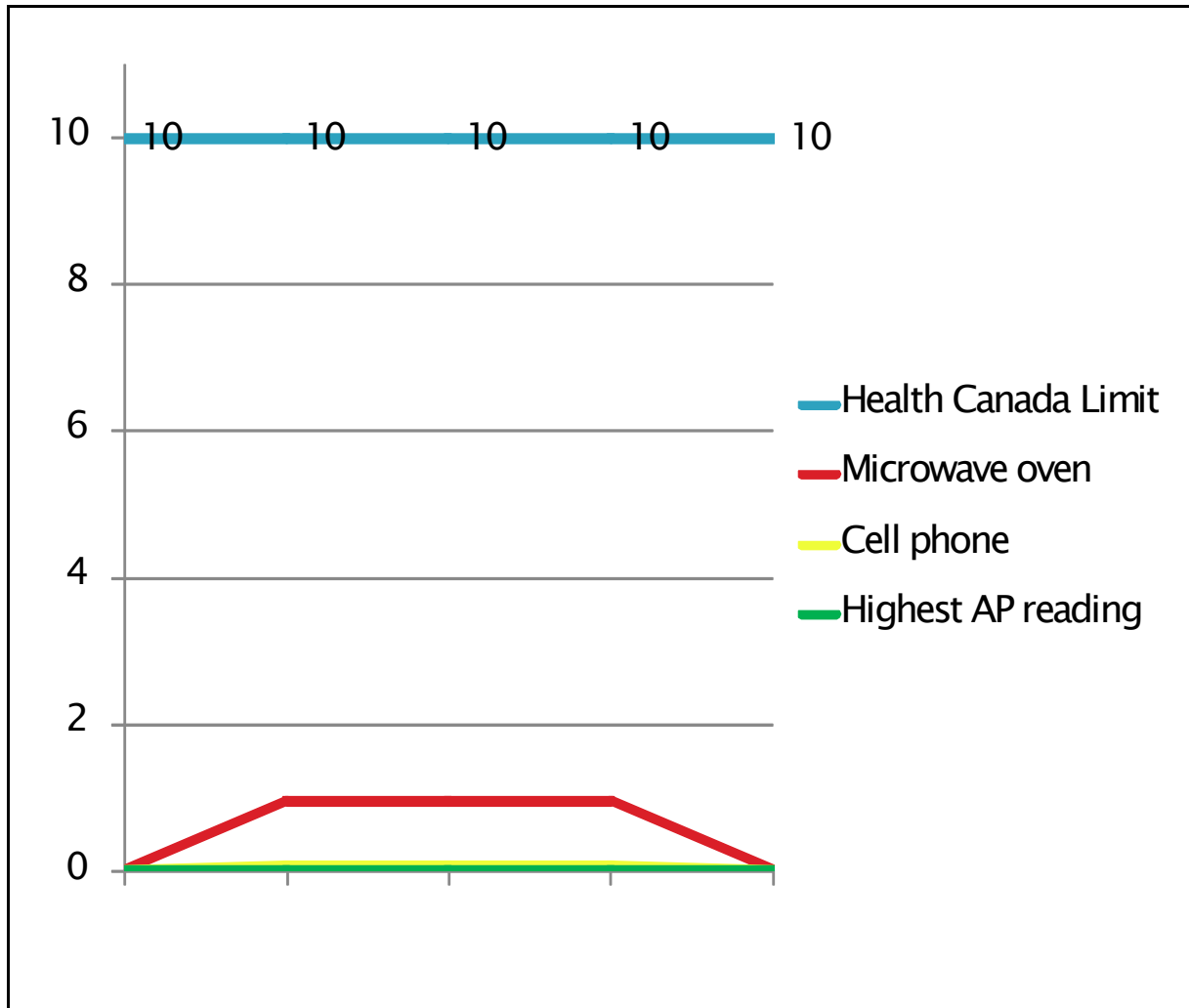
Wireless Project

5. A detailed schedule for the cabling and equipment installation has been developed by associated school grouping (ASG). Attached in Appendix “A” is the current schedule and the status of work completed.
6. Initial testing will begin at Crestwood SS, Adam Scott SS, East Northumberland SS and Colborne PS in early February. The remaining schools will be activated between April 1st and June 30th, 2011.
7. Completion of the Wireless Project is targeted for June 30th, 2011.

Wireless Monitoring

8. The ICT Department has established a testing protocol that will ensure that all WiFi equipment deployed is operating within the standards established by Health Canada. A high level overview is provided below:
 - Before testing begins, an environmental scan will be performed at each site. Any potential existing EMF sources will be noted such as cell phone towers, possible residential, commercial or industrial buildings with existing WiFi, microwave ovens, cordless phones.

- Pre-implementation measurements will be conducted to establish base line readings at all school sites. At this time all other electromagnetic frequency (EMF) readings will be recorded.
 - Post-implementation measurements will then be conducted at each school location on an annual basis. This will involve random samplings at each school site directly below the access points and at aggregated or concentration points where multiple mobile devices are in use.
 - In the event of an abnormality in the readings above the standards established by Health Canada may be discovered we will communicate directly and immediately with the School Superintendent, School Administrator and Health and Safety Committee. WiFi in that school location will be immediately disabled until the source of the abnormal readings are located, be they internal or external, at which time remedial action will take place and the defective equipment/source will be disabled and/or replaced.
9. As part of the Instructional Technology Plan roll-out, the Education Centre's WiFi equipment has been upgraded with the same technology being deployed in our schools. This has offered us an opportunity to take initial readings throughout the Education Centre. Below are the findings.
- Health Canada's Safety Code 6 establishes **10 W/m²** as the limit for all WiFi equipment
- EMF readings were taken within the Education Centre with the following results. The detailed results of those readings are in Appendix "B".
- The highest reading obtained at a wireless access point was **0.00984 W/m²**, which is equivalent to **.098%** of the limit established by Health Canada.
- With a concentration of 15 Laptops streaming video at the same time, the highest reading recorded at the access point was **0.0153 W/m²** or **.153%** of the limit established by Health Canada.
- Measurements taken from a cell phone streaming video were **0.0605 W/m²** or **.605%** of the limit established by Health Canada.
- Measurements taken at a microwave oven set at high for 30 seconds in the staff lounge were at **0.956 W/m²** or **9.56%** of Health Canada's limit.
10. The following graph illustrates the limit established by Health Canada's Safety Code 6 and the readings taken in the Education Centre.



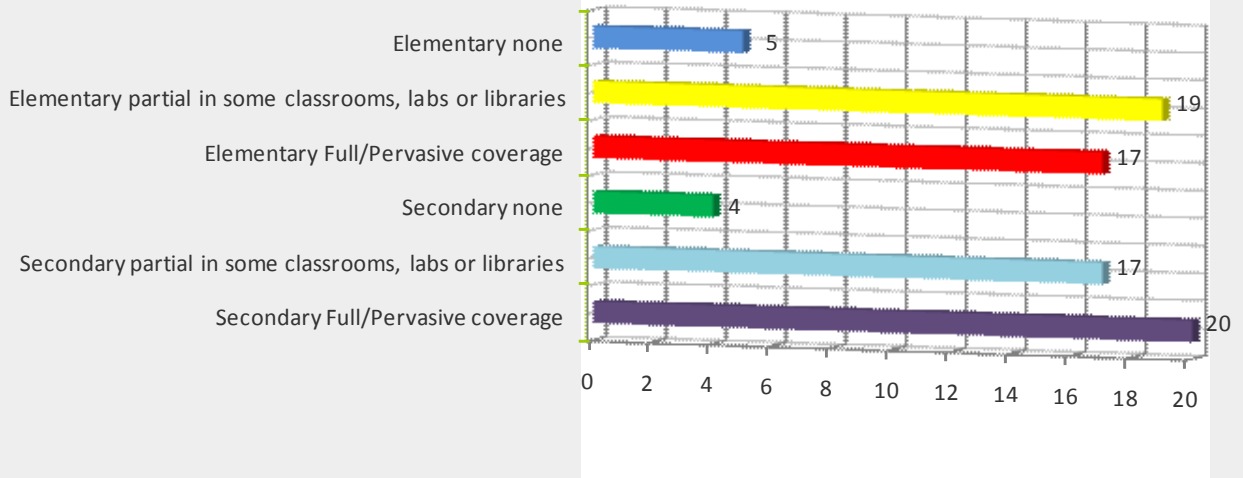
- Further research has been conducted by the ICT Department to determine the level of WiFi adoption within Public agencies in the Province, Canada and the World. In **Appendix “C”** you will find a list of Municipalities around the world that have implemented WiFi. In **Appendix “D”** is a list of other Ontario Public locations where we were able to determine that free public WiFi offered or have WiFi enabled communications to support their business.

In a recent survey of Ontario School Boards the following questions were asked:

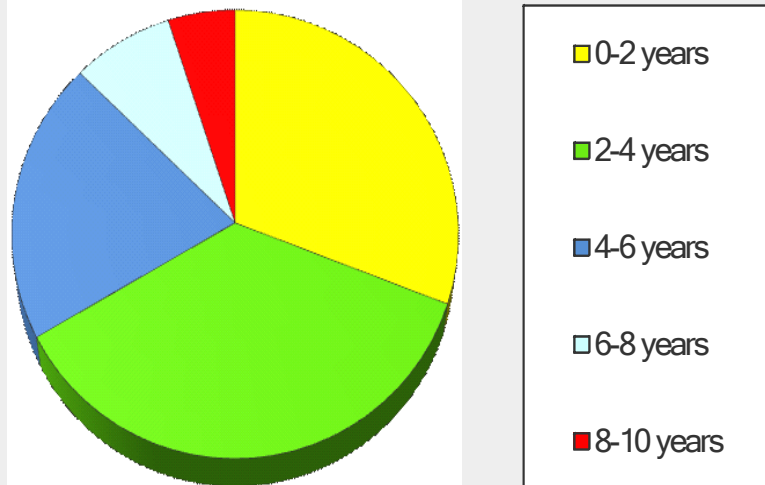
- Do you have Wi-Fi installed in your schools?
- How long have you been using Wi-Fi in your schools?

The following graphs represent 42 School boards that responded to the survey.

Do you have Wi-Fi installed in your schools?



How long have you been using Wi-Fi in your schools?



RECOMMENDATION

1. That the Instructional Technology Project Plan - Implementation Update be received for information.

Appendix “A”

Education Centre Monitor readings

AP #	Description	W/m ² Wi-Fi ON	% of Limit	Date of Reading
EDC-AP1	EDC1 ICT AREA	0.00714	0.07140	01/13/11
EDC-AP2	EDC2 ICT MEETING ROOM	0.00518	0.05180	01/13/11
EDC-AP3	EDC3 MALE WASHROOM BASMENT	0.00443	0.04430	01/13/11
EDC-AP5	EDC5 FINANCE	0.00381	0.03810	01/13/11
EDC-AP6	EDC6 BOARD CHAIRPERSON	0.00200	0.02000	01/13/11
EDC-AP7	EDC7 HUMAN RESOURCES	0.00174	0.01740	01/13/11
EDC-AP9	EDC9 MEETING ROOM 161	0.00393	0.03930	01/13/11
EDC-AP10	EDC10 MEETING ROOM 158	0.00114	0.01140	01/13/11
EDC-AP13	EDC13 STAFF ROOM	0.00904	0.09040	01/13/11
EDC-AP15	EDC15 CATALOGUING	0.00027	0.00270	01/13/11
EDC-AP16	EDC16 LAMANATING	0.00054	0.00540	01/13/11
EDC-AP17	EDC17 MAIL ROOM	0.00171	0.01710	01/13/11
EDC-AP18	EDC18 SPEC. ED. (ABOVE MEZANEEN)	0.00024	0.00240	01/13/11
EDC-AP21	EDC21 SOUTHWEST STAIRWELL 2ND FLOOR	0.00341	0.03410	01/13/11
EDC-AP22	EDC22 MALE WASHROOM 2ND FLOOR	0.00645	0.06450	01/13/11
EDC-AP23	EDC23 MEETING ROOM 202	0.00984	0.09840	01/13/11
N/A	at single wireless laptop streaming video	0.00659	0.06590	01/13/11
N/A	parking lot by lower entrance	0.00120	0.01200	01/13/11
N/A	reception desk	0.00406	0.04060	01/13/11
N/A	phone call at iPhone	0.01460	0.14600	01/14/11
N/A	streaming video 1/2" from iPhone while on 3G	0.06045	0.60450	01/14/11
N/A	streaming video 1/2" from iPhone while on Wi-Fi	0.83940	8.39400	01/14/11
N/A	microwave oven set on 'high' for 30 seconds - 2ft away	0.95600	9.56000	01/14/11
N/A	microwave oven set on 'high' for 30 seconds - 1/2 inch away	2.79700	27.9700	01/14/11
EDC-AP1	concentration (15 Wi-Fi devices): directly under AP, streaming video	0.01530	0.15300	01/25/11

Appendix “B”

Wireless Project Status

	% Complete	Estimated Activation Date
TASS ASG		4-Apr-11
TASS	100	4-Apr-11
Armour Heights PS	100	4-Apr-11
King George PS		4-Apr-11
North Shore PS	100	4-Apr-11
Adam Scott CVI ASG		11-Apr-11
Adam Scott CVI (Pilot Site)	100	7-Feb-11
Chemong PS		11-Apr-11
Edmison Heights PS		11-Apr-11
Queen Elizabeth PS		11-Apr-11
RF Downey PS		11-Apr-11
Crestwood SS ASG		18-Apr-11
Crestwood SS (Pilot Site)	100	7-Feb-11
James Strath PS	50	18-Apr-11
Kawartha Heights PS		18-Apr-11
Millbrook/South Cavan PS		18-Apr-11
North Cavan PS		18-Apr-11
South Monaghan PS		18-Apr-11
Kenner CVI ASG		25-Apr-11
Kenner CVI		25-Apr-11
Keith Wightman PS		25-Apr-11
Otonabee Valley PS		25-Apr-11
Roger Neilson PS		25-Apr-11
PCVS ASG		2-May-11
PCVS		2-May-11
Highland Heights PS		2-May-11
Prince of Wales PS		2-May-11
Queen Mary PS		2-May-11
Westmount PS		2-May-11
Lakefield DHS ASG		9-May-11
Lakefield DHS		9-May-11
Apsley PS	50	9-May-11
Buckhorn PS		9-May-11
Ridpath PS		9-May-11
Warsaw PS		9-May-11
Campbellford HS ASG		30-May-11
Campbellford HS		30-May-11
Hillcrest PS		30-May-11
Kent PS		30-May-11
Percy Centennial PS		30-May-11
Hastings PS		30-May-11
Norwood DHS ASG		13-Jun-11
Norwood DHS		13-Jun-11
Norwood PS		13-Jun-11
Havelock PS		13-Jun-11
East Northumberland SS ASG		4-Apr-11
East Northumberland SS	100	4-Apr-11
Brighton PS	100	4-Apr-11
Colborne PS (Pilot Site)	100	7-Feb-11

Murray Centennial PS	100	4-Apr-11
Northumberland Hills PS	100	4-Apr-11
Smithfield PS	100	4-Apr-11
Spring Valley PS	100	4-Apr-11
Stockdale PS	100	4-Apr-11
Cobourg CDI East ASG		11-Apr-11
Cobourg CDI East	100	11-Apr-11
Grant Sine PS	100	11-Apr-11
Merwin Greer PS	100	11-Apr-11
CR Gummow PS	100	11-Apr-11
Baltimore PS	100	11-Apr-11
Grafton PS	100	11-Apr-11
Roseneath PS	100	11-Apr-11
Cobourg CDI West ASG		18-Apr-11
Cobourg CDI West	100	18-Apr-11
Burnham PS		18-Apr-11
Camborne PS		18-Apr-11
Dale Road PS		18-Apr-11
Plainville PS		18-Apr-11
Terry Fox PS		18-Apr-11
Port Hope HS ASG		25-Apr-11
Port Hope HS		25-Apr-11
Dr. M.S. Hawkins Senior PS		25-Apr-11
Ganaraska Trail PS		25-Apr-11
Beatrice Strong PS		25-Apr-11
North Hope Central PS		25-Apr-11
George Hamilton PS		25-Apr-11
Bowmanville HS ASG		2-May-11
Bowmanville HS		2-May-11
Central Bowmanville PS		2-May-11
Harold Longworth PS		2-May-11
John M James PS		2-May-11
Ontario Street PS		2-May-11
Vincent Massey PS		2-May-11
Clarke HS ASG		9-May-11
Clarke HS	100	9-May-11
The Pines Senior PS		9-May-11
Kirby PS		9-May-11
Newcastle PS		9-May-11
Orono PS		9-May-11
Clarington Central SS ASG		6-Jun-11
Clarington Central SS		6-Jun-11
Dr. Ross Tilley PS		6-Jun-11
Enniskillen PS		6-Jun-11
Hampton Junior PS		6-Jun-11
M.J. Hobbs PS		6-Jun-11
Waverly PS		6-Jun-11
Courtice SS ASG		27-Jun-11
Courtice SS		27-Jun-11
Courtice North PS		27-Jun-11
Dr. Emily Stowe PS		27-Jun-11
Dr. G.J. MacGillvray PS		27-Jun-11
Lydia Trull PS		27-Jun-11
S.T. Worden PS		27-Jun-11

Municipalities around the world that have or are planning to implement WiFi (or Wireless) communications:

Akron, Ohio SSID: "ConnectAkron"

Albany, New York Albanyfreenet [29]

Anderson, Indiana Anderson WiFi [30]

Aparecida, Brazil-Free service [31]

Balanga City, Bataan, Philippines - free, limited to downtown and several tourist attractions only[32]

Bangkok, Thailand - free service for Bangkok Citizen. Service provided by True Corporation.

Binghamton, New York - free service.[33]

Bologna Italy - free, historical city center (phase 1), Acantho[34]

Boston, Massachusetts & Brookline, Massachusetts - paid, Galaxy Internet Services

Bristol, UK - free, 3 km area around city centre [35]

Calbayog City,Philippines (Downtown Area Only) [36]

Calgary, Alberta,Canada Operated by WestNet Wireless, first City Wi-Fi in Canada [37]

Cambridge, Massachusetts - free (pilot), through the Cambridge Public Internet (CPI) Initiative

Cambridge, Ontario - paid service provided by Atria Networks for various locations throughout Waterloo Region [38], free at Central Public Library.

Chandler, Arizona - paid service, Kite Networks[39]

Clearwater Beach, Florida - free service,[40]

Corpus Christi, Texas - paid service, Earthlink[41]

Denver, Colorado - Free Wifi in Downtown Denver. [42]

Elk Grove, California

Escondido, California - free service in downtown area and Public Library

Fredericton, New Brunswick - free, Fred-e Zone[43]

Greater Noida, Noida, India -- Paid, operated by Maksat Technologies (P) Ltd, Local ISP.

Hollywood, Florida - Johnson Controls, Sling Broadband Wimax deploy municipal Wi-Fi network for wireless automated meter reading (AMR), public safety and free Wi-Fi service for residents. Muni Wireless

Hong Kong - Most are subscribed, paid services, but free service in selected governmental facilities is also available[44]

Honolulu, Hawaii - free, Tri-Net Solutions LLC [45]

Kennesaw, Georgia - free, City of Kennesaw WiFi - available in city parks and other areas [21]

Kitchener, Ontario - paid service provided by Atria Networks for locations throughout Waterloo Region [38], free at Kitchener Public Library branches.

Kuala Lumpur, Malaysia - free, Wireless@KL - Covering major commercial areas.[46]

La Plata, Argentina - free, city center only [22]

Lawrence, Kansas - free, Lawrence Freenet, not-for-profit company that works in conjunction with the City of Lawrence and local

internet providers [23]

Leiden, The Netherlands - free, community project covering city and region Wireless Leiden

Liverpool, UK - paid service, covering central areas.

Luxor, Egypt - pilot, paid service - tourist areas, TE Data [47]

Luxembourg, Luxembourg -- paid, currently covering downtown and Central Station Hotcity

Madison, Wisconsin - paid, only covers central part of city.

Maywood, California - Free. Initially just the business corridors, now city-wide.

Miami Beach, Florida - Free, covers most of the city outdoors.[48]

Minneapolis, Minnesota - paid, USI Wireless [24] [49]

Mississauga, Ontario - free, Wireless access at Mississauga Libraries, Community Centres and Arenas[50]

Moncton, New Brunswick - free, Service provided by Red Ball Internet of Moncton. Wireless access available at Arenas and Moncton's Public Library. It was also the first city in Canada to provide wireless internet on its public transportation fleet.

Montreal, Quebec - free, community supported llesansfil[51]

Moose Jaw, Saskatchewan - free, city center and campus[52]

Moscow, Russia - paid service, Golden Telecom[53]

Mountain View, California - free - Google WiFi

Newcastle, County Down, Northern Ireland, UK

Norwich, England - free, city center and university, 18-month pilot Openlink (Norwich,UK)

Oulu, Finland - free - panOULU

Pacifica, California - paid service, PacificaNet[54]

Paris, France - free in many parks and in municipal libraries, museums, and public places (7 AM to 11 PM or opening hours, renewable 2-hour sessions)[55]

Peachtree City, Georgia - free at two parks and the public library/City Hall plaza - [56]

Penang, Malaysia - Named Penang Free Wi-Fi, it started in 2009, currently the Wi-fi service has covered some commercial spots in the state, mostly on Penang Island.

Perth, Australia - paid, RoamAD-based metro wide coverage in the CBD by metromesh

Philadelphia, Pennsylvania - free service, recently transferred from Earthlink to a local company[57]

Pittsburgh, Pennsylvania - free downtown 2 hours per day

Plattsmouth, Nebraska - free in all public buildings (Court House, Public Library, City Hall, Community Center) and Main Street

Powell, Ohio - Free, covers downtown[58]

Prince Albert, Saskatchewan - free, city center and campus[52]

Riverside, California - access via main street corridors[59]

Regina, Saskatchewan - free, city center and campus[52]

Roman, Romania - free, Minisoft[60], paid by advertisements, covers much of the city[61], expanding to nearby villages

Rzeszów, Poland - free, city-operated, with hot-spots located on public schools participating in the project[62]

Saskatoon, Saskatchewan - free, city center and campus[52]

Sharm el-Sheikh, Egypt - pilot, paid service, tourist areas, EgyNet[47]

Shawinigan, Quebec - free service, limited to downtown. City-operated.

Sherbrooke, Québec, Canada - free, limited to downtown, provided by ZAP Sherbrooke[63]

Singapore, Singapore - free/paid, Wireless@SG

Skokie, Illinois, - Downtown and park areas [25]

Southaven, Mississippi - paid service, city-operated, branded as Magnoliawave

Spokane, Washington - two free hours/day, paid after.

Storrs, Connecticut - used for students of The University of Connecticut

Springfield, Ohio - free, downtown and Clark State Community College campus

Sud Mennucci, Brazil -- free, limited to downtown. City-operated.

Taipei, Taiwan - paid service 'Wifly' by Q-Ware Communications, Inc.[64]

Taupo, New Zealand, paid/free large RoamAD-based zone in tourist area by Kordia Metro WiFi

Tempe, Arizona - paid service, Kite Networks DEFUNCT [65]

Toronto, Ontario - free service provided by Wireless Toronto and the Toronto Public Library system for locations throughout the Greater Toronto Area; paid service from Toronto Hydro's One Zone.

Trondheim, Norway, paid/free network in city centre [66]

Vienna, Austria - free service in the Vienna International Airport [67]

Waterloo, Ontario - paid service provided by Atria Networks for locations throughout Waterloo Region [38], free at Waterloo Public Library branches.

Winston-Salem, North Carolina - free, limited to downtown. City-operated: no technical support.[68]

Wroc³aw, Poland - free service Miejski Internet, in few places, renewable 1-hour sessions

Yazoo City, Mississippi - Paid network. Branded as Yazoo Wireless, Provided by CYTEC

Zrenjanin, Serbia - free, city center only

MetroFi - free with advertisements, deployed to 10 cities in the western USA, closed in 2008

In addition, a few U.S. states, such as Iowa, Massachusetts, and Texas offer free Wi-Fi service at welcome centers and roadside rest areas located along major Interstate highways.

Planned

Belo Horizonte, Brazil[69]

Brisbane, Australia[70]

Cleveland, Ohio[71] - Wireless will cover Ward 13 of the Old Brooklyn Neighborhood

Groningen, The Netherlands [72] - Municipal Wireless network with open service model, covering entire city, first parts operational, 2010-2012 expanding to 54sq km

Houston, Texas[73]

Jacareí[74], Brazil

Mexico City, Mexico[75][76] free, coupled with new surveillance system (planned 2008)

Milwaukee, Wisconsin[77] - paid service, Midwest Fiber Networks, target date: March 2008

Oakland County, Michigan - free 128 kbit/s, paid for high speed, Wireless Oakland

Republic of Panamá[78]

Sacramento, California[79]

São José dos Campos[80], Brazil

Silicon Valley Joint Venture Wireless Project - free, prototyped for Palo Alto and San Carlos by 2008, Silicon Valley Metro Connect.[81]

St. Louis Park, Minnesota - Set up, but not yet deployed due to contracting disputes.

Tecumseh, Ontario, Canada

Swindon, Wiltshire, UK[82]

Waukesha, Wisconsin[83]

Tel Aviv Downtown and later north part as well.[84]

Source: http://en.wikipedia.org/wiki/Municipal_wireless_network

Appendix “D”

Ontario Public locations that offer free public WiFi or have WiFi enabled communications to support their business in some or all of their locations

Peterborough Public Library	Mohawk College
Cobourg Public Library	Niagara College
Clarington Public Library	Northern College
Trent Hills Library	St. Clair College
(Cambellford, Hastings, Warkworth branches)	St. Lawrence College
North Kawartha Public Library (Apsley)	Sault College
Toronto Public Libraries	Seneca College
Ottawa Public Libraries	Sheridan College
London Ontario Public Libraries	Brock University
Milton Public Libraries	Carleton University
Kitchener Public Libraries	McMaster University
Orillia Public Library	Queen’s University
Marmora and Lake Public Library	Ryerson University
Sunnybrook Hospital	Trent University
Peterborough Regional Health Centre	University of Ottawa
Lindsay Ross Memorial Hospital	University of Waterloo
Toronto Sick Kids Hospital	University of Western Ontario
Ottawa Hospital	Wilfred Laurier University
Algonquin College	University of Windsor
Canadore College	University of Guelph
Centennial College	University of IT
Conestoga College	University of Toronto
Durham College	York University
Fanshawe College	Algonquin & Lakeshore CDSB
Fleming College	Algoma DSB
George Brown College	Avon Maitland DSB
Georgian College	Bluewater DSB
Humber College	CDSB of Eastern Ontario
Lambton College	CECLF du Centre-Est
Loyalist College	CSDC Centre-Sud
	DSB of Niagara
	Dufferin Peel CDSB
	Greater Essex County DSB
	Halton DSB
	Halton CDSB

Hamilton-Wentworth DSB
Hastings and Prince Edward DSB
Kenora CDSB
Keewatin-Patricia DSB
Lakehead DSB
Lambton Kent DSB
Limestone DSB
London DCSB
Near North DSB
Nipissing-Parry Sound CDSB
Ottawa-Carleton DSB
Peterb. Vic. North.& Clarington CDSB
Toronto CDSB
Toronto DSB
Trillium Lakelands DSB
Rainbow DSB
Rainy River DSB
Renfrew County DSB
Simcoe County DSB
Simcoe Muskoka CDSB
Superior-Greenstone DSB
Waterloo CDSB
Wellington CDSB
York Region DSB