

Liquid Waste Management Plan, Stage 3 Wastewater Advisory Committee Meeting #21 March 6, 2025

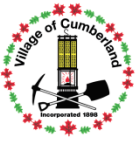
PREPARED BY: Paul Nash
DATE: March 6, 2025



THE VILLAGE OF
CUMBERLAND

250.336.2291
lwmp@cumberland.ca
cumberland.ca

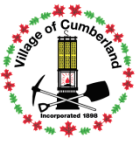
2673 Dunsmuir Avenue
Box 340, Cumberland, BC
V0R 1S0



Plan for this meeting

- Stage 3 Report Contents
- Review feedback from Open House
- **Confirm approach on \$12M Storm and Sanitary separation plan**
- Storm and Sanitary bylaws – any suggested changes?
- Timeline from here.





LWMP Process – Three Stages

2016, Stage 1 – *Identify* the needs, goals, constraints and opportunities.

Develop a long list of possible options and select a short list of the best ones.

2017-18, Stage 2 – Detailed study of the short-listed options, ***Evaluate*** to select the preferred option.

2024-25, Stage 3 – Implementation study of the preferred option and related regulatory and financial issues. ***Adopt*** the plan, submit and then start work.



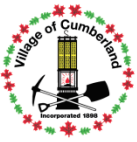
We are here!
Work on Wastewater
Upgrades Project
started earlier to
address regulatory
non-compliance





**Overall Project
Layout, 2025**

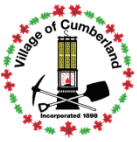




Project Construction Progress

- Site clearing 2022
- Initial construction work 2023, then stopped for re-design
- Site work restarted in Dec 2024
- Continue major construction through 2025.
- Commissioning start - ***first clean water*** – Q1 2026
- Main Project Completion Q2 2026
- Reed bed, wetland and channel relocation works in 2026

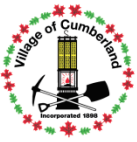




Completing the Stage 3 LWMP Report

- Updated community growth projections (from updated OCP)
- Wastewater Treatment Plan & Budget (current upgrade project)
- Environmental Impact Study of upgraded treatment on receiving water creek
- Updated Stormwater Master Plan
- Updated Source Control bylaw (trade waste policy)
- **Inflow & Infiltration Reduction plan (including storm-sanitary separation plan)**
- **Financing plan for near future works – the storm sanitary separation program**
 - Borrowing bylaw – *might become a “parcel tax” bylaw*
- Summary of public and First Nation consultation





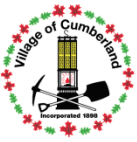
Environmental Impact Study

Main Question - “What is the impact of the ***proposed*** discharge on the receiving environment and downstream users?”

In our case the proposed discharge will be much higher quality than the current discharge:

- Reduced phosphorus loadings and high-quality disinfection
- Improved downstream fish habitat conditions compared to today
- Improved water quality in the Trent River for potential further use by others
- Potential for some metals (e.g. copper) to increase as Village grows
- ***Post-upgrade monitoring to confirm if no further treatment is required.***

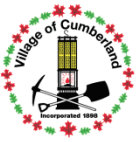




Wet Weather Flow

- Cumberland has VERY high wet weather flow.
- Current dry weather flow 900m³/day
- Current peak wet weather flow ~18,000m³/day – peaking factor of 20:1 !
- Was ~ 30:1 before separation works starting in 2010 (Egremont, Dunsmuir, etc)
- Most west coast communities ~ 3:1
- Courtenay-Comox dry weather ~12,000, peak wet weather ~36,000
- Standard regulatory goal is 2:1





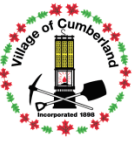
Causes of Wet Weather Flow (in decreasing order of control)

1. Remaining areas of combined storm-sanitary sewers (about 18 hectares)
2. Old/leaky pipes in some non-combined areas
3. Illegal roof connections to sanitary sewer
4. General infiltration into system
5. Rainfall on lagoon surface
 - 100mm of rain = 3600m³/day - 4x dry weather flow!

Because of (4) and especially (5), Cumberland can never get down to 3:1,

But can get down to around 8:1



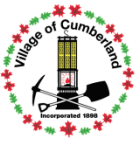


Handling Wet Weather Flows

- Lagoons still provide good biological treatment even at 20:1
- The soon-to-be-installed tertiary treatment can handle 7200m³/day, or 8:1
- Excess Wet Weather Flow disinfection system can handle another 7200m³/day, up to 14:1

The upgrade project will protect the environment against potential water quality impacts from these large flows.

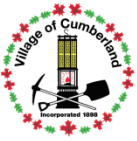




Storm Sanitary Separation Program

- As part of the LWMP, Cumberland ***must commit*** to separating the remaining combined sewer areas.
- 14 projects in downtown area, ***total cost approx. \$12M***
- This is the major future capital work item for the 20-year period of the LWMP
- The question for Cumberland is whether to expedite it, or not, given there is no environmental benefit from completing the separation now because...
 1. The treatment project already protects the environment against high flows
 2. Eliminating the combined sewer area alone will not eliminate high flows





Storm Sanitary Separation Program

Two funding scenarios:

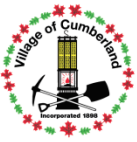
1. Borrow the money to do the work quickly and pay off the loan over 20 years.
2. Use parcel taxes to fund works directly (no borrowing), spread out over the same 20-year period.





Separation Costs and Payment Options

	(1) All Borrowing		(2) All Tax	
	No grant	50% grant	No grant	50% grant
Capital cost (\$M)	12	12	12	12
Grant amount (\$M)	0	6	0	6
Loan amount (\$M)	12	6		0
Annual cost/parcel	\$534	\$267	\$330	\$165
Annual O&M cost saving	\$20,000	\$20,000	0	0
Annual O&M saving per parcel	\$11	\$11	\$0	\$0
Net Annual cost per parcel	\$513	\$251	\$330	\$165

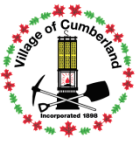


Recommendation from Wastewater Advisory Committee (30 Jan 2025)

“In consideration that Cumberland is already implementing treatment works to mitigate the environmental effects of high wet weather flows, the WAC proposes that:

- The implementation of the storm-sanitary separation program be spread out of over the 20-year period of the LWMP,
- The Village pursue both project implementation efficiencies and future grant funding opportunities to reduce the financial burden on the Village residents.”





Recommendation #1 from Wastewater Advisory Committee (March 6, 2025)

“In consideration that Cumberland is already implementing advanced treatment works to mitigate the environmental effects of high wet weather flows, the WAC proposes that:

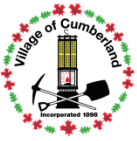
On timing of the program that:

1. Cumberland commit to 100% completion of the Storm-Sanitary Separation Program within the 20 year period of the LWMP.
2. It be recognized that there is limited environmental value in an accelerated implementation of the separation plan
3. It also be recognized that the further the works are pushed into the future, the more likely that costs will increase.

On funding the program

1. Council should decide the question of whether the program should be paid for directly by (parcel) tax, borrowing or a combination of both.
2. The financial plan should be a full cost contribution – assuming no grant funding.
3. The Village pursue both project implementation efficiencies and future grant funding opportunities to reduce the financial burden on the Village residents.”



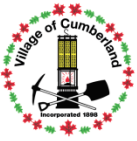


2nd Recommendation from Wastewater Advisory Committee (March 6, 2025)

In consideration of the large increase in wastewater costs the WAC recommends that:

- The Village review the wastewater user fee and parcel tax structure with a view to a cost distribution based in part or whole on usage.

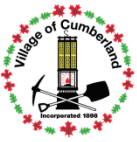




What did the LWMP cost?

Date	Activity	Cost \$M
2016	Stage 1 LWMP	\$0.2
2017-18	Stage 2 LWMP	\$0.3
2024-24	Stage 3 LWMP	\$0.2
Total LWMP		\$0.7
2019-26	Treatment Upgrades	\$17.6
2026	Reed bed, wetland and channel relocation (includes \$300k for EIS and operational certificate)	\$4.3
Total Projects		\$21.9
Grand total		~\$22.6M





Overall LWMP Cost and Payment

Item	Costs
Total cost (\$M)	22.6
Grants amount (\$M)	10.4
Loan amount (\$M)	6.9
Cumberland Reserves(\$M)	5.3
Loan cost per parcel	\$312
Annual Operating cost	\$600k
Annual O&M per parcel	\$330
Storm-Sanitary separation cost per parcel	\$165*
Net Annual increased cost per parcel	\$807

* Assuming spread out over 20-year period





Stage 3 Timeline

Date	Activity
25 Feb	Public Open House – Review capital plan
6 Mar	WAC meeting #21
21 Mar	Submit draft LWMP report to MoE
18 Apr	Finalize LWMP report
5 May	Cumberland Council Approval
16 May	Submit Final Stage 3 LWMP to MoE
End of 2025	<i>Expected</i> LWMP approval by Minister



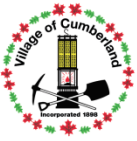
Storm and Sanitary System Bylaws

- Are there any updates we want?
- How to get “newly separated” homeowners to connect roof drains to storm?

Recommendation

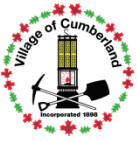
In recognition that installing the separated sewers in and of itself does not achieve the full benefits until the newly separated users connect to the storm system, the committee recommends that:

- The Village take a pro-active approach to ensuring that newly separated properties connect to the storm system, in accordance with the Stormwater system bylaw (1024)
- There be ongoing efforts to ensure compliance with the Stormwater bylaw (1024)



Plan Monitoring Committee

- Once the LWMP is approved, a Plan Monitoring Committee is formed.
- They will look at performance/progress compared to the Plan
- Ministry of Environment reviews at five intervals



Conclusion

- End product will be a world class example of sustainable and resilient wastewater treatment, that is adapted to wet winters and dry summers.

Thank You!