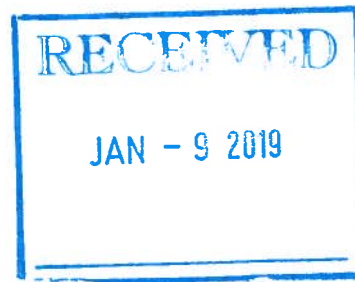


December 2018

To: Mayor and Council, Town of Rothesay

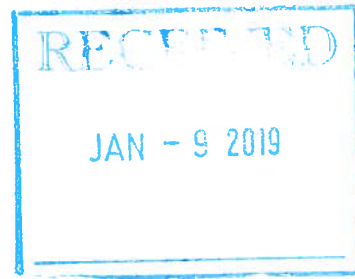


We the undersigned citizens of Rothesay have great concern about the status of our arena. The building is delapidated and clearly unsafe . There have been numerous Council discussions over the years about renovation vs building a new arena. In fact land had been purchased some time ago with the intention of building a new arena. And now we hear council is planning on renovation. The cost of these options remains unclear to the public. The numbers quoted to repair : \$ 6.5 million to bring it to standards. Furthermore this expense would have to be born exclusively by the Town and would substantially raise the taxes. To build a new one that would last longer, would cost at least \$ 9 million and the town would be responsible for one third ie. \$3 million and less of an impact on our taxes . And the space for this is available.

The decision is a very important one . We request an open public meeting so that the facts and figures can be presented, the pros and cons discussed in a transparent open session. Councillors and Mayor in the last election all ran with the promise of TRANSPARENCY....Councillors Tiffany Mackay French, Donald Shea, Matthew Alexander, Grant Brenan, Bill McGuire, Miriam Wells, Peter Lewis, and Mayor Nancy Grant. We now hold you to this promise regarding the Arena.

DATE: 8th January 2019

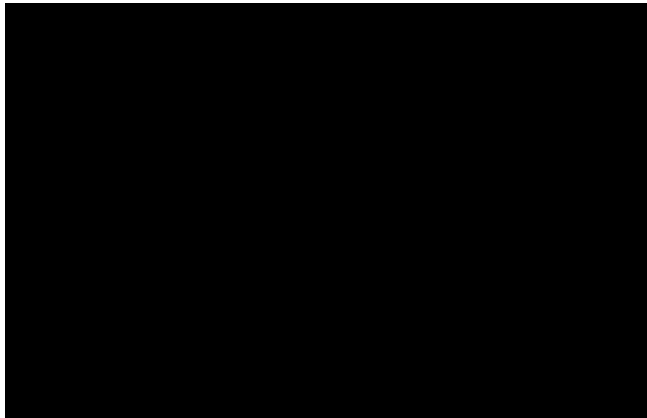
TO: Mayor, Council,
Town of Rothesay



I wish to present on behalf of the citizens of Rothesay, at the next Council meeting on Monday January 14, 2019, signed requests for an open public meeting to discuss the status of the Rothesay Arena. A copy of the request is attached.

Yours sincerely,

Brendan Kilfoil



DATE: 8th January 2019

TO: Mayor, Council,
Town of Rothesay

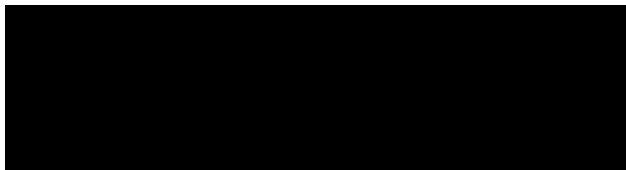


I wish to present on behalf of the citizens of Rothesay, at the next Council meeting on Monday January 14, 2019, signed requests for an open public meeting to discuss the status of the Rothesay Arena. A copy of the request is attached.

Yours sincerely,



Lance Henry



DATE: 8th January 2019

TO: Mayor, Council,
Town of Rothesay

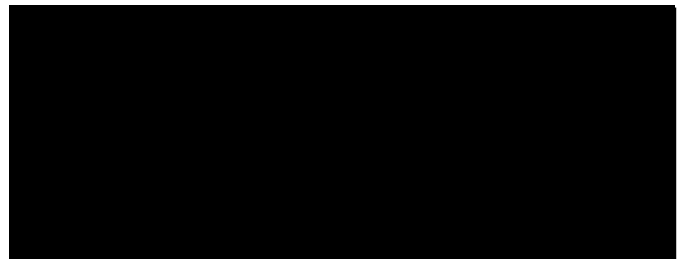


I wish to present on behalf of the citizens of Rothesay, at the next Council meeting on Monday January 14, 2019, signed requests for an open public meeting to discuss the status of the Rothesay Arena. A copy of the request is attached.

Yours sincerely,

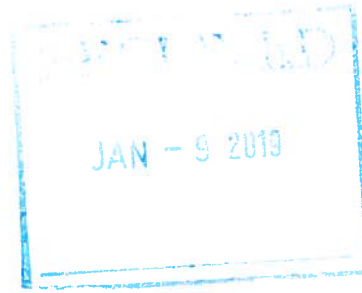
Phone:

Address:



DATE: 8th January 2019

TO: Mayor, Council,
Town of Rothesay



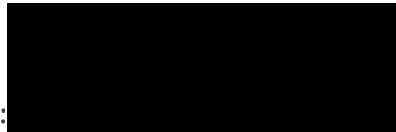
I wish to present on behalf of the citizens of Rothesay, at the next Council meeting on Monday January 14, 2019, signed requests for an open public meeting to discuss the status of the Rothesay Arena. A copy of the request is attached.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Tim Clark'. The signature is fluid and cursive.

Phone:

Address:





ROTHESAY
SPECIAL MEETING
Rothesay Town Hall
Monday, January 28, 2019
6:00 p.m.



CALL TO ORDER

1. UNFINISHED BUSINESS

1.1 Rothesay Arena

December 2018 Letter from residents RE: Request for a Public Meeting
(Motion on the floor from 14 January 2019)

2. APPROVAL OF AGENDA

**3. NEW BUSINESS
RECREATION**

3.1 Rothesay Arena

25 January 2019 Memorandum from Town Manager Jarvie

3.2 Morell Arena

16 November 2018 Memorandum from DRP Jensen

FINANCE

3.3 Municipal Capital Borrowing Board Application

24 January 2019 Memorandum from Treasurer MacDonald

DEVELOPMENT SERVICES

3.4 Contract Award – GIS Consulting Services

4 January 2019 Report prepared by DPDS White

ADMINISTRATION

3.5 Amendment to Disposal of Surplus Vehicles and Equipment Policy

9 January 2019 Memorandum from Town Clerk Banks
REVISED Disposal of Surplus Vehicles and Equipment Policy

OPERATIONS

3.6 2019 Asphalt Resurfacing and Microseal Placement Program

9 January 2019 Report prepared by DO McLean

3.7 Engineering Design and Construction Management Services Church Avenue Reconstruction

9 January 2019 Report prepared by DO McLean

4. NEXT MEETING

Regular meeting Monday, February 11, 2019
Public Hearing (Bridlewood Estates) TBD

5. ADJOURNMENT



ROTHESAY

INTEROFFICE MEMORANDUM



TO	:	Mayor Grant & Rothesay Council
FROM	:	John Jarvie
DATE	:	25 January 2019
RE	:	Rothesay Wellness Centre

Recommendation:

It is recommended Council pass the following motion:

Rothesay Council supports the construction of a new facility on Scott Avenue to replace the Rothesay Arena. The project is to have a construction budget of \$7.5 million and is to include a standard ice surface (200x85 foot) and a walking track. Council expects to issue a request for proposals in March. The Provincial and Federal governments will be asked for financial assistance for the project.

Background:

The condition of the Rothesay Arena as the municipality's key recreational amenity has long been a concern of current and past Town Councils.

While other communities have received significant financial support from the other orders of government for recreation projects, Rothesay funding requests have gone unanswered. One of the reasons given for this has been a lack of a clear consensus on the part of the Council about the specifics of the project to be carried out. By adopting a clear statement, hopefully with unanimous approval, this objection is eliminated. Council is proposing a modest project in comparison to others approved or in the concept stage in New Brunswick.

If government financial support can be confirmed early this spring, it is hoped the project can be well underway, if not complete before the municipal elections in the spring of 2020. It is expected that a project of this scale will have little effect on the Rothesay tax rate IF appropriate support from other governments can be secured.

Fundamentally there are three major elements to such a building project:

- A. defining the facility to be constructed including the purposes for which it is intended
- B. determining the method for delivering the project
- C. confirming funding for the project

With respect to this project, these elements are as follows:

- A. project definition – this project is the establishment of a single ice surface wellness facility complete with walking track on a brownfield site with a construction budget target of \$7.5M.
- B. project delivery – the project delivery mechanism has not yet been determined and *construction management* or *design/build* approaches are under consideration.
- C. project financing – funding for the project is dependent on grants from other orders of government supplemented by funds borrowed by the Town.

Staff is preparing a report setting out detailed answers to the questions:

what is it? how is it built? how is it paid for?



ROTHESAY

INTEROFFICE MEMORANDUM



TO	:	John Jarvie
FROM	:	Charles Jensen
DATE	:	November 16/2018
RE	:	Morell Arena

Background:

A phone call was held with John Kelley regarding the Morell arena renovation. John is the engineer on the project. He has lived in the area his whole life and has donated his time to supervise the project.

Project details:

- Arena was built in 1943
- Phase one budget- \$1.3 million
- Includes roof, siding, new ice plant (one compressor), new boards and glass, new lighting and an upgrade to the community room.
- Phase 2 will include upgrades to washrooms, a walking track, new arena floor and possibly upgrades to dressing rooms.
- Money for project was raised by volunteers(5 years)
- \$250 000 from ACOA
- A lot of work on the project was done by community volunteers, demo of boards, engineering work, etc

Respectfully Submitted,

Charles Jensen
Director of Parks and Recreation



ROTHESAY

MEMORANDUM



TO	:	Mayor and Council
FROM	:	Doug MacDonald
DATE	:	January 24, 2019
RE	:	MCBB Application

Recommendation:

The Finance Committee recommends Council approve the following motion:

RESOLUTION FOR APPLICATION TO MCBB

Be it resolved that the Municipality of ROTHESAY submit to the Municipal Capital Borrowing Board an application for authorization to borrow money in an amount not to exceed \$3,100,000 for the following:

Purpose	Term	Amount
NAME OF FUND: Transportation		
Interim financing	2 YRS	\$1,000,000
Church Avenue Drainage project	30 YRS	\$1,000,000
NAME OF FUND: Protective Services		
Fire Truck	10 YRS	\$350,000
NAME OF FUND: Utility		
Church Avenue Sewer project	30 YRS	\$750,000

Background

The purpose of the borrowing application is to demonstrate to the Municipal Capital Borrowing Board ("MCBB") that the town has the financial capacity to finance the Church Avenue capital project and the purchase of a new fire truck.

As part of the application process we must submit our financial projections for the next five years indicating the effect on Town expenditures, debt levels, property tax rates, utility rates, etc. assuming all items in the capital plan proceed. We must demonstrate our capacity to fund the projects as planned.

As the Church Avenue project includes both storm drainage and sewer components a debt application is necessary with supporting documentation from both the General Fund and the Utility Fund.

ROTHESAY

TO: Mayor & Council

FROM: Doug MacDonald

RE: MCBB Borrowing Application

2019 January 28 Special Open Session FINAL_010

-2-

January 24, 2019

I have attached the 2019 capital plan summaries as well as the draft "Debt Profile and Budget Projections" that will be submitted in support of the debt application.

The debt application proposed is for more than allocated from borrowing in the 2019 capital budget. The estimates completed for budget purposes are preliminary and will be finalized once construction engineering is completed. Therefore, the debt application provides a contingency in both funds should the estimates differ from the preliminary amounts either in total or in the allocation between utility and general fund expenditures. The Town is not obligated to borrow the full approved amount and we will only incur actual debt based upon the final contract awards.

The Church Avenue project is currently budgeted to include the following expenditures:

Church Avenue					
	Resurfacing		81,795.00		
	Storm Drainage		900,000.00		
	Utility		650,000.00	1,631,795.00	
	HST	4.50%		73,430.78	
	Engineering	10%		163,179.50	
				1,868,405.28	1,900,000.00

The fire truck purchase is budgeted as \$650,000 with the Rothesay portion being approximately 40% or \$265,000.

These estimates will be updated prior to submission of the final debt application.

The longer term capital plan includes a number of major projects over the next five years, including completion of the Community centre project, trail development plans and sewer plant construction. However, none of these projects will proceed unless there are cost sharing arrangements with other levels of Government. Therefore, the projections do not currently include the effect of these projects.

The budget projections assume a 1% annual growth rate in the Town's property tax assessment base, and a 2.5% growth in operating expenditures. Again, should the assumptions be incorrect there would be a material impact on the projections and on our ability to fund all the capital plans.

The borrowing application also must refer to the need to obtain interim financing relating to the projects. The debenture proceeds are not received until the project is complete, therefore the MCBB advances the funds during the construction period. The interim financing is then repaid from the debt.

ROTHESAY		UTILITY FUND: DEBT PROFILE AND BUDGET PROJECTIONS					
Prepared By	DAM	Assumption - capital per existing budget					
		<u>Projections</u>					
		Operating & Maintenance exp.			2.50%		
		Projected	Budget	PROJECTION			
		2018	2019	2020	2021	2022	2023
USER CHARGE RATE		\$610	\$610	\$642	\$657	\$669	\$679
% INCR/ PREV YR			0%	5%	2%	2%	1%
NUMBER OF EQUIV USERS -		4,350	4,350	4,350	4,350	4,350	4,350
REVENUE							
USER CHARGE REVENUE		\$2,683	\$2,660	\$2,793	\$2,857	\$2,911	\$2,955
WATER COST TRANSFER		380	325	333	341	350	359
OTHER TRANSFERS		59	59	59	59	59	59
CONNECTION & SERVICE CHARGES		223	112	75	75	75	75
INTEREST & OTHER REVENUES		146	52	60	60	48	42
SURPLUS OF PREVIOUS YEARS		21	12	26			
TOTAL REVENUE		3,512	3,220	3,346	3,393	3,443	3,489
EXPENDITURE							
DEBT COST		\$834	\$766	\$843	\$843	\$847	\$845
OPERATING & MAINTENANCE		1,732	1,784	1,829	1,874	1,921	1,969
CAPITAL FROM BUDGET		455	600	600	600	600	600
RESERVES		465	70	75	75	75	75
OTHER: DISCOUNTS, LOSS							
DEFICIT OF PREVIOUS YEAR(S)		0	0	0	0	0	0
TOTAL EXPENDITURES		3,486	3,220	3,347	3,392	3,443	3,489
SURPLUS / (DEFICIT)		\$26	\$0	(\$0)	\$0	(\$0)	\$0
DEBT COST PROJECTION							
PRESENT DEBT SERVICE COST		834	780	783	783	663	661
INTERIM FINANCING & OTHER CHARGES		0	0	0	0	0	0
	<u>YEAR</u>	<u>RATE</u>	<u>TERM</u>	<u>AMT</u>			
REFINANCING							
MFC BF23	2021	5.00%	10	\$956		124	124
PLANNED BORROWING							
2019 Capital Plan	2020	5.00%	20	\$750	60	60	60
					0		
					0		
TOTAL DEBT SERVICE COST		834	780	843	843	847	845
CHANGE OVER PREV YR			-6.5%	8.1%	0.0%	0.5%	-0.2%
DEBT SERVICE COST TO GROSS EXP		23.92%	24.22%	25.19%	24.85%	24.60%	24.22%
PROPORTION OF USER FEES TO SERVICE DEBT		\$146	\$148	\$162	\$163	\$165	\$164

ROTHESAY GENERAL FUND: DEBT PROFILE & BUDGET PROJECTIONS
For Discussion Purposes Only

				Variables		Projections			
Date	03-Jan-19			Non-tax Revenues		2.00%			
		2016 Population:	11,659	Other Revs /Exps		2.50%			
		Cost of Money:	5.00%	Municipal Tax Base		1.00%			
		(000)	Forecast	BUDGET	***** PROJECTIONS *****				
			2018	2019	2020	2021	2022	2023	
REVENUE									
NON-TAX REVENUE			\$991	\$648	\$583	\$595	\$607	\$619	
UNCONDITIONAL GRANT (*)			122	122	122	122	122	122	
OTHER GRANTS			43	26	26	26	26	26	
OTHER TRANSFERS			940	1,000	\$1,020	\$1,040	\$1,061	\$1,082	
SURPLUS 2ND PREV YR			43	1	7	0	0	0	
TOTAL REVENUE			\$2,139	\$1,797	\$1,758	\$1,784	\$1,816	\$1,850	
WARRANT			\$15,513	\$16,043	\$16,169	\$16,423	\$16,723	\$16,934	
EXPENDITURE									
DEBT COST			\$1,234	\$1,232	\$1,077	\$996	\$958	\$823	
CAPITAL FROM BUDGET			2,727	2,390	2,400	2,400	2,400	2,400	
UTILITY FUND TRANSFERS			380	325	333	341	350	359	
TRANSFER TO RESERVE			10	130	10	10	10	10	
OTHER EXPENDITURES			13,294	13,763	14,107	14,460	14,821	15,192	
			0	0	0	0	0	0	
TOTAL EXPENDITURE			\$17,645	\$17,840	\$17,928	\$18,207	\$18,540	\$18,784	
SURPLUS (DEFICIT)			\$7	\$0	\$0	\$0	\$0	\$0	
MUNICIPAL TAX BASE			\$1,251,069	\$1,293,792	\$1,306,730	\$1,319,797	\$1,332,995	\$1,346,325	
TAX RATE			\$1.24	\$1.24	\$1.24	\$1.24	\$1.25	\$1.26	
DEBT COST PROJECTION			2018	2019	2020	2021	2022	2023	
PRESENT DEBT SERVICE COST			\$1,236	\$1,228	\$947	\$886	\$848	\$713	
INTERIM FINANCING & OTHER CHARGES			0	0	20	0	0	0	
YEAR RATE TERM AMT									
REFINANCING									
O/S AUTHORITY									
PLANNED BORROWING									
2019 Capital Plan	2020	5.00%	30	\$1,000	65	65	65	65	
2019 Capital Plan	2020	5.00%	10	\$350	45	45	45	45	
5yr Capital Plan		5.00%	20	-			0	0	
TOTAL DEBT SERVICE COST			\$1,236	\$1,228	\$1,077	\$996	\$958	\$823	
DEBT RATIOS			2018	2019	2020	2021	2022	2023	
DEBT SERVICE COST/GROSS EXP.			7.0%	6.9%	6.0%	5.5%	5.2%	4.4%	
OUTSTANDING DEBT - DEC. 31			\$6,983	\$5,950	\$6,412	\$5,566	\$4,741	\$4,033	
O/S DEBT / MUNIC ASSMNT BASE			0.6%	0.5%	0.5%	0.4%	0.4%	0.3%	
OUTSTANDING DEBT PER CAPITA			\$600	\$511	\$551	\$478	\$407	\$347	
MUNICIPAL ASSESSMENT			\$1,251,069	\$1,293,792	\$1,306,730	\$1,319,797	\$1,332,995	\$1,346,325	
DEBT SERVICE COST PORTION OF TAX RATE			\$0.09	\$0.09	\$0.07	\$0.07	\$0.06	\$0.06	
\$250,000 RES ASSESS			\$217	\$213	\$188	\$174	\$167	\$143	
TOTAL TAXES ON \$250,000			\$3,100	\$3,100	\$3,124	\$3,174	\$3,231	\$3,272	
RESIDENT ASSESSMENT			\$2,500	\$2,500	\$2,525	\$2,550	\$2,576	\$2,602	
% change in tax bill						2%	2%	1%	
Cumulative % change in tax bill						2%	3%	5%	
BORROWING LIMITS:									
Annual - 2% of Municipal Assessment			\$	25,876	\$	26,135	\$	26,396	
Cumulative - 6% of Municipal Assessment			\$	77,628	\$	78,404	\$	79,188	
						\$	79,980	\$	80,780

Town of Rothesay

UTILITY CAPITAL PLAN - 2019

WATER CAPITAL PLAN - 2019

	2019	Capital Reserves	Grants	Gas Tax Infrastructure	Operating	Borrow
water quantity	300,000	-			300,000	
mcguire compound fencing	35,000				35,000	
filter bldg heating system	70,000				70,000	
Well drilling (carried forward)	70,000	50,000			20,000	
Hillsview/Shadow Hill Watermain	450,000	200,000			-	250,000

	925,000	250,000	-	-	425,000	250,000
--	---------	---------	---	---	---------	---------

SEWER CAPITAL PLAN - 2019

asphalt related sewer work	100,000			-	100,000	
Church Avenue	650,000				-	650,000
RF SCADA changeover (carry forward)	35,000	35,000				
Turnbull Court design/engineering	75,000		-		75,000	-
WWTF Phase 2 design	1,500,000		1,000,000			500,000
	2,360,000	35,000	1,000,000	-	175,000	1,150,000
TOTAL CAPITAL 2019	3,285,000	285,000	1,000,000	-	600,000	1,400,000

Town of Rothesay

Capital Plan Summary
General Fund

2019

Services

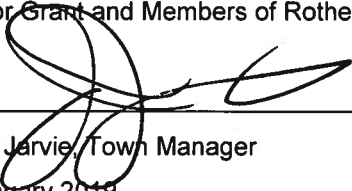
	Total	Operating	Reserves	Gas Tax	Grants	Borrow
GENERAL GOVERNMENT						
Building (Town Hall)	90,000	90,000	-	-	-	-
IT (MS Office/Server/Laptops)	50,000	50,000	-	-	-	-
	<u>140,000</u>	<u>140,000</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
PROTECTIVE (Fire Dept)	306,000	40,500	-	-	-	265,600
	<u>306,000</u>	<u>40,500</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>265,600</u>
TRANSPORTATION						
Street surfacing (per approved list)	1,370,000	570,000	-	800,000	-	-
Curb & Sidewalks (Marr Road)	425,000	425,000	-	-	-	-
Drainage (church avenue)	930,000	300,000	-	130,000	-	500,000
Designated Highways	282,500	-	70,625	-	211,875	-
Design / Studies	110,000	110,000	-	-	-	-
Fleet / Equipment	580,000	580,000	-	-	-	-
	<u>3,697,500</u>	<u>1,985,000</u>	<u>70,625</u>	<u>930,000</u>	<u>211,875</u>	<u>500,000</u>
RECREATION						
Arthur Miller Field surface	400,000					400,000
Trails	40,000	40,000	-	-	-	-
Arena renovation contract mgmt fees	100,000	100,000				
Connector trail	1,050,000	-	350,000		700,000	-
Truck	60,000	60,000				
Equipment	25,000	25,000				-
	<u>1,675,000</u>	<u>225,000</u>	<u>350,000</u>	<u>-</u>	<u>700,000</u>	<u>400,000</u>
Total Capital Expenditures	<u>\$ 5,818,500</u>	<u>\$ 2,390,500</u>	<u>\$ 420,625</u>	<u>\$ 930,000</u>	<u>\$ 911,875</u>	<u>\$ 1,165,600</u>



70 Hampton Road
Rothesay, NB
E2E 5L5 Canada

Rothesay Council
January 14, 2019

TO: Mayor Grant and Members of Rothesay Council

SUBMITTED BY: 
John Jarvie, Town Manager

DATE: 4 January 2019

SUBJECT: Contract Award – GIS CONSULTING SERVICES

RECOMMENDATION

It is recommended that Rothesay Council consider the following Motion:

Rothesay Council HEREBY awards the geographic information system (GIS¹) consulting services contract to **ESRI Canada Limited** for a total bid amount of \$49,933.00 with funding for the award from Planning and Development Services G/L # 26104060 as outlined in the Financial Implications section of this report.

Background

The town of Rothesay requires ongoing, software maintenance and technical support to assist with implementation of recommendations resulting from a GIS technical assessment completed in 2018 by ESRI Canada. The assessment identified several operational and new initiative recommendations to move GIS forward at the town of Rothesay.

Rothesay provides various services to residents in many different capacities such as treated drinking water, sanitary sewage treatment, storm water drainage, transportation services, parks and recreation facilities, bylaw enforcement, building inspection, and land use and development planning. For effective management of these services, Town staff requires access to the asset information on these services, such as their physical and descriptive data such pipe size or property ownership.

To meet these needs, the Town has put in place a corporate wide mapping system for all staff. The GIS software used by Rothesay is called ArcGIS. ArcGIS is a geographic information system (GIS) for working with maps and geographic information. It is used for creating and using maps, compiling geographic data, analyzing mapped information, sharing and discovering geographic information, using maps and geographic information in a range of applications, and managing geographic information in a database. There are currently over 100 datasets in the corporate ArcGIS database that locate and describe specified information; however, additional datasets and capabilities can be managed and utilized to offer in-house

¹ Geospatial Information Systems (GIS) are computer based software that captures, stores, analyzes, and manages geographically map referenced data. GIS tools allow users to create interactive queries, analyze spatial information, edit data, and map the results.

analysis and to develop the system as a one-stop shop for property information, infrastructure locations, informed capital planning, and accurate capital and maintenance job costing.

ArcGIS is the product of ESRI (Environmental Systems Research Institute) which is the world's largest geographic information system (GIS) software company. ESRI was founded in 1969 as a privately held consulting group in Redlands, California. ESRI Canada, a subsidiary of ESRI, is managed by Alex Miller, a Survey Engineer from the University of New Brunswick, who founded the company (ESRI Canada) in 1984.

ESRI Canada is the dominant marketplace provider of enterprise geographic information system (GIS) solutions to Canadian organizations in both the public and private sector. Rothesay has been an ESRI Canada client for more than ten years.

Recommendation

In 2017 Rothesay's Senior GIS Technician vacated his position and the Town has not filled that vacancy. Through 2018 the Town has chosen to maintain the corporate GIS at minimum service levels by contracting technical support services with ESRI. That relationship with ESRI has proven to be a successful method of alternate service delivery. In October 2018 Staff contracted Ms. Julie Roebotham, and Application Specialist with ESRI Canada to review (See Attached) the state of the Town's GIS and provide guidance and recommendations toward the direction of their GIS. That review concluded that without more regular and preventative software maintenance and major system upgrades Rothesay would be in jeopardy of major GIS service interruptions or failure.

Staff understand that non-competitive / sole source procurement is not the preferred method of carrying out a procurement process. However sole source procurement is unique given the dominant position of ESRI in the marketplace and that this software requires specialized training and knowledge that is not widely accessible under these very specific terms and technical conditions.

Considering the above information, Staff recommend that the Town accept the bid offer made by ESRI Canada as a "sole source" procurement contract. This award recommendation is based on the justification that ESRI Canada is the single known source supplier that can fulfil the Town's requirements.

Financial Implications

As part of the 2019 Budget approval process Council allocated \$125,000 to Planning and Development Services for the provision of Software and Equipment. The 2019 forecasted budget amount for this service was \$60,000 whereas the contractual cost for the ESRI software support is **\$49,933.00** which can be accommodated within the departmental budget.

Budget Summary: Project G/L No. 26104060

2019 Software Budget	\$125,000.00
Less: ESRI Support Contract Cost	<u>\$49,933.00</u>
Remaining 2019 Balance	\$75,067.00

The balance of funds will be used for the annual software license agreements for software (ArcGIS, Cityworks) as per the 2019 work plan for Planning and Development Services.

ATTACHMENTS

Attachment A – ESRI Canada GIS Review and Recommendations

Report Prepared by:


Brian White, Director of Planning and Development Services

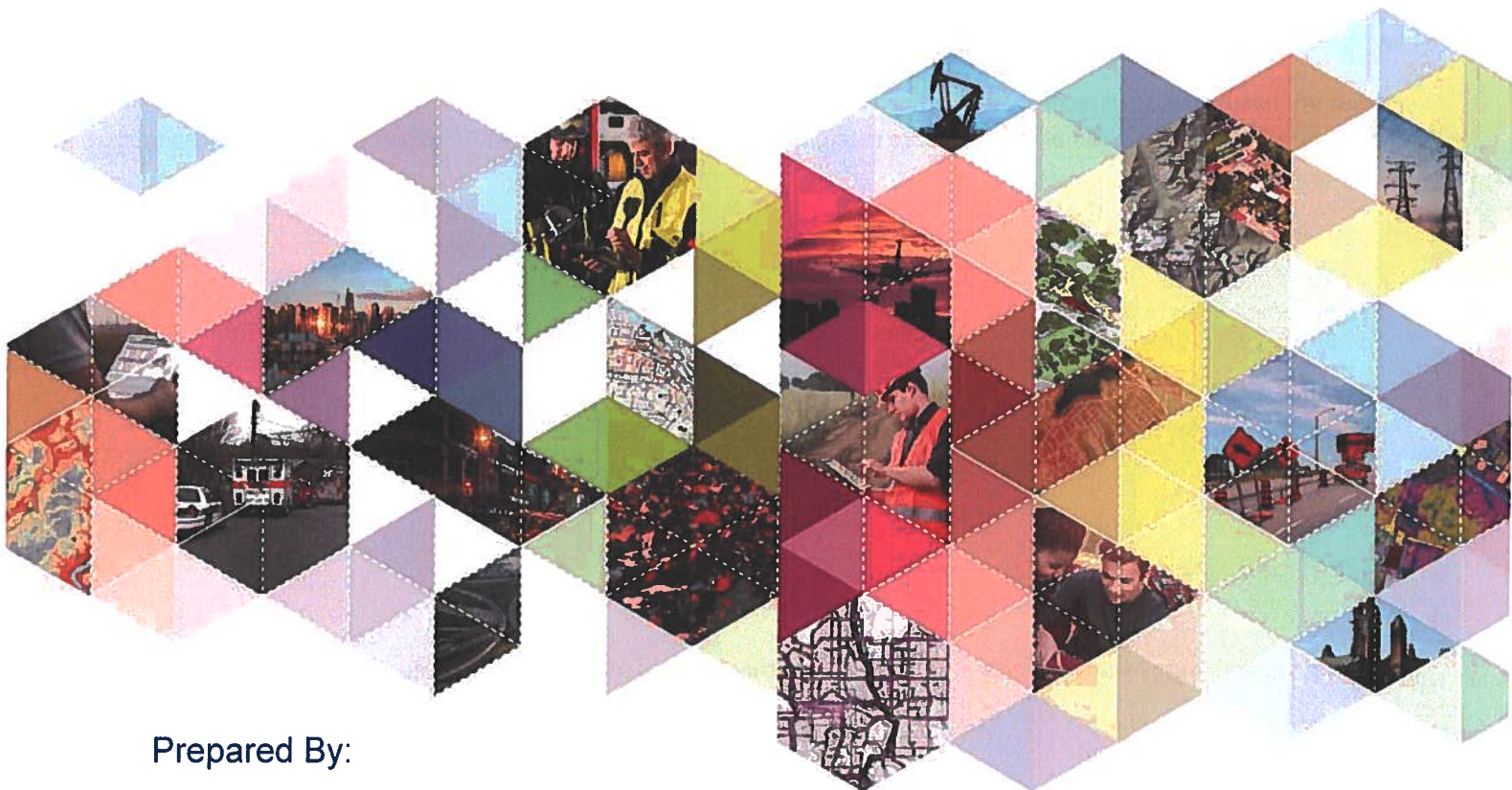
Finance Approval by:


Doug MacDonald, Treasurer



Report

Town of Rothesay GIS Recommendations



Prepared By:

Esri Canada Professional Services
Julie Roebotham, Application Specialist
T: 902-334-974

jroebotham@esri.ca
REPORT 2018-01
October 19, 2018

1496 Bedford Highway, Suite 606
Halifax, NS B4A 1E5

Statement of Confidentiality

Save as otherwise provided, the information contained in this document is proprietary and confidential to Esri Canada Limited. This document cannot be reproduced in any form or by any mechanical or electronic means, including electronic archival systems, without the written approval of Esri Canada Limited provided however that the issuer of the solicitation shall be exempt from this restriction and is permitted to use proprietary and confidential contained in this document in conformity with the terms or requirements of the solicitation or for the purpose of reviewing and evaluating this document. The receiving party shall use efforts commensurate with those that such party employs for the protection of corresponding sensitive information of its own to protect any information contained in this document for which the receiving party has an obligation to keep confidential.

If you are not the intended recipient of this document, note that reading, reproduction, or distribution of this document is strictly forbidden. You are hereby requested to inform us by telephone at 416 441-6035 and to return this document by certified mail to:

Esri Canada Limited
12 Concorde Place, Suite 900
Toronto, ON M3C 3R8

Contact Name: Nick DeMerchant
Phone: 506-238-0971

Trademarks

Esri Canada respectfully acknowledges that respective companies own all products identified in this response.

Table of Contents

Revision History	4
1 Background	5
1.1 Purpose	5
1.2 Methodology	5
2 Current State Analysis	6
2.1 Technology & Architecture	6
2.2 Applications and Users	7
2.3 GIS Administration	7
2.4 Data	7
2.5 Current Operational workflows related to GIS	7
2.6 Current Solutions	8
2.7 Cityworks	8
2.8 Current State – GIS Environment Status	9
2.9 Current State – Business Needs	9
3 Recommendations	11
3.1 Environment and Technology Upgrade	11
3.2 Operational Workflows	14
3.3 Enhancements and Projects	18
3.4 Timeline	21
4 Appendix 1	24
5 Appendix 2	25

Revision History

#	Date	Author	Circulation List	Description of Change
0.1	Oct 10,2018	Julie Roebotham		Initial draft

1 Background

Town of Rothesay (Rothesay) is an established user of the Esri platform. Rothesay has deployed ArcGIS for Server with development and test applications, leverages ArcGIS for Desktop for data management and map production, and has been exploring the benefits of ArcGIS Online to support business operations.

Rothesay has an enterprise geodatabase which houses their GIS data, but for approximately two years has not had a dedicated GIS resource to manage and maintain the data. This data is consumed primarily via a Flex Viewer web mapping application internally and three publicly available ArcGIS Online web mapping applications. Rothesay also has a Cityworks implementation and uses some legacy (currently non-functioning) scripting to push this data to ArcGIS Online for internal use.

Rothesay needs to modernize their ArcGIS environment and implement repeatable data management workflows to improve quality, accuracy and trust in the GIS data. Rothesay has also expressed desire to implement out-of-the-box solutions to address current needs, update existing scripts and processes and make Cityworks data more available to end users to maximize their Cityworks investment.

With this in mind, Rothesay had requested support from Esri Canada to review their GIS current state and provide guidance and recommendations toward the direction of their GIS.

1.1 Purpose

The purpose of this document is to create a set of GIS Recommendations. These recommendations strive to:

- Describe the current state of GIS at Rothesay, including the technical environment
- Outline the needs of the Rothesay staff where GIS is concerned
- Provide recommendations for upgrading the current environment, set in place operational workflows, and make recommendations on enhancements so the town can make full use of their investment.

1.2 Methodology

The review process began with the facilitation of a 2-day onsite workshop that took place September 27th and 28th 2018. An Esri Canada application specialist met and worked with business, GIS and IT resources to discuss the topics above.

The attendees for the workshop included:

Town of Rothesay	Esri Canada
Brian White, Director of Planning and Development Services	Julie Roebottom, Application Specialist
Darcy Hudson, Development Technician	Nick DeMerchant, Account Manager
Michael Kean, ICT Coordinator	
Doug MacDonald, Finance Director	
Brett McLean, Engineer and Director of Public Works	

Town of Rothesay	Esri Canada
Steve Nason, Bylaw Officer	
Charles Jensen, Director of Parks and Recreation	

Table 1 - Workshop Attendees

2 Current State Analysis

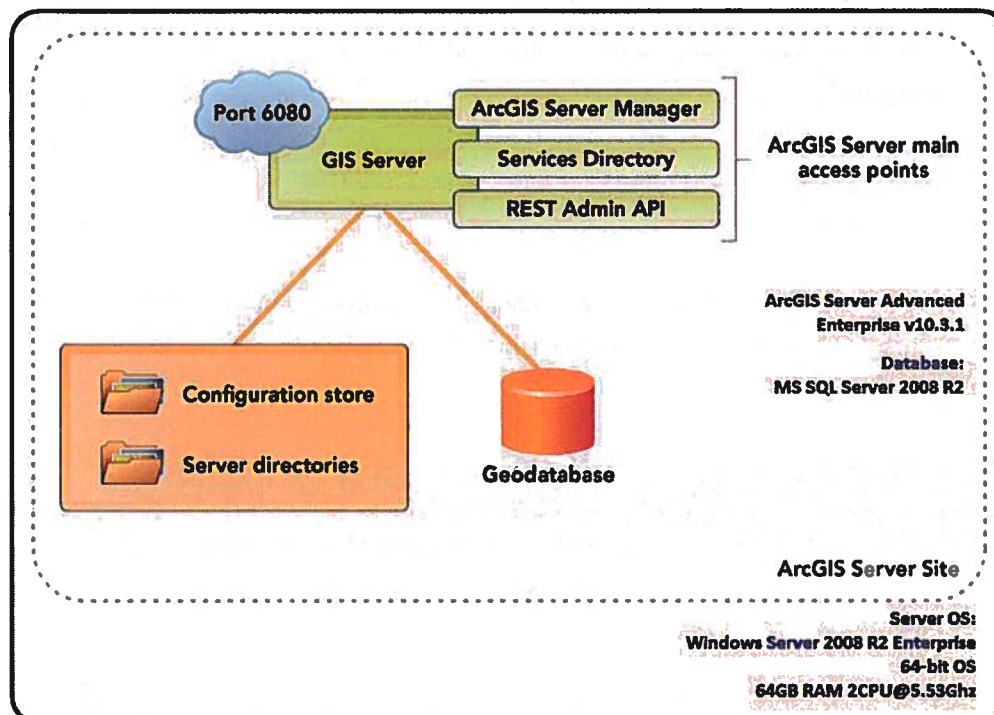
2.1 Technology & Architecture

The ArcGIS Software implemented at Rothesay includes:

- One SQL Server-based multi-user Geodatabase (version 10.3.1)
- One ArcGIS Desktop installation (ArcMap 10.3.1)
- One ArcGIS Server Advanced Enterprise (version 10.4.1)
- ArcGIS Online Organization

The following diagram outlines the current GIS architecture at Rothesay.

- ArcGIS Server, SQL Server geodatabase and Web Adaptor all reside on the same physical server



2.2 Applications and Users

The GIS applications in use at Rothesay:

Application	Description	Users
ArcGIS Desktop	Clean installation without add-ins or 3 rd party extensions	1
Flex Viewer - Rothesay Basemap	Web application containing majority of GIS data	All Authenticated
ArcGIS Online - Rothesay Recreational Sites	Story map with recreation information and videos	Public
ArcGIS Online - Operations Map Application	Web mapping application containing similar information to the Operations layers in the internal Flex Viewer	Public
ArcGIS Online - Development Services	Web mapping application containing similar information to the Development layers in the internal Flex Viewer	Public

Table 2 - Application Summary

2.3 GIS Administration

Currently the Rothesay has no dedicated GIS Administrator and has not had one in approximately two years. GIS falls under Planning and Development where there is a resource with GIS knowledge, but this resource is not solely dedicated to maintaining the GIS, nor are they associated with the other departments that rely on this data.

2.4 Data

Rothesay's GIS contains data for many departments at the municipality, including (but not limited to):

Category	Datasets
Development	Civic Addressing, Properties, Zoning, etc
Environmental	Topography, Flood Modelling, etc
Facilities	Town buildings, Town Property
Operations	Engineering Drawings, Sewer, Transportation, Water, Waste Collection, etc
Parks and Recreation	Benches, Picnic Tables, Trails, Parks, Playgrounds, etc

2.5 Current Operational workflows related to GIS

2.5.1 As-built / Activity Data Import

Contractors and 3rd parties are responsible for delivering data to Rothesay once a project is complete. This includes new construction, paved roads, sidewalk replacements, curbs, pressurized pipeline, sewers. Rothesay is also

responsible for documenting acquisitions and disposable (fleets, equipment, buildings). Most of this data is geospatial and should be imported into the geodatabase for use in other solutions and decision making.

2.5.2 Parcel Updates

Parcels are delivered monthly from the province and there is a model that runs each month to update the geodatabase

2.5.3 Scripts for pushing Cityworks data to ArcGIS Online

Cityworks is in use at Rothesay and there are several python scripts configured to pull permitting data from the Cityworks database and upload it into ArcGIS Online for use in other solutions

2.6 Current Solutions

The following GIS solutions are currently in operation at Rothesay

2.6.1 Flex Viewer (As mentioned above)

Web application containing majority of GIS data, as mentioned above

2.6.2 ArcGIS Online public facing apps (As mentioned above)

Web mapping applications containing similar information to the internal Flex Viewer app, available to the public

2.6.3 CoUrbanize

Third party collaboration application allowing citizens to place a point on the map and add a comment. Comments are received and responded to by Rothesay Staff.

2.6.4 Snow Plow Tracker / Garbage & Recycling tracker

Rothesay uses AVL with their snow plows and garbage trucks and displays this 3rd party service on a google web application.

2.6.5 Garbage Recycling Map

This is a static PDF of the current garbage & recycling zones

2.6.6 ArcGIS Collector for viewing Permits and Bylaws

The Bylaw Officer uses Collector for ArcGIS on his mobile device to view Cityworks permits. This data is pushed to ArcGIS Online using the scripts mentioned in the previous section

2.7 Cityworks

Rothesay uses Cityworks for Permits, Service Requests and Work Orders. Although there is room for training and knowledge transfer with Cityworks and the staff at the Town, this document does not deal with enhancements for the Cityworks implementation, except where there is room for some integration or where Cityworks data is being viewed through ArcGIS applications on mobile devices.

2.8 Current State – GIS Environment Status

The following is a list of potential and confirmed issues with the GIS environment that, although not necessarily a specific problem to the end users, need to be considered when discussing the future of GIS at Rothesay and the maintenance of GIS as a whole.

2.8.1 Aging Infrastructure / Legacy Software stack

The GIS environment at Rothesay is built on older versions of Windows OS, MS SQL Server database and ArcGIS Server / Desktop.

Flex Viewer is a legacy application framework to use with ArcGIS Services and doesn't allow for public access to applications without work on behalf of the IT department. It also doesn't allow the public to access any source data or query any datasets. Flex is also a deprecated technology that is no longer supported by Esri Canada and in 2019 will no longer be supported by modern internet browsers.

2.8.2 Geodatabase Size

There are three main databases at Rothesay and several database backups that are taking up a large amount of space on the GIS Server. The databases have versioning enabled, although the versions have not been modified in minimum four years. Replication is also enabled from the editing geodatabase (GEOROTH\GIS_LIVE) to the production geodatabase (GIS_PROD\GIS_LIVE) for most of the database. In addition to the overhead for versioning and replication, there are several large raster datasets duplicated across both production databases and in the development environments.

2.8.3 Environment Maintenance

The GIS environment hasn't been regularly attended to in several years. There are many scripts, scheduled tasks, services, ArcMap documents (mxd's) and various other documents with last modified dates of 2013 and earlier. These take up storage disk resources on the GIS server and can likely be archived or removed completely.

2.9 Current State – Business Needs

The following are the main pain points identified by the various departments during the 2-day workshop.

2.9.1 GIS Resourcing

Description: A major pain point repeated by various different departments in the two-day workshop at Rothesay was the lack of a dedicated GIS Resource to manage the environment on a daily basis.

Regular GIS Administrative tasks have not been performed on an ongoing basis for approximately two and a half years, impacting some of the applications and workflows (Collector with Cityworks points and the parcel import process, as an example). There has not been a resource assigned to regularly process incoming data, leading to the asset data in the geodatabase being incomplete.

Who is impacted: The GIS role at Rothesay falls under the Planning group, but any group requiring access to GIS information (planning, finance, engineering, permitting and by-laws, parks and recreation) all mentioned being impacted.

2.9.2 Incorrect and Incomplete Data in the Geodatabase

Description: In many cases data that underpins applications and decision-making processes related to GIS is suspected of being incomplete or inaccurate.

Who is impacted: Geographically inaccurate and incomplete data is an issue for Engineering who need to make decisions based on asset data. Currently sewer data is known to be inaccurate, and the lack of regular data loads into the system often means the newest data is not present.

Incomplete data is an issue for Finance who requires existing assets to be represented in the GIS so that costing calculations can be performed. Assets are also missing condition attributes, and assumptions are being made about the data that is there. Current asset age is acting as a surrogate for condition.

2.9.3 Publicly available data not easy for the public to find

Description: Calls come in from the public and developers for GIS information that could be made available in a self serve manner through web mapping capabilities. These calls are often handled by Rothesay staff, taking time away from other activities. Much of the calls regarding has no privacy or security concerns – for example, 'Who owns the tree on my property' or 'what is the zoning of my property'.

Who is impacted: These calls are often handed by the front desk and are forwarded to the Planning Department and the Bylaw officer.

2.9.4 Data in applications is not current

Description: Some of the ETL processes set up in the past are no longer running / functional.

There are a number of python scripts on the GIS server whose function is to keep the hosted data in ArcGIS Online up-to-date. These services include Cityworks Events, Development, Operations and possibly others (Water, Transport). The python scripts doing this push are out of date and include some arcpy methods that no longer work.

Who is impacted: The publicly available ArcGIS Online applications are out of date. The ByLaw officer has a Collector for ArcGIS field data collection application on his phone for viewing Cityworks events but these have not been updated since early 2018.

2.9.5 Asset data is not current and does not contain the correct information for amortization process

There is a yearly amortization process on assets which requires condition data. Condition data does currently exist in the geodatabase. Rothesay currently has a workaround using spreadsheets, making use of age as a surrogate for condition. The asset data needs to be properly configured in the GIS database to support this process. CBCL has taken a cut of the data and added some attributes, but this data has yet to be assessed or QA/QC'd and has not been added to the geodatabase. Exact changes to the data are not known.

The province also requires a 50 year asset replacement budget. The data exists at Rothesay but currently is not in the GIS.

Asset activity data has not been added from 2017 and 2018. Asset data is only added when projects are complete. Currently all new construction, paved roads, sewer work, pipeline work, sidewalk replacements and acquisition and disposal data (for buildings, fleet and equipment) have not been added to the geodatabase.

Who is affected: Primarily finance, although engineering needs to make decisions based on the accuracy and completeness of this data

3 Recommendations

The recommendations will be split up into three sections:

- Environment & Technology upgrade
- Operational workflows
- Enhancements and Projects

3.1 Environment and Technology Upgrade

3.1.1 GIS Server, OS and Database Upgrade

The GIS environment at Rothesay is due for an upgrade as well as an overall assessment to see what is still necessary.

3.1.1.1 *ArcGIS Enterprise*

ArcGIS Enterprise is an on-premise solution that enables web GIS on one's own environment. Currently the Rothesay uses ArcGIS Server with web adaptor and Flex Viewer to bring web GIS to their organization. They have also made use of ArcGIS Online to provision and visualizes their data.

At this time, ArcGIS Enterprise is not part of the immediate set of recommendations for Rothesay. They should continue to make use of ArcGIS Server and ArcGIS Online as a hybrid web GIS solution. At the current time, the overhead required to implement and maintain ArcGIS Enterprise is not necessary as they are well able to accomplish their targets using the system in place.

Instead, an ArcGIS Enterprise Impact and Needs assessment is placed on the road map as a near to mid-term goal. Pre-requisites would be an upgrade to the system and stabilization of current data and workflows, as well as a resource with GIS administrative capabilities who could manage the implementation.

3.1.1.2 *ArcGIS Server*

ArcGIS Server can be upgraded to the latest version 10.6.1, which will allow Rothesay to make full use of the technology available in the latest version as well as benefit from the fixes and enhancements to security, map and feature services, administration and the API. For a full list of upgrades and issues addressed in 10.6.1, please see the following documentation:

<http://enterprise.arcgis.com/en/server/latest/get-started/windows/what-s-new-in-arcgis-for-server.htm>

3.1.1.3 *Microsoft SQL Server and Windows Server OS*

ArcGIS Server 10.6.1 would require an upgrade to the SQL Server implementation, from 2008 R2 to a more recent version. The OS of the physical machine the server is on is still supported, but an OS upgrade may want to be considered at this time as well to avoid having to do it later (ideally to Windows Server 2012 or Windows Server 2016)

The following link describes the system requirements for ArcGIS Server 10.6.1. An upgrade to Microsoft .Net Framework is likely also required.

The current GIS Server has an appropriate amount of cores and RAM for the licensing requirements.

<http://enterprise.arcgis.com/en/system-requirements/latest/windows/arcgis-server-system-requirements.htm>

3.1.2 Database Size and Redundancy

Rothesay has implemented a one database per instance methodology using Microsoft SQL Server. The three main GIS Instances – GEOROTH, GIS_PROD and GIS_TEST each contain a database called GIS_LIVE. For the purposes of this document, the databases will be referred to by their instance (which is different) rather than the database name (which is the same for all three)

GEOROTH and GIS_PROD are the main production databases, with GEOROTH being editable and GIS_PROD being for viewing purposes. GIS_TEST is the dev/text database.

GEOROTH and GIS_PROD are both quite large and contain much of the same data. Both are versioned, and there is a replication script that runs 5 nights a week replicating a significant amount of data. There are also static rasters (DEMs, hillshades and orthophotos) that are duplicated on each database. Lastly, both databases are versioned which increases the overhead in maintenance (there is also a regularly run compress script) and adds tables to both databases to support versioning workflows. Currently there is only one editor at Rothesay.

3.1.2.1 *Designate GEOROTH as sole production database instance*

The GIS architecture at Rothesay doesn't require two production enterprise geodatabases. The recommendation is to merge GEOROTH and GIS_PROD into one enterprise geodatabase, with a publishing and editing version strategy.

All editable data should be merged from GEOROTH into the GIS_PROD database, and all static data (rasters, point in time datasets such as 2008 flood data) would remain in the publication database.

The Default version would be used to create ArcGIS Server services, while any edits would be performed on an edit version created off default. When edits were ready to be published, the edit version would be reconciled and posted to default, and deleted.

A number of configuration items need to be assessed when merging two databases. Any users and roles from GEOROTH need to be migrated to GIS_PROD along with the most recent data from the editable feature classes. Any scripts or mxd's pointing to GEOROTH would need to be updated.

Any static data in GIS_PROD that is version should be unversioned. Only datasets that are available for editing should be versioned. Only the GIS Editor should have the ability to post to default.

This frees up a significant amount of space and removes data redundancy and overhead required to maintain versioning and replication for two databases. It also maintains the versioned editing paradigm.

The replica that exists between both databases can be removed, along with any replication synchronization batch files. Finally a regular reconcile and compress batch script needs to be created to work against the newly merged GIS_PROD instance.

3.1.2.2 *Remove old backups and log files*

There were a number of old testing and backup databases that should be assessed and removed from the system. Also

3.1.3 *ArcPy Script Assessment / Enhancement*

There are currently a number of ArcPy scripts running on the GIS server. At least a subset of these, used to push data to ArcGIS Online, are currently not working due to a legacy ArcPy command that no longer works.

- Assess the scripts used to push data to ArcGIS Online and either re-write using ArcPy / ArcREST or migrate to the python web API.
 - There is a mobile device application set up to view Cityworks permitting data. This hasn't worked since February 2018 because of a deprecated ArcPy command
- Assess the remaining python scripts on the GIS Server to determine whether they are still running, frequency of run and whether they are still required

3.1.4 *Web Migration – Flex Viewer to ArcGIS Online*

Rothesay currently uses Flex Viewer to deliver web GIS to their users. Flex Viewer is no longer being actively developed for use with ArcGIS with the last planned release being from 2014. As such, Flex Viewer is no longer a recommended option for web GIS. Rothesay already makes use of ArcGIS Online, including pushing data from the internal geodatabase to ArcGIS Online on a regular basis making the data available to select end users.

The recommendation is to move away from Flex Viewer entirely and migrate the internal Flex Viewer application to ArcGIS Online.

3.1.4.1 *Flex Viewer to ArcGIS Online Data / Service assessment*

There are currently a number of ArcGIS services configured in ArcGIS Server at Rothesay. Some of the data is being pushed to ArcGIS Online and some remains internal for use in the Flex Viewer service.

A service assessment is recommended.

- Any data that can and should be publicly available should be configured into a feature service or services and pushed to ArcGIS Online. This may require an assessment of the data for privacy concerns.
- Any data that is internal only – that is, it doesn't need to be accessed by the public or exist in any public applications – should remain as an ArcGIS Server service.
- Scripts should be configured to automatically keep data in ArcGIS Online current. If, in the future, ArcGIS Enterprise is implemented Collaboration should be investigated to remove the need for scripting.

Continuing to host publicly accessible data in ArcGIS Online, with regular updates from the geodatabase via script, will allow the data to be accessed externally without making any modifications to the firewall (ie opening ports).

3.1.4.2 *Flex Viewer to ArcGIS Online Data / Service assessment*

The current Flex Viewer application contains many data layers and represents a mode of web mapping that is no longer recommended. Today's web mapping best practices include smaller, purpose-built applications, or suites of applications, designed to host fewer numbers of layers and allow the user to perform specific tasks. Smaller numbers of layers also improve performance as less features need to draw simultaneously.

- An assessment should occur to determine whether the migration of the Flex Viewer application should be 1:1, or whether a set of applications would be more functional.
- Also, an assessment of the layers within the app should occur, to identify if some layers are never used or are outdated, and can be removed.

3.1.4.3 *Enterprise Logins / SSO implementation*

The current Flex Viewer at Rothesay is available to all users on Rothesay's domain. This is a change from ArcGIS Online which is based on user identity. Migration to ArcGIS Online will mean a migration to an identity based system. The recommendation is to enable Enterprise Logins using SAML and Active Directory. This will remove the need for users to remember a new set of credentials, and to use the ones they're already familiar with.

Configuring enterprise logins with Active Directory Federation Services (ADFS) as the identity provider (IDP) will also provide a single-sign on login experience. With IDP-initiated logins, the member is signed in and can access resources without having to sign in again.

Anyone using a mobile device would require VPN access to the network to authenticate their credentials and access data that resides behind the firewall

3.1.4.4 *Recreate Basemaps and Push to ArcGIS Online*

There are currently a number of proprietary basemaps that exist in the Flex Viewer application that will need to be migrated to ArcGIS Online. These appear to be mostly imagery. Rasters will be cached locally and tile services published to ArcGIS Online. Once they're hosted they can be added to the Basemaps group for the Rothesay ArcGIS Online organization which will make them available to any future map or application.

3.2 Operational Workflows

3.2.1 GIS Resource

It is recommended that Rothesay assign a dedicated GIS Resource.

While their current GIS implementation isn't overly complex, it does include enterprise geodatabases, versioning, scripts, imagery, ArcGIS Server and web applications both on site and in ArcGIS Online. All these components require some maintenance, and this has not been regularly performed in the last number of years.

In addition, many groups rely on data from the GIS. Without regular operational maintenance workflows in place, this data is becoming untrustworthy – incorrect and incomplete – and its use by each group is being reduced. The

investment into GIS is not being realized to its full potential and future opportunities to enhance operations and decision making are being lost.

A dedicated GIS resource performing a set of regular maintenance workflows is recommended and, if possible, this resource should not be attached to any one department. The nature of the data in the GIS is such that it benefits all departments, and the staff maintaining it should have the ability to look across departments to ensure decisions and implementations are for the greater benefit of the entire municipality.

3.2.2 Operational Checklist

Developing a regular operational checklist is recommended so that GIS maintenance staff can take stock of the various procedures and ensure they are running smoothly.

This would include checking and confirming the functionality of the following tasks:

- Regularly scheduled scripts
 - Data push to ArcGIS Online
- Regularly scheduled tasks
- Regular processes
 - Parcel load
 - Other incoming data (as builds, other data from 3rd party contractors)
- ArcGIS Server service availability
- Geodatabase maintenance tasks
 - Reconcile and post
 - User and role cleanup
 - Database log file backup and archiving
 - Replication synchronization (if applicable)
- Creation and maintenance of a configuration management database. This helps should data, schema or applications change. The resource can consult the list and immediately see who and what is impacted
 - What services exist
 - What data is in each service
 - What maps / applications consume which services

This list would be dynamic, with items being added or removed as data, applications and processes change.

3.2.3 Data Workflows

There are several data workflows that require regular and ongoing maintenance, as well as some new processes that should be developed.

3.2.3.1 Parcel Load

There is an existing process to load parcel data delivered by the province into the geodatabase. This process is complex and involves a GIS model and a number of related tables. It has been noticed that this is not behaving as expected, with data and values missing. An investigation into this is recommended to determine if it is the data from the province or the load process itself. The load process should be updated (if applicable), tested and the process documented.

3.2.3.2 As-Built Data Load

Developers are required to provide data for completed projects to Rothesay, and this data needs to be entered into the geodatabase. A process should be built around this and documented so that staff can confirm what is outstanding versus what has been completed versus what has been entered.

This process would need to be assessed in a workshop, but essentially it should include the following:

- Developing a layer in the GIS to outline current development projects (represented by polygons) and labelled by name.
 - This layer should be consumed in a simple application that allows end users to view the location of a development and the status of drawing (ie : In Progress, Complete and As Built Incorporated)
- Once the developer delivers the completed diagram, the GIS Resource changes the polygon status to complete and loads the data into the edit version of the database
- End users are aware the development is complete and the data has been added to the geodatabase

The origin of this data needs to be determined. It could be from the recordkeeping department, or derived from other data. The process needs to be put in place between the origin source that, when a new development has begun, the GIS Resource needs to be notified.

The GIS Resource also requires a service level agreement on the delivery of a status of completion. They should have an agreed upon number of days to complete the dataload into the GIS and update the status polygon.

3.2.3.3 Data Accuracy Workflows

It was noted several times that data in the GIS is not accurate. It was also noted that a number of staff at Rothesay would be able to point out areas where information was inaccurate – sewers in the GIS that don't actually exist, etc.

Also, the previous GIS resource had a workflow where inspected assets were symbolized different than others to show they had been inspected and were accurate.

A data workflow needs to be put into place for determining areas requiring inspection and to highlight inspected areas. This would be an ongoing process for a number of different datasets and would require a workshop at the beginning to assess the priority of datasets requiring confirmation.

The recommendation here is four parts:

1. Create a web map containing asset data and share to the appropriate group for Mark-Up. Staff highlight areas where they know data is inaccurate.

2. Use these markup areas to systematically create 'inspection areas' around the suspected inaccurate areas.
3. Use these areas to create work assignments using Workforce for ArcGIS and assign to the appropriate resource.
4. Resource accepts the assignment and goes out to the location to inspect the area and uses Explorer for ArcGIS to markup the area with the correct edits. Once complete, the assignment is marked as such.
5. GIS Resource looks at the markups and makes the appropriate edits in the GIS database
6. Create an 'Accurate Areas web viewer. Once edits are made in the GIS database they are symbolized to show they have been inspected and are accurate. This map is shared to all internal users.

3.2.3.4 *Data Completeness Workflows / Support for Finance*

The asset data at the Rothesay is currently incomplete.

The Finance group requires the asset information to be complete as it is used for costing, lifecycle analysis, risk assessment and amortization calculations. Currently an attribute for age is acting as a surrogate for condition

A third party contractor took a version of asset data in 2017 and added attributes to the data that might cover some of the lifecycle modelling requirements. As yet, this data has not been able to be added into the geodatabase.

This data needs to be assessed for changes to the original and, if no changes have been made to the cut of the data since it was taken, incorporated into the geodatabase as part of a schema change.

The town also requires a process to maintain these attributes. Lifecycle modelling and risk assessment workflows will be demonstrated to Rothesay by Esri in November. As such, this document will not deal specifically with those workflows.

It is also recommended that Rothesay implement a repeatable process for staff or contractors to inspect these assets. Ideally this would take place using a mobile device and would allow the user to update the geographic and attribute data directly into the geodatabase.

It is recommended this process be setup using Collector for ArcGIS which would allow for both geographic and attribute additions, updates and/or removals.

These edits can be synchronized directly to an edit version of the geodatabase and a QA/QC process set up around them, either using visual inspections or Data Reviewer as mentioned in the section above. Data Reviewer includes a version change tool so the QAQC officer can verify each change before posting to the default version.

Asset Viewer and Query Tool / App

Finally, Finance requires a way to view these assets, select a set by location (ie All manholes within 10m of Main Street) and export the data in a .csv report. To accomplish this a simple web application is recommended.

A brief workshop with finance or related staff should take place to determine the exact data and queries required, as well as the user group who needs to see the data. Users will be able to select assets by a specific location – either by entering a point on a map or selecting an area – and export the set of assets to .csv, shapefile, file geodatabase, etc.

3.2.3.5 *Ad Hoc Requests*

In addition to the regular operational work listed above, there are likely ad-hoc requests that come in irregularly. These need to be dealt with, ideally by a regular GIS Resource.

3.3 Enhancements and Projects

Links listed below for solution examples can also be found in [Appendix 1](#)

3.3.1 GIS visibility on Rothesay Web page

There is no access from the current Rothesay web page to any of the GIS applications that exist that are available to the public. A recommendation that applies to any public facing application is to make a 'Maps and Apps Home' for it on the Rothesay homepage. This can either link to a gallery of publicly available apps within the ArcGIS Online organization, or can be configured to contain all publicly available maps and apps in an iframe within the web page itself.

The publicly available applications should be easy to find

3.3.2 Hub Basic / Open Data

As part of a data / service assessment mentioned in the web migration section above, data would be determined to be publicly accessible or not, with public data being pushed regularly into ArcGIS Online.

Taking this one step further, adding this data to an Open Data group and configuring a site to act as a landing page makes the data searchable, available for download to the public or anyone looking for town data. The site can also be configured as a one-stop location for publicly available applications and give the public a space where they can visualize and query the data themselves.

The following are examples of Hub Basic / Open Data sites.

The process to determine what data can be shared publicly will likely occur as part of the web migration. There will likely need to be an additional workshop to determine what should be shared as downloadable through the open data portal.

Finally, the GIS Resource will need to implement an Open Data update workflow to ensure the data available in the Open Data portal reflects the most up-to-date copy from the database.

<http://catalogue-saintjohn.opendata.arcgis.com/>

<http://data-fredericton.opendata.arcgis.com/>

<http://newdata-easthants.opendata.arcgis.com/>

<http://catalogue-hrm.opendata.arcgis.com/>

3.3.3 FAQ Self-Serve App

The Planning and Development Department at Rothesay spends a significant amount of time answering questions from the public that could easily be made into a self-serve application addressing the most Frequently Asked Questions on behalf of the public.

For example, questions such as 'What are the current events?', 'Who owns the tree on my property', 'What by-law zone am I in and what are the details' or 'What is the development happening at X address' can all easily be answered by allowing the public to browse data and make use of specific queries in regards to the data.

A workshop would be required to determine what data is available, what the structure of it is, as well as to determine the best / most frequently asked questions.

A list of common FAQs provided by the Rothesay is included in [Appendix 2](#)

See the following link for an example of a similar application configured for Halifax Regional Municipality.

<https://www.arcgis.com/apps/webappviewer/index.html?id=425cf408196648db994be8f53206f75c>

3.3.4 Explorer for Permit Viewer (Mobile Device)

There is currently a solution at Rothesay for viewing permits on a mobile device. This is an implementation of Collector for ArcGIS and displays data from Cityworks to the end user. This should be upgraded to use Explorer for ArcGIS.

The scripts themselves aren't working due to an issue with a legacy ArcPy command. These should be fixed as mentioned in the technology upgrade to continue to make the permitting data available in the Explorer map.

3.3.5 As-Built Status Viewer

As mentioned in the Operational Workflow section on As-Built Data loads (above) an As-Built Viewer web mapping application would allow staff to see the status of ongoing projects, as well as determine whether completed project data is present in the GIS.

3.3.6 Accurate Areas web viewer

As mentioned in the Operational Workflow section above on Data Accuracy, an Accurate Areas web mapping viewer would allow staff to know where asset and as-built data has been verified as accurate.

3.3.7 Asset Viewer and Query Tool / App

As mentioned in the Operational Workflow section on Data Completeness (above) an Asset View and Query web mapping application would allow staff to view assets and conditions as well as query assets by location.

3.3.8 Citizen Problem Reporter

Citizen Problem Reporter is an application that allows the public to submit issues related to municipal operations. Rothesay would decide what types of information they want to allow the public to submit a report on (for example, to report a pothole including a photo, or to report a barking dog), and this application provides the interface.

Each submitted report becomes a point on a map which contains information about the submitter as well as the report submitted. The point can then optionally be managed, displayed and queried in ArcGIS Online just like any other point. The report itself can be managed using Citizen Problem Manager. Staff can comment on incoming reports, change the status of the report, assign the problem to a specific person.

Finally, there is an option to configure a dashboard to aggregate data specific to the reports and all incoming submissions as a whole. This can be shared to a specific subset of users who do not need to update the reports, but simply need to see the statistics related to incoming information from the public (for example, town council)

If desired this can be integrated with Cityworks so that certain calls requiring follow-up service requests can be created. Cityworks does not currently have a public facing interface to allow the public to submit reports. This integration is custom but is not overly complex and has been implemented for other clients.

An example of Citizen Problem Reporter can be found here:

<https://www.arcgis.com/apps/CrowdsourceReporter/index.html?appid=106f109bd2394496bcc69d486523ffc5>

An example of Citizen Problem Manager can be found here:

<https://www.arcgis.com/apps/CrowdsourceManager/index.html?appid=aeacc57bf49a4b34a2201693b916654d>

An example of Citizen Problem Dashboard can be found here:

<https://www.arcgis.com/apps/opsdashboard/index.html#/f49b67cb587348ccad21a19b4d84f97c>

3.3.9 Additional ArcGIS Solutions:

Several other applications were reviewed during the 2-day workshop at Rothesay with the following being of some interest to the various departments.

3.3.9.1 Public Notification App

This application allows the town to select an area on the map and automatically creating mailing labels based on the selected area.

This application requires configuration based on the towns own data. Some data manipulation may be required depending on how their current addressing data is structured.

An example of the public notification app can be found here:

<http://statelocaltryit.maps.arcgis.com/apps/webappviewer/index.html?id=d66b6b83951c402dbe0d5c7649efb031>

3.3.9.2 Tree Inventory App

Tree inventory was discussed with Planning and Development as well as Parks and Rec. A configuration of the Collector for ArcGIS application can be used to collect tree information. Once the information has been collected it can be used as any other feature layer in ArcGIS Online, whether that is for public inquiry (who owns this tree) or for more complex forest management.

Information about a number of out of the box tree management solutions can be found at

Collection Editor

<http://publicgardens.maps.arcgis.com/apps/webappviewer/index.html?id=431ce98895104dc8bf38a068d6a1ab01>

Street Tree Inventory

<http://solutions.arcgis.com/local-government/help/street-tree-inventory/>

More general solutions for Right-of-way inventory applications

<http://solutions.arcgis.com/local-government/public-works/inventory-assets/>

3.3.9.3 *Property Lister App*

This is an application that allows the public to add commercial properties or sites for sale or lease that exist within that town that you might not find on Realtor.ca. Each property would be added to the map with a number of fields requiring information. Each incoming property would be monitored by Rothesay staff and displayed on the map once the point was confirmed to have the relevant required information.

An example of this type of application exists here:

<http://www.arcgis.com/apps/CrowdsourcingReporter/index.html?appid=0a7182ed5588407a9f5132ad78f3fd16>

Staff would use an app similar to the one below to approve the point and post to the map

<http://www.arcgis.com/apps/CrowdsourcingManager/index.html?appid=0539f7ecb83e4c13af156770ca755979>

3.3.9.4 *Parks / Playground Inspection App*

Parks and Rec voiced a need to be able to do inspections related to parks and facilities. The recommendation here is to use Survey 123 to create an inspection app to allow users to collect inspection information on a mobile device.

A workshop would be required to determine exactly what needs to be inspected and whether there are paper versions that could be transcribed into a digital format.

An example of a playground inspection type application can be found at the following link.

<https://survey123.arcgis.com/share/c6c4eef04bb24ce4816271bbd9df9573>

3.3.9.5 *AVL Snow Plow / Garbage and Recycling Enhancements*

The current AVL applications in Google are using X,Ys from the 3rd party AVL service to display truck and plow locations on a map.

This process should be investigated to confirm its still operating correctly.

If there is a desire on behalf of the town to keep all their geospatial applications on one platform, this service and application could be moved to ArcGIS Online and shared to the public.

3.3.9.6 *Garbage Zone Map*

This is currently a pdf on Rothesay's website and could easily be moved to a web application that lets the public search for their address to determine what zone they're in.

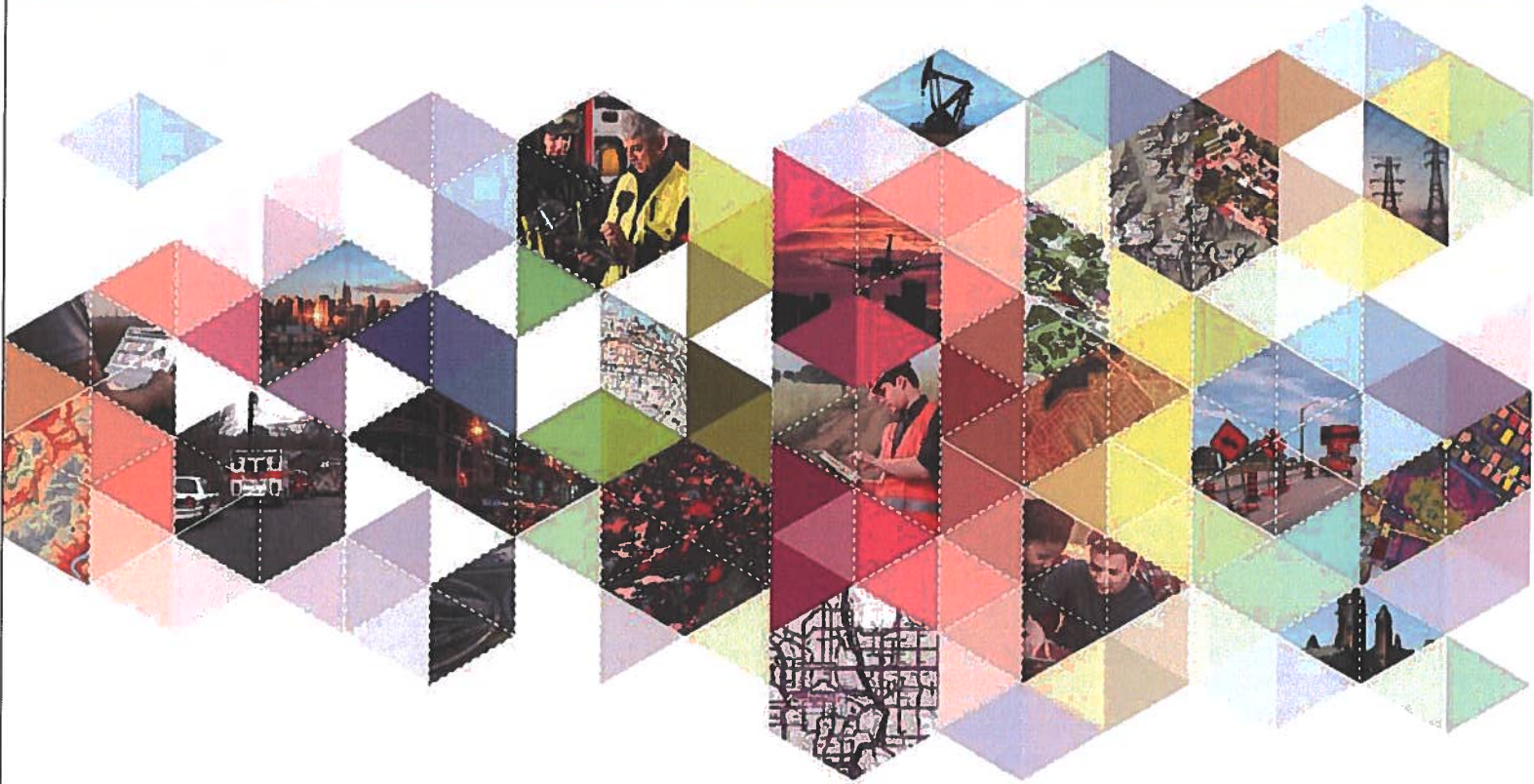
3.4 Timeline

The following diagram highlights the major categories and the general order of implementation for both the operational and enhancement recommendations.



Figure 1 - High level timeline

Appendices



4 Appendix 1

Table of ArcGIS Solutions listed above plus example links

Solution	Example
Hub Basic / Open Data	http://catalogue-saintjohn.opendata.arcgis.com/ http://data-fredericton.opendata.arcgis.com/ http://newdata-easthants.opendata.arcgis.com/ http://catalogue-hrm.opendata.arcgis.com/
FAQ / Self Serve Application	https://www.arcgis.com/apps/webappviewer/index.html?id=425cf408196648db994be8f53206f75c
Citizen Problem Reporter	https://www.arcgis.com/apps/CrowdsourcingReporter/index.html?appid=106f109bd2394496bcc69d486523ffc5
Citizen problem Manager	https://www.arcgis.com/apps/CrowdsourcingManager/index.html?appid=aeacc57bf49a4b34a2201693b916654d
Citizen Problem Dashboard	https://www.arcgis.com/apps/opstdashboard/index.html#/f49b67cb587348ccad21a19b4d84f97c
Public Notification	http://statelocaltryit.maps.arcgis.com/apps/webappviewer/index.html?id=d66b6b83951c402dbe0d5c7649efb031
Tree Collection Editor	http://publicgardens.maps.arcgis.com/apps/webappviewer/index.html?id=431ce98895104dc8bf38a068d6a1ab01
Street Tree Inventory	http://solutions.arcgis.com/local-government/help/street-tree-inventory/
Other ROW inventory type apps	http://solutions.arcgis.com/local-government/public-works/inventory-assets/

Property Lister	http://www.arcgis.com/apps/CrowdsourcingReporter/index.html?appid=0a7182ed5588407a9f5132ad78f3fd16
Property Manager	http://www.arcgis.com/apps/CrowdsourcingManager/index.html?appid=0539f7ecb83e4c13af156770ca755979
Playground Inspection App	https://survey123.arcgis.com/share/c6c4eef04bb24ce4816271bbd9df9573

5 Appendix 2

Planning Department FAQs delivered by Rothsay



Planning Dept FAQ
- sorted .docx



ROTHERSAY

MEMORANDUM



TO	:	Mayor and Council
FROM	:	Town Clerk Mary Jane Banks
DATE	:	9 January 2019
RE	:	Amendment to Disposal of Surplus Vehicles and Equipment Policy

RECOMMENDATION:

Council adopt the revised version of the Disposal of Surplus Vehicles and Equipment Policy originally adopted 13 November 2018; more specifically the second last paragraph be changed as follows:

“All sealed bids are opened by a committee of at least two (2) persons.” be added as a bullet point

The following sentence be deleted:

~~If the bid opening is to be done publicly then the date, time and venue for the bid opening meeting will be advertised on Kijiji Canada within the body of the ad.~~

BACKGROUND:

As Council will recall, the Disposal of Surplus Vehicles and Equipment Policy was originally adopted 13 November 2018, with amendments made at the Council meeting.

Following the distribution of the approved policy, Counc. Lewis noted the typographical error contained in the second last paragraph that contradicts the last bullet point.

The recommendation above is requested to correct the contradiction.

ROTHESAY

Policy

Topic: Disposal of Surplus Vehicles & Equipment	Date Amended	
Application: Town Vehicles and Equipment	Date Prepared	November 9, 2018
	Date Adopted	November 13, 2018
	Mayor & Council:	
	Town Manager:	

Vehicles & Equipment are declared surplus in the following manner:

- A budget is proposed for replacement vehicles & equipment based on the 10-year Fleet Replacement Program;
- Budget is adopted by Council;
- Competitive pricing is obtained for vehicles & equipment included in the budget;
- Pricing results are presented to Council for award of the vehicle or equipment purchase;
- Council adopts a recommendation to authorize the issuance of a purchase order for the vehicles or equipment;
- The vehicle or equipment is ordered, received and put into service;
- The corresponding equipment that the purchase replaced, according to the 10-year Fleet Replacement Program is declared surplus.

Surplus vehicles and equipment are disposed of in the following manner:

- Consult with long term employees to determine condition and expected value of the surplus vehicle or equipment;
- List the surplus vehicle or equipment for sale on Kijiji Canada as a silent auction with particular specifications as well as the following General Description and Terms:

The following is a piece of surplus equipment being disposed of by the town of Rothesay by means of a silent auction.

Interested parties should send a copy of their bid to the Town by the following means:

Deliver to the Town Hall, 70 Hampton Road, Rothesay in a sealed envelope marked with the piece of equipment the bid is for before _____pm on_____,_____, 201_.

Bids must state the piece of equipment you are interested in, the amount you wish to pay, your phone number and your signature.

Bidding will close on_____,_____, 201_. On the following business day all bid envelopes will be opened, bids will be reviewed to meet the criteria listed above and the highest bidder who met all of the requirements will be notified.

This surplus vehicle or piece of equipment is situated for viewing outside the main gate of the Rothesay Public Works Garage at 19 Master Drive in Rothesay.

- All units are to be sold as is;
- All vehicles and equipment that are declared surplus are to be disposed of as indicated by this policy;
- All bids received are to be opened in a public forum at the Town Hall.
- All sealed bids are opened by a committee of at least two (2) persons.

Mayor, Councillors, Staff and immediate family members of the same are excluded from the Kijiji bidding process with respect to surplus vehicles and equipment being disposed of by the Town.



70 Hampton Road
Rothesay, NB
E2E 5L5 Canada

Rothesay Council
January 14, 2019

TO: Mayor Grant and Members of Rothesay Council

SUBMITTED BY:



John Jarvie, Town Manager

DATE: January 9, 2019

SUBJECT: 2019 Asphalt Resurfacing and Microseal Placement Program

RECOMMENDATION

It is recommended that Mayor and Council:

- 1) approve the following list of asphalt and microseal streets for resurfacing in 2019 and authorize the Director of Operations to issue a public tender call for completion of the work:

Asphalt:

- Chapel Road
- Eydie Drive
- Marr Road
- Ricketts lane
- McGuire Road

Microseal:

- Donald Road
- Olive Lane
- Sheryl Drive
- Canwell Court
- Hooper Drive
- Kimberly Drive
- Mark Avenue
- Joelyn Lane
- Rodney Street

OR

- 2) approve the following list of asphalt and microseal streets for resurfacing in 2019 and authorize the Director of Operations to issue a public tender call for completion of the work:

Asphalt:

- Chapel Road
- Marr Road
- Ricketts lane
- Allan Avenue

Microseal:

- Donald Road
- Olive Lane
- Sheryl Drive
- Canwell Court
- Hooper Drive
- Kimberly Drive
- Mark Avenue
- Joelyn Lane
- Rodney Street

ORIGIN

At their meeting of July 9, 2018 Mayor and Council approved design work for the 2019 Asphalt Resurfacing and Microseal Placement Program as follows:

Asphalt:

- Chapel Road
- Eydie Drive
- Lennox Drive
- Salmon Crescent
- Marr Road
- Ricketts lane
- Church Avenue

Microseal:

- Donald Road
- Olive Lane
- Sheryl Drive
- Canwell Court
- Hooper Drive
- Kimberly Drive
- Mark Avenue
- Joelyn Lane
- Rodney Street
- McGuire Road

BACKGROUND

During the course of 2019 budget preparations, staff proposed deferral of Salmon Crescent and Lennox Drive to future years owing to the cost of necessary vertical profile adjustments. Church Avenue resurfacing was removed from the resurfacing program and added to a larger project to completely reconstruct Church Avenue.

During discussions with Council regarding the 2019 budget it was suggested that resurfacing of McGuire Road should not be a priority given the lack of area tax base in comparison to the overall cost of the work. It was suggested by a Council member that the reconstruction of Allan Avenue would be a better use of town capital dollars.

DISCUSSION

Staff recommend streets for the annual resurfacing budget based on quantifiable factors such as:

- current surface condition,
- street classification (arterial, collector, local),
- potential for future disturbance such as subdivision construction and utility renewals or expansion,
- condition of existing underground infrastructure.

The Town has utilized two methods to determine street surface condition. Firstly, Dillon Consulting Ltd. has been engaged to utilize a method whereby one individual visually inspects each road surface and rates the cracks, potholes, delamination, ravelling etc. according to industry accepted parameters to determine an overall rated condition of each street. This method rates streets on a 1 to 5 scale where 1 is “like-new” condition and 5 describes a street that has reached the end of its life. Secondly the Town has engaged TotalPave Solutions to utilize a tool whereby one individual drives a vehicle equipped with a mounted smartphone device equipped with software that measures the total number of bumps/dips in the street to produce a ride index. The ride index software equates the bump/dip information to a “number of metres of deflection per 10km of roadway”. A higher index number means more bumps/dips have been measured denoting a poorer quality surface. Condition rating coupled with ride index give staff a clear picture of roadway quality which is a major factor in determining resurfacing priorities. The condition rating and ride index data for McGuire Road and Allan Avenue are presented in the chart below:

Street	Condition Rating	Ride Index
McGuire Road	5.0	3.53
Allan Avenue	1.4	2.52

The data above shows that the street condition rating for McGuire is much worse than the condition of Allan Avenue and that there are more measurable bumps and dips on McGuire than there are on Allan.

To date staff have never prioritized projects based on tax base immediately adjacent to proposed resurfacing work. In an effort to provide Council with as much information as possible, staff have quantified the aggregate tax levy for properties adjacent to McGuire Road as well as adjacent to Allan Avenue (as this was suggested as an alternative to McGuire Road).

There are no private residences with frontage along McGuire Road, however McGuire Road does serve as the access to the Town’s water filtration plant, Water & Sewer Utility office building, Carpenter Pond

wellfield, Irving 24 gas station and the Highway 1 restaurant. The combined revenue collected by the Town from the taxable properties adjacent to McGuire Road is \$32,800.

There are 25 private residences with frontage along Allan Avenue. The combined revenue collected by the Town from the taxable properties adjacent to Allan Avenue is \$70,000.

Staff requested that the consultant engaged to design the 2019 program prepare estimates for the cost to resurface McGuire Road and Allan Avenue and compare the two.

The consultant pointed out some noteworthy differences between McGuire Road and Allan Avenue. Allan Avenue is narrower than McGuire Road, however it is longer overall and there are some deleterious materials in the subgrade that would have to be removed prior to resurfacing. The estimated cost to resurface McGuire Road is \$174,000 and the estimated cost to resurface Allan Avenue is \$243,000.

FINANCIAL IMPLICATIONS

The 2019 General Fund Capital Budget for asphalt resurfacing has been approved as \$1,250,000. This budget includes an (estimated) amount of \$174,000 for the resurfacing of McGuire Road. The estimated cost to resurface Allan Avenue is \$243,000, a net difference of \$69,000 should Council decide to defer McGuire Road in 2019 and resurface Allan Avenue instead. In order to maintain the \$1,250,000 resurfacing budget, based on the estimates, staff would need to find the additional \$69,000 by deferring the resurfacing of another proposed 2019 street.

The 2019 budget includes an amount of \$65,000 for the resurfacing of Eydie Drive. Should Council decide to defer McGuire Road in 2019 and resurface Allan Avenue instead, staff would propose deferring the resurfacing of Eydie Drive to a future year in order to utilize those funds to cover the majority of the \$69,000 net cost difference between McGuire Road and Allan Avenue. The remainder of the difference (\$69,000 - \$65,000) would be considered manageable within the overall 2019 resurfacing budget envelope.

It is important to note that the budget was determined based on estimates derived by consultants. It is necessary that Council determine the list of streets to include in the public tender for street resurfacing, however the actual tender will dictate the final product in that a high tender price may require the deferral of other streets and a low tender price may allow the Town to resurface additional streets or move residual funds to Reserves.

Report Prepared by:  Brett McLean, Director of Operations

Report Reviewed by:  Doug MacDonald, Treasurer



70 Hampton Road
Rothesay, NB
E2E 5L5 Canada

Rothesay Council
January 14, 2019

TO: Mayor Grant and Members of Rothesay Council

SUBMITTED BY: 
John Jarvie, Town Manager

DATE: January 9, 2019

SUBJECT: Engineering Design and Construction Management Services
Church Avenue Reconstruction

RECOMMENDATION

It is recommended that the proposal submitted by EXP. in the amount of \$154,818.75 including HST for the Church Avenue Reconstruction project be accepted and further that the Mayor and Town Clerk be authorized to execute the appropriate documentation in that regard.

ORIGIN

The 2019 General Fund and Utility Fund Capital Budgets include funding for the design and replacement of the reconstruction of Church Avenue including installation of a new storm sewer system and replacement of the existing water and sanitary sewer systems.

BACKGROUND

The existing water and sanitary and storm sewer services on Church Avenue are in need of replacement. Incidents of storm sewer surcharging have been reported and an area drainage study determined that additional storm sewer capacity is required.

DISCUSSION

On December 17, 2018 with a comprehensive and detailed scope of work document developed by staff, a proposal for consulting engineering services was requested from the engineering consulting community at large by way of a proposal call on the New Brunswick Opportunities Network (NBON) online service.

In response to this proposal call, four (4) compliant submissions were received from consulting engineering firms on January 8, 2019. Proposals were received from the following firms:

- CBCL Consulting Engineers Limited,
- Crandall Engineering Ltd.,
- Exp
- R. V. Anderson Associates Limited

The proposals were submitted in sealed envelopes with the Technical and Financial Proposals being submitted under separate cover. A review Committee consisting of the following staff completed an independent analysis and ranking of each Technical Proposal:

John Jarvie, Town Manager
Brett McLean, Director of Operations

Subsequent to the Technical Proposal Analysis, the Committee jointly discussed the information presented and opened the sealed envelopes containing the Financial Proposals for each submission. The upset price contained in each proposal was evaluated, ranked and combined with the scores from the technical evaluation.

The result of this process was to obtain the highest ranking proposal for recommendation to Mayor and Council for award. The highest ranked overall submission following this evaluation process was the proposal submitted by EXP.

The submission from EXP. met all of the requirements of the proposal call, in a manner acceptable to the committee, with a cost effective bid for the project.

FINANCIAL IMPLICATIONS

The 2019 General Fund and Utility Fund Capital Budgets include a combined amount of \$1,700,000 for design and construction of the work. Engineering fees for this type of work are generally accepted to be 12 – 17% of the overall budget. Assuming award by Council, an analysis has been completed for the fee schedule submitted by the consultant and the anticipated costs are shown in the table below:

Consultant	Fees (inc HST)	HST rebate	Subtotal	2019 Budget	% of overall Budget Item
Design and construction management	154,818.75	14,423.72	140,395.02	1,700,000	8.26

Report Prepared by:


Brett McLean, Director of Operations

Report Reviewed by:


Doug MacDonald, Treasurer

A copy of this report can be obtained by contacting the Rothesay Town Clerk, 70 Hampton Road, Rothesay, NB E2E 5L5 (506-848-6664).