

Municipality Of Chatham-Kent
Infrastructure and Engineering Services

To: Mayor and Members of Council
From: Thomas Kelly, P.Eng., General Manager
Date: April 24, 2020
Subject: Actions from “Chatham-Kent Lake Erie Shoreline” Report

Recommendations

Consistent with the “Chatham-Kent Lake Erie Shoreline Study” report dated April 23, 2020, it is recommended that:

1. Chatham-Kent prioritize the most vulnerable areas along Lake Erie and proceed with the following:
 - a. Region 2B: develop a long-term plan for Erie Shore Drive following the Drainage Act process recommended in Appendices A and B.
 - b. Region 3A: continue on-going maintenance efforts to protect and maintain the dike along Erieau Road opposite St. Anne’s Church.
 - c. Region 1B: incorporate the findings of the subject study and complete the Environmental Assessment for the Talbot Trail realignment and report back to Council.
 - d. Region 1D: incorporate the findings of the subject study and complete the Environmental Assessment for Rose Beach Line and report back to Council.
2. Administration continue to seek funding from both the Provincial and Federal governments to assist with significant flooding and erosion challenges facing Chatham-Kent as described in the subject report.
3. Administration initiate discussions with the Provincial Government to obtain a commitment and Provincial funding to restore the Rondeau barrier beach.
4. Long term, administration work toward a strategy on the approaches for the remaining regions and sub-regions identified in Table 1 of the subject report.

5. Upon completion of Lower Thames Valley Conservation Authority policy and hazard mapping updates identified in the subject report, administration initiate a formal review of the Official Plan land use policies and Zoning By-law regulations related to the Lake Erie shoreline areas.

Background

In November 2017, Council officially endorsed its intent to be a partner in developing a Lake Erie Integrated Shoreline Management Plan to address the effects of climate change on the Great Lakes.

The project was promoted through Canada's Climate Change Adaptation Platform, with financial support from Natural Resources Canada. Matching funds or in-kind support were received from:

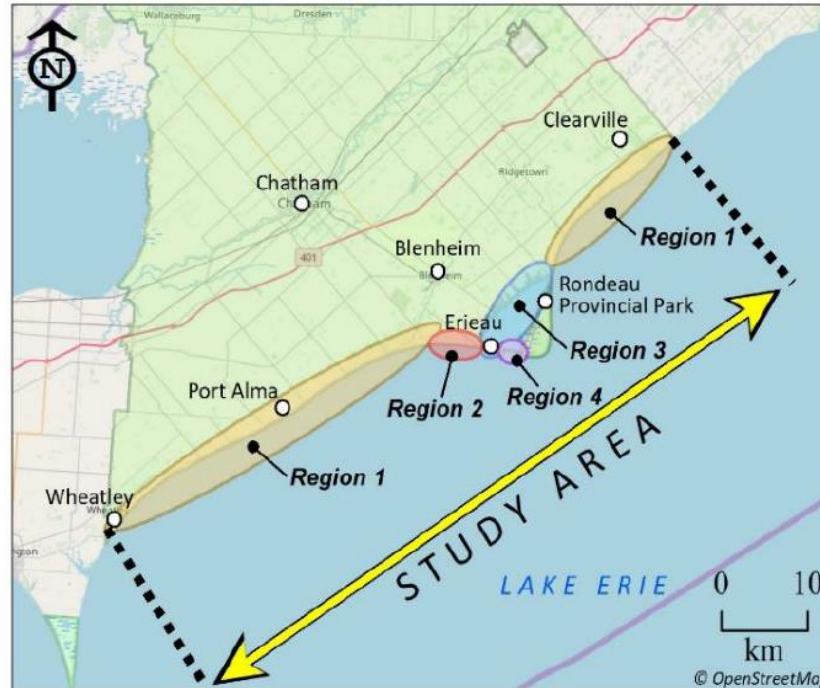
- Municipality of Chatham-Kent
- Lower Thames Valley Conservation Authority
- Province of Ontario
- Federal Government
- International Joint Commission

Approval for funding was received in June 2018.

Mr. Peter Zuzek of Zuzek Inc., in partnership with Linda Mortsch from the University of Waterloo, were retained by the Municipality of Chatham-Kent to assess the vulnerability of the shoreline to coastal hazards, including the projected impacts of climate change on future lake levels, ice cover, storm surge, and the nearshore wave climate. Potential damages from flooding and erosion related to property, infrastructure, and the coastal ecosystem were quantified. Mr. Zuzek is a Professional Geoscientist and recognized shoreline expert in his field. Extensive technical studies were conducted along the shoreline of Lake Erie in Chatham-Kent. Four rounds of public engagement were held in the preparation of the report. Each session presented attendees with detailed historical, factual and technical information. More importantly, participants were provided an opportunity to share their ideas and concerns on erosion and flooding challenges facing Chatham-Kent.

The results of the study were released to the public through a media release on April 24, 2020. Instructions on accessing the report were also emailed to all individuals who had previously provided contact information at the public meetings. Recommendations were categorized into four regions as noted in Figure 1:

Figure 1



Comments

The details associated with each recommendation are included in the “Chatham-Kent Lake Erie Shoreline Study” report.

Regarding Region 2B - Erie Shore Drive, it is recommended that residents of Erie Shore Drive initiate and sign a petition under Section 4 of the Drainage Act. Details of the process and petition are found in Appendices A and B.

Areas of Strategic Focus and Critical Success Factors

The recommendations in this report support the following areas of strategic focus:

Economic Prosperity:

Chatham-Kent is an innovative and thriving community with a diversified economy

A Healthy and Safe Community:

Chatham-Kent is a healthy and safe community with sustainable population growth

People and Culture:

Chatham-Kent is recognized as a culturally vibrant, dynamic, and creative community

Environmental Sustainability:

Chatham-Kent is a community that is environmentally sustainable and promotes stewardship of our natural resources

The recommendations in this report support the following critical success factors:

 Financial Sustainability:

The Corporation of the Municipality of Chatham-Kent is financially sustainable

 Open, Transparent and Effective Governance:

The Corporation of the Municipality of Chatham-Kent is open, transparent and effectively governed with efficient and bold, visionary leadership

Has the potential to support all areas of strategic focus & critical success factors

Neutral issues (does not support negatively or positively)

Consultation

As outlined in Section 5.0 of the Shoreline Study, the following consultation occurred:

- Let's Talk Chatham-Kent Online Engagement Site (initiated in March 2019)
- Community Meeting #1 (3 sessions) – held on April 10, 2019
- Community Meeting #2 (4 sessions) – held on June 19 and 20, 2019
- Community Meeting #3 (2 sessions) – held on November 26, 2019
- Southwestern Ontario Shoreline Roundtable (2 meetings) – held on August 1, 2019 and September 19, 2019

Financial Implications

Per the “Chatham-Kent Lake Erie Shoreline Study” report, the implementation of the recommendations will result in a capital cost ranging from \$131.7 to \$217.2 million. Annual maintenance costs will also be required contingent upon the solution chosen.

Discussion with Provincial and Federal representatives have been on going to determine if there are opportunities for higher level government funding. At this time, there is no funding available.

Prepared by:

Thomas Kelly, P,Eng., MBA
General Manager
Infrastructure and Engineering Services

Consulted and confirmed the content of the recommendations section of the report by:

Bruce McAllister, MCIP, RPP
Director, Planning Services

Attachment(s): Appendix A – Erie Shore Drive – Future Direction
 Appendix B – Drainage Works Petition Form

cc Director, Planning Services

REF: P:\RTC\Infrastructure and Engineering\I & ES\2020\4229 - Chatham-Kent Lake
Erie Shoreline Study.docx

Municipality of Chatham-Kent
Infrastructure and Engineering Services
Drainage, Asset and Waste Management

To: Mayor and Members of Council

From: Tim Dick, C.E.T.
Director of Drainage, Asset and Waste Management

Date: April 29, 2020

Subject: Erie Shore Drive – Future Direction

This report is for the information of Council.

Background

Erie Shore Drive (ESD) and the Lakeshore and Internal Drains (part of the Burk Drainage Scheme) have a long history of erosion and flooding coinciding with high water phases of Lake Erie. The current cycle began to escalate into a major concern in 2017 with Council directing administration to hold a public meeting to allow residents to voice their concerns and discuss options.

At a public meeting on November 29, 2017, administration recommended the use of the Drainage Act as the best means by which property owners could fairly achieve an integrated “community scale solution” to address problems along the entire length of ESD. The Drainage Act is regularly used in Chatham-Kent to facilitate works in flood prone areas. The most recent report targeting shoreline preservation along ESD was a 1998 preliminary report under Section 10 of the Drainage Act by Todgham and Case Associates. The report was never acted upon by Chatham-Kent Council due to vocal opposition from residential owners along ESD.

On December 11, 2017, a report to Council recommended “The residents of Erie Shore Drive affected by lake flooding initiate the Drainage Act process by signing a Section 4 petition.” After some debate, Council approved the following:

“That:

1. The Municipality of Chatham-Kent appoint an engineer to design a system of flood proofing such as direct drilled catch basins and drains to protect and alleviate on road flooding of the Dyke Rd.

2. A stakeholders committee be convened to determine a fair and equitable strategy to cover the expenses for the engineering and costing of the recommendation outlined within the 1998 Todgham and Case report.
3. Chatham-Kent Council demand that some of the money allocated to the Great Lakes Basin by the Federal and Provincial Governments be allocated to alleviate flooding issues along Lake Erie Shoreline in Chatham-Kent.”

As reported to Council on July 16, 2018, a Request for Proposals (RFP) was released to procure professional Engineering services from a qualified drainage consultant to investigate potential solutions to the long-standing erosion and flooding problems along ESD. There were no responses to the RFP due to consultant concerns that the work requested was to be conducted outside of the Drainage Act.

Infrastructure and Engineering Services (IES) has been increasingly monitoring road, dike and flooding conditions along ESD. Staff began to notice structural changes to the road and dike in the fall of 2017. As a result of these observations, a geotechnical consulting firm, Golder and Associates, was retained to assess the structural condition of the road and dike. Golder staff drilled a series of boreholes in order to evaluate dike integrity, composition of the road base and saturation levels.

A June 2018 report identified concerns with dike composition, utilities, drainage and lake water flow over the road into the Lakeshore Drain. The report stated that flows over the road, if not addressed, would lead to rapid deterioration and ultimate failure of the dike.

In keeping with the recommendations, Chatham-Kent took immediate action to address water flowing over the dike by installing a row of concrete blocks designed to direct water to predetermined, re-enforced spillways more tolerant to erosion. This approach held up well for a period of time but as water levels continued to rise in 2019, continual shoreline damage and flooding began to take its toll. An August 2019 storm resulted in heavy damage to some lake front properties as well as to the road and dike as heavy flows of water persisted for a prolonged period. Immediate repair work was initiated to stabilize the dike and roadway. This included reducing the road to a single lane and restricting traffic to one way. Work also included the development of more robust spillways and additional clay backfill placed behind the concrete blocks.

From January through March of 2020, high lake levels were observed along with a forecast of escalating lake levels. Following repeated wave attack and flooding events, staff observed additional longitudinal cracking in the asphalt surface of the road. Closer inspection also revealed extensive toe erosion along the entire length of the Lakeshore Drain. As a result, IES requested further input from Golder Associates regarding these structural changes. Golder visited the site with staff and were very concerned that the dike was in serious jeopardy of breach if a sustained high wind and wave event was to occur. Based on the advice provided by Golder, administration recommended that there were life safety concerns present and that immediate action was required. Accordingly, Council voted unanimously to close the road effective March 9, 2020. This action

allowed emergency work to be expedited to preserve the integrity of the dike. Two public meetings were held on March 3, 2020 to detail next steps of the project and to discuss any resident concerns.

The subsequent construction work, completed by Chatham-Kent Public Works, involved moving the concrete block curbing further toward the south, increasing the block height, reducing and fortifying the number of spillways, and adding additional clay backfill behind the concrete curbing.

The Golder report emphasized that “the current rehabilitative measures put in place are considered to be short-term and additional longer-term measures are recommended.” On April 6, 2020, Council passed a motion to reopen ESD as a one-way, local traffic only road with associated restrictions, as a short-term solution and further, requested long-term proposals by May 4, 2020.

Comments

Options 2-1(a) to 2-1(c) of the Zuzek report recommends the use of the Drainage Act to develop community scale shoreline protection and dike upgrades for ESD. Conceptual sketches developed by Zuzek Inc. and Chatham-Kent Engineering were presented to Council on March 13, 2020 and are included in the report. The Drainage Act is a formalized legal process that provides rights to petitioners, assessed owners, and includes the provision for an appeal process.

It is recommended that residents of ESD initiate and sign a petition under Section 4 of the Drainage Act (Appendix B). This is consistent with the recommendation provided at the November 29, 2017 public meeting and to Council on December 11, 2017.

Upon receipt of the petition, administration will recommend the appointment of a qualified Drainage Engineer to initiate a preliminary report under Section 10 of the Drainage Act. Considering the large scope and complexity of this endeavor, a preliminary report is the most logical approach because it will include high-level design concepts and cost estimates for the proposed work. Most importantly, it will provide a proposal on the distribution of costs to each benefitting landowner. Regulatory and environmental concerns will also be addressed early in the process. Section 10 directs the engineer to consider the “cost benefit” in his/her analysis of the work being contemplated.

Per the Drainage Act, Section 4, a petition is valid for area to be drained if signed by:

- a) the majority in number of the owners, as shown by the last revised assessment roll of lands in the area, including the owners of any roads in the area, or
- b) the owner or owners, as shown by the last revised assessment roll, of lands in the area representing at least 60 per cent of the hectarage in the area;

The validity of a petition is determined exclusively by the appointed Drainage Engineer

Due to the current conditions and short term nature of the diking repairs recently completed along ESD, it is recommended that the ESD residents and inland owners submit a petition to the Municipal Clerk within 60 to 90 days (July/2020).

Areas of Strategic Focus and Critical Success Factors

The recommendation in this report supports the following areas of strategic focus:

- Economic Prosperity:
Chatham-Kent is an innovative and thriving community with a diversified economy
- A Healthy and Safe Community:
Chatham-Kent is a healthy and safe community with sustainable population growth
- People and Culture:
Chatham-Kent is recognized as a culturally vibrant, dynamic, and creative community
- Environmental Sustainability:
Chatham-Kent is a community that is environmentally sustainable and promotes stewardship of our natural resources

The recommendation in this report supports the following critical success factors:

- Financial Sustainability:
The Corporation of the Municipality of Chatham-Kent is financially sustainable
- Open, Transparent and Effective Governance:
The Corporation of the Municipality of Chatham-Kent is open, transparent and effectively governed with efficient and bold, visionary leadership
- Has the potential to support all areas of strategic focus & critical success factors
- Neutral issues (does not support negatively or positively)

Consultation

Legal Services was consulted on this report.

Financial Implications

There will be financial implications in the event a valid petition is achieved. It is likely Chatham-Kent will be assessed a portion of the costs for the Erie Shore Drive road allowance but actual amounts are not known until a formal project is designed and costs estimated.

Until the long term proposal is in place, Chatham-Kent will continue to maintain the short term solution currently in place, at significantly higher costs than is the norm for roads and dikes.

Prepared by:

Reviewed by:

Tim Dick, C.E.T.
Director
Drainage, Asset and Waste Management

Thomas Kelly, P. Eng., MBA
General Manager
Infrastructure and Engineering Services

Consulted:

John Norton
GM, Community Development

REF: P:\RTC\Infrastructure and Engineering\I & ES\2020\4229 - Appendix A - Erie Shore Drive - Future Direction.docx



Ministry of Agriculture,
Food and Rural Affairs

Petition for Drainage Works by Owners Form 1

Drainage Act, R.S.O. 1990, c. D.17, clause 4(1)(a) or (b)

This form is to be used to petition municipal council for a new drainage works under the *Drainage Act*. It is not to be used to request the improvement or modification of an existing drainage works under the *Drainage Act*.

To: The Council of the Corporation of the _____ of _____

The area of land described below requires drainage (provide a description of the properties or the portions of properties that require drainage improvements)

In accordance with section 9(2) of the *Drainage Act*, the description of the area requiring drainage will be confirmed or modified by an engineer at the on-site meeting.

As owners of land within the above described area requiring drainage, we hereby petition council under subsection 4(1) of the *Drainage Act* for a drainage works. In accordance with sections 10(4), 43 and 59(1) of the *Drainage Act*, if names are withdrawn from the petition to the point that it is no longer a valid petition, we acknowledge responsibility for costs.

Purpose of the Petition (To be completed by one of the petitioners. Please type/print)

Contact Person (Last Name)	(First Name)	Telephone Number ext.
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Address	
Road/Street Number	Road/Street Name

Location of Project			
Lot	Concession	Municipality	Former Municipality (if applicable)

What work do you require? (Check all appropriate boxes)

- Construction of new open channel
- Construction of new tile drain
- Deepening or widening of existing watercourse (not currently a municipal drain)
- Enclosure of existing watercourse (not currently a municipal drain)
- Other (provide description ▼)

Name of watercourse (if known)

Estimated length of project

General description of soils in the area

What is the purpose of the proposed work? (Check appropriate box)

- Tile drainage only Surface water drainage only Both

Petition filed this _____ day of _____, 20__

Name of Clerk (Last, first name)	Signature
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- Your municipal property tax bill will provide the property description and parcel roll number.
- In rural areas, the property description should be in the form of (part) lot and concession and civic address.
- In urban areas, the property description should be in the form of street address and lot and plan number if available.
- If you have more than two properties, please take copy(ies) of this page and continue to list them all.

Number	Property Description
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Ward or Geographic Township	Parcel Roll Number
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I hereby petition for drainage for the land described and acknowledge my financial obligations.

Ownership

Sole Ownership

Owner Name (Last, First Name) (Type/Print)	Signature	Date (yyyy/mm/dd)
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Partnership (Each partner in the ownership of the property must sign the petition form)

Owner Name (Last, First Name) (Type/Print)	Signature	Date (yyyy/mm/dd)

Corporation (The individual with authority to bind the corporation must sign the petition)

Name of Signing Officer (Last, First Name) (Type/Print)	Signature
Name of Corporation	I have the authority to bind the Corporation. Date (yyyy/mm/dd)
Position Title	

Number	Property Description
--------	----------------------

Ward or Geographic Township	Parcel Roll Number
-----------------------------	--------------------

I hereby petition for drainage for the land described and acknowledge my financial obligations.

Ownership

Sole Ownership

Owner Name (Last, First Name) (Type/Print)	Signature	Date (yyyy/mm/dd)
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Partnership (Each partner in the ownership of the property must sign the petition form)

Owner Name (Last, First Name) (Type/Print)	Signature	Date (yyyy/mm/dd)

Corporation (The individual with authority to bind the corporation must sign the petition)

Name of Signing Officer (Last, First Name) (Type/Print)	Signature
Name of Corporation	I have the authority to bind the Corporation. Date (yyyy/mm/dd)
Position Title	

<input type="checkbox"/> Check here if additional sheets are attached	Clerk initial
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Petitioners become financially responsible as soon as they sign a petition.

- Once the petition is accepted by council, an engineer is appointed to respond to the petition. *Drainage Act*, R.S.O. 1990, c. D. 17 subs. 8(1).
- After the meeting to consider the preliminary report, if the petition does not comply with section 4, the project is terminated and the original petitioners are responsible in equal shares for the costs. *Drainage Act*, R.S.O. 1990, c. D. 17 subs. 10(4).
- After the meeting to consider the final report, if the petition does not comply with section 4, the project is terminated and the original petitioners are responsible for the costs in shares proportional to their assessment in the engineer's report. *Drainage Act*, R.S.O. 1990, c. D. 17 s. 43.
- If the project proceeds to completion, a share of the cost of the project will be assessed to the involved properties in relation to the assessment schedule in the engineer's report, as amended on appeal. *Drainage Act*, R.S.O. 1990, c. D. 17 s. 61.

Notice of Collection of Personal Information

Any personal information collected on this form is collected under the authority of the *Drainage Act*, R.S.O. 1990, c. D. 17 and will be used for the purposes of administering the Act. Questions concerning the collection of personal information should be directed to: where the form is addressed to a municipality (*municipality to complete*)

and where the form is addressed to a territory without municipal organization, the Drainage Coordinator, Ministry of Agriculture, Food and Rural Affairs, 1 Stone Rd W, Guelph ON N1G 4Y2, 519 826-3552.