ECN

NB PEI Educational Computer Network

Supporting higher education in Atlantic Canada for over 50 years

ANNUAL REPORT
2023-2024

April 1, 2023 - March 31, 2024

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
Social Responsibility

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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Message from the Chair

On behalf of the NB/PEI Educational Computer Network, I am pleased to present our 2023-2024 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 2023-24 fiscal year.

I would like to begin by thanking Marc-André Arseneau (CCNB) for his 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 54 years.

The NB/PEI ECN continues to focus on successfully securing our members' entire IT infrastructure, collectively using cybersecurity tools and services that none would be able to do alone. The value from collaboration, cooperation and highly professional relationships among its members has contributed greatly to the ECN's longevity and reputation across Canada.

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. For several years, annual savings have averaged $1.5M. 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 current five-year agreement expires March 31, 2027.

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 and PEI 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.

Cyber security is one of the major risks that face all ECN institutions. Like other risks, this is an institutional risk and multiple stakeholders each have their own roles and responsibilities in the protection of sensitive data, finances and reputation of the organization.

Each organization is responsible for identifying, prioritizing and managing their own cyber security risks. Each respective IT Organization is typically responsible for the technology components which have been assigned through the cyber security risk management process. The ECN provides support and services to each member IT Organization, as per the initiatives collectively defined through the ECN Strategic Planning process – one being the cyber security initiative.

A successful cyber security strategy at any organization includes the articulation of clear accountabilities and structures (governance), as well as comprehensive strategies and frameworks that all stakeholders can use to collectively identify and mitigate cyber risk.

While the details may differ from ECN institution to institution, each respective IT Organization's responsibility is to ensure that technology operations support the cyber security priorities as defined by the organization.

The ECN's role is to support the individual and collective IT Organizations in their efforts to achieve those cyber security objectives.

ECN highlights for 2023-2024 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 54 years. In addition,

- Hosted a virtual ECN Technical Workshop in December 2023 that focused on QRadar and Stratejm and the joint initiative to enhance the management of cybersecurity incidents and response. ECN purchased QRadar which is a network security management platform that provides situational awareness and compliance support. QRadar uses a combination of flow-based network knowledge, security event correlation and asset-based vulnerability assessment. The ECN has engaged the services of Stratejm for after- hours monitoring of the QRadar SIEM tool. They provide real-time situational awareness to security logs, resulting in quick IT responses to potential threats and generate accurate actionable alerts and reports.
- Participated in the second CANARIE led and funded National Cybersecurity Assessment to identify individual institutions cybersecurity gaps as well as common issues across institutions. The results provided a narrative for ECN, Atlantic Canada and the higher education sector across Canada on potential collaborative initiatives.
- Continued to take part in CANARIE Cybersecurity Initiative Programs (CIP), including QRadar Security Information and Event Management (SIEM) platform that went live in September with Stratejm monitoring logs after hours from ECN members.
- Participating in a pilot led by the Canadian Shared Security Operations Centre (CanSSOC). UNB, PEI and NBCC are taking part in this pilot. The goal is to determine the required capabilities, architecture and roles of the functioning federated, shared national security operations centre.
- Developed a router replacement plan and purchase, including a double router at major sites and upgrade to 10G to all connected institutions.
- Developed the PEI Regional Area Network (RAN) connecting PEI, Holland College and the UPEI Canadian Centre for Climate Change in St. Peters Bay. It provides direct routing between the New Brunswick Computer Network (NB ECN) and the PEI Education Computer Network (PEI ECN) for shared services as well as additional resiliency for multiple network services.

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 five times in 2023-2024:

May 26, 2023	University of Prince Edward Island
July 12, 2023	Université de Moncton
September 27, 2023	NBCC Saint John
January 24, 2024	Virtual meeting
March 13, 2024	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 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 is continually expanding the use of M365, Microsoft's software platform for file sharing, co-editing, document and records management, and collaboration. The Teams telephony as a service has been successfully launched which will significantly reduce telephony costs for participating institutions.

Consortium Security: Security remains a top priority for ECN. We have extended the national security incident and event management (SIEM) to all individual institutions and logs are now being processed through the tool for analysis and assessment. Stratejm, an Ontario-based company, is providing after business hours SIEM monitoring. Additionally, most ECN institutions are actively participating in the Cybersecurity Initiatives Program (CIP) led and funded by CANARIE. This program has provided intrusion detection, benchmarking, and other essential tools to all participants at no cost.

Network sustainability and improvement ECN has prioritized the development and enhancement of the network, expanding its reach as necessary and reinforcing its resiliency and redundancy whenever possible. The expansion of UPEI's network to Saint Peters Bay was successfully completed, and a secondary data center was built in Moncton, leveraging major carrier fiber. A 100G optical system was added between Fredericton, Saint John and Moncton at backup locations. New routers with extended capacity and added redundancy are being implemented around the ECN. Network equipment renewal is ongoing.

A table of strategic objectives is in Appendix III.

Financial operations

A copy of the approved budget vs actual expenditures for 2023-2024 (showing a deficit of $390,703 (NB: -$412,961); (PEI: $22,259) as well as the balance of the ECN committed funds as of March 31, 2024, is included in Appendix IV. New Brunswick's deficit was the result of the planned purchase for the after-hours monitoring service with Stratejm for the SIEM coverage. Internet Access was lower than budgeted for both NB and PEI. Hardware was well below budget while software and maintenance were higher than budgeted for the year. The CAF membership remains stable with no increases and SharePoint services expenses slightly more than budgeted. Meetings and training expenditures were lower due to less in person meetings and a virtual workshop. The Network Operation core costs were higher due to Network upgrades. The NB GigaPOP was as budgeted. The ECN's accumulated surplus of $120,260 (NB: $14,280; PEI: $105,980) will be used to fund the SIEM after hours monitoring service. The after-hours monitoring is expected to use the committed funds in the next year. 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 carefully until CANARIE can identify future opportunities that will be available to the ECN to alleviate some of these costs. The Network Committee will be developing a new three-year Strategic Plan that will include a sustainable funding model for the ECN.

Appendices

Appendix I: Members, Representatives, Alternates, and Chair

The Board members as of March 31, 2024 were:

Institution	Representative
• Mount Allison University	Dr. Robert MacKinnon
• St. Thomas University	Dr. M. Nauman Farooqi
• 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. Chris Finnamore
- 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, 2024 were:

Institution	Representative	Alternate
Mount Allison University	Mr. John Gillis	Mr. Peter Crawshaw
St. Thomas University	Ms. Krista Barrieau	Mr. Robert Brewer
Université de Moncton	M. André Lee	Ms. Maryse Haché
University of New Brunswick	Mr. Mark Humphries	Mr. Benjamin Steeves
New Brunswick Network	Mr. Ying Zhang	Mr. Chris Miller
University of Prince Edward Island	Mr. Dana Sanderson	Mr. Rob Milman
Holland College	Mr. Jacob Gallant	Mr. Greg Mermuys
Maritime College of Forest Technology	Mr. Riley Côté-DeMerchant	Mr. Bob Ross
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. Blair Sawler

The Chair of the Network Committee was Marc-André Arseneau.

The Network Sustainability Team as of March 31, 2024 were:

Institution	Representative
Mount Allison University	Mr. Peter Crawshaw
St. Thomas University	Mr. Krista Barrieau
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. Graham Nixon
Holland College	Mr. Greg Mermuys
Collège communautaire du Nouveau-Brunswick	M. Marc-André Arseneau
New Brunswick Community College	Mr. Tim O'Brien

The ECN Communication Team as of March 31, 2024 were:

Institution	Representative
• University of Prince Edward Island	Mr. Dana Sanderson
• New Brunswick Community College	Mr. Marc-André Arseneau
• Collège Communautaire de Nouveau-Brunswick	Mr. Tony Roy

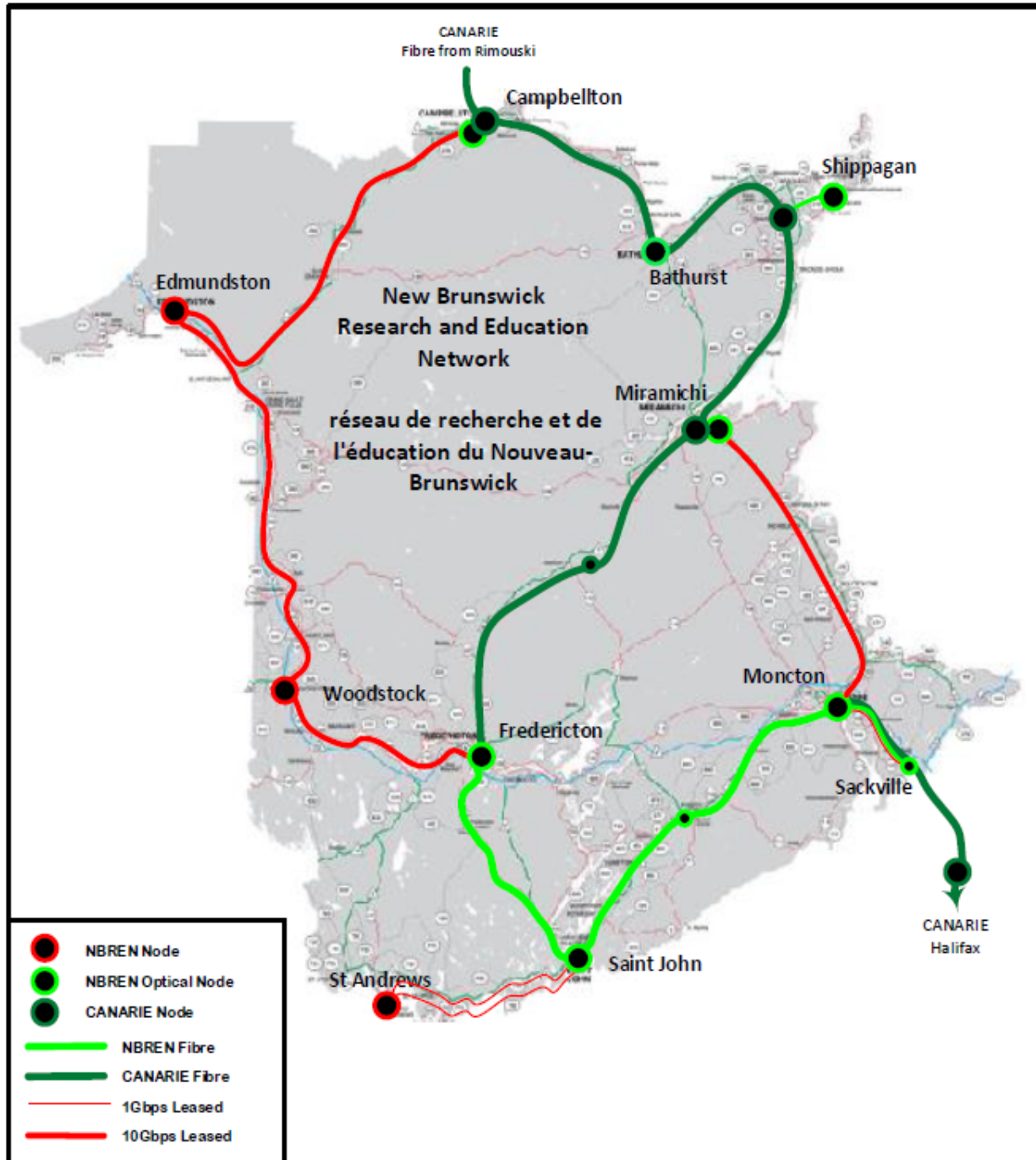The Firewall Change Management Team as of March 31, 2024 were:

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. Dave Totton
• University of New Brunswick	Mr. Jonathan MacAdam
• University of Prince Edward Island	Mr. Graham Nixon
• University of Prince Edward Island	Mr. Jaime Monslave
• 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. Blair Sawler

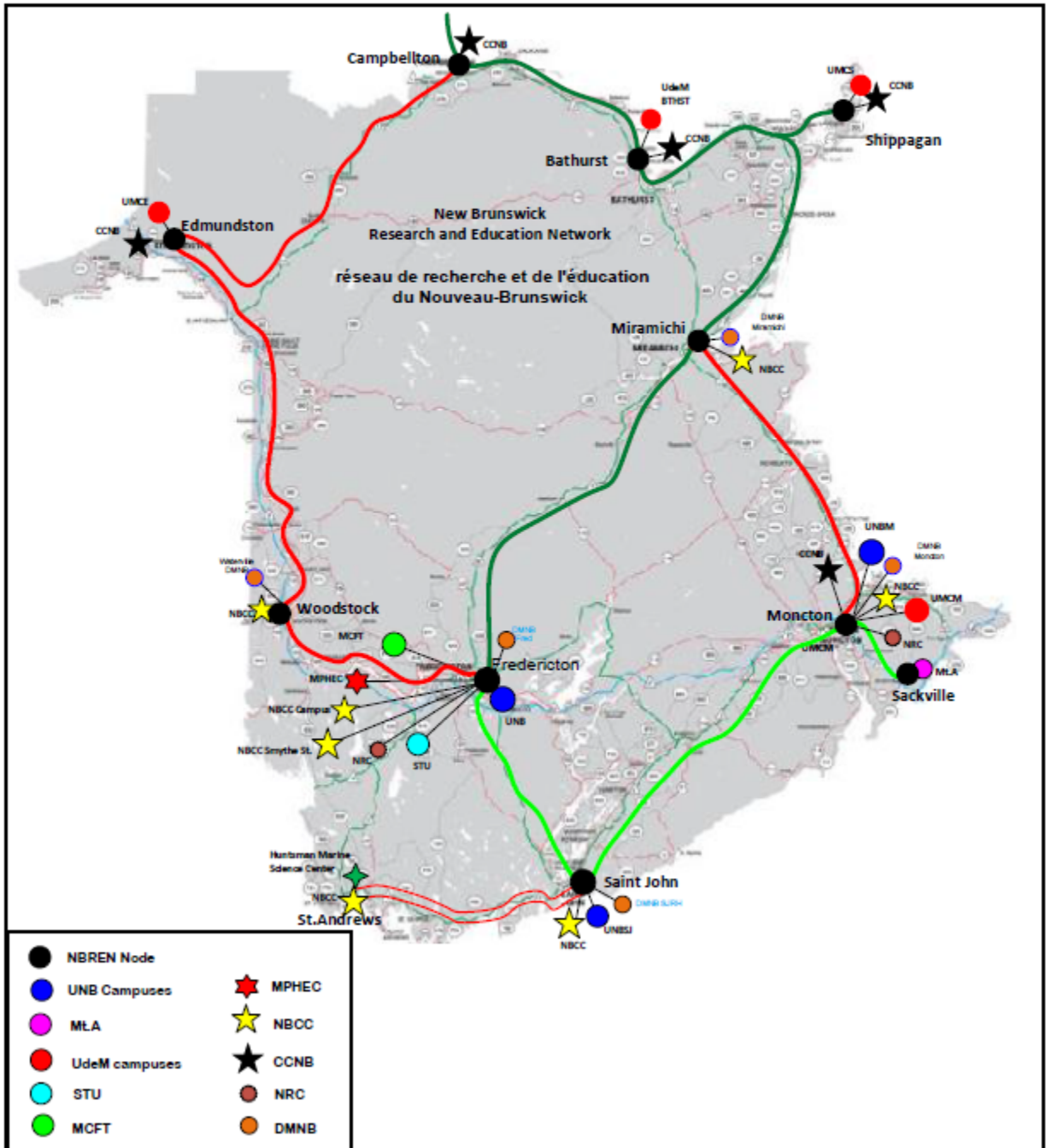# Appendix II: Research and Education Networks (REN)

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

Appendix III: ECN Service Areas / Projects

	Objectives 2023	Objectives 2024	Objectives 2025
Connectivity	• Network Equipment renewal	• Explore RPKI	• Network Equipment needs
Shared Services	• SIEM monitoring implementation	• SIEM monitoring expansion to 24/7 • Extending SIEM and Stratejm to other Maritime institutions	• SIEM Monitoring expansion to 24/7 • Extending SIEM and Stratejm to other Maritime institutions
Joint Purchasing	• Review Minitab options • Continue Canadian Access Federation (CAF) membership	• Explore Microsoft A5 licensing prospects • Continue Canadian Access Federation (CAF) membership	• Procurement review • Continue Canadian Access Federation (CAF) membership
Professional Development	• AUCTC • ECN workshop • Canheit	• AUCTC • ECN workshop • Canheit	• AUCTC • ECN workshop • Canheit
National Representation and Sharing of Information and Best Practices	• NREN GC • Alliance	• NREN GC • Alliance	• NREN GC • Alliance
Organizational	Participate in National Cybersecurity Assessment via CIP	• Strategic Plan renewal • Explore collaborative links with Atlantic region RANs • Secure funding model	• Developing an inventory of institutional applications across the ECN

Appendix IV: Statements of Revenue and Expenditures

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

Account Description	PERIOD ENDED: 3/31/2024 Budget 2023-2024	Actual 2023-2024
Revenue		
Provincial Transfers	946,538	946,538
Direct Funding from institutions	354,476	354,476
External fees for service	53,869	0
Committed funds	271,580	0
Total Revenue	**1,626,463**	**1,301,014**
Expenditures		
Network Shared Services		
UNB as the designated installation (service provider)	238,698	238,698
Total Network Shared Services	238,698	238,698
Telecommunications		
PEI Provincial Lines & Internet Access	57,047	40,148
NB Internet Access	70,000	41,946
Total Telecommunications	127,047	82,094
Hardware, software, maintenance		
Hardware	20,000	149
Software	59,112	62,308
CAF Maintenance	23,300	23,300
Maintenance	148,634	150,170
Total Hardware, Software, Maintenance	251,046	235,927
Meetings and Collaboration		
Network Committee	20,000	6,598
Collaborative Projects	412,205	566,528
RAN contributions to SIEM Initiative	35,000	26,089
ECN SharePoint Services	0	955
Total Meetings and Collaboration	265,504	600,171
NBREN and GigaPOP		
NBREN CORE	496,699	509,828
NBREN Additional Connections	20,769	0
NB GigaPOP Services	25,000	25,000
Total NBREN and GigaPOP	542,468	534,828
Total Expenditures	**1,626,464**	**1,691,717**
Net revenue (net loss)	***0***	***-390,703***
NB & PEI Committed Funds Balance as at March 31, 2023:		
Balance, April 1, 2023		510,962
Net revenue (loss) for the year		-390,702
Balance, March 31, 2024		**120,260**

*as per MPHEC audited financial statements

EDUCATIONAL COMPUTER NETWORK
NEW BRUNSWICK
STATEMENT OF REVENUE AND EXPENDITURES*

PERIOD ENDED: 3/31/2023

Account Description	Budget 2023-	Actual 2023-2024
Revenue		
Provincial Transfers	860,938	860,938
Direct contributions	328,000	328,000
External Fees for Service	53,869	0
Committed Funds	271,580	0
Total Revenue	**1,514,387**	**1,188,938**
Expenditures		
Network Shared Services		
UNB as the designated installation (service provider)	226,763	226,763
Total Network Shared Services	226,763	226,763
Telecommunications		
Internet Access	70,000	41,946
Total Telecommunications	70,000	41,946
Hardware, software, maintenance		
Hardware	20,000	149
Software	47,781	50,144
CAF membership	18,300	18,300
Maintenance	138,634	141,401
Total Hardware, software, maintenance	224,715	209,994
Meetings and Collaboration		
Network Committee	15,000	5,564
Collaborative Projects	400,441	555,760
RAN contribution to SIEM initiative	35,000	26,089
SharePoint Services	0	955
Total Meetings and Collaboration	450,441	588,369
NBREN and GigaPOP		
NBREN CORE	496,699	509,828
NBREN Additional Connections	20,769	0
NB GigaPOP Services	25,000	25,000
Total NBREN and GigaPOP	542,468	534,828
Total Expenditures	*1,514,387*	*1,601,899*
Net revenue (net loss)	*0*	*-412,961*
NB Committed Funds Balance as at March 31, 2023:		
Balance, April 1, 2023		427,241
Net revenue (loss) for the year		-412,961
Balance, March 31, 2024		**14,280**

 *as per MPHEC audited financial statements

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

PERIOD ENDED: 3/31/2023

Account Description	Budget 2023-2024	Actual 2023-2024
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)	11,934	11,935
Total Network Shared Services	11,934	11,935
Telecommunications		
Provincial Lines & Internet Access	57,047	40,148
Total Telecommunications	57,047	40,148
Hardware, software, maintenance		
Hardware	0	0
Software	11,331	12,164
CAF Maintenance	5,000	5,000
Maintenance	10,000	8,769
Total Hardware, software, maintenance	26,331	25,933
Meetings and Collaboration		
Network Committee	5,000	1,034
Collaborative Projects	11,764	10,768
Total Meetings and Collaboration	16,764	11,802
Total Expenditures	**112,076**	**89,817**
Net revenue (net loss)	*0*	*22,259*

PEI Committed Funds Balance as at March 31, 2024:

Balance, April 1, 2023		83,721
Net revenue (loss) for the year		22,259
Balance, March 31, 2024		**105,980**

*as per MPHEC audited financial statements