

Tri-County Water Board of Management

Agenda

July 15, 2025, 7:00 p.m.

Council Chambers

160 Main Street

West Lorne

Pages

1. **Call to Order**

2. **Adoption of Agenda**

Recommendation:

That Tri-County Water Board hereby adopts the Agenda for July 15, 2025 as presented.

3. **Disclosure of Pecuniary Interest**

4. **Delegations**

4.1 **Christine Scrimgeour - Draft 2024 Financial Statements**

1

Recommendation:

That the Tri-County Water Board hereby accept and approve the Draft Financial Statements for the year ended December 31, 2024, as presented.

5. **Minutes**

13

Recommendation:

That the Tri-County Water Board hereby adopts the minutes of April 15, 2025, as presented.

6. **Business Arising from Minutes**

7. **Staff Reports**

Recommendation:

That the Tri-County Water Board hereby receives the report from M. Badura, Manager of Corporate Services – Treasurer;

And further that the Tri-County Water Board approves the calculation adjustment and its inclusion in the preliminary audited financial statements.

8. Adjournment

Recommendation:

That the Tri-County Water Board hereby adjourn at _____ pm, to meet again at 7:00pm, on Tuesday, October 28, 2025, or at the Call of the Chair.

TRI-COUNTY WATER BOARD
FINANCIAL STATEMENTS
FOR THE YEAR ENDED DECEMBER 31, 2024

**TRI-COUNTY WATER BOARD
FINANCIAL STATEMENTS
FOR THE YEAR ENDED DECEMBER 31, 2024**

-1-	Independent Auditor's Report
-3-	Statement of Financial Position
-4-	Statement of Operations and Accumulated Surplus
-5-	Statement of Cash Flows
-6-	Statement of Change in Net Financial Assets
-7-	Notes to the Financial Statements
-10-	Schedule 1 - Schedule of Tangible Capital Assets

INDEPENDENT AUDITOR'S REPORT

To the Members of Board, Ratepayers and Inhabitants of the Tri-County Water Board

Opinion

We have audited the accompanying financial statements of Tri-County Water Board (the "Board"), which comprise the Statement of Financial Position as at December 31, 2024, and Statements of Operations and Accumulated Surplus, Cash Flows and Change in Net Financial Assets for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of Tri-County Water Board as at December 31, 2024 and its financial performance and its changes in cash flows and net financial assets for the year then ended in accordance with Canadian public sector accounting standards.

Basis of Opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Board in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian public sector accounting standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Board's ability to continue as a going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting unless management either intends to liquidate the Board or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Board's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit.

We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Board's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Board's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Board to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

July 15, 2025
London, Canada

LICENSED PUBLIC ACCOUNTANT

**TRI-COUNTY WATER BOARD
STATEMENT OF FINANCIAL POSITION
AS AT DECEMBER 31, 2024**

	2024	2023
FINANCIAL ASSETS		
Due from Municipality of West Elgin - operating (note 3)	\$ 488,373	\$ 711,327
NET FINANCIAL ASSETS	488,373	711,327
NON-FINANCIAL ASSETS		
Tangible capital assets - Schedule 1 (note 2.c)	10,582,909	10,471,192
	10,582,909	10,471,192
ACCUMULATED SURPLUS (NOTE 4)	\$ 11,071,282	\$ 11,182,519

Approved by:

Approved by:

The accompanying notes are an integral part of the financial statements

TRI-COUNTY WATER BOARD
STATEMENT OF OPERATIONS AND ACCUMULATED SURPLUS
FOR THE YEAR ENDED DECEMBER 31, 2024

	Budget 2024	Actual 2024	Actual 2023
REVENUES			
Current interest	\$ 26,504	\$ 44,341	\$ 43,228
Water billings	1,540,262	1,632,583	1,302,139
Municipal capital contributions	150,000	150,000	150,000
Other revenue	-	11,400	-
	1,716,766	1,838,324	1,495,367
EXPENDITURES			
Amortization	-	840,242	1,082,470
Minor capital expenditures	84,532	94,122	37,832
OCWA contract and callouts	491,985	491,985	475,824
Operating and maintenance	508,987	523,212	477,903
	1,085,504	1,949,561	2,074,029
EXCESS OF REVENUE OVER EXPENDITURES (EXPENDITURES OVER REVENUE)	631,262	(111,237)	(578,662)
ACCUMULATED SURPLUS, BEGINNING OF YEAR	11,182,519	11,182,519	11,761,181
ACCUMULATED SURPLUS, END OF YEAR	\$ 11,813,781	\$ 11,071,282	\$ 11,182,519

The accompanying notes are an integral part of the financial statements

**TRI-COUNTY WATER BOARD
STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED DECEMBER 31, 2024**

	2024	2023
NET INFLOW (OUTFLOW) OF CASH RELATED TO THE FOLLOWING ACTIVITIES:		
OPERATING ACTIVITIES		
Excess of revenue over expenditures (expenditures over revenue) (page 4)	\$ (111,237)	\$ (578,662)
Non-cash charges to operations		
Amortization	840,242	1,082,470
Decrease (increase) in due from Municipality of West Elgin	222,954	229,175
	951,959	732,983
INVESTING ACTIVITIES		
Net decrease (increase) in capital assets	(951,959)	(786,612)
Decrease (increase) in capital work in progress	-	53,629
	(951,959)	(732,983)
Cash provided by operating and investing transactions	-	-
Cash, beginning of year	-	-
CASH, END OF YEAR	\$ -	\$ -

The accompanying notes are an integral part of the financial statements

TRI-COUNTY WATER BOARD
STATEMENT OF CHANGE IN NET FINANCIAL ASSETS
FOR THE YEAR ENDED DECEMBER 31, 2024

	Budget 2024	Actual 2024	Actual 2023
Excess of revenue over expenditures (expenditures over revenue) (page 4)	\$ 631,262	\$ (111,237)	\$ (578,662)
Amortization of tangible capital assets	-	840,242	1,082,470
Acquisition of tangible capital assets	(1,040,593)	(951,959)	(786,612)
Net change in work in progress	-	-	53,629
Increase (decrease) in net financial assets	(409,331)	(222,954)	(229,175)
NET FINANCIAL ASSETS, BEGINNING OF YEAR	711,327	711,327	940,502
NET FINANCIAL ASSETS, END OF YEAR	\$ 301,996	\$ 488,373	\$ 711,327

The accompanying notes are an integral part of the financial statements

TRI-COUNTY WATER BOARD
NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED DECEMBER 31, 2024

1. Description of the Board

The Tri-County Water Board (the Board) is a Joint Municipal Service Board in the Province of Ontario, Canada. It conducts its operations guided by the provisions of provincial statutes such as the Municipal Act, Municipal Affairs Act and related legislation. On January 21, 2022, the member municipalities signed a Master Agreement to govern the management of the System. The participating municipalities of the Board are the Municipalities of Dutton-Dunwich, Southwest Middlesex, Chatham-Kent, Newbury and West Elgin. The Municipality of West Elgin is the Administering Municipality. The System was previously operated under a Purchase Capacity Agreement and Management Agreement which were signed in 1991 between the same parties.

2. Significant accounting policies

The financial statements of the Tri-County Water Board have been prepared by management in accordance with Canadian public sector accounting standards. The significant accounting policies are summarized as follows:

a. Revenue recognition

Revenue is recognized when received or receivable if the amount to be received can be reasonably estimated and collection is reasonably assured.

Government grants and transfers are recognized in the financial statements as revenue in the period in which events giving rise to the transfer occur, providing the transfers are authorized, any eligibility criteria have been met, and reasonable estimates of the amounts can be made.

b. Use of estimates

The preparation of financial statements in conformity with Canadian public sector accounting standards requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenditures during the period. Actual results could differ from these estimates. During 2024, based on a consultant's report issued in 2024, a net adjustment was made to the Board's financial system for revised estimates of flow consumptions from 2021 to 2024. This resulted in a reduction to revenue to the system of \$122,696 and has been recorded in 2024 as a change in estimate.

c. Tangible capital assets

Tangible capital assets are recorded at cost which includes all amounts that are directly attributable to acquisition, construction, development or betterment of the asset. The costs, less residual value, of the tangible capital assets are amortized on a straight-line basis over their estimated useful lives as follows:

Land improvements	15 years
Buildings	50 years
Infrastructure and equipment	25 years
Waterlines	75 years

**TRI-COUNTY WATER BOARD
NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED DECEMBER 31, 2024**

2. Significant accounting policies continued

d. Budget

The Board set a budget based on the accounting policies adopted previous to PSAB Handbook policy for tangible capital assets.

e. Deferred revenue

Revenue received for specific purposes which are externally restricted by legislation, regulation or agreement and are not available for general municipal purposes are accounted for as deferred revenue on the Statement of Financial Position. The revenue is recognized in the Statement of Operations and Accumulated Surplus in the year in which it is used for the specified purpose.

f. Asset retirement obligations

An asset retirement obligation is recognized when as at the financial reporting date, all of the following criteria are met:

- there is a legal obligation to incur retirement costs in relation to a tangible capital asset;
- the past transaction or event giving rise to the liability has occurred;
- it is expected that the future economic benefits will be given up; and
- a reasonable estimate of the amount can be made.

Buildings and underground pipes containing asbestos, are estimated and recognized as a liability and an increase in the cost of the asset at the time of acquisition. The liability is discounted annually over the same useful life as the asset's annual amortization expense, calculated in accordance with the Board's amortization policies. Management has evaluated its tangible capital assets and determined that there is only a short portion of the underground pipe that may contain asbestos and therefore, has not recorded any asset retirement obligation.

3. Continuing operations

All banking activities are administered by the Municipality of West Elgin, on behalf of the Board's activities. The amount due from the Municipality of West Elgin represents the net working capital position between the Municipality and the Board after adding or deducting payments made to or received from the Municipality of West Elgin.

TRI-COUNTY WATER BOARD
NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED DECEMBER 31, 2024

4. Accumulated Surplus

Accumulated surplus consists of the following surplus balance:

	2024	2023
Reserve for future operations	\$ 947,421	\$ 1,170,375
Invested in tangible capital assets	10,123,861	10,012,144
	\$ 11,071,282	\$ 11,182,519

5. Commitment

The Board, through the Municipality of West Elgin, has contracted with OCWA to operate and maintain the System. The annual cost for 2024 was \$491,985 (2023 - \$475,824). Additional costs, agreed to by both parties, are permitted under the agreement.

TRI-COUNTY WATER BOARD
SCHEDULE 1 - SCHEDULE OF TANGIBLE CAPITAL ASSETS
FOR THE YEAR ENDED DECEMBER 31, 2024

Land and Land							2024	2023
	Improvements	Buildings	Equipment	Waterlines	Total			
COST								
Balance, beginning of year	\$ 88,735	\$ 4,664,564	\$ 15,294,140	\$ 1,471,992	\$ 21,519,431		20,732,819	
Add:								
Additions during the year	122,345	52,316	777,298	-	951,959		788,944	
Less:								
Disposals during the year	-	-	-	-	-		(2,332)	
BALANCE, END OF YEAR								
	211,080	4,716,880	16,071,438	1,471,992	22,471,390		21,519,431	
ACCUMULATED AMORTIZATION								
Balance, beginning of year	-	1,830,727	8,363,754	853,758	11,048,239		9,965,769	
Add:								
Amortization during the year	408	97,799	722,409	19,626	840,242		1,082,470	
Less:								
Disposals during the year	-	-	-	-	-		-	
BALANCE, END OF YEAR								
	408	1,928,526	9,086,163	873,384	11,888,481		11,048,239	
NET BOOK VALUE OF TANGIBLE CAPITAL ASSETS								
	210,672	\$ 2,788,354	\$ 6,985,275	\$ 598,608	\$ 10,582,909		10,471,192	

This schedule is provided for information purposes only

Tri-County Water Board of Management

Minutes

Date: April 15, 2025, 7:00 p.m.

**Location: Council Chambers
160 Main Street
West Lorne**

Present: Allan Mayhew, Southwest Middlesex
Mike Hentz, Dutton Dunwich
Amarilis Drouillard, Dutton Dunwich
Bill Denning, West Elgin
Corey Pemberton, Dutton Dunwich
Don McCallum, Southwest Middlesex
Kevin Derbyshire, Newbury
Mike Sholdice, Southwest Middlesex
Darren Galbraith, Chatham-Kent
Richard Leatham, West Elgin

Regrets: Taraesa Tellier, West Elgin
Ryan Statham, West Elgin

Staff Present: Cathy Case, Clerk/Treasurer, Newbury
Robin Trepanier, OCWA
Sam Smith, OCWA
Terri Towstiuc, Recording Secretary/Clerk, West Elgin
Sam Sianas, OCWA
Robin Greenall, Chief Administrative Officer, West Elgin
Amanda Gubbels, Chief Administrative Officer, Southwest Middlesex

Regrets: Maegan Garber, OCWA
Magda Badura, Manager of Corporate Services/Treasurer, West Elgin
Don Macleod, Chief Administrative Officer, Dutton Dunwich

This meeting was held in a Hybrid format

1. Call to Order

Chair Bill Denning called the meeting to order at 7:00 pm.

2. Adoption of Agenda

Moved: Allan Mayhew, Southwest Middlesex

Seconded: Don McCallum, Southwest Middlesex

That Tri-County Water Board hereby adopts the Agenda for April 15, 2025, as presented.

Disposition: Carried

3. Disclosure of Pecuniary Interest

No disclosures

4. Minutes

Moved: Mike Hentz, Dutton Dunwich

Seconded: Mike Sholdice, Southwest Middlesex

That the Tri-County Water Board hereby adopts the minutes of January 28 and March 11, 2025, as presented.

Disposition: Carried

5. Business Arising from Minutes

None.

6. Staff Reports

6.1 Tri-County Water Board Annual Report

Moved: Allan Mayhew, Southwest Middlesex

Seconded: Mike Hentz, Dutton Dunwich

That Tri-County Water Board hereby receive the Tri-County Water Board Annual Report, previously received by email March 5, 2025, pursuant to Ontario Regulation 170/03, provided by Matthew Belding, Process and Compliance Technician, Ontario Clean Water Agency.

Disposition: Carried

6.2 Tri County Drinking Water System, Operations Report, First Quarter 2025

Moved: Richard Leatham, West Elgin

Seconded: Don McCallum, Southwest Middlesex

That Tri-County Water Board hereby receive the Tri County Drinking Water System Operations Report, First Quarter 2025, presented by Sam Smith, Sr. Operations Manager, Ontario Clean Water Agency, Southwest Region, for information purposes.

Disposition: Carried

6.3 Tri-County Water System – Multi-Faceted Review Toward Long-Term Sustainability

Moved: Amarilis Drouillard, Dutton Dunwich

Seconded: Richard Leatham, West Elgin

That the Tri-County Water Board hereby receives the report from Robin Greenall, CAO West Elgin and Amanda Gubbels, CAO Southwest Middlesex

And endorse the initiation of a strategic review process to evaluate the governance, capacity, and sustainability of the Tri-County Water System;

And direct staff to obtain pricing for a business case study, including a review of Municipal Services Corporation (MSC) options, and include evaluation of board structures that retain municipal representation while incorporating technical expertise, and report back to the Board;

And direct staff to obtain pricing for an overall system capacity and servicing model of the Tri-County Water System, to understand current excess capacity and inform future discussions on potential expansion;

And direct staff to initiate outreach to neighbouring municipalities to review long-term servicing needs for growth, both within existing users and with adjacent municipalities who may be interested in receiving services.

Disposition: Carried

6.4 Tri-County Drinking Water System, Draft Inspection Report, February 18, 2025

Moved: Mike Hentz, Dutton Dunwich

Seconded: Amarilis Drouillard, Dutton Dunwich

That Tri-County Water Board hereby receive the Draft Inspection Report, dated February 18, 2025, as information only.

Disposition: Carried

7. Correspondence

7.1 Letter Dated March 27, 2025 Re: Southwold Water Distribution System

7.2 Verbal Correspondence, R Greenall Re: Delaware First Nations

Tri-County Water Board received a request from the Township of Southwold to explore opportunity to sell water to the township, through the Tri-County water system, to assist with water supply issues currently being experienced, and to address future growth and expansion. The board also discussed supplying water to the local First Nations.

Moved: Allan Mayhew, Southwest Middlesex

Seconded: Mike Hentz, Dutton Dunwich

That Tri-County Water Board hereby receive the correspondence from Township of Southwold and Delaware First Nations, and direct administration to respond to the parties, as discussed.

Disposition: Carried

8. Adjournment

Moved: Amarilis Drouillard, Dutton Dunwich

Seconded: Corey Pemberton, Dutton Dunwich

That the Tri-County Water Board hereby adjourn at 7:47 pm, to meet again at 7:00pm, on Tuesday, July 15, 2025, or at the Call of the Chair.

Disposition: Carried

Corey Pemberton, Chair

Terri Towstiuć, Recording Secretary



Staff Report

Report To: Tri-County Water Board
From: Magda Badura, Manager of Corporate Services/Treasurer
Date: 2025-07-15
Subject: West Elgin Water Consumption Adjustment

Recommendation:

That the Tri-County Water Board hereby receives the report from M. Badura, Manager of Corporate Services – Treasurer;

And further that the Tri-County Water Board approves the calculation adjustment and its inclusion in the preliminary audited financial statements.

Purpose:

The purpose of this report is to update the Board on the financial impact of water costs paid by West Elgin to the Tri-County Water Board from 2021 to 2024 and to outline the adjustments implemented following the findings of the recent water modeling study.

Background:

In response to concerns regarding the accuracy of water consumption reporting, Dillon Consulting Limited (Dillon) was retained to conduct an assessment of the Municipality of West Elgin's water consumption calculation methodology. The purpose of the assessment was to document both historical and current methods used to calculate water consumption; and to provide recommendations for a more representative and accurate methodology.

West Elgin is part of the Tri-County Water System, which also includes the Municipality of Southwest Middlesex, the Village of Newbury, the Municipality of Chatham-Kent, and the Municipality of Dutton/Dunwich. West Elgin is located at the upstream end of the water supply network, with treated water conveyed from a Lake Erie shoreline Water Treatment Plant (WTP) through approximately 12 km of trunk watermain. This infrastructure is owned and operated by the Tri-County Water Board, with meter chambers located at the connection points to other member municipalities.

Historically, until 2021, West Elgin's water consumption was calculated using the sum of metered flows for Rodney and customer meter readings for West Lorne. However, this method was found to underestimate actual consumption, as it excluded system losses such as leakage and flushing and relied on older, potentially inaccurate customer meters.

In 2021, a revised calculation method was adopted. Rather than using localized readings, West Elgin's consumption was calculated by subtracting the metered flows to the other four Tri-County members from the total flow supplied by the WTP. This method resulted in significantly higher consumption values for West Elgin because it attributed any unmeasured flow in the Tri-County system—such as water losses, inaccuracies in flow measurement and unaccounted leaks and flushing.

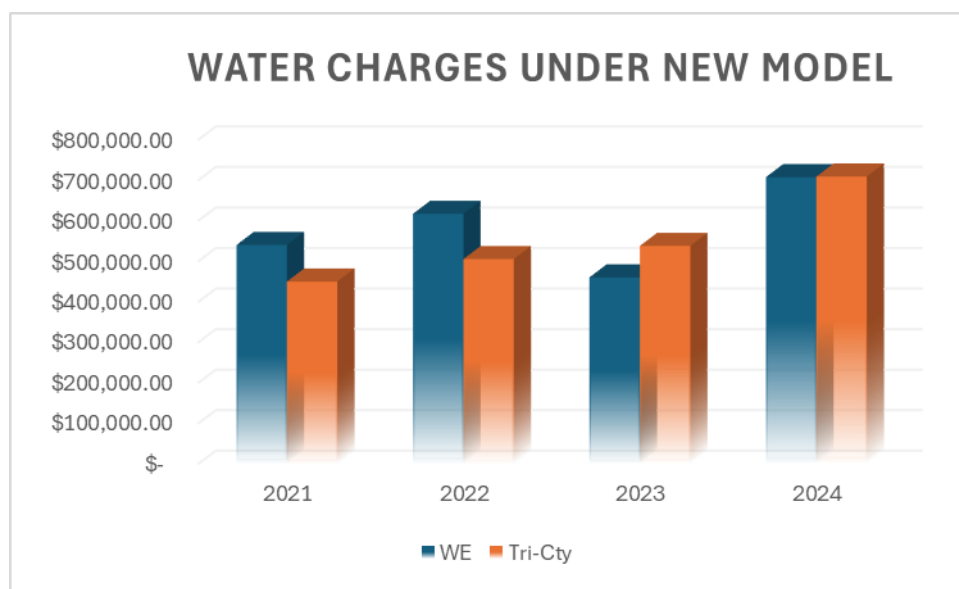
Dillon's review highlighted that the revised methodology overstates West Elgin's water usage. An annual flow deficit—averaging 17% of the total flow from the WTP—was identified when comparing the total water supplied to the sum of all measured consumption by Tri-County members. The causes of this discrepancy may have been related to measurement inaccuracies at Tri-County meter chambers, leakage from the trunk watermain, undetected losses in West Lorne's distribution system not captured by the previous method, under-readings from aging customer meters, and water used during system flushing operations.

Given the magnitude of the flow deficit, Dillon concluded that it is unlikely the discrepancy can be attributed solely to West Elgin's system. A significant portion of the unmeasured flow is likely due to losses or measurement issues within the Tri-County water network itself.

The method used for calculating West Elgin's water consumption significantly overestimated actual usage by assigning all unaccounted-for flow within the Tri-County Water System to West Elgin alone. Dillon Consulting recommended adopting a revised calculation method (Equation 4 attached to this report on pg. 5) that more accurately reflects West Elgin's true consumption, although some uncertainties remain—particularly with data from the West Lorne area.

Based on the revised methodology (Equation 4), West Elgin's water consumption for the years 2021 to 2024 was recalculated, with the results summarized in the table below. The updated figures indicate that West Elgin overpaid for water in 2021 and 2022, and underpaid in 2023 and 2024. Following consultation with the auditors, it was confirmed that there is no need to reopen the financial records for 2021 to 2023. Instead, the net adjustment can be processed in the 2024 fiscal year.

	West Elgin	Tri-County	Difference
2021	\$ 539,668.18	\$ 449,462.57	\$ 90,205.61
2022	\$ 616,572.39	\$504,969.98	\$ 111,602.41
2023	\$ 459,795.91	\$537,429.33	\$ (77,633.42)
2024	\$ 707,107.15	\$708,585.27	\$ (1,478.12)
Total			\$ 122,696.47



Dillon recommends that the Tri-County Water Board investigate the system-wide flow discrepancies by verifying the accuracy of flow meters and conducting leak detection testing on the trunk watermains.

Financial Implications:

As the administering body for the Tri-County Water Board, the Municipality of West Elgin maintains and records all related financial transactions. The identified overpayment will be recorded through an adjusting journal entry in the 2024 fiscal year. This entry will increase the Tri-County's overall deficit by \$122,696.47, ensuring the financial statements accurately reflect the revised water consumption calculations and related costs.

The adjustment was initially reported to the Board on February 6, 2024, during the presentation of the preliminary financials as of December 31, 2023. At that time, the Board was advised that the year-end had not yet been finalized due to manual calculations required for West Elgin. It was noted that the reconciliation would be completed and brought back for acknowledgment at the next scheduled meeting.

The adjustment was subsequently acknowledged again by the municipal auditors on June 25, 2024, when the audited financial statements were presented to the Board for approval. Ms. Christene Scrimgeour confirmed that West Elgin's water consumption figures were inaccurate and would be corrected in the future.

Respectfully submitted by,

Magda Badura

Manager of Corporate Services - Treasurer

Report Approval Details

Document Title:	West Elgin Water Consumption Adjustments - 2025-13-Corporate Services Finance.docx
Attachments:	<ul style="list-style-type: none">- Tri-Cty Financials as of December 31, 2024.pdf- Tri-Cty Financials as of May 31 2025.pdf- Bardura_West Elgin Water Consumption Calculations_January 2025.pdf
Final Approval Date:	Jun 27, 2025

This report and all of its attachments were approved and signed as outlined below:

Robin Greenall

Tri-County Water Board
Income Statement
As of December 31, 2024

	Preliminary	2024 Budget
	2024 Actuals	
Revenues		
02-7315-6110 BANK INTEREST	(44,340.89)	(26,504.20)
02-7315-6190 REBATES	(11,400.00)	-
02-7315-6590 WATER REV - MUNICIPAL	(1,509,886.18)	(1,540,262.20)
02-7315-6591 Municipal Contribution - Capital Replacement	(150,000.00)	(150,000.00)
Expenses		
02-7315-7500 HYDRO	289,621.71	283,000.00
02-7315-7501 GAS	28,630.62	31,000.00
02-7315-7510 INSURANCE	29,500.20	28,000.00
02-7315-7511 TAXES	71,946.02	71,961.00
02-7315-7520 Grounds Maintenance - Phragmites Control	8,026.20	5,000.00
02-7315-7529 ADMINISTRATION EXPENSE	-	8,026.20
02-7315-7531 FINANCIAL PLAN	-	10,000.00
02-7315-7532 LICENSES & PERMITS	1,410.40	1,000.00
02-7315-7675 LEGAL	-	1,000.00
02-7315-7676 AUDIT	3,953.38	5,000.00
02-7315-7679 Chemicals	90,199.61	65,000.00
02-7315-7680 CONTRACTED SERVICES	491,985.00	491,985.00
02-7315-7681 Asset Management	10,479.53	5,000.00
02-7315-7900 TRANSFER TO RESERVE	194,340.89	150,000.00
02-7315-7901 TRANSFER FROM RESERVES	(540,067.75)	(559,330.80)
Capital		
02-7315-8000 CAPITAL OVER \$10,0000	1,035,601.26	1,120,125.00
	\$ -	\$ -

Water Consumption (m³)	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>
Municipality of Dutton-Dunwich	266,170	246,763	236,547	226,664
Municipality of Chatham-Kent	95,409	96,139	92,052	95,644
Village of Newbury	51,874	58,300	47,959	46,536
Municipality of Southwest Middlesex	401,426	381,735	370,319	387,346
Municipality of West Elgin	454,003	487,894	481,999	578,648
Total	<u>1,268,882</u>	<u>1,270,830</u>	<u>1,228,876</u>	<u>1,334,838</u>

Reserve Balance

Beginning Balance - January 1, 2024	\$ 1,170,375.13
Transfer to Reserves	150,000.00
Transfer to Reserves	44,340.89
Transfer from Reserves	(540,067.75)
Ending Balance - December 31, 2024	<u>\$ 824,648.27</u>

Tri-County Water Board

Income Statement

As of May 31, 2025

	<u>2025 Actuals</u>	<u>2025 Budget</u>
Revenue		
02-7315-6110 BANK INTEREST	-	(25,000.00)
02-7315-6190 REBATES	-	-
02-7315-6353 Gain/Loss on Asset Disposal	-	-
02-7315-6590 WATER REV - MUNICIPAL	(587,202.70)	(1,691,806.00)
02-7315-6591 Municipal Contribution - Capital Replacement	-	(150,000.00)
Expenses		
02-7315-7500 HYDRO	94,199.09	295,800.00
02-7315-7501 GAS	15,475.04	29,751.00
02-7315-7502 WATER	-	-
02-7315-7510 INSURANCE	31,391.28	31,391.00
02-7315-7511 TAXES	-	74,120.00
02-7315-7520 Grounds Maintenance - Phragmites Control	-	5,000.00
02-7315-7529 ADMINISTRATION EXPENSE	-	8,187.00
02-7315-7531 FINANCIAL PLAN	-	-
02-7315-7532 LICENSES & PERMITS	-	1,500.00
02-7315-7601 TELEPHONE & INTERNET	-	-
02-7315-7675 LEGAL	-	25,000.00
02-7315-7676 AUDIT	-	5,100.00
02-7315-7679 Chemicals	26,645.84	66,950.00
02-7315-7680 CONTRACTED SERVICES	211,143.55	501,825.00
02-7315-7681 Asset Management	-	5,000.00
02-7315-7900 TRANSFER TO RESERVE	-	150,000.00
02-7315-7901 TRANSFER FROM RESERVES	-	(373,943.00)
Capital		
02-7315-8000 CAPITAL OVER \$10,0000	30,296.83	1,041,125.00
	\$ (178,051.07)	\$ -

Consumption (m³)

	<u>2025 YTD</u>	<u>2025 Budget</u>
Dutton-Dunwich	91,153	244,189
Chatham-Kent	32,551	96,139
Newbury	17,618	58,299
Southwest Middlesex	156,452	381,735
West Elgin	229,528	482,148
Total	527,302	1,262,510

Memo



To: Magda Bardura – West Elgin
From: Nick Emery – Dillon Consulting Limited (Dillon)
cc: Mina Yacoub – Dillon
Ousman Jobarteh – Dillon
Jason Johnson – Dillon
Date: February 4, 2025
Subject: West Elgin Water Consumption Calculations
Our File: 24-7728

1.0

Introduction

Dillon Consulting Limited (Dillon) completed an assessment of the Municipality of West Elgin's (West Elgin) water consumption calculation methodology to:

1. Document current and previous calculation methods; and
2. Provide recommendations for a representative calculation methodology.

Dillon reviewed the calculation methodologies and the data used to complete the consumption calculations, and identified assumptions and uncertainties associated with each method. The results of the review were used to develop a recommended consumption calculation method.

2.0

Background

West Elgin is part of the Tri-County Water System, whose other members include the Municipality of Southwest Middlesex, the Village of Newbury, the Municipality of Chatham/Kent, and the Municipality of Dutton/Dunwich.

West Elgin is located at the upstream end of the water supply network. Water from the water treatment plant (WTP) located on the Lake Erie shoreline is conveyed through West Elgin to the other member municipalities by approximately 12 km of trunk watermain owned by the Tri-County System. Meter chambers are located at the connections to the other member municipalities, as shown on the attached figure.

Due to its location in the network, the volume of water supplied by the Tri-County System to West Elgin is calculated rather than directly measured. The calculation methodology was modified in 2022, resulting in larger consumption values than that reported in 2021, as summarized in **Table 1**.

Table 1: Reported West Elgin Annual Water Consumption Summary

Year	Annual Calculated Consumption (m³)
2021	522,103
2022	580,852
2023	636,050

3.0

Consumption Calculation Before 2021

Until 2021, West Elgin's annual water consumption was calculated using the following equation.

Equation 1:

$$\text{West Elgin Consumption} = \text{West Lorne Consumption} + \text{Rodney Consumption}$$

where:

West Lorne Consumption = The sum of the individual West Lorne customer service meter readings; and

Rodney Consumption = The flows measured at the four meter chambers that supply Rodney, including FIT301, FIT304, FIT312, and FIT313.

The resulting water consumption calculation for 2021 is summarized in the following table.

Table 2: Reported West Elgin Annual Water Consumption Summary

Portion of the Water Distribution System	Annual Calculated Consumption (m³)
West Lorne	148,374
Rodney	373,729
Total	522,103

This calculation methodology likely underestimates West Elgin's annual water consumption, because it includes customer meter readings and does not include losses due to flushing and leakage.

The flow measurements from the Tri-County meter chambers that supply Rodney are likely reasonably reliable, since the flowmeters are maintained and monitored by the system operator. In contrast, the data used to calculate the West Lorne water consumption are from the customer service meter readings and are less reliable. Service meters are not frequently monitored and maintained, and malfunctioning or older meters typically underestimate flow. Consequently, the water use calculated for West Lorne is likely lower than the actual annual water consumption.

This calculation method also neglects some of the water losses in the West Lorne portion of the water distribution system due to leakage and flushing. The flows measured at the Rodney meter chambers include both water used by customers and downstream system losses. However, since the West Lorne component of the consumption calculation is based on end-of-pipe flows at the customer meters, it does not include the losses that occur between the treatment plant and the water service connections.

Consumption Calculation After 2021

After 2021, West Elgin's water consumption was calculated by subtracting the flows measured at the meter chamber connections to Southwest Middlesex, Newbury, Chatham-Kent, and Dutton/Dunwich from the total flow supplied by the WTP, as summarized in the following equation.

Equation 2:

West Elgin Consumption = Flow Supplied by WTP - Sum of Flows Supplied to other Tri-County Members

The resulting values are summarized in the following table.

Table 3: West Elgin Annual Water Consumption Calculation Post-2021 (m³)

Municipality	2022	2023
Southwest Middlesex	381,735	370,319
Newbury	58,300	47,959
Chatham-Kent (Bothwell)	96,139	92,052
Dutton/Dunwich	244,189	229,423
West Elgin	667,979	731,458
Total Flow from WTP	1,448,342	1,471,211

This calculation method likely overestimates West Elgin's annual water consumption, because it attributes water losses from the Tri-County system and any errors in flow measurement to West Elgin.

An analysis was completed to calculate how much additional flow is allocated to West Elgin using this methodology. A flow deficit was calculated by subtracting the flows measured at the Tri-County meter chambers and West Lorne customer meter readings from the total flow supplied by the WTP, using the following equation.

Equation 3:

Annual Deficit = Flow Supplied by WTP - Sum of Flows Supplied to all Tri-County Members

The resulting flow deficit represents unmeasured flow in the Tri-County system that is currently being attributed to West Elgin.

Table 4: Tri-County Flow Deficit Summary (m³)

Consumption	2022	2023
Other Tri-County Member Municipalities		
Southwest Middlesex ¹	381,735	370,319
Chatham-Kent ¹	96,139	92,052
Newbury ¹	58,300	47,959
Dutton-Dunwich ¹	246,763	236,547
Other Municipalities Subtotal	782,937	746,877
West Elgin		
Rodney ¹	206,882	198,566
West Lorne ²	128,913	122,978
Crinan ¹	122,660	120,709
West Elgin Subtotal	458,455	442,253
Total Consumption	1,241,391	1,189,130
Supply from WTP	1,448,342	1,471,211
Flow Deficit (m³)	-206,951	-282,081
Flow Deficit (%)	-14.3%	-19.2%

Notes:¹ From Tri-County meter chamber data.² From customer meter data.

The calculation results suggest that there is a significant difference between the total flow supplied by the WTP and the total calculated consumption for the Tri-County members. The reasons for this difference may include:

- Measurement errors at one or more Tri-County meter chamber;
- Leakage from the Tri-County trunk watermain;
- Leakage from the portion of the West Lorne water distribution system that is not located downstream of a Tri-County meter chamber;
- Underestimated customer meter readings in the West Lorne portion of the West Elgin water distribution network; and
- Losses due to system flushing.

The average calculated flow deficit based on the 2022 and 2023 data is approximately 17 percent of the total flow supplied by Tri-County. The magnitude of this flow deficit cannot be reasonably attributed solely to losses in the West Lorne portion of the West Elgin water system caused by leakage, flushing and/or inaccurate customer meter data. Consequently, a significant portion of this water deficit is likely associated with the Tri-County portion of the network.

Discussion

Using the current West Elgin water consumption calculation methodology, any flow measurement errors and water losses from the Tri-County system are included in West Elgin's consumption. The result significantly overestimates West Elgin's actual water use. A more accurate method for calculating West Elgin's consumption is presented by the following equation:

Equation 4:

$$\text{West Elgin Consumption} = \text{Rodney Consumption} + \text{Crinan Consumption} + \text{West Lorne Consumption} + \text{West Lorne Flushing} + \text{West Lorne Leakage}$$

This equation accounts for the significant components of the West Elgin water consumption using the best available data. The resulting West Elgin water consumption is summarized in the following table.

Table 5: Revised West Elgin Annual Water Consumption Calculation (m³)

Value	2022	2023
West Elgin Water Use		
Rodney ¹	206,882	198,566
West Lorne ²	128,913	122,978
Crinan ¹	122,660	120,709
Use Subtotal	458,455	442,253
West Lorne Water Losses		
Flushing ³	1,000	1,000
Leakage ⁴	12,891	12,298
Loss Subtotal	13,891	13,298
TOTAL CONSUMPTION	472,346	455,551

Notes:

- ¹ From Tri-County meter chamber data.
- ² From customer meter data.
- ³ Based on seven unmetered blow off locations and one unmetered autoflusher.
- ⁴ Based on 10% of the West Lorne measured water use.

The annual system flushing volume for the blow offs located in the West Lorne portion of the network was estimated based on the following information:

- Seven blow off locations;
- Annual flushing frequency of seven times per year;
- Flushing duration of 10 minutes; and
- An assumed flow rate of 30 L/s.

The resulting calculated volume of approximately 880 m³/year was rounded up to 1,000 m³/year to account for the annual volume used by the Gray Line autoflusher.

Leakage from the West Lorne portion of the system is estimated assuming that water losses account for a percentage of the supplied flow. Based on information from Environment Canada presented in its 2011 Municipal Water Use Report, water losses represent approximately 13.3% of total water use in municipal water distribution systems. The report also notes that large cities tend to have more water lost through leaks than smaller communities. Based on this, a reasonable assumption for leakage from the West Lorne system is 10%.

Dillon reviewed the water distribution network to evaluate whether additional meter chambers could be installed to better measure the flow supplied by Tri-County to the West Lorne portion of the system. The results of the review suggest that this strategy probably isn't feasible because the many connections from the Tri-County trunk watermain to the West Lorne network would require a significant number of meter chambers. These chambers would likely interfere with flows under high demand conditions within the West Lorne Settlement Area and could affect available fire flows. Furthermore, installing a meter chamber on the Tri-County trunk watermain isn't feasible because it would prevent flows from the West Lorne standpipe from feeding the southern portion of the network.

Conclusions and Recommendations

The current method used to calculate West Elgin's water consumption overestimates the Municipality's water use. The available data suggest that there is a significant deficit between the flow supplied at the WTP and the flows used by the Tri-County member municipalities. Using the current calculation methodology, this deficit is borne exclusively by West Elgin.

Based on the results of Dillon's review, Equation 4 provides a more accurate method for calculating West Elgin's water consumption using the available data. While there is some uncertainty associated with the values used to calculate the total consumption for the West Lorne portion of the system, the accuracy of these values can be improved through additional investigation, including:

- Confirming the flushing losses by reviewing the calculation assumptions. The Municipality could also consider directly measuring the flushing volumes;
- Completing a detailed review of the water billing records to confirm the accuracy of the West Lorne customer meter data. Some of the review tasks may include:
 - Filtering the data to remove duplicate records;
 - Sorting the data to identify meters that may be undermeasuring flows;
 - Analyzing the data to identify trends, such as comparing the per meter water use in West Lorne with Rodney and Crinan;
- Compiling pipe age and pipe material data to characterize the West Lorne water distribution network. Once tabulated, this data can then be compared with the pipe data for the Tri-County trunk watermain to identify areas with highest risk of leakage.

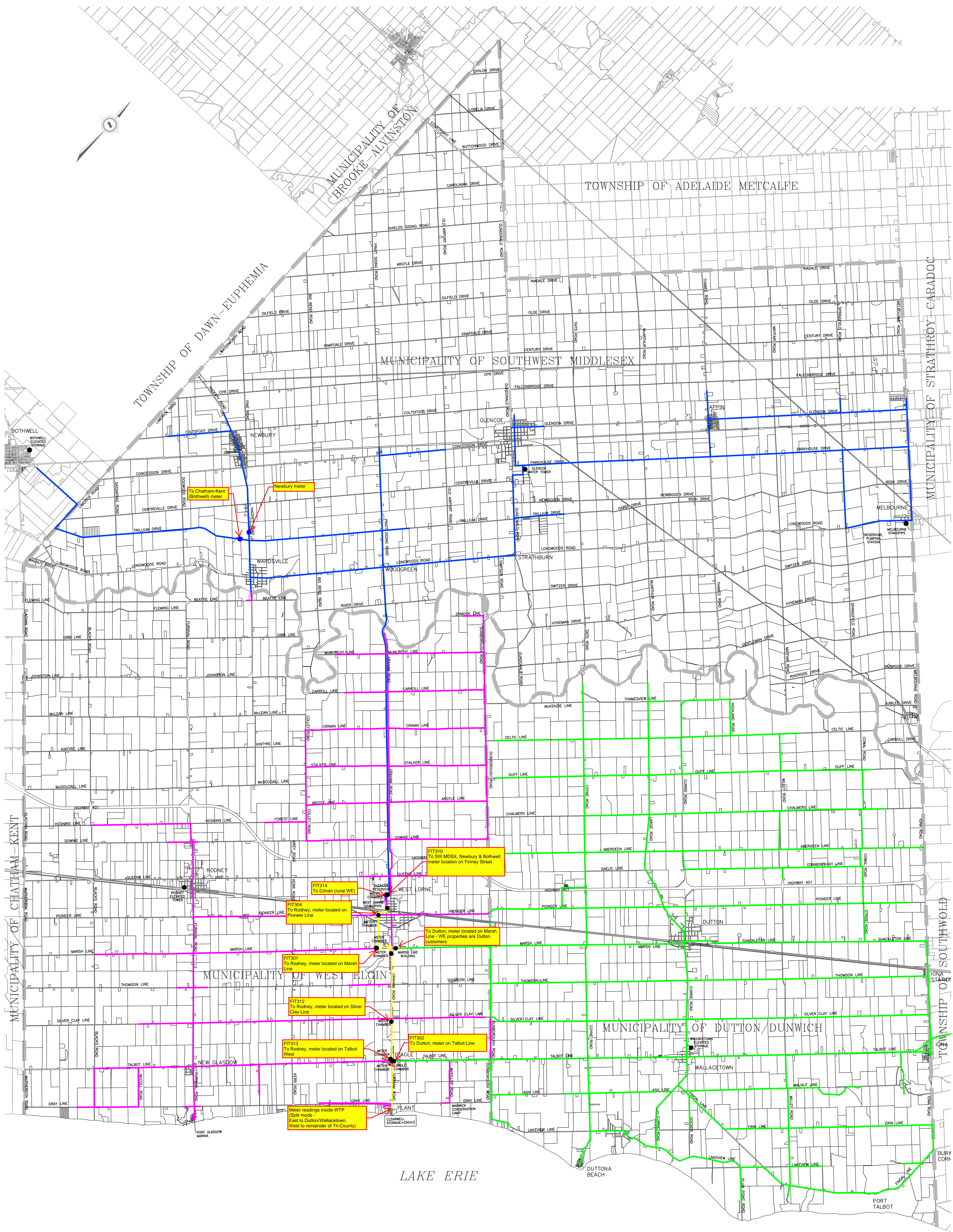
The Tri-County Board should consider investigating the causes for the difference between the flow supplied at the WTP and the flows used by the Tri-County member municipalities. The investigation may include:

- Inspecting the Tri-County meter chambers and verifying the flow meter accuracy; and
- Completing a leak detection investigation of the Tri-County trunk watermain.

DILLON CONSULTING LIMITED

Attachments: Figure – Tri-County Water Lines

TRI-COUNTY TRUNK WATER LINES



LEGEND

TRI-COUNTY	Blue line
DUTTON/DUNWICH	Green line
SOUTHWEST MIDDLESEX	Yellow line
WEST ELGIN	Magenta line