

This document was created using best practices in document accessibility. Should you need assistance reading or understanding this document, call 902-543-8181 or email info@modl.ca.

Municipal Council Meeting Agenda
Tuesday, February 28, 2023 – 9:00 a.m.
MODL Council Chambers – 10 Allée Champlain Drive, Cookville

- 1. Call to Order**
 - 1.1 Mi'kma'ki Territorial Acknowledgement
- 2. Announcements, Acknowledgements, Recognition**
 - 2.1 International Robotics Competition – The Techno Ninjas
- 3. Public Input (15 Minutes)**
- 4. Changes/Approval of Agenda (as circulated)**
- 5. Approval of Minutes – February 14, 2023**
- 6. Business Arising from Minutes**
- 7. Awarding of Tenders/RFPs**
 - 7.1 Award of RFP 2022-05-401 Water Storage Tank – Design, Construction & Contract Administration Services 1-4
- 8. Presentations/Scheduled Times - Nil**
- 9. Consideration of Correspondence - Nil**
- 10. Recommendations from Committees & Boards**
 - 10.1 Policy & Strategy Committee** **5**
 - 10.1.1 Canadian Lyme Disease Research Network..... 6-7
 - 10.2 Municipal Joint Services Board (MJSB)**
 - 10.2.1 Pre-budget Approval Request re Purchase of Wheeled Excavator (MJSB) 8-12
 - 10.3 Regional Emergency Measures Organization (REMO)**
 - 10.3.1 2023/24 Regional Emergency Management Organization Budget (REMO) 13-14
- 11. Staff Reports**
 - 11.1 Finance**
 - 11.1.1 Riverport Electric Light Commission – Request for Financial Assistance 15-17

11.2 Engineering

11.2.1 Pre-Budget Approval re Osprey Village Trail Connector 18-20

11.3 Planning

11.3.1 MODL 2040 - Drinking Water..... 21-45

12. Mayor's/Deputy Mayor's/Councillors' Matters

12.1 LCLC Update

12.2 Region 6 Update

12.3 Deputy Mayor's Update

12.4 Mayor's Update

13. Added Items

14. In Camera

14.1 Personnel Matter under Section 22(2)(c) of the MGA

15. Adjournment

Council
Item: #7.1
Date: February 28, 2023
Authorization: T. MacEwan



Municipality of the District of Lunenburg

Request for Decision

Report to: Mayor and Council

Submitted by: Larry Feener, P.Eng., Municipal Engineer

Date: February 28, 2023

Re: RFP Award 2022-05-401
Water Storage Tank- Design, Construction and
Contract Administration Services

Recommendation

Council authorize staff to award RFP 2022-05-401 Water Storage Tank – Design, Construction and Contract Administration Services, and resident inspection to CBCL Limited for an amount of up to \$565,380 which includes a 15% contingency and net HST.

Executive Summary

Osprey Village, located near Exit 12 in Cookville, is a growing commercial development that continues to attract new development. The Municipality of the District of Lunenburg (MODL) is undertaking several investments to further support the residential and commercial success of Osprey Village such as working with our Federal and Provincial partners to construct a 9.7-million-dollar active transportation corridor connecting Osprey Village to Bridgewater as well as trail development that will link Osprey Village to a larger trail network.

MODL wishes to improve existing servicing and encourage further economic development in the area by ensuring there is adequate water services for both domestic supply and fire protection. The addition of a water tank into the Public Service Commission of Bridgewater (PSCB) water utility infrastructure is primarily intended to meet fire flow objectives in Osprey Village and provide additional water capacity for future development in the Osprey Village area.

On June 18, 2021, the province of Nova Scotia partnering with the federal government, Municipality of the District of Lunenburg (MODL) and Town of Bridgewater (TOB) announced

funding through the Green Infrastructure, Investing in Canada Infrastructure plan, for the construction of a new water tank. The estimated cost was \$2,905,000.

Discussion

In 2020, Englobe identified several potential sites that a new water storage tank could be located. A site selection analysis of these sites was completed by Design Point Engineering & Surveying Ltd in June 2021, recommending the Pine Grove site as the best option for the new water storage tank.

A Request for Proposal (RFP) was issued December 20, 2022 and closed January 26, 2023. The RFP requested Proposals from qualified consultants to complete a design, construction and contract administration services, and cost estimating for a new water storage tank and associated infrastructure. Members of the RFP Evaluation Committee included staff from MODL Engineering Department and a staff member from the Public Service Commission of Bridgewater’s Engineering Department.

The RFP requested Proponents provide the following deliverables as part of the Proposal:

- Preliminary and detailed design of a 14 metre diameter by 16 metre tall water storage tank;
- Preparation of Tender Documents including Engineering drawings for the construction; and
- Construction Oversight and Contract Administration.

Three (3) proposals were received from Englobe Corp., CBCL Ltd., and Design Point Engineering before the closing date and time. Technical proposals were evaluated based on the criteria outlined in the RFP including Design Team Experience & Qualifications, Key Personnel assigned, Management of Services, and Approach and Methodology for a total available score of 80 percent. Financial proposals were evaluated based on lowest cost and had an available score of 20 percent. Results of the scoring are shown in the table below:

Criteria/Element	% of Score Available	% Achieved	% Achieved	% Achieved
Proposal Submitted By	NA	Englobe	CBCL	Design Point
Average Technical Score	80	57.0	65.5	63.8
Financial Score	20	17	20	12
TOTAL	100	74.0	85.5	75.8

Financial details were as follows:

Financial Proposal Submitted By	Englobe	CBCL	Design Point
Part A-Project Admin, Preliminary and Detailed Design, Tender Services, Construction Admin	\$318,033.40	\$280,514.00	\$423,890.00
Part B-Resident Inspection	\$236,480.00	\$190,912.00	\$344,960.00
TOTAL	\$554,513.40	\$471,426.00	\$768,850.00

Note: Prices exclusive of HST.

CBCL had the lowest overall cost and highest total score.

Budget Implications

The total estimated cost of the water storage tank project is \$3.84M including Engineering. The approved 2022/23 Capital Budget included a portion of the Engineering costs in the amount of \$150,000 for design, the remaining Engineering costs during construction were included in the 2023/24 proposed budget.

The Federal and Provincial Government is funding 73.3% of the \$2,905,000 and the remaining costs are being shared by MODL and Town of Bridgewater at 50% each.

Strategic Plan

Osprey Village Development is one of the Economic Development 2022/23 Strategic Priorities of Council.

Work Plan

The Osprey Village Water Storage Tank project is included in the 2022/23 approved Capital Budget and 2023/24 Proposed Capital Budget.

Alternatives

N/A

Conclusion

The addition of the Osprey Village Water Storage Tank and associated infrastructure will ensure there is adequate water services for both domestic supply and fire protection for both existing and future developments for Osprey Village and surrounding area.

Report Preparation	
Department	Engineering & Public Works
Report Prepared by	Larry Feener, P.Eng.
Report Approved by	Stephen W. Pace, MBA, P.Eng.
Date Reviewed by C.A.O.	February 28, 2023

Council
Item: #10.1
Date: February 28, 2023
Authorization: T. MacEwan



Municipality of the District of Lunenburg

10 Allée Champlain Drive, Cookville, Nova Scotia, Canada, B4V 9E4
Phone: 902.543.8181 Fax: 902.543.7123 Web Site: www.modl.ca

February 21, 2023

To Her Worship, Mayor Bolivar-Getson, and Councillors
of the Municipality of the District of Lunenburg

Dear Mayor and Councillors:

The Policy & Strategy Committee, in session on Tuesday, February 21, 2023, made the following recommendations to Council:

1. That Municipal Council approve MODL join the Canadian Lyme Disease Research Network as a partner municipality, and that the Manager of Corporate Services and Communications be the Municipality's staff representative.

Respectfully submitted,

Chairperson and Members
Policy & Strategy Committee

/jp



Municipality of the District of Lunenburg

Report to Council

Report To: Council
Submitted By: Sarah Kucharski, Manager, Corporate Services & Communications
Date: February 21, 2023
Re: Canadian Lyme Disease Research Network Request

Background

In 2017, Council received presentations from Nova Scotia Public Health, the Public Health Agency of Canada (PHAC) and a staff working group on the issue of Lyme Disease. Three motions were passed indicating MODL's commitment to improving Lyme Disease prevention and treatment in Nova Scotia. We continue to execute on the commitments made at that time.

On January 10, 2023, Council received a presentation from Camille Guillot, Research Assistant, Université de Montréal and Dr Jean-Philippe Rocheleau, DMV PhD. They represent the Canadian Lyme Disease Research Network, a group working to identify science-based interventions to reduce the risk of Lyme disease and share science and experience among local partners and researchers, and the University of Montreal.

They are asking potential municipal partners to commit to the following:

- Support in the creation of a toolbox that contains the various interventions Lyme prevention,
- Identifying relevant stakeholder groups with the input of the research team,
- Sending staff to attend workshops (virtual or in person),
- Represent views of municipality in discussions.

Ms. Guillot estimates that municipal staff time needed would be between 20 and 30 hours, between February and July 2023. They do not require any additional funding; however, they would appreciate the use of our Municipal Services Building Council Chambers as a meeting space for a workshop, should the dates/times work with their needs.

Recommendation/Motion

That Municipal Council approve MODL join the Canadian Lyme Disease Research Network as a partner municipality, and that the Manager of Corporate Services and Communications be the Municipality's staff representative.

Report Preparation	
Department	Administration
Report Prepared by	Sarah Kucharski, Manager, Corporate Services & Communications
Report Approved by	
Date Reviewed by C.A.O.	

Copy

Municipal Joint Services Board

131 North St, PO Box 209, Bridgewater, NS B4V 2W8
Phone: (902) 543-2991 Fax: (902) 530-5189

Council

Item: #10.2.1

Date: February 28, 2023

Authorization: T. MacEwan

A Joint Services Board

MEMORANDUM

To: Council for the Municipality of the District of Lunenburg
From: Municipal Joint Services Board, Lunenburg Region
Date: February 23, 2023
Subject: Pre-Budget Approval – Purchase of Wheeled Excavator

Decision [] **Direction** [] **Information** []

Recommendation

The MJSB Board recommends the following:

That the Municipality of the District of Lunenburg give pre-budget approval, under MJSB Procurement Policy Section 19.1.12, for the sole-sourced purchase of the demo model Volvo EW160E Wheeled Excavator, at a price of \$291,688 including tax.

Background

In accordance with MJSB Procurement Policy, Section 19.1.12, alternative procurement practices may be authorized by the Board under exceptionally advantageous circumstances.

MJSB's budget is approved by the three Councils, upon the recommendation and approval of the Board. Per the MJSB agreement, MJSB budget approval requires the approval of at least two of the partner Councils, representing at least 51% of the municipal operating contributions. The MJSB budget is approved as a component of each Council's overall annual budget.

The Board meeting to review MJSB's budget and recommend its approval to the Councils will take place in early March. Subsequent Council approvals may not be completed until late spring.



Discussion

The MJSB 2023/24 capital program includes the replacement of the site's wheeled excavator. Rather than purchase a new wheeled excavator, a demonstration model with significant usable life remaining has been sourced from Volvo. The price for this excavator is \$45,000 less than the same machine new, and \$50,000 less than the 2022 price for a similar, lower capacity model from Caterpillar. The demo model unit has 1,500 hours remaining on its warranty.

There is only one demonstration model available, and it cannot be held for purchase without a commitment in the form of a purchase order.

In accordance with MJSB Procurement Policy Section 19.1.12, the MJSB Finance Committee has approved, and recommended that the Board provide pre-budget approval, to procure the demonstration model sole-sourced from Volvo.

Subject to Board and Councils' pre-budget approval, a commitment would be made to Volvo in fiscal year 2023-23, to purchase the unit in the 2023-24 fiscal year.

Further details are provided in the attached Capital Budget expenditure explanation.

Financial

The MJSB 2023/24 capital budget includes \$300,000 to replace the current 2011 Cat313D Wheeled Excavator, which is sufficient to purchase the proposed demo model wheeled excavator. This funding would be insufficient to purchase a new wheeled excavator, and some important capital work would need to be deferred to a later year in order to purchase a new unit.

Options

A tender process can be initiated to purchase a new wheeled excavator. However, preliminary research indicates that pricing for a new model will be \$45,000 to \$50,000 higher than the demo model that is proposed to be purchased. In addition, the timing to obtain a new model is unknown. Delaying the replacement of the wheeled excavator would increase probability of operational issues and repair/leasing costs arising if the existing wheeled excavator becomes unserviceable.

Attachment

Capital Budget Expenditure Explanation – Wheeled Excavator

RECOMMENDATION FOR CAPITAL EXPENDITURE

Please note, this form is to be completed for all proposed MJSB asset acquisitions and capital expenditures for the budget year 2023-2024. The purpose of this form is to provide a systematic and consistent approach to evaluating the benefits and costs of each capital program and to provide clear information on the project for consideration.

Complete each section. Where necessary, attach additional comments, schedules, reports and drawings/ photographs.

Section A Proposed Capital Program

Project Name: Wheeled Excavator

Expected useful life: 10 years

Project Description:

The existing Cat 313D 2011 wheeled excavator will be replaced with a newer wheeled excavator. The cost of \$291,688 is the price, including tax, to purchase a demonstration wheeled excavator from Volvo. Th machine being purchased has 500 hours on it, but still has 1,500 hours of warranty left, and is approximately \$50,000 cheaper than a comparable new/unused wheeled excavator.

Needs Assessment: Urgent: X Potential Health & Safety Concerns: _____
Compliance: _____

a. Explain why this project is required and what public needs it meets or public benefits it provides. Be specific.

The wheeled excavator is primarily used in for loading recyclables. It also supports loading landfill and C&D as a backup. The wheeled excavator is used every day and is critical to being able to load and unload recyclables. There is no other equipment that can fulfill the function of this machine without causing damage to infrastructure or equipment, or creating safety concerns.

The current wheeled excavator is 11 years old, and is beyond its normal expected lifespan. If it were to break down and be unrepairable, we would need to rent or lease a replacement at high cost. It should be replaced now, before an issue arises that would result in high operating costs to replace it, or to repair it.

The wheeled excavator has an engine oil leak that is not cost-effective to repair, but is a sign that it may soon experience complete failure.

b. What are the service expectations for this acquisition? (e.g. population served, gallons per day treated, labour hours saved)

Operations interruption if wheeled excavator fails to perform. Recyclables will rapidly pile up and we will have no space in which to receive them. This machine is critical to cost-effectively maintain service levels. The height of the trailers used to transport recyclables (13'6") is much higher than any of our loaders can reach, so we have no other way to load any recyclables.

The wheeled excavator loads 2000 Metric Tonnes of curbside and commercial recyclables annually.

It may also be used in other areas on-site, as required: loading landfill trailer for shipment, processing construction and demolition waste, and other general site maintenance.

The wheeled excavator is also used to fulfill two site contracts, to load GE cardboard (a further 900 Metric Tonnes annually), and to load Michelin landfill/recyclables. If we did not have the wheeled excavator, we would not have an efficient way to fulfill these two contracts and may need to exit the contracts.

c. The proposed capital program is specifically for which functional area (Admin, Recycling, C&D etc)

Primary function is within the Recycling Building Tipping Floor Area, but it can also be used on the entire site.

Section B Capital Program Funding

If it is a new acquisition, please provide cost/ benefit analysis. Costs must include all project-related items such as design fees, engineering services, transportation, etc. Please list of other funding opportunities, if applicable.

Costs: \$291,687.94

Benefits: Replacing this machine will ensure reliability of future operations. It will also prevent risk of significant future cost to rent or lease one, should it be unserviceable for any period of time.

Section C Procurement and Quality Assurance Program

a. Briefly provide the method of purchasing (See Procurement Policy):

Tender RFP EOI Written Quote

b. Who will be responsible for the:

Specification development: Maintenance Supervisor

Applicable warranty: 2,000 hours

Project Lead Person: Site Supervisor

c. Description of construction and design, if applicable (if applicable, attached related documents):

N/A

d. Project review:

Replacing the Wheeled Excavator

Expected date to replace this asset or equipment by year: 2032



Council
Item: #10.3.1
Date: February 28, 2023
Authorization: T. MacEwan



Municipality of the District of Lunenburg

10 Allée Champlain Drive Cookville Nova Scotia Canada B4V 9E4

Administration

Phone: 902.543.8181 Fax: 902.543.7123 Web Site: www.modl.ca

February 13, 2023

Mayor Carolyn Bolivar-Getson & Council
Municipality of the District of Lunenburg
10 Allée Champlain Drive
Cookville NS B4V 9E4

Dear Mayor Bolivar-Getson:

RE: 2023/24 REMO Operating Budget

At the January 16, 2023, Regional Emergency Management Organization (REMO) Advisory Committee meeting, the Committee passed the following motion:

“that the Regional Emergency Management Advisory Committee recommends a total 2023/24 budget of \$171,800 to partner Municipal Units for approval.”

Please find attached the recommended Operating Budget for REMO for the fiscal year 2023/24, indicating the Municipality of Lunenburg’s share of \$85,715.37. Please note there is no Capital Budget for the fiscal year 2023/24.

Please forward this budget to your Council for consideration and approval. Once approved, please forward a copy of Council’s motion approving the budget to Joanne Powers, Executive Assistant, Municipality of the District of Lunenburg (joanne.powers@modl.ca) for insertion on a future REMO agenda.

Sincerely,

A handwritten signature in blue ink, appearing to be "Tom MacEwan".

Tom MacEwan
Chief Administrative Officer

/jgp
Attachment

cc: Angela Henhoeffler, REMC

Regional Emergency Management Budget 2023/24

Fiscal Year Period April 01, 2023 To March 31, 2024							
REMO	YTD	Commitment	Annual Budget	Funds Available	% Used	Budget 2022/2023	Proposed 2023/2024
TRAINING/ TRAVEL	5,730.42	2,572.08	8,200.00	-102.50	101%	8,200.00	11,000.00
ADMINISTRATION	79,688.53	30,995.61	113,100.00	2,415.86	98%	113,100.00	133,900.00
PROJECTS	1,110.37	0.00	2,000.00	889.63	56%	2,000.00	4,400.00
GRANTS & CONTINGENCY	12,063.52	10,936.48	23,000.00	0.00	100%	23,000.00	22,500.00
TOTAL REMO BUDGET	98,592.84	44,504.17	146,300.00	3,202.99	98%	146,300.00	171,800.00

Cost Sharing	2022-23 Budget			2023/24 Proposed Budget			
	UA 2021/22	share	Contribution	UA 2022/23	share	Contribution	Increase
Town of Bridgewater	705,421,934	12.44733500%	\$ 18,210.45	715,142,664	12.35482161%	\$ 21,225.58	\$ 3,015.13
Town of Mahone Bay	142,808,678	2.51989252%	\$ 3,686.60	145,777,562	2.51845662%	\$ 4,326.71	\$ 640.11
District of Chester	1,707,471,788	30.12873902%	\$ 44,078.35	1,741,116,861	30.07957615%	\$ 51,676.71	\$ 7,598.37
District of Lunenburg	2,820,875,547	49.77500873%	\$ 72,820.84	2,887,963,821	49.89253140%	\$ 85,715.37	\$ 12,894.53
Town of Lunenburg	290,674,795	5.12902474%	\$ 7,503.76	298,368,092	5.15461423%	\$ 8,855.63	\$ 1,351.86
Totals	5,667,252,742	100.0%	\$ 146,300.00	5,788,369,000	100.00000000%	\$ 171,800.00	\$ 25,500.00

Council
Item: #11.1.1
Date: February 28, 2023
Authorization: T. MacEwan



Municipality of the District of Lunenburg

Request for Decision

Report to: Council
Submitted by: Elana Wentzell, Director of Finance
Date: February 28, 2023
Re: Riverport Electric Light Commission Request for Financing

Recommendation

It is recommended that Municipal Council debate the merits of the options presented.

Executive summary

At the February 8, 2023 Finance Committee meeting, a request for financing was received from the Riverport Electric Light Commission (RELC) in the amount of \$350,000 to assist in undertaking necessary capital upgrades. The Finance Committee discussed the request and made the following motion:

Moved by Councillor Whynot, seconded by Deputy Mayor Hubley that the Finance Committee refer the request from Riverport Electric Light Commission for Financial Assistance to staff for review and report back to the February 28, 2023, Council Meeting with a recommendation.

Discussion

The RELC is an elector-owned public electric utility, incorporated by an Act of the Nova Scotia Legislature in 1920. This legislation enables RELC to issue debentures in order to raise funds to cover its expenditures. The legislation also enables the Municipality of Lunenburg to guarantee the principal and interest of debentures issued by the RELC by a two thirds vote by Municipal Council. This guarantee is secured by the taxable property within the RELC District.

The issuance of debentures is an older practice. Municipalities used to issue their own debentures. The Province created the Municipal Finance Corporation (MFC), now known as the Municipal Finance Department, so Municipal units could take advantage of more favorable

interest rates by borrowing as a group under the Provincial umbrella. The RELC cannot utilize the MFC as they do not qualify as a Municipal unit.

The RELC could borrow against its assets, like any other business. However, by borrowing from MODL, they are hoping to receive a more favorable interest rate than they can get from a lending institution. MODL would have to use its own reserves to accommodate this request.

The Municipality has a loan guarantee policy where community organizations and Fire Departments can receive a loan guarantee of up to \$100,000 for up to 10 years if the loan guarantee does not exceed 60% of the owned assets. Loan guarantees require Ministerial approval. RELC does not qualify as a non-profit organization under the policy. However, MODL could amend its policy to allow RELC to receive a loan guarantee similar to other organizations in MODL. This would enable the RELC to get a more favorable interest rate when borrowing funds from a financial institution.

Budget implications & Strategic Priorities

If the Municipality were to loan funds to RELC, this would tie up Municipal reserves until the loan was repaid. Municipal Council has identified Strategic Priorities for investment in the District. This request could be considered an “Emerging Issue” priority. A locally owned Electric Utility in MODL has been beneficial to the municipal residents that live in the electric distribution area for over 100 years.

Alternatives

Staff believe there are some options for Council to consider:

1. Approve the financing request up to \$350,000, conditional on NSUARB approval of the RELC Capital Plan, with proof of work requirements (invoices from contractors) to be submitted before funds are released. The borrowing should not exceed 10 years, and the interest rate should be set at 5.4%, the amount MODL currently earns on its own funds on deposit at the bank.
2. Direct Staff to amend Policy 006 Loan Guarantees for Community Organizations to include for-profit community run organizations like Riverport Electric Light Commission;
3. Deny the request.

Conclusion

Staff believe that developing and fostering a relationship with RELC is important. However, MODL is limited in its ability due to its own policies and the Provincial regulations that govern RELC. Council should determine which option would be in the best interest of this continued relationship and the MODL ratepayers.

Report Preparation	
Department	Finance
Report Prepared by	Elana Wentzell
Report Approved by	
Date Reviewed by C.A.O.	

Council
Item: #11.2.1
Date: February 28, 2023
Authorization: T. MacEwan



Municipality of the District of Lunenburg

Request for Decision

Report to: Mayor and Council
Submitted by: Jamie Burgess, P.Eng., Municipal Engineer
Date: February 28, 2023
Re: Request for Pre-Budget Approval Osprey Village Trail Connector

Recommendation

Council give pre-budget approval for the Osprey Village Trail Connector project for \$800,000, including net HST, as identified in the 5-year Capital Budget Plan for 2023/24.

Executive Summary

Osprey Village, located at Exit 12 in Cookville, Lunenburg County is an area of strong economic growth and continues to be an area of interest for further development as an area of mixed use residential and commercial opportunities. There has been considerable investment in recent years by new enterprises and proposed expansion of existing occupants within Osprey Village.

New services and amenities have been proposed to further support residents both inside Osprey Village and those in the Municipality as a whole. One of these proposed projects is the Osprey Village Trail Connector which will serve as a multi-use trail, linking the previously separate trail systems of the rails to trails network along the LaHave River and the Central Nova/Adventure Trail in the Oakhill area. This connection will allow both pedestrians and Off Highway Vehicles (OHVs) a viable route through Osprey Village and allow for improved access to services in a safe manner. This trail has been a priority for MODL, trail associations and is supported by local businesses.

Discussion

Municipal Staff have been working with **exp** Services to design an Off Highway Vehicle trail that will connect the Central Nova trail along Highway 103 to the LaHave River Trail through Osprey Village that will safely allow OHV traffic and pedestrians to travel between the two trail networks. This design has considered safe public highway crossings, wetland crossings, extreme terrain, the need to access businesses, to create the most advantageous trail

alignment. Many combinations of alignments have been considered to address all the obstacles and requirements of this trail through Osprey Village. **Exp Services** has now completed a plan that is ready to go to tender. It is recommended to tender the **Osprey Village Trail Connector** project early in the season with the intention of obtaining more favorable pricing.

Budget Implications

The proposed 2023/24 capital budget is \$800,000 including net HST, contingency, contract administration, and construction oversight. This amount is significantly larger than the \$250,000 shown in the 2022/23 budget. The lower 2022/23 budget cost estimate was provided for a trail that was significantly different from the current design. The previous trail alignment cost estimate was for a shorter trail that did not include guard rails, fencing, provisions for reinstatement and all the necessary water course alterations.

The proposed longer trail alignment is required to prevent OHVs traveling on public roads and to allow for safe crossing of both Pinegrove Road and Highway 10. The new proposed crossing points on both the Pine Grove Road and Highway 10 are the only locations available that will meet the requirements of Nova Scotia Transportation & Public Works for safe sight stopping distances in the Osprey Village area.

Strategic Plan

Investing in Infrastructure (Expanding Recreation Infrastructure) is one of Council's 2022/23 Strategic Priorities.

Opportunities to include or improve accessibility will be considered during the various phases of the project.

Work Plan

The Osprey Village Connector Trail project is included in the 5-year Capital Budget plan for 2023/24.

Alternatives

Council may decide to defer the decision to pre-approve the Osprey Village Connector Trail to the regular 2023/24 budget process.

Conclusion

Investing in transportation links such as the Osprey Village Connector Trail will further support economic activity and access to Osprey Village by other transportation options and groups. Ensuring this project is tendered early in the season will allow for the most advantageous pricing to be obtained.

Council give pre-budget approval for the Osprey Village Connector Trail project for \$800,000 including HST, as identified in the 5-year Capital Budget Plan for 2023/24.

Report Preparation	
Department	Engineering & Public Works
Report Prepared by	Jamie Burgess, P.Eng.
Report Approved by	Stephen W. Pace, MBA, P.Eng.
Date Reviewed by C.A.O.	February 28, 2023



Municipality of the District of Lunenburg

Executive Summary- Drinking Water

Report to: Municipal Council

Prepared by: Ella R. Gindi, Planner I

Introduction

A safe drinking water supply is a basic requirement for all Nova Scotians. Nova Scotia's Statements of Provincial Interest (SPI) require planning documents to protect all water supply watersheds regardless of ownership. The towns of Mahone Bay, Bridgewater and Lunenburg rely on watersheds within MODL that were designated by the province under the Environment Act.

- Town of Mahone Bay: Oakland Lake Watershed (1963)
- Town of Bridgewater: Hebb, Milipsigate and Minamkeak Lake Watershed (1964), and
- Town of Lunenburg: Dares Lake Watershed (1972).

MODL does not operate its own municipal water system, but some MODL properties near the towns have access to town water services. One such area, Osprey Village, is particularly important as it offers opportunities for growth at higher densities than other areas of the municipality. To ensure a reliable and safe drinking water supply for MODL residents, it is vital that the watersheds are protected and managed properly. Planning staff are recommending three zones to adequately protect MODL's three Protected Water Areas (PWA) and their natural boundaries.

Engagement:

Planning staff has collected feedback from Council, water utilities, and the provincial watershed planner. During discussions following earlier workshops with Council, town water utilities emphasized the need for stronger policies to protect undeveloped land by limiting development to safeguard the quality of drinking water. The utilities also support protecting the natural boundaries of the watersheds. Based on the feedback, and the guidance received from both the province and best practices research, planning staff has developed revised recommendations to protect MODL's watersheds.

Recommendations and Justifications

Planning staff's recommendations are based on the Municipal Government Act, Environment Act, best practices, a literature review, and comments from stakeholders. The following are a summary of the recommended policies and regulations:

1. Acknowledge and protect the entire natural watershed to mitigate contamination downstream and safeguarding drinking water quality.
 - Existing PWAs do not accurately reflect the natural watersheds due to limited technology when they were established in the 1960s.

- Provincial guidelines and literature suggest protecting the entire natural watershed helps to ensure a safe supply of potable water.
2. Establish Three Protected Watershed Area (PWA) zones (see appendix I map 1).
 - **PWA-1:** Most restrictive zone and proposed to match the boundaries of the Oakland and Dares lakes PWAs, which have already been designated by the province.
 - **PWA-2:** Intermediate restrictive zone and proposed to match the boundaries of the Hebb, Milipsigate and Minamkeak Lakes PWAs, which have already been designated by the province. The land use controls would be less stringent as compared to PWA-1.
 - **PWA-3:** Least restrictive zone proposed to apply to the areas within the natural watersheds of Dares, Hebb, Milipsigate, and Minamkeak Lakes but outside the existing PWAs. This zone would contain the least stringent land use controls.
 - Our natural watersheds and lake sizes vary. The SPI implies that smaller waterbodies are more susceptible to contamination. A three-zone approach would help to protect drinking water while permitting development to occur in the intermediate and least stringent PWA zones with applied water setbacks.
 3. Establish appropriate setbacks and vegetative buffers to protect water quality in each zone.
 - Setbacks and vegetative buffers are integrated planning tools for mitigating contaminants from entering watercourses (e.g., nitrogen, petroleum, and phosphorus).
 - A 30m vegetative buffer attenuates sediment and phosphorus but only filtrates 50% nitrogen. A 50m buffer removes 80% of nitrogen and enhances the safety of stream-breeding amphibians.
 - A 75 m development setback surrounding the PWA-1 and PWA-2 would help protect the water quality and mitigate blue-green algae.
 4. Require an erosion and sedimentation mitigation plan as a condition of a proposed development.
 - Municipalities are mandated to establish measures to reduce erosion, sedimentation, runoff, and vegetation removal associated with development.
 - Sedimentation from disturbed areas is a significant source of stormwater pollution.
 - Runoff entering watercourses impacts water quality, is costly and affects aquatic ecosystems, potentially violating the fisheries Act and Environment Act.
 5. Regulating lot coverage to reduce surface runoff by minimizing impervious surfaces through a 2-acre lot size and 10% lot coverage.
 6. Introduce an approvals process to control the redevelopment of existing nonconforming uses, or changes in use within the PWA-1 and PWA-2 Zone.
 - Balances the expansion of existing uses against the risks posed to drinking water quality by enabling existing nonconforming uses.
 7. Restrict new municipal roads and subdivision on private roads within the PWA-2 Zone.
 - Kings County and Chester Municipalities use this policy to reduce development, impervious surfaces and runoff that carries contaminants into a watercourse.

Implications (see appendix I, Table 2)

- Within the PWA-1 zone only water utility uses, conservation uses, and open space uses would be permitted.

- In Oakland, there are 87 properties with no existing residential uses. 12 properties are owned by the Town of Mahone bay. Hence 57 properties will be impacted. In Dares Lake, PWA-1 zone, 28 properties would be impacted.

Table 1: Proposed Watershed Land Use Regulations

Land use regulations for the following watersheds	Dares Lake Watershed	Hebb, Milipsigate and Minamkeak Lakes Watershed	Oakland Lake Watershed
Protecting the natural watershed	Yes	Yes	Yes
Zoning	PWA-1 and PWA-3	PWA-2 and PWA-3	PWA-1
Watercourse Setbacks and vegetative buffers	75m for development in PWA-1 and 30m in PWA-3 100m livestock setback 30m vegetative buffer both zones	75m for development in PWA-2 and 30m in PWA-3 100m livestock setback 30m vegetative buffer both zones	75m for development 30m vegetative buffer
Erosion Control	Erosion and sedimentation mitigation plan	Erosion and sedimentation mitigation plan	Erosion and sedimentation mitigation plan
Lot Size and Coverage	2 acres lot with max 10% lot coverage	2 acres lot with max 10% lot coverage	2 acres lot with 10% max lot coverage
Nonconforming use-expansion or alteration	In PWA-1: development agreement	N/A	In PWA-1: Development agreement
Permitted Land Uses	PWA-1: municipal water operations and treatment facilities, open space, conservation, existing use, existing residential use, and associated accessory uses. PWA-3: residential use, commercial use, institutional use, agricultural use (follow the setback requirement for the keeping of livestock) and open space.	PWA-2: conservation, open space, horticulture, silviculture, residential use and associated accessory uses. PWA-3: residential use, commercial use, institutional use, agricultural use (follow the setback requirement for the keeping of livestock), renewable energy and open space.	PWA-1: municipal water operations and treatment facilities, open space, conservation, existing use, existing residential use, and associated accessory uses.
Public and Private Roads	Restricted in PWA-1	Restricted in PWA-2	Restricted in PWA-1

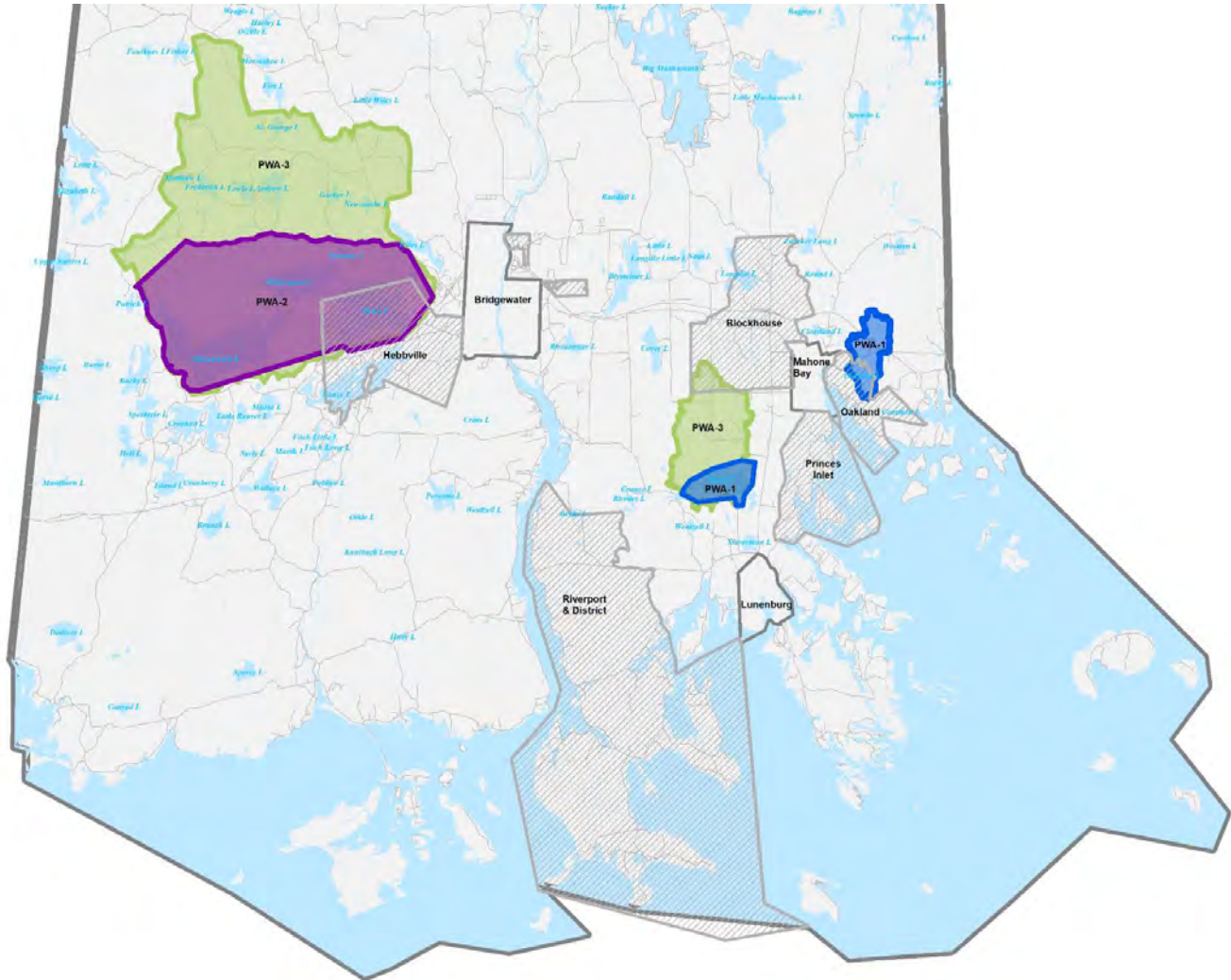
Table 2: Number of Properties Impacted in each watershed

Watershed Name	Dares Lake Watershed	Hebb, Milipsigate and Minamkeak Lakes Watershed	Oakland Lake Watershed
Number of Properties	<u>Total</u> : 189 properties <u>Existing Protected Area</u> : 36 properties/ 2 dwellings <u>Natural Watershed</u> : 153 properties/ 5 dwellings	<u>Total</u> : 1401 properties/ 402 dwellings <u>Existing Protected Area</u> : 658 properties/ 75 dwellings (344 are government owned. 266 properties out of 344 are owned by PSC) <u>Natural Watershed</u> : 765 properties	87 properties/ 0 dwellings





Number of Impacted Properties	29 properties (excluding properties owned by the Town of Lunenburg)		57 properties (excluding properties owned by the Town of Mahone Bay and Majesty of the King)
--------------------------------------	---	--	--

*Impacted Property: Means a currently undeveloped property that would be prohibited from new residential uses.

Map 1: Drinking Water Supply Are



Part D; Environment and Climate - Drinking Water Watersheds

-  Areas With Secondary Planning Strategies
-  PWA - 1
-  PWA - 2
-  PWA - 3



0 1.25 2.5 5 7.5 10 Kilometers



Sources: Digital Base Map Data from the Nova Scotia Geomatics Centre, Amherst, NS

Disclaimer: Information compiled from numerous sources and may not be complete or accurate. Graphical representation only.

Date: January 2023

Prepared By: Planning & Development Services
Municipality of the District of Lunenburg



Municipality of the District of Lunenburg Background Report

Report to: Municipal Council

Prepared by: Ella Gindi, Planner I

Date: November 21, 2022

Re: Drinking Water

Introduction

A safe supply of drinking water is a basic requirement for all Nova Scotians. While the Municipality does not currently own and operate its own municipal water supply, the Towns of Bridgewater, Lunenburg, and Mahone Bay all depend on water sourced from watersheds located within the MODL. Some of our communities that are in proximity to the towns receive municipal water services from the towns. Osprey Village water services comes from the Town of Bridgewater. Drinking Water connection to Osprey Village is a crucial step for establishing Osprey Village as MODL's prominent growth node.

The Nova Scotia **Statements of Provincial Interest** require planning documents to protect all water supply watersheds regardless of ownership.

The previous secondary planning strategies in Hebbville and Oakland addressed the protection of watersheds in their documents that reflected some of unique characteristics of the watersheds they protected. However, there is a need for a comprehensive and consistent policy throughout the municipality, as an overarching goal of protecting drinking water supplies is a shared objective of all residents.

Since specific activities are regulated or prohibited within the watersheds by the water utilities through individual Protected Water Area Regulations, this document focuses on regulating the land use of the watersheds. The Municipality understands that the existing watershed

boundaries under the provincial regulations are not reflective of the larger, natural watersheds which still play a key role in protecting the sources of drinking water.

To apply necessary land use regulations to protect the three watersheds, planning staff are recommending three zones that will provide adequate protection of the three watersheds protected and natural boundaries.

Statement of Provincial Interest Regarding Drinking Water

Protecting the quality of drinking water within municipal water supply watersheds is mandatory under the Statement of Provincial Interest regarding drinking water. Provisions on drinking water protection requires that planning documents identify and address water supply protection. According to the provincial provisions, the MODL's Municipal Planning Strategy should consider the following policy issues:

1. Permitted or prohibited land uses
2. Nonconforming uses and structures
3. Lot size and density
4. Enlarged watercourse buffer distance
5. Land alteration regulations
6. If water protection is impractical, identification of such reasons and alternative sources
7. Guiding principles for the Watershed Management Plans
8. Protected Water Areas Map in the Land Use By-law.

Environment Act:

The Environment Act supports the protection, enhancement, and reasonable use of the natural environment. Water resources in the Act include all fresh and marine waters comprising all surface water, groundwater, and coastal water. The Act provides the province with the authority to classify water resources according to their sensitivity or uses, adopt water quality guidelines, and indicators. The Minister of the Environment also has the authority to establish or adopt goals for effluent reduction and establish total allowable waste-loads for water bodies. While the Environment Act defines the boundary of the Watershed Protected Water Areas and the permitted activities within the prescribed areas, municipalities are responsible for establishing the land use regulations to protect the water quality. Although the municipality does not have its own water system, three protected water areas exist within the MODL's jurisdiction (see appendix I, map 1):

1. Oakland Lake Watershed Protected Water Area Regulations ([1963](#))
 - a. [Oakland Lake WPW Area Boundary](#)
2. Hebb, Milipsigate and Minamkeak Lake Watershed Protected Water Area ([1964](#))
 - a. [Hebb, Milipsigate and Minamkeak Lake WPW Area Boundary](#)

3. Dares Lake Protected Water Area Regulations ([1972](#))
 - a. [Dares Lake PW Area Boundary](#)

Background

Watershed Profiles

OAKLAND LAKE:

- Town of Mahone Bay Water Utility supplies customers within the Town only.
- Daily consumption of water is 611,674 litres at a 60.0% capacity.
- The water is treated using coagulation pre-treatment system, micro-filtration water treatment system, ultraviolet disinfection system, chlorination disinfection, and various chemical feed meter pump systems, then transferred to a 2 million-litre reservoir.
- The existing Protected Water Area is about 405 hectares, of which 66 hectares are surface water. The entire natural watershed is covered by the Protected Water Area Regulations. Currently Oaklands Land Use By-Laws cover a small fragment of the Natural watershed.

HEBB, MILPSIGATE AND MINAMKEAK LAKES:

- Bridgewater Public Service Commission supplies customers in the Town of Bridgewater, and portions of the Village of Hebbville, as well as the communities of Cookville and Wileville.
- Daily consumption of water is 7.2 million litres. 1.2 billion liters of storage capacity and projected safe yield of 13.5 million liters per day– 53.3% capacity.
- The water is conventionally treated using chemically assisted sedimentation and filtration processes, then transferred to 4.5 million litre reservoirs.
- The Protected Water Area is about 11,600 hectares, of which 2,300 hectares are surface water. However, 5,899.6 hectares of the lake watershed in Chelsea and Newcombville is not designated as the Protected Water Area and remains unprotected.

DARES LAKE:

- Town of Lunenburg Water Utility supplies customers throughout the Town and to the High Liner Foods, fish plant in Garden Lots.
- Daily consumption of water is 2.10 million liters (varies from year to year), with the safe yield of 4.55 million liters per day – at a 46.2% capacity, based on a 1-in-50-year failure recurrence.
- The water is treated with liming and chlorination, then stored in a 3.4 million litre water tank in Lilydale and a 3.6 million litre water tank in Garden Lots.
- The Protected Water Area is about 202 hectares, of which 164.3 hectares are surface water. However, 1,128.5 hectares of the lake watershed in Big Lots are not designated as the Protected Water Area and remain unprotected.

The municipality's existing planning documents have land use controls only for a small segment of the Protected Water Areas because the majority of the municipality does not have planning land use controls.

Only Hebb Lake has zoning regulations within the Hebb, Milipsigate and Minamkeak Lakes protected water area. Most of the land surrounding Hebb Lake is zoned under the Village of Hebbville planning document. The zone only permits single residential dwelling units. It is subjected to specific zone requirements, public water systems developments, and infrastructure. The setback of residential dwellings is 14 metres from any watercourse. Other identified land uses in the un-zoned areas within the watershed are resource farming, resource extraction, resource forestry, residential, institutional, industrial, and transportation.

Oakland watershed has zoning control within Oakland planning area boundary. The watershed is zoned as a Protected Water Area. The uses permitted in the zone are structures essential to the operation and maintenance of a municipal public water supply system. Other uses do not involve multi-use trails, forestry, pasture, and grazing. Keeping livestock must obtain a fenced setback of 100 metres from any watercourse.

It is vital to safeguard the protected water areas and to establish land use regulations that prohibit or direct future developments without compromising the water quality.

Municipal Planning Strategies and Water Supply Plans of the Three Towns

Each town has policy statements in its Municipal Planning Strategy (MPS) regarding the protection of municipal water supply. Common themes in all three MPS documents include protecting and managing the watersheds by working with the respective Source Watershed Protection Committees and charging developers the cost of extending water services. The province gave the water utility commissions an authority indicated in the Environment Act to control activities, not land uses. Water utilities are responsible for protecting watersheds from prohibited activities, while municipalities including MODL are responsible for protecting the watersheds from a land use perspective.

Town of Bridgewater (2014): Section 15 of the Bridgewater MPS describes the policies regarding municipal infrastructure. Specifically, subsection 15.2 states the water treatment and distribution policies, such as:

- Encourages the Bridgewater Public Service Commission to consider inadequately serviced or un-serviced developed areas of the town as priority areas for improvement or extension to the water distribution network;

- Co-operate with the Bridgewater Public Service Commission to protect the waters and watershed land of Hebb Lake, Milipsigate Lake, and Minamkeak Lake as a public water supply; and
- Recognizes the role of the Source Watershed Protection Committee in assisting in the management and protection of the Protected Water Area.

Town of Bridgewater Source of Water Protection Plan (SWPP) helps the Public Service Commission of Bridgewater (PSCB) effectively manage the safe supply of drinking water to the town and the surrounding area. The Plan identifies several potential hazards from development such as sedimentation and pollutants carried by runoff that can be mitigated by:

- Acquisition of land
- Education and stewardship
- Best management practices
- Contingency planning
- Designation
- By-laws

Town of Lunenburg (1996): Section 13 of the Lunenburg (Town) MPS describes the Town Council's policies on the Town water supply system. Specifically, subsection 13.2 states that the Town Council will "seek means to ensure the protection of Dares Lake and its watershed lands."

Town of Mahone Bay (2008): Section 3.2 of the Mahone Bay MPS describes the Town Council's policies on the Town water supply system. Some policies are highlighted as follows:

- Consider extension of the water system outside the Town boundaries on request.
- Continue to improve the protection of the Oakland Lake water supply through an Oakland Lake Watershed Advisory Committee including representatives from the affected landowners and the Council of the Municipality of the District of Lunenburg.
- Acquire land within the watershed of Oakland Lake whenever possible, to secure protection of the water supply.

Best Practices

Region of Queens Municipality (2022)

The Region of Queens created a watershed designation within their MPS to safeguard their drinking water supply. Moreover, the Region of Queens has a Watershed (W) Zone within the protective zone section of their Land Use By-law (LUB). Many residents of the region are still using on-site wells. However, Liverpool and parts of Brooklyn have a central water supply. Policies are in place to protect the designated watershed such as:

- Establishing a Watershed Zone in the Land Use Bylaw to protect the municipal water supply by restricting the type and intensity of land uses permitted.
- Conducting a study that will include a detailed review of water recharge areas and contamination risk to assess the zone boundary.
- Only permitting municipal water treatment facilities in the watershed protection zone.

Municipality of the County of Kings MPS and LUBs (2019)

Although most of the drinking water in the Municipality is groundwater (vs. surface water), the Municipality also has backup drinking water supply areas. The Municipality incorporated water protection regulations to restrict land use to protect drinking water quality. Land uses that may affect the drinking water quality are prohibited within the protected area. Moreover, a development agreement could apply while ensuring regulatory oversight in cases of nonconforming land uses. Several policies are in place to protect the designated watershed, such as:

- Town Water Supply Overlay for the backup water supply for the towns
- Permitted uses: agricultural uses, forestry uses, mobile homes, Public Utilities, and existing residential uses
- **Large natural buffers:** significant setbacks from watercourses within the Town Water Supply Overlays.
- Prohibit the development of new public or private roads.
- Overlays requirements applies to any development, including accessory uses and home-based businesses, within the Town Water Supply Overlays.
- **Agricultural or forestry use** that may contribute to excessive flooding, erosion, contamination, or other detrimental consequences is permitted within 100 feet of any watercourse.

Chester MPS and LUB (2022)

The Environmental Protection Area designation addresses two specific land types requiring protection of potential drinking water. Spectacle Lake is designated a Protected Watershed under the former Chester Village Secondary Planning Strategy. Land use controls such as limiting development were applied to preserve Spectacle Lake as a water source by minimizing the possibility of water contamination. Several policies are in place to protect the protected watershed, such as:

- Establish a Protected Watershed Zone, which will be under the Environmental Designation

- Single-unit dwellings on large lots and water supply facilities will contain special requirements for new structures associated with permitted land uses via a **development permit**.
- Watercourse buffers
- **Prohibited uses: commercial and industrial uses, livestock operations, new public roads, subdivisions on private roads, and places of worship and cemeteries.**
- Requires a large minimum lot size and an extensive minimum lot frontage.
- **Erosion mitigation plan** that ensures that existing natural vegetation within **150m of any watercourse will be retained in a natural and healthy condition.**

MOD of Yarmouth MPS and LUB (2020)

Municipal Planning Strategy:

The Lake George watershed is the water supply for the Town of Yarmouth and nearby areas within the district's drinking water supply. The watershed protection applies to the **natural watershed** which was re-designated in October 2006. This change followed a provincial initiative to have all public water suppliers develop source water protection plans. Restrictions apply to various recreational activities ranging from swimming to boating and fishing and agricultural and forestry activities. The MPS and LUB support the restriction of land use activities within the natural watershed to ensure that water quality is protected both now and in the future. The area designated and zoned Lake George Watershed corresponds to the natural topographic drainage area surrounding Lake George. Several policies are in place to protect the protected watershed, such as:

- Designates all land and islands within the Lake George natural watershed boundary as the Lake George Watershed Designation to restrict land uses within the provincially designated water supply area.
- Establishes the Lake George Watershed (LGW) Zone.
- Permitted uses: Single unit dwellings, Conservation-related projects, Household gardens, non-industrial forestry uses, Limited recreational uses and Utilities excluding wind farms
- Regulates lot sizes and a **92m separation setback from any water body or watercourse** for all new developments, excluding water utility buildings and structures.

Town of Antigonish 2020 MPS and LUB (2020)

The Town and surrounding service areas' primary water supply is the James River Watershed. It is located outside the Town boundaries within the Municipality of the County of Antigonish. **The Town owns 39% of the watershed area, 59% is owned by the Crown, and 2% of the area is privately owned.** Council protects these water sources through special provisions of the Land Use By-law.

- Establishes the Water Supply (WS) overlay designation to add a regulative layer to the underlying designation and zone.
- Permitted uses: Accessory use, Conservation related projects that do not require a permanent structure, existing residential dwellings, existing uses, public works associated with water supply monitoring, and recreational uses that do not require a permanent structure.

Town of Wolfville MPS and LUB (2020)

The Town has ensured the continued availability of the historic watershed lands, in perpetuity, which is protected by a conservation easement between the Nova Scotia Nature Trust and the Town. Wolfville's current water supply consists of two wells constructed in the surficial sand and gravel glacial deposits around West Main Street. The water utility is a separate corporation from the Town and is funded through water rates. To ensure that the water supply is safe and potable, it must meet rigorous standards and guidelines.

- Establishes three zones from most restrictive to least restrictive
- Requires a development agreement for expansion or alteration of nonconforming uses.

Guysborough MPS and LUB (2018)

Municipal Planning Strategy:

There are two watersheds located within the Municipality that provide drinking water for residents. The Wilkins Lake Watershed has been the sole source of drinking water for customers of the Canso Water Utility since 1965. The second watershed is the Grant Lake Watershed, the primary drinking water source for customers of the Town of Mulgrave Water Utility. Several policies are in place to protect the protected watershed, such as:

- Designates the Wilkins Lake and Grant Lake watersheds and associated water reservoirs as a Watershed Reservoir area to protect the reservoirs and their drainage areas.
- Permits-only water distribution uses historic sites, conservation-related uses, and resource use compatible with watershed management.
- Establishes a 30.5m from any watercourse within the watershed area except from the Wilkins and Grant Lakes, which have 100m setbacks.
- A 30.5m of vegetative buffer surrounds all watercourses.

Literature Review:

Natural Watershed Protection: According to SPI guidebook: The natural watershed boundary (drainage area) is the key factor in identifying the scope of a watershed. The natural watershed boundary outlines the limit beyond the boundary to where the water flows to a different watershed. This flow may occur overland by streams, rivers, and lakes, or it infiltrates and move through the ground. "Planning documents must identify the natural drainage area for the

Municipal water supply watersheds for surface water supplies". Watershed-based zoning provides a greater certainty that stream protection objectives can be met in the face of future development. It also drives local governments to take make decisions regarding which streams will be fully protected and which will be degraded. Study outlines justifiable concerns about the streams that will be purposely sacrificed under the decision of not protecting the whole natural watershed. Hence, Complete natural watershed protection is vital for maintaining water quality which are at the heart of watershed-based zoning.

Erosion control: Sedimentation from disturbed areas is a major source of stormwater pollution. When rain falls on exposed soil it washes sediment away from land. The runoff carries sediment, nutrients, and other pollutants into watercourses. This can result in poor water quality that will be costly to treat and will adversely harm the aquatic eco-systems which is a violation of the fisheries Act and Environment Act (Bridgewater, 2021). There are sets of recommendation that needs to adhere to by the Provincial regulations on erosion control, as stated in the Erosion and Sedimentation Control Handbook for Construction Sites, such as practices that include tree-cutting, mowing, grading, excavation, fertilizing, applying pesticides, and paving. Introducing planning regulations and zoning to the protected and natural watershed are significant to place erosion controls to eliminate or reduce sediments and pollutants from affecting the water quality within the three watersheds.

Buffers/Setbacks: Watercourse buffers are highly effective at removing pollutants such as chemicals and sediment from run-off before it gets into a watercourse. Stormwater contains numerous pollutants that can enter a watercourse that may adversely affect drinking water quality but also potentially cause harm to native animals, plants, fish, breeding habitats. Watercourse buffers that are vegetated have filtration abilities. Vegetative buffers consisted of native plants are frequently used to create a margin between land use to protected watercourses which helps to prevent erosion and safeguarding wildlife eco-systems. The literature suggests a 30-metre buffer is an effective approach to maintain water quality. A 30-metre buffer exhibits a consistent and complete attenuation of sediment and phosphorus and a 50% nitrogen removal. A 50-metre buffer helps to remove 80% of nitrogen and enhances the safety of stream-breeding amphibians. Vegetative buffer is a beneficial practice for erosion control to ensure that land disturbance will not lead to sedimentation entering watercourses (Russell, 2012). Under the Forest Act which regards to wildlife habitat and watercourse protection regulations, in the special management zone such as a watershed zone, a minimum of 50m setback shall apply, a forestry operator shall ensure at least 20 m in width setback. No forestry operator will, reduce the basal area of living trees to less than 20 m² per hectare or create an opening in the dominant tree canopy larger than 15m.

Lot coverage: Studies recommend, a maximum 10% impervious coverage because when the area of an entire watershed has more than a 10% impervious surface coverage, there will be an impact to the water quality. It is possible to have higher percentages of impervious surface coverage if measures are taken to filter the stormwater, but in relatively undeveloped areas, maintaining a low impervious surface coverage ratio is the most effective tool.

Within a protected water area, the subdivision of a large lot is purposefully hindered, as smaller lots attract development. Eliminating sources of water contamination, and distancing the existing development is critical in protecting the water sources. Municipal water facilities and conservation uses, are typically exempted from buffer requirements. Since the province has loose guidelines regarding buffer widths, municipalities can customize their plans to meet their individual needs.

Land use permitted or prohibited (national level): In Canada, normally, no development is permitted in a protected water area part from municipal water distribution or purification facilities, and related conservation uses. Some regulations sometimes permit public parks and single-detached dwellings, if a protected water area has large surface water areas.

Nonconforming uses: Only the minimum requirement for nonconforming uses and structures, as determined by the Municipal Government Act, should be permitted. In case of a conflict between this non-conforming use and structure exemptions (the “grandfathering clause”) and the environmental Regulations, the more stringent ones prevail. Zoning may be more relaxed and permit minor accessory structures, such as boathouses and docks.

In proposed zones, the MODL will provide additional types of Protected Water Areas to encompass the natural watershed that is not covered by the provincial regulations. Restrictions may be relaxed in the natural watershed area.

Engagement

Council’s comments during the first Drinking Water Workshop:

- What are our neighbours doing? (Refer to best practices)
- Create maps showing current activities, land use, natural watershed boundaries, current subdivision applications (in process or approved) and setbacks.

The following table discusses council’s question regarding the number of properties located near the watersheds and the impact on the development potential of properties within the area (the number refers to the zone type but does not take into consideration the number of properties that will be taken out of development due to the policy recommendation to prohibit new public and private roads).

Number of Properties Impacted in each watershed			
Watershed Name	Dares Lake Watershed	Hebb, Milipsigate and Minamkeak Lakes Watershed	Oakland Lake Watershed
Number of Properties	<u>Total:</u> 189 properties <u>Existing Protected Area:</u> 36 properties/ 2 dwellings <u>Natural Watershed:</u> 153 properties/ 5 dwellings	<u>Total:</u> 1401 properties <u>Existing Protected Area:</u> 658 properties/ 75 dwellings (344 are government owned. 266 properties out of 344 are owned by PSC) <u>Natural Watershed:</u> 765 properties	87 properties/ 0 residential dwellings
Number of Impacted Properties	29 properties (excluding properties owned by the Town of Lunenburg)		57 properties (excluding properties owned by the Town of Mahone Bay and Majesty of the Queen)

Table 1: Number of properties impacted in Each Watershed

*Impacted Property: Means a currently undeveloped property that would be prohibited from new residential uses.

MODL 2040: What We Heard Report:

Responses indicated priorities to protect undeveloped land, watershed protection, and prioritizing sustainable forestry practices. Respondents also indicated that education is essential to preserve our environmental practices such as watershed protection, logging, and sustainable forestry practice." It should be noted that most residents who benefit from the water provided by the watersheds live in the towns and would not have participated in the MODL2040 survey, as it was targeted towards residents of MODL.

Stakeholders Workshop Summary

Below is a summary of the comments made by Mahone Bay, Bridgewater and Lunenburg water utilities. Meetings were held in March 2022.

Water Utilities (Three Towns) Comments:

Land use restrictions: Will renewable energy be restricted? Will the land uses permit small scale agriculture but restrict animal/livestock farming or mixed farming uses?

Setbacks: Extend the 30m and 75m water course buffer policy over all the watershed lakes and not just Hebb Lake. For Oakland 75m setback throughout the watershed. Will wetlands be protected too?

Vegetation retention: Restrict the amount of vegetation developers or property owners remove off from their lots before the development starts. Retain trees within the buffer where possible. Include specific grading requirements.

Lot coverage: Restrict expansion of existing uses, except what is enabled through the non-conforming provisions of the MGA. 10% max of lot coverage is preferable to 20% lot coverage to reduce impervious surfaces.

Provincial Watershed Planner

a meeting with the province watershed planner was held on November 22, 2022. The points below are a summary of comments received (to review the full notes from the meeting please see appendix):

- The protected water area analysis to determine the natural watershed boundary was done in mid 1960s and early 1970s and is outdated and incorrect.
- Technology improved and can show the actual natural watershed boundary.
- MODL can decide to protect the entire natural watershed which is the best practice.
- The three-zoning approach is a positive step forward from a source water protection perspective lens.
- A 75 m setback surrounding PWA-1 and PWA-2 will protect water quality and will mitigate blue green algae.

Engagement Next Steps:

- Another round of stakeholder engagement should occur to introduce the new draft regulations after considering the previous comments from the three stakeholder committees.
- Council Workshop to present new proposed policies and land use regulations.
- Send letters to property owners within the protected and natural watershed along with a map of their designated area.
- Three public information sessions, one for each of the designated watersheds (Oakland, Dares and Hebb, Milipsigate and Minamkeak lakes) **OR** hold two information sessions, one for Oakland and Dares Lake and a second one for Hebb, Milipsigate and Minamkeak lakes.

Recommendations

The planning staff recommendations are based on the MGA, Environment Act, best practices, literature review and comments from the three water utilities.

Natural watershed:

- **Recommendation to Council:** Acknowledge and protect the entire natural watershed from mitigating contamination downstream and safeguarding drinking water quality (see appendix map 1).
 - Protecting the natural watershed is vital to protecting water quality. According to the Statement of Provincial Interest Guidebook (2020), "Planning documents must identify the natural drainage area for the Municipal water supply watersheds for surface water supplies."
 - The literature suggests that protecting the entire natural watershed will help mitigate contamination running downstream and ensure the safe consumption of potable water in the long run.
 - The municipality of the District of Yarmouth also protects the entire natural watershed. According to the province watershed planner, the mapping of the three watersheds was done via ground truthing during 1960-70.
 - With today's technology, we know that PWA mapping is not an accurate representation of the actual natural watershed. Hence protecting the entire natural watershed is the first step in the right direction to protecting drinking water.

Zoning:

- **Recommendation to Council:** establish three Protected Watershed Area zones (see appendix 1, map 2).
 - Protected Watershed Area -1 (PWA-1) will be the most restrictive zone for Oakland and Dares lakes protected water areas designated by the province.
 - Protected Watershed Area -2 (PWA-2) will apply to Hebb, Milipsigate and Minamkeak lakes, designated protected areas by the province, which will utilize less stringent controls compared to PWA-1
 - Protected Watershed Area -3 (PWA-3) will apply to Dares Lakes and Hebb, Milipsigate, and Minamkeak lakes natural watershed with the least stringent land use controls.
- The province legislation provides municipalities with several tools to protect drinking water supply via zoning MGA s.220 [Charter s.235].

- Our natural watersheds and lakes size vary. Hence, it will be an excellent tactic to apply a three-zoning approach to protect drinking water while also enabling development to occur
- Wolfville took a similar approach to protect its wellheads from residential, commercial, and industrial contamination.
- According to the MGA, smaller waterbodies are more susceptible to contamination. More stringent zoning will help to protect the water quality.
- In Canada, the common practice in protected water areas is to prohibit new development apart from municipal water distribution, purification facilities, and related conservation uses. However, we do want to enable residents to be able to develop in the future while not compromising the water quality, the three-zoning approach will enable development to occur in the least stringent protected water areas zones with applied watercourse setbacks while prohibiting new development part from water utility in the most stringent zone (please see map X in the appendices).

Setbacks/ Vegetative Buffers:

- **Recommendation to Council:** Establish a 75m setback within PWA-1 and PWA-2 and a 30.5m setback in PWA-3.
 - Apply a 75m vegetative buffer in all PWA zones.
 - Agriculture use, such as keeping livestock, should apply a setback of at least 100m within PWA-3.
 - (Water utility facilities are exempt from setback requirements).
- According to the SPI guidebook, literature, and best practices, setbacks and vegetative buffers from watercourses are an integrated planning tool to mitigate contaminants (e.g., nitrogen, petroleum, microplastics, and phosphorus).
 - Some municipalities did not apply setback controls because they prohibited any new development within the protected water area from water utility facilities.
 - Some Municipalities applied setbacks ranging from 91m to 150m from any watercourse. A 30m setback was applied to areas that are not in proximity to the actual lake but are within the natural watershed area.
 - A 35m vegetative buffer consisting of native plants was applied in several municipalities to mitigate erosion and surface runoff, and to filtrate additional contaminates.
 - Water utility facilities in other municipalities do not need to adhere to setback controls. The province watershed planner indicated that a 75 m setback surrounding the PWA will help protect the water quality and mitigate the blue-green algae.
 - Stream-breeding amphibians are an indication of good water quality.

- According to the literature, a 30m buffer completely attenuates sediment and phosphorus but only filters 50% nitrogen. In comparison, a 50m buffer helps to remove 80% of nitrogen and enhances the safety of stream-breeding amphibians.
- During the previous stakeholder engagement with the town's water utility committees, it was suggested to apply the 75m setback throughout the protected water area designated by the province.

Erosion Control:

- **Recommendation to council:** In relation to development, require an erosion and sedimentation mitigation plan to adhere to erosion control standards that may include but are not limited to minimizing erosion and sedimentation during excavation or infilling, retaining, and replanting natural vegetation and other measures to prevent or minimize erosion on land near a significant watercourse.

- The SPI guidebook states that each municipality needs to establish measures to reduce erosion, sedimentation, runoff, and vegetation removal associated with development.
- According to the literature, sedimentation from disturbed areas is a significant source of stormwater pollution.
- Runoff carries sediment, nutrients, and other pollutants from human-made practices such as tree-cutting, mowing, grading, excavation, fertilizing, applying pesticides, and paving.
- Runoff entering watercourses impacts water quality that, is costly to fix and affects aquatic ecosystems, violating the fisheries Act and Environment Act.
- All municipalities have erosion control policies in place as mandated by the SPI.
- The Municipality of Chester requires new development to submit an erosion and sedimentation plan. Additionally, it requires the protection of native vegetation within 150m of any watercourse and prohibits topsoil removal. Topographic alteration is subjected to specific requirements.

Lot Size and Coverage:

- **Recommendation to Council:** Regulating lot coverage to reduce surface runoff by minimizing impervious surfaces by regulating a 2 acres lot to enable only 10% lot coverage.

- Water utility committees want to mitigate impervious surfaces by maximizing the lot to 2 acres with a 10% lot coverage. Studies also suggest a 10% impervious coverage to protect water quality by enabling water to infiltrate the ground.

- The SPI guidebook suggests limiting the number of lots is highly significant because too many may result in development that will adversely affect drinking water quality.
- Municipalities are required to balance the minimum size of lots and intensity of development against the risk posed to the quality of drinking water.

Nonconforming use expansion or alteration:

- **Recommendation to Council:** Introduce an approvals process to control the redevelopment of existing nonconforming uses, or changes in use within the PWA-1 and PWA-2 Zone.

- Balancing the expansion of existing uses against the risks posed to drinking water quality by enabling existing nonconforming uses to apply for a development agreement.
- The legislation provides municipalities with several tools to protect the drinking water supply, such as permitting an expansion or alteration of a nonconforming use via a development agreement (MGA s.225-227 [Charter s.240-242]).
- Wolfville permits the expansion or alteration of nonconforming uses via a development agreement. In this case, a development agreement is more valuable than a development permit because development agreement records are kept. Since this is an environmentally sensitive area will be helpful to keep a record of changes in human-built form within these areas.

Restrict the development of new Municipal and subdivision development on Private Roads:

- **Recommendation to Council:** Restrict new municipal and subdivision on private roads within the PWA-2 Zone.

- Kings County and Chester Municipality prohibit the construction of new municipal and private roads to reduce impervious surface and runoff that carries petroleum and other contaminants from entering a watercourse.

The following table provides a summary of the proposed land use regulations mentioned above.

Land use regulations for the following watersheds	Dares Lake Watershed	Hebb, Milipsigate and Minamkeak Lakes Watershed	Oakland Lake Watershed

Protecting the natural watershed	Yes	Yes	Yes
Zoning	PWA-1 and PWA-3	PWA-2 a PWA-3	PWA-1
Watercourse Setbacks and vegetative buffers	75m in PWA-1 and 30m in PWA-3 100m livestock setback 30m vegetative buffer both zones	75m in PWA-2 and 30m in PWA-3 100m livestock setback 30m vegetative buffer both zones	75m 30m vegetative buffer
Erosion Control	Erosion and sedimentation mitigation plan	Erosion and sedimentation mitigation plan	Erosion and sedimentation mitigation plan
Lot Size and Coverage	2 acres lot with 10% lot coverage	2 acres lot with 10% lot coverage	2 acres lot with 10% lot coverage
Nonconforming use-expansion or alteration	In PWA-1: development agreement		In PWA-1: Development agreement
Permitted Land Use	PWA-1: municipal water operations and treatment facilities, open space, conservation, existing use, existing residential use, and associated accessory uses PWA-3: residential use, commercial use, institutional use, agricultural use (follow the setback requirement for the keeping of livestock), renewable energy and open space.	PWA-2: conservation, open space, horticulture, silviculture, residential use and associated accessory uses PWA-3: residential use, commercial use, institutional use, agricultural use (follow the setback requirement for the keeping of livestock), renewable energy and open space.	PWA-1: municipal water operations and treatment facilities, open space, conservation, existing use, existing residential use, and associated accessory uses
Public and Private Roads	Prohibited in PWA-1	Prohibited in PWA-2	Prohibited in PWA-1

Table 2: Land use Regulations for PWA Zones

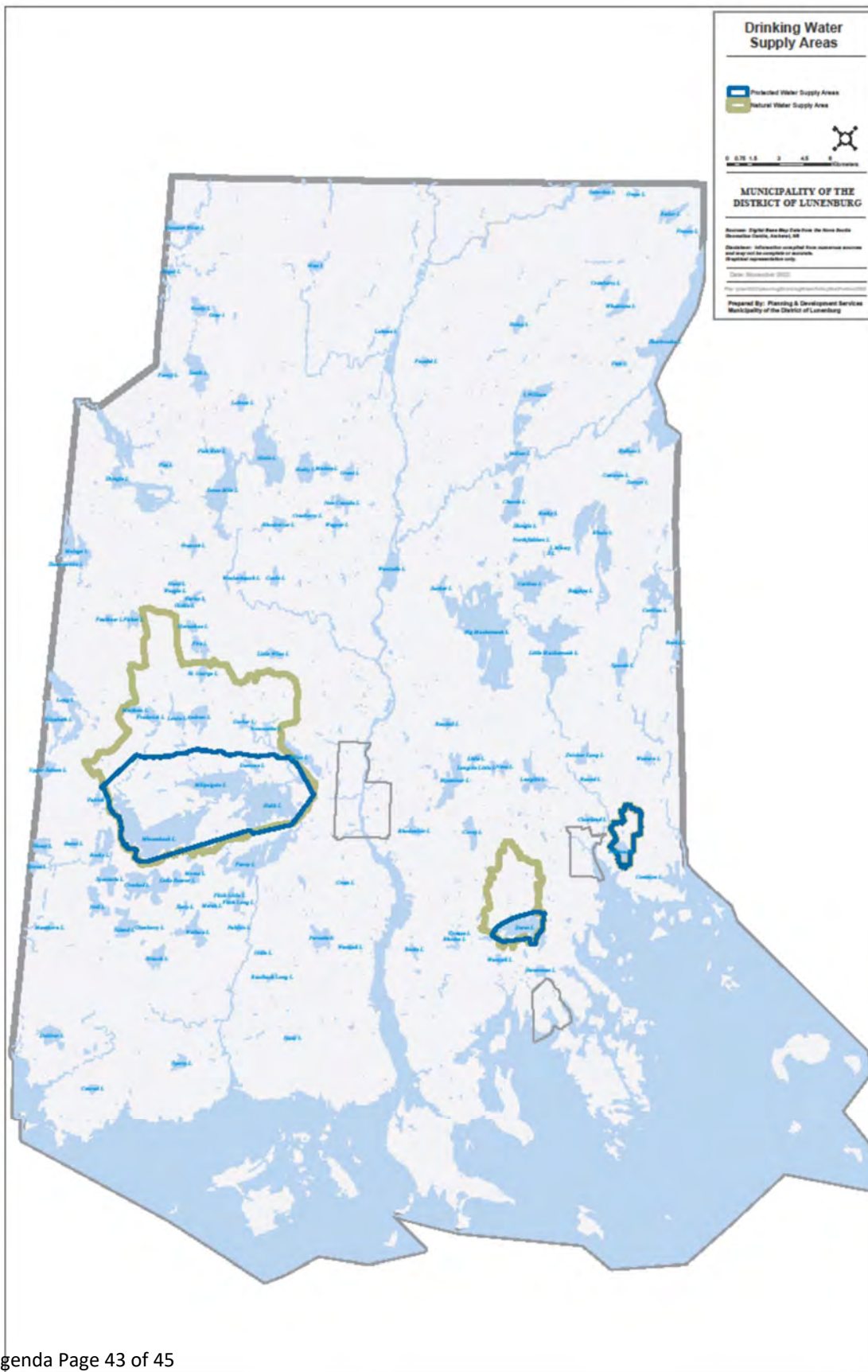
Report Preparation	
Department	Planning and Development

Report Prepared by	Ella Gindi Planner I
Report Approved by	
Date Reviewed by C.A.O.	

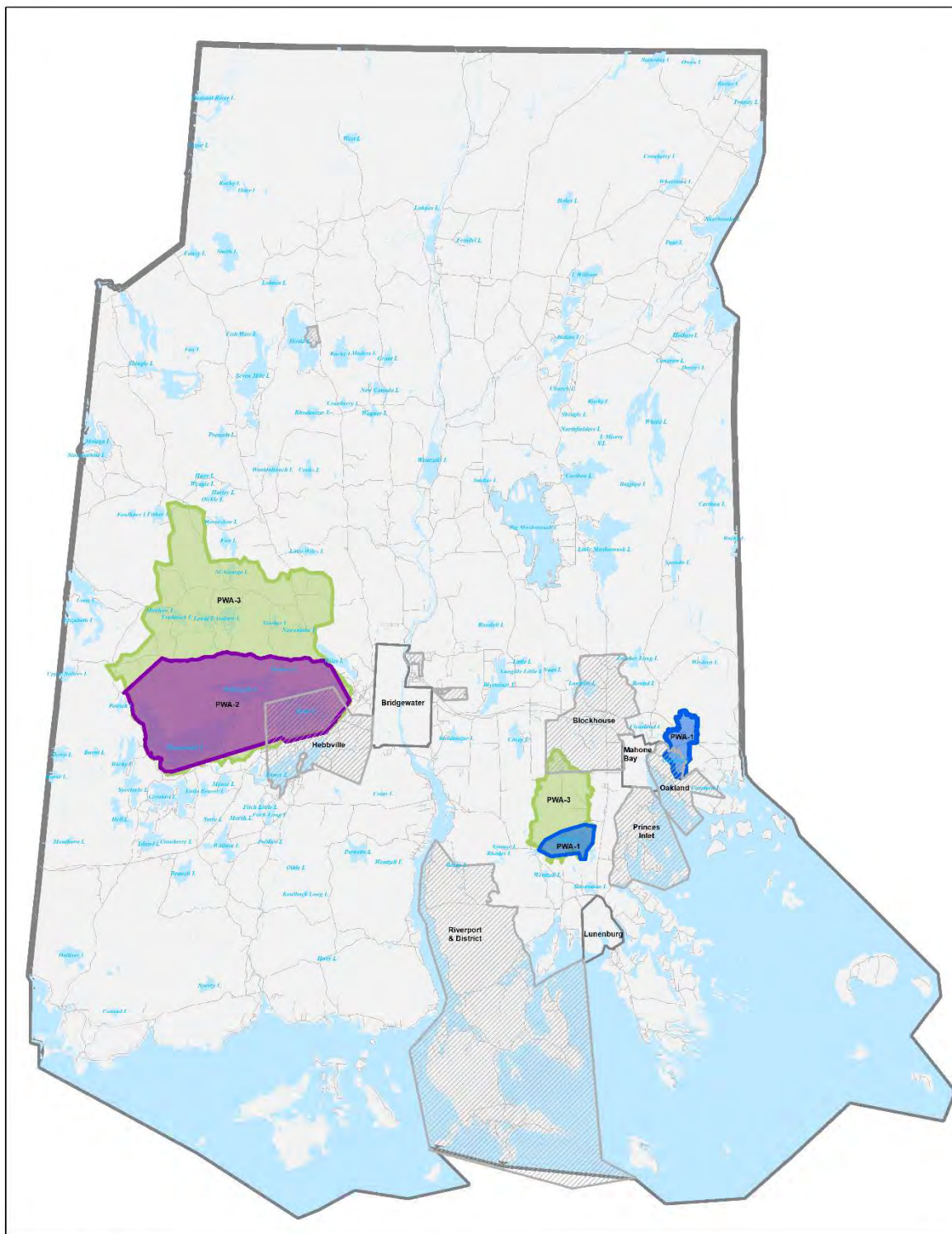
COPY

Appendices:




Map 1: Provincial designated protected water area boundary vs. the Natural watershed boundary



Map 2: Proposed three zoning approach:



Part D; Environment and Climate - Drinking Water
Watersheds

-  Areas With Secondary Planning Strategies
-  PWA -1
-  PWA -2



0 1.25 2.5 5 7.5 10 Kilometers

Sources: Digital Base Map Data from the Nova Scotia Geomatics Centre, Amherst, NS

Disclaimer: Information compiled from numerous sources and may not be complete or accurate. Graphical representation only.

Date: January 2023

Prepared By: Planning & Development Services
 Municipality of the District of Lunenburg



Meeting with the province watershed planner: main points

- The protected water area analysis was done in mid 1960 and early 1970's and was done via ground truthing to determine the natural watershed boundary. But MODL's watersheds mapping systems is old, hence the mapping was not 100 % correct.
- Technology changed and improved with newer technology such as Lidar and GIS helped to see the actual bona fide (natural) watershed boundary.
- Municipality or water utility can decide to protect the entire natural watershed which will be a process of best practice.
- The province has a three-tiered approach that is a multiple barrier strategy the program covers the whole natural watershed. The second tier is to treat it to make sure it is safe for use before it is distributed, and then testing to make sure it continues to be safe.
- Within the source water protection plan, they are five options available to a municipality or water utility to protect our land
- The best option is to purchase and own all the land around the water supply, so some probabilities have that where they have a small reservoir or whether it's a well field because that's a smaller geographical footprint than an entire river or watershed.
- The next step would be bylaws and municipal planning strategy as tools in there to restrict land use, then there's the PWA we're talking about and they restrict activities and education (Mike Allen, personal Communication, 2022).
- The three-zoning approach is a step in the right direction because it the land use regulation will varied from most stringent to least stringent. "It's a positive step forward right from a source water protection perspective lens".
- Having the 75 m setback surrounding the PWA will help protect the water quality and will mitigate the blue green algae.
- It is important to listen to the water utility committees and base the policies and land use by laws to align with their comments.
- Review for commercial forestry what is the required setback because it will provide a sense of the right width of vegetative buffers