ECN

NB PEI Educational Computer Network

Supporting higher education in Atlantic Canada for over 50 years

ANNUAL REPORT 2021-2022

April 1, 2021 - March 31, 2022

MISSION

To ensure high quality Information and Communication Technology (ICT) services
to all member institutions in New Brunswick and Prince Edward Island

VISION

To apply our collective skills and resources to the betterment
of the New Brunswick and Prince Edward Island higher education communities
through the deployment of state-of-the-art technology
while saving money for our provinces and institutions

VALUES

Honesty

Collaboration

Collegiality

Openness

Trust

Visit our website at:
http://www.nbpei-ecn.ca (English)
http://rie-nbipe.ca (French)

NEW BRUNSWICK and PRINCE EDWARD ISLAND EDUCATIONAL COMPUTER NETWORK MEMBERS

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Charlottetown, Prince Edward Island C1A 4Z1

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Fax: (902) 629-4239
www.hollandcollege.com

MARITIME COLLEGE OF FOREST TECHNOLOGY

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MARITIME PROVINCES HIGHER EDUCATION COMMISSION

82 Westmorland, Suite 401
P.O. Box 6000
Fredericton, New Brunswick E3B 5H1

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284 Smythe Street
Fredericton, New Brunswick E3B 3C9

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MOUNT ALLISON UNIVERSITY

155 Main Street
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ST. THOMAS UNIVERSITY

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UNIVERSITÉ DE MONCTON

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Message from the Chair

On behalf of the NB/PEI Educational Computer Network, I am pleased to present our 2021-2022 Annual Report highlighting our activities and accomplishments over the past fiscal year. The ECN continues to exemplify effective collaboration for the benefits of its members while continuing to lead in Network and Communication Technology. This document highlights the ECN's activities and accomplishments over the 2021-22 fiscal year.

I would like to begin by thanking Varsha Wadnikop (NBCC) for taking on the role as Chair of the Network Committee this past year and to acknowledge the skilled and dedicated members of the Network Committee who generously provide expertise and guidance to achieve their mandate. I would also like to thank our respective provincial governments, fellow Board members, partners and stakeholders for their continuous support, hard work and dedication, which combined, has made this network successful for over 52 years.

The NB/PEI ECN continues to build on strengthening its network security and framework around successful security strategies. With the extension of the Security Incident and Event Management (SIEM) tool to all institutions across the ECN, logs are now flowing through the tool for analysis and assessment which will provide security analytics for actionable insight into critical threats. The ECN will be able to accurately detect, prioritize and address these threats.

I hope you will enjoy reading the following pages and learning about the many achievements of the ECN over the past year.

Dr. Alexander (Sandy) MacDonald

Chair, ECN Board of Directors

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Overview

The NB/PEI Educational Computer Network (ECN), founded in 1970, connects all of the universities, community colleges and the Maritime College of Forest Technology in New Brunswick (NB) and UPEI and Holland College in Prince Edward Island (PEI). The primary service provided by the network is connectivity among its members and to the wider world. Many additional benefits are enjoyed by members, notably joint purchasing and licensing, shared IT services, professional development, cyber security and the delivery of network-based services and information exchange.

This approach has enabled all ECN members to realize the benefits of a high capacity, high speed data communications network at a reasonable cost, regardless of size. It also allows members to take advantage of economies of scale not available to individual member institutions, and ensures that smaller institutions receive the same level of service as larger ones. The ECN reduces overall IT expenditures for its members by an average of $1.3 million annually, resulting in 100% return on investment. Through economies of scale, and with expertise contributed by all, ECN members pay less for many software applications, connections to commercial internet services, and equipment, than they could independently. Finally, members become stronger on the national front by providing a united voice with respect to the collective needs of New Brunswick and Prince Edward Island research and education sector.

ECN is one of the oldest yet most innovative of the higher education IT consortia across Canada. ECN members benefit from a strong governance and management model, and a reasonably secure budget that ensures continuity and flexibility. ECN's collaborative and collegial culture firmly supports its many accomplishments.

More about ECN

Following a pilot project in the late 1960's, the NB Educational Computer Network was formed in 1970 when the New Brunswick Higher Education Commission, Mount Allison University, l'Université de Moncton, the University of New Brunswick, and St. Thomas University entered into an agreement to share computer- processing services. In 1974, the newly formed Maritime Provinces Higher Education Commission (MPHEC) assumed stewardship of the Agreement and in 1975, the University of Prince Edward Island joined as a full member, establishing the NB/PEI ECN. The signing of a five-year agreement, from May 1, 1992 to April 30, 1997, formalized the addition of Holland College as the next member of the group. A subsequent five-year agreement (May 1, 1997 to April 30, 2002) witnessed the addition of the Maritime Forest Ranger School (now the Maritime College of Forest Technology) to the list of member institutions of the ECN. The agreement (January 1, 2017 to March 31, 2022) witnessed the addition of the Collège

communautaire de Nouveau Brunswick (CCNB) and the New Brunswick Community College (NBCC) to the list of member institutions.

The ECN is overseen by a Board of Directors, consisting of the Presidents of the member institutions and the Chief Executive Officer of the MPHEC. The overall management and operation of the network and the associated services is the responsibility of a Network Committee consisting of the Senior IT positions from each member institution. The ECN is funded by the Provinces of New Brunswick and Prince Edward Island, through the funding administered by the MPHEC, and is topped-up with some direct funding from some of the institutions.

In addition to providing connectivity among its members, both NB and PEI portions of the network also connects member institutions to the wider world through a shared connection to the Canadian Advanced Research Network (CANARIE) and through CANARIE to the world. ECN has been highly successful in attracting capital investment from the federal government with over one million dollars contributed to the development and expansion of the NB research and education communications network and the Security Information and Event Management (SIEM) project over the last five years. Inestimable value from collaboration, cooperation, and highly professional relationships among the members has contributed greatly to ECN's reputation across Canada as having one of the best governances, management, and operating models among similar organizations.

ECN highlights for 2021-2022 include:

The NB/PEI Educational Computer Network (ECN) continued to successfully provide connectivity among its members and to the wider world, just as it has for the past 52 years.

- With continued COVID-19 restrictions in place, the ECN50RIÉ and AtlanticNet 2020 were delayed for another year and subsequently cancelled. A celebration of the ECN's 50th plus will be held in the fall of 2022.
- The Communications Team continued to circulate, promote, provide updates on ECN successes, and keep partner information (NREN and CANARIE) current by using the website as a communication tool.
- A new 5-year ECN Agreement (2022-2027) was signed by Board members in January 2022.
- Several ECN institutions are participating in the CANARIE led and funded Cybersecurity initiative program (CIP). Enhancing security through access to tools, people and processes at no cost.
- Completed the deployment of QRadar Security and Event Management (SIEM) platform for the ECN and all ECN member sites. This initiative will improve the consortium security with the use of monitoring and alerting tools. A Security Analyst position, partially funded by CANARIE, was created and filled to analyze the data and provide support to members.

With the completion of the installation, the development of an RFP, for the management and monitoring services of the QRadar for 24/7 coverage will be finalized.

- The Climate Change Centre installation in Saint Peter's Bay, PEI progressed and will be in operation by June 2022. This installation will provide a failover through the CANARIE link to Moncton.
- The CANARIE Expression of Interest was approved for the business continuity or disaster recovery connections between the primary nodes between Saint John, Fredericton and Moncton on the NB portion of the network. Fredericton has two data centres which will have ISP connection and a CANARIE connection at both centres.
- In November 2021 the technical workshop was held for the second time "virtually". The workshop consisted of a series of short sessions and presentations on a variety of topics with about 80 people attending. Once again, ECN O365 staff built a platform using SharePoint in conjunction with Microsoft Teams to deliver the online sessions successfully.
- Staff from UNB (hosting service) and other ECN institutions worked together to set up a VOIP Telephony Shared Service that will enable ECN institutions to connect their individual MS Teams Voice environments. Following testing, the service is set to go live in June 2022. This initiative will provide significant cost savings for the ECN members.

Governance (Board of Directors)

The ECN is governed by a Board of Directors (Board) consisting of the following members:

- The President of Holland College
- The Executive Director of the Maritime College of Forest Technology
- The Chief Executive Officer of the MPHEC
- The President of Mount Allison University
- The President of St. Thomas University
- Le recteur de l'Université de Moncton
- The President of the University of New Brunswick
- The President of the University of Prince Edward Island
- The President and CEO of the New Brunswick Community College
- Le président-directeur général du Collège communautaire du Nouveau-Brunswick

The Chairperson, whose term is five years, renewable for a second five-year term, is elected by the Board. Quorum is six members. Decisions must have the unanimous consent of those members voting (with the exception of a vote declaring that the service of the designated installation is inadequate; in which case the designated member is ineligible to vote). Generally, two meetings are held each year. The MPHEC performs administrative duties for the Board and manage the budget on behalf of all the members.

Network Committee

The NB/PEI Educational Computer Network Committee (Network Committee) includes one voting representative nominated by each of the parties of the Agreement as well as a voting member who represents the Network Operations. An alternate representative to the Network Committee is also appointed. Members and alternates are appointed for an indefinite period or are replaced upon recommendation in writing to the Chairperson of the Board. The Chairperson of the Network Committee is nominated by the Network Committee, and is non-voting, and is approved by the Board for a maximum of two 2-year terms. The MPHEC representative is the Secretary of the Network Committee. The Network Committee meets 5-6 times annually. The duties of the Network Committee are listed in Appendix A of the ECN Agreement. The Network Committee makes decisions by unanimous consent of members voting.

The Network Committee submits, on or before February 15, a recommended Network Plan and Budget to the Vice-President (Finance) of each of the member institutions for confirmation. Once confirmed, the Network Committee submits the Network Plan and Budget to the Board for approval. At the end of the year, the Committee drafts an annual report for approval by the Board showing its performance compared to the Network Plan from the beginning of the fiscal year.

Designated installation

UNB is the designated, and the major, installation for the Network. Computing facilities and Information and Communication Technology (ICT) services are provided by UNB to all ECN members as detailed in Appendices B and C of the ECN Agreement.

Meetings

The ECN Network Committee met seven times in 2021-2022:

May 26, 2021	Virtual meeting
July 14, 2021	Virtual meeting
September 22, 2021	Virtual meeting
November 2, 2021	Virtual meeting
January 12, 2022	Virtual meeting
March 16, 2022	Virtual meeting

A list of the Board and Network Committee members is included in Appendix I.

Appendix II includes:

A New Brunswick map displaying the physical network connections and their relative bandwidth as well as CANARIE links.

A New Brunswick map displaying the connected campuses of the partner institutions; there are a total of 36 campuses connected in 15 cities, towns, and villages.

The Prince Edward Island map shows the connected locations and the CANARIE link.

Strategy

The key shared service of the ECN is connecting member institutions via a high-speed, high-capacity research and education network. Members also jointly purchase and deploy IT products and services such as anti-virus software, Office 365, firewalls, password manager solution and security and event management. being some examples of successful collaborations.

ECN updated its strategic plan to focus on the following areas:

Communication and collaboration tools: ECN continues to expand the use of M365 (Microsoft's software platform used for file sharing and co-editing, document and records management, and collaboration), by launching a project to implement Teams telephony as a service; ultimately, this will significantly reduce telephony costs for participating institutions.

Consortium Security: Security issues continue to be a high priority the ECN. The second phase of the national security incident and event management (SIEM) project is nearing completion; we've extended the SIEM to all individual institutions, and logs are now flowing through the tool for analysis and assessment. Most ECN institutions are participating in the CANARIE-led and funded Cybersecurity Initiatives Program (CIP), which to date has made intrusion detection, benchmarking, and other tools available to all at no cost.

Network sustainability and improvement: ECN has focused on network development, extending it where needed, while building in resiliency and redundancy wherever possible. Expansion of UPEI's network to Saint Peters Bay was begun, and renewal of equipment throughout the network was also started.

A table of strategic objectives is in Appendix III.

Financial operations

A copy of the approved budget vs actual expenditures for 2021-2022 (showing a deficit of $415,303 (NB: -$410,325); (PEI: -$4,978) as well as the balance of the ECN committed funds as of March 31, 2022 is included in Appendix IV. New Brunswick's deficit was the result of the planned purchase of hardware and licensing for the QRadar application for the SIEM coverage at the ECN member institutions as well as costs related to the preparation of the VOIP telephony project and maintenance of the new firewall build. Internet Access was higher than budgeted on the PEI side but under budget on the NB side. Hardware, software and maintenance were all below budget for the year. The CAF membership remains stable with no increases and SharePoint services

expenses were slightly lower than budget. Due to ongoing COVID restrictions, meetings and training expenditures are nil. Although the Network operation core costs were stable, additional hardware was purchased for upgrading the Network which reflects an increase overall. The NB GigaPOP was as budgeted. In PEI, most budget line items fell in line with what was proposed although Internet Access was higher. The ECN's accumulated surplus of $598,234 (NB: $527,567; PE: $70,667) will be used to fund some of the newer initiatives as well as other Cyber Security initiatives, Network maintenance and Disaster Recovery. A strategic planning session is scheduled in the first quarter of 2022-23 at which time the ECN Committee will be considering how to best leverage, our resources for cost savings moving forward and to determine the budget line items and the use of our committed funds moving forward.

Appendices

Appendix I: Members, Representatives, Alternates, and Chair

The Board members as of March 31, 2021 were:

Institution	Representative
Mount Allison University	Dr. Jean-Paul Boudreau
St. Thomas University	Ms. Dawn Russell
Université de Moncton	Dr. Denis Prud'homme
University of New Brunswick	Dr. Paul Mazerolle
University of Prince Edward Island	Dr. Greg Keefe
Holland College	Dr. Alexander MacDonald (Chair)
Maritime College of Forest Technology	Mr. Tim Marshall
Maritime Provinces Higher Education Commission	Ms. Catherine Stewart
Collège communautaire du Nouveau-Brunswick	M. Pierre Zundel
New Brunswick Community College	Ms. Mary Butler

The Network Committee Representatives and Alternates as of March 31, 2021 were:

Institution	Representative	Alternate
Mount Allison University	Mr. John Gillis	Mr. Peter Crawshaw
St. Thomas University	Mr. Dan Crabbe	Mr. Robert Brewer
Université de Moncton	M. André Lee	Ms. Maryse Haché
University of New Brunswick	Mr. Terry Nikkel	Benjamin Steeves
New Brunswick Network	Mr. Dave Totton	Mr. John Jackson
University of Prince Edward Island	Mr. Dana Sanderson	Mr. Blair Vessey
Holland College	Mr. Richard MacDonald	Mr. Greg Mermuys

- Maritime College of Forest Technology — Ms. Sarah Weatherby — Mr. Mike Boucher
- Maritime Provinces Higher Education Commission — Ms. Rachael Anderson — Mr. Scott Stonehouse
- Collège communautaire du Nouveau-Brunswick — Mr. Tony Roy — Mr. Marc-André Arseneau
- New Brunswick Community College — Mr. Simon Collier — Mr. Gagandeep Singh

The Chair of the Network Committee was Varsha Wadnikop.

The Network Sustainability Team as of March 31, 2022 were:

Institution	Representative
Mount Allison University	Mr. Peter Crawshaw
St. Thomas University	vacant
Université de Moncton	M. Philippe Boudreau
University of New Brunswick	Ms. Ying Zhang
New Brunswick Network	Mr. David Totton
University of Prince Edward Island	Mr. Doug Burton
Holland College	Mr. Greg Mermuys
Collège communautaire du Nouveau-Brunswick	M. Marc-Andre Arseneau
New Brunswick Community College	Stephen Gamblin

The ECN Communication Team as of March 31, 2022 were:

Institution	Representative
University of New Brunswick	Ms. Andrea Hanson
University of Prince Edward Island	Mr. Dana Sanderson
New Brunswick Community College	Ms. Varsha Wadnikop
Collège Communautaire de Nouveau-Brunswick	Mr. Tony Roy

The Firewall Change Management Team as of March 31, 2022 were:

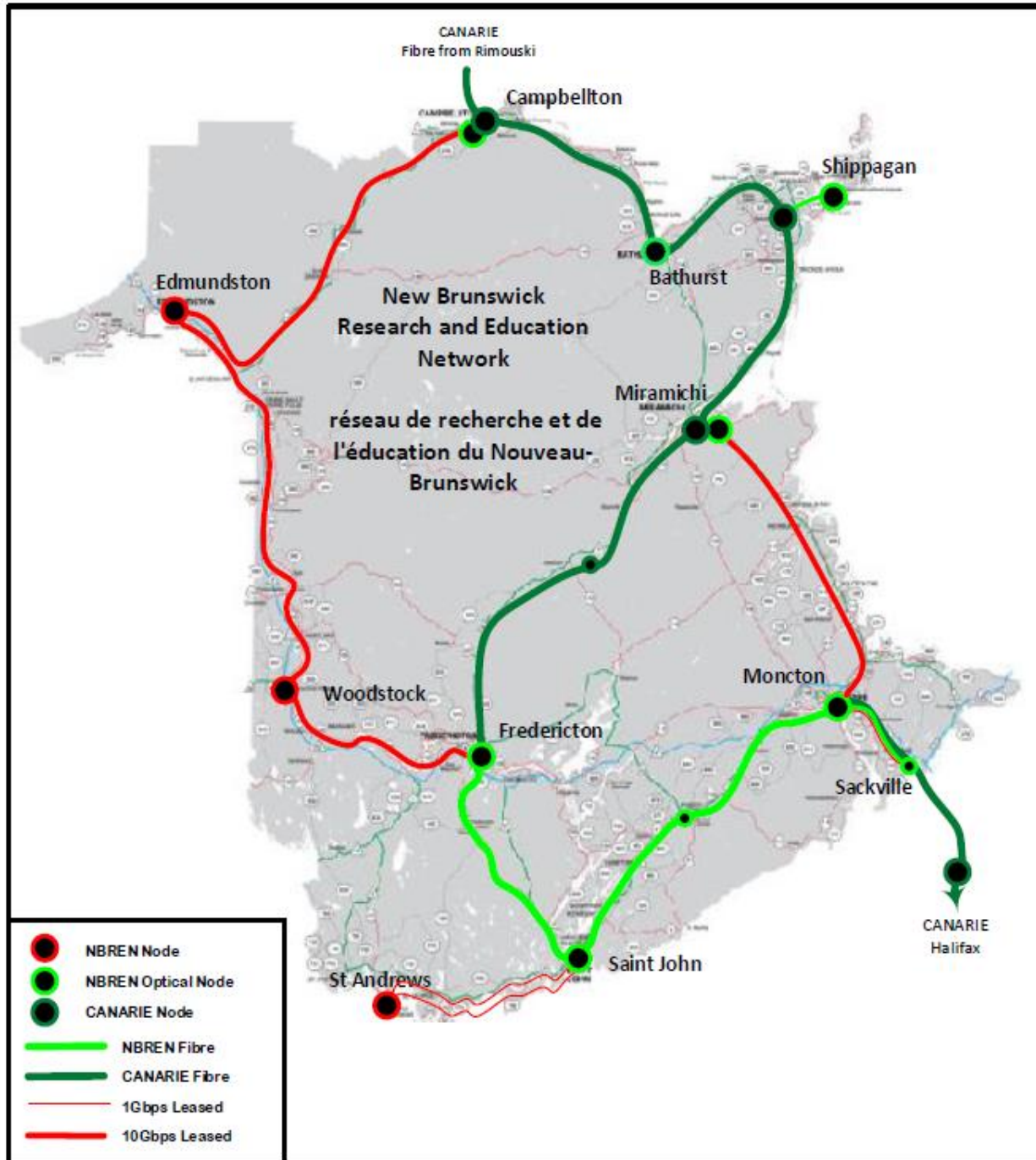| Institution	Representative
Mount Allison University	Mr. Peter Crawshaw
St. Thomas University	Mr. Rob Brewer
Université de Moncton	M. Daniel Poirier
Université de Moncton	M. Stéphane Cormier
Université de Moncton	M. Denis Pelletier

- Université de Moncton — M. Luc Bosse
- University of New Brunswick — Mr. John Debique
- University of New Brunswick — Ms. Ying Zhang
- University of New Brunswick — Mr. Stephen Craft
- University of New Brunswick — Mr. Dave Totton
- University of New Brunswick — Mr. Jonathan MacAdam
- University of Prince Edward Island — Mr. Walter Pirch
- University of Prince Edward Island — Mr. Geoffrey Mondoux
- Holland College — Mr. Greg Mermuys
- Maritime College of Forest Technology — Mr. Bob Ross
- Maritime Provinces Higher Education Commission — Mr. Scott Stonehouse
- Collège communautaire du Nouveau-Brunswick — M. Denis Landry
- Collège communautaire du Nouveau-Brunswick — M. Marc-André Arseneau
- New Brunswick Community College — Mr. Georges Leblanc
- New Brunswick Community College — Mr. Gagandeep Singh

Appendix II: Research and Education Networks (REN)

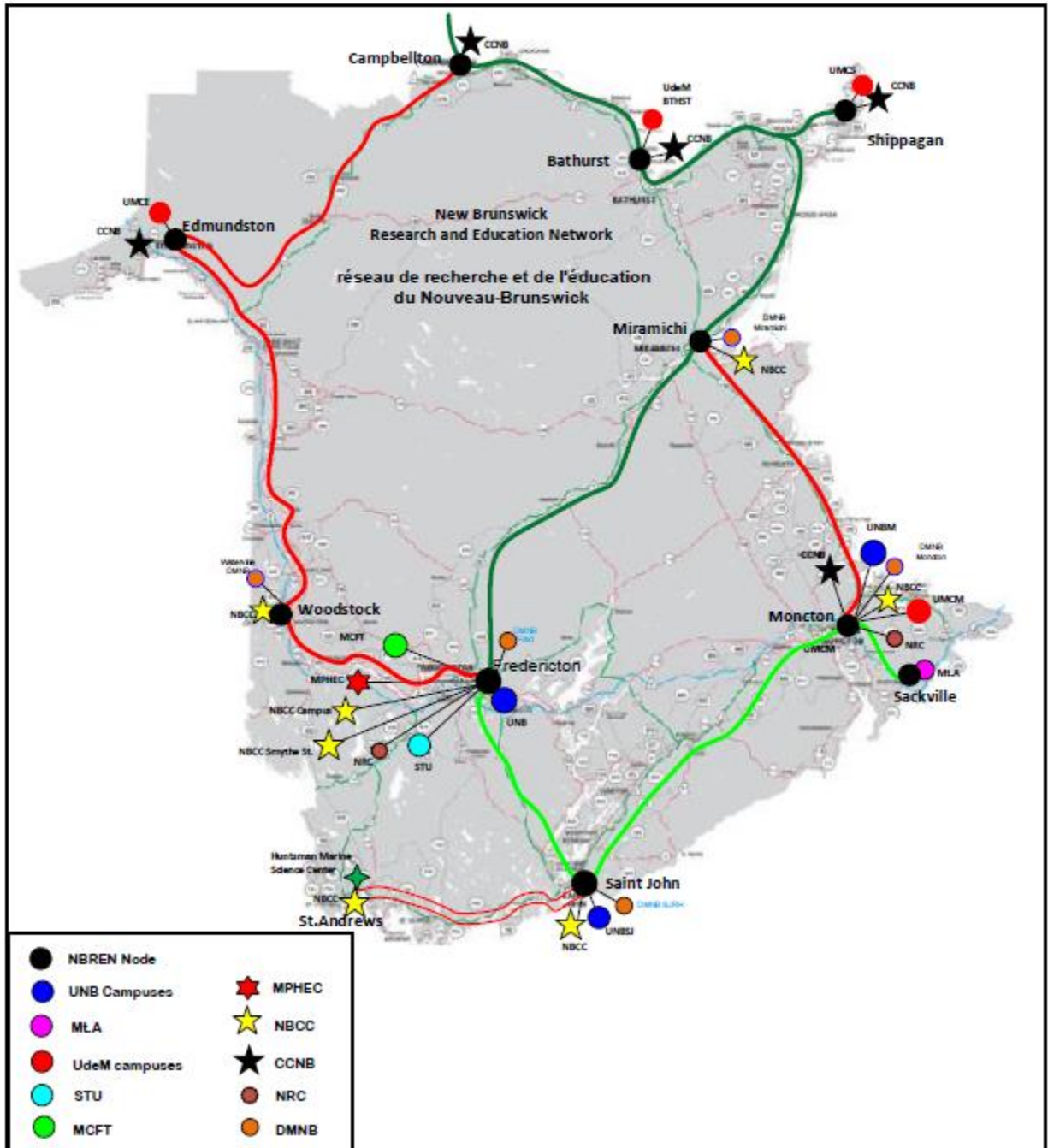New Brunswick Research and Education Network

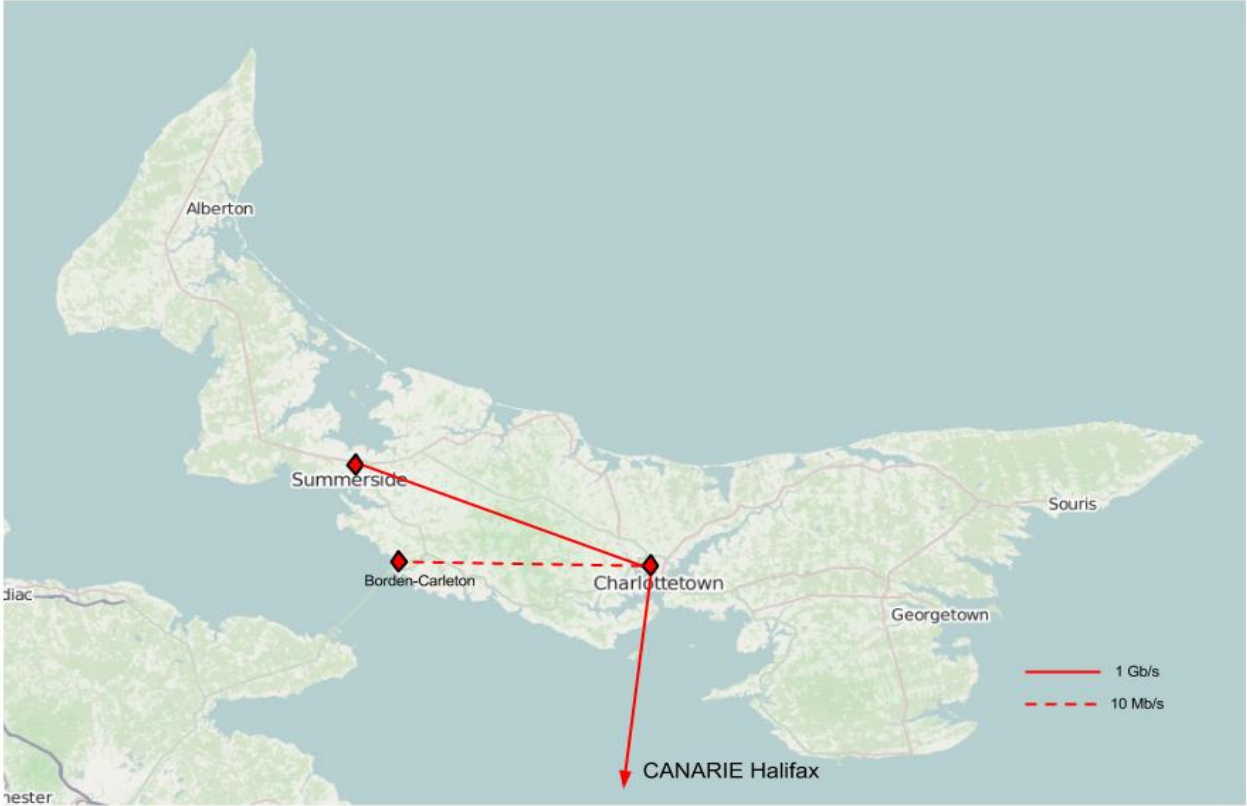**NB REN – Research and Education Network**
with
Optical Transport Layer

NB REN – Research and Education Network

Main Campus Locations

Prince Edward Island Research and Education Network

	Objectives 2021	Objectives 2022	Objectives 2023
Connectivity	• UPEI network extension to Saint Peters Bay site • Reconfigure PEI provincial network for redundancy	• Provincial network redundancy • Fiber IRU renewal for Fredericton-Saint John-Moncton connections	• Network equipment renewal
Shared Services	• SIEM 1b data collection • M365 expansion continued • VOIP-as-a-service assessment	• VOIP as a shared service implementation • Complete SIEM 1b • SIEM monitoring service planning	• Business case for MS A5 licensing
Joint Purchasing	• Deploy password manager to students, staff, and faculty across ECN	• Acquire and deploy cybersecurity tools via CIP • Continue Canadian Access Federation (CAF) membership	• Review Minitab options
Professional Development	• Atlantic Net 2021 (delayed due to Covid) • ECN 50th (delayed due to Covdi) • AUCTC (delayed due to Covid) • ECN workshop	• AUCTC • ECN workshop • ECN 50th + celebration • Canheit	• AUCTC • ECN workshop • Canheit
National Representation and Sharing of Information and Best Practices	• NREN GC • NDRIO • CUCCIO	• NREN GC • Alliance	• NREN GC • Alliance
Organizational	• Consolidate NB and PEI budgets (not needed) • Renewal of 5 year ECN Agreement	• Strategic plan renewal • Participate in National Cybersecurity Assessment via CIP	• Budget reset (assess ongoing operational budget commitments)

Appendix IV: Statements of Revenue and Expenditures

EDUCATIONAL COMPUTER NETWORK
NEW BRUNSWICK AND PRINCE EDWARD ISLAND
STATEMENT OF REVENUE AND EXPENDITURES*

	Budget	Actual
PERIOD ENDED: 3/31/2022	**Budget**	**Actual**
Account Description	**2021-2022**	**2021-2022**
Revenue		
Provincial Transfers	946,538	946,538
Direct Funding from institutions	354,476	354,476
External fees for service	54,469	0
Committed funds	0	0
Total Revenue	**1,355,483**	**1,301,014**
Expenditures		
Network Shared Services		
UNB as the designated installation (service provider)	230,695	230,696
Total Network Shared Services	230,695	230,696
Telecommunications		
PEI Provincial Lines & Internet Access	57,047	68,291
NB Internet Access	100,000	69,900
Total Telecommunications	157,047	138,191
Hardware, software, maintenance		
Hardware	35,000	901
Software	65,929	65,184
CAF Maintenance	23,300	23,300
Maintenance	61,714	48,588
Total Hardware, Software, Maintenance	185,943	137,973
Meetings and Collaboration		
Network Committee	25,000	0
Collaborative Projects	232,522	773,773
RAN contributions to SIEM Initiative	30,000	-39,658
ECN SharePoint Services	68,700	61,199
Total Meetings and Collaboration	356,222	795,314
NBREN and GigaPOP		
NBREN CORE	379,807	389,145
NBREN Additional Connections	20,769	0
NB GigaPOP Services	25,000	25,000
Total NBREN and GigaPOP	425,576	414,145
Total Expenditures	**1,355,483**	**1,716,319**
Net revenue (net loss)	*0*	*-415,305*
NB & PEI Committed Funds Balance as at March 31, 2022:		
Balance, April 1, 2021		1,013,537
Net revenue (loss) for the year		-415,305
Balance, March 31, 2022		**598,232**

*as per MPHEC audited financial statements

EDUCATIONAL COMPUTER NETWORK
NEW BRUNSWICK
STATEMENT OF REVENUE AND EXPENDITURES*

PERIOD ENDED: 3/31/2022

Account Description	Budget 2021-2022	Actual 2021-2022
Revenue		
Provincial Transfers	860,938	860,938
Direct contributions	328,000	328,000
External Fees for Service	54,469	0
Committed Funds	0	0
Total Revenue	**1,243,407**	**1,188,938**
Expenditures		
Network Shared Services		
UNB as the designated installation (service provider)	219,161	219,161
Total Network Shared Services	219,161	219,161
Telecommunications		
Internet Access	100,000	69,900
Total Telecommunications	100,000	69,900
Hardware, software, maintenance		
Hardware	35,000	901
Software	52,205	51,495
CAF membership	18,300	18,300
Maintenance	51,714	39,819
Total Hardware, software, maintenance	157,219	110,515
Meetings and Collaboration		
Network Committee	20,000	0
Collaborative Projects	222,751	764,002
RAN contribution to SIEM initiative	30,000	-39,658
Shared Services	68,700	61,199
Total Meetings and Collaboration	341,451	785,543
NBREN and GigaPOP		
NBREN CORE	379,807	389,145
NBREN Additional Connections	20,769	0
NB GigaPOP Services	25,000	25,000
Total NBREN and GigaPOP	425,576	414,145
Total Expenditures	*1,243,407*	*1,599,263*
Net revenue (net loss)	*0*	*-410,325*

NB Committed Funds Balance as at March 31, 2022:

Balance, April 1, 2021	937,892
Net revenue (loss) for the year	-410,325
Balance, March 31, 2022	**527,567**

*as per MPHEC audited financial statements

EDUCATIONAL COMPUTER NETWORK
PRINCE EDWARD ISLAND
STATEMENT OF REVENUE AND EXPENDITURES*

PERIOD ENDED: 3/31/2022

Account Description	Budget 2021-2022	Actual 2021-2022
Revenue		
Provincial Transfers	85,600	85,600
Direct HC/UPEI Transfer	26,476	26,476
Total Revenue	**112,076**	**112,076**
Expenditures		
Network Shared Services		
UNB as the designated installation (service provider)	11,534	11,535
Total Network Shared Services	11,334	11,535
Telecommunications		
Provincial Lines & Internet Access	57,047	68,291
Total Telecommunications	57,047	68,291
Hardware, software, maintenance		
Hardware	0	0
Software	13 724	13,689
CAF Maintenance	5,000	5,000
Maintenance	10,000	8,769
Total Hardware, software, maintenance	28 724	27,458
Meetings and Collaboration		
Network Committee	5,000	0
Collaborative Projects	9771	9,771
Total Meetings and Collaboration	14,771	9,771
Total Expenditures	**112,076**	**117,054**
Net revenue (net loss)	*0*	*-4,978*

PEI Committed Funds Balance as at March 31, 2022:

Balance, April 1, 2021	75,645
Net revenue (loss) for the year	-4,978
Balance, March 31, 2022	**70,667**

*as per MPHEC audited financial statements