Algoma PUBLIC HEALTH
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March 26, 2025

BOARD OF HEALTH MEETING

SSM Algoma Community Room / Teams Meeting

294 Willow Avenue

Sault Ste Marie

www.algomapublichealth.com

Meeting Book - March 26, 2025, Board of Health Meeting

Table of Contents

Board of Health Meeting
AGENDA

Wednesday, March 26, 2025 - 5:00

SSM Algoma Community Room | Videoconference

BOARD MEMBERS	**APH MEMBERS**
Deborah Graystone	Dr. John Tuinema - Acting Medical Officer of Health & CEO
Sally Hagman	Rick Webb - Director of Corporate Services
Julila Hemphill	Kristy Harper - Director of Health Promotion & Prevention /
Donald McConnell - 2nd Vice-Chair	Chief Nursing Officer
Luc Morrissette	Leslie Dunseath - Manager of Accounting Services
Sonny Spina	Leo Vecchio - Manager of Communications
Sonia Tassone	Tania Caputo - Board Secretary
Suzanne Trivers - Board Chair	
Jody Wildman - 1st Vice-Chair	
Natalie Zagordo	

STAFF GUESTS: Alana Brassard - Supervisor of Healthy Growth & Development, Lillie Mills - Public Health Nurse, Taylor Labadie, Health Promotion Specialist

GUESTS: Joseph Clark, Arda Safkan, Tim Schneider, Mili Alikalfic - Blackstone Energy

1.0 Meeting Called to Order — *S. Trivers*

- **a. Land Acknowledgment**
- **b. Roll Call**
- **c. Declaration of Conflict of Interest**

2.0 Adoption of Agenda — *S. Trivers*

RESOLUTION

THAT the Board of Health agenda dated March 26, 2025, be approved as presented.

3.0 Delegations / Presentations — *A. Brassard, L. Mills, T. Labadie*

- **a. Supporting Infant and Early Mental Health in Algoma - The Nurturing Algoma Project**

4.0 Adoption of Minutes of Previous Meeting — *S. Trivers*

RESOLUTION

THAT the Board of Health meeting minutes dated February 26, 2025, be approved as presented.

5.0 Business Arising from Minutes — *S. Trivers*

6.0 Reports to the Board — *J. Tuinema*

- **a. Medical Officer of Health and Chief Executive Officer Reports**

  MOH Report - March 2025
  - Mental Health Promotion in Schools - Fostering Positive Relationships with Food

RESOLUTION

THAT the report of the Medical Officer of Health and CEO be accepted as presented.

- **b. Finance and Audit**
  - **i. Finance and Audit Committee Chair Report** — *J. Wildman*

RESOLUTION

THAT the Board of Health accepts the March 12, 2025, Chair Report for the Finance and Audit Committee Meeting as presented.

ii. Unaudited Financial Statements ending January 31, 2025. *J. Wildman*

RESOLUTION

THAT the Board of Health accepts the Unaudited Financial Statements for the period ending January 31, 2025, as presented.

ii. Blackstone Energy Project *J. Wildman*

RESOLUTION

THAT the Board of Health has reviewed the recommendation of the Finance and Audit Committee to proceed with the Blackstone project proposal as presented; and
THAT final Board of Health approval of a partnership and project will be determined after a review of the final text of the partnership agreement.

7.0 New Business/General Business *S. Trivers*

8.0 Correspondence - requiring action *S. Trivers*

a. alPHa Conference and AGM - June 18 - 20, 2025

9.0 Correspondence - for information *S. Trivers*

a. alPHa Information Break - March 2025

b. Letter to the Ministers of Health from Public Health Sudbury & Districts regarding **Support for a Provincial Immunization Registry** dated March 21, 2025.

c Letter to the Ministers of Health from Public Health Sudbury & Districts regarding **Endorsement of the Walport Report, and for Continued focus on Public Health Emergency & Pandemic Preparedness dated** March 21, 2025.

10.0 Addendum *S. Trivers*

11.0 In-Camera *S. Trivers*

For discussion of labour relations and employee negotiations, matters about identifiable individuals**, adoption of in camera minutes, security of the property of the board**, litigation or potential litigation.

RESOLUTION

THAT the Board of Health go in-camera.

12.0 Open Meeting *S. Trivers*

Resolutions resulting from in-camera meeting.

13.0 Announcements / Next Committee Meetings: *S. Trivers*

Finance and Audit Committee Meeting
Wednesday, April 9, 2025 @ 5:00 pm
SSM Algoma Community Room | Video Conference

Board of Health Orientation - New Board Members
Friday, April 11, 2025 @ 9:00 am - noon
SSM Algoma Community Room | Video Conference

Governance Committee Meeting
Wednesday, April 16, 2025 @ 5:00 pm
SSM Algoma Community Room | Video Conference

Board of Health
Wednesday, April 23, 2025 @ 5:00 pm
SSM Algoma Community Room | Video Conference

14.0 Adjournment *S. Trivers*

RESOLUTION

THAT the Board of Health meeting adjourns.

Supporting Infant and Early Mental Health in Algoma
The Nurturing Algoma Project

Lillie Mills, Public Health Nurse
Taylor Labadie, Health Promotion Specialist
March 2025

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Overview

- Strategic Directions & Ontario Public Health Standards
- Ottawa Charter
- Infant and Early Mental Health
- Return on Investment
- Introduction to CanDDIS
- The Nurturing Algoma Project
- Moving Forward

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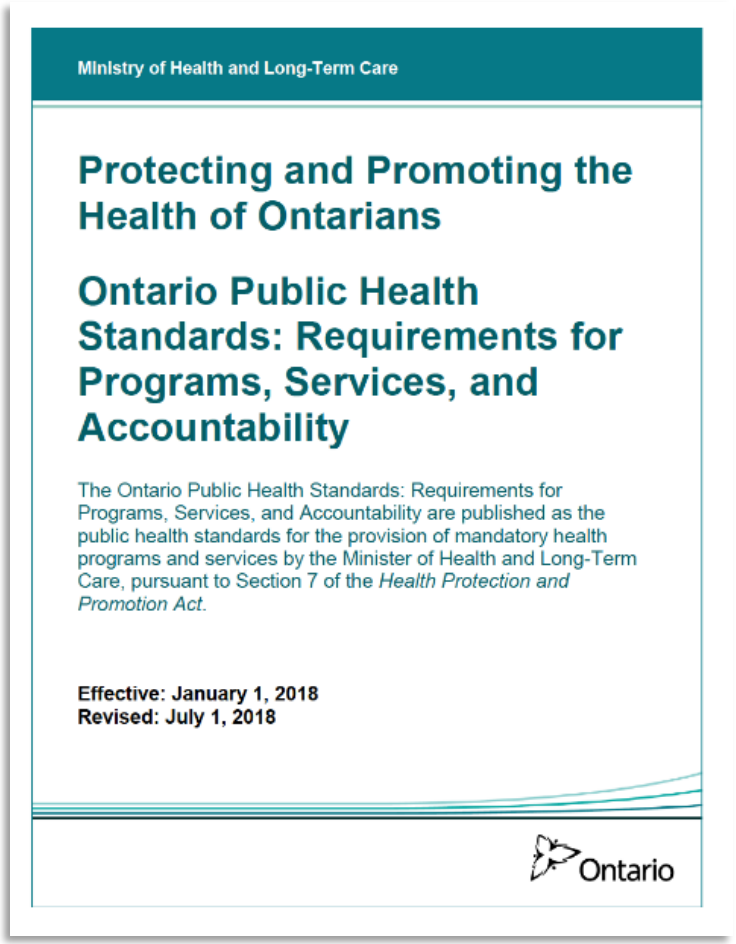
Strategic Directions

Advance the priority public health needs of Algoma's diverse communities.

Improve the impact and effectiveness of Algoma Public Health programs.

Grow and celebrate an organizational culture of learning, innovation, and continuous improvement.

Ontario Public Health Standards



Healthy Growth and Development

Goal

To achieve optimal preconception, pregnancy, newborn, child, youth, parental, and family health.

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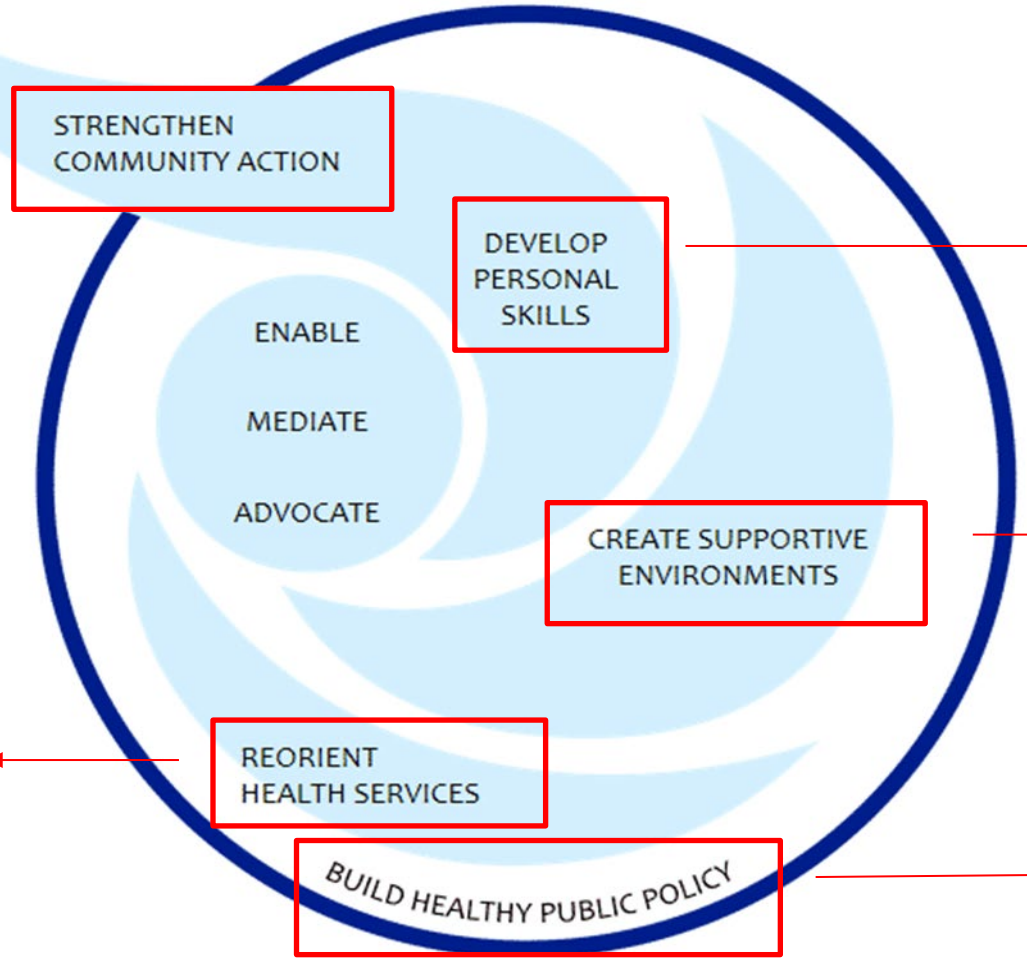
Ministry of Health, Ontario. Ontario Public Health Standards: Requirements for Programs, Services and Accountability. 2021. https://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Ontario_Public_Health_Standards_2021.pdf

Ottawa Charter: The Public Health Approach

APH led advocacy efforts with the SSM & Algoma Child and Family Network to take collective action on early developmental screening and IEMH.

Offering ASQ community training to staff from several agencies across the Algoma District has expanded screening from intervention-based programs. Nurturing Algoma will assist in the development of navigable care pathways for Algoma families.



Families learn the importance of early screening through access to community resources. Resources accommodate all literacy levels. Caregivers are recognized as experts in the screening process.

Improving knowledge and understanding of IEMH among frontline staff will create supportive environments for children across Algoma.

Through data collected from Nurturing Algoma, collective effort can be made to advocate for provincial and national healthy public policies for IEMH.

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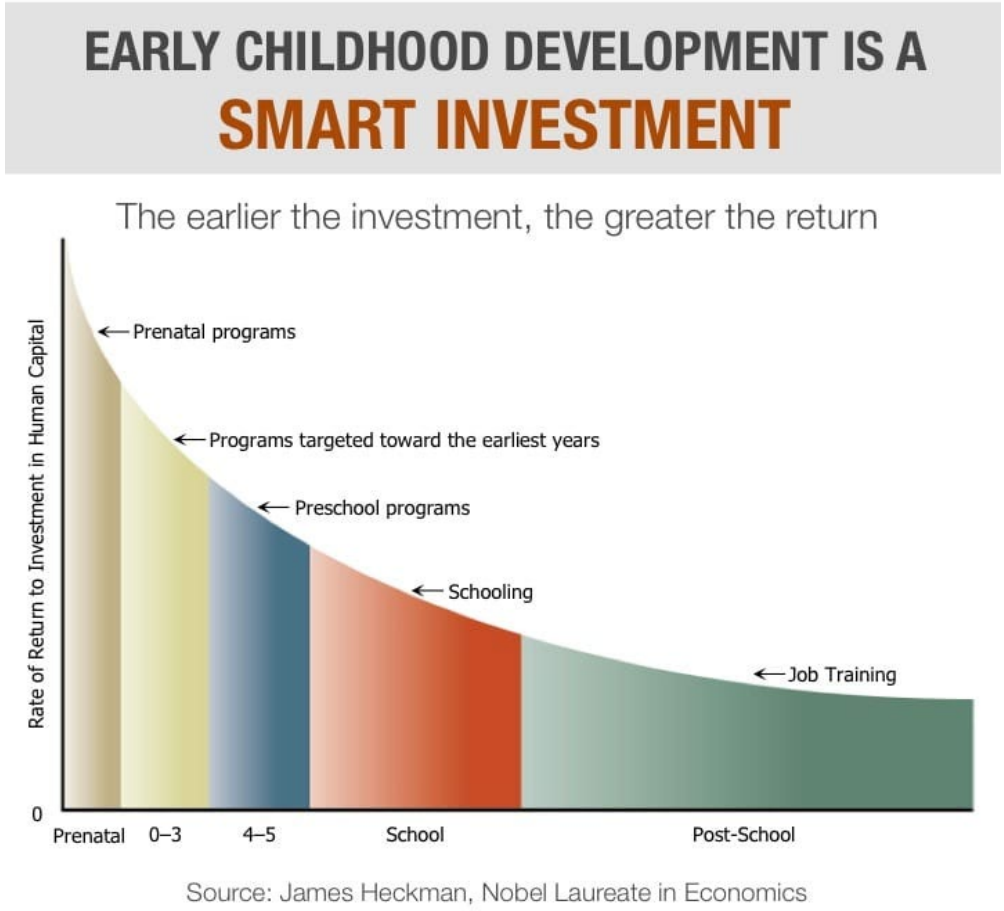
World Health Organization. Health Promotion Glossary of Terms. 2021. https://www.who.int/publications/i/item/9789240038349
World Health Organization. Ottawa Charter for Health Promotion. 2012. https://www.who.int/publications/i/item/ottawa-charter-for-health-promotion

Infant and Early Mental Health (IEMH)

Alberta Family Wellness Initiative. Resilience. 2025. https://www.albertafamilywellness.org/what-we-know/resilience-scale/

Return on Investment

- Early detection of delay reduces the demands on treatment services later in a child's life[1]
- Earlier the investment, the greater the return[2-4]
- Every 1 Canadian dollar invested, yields a return of $3.30 to the population[5]



1. Center on the Developing Child. 2007. InBrief: The Science of Early Childhood Development. Harvard University. https://developingchild.harvard.edu/resources/inbrief-science-of-ecd/
2. García JL, Heckman JJ, Leaf DE, Prados MJ. Quantifying the life-cycle benefits of an influential early-childhood program. Journal of Political Economy. 2020 Jul 1;128(7):2502-41. https://www.journals.uchicago.edu/doi/abs/10.1086/705718
3. Hajizadeh N, Stevens ER, Applegate M, Huang KY, Kamboukos D, Braithwaite RS, Brotman LM. Potential return on investment of a family-centered early childhood intervention: a cost-effectiveness analysis. BMC public health. 2017 Dec;17:1-4. Potential return on investment of a family-centered early childhood intervention: a cost-effectiveness analysis | BMC Public Health
4. Mental Health Commission of Canada. 2013. https://mentalhealthcommission.ca/wp-content/uploads/drupal/2016-06/Investing_in_Mental_Health_FINAL_Version_ENG.pdf
5. Children First Canada. Pedianomics. 2023. https://childrenfirstcanada.org/wp-content/uploads/2023/05/Pedianomics-Raising-Canada-2023-Children-First-Canada.pdf
6. Heckman, J. 2023. The Heckman Curve. https://heckmanequation.org/resource/the-heckman-curve/

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The Canadian Database of Development, Infancy to Six (CanDDIS)

- The first Canadian database of child development, infancy to six
- Created through partnership between IEMHP, Queen's University, and community-based agencies across Canada
- The CanDDIS houses anonymous data from the Ages and Stages Questionnaires (ASQ)
  - Reliable and validated developmental screening tools
- Anonymous data is securely stored in a REDCap server maintained by the Centre for Advanced Computing at Queen's University

Infant and Early Mental Health Promotion | SickKids

Queen's University

CIHR IRSC Canadian Institutes of Health Research / Instituts de recherche en santé du Canada

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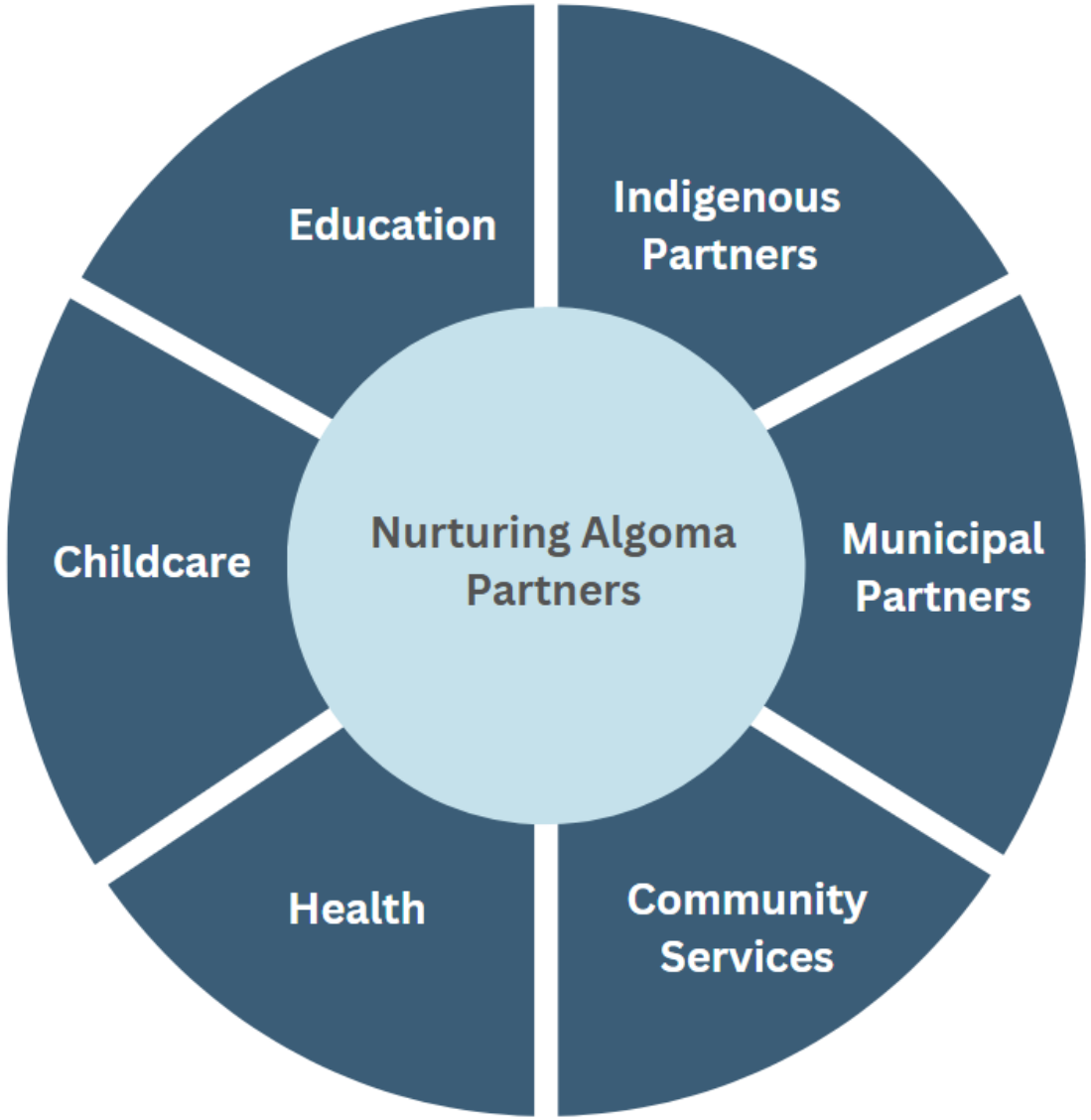
Infant and Early Mental Health Promotion. The Canadian Database of Development, Infancy to Six. 2025. https://www.iemhp.ca/canddis

District-Wide Action

- Supported by the SSM & Algoma Child and Family Network (CFN) and Planning Action Table (PAT)
  - ➢ Spearheaded by Algoma Public Health
- Shared goal: building an environment that promotes the health of Algoma's youngest residents



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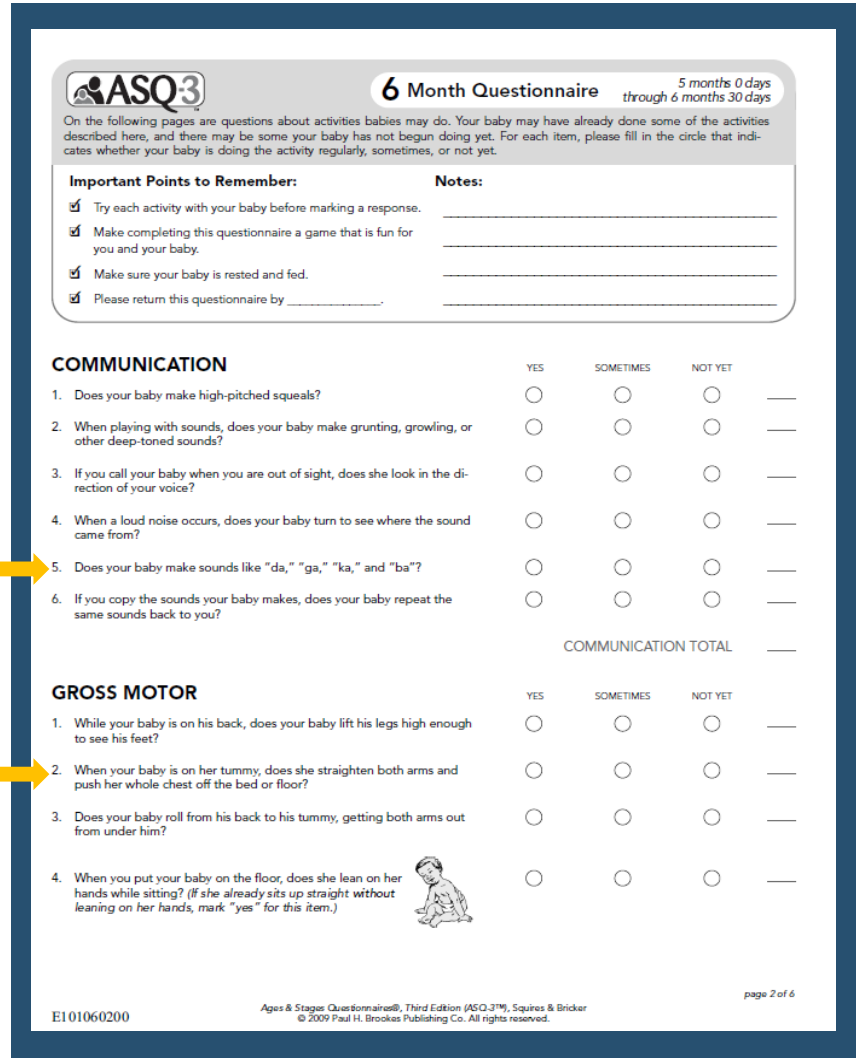
Ages & Stages Questionnaires



ASQ-3 **6 Month Questionnaire** *5 months 0 days through 6 months 30 days*

On the following pages are questions about activities babies may do. Your baby may have already done some of the activities described here, and there may be some your baby has not begun doing yet. For each item, please fill in the circle that indicates whether your baby is doing the activity regularly, sometimes, or not yet.

Important Points to Remember:

- ☑ Try each activity with your baby before marking a response.
- ☑ Make completing this questionnaire a game that is fun for you and your baby.
- ☑ Make sure your baby is rested and fed.
- ☑ Please return this questionnaire by _____.

Notes:

COMMUNICATION

		YES	SOMETIMES	NOT YET	
1.	Does your baby make high-pitched squeals?	○	○	○	____
2.	When playing with sounds, does your baby make grunting, growling, or other deep-toned sounds?	○	○	○	____
3.	If you call your baby when you are out of sight, does she look in the direction of your voice?	○	○	○	____
4.	When a loud noise occurs, does your baby turn to see where the sound came from?	○	○	○	____
5.	Does your baby make sounds like "da," "ga," "ka," and "ba"?	○	○	○	____
6.	If you copy the sounds your baby makes, does your baby repeat the same sounds back to you?	○	○	○	____

COMMUNICATION TOTAL ____

GROSS MOTOR

		YES	SOMETIMES	NOT YET	
1.	While your baby is on his back, does your baby lift his legs high enough to see his feet?	○	○	○	____
2.	When your baby is on her tummy, does she straighten both arms and push her whole chest off the bed or floor?	○	○	○	____
3.	Does your baby roll from his back to his tummy, getting both arms out from under him?	○	○	○	____
4.	When you put your baby on the floor, does she lean on her hands while sitting? *(If she already sits up straight without leaning on her hands, mark "yes" for this item.)*	○	○	○	____

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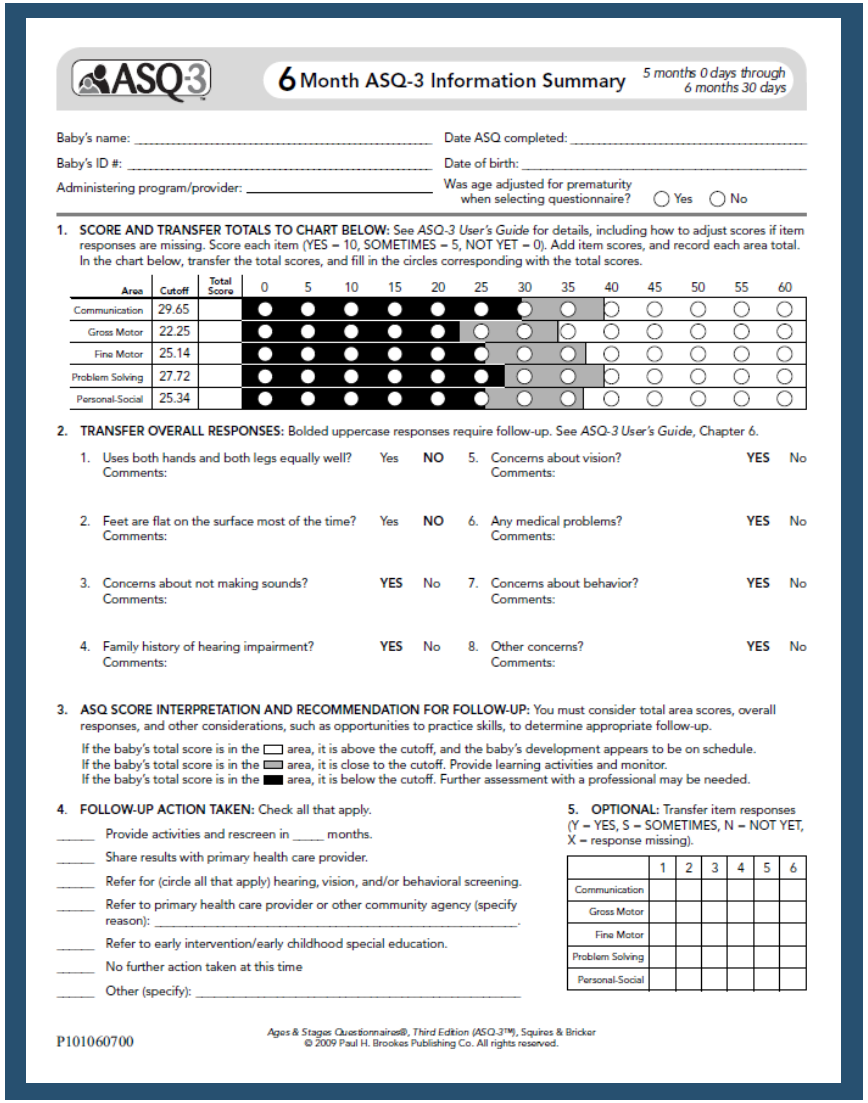

ASQ-3 **6 Month ASQ-3 Information Summary** *5 months 0 days through 6 months 30 days*

Baby's name: _____ Date ASQ completed: _____

Baby's ID #: _____ Date of birth: _____

Administering program/provider: _____ Was age adjusted for prematurity when selecting questionnaire? ○ Yes ○ No

1. SCORE AND TRANSFER TOTALS TO CHART BELOW: See *ASQ-3 User's Guide* for details, including how to adjust scores if item responses are missing. Score each item (YES = 10, SOMETIMES = 5, NOT YET = 0). Add item scores, and record each area total. In the chart below, transfer the total scores, and fill in the circles corresponding with the total scores.

Area	Cutoff	Total Score	0	5	10	15	20	25	30	35	40	45	50	55	60
Communication	29.65		●	●	●	●	●	●	○	○	○	○	○	○	○
Gross Motor	22.25		●	●	●	●	●	○	○	○	○	○	○	○	○
Fine Motor	25.14		●	●	●	●	●	○	○	○	○	○	○	○	○
Problem Solving	27.72		●	●	●	●	●	●	○	○	○	○	○	○	○
Personal-Social	25.34		●	●	●	●	●	○	○	○	○	○	○	○	○

2. TRANSFER OVERALL RESPONSES: Bolded uppercase responses require follow-up. See *ASQ-3 User's Guide*, Chapter 6.

1. Uses both hands and both legs equally well? Yes **NO** Comments:
2. Feet are flat on the surface most of the time? Yes **NO** Comments:
3. Concerns about not making sounds? **YES** No Comments:
4. Family history of hearing impairment? **YES** No Comments:
5. Concerns about vision? **YES** No Comments:
6. Any medical problems? **YES** No Comments:
7. Concerns about behavior? **YES** No Comments:
8. Other concerns? **YES** No Comments:

3. ASQ SCORE INTERPRETATION AND RECOMMENDATION FOR FOLLOW-UP: You must consider total area scores, overall responses, and other considerations, such as opportunities to practice skills, to determine appropriate follow-up.

If the baby's total score is in the ☐ area, it is above the cutoff, and the baby's development appears to be on schedule.
If the baby's total score is in the ▒ area, it is close to the cutoff. Provide learning activities and monitor.
If the baby's total score is in the ■ area, it is below the cutoff. Further assessment with a professional may be needed.

4. FOLLOW-UP ACTION TAKEN: Check all that apply.

_____ Provide activities and rescreen in _____ months.
_____ Share results with primary health care provider.
_____ Refer for (circle all that apply) hearing, vision, and/or behavioral screening.
_____ Refer to primary health care provider or other community agency (specify reason): _____.
_____ Refer to early intervention/early childhood special education.
_____ No further action taken at this time
_____ Other (specify): _____

5. OPTIONAL: Transfer item responses (Y = YES, S = SOMETIMES, N = NOT YET, X = response missing).

	1	2	3	4	5	6
Communication						
Gross Motor						
Fine Motor						
Problem Solving						
Personal-Social						

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Ages & Stages Questionnaires

5. Does your baby make sounds like "da," "ga," "ka," and "ba"?

2. When your baby is on her tummy, does she straighten both arms and push her whole chest off the bed or floor?

1. **SCORE AND TRANSFER TOTALS TO CHART BELOW:** See *ASQ-3 User's Guide* for details, including how to adjust scores if item responses are missing. Score each item (YES = 10, SOMETIMES = 5, NOT YET = 0). Add item scores, and record each area total. In the chart below, transfer the total scores, and fill in the circles corresponding with the total scores.

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Gross Motor	22.25		●	●	●	●	●	○	○	○	○	○	○	○	○
Fine Motor	25.14		●	●	●	●	●	●	○	○	○	○	○	○	○
Problem Solving	27.72		●	●	●	●	●	●	○	○	○	○	○	○	○
Personal-Social	25.34		●	●	●	●	●	●	○	○	○	○	○	○	○

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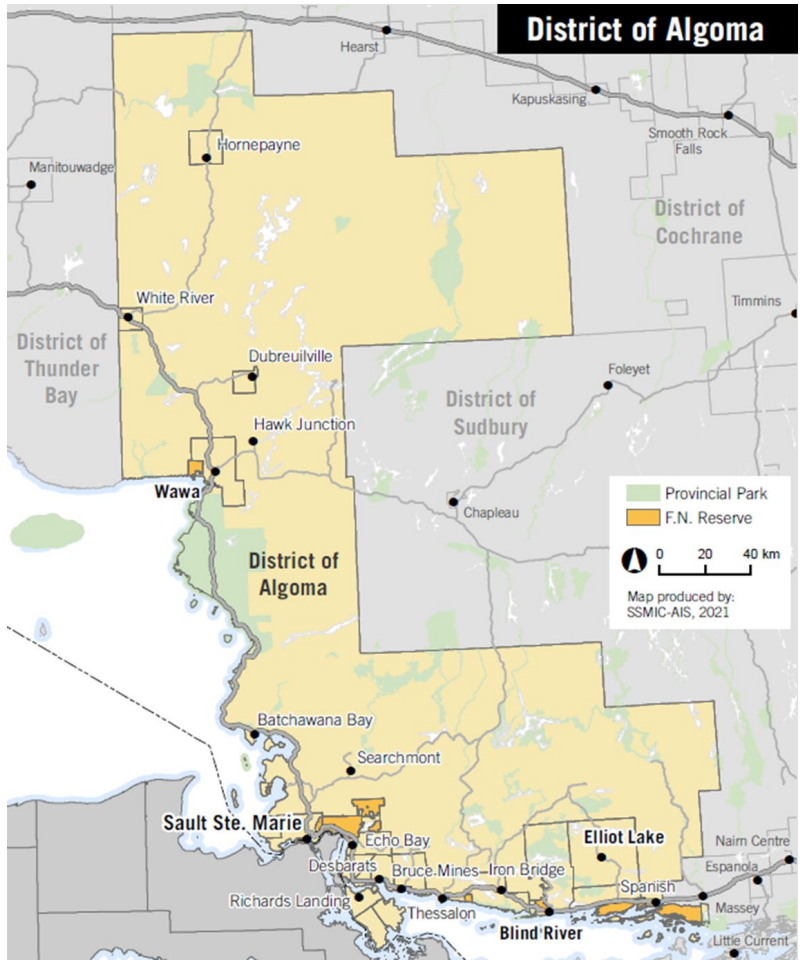
Sample Data Snapshot

April/ Spring 2023 Screen

Municipality		# At-Risk
Anonymized Municipality 1	n = 18	0
Anonymized Municipality 2	n = 53	1
Anonymized Municipality 3	n = 49	0
Anonymized Municipality 4	n = 23	1
Anonymized Municipality 5	n = 13	0
Anonymized Municipality 6	n = 77	2
Anonymized Municipality 7	n = 33	4
Anonymized Municipality 8	n = 34	1
Other	n = 22	1

***Figure 1**: Sample Data from IEMHP*
**Algoma data is not depicted in this example.*



Where We Are

Building community capacity

Increasing screening rates

Ongoing consultations

Knowledge sharing opportunities

Improving community knowledge & awareness

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Moving Forward

- Continued strengthening of Algoma partnerships and community-wide action.
- Routine use of ASQs and entry into the database to enrich our awareness of community strengths and gaps. Data collected will support applications for funding and supports for early years programming and intervention services.
- Ongoing partnership with IEMHP at SickKids for consideration of future projects including Infant & Early Mental Health Care Pathways.
- Influence and inform strategic planning, policy, and decision-making for communities of Algoma District.
- Dissemination of findings to partners and the broader community.
- Leveraging the momentum from this tangible action project will lead to further initiatives that support the early years population.

Questions?

Chi-Miigwech. Merci. Thank You.

PUBLIC HEALTH

Nov

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March 26, 2025

Report of the

Medical Officer of Health / CEO

Prepared by:
Dr. John Tuinema and the
Leadership Team

Presented to:
Algoma Public Health Board of Health

TABLE OF CONTENTS

APH AT-A-GLANCE

Public health in Canada traditionally has six main functions; health promotion, health protection, population health assessment, disease and injury prevention, health surveillance, and emergency preparedness and response. For the last function, much of the attention lands on emergency response, but emergency preparedness is equally important. The last few months have seen much emergency preparedness work at APH, most notably around measles, avian flu, and our 24/7 response system.

Ontario is currently seeing an outbreak of measles that is primarily occurring within small communities with historically low immunization rates in Southern Ontario. So far only one case has been reported in Northern Ontario and none have been reported in Algoma. Preparation for measles response began this time last year with a review of our procedures, communication with local providers, education for our teams, and two table-top exercises. In response to the current outbreak, we have reached out to healthcare providers to be vigilant and provided information on diagnosis, infection control, and testing. We have also communicated with our highest-risk populations and continue to monitor national and provincial measles activity. We also continue to share our ongoing messages promoting ensuring children are up to date with their routine immunizations.

APH is also preparing for the possible emergence of avian influenza. Avian flu has been detected in many birds and some wild and domestic mammals. There have been rare cases of transmission to humans throughout the world, but no cases of human-to-human transmission have occurred. Preparation for a potential flu pandemic requires coordination between many levels of government and different agencies, particularly at this stage when the flu is primarily found in animals. The federal government continues to examine pandemic preparedness and has secured an early stockpile of vaccines. The province is coordinating efforts between agencies and providing guidance for different scenarios that may occur. APH attends regular meetings with the province on avian flu response and we have developed internal protocols for response. Although the risk of avian influenza is currently low, our preparation efforts are high.

APH is required to respond to emergencies on a 24/7 basis and maintains an after-hours number to report public health emergencies. As part of improvements to that system, we have recently changed our after-hours phone number. Communications have been sent to stakeholders to inform them of the new number and both the old and new numbers remain operational for the time being until we are satisfied that the new number is working well. The new number is 705-759-5146.

PROGRAM HIGHLIGHT - Mental Health Promotion in Schools - Fostering Positive Relationships with Food

Topic: Mental Health Promotion in Schools - Fostering Positive Relationships with Food

From: Hilary Gordon, Manager Community Wellness

Prepared by: Lindsay Fera, Registered Dietitian and Angela Piaskoski, Health Promotion Specialist

Ontario Public Health Standard Requirements[1] addressed in this report:

- School Health, Requirement #3: The board of health shall develop and implement a program of public health interventions using a comprehensive health promotion approach to improve the health of school-aged children and youth
- School Health, Requirement #4: The board of health shall offer support to school boards and schools, in accordance with the School Health Guideline, 2018 (or as current), to assist with the implementation of health-related curricula and health needs in schools, based on need.

2021-2025 Strategic Priorities addressed in this report:
[X] Advance the priority public health needs of Algoma's diverse communities.
[X] Improve the impact and effectiveness of Algoma Public Health programs.
[ ] Grow and celebrate an organizational culture of learning, innovation, and continuous improvement.

Key Messages

- Learning to become a competent eater takes time, and eating patterns are influenced by a variety of factors including availability, culture, mood, marketing and food skills (many of which are beyond an individual's control, particularly a child's).
- Non-judgmental, non-stigmatizing and neutral approaches to food and nutrition can help to create positive relationships with food and minimize potential harms and unintended consequences related to mental health.

Supporting Children and Youth Mental Health - a Food Neutral Approach
Helping children and youth create a foundation for good physical and mental health is extremely important. Evidence suggests that the number of Ontario children and youth concerned with their mental health and well-being is increasing, with 27% of Ontario students reporting that they visited a mental health care professional for a mental health issue at least once in the past year[2]. In 2021, Eating Disorders Ontario found that approximately 46% of Ontario youth reported concerns about food, weight and body image, which are known precursors to disordered eating[3]. Food can impact how we feel, think and act; and at the same time, mental health can impact the way that we eat. Nurturing positive relationships with food is a critical step towards overall health and well-being.

We know that in Algoma:

- 91% of youth 12-19 years-old ate less than 5 servings of fruit and vegetables per day[4].
- 60% of children 5-11 years-old, and 54% of teens 12-17 years-old, eat an evening meal with their family most days of the week[3].
- 21.2% of youth 12-17 years-old reported changing their eating habits to manage weight[5].

- 28.1% of youth 12-17-years-old reported being preoccupied with a desire to be thinner[(5)(ref1)].
- Youth aged 10-19 years old are hospitalized for self-harm more often than any other age group[(6)] and individuals aged 10-24 years old are more likely to be hospitalized for eating disorders than other age groups[(7).]

Children who are 'competent' eaters feel good about eating, eat as much or as little as their bodies need, eat what the family eats with only small changes, and enjoy mealtimes. Most children under 12 years of age have not developed the cognitive abilities to understand complex ideas like nutrition. A food neutral approach teaches children about food without judgement, viewing all food as morally equal. Food is thought to be neither good nor bad; it is simply food.

Negative or moral labels like "healthy" and "unhealthy" or "good" and "bad" can take the joy and wonder out of eating. It can also harm a child's relationship with food, causing stress and anxiety, especially if they have not yet learned to accept and like those foods. Calling foods "treats" can make them seem more appealing, and forbidding certain foods may increase a child's desire for them. Removing labels from food recognizes and respects that becoming a competent eater takes time, and that eating is influenced by many factors, some of which we can't control, including availability, culture, mood, marketing, and food skills. Providing children with neutral exposures to food helps them become competent eaters at their own pace. Some may enjoy new food immediately, some might need many exposures, and some may never develop a liking for certain foods at all[(8)].

A Food Neutral Approach in Algoma Schools
Algoma Public Health's (APH's) Registered Dietitians regularly review evidence and best practices and are learning more about food neutrality at the regional, provincial and federal levels. The School Health team at APH has received training from Eating Disorders Ontario Prevention on evidence-based approaches to prevent disordered eating and training from Rainbow Plate on incorporating food neutral approaches.

As part of the Northern Fruit and Vegetable Program (NFVP) and to complement the food neutrality work at the school-level, a Rainbow Food Explorers Educator Toolkit plus a kid-safe knife set are available for each elementary school across Algoma. The toolkit is a component of the Rainbow Plate program and is rooted in a food neutral approach to teaching nutrition. It encourages educators to provide neutral opportunities for children to explore a variety of vegetables and fruits at their own pace using their senses. The resource was piloted in four classrooms within three different schools last school year, and feedback was overwhelmingly positive.

> "*My grade 2 students are so engaged in health lessons when they get to be 'Rainbow Food Explorers'. They are making connections between Canada's Food Guide and their own eating patterns, and they are eager to explore fruits and vegetables using all of their senses. In a pressure-free environment, many children are tasting foods that they were unsure about, like red peppers, blueberries, and pears. The lesson plans come with many great ideas to get children thinking and encourage playful exploration. These lessons will be part of my program from now on!*" Teacher, Northern Heights

APH is now working with each school board on distribution plans so that the resources are provided to the schools in a meaningful way. APH will offer necessary support to ensure that educators are well-

informed and confident in using the resources.

Next Steps: 2025 and Beyond

APH Registered Dietitians are continuously reviewing emerging evidence related to a neutral approach to nutrition education, and looking for opportunities to incorporate this concept into school communities in engaging and age-appropriate ways.

At the elementary level (in collaboration with the school boards) Rainbow Food Explorers - Educator Toolkits will be distributed to all elementary schools in a meaningful way. At the secondary level, APH has started to connect secondary school counsellors to Eating Disorder Ontario Prevention for their free training opportunities. APH Registered Dietitians are working locally and provincially to evaluate and update all current nutrition messaging and resources with a food neutral lens.

Focusing less on what and how much children eat can help them feel more relaxed at eating times. Prioritizing family meals and involving children in growing, purchasing, and preparing food will provide opportunities to encourage curiosity, exploration and learning at their own pace. Neutral exposures to food can help children build and sustain positive relationships with food, laying the foundation for good physical and mental health as they grow.

References

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7. Discharge Abstract Database [2016 – 2022]. In: Ontario MoHI, editor. 2024.
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Finance and Audit Committee Chair Report
March 12, 2025

Attendees:
Sally Hagman
Luc Morrissette
Suzanne Trivers
Jody Wildman – Chair

Regrets:
None

APH Members:
Dr. John Tuinema – Acting Medical Officer of Health & CEO
Rich Webb – Director of Corporate Services
Leslie Dunseath – Manager of Accounting Services
Tania Caputo – Board Secretary

Guests:
Joseph Clark, Arda Safkan, Tim Schneider, Mili Alikalfic – Blackstone Energy Services

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Minutes

- The Minutes of the Finance and Audit Committee meeting of February 12, 2025 were approved.

Report and Recommendations to the Board of Health
The Committee:

- Reviewed APH's Unaudited Financial Statements for the period ending January 31, 2025.

  The Committee recommends Board of Health approval.

- Blackstone Energy Services provided a presentation detailing its qualifications, proposed services to be provided to Algoma Public Health. This included a detailed discussion of:
  - Self-funding Model for Projects
  - Estimated Project Costs, estimated payback periods and potential incentive values
  - Detailed Business Cases for Recommended Energy Retrofit Projects
  - Managed Energy Service Agreement

  Also included in the presentation was the October 2024 "Investment Grade Energy & Decarbonization Study".

The Committee recommends the Algoma Public Health and Blackstone Energy Services proceed with the project proposal as presented, and that final Board approval of a partnership and the project be determined following a review of the final text of the partnership agreement.

In Camera

- The Committee went into Closed session for adoption of in-camera meeting minutes and discussion of labour relations and employee negotiations.

Next Meeting

The Finance and Audit Committee is next scheduled to meet on April 9, 2025.

Submitted for Board of Health consideration by:
Jody Wildman, Chair, Finance and Audit Committee.

Algoma Public Health

Statement of Operations

January 2025

(Unaudited)

Public Health Programs (Calendar)

Description	Current YTD	Current YTD Budget	YTD Budget Variance	Annual Budget	Variance % Act to Bud	Variance YTD Act to Bud
Public Health Funding, Total	-1,028,178	-1,035,872	-7,694	-12,430,466	-1%	99%
Other Funding, Total	0	0	0	0		
Levies, Total	-1,210,055	-1,210,055	0	-4,840,220	0%	100%
Fees & Recoveries, Total	-33,641	-32,925	716	-595,100	2%	102%
Other Revenue, Total	0	0	0	0		
TOTAL REVENUE	**-2,271,874**	**-2,278,852**	**-6,978**	**-17,865,786**	0%	100%
Salaries & Wages, Total	873,774	911,220	37,446	10,934,636	-4%	96%
Benefits, Total	251,486	251,438	-48	2,837,798	0%	100%
Office Expenses, Total	3,729	5,200	1,471	62,400	-28%	72%
Program Expenses, Total	103,298	71,978	-31,320	922,034	44%	144%
Professional Development, Total	1,698	6,213	4,515	74,555	-73%	27%
Travel Expenses, Total	2,371	14,213	11,842	170,550	-83%	17%
Fees & Insurance, Total	29,594	32,508	2,915	427,100	-9%	91%
Telecommunications, Total	23,583	18,996	-4,587	227,952	24%	124%
Program Promotion, Total	1,372	1,975	603	23,700	-31%	69%
Debt Management & Amortization, Total	38,118	38,118	0	457,421	0%	100%
Computer/IT Services, Total	81,460	88,326	6,866	837,912	-8%	92%
Facilities Expenses, Total	83,735	74,144	-9,591	889,727	13%	113%
TOTAL EXPENSES	**1,494,217**	**1,514,329**	**20,111**	**17,865,786**	-1%	99%
SURPLUS/DEFICIT	**-777,657**	**-764,524**	**13,133**	**0**		

Healthy Babies Healthy Children (Fiscal)

Description	Current YTD	Current YTD Budget	YTD Budget Variance	Annual Budget		
TOTAL REVENUE (MCCSS)	-950,628	-950,625	3	-1,140,750	0%	100%
TOTAL EXPENSES	949,984	948,679	-1,305	1,140,750	0%	100%
SURPLUS/DEFICIT	-644	-1,946	-1,302	0		

Fiscal Programs (Non-Public Health)

Description	Current YTD	Current YTD Budget	YTD Budget Variance	Annual Budget		
PROVINCIAL GRANTS	-210,130	-210,128	2	-262,153	0%	100%
OTHER FUNDING	-114,447	-114,447	0	-114,447	0%	100%
TOTAL REVENUE	**-324,577**	**-324,575**	**2**	**-376,600**	0%	100%
CAPC/CPNP	92,195	95,372	3,178	114,447	-3%	97%
Nurse Practitioner	138,522	134,901	-3,621	162,153	3%	103%
Stay on Your Feet	69,934	83,079	13,145	100,000	-16%	84%
TOTAL EXPENSES	**300,651**	**313,353**	**12,702**	**376,600**	-4%	96%
SURPLUS/DEFICIT	**-23,926**	**-11,222**	**12,704**	**0**		

Fiscal Programs (Public Health)

PROVINCIAL GRANTS	0	-525,917	-525,917	-631,100	-100%	0%
TOTAL EXPENSES	508,906	527,121	18,215	631,100	-3%	97%
SURPLUS/DEFICIT	508,906	1,204	-507,702	0		

NOTE: Explanations will be provided for variances of 15% and $15,000 occurring in the first 6 months and variances of 10% and $10,000 occurring in the final 6 months.

Algoma Public Health

Statement of Revenue

January 2025

(Unaudited)

Description	Current YTD	Current YTD Budget	YTD Budget Variance	Annual Budget	Variance % Act to Bud	Variance YTD Act to Bud
MOH Program Funding - Public Health	-835,026	-843,375	-8,349	-10,120,503	-1%	99%
MOH Program Funding - 100%	-193,152	-192,497	655	-2,309,963	0%	100%
Public Health Funding, Total	**-1,028,178**	**-1,035,872**	**-7,694**	**-12,430,466**	-1%	99%
Levies - Sault Ste. Marie	-841,609	-841,609	0	-3,366,437	0%	100%
Levies - District	-368,446	-368,446	0	-1,473,783	0%	100%
Levies, Total	**-1,210,055**	**-1,210,055**	**0**	**-4,840,220**	0%	100%
Program Fees	-3,375	-3,333	42	-40,000	1%	101%
Land Control Fees	-5,065	-5,000	65	-215,000	1%	101%
Immunization Recoveries	-8,695	-5,417	3,278	-110,000	61%	161%
Recoveries from Programs	-1,835	-1,675	160	-20,100	10%	110%
Interest Revenue	-14,671	-17,500	-2,829	-210,000	-16%	84%
Fees & Recoveries, Total	**-33,641**	**-32,925**	**716**	**-595,100**	2%	102%
TOTAL REVENUE	-2,271,874	-2,278,852	-6,978	-17,865,786	0%	100%

Notes to Financial Statements – January 2025

Reporting Period

The January 2025 financial reports include one month of financial results for Public Health programming. All other non-funded public health programs are reporting ten months of results from the operating year ending March 31, 2025.

Statement of Operations

Summary – Public Health and Non-Public Health Programs

APH has not yet received the 2025 Amending Agreement from the province identifying the approved funding allocations for public health programs. The annual budget for public health programs has been updated to reflect the Board approved budget as presented at the November 2024 Board of Health Meeting.

As of January 31, 2025, Public Health calendar programs are reporting a $13K positive variance – which is driven by a $7K negative variance in revenues and a $20K positive variance in expenditures.

In July 2024, APH received confirmation that the annual allocation for the Healthy Babies, Healthy Children program funded through the Ministry of Children, Community & Social Services has received a $73K base funding increase, which will be ongoing. This represents a 6.8% increase and is the first received since 2015. The funding increase is provided to help address increasing operational costs and there is no expectation of service level expansion. The budget for this program has been updated to reflect new funding levels.

Public Health Revenue

Our Public Health calendar revenues are within 0.5% variance to budget for 2025.

For the 2025 calendar year, the province instructed public health units to plan for base funding growth of 1%. These anticipated changes are reflected within the Board of Health approved 2025 budget, however cash flow payments from the Ministry have yet to be updated to reflect the same. APH anticipates a catch-up payment related to these funding changes in the Spring.

In March 2024, the Ministry confirmed that IPAC Hub funding will continue in the 2024-25 fiscal year and in the years following, with formal planning and funding meetings with individual hubs to be forthcoming throughout the fiscal year. This funding has been provided to hubs across the province in order to enhance IPAC practices in identified congregate care settings. Formal funding approvals for this initiative were received in early December 2024, which includes $316K in committed base funding and $316K in one time funding for the 2024/25 fiscal year for a total of $631K for the current fiscal year. A catch-up payment related to this funding was made in February 2025.

Public Health Expenses

Program Expenses

There is a $31K negative variance associated with program expenses. The majority of this identified pressure is driven by demand for our Ontario Senior Dental program (externally sourced professional services for maintenance, preventative and denture services). Once again for 2025, APH plans to submit a request for increased base funding for this program alongside the 2025 Annual Service plan which is due to the Ministry on March 31st. Although we remain confident that these pressures will be funded, we continue to await formal funding approvals related to 2024 actual and 2025 anticipated pressures. We continue to service our communities based on demand considering conversations with the Ministry where APH has been instructed to continue programming as planned, with funding opportunities to continually be made available to address ongoing pressures.

Financial Position - Balance Sheet

APH's liquidity position continues to be stable and the bank has been reconciled as of January 31, 2025. Cash includes $2.1M in reserve funds.

Long-term debt of $2.9 million is held by TD Bank @ 1.80% for a 60-month term (amortization period of 120 months) and matures on September 1, 2026. $170K of the loan relates to the financing of the Elliot Lake office renovations, which occurred in 2015 with the balance, related to the financing of the 294 Willow Avenue facility located in Sault Ste. Marie. There are no material accounts receivable collection concerns.

Please note that similar to previous years, the Balance Sheet as of January 31, 2025 is not included as APH is currently completing year-end audit requirements. Once the 2024 annual audited financial statements are completed, the comparative balance sheet will be updated and provided.

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Discussion Items

1. Our Qualifications
2. Blackstone & Algoma Public Health
3. Self-Funding Energy Retrofit Projects
4. Project Business Case and Proposition
5. Next Steps for APH

Our Qualifications

- **150+** energy savings/GHG Reduction Project Completed
- **$300M** investment support from Enbridge sustain and Federal Canadian Infrastructure Bank
- **$35.5M** in Grants and Incentives secured for clients
- **$3.1B** in client energy spend managed annually by Blackstone
- **$200M** in avoided energy costs annually since our inception
- **7000** facilities managed annually
- **20+** Years established, 100% Canadian, Ontario HQ Based

blackstone energy services

From LTC and healthcare to schools and municipalities, our client base includes...

35% of Ontario Colleges

55% of Ontario Healthcare

100% of Ontario Universities

Blackstone & APH

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Blackstone & APH: Procurement Due Diligence

Proven Success

A track record of achievements and reputation

Multiple BPS Framework Agreements

oecm

MPSC
MMC Plexxus Sourcing Collaborative

MOHAWK MEDBUY

Similar Work Samples

Examples of past projects demonstrating capability

Public Sector References

From five different public sector entities

Testimonies

Positive feedback from multiple public sector entities

Algoma PUBLIC HEALTH Santé publique Algoma

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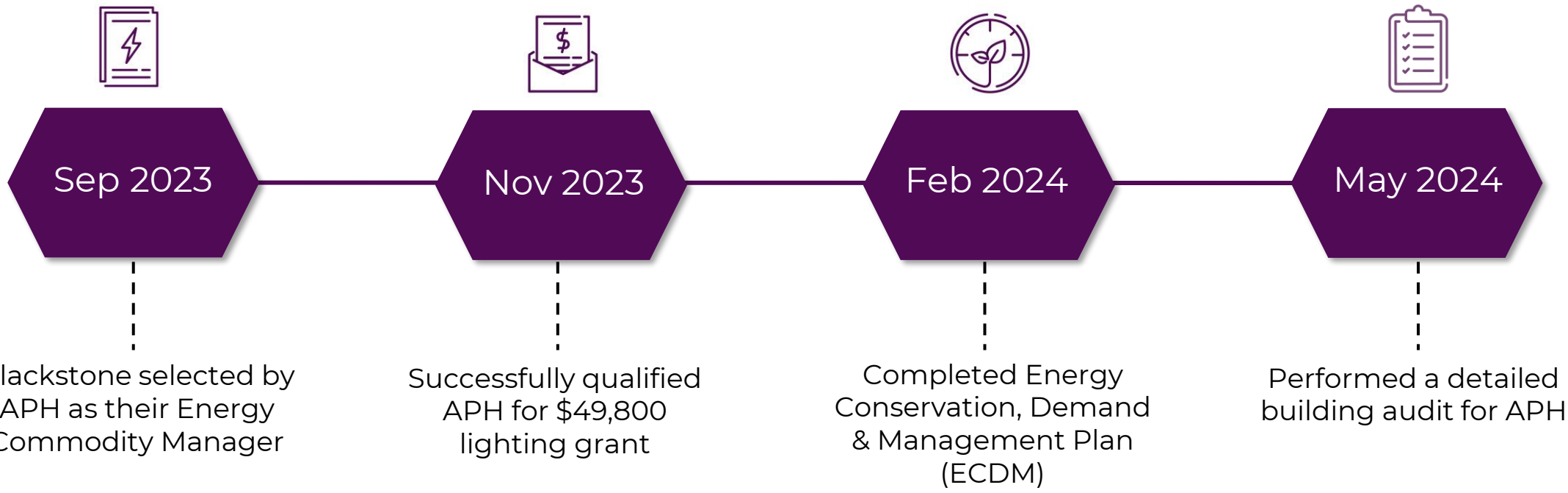
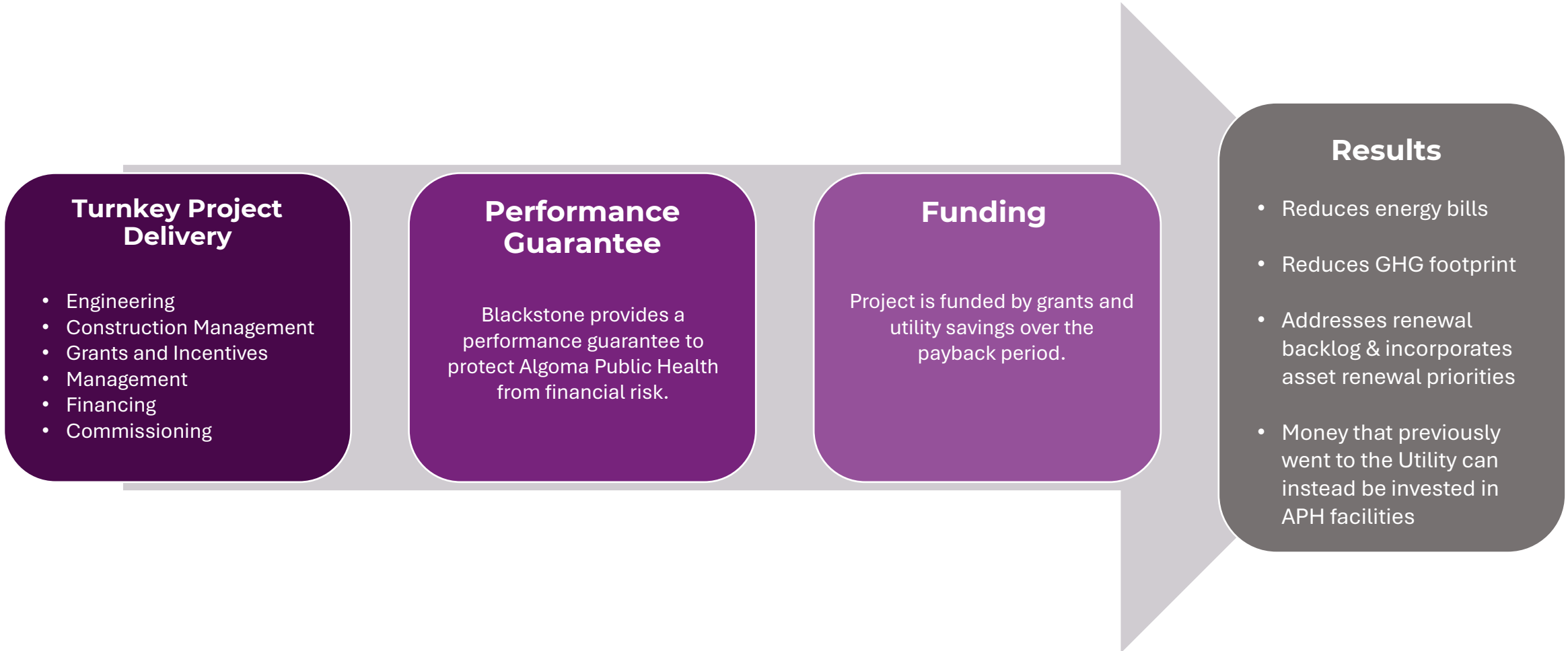
Blackstone & APH: History of Success

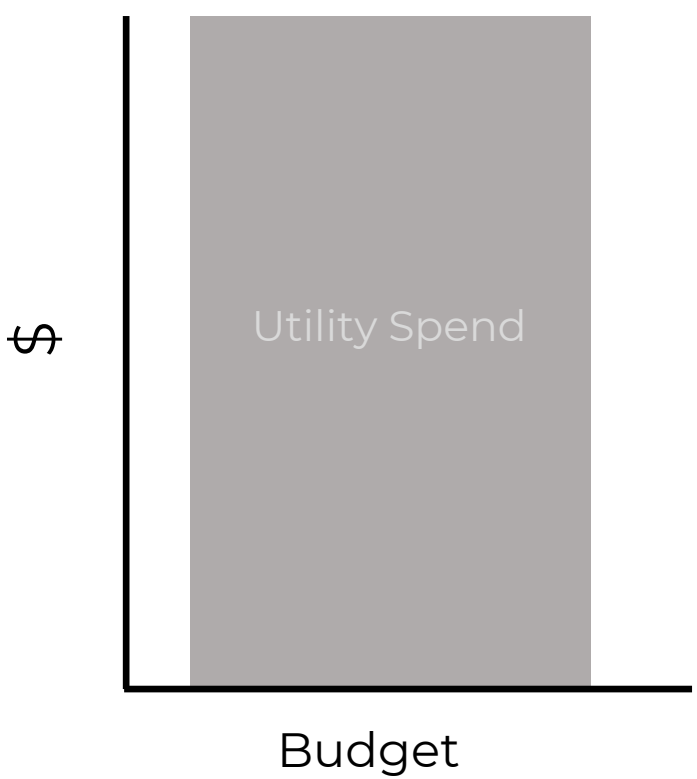


An **energy savings / GHG reduction project** is a project that retrofits aging, end of life and inefficient equipment with efficient equipment.

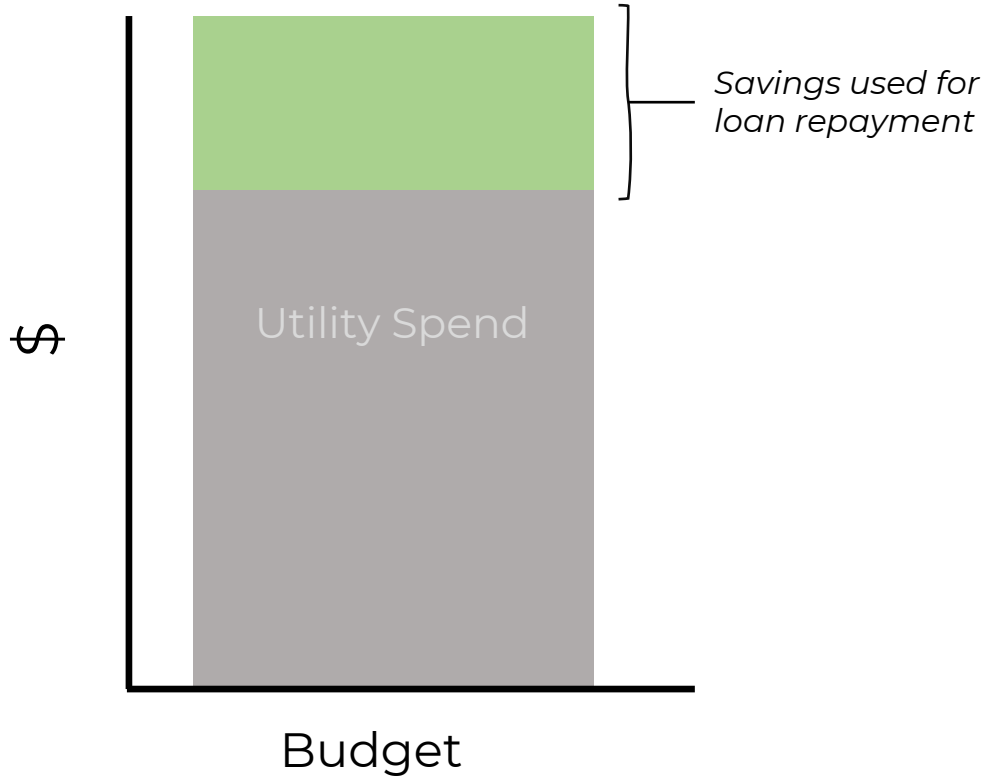


The Self-Funding Model

Utility Spend Before Retrofit



Utility Spend After Retrofit



Blackstone's Engineered Project Design

Proposed Measures	GHG Reduction (tCO2e)	Total Project Costs	Total Annual Project Savings	Simple Payback (Years)	Potential Incentives
LED Lighting Upgrade	7	$318,725	$21,294	15.0	$42,000
BAS and HVAC Re-commissioning	38	$106,576	$19,387	5.5	$17,647
Install a 137 kW Solar PV Rooftop System Generates 149,334 kwh/year. Behind meter..	12	$386,835	$17,767	21.8	$0
Install Metering and Energy Management (DERMS) system	13	$84,267	$2,586	32.6	$3,911
Total	71	$896,403	$61,033	14.7	$63,558

Algoma PUBLIC HEALTH Santé publique Algoma | blackstone energy services

Recommendation – Lighting

Proposed Measures	GHG Reduction (tCO2e)	Total Project Costs	Total Annual Project Savings	Simple Payback (Years)	Potential Incentives
LED Lighting Upgrade	7	$318,725	$21,294	15.0	$42,000

*Incentive must be used within 6-months.

Replace non-LED fixtures with LED

Recommendation – BAS & HVAC Re-commissioning

Proposed Measures	GHG Reduction (tCO2e)	Total Project Costs	Total Annual Project Savings	Simple Payback (Years)	Potential Incentives
BAS and HVAC Re-commissioning	38	$106,576	$19,387	5.5	*$17,647

*Incentive must be applied for upon signing. Time sensitive.

Calibration & verification of existing equipment

Recommendation – Rooftop Solar PV

Proposed Measures	GHG Reduction (tCO2e)	Total Project Costs	Total Annual Project Savings	Simple Payback (Years)	Potential Incentives
Install a 137 kW Solar PV Rooftop System	12	$386,835	$17,767	21.8	*$0

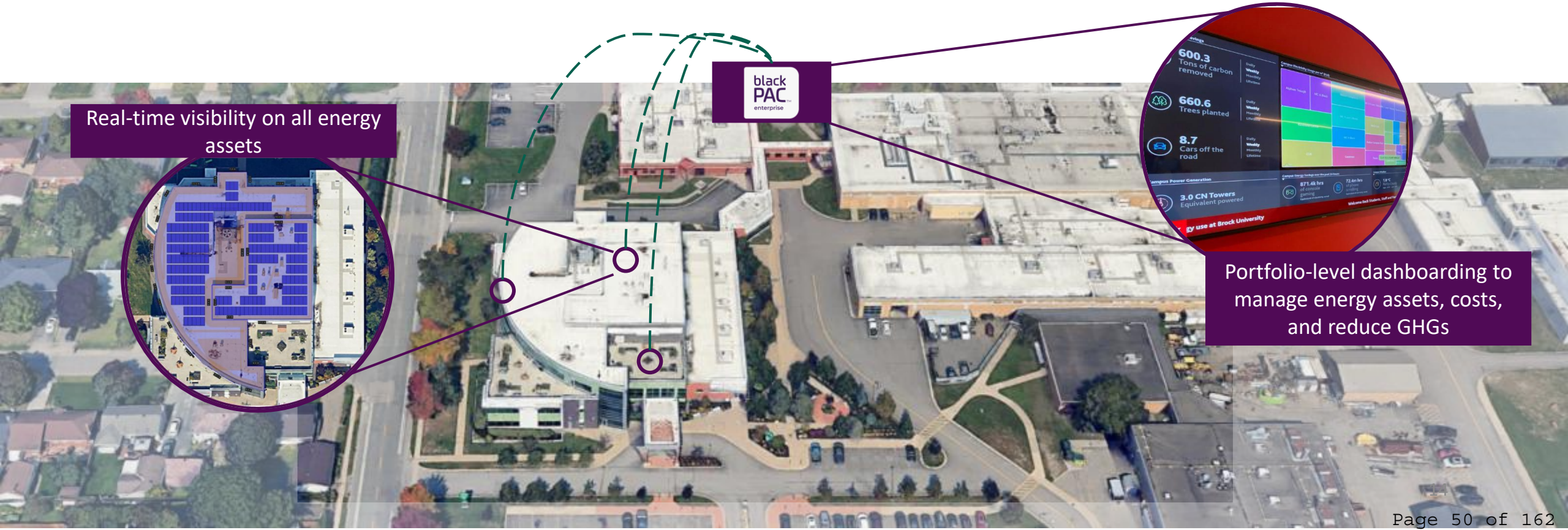
*An incentive may apply here of 30% to 40%, but a Connectivity Impact Assessment must be performed ASAP.

Install 137kW solar PV system

Recommendation – Metering & DERMS

Proposed Measures	GHG Reduction (tCO2e)	Total Project Costs	Total Annual Project Savings	Simple Payback (Years)	Potential Incentives
Install Metering and Energy Management (DERMS) system	13	$84,267	$2,586	32.6	*$3,911

*Incentive must be applied for upon signing. Time sensitive.



Project Business Case

Total Project Value	$896,403
Payback Period	14.7 years
Annual Utility and Levy Savings	$61,033
Annual GHG Reductions	40%
Energy Demand Reductions	35%
Future Avoided Costs	$250,000
Estimate of Available Grants	$63,558

The alternative is to keep paying the $61,033 annually to the utility.

Managed Energy Service Agreement

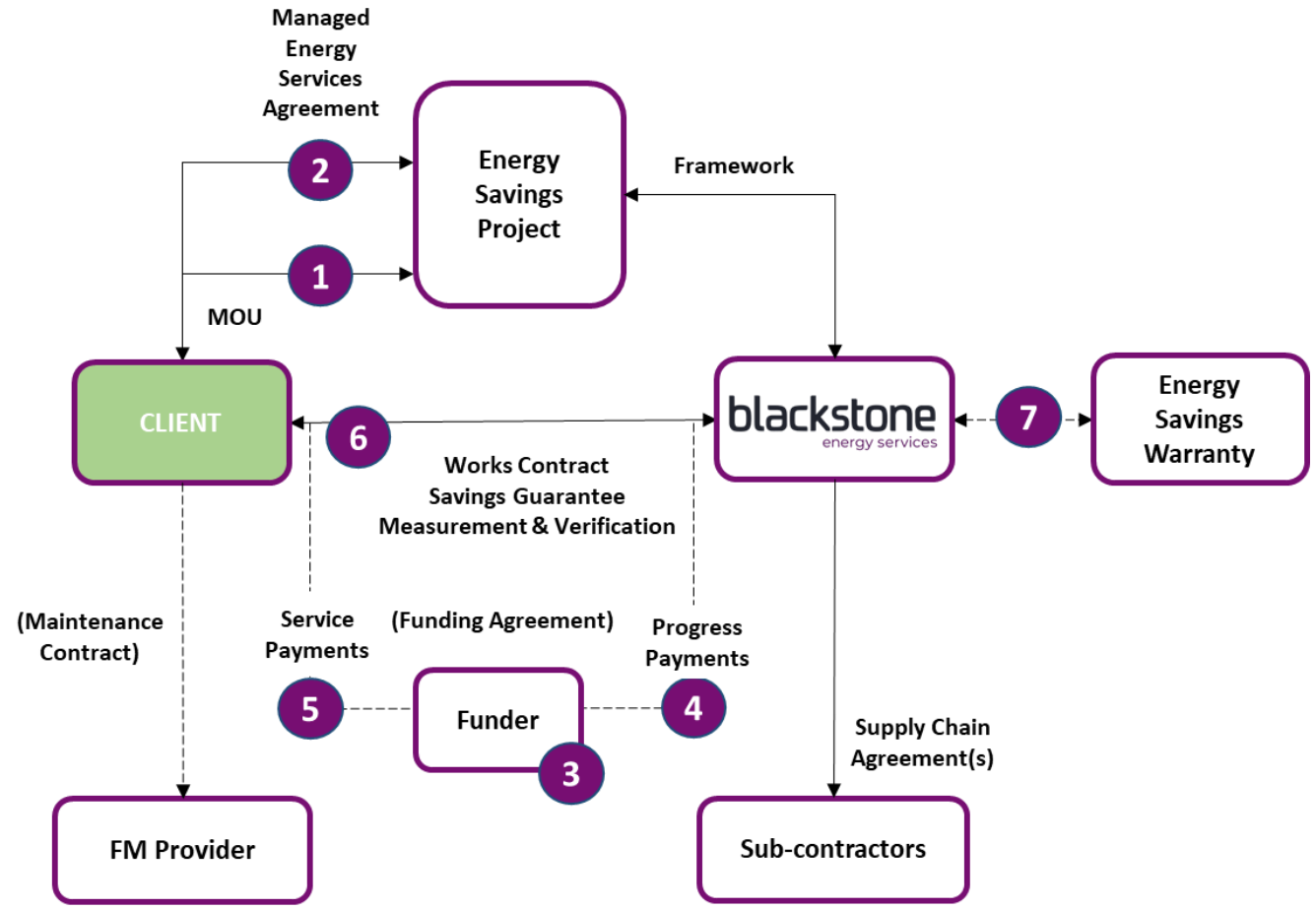
MESA Overview:

- $896,403 capital injection to renew infrastructure and reduce GHG emissions at **zero upfront cost** via Mutually Agreeable Finance Partner.
- Long-term, low-cost capital tied to GHG reduction for clean infrastructure renewal
- Flexible capital injection based on funding availability.
- **Capital and study costs** repaid via operational savings, grants, incentives & tax credits.
- Delivered under a utility service-based model.

Managed Energy Service Agreement

MESA Process Steps

1. MOU executed with basic terms and conditions of project scope and commercial terms (if applicable)
2. Managed Energy Services Agreement (MESA) is executed upon review and acceptance of Final Service Program Feasibility Study
3. Tri-party Funding agreement is executed as part of the MESA contract
4. Blackstone mobilizes and implements project measures as set out in Schedule "B" Project Schedule. Monthly progress draw requests are approved by client, an invoice is then issued to funder for payment with signed Progress Draw Approval Form.
5. Project is completed and accepted by client. Service Payments begin and are paid by client to a joint account that is owned by Blackstone and the Funder, which the Funder has power of attorney over.
6. The contract performance period is commenced, and savings are measured and verified. In the event of a confirmed savings shortfall, the construction period savings are used to offset financial shortfall.
7. If the construction period savings are liquidated to cover the savings shortfall, the Energy Savings Warranty claim is registered and the underwriter pays the shortfall claim to the loss payee, which in this case is the client.



Project Schedule

Project Scope: Design Detailed Engineering

Construction: Project Delivery

Monitoring & Verification – Quality Assurance

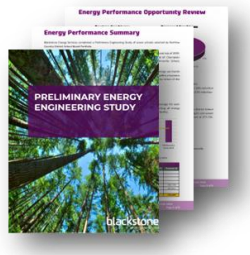
✓	✓	April 2025	July 2025	*TBD*	*TBD*	*TBD*

Project Business Case Qualification (ECDM)

NEXT STEP: Project Agreement Sign-Off (Financing Mechanism)

Commissioning

Performance Guarantee / Warranty



Questions?

400-2323 Yonge St.
Toronto, ON
M4P2C9

416.628.2828

instagram.com/blackstoneenergy/

Be informed. Be in control. Be the change.

Thank you

400-2323 Yonge St.
Toronto, ON
M4P2C9

416.573 3823

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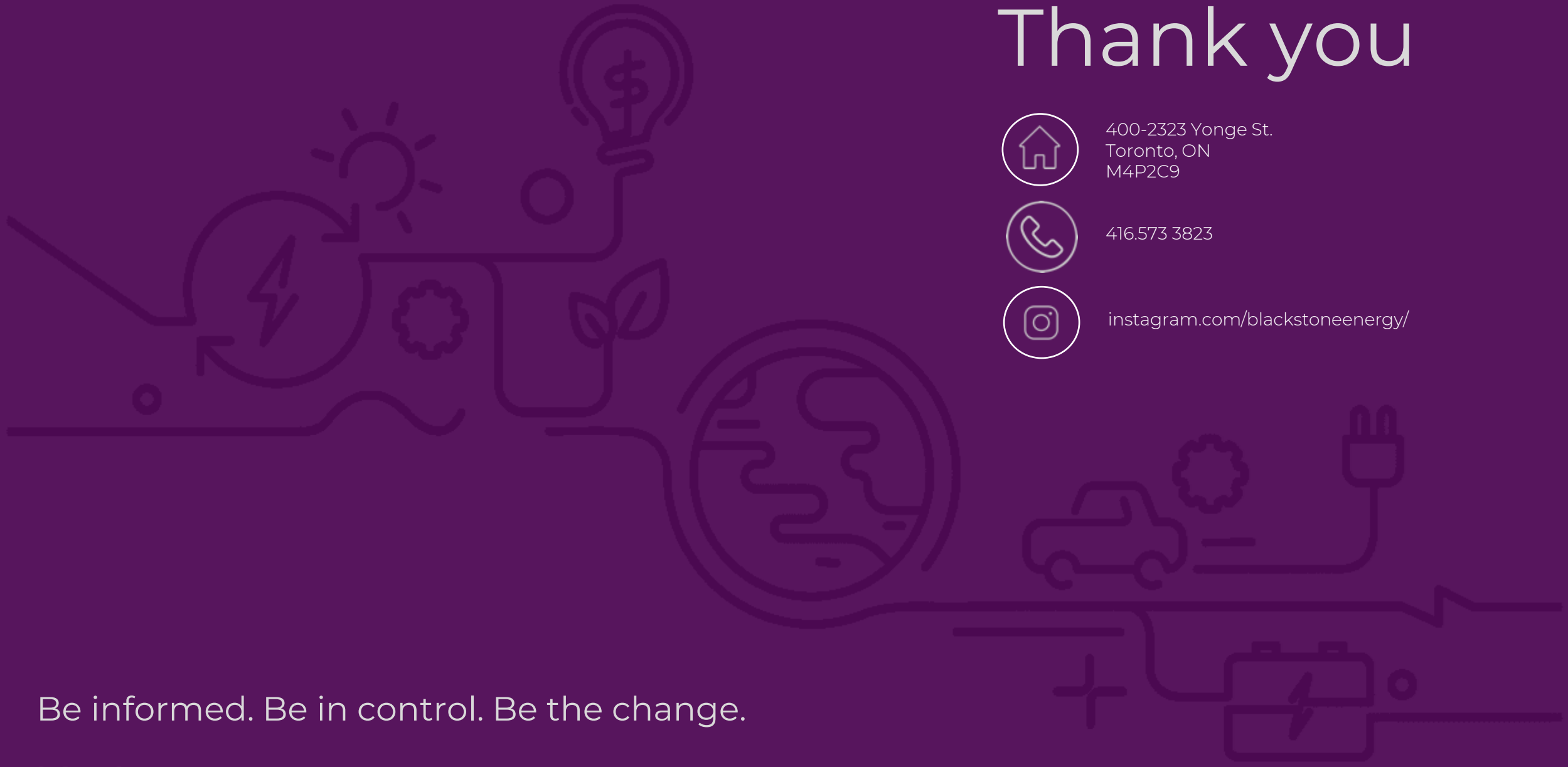


Be informed. Be in control. Be the change.

blackstone
energy services

Algoma Public Health
Sault Ste. Marie

Investment Grade Energy & Decarbonization Study

October 2024

blackstone

Table of Contents

List of Abbreviations

24/7	24 hours a day/7 days a week
ACH	Air Changes per Hour
AHU	Air Handling Units
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
BAS	Building Automation System
BES	Blackstone Energy Services
BTU	British Thermal Unit – which is a traditional unit of heat
ºC	Celsius
CAV	Constant Air Volume
CDD	Cooling Degree Days
CDT	Cooling Delta T
CFL	Compact Fluorescent Lamp
Cfm	Cubic Feet per Minute
CHP	Combined Heat and Power
CH_4	Methane
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CPI	Consumer Price Index
CSA	Canadian Standards Association
CV	Constant Volume
CW	Chiller Water
CHW	Chilled Water
DGI	Daily Global Insulation
DHW	Domestic Hot Water
DP	Differential Pressure
DX	Direct Expansion Refrigerant
EBI	Enterprise Building Integrator – by Honeywell
ECI	Energy Cost Index
EUI	Energy Utilization Index
ekWh	Equivalent kiloWatt Hours
EF	Exhaust Fan
ESA	Electrical Safety Association
ECM	Energy Conservation Measure
F	Fahrenheit
Fc	Foot-candle
FCU	Fan Coil Units
Ft^2	Square Feet
GHG	Green House Gases
HDD	Heating Degree Days
HE	Heat Exchangers
HG	Hot Glycol
HP	Horsepower
HRU	Heat Recover Units
HST	Harmonized Sales Tax
HTHW	High Temperature Hot Water
HVAC	Heating, Ventilation, and Air Conditioning
HW	Hot Water
HWS	Hot Water Supply
ID	Equipment Identification Tag
IEQ	Indoor Environmental Quality

IESO	Independent Electricity System Operator
IPMVP	International Performance Measurement & Verification Protocol
IT	Internet Technology
Kg	Kilograms
kW	KiloWatt, a Measure of Electric Demand
kWh	KiloWatt hours, a Measure of Electricity Usage
kW/ton	KiloWatt per Ton of Refrigeration
LDC	Local Distribution Company
LED	Light Emitting Diode
LEED	Leadership in Energy and Environmental Design and is a Green Building Rating System
m^2	Square Meter
m^3	Cubic Meter
MAD	Mixed Air Damper
MAU	Mixed Air Unit
MAT	Mixed Air Temperature
MBH	One Thousand British Thermal Units (BTUs)
MBTU	One Million British Thermal Units (BTUs)
MESA	Managed Energy Services Agreement
MUA	Make-up Air Unit
M&V	Measurement and Verification
MW	Megawatt
NO_2	Nitrogen Dioxide
OAT	Outdoor Air Temperature
OACH	Outdoor Air Changes per Hour
O&M	Operations and Maintenance
PCB	Polychlorinated Biphenyl
Ph	Phase
PH	Penthouse
PL	Plug-in
PM	Project Manager
psig	Pounds per square in gauge – is a measure of pressure
PV	Photovoltaic
PVC	Polyvinyl Chloride
RAT	Return Air Temperature
RF	Return Fan
ROI	Return On Investment
RTAC	Roof Top Air Conditioning
RTU	Roof Top Units
SAT	Supply Air Temperature
SF	Supply Fan
TBD	To Be Decided
UPS	Uninterrupted Power Supply
V	Volt
VAV	Variable Air Volume
VIV	Variable Inlet Vanes
VSD	Variable Speed Drive
WSIB	Workplace Safety and Insurance Board

List of Figures

List of Tables

1 Executive Summary

The Paris Agreement (originally adopted by Parties during COP21) rules were set at the United Nations Climate Change Conference of the Parties in November 2021. It is a legally binding international treaty on climate change which formally established the world's commitment to hold the increase in the global average temperature to well below 2°C above pre-industrial levels. The Canadian government committed to the Paris Agreement, and it is outlined in our country's Nationally Determined Contribution (NDC). As such all Canadians are obligated to meet the targets outlined, as well as meet the interim goals identified in the Federal Net-Zero Emissions Accountability Act, targeting net zero by 2050.

Algoma Public Health (APH) engaged Blackstone Energy Services (Blackstone) to develop an Investment Grade Energy and Decarbonization Study (Study) to define the necessary strategic planning, technologies, government incentives, utility rate structures, grid emissions, funding, and implementation solution to achieve organization's decarbonization goals, objectives, and outcomes.

This Study focuses on Algoma Public Health's main office located in Sault Ste. Marie, ON. Through an effective collaboration process, Algoma Public Health and Blackstone have jointly defined the objectives and outcomes of the Study as set out below:

1. Implementation of energy management and decarbonization program with no annual operating budget increases, leverage grants, incentives and innovative funding structures to create best value for Algoma Public Health. The decarbonization program would be cashflow neutral at the minimum and require no capital investment from Algoma Public Health over the life of the term.
2. Reduce Algoma Public Health's accumulated deferred maintenance by replacing certain equipment and systems which are at the end of their useful life within the scope of the proposed projects
3. Provide an additional level of redundancy and reliability by strategically added equipment.

The recommendations set out in this Study are to achieve the objectives and outcomes as defined above and provide a recommended technical and financial program for the APH to consider and implement.

IMPLEMENTATION OF CONSERVATION MEASURES

- LED Lighting Upgrade
- BAS and HVAC Re-commissioning

RENEWABLE ENERGY AND HEAT RECOVERY

- Install a Solar PV Rooftop System

DEMAND MANAGEMENT AND BUSINESS RESILIENCY

- Install Metering and Energy Management System

Figure 1. Initiatives and Associated Measures

Table 1 below shows the costs and savings for each project phase, GHG reduction of each phase as a percentage of the total emissions over the baseline period and the total emissions saved. Combined scope 1&2 emissions savings vary from one year to the next because Ontario's grid electricity emissions change every year due to constantly changing generation mix (impact of natural gas in electricity generation). The selected baseline period is April 2022 to March 2023.

Table 1. Summary of Proposed Phases – Recommended Program

Project Phases	Implementation Period	Total Project Cost	Annual Cost Savings	GHG Reduction in 2030 (tCO_2e)	GHG Reduction % in 2030	Annual GHG Reduction in 2050 (tCO_2e)	GHG Reduction % in 2050
Phase 1	2024-2026	$896,403	$57,102	73	25%	72[1]	25%[1]
Carbon Offsets (Optional) [2]	2049-2050	$6,600	N/A	0	0%	220	75%
Total		**$903,003**	**$57,102**	**73**	**25%**	**292**	**100%**

[1] *This additional deduction in GHG emissions is due to the Ontario grid emission factor being reduced to almost 0 GHG emissions between 2035 and 2050*

[2] *The carbon offset purchase is a known option at this time to achieve Net-Zero carbon by 2050*

Table 2. List of Measures Phase 1 – Recommended Program

Measure Numbers	Measure Name	GHG Reduction (tCO_2e)	Total Project Costs	Total Project Savings	Simple Payback (Years)
M1	LED Lighting Upgrade	7	$318,725	$20,447	15.6
M2	BAS and HVAC Re-commissioning	38	$106,576	$18,017	5.9
M5	Install a 137 kW Solar PV Rooftop System	12	$386,835	$16,357	23.6
M7	Install Metering and Energy Management (BlackPAC) system	13	$84,267	$2,280	37.0
Total		**71**	**$896,403**[3]	**$57,102**	**15.7**

[3]*Pricing valid for sixty (60) days.*

By executing all these initiatives, APH will achieve close to 25% GHG emissions reduction by 2030 and move towards GHG emissions reduction of 100% by 2050.

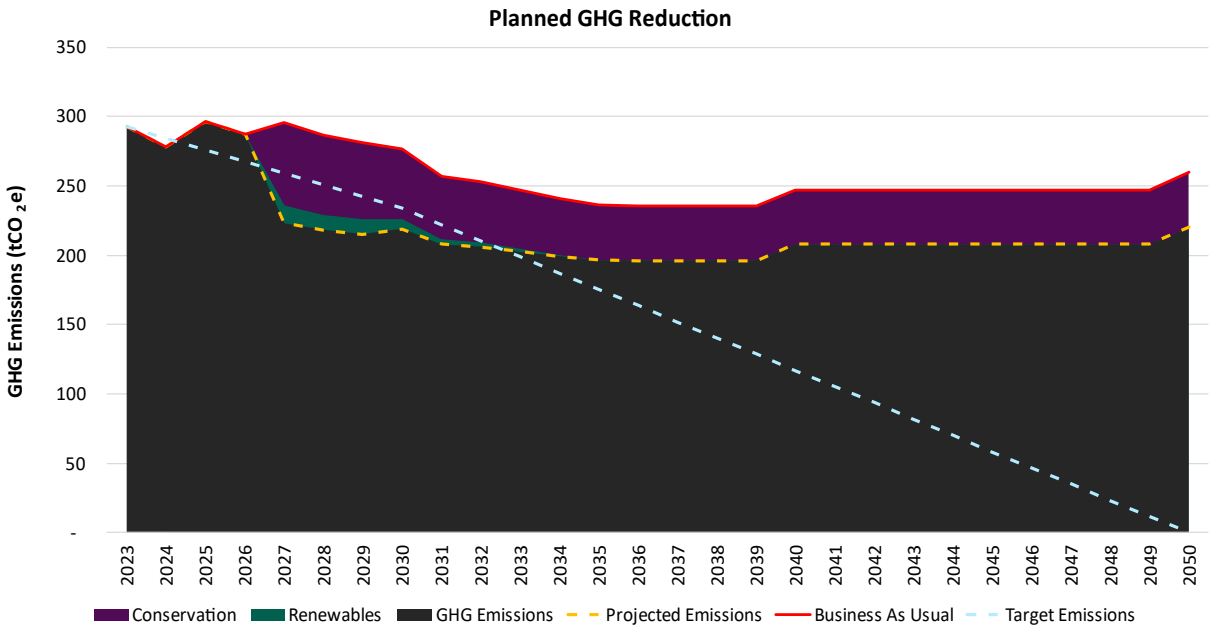


Figure 2. Emissions Profile from Proposed Project

Figures 2 depicts APH's annual carbon footprint up to 2050, using Ontario's forecasted electricity and natural gas emission factors published by Canada Infrastructure Bank (CIB). APH's future annual carbon footprint is subject to these factors and its profile will experience a few "bumps" as depicted in the 2023-2030 period, which are reflections of the anticipated increase in natural gas use for electricity generation in Ontario.

After implementation of the proposed project, APH will still have a Net-Zero Gap of approximately 220 tons (75%). To bridge the Net-Zero Gap, Blackstone recommends the following options to be considered:

- In addition to the proposed maximized onsite solar PV capacity, consider purchasing additional renewable electricity annually through a Virtual Power Purchase Agreements (VPPAs) as they become legislated in Ontario and achieve net-zero state.
- We recommend that APH plan a second deep energy retrofit project to further the decarbonization efforts towards net zero between 2030 – 2050. This retrofit could include measures evaluated as part of this study but not part of the recommended program (please refer to Section 5), incorporating new heat pump technologies and other electrification strategies available in the future.
- Alternatively, APH could buy carbon offsets to overcome Net-Zero Gap. Based on the anticipated Net-Zero Gap of 220, carbon offsets will cost the agency about $6,600 annually by 2050.

Both mitigation strategies mentioned above are based on IESO's efforts to decarbonize the electricity grid. Carbon offsets are not a preferred option by Blackstone to reach net-zero state, however due to the current unavailability of VPPAs in Ontario, Blackstone is suggesting proceeding with Carbon Offsets. If the legislation surrounding VPPAs changes in the future, the situation will be re-examined and VPPAs could be recommended as a preferred option.

1.1 Cashflow Proforma

Phase 1 – Recommended Program

Measure Numbers	Measure Name	GHG Reduction (tCO_2e)	Total Project Costs	Total Project Savings	Simple Payback (Years)	ITC Contribution	Potential Incentives	$/Ton
M1	LED Lighting Upgrade	7.486	$318,725	$20,447	15.6	$0	$14,104	$42,579
M2	BAS and HVAC Re-commissioning	38	$106,576	$18,017	5.9	$0	$0	$2,772
M5	Install a 137 kW Solar PV Rooftop System	12	$386,835	$16,357	23.6	$0	$0	$31,285
M7	Install Metering and Energy Management (BlackPAC) system	13	$84,267	$2,280	37.0	$0	$0	$6,596
Total		**71**	**$896,403**	**$57,102**	**15.7**	**$0**	**$14,104**	**$12,612**

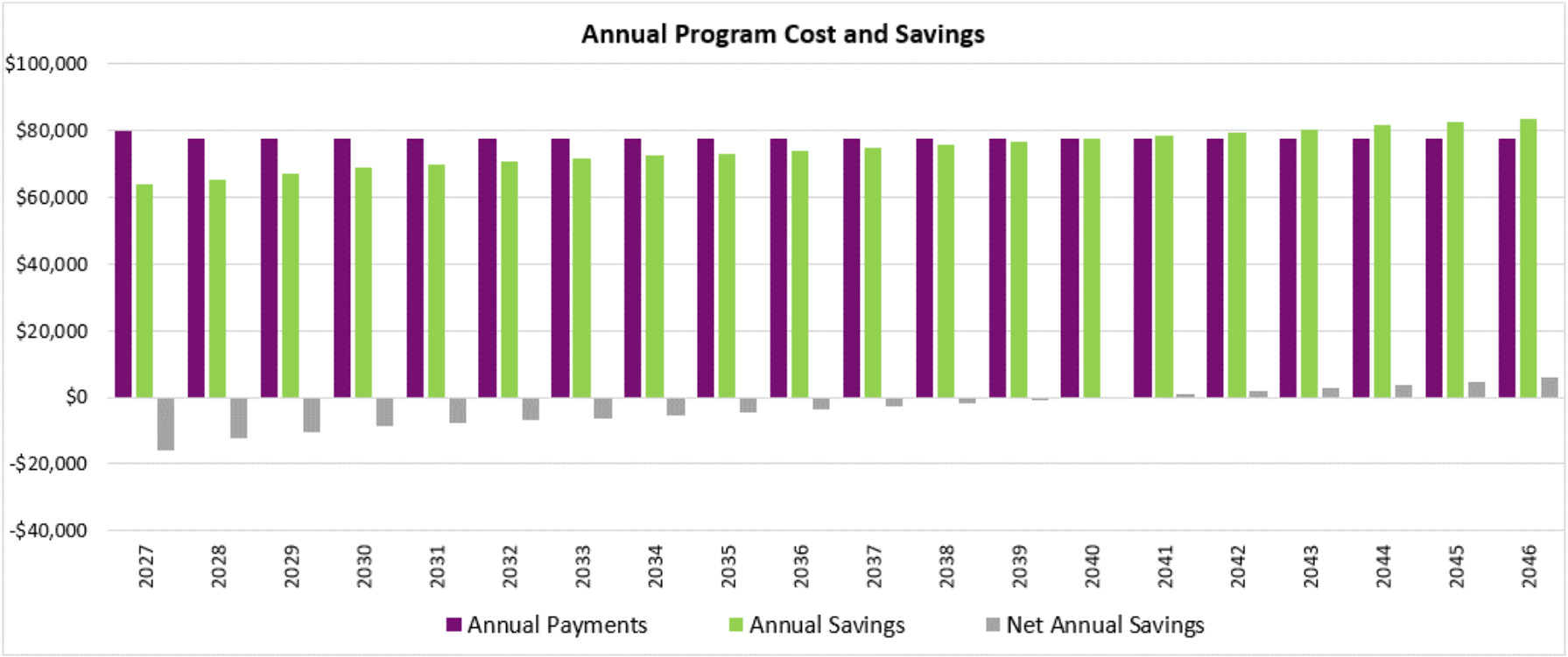


Figure 3. Cashflow Proforma

2 Current Energy Use & Projected Savings

2.1 Base Year Utility Analysis

As part of our program process, Blackstone conducted a comprehensive utility analysis of Algoma Public Health's Sault Ste. Marie facilities to define the energy use baseline. For this analysis, we used metered utility data from the period of April 2022 to March 2023. Electricity, natural gas and water costs were $186,490 for the base year. This data is summarized in Tables 3, 4 and 5 below. HST and fixed rates are not included.

Table 3. Utility Use and Cost Summary

Area	Electricity		Natural Gas		Water		Total
Sq. ft	kWh	$	m^3	$	m^3	$	$
70,000	826,090	117,130	116,588	55,811	1,565	$6,435	179,376

Table 4. Building Energy Performance and Cost Intensity

Area	Electricity		Natural Gas		Total	
Sq. ft	kWh/sq. ft	$/sq. ft	ekWh/sq. ft	$/sq. ft	ekWh/sq. ft	$/sq. ft
70,000	11.80	1.67	17.59	0.80	29.39	2.47

Table 5. Contractual Base Year Energy and Water Cost Rates

2022/2023				
Building	Electricity $/kWh	Demand $/kW	Gas $/$m^3$	Water $/$m^3$
APH Sault Ste. Marie	0.10	16.16	0.48	4.11

2.2 Utility Analysis Summary

The information in the following sections analyzes the base year period from April 2022 to March 2023. This analysis provides a detailed understanding of how the facility performed during that period from an energy performance perspective.

2.2.1 Utility Account Information

Utilities included in the analysis are electricity and natural gas. The service providers are SSM PUC and Enbridge. Table 6 summarizes the accounts for each utility.

Table 6. Summary of Utility Accounts

Utility	Provider	Meter #	Account #	Rate Class	Area Served
Electricity	SSM PUC	139252	0204481-01	Class B	Whole Campus
Natural Gas	Enbridge	2701184	910040288933	Rate 10	Whole Campus
Water	SSM PUC	55460	0204481-01	N/A	Whole Campus

2.2.2 Utility Consumption Summary

Utility consumption and cost for each respective utility has been adjusted to fit the base year of April 2022 to March 2023. In cost, HST and fixed rates are not included.

Table 7. Proportion of Total Utility Cost Consumption and Cost Summary

Utility	Annual Cost	Annual Consumption	% of Total Utility Costs	% of Total Energy	Cost per sq. ft
Electricity (kWh)	$117,130	826,090	65%	40%	$1.67
Natural Gas (m^3)	$55,811	116,588	31%	60%	$0.80
Water (m^3)	$6,435	1,565	4%	0%	$0.09
Totals	**$179,376**	**N/A**	**100%**	**100%**	**$2.56**

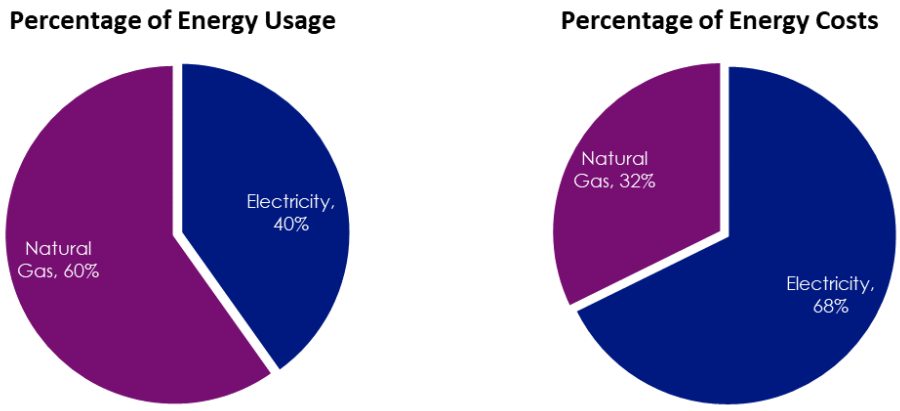


Figure 4. Percentage of Total Energy Usage and Cost

2.3 Existing Energy Performance

2.3.1 Energy Utilization Index

The Energy Utilization Index (EUI) is a measure of the facility's energy performance. The EUI is a statement of the number of ekWh of energy used annually per square foot of conditioned space. EUI calculations for the facility are summarized in the table below.

Table 8. Energy Utilization Index

ekWh/year	2,057,259
Gross Floor Area (sq. ft)	70,000
EUI (ekWh/sq. ft/yr.)	**29.39**

The EUI is an excellent way to compare one facility against others of the same building type based on a national average. A comparison of the EUI of the audited facility against the national average is summarized in the table below. The table compares our annual energy consumption to the industry average in Canada by Natural Resources Canada (2008).

Table 9. Energy Utilization Index Comparison

Building Type	Audited Facility	Industry Average	% Difference	Summary
Medical Office	29.39	19.10	54%	Facility consumes 54% more than similar facilities.

2.3.2 Energy Cost Index

The Energy Cost Index (ECI) is a measure of a facility's energy use in terms of the total energy use per square foot of space. The audited facility's ECI is summarized in the table below.

Table 10. Energy Cost Index

Cost/year	$172,941
Gross Floor Area (sq. ft)	70,000
ECI ($/sq. ft/yr.)	**$2.47**

2.4 Heating and Cooling Degree Days

For the purpose of the analysis found in this plan, there is an introduction to Heating and Cooling Degree days provided. This will allow for better understanding of weather impacts on the facilities. The reason degree days are measured is to allow a comparison between energy consumption relative to weather.

By doing this, we can determine whether any fluctuations in energy consumption are a direct result of weather. If not, then we can quickly recognize this and isolate any efficiency issues to eliminate energy waste.

"**Heating Degree Days**", or "**HDD**", are a measure of how much (in degrees), and for how long (in days), outside air temperature was lower than a specific "base temperature". They are used for calculations relating to the energy consumption required to heat buildings.

"**Cooling Degree Days**", or "**CDD**", are a measure of how much (in degrees), and for how long (in days), outside air temperature was higher than a specific base temperature. They are used for calculations relating to the energy consumption required to cool buildings.

For the auditing period for the facility, HDD and CDD were collected from Natural Resources Canada (for Sault Ste Marie location) and is summarized in the table below.

Table 11. HDD & CDD April 2022 to March 2023

Month	Heating Degree Days (18ºC or less)	Cooling Degree Days (19ºC or more)
April	492.05	0
May	263.99	3.32
June	164.47	7.32
July	75.91	21.29
August	42.51	28.89
September	111.06	16.46
October	302.81	0.35
November	467.07	0
December	675.84	0
January	761.88	0
February	721.85	0
March	689.17	0
Totals	**4,768.65**	**77.64**

2.5 Detailed Electricity Analysis

Electricity is supplied to the facility by the Sault Ste. Marie PUC and is billed through one meter. The following sections analyze electricity use for the facility, looking at consumption, demand, and electricity end use. Electricity costs used in this section reflect the billing data of the base year period of April 2022 to March 2023.

2.5.1 Electricity Consumption and Cost

Electricity consumption and cost at APH Sault Ste. Marie Campus is summarized in the table below.

Table 12. Monthly Electrical Consumption and Cost Details

Month	Consumption (kWh)	Demand (kW)	Electricity Cost	Demand Cost	Total Cost
Apr-22	63,464	132	$6,230	$2,067	$8,297
May-22	66,640	138	$6,083	$2,143	$8,226
Jun-22	67,556	171	$6,679	$2,732	$9,410
Jul-22	77,376	169	$9,734	$2,844	$12,578
Aug-22	74,177	182	$11,119	$3,069	$14,188
Sep-22	73,404	180	$10,319	$3,007	$13,326
Oct-22	79,813	192	$8,449	$3,062	$11,511
Nov-22	60,906	157	$3,501	$2,394	$5,895
Dec-22	63,378	156	$5,326	$2,441	$7,767
Jan-23	69,973	138	$8,268	$2,399	$10,667
Feb-23	66,309	150	$4,793	$2,380	$7,173
Mar-23	63,095	140	$5,814	$2,276	$8,090
Totals	**826,090**	**N/A**	**$86,316**	**$30,814**	**$117,130**

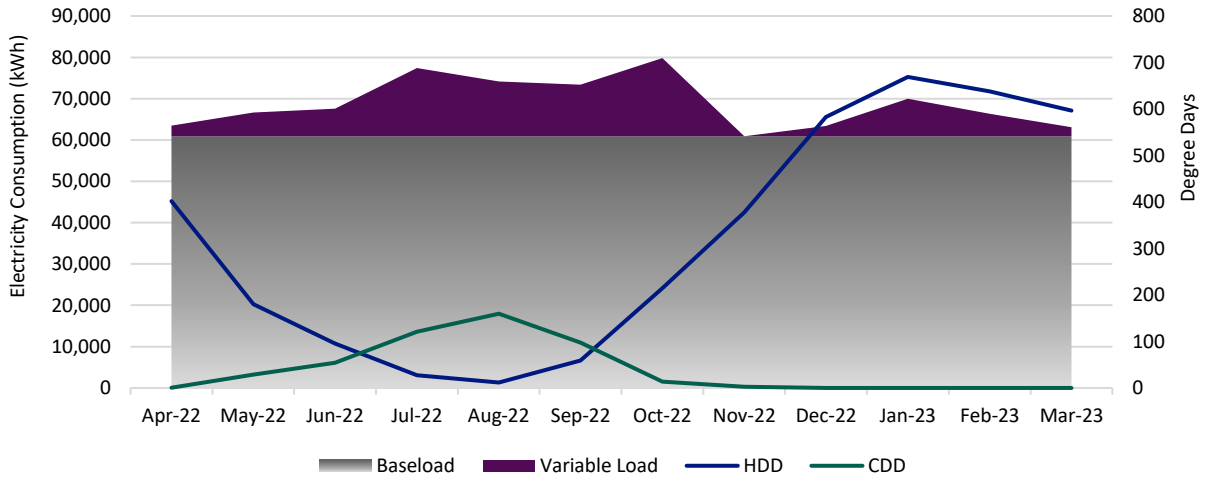


Figure 5. Electricity Profile

Figure 5 displays a breakdown of electricity consumed by month for the consumption period analyzed. This consumption is also compared against local weather effects. It also demonstrates that electricity consumption is only slightly correlated with cooling.

Figure 6 below shows percentages of Annual Electricity Cost and Demand Cost.

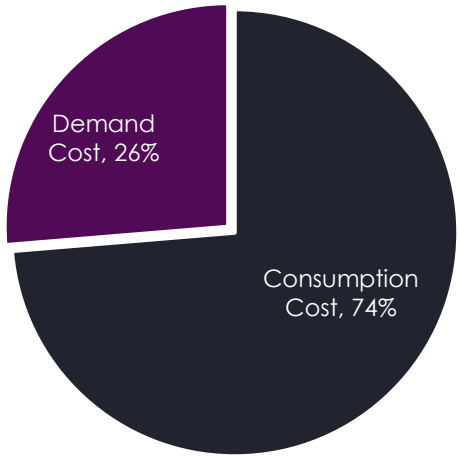
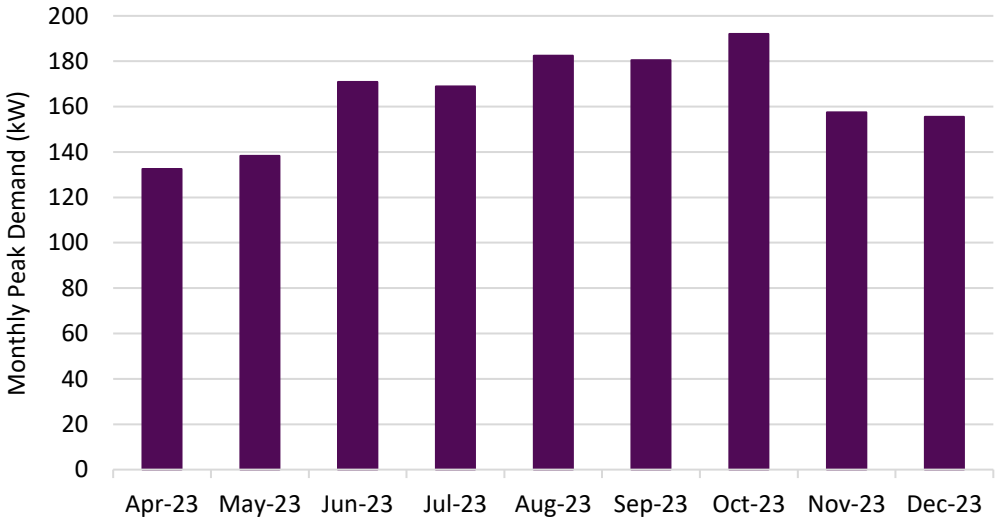


Figure 6. Electricity Cost

2.5.2 Peak Demand Analysis

This section analyzes the facility's peak (kW) load profile



Largest Peak Demand (kW)	192
Largest Peak Demand Month	Oct 2023
Average Peak Demand (kW)	159

Figure 7. Monthly Peak Demand

2.5.3 Electricity End Use

This section outlines electricity end use for each identifiable load broken down by major energy consumer as identified in the energy audits. The table and chart below show electrical consumption.

Table 13. Electricity End Use

End Use	Consumption (kWh)	Cost	% of Total
Lighting	249,367	35,357	30.2%
Fans	325,271	46,120	39.4%
Pumps	66,786	9,469	8.1%
Cooling	76,944	10,910	9.3%
Plug Loads	82,617	11,714	10.0%
Misc.	25,185	3,571	3.0%
Totals	**826,170**	**$117,141**	**100%**

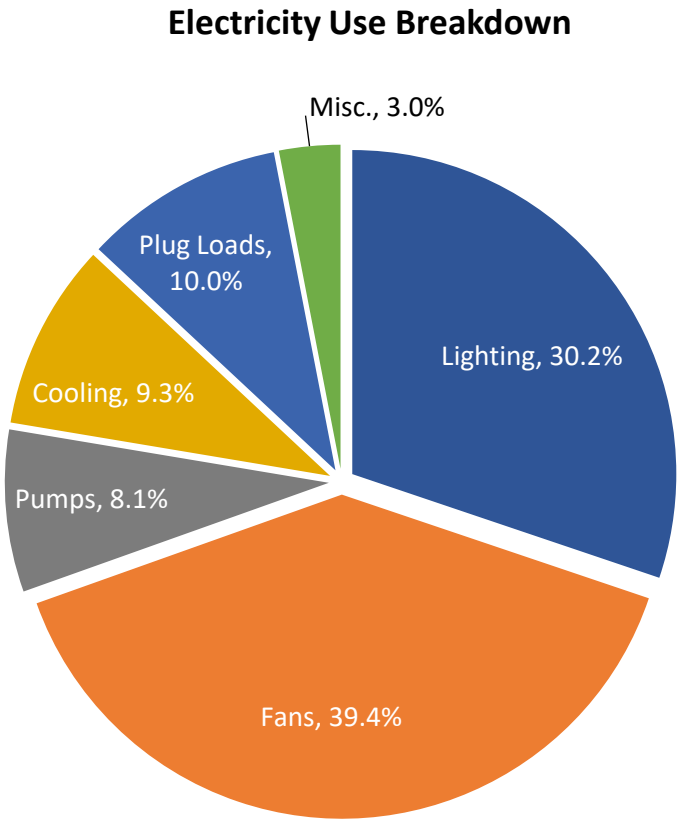


Figure 8. Electricity End Use

2.6 Natural Gas Analysis

The following sections analyze natural gas consumption at APH Sault Ste. Marie. Enbridge provides natural gas to the building through one meter. The rates used in this section reflect the billing data of the base year period of April 2022 to March 2023.

2.6.1 Natural Gas Consumption

Table 14 and Figure 9 display a breakdown of natural gas consumed by month for the consumption period analyzed. This consumption is also compared against local weather effects.

Table 14. Monthly Natural Gas Consumption

Month	Consumption (m^3)	Consumption (ekWh)	Total Cost
Apr-22	12,390	130,838	$4,601
May-22	8,056	85,071	$3,214
Jun-22	6,103	64,448	$2,457
Jul-22	3,697	39,040	$1,769
Aug-22	3,581	37,815	$1,877
Sep-22	2,835	29,938	$1,505
Oct-22	7,671	81,006	$4,140
Nov-22	8,360	88,282	$4,599
Dec-22	12,538	132,401	$6,828
Jan-23	18,778	198,296	$9,408
Feb-23	12,735	134,482	$6,069
Mar-23	19,844	209,553	$9,343
Totals	**116,588**	**1,231,169**	**$55,811**

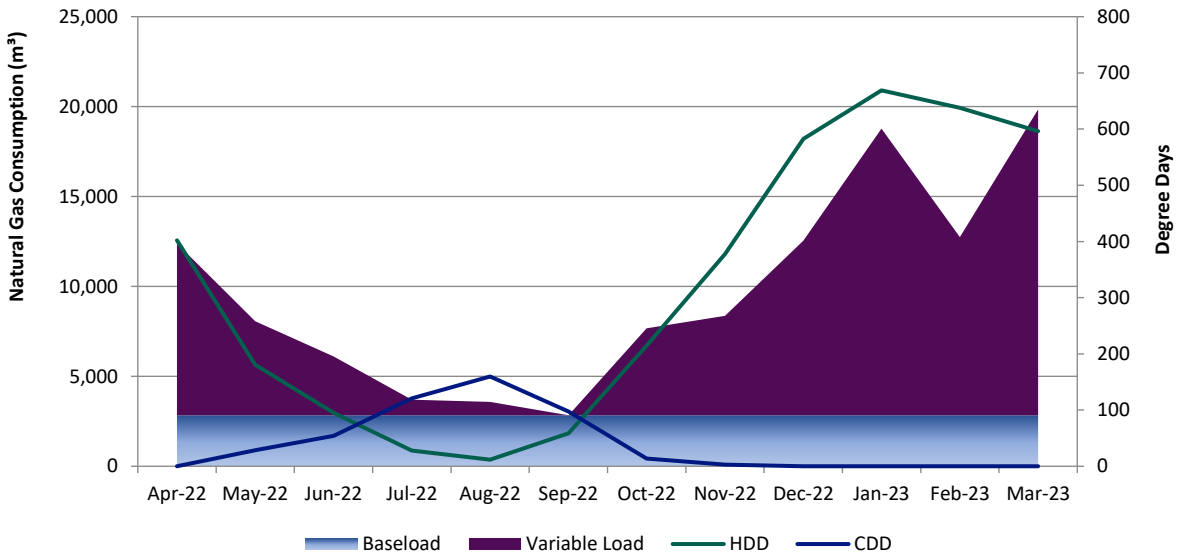


Figure 9. Natural Gas Consumption

The graphic above demonstrates that natural gas consumption is strongly correlated with heating load. Consumption increases commensurately with HDD, as demand for heating is higher.

2.6.2 Natural Gas End Use

The following chart displays the distribution of natural gas consumption by end use.

Table 15. Natural Gas End Use

End Use	Consumption (m^3)	Consumption (ekWh)	Cost	% of Total
Outdoor Air	42,415	447,904	20,304	36.4%
Humidification	10,224	107,967	4,894	8.8%
DHW	21,591	228,004	10,336	18.5%
Space Heating	42,357	447,293	20,277	36.3%
Totals	**116,588**	**1,231,169**	**55,811**	**100%**

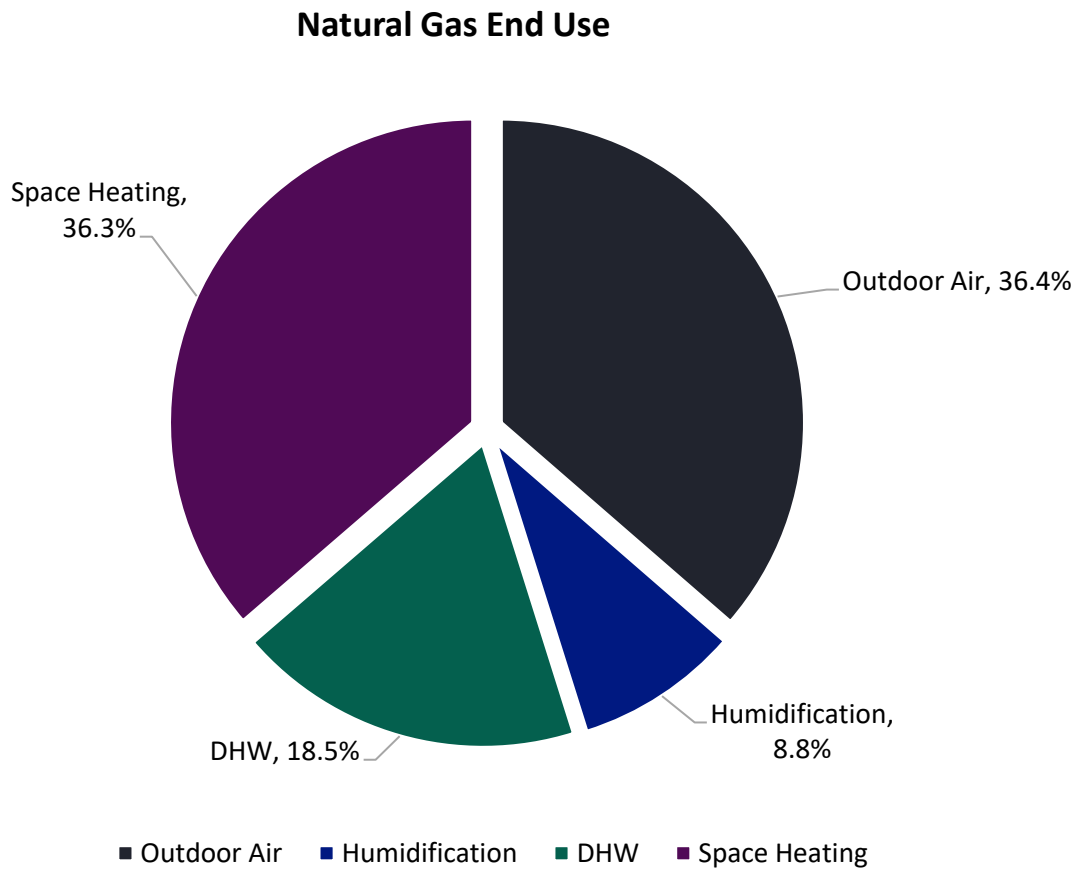


Figure 10. Natural Gas End Use

2.7 Energy End Use

Energy end use breaks down total energy consumption by end use type: space heating, space cooling, water heating, plug load, auxiliary motors and equipment, lighting, and servers. Since both electricity and natural gas are energy sources used in facility operations, equivalent kilowatt hours (ekWh) is the measure used as a common unit so that overall energy use at the facility can be compared.

Table 16. Average Energy End Use

End Use	Energy Consumption (ekWh)	Energy Consumption (%)
Lighting	249,367	12.1%
Fans	325,271	15.8%
Pumps	66,786	3.2%
Cooling	76,944	3.7%
Plug Loads	82,617	4.0%
Misc.	25,185	1.2%
Outdoor Air	447,904	21.8%
Humidification	107,967	5.2%
DHW	228,004	11.1%
Space Heating	447,293	21.7%
Totals	**2,057,339**	**100.0%**

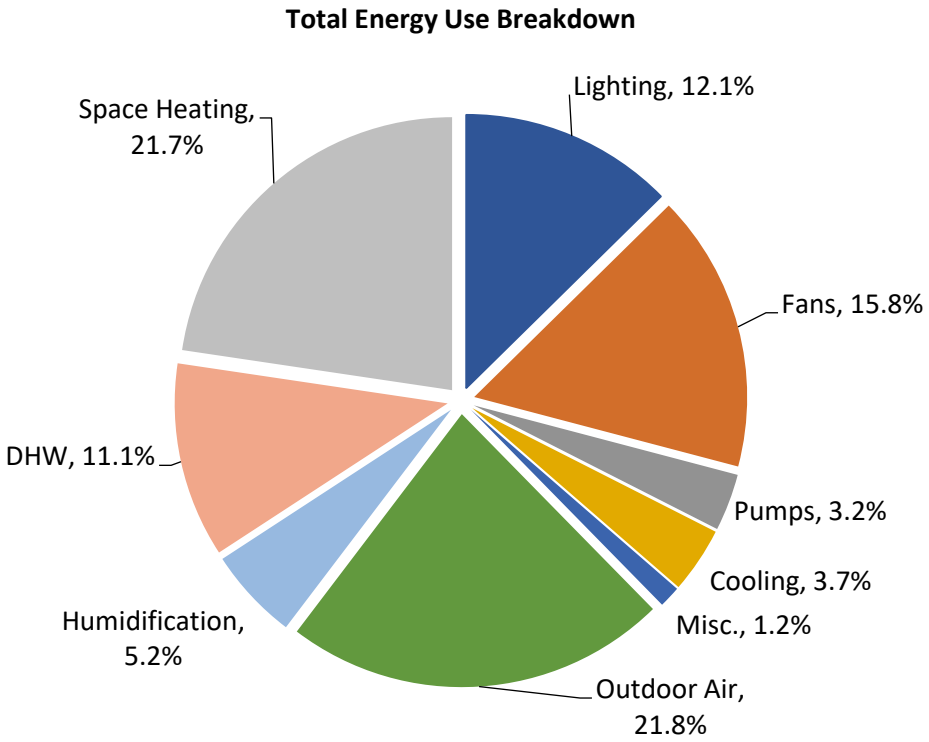


Figure 11. Energy End Use Breakdown

The following table outlines end use in relation to annual energy costs.

Table 17. End Use Average Annual Spend

End Use	Annual Cost ($)	Annual Cost (%)
Lighting	$35,357	20.4%
Fans	$46,120	26.7%
Pumps	$9,469	5.5%
Cooling	$10,910	6.3%
Plug Loads	$11,714	6.8%
Misc.	$3,571	2.1%
Outdoor Air	$20,304	11.7%
Humidification	$4,894	2.8%
DHW	$10,336	6.0%
Space Heating	$20,277	11.7%
Totals	**$172,952**	**100.0%**

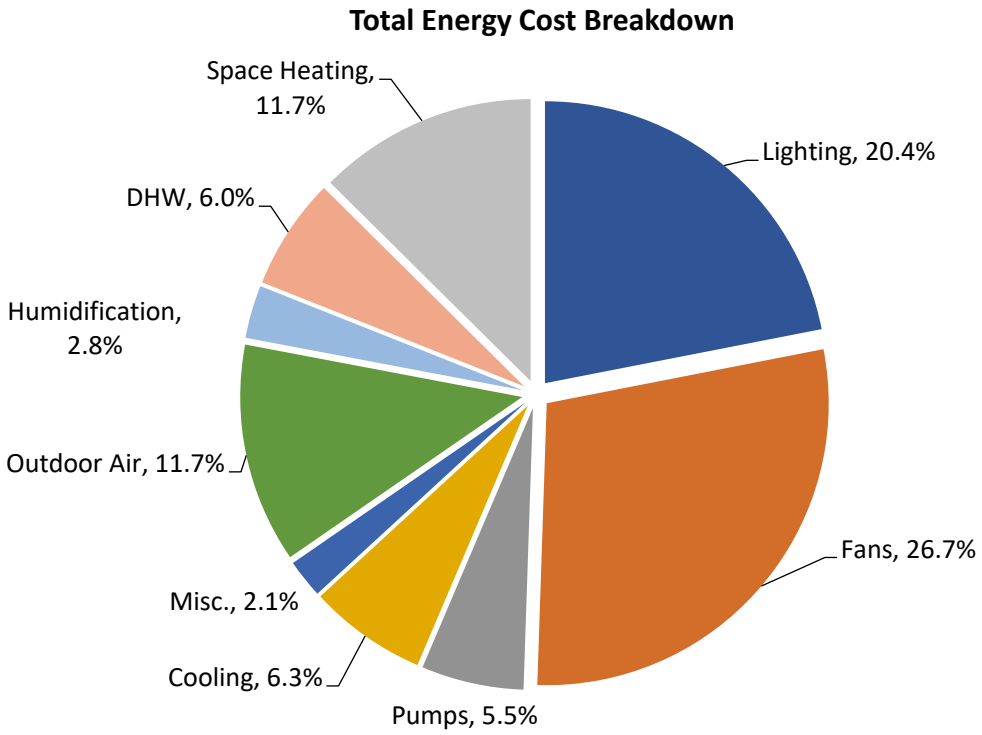


Figure 12. Energy Cost End Use Breakdown

3 Existing Conditions

Algoma Public Health (APH) is a public health agency committed to improving health and reducing social inequities in health through evidence-informed practice. Algoma Public Health has a main office in Sault Ste. Marie and three offices in the Algoma district: Blind River, Elliot Lake and Wawa.

The scope of this report includes the three-storey main office building in Sault Ste. Marie built in the 2010. The facility information is summarized in the table below.

Table 18. Facility Information Summary

Algoma Public Health – Sault Ste. Marie Location	
Type of Facility	Commercial
Address	294 Willow Avenue, P6B 0A9, Ontario
Gross Floor Area	70,000 sq. ft
Number of Floors	3

Figure 13. Algoma Public Health – Sault Ste. Marie Location

Building occupancy schedule along with the active staff member numbers are provided in table below.

Table 19. Overall Building Occupancy Schedule

	Monday - Friday
Public Opening Time	9:00 AM
Public Closing Time	4:30 PM
Staff Opening Time	8:30 AM
Staff Closing Time	5:00 PM
Permanent Full Time Staff	119
Permanent Part Time Staff	1
Temporary Full Time Staff	9

The building is closed during weekends and Public Holidays.

3.1 Building System Analysis

The following section analyzes each of the building systems, including:

- Heating System
- Cooling System
- Ventilation System
- Building Automation System
- Building Envelope
- Electrical Systems
- Lighting Inventory
- Plug Loads
- Major Miscellaneous Equipment

3.1.1 Heating System

The building has a boiler plant located at the 3rd floor mechanical room. The boiler plant is made up of three De Dietrich natural gas fired condensing boilers with a total heating input capacity of 3,807,000 btu/hr (3 x 1,269,000 btu/hr). The boilers were installed in 2010 during the construction of the building.

The make and model number of the boilers are listed in Table 20 along with other information.

Table 20. Boilers Information

Item #	Tag	Equipment Description	Location	Make	Model	Installation Year	Input Heating Capacity (btu/hr)
1	Boiler 1	Condensing Hot Water Heating Boiler	Penthouse Mechanical Room	De Dietrich	310-6 ECO	2010	1,269,000
2	Boiler 2	Condensing Hot Water Heating Boiler	Penthouse Mechanical Room	De Dietrich	310-6 ECO	2010	1,269,000
3	Boiler 3	Condensing Hot Water Heating Boiler	Penthouse Mechanical Room	De Dietrich	310-6 ECO	2010	1,269,000

The pictures of the existing boilers are provided below.

Figure 14. HW Boilers and pumps

The boilers generate heating hot water for the unit heaters, in-floor heating, radiant heating panels, reheats, variable air volume (VAVs) boxes, air handling units (AHUs) hydronic coils and domestic hot water (DHW) system. They're operational all year round, 8760 hours as the boiler provides heating hot water for the DHW system and reheat.

The hot water temperature is controlled based on the following setpoint temperatures:

- Outdoor air temperature reset where hot water temperature is supplied between 160° F and 130° F depending on the outdoor air temperature, hot water temperature increases as the outdoor air temperature decreases
- DHW set point temperature set point of 140° F

Heating hot water loops serving perimeter baseboard heating and in floor heating are variable volume systems and VFDs were installed on hot water circulation pumps. The list of the pumps that're used to circulate water through the building heating systems is provided below.

Table 21. Pump Data

Item #	Tag	Equipment Description	Location	Installation Year	Motor Power (HP)	Flow Rate (gpm)	Variable Flow	VFD
1	P1	Boiler Circulators	Boiler Room	2010	3	80	Constant Flow	NO
2	P2	Boiler Circulators	Boiler Room	2010	3	80	Constant Flow	NO
3	P3	Boiler Circulators	Boiler Room	2010	3	80	Constant Flow	NO
4	P4A	Perimeter Heating - Hot Water Supply Pumps	Boiler Room	2010	3	75	Variable Flow	YES
5	P4B	Perimeter Heating - Hot Water Supply Pumps	Boiler Room	2010	3	75	Variable Flow	YES
6	P5A	In floor heating - Hot Water Supply Pumps	Boiler Room	2010	3/4	20	Variable Flow	YES
7	P5B	In floor heating - Hot Water Supply Pumps	Boiler Room	2010	3/4	20	Variable Flow	YES
8	P6A	Glycol Hot Water Pumps	Boiler Room	2010	7 1/2	45	Variable Flow	YES
9	P6B	Glycol Hot Water Pumps	Boiler Room	2010	7 1/2	45	Variable Flow	YES

The heating hot water is circulated through boilers building via three-3HP circulation pumps. This is a constant volume system and there's no VFDs installed on the pumps. These pumps are operational all year round as the main boiler plant supplies heating for the DHW system and reheats for AHU2. Heating hot water for perimeter baseboard heaters and reheats is circulated via two-3HP circulation pumps equipped with VFDs. These pumps are operational all year round as hot water for reheats is provided by these pumps.

Heating hot water for in-floor heating is supplied via two-3HP circulation pumps equipped with VFDs.

Glycol heating hot water for the AHUs hydronic coils is supplied through heat exchangers via two 2HP circulation pumps equipped with VFDs.

The pictures of the pumps are provided below.

Figure 15. HW Circulation Pumps

3.1.2 Domestic Hot Water (DHW) System

Heating hot water for the DHW tank is provided by the boiler plant. DHW for the building is supplied through the DHW tank with a storage capacity of 700 U.S gals. and 437 gals/hr recovery rate. The heating estimated capacity of the DHW tank is approximately 510,000 btu/hr. The DHW tank temperature is set to 140°F.

The pictures of the DHW tank are provided below.

Figure 16. DHW Tank

The domestic hot water is being used for the faucets in the washrooms, client rooms, utility rooms and for a couple showers located at the 2nd floor change rooms. The recirculation pump for the DHW system is a 3/4 HP pump.

3.1.3 Cooling System

The cooling system for Algoma Public Health is made up of a chiller, cooling tower, chilled water and condenser water pumps. The chilled water is generated by the chiller located in the penthouse chiller room and used to provide cooling for the AHUs cooling coils. The make and rated cooling capacity of the chiller is McQuay and 215-ton, respectively. The chilled water is circulated via 2x15 HP chilled water pumps equipped with VFDs and it's a variable flow system.

The condenser water for the chiller is provided by a crossflow/induced draft Baltimore Cooling tower. The condenser water is circulated via 2x15 HP condenser pumps and it's a constant flow system. Each equipment was installed in 2010 when the building was built.

The cooling system is operational in shoulder seasons and summer. Based on the information collected at site, it becomes operational in May.

The make and model numbers of the chiller and cooling tower are listed in the tables below along with other information.

Table 22. Chiller Information

Item #	Tag	Equipment Description	Location	Make	Type	Installation Year	Refrigerant Type	Service	Rated Cooling Capacity (tons)
1	CH-1	Centrifugal Chiller	Penthouse Chiller Room	McQuay	Centrifugal 2-250	2010	R-134a	AHU-1,2,3 cooling coils	215

Table 23. Cooling Tower Information

Item #	Tag	Equipment Description	Location	Make	Model	Installation Year	Service	Fan Motor Quantity x (HP)
1	CT-1	Cooling Tower	Higher Roof	Baltimore Air Coil	Crossflow, induced draft	2010	Condenser Water for Chiller	1 x10

Table 24. Circulation Pumps

Item #	Tag	Equipment Description	Location	Area/Equipment Served	Installation Year	Motor HP	Flow Rate (gpm)	Variable Flow	VFD
1	P7A	Chilled Water Pumps	Chiller room	AHUs cooling coils	2010	15	65	YES	YES
2	P7B	Chilled Water Pumps	Chiller room	AHUs cooling coils	2010	15	65	YES	YES
3	P8A	Cooling Tower Pumps	Chiller room	Cooling Tower	2010	15	45	NO	NO
4	P8B	Cooling Tower Pumps	Chiller room	Cooling Tower	2010	15	45	NO	NO

3.1.4 Ventilation System

The ventilation for the main floor offices, client rooms, meeting rooms, corridors and other common areas, 2nd and 3rd floors is provided by the AHU's (AHU-1,2,3) located in the penthouse mechanical room. The AHUs are equipped with the heating (glycol) and cooling coils that condition the outdoor air. The heating hot water for the glycol coils is supplied by the main boiler plant through the heat exchangers (HX-1&2) via glycol circulation pumps with VFDs. The chilled water for the cooling coils is provided by the cooling system via chilled water circulation pumps with VFDs.

The AHUs operating schedule is controlled by the Building Automation System (BAS) based on the time-of-day schedule. AHUs are turned on 6AM in the morning and turned off 10 PM at night. AHUs run from

Monday through Sunday throughout the week. There's no weekend and holiday schedules set up to shut the AHUs off when the space isn't occupied.

The air flow rates, supply and return fan horsepower for the AHUs are listed in the table below along with other information on the fan systems.

Table 25. List of Ventilation Units

Item #	Tag	Equipment Description	Location	Area Served	Make/Model	Type	Supply Air Flow Rate (cfm)	Fresh Air Flow Rate (cfm)	Supply Fan Power (HP)	Return Fan (HP)
1	AHU-1	Air Handling Unit	Penthouse Mechanical Room	Exteriors	Haakon - Airpak	VAV	15,000	2500	15	5
2	AHU-2	Air Handling Unit	Penthouse Mechanical Room	Clinic	Haakon - Airpak	CV with reheat	13,200	3500	15	5
3	AHU-3	Air Handling Unit	Penthouse Mechanical Room	Interiors	Haakon - Airpak	VAV	42,000	7500	40	10

A Tempeff heat recovery system recovers the heat from the sanitary/process exhaust fans to pre-heat outdoor air. The heat recovery system is connected to the AHUs outdoor air intake ducts as it supplies tempered outdoor air to AHUs. The heat recovery unit schedule is controlled by BAS based on the time-of-day schedule, turned on 6AM in the morning and turned off 10 PM at night. The unit runs from Monday through Sunday throughout the week. There's no weekend and holiday schedules set up to shut it down when the space isn't occupied.

The heat recovery system air flow rates, supply and exhaust fan horsepower are listed in the table below.

Table 26. Heat Recovery System Information

Item #	Tag	Equipment Description	Location	Area Served	Make/ Model	Type	Capacity (cfm)	Supply Fan HP	Exhaust Fan HP
1	HRV-1	Heat Recovery Unit	Penthouse Mechanical Room	AHU-1,2,3	Haakon - Airpak	Tempeff RG 20000	12500	15	15

Exhaust fans are used throughout the building to exhaust the air from spaces such as mechanical and electrical rooms, kitchens, meeting rooms and labs. The list of the exhaust fans is provided in the table below, along with the information on the type of control for each fan.

Table 27. List of Exhaust Fans

Tag	Equipment Description	Service	Make	Cfm	Rated HP	Type of Control
EF-1	Exhaust Air to HRV-1	Sanitary/Process	Tempeff	12,500	15	Schedule
SF-1	Fresh Air From HRV-1	AHUs	Tempeff	12,500	15	Schedule
EF-2	Boiler Room Exhaust	Boiler Rm	Greenheck	6,600	2	Temp/Occupancy
SF-2	Boiler Room Fresh Air	Boiler Rm	Greenheck	6,600	5	Temp
EF-3	Chiller Rm Exhaust	Boiler Rm	Greenheck	2,500	1	Temp/Occupancy
SF-3	Chiller Rm Exhaust	Boiler Rm	Greenheck	2,500	1	Temp
EF-4	Electrical Rm Exhaust	Boiler Rm	Greenheck	3,000	1	Temp/Occupancy
SF-4	Electrical Rm Supply	Boiler Rm	Greenheck	3,000	1.5	Temp
EF-5	Staff Kitchen Range Exhaust	Kitchenette	Greenheck	300	0.25	Occupancy
EF-6	Community Kitchen Exhaust	Community Kitchen	Greenheck	900	0.25	Occupancy
EF-7	Fume Exhaust	Wet Lab	Greenheck	550	0.25	Occupancy with schedule override
EF-8	Biosafety Cabinet	Soiled Utility	Greenheck	275	0.25	Occupancy with schedule override
EF-9, 10, 11 ,12 ,13,14-21	Meeting Rm CO2 ventilation	Meeting Rooms, Stuff Rooms	Greenheck	14,425	4 3/4	Room CO2 sensor

3.1.5 Building Automation System

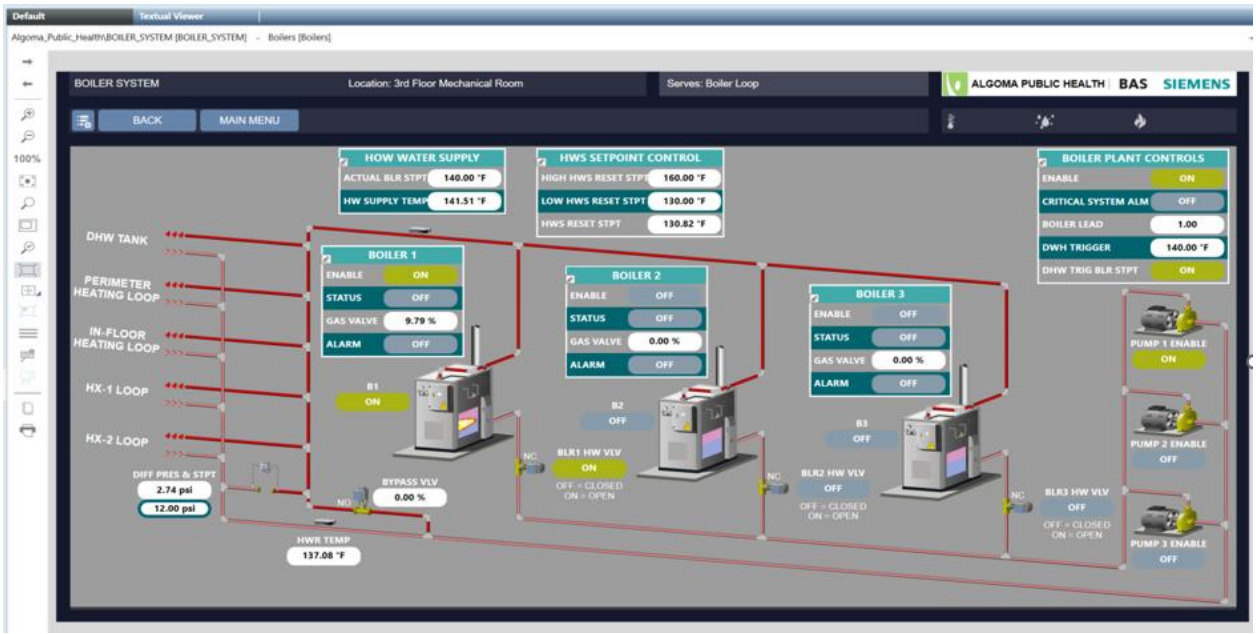
Siemens Apogee™ Building Automation System (BAS) had been used to control and monitor the operations of the HVAC equipment such as boilers, chiller, AHUs, RTUs, pumps, EFs, reheats, VAVs and room temperatures. Siemens Apogee BAS was upgraded to Siemens Desigo Platform in 2023.

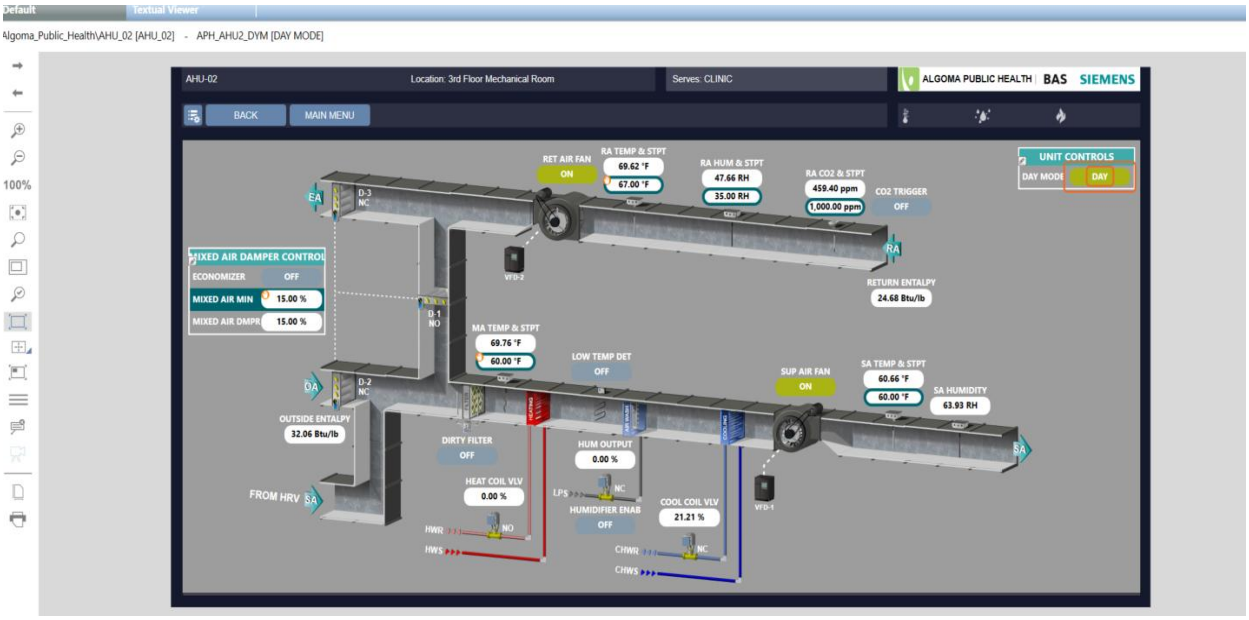
Blackstone Energy Services was provided with a read-only remote access to the BAS front end graphics to view the operating parameters of the HVAC and BAS equipment and systems. As built control drawings and sequences of operations for the major HVAC equipment weren't provided to the Blackstone as they weren't readily available at the time of the site visit and during the study period.

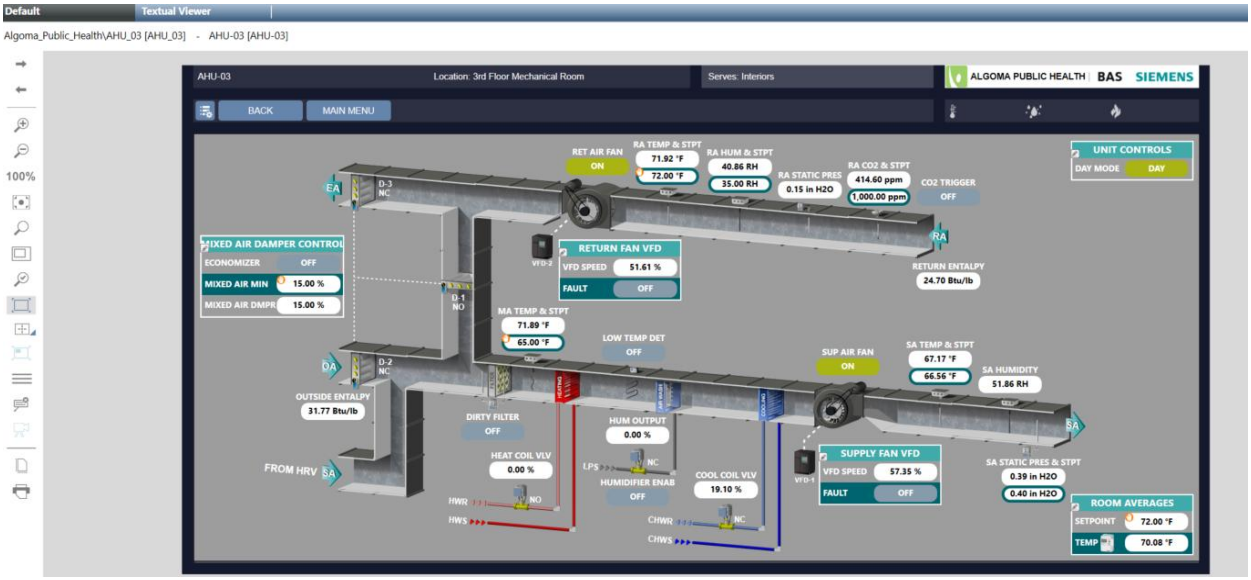
Information on the current equipment run time schedules, boiler loop heating hot water temperatures, AHUs supply and return air temperatures and space set point temperatures for occupied and unoccupied periods were collected based on the review of the available information on the BAS graphics. The collected information on HVAC system is provided below.

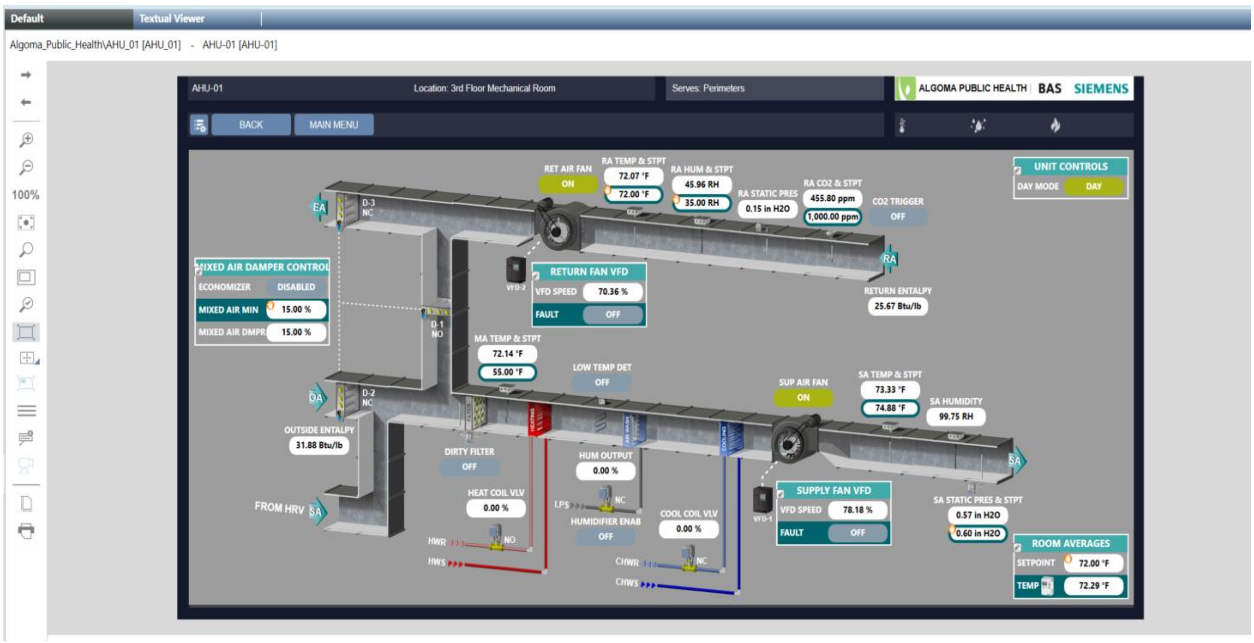
1. The heating hot water for the boilers is controlled based on the outdoor air temperature reset (160°F - 140 °F) and DHW system supply temperature (140 °F). The hot water temperature is set to provide whichever set point is higher.
2. Operating hours of AHUs, RTUs and HRV-1 are controlled based on time-of-day schedule where this equipment is operational between 6 AM to 10 PM all year-round including weekends and holidays.
3. Reheats and radiation valves are operational all year including shoulder seasons and summer
4. Occupied (daytime) room temperatures for some rooms were between 72 °F and 75 °F set as minimum and maximum set point temperatures respectively.
5. Unoccupied (night) setpoint temperature for heating for some rooms was set to 72 °F.
6. Unoccupied (night) setpoint temperature for cooling for some rooms was set to 82 °F.
7. Mechanical cooling for the chiller system is set to 55 °F.
8. CO2 (Carbon dioxide) setpoint for the meeting and community rooms are set to 800 ppm.

Screenshots from the BAS Graphics are provided below for reference.

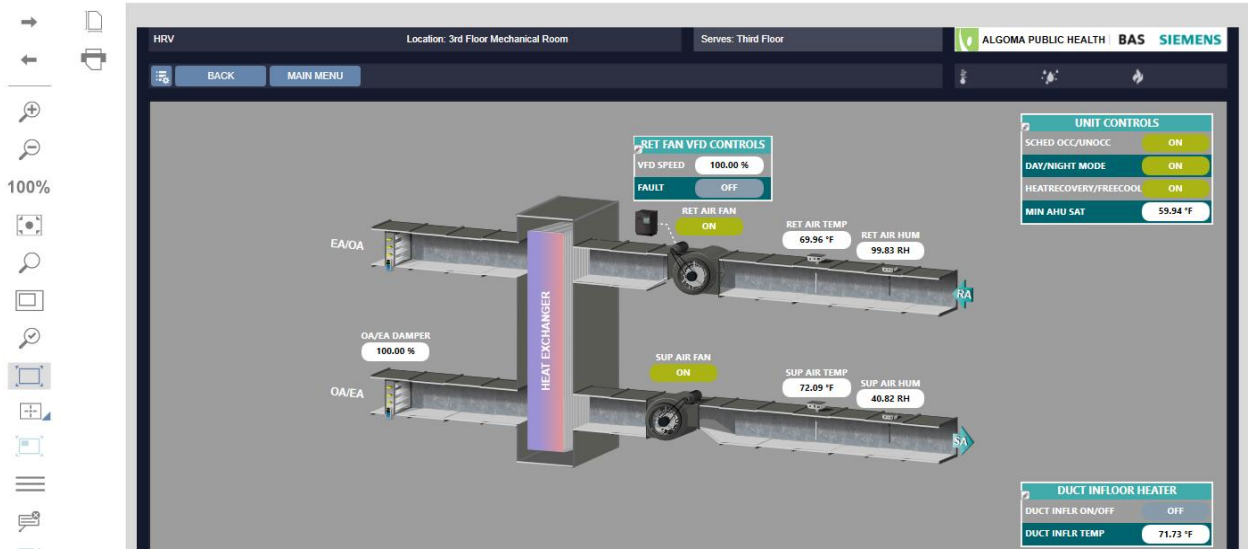



Default
Textual Viewer
Algoma_Public_Health\AHU_02 [AHU_02] - APH_AHU2_DYM [DAY MODE]
AHU-02
Location: 3rd Floor Mechanical Room
Serves: CLINIC
ALGOMA PUBLIC HEALTH | BAS SIEMENS
BACK
MAIN MENU
100%
RET AIR FAN
ON
RA TEMP & STPT
69.62 °F
67.00 °F
RA HUM & STPT
47.66 RH
35.00 RH
RA CO2 & STPT
459.40 ppm
1,000.00 ppm
CO2 TRIGGER
OFF
UNIT CONTROLS
DAY MODE
DAY
MIXED AIR DAMPER CONTROL
ECONOMIZER
OFF
MIXED AIR MIN
15.00 %
MIXED AIR DMPR
15.00 %
RETURN ENTALPY
24.68 Btu/lb
MA TEMP & STPT
69.76 °F
60.00 °F
LOW TEMP DET
OFF
SUP AIR FAN
ON
SA TEMP & STPT
60.66 °F
60.00 °F
SA HUMIDITY
63.93 RH
OUTSIDE ENTALPY
32.06 Btu/lb
DIRTY FILTER
OFF
HUM OUTPUT
0.00 %
HEAT COIL VLV
0.00 %
HUMIDIFIER ENAB
OFF
COOL COIL VLV
21.21 %
FROM HRV
EA
RA
SA
DA
HWR
HWS
CHWR
CHWS


Default
Textual Viewer
Algoma_Public_Health\AHU_03 [AHU_03] - AHU-03 [AHU-03]
AHU-03
Location: 3rd Floor Mechanical Room
Serves: Interiors
ALGOMA PUBLIC HEALTH | BAS SIEMENS
BACK
MAIN MENU
100%
RET AIR FAN
ON
RA TEMP & STPT
71.92 °F
72.00 °F
RA HUM & STPT
40.86 RH
35.00 RH
RA STATIC PRES
0.15 in H2O
RA CO2 & STPT
414.60 ppm
1,000.00 ppm
CO2 TRIGGER
OFF
UNIT CONTROLS
DAY MODE
DAY
MIXED AIR DAMPER CONTROL
ECONOMIZER
OFF
MIXED AIR MIN
15.00 %
MIXED AIR DMPR
15.00 %
RETURN FAN VFD
VFD SPEED
51.61 %
FAULT
OFF
RETURN ENTALPY
24.70 Btu/lb
MA TEMP & STPT
71.89 °F
65.00 °F
LOW TEMP DET
OFF
SUP AIR FAN
ON
SA TEMP & STPT
67.17 °F
66.56 °F
SA HUMIDITY
51.86 RH
OUTSIDE ENTALPY
31.77 Btu/lb
DIRTY FILTER
OFF
HUM OUTPUT
0.00 %
HEAT COIL VLV
0.00 %
HUMIDIFIER ENAB
OFF
COOL COIL VLV
19.10 %
SUPPLY FAN VFD
VFD SPEED
57.35 %
FAULT
OFF
SA STATIC PRES & STPT
0.39 in H2O
0.40 in H2O
ROOM AVERAGES
SETPOINT
72.00 °F
TEMP
70.08 °F
FROM HRV
EA
RA
SA
DA
HWR
HWS
CHWR
CHWS



Algoma_Public_Health\HRV - HRV



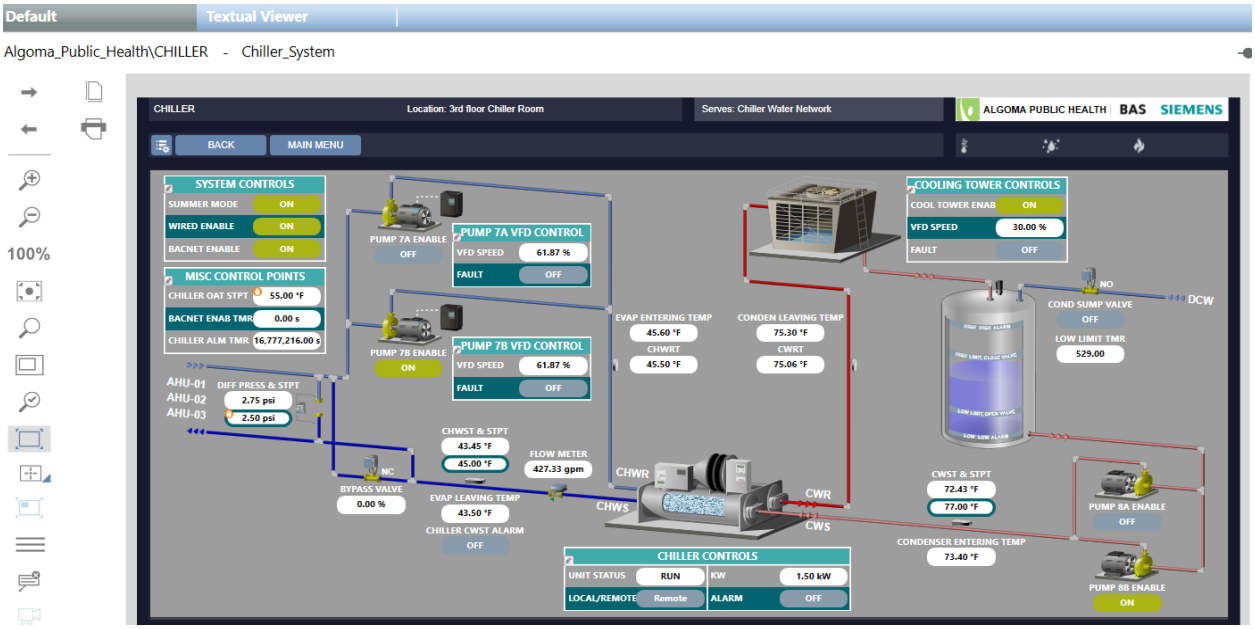


Figure 17. BAS Floor Plan and AH1

The energy conservation measures related to improving operations of the HVAC equipment via changing setpoint on the BAS is discussed under the Section 5.

3.1.6 Building Envelope

Algoma Public Health building was built in 2010. The exiting wall structure of the building consist of brick, brick masonry, concrete, aluminum panels (metal siding) and glass wall.

The windows are double glazed. The doors are comprised of glass doors at the front entrance and the metal doors are used as side and back access doors to the building. The roof is constructed of single-ply membrane roof.

Building wall insulation is made up of extruded polystyrene (thermal resistance of R5), air/vapour barrier membrane and batt insulation (thermal resistance of R3.7-R4.3) and gypsum board.

3.1.7 Electrical System

The building incoming electricity is supplied at 600 Volts (V). Service distribution panel board with the main switchgear is rated at 1200 Amps. It's a 3 Phase and 4 wire system. Harmonic filter and power factor correction equipment rated at 235 Amps is connected to the service distribution panel.

The Motor Control Center (MCC) providing power for most of the HVAC equipment in the penthouse mechanical room is fed from the service distribution panel. There's spare power capacity available at the main distribution level and the MCC.

3.1.8 Lighting System

This report summarizes the lighting audit and analysis for the interior and exterior of the building.

A detailed lighting inventory of Algoma Public Health is compiled into a line-by-line database categorized by room type, existing fixture types, quantities, voltage, mounting, lighting controls, and estimated hours of operation. The data was captured during the lighting audit conducted in May 2024.

Light levels measured onsite with a handheld light meter have been recorded as part of this study. Measurements were taken at three feet above finished floor. Hours of operation are categorized by room type and estimated based on the business hours of the facility and type of the activity for each room.

Proposed lighting measures are selected based on the energy savings potential, consistency of lighting products installed and maintaining or exceeding existing lighting levels. Different lighting retrofit and upgrade alternatives were evaluated based on existing conditions and equivalencies, and evaluated based on operating cost, maintenance costs and overall system energy performance.

During the evaluation process of the various retrofit options were reviewed, measures included in this report were selected based on products that maximize energy savings and lower future maintenance costs. The main purpose of proposing a lighting retrofit is to improve performance with energy-efficient lighting systems, reduce energy and demand consumption of the facility, maintain or improve existing light levels and reduce maintenance cost.

Calculations of estimated energy savings for the lighting systems are derived based upon existing fixture wattages and the specifications from proposed LED fixtures and lamps. Existing conditions of the lighting system is provided below in detail. Proposed LED lighting upgrade is explained in detail under the Recommended Measures Summary Section.

3.1.8.1 Methodology

This section aims to define the lighting audit process and methodology employed by Blackstone, and referencing the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) guidelines for Level 2 Energy Audits.

3.1.8.2 Objectives

This study was defined to meet the following objectives:

- Survey existing lighting conditions and compile inventory on a room-by-room basis.
- Identify occupant requirements and concerns regarding their lighting system.
- Determine operating schedules and estimate hours of operation based on an estimate derived from discussions with occupants and site visits.
- Identify lighting quantity and energy savings opportunities with respect to the lighting systems.
- Review and analyze existing systems with the intent to present various lighting schemes identifying potential lighting upgrades.
- Determine material specifications, estimates of upgrade costs, and incentive offerings.
- Compile results in a lighting feasibility report, to include quantified cost savings and financial analysis.

3.1.8.3 Lighting Audit and Analysis

The lighting study includes audits of each the building's lighting systems and controls, an analysis of any past upgrades performed, review of alternatives for further energy savings actions and a summary of recommendations. The audits included a detailed inventory of lighting in the facility. This information was obtained through physical, on-site reviews of the lighting system on a room-by-room basis. Light levels measured onsite with a handheld light meter have been recorded as part of this study. Measurements were taken at 3 feet above finished floor (AFF).

3.1.8.4 Energy Analysis

Lighting energy use was determined based on the existing lighting systems rated input wattages and estimates of operating hours. Estimates based on this information were compared to the consumption figures obtained from monthly meter readings or utility account history records (where available) to ensure an accurate and objective analysis. Using accepted by ASHRAE energy calculations of building equipment, the lighting loads will be used in an energy balance against metered consumption or billed by utility companies.

3.1.8.5 Proposed Measure Selection Criteria

Proposed LED fixtures and lamps for lighting upgrade project on this project have been selected based on the following criteria:

- appropriateness for tasks performed in the space.
- condition of existing lighting systems.
- cost to retrofit existing system vs. cost to replace systems.
- low maintenance requirements.
- consistency of application (all areas of similar function are consistent).
- overall impact on occupants and general acceptance of changes.

3.1.9 Existing Conditions

The illumination for the interior building is mainly provided by 2'x2' lighting fixtures with 2 U shape T8 25-Watt fluorescent lamps, 4' lighting fixtures with T8 linear fluorescent lamps, 3' lighting fixtures with T8 linear fluorescent lamps, 3' lighting fixtures with T8 linear fluorescent lamps compact fluorescent, compact fluorescent lamps, high intensity discharge lamps, and LED sources. All fluorescent fixtures have electronic type of ballasts.

Most of the lighting systems are controlled by the occupancy sensors and combination of the occupancy sensors and dimmer switches. The interior lighting system is mostly 120 V. The building lights and the lights used for the walkway to Sault College are 347 V. The table below breaks down the various lighting technologies by quantity of fixtures and percentage.

Table 28. Overview of Existing and Proposed Fixtures

Lighting Technology	Quantity	Percentage
T8 U Tube Fluorescent	731	47%
T8 Fluorescent	507	32%
Compact Fluorescent	179	11%
T5 Fluorescent	21	1%
Incandescent and Halogen	69	4%
LED	30	2%
EXIT Sign	35	2%
	1,572	**100%**

As indicated on the table above, T8 U tube fluorescent, T8 fluorescent, T5 fluorescent fixtures and compact fluorescent lamps make up 96% of the existing lighting systems.

A full lighting inventory that identifies quantities, fixture types, lamp wattages and proposed LED fixtures is provided in Appendix 1.

3.1.9.1 *Existing Light Levels*

The table below details the measured light levels in lux by sampled space type.

Table 29. Overview of Measured Light Levels

Area	Minimum (lux)	Maximum (lux)	Average (lux)
Building Entrance	303	350	325
Waiting Area	110	150	130
Family Room	245	281	263
Client Room	211	236	224
Corridor	305	344	325
Open Concept Office	155	213	184
Corner Office	421	457	439
Nurse Room	174	188	181
Storage Room	205	221	213
Storage Area Hallway	300	460	380
Meeting Room	295	312	304
Mechanical Room	175	185	180
Computer Room	216	249	233
Women's Lockers Room	320	470	395

The measured light levels during the energy audit assist in determining the lighting measures that will be proposed. In most cases, where light levels are satisfactory to the occupants and the existing fixtures are in good condition, it is significantly more cost-effective to perform a retrofit of the existing fixtures rather than complete a re-design of the space.

3.1.9.2 *Lighting Hours of Operation*

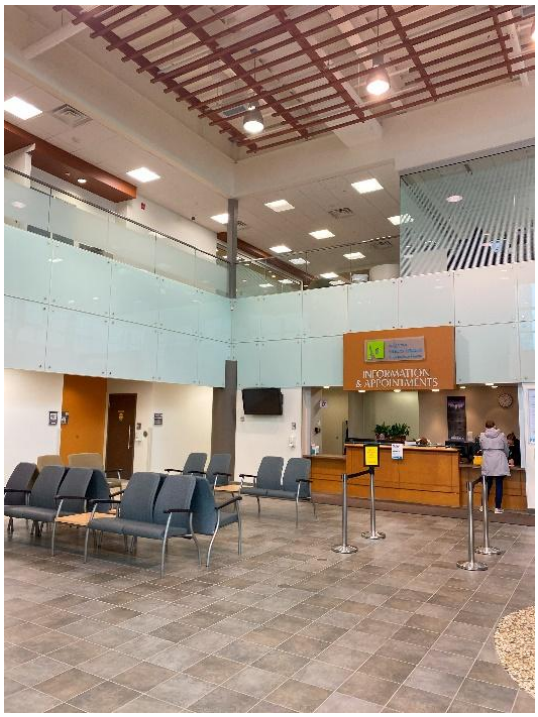
During the energy study, the hours of operation of the spaces were noted to determine the lighting run hours. The variations in run hours have been considered in the lighting energy analysis. The estimated run hours for various areas are provided in the table below for reference.

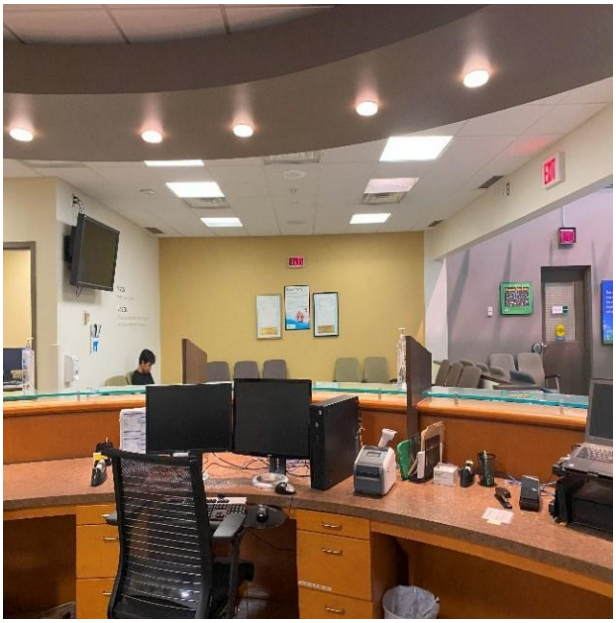
Table 30. Lighting Run Hours

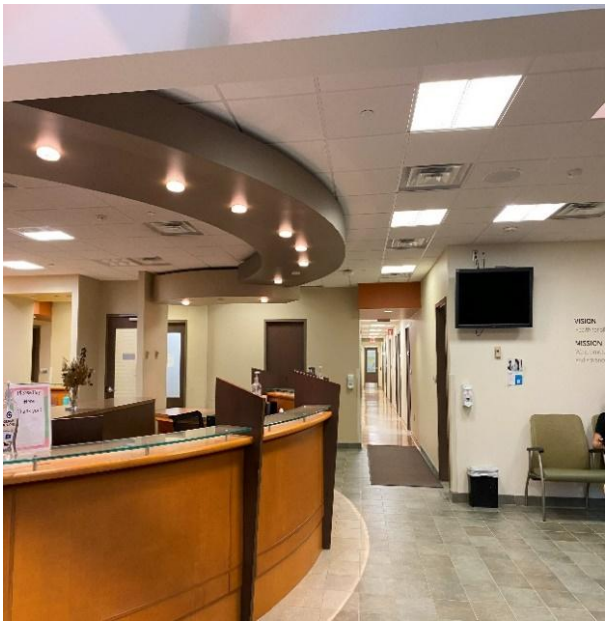
Area	Run Hours
Reception Area	3000
Corridors/Hallways	3000
Waiting Area	3000
Client Rooms	2000
Community Room	2000
Offices	2000
Examination Rooms	2000
Storage Room	2000
Stairwell	8760
Washrooms	2000

3.1.9.3 Existing Conditions – Pictures

Pictures for interior lighting are provided below:







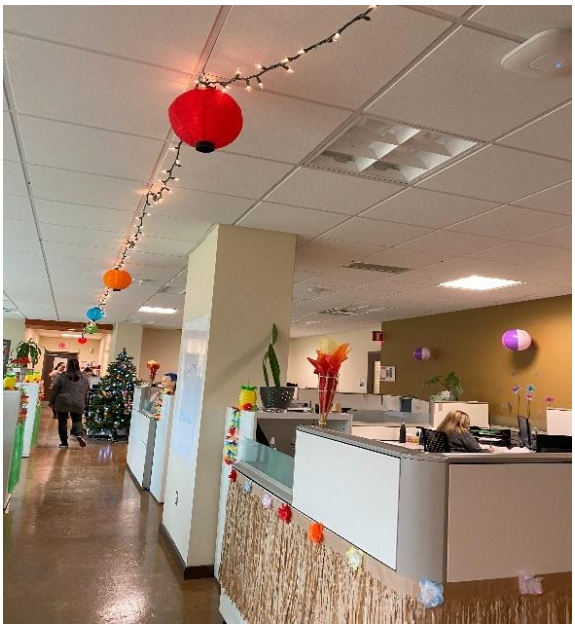


Figure 18. Interior Lighting

3.1.10 Plug Loads

The office equipment such as desktops, laptops, monitors, printers, photo-copy machines are considered as plug loads and they can consume significant amount of energy if they are on when not in use.

The list of the desktops, laptops and monitors were provided to Blackstone by the IT Department as a part of the energy auditing process. This list was used to estimate the plug load energy consumption for the building.

3.1.11 Major Miscellaneous Equipment

The list for the miscellaneous equipment found at Algoma Public Health is summarized below. Information on most of the equipment was collected during the site audit.

- Vaccine freezers
- Elevator
- Kitchen equipment such as toasters, coffee machines, dishwashers and fridges.

4 Recommended Energy Conservation and Greenhouse Gas (GHG) Reduction Measures Summary

The following section summarizes the recommended energy conservation and GHG reduction and renewable energy measures that were discovered through the energy auditing process.

4.1 ECM 1 – LED Lighting Upgrade

Facilities benefit significantly from a lighting system upgrade that utilizes the most energy efficient lighting technologies available. This measure proposes installation of new LED fixtures and LED lamps to replace the existing U-Shaped tube, linear and compact fluorescent and halogens fixtures and t lamps. EXIT signs will be replaced with new green LED EXIT signs.

The following table summarizes the pre-retrofit and post-retrofit conditions of the various lighting technologies included in this project. Detailed room by room lighting audit results are provided in the study report.

Table 31. Lighting Upgrade Project Summary

Pre-Retrofit		Post-Retrofit	
Current Fixture Type	**Fixture Qty**	**Proposed Retrofit Solution**	**Fixture Qty**
T8 U Tube Fluorescent	731	Center Basket LED Troffer 2×2	731
T8 Fluorescent	507	Retrofit T8 LED	507
Compact Fluorescent	179	New LED Downlight Fixture	179
T5 Fluorescent	21	Retrofit T5 LED	21
Incandescent and Halogen	69	New LED Downlight Fixture	69
LED	30	NA	30
EXIT Sign	35	New LED EXIT Sign	35

By switching the existing interior lighting to LED, the facility will save a significant portion of its energy consumption while maintaining or exceeding existing lighting levels. LED lamps and LED fixtures also have a longer lifetime compared to the existing and compact fluorescent lamps. This will reduce the maintenance costs and time associated with replacement. Incentives are offered through the SaveonEnergy Retrofit Program offered by the IESO, which will assist with project finances. The incentive application for the pre-project for the LED Lighting Upgrade measure was submitted and approved based on the protocols administrated by the old framework.

The exterior building lighting consists of halogen wall pack fixtures, which will be replaced with wall pack LED fixtures as part of this project.

Most of the interior lighting systems are controlled by the occupancy sensors and there are no changes proposed to the existing lighting control system, therefore lighting controls will not be included in the scope work.

The table below shows measure summary.

Table 32. Lighting Upgrade Project Summary

Project Details			
Project Cost ($)	$318,725		
Incentive Value ($)	$14,104		
Project Cost Net Incentives ($)	$304,621		
Annual Utility Cost Savings ($)	$20,447		
Maintenance Cost Savings ($)	$3,000		
Simple Payback (yrs.)	15.7		
GHG Reductions (tonnes of CO_2e)	7.5		
Total GHG Reduction (%)	2.2%		
Energy Savings			
Utility	**Annual Savings (units)**	**Annual Savings ($)**	**Utility Bill Reduction (%)**
Electricity (kWh)	110,125	$11,013	10.1%
Monthly Electricity (kW)	35	$6,842	
Natural Gas (m^3)	-850	-$408	

4.1.1 Lighting Measures Scope of Work

Re-lamp and Re-ballast

The intent of this measure is to replace the existing fluorescent lighting systems with new, more efficient T8-LED and T5-LED lamps and electronic ballasts. This measure is proposed for luminaires that are generally in good condition and where better performance can be achieved through a cost-effective solution. This lighting measure will be installed on a one-for-one basis. Re-lamp and re-ballast measures can be implemented on a wide variety of luminaire types and lamp/ballast combinations. Typical lamp lengths of 2', 3' and 4' are replaced with corresponding lower wattage T8 and T5 LED lamps and high efficiency electronic ballasts.

New LED Fixtures

Existing 2'x2' T8 U tube fluorescent fixtures, high intensity discharge (HID) fixtures and compact fluorescent fixtures will be replaced with new LED fixtures on a one-for-one basis. The existing linear fluorescent fixtures will be replaced with the new LED fixtures depending on the condition and type of the existing fixture.

The existing removed fixtures will be disposed of in an environmentally friendly manner.

A full lighting inventory that identifies quantities, fixture types, lamp wattages and proposed LED fixtures is provided in Appendix 1.

4.1.2 Energy Savings Calculations Methodology

A complete inventory of the existing lighting system – including all existing luminaires, ballasts and lamps – is entered into the spreadsheet. Lighting operating hours for each system was estimated depending on the type and usage of the area or space. The input lighting wattages for the existing systems were calculated based on the audit data collected during site visit, information provide by the client and lighting specifications from the electrical drawings.

Lighting energy measure conservation options are then evaluated, including basic retrofits and new luminaire upgrades. The proposed LED fixtures and lamps were entered into the same spreadsheet in room-by-room basis considering the type and condition of the existing lighting systems and usage of the space or area where the new LED fixtures and lamp will be installed.

Specifications for the proposed lighting systems were used to calculate the post retrofit energy consumption. The existing lights are mainly controlled by the occupancy sensors and dimmer switches. There's no reduction in operating hours for the post-retrofit was estimated as such same operating hours for the lighting systems were used to calculate pre-retrofit and post-retrofit energy consumption. The difference between the estimated pre-retrofit and post-retrofit annual energy consumption is equal to the estimated annual energy consumption savings.

Lamp and Ballast Recycling

All lamps and ballasts will be disposed of in an environmentally friendly manner. All fluorescent lamps and electronic ballasts will be recycled.

Luminaire Grounding

As Algoma Public Health building was installed in 2010. Considering the age of the building, there is no allowance estimated in this scope for installing new grounded wiring, nor for the associated costs. If there are exceptions revealed during the project installation, ground wiring will be considered as a system upgrade at an additional cost.

Existing Sockets

When retrofitting an existing fixture, the understanding is that all luminaire sockets are in good condition. Therefore, there is no allowance in this scope for installing new sockets, nor for the associated costs. If there are exceptions revealed during the project installation, socket replacements will be considered as an upgrade at an additional cost.

4.1.3 Impact on Current Operations and Maintenance

The proposed upgrades will reduce the facility operating costs associated with maintaining lighting systems due to longer life expectancy. Additional material cost savings will result from premature burnouts during the warranty period. When the warranty period expires, additional maintenance will be required for the new system components. The following table provides typical life spans and warranty terms for the proposed equipment.

Table 33. Life Span and Warranty for Lighting Upgrade Components

Component	Average Life Span	Manufacturer Warranty Period
T-LED lamps	50,000 hours	5 years
Electronic ballasts	50,000 hours	5 years
LED Luminaires (including drivers)	50,000 hours	5 years
LED Lamps:		
A19 LED	25,000 hours	3 years
PAR LED	40,000 hours	5 years
MR16 LED	40,000 hours	5 years
PL-LED	40,000 hours	5 years

4.2 ECM 2 – BAS and HVAC Re-commissioning

Definition of Building Recommissioning

Building re-commissioning is a low-cost, low-risk energy management strategy. The benefits extend beyond operational efficiencies and energy cost savings. It improves equipment operations and extends equipment service life, hence reducing operating expenditures over time.

The intent of this measure is to enhance the operations of the HVAC equipment and BAS by implementing recommissioning process that would lead to energy and cost savings as well as reduced greenhouse gas emissions.

HVAC and BAS recommissioning consists of three phases which are investigation phase, implementation phase and persistence phase. As a high-level summary for all phases, the process would include the following steps:

- Confirmation of the operations of sensors, control systems, actuators, programming & sequence of operation, and I/O devices (investigation phase)
- Verification of operational parameters such as se-point temperatures and schedules for HVAC equipment such as boilers, heat pumps, chillers, AHU, pumps and RTUs (investigation phase)
- Identification of EBCx measures based on the findings of the investigation phase
- Optimization, repairing, replacing and/or recalibrating HVAC equipment, sensors, and BAS systems to improve the efficiency of the systems and equipment (implementation phase)
- Implementation of measures identified during the confirmation and verification stage (implementation phase).

Existing BAS and Operations

Siemens Apogee™ Building Automation System (BAS) had been used to control and monitor the operations of the HVAC equipment such as boilers, chiller, AHUs, RTUs, pumps, EFs, reheats, VAVs and room temperatures. Siemens Apogee BAS was upgraded to Siemens Desigo Platform in 2023.

Information on the current equipment run time schedules, boiler loop heating hot water temperature setpoints, AHUs supply and return air temperatures and space setpoint temperatures for occupied and unoccupied periods were collected based on the review of the available information on the BAS graphics. The following measure were identified to improve the efficiency of the HVAC systems and equipment and to reduce energy consumption.

1. Operating hours of AHUs, RTUS and HRV-1 are controlled based on time-of-day schedule where this equipment is operational between 6 AM to 10 PM all year-round including weekends and holidays. Reduce operating hours of these system to reflect building occupancy which is from 8:30 AM to 5 PM from Monday through Friday. The building is not occupied on the weekends and during holidays. Implement holiday schedule to improve the efficiency of the systems.
2. Reheats, radiation and perimeter heating systems are operational all year including shoulder seasons and summer. Implement heating lockout temperature to control radiation and perimeter heating system to prevent building from simultaneous heating and cooling.
3. Occupied (daytime) room temperatures for some rooms are between 72 °F and 75 °F, which are set as minimum and maximum setpoint temperatures respectively. The room thermostat controls both reheats, VAV boxes and perimeter heating. Implement summer and winter heating temperatures to reduce heating load on the boilers
4. Unoccupied (night) setpoint temperature for heating for some rooms was set to 72 °F. Reduce unoccupied heating setpoint temperature to 68 °F.
5. Mechanical cooling for the chiller system is set to 55 °F. Increase set point temperature for a couple of degrees and verify the operations of the free cooling for AHUs.
6. Verify the accuracy of the CO2 sensors to control the fresh air intake for AHUs and RTUs
7. Verify the location and accuracy of the outdoor air sensor.
8. Air balancing of AHUs, RTUS and HRV-1 is recommended to provide optimum amount of outdoor air and better control of the supply and return air fan systems.

Some of the control strategies identified above are relatively simple measures such as revising and reducing operating hours for AHUs and RTUs and resetting conditioned space heating setpoint temperatures. These measures can be implemented immediately to optimize the equipment operations and reduce electricity and gas consumption of the HVAC equipment.

Recommissioning of HVAC equipment such as the heating plant boilers, pumps, AHUs, RTUs and VAVs, and re-calibration or replacement of sensors can be carried out during the implementation phase of building recommissioning.

The table below shows measure summary.

Table 34. BAS and HVAC Re-commissioning Measure Summary

Project Details			
Project Cost	$106,576		
Incentive Value	NA		
Project Cost Net Incentives	$106,576		
Annual Cost Utility Savings	$18,017		
Simple Payback (yrs.)	5.9		
GHG Reductions (tonnes of CO_2e)	38		
Total GHG Reduction (%)	13.2%		
Energy Savings			
Utility	**Annual Savings (Units)**	**Annual Savings ($)**	**Utility Bill Reduction (%)**
Electricity (kWh)	106,048	$10,605	10.1%
Natural Gas (m^3)	15,444	$4,413	

4.2.1 Scope of Work

Estimated scope of work for the implementation of BAS re-commissioning is provided below.

- Confirmation of the operations of sensors, control systems, actuators, and I/O devices.
- Verification of operational parameters such as setpoint temperatures and schedules for HVAC equipment such as boilers, heat pump chillers, chillers, AHU, pumps, RTUs and heat recovery units.
- Verification of controls and operations of VAV boxes and reheats.
- Optimization, repairing, replacing and/or recalibrating sensors.
- Implementation of the improved sequences of operation to monitor and control the operations of the equipment.
- Implementation of measures identified during the investigation phase.
- Accurate and detailed documentation of the measures implemented.

It's recommended to begin the installation of the simpler measures such as BAS programming changes identified in the section above, before the implementation of the EBCx process to optimize the building systems.

4.2.2 Pricing Methodology

The measure implementation cost was estimated based on the quantity of the HVAC equipment and BAS points, and hours of work assigned to complete the tasks for each system.

4.2.3 Energy Savings Calculations Methodology

The annual gas and electricity savings resulted from the implementation of this measure were calculated based on the hourly simulation of the building's HVAC equipment energy consumption and end-use energy balance as the energy consumption of the HVAC equipment and systems were calibrated based on the actual utility gas and electricity consumption.

4.2.4 Impact on Current Operations and Maintenance

BAS and HVAC recommissioning will improve the operations of the HVAC and BAS systems and equipment. Faulty and non-functional devices will be replaced due to the re-commissioning process. This will improve the performance of the equipment and optimize energy efficiency. The amount of emergency repairs will be reduced, resulting in lower the operating expenditures.

4.3 ECM 3 – Install a 137 kW Solar PV Rooftop System

It is recommended to install solar (PV) panels on the roof to generate electricity onsite to reduce the electricity consumption and GHG emissions of the building. Onsite energy generation will impact (decrease) peak demand and reduce demand charges (Class B) accordingly.

Helioscope simulation program was used to model the electricity generation for the ground mount PV panels. The locations for the solar PV panels are marked on the detailed layout from the Helioscope Annual Production Report.

As part of the modelling of this measure, the following equipment has been considered:

Panel type and size: Longi Solar, LR7-72HPH-600M (600W)
Inverter type: CSI-125K-T600GL03-U

A proposed layout of the Rooftop solar PV locations is shown in the following picture:

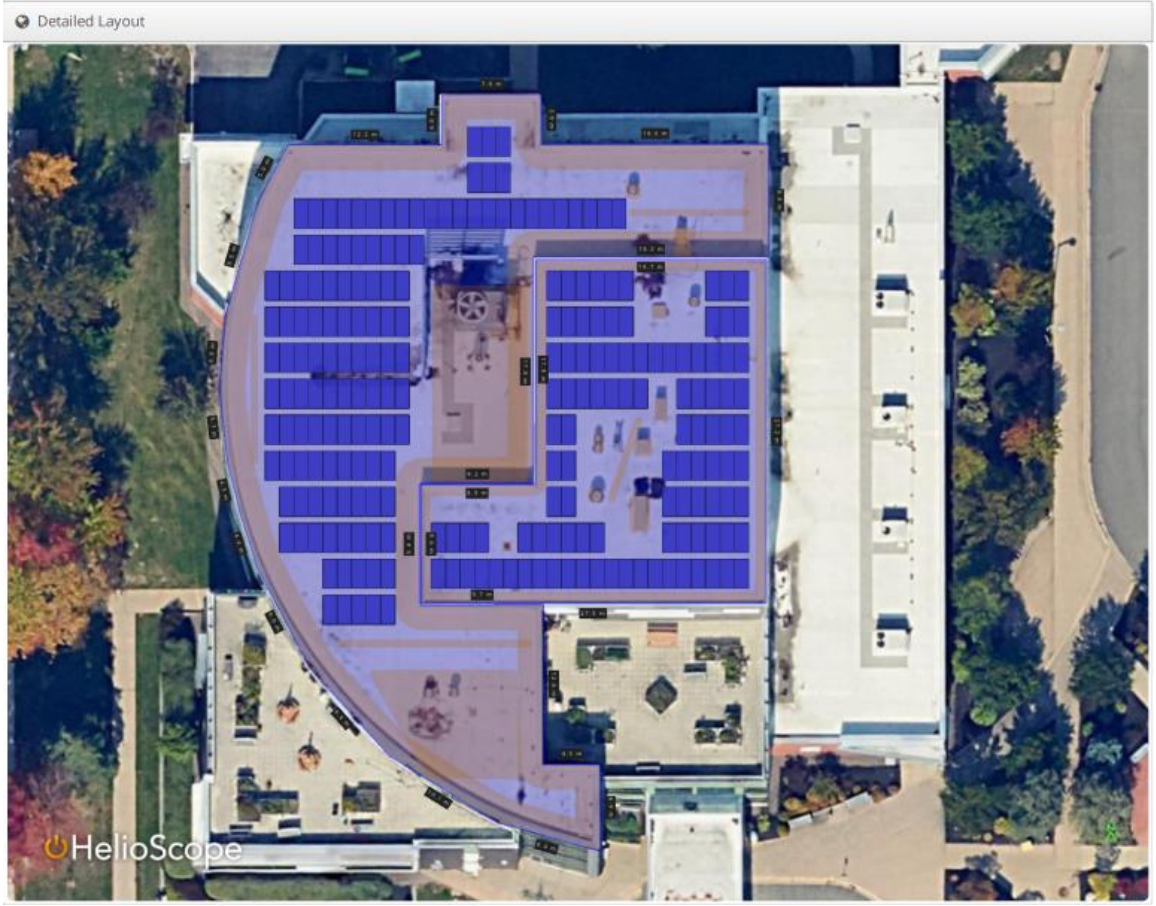


Figure 19. Proposed Layout of the Rooftop Solar PV Locations

The table below shows measure summary.

Table 35. Solar PV Rooftop System

Project Details			
Project Cost	$386,835		
Incentive Value	$0		
Project Cost Net Incentives	$386,835		
Annual Cost Savings	$16,357		
Maintenance Savings	-$1,000		
Simple Payback (yrs.)	23.6		
GHG Reductions (tonnes of CO_2e)	12		
Total GHG Reduction (%)	4.2%		
Energy Savings			
Utility	**Annual Savings (Units)**	**Annual Savings ($)**	**Utility Bill Reduction (%)**
Electricity (kWh)	149,334	$14,933	10.0%
Demand (kW)	25	$2,424	

4.3.1 Scope of Work

The following studies and tasks will have to be performed in the development process and implementation:

- Connection Impact Assessment: this is a study performed for the local electricity distribution company that explores the impact of the proposed generation on the electrical grid.
- Structural Assessment: this study is performed by a structural engineer in order to gauge the ability of the building(s) to support the weight of the solar project. If the structure is deemed to be inadequate, the engineer will describe what building modifications would be required in order to safely support the solar project.
- Roof Assessment: this study explores the rooftops on which the project will be constructed. Specifically, it determines the status of the rooftop membrane and its remaining useful life. If the expected lifespan of the rooftop membrane is low (<10 years), the study would likely recommend maintenance or replacement.
- Construction Preparation: This step involves preparation of the site (safety fencing, scaffolding, prepping for on-site equipment storage, etc.) and ordering of major pieces of equipment.
- Construction: This is the installation and connection of the project to the grid up to the point of substantial completion.
- Final commissioning / cleanup (1 month): In this step, the solar project is brought to final completion, monitoring systems are completed, and final cleanup is performed.

4.3.2 Impact on Current Operations and Maintenance

Solar panels require minimal maintenance to ensure that they operate properly and generate energy output. Annual maintenance cost will be confirmed during the design stage. Annual snow removal costs of the proposed system installation will be determined during design stage, once further details about panels incline, spacing and possible sun tracker installation are developed.

4.3.3 Energy Savings Calculations Methodology

Helioscope simulation program was used to model the electricity generation for the ground mount PV panels. The locations for the solar PV panels are marked on the detailed layout from the Helioscope Annual Production Report. The effect of snow soiling is included in the projected solar PV system annual electricity production.

For more details about Helioscope model, please refer to Appendix 3.

For more details about proposed solar equipment, please refer to Appendix 4.

4.4 ECM 4 – Install Monitoring/Metering System

Installation of an energy management and metering system is proposed to monitor the energy consumption (BTU Meter) for the main boiler plant and to monitor the gas, electricity and water utility consumption of the building on real time basis to further optimize operations of the building systems and validate utility consumption data.

Real-time monitoring and energy management involves collecting, transmitting, processing, analyzing, alerting, and visualizing measured data. Real-time monitoring systems can produce consumption, GHG and M&V reports for real time monitoring of any systems and provides real time utility data monitoring and graphics that can be used for presentation and integrated into the existing BAS. It creates dashboards that can be used for educational purposes about existing systems and GHG emissions.

Screenshots from metering system are provided below for reference.

Figure 20. Metering System Screenshots

The table below shows measure summary.

Table 36. Install Monitoring/Metering System Project Summary

Project Details			
Project Cost	84,267		
Incentive Value	$0		
Project Cost Net Incentives	$84,267		
Annual Cost Savings	$2,280		
Maintenance Savings	-$2,408		
Simple Payback (yrs.)	37.0		
GHG Reductions (tonnes of CO_2e)	13		
Energy Savings			
Utility	**Annual Generation (units)**	**Annual Savings ($)**	**Utility Bill Reduction (%)**
Electricity (kWh)	18,860	$1,886	2.7%
Electricity (kW)	NA	NA	
Natural Gas (m^3)	5,837	$2,802	

4.4.1 Scope of Work

The proposed scope of work includes installation of ultrasonic flow meters, temperature/pressure sensors, current transducers, controllers and programming of the sequences of operation.

4.4.2 Impact on Current Operations and Maintenance

There is no anticipated changes to the current operations and maintenance expenditures apart from the energy and cost savings.

4.4.3 Energy Savings Calculations Methodology

Annual energy savings are calculated based on the optimized performance of the boiler plant and chilled water plant operations. The regression analysis of the building gas and electricity consumption was created, and the hourly energy consumption analysis of the boiler plant was performed to estimate energy savings.

5 Measures Evaluated but not part of the Recommended Program

The following energy conservation and GHG measures were evaluated as part of the detailed facilities' analysis but are not included in the recommended program as they do not satisfy selected financial criteria. These measures should be considered for future implementation to renew/replace existing equipment and infrastructure or provide additional renewable generation capacity.

5.1 ECM1 -Decoupling of DHW System and Boiler Plant Upgrade with Installation of Heat Pumps

The heating hot water for the perimeter and in-floor radiant heating, reheats, AHUs glycol coils and DHW system is generated by the main boiler plant in the penthouse boiler room. The boilers are operational all year round as they provide heating hot water for the DHW system and reheats for AHU2.

This measure proposes the installation of the following equipment related to the main boiler plant and building heating systems:

1. A new condensing DHW boiler to provide heating hot water for the DHW system
2. Two new boilers for space heating to replace the existing three De Dietrich boilers
3. Installation of a heat pump system is proposed to address the greenhouse gas emissions reduction targets for Algoma Public Health.

Description of each proposed system is provided below.

1. The purpose of the implementation of a dedicated DHW boiler is to decouple the DHW system from the main boiler plant to reduce the operating hours of the main boilers and to improve the efficiency of the heating system. The boilers are operational all year round. The estimated capacity of the proposed DHW boiler is around 650,000 btu/hr.
   It's suggested to shut down the main boilers in summer after the installation of the DHW boiler when the chiller is operational.
2. Blackstone was informed about the concern related to having difficulties in sourcing the spare parts for the existing boilers. Replacement of the existing boilers is included in the scope as it was requested from Algoma Public Health. The total input heating capacity of the new heating boilers will be reduced since the installation of a dedicated DHW boiler is suggested to provide heating hot water for the DHW system as explained above.
3. A cascade heat pump system with water-to-water heat pump and air sourced heat pump equipment working as tandem to produce heating hot water temperature up to 160 °F when OAT above 41 °F

The schematic for the existing heating system is provided below.

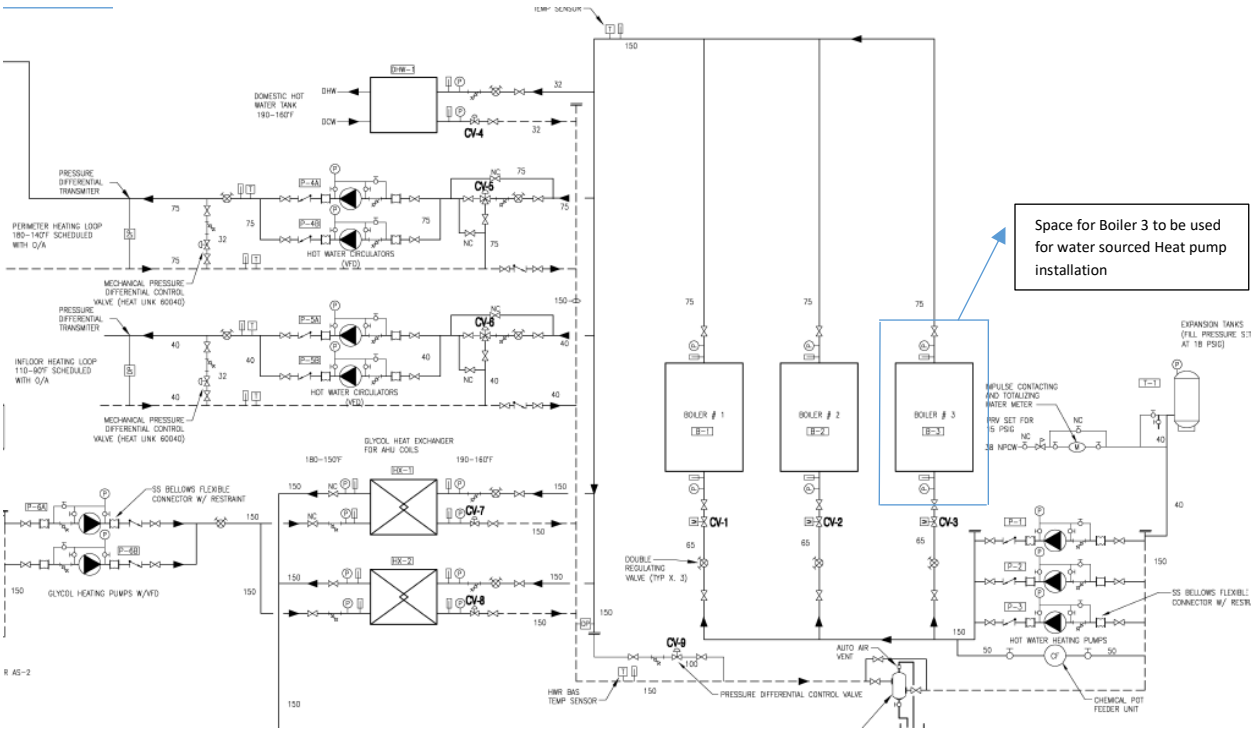


Figure 21. Existing Heating System Schematic

As described above, all three boilers shown in this schematic will be removed and two new boilers will be installed. The proposed heat pump equipment will be installed beside the new boilers (Boiler 1 & 2) instead of Boiler 3.

The estimated total input capacity of the new boilers is approximately 3,000 MBH.

The heat pump equipment was selected based on the building energy analysis performed using base year (April 2022 and March 2023) gas consumption data and simulated hourly boiler gas consumption data. The proposed system consists of following components:

- 2 x 40-ton Chillmaster (CMHR6404NWBMSSA) water source heat pump
- 2 x 40-ton York (YMAE0035) air sourced heat pump

The input heating capacity of the condensing DHW is around 650,000 btu/hr. It is suggested to connect the new DHW boiler to the existing DHW tank (700 gallons). The existing piping connection from the boilers to DHW tank will be capped off. A piping schematic for a similar system is provided below.

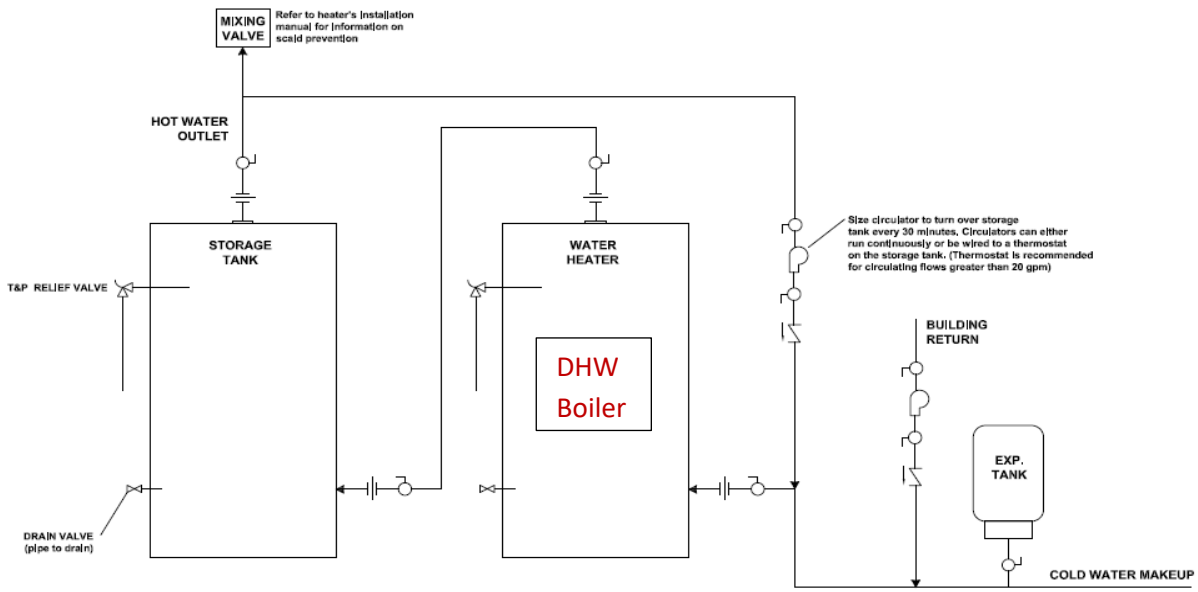


Figure 22. Piping Schematic for Similar System

5.1.1 Scope of Work

The scope of work required to implement this measure is summarized below.

- Removal of the existing boilers
- Installation of the existing boilers
- All required piping work to connect boilers to the existing heating hot water system
- Removal of the existing pumps and installation of new heating hot water circulation pumps if the existing pumps cannot be used for the new system
- Installation of the boiler circulators
- Installation of the new condensing DHW boiler with the concrete boiler pad
- All required piping work to connect the DHW boiler to the existing DHW tank
- Installation of new stacks for all new boilers
- All required gas piping and connections
- Installation of the electrical control panel for the new DHW boiler
- All required electrical wiring to power the new boilers
- Installation of the water-to-water heat pump in the mechanical room with concrete pads
- Installation of the air sourced heat pump with the roof sleepers required of support the structure
- Installation of heat exchangers between water-to-water heat pump and air sourced heat pump
- Installation of pumps required for each heat pump tandem system
- Installation of control panels and disconnects required for the heat pump equipment and pumps

- All required electrical wiring work to connect the heat pump equipment and pumps to the control panel. Providing electrical wiring work from the main electrical distribution panel to the new control panel
- Integration of all new systems into the existing BAS
- Water balancing of the new systems
- Commissioning of the heating system

5.1.2 Impact on Current Operations and Maintenance

The new heat pumps will be integrated into the new BAS to allow for control and monitoring of the system performance and operating parameters. The heat pumps will require regular maintenance to ensure proper operations of the systems. Since the new equipment will be added to the heating system, it's estimated that overall annual maintenance expenditures will increase.

5.1.3 Energy Savings Calculations Methodology

The annual gas savings resulted from the implementation of this measure were calculated based on the hourly simulation of the building's HVAC equipment energy consumption and end-use energy balance as the energy consumption of the HVAC equipment and systems were calibrated based on the actual utility gas and electricity consumption. The heat pump equipment demand (kw) rating under design conditions was used to estimate the increased demand load.

5.2 ECM2 - Monitor and Control Plug Loads Across the Building

Phantom loads or plug loads can make up to 20% of the building electricity load. The electrical equipment such as computers, laptops, monitors and smart phones can consume significant amount energy when they're turned off but still plugged into the grid. One of the ways to identify and reduce the electricity consumption related to plug loads is submetering as it would provide information to analyze the plug load energy consumption with respect to time of use.

The list of the desktops, laptops and monitors were provided to Blackstone by the IT Department as a part of the energy auditing process. This list was used to estimate the plug load energy consumption for the building, which is around 10% of the annual building electricity consumption.

Estimated total GHG emission reduction for this measure can be low compared to other measures, however, it would decrease the electricity consumption of the building and operating expenditures. Through implementing energy conservation measures, the facility electricity consumption can be reduced and used as a step towards electrification.

5.2.1 Scope of Work

The proposed scope of work includes installation of current transducers and integration to the BAS to monitor and control the energy consumption of plug loads. Sub-meters can be installed at the electrical panels that serve the loads connected to the computer labs, offices and other areas. Time of day schedules can be implemented to shut down the plug loads when systems not in use apart from servers that need to be on 24/7. Alternatively, the IT department might install software upgrades onto the desktops, laptops and monitors (that doesn't leave the building) to shut down off after office hours. This has been the strategy that was implemented by some other institutions.

5.2.2 Impact on Current Operations and Maintenance

There's no significant operating and maintenance cost associated with this measure. The impact on the current operations will be minimal.

5.2.3 Energy Savings Calculations Methodology

The list of the desktops, laptops and monitors were provided to Blackstone by the IT Department as a part of the energy auditing process. This list was used to estimate the plug load energy consumption for the building, which is around 10% of the annual building electricity consumption. The run times for the equipment was estimated based on the regular business hours for the office work environment from 9 AM to 5 PM.

5.3 ECM3 - Install a 215 kW Ground Mount Solar PV System

Blackstone has evaluated installation of 215 kW ground mount solar (PV) panels to generate electricity onsite to reduce the electricity consumption and GHG emissions of the building. Onsite energy generation will impact (decrease) peak demand and reduce demand charges (Class B) accordingly.

Helioscope simulation program was used to model the electricity generation for the ground mount PV panels. The locations for the solar PV panels are marked on the detailed layout from the Helioscope Annual Production Report.

As part of the modelling of this measure, the following equipment has been considered:

Panel type and size: Longi Solar, LR7-72HPH-600M (600W)
Inverter type: CSI-100K- T480GL02-U

A proposed layout of the ground mount solar PV rooftop locations is shown in the following picture:

Figure 23. Proposed Layout of the Ground Mount Solar PV Rooftop Locations

5.3.1 Scope of Work

The following studies and tasks must be performed in the development process and implementation:

- Connection Impact Assessment: this is a study performed for the local electricity distribution company that explores the impact of the proposed generation on the electrical grid. Connection to the grid will be the complex part of the proposed installation. The transformer station to which the campus is connected to must have the capacity to support the solar project.
- Structural Assessment: The engineer will describe the structural designs and materials required to safely support the solar project on the ground.
- Construction Preparation: This step involves preparation of the site (safety fencing, scaffolding, prepping for on-site equipment storage, etc.) and ordering of major pieces of equipment.
- Construction: This is the installation and connection of the project to the grid up to the point of substantial completion.
- Final commissioning / cleanup (1 month): In this step, the solar project is brought to final completion, monitoring systems are completed, and final cleanup is performed. The Electrical Safety Authority and the local distribution company would provide regulatory oversight for the connection and commissioning of the system.

There are trees on the south part of the parking lot where the installation of the solar panels is planned. It's suggested to transplant these trees to create more space for the solar panels.

5.3.2 Impact on Current Operations and Maintenance

Solar panels require minimal maintenance to ensure that they operate properly and generate energy output. Annual maintenance cost will be confirmed during the design stage. Annual snow removal costs because of the proposed system installation will be determined during design stage, once further details about panels incline, spacing and possible sun tracker installation are developed.

5.3.3 Energy Savings Calculations Methodology

Helioscope simulation program was used to model the electricity generation for the ground mount PV panels. The locations for the solar PV panels are marked on the detailed layout from the Helioscope Annual Production Report.

The effect of snow soiling is included in the projected solar PV system annual electricity production.

For more details about Helioscope model, please refer to Appendix 3.

For more details about proposed solar equipment, please refer to Appendix 4.

6 Measurment & Verification (M&V) Plan

6.1 Project Description

Blackstone will perform measurement and verification (M&V) activities for each of the proposed measures. The following report details the M&V plan for Algoma Public Health. A properly defined and implemented M&V plan will be an important part of future carbon reporting requirements.

6.1.1 Expected Annual Energy Savings Overview

The table below provides a summary of the expected annual energy and demand savings that result from the implementation of the proposed energy conservation measures.

Table 37. Summary of Estimated Annual Energy Savings

Energy Conservation Measure	Electrical Energy Savings (kWh/year)	Demand Savings (kW/year)*	Natural Gas Savings (m^3/year)	Natural Gas Savings (ekWhNG/year)	Total Energy Savings (ekWh)	GHG Savings (tCO2e)
M1– LED Lighting Upgrade	110,125	35	(850)	(8,976)	101,149	7
M2 – BAS and HVAC Re-commissioning	106,048		15,444	163,089	269,137	38
M3 – Install a 137 kW Solar PV Rooftop System	149,334	25			149,334	12
M4– Install Metering and Energy Management (BlackPAC) system	18,860		5,837	61,639	80,499	13
TOTAL SAVINGS	**384,367**	**60**	**20,431**	**215,752**	**600,118**	**71**

*Annual electric demand savings (kW/year) is the sum of the monthly demand savings.

6.1.2 Projected Annual Cost Savings Overview

The table below provides a summary of the expected cost savings that result from the implementation of the proposed energy conservation measures.

Table 38. Summary of Projected Annual Cost Savings

Energy Conservation Measure	Savings Total ($)
M1– LED Lighting Upgrade	$20,447
M2 – BAS and HVAC Re-commissioning	$18,017
M3 – Install a 137 kW Solar PV Rooftop System	$16,357
M4 – Install Monitoring/Metering System	$2,280
TOTAL SAVINGS	**$57,102**

6.1.3 Measurement & Verification Plan Summary

The table below outlines the M&V Option selected for each proposed measure and a summary of how these options are used to create the M&V plan.

Table 39. Summary of Selected M&V Options

Energy Conservation Measure	Electricity	Natural Gas	O&M
M1– LED Lighting Upgrade	Option C	Deemed	Option D
M2 – BAS and HVAC Re-commissioning	Option C	Option C	Option D
M5 – Install a 137 kW Solar PV Rooftop System	Option C	Option C	Option D
M7 – Install Monitoring/Metering System	Option C	Option C	N/A

Generally, the selected method is influenced by the cost to verify a measure and the measure's cost savings. Based upon analysis of the utility savings, it was determined that both electricity and natural gas savings warrants using Option C.

The M&V plan and the post-project results report will adhere to the International Performance Measurement & Verification Protocol (IPMVP) Option C: Whole Facility. Option C will be used to verify the collective electricity and natural gas savings of measures, M1, M2, M3, M4. This will be achieved using utility meter data, where a baseline is produced that is used as a point of measurement against billed consumption.

6.2 Global Assumptions

6.2.1 Energy Price Data

Energy Costs used to determine the value of the energy savings are based on the rates detailed in Section 5. The table below summarizes the baseline year rates. The savings calculations are based on 2027 rates.

Table 40. 2016 Utility Rates

Year	Electricity (kWh)	Demand (kW)	Natural Gas (m^3)	Natural Gas ($ekWh_{NG}$)
Contractual Rates	$0.10	$16.16	$0.482	$0.0455

6.2.2 Schedule & Reporting for Verification Activities

The schedule of M&V submissions is summarized in the table below.

Table 41.Schedule for Report Submissions

Item	Time of submission*	Owner's review and acceptance period
Post-Installation Report	45 days after acceptance	30 days
Annual Reconciliation Report	45 days after annual service program assurance period	30 days

*Report submissions due dates may vary if an adjustment in the baseline needs to be made and accepted due to changes within the facility.

**The reports are interim results that are meant to provide information and tracking of Utility Costs savings. The Annual Reconciliation Report is the contractual instrument that will set out Utility Cost savings as per the Agreement.

The Post-Installation Report will be submitted within 45 days of project completion. The client will then have 30 days to review and approve the Post-Installation Report. Commissioning will be reported separately. The Post-Installation Report will document any deviations from the specified equipment and, if necessary, make recommendations for approval of any adjustments to M&V plans specified in this report.

The Annual Report will be due within 45 days of the end of the annual service program assurance period. The client will have 30 days to review and approve the Annual Report.

6.3 Approach & Methodology

6.3.1 Methodology Selection

IPMVP Option C: Whole Facility was selected as the M&V methods as the combination offers the best opportunity to minimize the costs of evaluating savings performance of the retrofit project; however, it is necessary to ensure that any occurrences that will notably affect energy consumption in the health care facility that are separate from the retrofit projects (e.g. addition of new space or equipment, growth of occupancy, increase in operating hours, etc.) are noted and the baseline (discussed in Section 5) is adjusted accordingly.

All baseline adjustments will be calculated using acceptable engineering calculations. Adjustments can be of two different types:

1. Routine Adjustments: for changes in parameters that can be expected to happen throughout the post-retrofit period and for which a relationship with energy use/demand can be identified. These changes are often seasonal or cyclical, such as weather or occupancy variations.
2. Non-Routine Adjustments: for changes in parameters which cannot be predicted and for which significant impact on energy use/demand is expected. Non-routine adjustments should be based on known and agreed changes to the facility.

Data to support the baseline adjustment calculations may come from spot or short-term metering before and after system installation during the first year of operation, historical data, and/or information from other similar projects. Baseline energy use and post-retrofit energy use are predicted using engineering calculations.

6.3.2 Data Collection

Electricity data is provided by Veridian Connections. Natural Gas data is provided by Enbridge.

Environment National Aeronautics and Space Administration (NASA) data will be obtained from the weather station located at Sault Ste Marie, Ontario through RETScreen. Setpoints for temperature, humidity, air flow and various other items as well as schedules for air handling units are obtained from the onsite building automation system.

6.4 Measurement & Verification Plan – Option C

6.4.1 Whole Facility Meters

The table below lists the meters that will be monitored for Option C on electricity and natural gas savings:

Table 42. Monitored Meters

Vendor	Account No.	Meter ID	Service Type
SSM PUC	0204484-01	139252	Large Commercial
Enbridge	210040288933	2701184	Large Commercial

6.4.2 Baseline Development

Utility consumption data is gathered from the utility providers from April 2022 to March 2023. This provides two complete years of data which will be used to represent the facility's annual consumption trends. The selected base-year period for M&V will be from April 2022 to March 2023.

The utility consumption data provided is compared to several variables that influence utility consumption in a building by means of regression analyses. Using the weather station at Sault Ste Marie, exterior weather temperature stands out as a major driver of consumption and demand as shown in the figures below.

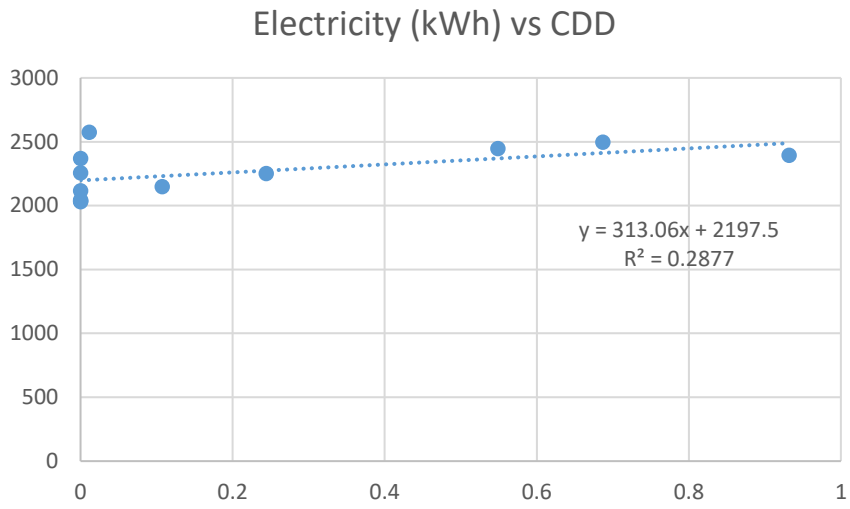


Figure 24. Regression Analysis for Electricity Consumption Based on Average Outdoor Temperature

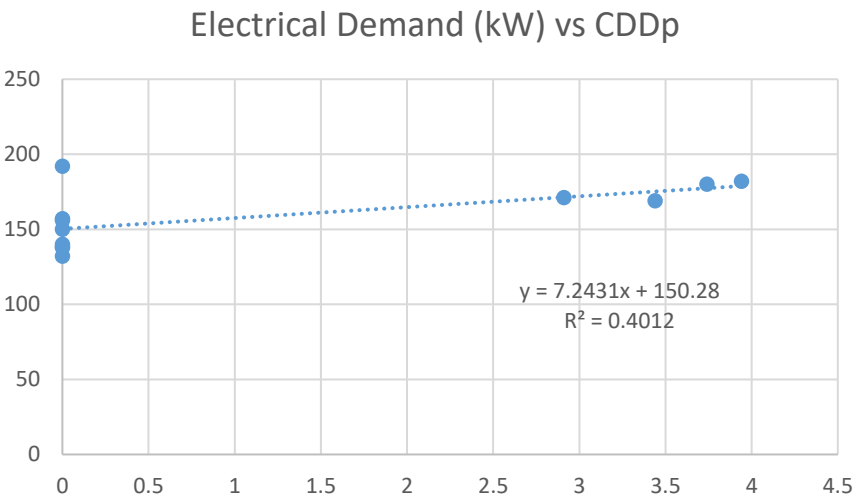


Figure 25. Regression Analysis for Electricity Demand Based on Average Outdoor Temperature

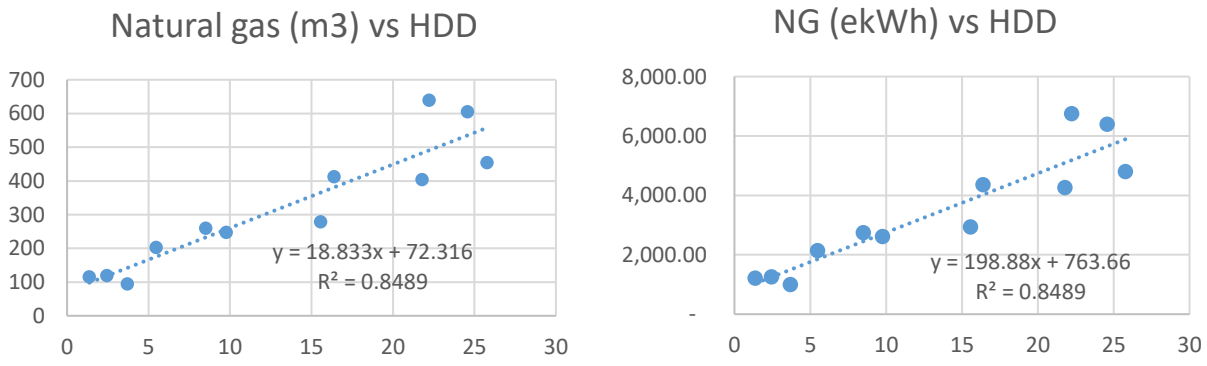


Figure 26. Regression Analysis for Natural Gas on Average Outdoor Temperature

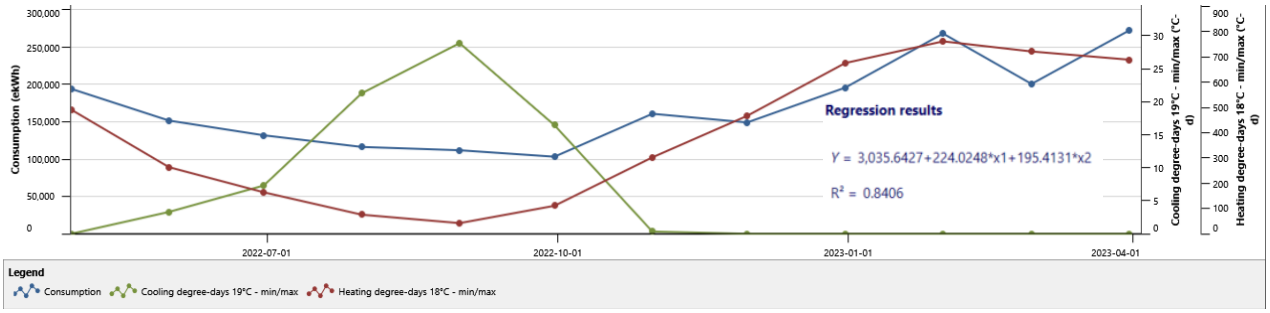


Figure 27. Regression Analysis for Electricity Demand Based on Average Outdoor Temperature

The R^2 value, known as the coefficient of determination, is a measure of how strong the relationship is between different variables – in this case, weather vs. consumption and demand. The above figures demonstrate a strong relationship between all utilities and exterior weather temperatures. This implies that consumption and production correlates strongly with changes in exterior temperature.

6.4.3 Energy Driver Coefficients

A regression analysis was performed on several variables to determine their influence on energy consumption in the building. This analysis generates constants (coefficients) that are used in the equations (noted in the following sections) for the purposes of calculating energy savings. Each utility has its own relevant energy drivers with their– own unique constants.

To determine Cooling Degree Days (CDD) and Peak Cooling Degree Days (CDDp), balance point temperatures were used in the regression analysis and correlated to daily energy consumption.

- Electricity kWh CDD Balance Point: 19.0 ℃
- Electricity kW CDDp Balance Point: 19.0 ℃
- Natural Gas m^3 HDD Balance Point: 18.0 ℃
- Natural Gas $ekWh_{NG}$ HDD Balance Point: 18.0 ℃
- Regression (R^2) (CDD vs. kWh) = 0.2877
- Regression (R^2) (CDDp vs. kW) = 0.0.4012
- Regression (R^2) (HDD vs. m^3) = 0.8489
- Regression (R^2) (HDD vs. $ekWh_{NG}$) = 0.8489

6.4.4 Base Year Variable Declaration

The following Base Year Variables have been used in the calculation for each utility regression equation and their respective coefficients.

Electricity Consumption (kWh)	= (313.06*Total CDD) + (2197.5*Days)
Electricity Demand (kW)	= (112.15*Max CDDp) + 3,058.7
Natural Gas Consumption (m3)	= (18.833*Total HDD) + (72.316*Days)
Natural Gas Consumption ($ekWh_{NG}$)	= (198.88*Total HDD) + (763.66*Days)
Total Energy (ekWh)	= (224.0248*Total CDD) + (195.4131*Total HDD) + 3035.6427*Days

Where:

- "Total CDD" means the total number of cooling degree days in a billing period.
- "Total CDDp" means the maximum cooling degree days in a billing period.
- "Total HDD" means the total number of the heating degree days in a billing period.
- "Days" means the total number of days during a specified billing period as set by the respective utility as seen on the monthly utility bill.

6.5 Measurement & Verification Plan – Calculations

6.5.1 Proposed Annual Savings

Annual savings will be calculated using the Base Year Rates as determined by the following equation:

$\$_p = (S_E * Rate_g) + (S_D * Rate_g) + (S_N * Rate_g) + \$_M$

Where:

- $\$_p$ = Proposed Annual Net Savings, using IPMVP Option C & Option A
- $Rate_g$ = Corresponding Base Year Utility Rates
- S_E = Electricity (kWh) savings
- S_D = Electrical demand (kW) savings
- S_N = Natural gas (ekWh) savings
- $\$_M$ = Operations & maintenance avoided costs

Option C electricity savings are calculated using the following equation:

$S = E_B – E_G$

Where:

- S = Corresponding consumption (or demand) savings
- E_B = Adjusted Base Year Period consumption or Adjusted Base Year Period demand
- E_G = Reconciliation Period consumption or demand

Option C natural gas savings are calculated using the following equation:

$S = E_B – E_G$

Where:

- S = Corresponding consumption savings
- E_B = Adjusted Base Year Period consumption (ekWh)
- E_G = Reconciliation Period Consumption (ekWh)

6.5.2 Actual Savings

Energy and demand savings for each Reconciliation Period will be determined by the following equation:

$\$_a = (S_E * Rate_s) + (S_D * Rate_s) + (S_N * Rate_s) + \$_M$

Where:

- $\$_a$ = Actual Net Savings, using IPMVP Option C
- $Rate_s$ = Selected rate between the higher of corresponding Current Rates and Base Year Rates

6.5.3 Determination of Utility Cost Savings Surplus/Shortfall

To determine a surplus or a shortfall of savings, the following equation will be used

$\$_c = \$_a - \$_p$

Where:

- $\$_c$ = Savings Surplus (+)/Shortfall (-)

6.5.4 Base Year Utility Consumption

6.5.4.1 Base Year Electricity and Demand Consumption (kWh & kW)

The electricity base year utility consumption and demand at Algoma Public Health is summarized in the table below and the period is from April 2022 to March 2023.

Table 43. Electrical Consumption & Demand

Month	Consumption	Demand
Apr-22	63,464	132
May-22	66,640	138
Jun-22	67,556	171
Jul-22	77,376	169
Aug-22	74,177	182
Sep-22	73,404	180
Oct-22	79,813	192
Nov-22	60,906	157
Dec-22	63,378	156
Jan-23	69,973	138
Feb-23	66,309	150
Mar-23	63,095	140
	826,090	**N/A**

6.5.4.2 Base Year Natural Gas Consumption (m^3)

The natural gas base year utility consumption at Algoma Public Health is summarized in the table below and the period is from April 2022 to March 2023.

Table 44. Natural Gas Consumption

Read Date	Consumption (m^3)	Consumption ($ekWh_{NG}$)
Apr-22	12,390	130,838
May-22	8,056	85,071
Jun-22	6,103	64,448
Jul-22	3,697	39,040
Aug-22	3,581	37,815
Sep-22	2,835	29,938
Oct-22	7,671	81,006
Nov-22	8,360	88,282
Dec-22	12,538	132,401
Jan-23	18,778	198,296
Feb-23	12,735	134,482
Mar-23	19,844	209,553
	116,588	**1,231,169**

6.5.5 Determination of Adjusted Baseline Measurements

Consumption and demand for the Base Year Period is adjusted to estimate what the current Reconciliation Period consumption and demand would have been if no energy conservation measures had been implemented.

This is accomplished by adjusting for these factors with respect to differences between the Base Year Period and corresponding Reconciliation Period:

a) Changes in the number of days between the Base Year and Reconciliation Period
b) Changes in weather
c) Changes in facility use
d) Modifications to the facility

6.5.6 Adjusted Baseline Calculations

6.5.6.1 Adjusted Base Year Consumption - Monthly Models:

For commodities for which revenue grade daily consumption data is not available from the utility provider, Baseline models are created from monthly billing data. Thus, reconciliations in this case will also be based on monthly billing data, and the reconciliation period shall correspond to an even multiple of monthly billing cycles / periods.

For monthly models the Adjusted Base Year consumption is calculated as follows for each savings category:

$$Q = \sum_{i=1}^{n} (C_C * CDDm_i + C_H * HDDm_i + C_D * D_i + M_i)$$

Adjusted Base Year consumption = weather independent consumption + weather dependent consumption + causes for adjustments

Where:

- Q = total Adjusted Base Year Period consumption for the reconciliation period
- n = the total number of monthly billing cycles in the reconciliation period
- C_D = a constant representing units of consumption per day (a.k.a. base load consumption)
- D_i = the total number of days in billing period “i"
- C_H = a constant representing units of consumption per heating degree day
- $HDDm_i$ = the number of heating degree days for the i^{th} monthly billing cycle in the reconciliation period
- C_C = a constant representing units of consumption per cooling degree day
- $CDDm_i$ = the number of cooling degree days for the i^{th} monthly billing cycle in the reconciliation period
- M_i = other adjustments for the i^{th} monthly billing cycle in the current reconciliation period

6.5.7 Base Load Consumption

For the case of daily models, base load consumption is a constant value (C_D). For monthly models, however, we must account for the fact that utility meters are not always read on the same day of the month, and thus the number of days in a meter’s billing period frequently varies. The term, $C_D * D_i$, in the monthly model equation accounts for this, where D_i gives the number of days in the monthly billing period "i".

6.5.8 Weather Dependent Consumption

Change in weather between the Base Year and corresponding Reconciliation Period is accounted for with the term, $C_H * HDD_m + C_C * CDD_m$. Weather Dependent Consumption is consumption per degree-day times the number of degree-days in the current Reconciliation Period. A cooling degree-day is the difference between the average daily temperature and the reference temperature (AvgTemp – Reference Temp). A heating degree-day is the difference between the reference temperature and the average daily temperature (Reference Temp – AvgTemp). Degree-days are either positive numbers or zero. If the degree-day calculation yields a negative number, the period is considered to have zero degree-days of that type. The weather station used to determine daily temperatures is specified in Section 1.3.

6.5.9 Other Adjustments

The total adjustment for any Reconciliation Period will be determined with this equation:

Mi = Adj1 + Adj2 + … Adjn

Where Adj1, Adj2 and Adjn are all of the causes for adjustments determined to be necessary by the parties for the Reconciliation Period. The sign of the adjustment will be positive when the change will cause an increase in energy and the sign of the adjustment will be negative when the change will cause a decrease in energy. In each instance when Blackstone proposes to make "Other Adjustments," Blackstone will propose such other adjustments to Algoma Public Health, with adequate explanation and documentation.

7 Financing Net-Zero

This section of the Study outlines the recommended program delivery model. The proposed measures require significant capital investment and may have utility cost implications or savings. It should be noted that measures such as converting from natural gas to electricity will increase operational costs, as the electricity is more expensive than natural gas. The increase in operational costs is accounted for in the total annual cost savings. The following section is focused on Phase 1 so the GHG reduction target for 2030 is achieved.

7.1 Capital Costs Required

As part of Phase 1, the investment and associated costs and benefits include the following:

Table 45. Investment Costs and Benefits Associated with Phase 1

Program Information	
Phase 1	**2025-2027**
Total Investment in ECDM, Renewable Energy and Electrification	$896,403
Total Annual Cost Savings	$57,102
Initial Project Contribution	$0

7.2 Investment Scenarios – Further Financial Details

7.2.1 Managed Energy Service Agreement (MESA)

For Algoma Public Health to reach 20% GHG reduction, it is vital to reduce and eventually eliminate the consumption of natural gas. Hence, the recommended GHG reduction program prioritizes energy conservation, the implementation of renewable energy systems and electrification measures. To develop plausible investment strategies for the implementation of these projects several factors must be considered. These include the current cost of technology, utility prices and incentives or funding avenues, which in some cases do not immediately provide a sound business case for facility electrification and ultimately carbon reduction. The depicted scenario shows a MESA model in partnership with a third-party financing provider.

The table and figure below depict further financial details of the program.

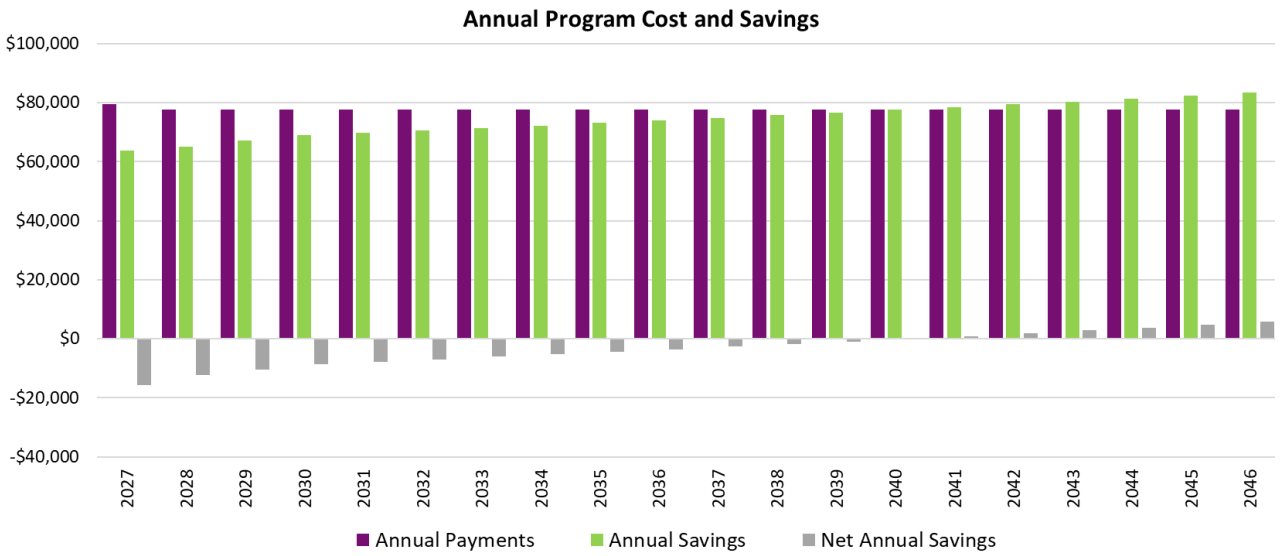


Figure 28. Cashflow following MESA Model

Table 46. Investment Costs and Benefits for the MESA Program

Program Information	
Implementation Period	**2025 – 2027**
Total Investment	$896,403
Total Annual Cost Savings	$57,102
Construction Period	18 Months
Construction Interest Rate	5.25%
Term	20 years
Term Re-Payment Interest Rate	5.25%
Estimated Term Cost Savings	$1,485,343
Total Term Cumulative Cash Flow	-$67,173

7.2.2 Proposed Delivery Model

Blackstone team has extensive experience in developing fully funded, cashflow positive models implemented in public institutions. We are proposing **Managed Energy Service Agreement (MESA)** delivery model to achieve your 2030 GHG reduction target. Through MESA, Blackstone will develop, design and construct proposed energy & carbon reduction project (Phase 1) with no upfront capital required. With MESA program, the APH will own the assets and project related financial savings, if required, can be guaranteed by an energy savings warranty to eliminate the risk of savings shortfalls and ultimately ensure the financial performance of the business case/project is achieved.

MESA Process Steps

1. MOU executed with basic terms and conditions of project scope and commercial terms (if applicable)
2. Managed Energy Services Agreement (MESA) is executed upon review and acceptance of Final Service Program Feasibility Study
3. Tri-party Funding agreement is executed as part of the MESA contract
4. Blackstone mobilizes and implements project measures as set out in Schedule "B" Project Schedule. Monthly progress draw requests are approved by client, an invoice is then issued to funder for payment with signed Progress Draw Approval Form.
5. Project is completed and accepted by client. Service Payments begin and are paid by client to a joint account that is owned by Blackstone and the Funder, which the Funder has power of attorney over.
6. The contract performance period is commenced, and savings are measured and verified. In the event of a confirmed savings shortfall, the construction period savings are used to offset financial shortfall.
7. If the construction period savings are liquidated to cover the savings shortfall, the Energy Savings Warranty claim is registered and the underwriter pays the shortfall claim to the loss payee, which in this case is the client.

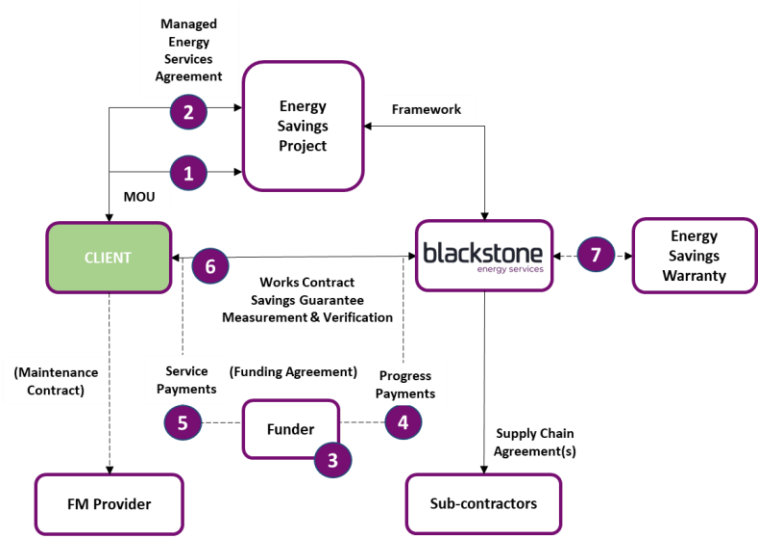


Figure 29. Managed Energy Services Agreement (MESA) Delivery Overview

Appendix 1: ECM01 – Lighting Database and Proposed Lighting Equipment

Appendix 2: ECM01 – Lighting Specifications

Appendix 3: Helioscope Models

Appendix 4: Proposed Solar PV Equipment

Appendix 5: Mechanical Equipment Submittals

PLEASE ROUTE TO:

All Board of Health Members
All Members of Regional Health & Social Service Committees
All Senior Public Health Managers

Dear alPHa Members,

alPHa's 2025 Annual General Meeting (AGM) and Conference will be held June 18-20, in-person at The Pantages Hotel, located at 200 Victoria Street in Toronto.

The **AGM Pre-Notice and Package** are now available on the conference webpage, that can be found here, and direct links are below. Please note, registration for the event will launch in mid-April. Additionally, other information, such as the conference program, will be available at that time.

- **2025 AGM & Conference Notice and Calls Package**
- **Pre-Notice for the 2025 alPHa Annual General Meeting**
- **Call for 2025 alPHa Resolutions**
- **Call for 2025 alPHa Distinguished Service Awards**
- **Call for Board of Health Nominations**
- **Conference Sponsorship Package** and **Sponsorship Commitment Form** (If you know of a potential sponsor that alPHa should reach out to, please e-mail loretta@alphaweb.org. Members' suggestions are always greatly appreciated!)

alPHa has secured a block of rooms for conference attendees. If you would like to book your room, here is how you can do it:

LINK: https://bookings.travelclick.com/102298?groupID=4609798&hotelID=102298

Please note that you can also call the hotel 416-362-1777 or email (reservations@silverhotelgroup.com) and request a room from the "alPHa 2025 June Conference" room block.

The Pantages Hotel has a unique downtown location and is situated across from the Eaton Centre and Massey Hall. It has a limited number of rooms and Members who wish to stay at the conference hotel are encouraged to book early. If the room block sells out, there are many other hotels within walking distance to the conference.

Information about the opening reception that is taking place late in the afternoon on Wednesday, June 18th, and the half-day Section meetings on the morning of Friday, June 20th will follow at a later date.

In the meantime, please don't forget to hold the dates June 18th to 20th!

Take Care,

Loretta

_____

Loretta Ryan, CAE, RPP
Chief Executive Officer
Association of Local Public Health Agencies (alPHa)
PO Box 73510, RPO Wychwood
Toronto, ON M6C 4A7
Tel: 416-595-0006 x 222
Cell: 647-325-9594
loretta@alphaweb.org
www.alphaweb.org

PLEASE ROUTE TO:
All Board of Health Members
All Members of Regional Health & Social Service Committees
All Senior Public Health Managers

March 17, 2025

March 2025 InfoBreak

This update is a tool to keep alPHa's Members apprised of the latest news in public health including provincial announcements, legislation, alPHa activities, correspondence, and events. Visit us at alphaweb.org.

Leader to Leader - A message from alPHa's Chair - March 2025

"Leadership is the capacity to translate vision into reality."

Hello alPHa Members!

Reflecting on the resounding success of the alPHa 2025 Winter Symposium, Section Meetings and Workshops, and its record attendance, one might think that it would be difficult to top. Well, alPHa will be doing just that at the 2025 Annual General Meeting (AGM) and Conference. alPHa Members can look forward to engaging face-to-face in Toronto from June 18 – 20. This is where we will continue the important conversation on the critical role of public health in

Ontario. The 2025 AGM and Conference Notice and Calls package was recently distributed to all alPHa Members, so be sure to check it out.

It all kicks off with a mobile workshop and an opening reception that are taking place the afternoon of Wednesday, June 18. The AGM and Conference are on Thursday, June 19, with the half-day Section Meetings on the morning of Friday, June 20. Stay tuned for the registration, which will open in mid-April, along with the details of the exciting line up of guest speakers, presentations, and informative updates.

The Pantages Hotel, located at 200 Victoria Street in Toronto, has a unique downtown location. It is situated across from the Eaton Centre and Massey Hall. A block of rooms is available, and you are encouraged to book early. However, if the block sells out, rest assured that there are other hotels within walking distance of the conference. Further accommodation information can be found on the alPHa website.

There will be a few changes to the AGM this year due to 'The Association of Local Public Health Agencies (Ontario) General Operating By-Law No. 2', updated policies and procedures which align to the legislated compliance with the Ontario Not-For-Profit Corporations Act which came into effect in October 2024. The most significant change pertains to the Boards of Health election of regional representatives who will serve on the alPHa Board of Directors, and as the BOH Section Executive Committee. The BOH Section elections must take place prior to the AGM. All Board of Health members are encouraged to participate in the Section elections meeting taking place on May 6, 2025. Advance registration is required. Details are in the Notice of the alPHa 2025 AGM and Conference Calls package.

An important component of the AGM is the Resolutions session. The adoption of Resolutions for positions, coupled with the standing Resolutions and guided by the alPHa Strategic Plan, pave a clear path forward for the elected alPHa Board of Directors and the Association. Due to ONCA, the deadline is set at Friday, April 18 to submit Resolutions that request amendments to the By-Law. (Note: This is a holiday, and submissions will be accepted until Tuesday, April 22.) Monday, May 5 is the deadline for Resolutions that do not request amendments to the By-Law. Resolutions received after may still be considered under the criteria for 'Late Resolutions'. Members are strongly encouraged to submit on time.

Would you like to recognize an alPHa member in your stakeholder group who has made outstanding contributions to public health in Ontario? The alPHa Distinguished Service Awards (DSA) would be an excellent way for such recognition. DSAs are awarded annually to active alPHa member representatives who are in good standing. A maximum of one for the BOH Section, one for the COMOH Section, and one in each of the seven

public health affiliate associations may be submitted. Completed nomination packages will be accepted until Friday, April 18.

Coming up quickly on March 26 in-person and on April 2 on-line, is The Ontario Public Health Convention (TOPHC) 'Insight to Impact: Leveraging evidence & collective expertise to advance public health practice'. alPHa is pleased to be a sponsor for TOPHC, and I will be delivering opening remarks at the in-person event on March 26. Perhaps I will see you at TOPHC 2025 in March? If so, I look forward to the opportunity to connect.

Working together, on your behalf, to advance the cause of a resilient, sufficiently resourced, local public health system in Ontario is a resolute team of the alPHa Board of Directors, its Executive Committee, and under the leadership of Loretta Ryan, Chief Executive Officer, the alPHa staff.

Best regards,

Trudy Sachowski
Chair, alPHa Board of Directors

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alPHa remembers Dr. Malcolm Lock

alPHa Chair, Trudy Sachowski, has written a letter expressing sincere condolences following the unexpected passing of Dr. Malcolm Lock. alPHa joins in the celebration and memory of his considerable contributions to local public health during his two decades of leadership in the Brant County, Haldimand Norfolk, and Grand-Erie public

health units. He continuously demonstrated his dedication to the wellbeing of all residents of those communities, not least with his ongoing willingness to go where he was needed, when he was needed, even after his formal retirement more than five years ago. We also celebrate the fact that the impact of his contributions was felt well beyond the confines of the local public health agencies he chose to serve. His public health physician colleagues in the neighbouring health units in our Central West region have spoken highly of that same dedication, as well as his valuable expertise and wisdom, which helped them support the wellbeing of residents in their own communities. To read more, please click here.

2025 alPHa Conference and Annual General Meeting

We hope you are excited about the upcoming alPHa AGM and Conference. This is being held **in-person, June 18-20, 2025, at the Pantages Hotel in Toronto**. alPHa has secured hotel rooms at a discounted rate at the venue. The link you need to use to book your accommodations was sent in an e-mail on February 14. Additionally, should you need the code, please e-mail communications@alphaweb.org. Please note, we are anticipating the rooms will go quickly. *The block quickly sold-out last year and Toronto is a popular destination. Members are encouraged to book as soon as possible.* Additionally, we are excited to announce that Toronto Public Health (TPH) will be the event's co-host! Thank you to TPH for supporting the 2025 Conference and AGM. alPHa would also like to thank Vocalmeet for being a Platinum Sponsor!

Earlier this month, the **AGM Pre-Notice and Package were released. These important documents for the alPHa Membership** are available on the conference webpage, that can be found here. Please note, direct links are below.

Registration for the event will launch in mid-April. Additionally, other information, such as the conference program, will be available at that time.

- **2025 AGM & Conference Notice and Calls Package**
- **Pre-Notice for the 2025 alPHa Annual General Meeting**
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- **Conference Sponsorship Package** and **Sponsorship Commitment Form** (If you know of a potential sponsor that alPHa should reach out to, please e-mail loretta@alphaweb.org. Members' suggestions are always greatly appreciated!)

Important: New for this year – BOH Section online elections! An election to determine the representatives will be held at the alPHa BOH Section Zoom meeting on Tuesday, May 6 at 2:00 p.m. EDT for the sole purpose of electing regional representatives. All candidates must be in attendance and be prepared to give a two-minute speech to the attendees. All alPHa Board of Health Section Members who wish to participate and vote, including candidates, must pre-register by Friday, April 18 at 4:30 p.m. EDT.

alPHa will reach out at a later date to the public health units for a list of Members who plan to attend the meeting. This is a similar process to previous years in that an EA/AA will send in the list to alPHa on behalf of their Board of Health to communications@alphaweb.org. Members do not individually register.

Please contact Loretta Ryan, Chief Executive Officer, alPHa at loretta@alphaweb.org, if you have any questions.

alPHa Winter Symposium Resources from the Esri Canada Workshop are now available!

Thank you again to all of the alPHa Members who attended this year's Winter Symposium. We were glad to see so many of you engaged in discussions and dialogue on key public health issues. Presentations from this year's Winter Symposium are available here, which includes the ones from the Esri Canada workshop (other resources were posted last month and can be found there). Please note, you will need to log in to the members' side of the website to view the presentations.

GenWell Resources and GenWell Weekend

GenWell was honoured to share their message and mission with alPHa members, delivering both a workshop for executive and administrative assistants and a keynote for regional leaders. They appreciated the opportunity to connect with public health professionals dedicated to improving the well-being of their communities. GenWell is excited about the opportunity to collaborate with public health agencies across Ontario and Canada to educate, empower, and catalyze action around social health—highlighting its profound impact on mental, physical, and societal well-being.

As a follow-up to their recent sessions with alPHa, GenWell (a registered Canadian NFP) is offering a 50 per cent discount to other public health offices interested in their GenWell Social Health Workshops. Through Purpose Pricing, Members can book a session for only $2,500, with workshops ranging from 60 to 120 minutes. GenWell would be happy to discuss your unique needs and how they can support your team.

For more information, or to book a workshop, please contact Jennifer@GenWellProject.org.

In May, GenWell is encouraging everyone to take the weekend of May 2-4 to connect with family, friends, neighbours, classmates, and colleagues. They do this so that Canadians can be part of the solution to building a more connected Canada, where everyone has the opportunity to thrive. It works like this: On Friday, connect with co-workers and classmates and Saturday and Sunday, take the message home and connect with family, friends, neighbours, and your community. To learn more, click here.

Public Health Agency of Canada: Advancing early TB detection & care: Public health & clinical insights webinar

Public Health Agency of Canada | Agence de la santé publique du Canada

On Tuesday, March 18, from 1 p.m. to 2 p.m. Eastern Time, the Public Health Agency of Canada is commemorating World Tuberculosis (TB) Day via webinar. This event will give attendees an "opportunity to learn about the latest public health approaches to screening and detecting TB disease and infection at the community-level and gain a better understanding of the clinical diagnosis, treatment, and management of TB infection." **Please note, you must register in advance in order to attend. To do so, please click here.**

TOPHC 2025

TOPHC
The Ontario Public Health Convention

TOPHC is hosting a two-day convention that will include one day of virtual presentations and interactive activities and a second day of in-person workshops and networking.

Important dates

- March 26: In-person Convention
- April 2: Virtual Convention

This year's theme is: Insight to Impact: Leveraging Evidence and Collective Expertise to Advance Public Health Practice.

TOPHC brings together a multi-disciplinary community of public health professionals to prevent illness and improve health, by sharing the latest research and information, promoting best practices, and advancing evidence-based public health initiatives and policies. This is a unique opportunity to build and refine practical skills, learn best practices, keep up with new and emerging developments in the field, and network with peers across Ontario. To learn more, click here.

Get ready for 2025 alPHa Workplace Health and Wellness Month!

Yes, it's that time of year when you need to plan your physical, mental, and social activities for alPHa's Workplace Health and Wellness Month, which is happening in May! To view this year's Workplace Health & Wellness Month poster, please click here.

Head to the website to read alPHa's infographics to help you improve your health and wellness. Please note, we have substantially added to these resources over the past year and want to thank everyone for their feedback.

New for this year! Participants in Workplace Health and Wellness Month will be entered into a draw for a gift card!

Boards of Health: Shared Resources

A resource page is available on alPHa's website for Board of Health members to facilitate the sharing of and access to information, orientation materials, best practices, case studies, by-laws, Resolutions, and other resources. **In particular, alPHa is seeking resources to share regarding the province's Strengthening Public Health Initiative, including but not limited to, voluntary mergers and the need for long-term funding for local public health.** If you have a best practice, by-law or any other resource that you would like to make available via the newsletter and/or the website, please send a file or a link with a brief description to gordon@alphaweb.org and for posting in the appropriate library.

Resources available on the alPHa website include:

- Orientation Manual for Boards of Health (Revised Jan. 2024)
- Review of Board of Health Liability, 2018, (PowerPoint presentation, Feb. 24, 2023)
- Legal Matters: Updates for Boards of Health (Video, June 8, 2021)
- Obligations of a Board of Health under the Municipal Act, 2001 (Revised 2021)
- Governance Toolkit (Revised 2022)
- Risk Management for Health Units
- Healthy Rural Communities Toolkit
- The Ontario Public Health Standards
- Public Appointee Role and Governance Overview (for Provincial Appointees to BOH)
- Ontario Boards of Health by Region
- List of Units sorted by Municipality
- List of Municipalities sorted by Health Unit
- Map: Boards of Health Types
- NCCHPP Report: Profile of Ontario's Public Health System (2021)

- The Canadian Centre on Substance Use and Addiction
- The Municipal Role of Public Health(2022 U of T Report)
- Boards of Health and Ontario Not-for-Profit Corporations Act

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Calling all Ontario Boards of Health: Level up your expertise with our training courses designed just for you!

Don't miss this unique opportunity to enhance your knowledge and strengthen local public health leadership in Ontario.

BOH Governance training course
Master public health governance and Ontario's Public Health Standards. You'll learn all about public health legislation, funding, accountability, roles, structures, and much more. Gain insights into leadership and services that drive excellence in your unit.

Social Determinants of Health training course
Explore the impact of Social Determinants of Health on public health and municipal governments. Understand the context, explore Maslow's Hierarchy of Needs, and examine various SDOH diagrams to better serve your communities.

Speakers are Monika Turner and Loretta Ryan.

Reserve your spot for in-person or virtual training now! Visit our website to learn more about the costs for Public Health Units (PHUs). Let's shape a healthier future together.

Affiliates update

Affiliates

Association of Local Public Health Agencies

OPHNL

Leading the Way for Public Health Nursing

The Ontario Association of Public Health Nursing Leaders

On February 12, 2025, Nicole Welch stepped down as OPHNL President and Joanne Figliano-Scott assumed the role of OPHNL President and OPHNL Affiliate representative to alPHa's Board of Directors. Joanne was previously in the position of OPHNL President-Elect and brings 20+ years with Toronto Public Health where she is currently the Chief Nursing Officer and Director of Community Health and Well-being. A special meeting will be held on March 20, 2025 to elect a new OPHNL President-Elect. In this period of leadership transition, OPHNL's priority continues to be advancing the work of the 2024-2027 OPHNL Strategic Plan.

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alPHa Correspondence

Through policy analysis, collaboration, and advocacy, alPHa's Members and staff act to promote public health policies that form a strong foundation for the improvement of health promotion and protection, disease prevention, and surveillance services in all of Ontario's communities. A complete online library of submissions is available here. These documents are publicly available and can be shared widely.

- alPHa Letter - AMO, Underhousing & Homelessness

Ontario Public Health Directory: March 2025 update

The *Ontario Public Health Directory* has been updated and is available on the alPHa website. Please ensure you have the latest version, which has been dated as of **March 10, 2025**. To view the file, log into the alPHa website.

Please note, we will be updating the directory again soon with regards to the recently announced mergers.

Upcoming DLSPH Events and Webinars

Dalla Lana School of Public Health

- 2S/LGBTQ+ Health Hub Lecture - Cancer Person (Mar. 18)

- Building Public Trust in Health Through Culturally-Aligned (Mar. 19)
- G7 Cancer: Pathways to Precision Cancer Prevention (Mar. 20)
- The Early Ethics of Planetary Health (Apr. 2)
- META:PHI Virtual Conference 2025 (Apr. 4-5)
- Health Inc Seminar Series: Convenience does not equate to necessity (Apr. 10)

BrokerLink Insurance

Please note, alPHa's partnership with Aviva is no longer in place. All Members who are with Aviva are encouraged to explore insurance with BrokerLink.

As an alPHa member, you qualify for preferred rates on your personal home and auto insurance. Through this group insurance program, alPHa members will benefit from competitive rates and customized insurance solutions to fit your needs.

In partnership with alPHa, BrokerLink is proud to offer preferred home and auto insurance rates for members, get a quote today. Knowing what home insurance does and does not cover you for is important, especially when it comes to major risks like water damage. Learn about home insurance coverage and water damage here.

BrokerLink's 2025 Grand Group Giveaway!

Get a quote on home or auto insurance with BrokerLink, and you could win 1 of 4 cash prizes of $5,000. Don't miss your chance to save on insurance and win some cash in the Grand Group Giveaway!

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alPHa's mailing address

Please note our mailing address is:
PO Box 73510, RPO Wychwood
Toronto, ON M6C 4A7

For further information, please contact info@alphaweb.org.

News Releases

The most up to date news releases from the Government of Ontario can be accessed here.

Our mailing address is:
PO Box 73510, RPO Wychwood
Toronto, ON M6C 4A7
Canada

Public Health
Santé publique
SUDBURY & DISTRICTS

March 21, 2025

VIA ELECTRONIC MAIL

Honourable Sylvia Jones
Minister of Health of Ontario
Ministry of Health
5th Floor, 777 Bay Street
Toronto, ON M5G 2C8

Honourable Kamal Khera
Minister of Health of Canada
House of Commons
Ottawa, ON K1A 0A6

Re: Support for a Provincial Immunization Registry

Dear Honourable Minister Jones and Honourable Minister Khera:

First, let me congratulate both of you on your respective reappointments to Cabinet.

Minister Jones, our team has valued its partnership with you since your key role on the COVID-19 immunization roll-out, and we look forward to continuing to work with you on immunzaton issues, such as outlined in this letter.

Minister Khera, as you rejoin Cabinet now as the Minister of Health, we are excited to have the opportunity to engage with someone who worked on the front lines of COVID-19 immunizations can will have familiarity with the on-the-ground challenges we hope to partner with both your governments to address.

At its meeting on January 16, 2025, our Board of Health carried the following resolution #06-25:

> *WHEREAS neither Ontario nor Canada currently have a reliable, complete or timely way to record immunization information for residents;*

Sudbury
1300 rue Paris Street
Sudbury ON P3E 3A3
t: 705.522.9200
f: 705.522.5182

Elm Place
10 rue Elm Street
Unit / Unité 130
Sudbury ON P3C 5N3
t: 705.522.9200
f: 705.677.9611

Sudbury East / Sudbury-Est
1 rue King Street
Box / Boîte 58
St.-Charles ON P0M 2W0
t: 705.222.9201
f: 705.867.0474

Espanola
800 rue Centre Street
Unit / Unité 100 C
Espanola ON P5E 1J3
t: 705.222.9202
f: 705.869.5583

Île Manitoulin Island
6163 Highway / Route 542
Box / Boîte 87
Mindemoya ON P0P 1S0
t: 705.370.9200
f: 705.377.5580

Chapleau
34 rue Birch Street
Box / Boîte 485
Chapleau ON P0M 1K0
t: 705.860.9200
f: 705.864.0820

toll-free / sans frais
1.866.522.9200

phsd.ca

WHEREAS a national immunization registry has been a longstanding recommendation for strengthening public health in Canada;

WHEREAS in September 2024, the Ontario Immunization Advisory Committee released a position statement strongly urging the Ontario Ministry of Health to develop a provincial immunization registry; and

WHEREAS Peterborough Public Health (Motion 9.3.6) and Wellington-Dufferin-Guelph Public Health (Resolution 32) have also passed motions to support a provincial immunization registry;

THEREFORE BE IT RESOLVED THAT the Board of Health endorses the establishment and implementation of an Immunization Registry for Ontario;

AND THAT the Board of Health supports the establishment of a pan-Canadian immunization registry that integrates with any provincial registries.

Currently, it is not known how many Ontarians and Canadians are vaccinated for various diseases. Such diseases, including measles, polio, and pertussis, have been re-emerging globally, necessitating action to protect our populations. The efforts around measles are particularly salient, given the sizeable outbreak currently in Ontario, as well as an outbreak in Quebec. However, without a registry, we cannot effectively measure or monitor our successes or gaps in vaccination; to a great extent, we are working “blind”.

Immunization registries would enable better protecting Canadians and Ontarians from these diseases, as well as ongoing infectious threats such as influenza, RSV, and COVID-19. And registries would position us better to respond to future infectious emergencies and pandemics.

The Board encourages the province to move forward with the recommendation of the *Ontario Immunization Advisory Committee* to establish a provincial immunization registry.

However, infections do not respect provincial and territorial borders. So the Board of health further encourages the federal government to establish a pan-Canadian immunization registry that would integrate with provincial registries, such as the one we hope Ontario will design.

The Board would be pleased to offer any support we can to your governments in these endeavours, and the staff of Public Health Sudbury & Districts are available to help in any way they can. We hope to work in partnership to make our communities safer and healthier.

Sincerely,

Mark Signoretti
Chair, Board of Health

cc: Dr. Theresa Tam, Chief Public Health Officer of Canada
Heather Jeffrey, President of the Public Health Agency of Canada
Michael Sherar, President of Public Health Ontario and Chief Executive Officer
Dr. Kieran Moore, Chief Medical Officer of Health
Dr. M. M. Hirji, Acting Medical Officer of Health and CEO, Public Health Sudbury & Districts
Viviane Lapointe, Local Member of Parliament, Sudbury
Marc Serré, Local Member of Parliament, Nickel Belt
Carol Hugues, Local Member of Parliament, Algoma-Manitoulin-Kapuskasing
France Gélinas, Local Member of Provincial Parliament, Nickel Belt
Jamie West, Local Member of Provincial Parliament, Sudbury
Bill Rosenberg, Local Member of Provincial Parliament, Algoma–Manitoulin
Ontario Boards of Health

Public Health
Santé publique
SUDBURY & DISTRICTS

March 21, 2025

VIA ELECTRONIC MAIL

Honourable Sylvia Jones
Minister of Health of Ontario
Ministry of Health
5th Floor, 777 Bay Street
Toronto, ON M5G 2C8

Honourable Kamal Khera
Minister of Health of Canada
House of Commons
Ottawa, ON K1A 0A6

Re: Endorsement of the Walport Report, and for Continued focus on Public Health Emergency & Pandemic Preparedness

Dear Honourable Minister Jones and Honourable Minister Khera:

Congratulations once again on your respective reappointments to Cabinet.

At its meeting on January 16, 2025, the Board of Health for Public Health Sudbury & Districts carried the following resolution #08-25:

> *WHEREAS for the past two decades, there have been Public Health Emergencies of International Concern approximately every two years, several of which have impacted Canada;*
>
> *WHEREAS in a world that is increasingly more complex, interconnected, and uncertain, future public health emergencies maybe more impactful and difficult to manage;*
>
> *WHEREAS there are opportunities to learn lessons from the COVID-19 pandemic response, both of around successes and areas for improvement;*

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WHEREAS The Time to Act is Now: Report of the Expert Panel for the Review of the Federal Approach to Pandemic Science Advice and Research Coordination (aka The Walport Report) is one detailed effort to learn lessons from the COVID-19 pandemic response;

WHEREAS The Ontario Chief Medical Officer of Health's 2022 Annual Report Being Ready: Ensuring Public Health Preparedness for Infectious Outbreaks and Pandemics presented a laudable path forward to be better prepare for future public health emergencies;

THEREFORE BE IT RESOLVED THAT the Board of Health endorses the Walport Report and its 12 recommendations;

AND THAT the Board of Health encourages both the Federal government and the government of Ontario to act with deliberate resolve in implementing the Walport Report as well as the 2022 Chief Medical Officer of Health report, respectively.

It has now been 5 years since the COVID-19 pandemic began, and 3 years since the acute emergency response to COVID-19 ended. This has been the most acute health emergency in a generation, and the most dangerous crisis of any sort in our lifetimes. Canada performed admirably through this pandemic, saving millions of lives through science-driven leadership. However, any unprecedented event must have countless lessons with the benefit of hindsight. It is important that we learn these lessons so that we can be as ready as possible for the next health emergency. Indeed, we are already seeing a very concerning surge of avian influenza in North America's animal population and the possibility of it turning into a new pandemic.

Both the Canadian and Ontario governments have produced excellent reports to guide preparation for the next public health emergency:

- Being Ready: Ensuring Public Health Preparedness for Infectious Outbreaks and Pandemics by the Chief Medical Officer of Health of Ontario in 2023.
- The Time to Act is Now: Report of the Expert Panel for the Review of the Federal Approach to Science Advice and Research Coordination, by Sir Mark Walport for Health Canada in 2024.

Our Board previously endorsed and communicated its support for Ontario's *Being Ready* with our resolution 19-23 in April 2023. We are pleased to now endorse the Walport report as well. Its recommendations are all ones we agree will improve public health. In particular, we are impressed by the Report's recommendations for

building institutional infrastructure for long-term preparedness. We hope the federal government will move swiftly to implement these recommendations.

As a Board of Health, we are concerned that as we get farther away from the COVID-19 pandemic, the resolve to implement improvements to be better prepared for the future will wane. Indeed, we worry that momentum has already been lost. We note that Ontario's report committed to "regularly assess and report on the public health sector's progress in sustaining, strengthening, and developing its capacity to be ready for the next outbreak or pandemic". No such report on progress has yet been produced after almost 2 years.

We commend both your governments for producing excellent and laudable reports for future public health emergency and pandemic preparedness. And we implore both your governments to recommit to implementing these reports. As Avian influenza and other public health threats continue to arise, the work your governments have outlined in these two reports is absolutely necessary to advance.

Our Board and the staff of our agency stand ready to help your governments in any way that we can as you pursue implementation of these reports.

Sincerely,

Mark Signoretti
Chair, Board of Health

cc: Dr. M. M. Hirji, Acting Medical Officer of Health and Chief Executive Officer
Theresa Tam, Chief Public Health Officer of Canada
Dr, Kieran Moore, Chief Medical Officer of Health for Ontario
Dr. Kate Bingham, Associate Chief Medical Officer of Health for Ontario
Viviane Lapointe, Local Member of Parliament, Sudbury
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Ontario Boards of Health