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*Agenda*

**July 17, 2024 at 8:00 a.m.**

**Watershed Education Center (Vitale Park)  
Lakeville, NY 14480**

All attachments and reports may be found at  
[www.lcwsa.us](http://www.lcwsa.us)

- 1. Call to Order**
- 2. Approval of Agenda**
- 3. Approval of Minutes**
  - a. June 19, 2024 – Regular Meeting
- 4. Reports**
  - a. Financial Report – June 2024
  - b. Operations Report
  - c. Capital Report
  - d. Executive Director’s Report

**5. Other Business**

- |                         |   |
|-------------------------|---|
| Resolution No.: 2024-33 | RESOLUTION TO ACCEPT A PROPOSAL FROM GHD FOR ENGINEERING SERVICES FOR THE CAMP RUN OVERFLOW IMPROVEMENTS PROJECT STUDY (PROJECT NO. 131501)   |
| Resolution No.: 2024-34 | RESOLUTION RESCINDING CUSTOMER POLICY C05-210 CUSTOMER WATER LEAK HARDSHIP POLICY AND ADOPTING THE COURTESY WATER LEAK ADJUSTMENT POLICY  |
| Resolution No.: 2024-35 | RESOLUTION TO APPROVE (A) THE ISSUANCE OF THE AUTHORITY’S SYSTEM REVENUE BONDS, 2024; AND (B) A SEVENTEENTH SUPPLEMENTAL RESOLUTION FOR THE INSTALLATION OF A NEW UV DISINFECTION SYSTEM AT THE GROVELAND WASTEWATER TREATMENT PLANT, A NEW CHEMICAL FEED SYSTEM AT THE LAKEVILLE WASTEWATER TREATMENT PLANT, AND VARIOUS SEWER COLLECTION IMPROVEMENTS |
| Resolution No.: 2024-36 | RESOLUTION IN SUPPORT OF LIVINGSTON COUNTY’S CLIMATE SMART COMMUNITIES GRANT APPLICATION FOR THE CLIMATE AND LEAKAGE IMPACT PROJECT AND TO PROVIDE THE LOCAL MATCH OF 50% FOR THE IMPLEMENTATION OF THE PROJECT   |

**6. Adjournment**

**Next Regular Meeting: Wednesday, August 21, 2024 @ 8:00 am**

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*Unreviewed Minutes*  
**REGULAR MEETING**  
**May 15, 2024 at 8:00 a.m.**  
**Watershed Education Center (Vitale Park)**  
**Lakeville, NY 14480**

**Members Attending:** M. McKeown, B. Ceci, T. Saunders, M. Falk, D. Higgins, and S. Beardsley  
**Others attending:** J. Molino (Executive Director), L. Monaghan (Deputy Director), R. Lewis (Principal Accountant), M. Kosakowski (Director of Operations), S. Wright (Secretary), and J. Campbell (Attorney)

**Call to Order: 8:00 a.m.**

**Approval of Agenda:**

*Motion: M. Falk moved, and S. Beardsley seconded to approve the agenda. Carried unanimously.*

**Open Public Hearing**

*At 8:00 a.m., D. Higgins moved, and T. Saunders seconded to open the public hearing for the proposed water rate for the Town of Leicester Cuylerville Water District Customers. Carried unanimously.*

**Approval of Minutes:**

**May 15, 2024 - Regular Meeting**

*Motion: T. Saunders moved, and D. Higgins seconded to approve the regular meeting minutes dated May 15, 2024. Carried unanimously.*

**Reports:**

**Financial Report – May 2024**

R. Lewis reviewed the May financial report. Cubic Billing System training starts June 25<sup>th</sup>. The August quarterly billing will be processed in the new system.

*Motion: S. Beardsley moved, and M. Falk seconded to approve the May 2024 Financial Report. Carried unanimously.*

**Operations Report**

M. Kosakowski reviewed:

- The hydrant painters are working very quickly.
- 5 new taps were completed this month with 3 more to complete.
- Leak detection will start in Leicester the week of June 24<sup>th</sup>.

**Capital Report**

L. Monaghan reviewed:

- SCADA updates this month included switching from the previous provider to our provider.
- The Chem Feed project has been submitted for reimbursement.

**Executive Director Report**

J. Molino reviewed:

- Groveland Water District #1 has been awarded to the bidder. The project should start in the fall.
- WIIA grant applications have been submitted.
- Groveland Correctional special legislation passed. Once signed by the Governor, we have one year to submit an application for acquisition.
- Excellus has sent the rate increase for 2025. On average, an increase of at least 20% is expected.

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**Other Business:**

**Resolutions:**

- 2024-28 RESOLUTION APPROVING A WATER SUPPLY AGREEMENT BETWEEN THE VILLAGE OF GENESEO AND LIVINGSTON COUNTY WATER AND SEWER AUTHORITY Resolutions 2024-28 through 2024-30 are contingent on approval from the Village of Geneseo or Livingston County Board of Supervisors.  
*Motion: S. Beardsley moved, and M. Falk seconded to approve Resolution 2024-28. Carried unanimously.*
- 2024-29 RESOLUTION APPROVING AMENDMENT NO. 3 TO AGREEMENT FOR THE SALE OF WATER FROM THE LIVINGSTON COUNTY WATER AND SEWER AUTHORITY TO THE VILLAGE OF GENESEO  
*Motion: D. Higgins moved, and T. Saunders seconded to approve Resolution 2024-29. Carried unanimously.*
- 2024-30 RESOLUTION APPROVING THE AMENDED AND RESTATED INTERMUNICIPAL AGREEMENT BETWEEN THE LIVINGSTON COUNTY WATER AND SEWER AUTHORITY AND THE COUNTY OF LIVINGSTON  
*Motion: M. Falk moved, and S. Beardsley seconded to approve Resolution 2024-30. Carried unanimously.*

**Close Public Hearing:**

*At 9:32 a.m., the public hearing was closed.*

- 2024-31 RESOLUTION ADOPTING THE WATER RATE OF \$5.25 PER 1,000 GALLONS FOR THE TOWN OF LEICESTER CUYLerville WATER DISTRICT CUSTOMERS  
*Motion: T. Saunders moved, and B. Ceci seconded to approve Resolution 2024-31. Carried unanimously.*

**Executive Session:**

*Motion: S. Beardsley moved, and D. Higgins seconded that the board reconvene in Executive Session at 9:33 a.m. for collective negotiations pursuant to Article 14 of the Civil Service Law (the Taylor Law) and for the purpose of discussions concerning the medical, financial, credit or employment history of a particular person or corporation, or matter leading to the appointment, employment, promotion, demotion, discipline, suspension, dismissal or removal of a particular person or corporation. Carried unanimously.*

*Motion: M. Falk moved, and S. Beardsley seconded to end the Executive Session at 10:35 a.m. with no action taken. Carried unanimously.*

- 2024-32 RESOLUTION TO SET THE COMPENSATION FOR THE EXECUTIVE DIRECTOR  
*Motion: D. Higgins moved, and M. Falk seconded to increase the Executive Director's (J. Molino) compensation \$10,000. Carried unanimously.*

**Adjournment: 10:35 a.m.**

*M. McKeown closed the meeting.*



**RESOLUTION NO. 2024 - 32**

**RESOLUTION TO SET THE COMPENSATION FOR THE EXECUTIVE DIRECTOR**


WHEREAS, pursuant to the Employment Agreement between the Livingston County Water and Sewer Authority and Jason R. Molino, compensation for the Executive Director may be re-negotiated on an annual basis as part of the annual evaluation process and the Livingston County Water and Sewer Authority Board of Directors may, by resolution, authorize pay increases during the Executive Director's term of office; and

WHEREAS, the Board has conducted an annual evaluation for the Executive Director, and now therefore be it,

RESOLVED that the salary for the Executive Director shall be fixed at the rate of \$165,000 and shall be effective on the first day of the first full pay period following July 1, 2024.

June 19, 2024  
Livingston County Water & Sewer Authority  
Moved By: D. Higgins  
Seconded By: M. Falk  
AYES: 6  
NAYS: 0

To: Livingston County Water and Sewer Authority Board

From: Jason Molino, Executive Director 

Date: July 11, 2024

Subject: Camp Run Sewer Overflow Improvement Project Study

**1. Action Requested:**

Board approval and award of engineering services for the Camp Run Sewer Overflow Improvement Project Study.

**2. Background:**

The Authority has received an Engineering Planning Grant (EPG) Award commitment in the amount of \$100,000 to pay for the cost of completing the Camp Run Sewer Overflow Improvements Project Study. At the April 17, 2024 Board meeting the Board approved Resolution No. 2024-16 authorizing the use of \$20,000 from reserve funds for the required 20% local match for the project.

The Authority issued a request for proposals for engineering services to complete the project and received three responses. After reviewing each proposal, GHD has been recommended as the qualified firm for the project.

**3. Financial Implications:**

The GHD proposal is for \$56,700 which includes Authority staff time to assist with flow meter data collection. In addition, the proposal fee is less than the \$100,000 grant award. As a result, the Authority will evaluate expanding the scope of services with GHD to include preliminary design once a preferred solution is identified. In addition, the Authority will consider using workforce in-kind services to support the grants' 20% local match. The proposed resolution authorizes the Executive Director to expand the scope of services with GHD not to exceed the grant amount of \$100,000.



**RESOLUTION NO. 2024 - 33**

**RESOLUTION TO ACCEPT A PROPOSAL FROM GHD FOR ENGINEERING SERVICES FOR THE CAMP RUN OVERFLOW IMPROVEMENTS PROJECT STUDY (PROJECT NO. 131501)**

WHEREAS, the Livingston County Water and Sewer Authority (the “Authority”) has proposed to complete the Camp Run Sewer Overflow Improvements Project Study (“Project”); and

WHEREAS, the cost of completing the Project is estimated at \$120,000.00; and

WHEREAS, the Authority has received an Engineering Planning Grant (“EPG”) Award commitment in the amount of \$100,000 to pay for a portion of the cost of completing the Project, and that Authority Resolution No. 2024-16 authorized the local cash match for the Project to be a \$20,000 cash match from the Operating Reserve based upon a total estimated maximum project cost of \$120,000; and

WHEREAS, after proper legal advertisement for request for proposals for the Project (Project No. 131501), three (3) proposals were received on June 28, 2024:

GHD	\$56,700
Wendel	\$98,685
CPL	\$119,930

WHEREAS, Authority has completed a review of the proposals, and that GHD, having an address of 285 Delaware Avenue, Suite 500, Buffalo, NY 14202, has been identified as the qualified firm; and now therefore be it,

RESOLVED, that the Livingston County Water and Sewer Authority Board approves a proposal from GHD for the Camp Run Sewer Overflow Improvements Project Study in the amount of \$56,700, and therefore be it further,

RESOLVED, that the Livingston County Water and Sewer Authority Board authorizes the Executive Director to expand the scope of the Project as needed not to exceed a total project cost of \$120,000, and may utilize up to a \$20,000 cash match from the Operating Reserve or in-kind services to satisfy the local match requirement of the EPG program. The Executive Director may increase this local match using in-kind services without further approval from the Authority Board.

July 17, 2024

Livingston County Water & Sewer Authority

Moved By:

Seconded By:

AYES:

NAYS:

## Customer Water Leak Hardship Policy

**C05-210**

Approved April 28, 2010

Revised & approved May 23, 2012

Revised & approved January 22, 2021

### **Purpose & Definition**

Sometimes a customer can experience a substantial leak within their water supply line. The cause is usually a plumbing problem. A leak of this kind can create a large spike in a customer's quarterly bill. This policy creates a 'hardship test' calculation to rate the hardship resulting from an accidental customer water leak. The purpose of the calculation is to provide some relief to those customers who experience excessive leaks that create undue financial hardship.

While it is desirable to provide relief for excessive usage due to leaks that may occur, it is not the purpose of this policy to provide relief for usage when the cause of the leak is not resolved and repaired by the property owner. Therefore, this policy DOES NOT apply to leaks for which a hardship billing adjustment has already been given.

### **Policy**

#### **LCWSA Water Customers – Residential & Commercial**

If a customer contacts the billing office with a complaint of an excessive water leak, then the following 'hardship test' calculation will be done:

$$\text{Average usage for the previous year (4 quarters)} \times 5 = \text{Maximum usage to be charged at retail cost}$$

If the customer's current usage is under the "Maximum usage to be charged at retail cost", there will not be any adjustment to the customer's bill.

However, if the customer's current usage is over the "Maximum usage to be charged at retail cost", then the following calculation will be done.

$$\text{Customer's current usage} - \text{Maximum usage to be charged at retail cost} = \text{Usage to be charged at wholesale cost}$$

The customer's account will be credited as follows:

$$\text{Usage to be charged at wholesale cost} \times \text{Service Area's wholesale cost}$$

#### **LCWSA Sewer Customers – Commercial Only, i.e. accounts billed based on water consumption**

If a customer contacts the billing office with a complaint of an excessive water leak, and can provide documentation (photographs, copies of private contractor repair invoices, etc.) demonstrating that 100% of the water leak did not enter the sewer system, then the following calculation will be done:

$$\text{Average usage for the previous year (4 quarters)} - \text{Current Base Charge allowance (_____ gallons)} = \text{Usage to be charged at retail cost}$$

$$\text{Customer's current usage} - \text{Usage charged at retail cost} - \text{Base Charge allowance} = \text{Usage to be charged at wholesale cost}$$

## PURPOSE

If customers experience a substantial leak within their water system that creates a large, atypical increase in a customer's quarterly bill, this policy allows the Authority to provide a Courtesy Leak Adjustment resulting from an accidental water leak.

While it is desirable to provide relief for excessive usage due to leaks that may occur, it is not the purpose of this policy to provide relief for usage when the cause of the leak is not promptly resolved and repaired by the property owner upon notification or identification of the leak.

## POLICY

### I. Courtesy Leak Adjustment Request

Any LCWSA customer who has experienced a water leak must complete a "Courtesy Leak Adjustment Request Form". Completion of this form does not guarantee an adjustment will be made to a water and/or sewer bill. The Courtesy Leak Adjustment request must be submitted within 30 days of notice from the Authority of a high use condition **or** the date of the water/sewer bill in which the high use condition occurred.

To be eligible for a billing adjustment the following conditions must be met:

- Water leaks must be fixed promptly (within 30 days) and properly when detected.
  - Customers are responsible for all service lines, from the curb stop to the property, and plumbing within their property boundaries, except for the Authority issued water meter.
- Provide written proof of repairs in the form of copies of receipts for materials and/or labor associated with the repair and/or an invoice from a contractor and/or plumber.
- The cause of the leak must be repaired before adjustments will be approved.

### II. LCWSA Water Customers

If a customer completes a Leak Adjustment Form and meets all conditions listed above, then the following billing adjustment may be made:

The LCWSA will calculate the average quarterly water use from the previous 4 quarters and bill this water use at the current retail rate for that customer.

The additional water use above the quarterly average will be billed at the current wholesale rate for that customer's district. For example:

$$\text{Customer's current Water use} - \text{Calculated Quarterly Average} = \text{Water to be charged at current wholesale cost}$$



### III. LCWSA Sewer Customers (Accounts Billed Based on Water Consumption)

If a customer completes a Leak Adjustment Form and meets all conditions listed above, there are two possible adjustments for Sewer Billing.

**Option #1:** The customer can provide documentation (photographs, videos, and/or copies of private contractor repair invoices, etc.) demonstrating that 100% of the water leak did not enter the sewer system, then the following calculation will be done for sewer billing:

Average usage for the previous year (4 quarters) - Current Allowance = Total Sewer use to be charged at the current sewer rate

**Option #2:** The customer's water leak did in fact contribute to additional sewer flow:

Average sewer use - Current Allowance = Sewer use to be charged at the current retail rate  
**PLUS**

Customer's current sewer use – Current Allowance - Sewer use charged at retail rate = Sewer use to be charged at 1/2 of the current sewer rate.

### IV. Courtesy Leak Adjustment Conditions

Any/All water and/or sewer debt/capital fees will be based on the actual water use based on water meter readings.

Billing adjustments will NOT be made if any of the following conditions exist:

- A leak adjustment has been made within the past 5 years.
- There is still an active leak on the customer's water system.
- The leak was not repaired promptly by the property owner.
- The leak adjustment form was not submitted within the timeframe specified.
- The request is incomplete or missing supporting documentation as requested.
- The high-water use was caused by seasonal activities such as watering lawns, gardens, filling pools, washing vehicles, etc.

Courtesy Leak Adjustment Forms will be processed within the billing cycle they are received. If payment is not made by the billing due date while an adjustment is under review late penalties may be waived once a leak adjustment has been approved.

Leak Adjustment Example

LCWSA will adjust the water and sewer bill as follows:

Water Bill Calculation:

Current Quarterly Water Use (when leak occurred) = 100,000 gallons

Quarterly water use billed without adjustment = \$395

Quarterly Average based on the prior 4 quarters = 25,000 gallons

25,000 gallons to be billed at current rate of \$3.95 / 1,000 gallons.

$$25,000 / 1,000 \times \$3.95 = \$98.75$$

100,000 – 25,000 = 75,000 gallons to be billed at current wholesale rate of \$2.19 / 1,000 gallons

$$75,000 / 1,000 \times \$2.19 = \$164.25$$

$$\$98.75 + \$164.25 = \$263 \text{ (discount of \$132)}$$

Sewer Bill Calculation:

Quarterly Sewer use billed without adjustment = 100,000 – 14,000 (allowance) = 86,000

$$86,000 / 1,000 \times \$6.14 = \$528.04$$

Adjusted Sewer Bill Calculation:

$$25,000 - 14,000 = 11,000 / 1,000 \times \$6.14 = \$67.54$$

$$86,000 - 25,000 = 72,000 / 1,000 \times \$3.07 = \$221.04$$

$$\$67.54 + \$221.04 = \$288.58 \text{ (discount of \$239.46)}$$

**Total Adjustment/Discount given to customer if water + sewer = \$371.46**



# Courtesy Leak Adjustment Form

In the event a customer is subject to high water consumption because of a leak enter the information below:

<b>Service Address:</b>			
<b>Account Number:</b>		<b>Phone:</b>	
<b>Name:</b>		<b>Email:</b>	
<b>Description and location of Leak:</b>			
<b>Description and Date of Repair:</b>			
Customer Signature		Date	

Please submit this form along with proof of repairs in the form of receipts or invoices, please also include before and after pictures if you have them.  
 Submission can be made via email: [Billing@lcwsa.us](mailto:Billing@lcwsa.us)  
 Mailed: P.O. Box 396, Lakeville, NY, 14480  
 Drop-off: 1997 D'Angelo Drive, Lakeville, NY, 14480

### For Office Use Only

<b>APPROVED</b>	<b>APPROVED WITH CONDITIONS</b>	<b>DENIED</b>
LCWSA Authorized Signature		Date

#### Customer / Billing Information:

Customer #		Water District	
Current Water Use to be adjusted (gallons):		Water Billing Rate	
Quarterly Average Water Use (gallons):		Sewer District	
Quarterly Average Sewer (minus allowance):		Sewer Billing Rate	
Current Water Bill \$:		Current Sewer Bill \$:	
Adjust Water Bill \$:		Adjusted Sewer Bill \$:	



**RESOLUTION NO. 2024 - 34**

**RESOLUTION RESCINDING CUSTOMER POLICY C05-210 CUSTOMER WATER LEAK  
HARDSHIP POLICY AND ADOPTING THE COURTESY WATER LEAK ADJUSTMENT  
POLICY**

WHEREAS, The Livingston County Water and Sewer Authority (“Authority”) currently has Customer Policy C05-210 – Customer Water Leak Hardship Policy; and

WHEREAS, Authority staff have analyzed and reviewed the Customer Policy C05-210, and recommends rescinding the policy; and

WHEREAS, Authority staff, including the Authority Attorney, have drafted and reviewed the Courtesy Water Leak Adjustment Policy to reflect current billing practices;

WHEREAS, the Governance Committee has reviewed and recommends the Courtesy Water Leak Adjustment Policy, and now therefore be it,

RESOLVED, the Livingston County Water and Sewer Authority Board hereby adopts the Customer Water Leak Adjustment Policy, attached hereto, and be it further,

RESOLVED, that effective immediately, the Customer Water Leak Adjustment Policy shall replace existing Customer Policy C05-210 which is hereby null and void, and no longer in use by the Authority.

July 17, 2024

Livingston County Water & Sewer Authority

Moved By:


Seconded By:

AYES:

NAYS:

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To: Livingston County Water and Sewer Authority Board

From: Jason Molino, Executive Director 

Date: July 11, 2024

Subject: 17<sup>th</sup> Supplemental Resolution

**1. Action Requested:**

Board approval of the 17<sup>th</sup> Supplemental Resolution in order to issue long-term financing for the chemical feed building and sewer collection system improvements.

**2. Background:**

On July 19, 2023 the Authority Board approved Resolution No. 2023-31 amending the Thirteenth Supplemental Resolution to authorize the expanded scope of sewer collection improvements in addition to Groveland Station Wastewater Treatment Plant UV Facility and Lakeville Wastewater Treatment Plant Chemical Feed Facility. The authorization was for Revenue Notes not to exceed \$1,705,000.

The chemical feed facility has been constructed and sewer collection improvements have been completed. The Board decided not to move forward with the Groveland Station Wastewater Treatment Plant UV Facility at this time as discussions regarding the Authority taking on the Groveland Correction WWTF may result in the decommissioning of the Groveland Station WWTF.

Now that the projects are complete, the Authority can move forward with long-term financing.

As the Authority has been working with bond counsel, financial advisors and underwriters preparing for the bond issuance, several administrative issues have come up regarding the prior resolution. Both bond counsel and our underwriters have requested several amendments to the resolution that have no impact on the Boards authorization to borrow funds, nor on the amount of funding authorized. These changes are for consistent with the Authority's General Resolution and language preference of the bond counsels involved. Adoption of the 17<sup>th</sup> Supplemental Resolution will be necessary to issue the 2024 bonds.

**3. Financial Implications:**

The total amount to be bonded will be \$1,305,000. This includes \$1,105,000 for all capital improvements, \$127,500 for allocation to the required Debt Service Reserve, and estimated costs for administrative and issuance costs, which will be finalized at the time of issuance, are ~\$72,750. After evaluating market interest rates (3.75%-4.10%), we have requested a 15-year amortization for the bond. This would result in annual debt payments of ~\$125,000. This is consistent with the Authority's capital planning projections.



**RESOLUTION NO. 2024 - 35**

**RESOLUTION TO APPROVE (A) THE ISSUANCE OF THE AUTHORITY'S SYSTEM REVENUE BONDS, 2024; AND (B) A SEVENTEENTH SUPPLEMENTAL RESOLUTION FOR THE INSTALLATION OF A NEW UV DISINFECTION SYSTEM AT THE GROVELAND WASTEWATER TREATMENT PLANT, A NEW CHEMICAL FEED SYSTEM AT THE LAKEVILLE WASTEWATER TREATMENT PLANT, AND VARIOUS SEWER COLLECTION IMPROVEMENTS**

WHEREAS, Title 8-G of the Public Authorities Law of the State of New York, as amended (the "Act") created the Livingston County Water and Sewer Authority (the "Authority") with the authority and power to issue its revenue bonds and notes for the purpose of among other things, planning, developing, acquiring, constructing and financing the cost of any Water or Sewer Project (as defined in the Act), or for any other corporate purpose; and

WHEREAS, the Authority has proposed improvements which include (1) the installation of a new UV disinfection system at the Groveland Wastewater Treatment Plant; (2) a new chemical feed system at the Lakeville Wastewater Treatment Plant; and (3) various sewer collection improvements which include sewer lining and manhole repair (collectively, the "Project");

WHEREAS, the Authority has deemed it necessary in connection with the Project to financing the Project with a combination of debt and grants, which will be used to fund the completion of the Project, related documents for the following grants (i) an approximate \$367,576 grant under the New York State Water Quality Improvement Project as administrated by the New York Department of Environmental Conservation ("WQIP") for the new UV disinfection system at the Groveland Wastewater Treatment Plant; and (ii) an approximate \$198,055 grant under WQIP for the new chemical feed system at the Lakeville Wastewater Treatment Plant;

WHEREAS, the Authority previously issued its System Revenues Notes, 2023 in the aggregate principal amount of \$1,540,000 that mature on August 8, 2024 pursuant to the Act (the "2023 Notes") to finance the Project and to pay the cost of issuance of the 2023 Notes;

WHEREAS, the Authority desires to issue its System Revenue Bonds in the aggregate principal amount not to exceed \$1,540,000 pursuant to the Act (the "2024 Bonds") as shall be approved by the Chair, the Vice Chair or the Executive Director, to finance the Project and to pay the cost of issuance;

WHEREAS, the Authority has deemed it necessary in connection with the Project to financing the Project through the issuance of indebtedness represented by bonds and notes;

WHEREAS, the Authority is required by Section 3.2(b) of the Authority's General Bond Resolution, dated as of January 1, 2008, to adopt a Supplemental Bond Resolution authorizing additional indebtedness to be incurred by the Authority;

WHEREAS, as a condition precedent to incurring the above related indebtedness, the Authority intends to adopt a Seventeenth Supplemental Resolution annexed hereto and made a part hereof;

WHEREAS, the Authority is a local agency pursuant to the New York State Environmental Quality Review Act (“SEQRA”), ECL Section 8-0101, et seq., and implementing regulations, 6 NYCRR Part 617 (the “Regulations”), and

WHEREAS, by resolutions adopted by the Authority’s Board on August 31, 2022 and May 17, 2023, the Authority classified the Project as a “Type II Action” pursuant to the Regulations and therefore the Project is not subject to review under SEQRA; and

WHEREAS, it is now desired to authorize the issuance of the 2024 Bonds and to approve and authorize the execution of related documents;

NOW THEREFORE, it is hereby resolved as follows:

Section 1. The Authority hereby finds and determines:

(a) By virtue of the Act, the Authority has been vested with all powers necessary and convenient to carry out and effectuate the purposes and provisions of the Act and to exercise all powers granted to it under the Act.

(b) It is desirable and in the public interest for the Authority to apply for the grants discussed above and issue and sell the 2024 Bonds and to use the proceeds of said 2024 Bonds to permanently refinance the 2023 Notes that were issued to pay all or a part of the costs of the Project, including costs of issuance.

Section 2. In consequence of the foregoing, the Authority hereby determines to:

(a) Issue and sell the 2024 Bonds, pursuant to the General Revenue Bond Resolution (the “General Resolution”) adopted by the Authority as of January 1, 2008, as amended, and the Seventeenth Supplemental Resolution adopted by the Authority on July 17, 2024 (the “Seventeenth Supplemental Resolution,” together with the General Resolution, as amended, the “Resolution”) on a negotiated basis in accordance with a Bond Purchase Agreement to be entered into by the Authority with Roosevelt & Cross Incorporated (the “Bond Purchase Agreement”);

(b) Use the proceeds of the 2024 Bonds to permanently refinance the 2023 Notes and as shall be provided for in the Seventeenth Supplemental Resolution;

(c) Enter into each agreement or instrument required by the Resolution and the Bond Purchase Agreement, as applicable; and

(d) Execute such other documents and take such other action as may be necessary to effectuate the purposes of this resolution.

Section 3. The form and substance of the Seventeenth Supplemental Resolution presented at this meeting is approved.

Section 4. The Authority is hereby authorized to issue, execute, sell and deliver the 2024 Bonds in the aggregate principal amount not to exceed \$1,540,000, bearing interest, maturing, and upon such terms as shall be approved by the Chair, the Vice Chair or the Executive Director, provided that:

(a) The 2024 Bonds are hereby authorized to be issued, executed and delivered and shall be issued, executed and delivered at such time as the Chair, the Vice Chair or the Executive Director of the Authority determine.

(b) The 2024 Bonds shall be issued solely for the purposes previously described.

(c) The 2024 Bonds and the interest thereon, if any, are not and shall never be a debt of the State of New York or any political subdivision thereof other than the Authority, including without limitation the County of Livingston, and neither the State of New York nor any political subdivision thereof other than the Authority, including without limitation the County of Livingston, shall be liable thereon.

Section 5. The temporary use of available funds of the Authority, not immediately required for the purpose or purposes for which the same were borrowed, raised or otherwise created, is hereby authorized pursuant to **Section 165.10 of the Local Finance Law**, for the purpose or purposes described in this resolution. The Authority then reasonably expects to reimburse any such expenditures (to the extent made after the date hereof or within 60 days prior to the date hereof) with the proceeds of the bonds and notes authorized by this resolution. This resolution shall constitute a statement of official intent for purposes of Treasury Regulations Section 1.150-2. Other than as specified in this resolution, no monies are, or are reasonably expected to be, reserved, allocated on a long-term basis, or otherwise set aside with respect to the permanent funding of the object or purpose described herein.

Section 6. The 2024 Bonds shall not be issued, executed or delivered until the prior approval of the State Comptroller shall have been obtained as required by the Act.

Section 7. The Executive Director, the Chair or the Vice-Chair of the Authority are hereby authorized, on behalf of the Authority, (i) to execute and deliver the Seventeenth Supplemental Resolution, in substantially the form thereof presented to this meeting, with such changes, variations, omissions and insertions as the Executive Director, the Chair or the Vice Chair may hereafter approve, and (ii) to approve on behalf of the Authority (after consultation with Authority's counsel and bond counsel) the form and substance of the 2024 Bonds, the Bond Purchase Agreement, the Preliminary Official Statement prepared in connection with the 2024 Bonds, and all other certificates and documents required in connection with the issuance and sale of the 2024 Bonds to undertake and complete the Project (collectively, with the Seventeenth Supplemental Resolution, the "Financing Documents"), and to execute and deliver the same, and



the Secretary or Executive Director of the Authority is hereby authorized to affix the seal of the Authority to the Financing Documents and to attest the same. The execution by the Chair, the Vice-Chair or the Executive Director of each of the Financing Documents shall constitute conclusive evidence of the Chair's, the Vice-Chair's or Executive Director's approval thereof.

Section 8. The Executive Director, the Chair or the Vice-Chair of the Authority are further hereby authorized, on behalf of the Authority, to designate any additional Authorized Representatives of the Authority (as used or defined in and pursuant to the Resolution) to execute, on behalf of the Authority, any Financing Documents.

Section 9. The members, officers, employees and agents of the Authority are hereby authorized and directed for and in the name and on behalf of the Authority to do all acts and things required or provided for by the provisions of the Financing Documents, and to execute and deliver all such additional certificates, instruments and documents, pay all such fees, charges and expenses and to do all such further acts and things as may be necessary or, in the opinion of the member, officer, employee or agent acting, desirable and proper to effect the purposes of this resolution and to cause compliance by the Authority with all of the terms, covenants and provisions of the Financing Documents.

Section 10. This resolution shall take effect immediately and the 2024 Bonds are hereby ordered to be issued in accordance with this resolution.

July 17, 2024

Livingston County Water & Sewer Authority

Moved By: \_\_\_\_\_

Seconded By: \_\_\_\_\_

AYES: \_\_

NAYS: \_\_

Livingston County Water & Sewer Authority Board	This is to Certify that I, the undersigned, Secretary of the Livingston County Water & Sewer Authority, have compared the foregoing copy of resolution with the original resolution now on file in this office and which was duly adopted by the Livingston County Water & Sewer Authority Board on July 17, 2024 and that the same is a true and correct transcript of said resolution and of the whole thereof.  In Witness Whereof I have hereunto set my hand and the official seal of the Livingston County Water & Sewer Authority Board, this July 17, 2024.  _____ Sarah Wright, Secretary of the Board
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**LIVINGSTON COUNTY WATER AND SEWER AUTHORITY**

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**SEVENTEENTH SUPPLEMENTAL  
RESOLUTION AUTHORIZING UP TO  
\$1,540,000 SYSTEM REVENUE BONDS, 2024**

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Dated as of July 17, 2024

**SEVENTEENTH SUPPLEMENTAL RESOLUTION AUTHORIZING UP TO  
\$1,540,000 SYSTEM REVENUE BONDS, 2024**

Be It Resolved by the Governing Board of the Livingston County Water and Sewer  
Authority (the “Authority”), as follows:

**ARTICLE I**

**DEFINITIONS AND STATUTORY AUTHORITY**

SECTION 1.01. Seventeenth Supplemental Resolution. This Seventeenth Supplemental Resolution Authorizing up to \$1,540,000 System Revenue Bonds, 2024 is supplemental to the resolution adopted by the Governing Board of the Authority dated as of January 1, 2008, entitled “General Revenue Bond Resolution” as amended (the “General Resolution”) and referred to herein, with the General Resolution, as the “Resolution”.

SECTION 1.02. Definitions. (a) All terms that are defined in Section 1.5 of the Resolution shall have the same meanings, respectively, in this Seventeenth Supplemental Resolution as such terms are given in said Section 1.5 of the Resolution.

(b) In addition, as used in this Seventeenth Supplemental Resolution, unless the context shall otherwise require, the following terms shall have the following meanings:

“2023 Notes” shall mean the Authority’s outstanding System Revenue Notes, 2023 issued on August 9, 2023 and maturing on August 8, 2024.

“2024 Bond” shall mean the System Revenue Bond, 2024 authorized pursuant to this resolution in an amount not to exceed \$1,540,000.

“Closing Date” shall mean the date the 2024 Bonds closes.

“Outstanding EFC Indebtedness” shall mean the Authority’s outstanding (a) New York State Environmental Facilities Corporation Clean Water State Revolving Fund Series 2011 Bonds dated February 3, 2011 and originally issued in the aggregate principal amount of \$951,720, (b) New York State Environmental Facilities Corporation Clean Water State Revolving Fund Series 2012B Bonds dated May 24, 2012 and originally issued in the aggregate principal amount of \$1,322,692, (c) New York Environmental Facilities Corporation Clean Water State Revolving Fund Series 2021B Bonds dated December 9, 2021 and originally issued in the aggregate principal amount of \$1,970,000, and (d) New York State Environmental Facilities

Corporation Clean Water Statutory Installment Bond, 2023 dated January 5, 2023 originally issued in the aggregate principle amount of \$7,652,105.

“Bond Purchase Agreement” shall mean the Bond Purchase Agreement relating to the 2024 Bonds.

“Seventeenth Supplemental Resolution” shall mean this Seventeenth Supplemental Resolution.

(c) Words of the masculine gender shall be deemed and construed to include correlative words of the feminine and neutral genders. Unless the context shall otherwise indicate, words importing the singular number shall include the plural number and vice versa, and words importing persons shall include authorities and associations, including public bodies, as well as natural persons, but shall not include the Authority.

(d) The terms “hereby”, “hereof”, “hereto”, “herein”, “hereunder”, and any similar terms, as used in this Seventeenth Supplemental Resolution, refer to the Seventeenth Supplemental Resolution.

SECTION 1.03. Authority for the Seventeenth Supplemental Resolution. This Seventeenth Supplemental Resolution is adopted pursuant to the provisions of the Act and the Resolution.

## ARTICLE II

### AUTHORIZATION, TERMS AND ISSUANCE OF THE 2024 BONDS

SECTION 2.01. Authorization of the 2024 Bonds, Principal Amounts, Designation and Series. The 2024 Bonds are hereby authorized to be issued in an aggregate principal amount not to exceed \$1,540,000 and subject to the terms, conditions and limitations established in the Resolution, this Seventeenth Supplemental Resolution and Bond Purchase Agreement.

SECTION 2.02. Purposes. The proceeds of the 2024 Bonds shall be applied to permanently finance the 2023 Notes that were issued to finance (i) the installation of a new UV disinfection system at the Groveland Wastewater Treatment Plant (i) the construction of a new chemical feed system at the Lakeville Wastewater Treatment Plant, and (iii) various sewer collection improvements which include sewer lining and manhole repair and (iv) certain costs of issuance.

SECTION 2.03. Date of the 2024 Bonds. The 2024 Bonds shall be dated the date the 2024 Bond transaction closes.

SECTION 2.04. Maturities and Interest Rates. The 2024 Bonds shall bear

interest and shall mature as set forth in the Bond Purchase Agreement.

SECTION 2.05. Place of Payment. The principal of the 2024 Bonds shall be payable at maturity to the holders of the 2024 Bonds.

### **ARTICLE III**

#### **APPLICATION OF PROCEEDS OF THE 2024 BONDS**

SECTION 3.01. Application of Proceeds and Other Moneys. All proceeds will be deposited into the Project Fund and the Cost of Issuance Fund.

### **ARTICLE IV**

#### **FORM AND EXECUTION OF THE 2024 BONDS**

SECTION 4.01. Form of the 2024 Bonds. Subject to the provisions of the Resolution, the 2024 Bonds shall be issued in registered form, together with the form of assignment therefore and the Trustee's Certificate of Authentication, shall be in substantially the form set forth in the Bond Purchase Agreement.

SECTION 4.02. Execution and Authentication of the 2024 Bonds. Pursuant to the provisions of Section 2.3 of the Resolution, and this Seventeenth Supplemental Resolution either the Chairperson, the Vice Chairperson or the Executive Director of the Authority is hereby authorized and directed to execute, by such person's manual or facsimile signature, the 2024 Bonds in the name of the Authority and the corporate seal (or a facsimile thereof) shall be thereunto affixed, imprinted, engraved or otherwise reproduced thereon. The Secretary of the Authority is hereby authorized and directed to attest, by manual or facsimile signature, the execution of the 2024 Bond. The Trustee is hereby authorized to authenticate, by manual or facsimile signature, the 2024 Bonds and to deliver the same to or upon the order of the Authority in such amounts and at such times as the Trustee shall be directed in writing by an Authorized Officer.

### **ARTICLE V**

#### **MISCELLANEOUS**

SECTION 5.01. State Covenant. In accordance with the provisions of the Act, the State has pledged and agreed with the owners of obligations of the Authority that the State will not alter or limit the rights vested by the Act in the Authority to finance or refinance the acquisition, construction, maintenance, operation, repair, reconstruction, rehabilitation and improvement of facilities and to fulfill the terms of any agreement made with or for the benefit of the holders of bonds of the Authority or with any public corporation or person with reference to such project or part thereof, or in any way impair the rights and remedies of the Authority's

bondholders, until the 2024 Bonds and all costs and expenses in connection with any action or proceeding by or on behalf of such holders, are fully met and discharged. The State has further pledged and agreed with the holders of any bonds issued by the Authority pursuant to the Act that the State will not alter or limit the rights of the Authority to establish and collect rates, rents, fees or other charges to pay expenses in connection with the System.

SECTION 5.02. Authorized Officers. The Chairperson, Vice Chairperson, Secretary, and Treasurer of the Authority, and the Executive Director, are each hereby authorized to deliver and execute in the name and on behalf of the Authority any agreement, certificate, opinion, record or other document required by or authorized pursuant to the Resolution or this Seventeenth Supplemental Resolution in connection with the issuance of the 2024.

SECTION 5.03. When Effective. The Seventeenth Supplemental Resolution shall become effective immediately upon the filing with the Trustee of a copy hereof certified by an Authorized Officer.

SECTION 5.04. The 2024 Bonds constitute Additional Parity Indebtedness, and a default under any subordinated indebtedness, credit notes or Outstanding Additional Parity Indebtedness, including the Outstanding EFC Indebtedness shall constitute a default under the 2024 Bonds, and entitle any holder of the 2024 Bonds to parity treatment in accordance with Section 3.5, 10.2, 10.3, and 10.10 of the General Resolution.

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**IN WITNESS WHEREOF, LIVINGSTON COUNTY WATER AND SEWER AUTHORITY** has caused this resolution to be executed by its Executive Director and its corporate seal to be hereunto affixed, attested by its Secretary, all as of the day and year first above written.

[SEAL]


**LIVINGSTON COUNTY WATER  
AND SEWER AUTHORITY**

Attest: \_\_\_\_\_  
Sarah Wright, Secretary

By: \_\_\_\_\_  
Jason Molino, Executive Director

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To: Livingston County Water and Sewer Authority Board

From: Jason Molino, Executive Director 

Date: July 11, 2024

Subject: Climate Smart Communities (CSC) Grant Program

**1. Action Requested:**

Board approval of a resolution of support and commitment of local match funds for an application to the CSC program to support the Climate and Leakage Impact Project.

**2. Background:**

The New York State Department of Environmental Conservation (DEC) has an annual competitive grant program the Climate Smart Communities (CSC) Grant Program for municipalities to implement projects focused on climate change adaptation and greenhouse gas (GHG) mitigation.

The 2024 program year has \$21.5 million of grant funds available for various types of projects. Grant awards can be between \$50,000 and \$2,000,000 with a 20% or 50% total project cost local match.

Livingston County is an eligible applicant under the CSC program, however, the Livingston County Water and Sewer Authority (Authority) is a non-eligible entity that may participate as part of the CSC grant project in partnership with an eligible lead applicant. This would require the County to apply as the lead applicant on the Authority's behalf.

The Authority is proposing a partnership with the County to acquire funding for the Climate and Leakage Impact Project which would be the first of its kind in the United States of America that specifically targets and links water leakage and carbon emission reduction. This project would create a model for measuring and monitoring the Authority's water balance (loss water or leakage) and carbon balance while undertaking leakage reduction initiatives. The end goal is to aggressively incentivize leakage reduction projects by defensibly linking the carbon reduction to leakage reduction. The result of the Climate and Leakage Impact Project will quantify and reduce the carbon emissions as a component of leakage and will also provide benefits in the form of water conservation through reduced leakage, increased water availability, reduced production and maintenance costs, greater water distribution system resiliency and improved public water supply safety.

In April the Authority partnered with the County for the EPA Climate Pollution Reduction Grant for a similar project, with hopes of focusing on reducing leakage and carbon emission. Currently there are no carbon emission and/or GHG reduction funding programs at the State and Federal level that target the link between water leakage reduction and carbon emissions reduction.



### 3. Financial Implications:

The grant requires a local match based on total eligible project costs. Communities that are within disadvantaged census tracts or are less than 80% of the State median household income (MHI) qualify for a 20% local match, while other applicants require a 50% local match. While the Authority service area is under the MHI requirements, the County is not. Because the County is the applicant, the project will not qualify for the lower local match.

It is estimated that the total project costs are \$300,000. Assuming a \$150,000 grant award the Authority would be responsible for the remaining \$150,000 match. However, the grant contract extends from March 2025 to March 2030, and considering the scope of work for the project, the project timeline will likely span several years. It is recommended that the Authority can make the local match commitment over the three-to-five-year period as project expenditures are being realized and the project progresses.

Attached is a scope of work for establishing a Non-Revenue Water Program, which is the basis for the address leakage long-term and the foundation for establishing the Authority's water balance and carbon balance. This scope of work was developed with the assistance of Cavanaugh and Associates, a consulting firm and leaders in the leakage and water efficiency industry.

As discussed with the Board in the past, non-revenue water is an operational priority for the Authority as we purchase wholesale water for all our water customers. While minimizing water loss and revenue recovery, are a benefit for the proposed project, long-term pressure management throughout the system, identifying and repairing distribution system weaknesses, water conservation and electric usage/carbon reduction, are equally important.

## **Application Title**

Climate and Leakage Impact Project

### **Magnitude of GHG Reductions from 2025 through 2030**

It is estimated that 500 metric tons of carbon savings could be achieved from 120 million gallons of annual leakage down to 30 million gallons of annual leakage. That estimate is based on LCWSA water consumption and usage assuming LCWSA pulls power from plants that have around an 850g per kwh emissions rate, which is standard for most natural gas plants.

### **Magnitude of GHG Reductions from 2025 through 2050**

It is estimated that LCWSA alone could see more than 3,000 metric tons of carbon emissions avoided by 2050 related to less power consumption from leakage.

### **Cost Effectiveness of GHG Reductions**

Not only will there be less carbon emissions to the tune of over 100 metric tons of carbon per year, inherently there will also be 250,000 kwh of power savings each year and 60 – 90 million gallons of water conservation each year. Also, the benefits of the project are not limited to only the reduction in GHG emissions when factored in reduced water costs, maintenance costs and less electric used.

### **Documentation of GHG Reduction Assumptions**

Assumes an 850g per kwh carbon intensity on power. Assumes reduction of leakage to 30 MG annually from 120 MG annually.

### **Description of GHG Reduction Measures**

The Leakage Emissions Initiative (LEI) is a collaborative effort from members of the International Water Association (IWA) Water Loss Specialists Group and the American Water Works Association (AWWA) Water Loss Control Committee, which seeks to quantify the impact of unmanaged leakage (water loss) on avoidable carbon emissions. The end goal is to aggressively incentivize leakage reduction projects by defensibly linking the carbon reduction to leakage reduction. To help accomplish this goal, the LEI developed a methodology to determine a utility's specific energy carbon intensity and apply this to quantify carbon emissions for each component of the standard water balance. This calculation yields what is known as a carbon balance which can be conducted annually in conjunction with leakage reduction initiatives, to track metric tons of carbon emissions avoided as a result of the leakage reduction intervention.

Currently there are no carbon emission and/or GHG reduction funding programs at the State and Federal level that target the link between water leakage reduction and carbon emissions reduction. The Climate and Leakage Impact Project would be the first of its kind in the United States of America in which a municipal utility specifically targets water leakage and carbon emission reduction. The program however can easily be replicated and scaled to fit most, if not all water systems across the United States and globe as the methodology for determining and measuring leakage uses the IWA/AWWA Water Audit Method which provides globally accepted best management practices and guidance for water utilities.

The result of the Climate and Leakage Impact Project will quantify and reduce the carbon emissions as a component of leakage. In addition, however, it will also provide benefits in the form of water conservation

through reduced leakage, increased water availability, reduced production and maintenance costs, greater water distribution system resiliency and improved public water supply safety.

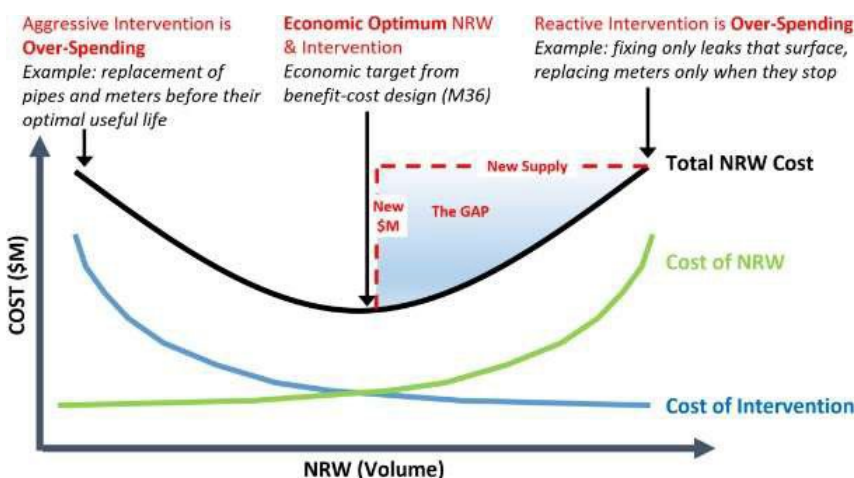
The foundation of reducing carbon emissions as a component of leakage is to standardize a verifiable and repeatable methodology with which LCWSA can measure and assess our own carbon emissions as it relates to water usage and leakage. This involves LCWSA adopting the IWA/AWWA Water Audit Method to develop a Water Balance and incorporate a newly added Carbon Balance methodology.

### Overall Water Audit & Loss Control Approach

The general approach for the development and implementation of a comprehensive Non-Revenue Water (NRW) Management Program is described herein. NRW Management is not a singular, universal solution, or a one-size- fits-all approach. Building and implementing a successful NRW Management Program is dependent on:

1. Calibration to match the utility's institutional capacity today,
2. Mature organically over time,
3. Have strategies and targets appropriately based on economic optimization of Water Loss,
4. Proper engagement of all departments across the Utility.

The starting point is an AWWA M36 water audit and water loss analysis, to identify and validate the current levels of loss and how those relate to the economically optimal levels of loss. This begins with a top-down effort – which means using available records and data – but to be effective must be more detailed bottom-up analysis and validation, which could involve hydraulic flow testing of the supply meters, data chain analysis, customer meter testing analysis, and billing data analytics. Additionally, a real loss component analysis will be conducted to segregate the real loss into the three sub-components to guide optimization of future leak detection efforts.



Next, it is essential to examine the economic optimum level of NRW. The goal is not zero, as that is not feasible. Additionally, the goal is not the unavoidable levels of loss, but rather the value of the water should guide the level of acceptable loss. This volume will be different for each system and vary over time as different factors change within the system.

The water loss program design will identify specific intervention strategies and schedules, tailored to the LCWSA operational and capital budgeting and resource allocations. Anticipated outcomes likely will include:

- Development and implementation of a Water Loss “Team” with representation from all departments within the Utility, charged with continued culture development, data tracking and task management;
- Set and achieve strategic, long-term conservation goals through both supply-side efficiency practices and zone management practices;
- Leverage of existing Utility Water Audit data management and customer metering systems for validation supply volumes, consumption volumes and Water Loss component volumes, to provide sustainable reliability in performance tracking;
- Zone-specific pressure optimization for leakage reductions, break reductions, improved customer service, energy cost reductions, extension of asset life, incorporating internationally proven pressure management strategies;
- Leverage AWWA M36 Leakage Component Analysis with District Metered Areas to achieve economic optimum level of leakage intervention (Economic Level of Leakage), incorporating continuous water balance calculations on a DMA basis from advanced metering systems;
- Leverage continued integration with the existing GIS and work order systems to track and guide system-wide efforts;
- Design an economically optimal testing strategy for large meters (Economic Level of Apparent Loss), providing macro and micro scale business case decision making for meter management activities, for optimization of revenue recovery;
- Leverage big data analytics for Water Loss diagnostics and control in billing processes (Economic Level of Apparent Loss), for optimization of revenue recovery.

Following the design phase, an implementation plan for strategic Water Loss Control will be developed. The engine for this will be the LCWSA team structure, fueled by clarity of scope, regular accountability, and communications.

#### *SCOPE OF WORK*

##### Phase 1: Policy & Practices Assessment/AWWA M36 Top-Down Water Audit with Level 1 Validation

*Objective Statement: To assess uncertainty in the benchmark water balance for further analysis.*

- Discovery
  - Conduct kickoff meeting with LCWSA staff
  - Compilation and review of all immediately available records regarding water production, consumption, billing, finance and distribution and storage operations.
  - Conduct interviews with all pertinent staff regarding same
- Top-Down Analysis
  - Synthesize all records and water system data into AWWA M36 Standard Water Audit format:
  - Calculation of water balance inputs from detailed data discovery
  - Top-down validation of detailed input calculations:
    - Basic Lag-Time Adjustments on Annual Consumption Data
    - Master Meter Error Adjustment
    - Composite Customer Metering Inaccuracies
    - Average System Operating Pressure
    - Composite Customer Retail Unit Cost
    - Variable Production Cost

- Review of Data Validity Scoring
  - Staff interviews regarding operational and data management practices
  - Assessment of data confidence grades for all Water Audit inputs
  - Determination of global Data Validity Score
- Top-Down Assessment of Key Performance Indicators for system efficiency:
  - Non-Revenue Water by Volume – Total, Normalized;
  - Non-Revenue Water by Value – Total, Normalized, % of Operating Cost;
  - Total Water Losses by Volume – Total, Normalized;
  - Unbilled Authorized Consumption by Volume - Total;
  - Apparent Losses by Volume – Total, Normalized;
  - Real Losses by Volume – Total, Normalized;
  - Infrastructure Leakage Index;
  - Water Audit Data Validity Score.
- Perform Level 1 Validation per WRF 4639 specifications
- Development of Level 1 validation basis documentation
- Team and Board Presentation of Results and Recommended Next steps (Readiness for subsequent Phases)

Phase 2: Level 2 Validation of Water Balance with Uncertainty Analysis

*Objective Statement: To validate the source data from the originating data systems feeding the water balance inputs and establish statistical confidence levels on the water balance outputs.*

- Coordination with Billing/IT staff to extract detailed historical supply volume database(s);
- Detailed analysis of same for identification of trends, anomalies and areas of concern;
- Flowcharting of existing business processes from meter reading to customer billing;
- Coordination with Billing/IT staff to extract detailed historical customer consumption database(s);
- Detailed analysis of same for:
  - Development of customer consumption profile for use in composite retail rate calculation;
  - Development of customer meter profile for use in NRW Program Recommendations;
  - Development of consumption profiles to identify trends, anomalies and areas of concern;
  - Validation of consumption totals by account, customer class, rate code, and monthly global totals;
  - Assessment of lag-time adjustments needed for the 12-month water balance;
  - Assessment of 95% statistical confidence limits of the water balance at the component and aggregate levels to provide a confidence band (+/-) on the NRW components;
  - Assessment of any validity improvements needed to support advanced NRW control efforts;
  - Main line & service line break data for use in the development of a component analysis of real losses.
- Level 3 Validation (as needed)
  - Coordinate with technical assistance providers in the collection of:
    - Finished Water Meters
      - Electronic Calibration
      - Flow Accuracy Testing

- Customer Meters
  - Small meter test results
  - Large meter test results

**Phase 3: Non-Revenue Water Economic Analysis**

*Objective Statement: To assess the magnitude of volumes and costs between the current and optimal non-revenue water at the component and aggregate levels and design a comprehensive, dynamic model to assist the utility reach the economic optimal level of water loss.*

- NRW Gap Analysis
  - Evaluation of current practices and policies against best-practices detailed in the M36 Manual;
  - Preliminary economic analysis to determine cost of current NRW program versus cost of optimized NRW program, to establish preliminary business case and prioritization of NRW components;
  - Development of NRW component mapping and economic analysis for preliminary target setting:
    - Unbilled Consumption components;
    - Apparent Loss components with emphasis on optimizing metering losses;
    - Real Loss components with emphasis on optimizing unreported losses;
    - Aggregated NRW economic target setting

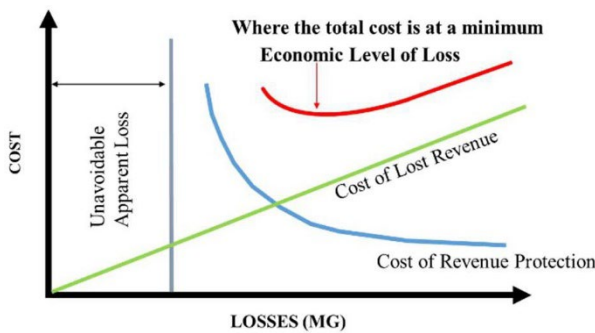


Figure 1 – Apparent losses economic

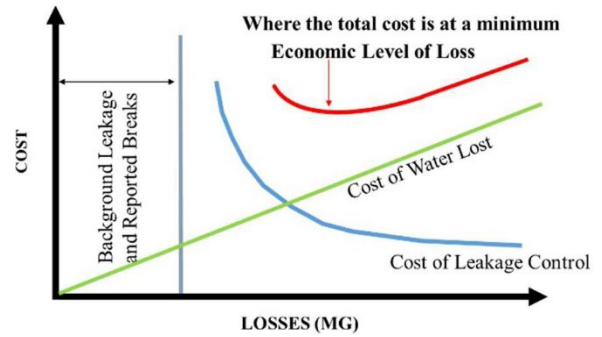


Figure 2 – Real losses economic

- Final Report
  - Prepare a summary report including
    - Economic analysis of NRW cost & revenue recovery;
    - Recommendations for areas of improvements and next steps on enhancement of overall NRW management;

**Phase 4: Non-Revenue Water Program Design**

*Objective Statement: To prepare an effective, achievable strategy for successful transition to a comprehensive program;*

- Design of near- and long-term NRW Program recommendations for the management and reduction of Non-Revenue Water, and improvements in system efficiency benchmarking and

Data Validity;

- Evaluation of existing demand management program, and gap analysis for long-term conservation objectives;
- Incorporation of long-term water loss management (supply side conservation) objectives into overall utility demand forecasting;
- Development of Program implementation plan, with prioritization and benefit/cost estimations.

#### Phase 5: Non-Revenue Water Program Implementations

*Objective Statement: To guide the utility in implementation of recommendations as outputs from the NRW Program Design.*

- Example Implementation of Operational and Capital Projects
  - While not all systems will require all implementation projects, an example listing of potential projects include:
    - Finished Water Meter replacement or relocation
    - Customer Meter Replacement
    - Main Line Replacement or Rehabilitation
    - Service Line Replacement or Rehabilitation
    - Pressure Optimization
    - District Meter Area Establishment
    - Active Leak Detection
    - Asset location and field verification

#### EXPECTED OUTPUTS AND OUTCOMES & PERFORMANCE MEASURES

An obvious outcome from the Climate and Leakage Impact Project will be the continued reduction in GHG emissions as well as water leakage. This will be measured through an annual Water Audit which will identify the annual water balance and carbon balance. Comparing year after year results will demonstrate annual and cumulative reduction in GHG emissions and water leakage.

The Water Audit process will provide the ability to input and monitor a variety of performance measurements which act as key performance indicators (KPI) for the audit process. These KPIs include, but are not limited to:

- Non-Revenue Water by Volume – Total, Normalized;
- Non-Revenue Water by Value – Total, Normalized, % of Operating Cost;
- Total Water Losses by Volume – Total, Normalized;
- Unbilled Authorized Consumption by Volume - Total;
- Apparent Losses by Volume – Total, Normalized;
- Real Losses by Volume – Total, Normalized;
- Infrastructure Leakage Index;
- Water Audit Data Validity Score.

### Components of the Carbon Balance and Calculations

The Carbon Balance is calculated using a utility's existing data from the Standard Water Balance in conjunction with a carbon intensity calculation based on the utility's total energy usage and the carbon intensity of its energy source(s). The total energy usage is divided by total water produced annually to determine the energy intensity of the utility per unit of water (i.e. m<sup>3</sup> or MG) basis. The energy intensity is then multiplied by the utility's identified emissions rate. This rate can be derived from referenced sources. An example is published by ElectricityMaps.com. The resulting figure is a specific carbon intensity that typically identifies grams of carbon emitted per unit of water production. This carbon intensity value can be applied to every component of the water balance to determine which operational components are most responsible for a utility's total carbon emissions.

There are multiple variables that will differentiate one utility's carbon intensity from that of another, but the energy source is one of the largest components. For instance, a utility will emit more carbon emissions when it procures energy from an electric utility who sources more electricity from coal-powered stations. Likewise, a utility would emit less carbon emissions if it sourced more from renewable energy. This energy mix can vary widely depending on where the utility is located across the globe. In some cases, the reduction in leakage could allow the electricity company to optimize its energy generation sources to lower the overall carbon emissions.





**RESOLUTION NO. 2024 - 36**

**RESOLUTION IN SUPPORT OF LIVINGSTON COUNTY'S CLIMATE SMART COMMUNITIES GRANT APPLICATION FOR THE CLIMATE AND LEAKAGE IMPACT PROJECT AND TO PROVIDE THE LOCAL MATCH OF 50% FOR THE IMPLEMENTATION OF THE PROJECT**

WHEREAS, the Climate Smart Communities ("CSC") Grant Program is a competitive grant program for municipalities to implement projects focused on climate change adaptation and greenhouse gas ("GHG") mitigation; and

WHEREAS, the County of Livingston ("County") is an eligible applicant under the Climate Smart Communities Grant, that the Livingston County Water and Sewer Authority ("Authority") is a non-eligible entity that may participate as part of the CSC grant project in partnership with an eligible lead applicant; and

WHEREAS, the Authority would like to partner with the County in support of the Climate and Leakage Impact Project; and

WHEREAS, the Climate and Leakage Impact Project will be the first of its kind in the United States of America that specifically targets water leakage and carbon emission reduction, creating a model for measuring and monitoring a utility's water balance and carbon balance while undertaking leakage reduction initiatives. The result of the Climate and Leakage Impact Project will quantify and reduce the carbon emissions as a component of leakage, and will also provide benefits in the form of water conservation through reduced leakage, increased water availability, reduced production and maintenance costs, greater water distribution system resiliency and improved public water supply safety; and

WHEREAS, the cost of completing the Climate and Leakage Impact Project is estimated at \$300,000.00; and

WHEREAS, the reduction in water leakage and GHG are a priority to the Authority, and now therefore be it,

RESOLVED, that the Livingston County Water and Sewer Authority supports the partnership with Livingston County for the CSC grant application for the Climate and Leakage Impact Project, and be it further,

RESOLVED, the Livingston County Water and Sewer Authority Board authorizes and appropriates the 50% local match as required by the CSC program for the Climate and Leakage Impact Project. The local match shall be a \$150,000 cash match based upon a total estimated maximum project cost of \$300,000 to be incurred between the start and end dates of the program, March 15, 2025 and March 14, 2030 respectively, and be it further,

RESOLVED, the and the Executive Director is hereby authorized to sign any and all necessary documents with Livingston County, to effectuate successful completion of the Climate and Leakage Impact Project, subject to review and approval by the Authority Attorney.

July 17, 2024

Livingston County Water & Sewer Authority

Moved By:

Seconded By:

AYES:

NAYS: