



REGIONAL
DISTRICT
OF NANAIMO



2024 Annual Report

Liquid Waste Management Plan

Submitted to the Ministry of Environment and Climate Change Strategy

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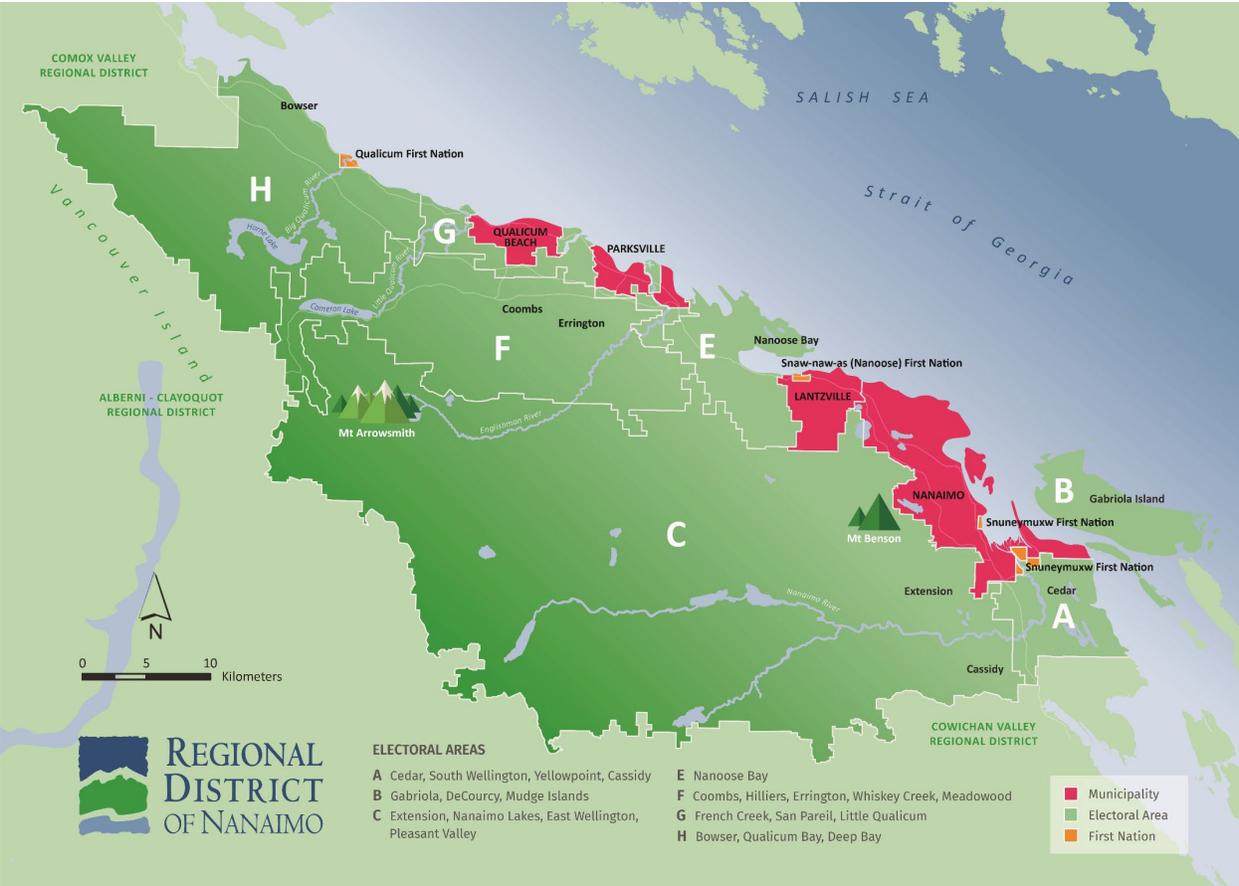
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1) Introduction

1.1 Regional District of Nanaimo

The Regional District of Nanaimo (RDN) provides regional governance and services to approximately 170,000 people on the central east coast of Vancouver Island. The RDN includes the City of Nanaimo (Nanaimo), District of Lantzville (Lantzville), City of Parksville (Parksville), Town of Qualicum Beach (Qualicum Beach), and seven unincorporated Electoral Areas, shown in Figure 1. Snuneymuxw, Snaw-naw-As, and Qualicum First Nations have communities in the RDN and the RDN is in the traditional territories of several First Nations.

Figure 1. Communities in the Regional District of Nanaimo



1.2 Wastewater Services

In Nanaimo, Lantzville, Parksville, Qualicum Beach, and on Snuneymuxw First Nations lands, those communities operate sanitary sewer collection services. In Electoral Areas A, E, and G, the RDN operates six small sewer collection systems. Wastewater from these collection systems goes to one of four treatment facilities operated by the RDN:

- French Creek Pollution Control Centre (FCPCC)
- Nanoose Bay Pollution Control Centre (NBPCC)
- Greater Nanaimo Pollution Control Centre (GNPCC)
- Duke Point Pollution Control Centre (DPPCC).

Each facility has a marine outfall that discharges treated effluent to the Strait of Georgia. The RDN also operates 23 pump stations, two septage receiving sites and more than 50 km of pipes to transport wastewater. In total, the RDN treats wastewater from approximately 140,000 people¹.

Approximately 40,000 people and businesses are outside sewer service areas and use septic systems for wastewater treatment. A small number of properties use holding tanks. While Island Health oversees septic systems and holding tanks, the RDN wastewater facilities accept and treat waste trucked from these systems.

1.3 Liquid Waste Management Plan

The Liquid Waste Management Plan (LWMP) is the RDN's long-range plan to manage wastewater. An LWMP approved by the Province of BC (the Province) authorizes wastewater treatment facility discharges and establishes elector approval for long-term borrowing. The Province approved the RDN's current LWMP in 2014.

In December 2023, the RDN submitted a request to the Minister of Environment and Climate Change Strategy to amend the LWMP. In March 2025, the RDN sent a follow-up request to the Minister of Environment and Parks to replace the Financial Planning Section 2.6 of the LWMP Amendment with a revised Section 2.6. The revised LWMP Amendment, attached in Appendix A, provides new Class A cost estimate for a significant capital project in the LWMP Amendment, the French Creek Pollution Control Centre Expansion and Odour Control Upgrade.

When this 2024 Annual Report was written, the RDN was waiting for a decision from the Province on the 2023 request to amend the LMWP and the 2025 request to update Section 2.6. To continue protecting human health and the environment, the RDN is implementing the LWMP Amendment in areas that do not require provincial approval.

1.4 Annual Report

The RDN prepares an annual report on the LWMP, by June 30 of each year, to track the status of the LWMP action items. This annual report tracks the status of the action items presented in the 2023 LWMP Amendment.

¹ Separately, Snaw-naw-as First Nation also owns and operates their own wastewater collection, treatment, and disposal system.

2) Status of the Action Items

The 2023 LWMP Amendment organizes new action items into six focus areas:

- Wastewater Infrastructure
- Biosolids Management
- Water Protection
- Education, Outreach & Collaboration
- Administrative Items
- Financial Planning

There are 37 action items across the first five focus areas. The Financial Planning focus area does not have action items. Rather, it organized information in a way that was easily shared with residents during the engagement and comment period. The sections below show the status for each action item. The status is colour-coded, based on the following:

- **Green:** Complete, ongoing, or the need has not yet arisen.
- **Orange:** In Progress
- **Purple:** Planned for future implementation

By the end of 2024, 19 action items had green status, 9 action items had orange status, and 9 action items had purple status.

2.1 Wastewater Infrastructure

The Wastewater Infrastructure focus area has 16 action items, shown in Table 1, below.

Table 1. Status and Implementation Plan for the Wastewater Infrastructure Focus Area Action Items

Wastewater Infrastructure Action Plan	
General	
1.1	<p>Action Item: Complete the Wastewater Pipeline Condition Assessment and Rehabilitation Plan which will provide a strategy to reduce inflow and infiltration (I&I) and lower the risk of future overflows.</p> <p>Status: Phase 1 is Complete. Phase 2 is In Progress, scheduled for completion in 2025.</p>

Wastewater Infrastructure Action Plan

Implementation Plan: This action item has two phases.

- Phase 1 is a desktop review of large RDN wastewater pipelines. It provides: a prioritized list for condition assessment; recommended assessment methods, specifications, procedures, and allowable limits for the pipe sizes and materials; recommended rehabilitation methods and order of magnitude capital costs for the pipe sizes and materials.
- Phase 2 will expand on Phase 1 with specific recommendations for physical triggers for rehabilitation and the methods to rehabilitate each segment of the linear infrastructure.

Note, the I&I and overflow strategy is supplemented by flow monitoring data, manhole inspections, CCTV inspections, and conductivity/pH testing. Furthermore, future upgrades at the Wellington Pump Station and Departure Bay Pump Station will reduce the potential for sanitary sewer marine overflows during extreme storm events.

Action Item: Monitor odours around the wastewater treatment facilities in 2023 and 2024 to identify specific sources and develop a strategy to prioritize odour reduction.

Status: Complete in 2024

1.2

Implementation summary: The RDN entered into a two-year agreement with the Vancouver Island University Applied Environmental Research Lab to monitor odours at GNPCC and FCPC from 2023 to 2024. The study used mobile odour sensors to pinpoint specific odorous chemicals at the plant and in the community. This helped plant operators monitor the effectiveness of the existing odour control units, focus maintenance efforts, and trial odour control systems so we can choose an effective solution for the FCPC expansion.

Action Item: Obtain RDN Board approval and notify the affected residents before borrowing for capital expenditures that are not listed in the LWMP but are necessary due to unforeseeable events.

1.3

Status: This action item relates to new projects that are not mentioned in the LMWP. To date, **the need has not arisen** for a new project. However, the revised budget for the FCPC Expansion and Odour Control Upgrade, a project listed in the LWMP, was passed by the RDN Board in 2024 and letters were mailed to affected residents after the Canada Post strike ended.

French Creek Pollution Control Centre

Action Item: Coordinate I&I reduction with the Town of Qualicum Beach and City of Parksville.

Status: In Progress

1.4

Implementation Plan: I&I reduction is coordinated with the municipalities at the biannual Wastewater and Water Collaborative (W3C) meeting. In 2024, meetings were held on April 24 and October 24.

Action Item: Consider a voluntary program to monitor select emerging contaminants based on the availability of budget, resources, standardized methods, and local commercial laboratories.

1.5

Status: In Progress

Wastewater Infrastructure Action Plan

	<p>Implementation Plan: In 2024, FCPCCC sent three biosolids samples to an external laboratory for PFAS analysis to test the new EPA analytical procedures (Method 1633 published in January 2024). Data quality was good. Results are too few to draw conclusions on. In 2025, FCPCCC plans to send three more samples of wastewater influent, effluent and biosolids for PFAS analysis to build baseline data.</p>
	<p>Action Item: Install equipment to monitor the quality of reclaimed water.</p>
1.6	<p>Status: Complete in 2023</p> <p>Implementation summary: Installed conductivity and turbidity meters to monitor the reclaimed water pumped to Morningstar Golf Course.</p>
	<p>Action Item: Use wastewater flow data to monitor peak flows.</p>
1.7	<p>Status: In Progress</p> <p>Implementation Plan: Flow monitoring peaks are monitored throughout the year. Data are recorded and summarized in the annual reports for the individual facilities, which are submitted under separate cover to ENV. The Wastewater Services Strategic Work Plan includes steps in 2026/7 to expand the I&I monitoring program.</p>

Nanoose Bay Pollution Control Centre

	<p>Action Item: Prioritize the rehabilitation of critical areas of the Nanoose forcemain and pump stations.</p>
1.8	<p>Status: In Progress</p> <p>Implementation Plan: Stage 1 replaced pump stations #5 & 6 in 2024. Phase 2 is planned for 2025 and will replace the section of the forcemain under the Fairwinds Golf Course.</p>
	<p>Action Item: Consider visual buffers during the design of the NBPCC secondary treatment upgrade.</p>
1.9	<p>Status: Planned for future implementation</p> <p>Implementation Plan: Visual buffers will be considered during the detailed design phase, scheduled for 2035.</p>
	<p>Action Item: Design odour controls into the NBPCC secondary treatment upgrade.</p>
1.10	<p>Status: Planned for future implementation</p> <p>Implementation Plan: Odour controls will be included in the detailed design, scheduled for 2035.</p>
	<p>Action Item: Design NBPCC secondary treatment upgrade to provide secondary treatment for flows up to two times average dry weather flow during storm or snowmelt events with less than a 5-year return period. Excess flows will receive at least primary treatment.</p>
1.11	<p>Status: Planned for future implementation</p> <p>Implementation Plan: This will be addressed in the detailed design phase, scheduled for 2035.</p>

Wastewater Infrastructure Action Plan

1.12	Action Item: Provide secondary treatment at NBPCC by 2040.
	Status: Planned for future implementation
	Implementation Plan: Secondary treatment is scheduled to be commissioned by the end of 2040.

Greater Nanaimo Pollution Control Centre

1.13	Action Item: Coordinate I&I reduction with the City of Nanaimo and District of Lantzville.
	Status: In Progress
1.14	Implementation Plan: I&I reduction is coordinated with the municipalities at the biannual Wastewater and Water Collaborative (W3C) meeting. In 2024, meetings were held on April 24 and October 24.
	Action Item: Consider a voluntary program to monitor select emerging contaminants based on availability of budget, resources, standardized methods, and local commercial laboratories.
1.15	Status: In Progress
	Implementation Plan: In 2024, GNPCC sent three biosolids samples to an external laboratory for PFAS analysis to test the new EPA analytical procedures (Method 1633 published in January 2024). Data quality was good. Results are too few to draw conclusions on. In 2025, GNPCC plans to send three more samples of wastewater influent, effluent and biosolids for PFAS analysis to build baseline data.
1.16	Action Item: Consider expanding the use of reclaimed water for use within the facility.
	Status: Planned for future implementation
1.16	Implementation Plan: Scheduled for 2026.
	Action Item: Use wastewater flow data to monitor peak flows.
1.16	Status: In Progress
	Implementation Plan: Flow monitoring peaks are monitored throughout the year. Data are recorded and summarized in the annual reports for the individual facilities, which are submitted under separate cover to ENV. The Wastewater Services Strategic Work Plan includes steps in 2026/7 to expand the I&I monitoring program.

2.2 Biosolids Management

The Biosolids Management Focus Area has four action items, shown in Table 2, below.

Table 2. Status and Implementation Plan for the Biosolids Management Focus Area Action Items

Biosolids Management Action Plan	
2.1	<p>Action Item: Reaffirm commitment to beneficially manage RDN Class A or Class B biosolids.</p> <p>Status: Complete</p>
	<p>Implementation summary: The Board endorsed the Liquid Waste Management Plan Amendment on November 28, 2024, through Motion 23-600. In doing so, the Board reaffirmed its commitment to beneficially managing RDN Biosolids.</p>
2.2	<p>Action Item: Continue the existing biosolids management programs if they remain viable.</p> <p>Status: Planned for future implementation</p>
	<p>Implementation Plan: The existing biosolids management programs are up for renewal in 2025 and 2026. Their continuation will be assessed at that time.</p>
2.3	<p>Action Item: Consider aligning the length of the biosolids management contract with the lifespan of the management site if doing so will make the program more efficient and/or reduce its cost.</p> <p>Status: Planned for future implementation</p>
	<p>Implementation Plan: The existing biosolids management programs are up for renewal in 2025 and 2026. Their continuation, and length of contract, will be assessed at that time.</p>
2.4	<p>Action Item: Continue monitoring biosolids management advancements in other jurisdictions in Canada.</p> <p>Status: Ongoing</p>
	<p>Implementation summary: Advancements in biosolids management are covered in the annual GNPCC biosolids management summary.</p>

2.3 Water Protection

The Water Protection Focus Area has two action items, show in Table 3, below.

Table 3. Status and Implementation Plan for the Water Protection Focus Area

Water Protection Action Plan	
3.1	<p>Action Item: Implement LWMP rainwater management goals through the RDN Drinking Water and Watershed Protection (DWWP) program and DWWP Action Plan, as revised periodically.</p> <p>Status: Ongoing</p> <p>Implementation summary: See section 2.3.1</p>

Action Item: Collaborate with RDN Water Services to increase service efficiency towards goals that are common with the LWMP.

Status: Ongoing

3.2

Implementation summary: In 2024, Wastewater Services participated in DWWP's Water to Earth Month in March and April by offering an open house/tour day at the Greater Nanaimo Pollution Control Centre and SepticSmart workshops. Over 50 people attended a tour – this is an unprecedented positive response to our invitation to the community.

2.3.1 Water Protection

The DWWP program continues to work towards the ongoing implementation of the 2022 Regional Strategy for Rainwater Management (RSRM), which serves as a foundational document to guide region-wide efforts in managing precipitation (all rain events, not just storms) across the regional land base. The Strategy outlines a framework for achieving a resilient approach to rainwater management in the region that includes:

- **Foundational Studies and Assessments:** Conducting watershed monitoring, climate projections, and funding strategies.
- **Development of Performance Targets:** Establishing targets for release rate, retention volume, recharge volume, and water quality to be applied to development within the region's watersheds.
- **Technical, Policy, and Planning Tools:** Supporting a comprehensive technical approach to rainwater management regionally through the development and application of policies, bylaws, development permit areas (DPAs), and various other tools.

In 2024, actions for the ongoing implementation of the RSRM included:

- **Completed:** Regional Downscaled Climate Projections analysis by the Pacific Climate Impacts Consortium, including projections related to temperature and precipitation.
- **Underway:** Development of policy language related to improved rainwater management as part of the Area F Official Community Plan (OCP) Update.
- **Underway:** Creation of draft Development Permit Area (DPA) Guidelines related to rainwater management and aquifer protection as part of the Area F OCP Update and to model approaches for future RDN Electoral area OCP updates.
- **Underway:** Implementation of a draft checklist for rainwater management, as recommended through the 2022 Watershed Performance Target, piloted through application on select development approvals.
- **Ongoing:** Community monitoring partnerships continue to collect data on surface water quality, benthic invertebrates, 6PPDQ (tire wear toxins) and wetlands, and are expanding into more streamflow data collection in partnership with the Province and BC Conservation Foundation.
- **Complete:** Application of the Ecological Accounting Process for natural asset management to French Creek through a two-year study, demonstrating the value of natural assets in rainwater management and to propose a budgetary value for maintaining these assets and their natural function as green infrastructure drainage.

- **Complete:** Installation of a Demonstration Rain Garden at the RDN Administration Building, with planned educational materials to be developed.
- **Initiated:** Establishment of community partnerships for the development and broader education of green infrastructure, such as rain gardens, including hosting an educational rain garden workshop.
- **Initiated:** Phase 3 Refined Numerical Water Budget for Cedar-Yellowpoint-Cassidy (Area A) that will highlight areas of surface water / groundwater interaction and can provide a technical basis for further water policy and planning for conservation and rainwater management approaches.

2.4 Education, Outreach & Collaboration

The Education, Outreach & Collaboration focus area has eight action items, shown in Table 4, below.

Table 4. Status and Implementation Plan for the Education, Outreach & Collaboration Focus Area

Education, Outreach & Collaboration Action Plan	
4.1	<p>Action Item: Collaborate with other RDN departments and local governments to promote pollution prevention initiatives.</p> <p>Status: Ongoing</p>
	<p>Implementation summary: Participated in the Source Control Community of Practice with other BC local governments. This meeting is held three times a year to share source control information and updates related to wastewater management.</p>
4.2	<p>Action Item: Implement the LWMP through partnerships with the member municipalities (i.e., W3C).</p> <p>Status: Ongoing</p>
	<p>Implementation summary: The Wastewater and Water Collaborative (W3C) is a biannual meeting with utilities staff from the RDN and member municipalities. The meeting’s goal is to advance LWMP initiatives. In 2024, the W3C met on April 24 and October 24.</p>
4.3	<p>Action Item: Welcome ongoing dialogue with First Nations on the LWMP and respect that each Nation will determine which initiatives are their priorities.</p> <p>Status: Ongoing</p>
	<p>Implementation summary: The Departure Bay Pump Station and Forcemain Upgrade is an upcoming project with the potential to impact First Nations interests. Wastewater Services, with the assistance of a consultant and the Capital Projects Delivery and Strategic Initiatives departments of the RDN, began sharing project information with Snuneymuxw First Nation in 2022. Communication will be ongoing.</p>
4.4	<p>Action Item: Continue sharing information about major wastewater capital projects on the RDN website.</p> <p>Status: Ongoing</p>

Education, Outreach & Collaboration Action Plan	
	Implementation summary: Current major wastewater capital projects are highlighted on the Get Involved RDN page.
4.5	Action Item: Continue supporting septic system users through the educational SepticSmart program (not regulated measures).
	Status: Ongoing
	Implementation summary: In 2024, the RDN offered four SepticSmart workshops and provided residents with more than \$43,000 in rebates to help them maintain their septic systems. The RDN has provided over \$400,000 to residents over the lifespan of this rebate.
4.6	Action Item: Continue promoting educational information on source control.
	Status: Ongoing
	Implementation summary: Source control was promoted online and at the GNPCC Open House/Tour Day in April 2024.
4.7	Action Item: Promote a public education program to generate support to reduce I&I on private property.
	Status: Planned for future implementation
	Implementation Plan: The Wastewater Services Strategic Work Plan includes steps in 2026/7 to develop a public education program to promote I&I reduction.
4.8	Action Item: Adapt the outreach program to meet changing needs over time.
	Status: Planned for future implementation
	Implementation Plan: An annual review of the outreach program is scheduled to start in 2025.

2.5 Administrative Items

The Education, Outreach & Collaboration focus area has seven action items, show in Table 5, below.

Table 5. Status and Implementation Plan for the Administrative Items Focus Area

Administrative Items Action Plan	
5.1	Action Item: Seek grant funding to lower the financial burden of capital projects on RDN communities.
	Status: Ongoing
	Implementation Plan: The RDN applies for grants as opportunities are approved by the Board.
5.2	Action Item: Investigate grant funding opportunities to reduce I&I on private property.
	Status: Ongoing
	Implementation Plan: See Action Item 5.1
5.3	Action Item: Investigate grant funding opportunities to reduce I&I entering RDN infrastructure.
	Status: Ongoing

	Implementation Plan: See Action Item 5.1
	Action Item: Continue using an Environmental Management System (EMS).
5.4	Status: Ongoing
	Implementation Plan: The RDN EMS System was ISO 14001 certified in 2024 .
	Action Item: Participate in the RDN corporate asset management program.
5.5	Status: In Progress
	Implementation Plan: Wastewater Services participates in the projects led by Corporate Asset Manager. The Asset Management Plans Schedule was last updated on November 14, 2023.
	Action Item: Implement the LWMP with recommendations from the LWMP Monitoring Committee.
5.6	Status: Ongoing
	Implementation Plan: The LWMP Monitoring Committee met on May 21, 2024. Minutes are available online .
	Action Item: Summarize LWMP implementation and minor adjustments in an annual report.
5.7	Status: Ongoing
	Implementation Plan: LWMP implementation is summarized in this section. Action item refinements are summarized in Section 4.

3) Notable Achievements

Wastewater Services made some notable achievements in 2024, listed below, that align with the spirit of the LWMP but do not address an action item.

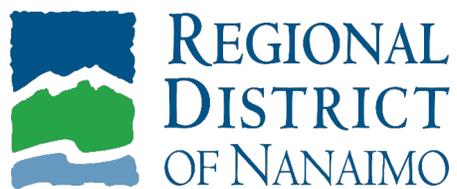
- Completed upgrades to the Bay Avenue Pump Station. The upgrade increased pumping capacity and raised its elevation to meet the current standards for Flood Construction Levels and protect critical electrical and control system components against sea level rise. It also removed an engineered overflow point, reducing the potential for future overflows from this location.
- Began construction to upgrade the Wellington Pump Station. The upgrade will increase capacity by approximately 40% to meet future growth in the City of Nanaimo. The increased capacity will also reduce the potential for future overflows caused by extreme rainfall events.
- Wastewater Services collaborated with City of Nanaimo to successfully negotiate a land use agreement with TELUS and Rogers to add a cell tower to GNPCC property to improve unreliable cell reception. The cell tower will increase safety for GNPCC staff, service providers and the wider community.
- RDN partnered with Ecole Hammond Bay, NALT, and the Walley Creek Streamkeepers to remove invasive plant species from Walley Creek near GNPCC.
- RDN partnered with BC Centre for Disease Control to monitor viruses and illicit drugs in wastewater influent.

4) Action Item Refinements

The LWMP amendment tasks the LWMP Monitoring Committee with the responsibility to review the action items annually and, if necessary, recommend refinements. This gives the plan the flexibility to sustainably manage wastewater and respond to changes such as the pace of development, technical issues, study results, regulatory changes, and availability of funding and grants. In 2024, the LWMP Monitoring Committee met on May 21 and did not recommend any action item refinements.

Appendix A – LMWP Amendment

Revised January 2025



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