***TOWNSHIP OF SOUTH FRONTENAC***
***COUNCIL MEETING***
***AGENDA***

TIME: 7:00 PM,
DATE: Tuesday, October 3, 2017
PLACE: Council Chambers.

# REPORT TO COUNCIL

# PLANNING DEPARTMENT

**AGENDA DATE: October 3, 2017 REPORT DATE: September 28, 2017**

**SUBJECT: Public Meeting: Zoning By-law Amendment: CMTC (Jutras)**

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## RECOMMENDATION

The recommendation is that Council hear comments from members of the public and consider passage of By-law 2017-61 to rezone land from Community Facility Zone (CF) to Special Urban Multiple Residential Zone (UMR-2) in Part of Lot 7,Concession V, District of Portland in the Village of Harrowsmith.

## BACKGROUND

An application has been submitted to amend the Township of South Frontenac Comprehensive Zoning By-law to rezone an existing 0.66 acre urban lot from Community Facility Zone (CF) to Special Urban Multiple Residential Zone (UMR-2) to permit the property to be used for three residential units.

The subject land is located in the Village of Harrowsmith as shown on Attachment #1. The land contains the former St. Paul United Church and a separate rectory residential building which are now owned by the Canadian Montessori Training Centre. The two buildings would accommodate the multi-unit residential use where two residential units would be accommodated in the former church building and the former rectory would function as a third separate dwelling. Attachment #2 is an air photo showing how the buildings are situated on the property.

Through initial inquiries about the proposed multi residential use of the land, the owner was advised by KFL&A Public Health that an engineered septic system would need to be developed and approved but that there would not be enough room on the property to place the required septic field for the three residences considering that the property is only 0.56 acres in size.

Council will recall that the owner requested to close a Township road allowance that existed along the north boundary of the property and add it to the subject land to provide additional room for the septic area. The road allowance would add 0.1 acre onto the property and would increase the interior side yard where the septic must be located. On September 5, 2017, Council passed By-law 2017-51 to close and transfer ownership of the road allowance as part of the subject property. Attachment #2 indicates the former unopened road allowance.

Plans for an engineered septic system have now been completed and, by letter dated September 25, 2017, Public Health has advised that they meet their requirements. Attachment #3 is part of the septic permit illustrating the septic design. Based on this approval and the road allowance closure, the owner is now proceeding to rezone the property.

The land is designated ‘Settlement Areas’ in the Official Plan. This designation is an expression of Council’s long term vision for hamlets and villages and has been designated to, among other things, promote a full range and mix of housing types and densities and to direct development generally where it can be supported by appropriate servicing.

The land is zoned Community Facility (CF) as noted and must be rezoned to Special Urban Multiple Residential (UMR-2). This special zone would recognize that one of the residences is in a separate stand-alone building.

The proposal is consistent with the intent of the Official Plan which contemplates such multiple units in this designation and the zoning by-law amendment would permit the proposed use to be accommodated in the existing buildings on the lot. The application is therefore supported.

By-law # 2017-61 would amend the Comprehensive zoning by-law as described above.

## FINANCIAL AND STAFFING CONSIDERATIONS

n/a

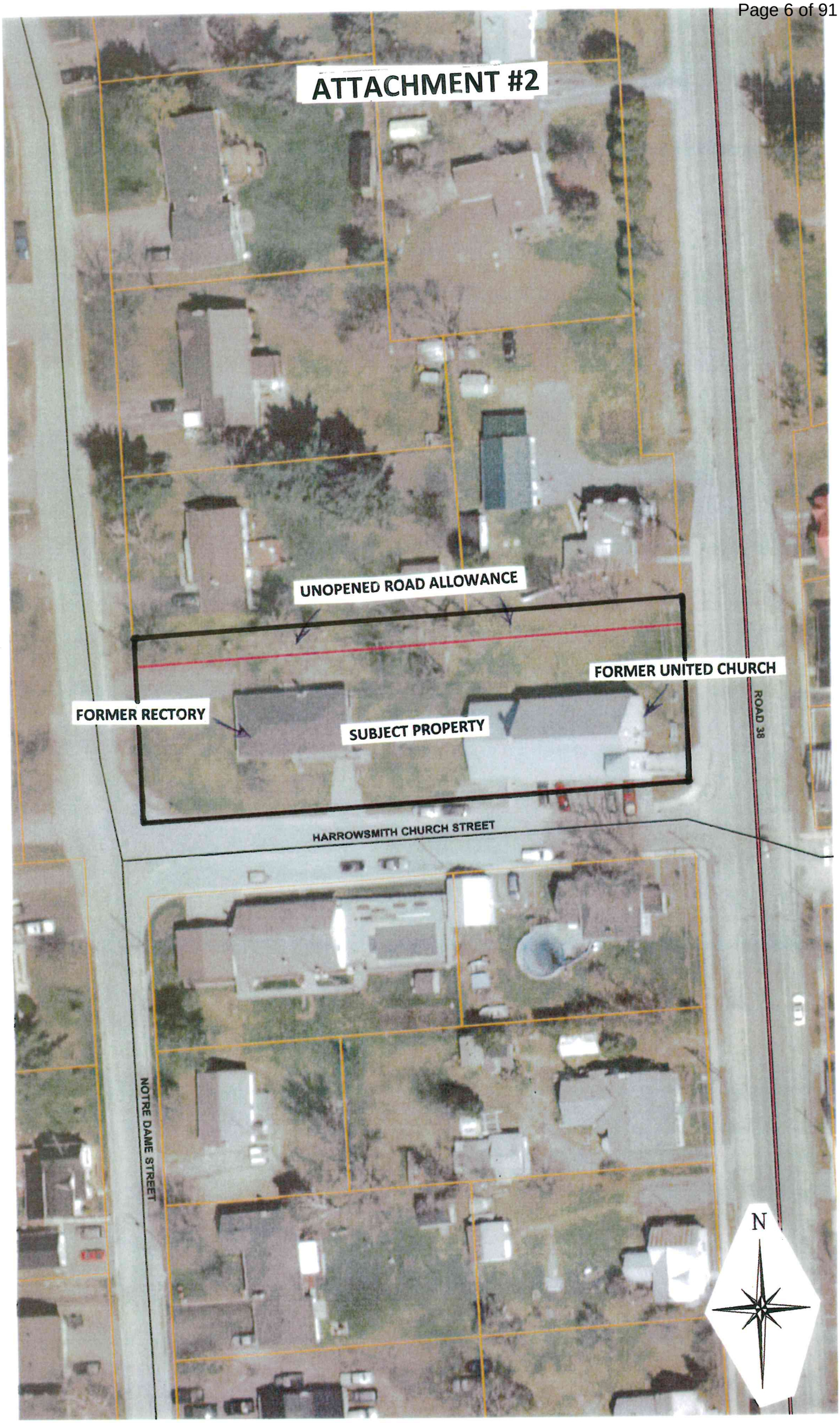
## ATTACHMENTS

Attachment #1 - is a map showing the location of the subject property.
Attachment #2 - is an air photo of the subject property.
Attachment #3 - is an illustration of the proposed septic system.

**Approved by: Lindsay Mills** **Submitted/Prepared by: Lindsay Mills**

JutrasZoningReport

# ATTACHMENT #1


ATTACHMENT #2
UNOPENED ROAD ALLOWANCE
FORMER UNITED CHURCH
FORMER RECTORY
SUBJECT PROPERTY
ROAD 38
HARROWSMITH CHURCH STREET
NOTRE DAME STREET
N

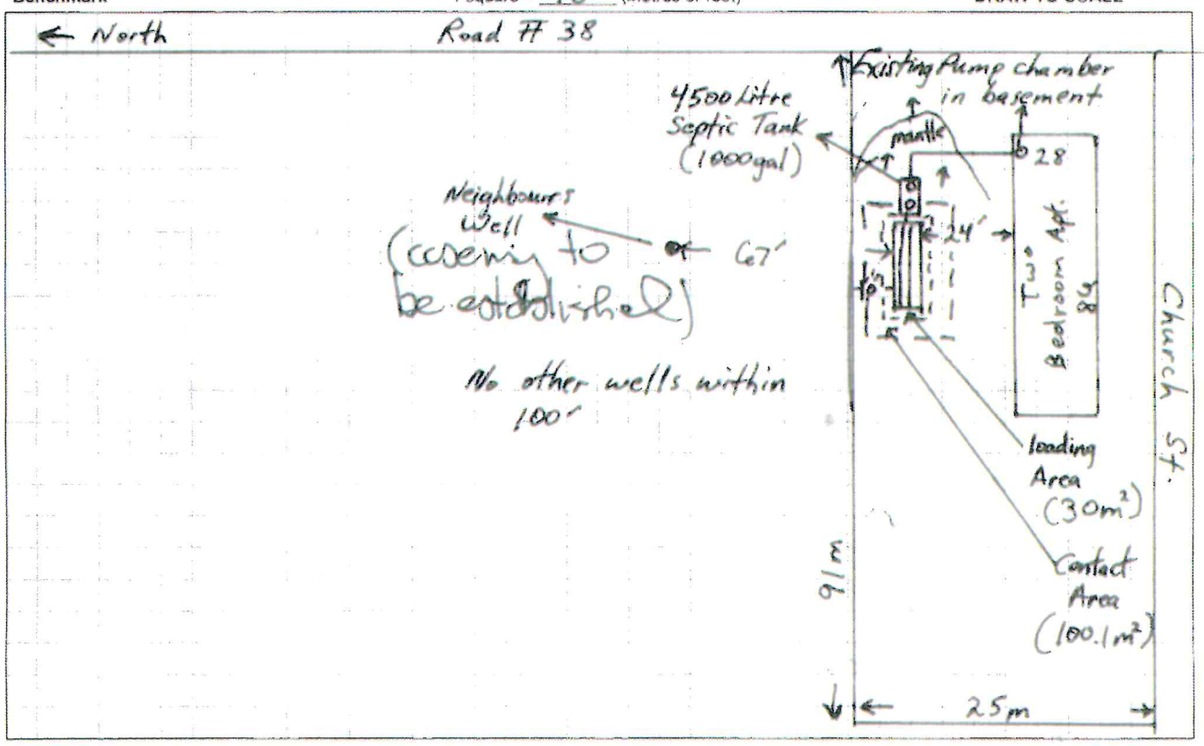
# ATTACHMENT #3

| Office Use Only | |
|---|---|
| Application number | PO-14-17 |
| Name | Canadian Montessori |

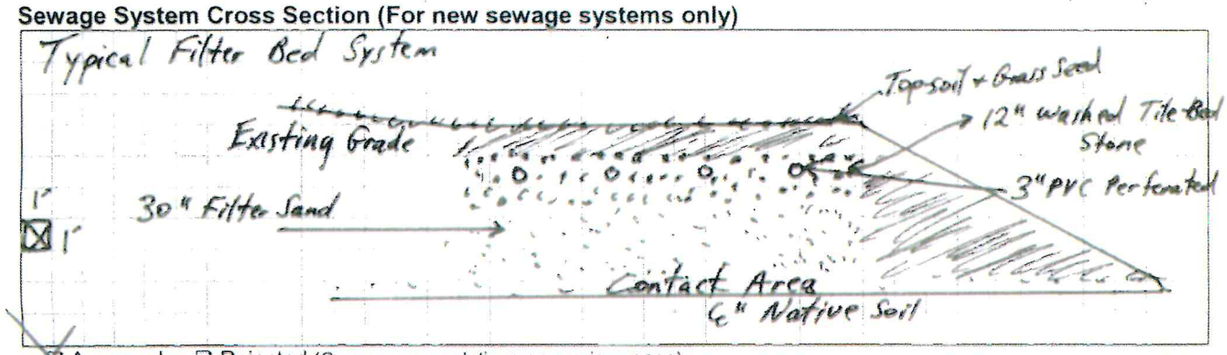
## Sewage System Plans Page

**Lot diagram and sewage system plan (drawing must be accurate, to scale, indicate north point and show the following):**
(a) Location of sewage system components (e.g. tank(s), leaching bed(s), etc). Locate and show horizontal distances from system to adjacent existing or proposed buildings, water supplies (including neighbours), existing on-site systems, driveways, property lines, lakes, rivers, springs, water courses, swimming pools.
(b) Lot dimensions topographic features (e.g., swamps, steep slopes) near system.

**Benchmark** 1 square = 10' (~~metres~~ or feet) DRAW TO SCALE




**Sewage System Cross Section (For new sewage systems only)**




☒ Approved ☐ Rejected (See recommendations on previous page)

Inspector: JMitchell Date: 11/7/17

Chief Building Official: JMitchell Date:

Permit to install a Class 2, 3, 4, 5 Sewage System under section 8-(1) (2) of the Building Code Act, S.O. 1992, C.23. This permit is issued to the owner to construct, install, alter, extend, enlarge or continue to use a Class 4 sewage system. Any person who is not issued a permit may apply to the Building Code Commission for any issues involving the Building Code or Compliance to the Code.

**NOTE: This approval expires 12 months after the date of issue.**
2016-05-31

# REPORT TO COUNCIL

# PLANNING DEPARTMENT

**AGENDA DATE: October 3, 2017 REPORT DATE: September 29, 2017**

**SUBJECT: PUBLIC MEETING - Special Zoning for New Lot: Howlett**

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## RECOMMENDATION:

It is recommended that Council hear comments from the public on a by-law to rezone lands in Part of Lot 7, Concession VIII, District of Storrington from Urban Residential-First Density (UR1) to Special Urban Residential-First Density (UR1-18), and consider passage of the attached amending By-law #2017-62.

## BACKGROUND:

An application has been submitted to amend the Township of South Frontenac Comprehensive Zoning By-law to rezone a portion of land that was the subject of a consent application to create a new residential lot. Attachment #1 shows the location of the subject land at Cedar Lake and Attachment #2 illustrates the proposed new lot and the retained portion both of which front on Sands Road.

Specifically, the amendment would rezone the proposed new lot from Urban Residential-First Density (UR1) to Special Urban Residential-First Density (UR1-18). This special zoning would be to recognize that the new residential lot would have only 64 metres (210 ft.) of road frontage whereas the normal requirement is 76 metres (250 ft.). The retained portion would still meet the standard 76 metre frontage requirement (note that the new lot would not be a waterfront lot).

Also, as depicted on Attachment #2, the new lot would form an “L” shape and would effectively wrap around the rear of an existing property that fronts on Sands Road. However, from a land use compatibility perspective this lot configuration is undesirable because any shed, or workshop constructed behind the existing residential lot would potentially invade their back yard privacy. Thus, the special UR1-18 zoning would also prohibit development in this location.

The land is designated ‘Settlement Areas’ in the Official Plan being within the boundaries of the Battersea Hamlet. The Plan states that it is Council’s intention that the majority of new growth in the municipality will be directed to existing settlement areas where it can be supported by appropriate servicing. The Plan does not specify any minimum required frontages for lots created in the settlement areas and without such guidance the proposed reduction in the frontage from 76 metres to 64 metres can be justified. The adequate lot size and its location in a relatively built-up area amid lots - many of which have smaller frontages also justifies the lot creation as proposed.

The application was given conditional approval by the Committee of Adjustment on June 8, 2017 subject to obtaining a rezoning among other standard conditions.

All commenting agencies had no objection at the consent stage. At time of preparation of this report no comments had been received from the public in response to the advertisement of the application.

From a planning perspective, the proposal appears to be consistent with the intent of the Official Plan to direct development to the settlement areas designations. The reduced road frontage is still larger than many of the adjacent lots and the provision to prohibit development behind the existing residence on Sands Road would address any potential compatibility issues associated with the lot creation. Thus, the application to rezone is supported by the Planning Department.

By-law No. 2017-62 would amend the Comprehensive Zoning By-law for the above.

## FINANCIAL and STAFFING CONSIDERATIONS

N/A

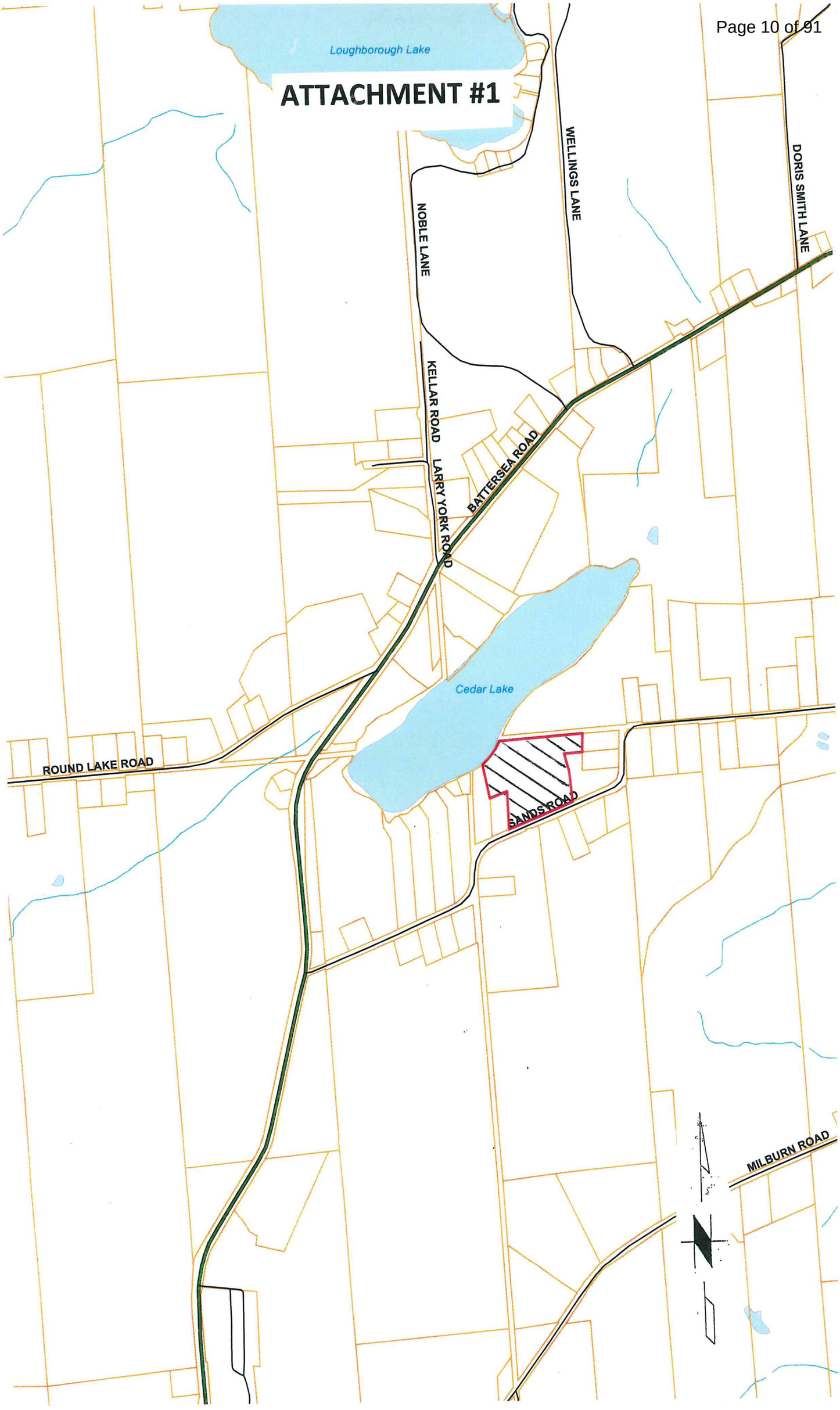
## ATTACHMENTS

Attachment #1 – shows the location of the subject land.
Attachment #2 - is a depiction of the proposed new lot and retained lot.

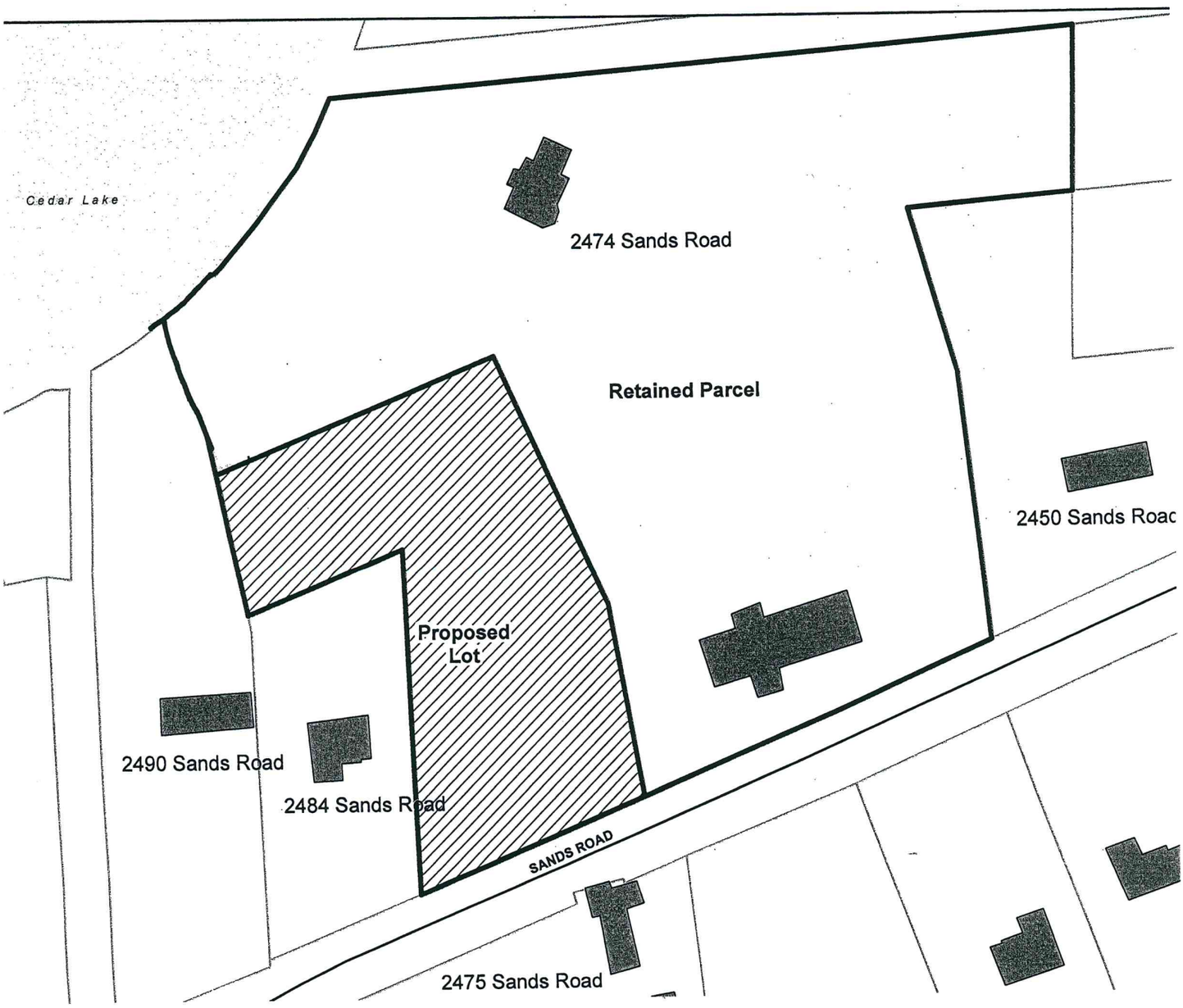
**Approved by: Lindsay Mills  Prepared/Submitted by: Lindsay Mills**

HowlettZoningReport

# ATTACHMENT #1



# ATTACHMENT #2



Minutes of Council
September, 19, 2017

Time: 7:00 PM
Location: Council Chambers

Meeting # 28

Present: Mayor Ron Vandewal, Pat Barr, Brad Barbeau, John McDougall, Alan Revill, Norm Roberts, Mark Schjerning, Ron Sleeth, Ross Sutherland

Staff: Wayne Orr, Chief Administrative Officer, Lindsay Mills, Planner, Louise Fragnito, Treasurer, Angela Maddocks, Executive Assistant.

1. Call to Order

a) Resolution

Resolution No. 2017-28-01
Moved by Councillor Sleeth
Seconded by Councillor Barbeau

THAT the Council meeting of September 19, 2017 be called to order at 7:00 p.m.
Carried

2. Declaration of pecuniary interest and the general nature thereof - n/a

3. Scheduled Closed Session - n/a

4. ***Recess***- n/a

5. Public Meeting

a) Resolution

Resolution No. 2017-28-02
Moved by Councillor Sleeth
Seconded by Councillor Barbeau

THAT a public meeting be held to discuss planning matters related to:

- Rezoning of a new lot in Concession III, Part of Lots 23 & 24, Storrington

Carried

b) Rezoning of Concession III, Part of Lots 23 & 24, Storrington District: 1324789 Ontario Inc

Lindsay Mills explained that the purpose of the application was to rezone a new residential property and the retained parcel resulting from a consent application in Part of Lots 23 & 24, Concession III. The lot has frontage on Round Lake Road and on Inverary Lake. Sweetfern Lane runs through the property providing access to other adjacent properties and is developed with a single detached dwelling and an accessory building. The consent application was to divide the land into two large portions where a new 15 acre lot would be separated from the waterfrontage and would become a non-waterfront rural lot containing the existing dwelling and fronting on Round Lake Road. While there were no objections from the health unit or the CRCA, a letter dated September 14, 2017 was received from the Inverary Lake Association expressing concerns about not receiving proper notification and future division of the land. Mr. Mills provided a verbal response to the concerns however Council was concerned that property notification had not been circulated to the public.

Resolution No. 2017-28-03
Moved by Councillor Sutherland
Seconded by Deputy Mayor Roberts

THAT the public meeting be adjourned until Tuesday, October 3, 2017 at 7:00 p.m.

Defeated

Resolution No. 2017-28-04
Moved by Councillor Schjerning
Seconded by Councillor Sutherland

THAT the public meeting of September 19, be cancelled and reschedule the meeting to allow for a full twenty day notice.

Carried

6. Approval of Minutes

a) Council Meeting of September 5, 2017

Resolution No. 2017-28-05
Moved by Councillor Sleeth
Seconded by Councillor Barbeau

THAT Council approves the minutes of the September 5, 2017 Council meeting.

Carried

b) Committee of the Whole Meeting of September 12, 2017

Resolution No. 2017-28-06
Moved by Councillor Revill
Seconded by Councillor Sutherland

THAT Council approves the minutes of the September 12, 2017 Committee of the Whole meeting.

Carried

7. Business Arising from the Minutes

a) Notice of Motion - Fermoy Hall - Trillium Grant

Resolution No. 2017-28-07
Moved by Councillor Barr
Seconded by Deputy Mayor Roberts

THAT the Township of South Frontenac submit an Ontario Trillium Fund application on behalf of the Fermoy Hall Community Group for restoration work to the historic Fermoy Hall.

Carried

8. Reports Requiring Action

a) Lindsay Mills, Planner, re: Proposed Road Allowance Closing: Selle

See By-law 2017-59

b) Louise Fragnito, Treasurer, re: Investment Reporting

Resolution No. 2017-28-08
Moved by Councillor Sutherland
Seconded by Councillor Revill

THAT alternatives in managing our current investments be investigated and that a report be brought forward to Council by November 2017 listing the alternatives as well as providing an update on the status of our current investments.

Carried

c) Louise Fragnito, Treasurer, re: 2018 Budget Direction

The direction from Council was to work with the 2.0% impact and maintain the total reserves around the $10 million level. They suggested reviewing Table 2 and modifying this list to achieve the 2.0%. Specific items that are to be reviewed and justified include a library in Verona, controlled intersection being part of the roads budget, firehalls at a different frequency for replacement and new/major enhancement investment in recreation facilities every 3 years.

9. Committee Meeting Minutes

a) Portland District Recreation meeting held May 3, 2017

b) Storrington District Recreation Committee meeting held June 26, 2017

c) Portland District and Area Heritage Society meeting held June 14, 2017

Resolution No. 2017-28-09
Moved by Councillor Schjerning
Seconded by Councillor McDougall

THAT Council receives for information the minutes of the following committee meetings:

- Portland District Recreation meeting of May 3, 2017
- Storrington District Recreation meeting of June 26, 2017
- Portland District & Area Heritage Society meeting of June 14, 2017

Carried

10. By-Laws

a) By-law 2017-58 - Rezoning in Concession III, Part of Lots 23 & 24 Storrington

This by-law was withdrawn as the corresponding public meeting has been rescheduled to allow for the 20 day notice period.

b) By-law 2017-59 - Close & Transfer Road Allowance, Concession III, Lots 5 & 6, Bedford

Councillor Sutherland proposed an amendment to the third reading of the by-law. See Resolution 2017-28-11.

Resolution No. 2017-28-10
Moved by Councillor McDougall
Seconded by Councillor Schjerning

THAT the following by-laws be given first and second reading:

- By-law 2017-59

Carried

Resolution No. 2017-28-11
Moved by Councillor Sutherland
Seconded by Councillor Schjerning

THAT the landowner pay for the legal and surveying costs as well as staff cost.

Carried

Resolution No. 2017-28-12
Moved by Councillor McDougall
Seconded by Councillor Schjerning

THAT By-law 2017-59, being a by-law to stop up and close a portion of an unopened road allowance between Lots 5 & 6, Concession III, Bedford district, be given third reading, signed and sealed.

Carried

11. Reports for Information

a) Accounts Payable and Payroll Listing

b) Seniors Housing Update

c) Committee of the Whole meeting - September 26, 2017 - CANCELLED

12. Information Items

a) Patricia Enright, Chief Librarian, Kingston Frontenac Public Library, re: Proclamation for Canadian Library Month

b) Nona Mariotti, Chair, Southern Frontenac Community Services, re: Seniors Housing

Wayne Orr noted that the City of Kingston now has more funds available for seniors housing and are positive about a project in the County.

The challenge for South Frontenac is looking for suitable property for this type of project.

13. Notice of Motions

a) Councillor Sutherland served a notice of motion to support the Kingston Frontenac Public Library request to proclaim October as Canadian Library Month 2017 and October 15 -21, 2017 as Ontario Public Library Week 2017.

14. Announcements - n/a

15. Question of Clarity (from the public on outcome of agenda items) - n/a

16. Closed Session - n/a

17. Confirmatory By-law

a) By-law 2017-60

Resolution No. 2017-28-13
Moved by Councillor Barr
Seconded by Deputy Mayor Roberts

THAT By-law 2017-60, being a by-law to confirm generally previous actions of the Council of the Township of South Frontenac, be given first and second reading this 19 day of September 2017.

Carried

Resolution No. 2017-28-14
Moved by Councillor Barr
Seconded by Deputy Mayor Roberts

THAT By-law 2017-60, being a by-law to confirm generally previous actions of the Council of the Township of South Frontenac, be given third reading, signed and sealed this 19 day of September 2017.

Carried

18. Adjournment

a) Resolution

Resolution No. 2017-28-15
Moved by Councillor Barr
Seconded by Deputy Mayor Roberts

THAT the Council meeting of September 19, 2017 be adjourned at 8:20 p.m.

Carried

Ron Vandewal, Mayor

Wayne Orr, Chief Administrative Officer

# REPORT TO COUNCIL

## CLERKS DEPARTMENT

**AGENDA DATE**: October 3, 2017

**SUBJECT:** Flag Protocol Policy

## RECOMMENDATION

That Council adopt the Flag Protocol Policy as presented.

## BACKGROUND

At the September 5, 2017 Council meeting the CAO presented the Flag Protocol Policy. The policy was reviewed and referred back to Corporate Services to address flag pole height and flag sizing.

The Corporate Services Committee reviewed the policy at their meeting held on September 6, 2017 and determined that given the uncertainty of the height of each flag poles at township facilities, it would be difficult to maintain a “one size fits all” inventory. However it was recognized that it is important to ensure that flags are monitored for wear and damage and this is acknowledged in Item 5. b) and 5. c) in the attached policy.

## FINANCIAL and STAFFING CONSIDERATIONS

None

## ATTACHMENTS

Flag Protocol Policy

**Submitted/approved by:**

Wayne Orr, CAO

**Prepared by:**

Angela Maddocks, Executive Assistant

**South Frontenac Township**

**Flag Protocol Policy**

## Purpose

The purpose of this policy is to establish a consistent protocol for the flying of flags at all municipal buildings, properties, and facilities.

## Scope

This policy applies to the half-masting of flags in South Frontenac Township.

## 1. Definitions

- **The Canadian Flag** means the Canadian Flag of Canada as approved by Parliament and proclaimed by Her Majesty Queen Elizabeth II, Queen of Canada, on February 15, 1965

- **Half-mast** is placing the centre of the flag exactly halfway down the staff.

## 2. Protocol

Flags are symbols that identify people belonging to a group. The National Flag of Canada and the flags of the provinces and territories are symbols of honour and pride for all Canadians. The Canadian flag (when flown in Canada) always takes precedence over all other national flags and shall not have any other flag flown at the same time, on the same flag pole.

## 3. Half-Masting

a) In accordance with Federal and Provincial protocol, flags shall be flown at half-mast on:

- the death of the Sovereign or a member of the Royal Family related to the Sovereign (spouse, son or daughter, father, mother, brother, sister), the Governor General, the Prime Minister, a former Governor General, a former Prime Minister, or a Federal Cabinet Minister;
- the death of the Lieutenant Governor, the Premier of Ontario or another person similarly honoured by the Province of Ontario; and
- the death of the local Member of Parliament or local Member of Provincial Parliament.

**b)** As a sign of respect and condolence the flags flown at Township properties shall also be flown at half-mast on:

- the death of current/former Mayor;
- the death of a current Member of Council;
- the death of a current Township of South Frontenac employee or volunteer fire fighter;
- the death of a County of Frontenac councillor;
- a current School Board Trustee

## 4. Process for Half-masting

a) For circumstances identified in the criteria outlined in the Half-masting section, the Office of the Clerk shall notify all departments regarding the half-masting of flags with respect to the location, the reason and the duration that the flag will be flown at half-mast. Department contacts responsible for facilities and Township properties shall lower and raise the flags upon receipt of the appropriate notification.

b) Where not specified under federal or provincial protocol a flag shall not stay at half-mast for more than a maximum of three business days from the date of death, and not beyond the day of the funeral.

**5. Township Properties**

**a)** Half-masting of flags shall be in effect at all municipal facilities that have flagpoles.
**b)** It is recognized that there are multiple locations throughout the township and best efforts will be taken to ensure synchronizing the half-masting of flags at all municipal facilities.
**c)** Best efforts will be given to ensure flags are free from excessive wear and damage. New flags will be kept in stock to replace flags that are identified as in need of replacement.

ADOPTED BY COUNCIL _____

# REPORT TO COUNCIL

# CLERSK DEPARTMENT

**AGENDA DATE:** October 3, 2017

**SUBJECT:** Notice of Motion-Proclamation – Library Month

## RECOMMENDATION

WHEREAS the public library offers access to information; and

WHEREAS the public library supports personal growth, economic renewal and quality of life; and

WHEREAS we recognize that the board and staff of the Kingston Frontenac Public Library provide a vital service to our community,

THEREFORE the Council of the Corporation of the Township of South Frontenac proclaims the month of October 2017 to be Public Library Month and October 15-21, 2017 to be Ontario Public Library Week.

## BACKGROUND

Council's Procedural By-Law 2016-71 establishes the process for Notice of Motion.

At the Council Meeting of September 19, 2017, Councillor Sutherland served a notice of motion to support the request from the Kingston Frontenac Public Library to proclaim October as Library Month as outlined in the correspondence in their correspondence.

## ATTACHMENTS

KFLA Correspondence

**Submitted/approved by:**

Angela Maddocks
Executive Assistant

YOUR PUBLIC LIBRARY
KINGSTON FRONTENAC PUBLIC LIBRARY

September 1, 2017

Township of South Frontenac
P.O. Box 100
Sydenham ON K0H 2T0

The Kingston Frontenac Public Library is asking the Township of South Frontenac to proclaim the month of October as Canadian Library Month 2017 and October 15-21, 2017 as Ontario Public Library Week 2017. During this week, libraries and library partners across Ontario raise awareness of the valuable role libraries play in Ontarians' lives.

The draft wording of the proclamation is as follows:

PROCLAMATION
Canadian Library Month - October 2017, and
Ontario Public Library Week – October 15-21, 2017
*A visit will get you thinking*

WHEREAS the public library offers access to information; and

WHEREAS the public library supports personal growth, economic renewal and quality of life; and

WHEREAS we recognize that the Kingston Frontenac Public Library provides a vital service to our communities

THEREFORE I HEREBY PROCLAIM the month of October to be Canadian Library Month 2017 and October 15-21, 2017 to be Ontario Public Library Week, and I encourage every person to use the public library this week and throughout the year.

Yours sincerely,

Patricia Enright
Chief Librarian/CEO

130 Johnson St. • Kingston, ON • K7L 1X8 • Phone: 613.549.8888 • Fax: 613.549.8476
www.kfpl.ca

# REPORT TO COUNCIL

## PUBLIC WORKS

**AGENDA DATE:** October 3, 2017

**SUBJECT:** Fermoy Hall

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### RECOMMENDATIONS

That Council endorse the amount of $30,000 identified in the 2017 Capital Budget for Fermoy Hall to be used for asbestos and other associated cleanup costs.

### BACKGROUND

A report was presented to Council on July 11, 2017 outlining the costs associated with the asbestos removal and other environmental cleanup costs. At that time, the recommendation was that no further action be taken.

Since then, staff met with the Bedford District Recreation Committee on September 7, 2017 to review the 2018 Capital Budget Submission. It was evident at that meeting that there is a strong interest in restoring and enhancing Fermoy Hall.

It was agreed that a report would be brought back to Council suggesting the amount identified in the 2017 Capital Budget for building upgrades be used for cleanup purposes.

### FINANCIAL IMPLICATIONS

The cleanup costs are expected to be in the amount of $27,000. The approved amount in the 2017 Capital Budget is $30,000 for building upgrades, well, paint, insulation and septic system.

### ATTACHMENT

Council Report, July 11, 2017

**Submitted/approved by:**

**Mark Segsworth, P. Eng.**
**Public Works Manager**

**Jamie Brash, Supervisor**
**Solid Waste, Facilities**

# REPORT TO COUNCIL

## PUBLIC WORKS

**AGENDA DATE:** July 11, 2017

**SUBJECT:** Fermoy Hall Plaster Repairs

**RECOMMENDATIONS:**

It is recommended that no action to be taken to repairs at the Fermoy Hall at this time.

**BACKGROUND:**

Public Works were asked to undertake the required plaster repairs at Fermoy Hall to allow the local user group a safe environment to gather. After reviewing the Townships Asbestos Containing Material Survey, the plaster at the site was reported to contain asbestos in the skim coat of the plaster.

After consulting with Pinchin Ltd. and Environmental Contracting Services, as per Regulation 278-05, the most cost efficient and safest method of repair would be to remove all of the existing plaster in the entire facility at cost of $17,000.00 plus HST. In addition, to allow for proper cleanup of the facility (as per Regulation 278-05), removal of the existing electrical service panel and conduits plus all wood wainscoting would also be required in which there would be additional costs of approximately $8-10,000.00.

This has been discussed with the Public Services Committee and they concur with this recommendation.

**FINANCIAL IMPLICATIONS:**

An amount of $30,000.00 was set aside in the 2017 Capital Budget for building upgrades, well, paint, insulation and septic system.

**ATTACHMENT:** N/A

**Submitted/approved by:**

**Mark Segsworth, P. Eng.**
**Public Works Manager**

**Jamie Brash, Supervisor**
**Solid Waste/Facilities**

# REPORT TO COUNCIL

# PUBLIC WORKS

**AGENDA DATE:** October 3, 2017

**SUBJECT:** Water Meter Services

## RECOMMENDATION

That Council approve Resolution No. PSC-09/21-02 of the Public Services Committee:

"That the Agreement dated April 4, 2017 between Utilities Kingston and the Township of South Frontenac for the operation and maintenance of the water system be amended to include provision of water meter services."

## BACKGROUND

**Since the Municipal Water System came into being in 2005, the issuance of** water meters, installation and reading has been somewhat decentralized. In addition, our current water meter technology is becoming obsolete.

Staff have had discussions with Utilities Kingston regarding adopting their approach and expertise to the provision of water meter services in South Frontenac.

With this in mind, we have requested a proposal from Utilities Kingston with regard to:

- Meter replacement to upgrade to current technology and to align with Utilities Kingston
- Meter reading hardware and software and/or meter reading services
- Water meter installation

It should be noted that we are somewhat exposed by our current practice for water meter installation and need to become more formalized from a risk management perspective.

The Water Bylaw will need to be updated to reflect these proposed changes. In addition, the current charge for a water meter is $25. An amended Bylaw will address the actual costs and at what point they will be billed. These changes would form a part of a communication strategy to property owners should these changes be approved.

A new clause 2.8 is proposed for the current agreement as well as a Table 9 in Appendix A. (Attached)

## FINANCIAL CONSIDERATIONS

An amount of $470/meter is proposed for replacement and new installations. This work would be undertaken by certified Utilities Kingston personnel. An amount of $50,000 will be proposed in the 2018 Budget so that half of our water meters will be brought up to current standards.

The cost to read meters is $1.90/meter. This aspect of the proposal will be revisited once existing meters have been upgraded.

**ATTACHMENT**

Clause 2.8, Table 9

**Submitted/approved by:**

**Mark Segsworth, P. Eng.**
**Public Works Manager**

This work would be completed under a time and material basis found in Table 8.

## 2.8 Water Meter Services

Utilities Kingston's has extensive experience capability and resources in delivering water related services including the provision water meters integral to the management of the water distribution system. Utilities Kingston will provide the following services related to water meters.

**Water Meter Replacement Program**

Utilities Kingston will supply and install approximately 210 water meters that are consistent with the quality, performance and specifications of the water meters deployed by Utilities Kingston within its existing service territory. These water meters will be new water meters with communication devices capable of being read with Utilities Kingston's equipment. This phase will be considered the *"Water Meter Replacement Program"* for all customers within the Sydenham Water Distribution area and are considered to be part of the asset renewal strategy of the Township.

Utilities Kingston will supply all meters, labour and equipment required to remove the existing water meters at the customer's premises and replace those with a new water meters. The scope of these services do not include any plumbing work required beyond the actual water meter replacement nor any carpentry work required to access, remove and replace the water meter.

Utilities Kingston understands that the water meter replacement program will be completed within a one year or two year period depending on the Township's Capital Budget.

**New Water Meter Installations**

Utilities Kingston will supply and install new water meters that are consistent with the quality, performance and specifications of the water meters deployed by Utilities Kingston within its existing service territory. These water meters will be new water meters with communication devices capable of being read with Utilities Kingston's equipment.

Utilities Kingston will supply all meters, labour and equipment required to Install a new water meters at the customer's premises The scope of these services do not include any plumbing work required beyond the actual water meter installation nor any carpentry work required to access, remove and replace the water meter.

New water meter installation services will be performed upon the receipt of a service request from the appropriate Township staff to be identified. For installation to occur a "spool" length of pipe must be in place for a new water meter to be installed. The "spool" length of pipe will be removed upon the water meter installation. Advice on establishing spool pieces, their care and maintenance can be provided if so required.

**Water Meter Reading Services**

Utilities Kingston will using its own equipment, provide water meter reading services to the Township. Water meters will be read in accordance with Township By-laws which at this time are understood to be 3 times a year.

Utilities Kingston will supply the meter reading data in an excel file or in another mutually agreed to format. Utilities Kingston respects the confidentiality of meter data and will hold all information it receives as part of this service in strict confidence and will not release this information to any third party without the express written direction of the Township.

**Water Meter – Trouble Shooting**

Utilities Kingston will provide services to investigate, correct, resolve and or reconcile disputes regarding readings on water meters on direction from the Township. Utilities Kingston will provide these services on a time and material basis as identified in Appendix A, Table 8 of this Agreement

## 3.0 Miscellaneous Services

### 3.1 Field Repairs

Utilities Kingston will complete, or arrange for a qualified contractor to complete under the review by a licensed operator, any field repairs required due to accidental damage or breaks. Works may be held pending so that the schedule will minimize equipment and travel costs. In all such instances the Township will be advised of the status of field repairs, and date when expected to be completed.

Emergency repair work undertaken outside the normal working hours of Utilities Kingston will be charged out at the applicable Overtime Rates.

As these works are unplanned, Utilities Kingston proposes that an allowance of $5000 be carried against which costs will be billed on a time and material basis at the published and agreed rates.

### 3.2 Underground Locates

## Table 9

## Water Meter Services

| Service | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|
| | | | | | |
| Water Meter Replacement Program * | $470/meter | $470/meter | | | |
| | | | | | |
| New Water Meter Installation* | $470/meter | $470/meter | | | |
| | | | | | |
| Water Meter Reading Services ** | $1.90/meter | | | | |
| | | | | | |
| Trouble Shooting | Refer to Table 8 | | | | |
| *Note: See Clause 5.0 for future costs. | | | | | |
| ** Note: metering reading costs will be adjusted yearly as per Clause 5.0 as it is effected by Table 8. | | | | | |

# REPORT TO COUNCIL

# PUBLIC WORKS

**AGENDA DATE:** October 3, 2017

**SUBJECT:** Capital Expenditures at the Point Park

## RECOMMENDATION

That an amount of $51,000 from the Parkland Reserve be used to fund improvements completed at the Point Park for enhancements to the Football Field, pathway sodding and rubberized surface area for the new playground equipment.

## BACKGROUND

In conjunction with the Limestone District School Board upgrades to the Football Field at the Point Park in Sydenham were undertaken in 2015. The field was ready for use in the fall of 2016. However, the work on the field did not include any outlet for surface drainage or any upgrades to the Track. These improvements were undertaken this year by Public Works staff.

Also this year, the Point received significant upgrades as a result of an Ontario 150 Grant. These upgrades focused on accessibility features like accessible washrooms, paved pathways and playground equipment. What was not included was a rubberized surface for the playground equipment to make it fully accessible. As well, sodding was required adjacent to the pathways to ensure grass for Canada Day.

## FINANCIAL IMPLICATIONS

Approximately $32,000 in labour, equipment and materials were charged to the Point Park Operating Budget to address the deficiencies at the Football Field. Another $19,000 of unbudgeted expenditures was incurred for the rubberized surface for the playground equipment and sodding adjacent to the paved pathway**.**

## ATTACHMENT

N/A

**Submitted/approved by:**

**Mark Segsworth, P. Eng.**
**Public Works Manager**

**Jamie Brash, Supervisor**
**Solid Waste/Facilities**

**PORTLAND REC COMMITTEE**
Meeting Minutes –July 3rd, 2017

**Attendees:** Pam Morey, Cheryl Preston, Linda Bates, John McDougall .
**Regrets**: Christine Leblanc, Mary-Jo Dowker

1) The minutes of the May 3rd, 2017 meeting were reviewed. Motion to accept by Cheryl Preston and seconded by Linda Bates.
2) The Agenda for July 3rd, 2017 meeting was reviewed. Motion to accept by Linda Bates and seconded by John McDougall.

3) There was discussion on the business arising from the minutes:

**Business Arising from Minutes**:

- A Central recreation update was given.
  - Time Capsule for South Frontenac for Canada 150. It was mentioned that it should reflect the Music, Fashion and Sports of our time as well as current events. We could possibly have student participation.
  - Following a short discussion a motion was made to divide the $500.00 that was designated for sports in each district into 1/3's between 1.Softball(Harrowsmith Minor Softball and Verona Minor softball )
    2. Frontenac Soccer Association
    3. Frontenac Minor Hockey.
    This motion was made by Linda Bates and Seconded by Cheryl Preston. All in Favor, Motion was carried. Arrangements will be made with the Tim Laprade Recreation Coordinator to arrange distribution of funds.

- The mention of possibly having a drone take pictures of local school children in front of their buildings in the shape of a 150 to mark Canada's 150th was mentioned by Linda Bates. This activity would cost roughly $100.00 and done by a licensed drone operator known to Linda Bates. This initiative would further expand on the Recreation's original idea of having this happen at Sydenham high School and Loughbrough Public School only.

**New Business**:

- A guest speaker Peter Muncy attended the meeting to explain and discuss the benefits of developing a dog park in South Frontenac. Mr. Muncy mentioned that there are a lot of people in South Frontenac that find it necessary to travel out of the township to bring their dogs to a dog park. The benefits of a dog park are it is a social time for local people and their animals. It could also cut down on crime if placed in a existing park as there would be more of a presence in the park. Also it would increase park usage. Mr. Muncy is aware of the necessary requirements to create a dog park space. Once the space is decided all that is necessary is a double gate a rules sign describing the rules of usage and a 4 foot fence around the perimeter, extra garbage pails A possible site at Centennial Park was discussed. The site between the Trail and park land was mentioned as a possible site as well as in the treed area of the park. All were interested and in favor of this project moving forward by placing it on the suggestions for next year's budget.
- McMullen Park and the further development of that property was discussed. Another possible site for upgrades to be mentioned in the upcoming budget.

Meeting was adjourned at 7:30. Our next will be held at the Princess Anne building in Hartington on Monday August 28th, 2017.

# *Loughborough District Recreation Committee Minutes*

*Monday, August 28, 2017*

**Attendance:** Chair Mike Howe, Councillor Ross Sutherland, Councillor Mark Schjerning, Terra Gower, Paul Wash, Tracy Holland

**Regrets:** Maryanne Takala, Karl Hammer

1. **Delegation – Joan Hirschorn**
   - Joan spoke about wanting the tennis courts to be functional again. She discussed that it is part of the culture in Sydenham and that it is a quiet and friendly sport that is becoming more popular in Canada with the rise of professional athletes. The SHS students would be able to learn the sport and there are offers from coaches that are willing to hold classes or clinics.
   - The pad was resurfaced already, therefore only lines and nets are required.
   - There was some discussion as to whether tennis was mentioned in the recreation survey that was conducted last year.
   - Chair Mike Howe discussed that the popularity dropped off in the 1990's and there was considerable vandalism to the tennis courts previously. He suggested approaching sponsors to pay for fencing and nets and also welcomed Joan to the budget meeting for LDRC.

2. **Approval of Minutes – Monday, May 29, 2017**
   - Motion to approve the minutes from Monday, May 29, 2017.
     Moved by: Tracy Holland
     Seconded by: Paul Wash
     Carried

3. **Business Arising**

   a. **Canada Day Update**
      - The fireworks show was excellent this year.
      - A wrap-up meeting was held last Wednesday.
      - Chair Mike Howe completed the report to submit to Heritage Canada for funding purposes and will submit the grant again in November for 2018.
      - The committee would like a dog show from the K9 unit next year.
      - Committee members are willing to return again to help next year.

   b. **South Frontenac Recreation Committee**
      - Garbage removal is needed over the weekend at parks and facilities.

   c. **Harris Park**
      - No news to report at this time.

**d. Bowes Park**

- No news to report at this time.

**e. Wilmer Park**

- There were only 3 baseball teams this year.
- Terra Gower will remain on the LDRC committee as Scott is not able to attend meetings.
- The retaining wall was removed. The area was slopped and sodded and the wall was not replaced. 3 stairs were added.
- The netting was put up 3 weeks before the season ended. The committee discussed other options for having the netting put up before the season begins as it is a safety issue.
- The infield will be improved this fall.
- There was no change in the fencing along the road. It has yet to be replaced or repaired.
- None of the bleachers were repaired or painted.
- All buildings require significant repair still.
- Tracy Holland mentioned an interest in grant writing to help projects to be completed such as the much desired playground equipment at Wilmer Park.

**f. The Point Park – 150 Ontario Project**

- The final report is not available yet.
- There are a few loose ends that still need to be completed.
- The summer camp had a waitlist at The Point this year.

**g. Capital Budget**

- The committee reviewed the budget items for 2017 and identified which items have not been completed as well as what are the new capital items that need to be requested.
- Capital items must be submitted to Tim Laprade by September 8. Chair Mike Howe will draft up the items and send them to the committee via email.

**h. Central Soccer**

- No news to report at this time.

**i. Triathlon**

- Maryanne Takala provided an update via email that the triathlon was a success and that they plan to hold it again next year in Sydenham.
- A final report is not yet available.

**j. Football**

- Karl Hammer provided a report by email. The TIMFL season held the championship weekend at The Point field in Sydenham. Sydenham teams were in the final of each division and won the championship except the Bantam team. There were issues with garbage as there was a large amount of people that were in the area from Friday-Sunday. More bins should be provided for large events or the existing ones need to be emptied over the weekend.

- There was a brief discussion regarding field usage and the importance of the field at the public school being upgraded and maintained to be used as a practice field.

**k. Canoe Club**

- More water access is needed or a second dock for regattas.
- The washrooms need better signage as everyone was using the new changeroom washrooms.

**Next Meeting:** Monday, September 25 @ 7:00 p.m. in the Sydenham Library
**Adjournment:** 8:15 p.m.
**Recording Secretary:** Sarah Vandewal

# Capital Budget Submission Template

| Work/Equip Proposed | Est. Cost | Rationale for Proposing | Is this a carry over? (Yes/No/Why) |
|---|---|---|---|
| **Harris Park** | | | |
| - No requests | 0 | n/a | n/a |
| **Bowes Park** | | | |
| - Re-shingle the pavilion roof | $1200 Materials<br>$150 disposal of shingles<br>$0 Labor provided by volunteer | Needs to be replaced | |
| - Top dressing (2 fields) | | | Yes. Budgeted in 2017. |
| **The Point** | | | |
| - Tennis Court resurfacing needs to be completed and lines painted | | | Yes. Budgeted in 2017. |
| Replacement of the bunker roof | | Health and safety issue | |
| Top dressing for field | | | Yes. Budgeted in 2017. |
| **Wilmer Park** | | | |
| - Interior walls of storage shed. | | Health and safety issue | |
| - Fence along roadway | | | Yes. Budgeted in 2017. |
| - Washrooms upgrade | Cost unknown | | |
| - Top dressing for field | | | Yes. Budgeted in 2017. |
| - Playground equipment (ages 7-12) | Cost unknown | | |

# RE: Sydenham Tennis Courts

TR Tony Roth <tr@ottawaathleticclub.com>
Yesterday, 8:58 PM
Howe, Michael

Reply all |

Thanks for this Mike,
Let me know if nay further information from me could prove useful. It will be great if even 1 court is restored.
Best Regards,
Tony

---

**From:** Howe, Michael [howem@limestone.on.ca]
**Sent:** Friday, September 22, 2017 7:32 PM
**To:** Tony Roth
**Subject:** Re: Sydenham Tennis Courts

Tony,

Thank you for your letter. The plans for the old tennis court are still under discussion. Right now, we are looking at restoring one of the old courts for use. The pad will be organized to allow other uses of the space. Once a decision has been make (working with capital budget 2018) I will be happy to advise. I will share your letter with the local Parks and Recreation Committee for the Loughborough District. Thank you again, Mike Howe.

---

**From:** Tony Roth <tr@ottawaathleticclub.com>
**Sent:** Friday, September 22, 2017 8:05 AM
**To:** Howe, Michael
**Cc:** Tony Roth
**Subject:** Sydenham Tennis Courts

Good Morning Mr. Howe,

I am writing in support of the suggestion to re-constitute the tennis courts in Sydenham.

I lived in the Sydenham area (on Wilmer Rd) for 15 years before moving to Ottawa, and my mother, Joan Hirschorn, still resides there, so I am often back home and in the village. For many years I was the head pro at the Kingston Tennis Club, while also working as a touring pro with both the Ontario Tennis Association and Tennis Canada, and I now run the Noble Tennis School from the Ottawa Athletic Club.

Tennis is currently experiencing a boom of popularity in this country, spurred partly by the international success of Canadian players such as Milos Raonic and, more recently, Denis Shapovalov. Tennis is often called the 'sport of a lifetime' because people of all ages and levels, including the disabled (wheelchair tennis, for instance, is a thriving international sport), are able to participate and enjoy the game. It is a

non-contact, non-violent activity, with a strong code and tradition of sportsmanship, which, in these days of concerns over concussions, injuries, and the culture of aggression in many sports, is an increasingly attractive feature for many. It is inexpensive to play, it can be enjoyed by whole families together, and it is a quiet activity that does not disturb nearby residents.

I believe usage of the courts will be significant. I believe there are no public tennis courts outside Kingston, and with two school literally next door, the opportunity for kids to be introduced to the game and enjoy sustained activity on the courts is practically ensured. The growing community of Sydenham and surrounding area will appreciate the ability to enjoy the sport without the need to commute to Kingston, and the option of tennis will add another feature to tilt the balance in our favour with tourists and other visitors. Also, with options such as portable net structures, it will be easily feasible to use the large space for other activities or events, if or as needed.

The investment involved in re-constituting the courts would be quite minimal, as the space is already defined and levelled, and not much would need to be added above the existing blacktop. The main expenses would be to complete the courts with suitable surfacing and paint, and provide fencing. Very roughly, I am guessing an outlay of $6-8,000. If interested, I would be willing to offer some clinics on he courts, perhaps next spring, with funds raised going towards the offset of such expenses. Likewise, if you want I can assist in finding experts that can provide a proper estimate.

Thank you for your time and consideration. Please feel free to contact me if you wish to discuss further. I can be reached through this email, or at 613-407-5330.

Best Regards,
Tony Roth

MINUTES - Date: Sept 7 /17 BEDFORD DISTRICT RECREATION ~~Sept 7 /17~~

Call to Order -- Delegations:

1. Budget Discussions:

Motion:

Moved by: Betty O'Connor
Seconded by: Lois Webster

That the meeting be called to order. Discussions concerning Fearmoy Hall and update presentation from Donna Garland regarding a possible Trillium grant.

Carried: DBrown

Motion:

Moved by: Lois Webster
Seconded by: Pat Barr

That we budget $30,000.00 for Fearmoy Hall to engage a consultant to insure the structural integrity of the building, in particular walls, chimneys, foundation.

Carried: DBrown

3. Chair to sign off on Attendance

4. Adjournment -Moved by:
Seconded by:

5. Next meeting at call of the Chair.

Presented by Secretary: Betty O'Connor
Betty O'Connor

Pg 2

MINUTES - Date: Sept. 7/17 BEDFORD DISTRICT RECREATION

Call to Order -- Delegations:

1. Budget Discussions:

Motion:

Moved by: Betty O'Connor
Seconded by: Lois Webster

That we budget $5,000 for a REPLACEMENT OF Deck and wheel chair ramp for Bradshaw school.
And that we budget $20,000 for a replacement of playground structure at Glendower Hall.

Carried:

Motion:

Moved by: Lois Webster
Seconded by: Betty O'Connor

That we reimburse the music group for mic chairs as invoiced: $581.10
That we budget $500 for Canada day.
That we carry forward budget for school visits at BRADSHAW.

Carried: D Brown

3. Chair to sign off on Attendance above.

4. Adjournment -Moved by: Betty O'Connor
Seconded by: Lois Webster

5. Next meeting at call of the Chair. D Brown

Presented by Secretary: Betty O'Connor
Betty O'Connor

**TOWNSHIP OF SOUTH FRONTENAC**

**BY-LAW NUMBER 2017-61**

**BEING A BY-LAW TO AMEND BY-LAW NUMBER 2003-75, AS AMENDED, TO REZONE LAND FROM COMMUNITY FACILITY ZONE (CF) TO SPECIAL URBAN MULTUPLE RESIDENTIAL ZONE (UMR-2), PART LOT 7, CONCESSION V, DISTRICT OF PORTLAND: CANADIAN MONTESSORI TRAINING**

**WHEREAS**, the Municipal Council of the Township of South Frontenac deems it expedient to amend By-law Number 2003-75 as amended, as it relates to a parcel of land located in Part of Lot 7, Concession V of the District of Portland;

**NOW THEREFORE THE CORPORATION OF THE TOWNSHIP OF SOUTH FRONTENAC BY ITS COUNCIL, HEREBY ENACTS AS FOLLOWS:**

1. THAT Schedule "E", to Zoning By-law Number 2003-75 as amended, is hereby further amended by changing the zoning from Community Facility Zone (CF) to Special Urban Multiple Residential Zone (UMR-2) for those lands shown on the attached map designated as Schedule "1".

2. THAT Zoning By-law Number 2003-75 as amended is hereby further amended by adding a new section UMR-2 (Part Lot 7, Concession V, Portland District) immediately after section UMR-1 (Part Lot 19, Concession XI, Portland District – R. Ball), to read as follows:

   **UMR-2 (Part Lot 7, Concession V, Portland District – Canadian Montessori Training)**

   Notwithstanding the provisions of section 16.2 or any other provision of this By-law to the contrary, on the lands zoned Special Urban Multiple Residential (UMR-2), the following special provision applies:

   Special Provision
   A dwelling is permitted in a separate single detached building.

   All other provisions of this by-law shall apply.

3. THAT development is subject to a site plan agreement entered into between the owner and the municipality and registered on the title of the property, specifying locations of all buildings and structures; septic location and parking areas.

4. THIS BY-LAW shall come into force in accordance with section 34 of the Planning Act, 1990, as amended, either upon the date of passage or as otherwise provided by said section 34.

**Dated at the Township of South Frontenac this third day of October. 2017.**

**Read a first and second time this third day of October, 2017.**

**Read a third time and finally passed this third day of October, 2017.**

**THE CORPORATION OF THE TOWNSHIP OF SOUTH FRONTENAC**

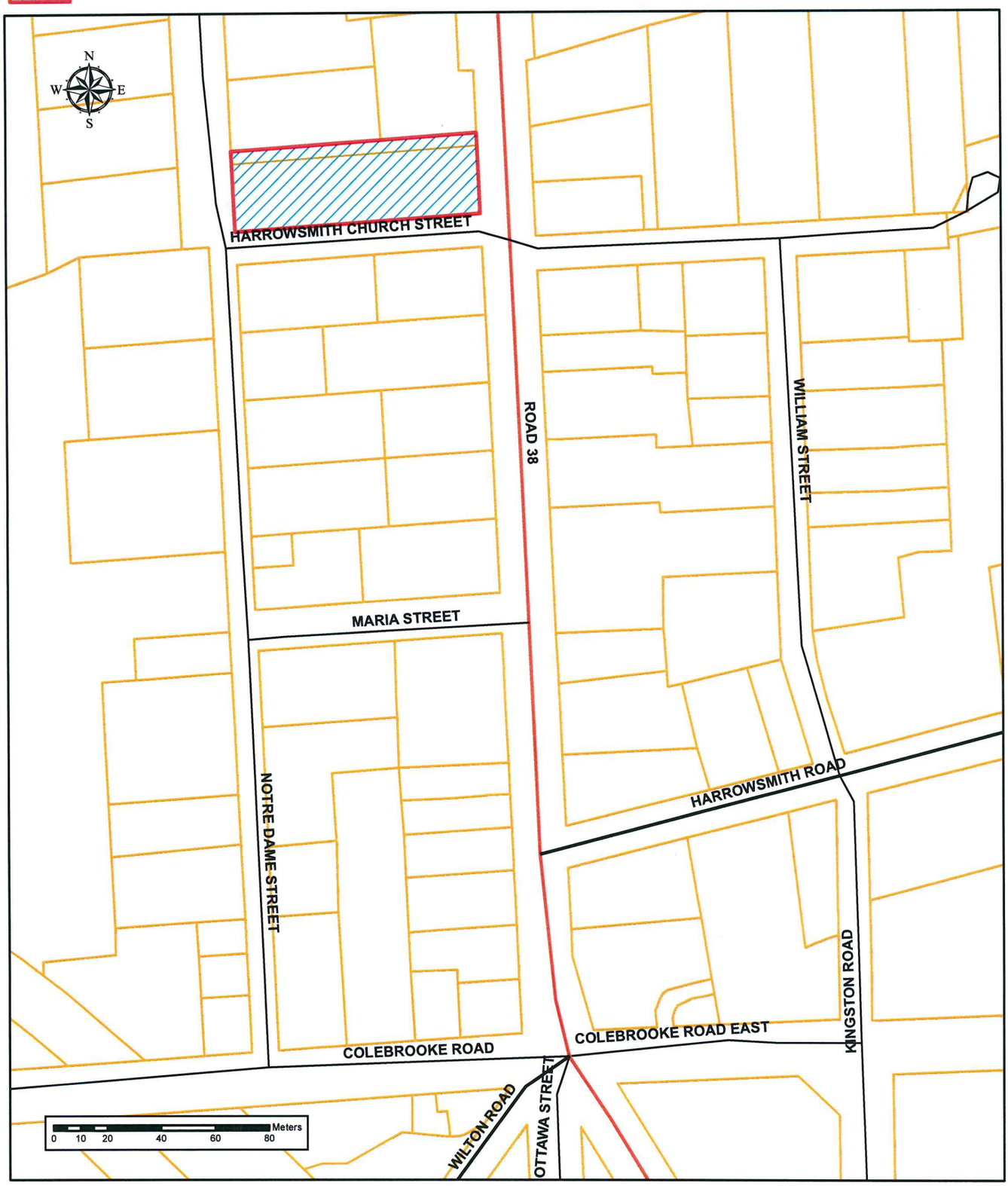
_____
**Ron Vandewal, Mayor**

_____
**Wayne Orr, Clerk-Administrator**

# TOWNSHIP OF SOUTH FRONTENAC

## SCHEDULE '1' TO BY-LAW NO. 2017-61

**AREA REZONED FROM 'CF' TO 'UMR-2'**




**THIS SCHEDULE '1' TO BY-LAW NO. 2017-61**
**PASSED THIS 3RD DAY OF OCTOBER 2017**

**MAYOR** _____

**CLERK** _____

# TOWNSHIP OF SOUTH FRONTENAC

## BY-LAW NUMBER 2017-62

## BEING A BY-LAW TO AMEND BY-LAW NUMBER 2003-75, AS AMENDED, TO REZONE LAND FROM URBAN RESIDENTIAL-FIRST DENSITY ZONE (UR1) TO SPECIAL URBAN RESIDENTIAL-FIRST DENSITY ZONE (UR1-18), PART LOT 7, CONCESSION VIII, DISTRICT OF STORRINGTON: HOWLETT

**WHEREAS**, the Municipal Council of the Township of South Frontenac deems it expedient to amend By-law Number 2003-75 as amended, as it relates to a parcel of land located in Part of Lot 7, Concession VIII of the District of Storrington;

**NOW THEREFORE THE CORPORATION OF THE TOWNSHIP OF SOUTH FRONTENAC BY ITS COUNCIL, HEREBY ENACTS AS FOLLOWS:**

1. THAT Schedule "H", to Zoning By-law Number 2003-75 as amended, is hereby further amended by changing the zoning from Urban Residential-First Density Zone (UR1) to Special Urban Residential-First Density Zone (UR1-18) for those lands shown on the attached map designated as Schedule "1".

2. THAT Zoning By-law Number 2003-75 as amended is hereby further amended by adding a new section UR1-18 (Part Lot 7, Concession VIII, Storrington District) immediately after section UR1-17 (Part Lot 19, Concession VI, Portland District – Kerr), to read as follows:

   **UR1-18 (Part Lot 7, Concession VIII, Storrington District – Howlett)**

   Notwithstanding the provisions of section 14.3.1 or any other provision of this By-law to the contrary, on the lands zoned Special Urban Residential-First Density (UR1-18), the following special provisions apply:

   Special Provisions
   - Lot Frontage (Minimum) 64 metres (210 ft.)
   - No development shall occur behind the rear lot line of any abutting property.

   All other provisions of this by-law shall apply.

3. THIS BY-LAW shall come into force in accordance with section 34 of the Planning Act, 1990, as amended, either upon the date of passage or as otherwise provided by said section 34.

**Dated at the Township of South Frontenac this third day of October. 2017.**

**Read a first and second time this third day of October, 2017.**

**Read a third time and finally passed this third day of October, 2017.**

**THE CORPORATION OF THE**
**TOWNSHIP OF SOUTH FRONTENAC**

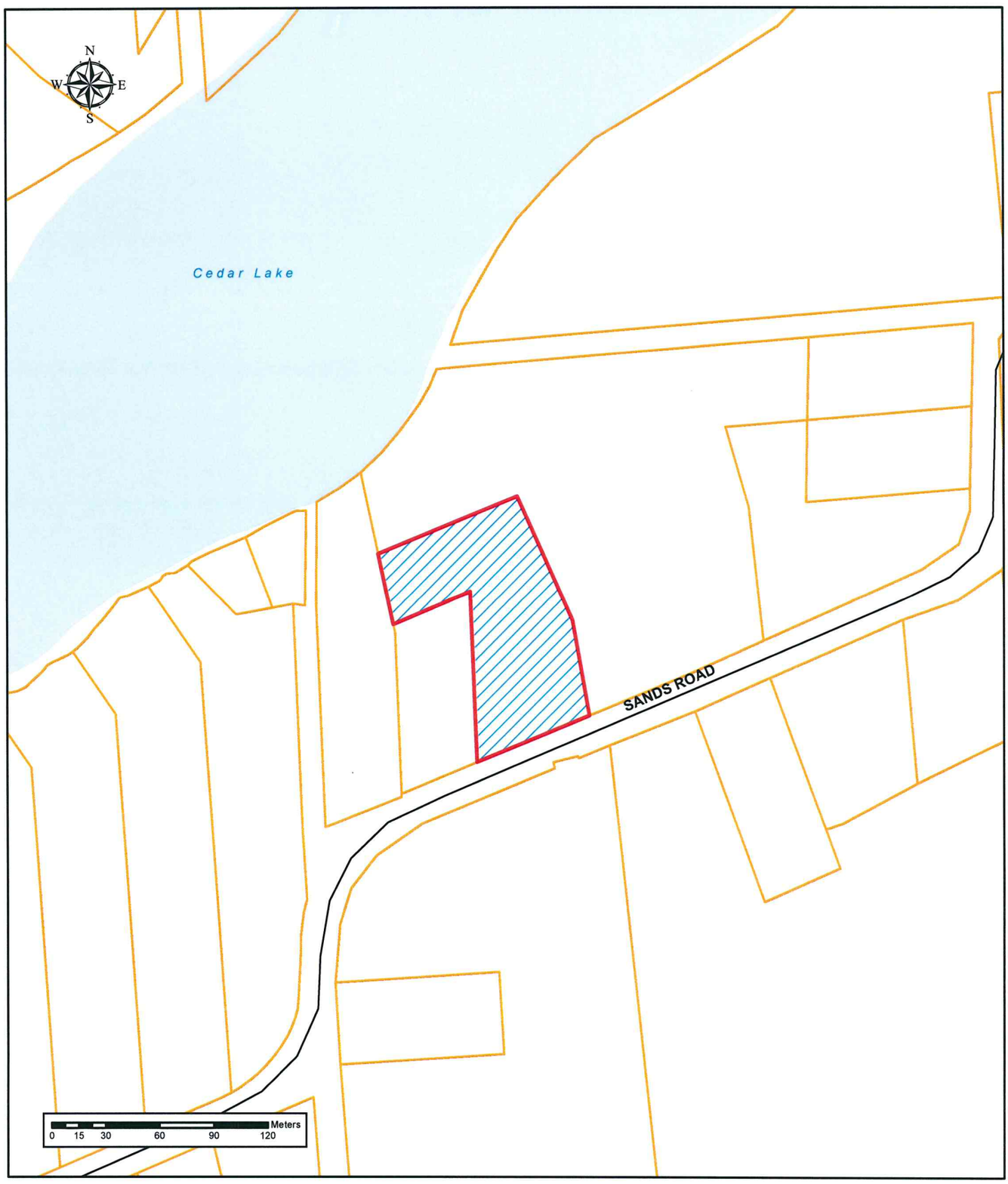
_____
**Ron Vandewal, Mayor**

_____
**Wayne Orr, Clerk-Administrator**

# TOWNSHIP OF SOUTH FRONTENAC

## SCHEDULE '1' TO BY-LAW NO. 2017-62

**AREA REZONE FROM 'UR1' TO 'UR1-18'**




**THIS SCHEDULE '1' TO BY-LAW NO. 2017-62**
**PASSED THIS 3RD DAY OF OCTOBER 2017**

**MAYOR** _____

**CLERK** _____

**Payment Listing**
**For the period of September 20, 2017 to October 3, 2017**

**Accounts Payable Payment Listing:**

| | | |
|---|---|---|
| | **For the period of September 20, 2017 to October 3, 2017** | 3,680,955.49 |

**Payroll Payment Listing:**

| | | |
|---|---|---|
| Pay Period #20 | Pay date September 27, 2017<br>For the period of September 10, 2017 to September 23, 2017 | 81,399.20 |
| Council Honorarium/ Reimbursement | Pay date September 29, 2017<br>For the period of September 1, 2017 to September 30, 2017 | 10,395.03 |
| | | **$ 3,772,749.72** |

**Total Payments**

**RECOMMENDATION:**

1. It is recommended that Council receive for information the listing of the Accounts Payable and Payroll for the period ending October 3, 2017 in the amount of

$ 3,772,749.72

**Submitted/approved by:**
**Stephanie Kuca - Deputy Treasurer**

**Ranges:** **From:** **To:** Distribution Types Included:
**Cheque Date:** **2017-09-20** **2017-10-03** **PURCH, MISC**

## 10 GG

### 0000 Gen

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008063 | 2017-10-03 | | COUNTY OF FRONTENAC | | |
| | | 50346 | | FMIS- 3rd Quarter | $27,379.82 |
| **Total EFT000000008063** | | | | | **$27,379.82** |
| EFT000000008072 | 2017-10-03 | | THE FRONTENAC NEWS | | |
| | | 65058 | | AD- Sept 14 2017 | $340.71 |
| **Total EFT000000008072** | | | | | **$340.71** |
| **Total Gen** | | | | | **$27,720.53** |

### 0020 TaxC

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008063 | 2017-10-03 | | COUNTY OF FRONTENAC | | |
| | | 50343 | | Levy- 3rd Quarter | $1,363,534.25 |
| **Total EFT000000008063** | | | | | **$1,363,534.25** |
| **Total TaxC** | | | | | **$1,363,534.25** |

### 0035 TaxSB-EP

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008082 | 2017-10-03 | | LIMESTONE DISTRICT SCHOOL | | |
| | | SEPT 2017 LEVY | | SEPT 2017 LEVY | $1,326,967.50 |
| **Total EFT000000008082** | | | | | **$1,326,967.50** |
| **Total TaxSB-EP** | | | | | **$1,326,967.50** |

### 0036 TaxSB-ES

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008049 | 2017-10-03 | | ALGONQUIN AND LAKESHORE | | |
| | | SEPT 2017 LEVY | | SEPT 2017 LEVY | $118,044.86 |
| **Total EFT000000008049** | | | | | **$118,044.86** |
| **Total TaxSB-ES** | | | | | **$118,044.86** |

### 0037 TaxSB-FP

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008061 | 2017-10-03 | | CONSEIL DES ECOLES PUBLIQUES | | |
| | | SEPT 2017 LEVY | | SEPT 2017 LEVY | $5,451.28 |
| **Total EFT000000008061** | | | | | **$5,451.28** |
| **Total TaxSB-FP** | | | | | **$5,451.28** |

### 0038 TaxSB-FS

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008062 | 2017-10-03 | | CONSEIL SCOLAIRE CATHOLIQUE DU | | |
| | | SEPT 2017 LEVY | | SEPT 2017 LEVY | $8,373.59 |
| **Total EFT000000008062** | | | | | **$8,373.59** |
| **Total TaxSB-FS** | | | | | **$8,373.59** |

### 1000

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068834 | 2017-10-03 | | DRAPEAU AUTOMATIC SPRINKLER CORP | | |
| | | 13727 | | Sprinkler+FireAlarm Inspection | $755.06 |
| **Total 068834** | | | | | **$755.06** |
| 068851 | 2017-10-03 | | SNIDER, PERCY | | |
| | | 17/08/30-03 | | Grass cutting and weed eating | $359.36 |
| **Total 068851** | | | | | **$359.36** |
| EFT000000008077 | 2017-10-03 | | HUGHES CONSTRUCTION AND | | |
| | | 2506 | | 17/08- Grass Cutting | $121.57 |
| **Total EFT000000008077** | | | | | **$121.57** |
| EFT000000008099 | 2017-10-03 | | SUPERIOR PROPANE INC. | | |
| | | 16859701 | | Tank Rental | $76.97 |
| **Total EFT000000008099** | | | | | **$76.97** |
| **Total** | | | | | **$1,312.96** |

### 1100 Counc

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068854 | 2017-10-03 | | WEBSTER, LOIS | | |
| | | 17/09/21 | | CAN150- Bedford District misc. | $30.10 |
| **Total 068854** | | | | | **$30.10** |
| EFT000000008053 | 2017-10-03 | | BARR, PAT | | |
| | | 150TH RALLY SNACKS | | 150TH road RALLY SNACKS | $61.04 |
| **Total EFT000000008053** | | | | | **$61.04** |
| EFT000000008104 | 2017-10-03 | | TROUSDALE'S HOME HARDWARE | | |
| | | 894 | | Flag Pole Wall+ Dowelling | $46.31 |
| | | 911 | | Flag Pole Wall + Dowelling | $146.74 |
| **Total EFT000000008104** | | | | | **$193.05** |
| EFT000000008105 | 2017-10-03 | | TRUE ELECTRIC | | |

| | | | | | |
|---|---|---|---|---|---|
| | | 6797 | | Road Rally-Electricity Set up | $1,554.58 |
| **Total EFT000000008105** | | | | | **$1,554.58** |
| **Total Counc** | | | | | **$1,838.77** |

### 1250 Clk

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008063 | 2017-10-03 | | COUNTY OF FRONTENAC | | |
| | | 50328 | | EAP | $185.17 |
| **Total EFT000000008063** | | | | | **$185.17** |
| EFT000000008103 | 2017-10-03 | | TROUSDALE'S FOODLAND | | |
| | | 5802 | | COFFEE & CREAM | $23.30 |
| | | 577 | | coffee,sugar, cream | $27.86 |
| **Total EFT000000008103** | | | | | **$51.16** |
| EFT000000008112 | 2017-10-03 | | UPPER CANADA OFFICE SYSTEMS | | |
| | | 317212 | | Copier Usage | $539.87 |
| **Total EFT000000008112** | | | | | **$539.87** |
| **Total Clk** | | | | | **$776.20** |

### 1275 Fin

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068850 | 2017-10-03 | | SHRED-IT INTERNATIONAL ULC | | |
| | | 8100248826 | | Shredding Services | $144.54 |
| **Total 068850** | | | | | **$144.54** |
| EFT000000008068 | 2017-10-03 | | DIAMOND SOFTWARE INC | | |
| | | PS-332208 | | VCH+ Esend Implementation | $174.01 |
| **Total EFT000000008068** | | | | | **$174.01** |
| EFT000000008073 | 2017-10-03 | | GRAND & TOY LIMITED | | |
| | | L468881 | | Record Book | $17.05 |
| **Total EFT000000008073** | | | | | **$17.05** |
| **Total Fin** | | | | | **$335.60** |
| **Total GG** | | | | | **$2,854,355.54** |

## 20 PP&P

### 2100 Fire

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068836 | 2017-10-03 | | GILMOUR'S ON 38 | | |
| | | 741166 | | Lasagna | $246.21 |
| **Total 068836** | | | | | **$246.21** |
| 068837 | 2017-10-03 | | GRANT'S NO FRILLS | | |
| | | 17/09/15 | | Drinking Water | $49.25 |
| **Total 068837** | | | | | **$49.25** |
| 068841 | 2017-10-03 | | KIDD ELECTRICAL & CONTRACTING | | |
| | | 17/08/26-SYDENHAM FS | | Ext. Cords,Power Feeds+ Plug | $976.90 |
| **Total 068841** | | | | | **$976.90** |
| 068848 | 2017-10-03 | | RECEIVER GENERAL RADIO LICENCES | | |
| | | 20170068578 | | RADIO AUTHORIZATION | $451.20 |
| | | 20170068577 | | RADIO AUTHORIZATION | $1,382.40 |
| | | 20170068564 | | RADIO AUTHORIZATION | $1,346.40 |
| **Total 068848** | | | | | **$3,180.00** |
| 068851 | 2017-10-03 | | SNIDER, PERCY | | |
| | | 17/08/30-07 | | Grass Cutting and weed eating | $157.58 |
| | | 17/08/30-06 | | Grass Cutting and weed eating | $112.55 |
| | | 17/08/30-05 | | Grass cutting and weed eating | $202.60 |
| **Total 068851** | | | | | **$472.73** |
| 068855 | 2017-10-03 | | WENTWORTH LANDSCAPES | | |
| | | 17-5-474 | | Lawncare 17/08 | $41.40 |
| **Total 068855** | | | | | **$41.40** |
| EFT000000008048 | 2017-10-03 | | AJ STONE COMPANY LIMITED | | |
| | | 135195 | | Hose, + Strainer + Adapter | $874.20 |
| | | 135097 | | Receiver Assembly, Nightfight | $1,360.08 |
| **Total EFT000000008048** | | | | | **$2,234.28** |
| EFT000000008052 | 2017-10-03 | | ANGLIN GROUP LTD | | |
| | | 1752 | | Progress draw #2 | $157,616.06 |
| **Total EFT000000008052** | | | | | **$157,616.06** |
| EFT000000008070 | 2017-10-03 | | ESKEROD SIGNS | | |
| | | 27674 | | Fire Hall Sign | $778.46 |
| **Total EFT000000008070** | | | | | **$778.46** |
| EFT000000008080 | 2017-10-03 | | KENWORTH ONTARIO - KINGSTON | | |
| | | KS20633 | | Safety and Service | $621.52 |
| | | KS20622 | | Safety and Service and Heater | $1,854.02 |
| | | KS20624 | | Voltage Regulator | $454.46 |
| | | KS20650 | | Front Marker Light | $62.90 |
| | | KS20385 | | Safety and Service | $711.04 |
| | | KS20568 | | Headlight Fuses | $283.50 |
| | | KS20317 | | Fuel Filter+Drive Shaft | $726.04 |
| **Total EFT000000008080** | | | | | **$4,713.48** |
| EFT000000008090 | 2017-10-03 | | NELLIE'S GAS BAR | | |
| | | 17/07/13-40 | | Diesel-331 | $57.64 |
| | | 17/08/09-20 | | Regular Fuel-341 | $58.53 |
| | | 17/08/09-21 | | Diesel- 341 | $106.27 |
| | | 17/06/05-46 | | Regular-341 | $71.14 |
| | | 17/07/07-01 | | Regular-341 | $33.54 |
| | | 17/05/29-33 | | Regular-341 | $33.64 |
| **Total EFT000000008090** | | | | | **$360.76** |
| EFT000000008091 | 2017-10-03 | | NORTHWAY HARDWARE | | |

| | | | | | |
|---|---|---|---|---|---|
| | | 16516 | | Cleaning Supplies | $30.48 |
| **Total EFT000000008091** | | | | | **$30.48** |
| EFT000000008106 | 2017-10-03 | | TURRIS COMMUNICATIONS LTD | | |
| | | TCL-175520 | | Battery Replacement | $12.09 |
| **Total EFT000000008106** | | | | | **$12.09** |
| EFT000000008107 | 2017-10-03 | | UBCON CONSTRUCTION LTD | | |
| | | 17-005-4 | | 17/08 Grass Cutting | $152.64 |
| | | 17-005-4 | | 17/08 Grass Cutting | $152.64 |
| **Total EFT000000008107** | | | | | **$305.28** |
| **Total Fire** | | | | | **$171,017.38** |

### 2605 Build

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008102 | 2017-10-03 | | TOWN AND COUNTRY AUTO SUPPLY | | |
| | | 6083-456180 | | Oil Filter | $5.80 |
| **Total EFT000000008102** | | | | | **$5.80** |
| **Total Build** | | | | | **$5.80** |

### 2620 Anml Ctl

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008043 | 2017-09-29 | | FRONTENAC MUNICIPAL LAW | | |
| | | SF-AC-2017-SEPTEMBER | | ANIMAL CONTROL 17/09 | $3,256.19 |
| **Total EFT000000008043** | | | | | **$3,256.19** |
| **Total Anml Ctl** | | | | | **$3,256.19** |

### 2640 Bylaw enf

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008043 | 2017-09-29 | | FRONTENAC MUNICIPAL LAW | | |
| | | SF-P-2017-SEPTEMBER | | PARKING BYLAW 17/09 | $457.92 |
| | | SF-P-2017-SEPTEMBER | | PARKING BYLAW MILEAGE 17/09 | $634.98 |
| **Total EFT000000008043** | | | | | **$1,092.90** |
| **Total Bylaw enf** | | | | | **$1,092.90** |
| **Total PP&P** | | | | | **$175,372.27** |

## 30 Trans

### 3000 PW OH

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008050 | 2017-10-03 | | ALLIANCE WIRELESS COMMUNICATIONS | | |
| | | C14258-0917 | | Answering Service | $283.60 |
| | | C14258-0817 | | Answering Service | $186.37 |
| **Total EFT000000008050** | | | | | **$469.97** |
| EFT000000008065 | 2017-10-03 | | CUNNINGHAM SWAN CARTY | | |
| | | 146846 | | Ottawa Road | $381.60 |
| **Total EFT000000008065** | | | | | **$381.60** |
| **Total PW OH** | | | | | **$851.57** |

### 3005 RdAdmOH

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008112 | 2017-10-03 | | UPPER CANADA OFFICE SYSTEMS | | |
| | | 317220 | | Copier Usage | $81.70 |
| **Total EFT000000008112** | | | | | **$81.70** |
| **Total RdAdmOH** | | | | | **$81.70** |

### 3010

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068830 | 2017-10-03 | | ANKA SERVICES | | |
| | | 4466 | | Door Opener Batteries | $24.35 |
| **Total 068830** | | | | | **$24.35** |
| 068831 | 2017-10-03 | | ATKINSON HOME BUILDING CENTRE | | |
| | | 118606 | | D Batteries | $9.66 |
| **Total 068831** | | | | | **$9.66** |
| 068847 | 2017-10-03 | | MEGA-LAB MANUFACTURING CO LTD | | |
| | | 0000143694 | | Lubitol | $581.05 |
| **Total 068847** | | | | | **$581.05** |
| 068851 | 2017-10-03 | | SNIDER, PERCY | | |
| | | 17/09/07-10 | | Flagging | $397.37 |
| **Total 068851** | | | | | **$397.37** |
| EFT000000008045 | 2017-10-03 | | ABELL PEST CONTROL INC. | | |
| | | A0467618 | | 17/09 Pest Control | $66.71 |
| **Total EFT000000008045** | | | | | **$66.71** |
| EFT000000008046 | 2017-10-03 | | AECOM CANADA LTD | | |
| | | 38274193 | | Harrowsmith Design | $2,851.52 |
| | | 38274357 | | Buck Lake Study-Alt Concepts | $2,772.96 |
| **Total EFT000000008046** | | | | | **$5,624.48** |
| EFT000000008047 | 2017-10-03 | | AIR LIQUIDE CANADA INC. | | |
| | | 67293768 | | Oxygen | $29.02 |
| **Total EFT000000008047** | | | | | **$29.02** |
| EFT000000008054 | 2017-10-03 | | BATTLEFIELD EQUIPMENT RENTALS | | |
| | | 24209371 | | Roller | $3,944.22 |
| | | 24209448 | | Roller Rental | $1,861.19 |
| **Total EFT000000008054** | | | | | **$5,805.41** |

| | | | | | |
|---|---|---|---|---|---|
| EFT000000008055 | 2017-10-03 | | BAYRIDGE PRINTER PROS | | |
| | | 21511 | | TN570 Toner | $152.64 |
| **Total EFT000000008055** | | | | | **$152.64** |
| EFT000000008056 | 2017-10-03 | | BLACK DOG TIRE & LUBRICANTS | | |
| | | IN0009472 | | Tire Change | $28.49 |
| | | IN0009506 | | New Tire and Rim | $511.24 |
| **Total EFT000000008056** | | | | | **$539.73** |
| EFT000000008060 | 2017-10-03 | | CINTAS | | |
| | | 884840211 | | Uniform+ Cleaning Supplies | $15.58 |
| | | 884840211 | | Uniform+ Cleaning Supplies | $152.57 |
| | | 884840211 | | Uniform+ Cleaning Supplies | $12.09 |
| | | 884840187 | | Uniform+ Cleaning Supplies | $41.12 |
| | | 884840187 | | Uniform+ Cleaning Supplies | $13.21 |
| | | 884841689 | | Cleaning and Uniform | $13.70 |
| | | 884841689 | | Cleaning and Uniform | $22.31 |
| | | 884841716 | | Cleaning and Uniform | $15.58 |
| | | 884841716 | | Cleaning and Uniform | $101.93 |
| | | 884841716 | | Cleaning and Uniform | $12.09 |
| | | 884843239 | | Uniform and Cleaning | $101.66 |
| | | 884843239 | | Uniform and Cleaning | $13.21 |
| | | 884843239 | | Uniform and Cleaning | $12.09 |
| | | 884843211 | | Uniform and Cleaning | $13.21 |
| | | 884843211 | | Uniform and Cleaning | $29.36 |
| **Total EFT000000008060** | | | | | **$569.71** |
| EFT000000008064 | 2017-10-03 | | CRUICKSHANK CONSTRUCTION | | |
| | | 90081199 | | Gravel | $19,012.64 |
| | | 90081313 | | gravel | $20,653.40 |
| | | 90081830 | | Shoulder Crew+ Floats | $3,193.99 |
| | | 90081857 | | Gravel | $603.08 |
| | | 90081750 | | Gravel | $4,464.36 |
| | | 90081683 | | Gravel | $16,257.78 |
| | | 90081573 | | Gravel | $13,276.19 |
| **Total EFT000000008064** | | | | | **$77,461.44** |
| EFT000000008074 | 2017-10-03 | | GREER GALLOWAY CONSULTING ENGINEERS | | |
| | | 17938 | | Consulting Services | $1,803.91 |
| **Total EFT000000008074** | | | | | **$1,803.91** |
| EFT000000008088 | 2017-10-03 | | MILLER PAVING LIMITED | | |
| | | SU-150-18-1049 | | Desert Lake+ Verona Sand | $36,127.54 |
| **Total EFT000000008088** | | | | | **$36,127.54** |
| EFT000000008092 | 2017-10-03 | | NORTRAX | | |
| | | 815217 | | 5/8 X 3 1/4 + Lock wash | $108.48 |
| **Total EFT000000008092** | | | | | **$108.48** |
| EFT000000008093 | 2017-10-03 | | O. BETTSCHEN | | |
| | | 39132 | | Gravel | $467.28 |
| **Total EFT000000008093** | | | | | **$467.28** |
| EFT000000008094 | 2017-10-03 | | PETRIE FORD | | |
| | | 239035 | | Lens | $5.03 |
| **Total EFT000000008094** | | | | | **$5.03** |
| EFT000000008100 | 2017-10-03 | | SWEET'S SAND & GRAVEL | | |
| | | S-0051074 | | Water Truck Rental | $2,588.52 |
| **Total EFT000000008100** | | | | | **$2,588.52** |
| EFT000000008102 | 2017-10-03 | | TOWN AND COUNTRY AUTO SUPPLY | | |
| | | 6083-455772 | | Brake Pads | $104.75 |
| | | 6083-455846 | | Raven Glove | $36.61 |
| **Total EFT000000008102** | | | | | **$141.36** |
| EFT000000008103 | 2017-10-03 | | TROUSDALE'S FOODLAND | | |
| | | 1623 | | Drinking Water, Cream | $30.53 |
| **Total EFT000000008103** | | | | | **$30.53** |
| EFT000000008104 | 2017-10-03 | | TROUSDALE'S HOME HARDWARE | | |
| | | 894 | | Lumber | $200.73 |
| | | 74127 | | fruit fly traps | $11.38 |
| | | 73542 | | Coupler, Quick Brass. | $11.69 |
| **Total EFT000000008104** | | | | | **$223.80** |
| EFT000000008109 | 2017-10-03 | | UNITED RENTALS OF CANADA INC | | |
| | | 144575905-008 | | Fence Rental | $276.79 |
| **Total EFT000000008109** | | | | | **$276.79** |
| EFT000000008111 | 2017-10-03 | | UNIVERSAL SUPPLY GROUP | | |
| | | 173-165596 | | 19 Series Licence+ Base mount | $5.85 |
| **Total EFT000000008111** | | | | | **$5.85** |
| EFT000000008114 | 2017-10-03 | | WASTE CONNECTIONS OF CANADA | | |
| | | 7150-0000228894 | | Construction Waste | $479.15 |
| **Total EFT000000008114** | | | | | **$479.15** |
| **Total** | | | | | **$133,519.81** |

### 3205 Mwg&Wd Spry

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068851 | 2017-10-03 | | SNIDER, PERCY | | |
| | | 17/08/24-42 | | Centennial Park | $152.64 |
| **Total 068851** | | | | | **$152.64** |
| **Total Mwg&Wd Spry** | | | | | **$152.64** |

### 3210 Brushing

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008054 | 2017-10-03 | | BATTLEFIELD EQUIPMENT RENTALS | | |
| | | 24209498 | | Engine Oil | $49.96 |
| **Total EFT000000008054** | | | | | **$49.96** |
| **Total Brushing** | | | | | **$49.96** |

## 3215 Drainage

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068851 | 2017-10-03 | | SNIDER, PERCY | | |
| | | 17/09/21-29 | | Flagging | $381.85 |
| | | 17/09/20-23 | | Flagging | $417.47 |
| | | 17/09/19-22 | | Tri axle rental | $1,546.75 |
| | | 17/09/11-26 | | Flagging | $140.68 |
| | | 17/09/20-28 | | Flagging | $1,205.86 |
| | | 17/08/23-38 | | Triaxle Rental | $1,343.23 |
| | | 17/09/07-04 | | Flagging | $1,205.86 |
| **Total 068851** | | | | | **$6,241.70** |
| EFT000000008064 | 2017-10-03 | | CRUICKSHANK CONSTRUCTION | | |
| | | 90077822 | | Gravel | $138.37 |
| | | 90081858 | | Gravel | $231.30 |
| **Total EFT000000008064** | | | | | **$369.67** |
| EFT000000008075 | 2017-10-03 | | G WILLIAMS PAVING LTD | | |
| | | 6597 | | Road Cuts Completed | $5,556.10 |
| | | 6597 | | Road Cuts Completed | $8,284.28 |
| **Total EFT000000008075** | | | | | **$13,840.38** |
| EFT000000008086 | 2017-10-03 | | MCNICHOLS CONSTRUCTION LTD | | |
| | | 17/08/16-PETWORTH | | 320 Cat + Tandem | $2,269.25 |
| | | 17/08/31-DESERT LAKE | | 320 Cat + Tri axle | $2,320.13 |
| | | 17/08/17-JAMISON | | 320 Cat + Tandem | $2,136.96 |
| | | 17/08/24-BEDFORD | | 320 Cat+ Tandam+ Hoe Ram | $6,512.64 |
| | | 17/08/21-COLEBROOK | | 320 Cat +Tandam | $4,273.92 |
| | | 17/08/30-DESERT LAKE | | 320 Cat+ Hoe Ram+ Tri Axle | $9,570.53 |
| **Total EFT000000008086** | | | | | **$27,083.43** |
| EFT000000008093 | 2017-10-03 | | O. BETTSCHEN | | |
| | | 39188 | | Gravel | $706.10 |
| | | 39248 | | Old Asphalt | $414.07 |
| | | 39168 | | Gravel | $1,303.27 |
| | | 39298 | | Gravel | $189.84 |
| | | 39167 | | Gravel | $1,393.19 |
| | | 39222 | | Gravel | $108.68 |
| **Total EFT000000008093** | | | | | **$4,115.15** |
| EFT000000008100 | 2017-10-03 | | SWEET'S SAND & GRAVEL | | |
| | | S-0051477 | | Water Truck Rental | $2,870.90 |
| | | S-0051478 | | Gravel | $2,907.68 |
| **Total EFT000000008100** | | | | | **$5,778.58** |
| **Total Drainage** | | | | | **$57,428.91** |

## 3310 Hardtop Patching

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068851 | 2017-10-03 | | SNIDER, PERCY | | |
| | | 17/08/24-37 | | Patching | $1,297.44 |
| | | 17/08/24-37 | | Patching | $1,182.96 |
| | | 17/08/31-46 | | Patching | $2,594.88 |
| | | 17/08/31-46 | | Patching | $648.72 |
| | | 17/08/17-35 | | Patching | $3,205.44 |
| | | 17/09/06-08 | | Patching | $1,297.44 |
| | | 17/08/17-33 | | Flagging | $221.07 |
| **Total 068851** | | | | | **$10,447.95** |
| **Total Hardtop Patching** | | | | | **$10,447.95** |

## 3315 Sweeping

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068851 | 2017-10-03 | | SNIDER, PERCY | | |
| | | 17/08/24-42 | | Centennial Park | $152.64 |
| **Total 068851** | | | | | **$152.64** |
| **Total Sweeping** | | | | | **$152.64** |

## 3405 Washout

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068842 | 2017-10-03 | | LAFARGE CANADA INC | | |
| | | 707731837 | | RAP | $659.10 |
| | | 707731838 | | RAP | $94.33 |
| | | 707731839 | | RAP | $524.02 |
| | | 707731840 | | RAP | $408.86 |
| | | 707743476 | | RAP | $93.87 |
| | | 707731836 | | RAP | $96.70 |
| | | 707780040 | | RAP | $120.67 |
| **Total 068842** | | | | | **$1,997.55** |
| EFT000000008064 | 2017-10-03 | | CRUICKSHANK CONSTRUCTION | | |
| | | 90081314 | | Gravel | $2,031.53 |
| | | 90081858 | | Gravel | $103.99 |
| **Total EFT000000008064** | | | | | **$2,135.52** |
| EFT000000008100 | 2017-10-03 | | SWEET'S SAND & GRAVEL | | |
| | | S-0051232 | | Gravel | $45.87 |
| | | S-0051348 | | Gravel | $101.44 |
| **Total EFT000000008100** | | | | | **$147.31** |
| **Total Washout** | | | | | **$4,280.38** |

## 3425 Gradng & Grvl resurf

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008100 | 2017-10-03 | | SWEET'S SAND & GRAVEL | | |

| | | | | |
|---|---|---|---|---|
| | | S-0051179 | Water Truck Rental | $1,741.38 |
| | | S-0048827 | Grader+Water Truck Rental | $5,754.55 |
| **Total EFT000000008100** | | | | **$7,495.93** |
| **Total Gradng & Grvl resurf** | | | | **$7,495.93** |

### 3515 Stock Snd&Slt

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008057 | 2017-10-03 | | BRICAZA CORPORATION | | |
| | | 1709-001 | | winter sand | $169,432.84 |
| | | 1709-002 | | Winter Sand | $48,502.89 |
| **Total EFT000000008057** | | | | | **$217,935.73** |
| EFT000000008079 | 2017-10-03 | | K+S WINDSOR SALT LTD | | |
| | | 5300321448 | | Winter Salt | $14,262.55 |
| | | 5300322539 | | Winter Salt | $7,012.26 |
| | | 5300322262 | | Winter Salt | $2,445.70 |
| | | 53005322205 | | Winter Salt | $7,344.26 |
| **Total EFT000000008079** | | | | | **$31,064.77** |
| **Total Stock Snd&Slt** | | | | | **$249,000.50** |

### 3615 Street signs

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068851 | 2017-10-03 | | SNIDER, PERCY | | |
| | | 17/09/07-11 | | Excavator with Auger | $826.80 |
| | | 17/08/09-24 | | Excavator with Auger | $2,403.06 |
| | | 17/08/15-32 | | Excavator with Auger | $850.71 |
| **Total 068851** | | | | | **$4,080.57** |
| EFT000000008044 | 2017-10-03 | | BOULTON SEPTIC/LARMON'S | | |
| | | 25628 | | flagging | $746.66 |
| **Total EFT000000008044** | | | | | **$746.66** |
| EFT000000008087 | 2017-10-03 | | MECHANICAL ADVERTISING | | |
| | | 909812 | | Wooden Signs | $1,127.14 |
| **Total EFT000000008087** | | | | | **$1,127.14** |
| **Total Street signs** | | | | | **$5,954.37** |

### 3650 Street Lights

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008096 | 2017-10-03 | | R.W. ELECTRIC | | |
| | | 33890 | | Repair Flasher-Hwy 3 | $828.83 |
| **Total EFT000000008096** | | | | | **$828.83** |
| **Total Street Lights** | | | | | **$828.83** |

### 3800 Crssng Guards

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008041 | 2017-09-29 | | SNIDER, DEBBIE | | |
| | | 17/09 | | CROSSING GUARD 17/09 | $450.00 |
| | | 17/09 | | CROSSING GUARD 17/09 | $12.96 |
| **Total EFT000000008041** | | | | | **$462.96** |
| EFT000000008042 | 2017-09-29 | | WILSON, CHRISTINA | | |
| | | 17/09 | | CROSSING GUARD 17/09 | $540.00 |
| | | 17/09 | | CROSSING GUARD 17/09 | $15.55 |
| **Total EFT000000008042** | | | | | **$555.55** |
| **Total Crssng Guards** | | | | | **$1,018.51** |

## Total Trans $471,263.70

## 40 Env

### 4110 Water Treat

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008113 | 2017-10-03 | | UTILITIES KINGSTON | | |
| | | 33919 | | Operating Costs 17/06 | $11,269.03 |
| | | IN-0000164 | | Operating Costs 17/07 | $11,269.03 |
| | | IN-0000218 | | Operating Costs 17/08 | $11,269.03 |
| **Total EFT000000008113** | | | | | **$33,807.09** |
| **Total Water Treat** | | | | | **$33,807.09** |

### 5005 SW & Fac OH

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008070 | 2017-10-03 | | ESKEROD SIGNS | | |
| | | 27654 | | reflective decals | $457.92 |
| **Total EFT000000008070** | | | | | **$457.92** |
| **Total SW & Fac OH** | | | | | **$457.92** |

### 5105 Garb coll

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068828 | 2017-09-29 | | SNIDER, PERCY | | |
| | | DISPOSAL 17/09 | | DISPOSAL 17/09 | $11,454.79 |
| | | DISPOSAL 17/09 | | DISPOSAL 17/09 | $9,455.41 |
| **Total 068828** | | | | | **$20,910.20** |
| 068851 | 2017-10-03 | | SNIDER, PERCY | | |
| | | 17/09/07-07 | | Garbage Truck Rental | $1,717.20 |
| | | 17/09/13-17 | | Garbage Truck Rental | $1,679.04 |
| | | 17/09/14-18 | | Garbage Truck Rental | $305.28 |

| | | | | | |
|---|---|---|---|---|---|
| **Total 068851** | | | | | **$3,701.52** |
| EFT000000008040 | 2017-09-29 | | BOULTON SEPTIC/LARMON'S | | |
| | | COLLECTION 17/09 | | COLLECTION 17/09 | $11,701.36 |
| **Total EFT000000008040** | | | | | **$11,701.36** |
| EFT000000008044 | 2017-10-03 | | BOULTON SEPTIC/LARMON'S | | |
| | | 25690 | | Garbage Pick Up | $760.66 |
| **Total EFT000000008044** | | | | | **$760.66** |
| **Total Garb coll** | | | | | **$37,073.74** |

### 5110 Gab disp

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068851 | 2017-10-03 | | SNIDER, PERCY | | |
| | | 17/09/01-06 | | Dump/Dozer | $569.86 |
| | | 17/09/07-13 | | Portland Dump Waste | $1,068.48 |
| | | 17/09/14-15 | | Dump/Dozer | $1,139.71 |
| **Total 068851** | | | | | **$2,778.05** |
| EFT000000008038 | 2017-09-29 | | WHALEY, GEORGE | | |
| | | 17/09 DISPOSAL | | 17/09 DISPOSAL | $1,935.80 |
| **Total EFT000000008038** | | | | | **$1,935.80** |
| EFT000000008045 | 2017-10-03 | | ABELL PEST CONTROL INC. | | |
| | | A0466655 | | Pest Control Sept 2017 | $97.44 |
| | | 08052315 | | 17/08 Pest Control | $58.81 |
| **Total EFT000000008045** | | | | | **$156.25** |
| EFT000000008069 | 2017-10-03 | | ENVIRO-GUARD PLUS INC. | | |
| | | 88893 | | 17/08 Pest Control | $42.74 |
| **Total EFT000000008069** | | | | | **$42.74** |
| EFT000000008078 | 2017-10-03 | | JODY CAMPBELL'S SEPTIC SERVICE | | |
| | | 10077 | | Toilet Rental | $117.02 |
| | | 10077 | | Toilet Rental | $117.02 |
| | | 10077 | | Toilet Rental | $117.02 |
| **Total EFT000000008078** | | | | | **$351.06** |
| EFT000000008114 | 2017-10-03 | | WASTE CONNECTIONS OF CANADA | | |
| | | 647-0000023383 | | 110.69 MT ICI/RESI Waste | $11,630.94 |
| | | 7150-0000228894 | | Construction Waste | $1,082.98 |
| | | 647-0000023420 | | 27.42MT ICI/Construction | $2,413.59 |
| **Total EFT000000008114** | | | | | **$15,127.51** |
| **Total Gab disp** | | | | | **$20,391.41** |

### 5205 Recyc Coll

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068828 | 2017-09-29 | | SNIDER, PERCY | | |
| | | DISPOSAL 17/09 | | DISPOSAL 17/09 | $12,356.86 |
| | | DISPOSAL 17/09 | | DISPOSAL 17/09 | $10,775.05 |
| | | DISPOSAL 17/09 | | DISPOSAL 17/09 | $11,501.55 |
| **Total 068828** | | | | | **$34,633.46** |
| EFT000000008040 | 2017-09-29 | | BOULTON SEPTIC/LARMON'S | | |
| | | COLLECTION 17/09 | | COLLECTION 17/09 | $10,065.69 |
| **Total EFT000000008040** | | | | | **$10,065.69** |
| **Total Recyc Coll** | | | | | **$44,699.15** |

### 5210 Rec Disp/Prc

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068851 | 2017-10-03 | | SNIDER, PERCY | | |
| | | 17/09-12 | | Recycle | $534.24 |
| **Total 068851** | | | | | **$534.24** |
| **Total Rec Disp/Prc** | | | | | **$534.24** |

**Total Env** **$136,963.55**

## 70 Cem

### 7000 Health

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068844 | 2017-10-03 | | LEEDER MONUMENTS | | |
| | | 2151 | | Corner Posts | $66.14 |
| | | 2151 | | Corner Posts | $198.43 |
| | | 2151 | | Corner Posts | $198.43 |
| **Total 068844** | | | | | **$463.00** |
| 068855 | 2017-10-03 | | WENTWORTH LANDSCAPES | | |
| | | 17-5-474 | | Lawncare 17/08 | $51.77 |
| | | 17-5-474 | | Lawncare 17/08 | $135.91 |
| | | 17-5-474 | | Lawncare 17/08 | $54.16 |
| **Total 068855** | | | | | **$241.84** |
| EFT000000008039 | 2017-09-29 | | D G YOUNGE CONCRETE BURIAL VAULTS | | |
| | | SERVICES 17/09 | | SERVICES 17/09 | $875.14 |
| **Total EFT000000008039** | | | | | **$875.14** |
| EFT000000008064 | 2017-10-03 | | CRUICKSHANK CONSTRUCTION | | |
| | | 90078717 | | RAP | $686.38 |
| | | 90076095 | | RAP | $247.64 |
| **Total EFT000000008064** | | | | | **$934.02** |
| EFT000000008067 | 2017-10-03 | | D G YOUNGE CONCRETE BURIAL VAULTS | | |
| | | 1669 | | 17/08 Cemetary Services | $305.28 |
| | | 1669 | | 17/08 Cemetary Services | $864.96 |
| | | 1669 | | 17/08 Cemetary Services | $1,017.60 |
| **Total EFT000000008067** | | | | | **$2,187.84** |
| EFT000000008077 | 2017-10-03 | | HUGHES CONSTRUCTION AND | | |

| | | | | |
|---|---|---|---|---|
| | | 2512 | 17/08- Grass Cutting | $396.23 |
| | | 2513 | 17/08- Grass Cutting | $1,143.68 |
| | | 2514 | 17/08- Grass Cutting | $486.29 |
| | | 2515 | 17/08- Grass Cutting | $220.63 |
| | | 2516 | 17/08- Grass Cutting | $1,269.75 |
| **Total EFT000000008077** | | | | **$3,516.58** |
| EFT000000008107 | 2017-10-03 | | UBCON CONSTRUCTION LTD | |
| | | 17-005-4 | 17/08 Grass Cutting | $356.16 |
| | | 17-005-4 | 17/08 Grass Cutting | $1,424.64 |
| **Total EFT000000008107** | | | | **$1,780.80** |
| **Total Health** | | | | **$9,999.22** |
| **Total Cem** | | | | **$9,999.22** |

## 80 Rec

### 8000 Rec

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068838 | 2017-10-03 | | HOLLAND, TRACY | | |
| | | 17/09/18- SF REC | | 17/09/18- SF REC | $31.21 |
| | | 17/09/18- SF REC | | 17/09/18- SF REC | $3.07 |
| **Total 068838** | | | | | **$34.28** |
| 068840 | 2017-10-03 | | HOWE, MIKE | | |
| | | 17/09/18- SF REC | | 17/09/18- SF REC | $31.21 |
| | | 17/09/18- SF REC | | 17/09/18- SF REC | $4.96 |
| **Total 068840** | | | | | **$36.17** |
| 068851 | 2017-10-03 | | SNIDER, PERCY | | |
| | | 17/08/28-01 | | Grass cutting and weed eating | $270.15 |
| | | 17/08/31-08 | | Grass Cutting and weed eating | $1,215.73 |
| | | 17/08/24-09 | | Grass Cutting and weed eating | $295.10 |
| | | 17/08/29-04 | | Grass cutting and weed eating | $180.11 |
| | | 17/08/28-02 | | Grass cutting and weed eating | $144.09 |
| | | 17/08/28-50 | | Grass cutting and weed eating | $882.50 |
| **Total 068851** | | | | | **$2,987.68** |
| 068855 | 2017-10-03 | | WENTWORTH LANDSCAPES | | |
| | | 17-5-474 | | Lawncare 17/08 | $67.89 |
| **Total 068855** | | | | | **$67.89** |
| EFT000000008037 | 2017-09-29 | | LEONARD, ELIZABETH | | |
| | | 17/09 | | 17/09 MAINTENANCE | $142.50 |
| **Total EFT000000008037** | | | | | **$142.50** |
| EFT000000008058 | 2017-10-03 | | BROWN, DONNA | | |
| | | 17/09/18- SF REC | | 17/09/18- SF REC | $31.21 |
| | | 17/09/18- SF REC | | 17/09/18- SF REC | $44.58 |
| **Total EFT000000008058** | | | | | **$75.79** |
| EFT000000008059 | 2017-10-03 | | CANADIAN TIRE | | |
| | | 131903 | | Keys | $16.22 |
| **Total EFT000000008059** | | | | | **$16.22** |
| EFT000000008071 | 2017-10-03 | | FOX, KEVIN | | |
| | | 17/09/18- SF REC | | 17/09/18- SF REC | $31.21 |
| | | 17/09/18- SF REC | | 17/09/18- SF REC | $31.70 |
| **Total EFT000000008071** | | | | | **$62.91** |
| EFT000000008076 | 2017-10-03 | | HD SUPPLY CANADA, INC | | |
| | | INV107381840 | | Lock | $189.09 |
| **Total EFT000000008076** | | | | | **$189.09** |
| EFT000000008077 | 2017-10-03 | | HUGHES CONSTRUCTION AND | | |
| | | 2511 | | 17/08- Grass Cutting | $666.40 |
| | | 2505 | | 17/08- Grass Cutting | $445.77 |
| | | 2506 | | 17/08- Grass Cutting | $121.57 |
| | | 2507 | | 17/08- Grass Cutting | $562.83 |
| | | 2508 | | 17/08- Grass Cutting | $454.76 |
| | | 2509 | | 17/08- Grass Cutting | $400.74 |
| | | 2510 | | 17/08- Grass Cutting | $481.78 |
| **Total EFT000000008077** | | | | | **$3,133.85** |
| EFT000000008078 | 2017-10-03 | | JODY CAMPBELL'S SEPTIC SERVICE | | |
| | | 10079 | | Toilet Rental | $101.76 |
| | | 10078 | | Toilet Rental | $101.76 |
| | | 10080 | | Toilet Rental | $101.76 |
| | | 10081 | | Toilet Rental | $101.76 |
| | | 10082 | | Toilet Rental | $101.76 |
| **Total EFT000000008078** | | | | | **$508.80** |
| EFT000000008089 | 2017-10-03 | | MOREY, PAM | | |
| | | 17/09/18- SF REC | | 17/09/18- SF REC | $31.21 |
| | | 17/09/18- SF REC | | 17/09/18- SF REC | $5.25 |
| **Total EFT000000008089** | | | | | **$36.46** |
| EFT000000008091 | 2017-10-03 | | NORTHWAY HARDWARE | | |
| | | 16515 | | Toilet Seat | $8.62 |
| **Total EFT000000008091** | | | | | **$8.62** |
| EFT000000008093 | 2017-10-03 | | O. BETTSCHEN | | |
| | | 39188 | | Gravel | $301.68 |
| | | 39222 | | Stone Dust | $514.09 |
| **Total EFT000000008093** | | | | | **$815.77** |
| EFT000000008097 | 2017-10-03 | | SLEETH, SARAH | | |
| | | 17/09/22-26 | | Cleaning | $490.00 |
| | | 17/09/22-26 | | Cleaning | $40.00 |
| | | 17/09/22-26 | | Cleaning | $30.00 |
| **Total EFT000000008097** | | | | | **$560.00** |
| EFT000000008101 | 2017-10-03 | | SYDENHAM LANDSCAPE PRODUCTS | | |
| | | 03053 | | sand, soil and seed | $1,104.10 |
| **Total EFT000000008101** | | | | | **$1,104.10** |
| EFT000000008104 | 2017-10-03 | | TROUSDALE'S HOME HARDWARE | | |

| | | | | |
|---|---|---|---|---|
| | | 73735 | cleaner | $10.16 |
| | | 74127 | lightbulbs, tape | $89.49 |
| | | 73320 | Pier Deck 4X4 | $7.62 |
| **Total EFT000000008104** | | | | **$107.27** |
| EFT000000008107 | 2017-10-03 | UBCON CONSTRUCTION LTD | | |
| | | 17-005-4 | 17/08 Grass Cutting | $1,093.92 |
| | | 17-005-4 | 17/08 Grass Cutting | $305.28 |
| | | 17-005-4 | 17/08 Grass Cutting | $190.80 |
| | | 17-005-4 | 17/08 Grass Cutting | $1,465.34 |
| | | 17-005-4 | 17/08 Grass Cutting | $356.16 |
| **Total EFT000000008107** | | | | **$3,411.50** |
| EFT000000008110 | 2017-10-03 | UNITY SOD FARM LTD. | | |
| | | 15939 | Nitrogen | $574.94 |
| | | 15941 | Nitrogen | $574.94 |
| | | 15938 | aeration,fertilzer,seed+soil | $1,344.25 |
| **Total EFT000000008110** | | | | **$2,494.13** |
| EFT000000008115 | 2017-10-03 | WOOD, ALVIN | | |
| | | 17/09/18- SF REC | 17/09/18- SF REC | $31.21 |
| | | 17/09/18- SF REC | 17/09/18- SF REC | $21.80 |
| **Total EFT000000008115** | | | | **$53.01** |
| **Total Rec** | | | | **$15,846.04** |

## 8020 Swim

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008081 | 2017-10-03 | | LIFESAVING SOCIETY | | |
| | | M122200 | | Bronze Med | $312.00 |
| **Total EFT000000008081** | | | | | **$312.00** |
| **Total Swim** | | | | | **$312.00** |

## 8040 Trails

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008093 | 2017-10-03 | | O. BETTSCHEN | | |
| | | 39126 | | Stone Dust | $1,043.38 |
| **Total EFT000000008093** | | | | | **$1,043.38** |
| **Total Trails** | | | | | **$1,043.38** |

## 8210 VCA

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068832 | 2017-10-03 | | BATES, DON | | |
| | | 2017091 | | Oil and Gas for Mini Train | $33.26 |
| **Total 068832** | | | | | **$33.26** |
| 068833 | 2017-10-03 | | COLEMAN, DONALD | | |
| | | 2017092 | | Flower Barrel Prizes | $700.00 |
| **Total 068833** | | | | | **$700.00** |
| 068835 | 2017-10-03 | | FESTIVALS & EVENTS ONTARIO | | |
| | | FEO1781-108-VCA | | Membership 17/10- 18/09 | $122.11 |
| **Total 068835** | | | | | **$122.11** |
| 068843 | 2017-10-03 | | LAND O' LAKES TOURIST ASSOCIATION | | |
| | | 6805-5377-VCA | | 2017-2018 Membership | $208.61 |
| **Total 068843** | | | | | **$208.61** |
| 068849 | 2017-10-03 | | SHARBOT LAKE LAWN SERVICE & HOME MAINTENANCE | | |
| | | 630727-VCA | | Lawn care of Signs. | $335.81 |
| **Total 068849** | | | | | **$335.81** |
| 068853 | 2017-10-03 | | VERONA COMPUTER STORE | | |
| | | 1320 | | Hard drive-Control Computer | $412.13 |
| **Total 068853** | | | | | **$412.13** |
| **Total VCA** | | | | | **$1,811.92** |

## 8240 Comm Caring

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068829 | 2017-10-03 | | ADDICTION MENTAL HEALTH SERVICES | | |
| | | DONATION FROM PCC | | DONATION FROM PCC | $2,000.00 |
| **Total 068829** | | | | | **$2,000.00** |
| 068839 | 2017-10-03 | | HOME BASE HOUSING | | |
| | | PCC-DONATION | | DONATION FROM PCC | $1,000.00 |
| **Total 068839** | | | | | **$1,000.00** |
| 068845 | 2017-10-03 | | LOUGHBOROUGH CHRISTMAS & RELIEF FUND | | |
| | | DONATION FROM PCC | | | $1,000.00 |
| **Total 068845** | | | | | **$1,000.00** |
| 068852 | 2017-10-03 | | SOUTH FRONTENAC FOOD BANK | | |
| | | DONATION FROM PCC | | DONATION FROM PCC | $1,000.00 |
| **Total 068852** | | | | | **$1,000.00** |
| EFT000000008098 | 2017-10-03 | | SOUTHERN FRONTENAC COMMUNITY | | |
| | | DONATION FROM PCC | | DONATION FROM PCC | $1,000.00 |
| **Total EFT000000008098** | | | | | **$1,000.00** |
| **Total Comm Caring** | | | | | **$6,000.00** |

## 8405 Ver&Dis Hist

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068846 | 2017-10-03 | | LOVEGROVE, D. | | |
| | | 1/30/2017-02 | | 2017, Hosting+Domain | $110.00 |
| **Total 068846** | | | | | **$110.00** |
| **Total Ver&Dis Hist** | | | | | **$110.00** |

**Total Rec** **$25,123.34**

**90 Plan**

**9800 Dev Serv**

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| EFT000000008051 | 2017-10-03 | | ASSOC OF MUNICIPALITIES OF ONT | | |
| | | PS001200 | | Job Ad- Mgr Dev Services | $244.22 |
| **Total EFT000000008051** | | | | | **$244.22** |
| **Total Dev Serv** | | | | | **$244.22** |
| **Total Plan** | | | | | **$244.22** |

**99**

**9999**

| Cheque | Date | Inv # | Vendor | Description | Amount |
|---|---|---|---|---|---|
| 068856 | 2017-10-03 | | UPITIS RENA | | |
| | | CRADJ4741-1 | | 010010002000000 | $6,874.25 |
| **Total 068856** | | | | | **$6,874.25** |
| EFT000000008083 | 2017-10-03 | | LIVINGSTON, PAMELA | | |
| | | 2017TAXREFUND | | 080-040-17410 TAX REFUND | $351.45 |
| | | 17/09/11 | | P.Livingston Tax Refund | $351.45 |
| **Total EFT000000008083** | | | | | **$702.90** |
| EFT000000008095 | 2017-10-03 | | REALTAX INC | | |
| | | 63285 | | Farm Debt | $56.50 |
| **Total EFT000000008095** | | | | | **$56.50** |
| **Total** | | | | | **$7,633.65** |
| **Total** | | | | | **$7,633.65** |
| **Total** | | | | | **$3,680,955.49** |

**From:** Meela Melnik-Proud [mailto:meelamelnik@hotmail.com]
**Sent:** September-18-17 3:55 PM
**To:** Ron Vandewal <rvandewal@southfrontenac.net>; councillornroberts@gmail.com; councillorrevill@gmail.com; john.mcdougall@xplornet.ca; patbarr1@aol.com; markschjerning@outlook.com; 7846elbe@gmail.com; sfcron.sleeth@gmail.com; Wayne Orr <worr@southfrontenac.net>
**Cc:** Andy Baxter <andy.baxter@ontario.ca>; Warren, Catherine (MNRF) <Catherine.Warren@ontario.ca>; Evonne Potts <evonne.potts@gmail.com>
**Subject:** Further concern for Species at Risk on Johnston Point

***"As human actions transform the natural world, Earth's ecological systems are undergoing fundamental change, the consequences of which are breathtaking in scope and speed. Biological diversity is undergoing such catastrophic declines that scientists, in peer-reviewed studies, are describing "biological annihilation" and warning of a sixth mass extinction in a historically unparalleled time-frame. To tackle biodiversity conservation in the face of increasing development pressures and climate change, WWF-Canada draws upon scientific principles ... to ensure evidence-based decision-making, and to increase the likelihood of success." World Wildlife Fund -Canada, 2017 Living Planet Report.***

September 18, 2017

Dear Mayor and Councillors.

Please find attached a Bat Activity Survey Report on Johnston Point with an Addendum by Toby J. Thorne, and also the World Wildlife Fund's 2017 Living Planet Report Canada. Our concerned citizens group commissioned and paid for the peer review survey, which was guided by MNRF's most recent bat survey protocol, and conducted by a certified bat expert holding specific skills in acoustic surveying and call identification of bats.

Between the period June 30, 2017 to July 12, 2017, a total of 848 observations of the endangered Little Brown Myotis bat were recorded on Johnston Point. A further 760 observations could be identified to Myotis genus, but not to species. Mr. Thorne's report concludes that " *the presence of suitable ecosites, combined with the high level of acoustic activity from SAR bats indicates the likely presence of maternity habitat*." It offers new and compelling evidence that this endangered species is not only present on Johnston Point, but very active. It was submitted to the MNRF last Thursday, as the WWF's release of the 2017 Living Planet Report Canada, coincidently made sobering news of the day.

WWF's Living Planet Report is considered the most comprehensive synthesis of Canadian wildlife population trends ever conducted. Alarmingly, it found that from 1970 to 2014, half of the monitored vertebrate wildlife species - 451 of 903 mammal, bird, reptile, amphibian and fish species across the country - suffered an average population decline of 83%. Habitat destruction and climate change are cited as the leading cause.

The loss of Canada's wildlife is staggering, but what hits closest to home was the further news regarding the numbers for at-risk species. Despite protection, since the Species at Risk Act became law in 2002, the rate of decline for Canada's federally protected at-risk appears to be increasing by 2.7% per year. ***"According to researchers, the federal Species at Risk Act has faltered in its mission to protect Canada's most beleaguered wildlife,"*** says the report. It cites "***government failures to meet SARA's timelines for recovery strategies and in identifying and protecting critical habitat***" as one of the biggest shortcomings.

Ironically, one of the deepest losses is for the endangered Little Brown Bat, highlighted on page 20 of the Living Planet Report. *"Within three years of discovery, white-nose syndrome had wiped out 94 per cent of hibernating little brown bats in Nova Scotia, New Brunswick, Ontario and Quebec. Some*

*ecologists consider this the most rapid decline of mammals ever documented. The westward*
*sweep of the disease is expected to infect the entire range in Canada by 2028.* ***The little brown bat was emergency - listed as Endangered under SARA in 2014, one of three species ever to receive such t reatment out of all invertebrates, vertebrates and flora."***

The recommendations of the WWF report are:

**1. Citizen-based conservation**: By helping to monitor wildlife, and protect and restore habitats, individual actions, collectively will help reverse the decline of wildlife in Canada.

**2. Collect and share information on ecosystems**: Without accurate information, meaningful decisions to protect wildlife can't be made.

3. **Better understand climate change**: New knowledge will allow us to build evidence-based strategies for mitigating climate-change impacts and for enhancing ecosystem resilience.

4. **Take ecosystem-based action and bolster the Species at Risk Act:** An ecosystems-based approach to take into account multiple species and their habitats is essential.

**5. Make a commitment to nature.** Solutions are far more likely to be realized with broad public support for difficult resource allocation and land-use decisions that have a goal of benefiting nature at their core.

Once again, we commend Township Council on commissioning the July 2015 McIntosh-Perry peer review of Johnston Point's EIAs in the Developer's haste for a decision on the Plan of Condominium. It is what gave us the capacity, in keeping with these recommendations to work together to tackle wildlife conservation in our own backyard.

That peer review fuelled our stance for Party Status at the OMB to give voice to Johnston Point's species at risk.

It grounded us in monitoring Conditions 5D and 5E following the April 2016 hearing, to ensure that the threatened and engendered species and their significant Natural Heritage environment were fully addressed and safeguarded.

It helped us determine where science-based evidence was lacking, and commission further surveys to aid the MNRF in their assessment of the proposal. The July 2015 peer review had directly observed Blanding's Turtle, Butternut and Snapping Turtle. Since then, the MNRF's assessment together with further targeted peer review surveys for species at risk have identified Gray Ratsnake and Whippoorwill habitat, and likely Little Brown Myotis maternity habitat on Johnston Point, none of which had been found in the 2012 and 2014 EIAs. Collectively we have monitored multiple species and their habitats on Johnston Point.

Collectively we can demonstrate the concerns concluded on them by experts of McIntosh-Perry well in advance of the OMB. They are worth repeating, along with the fact that Johnston Point has only **conditional** approval, **contingent on the MNRF's assessment of the project through a species-at-risk lens.**

*"It is the opinion of McIntosh Perry that the Environmental Impact Assessment report does not sufficiently demonstrate there will be no negative impacts on the natural features or their ecological functions on the subject property as per the requirements of the Provincial Policy Statement. The EIA report in general did not include sufficient or adequate information to be able to assess if the report meets the requirements of the various legislative requirements. The EIA report (2014):*

- *Does not document the date, type, extent or results of field surveys.*
- *Does not include Ministry of Natural Resources consultation.*
- *Does not demonstrate there will be no negative impacts on the natural features or their ecological functions for significant wildlife habitat for threatened species.*
- *Does not demonstrate there will be no negative impacts on the natural features or their ecological functions for the ANSI or the PSW.*
- *Does not demonstrate development and site alteration in fish habitat will be in accordance with provincial and federal requirements.*

*Site alterations performed may have contravened the prohibitions of the Endangered Species Act.* ***At a minimum, the proposed development has the potential to result in long-term negative impacts to Blanding's Turtle, Snapping Turtle and Gray Ratsnake. It is strongly recommended that the MNR be consulted prior to any further site alteration to:***

- *ensure proposed development does not contravene the Endangered Species Act and its associated regulations; and*
- *obtain any necessary approvals or permits required to undertake activities that have the potential for adverse impacts to species at risk and their habitat*." (McIntosh-Perry, July 2015 peer review, p. 11)

We have in our hands the Provincial Policy Statement, the Endangered Species Act, the Natural Heritage Reference Manual. We have the McIntosh Perry peer review of the EIAs, John Urquhart's species at risk data forwarded to the MNRF by Nature Conservancy Canada (NCC), the MNRF's assessment of the proposal, and peer review SAR surveys for Whippoorwill and Bats.

Undeniably there are multiple species at risk on Johnston Point that were altogether missed in the settlement agreement. They are contained, in whole or in part, by Provincially Significant Wetland (PSW), Significant Woodland, Significant Wildlife Habitat, and Fish Habitat, and an Area of Natural and Scientific Interest, that by ANSI definition in the Provincial Policy Statement, is "*land and water containing natural landscapes or features that have been identified as having life science values related to protection, scientific study or education."* (PPS. p. 39; NHRM p. 90).

Judging by our effort to protect this Natural Heritage gem in South Frontenac Township, what fuels the catastrophic decline in Canada's wildlife is not missing evidence or strategy for mitigating climate-change impacts and for enhancing ecosystem resilience. What's missing is simply political goodwill and bold action to lead us in the direction evidence tells us we urgently need to go.

In March 2015, the Township's own CAO had advised *"that the Township does not have the processes or staffing capacity in place to effectively manage the agreement as written."* We can

only assume it was this fundamental truth, exposed through Matt Rennie's documentation of Applewood's dock permit violations that led the Township to take the necessary bold action to deny the Conditions of Draft Plan Approval, prior to the OMB.

We saw leadership and bold action from Township Council stopped in its tracks again last October, with the Motion on mitigation in response to the MNRF's assessment of the proposal. Catherine Warren's second letter to the Township made it clear that the proposed Plan of Condominium cannot avoid negative impact in particular to Blanding's Turtle and Gray Ratsnake, and will likely contravene sections 9 and 10 of the ESA for both these species. In recognizing linkages between these two species and their habitat in and/or adjacent to significant wetland, significant woodland, significant wildlife habitat, fish habitat and ANSI, the plan as written cannot demonstrate that there will be no negative impacts on the natural features or their ecological functions in general. Simple enforcement of the Natural Heritage Policy under the PPS would not permit any site alteration and development on Johnson Point. Had Township Council not been silenced by the amendment, it may have "*resolved that the Township write the MNRF to express our preference for species at risk habitat on Johnston's point be left as is, rather destroyed in a trade off*".

The only unchallenged bold action we continued to see and hear is that of more heavy construction and the sounds of further blasting on Johnston Point, without conditions of approval having been met.

David Miller, WWF-Canada president and CEO, says "*Wildlife loss is not someone else's problem. It's a Canadian problem ....We all, collectively, have a moral duty — and a self-interest — to halt wildlife decline."* To this end, I look forward to the MNRF's response to Mr. Thorne's Bat survey of Johnston Point, and trust it opens wide channels of communication that go towards a call for an immediate Stop Work Order that is enforced, and withdrawal and review of any and all permits to be issued under section 17(2)c of the ESA.

Respectfully,

Meela Melnik-Proud

# Bat Activity Survey Report


## Location: Johnston Point, Loughborough Lake

Summary: bats were monitored in the vicinity of Johnston Point, the location of a proposed development. Bats were observed through active monitoring along transects around the point, and by an automated recorder deployed for 13 nights close to the north-eastern border of the property. A total of 848 observations of little brown myotis, a provincial and federal Species at Risk were recorded. A further 760 observations could be identified to the Myotis genus, but not to species. All three Myotis species in Ontario are currently listed as Endangered under the Species at Risk Act. The number and timing of activity by little brown myotis offers compelling evidence that there is significant colony of this species near to Johnston Point.

Client: Meela Melnik-Proud

Author: Toby J. Thorne

Report Completed: 23 July 2017

Revisions Made: 11 September 2017

## Background:

*Location:*

Loughborough Lake (figure 1) is located approximately 20 km north of the city of Kingston, and is located Frontenac county. Jonhston Point is a small peninsula that extends from the northern shore of the lake near the western end. Physical access to the development site was not possible for the purpose of this report, but from inspection of satellite images and from the surrounding water revealed it to be largely treed with some open space. There is a wetland to the immediate north of the point. A narrow, metalled road extends down the centre of the point for approximately two thirds of its length. A proposed development will involve the construction of new houses on Johnston Point. Detailed information on the nature of these surveys was not available at the time of these surveys or report.

**Figure 1:** Overview of Loughborough Lake. Johnston Point is indicated by the white circle


*Bats in Ontario:*

Eight species of bat are currently considered resident in Ontario. Three of these species – little brown myotis (*Myotis lucifugus*), northern myotis (*M. septentrionalis*) and tri-colored bat (*Perimyotis subflavus*) – are listed as endangered under the federal Species at Risk Act (S.C. 2002, c. 29). These three species, along with eastern small-footed myotis (*M. leibii*), are also listed as endangered under the provincial Endangered Species Act (S.O. 2007, Chapter 6). The remaining four species – big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), hoary bat (*L. cinereus*) and silver-haired bat (*Lasionycteris noctivagans*) – are not currently listed. Three critical habitats have been identified for Species at Risk bats: hibernation sites, maternity colonies and migratory stopover sites.

*Acoustic Monitoring and Limitations*

Bats are historically under recorded, due in part at least to the difficulty of monitoring them. Bats are difficult to observe visually, roosts are difficult to locate and trapping is time consuming and invasive. Fortunately, bats can be monitored without disturbance by listening to and recording the vocalisations they produce for echolocation. These sounds are typically ultrasonic, and so specialised equipment is needed to record them.

Acoustic monitoring of bats faces numerous limitations, several key points are outlined below:

Bats' echolocation signals are determined by the optimal signal design for the environment they are flying in and the prey they seek to capture. There is no evolutionary selection for different species to produce different sounds. This contrasts with many other animal vocalisations, such as mating calls of birds and frogs, where the animal seeks to communicate with its own species and it is thus advantageous for species to sound different.

Two species of bat with similar ecology can produce very similar echolocation sounds. Meanwhile, the same species of bat may alter its echolocation signals when flying in different environments, such as clutter versus open space. In some cases, the intra-specific variation can be greater than the inter-specific variation. In Ontario, this difficultly is particularly noteworthy for bats in the Myotis genus. These species all produce very similar calls with significant overlap, particularly in cluttered habitat. It is typically relatively easy to identify these bats to genus, but often more problematic to identify them to species level.

It is also noteworthy that because higher frequency sounds attenuate faster in air, bats that echolocate at higher frequencies are detectable at shorter ranges than those at lower frequencies. A bat echolocation at 40 kHz may be detected at as little has half the distance of a comparable bat at 20 kHz. This difference is compounded by the fact that higher frequency bats tend to be smaller species which also echolocate at lower amplitudes.

Finally, during acoustic monitoring it is standard practice to express the relative activity as the number of observations. An observation can be defined as a continuous series of calls produced as the bat flies past a microphone. The number of observations does not relate directly to a number of individuals. Ten observations could be 10 bats, or one bat recorded 10 times.

## Methodology:

As it was not possible to access the development site itself, surveys were limited to the surrounding areas of the point. Bats were monitored with a dual approach, a single night of active surveying in the area surrounding the point, and 13 nights of automated monitoring on the border of the development site (figure 2). Additionally, one nearby building was examined for roosting potential (figure 2).

**Figure 2:** Closer view of Johnston Point. The location of the route for active survey by boat is indicated by the red line, and by foot by the blue line. The location of barn is indicated by the white start. The location of the automated recorder is indicated by the yellow star.


*Active Surveys*

On 30 June 2017 bats in the area surrounding Johnston Point were surveyed using active observation. Observations began approximately thirty minutes after local sunset time. The echolocation calls of any bats encountered were recorded using a Pettersson M500 USB ultrasound microphone converted to M500-384 firmware connected to a windows tablet computer running SonoBat Live 4.2.1. SonoBat Live was programed to automatically record and identify potential bat signals, with the following settings: max file length = 6 seconds, high pass filter = 15 kHz, maximum number of calls to consider = 16, trigger sensitivity = 70 and classifier = 'northnortheast'.

The survey route began at the northern end of the point, near to the adjacent wetland. The initial survey route involved using a boat to follow the edge of the property (see figure 2). Following the boat survey, bats were monitored on a foot transect at north-eastern end of the point, as near as was accessible by land (figure 2).

All bats within range during this survey were recorded and a .wav file of their echolocation calls saved for later inspection.

*Automated Monitoring:*

An automated bat recorder was deployed close to the north-eastern border of the Johnston point property. The recorder was positioned in a small woodland clearing approximately 30 m from the property border, closest to proposed location of lot 11.

The recorder was an Anabat Swift full-spectrum recorder with the following settings: sensitivity = 15, minimum frequency = 16 kHz, maximum frequency = 250 kHz, minimum event = 1 ms, trigger window = 2 seconds, sample rate = 320 kHz, high pass filer = 10 kHz, maximum file length = 8 seconds. The microphone for the recorder was deployed at a height of approximately 4m above ground level, mounted to a tree in the centre of a forest clearing approximately 30m from the border of the Johnston Point property. The microphone was mounted using a stick to hold it approximately 1m from the tree trunk in an area clear of branches and overhanging foliage, in order maximise bat detection and the quality of recordings.

The automated recorder was placed on 30 June 2017 and it was retrieved on 12 July 2017 after recording for a total of thirteen nights. To provide an approximate idea of weather conditions during the automated monitoring weather data from the nearest environment Canada weather station, located in Hartington approximately 20km west of Johnston Point was obtained.

*Bat Call Identification:*

All files were analysed using SonoBat 4.2.0 (SonoBat, U.S.A.) to view and measure parameters of the recorded files. The SonoBat Datawizard utility was used to attribute files with appropriate project metadata and to scan the files and discard those without potential bat signals with the following settings: minimum frequency = 20 kHz, quality = high grade. Files were then passed through the autoclassifiy function of SonoBat to assign an initial species identification to files, using the following settings: classifier = ‘northnortheast’, acceptable call quality = 0.3, sequence decision threshold = 0.9, maximum number of calls to consider = 16, filter = automatic.

Following autoclassification, a manual review was conducted for all files flagged by SonoBat to contain high-frequency bat calls. Upon manual inspection of a file, either SonoBat’s identification of the species was accepted, or manually corrected if appropriate.

Identifying bats by their recorded echolocation calls is an imprecise science due to significant variation among calls by the same species, and similarity of calls by different species. This is particularly problematic with bats in the genus Myotis, for which there is a high degree of overlap between species in Ontario. When an observation could not be reliably identified to species it was recorded only as “Myotis Species”.

Each file containing a call sequence for which a defensible species identification could be made was counted as a single observation.

*Building Inspection:*

A building inspection was undertaken of a dilapidated barn located approximately 100m from the north-eastern boundary of the development site. A surveyor walked through both stories of the barn searching for bats and bat guano.

## Results:

*Active Monitoring Results:*

During active monitoring a total of 16 big brown and 17 hoary bats were observed. The bats were foraging above the inlet on the northern side of the Johnston Point. No bats were detected on land to the north east of the point at the time of the survey.

*Automated Monitoring Results:*

A total of 848 little brown myotis observations were identified, along with 760 passes that could be confidently identified to the Myotis genus, but not to species within the genus. An additional 528 big brown bats observations were identified. Table 1 contains the number of observations for each night. Table 2 contains the approximate timing of activity through the course of the night.

**Table 1:** Nightly observation counts and weather data for active monitoring

| Date | Little Brown | Unidentified Myotis Species | Big Brown | Mean Daily Temp (°C) | Total Rainfall (mm) |
|---|---|---|---|---|---|
| 30 June 2017 | 38 | 14 | | 20.3 | 4.2 |
| 01 July 2017 | 14 | 30 | 250 | 21.5 | 0.8 |
| 02 July 2017 | 2 | 12 | 144 | 19.5 | 6.8 |
| 03 July 2017 | 24 | 38 | 60 | 18.5 | 0 |
| 04 July 2017 | 28 | 42 | 38 | 18.5 | 0 |
| 05 July 2017 | 64 | 32 | 26 | 20 | 0 |
| 06 July 2017 | 28 | 36 | 6 | 21 | 0 |
| 07 July 2017 | 40 | 20 | | 22.5 | 0.4 |
| 08 July 2017 | 12 | 24 | | 20 | 0.6 |
| 09 July 2017 | 58 | 36 | | 19 | 2.6 |
| 10 July 2017 | 104 | 66 | 2 | 20.8 | 0 |
| 11 July 2017 | 374 | 294 | | 21.5 | 0 |
| 12 July 2017 | 62 | 116 | | 19.5 | 18 |

**Table 2:** Hourly activity expressed as the number of files recorded in each hour following sunset

| Hour | Number of Files |
|---|---|
| 21:00 | 716 |
| 22:00 | 623 |
| 23:00 | 111 |
| 00:00 | 229 |
| 01:00 | 74 |

| | |
|---|---|
| 02:00 | 138 |
| 03:00 | 154 |

*Building Inspection:*

A small number of bat droppings were identified within the barn. The absence of a larger accumulation of droppings suggests that this barn is not home to a significant number of bats. It is more like used by individuals, possibly as a night resting spot before they return to the main roost in the morning.

## Discussion

Although there were no Species at Risk bats observed during active monitoring, the results from the automated recorded indicated a significant population of little brown myotis on Johnston Point, immediately adjacent to the development site. The number of observations is very high. The only site known to the author to have recorded comparable levels of nightly activity had a known little brown myotis roost within 50 m of the recorder. Further, many observations were in the hour following sunset. Little brown myotis emerge from their roosts approximately 30 minutes after sunset, depending on local conditions. The combination of these facts gives a strong indication that there is a little brown myotis roost close to the location of the recorder.

As the recorder was not placed on the development site itself it is difficult to draw conclusions about species present on the site. However, given the level of activity observed ~30 m from the edge of the development site, it is extremely likely that the bats detected are also present on the site. Although a nearby roost is highly likely, there is no way to identify its location or the direction from which the bats are coming without further investigations.

Little brown myotis was the only Species at Risk that could be confidently identified acoustically. However, among the files that could be confidently identified to genus there were multiple observations that could potentially be eastern small-footed myotis. Although no call sequences were of sufficient clarity to confidently identify this species, there were some possible calls that did not have sufficient quality to pass manual verification. This species is more difficult than little brown myotis to identify acoustically with confidence. The eastern small-footed myotis has an apparent preference for roosting in rocky habitat[1], similar to landscape found near Loughborough Lake. Therefore, the possibility of this species presence should be considered. This would best be confirmed through capture surveys, given the difficulty of acoustic observation for this species.

1 Humphrey, C. 2017. Recovery Strategy for the Eastern Small-footed Myotis (Myotis leibii) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. vii + 76 pp.

## Comparison to MNRF Protocol:

These surveys did not strictly adhere to the most up-to-date bat survey guidelines provided by the Ontario Ministry of Natural Resources and Forestry (OMNRF) for treed habitat[2]. This was primarily because no access to the site was available. Without physical access, it was be impossible to conduct snag mapping or acoustic surveys in the manner specified. Nonetheless, the approach taken was compatible with the approach outlines in OMNRF guidelines and can be considered in light of this specification.

*Phase I: Bat Habitat Suitability Assessment*

Although formal ELC data was not available for the purpose of this survey, visual surveys from the property boundaries and satellite images indicate that appropriate habitat is present. The OMNRF guidelines for SAR bats in treed habitat specify suitable habitat as follows: "any coniferous, deciduous or mixed wooded ecosite, including treed swamps, that includes trees at least 10cm diameter-at-breast height (dbh) should be considered suitable maternity roost habitat."

*Phase II: Identification of Suitable Maternity Roost Trees*

Without property access it was not feasible to conduct snag surveys as outlined in the OMNRF's most recent guidelines for SAR bats in treed habitats. However, given the apparent density and maturity of the woodland snags are assumed to be present and acoustic surveys were conducted.

*Phase III: Acoustic Surveys*

The OMNRF's latest guidelines for SAR bats in treed habitats specify that acoustic monitors should be placed within 10 m of candidate roost snags. Without site access this was not possible for this survey. Further, bats are best detected and produce the clearest calls for species identification in clear, open flight spaces. Obtaining optimal quality recordings and maximising detection is not necessarily compatible with this instruction. As site access was not available, and the goal was to detect SAR species in the area, the recorder was placed in a location to maximise detection and quality.

The guidelines specify that surveys should be conducted only in the month of June. This survey did not meet that specification, as it was conducted in the first weeks of July. However, as SAR bats are most likely still in or around their maternity colonies in early July the late timing of the survey relative to the specification doesn't detract from the strong evidence of maternity activity in the vicinity.

2 Ontario Ministry of Natural Resources and Forestry, Guelph District. 2017. Survey Protocol for Species at Risk Bats within Treed Habitats Little Brown Myotis, Northern Myotis & Tri-Colored Bat

## Conclusion:

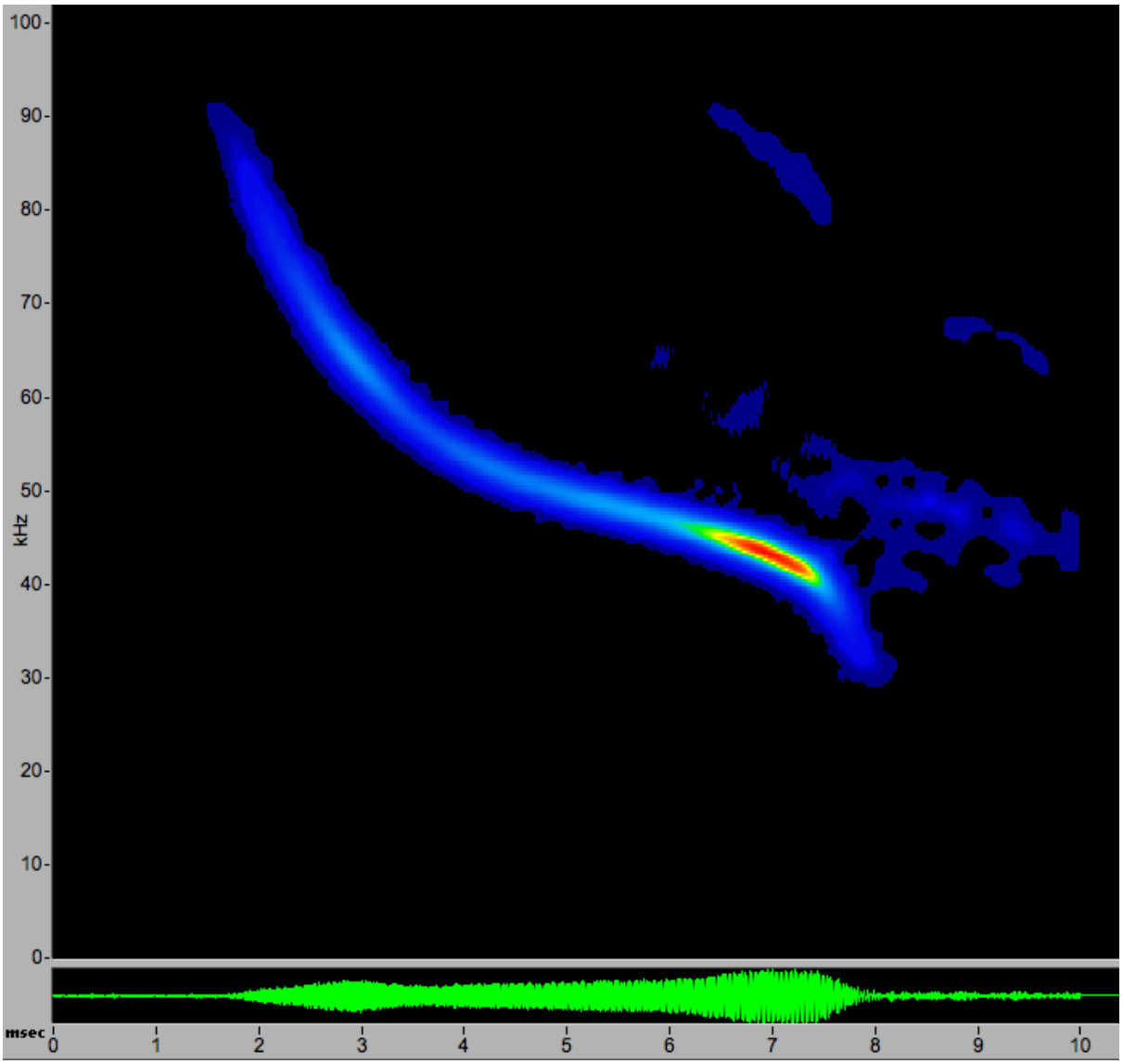
The number and timing of observations of little brown myotis gives the strongest indication available through acoustic monitoring that there is a significant roost near Johnston Point.

Although the full OMRNF protocol for surveying SAR bats in treed habitat could not be followed due to the absence of site access, the presence of suitable ecosites, combined with the high level of acoustic activity from SAR bats indicates the likely presence of maternity habitat, as quoted below:

"If an Ecological Land Classification (ELC) ecosite is determined to be suitable for the establishment of maternity roosts, trees with suitable attributes are present, and SAR bats are detected during the maternity roost season (June), it can be concluded with a high degree of certainty that the ELC ecosite represents the habitat most in use during the breeding season for roosting, feeding, rearing of young and resting."

Accordingly, to better understand the potential impact of the proposed development on SAR bats on the point, it would be desirable to survey the site fully using the OMNRFs treed habitat protocol and appropriate snag surveys and detailed acoustic monitoring – if this has not already been conducted.

## Appendix 1 – Example Call:




Example of a call recorded during passive monitoring that was identified as little brown myotis. Key identification points include: the frequency of the call, which in this case has a characteristic frequency of 41.7 kHZ; the length, 6.01 ms and the overall shape, which includes a distinct bend between the upper and lower slopes and ends with distinctive downward tail.

Further examples or original files can be made available on request.

# Appendix 2 – Author's Curriculum Vitae

### Key Skills

- Acoustic surveying of bats using passive and active techniques (heterodyne and full spectrum)
- Call identification for bats of UK and Ontario, including use of auto classifiers and verification
- Bat capture using mist-net, harp-trap, hand-net, taking by hand, and handling
- Marking bats using banding, fur clipping and application of radio-tags to bats and tracking
- Use of Microsoft Office, Adobe Creative Suite, Sonobat, Avisoft Kaleidoscope, callViewer18, R
- Have held bat permits from Natural England (UK) and Ministry of Natural Resources (Ontario)

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### Education:

**University of Western Ontario, Canada** Jan 2013 – Dec 2014
Biology – M.Sc. (Research Based)

**University of Oxford, United Kingdom** Oct 2009 – Jun 2012
Biological Sciences – BA

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### Work Experience:

**Bat Researcher:** October 2016 – Present
*The Toronto Zoo*
- Lead and grow the Zoo's Native Bat Conservation Program
- Working with Parks Canada to monitor bat activity in the new Rouge National Urban Park

**Species at Risk Technician:** May 2016 - Present
*Ontario Land Trust Alliance*
- Work with land trusts within the alliance to develop inventory and monitoring of Species at Risk bats
- Lead surveying and monitoring of SAR bats, and organise outreach and training events
- Support land trusts to develop SAR action plans, and generally support OLTA's SAR activities

**Freelance Bat Biologist** July 2015 - Present
*Ontario*
- Design and conduct acoustic and observation surveys, and analyse acoustic data
- Provide prompt and comprehensive reporting and feedback on survey results
- Select projects:
  - ***High Park Urban Bats Project*:**
    - Analysed basic trends in bat data from two passive recorders operating over 1.5 seasons
    - Filtered extraneous noise, and classified ~ 30 000 files containing bats to species level where possible
    - Summarised findings in a well-received report written for a non-expert audience
  - ***RiverStone Environmental Solutions Inc:***
    - Devised and delivered a two day training program for RiverStone staff on bat ecology and surveying
    - Topics included: basic ecology, visual and building surveys, acoustic data collection and analysis, implementation and limitations of relevant MNRF protocols
  - ***Thames Talbot Land Trust:***
    - Designed and conducted acoustic transects to assess the present of bats at two properties
    - Identified species recorded during acoustic transects and used GIS to map species locations
    - Summarised findings in a report suitable for the trust board and staff, addressing potential site management activities following discussion with the Conservation Property Manager

**Technician – Bat Acoustic Monitoring:** July 2016 – September 2016
*Royal Ontario Museum*
- Hired to analyse data for a ROM monitoring project for the Toronto Regional Conservation Authority
- Conducted all data sorting, automatic classification with Kaleidoscope software, and manual verification

- Created appropriate graphs summary tables and co-authored a report for the TRCA

**Freelance Bat Biologist** 2008 – 2012
*United Kingdom*
- Conducted acoustic and trapping surveys to monitor bats for a variety of projects
- UK clients: Belos Ecology, Bernwood Ecology, British Waterways, Swift Ecology

### Other Relevant Experience:

**Master's Research Project: Bat Migration** Jan 2013 – Dec 2014
*University of Western Ontario*
Supervised by Dr. Brock Fenton and Dr. Jeremy McNeil
- Used automated recorders (Wildlife Acoustics SM2s and ecoObs Batcorders) to monitor bat activity on islands in the Great Lakes; liaised with landowners to find suitable recording sites
- Managed a large dataset (total ~3 million calls); used software to filter and identify calls; and conducted manual verification of target species calls
- Analysed data, interpreted results and presented it in academic presentations and written thesis

**Bernwood Forest Bechstein's Project Coordinator** 2011 – 2012
*North Bucks Bat Group*
- Arranged the loan of equipment and landowner permissions necessary to survey
- Applied and tracked radio tags in order to identify day roosts and night time foraging ranges
- Contributed to data analysis and reporting

**Undergraduate Honours Project: Bat Social Networks** Jan 2011 – Feb 2012
*University of Oxford*
- Helped to collect data on summer roosting associations of target species in a citizen science project
- Conducted statistical analyses (primarily SOCPROG package in Matlab) to test hypotheses

**Bechstein's Project Buckinghamshire Coordinator** Jan 2010 – Nov 2011
*Bat Conservation Trust*
- Identified suitable sites liaised with landowners, organised and trained volunteers
- Conducted surveys using acoustic lures and harp traps
- Identified and recorded biometrics for captured bats

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## Publications:

**Thorne T.**, 2017. Bats of Ontario, Hawk Owl Publishing, Bowmanville, ON, Canada.
Lim B., **Thorne T.**, 2016. Scarborough Waterfront Project Bat Survey.
*__Thorne T.__, Parr N., Kroes J., 2016. Bats of Thickson's Woods, Pilot Study and Public Education Program.
*__Thorne T.__, 2015. High Park Urban Bat Project, Long-Term Monitoring Results, 2014-2015.
*__Thorne T.__, 2014. The Role of Islands in the Migration of Bats Across Lake Erie and Lake Ontario: *Lasiurus borealis*, *Lasiurus cinereus* and *Perimyotis subflavus*. *Master's Thesis*, University of Western Ontario.
**Thorne T.**, 2012. Social analysis of roosting associations within two bat species, brown long-eared (*Plecotus auritus*) and Natterer's (*Myotis nattereri*), in a British broadleaved woodland. *Undergraduate Honours Thesis,* University of Oxford.
Damant C., Hodgkins J. & **Thorne T.,** 2011. Bernwood Forest Bechstein's Bat (*Myotis bechsteinii*) Project: First Year Results Summary. 2011.

***Links at linkedin.com/in/tobythorne*

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25 August 2017

Cover Letter for Johnston Point Bat Activity Survey Addendum

To Whom It May Concern:

Attached to this letter is an addendum to the report I produced titled 'Bat Activity Survey Report, Location: Johnston Point, Loughborough Lake'.

At the time that I was engaged to conduct an independent survey of bats near the point I requested information about any prior surveys that had been conducted and methodologies used. This information was not available at the time and my surveys and report were completed in the absence of information about previous surveys.

The clients for my surveys were able to obtain information pertaining to the bat surveys that were conducted on the property subsequent to my engagement. Following the completion of my report, they provided this information to me and requested that I comment on these surveys considering my findings.

The outcome of this is the report addendum attached.

Toby J. Thorne.

Toby J. Thorne M.Sc Bat Surveyor 25/08/2017
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# Addendum to Report Titled: 'Bat Activity Survey Report, Location: Johnston Point, Loughborough Lake'

Background: After the completion of the report named above, additional information about previous surveys conducted by the developer was made available and a review was requested.

Information Provided:

- Table 1, titled JP Cavity Snags: a table from the report that appears to summarise cavity snags in the site – this table, as provided, doesn't reference bats and so cannot be unequivocally tied to bats, although snag surveys are mentioned elsewhere and it is interpreted with an assumption of relevance
- Email 1, describing protocols used and habitat / snag surveys conducted
- Email 2, describing acoustic surveys undertaken

Interpretation:

The information provided in email 1 indicates that pre-development surveys followed the guidelines in document: "BATS AND BAT HABITATS Guidelines for Wind Power Projects", published by the MNRF in 2011 and these guidelines appear to have been followed appropriately.

However, since 2011 a series of updated guidance documents have been produced by the MNRF specifically relating to surveys for SAR bat activity in treed habitat. These include, but are not limited to, the following documents: "TECHNICAL NOTE SPECIES AT RISK (SAR) BATS", MNRF Regional Operations Division, 2015; "BAT AND BAT HABITAT SURVEYS OF TREED HABITATS" MNRF – Guelph District Updated: August 2016 and "Survey Protocol for Species at Risk Bats within Treed Habitats Little Brown Myotis, Northern Myotis & Tri-Colored Bat", MNRF – Guelph District, April 2017.

The internal process through which these protocols are disseminated to local offices or consultants is not widely publicised. However, experience suggests that there is some degree of inconsistency. Nonetheless, given the critically imperilled status of several Ontario bat species it is important to select methodologies and make decisions using the most up-to-date information possible. With the fast pace with which our understanding of the ecology of North American bat species is improving, there have been numerous changes in our approaches since the 2011 protocol was produced. Several of these changes are reflected in more recent protocols produced by the MNRF.

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Most notably, the 2015 and 2016 guidance documents make no mention of a minimum number of snags per hectare. The 2017 guidelines state explicitly there is “no minimum threshold in terms of the number of snags/ha for an ELC ecosite to be considered suitable maternity roost habitat. However, an ELC with 10 or more snags/ha may be considered to be high quality potential maternity roost habitat”. The documents also recommend acoustic monitoring regardless of snag density. As both emails 1 and 2 were sent in late 2016, the 2017 guidelines would not have been available when conducting surveys. However, both the 2015 and 2016 documents would have been available.

Although the 2011 protocol, as followed, did not require acoustic surveys to be conducted, heterodyne surveys were conducted and found no indication of SAR bat. The use of heterodyne bat detectors for a development does not meet any of the MRNF protocols. Identifying bats to species level using a heterodyne detector requires a high level of skill and familiarity and requires the full attention of the operator. Further, because it is not possible to record the output of a heterodyne detector in a way that can be meaningfully analysed, even when a species is confidently identified by the operator no record is available for later verification or evidence.

Conclusion:

The overwhelming evidence of SAR bat presence described in the primary report provides a clear and irrefutable indication that relevant species are present immediately adjacent to the site of proposed developments. Given the high mobility and foraging ecology of bats it would be wholly remarkable if they were not also present < 50 m away on the site itself, and accordingly more comprehensive acoustic surveys may be appropriate.

# LIVING PLANET REPORT 2016

100% RECYCLED

## BIODIVERSITY

The Living Planet Index, which measures biodiversity abundance levels based on 14,152 monitored populations of 3,706 vertebrate species, shows a persistent downward trend.

## RISKS

Our use of natural resources has grown dramatically, particularly since the mid-20th century, so that we are endangering the key environmental systems that we rely upon.

## ANTHROPOCENE

Scientists propose that, as a result of human activity, we have transitioned from the Holocene into a new geological epoch: the “Anthropocene”.

## RESILIENCE

The 21st century presents humanity with a dual challenge to maintain nature in all of its many forms and functions and to create an equitable home for people on a finite planet.

WWF

**Why we are here**
To stop the degradation of the planet’s natural environment and to build a future in which humans live in harmony with nature.

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WWF · LIVING PLANET REPORT 2016 SUMMARY

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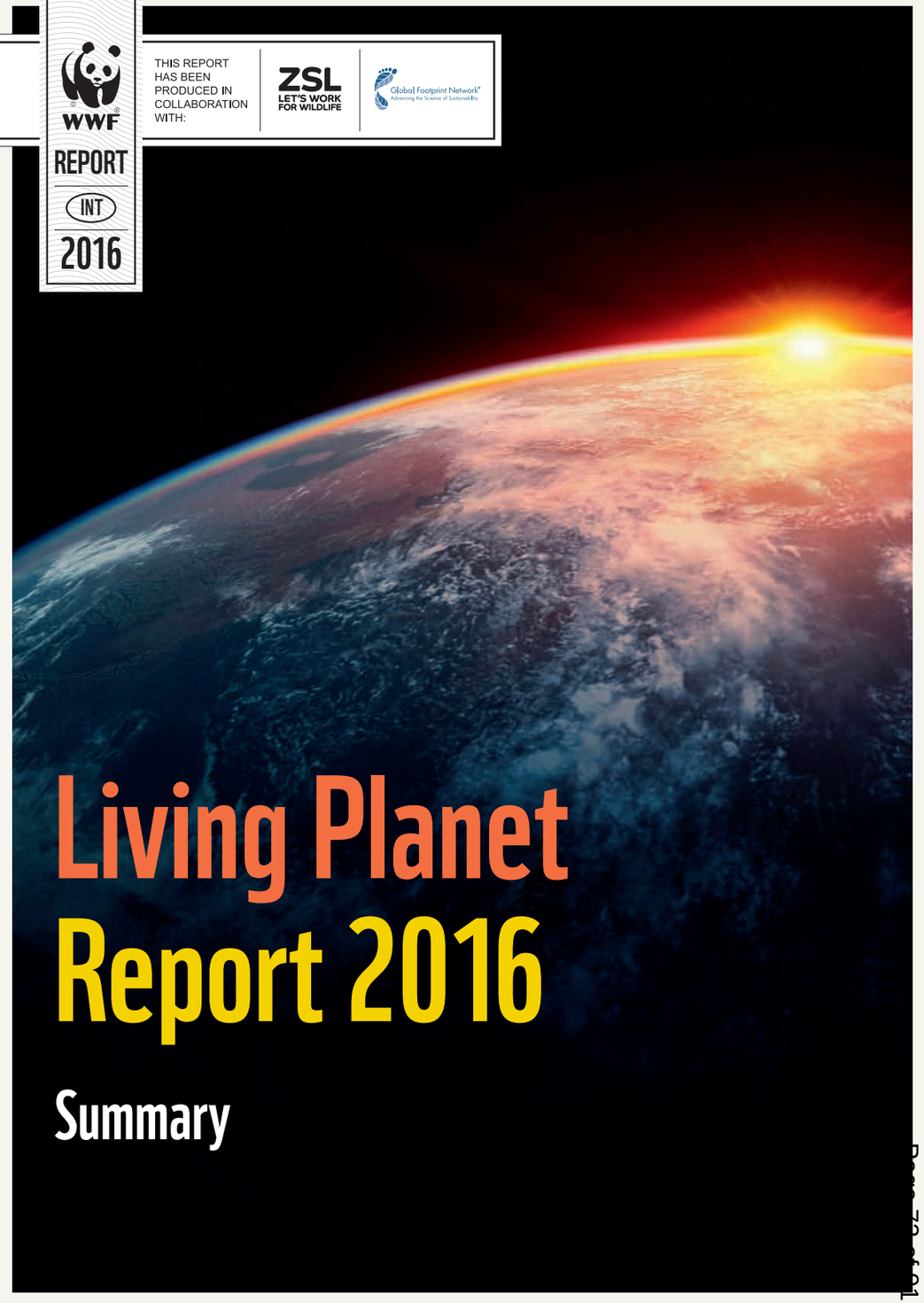


# Living Planet Report 2016

## Summary

THE SIZE AND SCALE OF THE HUMAN ENTERPRISE HAVE GROWN EXPONENTIALLY SINCE THE MID-20TH CENTURY.
AS A RESULT, NATURE AND THE SERVICES IT PROVIDES TO HUMANITY ARE SUBJECT TO INCREASING RISK.
SCIENTISTS SUGGEST THAT WE HAVE TRANSITIONED FROM THE HOLOCENE INTO A NEW GEOLOGICAL EPOCH,
CALLING IT THE "ANTHROPOCENE". THE FUTURE OF MANY LIVING ORGANISMS IS NOW IN QUESTION. SPECIES
POPULATIONS OF VERTEBRATE ANIMALS HAVE DECREASED IN ABUNDANCE BY 58 PER CENT BETWEEN
1970 AND 2012. THE MOST COMMON THREAT TO DECLINING ANIMAL POPULATIONS IS THE LOSS AND
DEGRADATION OF HABITAT. INCREASINGLY, PEOPLE ARE VICTIMS OF THE DETERIORATING STATE OF NATURE:
WITHOUT ACTION THE EARTH WILL BECOME MUCH LESS HOSPITABLE TO OUR MODERN GLOBALIZED SOCIETY.
HUMANS HAVE ALREADY PUSHED FOUR PLANETARY SYSTEMS BEYOND THE SAFE LIMIT OF THEIR SAFE
OPERATING SPACE. BY 2012, THE BIOCAPACITY EQUIVALENT OF 1.6 EARTHS WAS NEEDED TO
PROVIDE THE NATURAL RESOURCES AND SERVICES HUMANITY CONSUMED IN THAT YEAR. TO MAINTAIN
NATURE IN ALL OF ITS MANY FORMS AND FUNCTIONS AND TO CREATE AN EQUITABLE HOME FOR PEOPLE ON
A FINITE PLANET, A BASIC UNDERSTANDING MUST INFORM DEVELOPMENT STRATEGIES, ECONOMIC
MODELS, BUSINESS MODELS AND LIFESTYLE CHOICES: WE HAVE ONLY ONE PLANET AND ITS NATURAL
CAPITAL IS LIMITED. A SHARED UNDERSTANDING OF THE LINK BETWEEN HUMANITY AND NATURE
COULD INDUCE A PROFOUND CHANGE THAT WILL ALLOW ALL LIFE TO THRIVE IN THE ANTHROPOCENE.

# LIVING ON THE EDGE

The evidence has never been stronger and our understanding never been clearer. Not only are we able to track the exponential increase in human pressure and the consequent degradation of natural systems, but we also now better understand the interdependencies of Earth's life support systems and their limits.

Lose biodiversity and the natural world including the life support systems as we know them will collapse. We depend on nature for the air we breathe, water we drink, the food and materials we use and the economy we rely on, and not least, for our health, inspiration and happiness.

For decades scientists have been warning that human actions are pushing life toward a sixth mass extinction. Evidence in this year's *Living Planet Report* supports this. Wildlife populations have already shown a concerning decline, on average by 67 per cent by the end of the decade. While environmental degradation continues, there are also signs that we are beginning a transition towards an ecologically sustainable future.

Despite 2016 set to be another hottest year on record, global $CO_2$ emissions have stabilized over the last two years, with some arguing they may even have peaked. Rampant poaching and wildlife trafficking is devastating ecosystems, but the U.S. and China have recently committed to a historic ban of domestic ivory trade.

Perhaps more importantly, the interdependence between the social, economic and environmental agendas is being recognized at the highest levels through the revolutionary approach adopted in defining the new set of the world's Sustainable Development Goals.

We need to transition to an approach that decouples human and economic development from environmental degradation—perhaps the deepest cultural and behavioural shifts ever experienced by any civilization.

These changes are upon us, and if we are awed by the scale of the challenges that this generation is facing, we should be equally motivated by the unprecedented opportunity to build a future in harmony with the planet.



Marco Lambertini,
Director General
WWF International



# RISK AND RESILIENCE IN A NEW ERA

Earth's ecosystems have evolved for millions of years. This process has resulted in diverse and complex biological communities living in balance with their environment. In addition to their intrinsic value, diverse ecosystems also provide the foundation for human livelihoods and well-being. However, the size and scale of the human enterprise have grown exponentially since the mid-20th century. As a result, nature and the services it provides to humanity are subject to increasing risk. To draw attention to our potentially perilous environmental situation, Nobel Prize winner Paul Crutzen and others suggest that we have transitioned from the Holocene into a new geological epoch, calling it the "Anthropocene".

During the Anthropocene, the climate is changing rapidly, oceans are acidifying and entire biomes are disappearing – all at a rate measurable during a single human lifetime. The future of many living organisms is now in question. And not only wild plants and animals are at risk: increasingly, people are victims of the deteriorating state of nature. Climate and other predictive models suggest that without action during the Anthropocene the Earth will become much less hospitable to our modern globalized society.

Given our current trajectory toward the unacceptable conditions that are predicted for the Anthropocene, there is a clear challenge for humanity to learn how to operate within the environmental limits of our planet and to maintain or restore resilience of ecosystems. Our central role as driving force into the Anthropocene also gives reason for hope. Not only do we recognize the changes that are taking place and the risks they are generating for nature and society, we also understand their causes. These are the first steps to identifying solutions for restoring the ecosystems we depend upon and creating resilient and hospitable places for wildlife and people. Acting upon this knowledge will enable us to navigate our way through the Anthropocene.

# THE GLOBAL LIVING PLANET INDEX

The Living Planet Index (LPI) measures biodiversity by gathering population data of various vertebrate species and calculating an average change in abundance over time. The LPI can be compared to the stock market index, except that, instead of monitoring the global economy, the LPI is an important indicator of the planet's ecological condition. The global LPI is based on scientific data from 14,152 monitored populations of 3,706 vertebrate species (mammals, birds, fishes, amphibians, reptiles) from around the world.

From 1970 to 2012 the LPI shows a 58 per cent overall decline in vertebrate population abundance (Figure 1). Population sizes of vertebrate species have, on average, dropped by more than half in little more than 40 years. The data shows an average annual decline of 2 per cent and there is no sign yet that this rate will decrease.

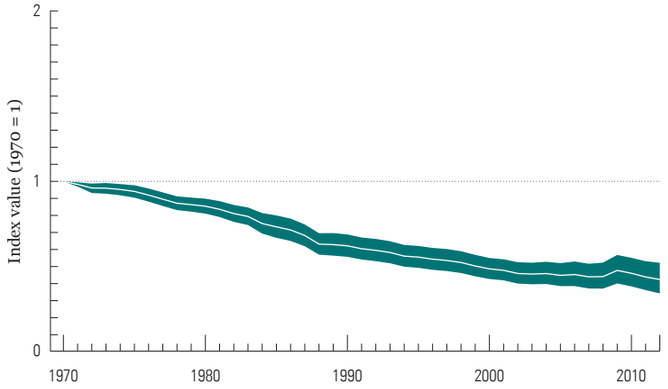



***Figure 1: The Global Living Planet Index shows a decline of 58 per cent (range: -48 to -66 per cent) between 1970 and 2012***
*Trend in population abundance for 14,152 populations of 3,706 species monitored across the globe between 1970 and 2012. The white line shows the index values and the shaded areas represent the 95 per cent confidence limits surrounding the trend (WWF/ZSL, 2016).*

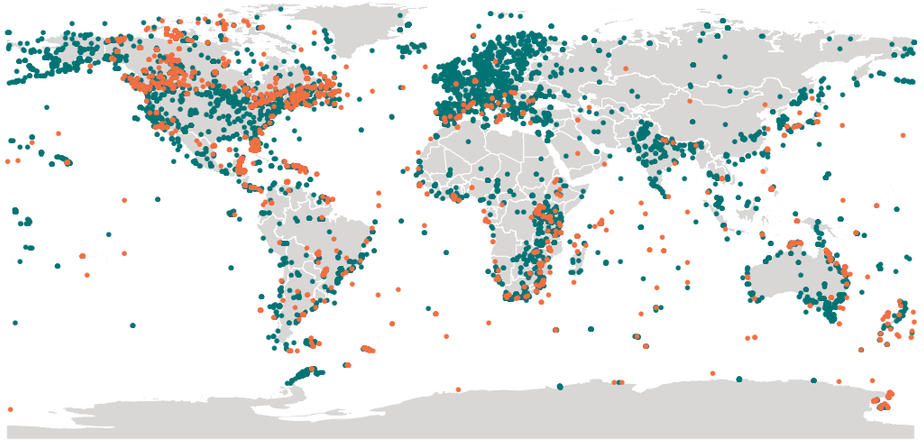
**FROM 1970 TO 2012 THE GLOBAL LPI SHOWS A 58 PER CENT OVERALL DECLINE IN VERTEBRATE POPULATION ABUNDANCE**



# MONITORING SPECIES

***Figure 2: The distribution of locations providing data for the Living Planet Index***
*Map showing the location of the monitored populations in the LPI. New populations added since the last report are highlighted in orange (WWF/ZSL, 2016).*

The LPI database is continually evolving and for each *Living Planet Report* a larger dataset is available to use for the analysis. Since the last *Living Planet Report*, 668 species and 3,772 different populations have been added to the LPI database (Figure 2). The dataset is currently limited to populations of vertebrate species. Methods to incorporate invertebrates and plants are now in development.




THE TERRESTRIAL LPI SHOWS THAT POPULATIONS HAVE DECLINED BY 38 PER CENT OVERALL BETWEEN 1970 AND 2012


THE FRESHWATER LPI SHOWS THAT ON AVERAGE THE ABUNDANCE OF POPULATIONS MONITORED IN THE FRESHWATER SYSTEM HAS DECLINED BY 81 PER CENT BETWEEN 1970 AND 2012


THE MARINE LPI SHOWS A 36 PER CENT OVERALL DECLINE BETWEEN 1970 AND 2012

# A CLOSER LOOK AT THREATS

Whether or not populations are in trouble depends on species resilience, location, and the nature of what threatens them. Threat information is available for about one third of populations in the LPI (3,776 populations). Over half of these populations (1,981) are declining. The most common threat to declining populations is the loss and degradation of habitat.

## THREATS

### Habitat loss and degradation

This refers to the modification of the environment where a species lives, by either complete removal, fragmentation or reduction in quality of key habitat characteristics. Common causes are unsustainable agriculture, logging, transportation, residential or commercial development, energy production and mining. For freshwater habitats, fragmentation of rivers and streams and abstraction of water are common threats.

### Species overexploitation

There are both direct and indirect forms of overexploitation. Direct overexploitation refers to unsustainable hunting and poaching or harvesting, whether for subsistence or for trade. Indirect overexploitation occurs when non-target species are killed unintentionally, for example as bycatch in fisheries.

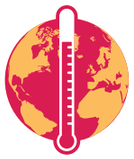
### Pollution

Pollution can directly affect a species by making the environment unsuitable for its survival (this is what happens, for example, in the case of an oil spill). It can also affect a species indirectly, by affecting food availability or reproductive performance, thus reducing population numbers over time.

### Invasive species and disease

Invasive species can compete with native species for space, food and other resources, can turn out to be a predator for native species, or spread diseases that were not previously present in the environment. Humans also transport new diseases from one area of the globe to another.

### Climate change



As temperatures change, some species will need to adapt by shifting their range to track suitable climate. The effects of climate change on species are often indirect. Changes in temperature can confound the signals that trigger seasonal events such as migration and reproduction, causing these events to happen at the wrong time (for example misaligning reproduction and the period of greater food availability in a specific habitat).



***Figure 3: Threat type frequency for 703 declining terrestrial populations in the LPI database showing 1,281 recorded threats***
*Each population has up to three threats recorded, so the total number of recorded threats exceeds the number of populations (WWF/ZSL, 2016).*

The LPI database contains threat information for 33 per cent of its declining **terrestrial populations** (n=703). Habitat loss and degradation are the most common threats to terrestrial populations (Figure 3), followed by overexploitation.

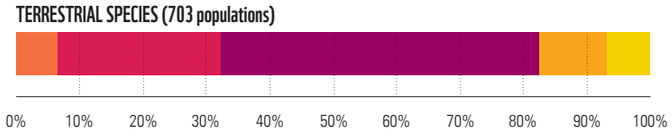



***Figure 4: Threat type frequency for 449 declining freshwater populations in the LPI database showing 781 recorded threats***
*Each population has up to three threats recorded, so the total number of recorded threats exceeds the number of populations (WWF/ZSL, 2016).*

The LPI database contains threat information for 31 per cent of its declining **freshwater populations** (n=449). Based on this information, the most common threats are habitat loss and degradation, mentioned in 48 per cent of analyzed population studies (Figure 4).

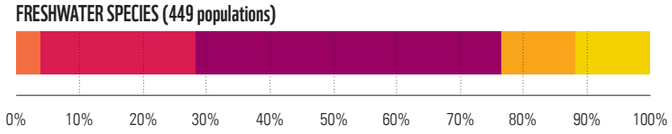
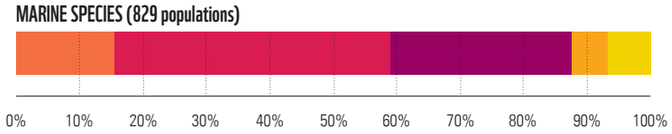



***Figure 5: Threat type frequency for 829 declining marine populations in the LPI database showing 1,155 recorded threats***
*Each population has up to three threats recorded, so the total number of recorded threats exceeds the number of populations (WWF/ZSL, 2016).*

Threat information is available for 29 per cent of declining **marine populations** (n=829). Data indicates that the most common threat for marine species is overexploitation, followed by loss and degradation of marine habitats (Figure 5).




*Key*

- Climate change
- Overexploitation
- Habitat loss / degradation
- Invasive species and disease
- Pollution

## THE MOST COMMON THREAT TO DECLINING POPULATIONS IS THE LOSS AND DEGRADATION OF HABITAT

# DAM REMOVAL FOR RIVER RESTORATION: THE ELWHA RIVER

Free-flowing rivers are the freshwater equivalent of wilderness areas. The natural flow variations of these rivers shape and form diverse riverine habitats, within and next to the river. In many places, connected, free-flowing rivers are crucial for carrying sediment downstream, bringing nutrients to floodplain soils, maintaining floodplains and deltas that protect against extreme weather events, and providing recreational opportunities or spiritual fulfilment. Almost everywhere that free-flowing rivers remain, they are home to vulnerable freshwater biodiversity. Dams and other infrastructure threaten these free-flowing rivers as they create barriers, causing fragmentation and alteration to flow regimes. Dams also affect long-distance migratory fishes by obstructing their migratory pathways, making it difficult or impossible to complete their life cycles.

The Elwha River in the Pacific Northwest of the United States provides a striking example. Two hydroelectric dams – the Elwha Dam constructed in 1914 and the Glines Canyon Dam completed in 1927 – blocked passage for migratory salmon. Local people reported a huge decline in adult salmon returning to the river after the Elhwa Dam was constructed. This heavily affected the Lower Elwha Klallam Tribe, who relied on the river's salmon and other associated species in the watershed for physical, spiritual and cultural reasons. Salmon are a keystone species in that they bring nutrients from the coast inland, nourishing both terrestrial and aquatic species that benefit from this supply of nutrients.

In the mid-1980s the Elwha Klallam Tribe and environmental groups started to push for the removal of the Elwha and Glines Canyon dams. Eventually the Elwha River Ecosystem and Fisheries Restoration Act of 1992 was put in place, mandating the "full restoration of the fisheries and ecosystem". After 20 years of planning, work to remove the Elwha Dam began in 2011, the largest dam removal in US history. The removal of the Glines Canyon Dam was completed in August 2014. Fish populations are expected to make a return to the river. Some chinook salmon already did in 2012, just after the Elwha dam came down.

# ECOSYSTEM SERVICES: LINKING NATURE AND PEOPLE

The observed decline in species populations is inextricably linked to the state of the ecosystems that sustain them. Destruction of these ecosystems represents a risk not just to resident plants and wildlife, but to humans as well. For ecosystems provide us with food, fresh water, clean air, energy, medicine, and recreation. In addition, we depend upon healthy and diverse natural systems for the regulation and purification of water and air, climatic conditions, pollination and seed dispersal, and control of pests and diseases (Figure 6).

The available stock of renewable and non-renewable natural resources that supports human life (e.g., plants, animals, air, water, soils, minerals) can be described as “natural capital”. Natural capital delivers a flow of benefits to people both locally and globally. The benefits themselves are often referred to as “ecosystem services”.

Natural capital assets evolved to be self-sustaining. But increased human pressure – such as conversion of natural habitat to agriculture, overexploitation of fisheries, pollution of freshwater by industries, urbanization and unsustainable farming and fishing practices – is diminishing natural capital at a faster rate than it can be replenished. We are already experiencing the consequences of natural capital depletion. These consequences are expected to grow over time, increasing food and water insecurity, raising prices for many commodities, and increasing competition for land and water. Greater competition for natural capital will exacerbate conflict and migration, climate change and vulnerability to natural disasters such as flooding and drought. There will be a general decline in physical and mental health and well-being and this will lead to more conflict and migration.

## HEALTHY ECOSYSTEMS ARE VITAL TO OUR SURVIVAL, WELL-BEING AND PROSPERITY

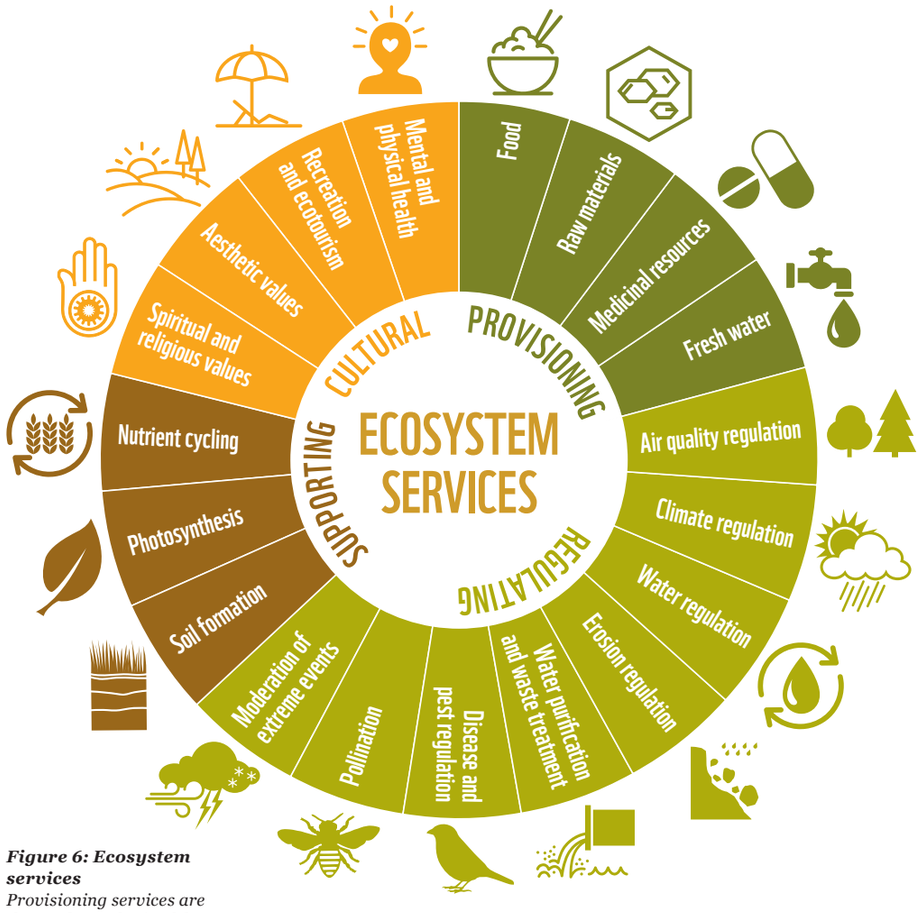



***Figure 6: Ecosystem services***
*Provisioning services are the products obtained from ecosystems, regulating services are the benefits obtained from the regulation of ecosystem processes, cultural services are the nonmaterial benefits people obtain from ecosystems and supporting services are those services that are necessary for the production of all other ecosystem services. Adapted from the Millennium Ecosystem Assessment, 2005.*

## INCREASED HUMAN PRESSURE IS DIMINISHING NATURAL CAPITAL AT A FASTER RATE THAN IT CAN BE REPLENISHED

# COMMUNITY MANGROVE RESTORATION MADAGASCAR

Mangroves protect and stabilize coastlines – particularly important as climate change brings more extreme storms and increased wave action. They also act as sinks, sequestering 3–5 per cent more carbon per unit area than any other forest system. But mangroves are disappearing, cleared for urban and tourism development or felled for fuel and building materials. Wise use of mangroves, such as creating coastal reserves and helping local communities develop livelihoods built on keeping them intact, is crucial for nature and people.

The most extensive mangrove cover, about a million hectares bordering the Western Indian Ocean, is found in the river deltas of Kenya, Madagascar, Mozambique and Tanzania. As an ecozone between land and sea, mangroves are home to a huge variety of creatures, from birds and land mammals to dugongs, five marine turtle species and many kinds of fish. And much of the economically important prawn harvest along this coast depends on mangroves for safe spawning and nursery grounds.

In the Melaky region on Madagascar's west coast, local people are taking action to remedy the loss of mangroves, which are crucial to their livelihoods. Since September 2015, men, women and children from the village of Manombo have become key players in mangrove conservation and restoration. Mangrove restoration benefits local communities by improving access to fish and crab stock, which provide a regular income, and builds resilience against climate change. The village community participated in a reforestation campaign, planting around 9,000 mangrove seedlings to restore degraded forests around their village. Next to Manombo, other communities have together planted 49,000 seedlings. For the local communities and the future of their forests, that equals a real success.

# HUMAN IMPACTS ON THE PLANET

Throughout history there has been a limit to nature's capacity to absorb the impact of human development. In previous times, pollution and other pressures mainly resulted in the deterioration of local environments. But now we have strained the limits of natural resilience at the planetary level as well. The world's population has grown from about 1.6 billion people in 1900 to today's 7.3 billion. During this period, technological innovations and the use of fossil energy helped meet growing demand for resources.

Most notably, in the early 1900s an industrial method was developed for fixing nitrogen into ammonia. The resulting synthetic fertilizer now sustains about half of the world's population but also causes pollution of air, water and soils. Readily available fossil fuels provide energy for domestic use and industrial production, enabling global trade. But only at the cost of rising atmospheric $CO_2$ concentrations and global warming (Figure 7).

Human activities and accompanying resource uses have grown so dramatically, especially since the mid-20th century, that the environmental conditions that fostered our development and growth are beginning to deteriorate. It is clear that responding to risks at the planetary scale will be vastly more challenging than anything we have dealt with before. An Earth system perspective can help us to perceive complex relationships between human actions and global impacts that affect the natural state of the planet. It enables us to see how local changes have consequences that play out at other geographic scales, and to recognize that impacts that influence one system might affect other systems as well.

**HUMAN ACTIVITIES AND ACCOMPANYING RESOURCE USES HAVE GROWN SO DRAMATICALLY THAT THE ENVIRONMENTAL CONDITIONS THAT FOSTERED OUR DEVELOPMENT AND GROWTH ARE BEGINNING TO DETERIORATE**

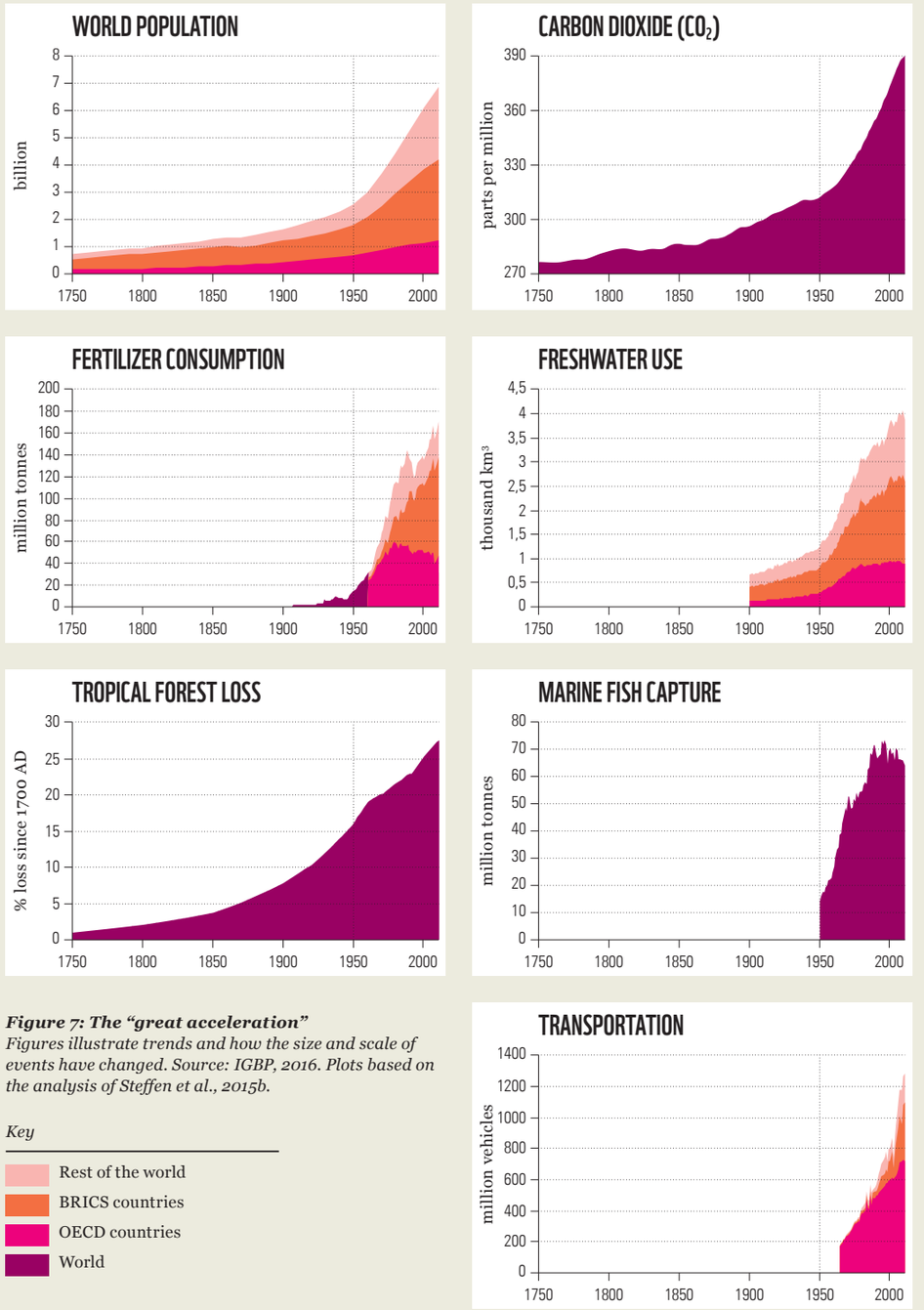



***Figure 7: The "great acceleration"***
*Figures illustrate trends and how the size and scale of events have changed. Source: IGBP, 2016. Plots based on the analysis of Steffen et al., 2015b.*

# PLANETARY BOUNDARIES

The Planetary Boundaries framework exemplifies such an Earth system perspective. It illustrates how global patterns of consumption and production lead to increased risk for both natural and human systems.

Nine human-produced alterations to the functioning of the Earth system form the basis of the Planetary Boundaries (Figure 8). They are 1) biosphere integrity (or destruction of ecosystems and biodiversity), 2) climate change, and 3) its twin problem ocean acidification, 4) land-system change, 5) unsustainable freshwater use, 6) perturbation of biogeochemical flows (nitrogen and phosphorus inputs to the biosphere), 7) alteration of atmospheric aerosols, 8) pollution by novel entities, 9) stratospheric ozone depletion. Based on our evolving understanding of the functioning and resilience of the global ecosystem, the Planetary Boundaries framework delineates safe limits for the functioning of these critical Earth subsystems. Within defined safe operating spaces human societies can develop and thrive. When we push beyond these boundaries, we risk causing irreversible changes to resources that we depend upon.

**THE PLANETARY BOUNDARIES CONCEPT ILLUSTRATES THE RISKS OF HUMAN INTERFERENCE WITH THE EARTH SYSTEM**

Although there is some degree of scientific uncertainty regarding the biophysical and societal effects of exceeding the boundaries, current analysis suggests that humans have already pushed four of these systems beyond the limit of their safe operating space. Attributable global impacts and associated risks to humans are already evident for climate change, biosphere integrity, biogeochemical flows and land-system change. Other assessments suggest that freshwater use has also passed beyond a safe threshold.

The Planetary Boundaries concept is useful for framing our current understanding of potential tipping points. Furthermore, it underscores the importance of applying the precautionary principle in the management of natural systems. Determining and respecting Planetary Boundaries could greatly reduce the risk that the Anthropocene will become inhospitable to life as we know it.

**ANALYSIS SUGGESTS THAT HUMANS HAVE ALREADY PUSHED FOUR OF THESE SYSTEMS BEYOND THE LIMIT OF A SAFE OPERATING SPACE**

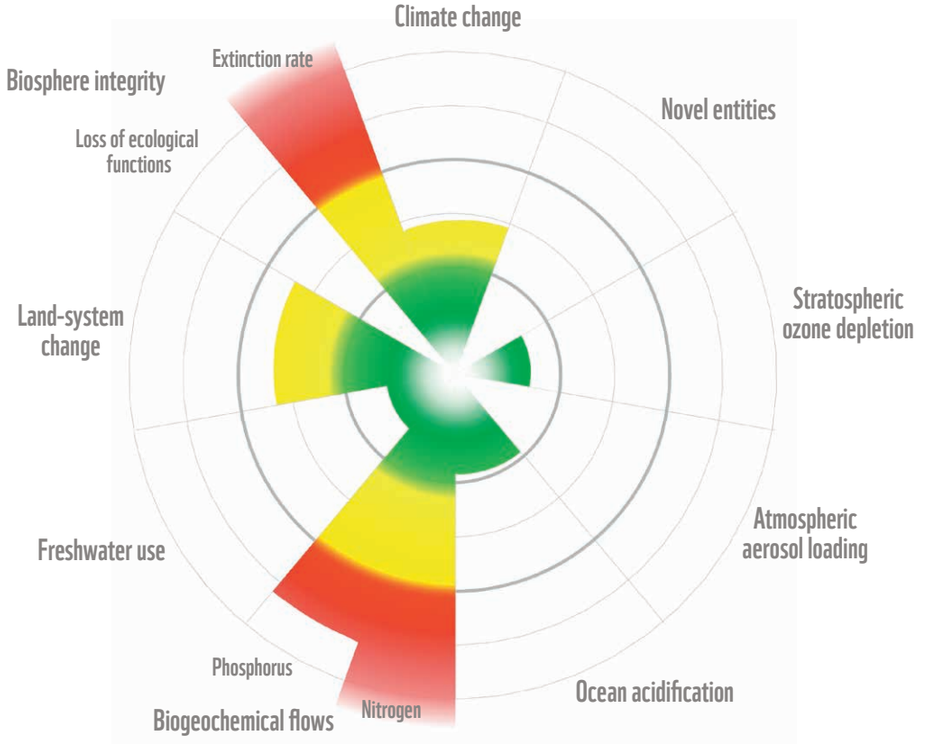



***Figure 8: Planetary Boundaries***
*The green zone is the safe operating space (below the boundary), yellow represents the zone of uncertainty, with an increasing risk of disrupting Earth system stability; and red is the high-risk zone, pushing the Earth system out of a stable Holocene-like state. The Planetary Boundary itself lies at the inner heavy circle (Steffen et al., 2015).*

*Key*

- Beyond zone of uncertainty (high risk)
- In zone of uncertainty (increasing risk)
- Below boundary (safe)

One thing is clear: we cannot tackle just one boundary without addressing the others. Changes in the Planetary Boundaries are not isolated from one another; changes in one can be amplified through changes to other boundary categories. If we seek to fix climate change by removing $CO_2$ from the atmosphere through new technologies and emission reductions, but fail to consider the role of land-system change, biogeochemical flows and the other subsystems on the integrity of the biosphere, we will fail to chart a sustainable course through the Anthropocene.

# ECOLOGICAL FOOTPRINT OF CONSUMPTION

Since the early 1970s, humanity has been demanding more than our planet can sustainably offer. By 2012, the biocapacity equivalent of 1.6 Earths was needed to provide the natural resources and services humanity consumed in that year. Exceeding the Earth's biocapacity to such a degree is possible only in the short term. Only for a brief period can we cut trees faster than they mature, harvest more fish than the oceans can replenish, or emit more carbon into the atmosphere than the forests and oceans can absorb. The consequences of this "overshoot" are already clear: habitat and species populations are declining, and carbon in the atmosphere is accumulating.

Even as the consequences of human pressure on the environment are increasingly acknowledged and observed, society has yet to make a rational economic response. According to Ecological Footprint data from the past four decades, the few instances of reductions in the total global Ecological Footprint do not correspond to intentional policies to limit human impact on nature. Rather they were reactions to major economic crises, such as the 1973 oil crisis, the deep economic recession in the USA and many of the OECD countries during 1980-1982 and the 2008-2009 global economic recession. Furthermore, the reductions in total Ecological Footprint were only temporary and were followed by a rapid climb.

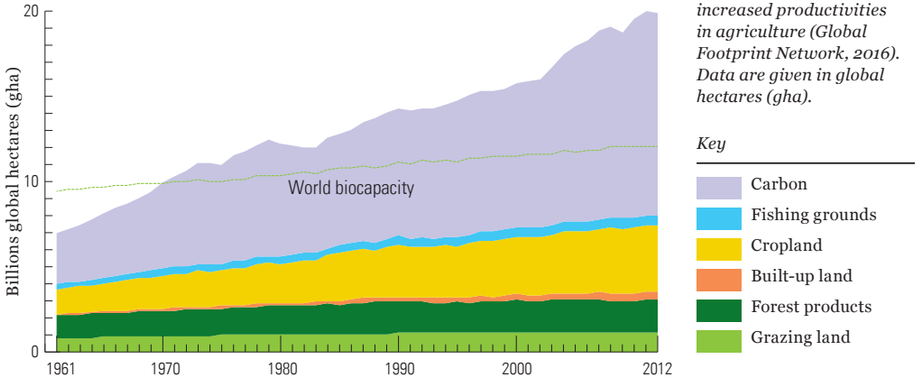



***Figure 9: Global Ecological Footprint by component vs Earth's biocapacity, 1961-2012***
*Carbon is the dominant component of humanity's Ecological Footprint (ranging from 43 per cent in 1961 to 60 per cent in 2012). It is the largest Footprint component at the global level as well as for 145 of the 233 countries and territories tracked in 2012. Its primary cause has been the burning of fossil fuels – coal, oil and natural gas. The green line represents the Earth's capacity to produce resources and ecological services (i.e., the biocapacity). It has been upward trending slightly, mainly due to increased productivities in agriculture (Global Footprint Network, 2016). Data are given in global hectares (gha).*



## Exploring the Ecological Footprint of Consumption

The Ecological Footprint equates humanity's demand on nature to the amount of biologically productive area required to provide resources and absorb waste (currently just carbon dioxide from fossil fuel, land-use change and cement). It considers six demand categories:

### CROPLAND FOOTPRINT
refers to the demand for land on which to produce food and fibre for human consumption, feed for livestock, oil crops and rubber.

### GRAZING LAND FOOTPRINT
refers to the demand for rangelands to raise livestock for meat, dairy, leather and wool products.

### FISHING GROUNDS FOOTPRINT
refers to the demand for marine and inland water ecosystems necessary to generate the annual primary production (i.e., phytoplankton) required to support seafood catch as well as aquaculture.

### FOREST PRODUCT FOOTPRINT
refers to the demand for forests to provide fuel wood, pulp and timber products.

### BUILT-UP LAND FOOTPRINT
refers to the demand for biologically productive areas needed for infrastructure, including transportation, housing and industrial structures.

### CARBON FOOTPRINT
refers to the demand for forests as the primary ecosystems available to long-term sequester carbon not otherwise absorbed by the oceans. It captures different rates of carbon sequestration depending on the degree of human management of forests and the type and age of forests, and includes the emissions related to forest wildfires, soil and harvested wood.

# MAPPING THE ECOLOGICAL FOOTPRINT OF CONSUMPTION

Average per capita Ecological Footprints differ among countries due to varying levels of total consumption. They also vary according to the demand for individual Footprint components. These components include the quantity of goods and services residents consume, natural resources used, and carbon generated to provide these goods and services. Figure 10 shows the average Ecological Footprint per person per country in 2012.

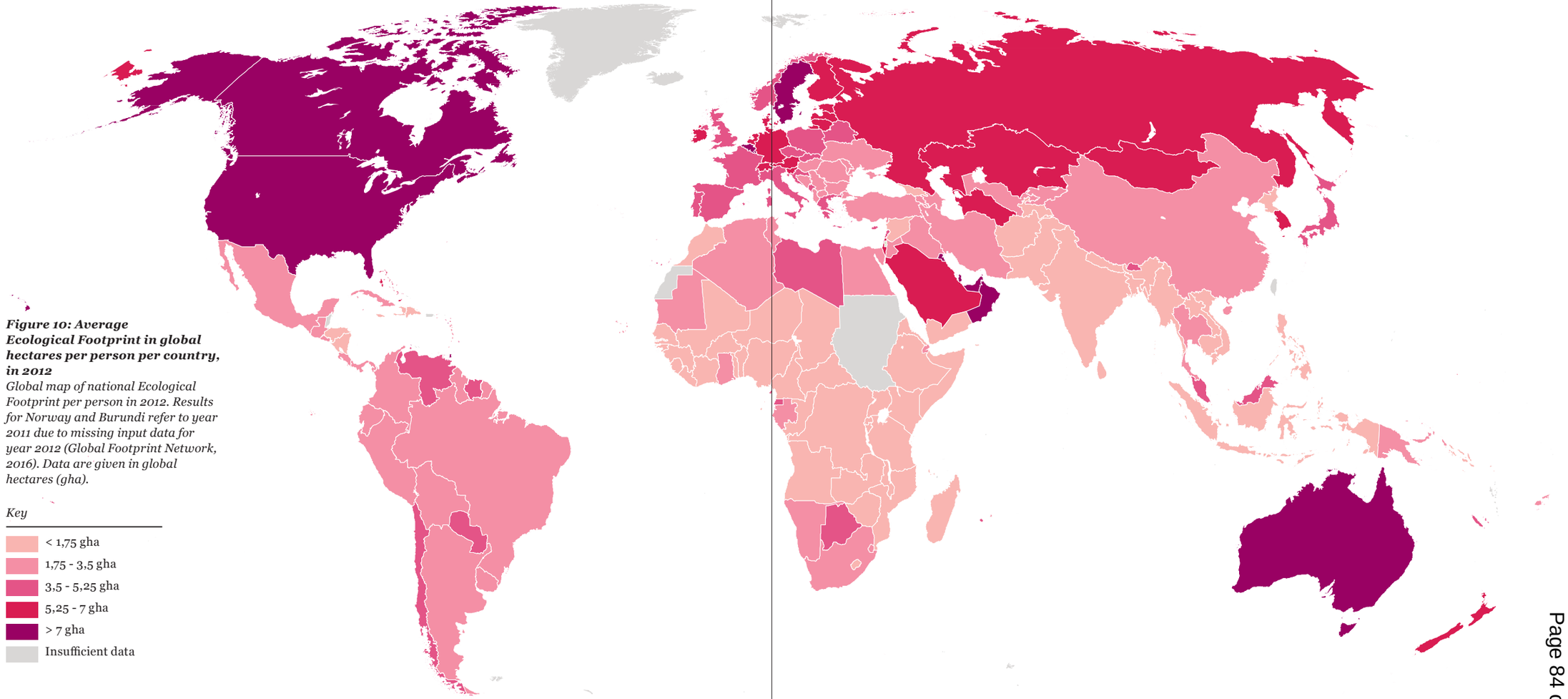



***Figure 10: Average Ecological Footprint in global hectares per person per country, in 2012***
*Global map of national Ecological Footprint per person in 2012. Results for Norway and Burundi refer to year 2011 due to missing input data for year 2012 (Global Footprint Network, 2016). Data are given in global hectares (gha).*

Among countries with large per capita Ecological Footprints, the carbon component is particularly high due to both fossil fuels consumption and the use of energy-intensive goods. Per capita Ecological Footprints of several countries are as much as six times larger than the available per capita share of global biocapacity (1.7 gha). This implies that residents of these countries are placing disproportionate pressure on nature as they appropriate more than their fair share of the Earth's resources. At the other end of the scale, some of the world's lowest-income countries have per capita Ecological Footprints that are less than half the per capita biocapacity available globally, as many people in these countries struggle to meet basic needs.

# ECOLOGICAL RESTORATION OF THE LOESS PLATEAU IN CHINA

China’s Loess Plateau, the birthplace of the largest ethnic group on the planet, was once an abundant forest and grassland system. One of the central civilizations on Earth grew on the plateau while simultaneously reducing biodiversity, biomass and accumulated organic matter. Over time, the landscape lost its ability to absorb and retain moisture, causing an area the size of France to dry out. Without the constant nutrient recycling from decaying organic matter, the soil lost its fertility and was eroded away by the wind and water, leaving a vast barren landscape. By 1,000 years ago the site of the magnificent early dynasties in China had been abandoned by the wealthy and powerful. By the mid-1990s the plateau was mainly famous for the recurrent cycle of flooding, drought and famine known as “China’s Sorrow”.

Today, large areas of the Loess Plateau have been restored. The changes have been brought about by differentiating and designating ecological and economic land, terracing, sediment traps, check dams and other methods of infiltrating rainfall. At the same time, efforts have been made to increase biomass and organic material through massive planting of trees in the ecological land and using sustainable, climate-smart agricultural methods in the economic lands.

The crucial step toward restoration was the understanding that, in the long run, safeguarding ecosystem functions is vastly more valuable than the production and consumption of goods and services. It therefore made sense to designate as much of the land as possible as ecological land. This also led to a counter-intuitive outcome: concentrating investment and production in smaller areas was found to increase productivity. It’s a clear illustration of how functional ecosystems are more productive than dysfunctional ones.

The work on China Loess Plateau shows that it is possible to restore large-scale degraded ecosystems. This helps us adapt to climate impacts, makes the land more resilient and increases productivity. The Loess Plateau also shows that valuing ecosystem function higher than production and consumption provides humanity with the logical framework to choose to make long-term investments and see the positive results of trans-generational thinking.

# PROBLEM SOLVING IN A COMPLEX WORLD

It is clear that we need to steer the course of socio-economic development onto a pathway that does not conflict with the welfare of people and the biosphere. But the increased risk associated with exceeding Planetary Boundaries, the expansion of consumption footprints, and the continuous decline of Living Planet Indices signal that sustainability efforts to date have been far from sufficient. So how can we begin to affect development in a way that will make essential changes at a relevant magnitude?

IN SPITE OF THE COMPLEXITY, WE OFTEN TURN TO SUPERFICIAL SOLUTIONS WHEN TRYING TO SOLVE COMPLEX PROBLEMS

A prerequisite for affecting significant change in human systems is to understand the nature of the decision-making that results in environmental, social and ecological degradation. Trillions of decisions and actions take place every day, resulting in both visible and invisible impacts on society and the Earth system. In spite of the complexity that defines our problems, we often turn to superficial solutions when trying to solve them.

System thinking can help us ask the right questions by examining complex problems layer by layer and then analyzing the connections between these layers. A common tool used in systems thinking is the "four levels of thinking" model. It is designed to identify root causes and basic dynamics of complex problems.

The first level events represents only the "tip of the iceberg" phenomena within a system. Because events are tangible or visible and immediate, most policy discussion and problem-solving interventions occur at this level. But when addressing events we are treating symptoms but not the source of a problem. By applying the four levels of thinking it becomes clear why tip-of-the-iceberg solutions may not have long-lasting effects. If the issue has deep roots within our socio-economic system, it will simply re-emerge at different times or in different places.

FINDING SOLUTIONS REQUIRES A MUCH DEEPER UNDERSTANDING OF PRESSURES, DRIVERS, ROOT CAUSES AND THE BASIC DYNAMICS OF SYSTEMS



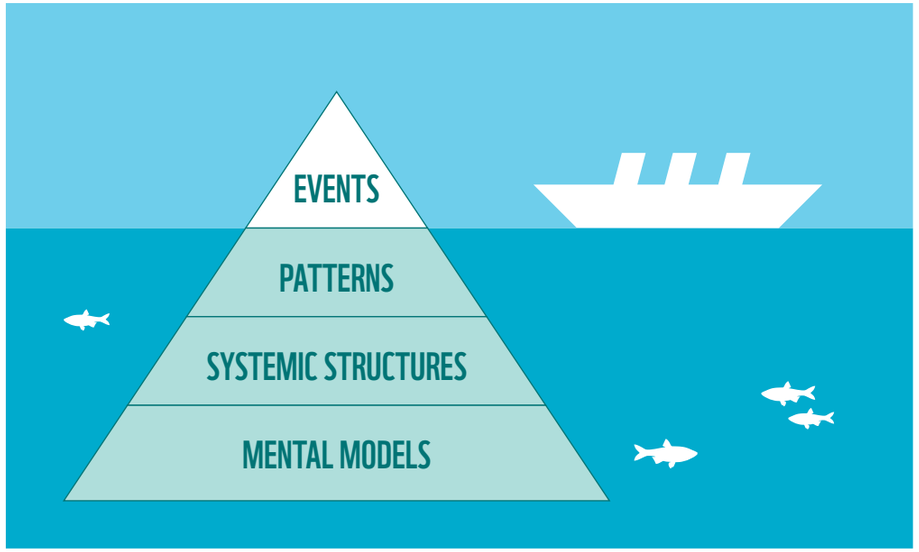



***Figure 11: An illustration of the "four levels of thinking" model***
*showing that events or symptoms are only the tip of the iceberg in the overall dynamics of a system. Meanwhile the underlying determinants of the system's behaviour are less apparent. The deeper we go below the surface events, the closer we get toward "root causes". Adapted from Maani and Cavana (2007).*

The second level of thinking concerns the patterns that emerge when a set of events repeatedly occurs to form recognizable behaviours or outcomes. For instance, a single event can be an individual choice about what to buy in the supermarket. Only when these events are grouped together and arranged on a timeline can we see the bigger pattern forming from the choices of many individuals in the supermarket.

The third level of thinking reveals systemic structures, which are the political, social, biophysical or economic structures that constrain the way different elements in the system can behave and interact. It is at this level that we truly begin to understand the causal relationships between events and various actors within the system. One of these constraining systemic structures is our prevailing global economic model.

At the fourth and deepest level of thinking are the mental models of individuals and organizations that reflect the beliefs, values and assumptions that we personally hold. Mental models – which can vary across cultures – are rarely taken into account in decision-making. However, belief systems – "we need to get richer in order to be happier", "people are poor because they don't try hard enough" – significantly affect all levels above. Mental models influence the design of system structures, the guidelines and incentives that govern behaviours, and ultimately, the individual events that make up the flow of daily life.

# A RESILIENT PLANET FOR NATURE AND PEOPLE

The 21st century presents humanity with a dual challenge: to maintain nature in all of its many forms and functions and to create an equitable home for people on a finite planet. The UN 2030 Agenda for Sustainable Development combines the economic, social and ecological dimensions necessary to sustain human society through the Anthropocene. These dimensions are all interconnected and must therefore be addressed in an integrated manner. Furthermore, a basic understanding must inform development strategies, economic models, business models and lifestyle choices: we have only one planet and its natural capital is limited.

The WWF "One Planet Perspective" outlines better choices for governing, using and sharing natural resources within the Earth's ecological boundaries. Adoption of this perspective will help nations meet their Sustainable Development Goals commitments by aligning individual initiative, corporate action and government policy in order to attain a sustainable global society.

When applied to business, "One Planet Thinking" encourages companies to align their operations so that they are actively contributing to a healthy and resilient planet for future generations. Minor changes to improve efficiency in resource use or to reduce pollution through end-of-pipe solutions will not bring about the magnitude of needed change.

The idea behind making better choices is to create a situation where food, energy and water is available to all, biodiversity is maintained, and ecosystem integrity and resilience are ensured. Resilient ecosystems would be able to absorb and recover from shocks and disturbances, maintain functionality and service by adapting to disruptions, and transform when necessary.

**A BASIC UNDERSTANDING MUST INFORM OUR STRATEGIES: WE HAVE ONLY ONE PLANET AND ITS NATURAL CAPITAL IS LIMITED**


***Figure 12: WWF One Planet Perspective***
*The better choices outlined in the figure lead to ecosystem integrity, biodiversity conservation and food, water and energy security.*

**THE WWF "ONE PLANET PERSPECTIVE" OUTLINES BETTER CHOICES FOR GOVERNING, USING AND SHARING NATURAL RESOURCES WITHIN THE EARTH'S ECOLOGICAL BOUNDARIES**

# TRANSITIONING THE GLOBAL ECONOMIC SYSTEM

How do we define what constitutes a better choice? Systems thinking can help us understand the underlying causes of unsustainable development. Once the patterns, systemic structures and mental models that shape the destructive aspects of the human enterprise are identified and analysed, leverage points are easier to perceive. Leverage points are those places in a system where a given amount of change can result in the largest possible impact. Common leverage points for sustainability include government and corporate planning efforts, technological innovation, trade agreement negotiations, and the influence of large social organizations.

Changing the global economic system would entail a transformation in which human development is decoupled from environmental degradation and social exclusion. For this to occur, a number of significant changes – both incremental and radical – would need to take place in the areas of natural capital protection, governance, financial flows, markets, and the energy and food systems.

## Preserving natural capital

To adequately protect natural capital, resources need to be used sustainably, and the global network of protected areas needs to be expanded. Adequate funding mechanisms are needed if protective area management is to be effective.

## Equitable resource governance

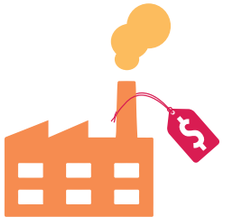
Legal and policy frameworks should support equitable access to food, water and energy, and stimulate inclusive processes for sustainably managed land and sea use. This also requires an evolved definition of well-being and success that includes personal, societal and environmental health. Decision making should consider future generations as well as the functional value of nature.



## Redirecting financial flows

Sustainable financial flows that support conservation and sustainable ecosystem management are an essential enabling condition for both preserving natural capital and promoting resilient and sustainable markets. Still, many financial institutions continue to invest substantially in harmful and unsustainable activities such as coal mining, environmentally-destructive agriculture and oil drilling.

## Resilient markets for production and consumption



Producing better and consuming more wisely are key to establishing resilient markets that operate within our planet's safe operating space, safeguard our natural wealth, and contribute to our economic and social well-being. Sustainable resource management and incorporation of the true costs of production in the value chain represent better choices in this regard.

## Transformation of energy and food systems

Redirecting our path toward sustainability requires fundamental changes in two important systems: energy and food. Current structures and behaviours within these two systems have a tremendous impact on biodiversity, ecosystem resilience and human well-being.

**Toward sustainable renewable energy sources**

As fossil-fuel burning is the largest manmade driver of climate change, the vast majority of fossil fuels would be best left in the ground. Fortunately, renewable energy alternatives are becoming more and more competitive. Further development and rapid widespread adoption of renewable energy innovations are expected to reduce climate risks, while improving human health, boosting our economies, and creating jobs to replace those in fossil-based industries. While the global transition toward sustainable renewable energy sources such as wind and solar remains an immense task, many countries are already committed to transforming their traditional energy supply systems.

**Toward resilient food systems**

Food production is one of the primary causes of biodiversity loss through habitat degradation, overexploitation of species such as overfishing, pollution and soil loss. It is also a primary force behind the transgression of the Planetary Boundaries for nitrogen, phosphorus, climate change, biosphere integrity, land-system change and freshwater use. Even though its environmental impacts are immense, the current food system is expected to expand rapidly to keep up with projected increases in population, wealth and animal-protein consumption.

Transitioning toward an adaptive and resilient food system that provides nutritious food for all within the boundaries of a single planet is a daunting but essential goal. Various structures within the current industrialized global food system reinforce the status quo, including agricultural subsidies, governmental research programmes, and metrics that do not consider the environmental, social, ethical and cultural impacts in the costs of production. Imperfect as they are, these same structures also represent leverage points for change.

TRANSITIONING TOWARD AN ADAPTIVE AND RESILIENT FOOD SYSTEM THAT PROVIDES NUTRITIOUS FOOD FOR ALL WITHIN THE BOUNDARIES OF A SINGLE PLANET IS A DAUNTING BUT ESSENTIAL GOAL.

Agricultural production is highly influenced by consumption choices, lifestyles, waste and distribution. So, while reducing agriculture's environmental impacts and reducing waste along the food chain will be instrumental in meeting future needs, reducing the footprint of food consumption can make a significant contribution as well.

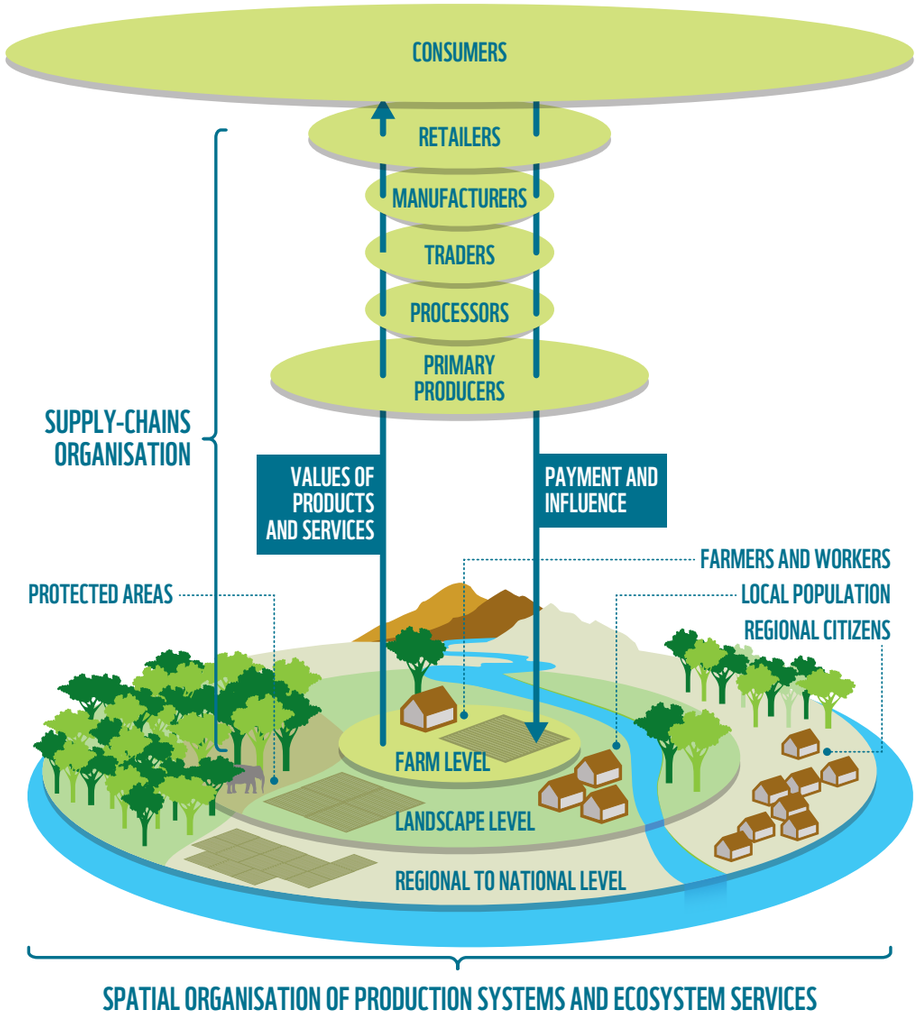
Optimizing productivity by diversifying farms and farming landscapes, increasing biodiversity and stimulating interactions between different species can be part of holistic strategies to build healthy agro-ecosystems, secure livelihoods, protect natural systems and preserve biodiversity. Diversified farming is applicable to all types of agriculture, including highly specialized industrial agriculture and subsistence farming.

In addition to farmers, other stakeholders along the food supply chain can contribute to and promote sustainable agricultural practices at the landscape level. For example, food retailers can influence production practices at the landscape scale and – through prices – they can alert consumers to the environmental costs of production, thereby shifting demand for sustainable products.



Companies in the supply chain could encourage landscape-scale diversification as it will reduce variability in supply and improve recovery from shocks, making their own business interests more resilient to risk. Moreover, landscapes that integrate crop, livestock and forestry systems with natural areas experience a higher, and more resilient, provision of ecosystem services such as crop pollination and pest control by natural enemies.

***Figure 13: Interaction between supply-chain and integrated landscape approach***
*Adapted from Van Oorschot et al., 2016; WWF MTI, 2016.*



# THE PATH AHEAD

The facts and figures in the *Living Planet Report* tend to paint a challenging picture, yet there is still plenty of room for optimism. If we manage to undergo the critical transitions necessary, the reward will be immense. Fortunately, we are not starting from scratch. There are several countries that have managed to raise the standards of living for their populations while using resources at much less intensity than industrial countries. Furthermore, the world is reaching a solid consensus regarding the direction we must take. In 2015, the 2030 Sustainable Development Goals were adopted. And at the Paris climate conference (COP21) in December 2015, 195 countries adopted a global agreement to combat climate change, and to accelerate and intensify the actions and investments needed for a sustainable low-carbon future. Finally, we have never before had such an understanding of the scale of our impact on the planet, the way the key environmental systems interact or the way in which we can manage them.

Ultimately, addressing social inequality and environmental degradation will require a global paradigm shift toward living within Planetary Boundaries. We must create a new economic system that enhances and supports the natural capital upon which it relies.

The speed at which we transition to a sustainable society is a key factor for determining our future. Allowing and fostering important innovations and enabling them to undergo rapid adoption in a wider arena is critical. Sustainability and resilience will be achieved much faster if the majority of the Earth's population understand the value and needs of our increasingly fragile Earth. A shared understanding of the link between humanity and nature could induce a profound change that will allow all life to thrive in the Anthropocene.

**SUSTAINABILITY AND RESILIENCE WILL BE ACHIEVED MUCH FASTER IF THE MAJORITY OF THE EARTH'S POPULATION UNDERSTAND THE VALUE AND NEEDS OF OUR INCREASINGLY FRAGILE EARTH**



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Nigerian Conservation Foundation (Nigeria)

***As at August 2016**

See LPR 2016 for a comprehensive list of references and sources for all data in this summary.

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**TOWNSHIP OF SOUTH FRONTENAC**

**BY-LAW 2017-63**

**A BY-LAW TO CONFIRM GENERALLY PREVIOUS ACTIONS OF THE COUNCIL OF THE CORPORATION OF THE TOWNSHIP OF SOUTH FRONTENAC.**

THEREFORE THE CORPORATION OF THE TOWNSHIP OF SOUTH FRONTENAC, BY ITS COUNCIL, HEREBY ENACTS AS FOLLOWS:

1. The actions of the Council of the Corporation of the Township of South Frontenac at its Council Meeting of October 3, 2017 be confirmed.

2. Execution by the Mayor and the Clerk-Administrator of all Deeds, Instruments and other Documents necessary to give effect to any such Resolution, Motion or other action and the affixing of the Corporate Seal to any such Deed, Instruments or other Documents is hereby authorized and confirmed.

3. This By-law shall come into force and take effect on the date of its passage.

Dated at the Township of South Frontenac this 3rd day of October, 2017.

Read a first and second time this 3rd day of October, 2017.

Read a third time and finally passed this 3rd day of October, 2017.

**THE CORPORATION OF THE TOWNSHIP OF SOUTH FRONTENAC**

_____

**Ron Vandewal, Mayor**

_____

**Wayne Orr, Chief Administrative Officer**