The Corporation of the Town of Tecumseh

Public Works & Engineering Services

To: Mayor and Members of Council

From: Phil Bartnik, Director Public Works & Engineering Services

Date to Council: January 25, 2022

Report Number: PWES-2022-03

Subject: Approval of 2022 Public Works & Engineering Services 2022 Capital Works Projects

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Recommendations

It is recommended:

That the following Public Works & Engineering Services projects for 2022, be **approved**.

			Previously Approved	Requested for 2022	Future Costs	Total Costs
Sidewalk Projects						
1.	Sidewalk Repair Program - Various Locations		$ -	**$ 69,000**	$ -	$ 69,000
	Sub-Total		$ -	**$ 69,000**	$ -	$ 69,000
	Grants:		$ -	**$ -**	$ -	$ -
	Recoveries:		$ -	**$ -**	$ -	$ -
	Sidewalk Lifecycle Reserve:		$ -	**$ 69,000**	$ -	$ 69,000
New Infrastructure						
1.	Riverside Drive Trail		$ 1,201,800	**$ 460,200**	$ -	$ 1,662,000
2.	Lesperance Road Trail (CR22 to CR42)		$ 137,500	**$ -**	$ 1,066,500	$ 1,204,000
3.	CWATS Study - Pike Creek/Tecumseh Road		$ 6,000	**$ -**	$ -	$ 6,000
	Sub-Total:		$ 1,345,300	**$ 460,200**	$ 1,066,500	$ 2,872,000
	Grants:		$ -	**$ -**	$ 1,216,707	$ 1,216,707
	Recoveries:		$ -	**$ -**	$ -	$ -
	Infrastructure Reserve:		$ 1,345,300	**$ 460,200**	-$ 150,207	$ 1,655,293

		Previously Approved	Requested for 2022	Future Costs	Total Costs
Road Projects					
1.	Road Paving - Tar & Chip	$ -	**$ 100,000**	$ -	$ 100,000
2.	Road Paving - Asphalting	$ -	**$ 1,100,000**	$ -	$ 1,100,000
3.	Road Paving - Crack Sealing	$ -	**$ 100,000**	$ -	$ 100,000
4.	Expansion/Improvements PW Yard (North)	$ 110,000	**$ 50,000**	$ -	$ 160,000
5.	TTMP Bicycle Sharrows	$ 15,000	**$ -**	$ -	$ 15,000
6.	CR42/43 Construction	$ 22,450	**$ -**	$ 47,550	$ 70,000
7.	Tecumseh Hamlet SPA EA FSR	$ 98,000	**$ -**	$ -	$ 98,000
8.	Tecumseh Sigange Project	$ 16,000	**$ 60,000**	$ -	$ 76,000
9.	Lesperance/VIA Rail Improvements	$ 1,849,300	**$ -**	$ -	$ 1,849,300
10.	Sylvestre Drive Sanitary Sewer Extension	$ 94,000	**$ -**	$ 1,020,000	$ 1,114,000
11.	Brighton Road Traffic Improvements	$ 30,000	**$ -**	$ -	$ 30,000
12.	Various Watermain Replacement Projects 2021	$ 23,100	**$ -**	$ -	$ 23,100
13.	Scully & St. Mark'sStorm PS/Riverside Drive	$ 127,600	**$ 1,400,400**	$ -	$ 1,528,000
14.	Cty Rd 46/Webster/Laval Sanitary Sewer Extension	$ 120,750	**$ -**	$ 1,982,050	$ 2,102,800
15.	Del Duca Drive Sanitary Sewer	$ 112,450	**$ 5,000**	$ 1,331,050	$ 1,448,500
16.	Lanoue Street Improvements	$ 488,300	**$ -**	$ 503,200	$ 991,500
17.	Tecumseh Road Path - Arlington to DM Eagle	$ 100,000	**$ -**	$ -	$ 100,000
18.	Annual Project Contingency	$ -	**$ 250,000**	$ -	$ 250,000
19.	PJ Cecile Storm Pump Station	$ 14,000	**$ 42,500**	$ 217,500	$ 274,000
20.	Tecumseh Rd - Storm and Road Improvements	$ 133,000	**$ 2,554,200**	$ -	$ 2,687,200
	Sub-Total	$ 3,353,950	**$ 5,662,100**	$ 5,101,350	$ 14,117,400
	Grants:	$ -	**$ -**	$ 525,000	$ 525,000
	Recoveries:	$ -	**$ -**	$ 2,795,000	$ 2,795,000
	Road Lifecycle Reserve:	$ 3,353,950	**$ 5,662,100**	$ 1,781,350	$ 10,797,400
Bridge Projects					
1.	Bridge and Culvert Needs Study (>3m Span)	$ -	**$ 39,000**	$ 78,000	$ 117,000
2.	Bridge #1005 - Pike Creek Drain at Baseline Road	$ 250,000	**$ -**	$ -	$ 250,000
3.	Culvert #42 - Snake Lane Road	$ 62,300	**$ -**	$ 487,500	$ 549,800
4.	Culvert #53 - Snake Lane Road	$ 65,100	**$ -**	$ 572,500	$ 637,600
5.	Culvert #54 - Snake Lane Road	$ 65,100	**$ -**	$ 572,500	$ 637,600
	Sub-Total:	$ 442,500	**$ 39,000**	$ 1,710,500	$ 2,192,000
	Grants:	$ -	**$ -**	$ -	$ -
	Recoveries:	$ -	**$ -**	$ -	$ -
	Bridges Lifecycle Reserve:	$ 442,500	**$ 39,000**	$ 1,710,500	$ 2,192,000

		Previously Approved	Requested for 2022	Future Costs	Total Costs
Water Projects					
1.	Riverside Drive Trail (Lesperance-Manning)	$ -	**$ 25,000**	$ -	$ 25,000
2.	Banwell Watermain - Intersection to South of CPR	$ 130,900	**$ -**	$ 607,100	$ 738,000
3.	Various Watermain Replacement Projects 2021	$ 1,085,000	**$ -**	$ -	$ 1,085,000
4.	Hwy3-CR34 Water Valve Replacement	$ 456,300	**$ -**	$ -	$ 456,300
5.	Watermain Anode Program - Inspection/Replacement	$ 259,690	**$ 20,000**	$ -	$ 279,690
6.	Tecumseh Hamlet SPA EA FSR	$ 98,000	**$ -**	$ -	$ 98,000
7.	Cty Rd 46/Webster Laval Sanitary Sewer Exten.	$ 80,400	**$ -**	$ 1,240,400	$ 1,320,800
8.	Del Duca Drive Sanitary Sewer	$ 5,550	**$ 3,000**	$ 22,250	$ 30,800
9.	CR42/43 Construction	$ 758,600	**$ 1,372,100**	$ 390,000	$ 2,520,700
10.	Tecumseh Road - Storm and Road Improvments	$ -	**$ 67,000**	$ -	$ 67,000
11.	2020 Water and Wastewater Rates Study	$ 10,000	**$ -**	$ -	$ 10,000
12.	North Tecumseh Water Distribution Model	$ -	**$ 70,000**	$ -	$ 70,000
13.	Water Sampling Station Replacements	$ -	**$ 37,000**	$ -	$ 37,000
	Sub-Total:	$ 2,884,440	**$ 1,594,100**	$ 2,259,750	$ 6,738,290
	Grants:	$ -	**$ -**	$ -	$ -
	Recoveries:	$ -	**$ -**	$ -	$ -
	Watermain Reserve Fund:	$ 2,884,440	**$ 1,594,100**	$ 2,259,750	$ 6,738,290
Wastewater Projects					
1.	Sylvestre Drive Sanitary Sewer Extension	$ 186,800	**$ -**	$ 761,100	$ 947,900
2.	Tecumseh Hamlet SPA EA FSR	$ 113,000	**$ -**	$ -	$ 113,000
3.	Cty Rd 46/Webster/Laval Sanitary Sewer Exten.	$ 166,700	**$ -**	$ 1,290,100	$ 1,456,800
4.	Scully & St. Mark's Storm PS/Riverside Drive	$ 98,550	**$ 316,450**	$ -	$ 415,000
5.	Del Duca Drive Sanitary Sewer	$ 188,500	**$ 20,000**	$ 1,027,200	$ 1,235,700
6.	Sanitary Sewer Model Update	$ 315,000	**$ 30,000**	$ -	$ 345,000
7.	CR42/43 Construction	$ 74,900	**$ 1,861,700**	$ -	$ 1,936,600
8.	Tecumseh Road - Storm and Road Improvements	$ -	**$ 38,300**	$ -	$ 38,300
9.	8th Concession Sanitary Sewer By-Law	$ -	**$ 45,000**	$ -	$ 45,000
10.	2020 Water and Wastewater Rates Study	$ 10,000	**$ -**	$ -	$ 10,000
	Sub-Total:	$ 1,153,450	**$ 2,311,450**	$ 3,078,400	$ 6,543,300
	Grants:	$ -	**$ -**	$ -	$ -
	Recoveries:	$ -	**$ -**	$ 3,764,900	$ 3,764,900
	Wastewater Sewers Reserve Fund:	$ 1,153,450	**$ 2,311,450**	-$ 686,500	$ 2,778,400
Wastewater Facility Projects					
1.	SCADA Software/Server/Nodes Update	$ 26,250	**$ 20,000**	$ -	$ 46,250
2.	Sylvestre Drive Sanitary PS Improvements	$ 30,000	**$ 25,000**	$ 150,000	$ 205,000
3.	Lakewood Sanitary PS Improvements	$ 32,500	**$ 22,000**	$ 56,000	$ 110,500
4.	Gauthier Sanitary Pump Station	$ -	**$ 15,000**	$ 385,000	$ 400,000
	Sub-Total:	$ 88,750	**$ 82,000**	$ 591,000	$ 761,750
	Grants:	$ -	**$ -**	$ -	$ -
	Recoveries:	$ -	**$ -**	$ -	$ -
	Wastewater Facilities Reserve Fund:	$ 88,750	**$ 82,000**	$ 591,000	$ 761,750

		Previously Approved	Requested for 2022	Future Costs	Total Costs
Stormwater Projects					
1.	Riverside Drive Trail (Lesperance-Manning)	$ 37,500	**$ 142,900**	$ -	$ 180,400
2.	Lesperance/VIA Rail Improvements	$ 162,500	**$ 120,400**	$ -	$ 282,900
3.	Sylvestre Drive Sanitary Sewer Extension	$ 4,200	**$ -**	$ 49,900	$ 54,100
4.	Oldcastle Storm Drainage Master Plan	$ 490,000	**$ 45,000**	$ -	$ 535,000
5.	Tecumseh Hamlet SPA EA FSR	$ 496,000	**$ -**	$ -	$ 496,000
6.	Cty Rd 46/Webster/Laval Sanitary Sewer Exten.	$ 77,400	**$ -**	$ 455,700	$ 533,100
7.	Scully & St. Marks Storm PS/Riverside Drive	$ 1,071,100	**$ 14,035,900**	$ -	$ 15,107,000
8.	MRSPA Pond Design and Construction	$ 2,780,000	**$ -**	$ 9,955,000	$ 12,735,000
9.	Del Duca Drive Sanitary Sewer	$ 165,850	**$ 24,000**	$ 940,850	$ 1,130,700
10.	Lanoue Street Improvements	$ -	**$ -**	$ 55,500	$ 55,500
11.	Shoreline Management Plan	$ 350,000	**$ -**	$ -	$ 350,000
12.	Stormwater Rate Study	$ 45,000	**$ -**	$ -	$ 45,000
13.	PJ Cecile Pump Station	$ 486,000	**$ 1,457,500**	$ 7,482,500	$ 9,426,000
14.	Tecumseh Rd - Storm and Road Improvements	$ 84,000	**$ 1,911,600**	$ -	$ 1,995,600
15.	Turkey Creek Watershed Assessment - PH 1-2	$ 60,000	**$ -**	$ -	$ 60,000
	Sub-Total:	$ 6,309,550	**$ 17,737,300**	$ 18,939,450	$ 42,986,300
	Grants:	$ 200,000	**$ -**	$ 10,700,000	$ 10,900,000
	Recoveries:	$ -	**$ -**	$ -	$ -
	Storm Sewer Lifecycle Reserve:	$ 6,109,550	**$ 17,737,300**	$ 8,239,450	$ 32,086,300

Executive Summary

The Public Works & Engineering Services (PWES) Department is recommending the Pre-Approval of the 2022 PWES Capital Works Projects to continue projects previously approved and initiate priority projects in the coming year. Subject to the outcome of on-going strategic planning sessions with Council to confirm the desired focus of infrastructure works for the Town over the next 5 years, a separate report regarding the remainder of the 2022-2026 Public Works & Engineering Services Five Year Capital Works Plan will be provided for Council consideration.

The total number of 2022 projects for PWES is 39, requiring $27.4M in budget allocation. Most of these projects are on-going and approximately 10 are new projects. The new projects generally relate to water, road, sanitary and bridge repairs/ improvements required to maintain existing infrastructure, support proposed developments and/or satisfy funding agreements. The notable projects and studies consist of the following:

- Finalization of various studies such as the Shoreline Management Plan, the Stormwater Rates Study, the Oldcastle Stormwater Master Plan and the Sanitary Sewer Model Update;
- Continuation of detailed design for the Scully, St. Marks and PJ Cecile Storm Pump Stations under the Disaster Mitigation and Adaptation Fund program;

- Construction of the Riverside Drive multi-use pathway between Manning Road and the Tecumseh/Windsor border;
- Construction of the Tecumseh Road Storm and Road Improvements Project;
- Construction of the Lesperance Road/VIA Crossing Improvements Project;
- Watermain and sanitary sewer improvements related to the County of Essex County Road 42 Improvements Project.

Details and in-progress updates for each of the 2022 projects are provided within the following sections of this report.

Background

Approval of 2022 PWES Capital Works Projects is sought to maintain a consistently high level of service and strive to improve the Town's infrastructure components in a timely manner.

In general, many of the projects listed in this report for 2022 are on-going projects that require works to continue into 2022. Additionally, a number of new projects are recommended to satisfy applicable legislation or updated municipal standards and/or grant requirements. The report is structured so that all projects with a request for funds in 2022 are detailed first, followed by ongoing projects which have prior funding allocations.

A separate report in 2022 regarding the remainder of the 2023-2026 Public Works & Engineering Services Five Year Capital Works Plan is forthcoming following the conclusion of on-going discussions with Council regarding project prioritization.

Comments

Detailed information is provided for all 2022 projects, both those previously approved and those newly proposed for 2022. Generally, the description for each project includes cost estimates for each of the related infrastructure categories (i.e. roads, water, wastewater, storm, etc.). Project descriptions also outline the main project drivers.

The tables presented in the Recommendations section of this report separate the cost of each project into the related infrastructure categories and include previously approved budget, requested budget for 2022, future budget needs and total category cost related to each specific project.

Certain projects have been proposed to be phased in over a two-year period or longer because the project scope is too large or costly to be completed in one construction season or would be too disruptive over a large area and for too long relative to the adjacent properties. Projects being phased would typically be tendered as two separate tender calls.

Finally, all new projects, and infrastructure replacement projects, will be designed to be compliant with the current requirements of the Accessibility for Ontarians with Disabilities Act (AODA).

In the following sections, unless otherwise noted, these acronyms are used: “CR” means County Road; “EA” means Environmental Assessment; “FSR” means Functional Servicing Report; “ERCA” means Essex Region Conservation Authority and “Ha” means hectares.

Section A: Projects Requiring Funding Allocations in 2022

A1. Tar & Chip, Asphalting and Crack Sealing

Work	**Requested for 2022**	Location of Work	Extent
Tar & Chip	**$100,000**	8th Concession Road 11th Concession Road 12th Concession Road (The above projects relate to edge repair and shouldering)	STR to CR8 STR to CR8 STR to CR8
Asphalting	**$1,100,000**	Riverside Drive Poisson Street Piccadilly Avenue Trafalgar Court Green Valley Drive Verdant Court Maisonneuve Street Intersection Road	Arlington to Kensington Tecumseh to Arbour Full extent Full extent Meadowland to Brunelle Full extent St. Anne to Lesperance Lesperance to Shawnee
Crack Sealing	**$100,000**	Various locations	To be determined.

Roads recommended for inclusion in the annual paving program are selected with reference to the Town’s Road Needs Study, PWES staff input and suggestions from Council and residents. PWES investigates and categorizes the needs based on the condition of the roads in comparison with other similar traffic volumes.

Roads proposed for tar and chip are based on PWES staff review of observed road condition and maintenance needs in conjunction with Pavement Condition Index (PCI) ratings from the Road Needs Study. Based on this information, Administration recommends the installation of new tar and chip surfaces to repair the edge portions of the travelled road surfaces. This work will also include related road shoulder improvements. In addition, PWES suggests earmarking an amount for remedial tar and

chip repairs on roads as needed. Every spring, PWES finds areas that require repair from winter plowing activities, for example.

PWES also recommends that an amount be set aside for crack sealing of Town roads to extend the lifespan of the pavement before more substantial repairs or replacement are required. An amount of $100,000 is set aside for crack sealing in the annual paving program.

Inspection and project administration will be carried out by PWES staff upon award of the Contract by Council. Quality control of the materials will be carried out by a Consulting Geotechnical Engineer.

Funding is to be provided from Road Lifecycle Reserve in the amount of $1,300,000.

- **Reference Reports:**

  - Report PWES-2020-21, “Town of Tecumseh Road Needs Study 2019, Study Completion and Adoption”, April 28, 2020; Motion RCM-139/20.

A2. Tecumseh Signage Project

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$16,000	**$60,000**	$0	$76,000

In response to Council inquiries regarding the replacement of existing Town signage, PWES completed an inventory of existing signage and confirmed that it varies greatly in design, branding, size, road classification, location and age. Based on these findings and with Council direction, PWES undertook a further study to determine the condition of the existing community signage as part of the 2020 Capital Works Plan.

Subsequently, Council approved the recommendations of the 2020 Community Sign Survey completed by Generator Design of Canada Inc. for inclusion in the annual Roads Operational Budget and further that the three sign works be incorporated into the annual PWES Capital Works Plan:

- Replacement of Sign No.11 (Brighton Road at VIA Rail)
- Replacement of Sign No.16 (Tecumseh Road at Pike Creek)
- Installation of a new Sign at County Road 9 at South Talbot Road

Additionally, the installation of a new sign on County Road 19 at County Road 8 was subsequently requested by a member of Council. PWES concurs that a sign at this location is warranted. Administration recommends that these sign improvements be undertaken in 2022.

Funding for this project is to be provided from the Road Lifecycle Reserve in the amount of $60,000.

- **Reference Reports:**

  - Report PWES-2019-49, “2020-2024 Public Works and Environmental Services Five Year Capital Works Plan”, December 10, 2019; Motion RCM-401/19.

  - Report PWES-2021-28, “Tecumseh Community Signage Inventory and Condition Assessment”, June 8, 2021; Motion RCM-185/21.

A3. Lesperance/VIA Rail Improvements

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$2,011,800	**$120,400**	$0	$2,132,200

In 2020, PWES was authorized to submit an application for funding to the Rail Safety Improvement Program for the VIA/Lesperance Rail Improvements Project. While the application was in process, detailed design for this project was deferred pending the results of the funding application in order not to render design costs ineligible.

On March 19, 2021, the Town received confirmation that the Tecumseh Road VIA Crossing Improvements project had been selected for 2021-2022 Rail Safety Improvement Funding. Subsequently, Dillon Consulting Ltd. was retained to undertake the detailed design for the project due to their past involvement in the crossing investigations and on-going work with the related Tecumseh CIP/Streetscape project. Preliminary designs have been prepared and discussions are on-going with VIA regarding their requirements/approvals.

Dillon Consulting Ltd. has been retained to complete detailed design, prepare tender documents, assist with tendering and assist with obtaining required approval for this project. Dillon Consulting Ltd. is working very closely with VIA to navigate through the railway approval process obtaining valuable intellectual knowledge regarding the railway requirements that needs to carry forward through construction. Continuity in the project consulting team is critical for the timely and successful completion of this project. It is recommended that we continue with Dillon Consulting Ltd. for construction engineering services related to contract administration and construction observation.

The estimated project cost of $2,132,200 includes $282,900 for storm sewers and $1,849,300 for road reconstruction.

Additional funding for this project is to be provided from Storm Sewer Lifecycle Reserve in the amount of $120,400.

- **Reference Reports:**

  - Report PWES-2019-49, “2020-2024 Public Works & Environmental Services Five Year Capital Works Plan” December 10, 2019; Motion RCM-401/19

  - Report PWES-2020-24, “Rail Safety Improvement Program – Infrastructure, Technology and Research Funding (RSIP-ITR) 2021/2022 Intake VIA Crossing at Lesperance Road (Chatham Mile 99.31)”, July 28, 2020; Motion RCM-236/20

  - Report PWES-2021-32, “Rail Safety Improvement Program, 2021/2022 Intake Agreement for Rail Grade Crossing Improvements VIA Rail at Lesperance Road (Chatham Mile 99.31)”, July 13, 2021; Motion RCM-229/21

A4. Expansion/Improvements to the Public Works Yard (North)

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$110,000	**$50,000**	$0	$160,000

Additional storage area is required for Public Works equipment and materials. As part of the approved 2019-2023 PWES Five Year Capital Works Plan, Administration recommended that the Lacasse Public Works yard be expanded westerly in 2019 to include a portion of the previous Town dog park which was closed approximately 10 years ago. This project is progressing and to date, the following works have been completed:

- Removal of existing perimeter fence/shrubs/trees and stripping of topsoil.
- New perimeter berm has been constructed with cedar/spruce tree screening and mulch.
- Drainage has been installed.
- A new waterline has been installed to the new wash bay.
- Purchase and installation of mass concrete blocks for material storage separation walls for new construction materials (i.e. sand, clear stone, granular ‘A’, etc.) including identification signage.
- Asphalt pad for new material storage areas.
- Increase asphalt pad at salt shed to improve truck loading operations and reduce potential soil impacts.
- Fine grading and compaction of recycled aggregate.

The remaining works generally include the following:

- Purchase and installation of additional mass concrete blocks for material storage separation walls for debris from construction sites (i.e. broken concrete, broken asphalt, excess soil, etc.).
- Asphalt pad for construction debris storage area including stone base improvements.
- Asphalt entrance pad into service garage.
- Construction of a concrete pad for the wash bay.

Funding in the amount of $110,000 for the works completed to date has been provided through the Road Lifecycle Reserve. This project will carry over into 2022 with additional budget of $50,000 requested from the Road Lifecycle Reserve to complete the improvements.

- **Reference Reports:**

  - Report PWES-2018-08, “2019-2023 Public Works & Environmental Services Five Year Capital Works Plan”, December 11, 2018; Motion RCM-361/18.

  - Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

A5. Annual Project Contingency

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$0	**$250,000**	$0	$250,000

Administration recommends carrying an Annual Project Contingency for Public Works & Engineering Services. This allocation is for needs that arise from time to time that cannot be anticipated during the preparation of the PWES Five Year Capital Works Plan. The allocation will be used to address these needs in accordance with the Town Purchasing and Procurement Policies. Use of these funds would be communicated through quarterly budget variance reports to Council.

Funding for this Annual Project Contingency is to be provided from the Road Lifecycle Reserve in the amount of $250,000.

A6. 2022 Sidewalk Repair Projects

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$0	**$69,000**	$0	$69,000

The 2022 sidewalk program will be based on sidewalk conditions determined through the comprehensive sidewalk inspection conducted annually. Currently this inspection is completed by Public Works staff and, along with input from Council and residents, this information is used to develop the annual program for recommended sidewalk repair and replacements. Should this inspection generate large amounts of sidewalk replacement, a Request for Quotation (RFQ) will be issued.

Trip hazards identified throughout the Town will be addressed to keep the Town in compliance with minimum maintenance standards and as a risk management measure. Currently, a detailed list of sidewalks to be repaired/ replaced has not been generated. The funding requested is for an upset limit to carry out the work. Inspection and project administration will be carried out by PWES Staff upon award of the Contract.

Funding for this project is to be provided from the Sidewalk Lifecycle Reserve in the amount of $69,000.

A7. Riverside Drive Trail

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$1,239,300	**$628,100**	$0	$1,867,400

On April 8, 2021 a Special Council Meeting (SCM) was held at which time the Town's Consultants, Bezaire Partners and Dillon Consulting Ltd., presented a detailed review and analysis, inclusive of public consultation, comparative costs, key issues, and an evaluation of trail options. Based on their comprehensive evaluation, the Consultants recommended proceeding with the detailed design and construction of a 2.4m - 2.7m wide asphalt, off-road multi-use recreational trail along the south side of Riverside Drive between the Tecumseh/Windsor border and Manning Road. During the SCM, numerous delegations presented information related to the proposed trail. Following the SCM, the Consultant's presentation was uploaded to the Town's PlaceSpeak platform for a 30-day period to provide an opportunity to receive further public input on the project. Feedback received through the PlaceSpeak platform was forwarded to the Town's Consultants for their review and consideration during the preparation of their final recommendations for the trail.

At the June 22, 2021 Regular Meeting of Council, Administration brought forward Report No. PWES-2021-29 at which time the Town's Consultants presented their final trail recommendations. Following the presentation, Council approved the report recommendations to proceed to the detailed design stage for the installation of a recreational multi-use trail on the south side of Riverside Drive, from the Tecumseh/Windsor border to Manning Road, in accordance with the recommendations from the Town's Consultant.

At the July 27, 2021 Regular Meeting of Council, Council approved the recommendations of Report No. PWES-2021-35 which authorized the submission of an application to the Canada Community Revitalization Fund for the Riverside Drive Trail Project. In a news release published on August 13, 2021, the federal government announced its financial support from the Canada Community Revitalization Fund for post-pandemic recovery for the Town of Tecumseh to help fund our community infrastructure project, the Riverside Drive Trail, in order to rebound from the effects of the COVID-19 pandemic. This one-time special intake will fund up to 75%, to a maximum of $750,000, of the total eligible project costs of the Riverside Drive Trail.

The Town's Consultants are proceeding with the detailed trail design and construction is planned for 2022.

Based on the detailed design completed to date, additional works have been identified regarding the following:

- utility conflicts and required relocations
- property/easement requirements
- conflicts with private landscaping within the Town right of way
- additional drainage needs
- potential increase in asphalt thickness to accommodate larger operational (snow removal) equipment
- potential streetlight improvements

Based on the above, an updated project cost estimate has been calculated. The updated cost estimate also accounts for observed market value increases in recent local tenders. The estimated project cost is $1,867,400, which includes $1,662,000 for new infrastructure, $25,000 for watermains and $180,400 for storm sewers.

Bezaire Partners and Dillon Consulting Ltd. have been retained to complete preliminary design, detailed design (including consultation with landowners), prepare tender documents and to undertake excess soil investigations for this project. In order to complete construction in 2022, this project needs to advance in a timely manner. There have been many challenges with this project and substantial public consultation has occurred. Continuity through to the end of construction is imperative for the successful completion of this project. It is recommended that we continue with Dillon Consulting Ltd. for construction engineering services related to contract administration and construction observation with Bezaire Partners providing additional support services.

The additional funding for this project is to be provided from the following:

- Infrastructure Reserve in the amount of $460,200.
- Watermain Reserve Fund in the amount of $25,000.
- Storm Sewer Lifecycle Reserve in the amount of $142,900.

- **Reference Reports:**

  - Report PBS No. 32/16, “County Wide Active Transportation Study Plan, Town of Tecumseh 2017 Project, Trail on Riverside Drive from Tecumseh/Windsor Municipal Boundary to Manning Road”, October 25, 2016; Motion RCM-372/16.

  - Report PWES No. 54/16, “2017-2021 Public Works & Environmental Services Capital Works Plan”, December 13, 2016; Motion RCM-442/16.

  - Report PWES-2019-49, “2020-2024 Public Works & Environmental Services Five Year Capital Works Plan”, December 10, 2019; Motion RCM-401/19.

  - Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

  - Report PWES-2021-04, “Riverside Drive Trail: Tecumseh-Windsor Border to Manning Road, Summary of Public Information Centres and Recommendation”, April 8, 2021; Motion SCM-05/21.

  - Report PWES-2021-29, “Riverside Drive Trail: Final Review and Recommendation”, June 22, 2021; Motion RCM-196/21.

  - Report PWES-2021-35, “Canada Community Revitalization Fund”, July 27, 2021; Motion RCM-259/21.

  - Report PWES-2021-40. “Canada Community Revitalization Fund – Riverside Drive Trail”, September 14, 2021; Motion RCM-287/21.

A8. Bridge and Culvert Needs Study (with Spans > 3.0m)

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$0	**$39,000**	$0	$39,000

The Town has a total of eighteen (18) existing bridges and culverts with a span greater than 3.0 metres that need to be inspected in accordance with the latest version of the Ontario Structure Inspection Manual (OSIM) published by the Ministry of Transportation of Ontario (MTO).

Inspections of the bridges and culverts are to take place every two years as legislated by Section 2(3) of The Public Transportation and Highway Act: "The structural integrity, safety and condition of every bridge shall be determined through the performance of at least one inspection in every second calendar year under the direction of a professional

engineer and in accordance with the Ontario Structure Inspection Manual". With the last inspection taking place in 2020, it is now necessary to carry out a new Bridge and Culvert Needs Study in 2022 to comply with the legislation.

Continuity is an important component in assessing the on-going changes to the Town's bridge infrastructure. Administration recommends retaining Dillon Consulting Ltd. to provide engineering services on this project based on their past completion of the 2003, 2008, 2014, 2016, 2018 and 2020 Bridge and Culvert Needs Studies.

Funding for this project is to be provided from the Bridge Lifecycle Reserve in the amount of $39,000.

A9. Water Sampling Station Replacements

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$0	**$37,000**	$0	$37,000

In accordance with the Safe Drinking Water Act, 2002 and Ontario Regulation 170/03, the owner of a drinking water system and the operating authority for the system are required to take water samples from the distribution system and have those samples tested to ensure the required water quality is maintained. The Town has 34 water sampling stations within the system and a minimum of 23 water samples are taken and tested each week. Depending on location, water sampling stations have an approximate service life of 10 years. The service life of water sampling stations that are subjected to road salt is typically less than 10 years due to corrosion which also creates the risk of a sample being contaminated with rust.

Based on the condition of the existing water sampling stations, Administration recommends the replacement of 10 water sampling stations in 2022. It is planned that this work will be completed by Town Water Operators and the estimated cost is $37,000.

Funding for this project is to be provided from the Watermain Reserve Fund in the amount of $37,000.

A10. County Road 42 and County Road 43 Improvements

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$855,950	**$3,233,800**	$437,550	$4,527,300

As part of the County of Essex 25-year capacity program, CR42 and CR43 road improvements were identified and the County of Essex engaged Dillon Consulting Ltd. to undertake the detailed design for the following:

- Widening of CR42 from the City of Windsor border with the Town of Tecumseh to the Pike Creek located in the Town of Lakeshore.
- Diversion of CR43 from Shields Avenue to approximately 250 metres south of CR42.

Based on these proposed road improvements, Administration identified municipal services within the project limits that need to be designed and incorporated into the County's overall project. These municipal services included watermains, sanitary sewers and overland storm water flow routing from existing development located on the north side of CR42 to the Pike Creek located to the south of CR42.

In December 2018, Council approved the recommendations of Report PWES-2018-08 that included undertaking advanced engineering design for the above noted municipal services to allow this work to be incorporated into the County of Essex contract drawings and specifications for their CR42 improvements project. In accordance with this report, Dillon Consulting Ltd. was retained to complete the advance engineering.

Based on the advanced engineering, it was recommended that the following Town municipal services be included in the County of Essex CR42 improvements project:

- Construction of a new 400 mm diameter trunk watermain on CR19 in the vicinity of the proposed CR19/42 roundabout.
- Construction of a new 400 mm diameter trunk watermain from the proposed CR19/42 roundabout to the 12th Concession Road.
- Replacement of a section of existing 150 mm diameter watermain on the 12th Concession Road with new 300 mm diameter PVC watermain.
- Replacement of a section of the existing 200 mm diameter watermain on CR43 with new 200 mm diameter PVC watermain.
- Replacement of existing sanitary connections on CR42 with new PVC service connections.
- Installation of landscaping within the proposed roundabouts at CR19/42 and CR42/43 to enhance the aesthetic nature of the entry points into the Town of Tecumseh.
  (Note: The above noted 400 mm diameter trunk watermains are in accordance with the 2018 Water and Wastewater Master Plan Update and are components of project W-5A (Trunk watermain on Manning Road–CP Railway to CR42) and project W-5B (Trunk watermain on CR42–11th Concession Road to Manning Road).)

The original advanced engineering for the sanitary sewer focused on finding a solution to address conflicts with the proposed new storm sewer. Subsequent to the original

advanced engineering work, additional investigations were undertaken to confirm the sanitary servicing needs for the entire existing settlement area located on the south side of CR42. It was originally proposed to install a new sanitary sewer on the south side of CR42 to service only the properties that are currently connected into the existing sanitary sewer. With the assistance of the updated sanitary sewer model, it was determined that the sanitary sewer being proposed to address conflicts with the storm sewer was not large enough to accommodate the entire settlement area on the south side of CR42. The additional assessment also determined that some downstream improvements are required in the existing sanitary sewer system to address the estimated future flows from the entire settlement area. To avoid costly future sanitary sewer improvements after the CR42 improvements are completed, it is recommended that the required sanitary sewer capacity improvements be included in the County of Essex contract drawings and specifications for the their CR42 Improvements Project. Current budget requests are based on the full cost of the sanitary works, however, there may be potential for some cost sharing with the County. Future discussions with the County are required.

In addition, based on the previous CR42 phasing plans, it was anticipated that the Town's 12th Concession Road (CR42 to Dimu) watermain replacement project and the Banwell Road watermain replacement project could be constructed as part of the Town's 2021 Various Watermain Replacements Project in advance of the CR42 Improvements Project. Based on the County's current phasing plan, however, it is now recommended that these watermain replacements be included in the County of Essex contract drawings and specifications for their CR42 Improvements Project.

The estimated project cost of $4,527,300 includes $70,000 for road works, $2,520,700 for watermains and $1,936,600 for sanitary sewers.

It is recommended that the Town continue with Dillon Consulting Ltd. for construction engineering services related to contract administration and construction observation based on their current involvement with the advanced engineering and since they will be undertaking the contract administration and construction observation for the overall County project.

Additional funding for this project is to be provided from the following:

- Wastewater Sewers Reserve Fund in the amount of $1,861,700
- Watermain Reserve Fund in the amount of $1,372,100

➢ **Reference Reports:**

- Report PWES-2018-08, "2019-2023 Public Works & Environmental Services Five Year Capital Works Plan", December 11, 2018; Motion RCM-361/18.

- Report PWES-2019-49, “2020-2024 Public Works & Environmental Services Five Year Capital Works Plan”, December 10, 2019; Motion RCM-401/19.

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

- Report CAO-2020-06, “Boundary Adjustment Agreement and the County Road 43 Class Environmental Assessment Study”, August 11, 2020; Motion RCM-245/20.

A11. Watermain Anode Program – Inspection/Replacement

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$259,690	**$20,000**	$0	$279,690

Ductile and cast iron pipe make up approximately 20% of the total amount of watermain in the Town's watermain distribution system. Due to the continual corrosion problems and high failure rates associated with ductile and cast iron pipe, the Town of Tecumseh Water Division commenced an anode protection program in 2015.

PWES had included the Watermain Anode Program – Inspection/Replacement in its approved 2021 Capital Works Plan. In September of 2021, the tender was awarded to C.P. Systems to undertake the continuation of the program. Following award of the tender, C.P. Systems advised that there is shortage of anodes and they are unable to obtain the enough anodes to complete the work in 2021. Accordingly, it was agreed that the work would be postponed until 2022 when there is a sufficient supply of anodes to allow the contractor to complete the work in its entirety.

Additional funding is being requested for the contract administration and inspection of the project.

Additional funding for this project is to be provided from the Watermain Reserve Fund in the amount of $20,000.

- **Reference Reports:**

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects, December 8, 2020; Motion RCM-375/20.

- Report PWES-2021-43, “Watermain Anode Program, Inspection/Replacement - Tender Award”, September 28, 2021; Motion RCM-306/21.

A12. North Tecumseh Water Distribution Model

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$0	**$70,000**	$0	$70,000

In March 2020, Council approved the recommendations of Report PWES-2020-15 which adopted the Tecumseh 2018 Water and Wastewater Master Plan Update.

The Town of Tecumseh receives its potable water supply from the ENWIN Utilities Water System. In 2019, the ENWIN Utilities Water System Master Plan was completed which incorporated information from the Tecumseh 2018 Water and Wastewater Master Plan Update.

As a result of the Master Plan recommendations, discussions have occurred between Town Administration and ENWIN to optimize the water system needs. ENWIN currently has a functional water model which accurately depicts the City of Windsor and Town of LaSalle's water distribution systems. ENWIN's model includes a high level layout of the Tecumseh water distribution system, however, to optimize the system requirements a more detailed model of the Tecumseh water system is required.

In 2021, ENWIN, through coordination with the Town, expanded their water model to include a detailed assessment of the Town's South water distribution system to more accurately represent the system and allow the model to be used to determine the best location for an elevated water storage facility within the ENWIN-Tecumseh system. The detailed water model will also allow Tecumseh to assess existing water flows and pressures within the south Tecumseh system and to develop strategies to improve water supply in identified areas of concern. This work is expected to be completed in early 2022.

Administration is recommending a similar water model update be completed on the Town's North water distribution system. This model will provide insight into the existing characteristics of the water distribution system, assist with the design of future watermain replacement projects and assess available capacity to accommodate infill and redevelopment within the Town.

Accordingly, Administration recommends that ENWIN be approached to expand the scope of service with their water modelling consultant to build an accurate model of the Town's North water distribution system. It is recommended that an allowance of $70,000 be provided for this project.

Funding for this project is to be provided from the Watermain Reserve Fund in the amount of $70,000.

- **Reference Reports:**

- Report PWES-2020-15, “2018 Water and Wastewater Master Plan Update, Study Completion and Final Adoption”, March 10, 2020; Motion RCM-87/20.

A13. Del Duca Drive Sanitary Sewer Extension

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$472,350	**$52,000**	$3,321,350	$3,845,700

In December 2018, Council approved the recommendations of Report PWES-2018-08 that authorized Administration to complete the engineering design for the Del Duca Drive Sanitary Sewer Extension. In accordance with this report, Stantec Consulting Ltd. was retained to complete the detailed design.

The Del Duca Drive Sanitary Sewer Extension is a continuation of the sanitary sewer servicing within the 8th Concession Road sanitary service area. The project includes the extension of a sanitary sewer along Del Duca Drive.

The Oldcastle Stormwater Master Plan is being completed concurrently with the design for the Del Duca Sanitary Sewer Extension. Through the Oldcastle Stormwater Master Plan it was determined that a future major storm event flow route is required from the Del Duca Drive cul-de-sac southerly to the Hurley Relief Drain. Coordination has occurred between these two projects to ensure that the Del Duca design provides for the anticipated recommendations of the Oldcastle Stormwater Master Plan. Based on this coordination, it was determined that a previously identified sanitary easement needs to be modified to accommodate a future storm sewer. Details of the easement requirements were finalized in 2021 and discussions are on-going with the property owners where easements are required.

It is anticipated that completion of the detailed design, easement acquisition, geotechnical investigations related to new regulations from the Ontario Ministry of Environment, Conservation and Parks for excess soil generated from construction projects, utility relocations, preparation of tender documents and obtaining required approvals will occur in 2022. Construction is tentatively planned to proceed in 2023.

A future report will be brought forward to Council with recommendations related to easement acquisition.

The project cost of $3,845,700 includes $1,448,500 for road reconstruction, $1,130,700 for storm sewers, $1,235,700 for sanitary sewers and $30,800 for watermains. Estimated recoveries from landowners for the sanitary sewers would be approximately $1,050,000 and will be refined once the By-Law for the 8th Concession Road sanitary service area is completed.

Funding for this project is to be provided from the following:

- Road Lifecycle Reserve in the amount of $5,000
- Wastewater Sewers Reserve Fund in the amount of $20,000
- Storm Sewer Lifecycle Reserves in the amount of $24,000
- Watermain Reserve Fund in the amount of $3,000

➢ **Reference Reports:**

- Report PWES-2018-08, “2019-2023 Public Works & Environmental Services Five Year Capital Works Plan”, December 11, 2018; Motion RCM-361/18.

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

A14. Sanitary Sewer Model Update and Flow Monitoring

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$315,000	**$30,000**	$0	$345,000

In June 2018, Council approved the recommendation of Report PWES-2018-17 “Flood Mitigation Strategy” that the report be received. Continued flow monitoring and sanitary sewer modeling were recommended flood mitigation strategies in the report. The report further identified that updating the sanitary sewer model would be incorporated within the 5-year PWES Capital Works Plan.

In December 2018, Council approved the recommendations of Report PWES-2018-08 that authorized Administration to complete a Sanitary Sewer Model Update and Flow Monitoring project. In accordance with this report, Dillon Consulting Ltd. was retained to undertake the modelling project.

Following commencement of the study, the original project scope was expanded to determine if the impacts of the Town’s Inflow and Infiltration Removal project could be quantified based on the 2019 flow monitoring program to assist with sewer capacity assessments for new development proposals. In addition, to obtain design efficiencies and improve available information to assist with development inquiries, Administration recommended expanding the scope of work in 2020 to include modelling assessments related to the Tecumseh CIP area as well as the reconfiguration of the future sanitary trunk servicing within the Tecumseh Hamlet area. This would include integration of the Tecumseh Hamlet and Manning Road Secondary Planning areas and refinements to the existing County Road 42 service area for both dry and wet weather flow conditions.

A significant component of the model development is model calibration/verification. In order to calibrate/verify a model, flow monitoring data is used to confirm that the flows

generated by the model are representative of actual flows measured in the sewers during recorded events. In order to assess rain derived inflow and infiltration, a significant rainfall event is required. During the scheduled flow monitoring period, only minor rain events were received. Accordingly, the flow monitoring was extended into Fall 2020.

Prior to finalizing the report, a significant rainfall event occurred in the Town on July 16, 2021. This event provided another opportunity to verify the model generated outputs. Calibration / verification of the model is on-going and the final report for this project is expected in 2022. The updated model will provide insight into the existing flow characteristics of the sanitary sewer system and on available sanitary sewer capacity to accommodate infill development within the Town.

Funding for this project is to be provided from the Wastewater Sewers Reserve Fund in the amount of $30,000.

- **Reference Reports:**

- Report PWES-2018-17, “Flood Mitigation Strategy”, June 26, 2018; Motion RCM-194/18.

- Report PWES-2018-08, “2019-2023 Public Works & Environmental Services Five Year Capital Works Plan”, December 11, 2018; Motion RCM-361/18.

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

A15. 8th Concession Sanitary Sewer By-Law

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$0	**$45,000**	$0	$45,000

The Oldcastle Hamlet is approximately 815 Ha of land which has largely developed for industrial purposes. The majority of existing developments within the hamlet had historically been serviced by private on-site sewage disposal (septic) systems. A number of studies, however, identified significant pollution problems and potential health risks attributed to the discharge of raw wastewater from failing septic systems into roadside open ditches. As a result of these studies, the Town commenced the phased introduction of sanitary sewers into the Oldcastle Hamlet in 2010. The Oldcastle Hamlet is serviced by two trunk sanitary sewers: North Talbot Road Trunk Sanitary Sewer and 8th Concession Road Trunk Sanitary Sewer.

In December 2011, Council approved the recommendations of PWES Report No.39/11 where it was recommended the cost of the sanitary sewer collection system (including

the municipal sanitary sewers (sewer mains) and the pipes within the municipal road allowances that connect each property to a sewer main (laterals)) for the area within the North Talbot Road Sanitary Sewer Outlet be assessed against the benefitting lands within that area based on Main and Lateral Charges in accordance with Part XII of the Municipal Act 2001; and that the "North Talbot Road Sanitary Sewer Outlet Main and Lateral Charges By-Law" be considered.

Similar to the cost recovery process for the North Talbot Road Sanitary Sewer Outlet Area, it was intended that the cost of the sanitary sewer collection system for the 8th Concession Road Sanitary Sewer Outlet Area would be assessed against the benefitting lands within that area in accordance with Part XII of the Municipal Act.

In February 2018, Council approved the recommendations of Report PWES-2018-01 which included the cost of the sanitary sewer collection system for the “8th Concession Road Sanitary Sewer Outlet” area be assessed against the benefitting lands within that area based on Main and Lateral Charges in accordance with Part XII of the Municipal Act; and that a by-law that outlines the charges be considered.

Administration recommends moving forward with the preparation of a Part XII By-Law to recover costs for the sanitary sewer collection system servicing the 8th Concession Sanitary Sewer Area from the benefitting lands. It is recommended that this be advanced in 2022 and that an allowance of $45,000 be allocated to retain a consultant to assist the Town with the creation of the By-Law.

Funding for this project is to be provided from the Wastewater Sewers Reserve Fund in the amount of $45,000.

- **Reference Reports:**

- Report PWES No. 39/11, “North Talbot Road Sanitary Sewer Outlet, Part XII By-Law”, December 13, 2011; Motion RCM-427/11.

- Report PWES No. 45/17, “8th Concession Road Sanitary Sewer Outlet, Main and Lateral Charges Cost Recovery By-Law”, September 26, 2017; Motion SCM-13/17.

- Report PWES-2018-01, “8th Concession Road Sanitary Sewer Outlet, Main and Lateral Charges Cost Recovery Part XII By-Law”, February 13, 2018; Motion SCM-02/18.

A16. Sanitary Pump Station Improvements

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$120,250	**$82,000**	$691,000	$893,250

The Town owns and operates four (4) sanitary pump stations. The 2016 Pump & Metering Station Condition Assessment identified 'Immediate Repairs' and '10 Year Repairs' for the sanitary pump stations. In addition, The Town contracts the Ontario Clean Water Agency (OCWA) as the Overall Responsible Operator for the Town's pump stations. Accordingly, OCWA also provides recommendation to the Town for the on-going maintenance needs of our pump stations.

Administration recommends the following sanitary pump station works be undertaken in 2022, based on the recommendations contained in the 2016 Pump & Metering Station Condition Assessment and the recommendations provided by OCWA:

- Sylvestre Drive Sanitary Pump Station (Estimated Cost $25,000)
    - Rebuild existing pump.

- Lakewood Sanitary Pump Station (Estimated Cost $22,000)
    - Insulate electrical building and add a heating/air conditioning unit to control the environment in the building.
    - Replace pressure transmitter.

- Gauthier Sanitary Pump Station (Estimated Cost $15,000)
    - New hardware for flow meter.
    - New level controller.

- SCADA Software/Server/Nodes Update (Estimated Cost $20,000)
    - Implement OCWA SCADA group as 1st responder for maintenance and support.
    - Connect all stations with remote access.

Funding for this project is to be provided from the Wastewater Facilities Reserve Fund in the amount of $82,000.

➢ **Reference Reports:**

- Report PWES No. 51/16, "2016 Pump & Metering Station Condition Assessment", December 13, 2016; Motion RCM-440/16.

A17. Oldcastle Storm Drainage Master Plan

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$490,000	**$45,000**	$0	$535,000

In December 2017, Council approved the recommendations of PWES Report No. 57/17 that authorized Administration to proceed with the Oldcastle Storm Drainage Master Plan. The Oldcastle Storm Drainage Master Plan focused on analysing the storm

infrastructure and development of a framework for how stormwater is addressed for new and re-developments. This analysis determined how storm infrastructure functions during minor rainfall events (what can be contained in ditches, drains and sewers), and major rainfall events (which would follow overland flood routes). The Master Plan is following the Municipal Class Environmental Assessment (EA) process and is equivalent to the same steps that a Schedule 'B' EA would follow.

Two Public Information Centres were held (October 17, 2019 & January 29, 2020) that depicted information on existing drainage conditions, alternative mitigation measures and anticipated recommended solutions to solicit feedback from the public.

During 2020/2021, the project scope expanded to include coordination efforts with a proposed residential development in the Oldcastle area to ensure that the proposed residential stormwater storage facility will complement the future regional storage facility required for the Hurley Relief Drain watershed. Coordination also occurred with the Town's Del Duca Drive sanitary sewer project. Based on the investigation completed as part of the Master Plan, it was determined that both DelDuca Drive and Ure Street have the potential for significant surface ponding during major storm events. Under existing conditions, once surface ponding reaches a certain elevation, it spills easterly towards the 8th Concession Road between existing buildings and across private properties in an uncontrolled manner. As a result, the design for the DelDuca project, incudes storm sewer improvements to create a future planned overland follow route to the Hurley Relief Drain. Additional consultation also took place with the Town of LaSalle, City of Windsor, the Ministry of Transportation (MTO) and private landowners that would be impacted by the proposed stormwater solutions. As a result of the feedback received, significant additional analysis was undertaken to develop a revised strategy for the Wolfe Drain watershed. Work on the revised strategy continued in 2021 with a revised draft report provided to the Town in October 2021.

The final Master Plan report will be brought forward to Council in early 2022 to obtain approval to advertise the Notice of Study Completion to initiate the mandatory 30-day public and agency review period. Additional funding is being requested for 2022 for cost overruns encountered throughout the report finalization and public consultation process. The additional work reduced potential impacts to existing private industrial lands, allowed for a recently proposed private industrial site expansion to proceed so the owners could satisfy their production commitments and provided a number of potential solutions for the Wolf Drain watershed pending the completion of the on-going Turkey Creek Watershed Assessment.

Additional funding for this project is to be provided from the Storm Sewer Lifecycle Reserve in the amount of $45,000.

➢ **Reference Reports:**

- Report PWES No. 57/17, “2018-2022 Public Works & Environmental Services Capital Works Plan”, December 12, 2017; Motion RCM-441/17.
- Report PWES-2018-17, “Flood Mitigation Strategy”, June 26, 2018; Motion RCM-194/18.
- Report PWES-2018-21, “National Disaster Mitigation Program-Intake 5”, September 11, 2018; Motion RCM-272/18.
- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.
- Report PWES-2021-48, “NDMP Extension for Intakes 3, 4 & 5 A19 Transfer Payment Agreement Amendment”, December 14, 2021; Motion RCM-399/21.

A18. Scully & St. Mark’s Storm Pump Station & Riverside Drive Storm Sewers

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$1,297,250	**$15,752,750**	$0	$17,050,000

This project consists of decommissioning the St. Mark’s storm pump station and redirecting those flows into an upgraded and expanded Scully storm pump station to provide a greater level of service. The consolidated Scully St. Mark’s pump station is to have increased pump capacity to accommodate the additional flows from the current St. Mark’s service area, as well as other adjacent areas where interconnections and overland flows have been identified as part of the Town’s Storm Drainage Master Plan (2019). This project also includes trunk storm sewer improvements along Riverside Drive to add resiliency to the system and improve the level of service to address area-wide issues of surface flooding.

The project cost of $17,050,000 includes $15,107,000 for storm sewers and pumping stations, $415,000 for sanitary sewers and $1,528,000 for road reconstruction.

In October 2020 the Town was advised that our funding application to the federal Disaster Mitigation and Adaptation Fund (DMAF) was approved for funding totalling $10.7M for the following projects:

- Scully & St. Mark’s Storm Pump Station & Riverside Drive Trunk Storm Sewers project (Estimated cost 17.05M).
- P.J. Cecile Storm Pump Station Improvements project (Estimated cost $9.70M).

Under DMAF, all works must be completed by March 31, 2028. The Scully & St. Mark's Storm Pump Station & Riverside Drive Trunk Storm Sewer project is a major infrastructure improvement project that will enhance the level of service and provide approximately 6-times more capacity than the existing pump station to accommodate the growing frequency of heavy rainfall events.

In February 2021, Council approved the recommendation of Report PWES-2021-03 that authorized the Mayor and Clerk to sign the DMAF agreement and also authorized that the Town's portion of the total project costs, being $16.05M of the total $26.75M, be funded through a combination of Lifecycle Stormwater Reserves and debt with up to $15M of debt to be incurred.

Throughout 2021 the Town's Consultant, Dillon Consulting Ltd., has continued with the engineering designs for the pump station and sewer improvements, which are nearing the 60% completion stage. In addition, the Greenhouse Gas Mitigation Assessment, a condition of the DMAF Agreement, commenced in late 2021 with completion scheduled for late January 2022.

It is planned to complete all design components of this project by Q3 2022 with tendering anticipated in Q4 2022/Q1 2023. In order to tender the project in 2022, it is necessary to obtain full budget approval through the 2022 Capital Works Plan.

Funding for this project, including the above noted debit, is to be provided from the following:

- Storm Sewer Lifecycle Reserve in the amount of $14,035,900
- Wastewater Sewers Reserve Fund in the amount of $316,450
- Road Lifecycle Reserve in the amount of $1,400,400

➢ **Reference Reports:**

- Report PWES-2018-17, "Flood Mitigation Strategy", June 26, 2018; Motion RCM-194/18.

- Report PWES-2018-08, "2019-2023 Public Works & Environmental Services Five Year Capital Works Plan", December 11, 2018; Motion RCM-361/18.

- Report PWES-2019-02, "Disaster Mitigation and Adaptation Fund, Special Spring 2019 Flooding Intake, Expression of Interest and Full Application", July 23, 2019; Motion RCM-229/19.

- Report PWES-2019-50, "Storm Drainage Master Plan, Study Completion and Final Adoption", December 10, 2019; Motion RCM-402/19.

- Report PWES-2020-33, "Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects", December 8, 2020; Motion RCM-375/20.

- Report PWES-2021-03, “Disaster Mitigation and Adaptation Fund, Agreement for Climate Change and Flood Resiliency Project, Storm Infrastructure Improvements”, February 9, 2021; Motion RCM-40/21.

A19. P.J. Cecile (Kensington) Storm Pump Station

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$500,000	**$1,500,000**	$7,700,000	$9,700,000

This project consists of the construction of a new pump station over the footprint of the existing structure with increased capacity and larger inlet and outlet piping. The estimated project cost of $9,700,000 includes $9,426,000 for storm sewers and pump stations and $274,000 for road reconstruction.

As indicated in A18 above, the Town received federal funding for this project through the DMAF program. As noted, under the DMAF, all works must be completed by March 31, 2028.

The P.J. Cecile (Kensington) Storm Pump Station is a major infrastructure improvement project that will enhance the level of service and provide approximately 8-times more capacity than the existing pump station to accommodate the growing frequency of heavy rainfall events.

This project is subject to the same funding requirements and approvals as outlined in A18 above, and is on a similar track for detailed engineering design and tendering. Accordingly, it is necessary to obtain full budget approval for the detailed engineering through the 2022 Capital Works Plan.

Funding for this project, including the above noted debit, is to be provided from the following:

- Storm Sewer Lifecycle Reserve in the amount of $1,457,500
- Road Lifecycle Reserve in the amount of $42,500

➢ **Reference Reports:**

- Report PWES-2018-17, “Flood Mitigation Strategy”, June 26, 2018; Motion RCM-194/18.

- Report PWES-2018-08, “2019-2023 Public Works & Environmental Services Five Year Capital Works Plan”, December 11, 2018; Motion RCM-361/18.

- Report PWES-2019-02, “Disaster Mitigation and Adaptation Fund, Special Spring 2019 Flooding Intake, Expression of Interest and Full Application”, July 23, 2019; Motion RCM-229/19.

- Report PWES-2019-50, “Storm Drainage Master Plan, Study Completion and Final Adoption”, December 10, 2019; Motion RCM-402/19.

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

- Report PWES-2021-03, “Disaster Mitigation and Adaptation Fund, Agreement for Climate Change and Flood Resiliency Project, Storm Infrastructure Improvements”, February 9, 2021; Motion RCM-40/21.

A20. Tecumseh Road Storm and Road Improvements Project

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$217,0000	**$4,571,100**	$0	$4,788,100

In January 2021, the Greater Essex County School Board (School Board) submitted a Site Plan Control Application to build the new North Shore School at 13800 Tecumseh Road, which is to replace the existing D.M. Eagle School located at 14194 Tecumseh Road. Existing infrastructure is inadequate to accommodate the school’s stormwater needs on the site. Accordingly, the School Board expressed an interest in the new municipal storm sewer (Project B-1 from the Storm Drainage Master Plan, 2019) proceeding in order to facilitate the timely construction of a new school.

In March 2021, Council approved the recommendations of Report PWES-2021-05 that added the Tecumseh Road Storm Sewer and Road Improvements Project to the 2021 PWES Capital Works Plan and authorized the completion of detailed design in 2021 with construction anticipated to proceed in 2022. In accordance with the recommendations, Stantec Consulting Ltd. was retained to complete detailed engineering design, prepare plans, specifications, tender documents and to assist with obtaining all required approvals.

The estimated project cost of $4,788,100 includes $2,687,200 for road reconstruction, $1,995,600 for storm sewers, $38,300 sanitary sewers and $67,000 for watermains. There are anticipated recoveries from the County of Essex of approximately $1.5M related to the road reconstruction component under the County Connecting Link Agreement. The estimated recovery will be refined once the tender costs are known. Any additional roadway improvements related to the proposed school site (i.e. traffic signal, turning lanes, sidewalks, etc.) would be borne by the School Board. These details will be determined and accounted for in the Site Plan Agreement that will be

negotiated with the School Board and brought forward for Council approval under a separate future report.

Provided that the School Board confirms the school is moving forward, and that an acceptable cost share agreement is negotiated with the School Board, it is recommended that this project be constructed in 2022.

Stantec Consulting Ltd. has been retained to complete detailed engineering design, prepare plans, specifications, tender documents and to assist with obtaining all required approvals. Provided confirmation from the School Board is received, this project will need to advance in a timely manner in 2022. It is recommended that we continue with Stantec Consulting Ltd. for construction engineering services related to contract administration and construction observation.

Additional funding for this project is to be provided from the following:

- Road Lifecycle Reserve in the amount of $2,554,200
- Wastewater Sewers Reserve Fund in the amount of $38,300
- Storm Sewer Lifecycle Reserves in the amount of $1,911,600
- Watermain Reserve Fund in the amount of $67,000

➢ **Reference Reports:**

- Report PWES-2018-17, “Flood Mitigation Strategy”, June 26, 2018; Motion RCM-194/18.

- Report PWES-2019-50, “Storm Drainage Master Plan, Study Completion and Final Adoption”, December 10, 2019; Motion RCM-402/19.

- Report PWES-2021-05, “Amendment to the 2021 PWES Capital Works Projects, Tecumseh Road Storm Sewer and Road Improvement Project from East of Lexham Gardens to Regent Road”, March 9, 2021; Motion RCM-74/21.

Section B: Carry Over Projects from 2021 Not Requiring Additional Funding in 2022

B1. Lanoue Street Improvements

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$488,300	**$0**	$558,700	$1,047,000

In 2019, Administration was authorized to proceed with the detailed design for the Lanoue Street Improvements (Manning Road to approx. 200m westerly) in 2020 and an

allowance for Tecumseh's share of the Manning/Lanoue intersection improvements was approved. The improvements consist of a three lane road cross-section, updated lighting and a new sidewalk on the south side of Lanoue. Subsequently, Stantec Consulting Ltd. was retained to complete the detailed design for this project.

Detailed design work will continue and is anticipated to be finalized in 2022. In addition, the required relocation of utility infrastructure is also being scheduled to avoid conflicts with the future road improvements.

To date, preliminary discussions have occurred between Administration from Tecumseh, Lakeshore and the County of Essex regarding a cost sharing agreement for the Manning /Lanoue intersection improvements. An allowance of $250,000 is being carried for potential costs associated with the Town's portion of the Manning/Lanoue intersection.

The estimated project cost is $1,047,000, which includes $991,500 for road improvements and $55,500 for storm sewers.

Funding for this project was previously provided from the Road Lifecycle Reserve in the amount of $488,300.

- **Reference Reports:**

  - Report PWES-2019-49, "2020-2024 Public Works & Environmental Services Five Year Capital Works Plan", December 10, 2019; Motion RCM-401/19.

B2. TTMP Bicycle Sharrows

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$15,000	**$0**	$0	$15,000

In 2020, Administration was authorized to proceed with the installation of Bicycle Sharrow pavement markings on the following streets:

- Little River Boulevard – Manning to Tecumseh/Windsor boundary
- Lacasse Boulevard – Full extent
- Arlington Boulevard – Full extent

The proposed works are in accordance with the Town's Transportation Master Plan, which aims to enhance the active transportation network and encourage sustainable transportation for all users. The installation of Sharrow pavement markings will provide awareness to drivers that the lane is shared with cyclists.

To date the materials required to complete this work have been procured and it is anticipated the Sharrows will be painted in 2022.

Funding for this work was previously approved from the Road Lifecycle Reserve in the amount of $15,000.

- **Reference Reports:**

- Report PWES No. 43/16, “Tecumseh Transportation Master Plan”, December 13, 2016; Motion RCM-439/16.

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

B3. Brighton Road Traffic Improvements

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$30,000	**$0**	$0	$30,000

In 2020, Administration was authorized to proceed with minor improvements within the Brighton Road corridor consisting of traffic circle enhancements, pavement markings and signage improvements. These works were in accordance with the recommendations contained within the Consultant’s report ‘Brighton Road Corridor Review, Review of Intersection Traffic Control Operations”.

To date a portion of the improvements have been completed, with the remainder of the works anticipated to be completed in the Spring/Summer 2022.

Funding for this project was previously approved from the Road Lifecycle Reserve in the amount of $30,000.

- **Reference Reports:**

- Report PWES-2019-48, “Brighton Road Corridor Review – Review of Intersection Traffic Control Operations, October 2019”, November 12, 2019; Motion SCM-22/19.

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

B4. CWATS Study for Facility Enhancements for Crossing at Pike Creek/Tecumseh Road

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$6,000	**$0**	$0	$6,000

At the September 2020 Regular Meeting of Council, Council approved the recommendations of Planning & Building Services Report No. PBS-2020-32 which included the commencement of a study for a facility enhancement for the Tecumseh Road/Pike Creek crossing. The total estimated cost of the study is $20,000, of which the Town of Tecumseh and the Municipality of Lakeshore provided a contribution of $6,000 each, for a total of $12,000 (60%), with the County of Essex's share being $8,000 (40%), in accordance with the CWATS cost-sharing agreement.

The Consultant, WSP Canada Inc., was retained and commenced this study in late 2021 with the completion of the study anticipated in 2022.

Funding for this project was previously approved from the Infrastructure Reserve in the amount of $6,000.

- **Reference Reports:**

- Report PBS-2020-32, "County Wide Active Transportation System, Town of Tecumseh 2021 Proposed Projects – Study for Facility Enhancement for Crossing at Pike Creek/Tecumseh Road", September 22, 2020; Motion RCM-281/20.

- Report PWES-2020-33, "Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects", December 8, 2020; Motion RCM-375/20.

B5. Tecumseh Road Multi-Use Pathway Re-construction (Arlington to DM Eagle Public School

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$100,000	**$0**	$0	$100,000

In December 2019, Council approved the recommendations of Report PWES-2019- that authorized Administration to proceed with the full re-construction of the Tecumseh Road pathway from Arlington to DM Eagle. The works were to include complete removal of the existing asphalt path/granular base and the construction of a new gravel base, 2.4 metre-wide asphalt path and related restoration.

To achieve efficiencies, Administration currently plans to include this pathway re-construction in the Tecumseh Road Storm and Road Improvements Project. If the Tecumseh Road Storm and Road Improvements Project does not proceed in 2022, Administration may reconsider the pathway reconstruction as a standalone project.

Funding for this project was previously provided from the Road Lifecycle Reserve in the amount of $100,000.

- **Reference Reports:**

- Report PWES-2019-49, “2020-2024 Public Works & Environmental Services Five Year Capital Works Plan”, December 10, 2019; Motion RCM-401/19.

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

B6. Lesperance Road Multi-Use Trail – CR22 to CR42

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$137,500	**$0**	$1,066,500	$1,204,000

In May 2019, Council approved the recommendation of Report No. PBS-2019-16 that endorsed this Multi-Purpose Pathway as a candidate project for funding through the Investing in Canada Infrastructure Program (2019 Intake of the Public Transit Funding Stream). Following this meeting, an application for funding was submitted which was ultimately approved by the funding agency. The maximum amount of funding available for this project is $466,707.

Dillon Consulting Ltd. was retained and is proceeding with the detailed design which is expected to be completed in 2022, with construction following in subsequent years.

Funding for this project was previously provided from the Infrastructure Reserve in the amount of $137,500.

- **Reference Reports:**

- Report PBS-2019-16, “Investing in Canada Infrastructure Program, 2019 Intake of the Public Transit Funding Stream, Lesperance Road Multi-Purpose Pathway – Cty Rd 22 to Cty Rd 42 Final Recommendation”, May 28, 2019; Motion RCM-150/19.

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

B7. Snake Lane Road Culverts (with Spans <3.0m) – Culverts No. 42, 53 & 54

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$192,500	**$0**	$1,632,500	$1,825,000

The 2016 Culvert Needs Study (Structures with Spans < 3.0m) identified the following Culverts for rehabilitation or replacement within a 1 to 5-year time frame:

- Culvert No. 42 – South Talbot Road Drain at Snake Lane Road (Est. cost $549,800)
- Culvert No. 53 – 9th Line Drain at Snake Lane Road (Est. cost $637,600)
- Culvert No. 54 – Webster Drain at Snake Lane Road (Est. cost $637,600)

In December 2020, Council approved the recommendations of Report PWES-2020-33 that authorized Administration to proceed with the 2021 capital works projects, which included moving forward with the design for Culverts No. 42, 53 & 54. Dillon Consulting Ltd. was retained and detailed design for these Culverts commenced in 2021 and it is anticipated the design will be completed in 2022. Construction is tentatively planned for 2023.

Funding for this project was previously provided from the Bridges Lifecycle Reserve in the amount of $192,500.

- **Reference Reports:**

- Report PWES No. 39/16, “2016 Culvert Needs Study (Structures with Spans < 3.0m)”, November 8, 2016; Motion RCM-384/16.

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

B8. Bridges (with Spans > 3.0m) – Baseline Road/Pike Creek Bridge No. 1005 Bank Stabilization

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$250,000	**$0**	$0	$250,000

During road inspections, settlement was observed adjacent to Bridge No.1005 located on Baseline Road at the Pike Creek Drain. Subsequent investigations revealed that scour/erosion is occurring at the bottom of the adjacent Pike Creek Drain bank resulting in bank instability and settlement. Based on a preliminary assessment, bank

stabilization works were recommended to address the bank scour/erosion and to stop the settlement of the road shoulder.

In December 2020, Council approved the recommendations of Report PWES-2020-33 that authorized Administration to proceed with this bank stabilization project. It was also recommended in the project description, that Dillon Consulting Ltd. be retained to undertake the following: detailed design for the bank stabilization works; assist with obtaining approvals; tender document preparation; assist with tendering; and to undertake contract administration/construction observation. Dillon Consulting Ltd. was recommended based on their previous involvement with the 2013/2014 Bridge No.1005 rehabilitation project and their current appointment for repair and improvement to the Pike Creek Drain under the provisions of the Drainage Act.

This project has not progressed in 2021 and is now being planned for 2022.

Funding for this project was previously provided from the Bridges Lifecycle Reserve in the amount of $250,000.

- **Reference Reports:**

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

B9. 2020 Water and Wastewater Rates Study

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$20,000	**$0**	$0	$20,000

The last update to the Town’s water and wastewater rates was completed in 2015. It is important to update these rates to ensure full cost recovery for the water and wastewater services provided by the Town. Full cost recovery is the generation of sufficient revenues to cover the cost of providing water and wastewater services which includes operations, capital works and the appropriate reserve contributions necessary for asset lifecycle replacement and growth.

In December 2019, Council approved the recommendations of Report PWES-2019-49 that authorized Administration to undertake a study in 2020 to update the Town’s water and wastewater rates. It was further noted that Administration planned to complete the majority of this study in-house, however, an allowance of $20,000 was approved for potential external consulting assistance and peer review.

This study was delayed due to COVID-19 and reprioritization of staffing resources to other studies, but it is anticipated that the study will be completed in 2022.

Funding for this project was previously provided from the following:

- Watermain Reserve Fund in the amount of $10,000
- Wastewater Sewers Reserve Fund in the amount of $10,000

➢ **Reference Reports:**

- Report PWES-2019-49, “2020-2024 Public Works & Environmental Services Five Year Capital Works Plan”, December 10, 2019; Motion RCM-401/19.

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

B10. County Road 43/Banwell Watermain – Intersection Road to South of CPR

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$130,900	**$0**	$607,100	$738,000

In December 2020 Council approved the recommendations of Report PWES-2020-33 that authorized Administration to proceed with the design, approvals and construction of a new watermain to connect the existing CR43 watermain to the existing watermain at the intersection of Banwell Road and Intersection Road. Connection of these existing watermains will add resiliency to the water supply for the Tecumseh Vista School, improve water quality and reduce the required number of auto flushers. It was further identified in the report that Dillon Consulting Ltd. would be retained to complete the design in 2021/2022 with construction to follow.

Based on the County of Essex revised phasing plan for their CR 42/43 improvements, it is anticipated that the design of the CR43/Banwell watermain will be coordinated with the County’s project and that construction could commence in 2023/2024. Detailed design will commence in 2022.

Funding for this project was previously provided from the Watermain Reserve Fund in the amount of $130,900.

➢ **Reference Reports:**

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

B11. 2021 Various Watermain Replacement Projects

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$1,108,100	**$0**	$0	$1,108,100

In December 2020, Council approved the recommendations of Report PWES-2020-33 that authorized Administration to proceed with following watermain replacement projects in 2021:

- 12th Concession Road Watermain (Estimated Cost $575,700)
    - Replacement of two sections of 150mm diameter cast iron watermain (approximately 480 metres), with a combination of new 150mm and 300mm diameter PVC watermain. The 300mm diameter watermain is located between CR42 and Dimu Drive and the 150mm watermain is located approximately 450 metres south of CR42.
    - Detailed design commenced in 2021 and is expected to be completed in 2022. The 300mm diameter watermain is anticipated to be constructed as part of the County's CR42 Improvements project. Construction for both sections of watermain is anticipated in 2022.
- CR43 Watermain (Estimated Cost $247,900)
    - Replacement of approximately 275 metres of 200mm diameter ductile iron watermain with a new 200mm diameter PVC watermain. This section of watermain starts at CR42 and extends northerly.
    - Detailed design commenced in 2021 and is expected to be completed in 2022, with construction following in subsequent years.
- Tecumseh Road Watermain – Brighton Road to Pike Creek (Estimated Cost $284,500)
    - Replacement of approximately 160 metres of 200mm diameter ductile iron watermain with a new 200mm diameter PVC watermain.
    - This watermain has been tendered with construction planned for January/February 2022.

Dillon Consulting Ltd. was retained for engineering services for all of the above watermain replacement projects. Based on the County of Essex revised phasing schedule for their CR 42/43 Improvements Project, it was determined that efficiencies could be obtained by having the CR43 and the 300mm diameter portion of the 12th Concession Road watermain replacements included as part of the County's project.

The estimated cost of $1,108,100 for the 2021 Various Watermain Replacements Project includes $23,100 for road works and $1,085,000 for watermains.

Funding for this project was previously provided from the following:

- Road Lifecycle Reserve in the amount of $23,100
- Watermain Reserve Fund in the amount of $1,085,000

➢ **Reference Reports:**

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

B12. Hwy 3/CR34 Water Valve Replacement

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$456,300	**$0**	$0	$456,300

In December 2020, Council approved the recommendations of Report PWES-2020-33 that authorized Administration to proceed with the Hwy 3/CR43 Water Valve Replacement Project. This project consists of the replacement of water valves on the existing 300mm diameter watermain located on Highway No.3 (Oldcastle Road to CR34) and on CR34 (Highway No.3 to Malden Road). Blackrock Consulting Ltd. was retained to prepare tender documents and to assist with tendering and contract administration. Draft tender documents were prepared in 2021 along with preliminary discussions with approval agencies, in anticipation of construction commencing in 2022.

Funding for this project was previously provided from the Watermain Reserve Fund in the amount of $456,300.

➢ **Reference Reports:**

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

B13. Sylvestre Drive Sanitary Sewer Extension

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$285,000	**$0**	$1,831,000	$2,116,000

In December 2017, Council approved the recommendations of PWES Report No. 57/17 that authorized Administration to proceed with engineering design work and the Class

Environmental Assessment for the Sylvestre Drive Sanitary Sewer Extension project. In accordance with this report, Dillon Consulting Ltd. was retained for this project.

This project consists of the extension of a sanitary sewer on Sylvestre Drive from Sylvestre Drive to CR19 (approximately 410-metres), as well as adjacent to the CR19 right-of-way through a future easement (approximately 215-metres) or within an expanded County Road right of way as part of a future CR19 improvement project. The installation of the sanitary sewers to service the properties identified within the study area is in keeping with Town's Water & Wastewater Master Plan, the Provincial Policy Statement, the County of Essex's Official Plan, and the Town's Official Plan to provide full municipal services to those properties within designated Settlement Areas.

It was originally planned to obtaining required approvals, prepare tender documents, obtain easements and undertake utility relocations in 2020 with construction tentatively planned to proceed in 2021. The County of Essex recently advised that future improvements to CR19 may commence in the next 5 to 10 years. The CR19 improvements will require the County to obtain a right of way widening over the area where the sanitary sewer easement is required. To obtain construction efficiencies and potentially avoid the need for the Town to obtain easements, it is beneficial to plan for this sanitary sewer construction when the CR19 improvements are completed. Accordingly, the potential construction of this project has tentatively been moved to beyond 2025. This schedule will be further updated in future Five Year Capital Works Plans as the County's schedule for the CR19 improvements is refined.

The project cost of $2,116,000 includes $1,114,000 for road works, $947,900 for sanitary sewers and $54,100 for storm sewers.

Estimated recoveries from landowners for the sanitary sewers would be approximately $947,900, with assessments to be calculated by Administration and invoiced back to the landowners by means of a Part XII by-law (Municipal Act, s.391). Detailed design has been paused, however, Administration intends to bring forward a future report to Council in 2022 regarding the cost recovery by-law.

Funding for this project was previously provided from the following:

- Road Lifecycle Reserve in the amount of $94,000
- Wastewater Sewers Reserve Fund in the amount of $186,800
- Storm Sewer Lifecycle Reserves in the amount of $4,200

➢ **Reference Reports:**

- Report PWES No. 57/17, "2018-2022 Public Works & Environmental Services Capital Works Plan", December 12, 2017; Motion RCM-441/17.

- Report PWES-2019-31, “Sylvestre Drive Sanitary Sewer Extension, Municipal Class Environmental Assessment, Schedule B – Filing the Notice of Study Completion”, July 23, 2019; Motion RCM-232/19.

- Report PWES-2019-51, “Sylvestre Drive Sanitary Sewer Extension, Municipal Class Environmental Assessment, Schedule B – Study Completion and Final Adoption”, December 10, 2019; Motion RCM-403/19.

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

B14. County Road 46, Webster and Laval Sanitary Sewer Extension

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$445,250	**$0**	$4,968,250	$5,413,500

In December 2018, Council approved the recommendations of Report PWES-2018-08 that authorized Administration to complete the engineering design for the CR46 Webster and Laval Sanitary Sewer Extension. In accordance with this report, Dillon Consulting Ltd. was retained to complete the engineering design.

The CR46 Webster and Laval Sanitary Sewer Extension is a continuation of the sanitary sewer servicing within the 8th Concession Road sanitary service area. The project includes the extension of a sanitary sewer along CR46 from the 8th Concession Road to Webster Drive, as well as on Webster Drive (entire length), and the extension of a sanitary sewer through an easement just south of Highway 401. This project will also be coordinated with the County’s planned road rehabilitation for CR46.

Detailed design, consultation with utility companies and preparation of final easement documentation continued in 2021. In addition, geotechnical investigations related to new regulations from the Ontario Ministry of Environment, Conservation and Parks for excess soil generated from construction projects commenced in late 2021. Detailed design will be completed in 2022 and discussions with Bell are on-going regarding the required relocation of Bell infrastructure. Preparation of tender documents, completion of the excess soil investigations and obtaining approvals will continue in 2022. Construction is tentatively planned to proceed in 2023.

The project cost of $5,413,500 includes $2,102,800 for road reconstruction, $533,100 for storm sewers, $1,456,800 sanitary sewers and $1,320,800 for watermains.

Estimated recoveries from landowners for the sanitary sewers would be approximately $1,767,000 and will be refined once the By-Law for the 8th Concession Road sanitary service area is in place.

Funding for this project was previously provided from the following:

- Road Lifecycle Reserve in the amount of $120,750
- Wastewater Sewers Reserve Fund in the amount of $166,700
- Storm Sewer Lifecycle Reserves in the amount of $77,400
- Watermain Reserve Fund in the amount of $80,400

➢ **Reference Reports:**

- Report PWES-2018-08, “2019-2023 Public Works & Environmental Services Five Year Capital Works Plan”, December 11, 2018; Motion RCM-361/18.

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

B15. Shoreline Management Plan

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$350,000	**$0**	$0	$350,000

In June 2018, Report PWES-2018-17 outlined the need for a Shoreline Management Plan as one of the recommended flood mitigation strategies. This Plan was subsequently incorporated within the 2020 5-year PWES Capital Works Plan. Thereafter, Zuzek Inc. was retained to complete the study.

The Shoreline Management Plan commenced in 2020 with public information centres held on October 29, 2020, April 20, 2021 and August 18, 2021. The Shoreline Management Plan generally includes the following components:

- Re-assessment of the 1:100-year Lake St. Clair flood elevations.
- A detailed shoreline property inventory including topographic information for each shoreline property within the Town of Tecumseh.
- Determination of vulnerable flood locations along the shoreline.
- Determination of extent of inland flooding based on lake water conveyance through vulnerable areas.
- Assessment of potential impacts of climate change.
- Assessment of lake flooding plus rain generated runoff (Integration with Dillon 2D Storm Drainage Master Plan model).
- Damage value estimates for public and private properties.
- High level conceptual mitigation measures that could be considered in the next phases of the study.

The study is expected to be finalized and reported to Council in 2022. It is intended that the final report to Council will include a presentation by the study consultant.

Funding for this project was previously provided from the Storm Sewer Lifecycle Reserve in the amount of $350,000.

- **Reference Reports:**

- Report PWES-2018-17, “Flood Mitigation Strategy”, June 26, 2018; Motion RCM-194/18.

- Report PWES-2019-49, “2020-2024 Public Works & Environmental Services Five Year Capital Works Plan”, December 10, 2019; Motion RCM-401/19.

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

B16. Stormwater Rate Study

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$45,000	**$0**	$0	$45,000

In December 2019, Council authorized Administration to undertake a Stormwater Rate Study (Report PWES-2019-49). The study was to assess the feasibility of implementing a user fee system to meet the significant funding requirements needed to implement stormwater infrastructure improvements. Watson & Associates Economists Ltd. (Watson) were retained to undertake the Study, which is nearing completion.

Funding for this project was previously provided from the Storm Sewer Lifecycle Reserve in the amount of $45,000.

- **Reference Reports:**

- Report PWES-2019-50, “Storm Drainage Master Plan, Study Completion and Final Adoption”, December 10, 2019; Motion RCM-402/19.

- Report PWES-2019-49, “2020-2024 Public Works & Environmental Services Five Year Capital Works Plan”, December 10, 2019; Motion RCM-401/19.

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

B17. Manning Road Secondary Plan Area – Stormwater Facility

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$2,780,000	**$0**	$9,955,000	$12,735,000

In December 2019 through Report PWES-2019-49, Council authorized Administration to complete the detailed design for the Manning Road Secondary Plan Area (MRPSA) stormwater facility and to move forward acquiring property for the MRSPA stormwater management pond in 2020. In accordance with this report, Dillon Consulting Ltd. was retained based on their previous work on the MRSPA EA, MRSPA EA Addendum and related Functional Servicing Report (FSR).

During 2020, the Town acquired property for the MRSPA stormwater management facility. In addition, prior to completing the detailed design for the MRSPA stormwater facility, the previous 2015 Environmental Study Report and FSR must be updated to reflect the current storm design criteria as provided in the Windsor/Essex Region Stormwater Management Standards Manual (December 2018). A draft version of the updated FSR has been prepared and is currently being reviewed by Administration. Additional assessment of the sanitary servicing requirements for the MRSPA area in relation to the overall Town's sanitary system network has also been undertaken.

Options for cost recovery are currently being considered by Administration, and a future report will be brought forward to Council regarding cost recovery recommendations for this project.

Funding for this project was previously provided from the Storm Sewer Lifecycle Reserve in the amount of $2,740,000.

- **Reference Reports:**

- Report PWES-2019-55, "Amendment to 2019-2023 PWES Five Year Capital Works Plan, Manning Road Secondary Plan Area, Stormwater Management Facility", November 12, 2019; Motion RCM-369/19.

- Report PWES-2019-49, "2020-2024 Public Works & Environmental Services Five Year Capital Works Plan", December 10, 2019; Motion RCM-401/19.

- Report PWES-2020-33, "Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects", December 8, 2020; Motion RCM-375/20.

B18. Tecumseh Hamlet Environmental Assessment & Functional Servicing Report

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$805,000	**$0**	$0	$805,000

In December 2019, Council authorized Administration to undertake various initiatives to move forward with the Tecumseh Hamlet Secondary Plan area (Report PWES-2019-49). These initiatives included a stormwater management analysis, finalizing the road network and commencing the Class EA, which would run concurrently with the related planning process for the Tecumseh Hamlet Secondary Plan. It was further recommended that the FSR and the finalization of the Class EA be completed in 2021. Dillon Consulting was retained to undertake the identified design and Class EA.

Dillon Consulting Ltd. proceeded with the stormwater management analysis and developed preliminary pond sizes for the Tecumseh Hamlet. During this same time, Dillon Consulting Ltd. also proceeded with the City of Windsor Sandwich South Master Servicing Report and Little River Watershed Floodplain Mapping Project (SSMSR). Ultimately, drainage from the Tecumseh Hamlet Area outlets to Little River. The preliminary pond sizing for the Tecumseh Hamlet was based on the allowable release rates identified in the draft Upper Little River Watershed Drainage and Stormwater Management Master Plan Class Environmental Assessment (ULR study). The allowable release rates in the draft ULR study are very restrictive resulting in the need for large ponds. Based on the preliminary results from the City's SSMSR study, it appeared that larger release rates may be allowable from the Tecumseh Hamlet area without adversely impacting the existing flow regime of the Little River. Since the SSMSR is generating new floodline mapping, an in depth review and approval by ERCA was required prior considering larger release rates from the Tecumseh Hamlet area. Accordingly, completion of the Tecumseh Hamlet stormwater management analysis was delayed pending ERCA's review of the SSMSR.

In March 2021, an outlet capacity assessment and recommended allowable release rate summary memo for the Tecumseh Hamlet area was submitted to ERCA and in August, ERCA confirmed that they had no objections to the proposed release rates. With the allowable release rates confirmed, Dillon Consulting Ltd. is now moving forward with finalizing the stormwater management analysis and road network layout. Following completion of this work, the EA is proposed to be finalized in 2022.

The total estimated cost for Hamlet FSR/Class EA is $805,000 which includes design components of $98,000 for roads, $98,000 for water distribution, $113,000 for sanitary sewers and $496,000 for stormwater infrastructure.

It is recommended that Dillon Consulting Ltd. continue with the stormwater management analysis, the road network design, the FSR and the Class EA in 2022, which were previously paused pending completion of other studies.

Funding for this project was previously provided from the following:

- Road Lifecycle Reserve in the amount of $98,000
- Watermain Reserve Fund in the amount of $98,000
- Wastewater Sewers Reserve Fund in the amount of $113,000
- Storm Sewer Lifecycle Reserve in the amount of $496,000

➢ **Reference Reports:**

- Report PWES-2019-49, “2020-2024 Public Works & Environmental Services Five Year Capital Works Plan”, December 10, 2019; Motion RCM-401/19.

- Report PWES-2020-33, “Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects”, December 8, 2020; Motion RCM-375/20.

B19. Turkey Creek Watershed Assessment – Phase 1 and 2

Previously Approved	**Requested for 2022**	Future Costs	Total Project Costs
$60,000	**$0**	$0	$60,000

Currently, various drainage/stormwater management studies are being undertaken in the Towns of Tecumseh, LaSalle and the City of Windsor. Many of these studies involve sub-watersheds of Turkey Creek or have the potential to be impacted by spill from the Turkey Creek watershed. These studies include Tecumseh’s Oldcastle Stormwater Master Plan, Windsor’s Sewer Master Plan and LaSalle’s Howard-Bouffard Master Drainage Study. With the outlet of Turkey Creek extending through LaSalle to the Detroit River, LaSalle has raised questions with regard to potential flood impacts from both existing and proposed development within the Turkey Creek watershed.

The Oldcastle Stormwater Master Plan will include recommendations for drainage improvements for the Tecumseh portion of the Wolfe Drain. The Wolfe Drain drainage area is approximately 340 Ha with approximately 240 Ha being located in Tecumseh. The Wolfe Drain outlets into the Cahill Drain, which crosses under the Herb Gray Parkway and ultimately outlets into the Turkey Creek between Malden Road and Matchette Road. The total drainage area for the Turkey Creek is approximately 5,700 Ha. While the Tecumseh portion of the Turkey Creek drainage area is relatively small, runoff from Tecumseh flows downstream through a developed portion of LaSalle.

The existing floodplain mapping for Turkey Creek and related tributaries dates back to the early 1980s and 1990s. Since the completion of this mapping, significant development has occurred in each municipality. In addition, the Herb Gray Parkway was constructed which included works on significant tributaries of Turkey Creek.

At the request of LaSalle, a meeting was convened in 2020 with engineering staff from all three municipalities and ERCA. Based on the extensive changes that have occurred in this watershed, it was agreed that the watershed would benefit from a more coordinated approach to updating hydrology and hydraulics for Turkey Creek and other primary tributaries (i.e. Cahill Drain) to confirm the inputs, assumptions and recommendations of the various on-going studies within the Turkey Creek watershed.

At the request of LaSalle, with input from both Tecumseh and Windsor, ERCA prepared a Request for Proposal (RFP) titled “Turkey Creek Watershed Hydrologic and Hydraulic Modeling”. Dillon Consulting Ltd. and Landmark Engineers Inc. submitted a joint submission and have been retained for the study.

In general, the objectives for this undertaking is not to replace the other on-going studies, but rather to inform and provide the necessary information to allow for more consistent and coordinated solutions across the Turkey Creek Watershed. The primary objectives for this undertaking include the following:

- Updated hydrology for the entire Turkey Creek Watershed and its tributaries.
- Updated and combined hydraulic modeling of Turkey Creek and any necessary primary tributaries (e.g. Cahill Drain).
- Confirmation of potential drainage impacts on downstream receivers.
- Identification of the necessary assumptions relevant to each of the respective master drainage studies to allow for coordinated solutions within each of the more local undertakings (primarily Tecumseh’s Oldcastle Stormwater Master Plan, Windsor’s Sewer Master Plan and LaSalle’s Howard-Bouffard Master Drainage Study).

In December 2020, Council authorized Administration to participate in the Turkey Creek Watershed Assessment study (Report PWES-2020-33).

The Consultants have completed the Phase 1 portion of the study, which focused on building out the necessary components of the hydrologic and hydraulic model, field investigations, as well as rainfall data collection and a complete review of available reports (i.e. historic floodline reports, drainage reports, drainage studies, etc.).

The Phase 2 portion of the project will include further buildout of the Phase 1 models, validating flows and hydraulic grade lines under existing conditions, assessing the system under future development conditions, identifying areas of concern and making recommendations to address the identified concerns.

As part of the draft Oldcastle Stormwater Master Plan, a number of potential improvement options are recommended for the Wolfe Drain watershed based on various allowable release rates into the downstream drainage systems. The findings of the Turkey Creek Watershed Assessment are required to ultimately determine the preferred drainage improvements for the Wolfe Drain watershed. Accordingly, Administration recommends that Tecumseh continue to be a participating partner in the Phase 2 portion of this study. Participation in the study includes both technical and financial support. The financial component of the project would include ERCA's project management costs as well as Tecumseh's portion of the above noted Turkey Creek Watershed Hydrologic and Hydraulic Modeling study. The cost estimate for Phases 1 and 2 is approximately $380,000 (excluding HST) with cost sharing based on the percentage of contributing watershed area in each municipality (Windsor 85%, LaSalle 11%, Tecumseh 4%).

During the early stages of this project, ERCA (on behalf of the municipal partners) submitted an application for funding to Intake 6 of the federal National Disaster Mitigation Program. Subsequently, ERCA was informed that the funding application was successful and that, through the Bilateral Contribution Agreement between Public Safety Canada (Government of Canada) and the Ministry of Municipal Affairs and Housing (Province of Ontario), this project is able to receive 50% funding up to $182,000.

It is important to note that, if the findings of this study identify problems in the downstream watercourses, additional studies/designs may be required to develop solutions for those problems. Furthermore, once solutions are developed, they will need to be implemented. If issues are identified downstream of the Wolfe Drain, it is anticipated that Tecumseh would be requested to be a contributing partner in future studies and remedial works. At this time, it is premature to estimate potential future cost implications to the Town of Tecumseh.

Funding for this project was previously provided from the Storm Sewer Lifecycle Reserve in the amount of $60,000.

- **Reference Reports:**

- Report PWES-2020-33, "Pre-Approval of 2021 Public Works & Environmental Services Capital Works Projects", December 8, 2020; Motion RCM-375/20.

Section C: Municipal Drain Projects

Town of Tecumseh is obligated to manage, repair, maintain and improve the Town's 120 Municipal Drains (totaling 221km) in accordance with the Drainage Act, including assessing costs to the benefitting upstream landowners according to the most current by-law. Municipal Drains are not municipal infrastructure and only the actual Town assessments are funded from the general tax rate.

There are currently approximately 132 active drainage projects that the Town is undertaking. These works include new municipal drains (4), maintenance of existing drains (62), drain improvements requiring an engineer's report (48) and apportionment agreements (18) all of which are at various stages of completion. The Drainage Superintendent receives requests for maintenance or repair and improvements for Municipal Drains, and determines which section of the Drainage Act is most suitable to proceed with the request. These drainage requests, and subsequent works, are addressed as they occur and are brought before Council for their approval on a project by project basis.

Funding for the Town's assessment for Municipal Drains will generally come from the Drains Lifecycle Reserve.

Consultations

Financial Services
Development Services

Financial Implications

The capital expenditures proposed for 2022 total just over $28.0M in addition to unfinished works carried forward from 2021, with a preliminary estimate of an additional $71.5M projected for future years.

Generally speaking, funding for most projects is covered through reserves, reserve funds and grants where reserves and reserve funds accumulate funds through annual budget allocations. There is, however, long-term debt planned with respect to the Scully/St. Marks and PJ Cecile Storm Pumping Station projects, with borrowing estimated at $15M over the course of a few years commencing in 2022.

For reference, 2021 allocations to capital reserve/reserve funds total $14.7M, with $10.3M going towards general tax rate supported reserves (public works, parks, fire, etc.) and $4.4M going towards rate supported reserve funds (water and wastewater).

Although two of the Town's capital funding reserve/reserve fund categories are either in, or soon-to-be in a deficit position, the Town's overall capital funding reserve/reserve funds are relatively healthy and Administration is comfortable recommending the advancement of the projects identified in this report in advance of the 2022-2026 five-year capital plan.

Projected Lifecycle Reserve and Reserve Fund balances for 2022 are provided in the attached schedules.

Following a capital works strategic planning session with Council in early 2022, the PWES 2022-2026 five-year capital plan will be brought to Council for consideration, approval and adoption accompanied by updated Projected Lifecycle Reserve and Reserve Fund schedules for the five-year planning period.

Link to Strategic Priorities

Applicable	2019-22 Strategic Priorities
☒	Make the Town of Tecumseh an even better place to live, work and invest through a shared vision for our residents and newcomers.
☒	Ensure that Tecumseh's current and future growth is built upon the principles of sustainability and strategic decision-making.
☐	Integrate the principles of health and wellness into all of Tecumseh's plans and priorities.
☒	Steward the Town's "continuous improvement" approach to municipal service delivery to residents and businesses.
☐	Demonstrate the Town's leadership role in the community by promoting good governance and community engagement, by bringing together organizations serving the Town and the region to pursue common goals.

Communications

Not applicable ☒

Website ☐ Social Media ☐ News Release ☐ Local Newspaper ☐

This report has been reviewed by Senior Administration as indicated below and recommended for submission by the Chief Administrative Officer.

Prepared by:

John Henderson, P.Eng.
Manager Engineering Services

Reviewed by:

Tom Kitsos, CPA, CMA, BComm
Director Financial Services & Chief Financial Officer

Reviewed by:

Brian Hillman, MA, MCIP, RPP
Director Development Services

Reviewed by:

Phil Bartnik, P.Eng.
Director Public Works & Engineering Services

Recommended by:

Margaret Misek-Evans, MCIP, RPP
Chief Administrative Officer

Attachment Number	**Attachment Name**
1	Road Projects 2022
2	Sidewalk & Pathway Projects 2022
3	CWATS Projects 2022

Attachment Number	Attachment Name
4	Bridge Projects 2022
5	Water Projects 2022
6	Wastewater Projects 2022
7	Storm Sewer Projects 2022
8	Municipal Drain Projects 2022
9	Major Project Summary – Oldcastle-North Talbot Sanitary Area
10	Major Project Summary – Oldcastle-8th Concession Sanitary Area
11	Major Project Summary – County of Essex Initiated Projects
12	Major Project Summary – Other Projects
13	Summary of PWES 2022 Capital Works Projects and Maps
14	2022 Roads Lifecycle Reserve Projection
15	2022 Bridge Lifecycle Reserve Projection
16	2022 Sidewalks Lifecycle Reserve Projection
17	2022 Storm Lifecycle Reserve Projection
18	2022 Wastewater Sewers Reserve Fund Projection
19	2022 Wastewater Facilities Reserve Fund Projection
20	2022 Watermain Reserve Fund Projection
21	2022 Water Facilities Reserve Fund Projection