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# 2022 Business Plan & Budget

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## Transportation Services

### Prior Year Accomplishments

#### Economic Prosperity & Innovation

- 10 Year Capital Program for Roads/Bridges
- 10 Year Equipment Replacement Strategy
- 10 Year Housing Strategy

#### Sustainable Growth

##### Administration:

In the area of general administration, the following accomplishments were achieved:

- Issued the following permits within Northumberland County (as of September 8, 2021)
  - 19 Entrance Permits
  - 50 Setback Permits
  - 37 Permission to Open Cut Permits
  - 46 Permission to Enter Permits
  - 15 Permission to Bore Permits
  - 108 Wide Load Annual Permits
  - 47 Wide Load Single Permits
  - 0 Special Event Permit
- Continued review and assessment of department operating structure
- Continued management of County issued permits
- Continued implementation of GIS Cooperative strategic plan initiatives
  - On-going data collection, updates, and maintenance to County geodatabase
  - Continued GIS support for County departments, including TWF, Forestry, Paramedics and Social Services
  - On-going development and maintenance of internal and external GIS Web applications
  - Continued development and maintenance of Cadastral Parcel Fabric project
  - On-going maintenance of road network and Fires Services data for all of Northumberland County



- Implementation and maintenance of asset data contained in Asset Management Software
- Implemented Esri Multi-jurisdictional Enterprise License Agreement, including the County and six (6) member municipalities.
- Provided year-round GIS services to the public and consultants
- Implemented GIS Municipal Services Agreements with three (3) local municipalities and provided ad-hoc services to remaining member municipalities, including integration with Asset Management software solutions
- Completed database upgrades to support hosting member municipalities data
- Developed Data Collection Story Map for circulation to municipal staff and Councils
- In-house designs for drainage improvements on various County Roads
- Delivery of 2021 Capital Construction Program – 13.20 km
- Delivery of 2021 Surface Treatment Program – 107 km
- Continued to provide technical support for implementation and roll-out of Cityworks asset management software
- Continued with development of County Asset Management Plan for core assets to be complete by July 1, 2022, as per O.Reg.588/17
- Completed a storm sewer inventory and updated the County GIS with funding received through FCM for Asset Management Data Collection
- Completed a guiderail inventory and updated the County GIS
- Continued to seek and apply for any applicable funding for County projects
- Continued to call joint tenders, RFP's/RFQ's for the benefit of County and member municipalities including but not limited to:
  - Annual Culvert Supply
  - Microsurfacing
  - Crack Sealing
  - Pavement Markings
  - Engineering, Environmental and Architectural Roster
  - Biennial Bridge Inspections (OSIMs)
- Finalized the Master Drainage Plan in conjunction with Ganaraska Region Conservation Authority, Town of Cobourg and Township of Hamilton for County Road 2
- Completed review of the GIS/Asset Management Group including the managed service agreements with member municipalities and a review of the County's Surface Treatment Program through the Modernization Funding Program
- Developed a Vegetation Management Committee to review current practices for removing vegetation around guiderails on County Roads and developed various alternatives going forward

## **Road Operations and Maintenance**



### **Winter Maintenance:**

In the area of winter maintenance, the following accomplishments were achieved:

- Sanding and salting, snow plowing, snow removal, culvert thawing and road patrol – meeting or exceeding compliance with the Minimum Maintenance Standards for major County roads
- Seasonal staff engaged to support our night shift resulting in 24-hour service to major roads
- Snow removal in all towns and villages enhancing safety and sight lines. Removal was done a minimum of one time and up to three times in the following villages and towns: Castleton, Harwood, Cold Springs, Warkworth, Dartford, Centreton, Plainville, Camborne, Grafton, Roseneath, Gores Landing, and Campbellford.
- Annual calibration of all snowplow combination units
- Approximately 2,357 tonnes of treated salt, 2,747 tonnes of rock salt, and 13,050 tonnes of winter sand used
- Cobourg, Morganston, Plainville, Brighton, Roseneath and Seymour domes required refilling during the winter season
- Continued work on joint tenders through shared services initiatives.

### **Roadside Maintenance:**

In the area of roadside maintenance, the following accomplishments were achieved:

- Tree removal, brushing, ditching, mowing, litter pickup
- Ditching and berm removal on shoulders
- All drainage survey and construction layout completed by in house staff
- Annual roadside mowing and weed removal at intersections, around safety devices and signs completed by in-house and contracted staff
- Annual roadside litter pickup was cancelled this year due to the Covid-19 pandemic.

### **Hardtop Maintenance:**

In the area of hardtop maintenance, the following accomplishments were achieved:

- Shoulder grading, catch basin cleaning, cold mix patching, sweeping
- Two (2) oil grit separators flushed and cleaned
- Completed minor road repairs using asphalt and cold mix asphalt
- Staff spent most of May and June sweeping, flushing and picking up winter sand in all towns and villages
- Approximately 22 new driveway entrances installed



### **Surface Treatment Program:**

In the area of surface treatment, the following accomplishments were achieved:

- Surface treated 107 km of Municipal and County roads, including:
  - 91 km for area municipalities (Trent Hills, Alnwick/Haldimand, Hamilton, Cramahe, Port Hope)
  - 1,065,425 litres of emulsion for area municipalities
  - 16 km of County Roads
  - 221,680 litres of emulsion for County roads
  - Total emulsion used is 1,287,105 litres

### **Traffic Safety Measures:**

In the area of Traffic Safety Measures, the following accomplishments were achieved:

- Repair of damaged post and cable, and steel beam guide rail
- Inspected and updated County's inventory of approximately 5,256 regulatory and warning road signs on all County Roads to ensure they meet the Provincial Standard for retro-reflectivity
- Replacement of approximately 94 damaged and non-reflective signs as of September 7, 2021.
- Continued routine maintenance of traffic signals
- Reviewed & continued to monitor portable radar speed sign data and locations
- Installed portable radar speed signs at four (3) locations and the Black Cat Radar device at twelve (12) locations, (As of September 1st in 2021) based on speeding concerns from the public and/or Police Services
- Completed 2021 pavement markings including:
  - 375 Turn Arrows
  - 282 Stop Blocks
  - 10 Slow Aheads
  - 17 School Aheads
  - 10 Stop Aheads
  - 2800 m of Crosswalks
  - 75 Bicycle Path Symbols
  - 16 Crosswalks (school, pedestrian)
  - 8 Railway Crossings
  - 12 Railway Stops
  - 2100 m of Hatching Areas
  - 20 Pavement Marking Numerals
  - 5 Hamlet Treatment Approaches



- 520 kms of yellow line (solid, dashed, skip, etc.)
- 910 kms of white lines (solid, dashed, skip, etc.)
- Completed a performance review of the line painting contractor to confirm adherence to specifications

#### **Culvert and Bridge Maintenance:**

In the area of culvert and bridge maintenance, the following accomplishments were achieved:

- Completed washing and flushing of bridges and structures

#### **Capital Housing and Equipment**

In the area of capital equipment acquisitions, the following purchases were completed to maintain and upgrade our road maintenance equipment:

- One (1) – Etnyre Asphalt Distributor
- One (1) – Etnyre Aggregate Spreader (Carry over from 2020)
- One (1) – 1 ton Truck
- Two (2) –  $\frac{3}{4}$  ton Crew Cab Trucks
- Three (3) –  $\frac{1}{2}$  ton Crew Cab Trucks

A full operational review was initiated in 2019 to establish direction for the future. This review is anticipated to be complete in 2021. In addition, a feasibility study/needs assessment for a Joint Operations Facility was initiated in late 2021 to review existing operational facilities and determine requirements for expanded and/or new facilities to accommodate operations to meet growth rates to 2051. As such, the base funding in the amount of \$275,000 allotted for 2021 for capital housing was moved into the transportation reserves to be used in the future based on the outcome of these studies. An additional \$275,000 will be placed into reserves for the 2022 budget to continue funding the future capital housing.

#### **Capital Works Construction Program**

The capital works program is divided into four main areas: Pavement Rehabilitation and Maintenance, Traffic Safety Measures, Bridge Rehabilitation and Maintenance, and Service Expansion.



### **Pavement Rehabilitation and Maintenance:**

The following capital projects were completed as part of our requirements to maintain and improve the road network:

- 2021 Paving Tender 13.20 km
  - County Road 8 - Catchmore Road to Wingfield Road (pulverize + 100mm) (5.6 km)
  - County Road 30 - County Road 26 to 401 (CIP + 100 mm) (2.5 km)
  - County Road 45 - Community Centre Road to County Road 74 (pulverize + 100mm + drainage improvements) (0.50 km)
  - County Road 74- County Road 2/10 (Welcome) to County Road 28 (CIP + 100mm) (3.8 km)
  - County Road 20 (Elgin Street) - Ontario Street to Division Street (paving north lane and CB adjustment) (0.8 km)
  - Various padding locations throughout the County
- 2021 Microsurfacing Tender (15.9 km)
  - County Road 23 - Eddystone Road to Massey Road
  - County Road 29 - Glover Road to County Road 30
  - County Road 26 - Hwy 401 to Dalwood Road
  - County Road 9 - County Road 45 to Beagle Club Road
  - County Road 18 - Donaldson Road to FF#4325
  - County Road 45 - Baxter Road to Merrill Road
  - County Road 45 - 200m south of County Road 25 to 1200m south of County Road 25
- 2021 Crack Sealing Tender (24.1 km) Completed approximately 90,039 meters of crack sealing on the following roads:
  - County Road 74 from County Road 18 to County Road 45 (4.8 km)
  - County Road 9 from County Road 18 to County Road 15 (4.0 km)
  - County Road 25 from West Street to Newman Road (1.5 km)
  - County Road 28 from FF# 4911 to FF# 3115 (3.6km)
  - County Road 45 from Baxter Road to 1.2km south of County Road 25 (8.4 km)
  - County Road 50 from 9<sup>th</sup> Line West to 10<sup>th</sup> Line West (1.8 km)
- Initiated EA and detailed design for County Road 64 road reconstruction project jointly with the Municipality of Brighton

### **Traffic Safety Measures:**

- Traffic Signals



- Installation of three (3) new UPS battery back-up systems in Campbellford at County Road 50 and County Road 30 (Queen Street and Grand Road), County Road 8 and County Road 38 (Bridge Street and Front Street), and County Road 8 and Doxsee Street (Bridge Street and Doxsee Street) to allow signal operations up to 6 hours in a power failure situation
- Design and implementation of new signal timing at the three traffic signals in Campbellford to improve traffic flow over the bridge including new GPS time clocks and controllers in each of the three cabinets
- Upgrades to comply with the Accessibility for Ontarians with Disabilities Act (AODA) including installation of Audible Pedestrian Signals (APS) and tactile walking plates at the following pedestrian crossings:
  - Elgin Street and Frei Street
  - Elgin Street and Rogers Road
- Replacement of traffic heads and LED lights at various traffic signals throughout the County
- Completed design and installation of approximately 3,925 metres of steel beam guiderail on County Roads (3-Cable Guide rail will no longer be installed on County Roads because of changes to OPS and MTO standards, except for minor repairs to existing post and cable)
- Continued to review and implement safety improvements identified in the TMP (i.e., Hamlet Entry Treatments, high collision intersections, etc.)
- Intersection Improvements:
  - Completed implementation and construction of modifications to County Road 45/Van Luven Road intersection including drainage improvements and installation of turning lanes
  - Continued detailed design for improvements on County Road 18 at the intersections of Danforth Road and Telephone Road in Hamilton Township
  - Continued feasibility study for improvements to the County Road 2/10/74 intersection in Welcome based on the recommendations from the Intersection Safety Review completed in 2019
- Reviewed and continue monitoring radar speed sign data and locations
  - Implemented traffic calming measures (pavement markings) on County Road 2A (Albert Street) in the village of Hastings.
  - Purchased an additional set of radar speed signs to rotate through hamlets as part of hamlet traffic calming treatments
- Developed and implemented a County Wide Speeding Awareness Campaign jointly with member municipalities and Police Services. The campaign slogan was 'Slow Your Roll Northumberland' and included the following strategies:
  - Radio and Print ads
  - Roadside Signage
  - Website and Social Media



- Digital pledge from residents to 'Slow their roll' and receive a window cling to install on their vehicle
- Prince Edward Street (County Road 64) at-grade crossing safety improvements
  - Successful in receiving funding from Transport Canada to complete detailed design and implement the at-grade crossing safety improvements (application submitted in summer 2019 in partnership with CNR, CPR and the Municipality of Brighton)
  - Completed a funding application to Transport Canada for communication and promotion of the at-grade crossing safety improvements and was successful in receiving funding
  - Completed detailed design for the at-grade crossing safety improvements and implemented improvements in coordination with CNR and CPR in late 2021
  - Implemented communication and promotion plan for the at-grade crossing safety improvements and general railway safety in coordination with Operation Lifesaver

#### **Bridge Rehabilitation and Maintenance:**

- Completed the Dartford Bridge rehabilitation on County Road 24
- Completed detailed design, tender preparation, and approvals for the Hickerson Culvert Replacement on County Road 45 in Baltimore
- Initiated Municipal Class Schedule 'A' EA and detailed design for the rehabilitation of Braithwaite Bridge on County Road 24
- Initiated feasibility study and subsequent detailed design and tender preparation for the County Road 45 retaining wall in Baltimore
- Completed minor culvert rehabilitation on four large culverts
- Completed various minor repairs to various structures

#### **Service Expansion:**

- County Road 2 EA Implementation
  - County Road 2 – phase II implementation between Rogers Rd and New Amherst Boulevard was anticipated to commence in 2019 pending approvals and coordination with the developer, however, the development was put on hold. It was re-initiated in late 2020 and the County was working with the developer on updates to the design and timing of construction. It was further put on hold by the developer in early 2021. Planning and design for the remainder of Phase II and for the Waterfront Trail in Phases III through V was initiated in 2020 and is on-going.
- Cycling Master Plan (CMP) Implementation
  - Continue with long term implementation goals





- Continue to partner with the Town of Cobourg to find and apply to any available funding to continue the Multi-use trail on Elgin Street from William/Burnham Street to east of Ontario Street
- Provide on-going support to Communications and Economic Development and Tourism Departments to promote cycling routes within the County
- Partnered with the Waterfront Regeneration Trust (WRT), Municipality of Port Hope and Peterborough County to establish a signed trail expansion of the Great Lakes Waterfront Trail into Peterborough County
- Removed surface treated shoulders on County Road 18 and replaced with asphalt from County Road 74 to County Road 9 (3.0 km), which is part of the Rice Lake Ramble Cycling Route
- Trent River Crossing (Campbellford Bridge) Implementation
  - Continued with detailed design for the new crossing as per the approved EA
  - Prepared and filed an addendum to the EA for a roundabout on the west side of the river at the intersection of Grand Road and Alma Road
  - Completed 30% detailed design for both the road and bridge
  - On-going public and agency consultation through 60% detailed design stage
- Transportation Master Plan (TMP) Implementation
  - Completion of the Draft economic impact study and business case for the extension of GO services to Northumberland County. The Study is anticipated to be finalized in late 2021
  - Continued with feasibility/conceptual design study for the relocation of the EDR in Cramahe and Brighton anticipated to be complete in late 2021
  - Initiated review and development of a Rural Intersection Street Light Policy with anticipated completion in 2021
  - On-going review and development of various policies including Sign Policy and ATV Policy

## **Thriving & Inclusive Communities**

- Continued to consult public on various transportation related projects in 2021
- Continued to inform the public of upcoming construction dates, road closures, changes to area speed limits, etc. through the mobilization of the County's four (4) electronic message board signs
- Received and responded to public inquiries and complaints related to transportation
- Continued to maintain and develop working relationships with member municipalities, Alderville First Nation, neighbouring municipalities and other organizations such as MTO, MECP, Conservation Authorities, OPP, Cobourg and Port Hope Police Services, etc.



- Representation on various committees and working groups such as Inter-Municipal Public Works Committee, Agricultural Advisory Committee, Waterfront Trail Committee, Safe Communities, Vegetation Management Advisory Committee, etc.

## **Leadership in Change**

- Completed staff training in the following areas for one or more staff members:
- Training:
  - OGRA Guelph Road School, TJ Mahoney Course
  - Compliance training of staff involved in winter maintenance operations
  - Health and Safety Training
  - LEAN White/Yellow/Green Belt Training
  - Accessible Word & Powerpoint Document Training
  - eSCRIBE Training
  - Public Works Leadership Development (PWLD) Program Training
  - C.S. Anderson Road School, Municipal Road Design & Construction
  - Traffic Protection
  - Excavator and Grader Training
  - CVOR/Hours of Work Training
  - Chainsaw Training
  - Snowplow Training
- Workshops/Seminars:
  - Municipal Class Environmental Assessment (MCEA) Amendments Update
  - NAMS+ Lifecycle Modelling and AM Maturity Assessments
- Conferences:
  - Annual ROW Management Conference
  - Transportation Association of Canada (TAC) Conference
  - Esri Virtual User Conference
- Continued with departmental succession planning

## **2022 Service Objectives & Initiatives**

### **Economic Prosperity & Innovation**

- 10 Year Capital Program for Roads/Bridges
- 10 Year Equipment Replacement Strategy



- Operational Review and development of a 10 Year Housing Strategy

## **Sustainable Growth**

### **Transportation Services Division Objective:**

To provide a safe and sustainable transportation network which meets or exceeds the needs of the travelling public and to support the movement of goods and services within the County of Northumberland.

### **Administration:**

- Continue to review and assess the new department operating structure
- Continue management of County issued permits
- Continue implementation of GIS Cooperative strategic plan initiatives
  - On-going data collection, updates and maintenance to County geodatabase
  - Continued GIS support for County departments, including Forestry, Planning, Social Services and Paramedics
  - On-going development and maintenance of internal and external GIS Web applications for the County and member municipalities
  - Continue development and maintenance of Cadastral Parcel Fabric project
  - On-going maintenance of road network and Fire Services data for all of Northumberland County
  - Implementation and maintenance of asset data contained in Asset Management Software
  - Provide year-round GIS services to the public, consultants and area municipalities through the permanent GIS Coordinator positions
  - On-going administration of the Esri Multi-jurisdictional Enterprise License Agreement, including the County and six (6) member municipalities.
  - On-going implemented of GIS Municipal Services Agreements with three (3) local municipalities and provided ad-hoc services to remaining member municipalities, including integration with Asset Management software solutions
  - Creation of Open Data Hub as per the County's Digital Strategy
- In-house designs for drainage improvements on various County Roads
- Delivery of 2022 Capital Construction Program
- Delivery of 2022 Surface Treatment Program
- Continue to provide technical support for implementation and roll-out of Cityworks asset management software
- Complete the County Asset Management Plan by July 1, 2022, as per O.Reg.588/17
- Continue to seek and apply for any applicable funding for County projects



- Continue to call joint tenders, RFP's/RFQ's for the benefit of County and member municipalities including but not limited to:
  - Annual Culvert Supply
  - Roadside Safety Devices
  - Biennial Bridge Inspections (OSIMs)
  - Microsurfacing
  - Crack Sealing
  - Pavement Markings
  - Engineering, Environmental and Architectural Roster

### **Road Operations and Maintenance**

To ensure the consistent delivery of the Winter Control and Roadside Maintenance Program in accordance with the County Winter Control Policy and Province of Ontario Minimum Maintenance Standards O. Reg. 239/02.

#### **Winter Maintenance:**

- In consideration of the extreme weather conditions that may be experienced during the winter season, the Transportation, Waste and Facilities Department will strive to achieve the objectives of the winter control program as approved by County Council to deliver an efficient and effective winter maintenance program
- Meet or exceed all winter maintenance requirements specified in the Provincial *Minimum Maintenance Standards*
- Provide a timely response to winter storms and hazardous road condition situations by proactive road patrols augmented with web based weather reports and radar
- Stockpile necessary winter sand and salt
- Utilize County fleet with units to provide center bare pavement on a timely and efficient basis
- Maintain drainage system during spring thaw with the timely removal of ice and snow
- Annual update of the Salt Management Plan to maintain environmental awareness and compliance

#### **Roadside and Hardtop Maintenance:**

- Meet or exceed all road patrol requirements specified in the *Minimum Maintenance Standards*
- Monitor and make necessary removal of trees and brush.
- Sweep all intersections, bridges, towns, and villages, patch all roads and grade all shoulders.
- Mow grass at all intersections, roadsides, and safety devices.
- Annual catch basin and OGS cleaning, and litter pick up.



- Continue our ditching and drainage issues and upgrades.
- Installation of new driveways for approved entrance permits.

#### **Surface Treatment Program:**

To provide a cost efficient and cost-effective surface treatment program for the benefit of the local municipal and county road networks.

- Anticipated surface treatment of over 120 km of Municipal and County roads

#### **Traffic Safety Measures:**

- Meet or exceed all road patrol requirements specified in the *Minimum Maintenance Standards*
- Maintain center line, edge line, stop blocks, turn arrows, school ahead, bicycle path symbols and slow ahead pavement markings
- Meet or exceed all regulatory sign reflectivity requirements specified in the *Minimum Maintenance Standards*
- Service all signal systems and upgrade and replace defective signs
- Work with the Inter-Municipal Public Works Committee on sign standards

#### **Culvert and Bridge Maintenance:**

- Washing and flushing of bridges and structures

#### **Capital Housing and Equipment**

- The total replacement value of the roads equipment is over \$11 million. A ten-year capital equipment replacement and housing plan has been developed. This ten-year program identifies the following capital equipment purchases in 2022:
  - Two (2) Tandem Combination Snowplow Units
    - (VO62) 2009 Sterling Tandem Combination Snowplow Unit - \$335,000
    - (VO68) 2008 Sterling Tandem Combination Snowplow Unit - \$335,000
  - One asphalt hot box - \$40,000
- The County has been completing routine maintenance and capital repairs to roads housing over the past 10 years, in accordance with the 10 year capital housing plan. Over the past several years, there have been a number of changes from legislative changes, to operational procedures and methodologies, to public expectations. Given these changes, and in the interest of finding the most effective and efficient way to deliver transportation services, a full operational review was initiated in 2019 to establish direction for the future. In addition, a feasibility study/needs assessment for



a Joint Operations Facility was initiated in late 2021 to review existing operational facilities and determine requirements for expanded and/or new facilities to accommodate operations to meet growth rates to 2051. As such, it is proposed to transfer the base funding in the amount of \$275,000 allotted for 2022 capital housing to the transportation reserves to be used in the future based on the outcome of these studies.

## Capital Works Construction Program

The annual updating of the 10-year construction program for the County road system has been prepared. This plan is compiled based on biennial pavement condition index (PCI) inspections, OSIM inspections, traffic volumes, identified safety concerns, previous studies and Master Plans, input from County maintenance and operations staff, as well as our constituent municipalities. The plan covers four main areas in Transportation: Pavement Rehabilitation and Maintenance, Traffic Safety Measures, Bridge Rehabilitation and Maintenance and Service Expansion. In 2022, the Transportation division will continue to look for efficiencies and strive for competitiveness and transparency in the procurement of contracted services for the major construction contracts for Roads and Bridges.

### Pavement Rehabilitation and Maintenance:

- 2022 Proposed Paving Tender

Proposed Location	Length (Km)	Estimated (Cost)
County Road 25 - County Road 29 to County Road 24	4.50	\$2,000,000
County Road 2 - Normar Road to Carruthers Road	3.7	\$1,350,000
County Road 42 - County Road 30 to Seymour/Asphodel Bdry.	3.07	\$1,400,000
County Road 64 - Main Street to Stoney Point Road - Phase 1	7.0	\$650,000
**County Road 18 - County Road 9 to Gores Landing	2.20	\$950,000
<b>TOTAL (non-provisional)</b>	<b>20.47</b>	<b>\$6.35M</b>

\*\* Funded through 2019 one-time gas tax top-up funding

- Miscellaneous padding locations
- 2022 Microsurfacing Tender (pavement preservation) for approximately 15 km of County Roads
- Tender for Completion of approximately 100,000 metres of crack sealing



#### **Traffic Safety Measures:**

- Design and tender for installation of up to 3,000 metres of steel beam guiderail
- Traffic Signal improvements including installation of UPS Battery Back-up and Audible Pedestrian Signals (APS) at various signal locations
- Continue to review and implement safety improvements identified in the TMP (i.e., Hamlet Entry Treatments, high collision intersections, etc.)
- Intersection Improvements:
  - Continue with detailed design, tender preparation, and approvals for intersection improvements in Welcome at County Road 10/2/74 intersection based on safety study recommendations
  - Initiate construction of intersection improvements on County Road 18 at Danforth Road and Telephone Road
  - Continue to investigate and implement measures for Hamlet traffic calming
- Review and continue monitoring radar speed sign data and locations

#### **Bridge Rehabilitation and Maintenance:**

- Completion of Hickerson Culvert replacement
- Completion of the Baltimore Retaining Wall (000053) rehabilitation or replacement
- Complete Municipal Class EA, detailed design and tender preparation for the rehabilitation or replacement of the County Road 45 Retaining Wall (000055)
- Complete Municipal Class EA, detailed design and tender preparation for the rehabilitation of Lot 15 Concession 9 Culvert, located on County Road 25 in Trent Hills
- Completion of design, tender and minor repairs/rehab to various bridges/culverts/retaining walls identified through OSIMs

#### **Service Expansion:**

- County Road 2 EA Implementation
  - County Road 2 – Continue to work with developer on Phase II from Rogers to Wilkins Gate and continue with planning and design for the remainder of Phase II from Wilkins Gate to New Amherst Boulevard.
  - Complete next stage of the Waterfront Trail assessment for Phases III through V as identified in the feasibility study completed as part of the EA
- Cycling Master Plan (CMP) Implementation
  - Continue with long term implementation goals
  - Partner with the Town of Cobourg and apply for any available funding to continue with construction of Multi-use trail on Elgin Street from William/Burnham Street to east of Ontario Street



- Partner with the Town of Cobourg to design and install paved shoulder/bike lane on Brook Road from King Street to Kerr Street Path
- Continue with on-going support to Communications and Economic Development and Tourism Departments to promote cycling routes within the County
- Review recommendations in the TMP with respect to new standards and update the CMP, if necessary.
- Trent River Crossing (Campbellford Bridge) Implementation
  - Continue with detailed design for the new crossing as per the approved EA including the second Public Information Centre (PIC) to be held in 2022.
- Transportation Master Plan (TMP) Implementation
  - Continue discussions with Metrolinx on implementation of recommendations in the GO Expansion Business Case & Economic Impact Study
  - Initiate next steps/seek funding for the relocation of the EDR in Cramahe and Brighton based on findings from the feasibility study completed in late 2021
  - Initiate construction of improvements to County Road 18/Telephone Road and County Road 18/Danforth Road intersections, as per the recommendations in the TMP as two of the high collision intersections in the County.
  - Finalize the Sign and ATV policies initiated in 2020 and continue to review and develop other policies identified in the TMP recommendations.

## **Thriving & Inclusive Communities**

- Continue to consult public on various transportation related projects in 2022
- Receive and respond to public inquiries and complaints related to transportation
- Continue to maintain and develop working relationships with member municipalities, Alderville First Nation, neighbouring municipalities, and other organizations such as MTO, MECP, Conservation Authorities, OPP, Cobourg and Port Hope Police Services, etc.
- Representation on various committees and working groups such as Inter-Municipal Public Works Committee, Agricultural Advisory Committee, Waterfront Trail Committee, Safe Communities, etc.

## **Leadership in Change**

- Complete staff training in various areas for staff members
- Continue with departmental succession planning





## Long Term Plan & Strategic Objectives

### Economic Prosperity & Innovation

- 10 Year Capital Program for Roads/Bridges
- 10 Year Equipment Replacement Strategy
- Conduct a complete Review of Road Operations / 10 Year Housing Strategy

### Sustainable Growth

#### Overall Budget

- Anticipate funding for the 2022 construction program through gas tax funding
- Use a portion of the 2019 and 2021 one time top up gas tax funding to advance future year projects in the Capital budget to 2022 and 2023
- Investigate and apply for any other funding opportunities that arise in 2022 and beyond
- Continue to request levy increase of \$500,000 for the overall base capital construction program as the rate of deterioration of infrastructure will increase without stable base funding
- With the recent and anticipated retirement of several senior level Transportation Services Division staff, there is a crucial need to continue with the implementation of succession planning and to maintain a consistent level of dedicated and professional staff

#### 10 Year Construction Plan

In 2020, County of Northumberland Staff completed the biennial update of the pavement condition index (PCI) survey of the County road system using the evaluation system developed by the Ontario Good Roads Association. The system provides a series of standardized factors used to develop a “snapshot” of the physical condition of the entire road network.

The PCI survey is the foundation for the development of the 10-year road construction program, along with traffic count updates and collision data. According to the MTO procedures and documentation, the PCI should be used to determine the need and timing for a road to be rehabilitated. The results of the 2020 PCI evaluation are summarized in the table below, which includes data from prior years for comparison purposes.

The County enjoyed the significant benefit of receiving Building Canada Funds in 2009 for the Alternate 401 Detour Route, which included 15 km of road rehabilitation as well as various other provincial funding sources such as the Ontario Community Infrastructure Fund (OCIF) through



both formula and application-based funding from 2014 to 2021 and this has contributed to improving the percentage of system adequacy over the years. Several County and Regional governments have an objective to maintain 65-70% of their road system as 'adequate'.

The desirable target for system adequacy is 70% and it is presently at 54% which is a decrease from the 2018 adequacy of 63%. However, this percentage reflects a shift in some of the adequate roads to fair (6-10 year) roads and aligns with the increase in pavement preservation to target road in the 6-10 year range and increase the life expectancy. There has also been a substantial reduction in 'Now rehabilitate' roads from 17% in 2014 to 5% in 2020 as these road sections have been priority in the capital plan over the past 5 years, which reduces high maintenance and operations costs and puts this category close to what should be targeted to reduce maintenance costs while still achieving full life expectancy.

It is important to note that in 2003, only 24% of the County road system was deemed as 'adequate'. While significant progress has been made to reach and the budget is approaching the targeted amount for road rehabilitation and maintenance, the needs in the other areas for safety improvements, bridge rehabilitation and service expansion have grown because of completed and approved Environmental Assessments and the County's first Transportation Master Plan. These needs are outlined in further detail in the Transportation Funding Issue paper, with the intention to focus on these areas in the next ten years.

See the summary Chart 1 of 2020 PCI Road Needs – System Adequacy



## 2020 PCI Road's Needs – System Adequacy

	PCI Rating	2003 KM	%	2006 KM	%	2008 KM	%	2010 KM	%	2012 KM	%	2014 KM	%	2016 KM	%	2018 KM	%	2020 KM	%
<b>Adequate</b>	> 85	121.9	24%	245.2	49%	255.4	51%	280.0	56%	287.6	57%	272.1	54%	305.2	62%	316.7	63%	266.7	54%
<b>6 to 10 Years</b>	76 to 85	152.3	30%	86.1	17%	67.5	13%	76.8	15%	74.7	15%	79.9	16%	83.6	17%	84.1	17%	127.2	26%
<b>1 to 5 Years</b>	56 to 75	209.3	42%	119.9	24%	132.6	26%	113.8	23%	85.4	17%	64.6	13%	29.3	6%	44.8	9%	76.3	15%
<b>NOW - Rehabilitate</b>	1 to 55	19.5	4%	51.5	10%	47.7	9%	32.8	7%	55.5	11%	86.5	17%	75.7	15%	49.0	10%	24.9	5%



### **Thriving & Inclusive Communities**

- Continue to develop and provide public consultation and communication on projects and initiatives
- Receive and respond to public inquiries and complaints related to transportation in an effective and efficient manner
- Continue to maintain and develop working relationships with member municipalities, Alderville First Nation, neighboring municipalities, and other organizations such as MTO, MECP, Conservation Authorities, OPP, Cobourg and Port Hope Police Services, etc.
- Representation on various committees and working groups such as Inter-Municipal Public Works Committee, Agricultural Advisory Committee, Waterfront Trail Committee, Safe Communities, etc.

### **Leadership in Change**

- Complete staff training in various areas for staff members
- Continue with departmental succession planning



Type of Project	Location	2022 Capital Plan		Road Section	Municipality	Length (km)	Estimated
							Cost
1. Pavement Rehabilitation and Maintenance	County Road 25 - County Road 29 to County Road 24 (pulverize + 100mm)			025259/025282	Trent Hills	4.50	\$2,000,000
	County Road 2 - Normar Road to Carruthers Road (pulverize + 100 mm AMEC)			102291/102297	Hamilton	3.7	\$1,350,000
	County Road 42 - County Road 30 to Seymour/Asphodel Bdry. (expanded asphalt + 100mm)			042000/042018	Trent Hills	3.07	\$1,400,000
	County Road 64 - Main street to Stoney Point Road - EA and Design			064000/064017/064043	Brighton	7.00	\$650,000
	**County Road 18 - County Road 9 to Gores Landing (pulverize + 100mm)			018153	Hamilton	2.20	\$950,000
						20.47	
	Miscellaneous Padding						\$100,000
	Crack Sealing						\$100,000
	Design/Geotech/Material Testing/Professional Services						\$100,000
	Pavement Preservation						
	Annual Allowance						<u>\$700,000</u>
							\$7,350,000
2. Traffic Safety Measures	Traffic Control Signals and streetlights						\$100,000
	Guiderail Replacement/Safety Improvements						\$200,000
	Intersection Improvement Program						<u>\$100,000</u>
							\$400,000
3. Bridge Rehabilitation and Maintenance	Bridge Rehabilitation - Tender						
		Hickerson Culvert replacement (45075)	\$ 800,000.00		Hamilton		
		Thompson Bridge Decommissioning/Removal	\$ 125,000.00		Trent Hills		
		Lot 16 Concession 9 Culvert (25213) - Design and Tender	\$ 75,000.00		Trent Hills		
		County Road 45 Baltimore retaining wall (000055) - design and tender	\$ 30,000.00		Hamilton		
		Baltimore Retaining Wall (000053) - replacement	\$ 450,000.00		Hamilton		
			\$ 1,480,000.00				\$1,480,000
	Bridge Reserve (future new bridges or major rehabilitation)						\$50,000
	Trent River Crossing & Arterial Road Network - Design/rehabilitation/construction						\$100,000
	Bridge Inspections (OSIM), structural evaluations, detailed deck conditions surveys						\$100,000
	Bridge/Culvert Maintenance						\$100,000
	Bridge - Time & Material Repairs						<u>\$20,000</u>
							\$1,850,000

\*Chart continues on the following page.



Type of Project	Location	2022 Capital Plan		Road Section	Municipality	Length (km)	Estimated Cost
4. Service Expansion	GIS						\$75,000
	Cycling Master Plan- Implementation						\$50,000
	Transportation Service Improvement needs identified by Transportation Master Plan or other EA Processes						\$150,000
	**Regional Transit - joint with Metrolinx						\$250,000
	Trent River Bridge Crossing (Campbellford) - detailed design, additional studies, property acquisition, etc.						\$100,000
	Locates (On1Call, Promark)						\$30,000
	County Road 2 EA - additional studies (Waterfront Trail EA, detailed design, etc.)						\$55,000
	County Road 18 - Telephone Road and Danforth Road Improvements (turning lanes)						\$3,500,000
	Elgin and Brook Road widening (pending future developments)						\$0
							\$4,210,000
						<b>TOTAL ESTIMATE FOR 2022</b>	<b>\$13,810,000</b>
							<b>AVAILABLE FUNDING</b>
Notes:						Base	\$ 7,860,095
1. Class 3 estimates; subject to final tender results						Gas Tax	\$ 2,699,054
2. Subject to Council budget approval						Gas Tax (remaining 2019 top-up)	\$ 1,900,000
3. Line items noted with ** w ere advanced using 2019 Gas Tax top-up funding						Transfer From Winter Operations	\$ 100,000
						OCIF Formula Funding (2021)	\$ 751,217
						Long Term Capital Plan Increase	\$ 500,000
TOTAL FUNDS SAVED for Trent River Bridge Crossing in 2022			\$200,000				
						Total	\$ 13,810,366

Type of Project	Location	2023 Capital Plan		Road Section	Municipality	Length (km)	Estimated Cost
1. Pavement Rehabilitation and Maintenance	County Road 25 - Cemetery north entrance to Tobacco Road			025119/025139/025162	Cramahe	6.2	\$2,450,000
	County Rd 10 - 4th Line to Cty Rd 2/74 and Cty Road 74 (pulverize + 100 mm, grind and pave in Welcome, storm sewer)			10000/074000	Port Hope	2.00	\$2,500,000
	County Road 64 - Main street to Stoney Point Road - Phase 1			064000/064017/064043	Brighton	7.00	\$2,350,000
	County Road 2 - County Road 10 to Hwy 401 Overpass			102096	Port Hope	1.50	\$600,000
	**County Road 50 - 11th line to Trent River Road			050077/050097/050123	Trent Hills	6.00	\$2,400,000
						22.70	
	Miscellaneous Padding						\$100,000
	Crack Sealing						\$100,000
	Design/Geotech/Material Testing/Professional Services						\$100,000
	Pavement Preservation						
	Annual Allowance						\$455,000
							\$11,055,000
2. Traffic Safety Measures	Traffic Control Signals and Streetlights						\$100,000
	Guiderail Replacement/Safety Improvements						\$200,000
	Intersection Improvement Program						\$100,000
							\$400,000
3. Bridge Rehabilitation and Maintenance	Bridge Rehabilitation - Tender						
	Braithwaite Bridge (24018) - Rehabilitation	\$	1,000,000.00				
	Lot 16 Concession 9 Culvert (25213) - Replacement	\$	700,000.00				
	Burnley Creek Bridge (25261) - Design and Tender	\$	75,000.00				
	County Road 45 Roseneath Retaining Wall (000051) - design and	\$	30,000.00				
	428 Elgin Street Retaining Wall (000042) - design and tender	\$	30,000.00				
	County Road 45 Baltimore retaining wall (000055) - Replacement	\$	100,000.00				
		\$	1,935,000.00				\$1,935,000
	Bridge Reserve (future new bridges or major rehabilitation)						\$50,000
	Trent River Crossing & Arterial Road Network - Design/rehabilitation/construction						\$100,000
	Bridge Inspections (OSIM), structural evaluations, detailed deck conditions surveys						\$55,000
	Bridge/Culvert Maintenance						\$100,000
	Bridge - Time & Material Repairs						\$20,000
							\$2,260,000

\*Chart continues on the following page.



Type of Project	Location	<b>2023 Capital Plan</b>		Road Section	Municipality	Length (km)	Estimated Cost
4. Service Expansion	GIS						\$75,000
	Cycling Master Plan- Implementation						\$50,000
	Transportation Service Improvement needs indentified by Transportation Master Plan or other EA Processes						\$100,000
	**Regional Transit/Joint with Metrolinx						\$250,000
	Trent River Bridge Crossing (Campbellford) - detailed design, additional studies, property acquisition, etc.						\$100,000
	Locates (On1Call, Promark)						\$30,000
	County Road 2 EA - additional studies (Waterfront Trail EA, detailed design, etc.)						\$50,000
	Elgin and Brook Road widening (pending future developments)						\$0
							\$655,000
						<b>TOTAL ESTIMATE FOR 2023</b>	<b>\$14,370,000</b>
							<b>AVAILABLE FUNDING</b>
Notes:						<b>Base</b>	<b>\$ 8,360,095</b>
1. Class 3 estimates; subject to final tender results						<b>Gas Tax</b>	<b>\$ 2,816,405</b>
2. Subject to Council budget approval						<b>Gas Tax (2021 top-up)</b>	<b>\$ 2,594,678</b>
3. Line items noted with ** were advanced using 2021 Gas Tax top-up funding						<b>Transfer From Winter Operations</b>	<b>\$ 100,000</b>
						<b>Long Term Capital Plan Increase</b>	<b>\$ 500,000</b>
TOTAL FUNDS SAVED for Trent River Bridge Crossing in 2023			\$200,000			<b>Total</b>	<b>\$ 14,371,178</b>





Type of Project	Location	2024 Capital Plan		Road Section	Municipality	Length (km)	Estimated Cost
1. Pavement Rehabilitation and Maintenance	County Road 2A - Hastings Village West limit to Bridge St. N (urban area)			002000/002005	Trent Hills	1	\$1,200,000
	County Road 64 - Main street to Stoney Point Road - Phase 2			064000/064017/064043	Brighton	7.00	\$1,850,000
	County Road 31 - bridge east of Townline Road to boundary (storm sewer, pulverize + 60 mm)			031000	Cramahe/AH	<u>1.0</u>	\$1,300,000
						9.00	
	Miscellaneous Padding						\$100,000
	Crack Sealing						\$100,000
	Design/Geotech/Material Testing/Professional Services						\$100,000
	Pavement Preservation						
	Annual Allowance						\$535,000
	Transfer to Transportation Reserve as result of Gas Tax Funding top-up used in 2022/2023						<u>\$2,369,000</u>
							\$7,554,000
2. Traffic Safety Measures	Traffic Control Signals and Streetlights						\$100,000
	Guiderail Replacement/Safety Improvements						\$200,000
	Intersection Improvement Program						<u>\$100,000</u>
							\$400,000
3. Bridge Rehabilitation and Maintenance	Bridge Rehabilitation - Tender						
	Burnley Creek Bridge (25261) - Rehabilitation	\$	1,000,000.00				
	County Road 45 Roseneath Retaining Wall (000051) - replacement	\$	100,000.00				
	428 Elgin Street Retaining Wall (000042) - rehabilitation	\$	100,000.00				
	Burnley Bridge (29080) - Design and Tender	\$	75,000.00				
	45111 Culvert (45111) - Design and Tender	\$	50,000.00				
		\$	1,325,000.00				\$1,325,000
	Bridge Reserve (future new bridges or major rehabilitation)						\$50,000
	Trent River Crossing & Arterial Road Network - Design/rehabilitation/construction						\$200,000
	Bridge Inspections (OSIM), structural evaluations, detailed deck conditions surveys						\$70,000
	Bridge/Culvert Maintenance						\$200,000
	Bridge - Time & Material Repairs						<u>\$20,000</u>
							\$1,865,000

\*Chart continues on the following page.



Type of Project	Location	2024 Capital Plan	Road Section	Municipality	Length (km)	Estimated Cost
4. Service Expansion	GIS					\$75,000
	Cycling Master Plan- Implementation					\$50,000
	Transportation Service Improvement needs indentified by Transportation Master Plan or other EA Processes					\$100,000
	Trent River Bridge Crossing (Campbellford) - detailed design, additional studies, property acquisition, etc.					\$200,000
	Locates (On1Call, Promark)					\$30,000
	County Road 2 EA - additional studies (Waterfront Trail EA, detailed design, etc.)					\$50,000
	County Road 2 EA - Phase II-b - Rogers Road to Lovshin/New Amherst Widening - year 1					\$1,500,000
	Elgin and Brook Road widening (pending future developments)					\$0
						\$2,005,000
					<b>TOTAL ESTIMATE FOR 2024</b>	<b>\$11,824,000</b>
						<b>AVAILABLE FUNDING</b>
Notes:					<b>Base</b>	<b>\$ 8,860,095</b>
1. Class 3 estimates; subject to final tender results					<b>Gas Tax</b>	<b>\$ 2,364,412</b>
2. Subject to Council budget approval					<b>Transfer From Winter Operations</b>	<b>\$ 100,000</b>
					<b>Long Term Capital Plan Increase</b>	<b>\$ 500,000</b>
TOTAL FUNDS SAVED for Trent River Bridge Crossing in 2024		\$400,000				
					<b>Total</b>	<b>\$ 11,824,507</b>



Type of Project	Location	2025 Capital Plan		Road Section	Municipality	Length (km)	Estimated Cost
1. Pavement Rehabilitation and Maintenance	County Road 23 and County Road 2 (Grafton urban area)			023000/102378	Alnwick/Haldimand	1.00	\$1,600,000
	County Road 30 - FF6378 to County Road 35			30332	Trent Hills	1.3	\$650,000
	County Road 26 - County Road 30 to Telephone Road			26000	Brighton	2.3	\$950,000
	County Road 18 - County Road 15 to Corkery Road			18225	Hamilton	1.8	\$750,000
	County Road 50 - Bridge Street to Trent Severn Lock No. 13			50000	Trent Hills	1.8	\$750,000
						8.20	
	Miscellaneous Padding						\$100,000
	Crack Sealing						\$100,000
	Design/Geotech/Material Testing/Professional Services						\$100,000
	Pavement Preservation						
	Annual Allowance						\$800,000
	Transfer to Transportation Reserve as result of Gas Tax Funding top-up used in 2022/2023						<u>\$1,200,000</u>
							\$7,000,000
2. Traffic Safety Measures	Traffic Control Signals and Streetlights						\$200,000
	Guiderail Replacement/Safety Improvements						\$200,000
	Intersection Improvement Program						<u>\$100,000</u>
							\$500,000
3. Bridge Rehabilitation and Maintenance	Bridge Rehabilitation - Tender						
		Burnley Bridge (29080) - Replacement	\$ 1,000,000.00				
		45111 Culvert (45111) - Replacement	\$ 800,000.00				
		25168 Culvert (25168) - Design and tender	\$ 75,000.00				
		Killoran Creek Culvert (25391) - Design and Tender	\$ 75,000.00				
		Ganaraska Culvert (009076) - Design and Tender	\$ 50,000.00				
			\$ 2,000,000.00				\$2,000,000
	Bridge Reserve (future new bridges or major rehabilitation)						\$100,000
	Trent River Crossing & Arterial Road Network - Design/rehabilitation/construction - Year 1 construction						\$200,000
	Bridge Inspections (OSIM), structural evaluations, detailed deck conditions surveys						\$45,000
	Bridge/Culvert Maintenance						\$100,000
	Bridge - Time & Material Repairs						<u>\$20,000</u>
							\$2,465,000

\*Chart continues on the following page.



Type of Project	Location	<b>2025 Capital Plan</b>		Road Section	Municipality	Length (km)	Estimated Cost
4. Service Expansion	GIS						\$75,000
	Cycling Master Plan- Implementation						\$50,000
	Transportation Service Improvement needs indentified by Transportation Master Plan or other EA Processes						\$100,000
	Trent River Bridge Crossing (Campbellford) - detailed design, additional studies, property acquisition, etc.						\$200,000
	Locates (On1Call, Promark)						\$30,000
	County Road 2 EA - additional studies (Waterfront Trail EA, detailed design, etc.)						\$100,000
	County Road 2 EA - Phase II-b - Rogers Road to Lovshin/New Amherst Widening - year 2						\$1,800,000
	Elgin and Brook Road widening (pending future developments)						\$0
							\$2,355,000
						<b>TOTAL ESTIMATE FOR 2025</b>	<b>\$12,320,000</b>
							<b>AVAILABLE FUNDING</b>
Notes:						<b>Base</b>	<b>\$ 9,360,095</b>
1. Class 3 estimates; subject to final tender results						<b>Gas Tax</b>	<b>\$ 2,364,412</b>
2. Subject to Council budget approval						<b>Transfer From Winter Operations</b>	<b>\$ 100,000</b>
						<b>Long Term Capital Plan Increase</b>	<b>\$ 500,000</b>
<b>TOTAL FUNDS SAVED for Trent River Bridge Crossing in 2025</b>			<b>\$400,000</b>			<b>Total</b>	<b>\$ 12,324,507</b>



Type of Project	Location	2026 Capital Plan		Road Section	Municipality	Length	Estimated
						(km)	Cost
1. Pavement Rehabilitation and Maintenance	County Road 28 - County Road 9 to County North Boundary			128119/128140/128161	Hamilton/Port Hope	5.50	\$2,750,000
	County Road 23 -Pete's Road to County Road 22			023091/023108	Alnwick/Haldimand	2.00	\$1,000,000
	County Road 25 - Structure 025104 to Cemetary North Entrance (Urban, grind and pave) and County Road 22 from FF1851 to			025106/022136	Cramahe	1.70	\$1,020,000
	County Road 41 - County Road 30 to County Road 26			041000/041017	Brighton	4	\$1,600,000
	County Road 20 - County Road 18/Burnham Street to Ontario Street			020000	Cobourg	0.73	\$1,400,000
						13.93	
	Misc Padding						\$100,000
	Crack Sealing						\$75,000
	Design/Geotech/Material Testing/Professional Services for 2026/2027 Program						\$75,000
	Pavement Preservation						
	Annual Allowance						\$550,000
							\$8,570,000
2. Traffic Safety Measures	Traffic Control Signals and Streetlights						\$100,000
	Guiderail Replacement/Safety Improvements						\$200,000
	Intersection Improvement Program						\$100,000
							\$400,000
3. Bridge Rehabilitation and Maintenance	Bridge Rehabilitation - Tender						
		Ganaraska Culvert (009076) - Replacement	\$ 1,000,000.00				
		25168 Culvert (25168) - replacement	\$ 600,000.00				
		Killoran Creek Culvert (25391) - replacement	\$ 1,100,000.00				
		Pratt's Mill Bridge (20008) - design and tender	\$ 75,000.00				
		Lot 16 Con 7/8 culvert (009106) - design and tender	\$ 50,000.00				
		Canton Retaining Wall (000033) - design and tender	\$ 30,000.00				
			\$ 2,855,000.00				\$2,855,000
	Bridge Reserve (future new bridges or major rehabilitation)						\$100,000
	Trent River Crossing & Arterial Road Network - Design/rehabilitation/construction - Year 2 Construction						\$200,000
	Bridge Inspections (OSIM), structural evaluations, detailed deck conditions surveys						\$65,000
	Bridge/Culvert Maintenance						\$100,000
	Bridge - Time & Material Repairs						\$20,000
							\$3,340,000

\*Chart continues on the following page.



Type of Project	Location	2026 Capital Plan	Road Section	Municipality	Length (km)	Estimated Cost
4. Service Expansion	GIS					\$75,000
	Cycling Master Plan- Implementation					\$55,000
	Transportation Service Improvement needs indentified by Transportation Master Plan or other EA Processes					\$50,000
	Trent River Bridge Crossing (Campbellford) - detailed design, additional studies, property acquisition, etc.					\$200,000
	Locates (On1Call, Promark)					\$30,000
	County Road 2 EA - additional studies (Waterfront Trail EA, detailed design, etc.)					\$50,000
	Elgin and Brook Road widening (pending future developments)					<u>\$50,000</u>
						\$510,000
					<b>TOTAL ESTIMATE FOR 2026</b>	<b>\$12,820,000</b>
						<b>AVAILABLE FUNDING</b>
Notes:					<b>Base</b>	<b>\$ 9,860,095</b>
1. Class 3 estimates; subject to final tender results					<b>Gas Tax</b>	<b>\$ 2,364,412</b>
2. Subject to Council budget approval					<b>Transfer From Winter Operations</b>	<b>\$ 100,000</b>
					<b>Long Term Capital Plan Increase</b>	<b>\$ 500,000</b>
TOTAL FUNDS SAVED for Trent River Bridge Crossing in 2026		\$400,000				
					<b>Total</b>	<b>\$ 12,824,507</b>



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## 2022 Issue Paper

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### Equipment Replacement Strategy

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#### **Purpose**

The County of Northumberland Transportation Services Division needs to establish and maintain a sustainable equipment replacement strategy. This allows for timely replacement of the equipment necessary to complete winter and summer maintenance on County roads.

#### **Background**

The County of Northumberland has a fleet of 68 vehicles for road maintenance and construction, including snowplows, graders, loaders, backhoes, one tons,  $\frac{3}{4}$  tons and  $\frac{1}{2}$  tons. The Roads department operates out of two maintenance yards equipped with sand domes, salt sheds, garages, equipment, and material storage. The total roads fleet of vehicles has a replacement value of over \$11 million.

The County currently has a fleet of nineteen (19) combination snowplow units, two (2) anti-icing units and one (1) Emulsion distributor and spreader for surface treating operations. The County's Fleet Maintenance and Operations Manual states that "the County will strive to maintain a ten-year replacement schedule for heavy trucks and a five-year replacement for light trucks." An aging fleet is prone to high maintenance costs and more frequent breakdowns, thereby affecting winter snow removal response times, motorist safety and the safety of County Snowplow operators.

In 2008, the County had a fleet of 40 licensed vehicles, and 23% of the County's fleet of heavy vehicles was older than ten years at that time. County Council adopted a plan in 2002 to ensure timely replacement of our equipment to have a reasonable fleet life. The plan that was adopted allowed for a base budget of \$550,000 each year for capital equipment to allow for timely replacement of our fleet without causing fluctuations in the annual budget. However, currently 45% of our heavy vehicles are still older than 10 years and 45% of the light duty vehicles in the County operations are over 7 years in service.

As the required budget has been increasing and exceeding the target set by Council in 2002, the overall roads equipment strategy has been reviewed in further detail in 2020, taking into consideration the current state of the equipment and the cost of new equipment in 2020 and identified as needing to be replaced.



Most of the equipment and vehicles are built in the United States, increasing the cost each year due to the fluctuating Canadian dollar. The number of vehicles/equipment being replaced each year has been reduced to stay within the budget.

During the budget and equipment replacement review in 2020, a revised multi-year strategy was proposed to gradually ramp up the County equipment replacement budget to maintain all vehicles and equipment. The annual budget has increased to between \$600,000 and \$650,000, however, these increases from the original base budget in 2002 do not offset the full cost of inflation for the past 18 years. Staff recommended to maintain the \$650,000 budget for 2021 and in the following three (3) years, staff recommended an additional \$50,000/year to try and meet the approved replacement schedule of 10 years for all heavy trucks, 5 years for light duty trucks, and approximately 20 years for off-road equipment, for a total annual need of **\$800,000** for the next 10 years.

Over the next ten years the proposed cost to replace heavy trucks in accordance with the ten-year replacement strategy is \$6,700,000. With the current funding strategy, there is a shortfall of \$2,680,000 at 2021 costs over the next 10 years to meet this goal.

The replacement of light duty vehicles over the next ten years would require a budget of \$960,000 to reach the 5–6-year vehicle replacement target. With the current funding strategy, there is a shortfall of \$440,000 at 2021 costs over the next 10 years.

The replacement of these light and heavy-duty vehicles is not based on vehicle year alone. To change out the light and heavy vehicles we look at maintenance cost, kilometers used and proposed kilometers within the next year. The kilometers that these vehicles are used for are not highway kilometers. They are short trips, a great amount of idling for road closures along with road maintenance duties, towing and hauling materials.

The off-road equipment staggers on replacement as it is based on the hours of operation, cost of maintenance and normal wear and tear. In most cases, a 20-year replacement program is recommended. In the next 10 years, there is \$1,760,000 proposed for off-road equipment replacement in the current funding strategy, which addresses the needs, however, is one of the reasons there is not enough available funds for the replacement of heavy trucks at 10 years and light vehicles at 5-6 years.

In 2008, the equipment replacement cost for a heavy vehicle (i.e. combination snowplow unit) was \$200,000 and for light duty trucks was approximately \$35,000. Over the last 12 years, the cost for a heavy vehicle has increased approximately 43% while light duty vehicles have increased 35%.

Additionally, increased requirements for Minimum Maintenance Standards (MMS) have forced the County to increase patrolling all year round. As a result, increased winter maintenance



operations for all vehicles, including patrol trucks and snowplows, has added thousands of kilometers to these vehicles each year, in comparison to 2008. In 2019, each County patrol vehicle traveled 50,000 km for winter and summer operations to keep up with minimum maintenance standards. In 2008 the existing maintenance standards involved the patrol trucks to travel approximately 30,000 km per year. In 2019, with the new existing minimum maintenance standards, the patrol trucks are producing 40% more kilometers per year per vehicle. Staff has seen higher maintenance costs once vehicles exceed the fifth year of operation, resulting in poor reliability and vehicle downtime during critical times of the year. This down time results in the vehicle being out of operation for the roads staff responsible for maintenance and patrolling.

Figure 1 below shows how one patrol truck quickly reaches high mileage when traveling throughout the County, maintaining the 503 kilometers of road. In 2020, the heavy and light vehicles owned by the County resulted in a total of 1,147,480km traveled.

Figure 1: Patrol Vehicle Kilometres Driven Per Year from 2014 to 2020

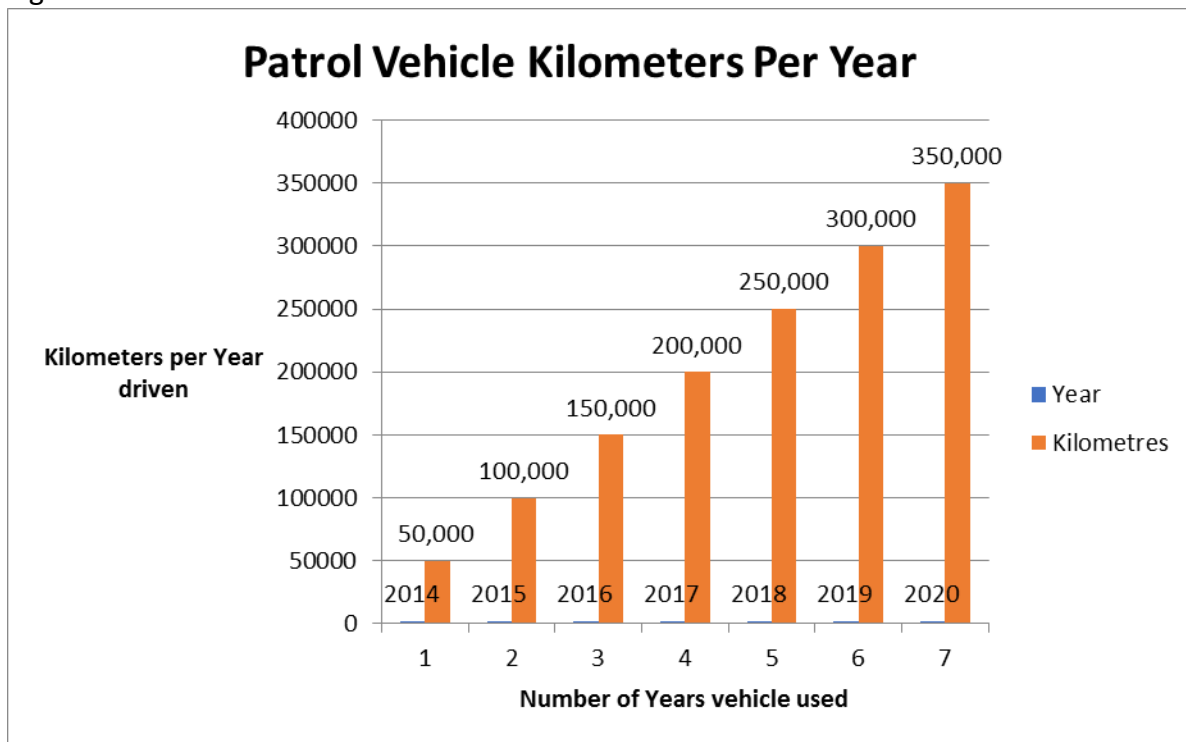


Figure 2 below shows the number of kilometers for one of the snowplow units that maintains a 24 hour plow route in the winter.

Figure 2: Number of kilometres driven per year for a 24-hour plow truck during years of services (14 years)

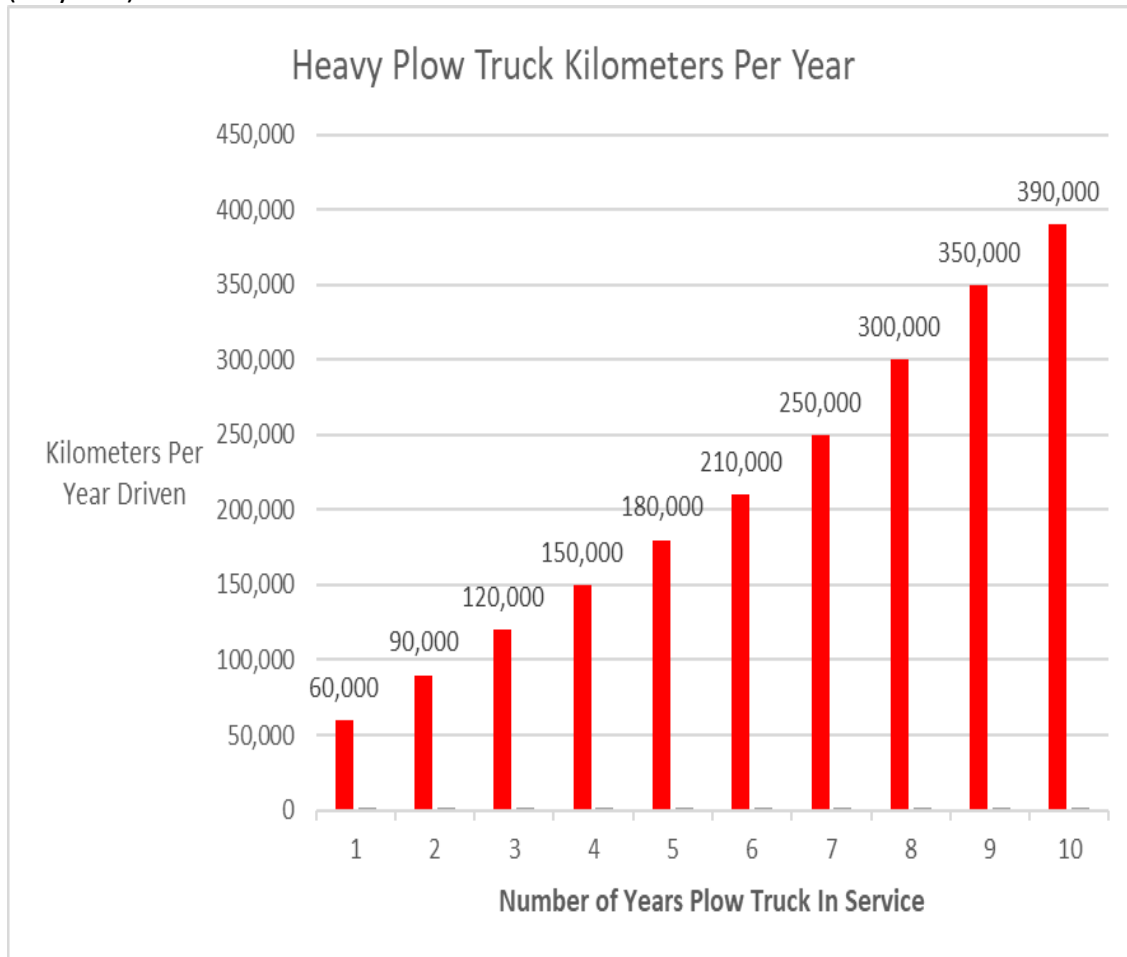
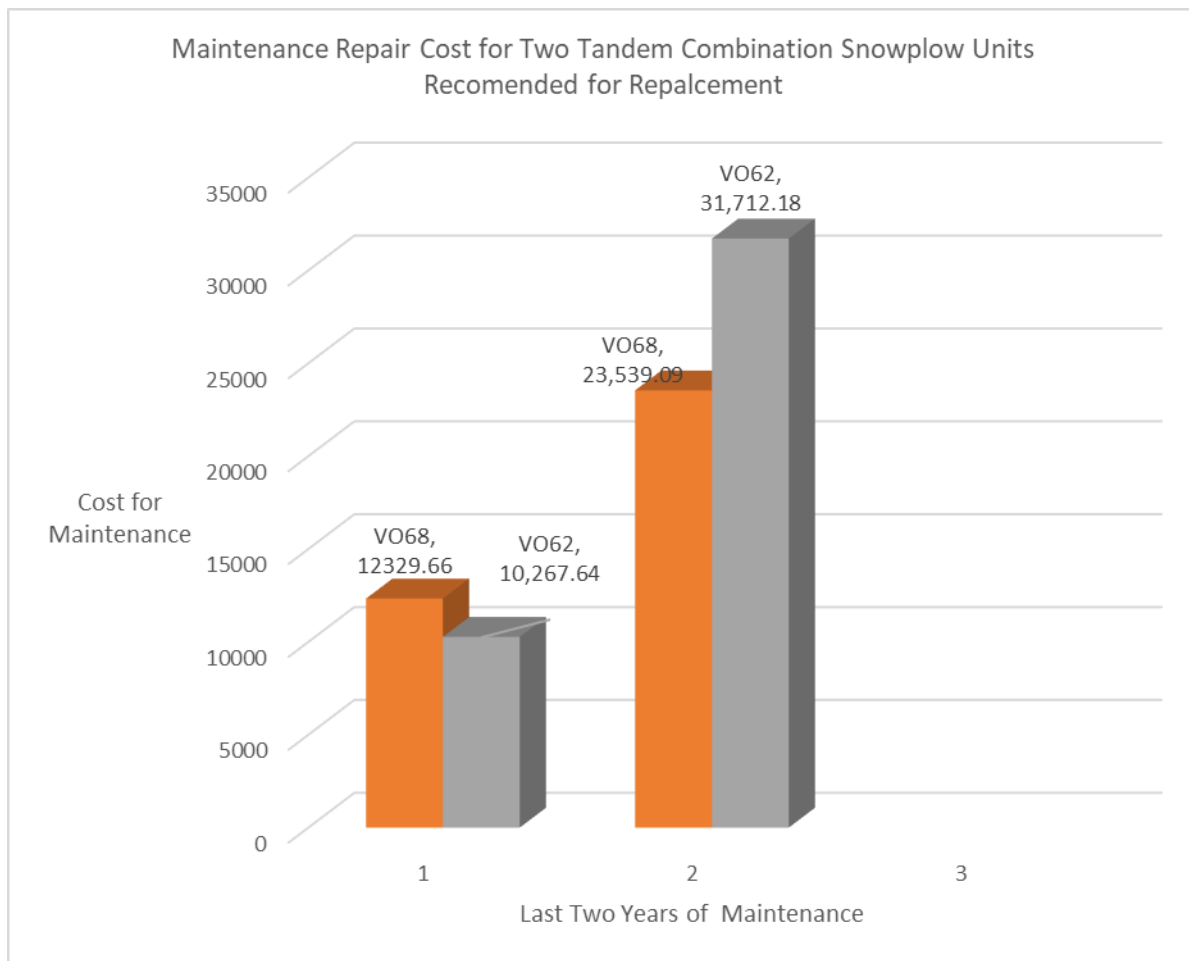


Figure 3: Maintenance and repair costs for the last two years for the two plow trucks recommended for replacement in 2022



## Consultation/Options

The draft 2022 Roads Budget has identified the replacement and investment of one (1) piece of off-road equipment and two (2) heavy duty vehicles.

- Two (2) Tandem Combination Snowplow Units
  - o (VO62) 2009 Sterling Tandem Combination Snowplow Unit - \$335,000
  - o (VO68) 2008 Sterling Tandem Combination Snowplow Unit - \$335,000
- One asphalt hot box - \$40,000



### **Justification for Two Combination Snowplow Units**

The replacement of the 2008 and 2009 combination snowplow units is in keeping with the County fleet replacement policy that “we shall attempt to maintain a ten-year replacement schedule for heavy trucks.” The trucks are 13 and 14 years old, respectively. The 2009 truck is at 293,542km and the 2008 truck has 353,197 kms on all equipment including the plow and wing combination sander dump box. These units have yet to fulfill the Winter season of 2021/2022 and possibly into the Winter season of 2022/2023 so the mileage will be even higher by the time they are replaced.

With the purchase of these two new units, the 2008 and 2009 Sterling plow would be moved into becoming spare units. Two of the older plow trucks in the fleet will be then sold on Gov Deals. To keep the 2008 and 2009 Sterling unit in regular operation it would require major expenditures to remain reliable and in good working order.

With information that has been received by staff of Northumberland County the delivery of a plow truck at this time is 12-14 months delivery.

Staff are recommending replacing these two units, one unit that maintains County Roads sections of 25 all of 35, sections of 30 in Trent Hills (Campbellford) area. The second combination unit maintains all Centreton Road #22 that is part of the EDR route. Other roads this second unit provides service for are #23 along with the section of #25

### **Justification for One Asphalt Hot Box**

An additional asphalt hot box is needed to perform the enormous amount of pothole repair that is needed during winter operations with the temperature variations on the 503 kilometers of Northumberland County roads.

In the 6 months of winter operations, it is extremely difficult to patch the potholes and keep the patching material from freezing and making it pliable to fill the holes as they travel over the roads.

The one Asphalt hotbox that we have now, cannot travel all these roads for three patrol areas, filling potholes in a timely, efficient manner, between winter operation duties.

Staff are recommending that an additional Asphalt Box be purchased in the 2022 equipment budget. This will give increased productivity for pothole repairs in Northumberland County Roads.



### **Sustainability and Reduction of Greenhouse Gases (GHG's)**

The County is currently working on a policy for the reduction of GHG's to meet provincial targets by 2030 and fleet is one of the areas identified in this draft plan. It is anticipated that integration of electric vehicles will be recommended where feasible in the future to contribute to the County's target for GHG reduction.

There are currently no electric units available for purchase that meet the County requirements in light or heavy-duty vehicles. The earliest anticipated availability is the end of 2022 or early 2023 for light duty, with no information on any electric plow units currently. Once the GHG policy is finalized and as electric vehicles become available, this strategy will be reviewed and updated as needed.

### **Financial Impact**

Based on the updated equipment replacement strategy taking into consideration the current number of fleet and replacement costs, the annual need to maintain the replacement of all heavy trucks every 10 years, light trucks every 5 years, and off-road equipment including graders, excavators, backhoes, tractors, trailers, etc. every 20 years is **\$800,000**.

The attached table outlines the updated ten-year Transportation Vehicle and Equipment Purchase and Replacement Plan.

In 2022, the Transportation Services Division is proposing that **\$710,000** be spent on equipment replacement. The proposed 2022 budget for equipment purchases / replacements, and major repairs allows for the following:

- Two (2) Tandem Combination Snowplow Units
  - (VO62) 2009 Sterling Tandem Combination Snowplow Unit - \$335,000
  - (VO68) 2008 Sterling Tandem Combination Snowplow Unit - \$335,000
- One asphalt hot box - \$40,000



### Equipment Replacement (net trade in)

	Vehicle / Unit #	Home Location	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>Heavy Trucks - Tandem</b>												
<b>2003 International Anti-icing</b>	(V028)	Morganston										
<b>2004 Sterling Anti-icing</b>	(V032)	Cobourg										
<b>2005 Sterling Spare</b>	(V035)	Morganston										
<b>2006 Sterling Cobourg</b>	(V042)	Cobourg										
<b>2007 Sterling Morganston</b>	(V047)	Morganston										
<b>2007 Sterling &amp; Distributor</b>	(V046)	Cobourg										
<b>2008 Sterling Cobourg</b>	(V053)	Cobourg										
<b>2009 Sterling Morganston</b>	(V062)	Morganston	\$335									
<b>2008 Sterling Morganston</b>	(V068)	Morganston	\$335									
<b>2010 International Cobourg</b>	(V072)	Cobourg		\$335								
<b>2011 Freightliner Morganston</b>	(V080)	Morganston			\$335							
<b>2012 International Cobourg</b>	(V086)	Cobourg				\$335						
<b>2014 International Morganston</b>	(V089)	Morganston					\$335					
<b>2015 International Cobourg</b>	(V092)	Cobourg						\$335				
<b>2016 International Morganston</b>	(V098)	Morganston							\$335			
<b>2016 International Morganston</b>	(V099)	Morganston								\$335		
<b>2017 Freightliner Morganston</b>	(V003)	Morganston									\$335	
<b>2017 Freightliner Cobourg</b>	(V004)	Cobourg										\$335
<b>2018 Freightliner Cobourg</b>	(V006)	Cobourg										\$335
<b>2018 Freightliner Morganston</b>	(V007)	Morganston										
<b>2019 International Morganston</b>	(V014)	Morganston										
<b>2020 International Cobourg</b>	(V017)	Cobourg										



Miscellaneous Vehicles			2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>Morganston Depot</b>												
<b>2022 Dodge 3/4 ton Quad Cab (V074)</b>	(V022)	Morganston										
<b>2022 Dodge 3/4 ton Crew Cab</b>	(V023)	Morganston										
<b>2022 Ford 1 ton Crew Cab</b>	(V024)	Morganston										
<b>2017 Ford 1 ton Crew Cab</b>	(V005)	Morganston						\$ 65			\$60	
<b>Cobourg Depot</b>												
<b>2012 Ford F550 Mechanics</b>	(V083)	Cob. Shop							\$ 190			
<b>2013 Dodge 1/2 ton Crew Cab</b>	(V090)	Cob. Shop			\$55							
<b>2016 Chevy 1 ton Crew Cab</b>	(V001)	Patrol 1			\$55							
<b>2016 GMC 1 ton Crew Cab</b>	(V002)	Patrol 1			\$55							
<b>Night Patrol</b>												
<b>2018 Dodge 1/2 ton Crew Cab</b>	(V011)	Cobourg								\$55		
<b>2014 Dodge 1/2 ton Crew Cab</b>	(V094)	MD.		\$55								
<b>2021 Dodge 1/2 ton Quad Cab</b>	(V021)	Patrol 3 MD										\$60
<b>Steve McConnell</b>												
<b>2021 Chevy 1/2 ton Quad Cab</b>	(V020)	Patrol 2 MD									\$60	
<b>2021 Dodge 1/2 ton Quad Cab</b>	(V019)	Patrol 1 Cob.			\$65						\$60	
<b>Administration /Survey</b>												
<b>2018 Dodge 1/2 ton Crew Cab</b>	(V010)	Office					\$ 55					
<b>2020 Dodge 1/2 ton Crew Cab</b>	(V016)	Office								\$ 55		
<b>Subtotal</b>			<b>670</b>	<b>\$ 390</b>	<b>\$ 500</b>	<b>\$ 335</b>	<b>\$ 390</b>	<b>\$ 400</b>	<b>\$ 525</b>	<b>\$ 445</b>	<b>\$ 515</b>	<b>\$ 730</b>

Graders			2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2000 Champion 720	(G015)	MD				\$300						
2012 John Deere 770G	(G016)	Cobourg										
Loaders and Tractors												
1999 Case 480 Tractor + broom	(T014)								\$140			
1999 Case 570 Tractor + broom	(T015)										\$140	
2001 John Deere 624H Loader	(L005)											
2004 John Deere Backhoe	(B006)				\$210							
2006 John Deere Loader	(L006)							\$240				
2006 Volvo Excavator CW. Brush	(EX-01)			\$320								
2007 Etnyre Distributor	(DS02)											
2007 Etnyre Spreader	(CS02)											
2008 John Deere Tractor CW. Mower (	(T016)						\$100					
2009 John Deere Loader	(L007)									\$240		
2010 Case Tractor Backhoe	(B007)						\$210					
2012 John Deere Loader	(L008)											
2017 John Deere Loader	(L009)											
2012 Case Tractor	(T017)											
2016 Telescopic Boom Excavator												





Miscellaneous Equipment			2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2010 Thompson Steamer	(ST04-10)											
2010 Thompson Steamer	(ST05-10)											
2011 Thompson Steamer	(ST06-11)											
2008 30 Ton Trailer	(TR10)				\$60							
2008 15 Ton Trailer	(TR11)							\$55				
2011 7 Ton Trailer	(TR12)											
Hydraulic Post Hole Auger x 2												
Asphalt Hot Box Cobourg												
Asphalt Hot Box Morganston			\$40									
Large Truck Hoist												
Bandit Wood Chipper												
Bandit Wood Chipper												
New Sign Trailer												
Scanning Unit (Mechanics)		Cobourg										
<b>Subtotal</b>			<b>\$40</b>	<b>\$320</b>	<b>\$210</b>	<b>\$360</b>	<b>\$310</b>	<b>\$240</b>	<b>\$195</b>	<b>\$240</b>	<b>\$140</b>	<b>\$0</b>
<b>Grand Total</b>			<b>\$710</b>	<b>\$710</b>	<b>\$710</b>	<b>\$695</b>	<b>\$700</b>	<b>\$640</b>	<b>\$720</b>	<b>\$685</b>	<b>\$655</b>	<b>\$730</b>



## **Risk Considerations**

There is the risk of high repair costs for these pieces of equipment without any guarantee of a longer life expectancy if the regular replacement schedule is not followed. The risk may impact the County's ability to meet Minimum Maintenance Standards as required by provincial legislation.

## **Impacts to Member Municipalities/Partners**

N/A

## **Included in 2022 Long Term Plan: YES**

Yes, these items were included in the 2022 Long Term Plan.



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## 2022 Issue Paper

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### Transportation Funding Strategy

#### **Purpose**

The County of Northumberland needs to establish and maintain a sustainable levy-supported capital and operating budget to maintain the existing and to further develop the County roads system infrastructure. In 2002, County Council approved a ten-year plan to incrementally increase the roads budget to its proper level. As the budget was increasing and nearing the target set in 2002, the overall roads strategy was reviewed in further detail in 2015, taking into consideration the current state of infrastructure at that time and new infrastructure that had been identified through Environmental Assessments (EA's) or other processes since 2002 as well as the increasing costs of construction and inflation, resulting in an increase to the overall need. Since 2015, the overall needs are reviewed and revised based on the previous years' studies, EA's, construction cost estimates, inflation, funding cuts, etc.. For example, in 2018, the recommendations and high-level needs from the County's Transportation Master Plan (TMP) that was approved by County Council in 2017 were incorporated into this assessment. Based on the review completed for the 2022 budget cycle, the revised desired budget level to sustain the transportation infrastructure is \$20.5 million (annually), and the current proposed roads budget for 2022 is \$11.1 million (excluding the 2019 gas tax top-up funding and the 2021 OCIF Formula Funding), which is \$9.4 million below the desired budget level. As such, it is imperative that the County continue with the strategy to increase the levy each and every year until the desired budget is reached.

This issue paper represents a \$500,000 increase to the 2022 base budget for road infrastructure (pavement rehabilitation and maintenance, traffic safety measures, bridge rehabilitation and maintenance and service expansion). Previously, two separate issue papers had been prepared for roads and bridges, for \$400,000 and \$100,000, respectively; however, one is being requested for transportation as a whole to provide flexibility and ensure suitable funding for the various types of infrastructure each year.



## Background

In 2001, the base budget for roads construction was only \$358,000. This would allow the County to resurface each section of the County road system every **250 years** (2001 costs). The 2022 base budget for roads construction at \$7.9 million would allow for each section of road to be resurfaced every **29 years** (2022 costs). County roads carry higher traffic volumes and a greater percentage of truck traffic than local roads and on average need to be resurfaced every 18-20 years. In addition, they require pavement preservation such as crack sealing and microsurfacing within that 20 year timeline to ensure the road can be resurfaced in 20 years and has not deteriorated to the point of a full reconstruction and costs associated with these treatments are not included in the estimate above.

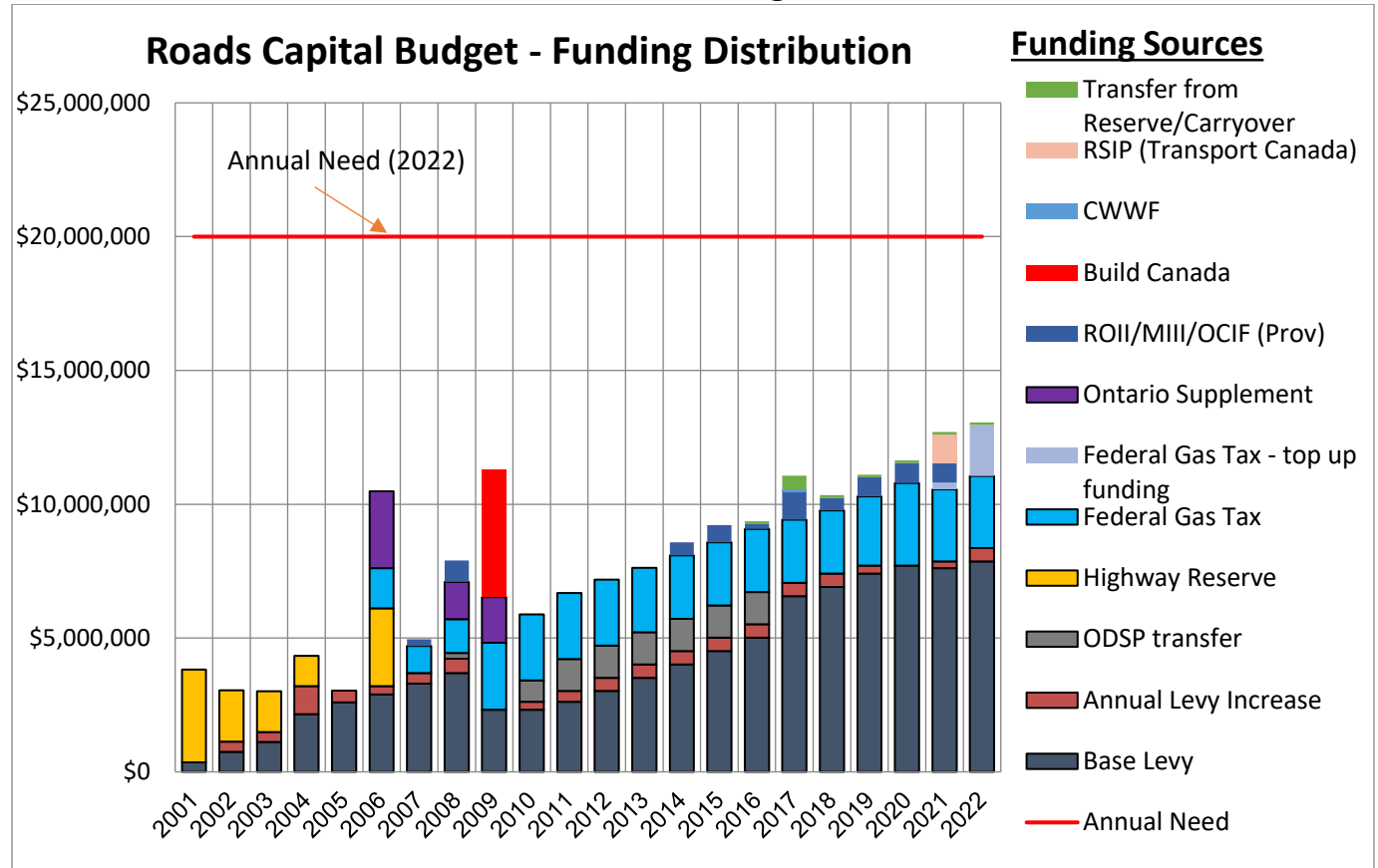
Further, the limited base budget does not address the other roads related needs, such as traffic safety measures, bridges, or service expansion.

During the 2002 budget process, a multi-year strategy was adopted to gradually ramp up the County tax levy funding over a 10+ year period to a level which will maintain the existing County road system at an acceptable level. A program was adopted by County Council to increase the capital roads levy by \$400,000 each year.

Since 2006, the capital roads budget also utilized other available funding sources to supplement the capital roads program, such as the highway reserve, the federal gas tax rebate, the one-time Move Ontario funding, the one-time Build Canada Fund, the Municipal Infrastructure Initiative (MII), and most recently the Ontario Community Infrastructure Fund (OCIF). The funding breakdown is shown in Table 1, below and as illustrated, the most significant funding sources were the one time Move Ontario Funding in 2006 and the Build Canada Funding in 2009, resulting in over \$10 million for the capital roads program in these years, which was needed to help address the continued deterioration of the County road system.

From 2015 until 2021, the County has received OCIF formula funding ranging between \$300,000 and \$750,000 annually. It is anticipated that the County will continue to receive OCIF funding, however, long term commitments have not been provided and it is being announced annually. Funding for 2022 has not yet been announced and losing this funding leaves a large gap in funding for the capital program for 2022 and beyond.

**Table 1: Chart of Past, Present and Future Funding Distribution**



The County of Northumberland has an inventory of 112 bridges on 503 kilometers of arterial roadways; there are 48 major structures, 64 culverts of span greater than 3.0 meters, and 20 retaining walls. Generally, the expected lifespan of a structure can range from 50 to 75 years. The age of the County's bridges range from 12 to 99 years old (built between 1922 and 2010), with 92% of the bridges aged 35 years or older as of 2021.

There is a significant need to ensure the integrity of these structures due to the continued aging of the infrastructure and the growing number of structures that require repairs. Every two years the 48 major structures, 64 culverts and 20 retaining walls are inspected by a team of engineering consultants and County staff in accordance with the Ontario Standard Inspection Manual (OSIM). In 2020, the inspections were performed on all structures by HP Engineering. OSIM inspections are most effective at providing a visual inspection and identifying immediate or near future maintenance needs, code compliant required upgrades, and rehabilitation. However, these inspections do not yield the high level of detail necessary to accurately



estimate the type of rehabilitation (minor or major) and the associated costs of these improvements.

Since 2002, the roads capital program has generally grown through an annual levy increase of \$400,000. Beginning in 2008, the bridge maintenance levy was further increased by \$100,000 annually.

## Consultation/Options

The roads construction project budget addresses ongoing management of four main components of the County Roads System:

- Pavement Rehabilitation and Maintenance
- Traffic Safety Measures (traffic signals and street lights, guiderails, road/intersection safety improvements)
- Bridge Rehabilitation and Maintenance
- System Expansions (road widening, turning lanes, bike paths, new structures, etc.)

Based on standard asset management principles, the annual budget required to keep these components of the road infrastructure in good repair are outlined as follows.

### Pavement Rehabilitation and Maintenance

Research and statistical evidence support a lifecycle analysis approach to pavement maintenance and rehabilitation to ensure a timely and cost effective pavement management program. The life cycle of a hot mix asphalt (HMA) road is dependent on many factors including the overall structure of the road (thickness and material of base, sub-base and asphalt), road drainage, traffic volumes, traffic speed, percentage of truck traffic, etc.. The County roadways are considered Arterial Roadways in accordance with Transportation Association of Canada (TAC) Guidelines, meaning they are for the main purpose of moving goods and services and allow for local and collector roads to feed into them and have limited direct access from properties. They are generally higher volume and speed roadways and feed into highways (i.e., Highway 401, Highway 115, etc.).

The lifecycle approach is also consistent with asset management principles and the types of timing of treatments throughout the lifecycle of a road can vary depending on the required Level of Service (LOS) (i.e., expected condition, function, use, safety, etc.). As the County develops its Asset Management Plan (AMP) for core assets by July 1, 2022 in accordance with the new Asset Management Legislation (Ontario Regulation 588/17), the lifecycle and treatments will be reviewed in detail and refined as appropriate. However, the following



lifecycles for urban and rural County arterial roads have been developed to determine overall needs for budgetary purposes. Table 1 and 2 provide the lifecycle for 1 km of roadways assuming a 45-year useful life, estimates based on 2020-2021 construction unit prices and do not include costs associated with safety devices and regular routine maintenance activities.

**Table 1: Urban Roadway Lifecycle**

Year 1	8-10 Years	16-18 Years
Full Reconstruct	Micro	Crack Seal
\$1,750,000	\$63,000	\$4,000
23-25 Years	33-35 Years	41-43 Years
Resurface	Micro	Crack Seal
\$421,000	\$63,000	\$4,000

\*Reconstruct at 45 Years.

**Table 2: Rural Roadway Lifecycle**

Year 1	8-10 Years	16-18 Years
Full Reconstruct	Micro	Crack Seal
\$900,000	\$63,000	\$4,000
23-25 Years	33-35 Years	41-43 Years
Resurface	Micro	Crack Seal
\$421,000	\$63,000	\$4,000

\*Reconstruct at 45 Years.

Based on the estimate above, the lifecycle cost of 1 km of urban roadway is \$2.3 Million and for 1 km of rural roadway is \$1.5 Million.

In addition to urban and rural HMA roads there are 107 km of surface treated County Roads. The County's current policy for surface treatment is to allow on roads with AADT of 1,000 or less. Based on the updated 2018 Average Annual Daily Traffic (AADT), more than 50% of the existing surface treated roads have an AADT >1,000. Therefore, there should be consideration to change the surface treated roads to HMA in the future. For the purposes of determining overall need, surface treated roads are assumed to remain as surface treated until a strategy is developed in the future. The lifecycle of a surface treated roadway is approximately 5 years, therefore, to meet this need, 21.4 km would need to surface treated annually, resulting in an annual need of \$321,000.

With this information in mind, we can determine an annual road rehabilitation budget, outlined in Table 3 below.



**Table 3 – Recommended Road Rehabilitation Budget**

Type of Road	Total Kms	Lifecycle Cost	Total Cost	Annual Cost
Surface treated	107	\$15,000/km every 5 years		\$321,000
Paved (rural)	369	\$1.5 Million	\$553.5 Million	\$12.3 Million
Paved (urban)	28	\$2.3 Million	\$64.4 Million	\$1.43 Million

**Recommended Annual Road Rehabilitation Budget**

**\$13.7 Million**

The proposed 2022 budget includes the following road rehabilitation:

- Approximately 20 km of surface treated roads;
- 13.5 km of paved rural roads (and funding for Phase 1 of the 7.0 km County Road 64 reconstruction project which is proposed over 3 years from 2022 to 2024);
- Approximately 15 km of pavement preservation; and
- Approximately 100,000 m of crack sealing.

The cost to complete the proposed 2022 road rehabilitation program is estimated at **\$7.65 million**.

### Traffic Safety Measures

Traffic safety measures include upgrades and maintenance on our roadside safety devices, traffic controllers, signals, and signage. There is also an increasing requirement to integrate safety upgrades into pavement rehabilitation projects. Most recently, traffic safety reviews and intersection upgrades have been completed.

### Guiderail

In 2016, OPS and MTO withdrew OPSD 1503 and specified that 3 cable guiderail will no longer be used on Ontario roadways. The rationale for eliminating the standard is based on the fact that post and cable deflects vehicles; is sensitive to height and tension; is not recommended for use on horizontal curves or adjacent to slopes steeper than 2:1, or on high speed roads and must have at least 3 m of deflection behind that is free of hazards. As a result, post and cable requires continuous monitoring and more repairs. The average lifecycle of post and cable is 15 years. On the other hand, steel beam guiderail restrains and redirects vehicles and has a lower deflection, therefore, it can be placed closer to hazards; is more durable; and requires less monitoring and maintenance. The average lifecycle of steel beam guiderail is 30 years.





Upfront costs for steel beam are generally higher (approximately 50 to 60%), however, given the longer lifecycle and reduced time and costs associated with maintenance, as well as increased safety, steel beam is recommended.

Going forward, to comply with the new standards, all post and cable will be replaced with steel beam guiderail. The change was implemented as part of the 2017 program and the bids received in the 2017 safety device tender for steel beam were much lower than typical estimated costs, which may be a reflection in the change of the standards, however, the cost in 2018 and 2019 was significantly higher with an average estimate of \$210/m including removal of existing post and cable and anchor blocks, installation of new steel beam including end treatments, granular sealing and traffic control. 2020/2021 saw another increase in the unit rate to approximately \$255/m, likely due to the supply and demand issues caused by the COVID-19 Pandemic. Using this estimate, the total cost to replace the existing 3-cable guiderail (50km +/-) with steel beam is \$12,750,000.00. To replace the guiderail over a 20 year period would result in replacement of approximately 3 km per year at a cost of \$765,000.

The costs will continue to be monitored moving forward and adjusted based on unit rates and guiderail replacement will continue to be prioritized and coordinated with paving projects; however, moving forward a higher portion of the traffic safety budget may be allotted to guiderails to accommodate this change in standards in the 10 year plan.

### Traffic Signals

The County owns traffic signals at eighteen intersections throughout the County and there is an ongoing requirement for upgrades and maintenance on this infrastructure. A traffic signal cabinet is comprised of various components, including the controller, conflict monitor and electrical board. Additional appurtenances including detection, traffic heads, pedestrian heads, push buttons and electrical conduits are also critical to the overall traffic signal system. The majority of the County's inventory is aged and requires upgrades or replacement in accordance with provincial regulations and design standards.

In addition, upgrades to comply with the Accessibility for Ontarians with Disabilities Act (AODA) are required. As traffic signal systems are replaced the County is required to include the installation of Audible Pedestrian Signals (APS) and tactile walking plates at intersections with pedestrian crossings. The County has completed the APS upgrades at the following locations:

- Elgin Street and Strathy Road (2017)
- Elgin Street and Division Street (2019)
- Bridge Street & Doxsee Avenue (2019)
- Elgin Street & Frei Street (2021)



- Elgin Street & Rogers Road (2021)

There are eight (8) remaining locations to be completed.

The County has completed UPS battery backup installation at the following locations:

- Elgin Street and Division Street (2019)
- County Road 18 and County Road 74 (2019)
- County Road 28 and Telephone Road (2019)
- County Road 18 and Depalma (2020)
- County Road 2 and Strathy Road (2020)
- County Road 2 and John Street (2020)
- County Road 50 (Queen Street) and County Road 30 (Grand Road) (2021)
- County Road 8 (Bridge Street) and County Road 38 (Front Street) (2021)
- County Road 8 (Bridge Street) and Doxsee Avenue (2021)

There are six (6) remaining locations.

Other required upgrades/repairs and replacements include loop replacements/conversion to auto detection, traffic head and pedestrian head upgrades, cabinet replacements, etc. at various locations. Furthermore, the Transportation Master Plan identified intersections to monitor that may require intersection improvements and/or may meet warrants for signalization in the future.

The overall need over the next 10 years to address the signal deficiencies, AODA requirements and potential new signalized intersections is \$200,000.00 per year.

#### Other Traffic Safety Related Items

There is an increasing requirement to integrate safety upgrades into pavement rehabilitation projects. Traffic safety reviews, intersection and other road upgrades are completed each year. The following list provides projects completed since 2014.

#### Traffic Safety Reviews/Assessments:

- County Road 45/Lonsberry Road/Roseneath Landing Road safety review (2014)
- County Road 30/County Road 29 intersection safety review (2014)
- County Road 30 and Old Wooler Road safety review (2016),
- County Road 45 Corridor through Alderville and Roseneath safety assessment (2018)
- County Road 2/10/74 in the hamlet of Welcome safety assessment (2018)
- County Road 2/10/74 intersection feasibility study for improvements (2020)



- County Road 18 at Telephone Road and Danforth Road (two of the high collision intersections identified in the TMP) safety study (2019)
- County Road 45 corridor from Highway 401 through Baltimore safety study (2019)

#### Intersection/Road Improvements:

- County Road 45 and County Road 33 (Merrill Road) intersection upgrades (2014)
- 45/Lonsberry Road/Roseneath Landing Road operational and maintenance improvements (2015)
- County Road 30/29 Intersection improvements (2016)
- County Road 30/Old Wooler Road safety related upgrades (using \$725k in OCIF top up funding) (2017)
- County Road 2 (Elgin Street) safety improvements (2017)
- County Road 18 at Telephone Road and Danforth Road detailed design of these two intersections that were identified in the top 10 high collision intersections in the County's TMP (initiated in 2020)
- County Road 45 at Van Luven Road and Cap Wilson Road intersection improvements (2020/2021)

#### Other:

- County Road 45 through Alderville/Roseneath trial speed limit change (2020)
- Purchase of additional radar speed signs to incorporate with hamlet traffic calming initiatives (2021)
- Slow Your Roll speeding awareness campaign, a joint initiative between the County, member municipalities and police services to address speeding concerns and driver behaviour raised throughout the County (2021)

Depending on the required improvements, the cost of implementing safety upgrades can vary widely from very minimal for brushing, pavement markings, signage, lighting, etc., to hundreds of thousands of dollars for geometric changes such as adding turning lanes, modifying grades, expanding radii, paving, etc. Where possible, these larger design and construction improvements can be incorporated into the current year's paving tender and depending on the scale and scope of the project, may be included under service expansion (i.e., widening for turning lanes, etc.). To complete the requisite studies, planning, design, consultation, etc. for these improvements as well as to address any other safety issues that arise throughout the year, an annual budget of approximately \$100,000 is required.

Based on the improvements outlined above, a realistic annual base budget to address traffic safety measures is **\$1.07M**. As indicated above, this does not include the full cost of implementation of all safety improvements; however, implementation will be coordinated with other areas of the capital program wherever possible for efficiencies.



The proposed 2022 Traffic Safety Measures program includes \$100,000 for Traffic Control Signals and Street Lights upgrades, \$200,000 for guiderail replacement, and \$100,000 for Road/Intersection Safety Improvement Program.

### Bridge Rehabilitation/Replacement and Maintenance

The County has 112 bridges and major culverts and 20 retaining walls that require ongoing repairs, maintenance, and occasional replacement. Prior to 2003, there was not a base budget to address bridge rehabilitation and maintenance. As part of the 2004 budget process, County Council established a base budget of \$450,000 per year for bridgework. Based on the Ontario Structures Inspection Manual (OSIMs) inspections for the County's structures completed in 2020, the urgent, 1-5 year, and 6-10 year bridge needs have been identified and the total estimated work is **\$24.0 million**, and a more reasonable annual base budget for bridge rehabilitation is **\$2,400,000**.

The 10-year capital plan for required structure improvements is prepared based on the OSIMs and other available information. Each year, the needs for required improvements are compounded since each year the County's budget is insufficient in covering the costs of immediate needs and the increasing cost of inflation which creates a backlog of structures in need of improvements. This means the needs of some structures are carried over to the next year, and at the same time, a new set of immediate needs are identified for a new group of structures.

Figure 1 shows the required budget to implement all the OSIM recommendations, including all maintenance, required code compliant upgrades, major rehabilitations and bridge replacements within the next 10 years. The funding that would be necessary to implement these works is estimated at \$24,030,000. This estimate includes structures for which works are planned within the 10 year budget and those structures for which works are not planned but would have reached the end of their useful life within this 10 year timeframe. Included in these estimates are costs for detailed engineering design, contract administration and construction. It is important to note that cost estimates at this stage are considered rough order of magnitude (ROM) estimates. This type of estimate represents an informed idea of the magnitude of the work required without having professional structural engineers prepare the detailed design and cost estimates. The variance attributed to ROM estimates can be +/- 50%. Cost estimates will be refined further during the detailed design and tender stages.

Figure 1:

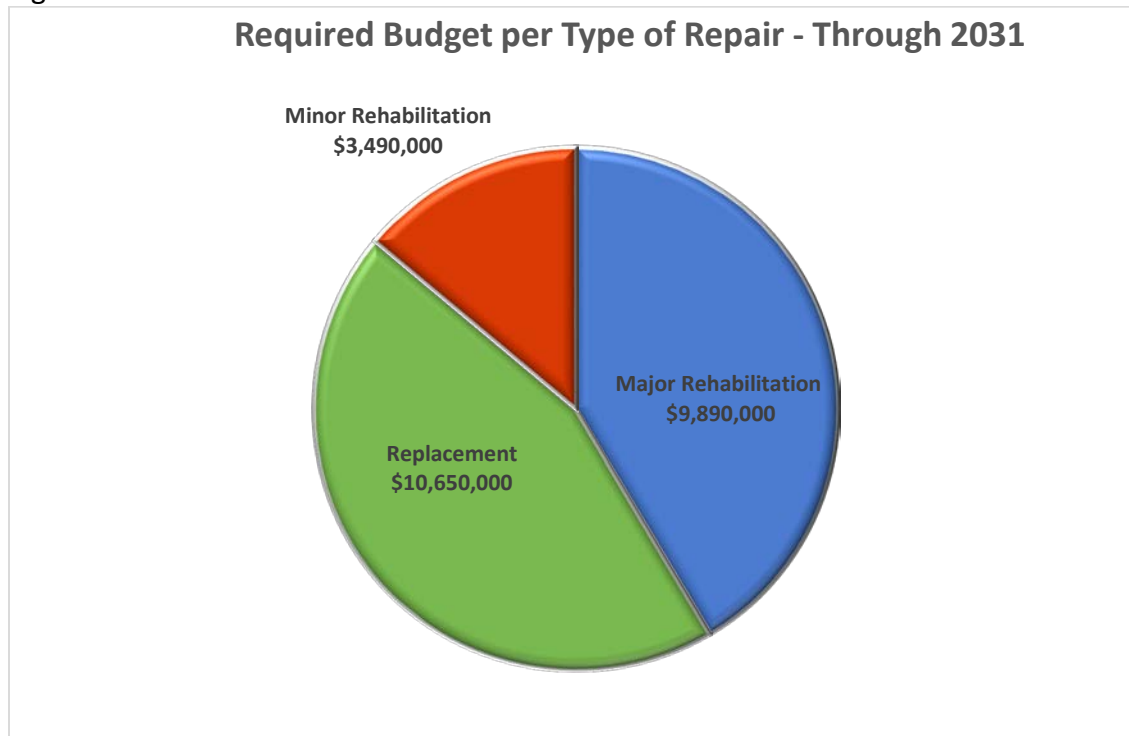


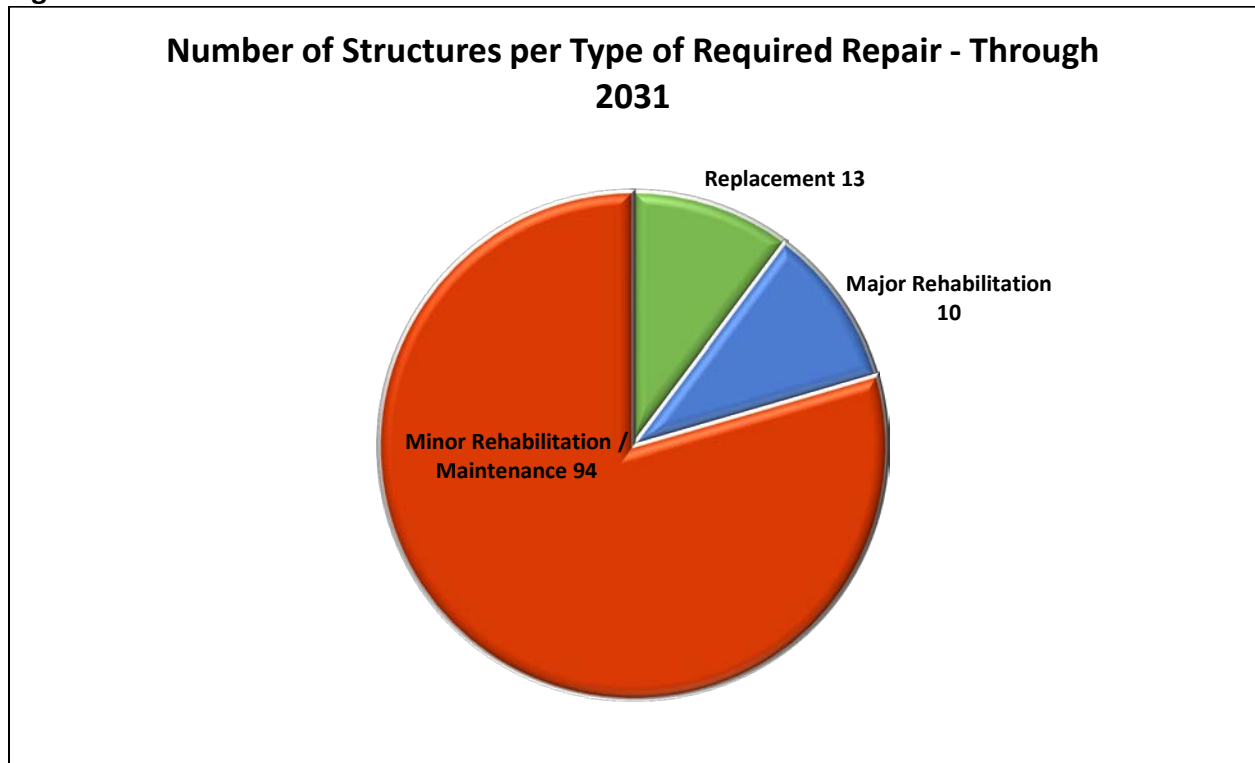
Table 4 shows the actual required budget for all types of repairs broken down by timeline.

**Table 4** – Actual Required Budget for Bridge Replacement, Major Rehabilitation and Maintenance (M=\$1,000,000)

Timeline	As of 2021
< 1 year	\$1.54M
1-5 years	\$9.76M
6-10 years	\$12.73M
Total	\$24.03M

**Figure 2** shows the number of structures that fall within each category of required repair. As can be seen from this figure, the majority needs maintenance and required code compliant upgrades. Maintenance is fundamental to the preservation of the integrity of the structures, to lengthen the structures' useful life, and to ensure that the number of structures that require major rehabilitation remains low. It follows that maintenance is imperative to ensuring that costs for major works remain feasible.

Figure 2:



The proposed 2022 budget allows for **\$2,400,000** for detailed bridge condition studies, engineering design, rehabilitation, and repairs and inspections. This includes \$900,000 for the Hickerson Culvert replacement, \$125,000 for the Thompson Bridge Decommissioning/Removal, \$350,000 for the Baltimore Retaining Wall (000053) replacement, \$75,000 for design and tender preparation for the Lot 16 Concession 9 Culvert (25213) replacement (Trent Hills), \$30,000 for design and tender preparation of the County Road 45 Retaining Wall (000055) replacement, \$600,000 for the Campbellford Trent River Bridge Crossing, \$100,000 for the bridge reserve, \$100,000 for OSIMs and deck condition surveys, \$100,000 for bridge/culvert maintenance and \$20,000 for minor bridge repairs.

### System Expansion

In 2013, the County approved an area-specific development charge for the Cobourg East community (By-law 26-13) to address future expansion of the County infrastructure related to this specific development including road widening, urbanization and intersection improvements on County Road 20 (Elgin Street and Brook Road North), as well as a grade separation at the CNR/CPR tracks on Brook Road North. Prior to the passing of By-law 26-13, the County did not collect any development charges, therefore, any system expansions, such as traffic signals, turning lanes, road widening, new structures, etc. needed to be funded through the County



levy. The area-specific development charge by-law was updated in 2018 in accordance with the Development Charges Act (DCA), 2017, that requires development charge by-laws to be updated every five years. Minor changes were made to adjust cost estimates and a new by-law came into effect on June 21, 2018 (2018-23).

While the area specific DC by-law allowed for monies to be collected for growth in one area of the County, it did not account for growth County-wide requiring expansion of infrastructure and services. In 2019, the County initiated a County Wide Development Charge study in accordance with the DCA, 2017, and the DC Study and By-law was approved by Council in late 2020 (By-law 2020-36), which repealed by-law 2018-23.

It is important to note that the DC's can be utilized for partial funding of service expansion projects but they are not a guaranteed source of funding and the amounts may fluctuate or change based on actual growth and advancement of projects

Previously, an annual base budget of \$650,000 was proposed as reasonable to address the system expansions that we anticipate over the next ten years, however, this figure did not include any allocation for the County's share of the Brighton Grade Separation or a potential new bridge in Campbellford, or any of the transportation service improvement needs identified by other EA processes or studies. Two of the County's major Environmental Assessments were recently completed and approved by the Ministry of Environment and Climate Change; the Trent River Crossing and Arterial Road Network EA (2017) and the County Road 2 EA (2016). The County has also completed its first Transportation Master Plan (TMP), which was endorsed by County Council in 2017; hence estimates and timelines for the proposed preferred alternative designs are available and are outlined below. Based on these, a more reasonable annual budget of **\$3.3 million** is proposed.

#### [Trent River Bridge and Arterial Road Network EA](#)

The preferred Alternative Design for the Trent River Bridge and Arterial Road Network EA includes a new bridge at Second and Alma Street, and replacement of the current bridge crossing. Estimated costs and timing are provided below based on the phasing and implementation schedule in the Environmental Study Report (2016).

Based on the environmental assessment (EA) estimates and the implementation plan for the bridge and assuming engineering, property acquisition, contingency, etc. would be on the order of 20% of the total construction costs, a total of \$19.9 million is required for Phase 1 in the next 10 years, equivalent to \$2.0 million per year, assuming the full cost is funded through the County levy. However, the intention is to proceed with the new bridge when provincial and federal funding is available. Under this scenario, assuming 60% funding from other levels of



government and 40% from the County, a total of \$8 million is required for Phase 1 from the County levy, equivalent to **\$800,000 per year**. The target transportation budget is based on this assumption. If Council decides to proceed with construction of the new bridge within 10 years without provincial and/or federal funding, \$19.9 million will be required through a combination of capital funding reserves, and/or debenture between approximately 2024 and 2027. Detailed design for the Trent River Bridge and Arterial Road network was initiated in 2019 and is ongoing. The construction cost will be updated based on the 60% and 90% engineer's estimates when available.

Since 2017, there has been ongoing reallocation of Rehabilitation, Replacement and Maintenance funding towards Phase 1 of Trent River Bridge service expansion project, which is not feasible as it will erode the County's ability to maintain its existing bridge infrastructure over the long-term.

Since Phase 2 involves replacement of existing infrastructure, this cost will be included in the Bridge Rehabilitation, Replacement and Maintenance section, and the current need is within 6 to 10 years (shown in 2031 in the long term plan).

#### County Road 2 EA – Burnham/William Street to Hamilton Road

The preferred Alternative Design for the County Road 2 EA includes widening on County Road 2 to four lanes in the urban section of Cobourg, widening to three lanes in the rural section through Hamilton Township and the Municipality of Port Hope and construction of a multi-use trail along County Road 2 or along the shoreline, and a roundabout at Theatre Road. Based on the estimates, phasing and implementation schedule in the Environmental Study Report (2016), and assuming engineering, property acquisition, contingency, etc. would be on the order of 20% of the total construction costs, a total of \$2.32 million is required for expansion on County Road 2. These estimates are based on 2016 dollars, and considering an annual inflation rate of 2%, the revised total construction costs are anticipated to be 2.61 million over the next 10 years, equivalent to **\$261,000 per year**.

#### Transportation Master Plan

The County also completed its first Transportation Master Plan (TMP) and it was adopted by County Council in 2017. There are several recommendations included in the plan related to infrastructure/safety improvements, policy recommendations, and active transportation. As part of the TMP assignment, high level cost estimates and potential funding options were reviewed and proposed. Where possible, recommended improvements have been completed since 2018 and will continue to be incorporated into the existing 10 year capital, however,





some additional funding or deferral of some projects beyond 10 years will be required. The associated costs are summarized below:

*Infrastructure/Safety Improvements:*

Infrastructure improvements include: top 10 collision intersections, intersection signalization, revised speed limit changes, Hamlet Entry Treatments, Corridor studies for 2031 improvement locations, Environmental Assessments for 2031 improvement locations, EDR relocation feasibility study and construction, GO Rail extension business case study, and a number of other smaller data collection and information gathering studies (AADT, speed data, funding options, etc.) as outlined in the TMP.

The overall high level cost for all of these improvements and studies between 2019 and 2028 is between \$2.2 million and \$4.2 million based on 2017 estimates, and considering an annual inflation rate of 2%, the estimate is \$2.4 million to \$4.6 million. This estimate does not include the cost for implementation of the major studies/projects and based on discussions throughout the TMP process, the intention is to move forward with the implementation of two of these major projects within the next 10 years including relocation of the EDR in Cramahe/Brighton and the extension of GO service to Northumberland County.

A high level estimate to complete upgrades to one of the potential new EDR roads is approximately \$15 million (order of magnitude +/-50%), which was developed for a funding application without any engineering studies. The County has retained CIMA+ to complete a feasibility study to relocate the EDR from County Road 2 to Telephone Road through the Municipality of Brighton and Cramahe Township. The estimate for relocation will be further refined through this feasibility study and can be incorporated into the future needs assessment. It is anticipated to be a complex project that would involve road widening, structure widening/rehab/replacements, drainage improvements, cut/fill to address grade changes, road resurfacing, etc.).

Funding in the amount of \$250,000 has been allocated to the extension of the GO service in the 2022 budget for a potential pilot project for a bus or other form of transportation to establish a route from Oshawa to Cobourg and Port Hope. The actual costs have not been determined and will be included as part of further study and discussions with Metrolinx, however, using this allocation, a total of \$2.5 million is required in funding over the next 10 years.

In 2017, the County proceeded with one of the recommendations in the TMP for Hamlet Entry Treatments in Cold Springs and Welcome. The pilot project was ongoing from 2018 to 2020, and the findings from this pilot project were shared with Council in the Fall of 2020. The hamlet traffic calming measures included additional oversize signage, pavement markings, portable



radar speed signs, and on-going education and awareness and these will continue to be implemented going forward.

Therefore, the overall cost estimate is \$19.9 to \$22.1 million over the next 10 years or **\$2.0 to \$2.2 million per year**.

#### *Policy Recommendations:*

A number of policies were reviewed as part of the TMP study and resulted in major and minor recommendation changes to twelve (12) policies and the creation of nine (9) new policies or guidelines. It is anticipated that the majority of policy changes and creation of new policies will be completed in-house by County staff.

#### *Active Transportation:*

The TMP reviewed the County's Cycling Master Plan (CMP), which was completed in 2012 and updated in 2014. Since the approval and implementation of the County's CMP, new Ontario Traffic Manual (OTM) guidelines for Active Transportation (Book 18) were developed, as such, the TMP provides a number of recommendations on potential updates to the CMP to be consistent with OTM Book 18. It is anticipated that the majority of CMP review and updating will be completed by in-house County staff.

#### *Summary*

Including the cost estimates for expansion in the next 10 years from the projects above, as well as other more minor expansion project (i.e., turning lanes, traffic signals, etc.), a realistic annual base budget of **3.3 million** is required to address system expansion. This will increase in future years based on detailed cost estimates and programs resulting from studies completed as part of the Transportation Master Plan (i.e., corridor studies that recommend future widening, etc.) and any other EAs or studies that may be completed, including the Brighton Grade Separation.

The proposed 2022 budget allows for **\$3,360,000** of system expansion projects. This includes \$500,000 for the Trent River Bridge and Arterial Road Network improvements in Campbellford, \$100,000 for TMP/EA improvements, \$50,000 for CMP improvements, \$55,000 for County Road 2 EA improvements, \$30,000 for On1Call, \$75,000 for GIS/Asset Management, and \$2.3M for intersection improvements and turning lanes on County Road 18 and Telephone Road and Danforth Road. This also includes \$250,000 for regional transit/GO expansion, which is being budgeted using federal gas tax funding (2019 top up).



## Financial Impact

### Total Budget Requirements

Based on the information above, we can determine that the base construction budget to properly manage our County Road assets should be in the order of **\$20.5 million** while the estimated value of the 2022 construction program is **\$11.1 million** (excluding the 2019 gas tax top-up funding and the 2021 OCIF Formula Funding). While great strides have been made in the past ten years, a number of major structures are approaching and/or reaching their lifespan, and additional major expansion projects have been identified during that time (i.e., second crossing of the Trent River Bridge, County Road 2 widening, Grade Crossings, EDR relocation, GO, etc.), which increases the required base budget for roads capital. In addition, the estimates have been updated to better reflect the current construction costs.

The current base budget is approximately \$9.4 million short of the new target amount, therefore, an annual increase in the roads budget continues to be necessary in order to meet the \$20.4 million target and it is imperative that the County continue with this strategy each and every year until it has been reached.

### Federal Gas Tax

Part of the 2005 Federal Budget included the Federal Government's New Deal for Cities and Communities. This New Deal included federal gas tax money being distributed to municipalities for investment in a range of infrastructure projects. We have received the federal gas tax in previous years:

Year 4 (2008): \$1,253,244  
Year 5 (2009): \$2,506,488  
Year 6 (2010): \$2,474,857  
Year 7 (2011): \$2,474,857  
Year 8 (2012): \$2,468,018  
Year 9 (2013): \$2,406,317  
Year 10 (2014): \$2,364,412  
2015 through 2018: \$2,364,412  
2019: \$5,211,849\*  
2020: \$2,581,705  
2021: \$5,293,733\*  
2022: \$2,699,055  
2023: \$2,816,405



\*Includes one-time doubling of gas tax funds and surplus funding

The Federal Gas Tax Fund (which represents 24% of the road construction program revenue in 2022) was made permanent in 2015 through a federal legislation and the County can expect to receive the amounts noted above over the next three years (\$2,699,055 to \$2,816,405 or 13% of the targeted \$20.5 million budget).

The County received Federal Gas top-up funding in 2019 and 2021, which can be used for various projects and services. A portion of the 2019 funding in the amount of \$1.9M is being used in 2022 and the 2021 funding in the amount of \$2.6M is being used in 2023 to move forward projects in the 10 year plan.

#### OCIF Formula Funding

The OCIF formula based funding in the amount of \$751,217 for 2021 was announced in the Spring of 2021 after the 2021 budget planning and approval. As such, it is being carried forward to use in the 2022 program. OCIF Funding for 2022 has not yet been announced. If the program does not continue past 2021, this results in a \$751,217 decrease in the annual capital funding and will therefore need to be sourced from other areas.

### Risk Considerations

It is imperative that Council continues to support future levy increases to protect the integrity of the County's road infrastructure for road rehabilitation, bridge rehabilitation, traffic safety and service expansion. As a result of other budgetary levy pressures, the base budget has only increased by \$950,000 since 2018, which is approximately \$1 million less than what was proposed through this transportation funding strategy over this four-year period. This has had an impact on financial capacity in future years and further delays critical infrastructure projects. There continues to be uncertainty with OCIF Formula Funding beyond 2021 in the amount of \$751,217, which also impacts the annual funding. Without a sustainable road and bridge budget, roads and bridges will continue to deteriorate at a rate faster than they can be rehabilitated, leading to potential bridge load restrictions or even closures and higher costs for complete reconstruction when they eventually do get done.

### Impacts to Member Municipalities/Partners

The County Road network intertwines with the member municipality roads, directly impacting movement of traffic within each municipality as well as movement of people, goods and services between municipalities. Therefore, the integrity of the County road system is integral



for the member municipalities, not only from a transportation perspective, but for economic development and tourism.

In addition, through shared services, the County and member municipalities have been issuing a number of joint tenders/RFPs/RFQs in efforts to be more efficient and hopefully realize savings through magnitude of work.

### **Included in 2021 Long Term Plan: YES**

Yes.

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## 2022 Business Plan & Budget

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### Waste Services

#### Prior Year Accomplishments

##### Economic Prosperity & Innovation

- 10 year Capital Program for Waste Services
- 10 year Equipment Replacement Strategy

##### Sustainable Growth

###### Material Recovery Facility

- Continued to implement new Standard Operating Procedures to enable safe operation of the facility during the COVID 19 Pandemic
- Maintained equipment and building structure
- Through the transition from single stream processing to dual stream processing were able to reduce the overall residual rate to 12%. Prior to the transition the residual rate was 29%
- Successfully negotiated a new Collective Agreement
- Successfully negotiated a Closure and Severance Agreement for the possible closure of the MRF in 2024, when the Blue Box program transitions to Producer Responsibility within Northumberland County

###### Community Recycling Centres

- Continued to safely and efficiently operate the County's 3 CRCs in the midst of the COVID 19 pandemic.
- In light of the COVID 19 pandemic, the Waste Services Division cancelled the HHW Depot operations at the Cobourg and Seymour sites. The HHW facilities at the Bewdley and Brighton CRCs continued to be operated 3 days per week, each for the entire year.
- Successfully negotiated the acquisition of Quinte West's ownership stake in lands immediately south of the Brighton Landfill.
- Undertook the decommissioning of the Leachate Pumping Station and the construction of alterations to the Leachate Collection System at the Eagleson Landfill
- Replaced the Vehicle Weigh Scale at the Seymour CRC



### Curbside Collection

- Continued to see growth in the usage of the new Green Bin Program. Slightly more than 2,300 tonnes were collected in 2020. On track to collect over 2,600 tonnes in 2021
- Saw a significant improvement in the quality of recyclables set out for collection through the new two stream collection program. Residual rate at the MRF fell to 12%, from a high of 29% in the former single stream collection program
- Implemented a roadside recycling collecting program, which enables individuals with disabilities and barrier to continue to set their recyclables out in clear bags versus Blue and Grey boxes

## **Thriving & Inclusive Communities**

### Planning and Education

- Through newspaper, radio, social media, continued to promote the County's new waste diversion programs (two stream recycling, green bin, year-round HHW & E-waste, and Styrofoam)
- Created and distributed the 2022 Waste and Recycling Collection Calendar to all residents of the County
- Continued to promote the use of the County's new "what goes where" on-line tool which assists residents in determining how to properly dispose of various common waste items
- The COVID 19 pandemic resulted in the Waste Services Division having to cancel its annual Mayor's Keep the County Clean Challenge and associated MRF Open House / Appreciation BBQ
- Launched a new "Get Caught Recycling Right" promotional campaign, where staff went out on a routine basis and inspected residents recycling set outs prior to collection. If there were issues with the set out (unacceptable items, items in the wrong box), staff let behind dedicated information on the issue and how to rectify it. If a set out was compliant, the resident was provided was given the opportunity to enter a monthly draw for prize. Monthly winners were featured on our Facebook Page and given a sign to place on their front yard, indicating that they had been "Caught Recycling Right"

## **Leadership in Change**

- Completed staff training in the following areas for one or more staff members
  - Training:
    - Health and Safety Training
    - Emergency and Standard First Aid
    - Transportation of Dangerous Goods



## 2022 Service Objectives & Initiatives

### Economic Prosperity & Innovation

- 10 year Capital Program for Waste Services
- 10 year Equipment Replacement Strategy

### Sustainable Growth

#### Material Recovery Facility (MRF)

- Maximize diversion rates at the MRF through continuous improvement of processes, improve the employee working environment while operating in a cost-effective manner
- Maintain processing rates of materials and reduce residual levels, through continued education of residential and IC&I establishments
- Maintain equipment and building structure
- Develop and implement a strategy for divestiture of the MRF, to align with the transition of County's residential recycling program to Producers in 2024

#### Community Recycling Centres

- Ensure the continued environmentally sensitive and economical operation of the Brighton Landfill.
- Continue to review and update the management and monitoring strategies for the County's closed landfills.
- Continue to offer year-round access to Household Hazardous Waste (HHW) at the Brighton and Bewdley CRCs
- Investigate the feasibility of implementing additional diversion programs for materials such as mattresses, asphalt shingles, dimensional lumber, etc.

#### Curbside Collection

- Continue to work with our Collection Contractor to improve service levels, and strive for a continual reduction in resident complaints relating to collection services

#### Education

- Continue to promote and educate residents about the significant changes to collection programs that were implemented in December of 2019 (e.g. new Green Bin program and transition to a two-stream recycling program from the current single stream program).
- Continue to offer tours of our MRF to schools, service clubs and the general public.





- Continue to offer “guest speaker” services to service clubs and the general public, in an effort to further promote the County’s waste diversion programs.

#### Long Term Waste Management Master Plan (LTWMMP)

- Commence an internal review of the current LTWMMP and look to complete a draft revised LTWMMP for review / approval by Council
- Initiate work on the Residual Waste Disposal Environmental Assessment process– Cost \$1,500,000 over 5 years.
- Continue contributing to a waste management reserve fund in order to finance the replacement of existing waste management facilities/equipment and for the implementation of any new waste management initiatives. Proposed 2022 contribution of \$400,000.

#### **Thriving & Inclusive Communities**

- Initiate work on the residual waste disposal Environmental Assessment (EA) which, through extensive consultation with the public, will ultimately determine the County’s long term solution for managing our non-divertible waste
- Continue to implement the recommendations of the Long-Term Waste Management Master Plan, in an effort to reach the goal of 75% waste diversion from landfill

#### **Leadership in Change**

- Complete staff training in various areas for staff members

### **Long Term Plan & Strategic Objectives**

#### **Economic Prosperity & Innovation**

- 10 year Capital Program for Waste Services
- 10 year Equipment Replacement Strategy

#### **Sustainable Growth**

##### Overall Budget

##### **2023:**

- Attempt to develop a realistic 2023 budget.



### Material Recovery Facility (MRF)

#### **2023:**

- Maximize diversion rates at the MRF through continuous improvement of processes, improve the employee working environment while operating in a cost-effective manner
- Continue to increase diversion rates and reduce residual levels through enhancing the education of residents and IC&I establishments
- Continue to maintain equipment and building structure through a proactive maintenance program
- Continue planning for the transition of residential recycling to Full Producer Responsibility in 2024

### Community Recycling Centres

#### **2023:**

- Ensure the continued environmentally sensitive and economical operation of the Brighton Landfill
- Look to implement additional diversion programs for materials such as mattresses, asphalt shingles, dimensional lumber, etc.
- Initiate the development of a remediation plan for the Highland Drive Landfill to mitigate the effects the residential component of the waste at this site is having, or could have, on the environment. This plan will need to be implemented in conjunction with or immediately following the completion of the Federal Government's remediation of Low Level Radioactive Waste from the site.

#### **3-5 Years:**

- Implement the remedial solution that will address the impacts of the residential component of the waste at the Highland Drive Landfill

### Education

#### **2023:**

- Develop and enhance the County's education and communication techniques and strategies
- Continue to provide accurate, informative and educational communications to all users of the County's waste management system
- Educate residents about the transition of Blue Box recyclables from municipal responsibility to full producer responsibility and how this transition may affect them

#### **3-5 Years:**

- Continue to provide accurate, informative, and educational communications to all users of the County's waste management



## Long Term Waste Management Plan

### **2023:**

- Implementation of goals / objectives of revised Long-Term Waste Management Master Plan (if / when approved by Council)
- Continue contributing to a waste management reserve fund in order to finance the replacement of existing waste management facilities/equipment and for the implementation of any new waste management initiatives
- Continue work on the Residual Waste Disposal Environmental Assessment

### **3-5 Years:**

- Continue to implement recommendations from the Long-Term Waste Management Master Plan
- Continue work on the Residual Waste Disposal Environmental Assessment

## **Thriving & Inclusive Communities**

- Continue work on the residual waste disposal Environmental Assessment (EA) which, though extensive consultation with the public, will ultimately determine the County's long term solution for managing our non-divertible waste
- Continue to implement the recommendations of the Long-Term Waste Management Master Plan, in an effort to reach the goal of 75% waste diversion from landfill

## **Leadership in Change**

- Complete staff training in various areas for staff members

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## 2022 Issue Paper

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### Equipment Replacement Strategy

#### Purpose

The County's Waste Services Division has developed a sustainable equipment replacement strategy, which includes the annual contribution of \$400,000 to a reserve account. This reserve allows for timely and affordable replacement of the equipment and facilities necessary to operate its landfill, transfer stations, and Material Recovery Facility (MRF).

#### Background

Northumberland County uses a fleet of approximately 30 pieces of mobile equipment for the operation of the Brighton, Bewdley and Seymour Community Recycling Centres (CRCs), and the MRF, ranging from a ½ ton truck for the collection of illegally dumped waste on municipal roadsides, to heavy equipment for work in the landfill, and transfer areas of the CRCs, and our MRF. There is also a significant amount of processing equipment at the MRF. Combined, the replacement value of this equipment is approximately \$8 million.

The two (2) items recommended for purchase / replacement, or repair in 2022, as part of the Waste Services Division's 10 Year Equipment Purchase and Replacement Strategy are:

- Replacement of a year 2010 Backhoe; and
- Purchase of a Pick-up Truck for use at the Bewdley CRC.

#### Consultation/Options

##### Justification for replacement of year 2010 Backhoe

The Waste Services Division has three (3) backhoes (one at each of its three CRCs). Each of these backhoes is used, on a daily basis, to perform a number of functions at the CRCs, including, but not limited to:

- Compaction of waste in Roll-off Bins;
- Shunting Roll-off Bins at the Public Drop-off Area;
- Turning of windrowed Leaf & Yard Waste materials to produce compost;



- Snow removal; and
- Miscellaneous site grading and excavation works.

The Waste Services Division is currently in the process of determining what the best machine is to conduct the necessary tasks that the existing backhoes perform at the CRCs. The backhoes currently in use are prone to frequent breakdowns due to their smaller sized hydraulic cylinders and the fact that the booms and buckets on the backhoe attachment aren't designed to withstand the constant pounding that they undergo when used to pack and breakdown waste materials in the 40-yard roll-off bins.

The Waste Services Division has been researching and doing on-site testing of rubber-tired excavators and frontend loaders, to determine which of these machines would be the best fit to replace our existing aging backhoes. Currently we have \$200,000 in reserves set aside to replace one of the backhoes (a year 2007 model), and a second backhoe (a year 2010 model) is now also slated for replacement.

The rubber-tired excavator and the frontend loader are both constructed much more robustly than backhoes and would both be capable of packing waste in roll-off bins at the CRCs. The rubber-tired excavator would be better at achieving higher waste densities within the roll-off bins, but be less versatile at snow removal operations and turning leaf and yard waste piles, whereas the frontend loader would be better at snow removal and turning piles of leaf and yard waste, but not as proficient as the rubber-tired excavator at packing waste in the roll-off bins.

A suitably sized rubber-tired excavator or a suitably sized frontend loader would each cost approximately \$275,000 to purchase new. The combined estimated cost to replace both the year 2007 and year 2010 backhoes is therefore \$550,000. With \$200,000 already set aside in reserves, the Waste Services Division is seeking a further \$350,000 in the 2022 Capital Budget for the replacement of the two backhoes. The Waste Services Division would put out a tender to replace both of the backhoes in 2022, and by doing so, hopefully receive more competitive bids by purchasing two replacement units at the same time, as opposed to just one.

#### **Justification for the purchase of a Pick-up Truck for use at the Bewdley CRC**

In 2019 the County undertook significant upgrades and improvements to the Bewdley CRC. As part of these upgrades, the areas in which waste materials can be diverted was expanded to reduce congestion at the site, and a new Household Hazardous Waste (HHW) facility was constructed and put into operation. The new HHW facility increased the level of service offered to residents for the proper management of their HHW. The Bewdley CRC now has dedicated Transfer Station Attendants who work outside during normal operations.

As part of their daily duties Transfer Station Attendants:



- accept and safely manage HHW;
- direct residents and provide oversight of the numerous waste diversion programs and dedicated disposal areas for these divertible materials;
- perform routine cleaning of debris from the elevated platform and sidewalks by the waste disposal bins, in a continuous effort to prevent slips, trips and falls by patrons; and
- remove divertible items they discover in waste bins, and transfer these items to the appropriate bin(s) or bunker(s) as the site.

Over the past two years it has become quite apparent that the Transfer Station Attendants at the Bewdley CRC require the use of a Pickup Truck to more efficiently move about the site and to perform their numerous tasks, including the relocation of divertible waste items from waste bins to the appropriate diversion bins or bunkers.

To meet this current need, one of the Waste Operations Supervisor's Pickup Trucks is being utilized by the Transfer Station Attendants at the Bewdley CRC, and the Waste Operations Supervisor is using their personal pickup truck to perform their day-to-day duties. This is not an optimal solution, from both an optics and a financial perspective, as the Waste Operations Supervisor is now utilizing their personal vehicle to respond to illegal dumping and missed waste collection calls, and the County is incurring mileage costs associated with the use of the personal vehicle by the Waste Operations Supervisor.

Given the above, staff are proposing that a new Pickup Truck be added to the Waste Services Division's vehicle fleet. The new Pickup Truck would be used by either one of the two Waste Operations Supervisors, or the Field Services Coordinator who responds to Illegal Dumping and By-law Enforcement complaints. The oldest of pickup trucks within the Waste Services Division's fleet would then be transferred to the Bewdley CRC for use there.

## Financial Impact

In 2022, the Waste Services Division is proposing that \$605,000 be spent on the replacement of two backhoes (a year 2007 and a year 2010 model); and the purchase of a pick-up truck.

The estimated replacement costs for the various vehicles are as follows:

- Replacement of a year 2007 and year 2010 backhoe (\$550,000 – of which \$200,000 is already set aside in Capital Reserves); and
- Purchase of a year 2022 Pickup Truck (\$55,000).



It is recommended that \$405,000 from the 2022 proposed Waste Services Division’s operating budget, along with \$200,000 from the Waste Services Division’s Capital Reserves be allocated to replace the above-noted pieces of equipment.

The following table outlines the ten-year Equipment Purchase and Replacement Plan for major waste management vehicles and equipment.

Waste Management 10 Year Capital Equipment Replacement Plan										
VEHICLE / MACHINE	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
LANDFILL EQUIPMENT										
1988 Ford Tandem (WM02)										
1996 Volvo Rock Truck (WM11)							\$ 200,000			
2007 Roll-off Trailer (WM19)										
2007 Western Star Roll-off Truck (WM14)										
2013 Freightliner Roll-off Truck (WM26)										
2017 International Roll-off Truck (WM30)					\$ 260,000					
2021 Roll-off Truck								\$ 260,000		
2000 CAT 816 Compactor (WM23)				\$ 300,000						
1993 CAT Excavator (WM03)										
2015 John Deere Excavator (WM-28)									\$ 300,000	
1993 Case 580 Backhoe (WM06) - Broom Tractor										
2001 Case Backhoe (WM25)										
2007 Backhoe / 2021 Loader										\$ 275,000
2010 Case Backhoe (WM22)	\$ 350,000									
2011 JCB Backhoe (WM29)			\$ 275,000							
1996 JCB Loader (WM12)										
1985 944 John Deere Loader (WM15)										
2008 D6N Bull Dozer (WM24)						\$ 400,000				
MISC VEHICLES										
2004 Pick-up Truck (WM07)										
2009 Pick-up Truck (WM31)										
2013 Pick-up Truck (WM27)		\$ 55,000								
2018 Pick-up Truck (WM32)							\$ 55,000			
2022 Pick-up Truck	\$ 55,000									
MRF EQUIPMENT										
2014 Skidsteer										
2016 Skidsteer										
2012 Toyota Forklift										
2018 Toyota Forklift										
2013 Loader										
2011 Fiber Baler										
2010 Container Baler										
2011 Hydraulic Lift										
MISC EQUIPMENT										
Seymour CRC Weigh Scale										
Roll-off Bins		\$ 75,000					\$ 75,000			
TOTAL	\$ 405,000	\$ 130,000	\$ 275,000	\$ 300,000	\$ 260,000	\$ 400,000	\$ 330,000	\$ 260,000	\$ 300,000	\$ 275,000

- Denotes vehicles which have already been replaced, but kept in the fleet as spares





## **Risk Considerations**

Not applicable.

## **Impacts to Member Municipalities/Partners**

Not applicable.

## **Included in 2022 Long Term Plan: YES/NO**

Yes.

## 2022 Issue Paper

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# CRC Scale House Replacements – Design / Approvals

### **Purpose**

To develop designs and secure approvals for the replacement of the existing Scale House Buildings at the County's three (3) Community Recycling Centres (CRCs), and for the addition of one set of vehicle weigh scales and a separate new Scale House Building at the Bewdley CRC.

### **Background**

The County has three (3) CRCs: namely the Brighton CRC; Bewdley CRC; and Seymour CRC. Each of the three CRCs has a Scale House Building. But each site has a slightly different configuration for the Scale House Building. At the Brighton and Seymour CRCs, the Scale House consists of two pre-fabricated construction trailers joined together to form a building that houses a Scale Attendant Booth and a common lunch room area, along with a two-piece bathroom. The Scale House at the Bewdley CRC is a slab-on-grade, metal clad building consisting of a Scale Attendant Booth with working space for two Scale Attendants (to service the two vehicle weigh scales at this facility) and a three-piece bathroom. There is no common lunch / meeting space in the Bewdley CRC Scale House Building.

Each of the three Scale House Buildings are in excess of 15 years old and in need of refurbishment or replacement.

Due to the light-weight construction of the Scale House Buildings at the Brighton and Seymour CRCs, and the harsh environment they are subjected to (multiple staff entering and exiting the building on a daily basis in all weather conditions), the Scale House Buildings are in need of replacement. On more than one occasion over the past few years, sections of the floor in both the Seymour and Brighton Scale House Buildings have had to be replaced, as have the door jams and window seals. The annual costs to maintain these structures is increasing to the point where it is more economical to simply replace them versus continually repairing and replacing worn out components.

In addition to the need to refurbish the existing Scale House Building at the Bewdley CRC, due to its age / condition and lack of working space, there is also a need to install an additional set



of weigh scales at the site to meet the ever-increasing usage at this site. The proposed third set of weigh scales would require its own, separate, new Scale House Building.

With each passing year the usage of the County's three CRCs increases, and that increase is most prevalent at the Bewdley CRC, which is located closest to the most populous communities within the County, being Cobourg and Port Hope. The below table depicts the increasing trend in usage of the three CRC between 2013 and 2019. Due to the closure of the CRCs for a period of time in 2020, site usage numbers for that year have not been included. It should be noted that the overall usage of the CRCs over the first seven (7) months of 2021 is up by almost 2%, when compared to the same seven-month timeframe in 2019. Accordingly, the trend in increasing usage continues into 2021 and is expected to continue into the future, as our population increases and as development continues within the County.

Number of Patrons

Site	2013	2019	Change (#)	Change (%)
Bewdley	38,800	65,430	26,630	69%
Brighton	27,955	35,680	7,725	28%
Seymour	20,110	19,756	-354	-2%
Total	86,865	120,866	34,001	39%

As can be seen from the data in the above table, the overall usage of the Bewdley CRC has increased by 69% over a 7-year period.

During Spring, Summer and Fall months it is not uncommon for over 400 patrons to make use of the Bewdley CRC on any given day. On Saturdays, the average number of patrons at the Bewdley CRC is approximately 430 per day, with peaks days in excess of 470.

The Bewdley CRC operates 8.5 hours per day, 6 days per week in the Spring, Summer and Fall, and 5 days per week in the Winter. On days when the site has over 430 patrons, that represents an average of 51 patrons per hour, or roughly one patron per minute. This is an average, when in reality, the 430 patrons typically come in higher volumes near the beginning of the day, as well as closer to the end of the day. This number of patrons on a daily basis puts a significant strain on the ability of staff to process the vehicles entering and exiting the site and also leads to congestion within the site, as line-ups form of vehicles waiting to weigh-out and pay.

The solution to this challenge is to construct a third set of weigh scales, with a Scale House Building that would be utilized during our busiest times (typically Fridays and Saturdays in the late Spring and Summer months) to process out-bound vehicles. This would result in one set of



scales being used to process in-bound loads, and two sets of scales being used to process out-bound vehicles and payments.

## **Consultation/Options**

If the Scale House Buildings at the CRCs are not refurbished and / or replaced, the costs to maintain the buildings will continue to escalate and the scope of the repairs needed to keep the buildings safe and operational will increase. For example, replacing a section of rotted floor, may expand into an entire floor replacement being required which would be both time consuming and likely require the facility to be closed for a few days and result in lost tipping fee revenues and a diminished level of service while the repairs are undertaken.

An additional set of weigh scales is required at the Bewdley CRC. The increase in site usage since 2013 has already negatively impacted operations, sometimes resulting in lengthy wait times for patrons on our busiest days (typically the first warm Saturdays in the Spring). Lengthy delays upset patrons, result in vehicle lineups that can back-up on to County Road 9, and in extreme cases, disenfranchise residents to the point where they may resort to illegal dumping versus going to the Bewdley CRC, where they anticipate having to undergo a lengthy wait time to dispose of their waste materials.

Staff feel it is imperative to get the designs for the Scale House Buildings and the proposed additional weigh scale completed and submitted to the Ministry of the Environment and Climate Change for review and approval, so that planning for the construction of the replacement of the buildings and the new weigh scale can be done in 2022, with the expectation of seeking Council approval in 2022 for the actual construction of the buildings and weigh scale in 2023.

## **Financial Impact**

In 2022, the Waste Services Division is proposing that \$100,000 be spent to retain the services of a Consultant Engineering Firm to develop the detailed designs for the refurbishment / replacement of the existing Scale House Buildings and to design the proposed new set of weigh scales and associated Scale House Building at the Bewdley CRC.

## **Impacts to Member Municipalities/Partners**

Not applicable.

## **Included in 2022 Long Term Plan: YES/NO**

Yes.

## 2022 Issue Paper

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# Change in Household Hazardous Waste Disposal Services

### Purpose

To recommend changes to the level of service provided to residents related to Household Hazardous Waste (HHW) disposal within the County.

### Background

Prior to 2019, the County operated four HHW Depots throughout the County. The four depots were located at the Brighton, Bewdley and Seymour CRCs and the Cobourg Works Yard. Each of the Depots was operated one Wednesday and one Saturday per month, during the months of April, through to October. On an annual basis, there were a total of 56 event days at which residents could dispose of their HHW.

In 2019, the County began offering year-round HHW disposal services to residents at the Bewdley and Brighton CRCs. Currently HHW materials are accepted year-round, on Mondays, Wednesdays, and Saturdays at the Brighton CRC; and year-round on Tuesdays, Thursdays and Saturdays at the Bewdley CRC. The County still maintains the two seasonal HHW Depots, located at the Seymour CRC and the Cobourg Works Yard, which were operated one Wednesday and one Saturday per month, during the months of April through to October in 2019. However, due to the ongoing COVID 19 Pandemic, the HHW Depots at the Seymour CRC and the Cobourg Works Yard were not operated in 2020 or 2021.

With the Brighton and Bewdley CRCs each accepting HHW 3 days per week, year-round, these two locations provide a combined 312 days per year of HHW disposal access to residents. This represents a 550% increase in accessibility to HHW disposal, as compared to the former HHW Depot service offered prior to 2019.

In 2020 and 2021, even without the operation of the HHW Depots at the Cobourg Works Yard and the Seymour CRC, staff saw an increase in the tonnage of HHW received from residents, as compared to 2018, when the County only operated the four seasonal HHW Depots.



With the understanding that the tonnage of HHW received did not diminish with the closure of the HHW Depots at the Seymour CRC and the Cobourg Works Yard in 2020 and 2021, staff believe that it would be prudent to eliminate the operation of the HHW Depots at the Cobourg Works Yard and the Seymour CRC, as it would result in a net operational savings of approximately \$30,000 annually.

The County does not have enough permanent or part-time employees within the Waste Services Division to staff the HHW Depot events on Wednesdays and Saturdays, as each Depot event day requires upwards of 7 staff. To operate the HHW Depot event days, the Waste Services Division retains contracted employees for the days from local employment agencies, and typically has one Supervisor and one additional Waste Services Division employee on hand to oversee and coordinate the works. Retaining contracted employees for the day presents Health and Safety challenges, as training has to be provided to the contracted employees in the mornings, prior to the start of the event, on how to safely and properly manage various household hazardous waste materials, what PPE is required and how it is to be worn / used.

One other challenge with the HHW Depot event days is that their success is heavily dependent on weather. When staffing up for these event days we have to plan for “worst case”, meaning the maximum number of patrons we believe may attend. On the busiest event days, in excess of 250 patrons may attend. When we get a day that is stormy and / or cold, the number of patrons can drop to as low as 30. Whether we receive HHW from 30 or 250 patrons, we still incur the cost of staffing the event for the day with 7 employees.

## **Consultation/Options**

If Council do not support eliminating the HHW Depots at the Seymour CRC and the Cobourg Works Yard at the present time, staff recommends that the usage of the two Depots be tracked over a two-year period in 2022 and 2023, to determine what the usage of the two Depots is, now that HHW disposal is accessible year-round at the Bewdley and Brighton CRCs.

After the two years, staff would then report back to Council on the usage and recommend a future course of action, at that time, on the closure of the Depots, or their continued usage, depending on the findings of the two years of additional operation.

## **Financial Impact**

If the HHW Depots at the Cobourg Works Yard and the Seymour CRC are closed permanently, starting in 2022, staff anticipate an overall cost saving of \$30,000 annually.



## **Impacts to Member Municipalities/Partners**

Not applicable.

## **Included in 2022 Long Term Plan: YES/NO**

Yes.

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## 2022 Business Plan & Budget

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### Facilities Services and Major Capital Project (MCP) Division

#### Prior Year Accomplishments

##### Economic Prosperity & Innovation

- Update 10 Year Capital Plans for 555 Courthouse Road Cobourg, 860 William Street Cobourg, 600 William Street Cobourg, 423 Croft Street Port Hope, 232 Purdy Road Colborne Emergency Services Base and all County Housing properties.
- Develop budget plans for Roseneath Emergency Services Base, Trent Hills Emergency Services Base and Agri-Food Centre building.
- Implementation of the County's 5-year Energy Conservation Plan.
- Worked with GIS and Finance to implement the County Asset Management Plan.
- Major Capital Projects (MCP) updated a 10-year plan of potential projects for the MCP division.
- Construction began for the Golden Plough Lodge and Northumberland County Archives & Museum Redevelopment Project (GPLNCAM). Construction is anticipated to be completed in 2023.
- Construction began for the Elgin Park Affordable Housing Project. The anticipated completion is in late 2023.
- The Net-Zero Feasibility Study for the 473 Ontario Street Affordable Housing Project was completed.
- Completed technical investigations and site evaluation for several potential sites for future housing and major building projects.

##### Sustainable Growth

##### Corporate Projects Completed

- 860 William Street Cobourg carpet was replaced.
- 860 William Street Cobourg POA new entrance was constructed.





### **Housing - Annual Capital Work**

- Installed lift at 8 King Street Colborne
- Completed lift improvement design at 330 King Street Cobourg
- Complete walkway improvements at 111 Front Street Campbellford, 6 Percy Street Colborne, and 24 Queen Street Port Hope
- Completed LED lighting upgrades to common areas at 12 Meade Street Brighton, 8 King Street Colborne.
- Replaced hot water tank at 12 Meade Street Brighton
- Replaced hot water tanks at 45 Wellington Street Port Hope
- Replaced stoves at all NCHC Apartment buildings
- Replaced balconies at 24 Queen Street Port Hope
- Completed interior painting at 330 King Street Cobourg
- Replaced eavestrough at 12 A Meade Street Brighton
- Completed bathroom, kitchen and flooring renovations to units.

### **Roads**

Installed make-up air unit at Morganston Depot

### **Golden Plough Lodge Redevelopment Project**

- Construction continued through 2021. Construction is anticipated to be completed in 2023.
- Stage II Building Permit obtained by the Town of Cobourg for the above grade superstructure.

### **Thriving & Inclusive Communities**

- Updated the Fire Plans for 555 Courthouse Road Cobourg, 860 William Street Cobourg, 600 William Street Cobourg, and all County Housing properties.
- Conducted fire drills for 555 Courthouse Road Cobourg, 860 William Street Cobourg, 600 William Street Cobourg, Agri-Food Centre and all County Housing properties.
- Continued to work with Community and Social Services staff to develop new Social Housing policies and procedures to address concerns of tenants and County staff.
- MCP participated in several shared services projects, in which both the County and our member municipalities have benefited.

### **Leadership in Change**

- Members of the Facilities Services and Major Capital Projects Division participated in the Safety and Management courses, Accessible training seminars, over the past year.



- MCP Department provided planning and design management, as well as construction and financial management at the shared services bases in Colborne, Roseneath and Campbellford.
- Took a leadership role in sustainable buildings in support of the County by seeking LEED Silver Certification in both the Campbellford Emergency Services Base, Elgin Street Social Housing project and the GPLNCAM.

## **2022 Service Objectives & Initiatives**

### **Economic Prosperity & Innovation**

- Update 10 Year Plans for Housing, Transportation & Waste, Corporate Services and Paramedic Base buildings.
- Compile Capital and Repairs & Maintenance budgets for Housing, Transportation & Waste, Corporate Services and Paramedic Base buildings.
- Continue to implement the Cityworks work order system to track all incoming work orders.
- Continue to adopt the asset management program inputting all relevant data.
- Continue to update the 10-year plan for MCP. New projects are being added on a continual basis.
- Continue to progress in the construction of the new GPL/NCAM.
- Continue construction of the Elgin Park Affordable Housing Redevelopment Project.
- Retain an Architectural and Engineering Consultant Team for the Detailed Design and Construction Administration of the 473 Ontario Street Affordable Housing Development Project, using the Construction Management (CM) Delivery Method.
- Retain a company to perform the scope for the Construction Manager At Risk (CMAR), with scope as outlined in CCDC 5B for the 473 Ontario Street Affordable Housing Development Project.

### **Sustainable Growth**

- Continue to develop a more efficient Housing maintenance scheduling program for staff.
- Continue to develop the preventive maintenance plan for all County Buildings.
- Complete County Housing, Northumberland Paramedics, Transportation & Waste, and Corporate capital projects on time and on budget.
- Continue to manage the repairs and maintenance budgets for the buildings in Housing, Transportation & Waste, Corporate Services, and the 6 Northumberland Paramedic bases.
- Complete projects in the next stage of the Energy Conservation Plan, while updating the 5-year plan.
- Co-Construction Administration for construction of GPL/NCAM starting fall 2020.



- Continue to progress in the construction of the new GPL/NCAM.
- Continue construction of the Elgin Park Affordable Housing Redevelopment Project.
- Complete the detailed design for the 473 Ontario Street Affordable Housing Development Project.
- Expected to complete any necessary due diligence studies for a potential affordable housing project in Port Hope.

### **Thriving & Inclusive Communities**

- Continue to work with Social Services staff to develop new Social Housing policies and procedures.
- Continue to update Fire Safety Plans for Corporate Services, Paramedic Bases, Waste Services Division, Agri-Food Centre and Housing buildings.
- MCP will continue to work closely with the County's Social Services department in the planning and Design Development stages of the 473 Ontario Street Affordable Housing Development Project, the construction of the Elgin Park Affordable Housing Redevelopment Project, and potentially an affordable housing project in Port Hope.
- Working with Social Services on the early stages of design for a possible additional Social Housing project.
- Continue to have open communication with the GPL community, neighbours, staff, residents, and residents' families as the project progresses through webpages, newsletters and web meeting.

### **Leadership in Change**

- Continue to promote the Health and Safety Management programs with the Facilities team and all County employees.
- MCP intends to review all the most up-to-date sustainable building processes, including LEED, for all new County buildings.

## **Long Term Plan & Strategic Objectives**

### **Economic Prosperity & Innovation**

- Work with purchasing to fine tune tendering request for proposals and quotes.
- Continue to further develop the Housing, Transportation & Waste, Corporate and Paramedic buildings repair and maintenance and Capital Budget.
- Continue to work with Finance to implement the Asset Management program.



- MCP will continue to develop projects beyond the 10-year plan so that we can forecast the work that needs to be done and the staff that will be required to complete the projects.

### **Sustainable Growth**

- Provide a plan to increase County Housing Stock to required levels.
- Work with Northumberland Paramedics on plans for new stations.
- Ensure Roads & Waste facilities are improved according to 10-year plans.
- Provide assistance to Corporate for their long-term building plans.
- MCP will work with Community and Social Services to develop new Social Housing projects.
- Continue to work on the GPL/NCAM project, completing Phase 1 (resident move-in) in 2022/2023, Phase 2 (demolition of existing GPL) in 2023, and Phase 3 (site works and development of the campus) by the end of 2023.
- Complete Phase 1 of the Elgin Street Affordable Housing Redevelopment construction.
- Complete detailed design on the 473 Ontario Street Affordable Housing Development Project.

### **Thriving & Inclusive Communities**

- Provide safe affordable housing for the County.
- Continue to keep up to date with all new Fire Safety and Accessibility Standards.
- Continue to develop projects with our member municipalities under the guise of shared services, and to work with various County departments on long term building plans. i.e. Social Housing, Transportation, Paramedics and Forestry.

### **Leadership in Change**

- Continue to encourage employees to enroll in continued education to assist in their Facilities role and Health and Safety Management Courses.
- MCP will continue to research and develop new sustainable building methods such as LEED, Passive House, Integrated Project Delivery, and other project delivery methods.
- Continue planning and developing new projects for the County, as well as shared services with our member municipalities.

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## 2022 Issue Paper

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### Corporate Buildings

#### Purpose

The Facilities Services Department has developed a 10-year capital plan for each of the County buildings to ensure that the buildings are maintained on a year-to-year basis. This protects the County from being hit with massive, unexpected building maintenance costs in one season. The following issue paper is a result of those ten-year plans.

#### Background

Northumberland County owns and operates three corporate buildings located in Cobourg:

- The Provincial Courthouse at 860 William Street;
- The Northumberland Paramedics/Tourism & Economic Development/Food 4 All/Facilities building at 600 William Street; and
- The County Headquarters at 555 Courthouse Road.

The Facilities Services and Major Capital Project Division is responsible for the ongoing maintenance of these properties. A 10-year capital plan has been developed and maintained for each building. In addition to these facilities, we also have 10-year plans for the 216 Purdy Road (OAFVC), 232 Purdy Road (Colborne ESB), Material Recovery Facility (MRF), 423 Croft Street (Port Hope Paramedic Base) and Trent Hills ESB. From those capital plans, the following items are highlighted to be addressed this year:

#### **555 Courthouse Road Cobourg: Geothermal system - \$30,000**

The geothermal system has been operating for 14 years and needs to have preventative maintenance. Work will be done with the pumps, wells, and overall geothermal system. This specialized work is expected to cost \$30,000.



### **860 William Street – Design and Implementation of Humidity control system - \$400,000**

Provincial guidelines from CBRE Limited indicate humidity controls need to be in place to maintain safe levels of humidity in this facility. This has been brought forward as it is stipulated in sub sections of the lease with the Province. Presently there are no humidity controls incorporated into the many heating and cooling systems, and low and high levels of humidity are observed at different times of the year. The systems need to be designed to control the humidity. A mechanical engineering firm will be retained to design the best solution for this facility, and assist with construction cost estimates, specifications, and contract management during the upgrades. This is expected to cost \$50,000 for the design and contract management, and an additional \$350,000 for the installation of the humidity control systems.

### **600 William Street – Interior Lighting upgrades– \$25,000**

Fluorescent fixtures in hallways and offices throughout the building will be replaced with more efficient LED fixtures to reduce electrical output and realize savings. Many lights remain on for 24 hours a day as a building safety measure so installation of LED lights will be very beneficial. This type of upgrade is expected to have a 2 year pay back with the project being completed in-house with our electrician in the facilities division. The cost of the new fixtures is expected to cost \$25,000.

## **Consultation/Options**

### **555 Courthouse Road Cobourg: Geothermal system maintenance**

The geothermal system has been operating for 14 years and needs to have preventative maintenance to ensure the asset in in good working order. This equipment is complex and very expensive to repair in the event of a breakdown. This maintenance has been recommended by mechanical contractors and Northumberland County's HVAC technician as good practice.

### **860 William Street – Design and Implementation of Humidity control system - \$400,000**

To meet the requirements in the Lease between the County and the Province the humidity control in this building needs to be addressed. This issue was brought forward by CBRE Limited staff who oversee the maintenance at this facility for the Province. The design process will help identify ways to control humidity in the multiple heating and cooling systems. Senior management in the County have been consulted to determine the lease requirements, and budgetary pricing was established by a mechanical contractor and our HVAC technician. The



design process by mechanical engineers is needed to ensure all factors and complexities have been considered.

#### **600 William Street – Interior Lighting upgrades**

LED lighting upgrades have been completed in 2020 in the food-4all warehouse and paramedics garage areas at 600 William. Lighting was improved for staff, while reducing the electrical usage. With in-house staff completing this project, the cost of the materials is only factored in, making this a very quick payback from electrical savings. It is expected to take 2 years to payback in savings.

## **Financial Impact**

#### **555 Courthouse Road Cobourg: Geothermal system maintenance – 30,000**

The cost to do preventative maintenance work and improvements to the Geothermal system is \$30,000.

#### **860 William Street – Design and Implementation of Humidity control system - \$400,000**

The design of the humidity control system is expected to be \$50,000, and the implementation of the designs through an RFQ process is expected to be another \$350,000.

#### **600 William Street – Interior Lighting upgrades- 25,000**

The LED upgrade of existing fluorescent light fixtures will cost \$25,000.

Total Financial Impact is \$455,000 with \$400,000 being utilized from Corporate Reserves having an internal payback schedule of 10 years.

## **Risk Considerations**

#### **555 Courthouse Road Cobourg: Geothermal system maintenance**

The geothermal system is now 14 years old. A full preventative maintenance is required to help ensure it is running properly and avoid any possible unforeseen service interruptions. Preventative maintenance can avoid additional emergency repairs, and breakdown of this large



capital asset. A breakdown of this system could lead to corporate offices temperature fluctuations and potentially an unsafe workplace.

#### **860 William Street – Design and Implementation of Humidity control system**

The humidity needs to be controlled to comply with the County's lease agreement with the Province for this facility. Not completing this design could have legal issues with the lease, as well as on-going humidity control safety implications. The humidity concern developed desire to limit COVID-19 air borne spread, but other considerations are also concerns including mold and poor air quality. Humidity control will benefit all occupants of the building.

#### **600 William Street – Interior Lighting upgrades**

Interior LED lighting upgrades will help reduce electrical output while providing a better-quality light for staff and visitors to the building. Not doing this upgrade will result in high energy usage while the County is aiming to reduce GHG emissions with establish targets.

### **Impacts to Member Municipalities/Partners**

#### **555 Courthouse Road Cobourg: Geothermal system maintenance**

Operations at 555 Courthouse Road could be impacted, resulting in potential service interruptions to the residents of Northumberland County. In addition, the County's Emergency Operations centre could be impacted due to HVAC system issues.

#### **860 William Street – Design and Implementation of Humidity control system**

Improved air quality at the Courthouse will be good for the County as a whole. Residents from all municipalities can utilize services at the provincial courthouse. The improvements will allow the building to be a better environment for staff and visitors.

#### **600 William Street – Interior Lighting upgrades**

Reduced energy consumption is in all resident's best interest and adds a better lighting quality for the operations at this facility. Residents from all municipalities could utilize services from tenants and County departments.





## **Included in 2021 Long Term Plan: YES/NO**

### **555 Courthouse Road Cobourg: Geothermal system maintenance**

Yes.

### **860 William Street – Design and Implementation of Humidity control system**

No. Humidity control system design was never previously considered due to the potential cost implications. The lease at the Courthouse indicates a need for this type of mechanical system control and providing this to our tenants. This was not previously known and has been discussed with senior management.

### **600 William Street – Interior Lighting upgrades**

Yes.