

Supporting higher education in Atlantic Canada for over 50 years

ANNUAL REPORT 2022-2023

April 1, 2022 - March 31, 2023

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

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Message from the Chair



On behalf of the NB/PEI Educational Computer Network, I am pleased to present our 2022-2023 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 2022-23 fiscal year.

I would like to begin by thanking Varsha Wadnikop (NBCC) for continuing her 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 53 years.

The NB/PEI ECN continues to be amazingly successful in securing our members' entire IT infrastructure, collectively deploying state-of-the art 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 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

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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 reduced IT costs for members and thus funders including the provinces by almost \$2M in 2021-22, a 139% return on investment. In the last five 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, I'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 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 Department 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 Department, 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 Department'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 Departments in their efforts to achieve those cyber security objectives.

ECN highlights for 2022-2023 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. In addition,

- ECN celebrated its 52nd Anniversary Event at the Delta Hotel in Fredericton that featured keynote speaker Alistair Croll addressing the Digital Future "The Slope of the Curve" as well as a discussion panel composed of Jim Ghadbane (CANARIE President & CEO, Dr. Barb Carra (Cybera President & CEO), Dr. Sandy MacDonald (Holland College President and ECN Board Chair), Dr. Moulay Akhloufi (UdeM Artificial Intelligence Researcher) and Catherine Stewart (MPHEC CEO & ECN Board member). Other guest speakers included past and present ECN members.
- The ECN Technical Workshop followed the Anniversary celebration, "The future of IT is here are you ready?" Conversation and debate among IT professionals to determine best strategies for implementing a shared service model for SaaS solutions.
- ECN institutions participated in the CANARIE led and funded National Cybersecurity
 Assessment (NCA). The assessment helps identify individual institutions cybersecurity
 gaps as well as issues that ECN members have in common. The data will be aggregated
 for a national view as well as a view of the Maritime region. Identifying common gaps
 across the country will provide CANARIE with necessary information to address the future
 needs of our institutions and will drive funding and initiative decisions.
- The deployment of QRadar Security Information and Event Management (SIEM) platform for the ECN and all ECN member sites was completed. An RFP was issued to outsource afterhours monitoring of the QRadar tool to address the staffing gap that is common across ECN members. The vendor will be identified in the Spring 2023.
- The successful launch of the Climate Change Centre in Saint Peter's Bay, PEI took place in June 2022. This installation provides a failover through the CANARIE link to Moncton.
- ECN members continue to take part in CANARIE Cybersecurity Initiative Programs. (CIP)
- UNB (which provides a hosting service) helped other ECN institutions successfully transition to MS Teams VOIP Telephony. The shared Service enables ECN institutions to update their individual telephony environments, providing significant cost savings for several members.
- ECN held a Strategic Planning session to identify 1) what is working well, 2) what could be done better, 3) what do we want to try and 4) what puzzles us. As a result, an updated strategic plan was developed.

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 2022-2023:

May 26, 2022 Holland College

July 13, 2022 Université de Moncton

September 21, 2022 NBCC Saint John February 1, 2023 Virtual meeting March 15, 2023 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:

<u>Communication and collaboration tools</u>: 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.

<u>Consortium Security</u>: 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. The final phase, outsourcing SIEM monitoring after business hours, is also well underway; a service provider has been selected (Stratejm Inc., an Ontario company). 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.

<u>Network sustainability and improvement</u>: 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 completed, 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 2022-2023 (showing a deficit of \$87,271 (NB: -\$100,325); (PEI: \$13,054) as well as the balance of the ECN committed funds as of March 31, 2023 is included in Appendix IV. New Brunswick's deficit was the result of the planned purchase for the QRadar application for the SIEM coverage as well as costs related to the preparation of the VOIP telephony project and network upgrades. Internet Access was lower than budgeted on the NB side with some credits applied as a result of the renewal. Hardware was 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 were lower than budget with the elimination of this expenditure halfway through the year. Meetings and training expenditures on the NB side were slightly higher due to the 52nd Anniversary celebration and workshop attendance. The Network Operation core costs were higher due to Network upgrades, specifically the Communications Room in Moncton. 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 \$510,962 (NB: \$427,241; PE: \$83,721) will be used to fund the SIEM after hours monitoring service. The afterhours monitoring is expected to draw significantly from the committed funds in the next two years. 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 made available to the ECN to alleviate some of these costs.

Appendices

Appendix I: Members, Representatives, Alternates, and Chair

The Board members as of March 31, 2023 were:

	<u>Institution</u>	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	Ms. Catherine Stewart
	Commission	
•	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, 2023 were:

	<u>Institution</u>	Representative	<u>Alternate</u>
•	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	vacant
•	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. 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. Gagandeep Singh

The Chair of the Network Committee was Varsha Wadnikop.

The Network Sustainability Team as of March 31, 2023 were:

	<u>Institution</u>	Representative
•	Mount Allison University	Mr. Peter Crawshaw
•	St. Thomas University	Mr. Dan Crabbe
•	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. Rob Milman
•	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, 2023 were:

<u>Institution</u> <u>Representative</u>

University of Prince Edward Island
 New Brunswick Community College
 Mr. Dana Sanderson
 Ms. Varsha Wadnikop

Collège Communautaire de Nouveau-Brunswick Mr. Tony Roy

The Firewall Change Management Team as of March 31, 2023 were:

	<u>Institution</u>	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 • Collège communautaire du Nouveau-Brunswick M. Denis Landry Collège communautaire du Nouveau-Brunswick M. Marc-André Arseneau Mr. Georges Leblanc • New Brunswick Community College New Brunswick Community College Mr. Gagandeep Singh

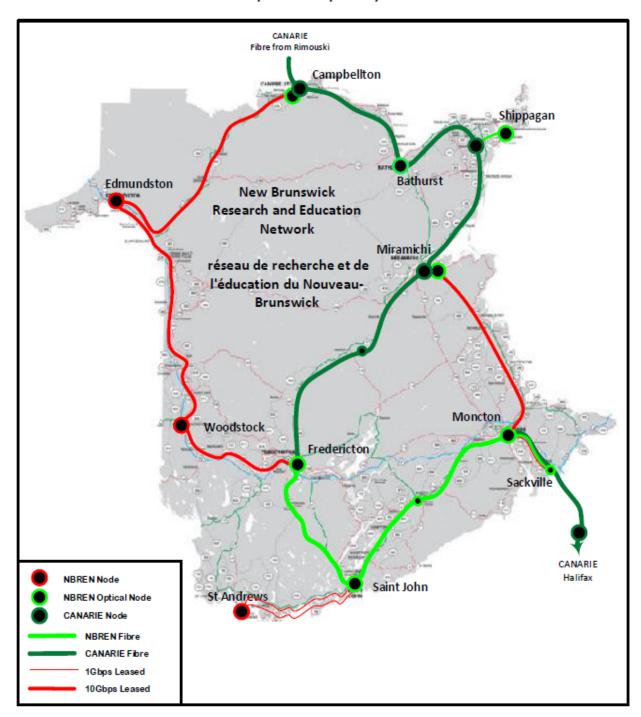
Mr. Scott Stonehouse

Appendix II:

Research and Education Networks (REN)

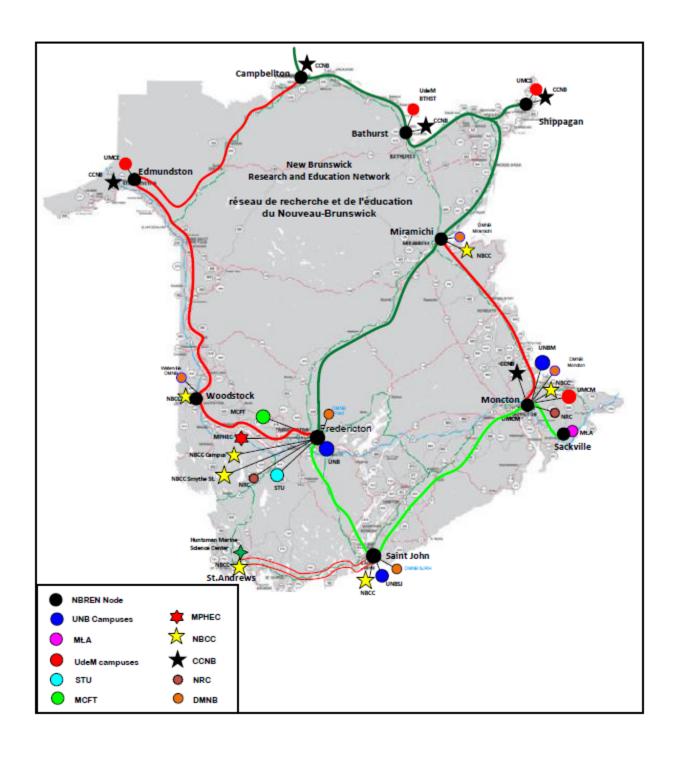
New Brunswick Research and Education Network

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 2022	Objectives 2023	Objectives 2024
Connectivity	 Provincial network redundancy Fiber IRU renewal for Fredericton-Saint John-Moncton connections 	Network Equipment renewal	Explore RPKI
Shared Services	 VOIP as a shared service implementation Complete SIEM 1b SIEM monitoring service planning 	SIEM monitoring implementation	SIEM monitoring expansion to 24/7
Joint Purchasing	 Acquire and deploy cybersecurity tools via CIP Continue Canadian Access Federation (CAF) membership 	Review Minitab options	Explore Microsoft A5 licensing prospects
Professional Development	AUCTCECN workshopCanheit	AUCTCECN workshopCanheit	AUCTCECN workshopCanheit
National Representation and Sharing of Information and Best Practices	NREN GCAlliance	NREN GCAlliance	NREN GC Alliance
Organizational	Strategic plan renewal	 Participate in National Cybersecurity Assessment via CIP 	Explore collaborative links with Atlantic region RANs

Appendix IV:

Statements of Revenue and Expenditures

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

PERIOD ENDED: 3/31/2023 Budget Actual			
	-	Actual	
Account Description	2022-2023	2022-2023	
Revenue			
Provincial Transfers	946,538	946,538	
Direct Funding from institutions	354,476	354,476	
External fees for service	54,469	0	
Committed funds	188,421	0	
Total Revenue	1,543,904	1,301,014	
Expenditures			
Network Shared Services			
UNB as the designated installation (service provider)	234,017	234,017	
Total Network Shared Services	234,017	234,017	
Telecommunications			
PEI Provincial Lines & Internet Access	57,047	60,391	
NB Internet Access	100,000	47,721	
Total Telecommunications	157,047	108,111	
Hardware, software, maintenance			
Hardware	30,000	3,962	
Software	52,966	58,347	
CAF Maintenance	23,300	23,315	
Maintenance	243,216	247,711	
Total Hardware, Software, Maintenance	349,482	333,334	
Meetings and Collaboration			
Network Committee	17,400	16,501	
Collaborative Projects	132,104	57,161	
RAN contributions to SIEM Initiative	30,000	29,156	
ECN SharePoint Services	86,000	35,347	
Total Meetings and Collaboration	265,504	138,165	
NBREN and GigaPOP			
NBREN CORE	492,085	549,658	
NBREN Additional Connections	20,769	0	
NB GigaPOP Services	25,000	25,000	
Total NBREN and GigaPOP	537,854	574,658	
Total Expenditures	1,543,904	1,388,286	
Net revenue (net loss)	0	-87,272	
NB & PEI Committed Funds Balance as at March 31, 2023:			
Balance, April 1, 2022		598,234	
Net revenue (loss) for the year		-87,272	
Balance, March 31, 2023		510,962	

EDUCATIONAL COMPUTER NETWORK NEW BRUNSWICK STATEMENT OF REVENUE AND EXPENDITURES*

PERIOD ENDED: 3/31/2023

Account Description	Budget 2022-	Actual 2022-2023
Revenue		
Provincial Transfers	860,938	860,938
Direct contributions	328,000	328,000
External Fees for Service	54,469	0
Committed Funds	188,421	0
Total Revenue	1,431,828	1,188,938
Expenditures		
Network Shared Services		
UNB as the designated installation (service provider)	222,317	222,317
Total Network Shared Services	222,317	222,317
Telecommunications		
Internet Access	100,000	47,721
Total Telecommunications	100,000	47,721
Hardware, software, maintenance		
Hardware	30,000	3,962
Software	43,096	47,015
CAF membership	18,300	18,315
Maintenance	233,216	238,942
Total Hardware, software, maintenance	324,612	308,233
Meetings and Collaboration		
Network Committee	12,400	13,905
Collaborative Projects	118,645	57,927
RAN contribution to SIEM initiative	30,000	29,156
Shared Services	86,000	35,347
Total Meetings and Collaboration	247,045	136,335
NBREN and GigaPOP		
NBREN CORE	492,085	549,658
NBREN Additional Connections	20,769	0
NB GigaPOP Services	25,000	25,000
Total NBREN and GigaPOP	537,854	574,658
Total Expenditures	<u>1,431,828</u>	1,289,263
Net revenue (net loss)	0	-100,325
NB Committed Funds Balance as at March 31, 2023:		
Balance, April 1, 2022		527,567
Net revenue (loss) for the year		-100,326
Balance, March 31, 2023		427,241
*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 2022-2023	Actual 2022-2023
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)	11,700	11,701
Total Network Shared Services	11,700	11,701
Telecommunications		
Provincial Lines & Internet Access	57,047	60,391
Total Telecommunications	57,047	60,391
Hardware, software, maintenance		
Hardware	0	0
Software	9,870	11,332
CAF Maintenance	5,000	5,000
Maintenance	10,000	8,769
Total Hardware, software, maintenance	24,870	25,101
Meetings and Collaboration		
Network Committee	5,000	2,596
Collaborative Projects	13,459	-766
Total Meetings and Collaboration	18,459	1,830
Total Expenditures	112,076	99,022
Net revenue (net loss)	0	-13,054
PEI Committed Funds Balance as at March 31, 2023:		
Balance, April 1, 2022		70,667
Net revenue (loss) for the year		13,054
Balance, March 31, 2023		83,721
*as per MPHEC audited financial statements		