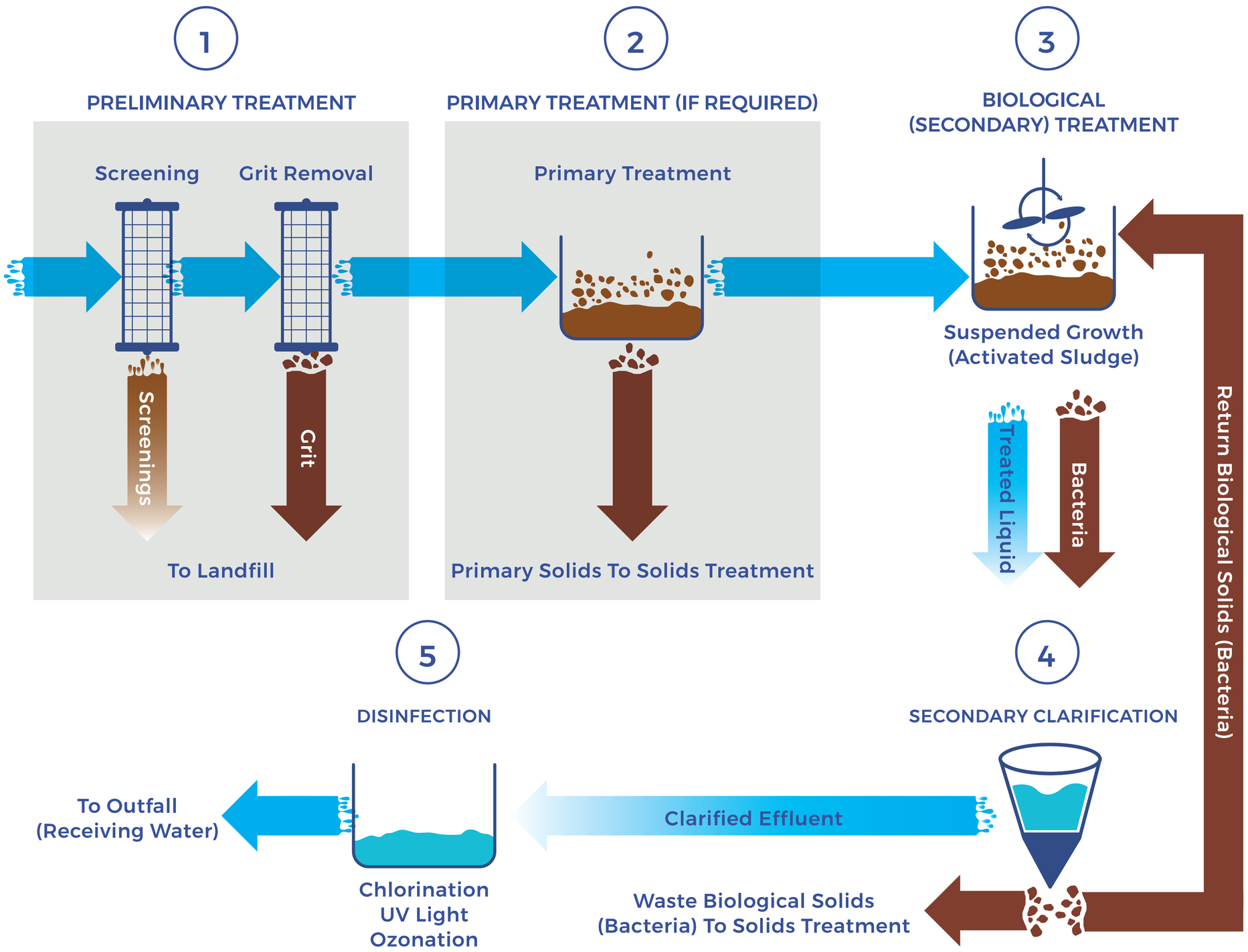
Regional District of **Kootenay Boundary**

Getting To Secondary Treatment At The Columbia Pollution Control Centre



1 PRELIMINARY TREATMENT

Removes coarse solids (rock, rags, plastics, etc.) and grit (sand and gravel) which are normally sent to landfill.

2 PRIMARY TREATMENT

Removes fecal solids by gravity settling, which are sent to the solids treatment processes.

3 BIOLOGICAL (SECONDARY) TREATMENT

Removes organic substances by using bacteria to convert degradable organic matter into bacterial cells.

4 SECONDARY CLARIFICATION

Separates the treated liquid from the bacterial cells grown in Step 3 by gravity settling. Some bacteria may be returned to Step 3, and the rest are sent to solids treatment with the primary solids.

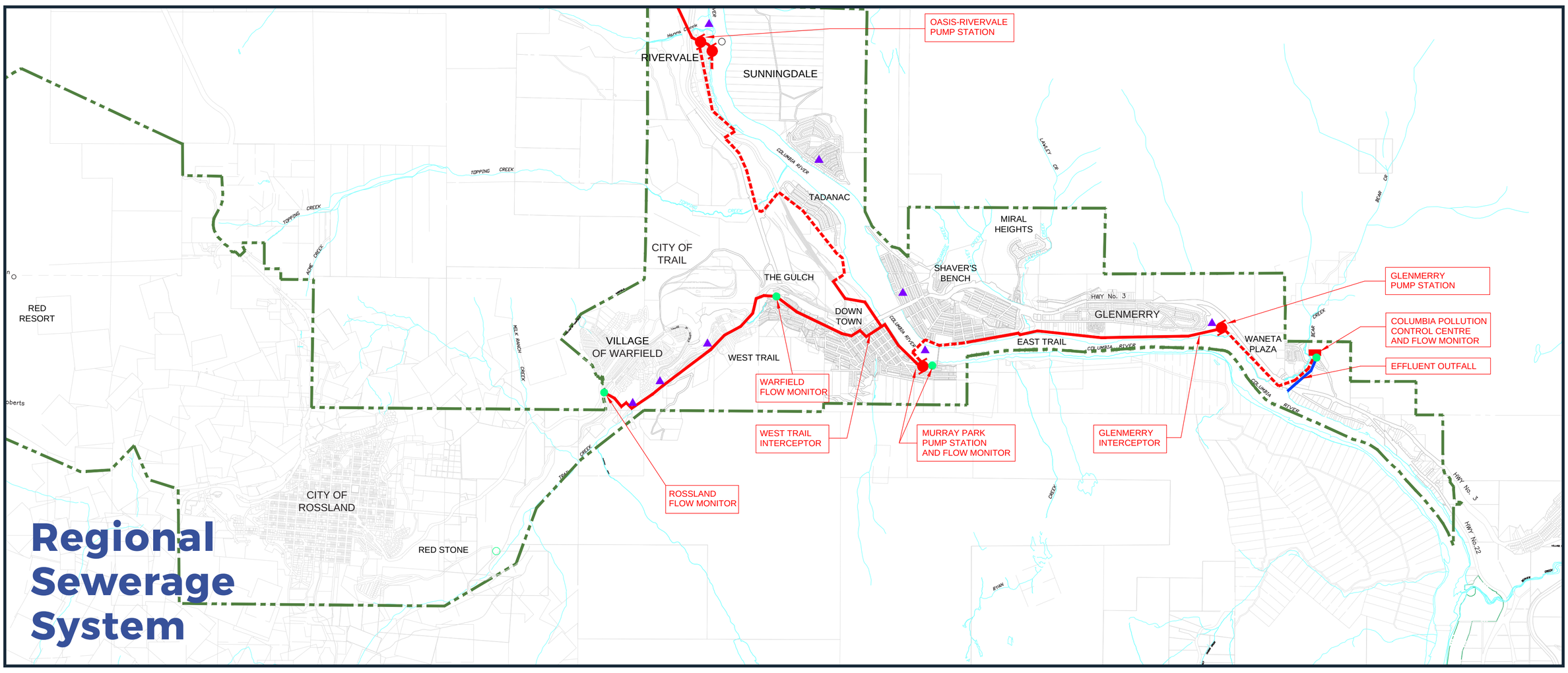
5 DISINFECTION

Kills or disables disease causing organisms and viruses in the treated wastewater. Disinfection may or may not be required, depending on the receiving water.

Treating Wastewater

Currently, the existing Columbia Pollution Control Centre provides primary wastewater treatment with disinfection (steps 1, 2 and 5 in the graphic) and sends treated effluent to the Columbia River, but it does not meet regulations. This plan outlines steps to upgrade the plant to meet provincial and federal regulations by adding secondary treatment.

YEAR BUILT	RESIDENTS SERVED	VOLUME OF WASTEWATER TREATED PER DAY
1972	14,000	9M+ Litres

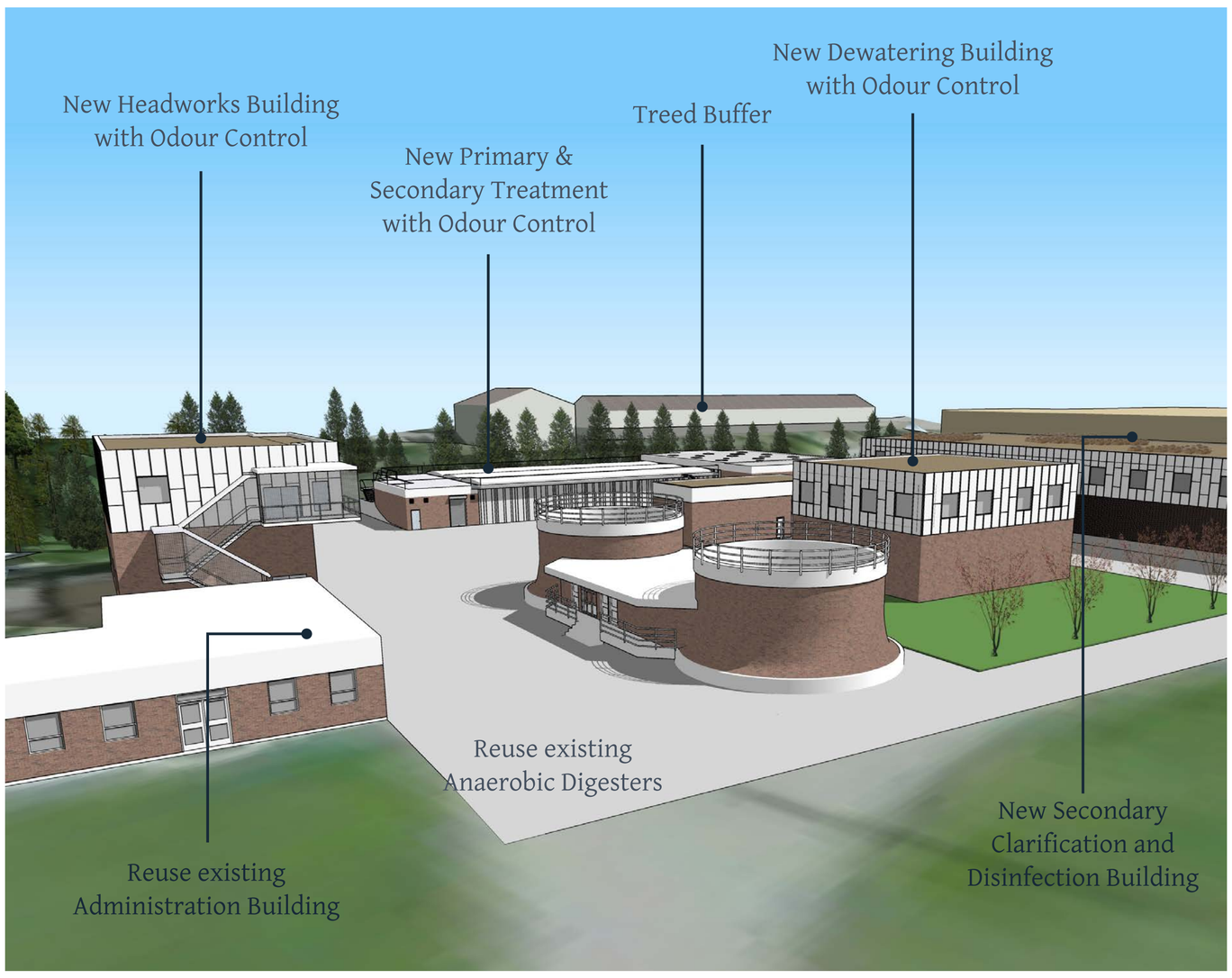


Regional Sewerage System

Regional District of Kootenay Boundary

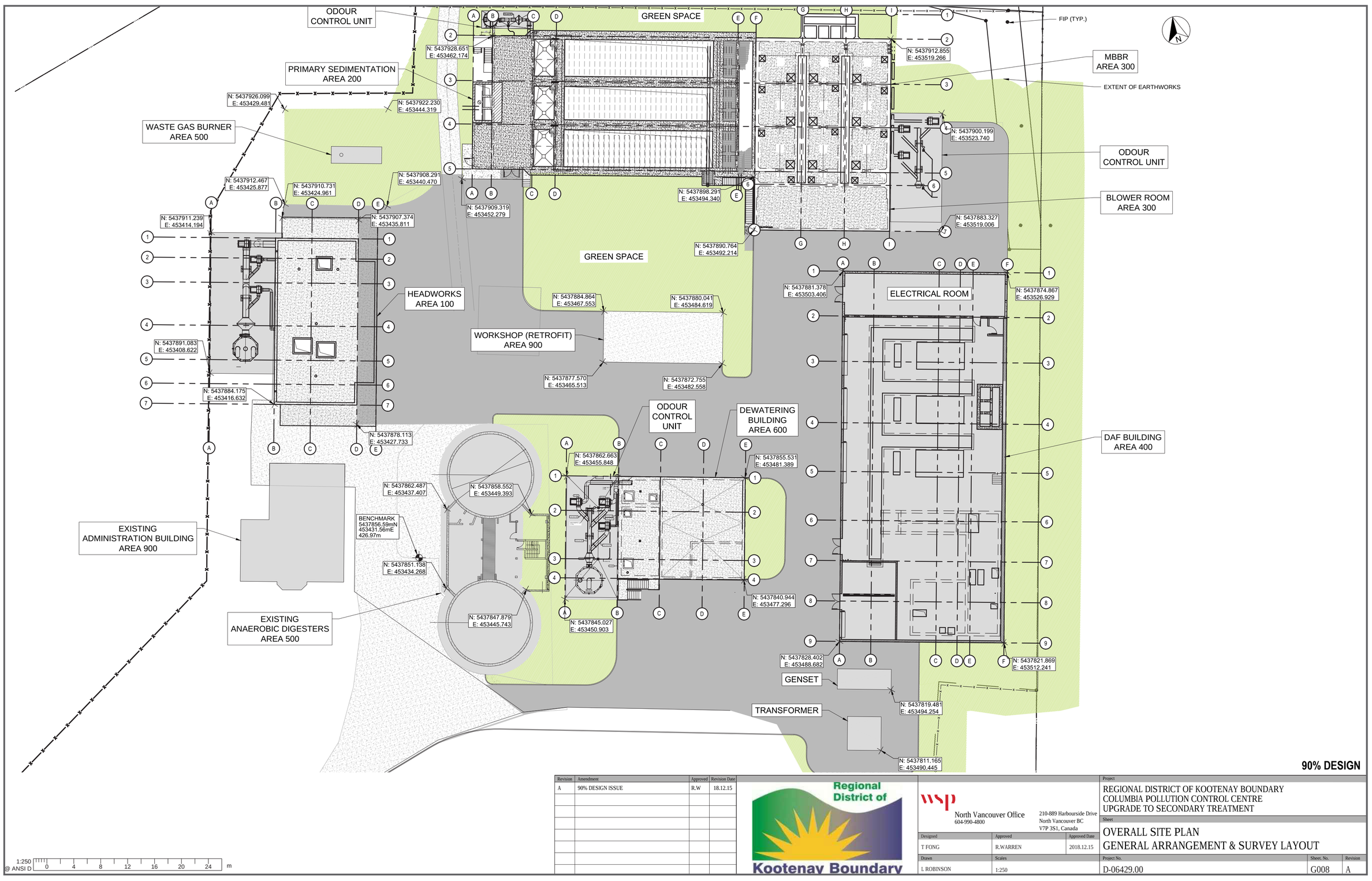
Upgrading The Columbia Pollution Control Centre To Protect The Columbia River

This upgrade will expand and upgrade the existing Columbia Pollution Control Centre to secondary treatment to serve Trail, Rossland, Warfield, and Electoral Area 'B.' The upgrade will meet provincial and federal regulations to protect the Columbia River and increase capacity of the plant by over 50%.



Design Elements

- Design for a population of 20,800 people (currently ~13,500)
- New headworks building with influent screening and grit removal
- New primary clarifiers for solids removal
- New secondary biological treatment process using the MBBR, moving bed biofilm reactor
- New small footprint dissolved air floatation secondary clarification
- New disinfection system using ultraviolet light
- Reuse existing anaerobic digesters for waste solids stabilization
- New building for dewatering waste biosolids
- Reclamation of waste effluent heat for building heating and cooling
- Reclamation of effluent for irrigation and non-potable water uses at the plant
- Comprehensive odour control
- Architectural building design and landscape design



Revision	Amendment	Approved	Revision Date
A	90% DESIGN ISSUE	R.W	18.12.15

1:250 @ ANSI D — 0 4 8 12 16 20 24 m

PROPOSED PLANT LAYOUT

Regional District of
Kootenay Boundary

Design Concepts

Sustainability Design

The new buildings will be heated using waste effluent heat. This would otherwise be wasted and will help reduce natural gas consumption and lower our heating bills.

Treated wastewater will be reclaimed for non-potable uses at plant, reducing potable water consumption by up to 200,000 litres per day.

Concerned About Odour?

Odourous wastewater treatment processes are enclosed and odour control systems will be installed to minimize impacts on residential areas.

The existing brick buildings on site have strong architectural character and influence the design of the new buildings.





A landscape buffer zone is provided on the north side of the new buildings to minimize overview from the adjacent seniors residence.

The landscape buffer features coniferous trees which will extend beyond the height of the new structure.





ROOFSCAPE

The flat roofs of the new buildings incorporate colours and materials which are intended to blend with the natural landscape of the region.

BUILDING HEIGHT

The new buildings incorporate flat roofs to reduce building height and minimize snow management. The building heights are minimized to ensure that the neighbouring seniors residence will maintain views across the valley.

Regional District of Kootenay Boundary

How Much Will This Cost?

Property Tax Impact

Assumptions:

Project cost: ~$52,000,000	
73% grant: ~$38,000,000	
27% debt: ~$14,000,000	
68.1% contribution from Trail	
20% contribution from Rossland	
11.2% contribution from Warfield	
0.7% contribution from Area 'B'	
Annual debt servicing with grant: $740,000	
Annual debt servicing without grant: $3,000,000	
30 year debt interest rate: 3.15%	
Annual O&M cost estimate: $593,000	

	Total Increase to Requisition with Grant	Total Increase to Requisition without Grant
Trail	$907,240	$2,445,396
Rossland	$267,133	$720,037
Warfield	$149,296	$402,416
Area 'B'	$9,331	$25,151

Cost estimates for households and businesses are based on Class B 2018 CAD cost estimates, 2017 flow-based cost apportionment, interest rates of 3.15%, current Municipal Participants and District policy and overall property assessments.

City of Trail

Property Tax Impacts

	Residents		Businesses	
	2018 Tax Bill	Tax Bill Increase To	2018 Tax Bill	Tax Bill Increase To
Assuming 73% capital costs funded by senior government grants To cover Service Debt and O&M	$123	$227	$302	$555
Assuming no funding from senior government To cover Service Debt and O&M	$123	$402	$302	$984

*Assuming a $200,000 average assessment value

Sewer Rate Impacts

	Current Annual Sewer Charge	Total New Sewer Charge
Assuming 73% capital costs funded by senior government grants	$261	No change
Assuming no funding from senior government	$261	No change

City of Rossland

Property Tax Impacts

	Residents		Businesses	
	2018 Tax Bill	Tax Bill Increase To	2018 Tax Bill	Tax Bill Increase To
Assuming 73% capital costs funded by senior government grants	No change	No change	No change	No change
Assuming no funding from senior government	No change	No change	No change	No change

Sewer Rate Impacts

	Residents		Businesses	
	2018 Sewer Bill	Sewer Bill Increase To	2018 Sewer Bill	Sewer Bill Increase To
Assuming 73% capital costs funded by senior government grants To cover Service Debt and O&M	$312	$456	$312	$456
Assuming no funding from senior government To cover Service Debt and O&M	$312	$700	$312	$700

Village of Warfield

Property Tax Impacts

	Residents		Businesses	
	2018 Tax Bill	Tax Bill Increase To	2018 Tax Bill	Tax Bill Increase To
Assuming 73% capital costs funded by senior government grants New parcel tax to cover Service Debt	Currently no parcel tax	$104	Currently no parcel tax	$104
Assuming no funding from senior government New parcel tax to cover Service Debt	Currently no parcel tax	$422	Currently no parcel tax	$422

Sewer Rate Impacts

	Current Annual Sewer Charge	Total New Sewer Charge
Assuming 73% capital costs funded by senior government grants To cover O&M	$438	$521
Assuming no funding from senior government To cover O&M	$438	$521

RDKB Electoral Area 'B'/ Lower Columbia Old Glory

Property Tax Impacts

	Residents		Businesses	
	2018 Tax Bill	Tax Bill Increase To	2018 Tax Bill	Tax Bill Increase To
Assuming 73% capital costs funded by senior government grants	No change	No change	No change	No change
Assuming no funding from senior government	No change	No change	No change	No change

Sewer Rate Impacts

	Residents		Businesses	
	Current Residential	Total New Charge Residential	Current Commercial	Total New Charge Commercial
Assuming 73% capital costs funded by senior government grants Increase Covered with Current Revenue	$198	No change	$247	No change
Assuming no funding from senior government To cover Service Debt and O&M	$198	$364	$247	$442

Regional District of Kootenay Boundary

Liquid Waste Management Plan *Commitments*

Stormwater Management

Development tends to increase the amount of impervious area (rooftops, roads, etc.) which reduces the amount of precipitation that infiltrates the soil and percolates down to the groundwater table. This in turn increases the amount of surface runoff, increasing the likelihood for flooding of low lying areas and erosion in streams. Urban activities also generate contaminants that can be picked up by surface runoff and carried to receiving waters (e.g. metal particles and hydrocarbons associated with automobile use).

Commitments

Develop municipal bylaws to protect storm drainage systems from contamination.

Source Control

High strength, toxic and hazardous materials that enter the regional collection system pose a risk to city staff, the public, operations at the plant and the environment, Source controls are used to discourage discharge of these materials to the sewer.

Commitments

Develop a source control bylaw to prevent the discharge of high strength, toxic or hazardous waste to the regional sewer system.

Wastewater Volume Reduction

A reduction in wastewater volume helps to conserve resources for wastewater collection and treatment and it reduces the volume of treated effluent to be discharged. The two basic components of wastewater volume reduction are water conservation, and reduction of the amount of surface water and groundwater that enters the sewer collection system through manhole covers, faulty pipes and connections, roof drains, etc.

Commitments

Develop and implement water conservation bylaws to help minimize wastewater volumes.

Develop and implement inflow and infiltration reduction programs to maintain capacity of critical municipal infrastructure.









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Regional District of Kootenay Boundary

Governance And Planning Process

Why Do We Need A Liquid Waste Management Plan?

The existing Regional District of Kootenay Boundary's Columbia Pollution Control Centre discharges to the sensitive Columbia River and does not meet the current minimum standards for wastewater treatment in British Columbia and Canada.

The Liquid Waste Management Plan is needed to ensure the future economic viability of the community, public health and protection of the environment by identifying the best option for upgrading and expanding the Columbia Pollution Control Centre. The Liquid Waste Management Plan will also coordinate other environmental protection measures including reduction of wastewater volumes, source control of contaminants and stormwater management.

Who is Involved?

Steering Committee

Provides direction for the overall process. Includes representation from the city councils of Rossland, Trail and Warfield who make decisions based on input from the Joint Advisory Committee.

Joint Advisory Committee

Provides input on regulatory and technical requirements. Represents community needs and interests.

Staff & Consultants

Provide technical resources, and expertise to both committees in developing management options.

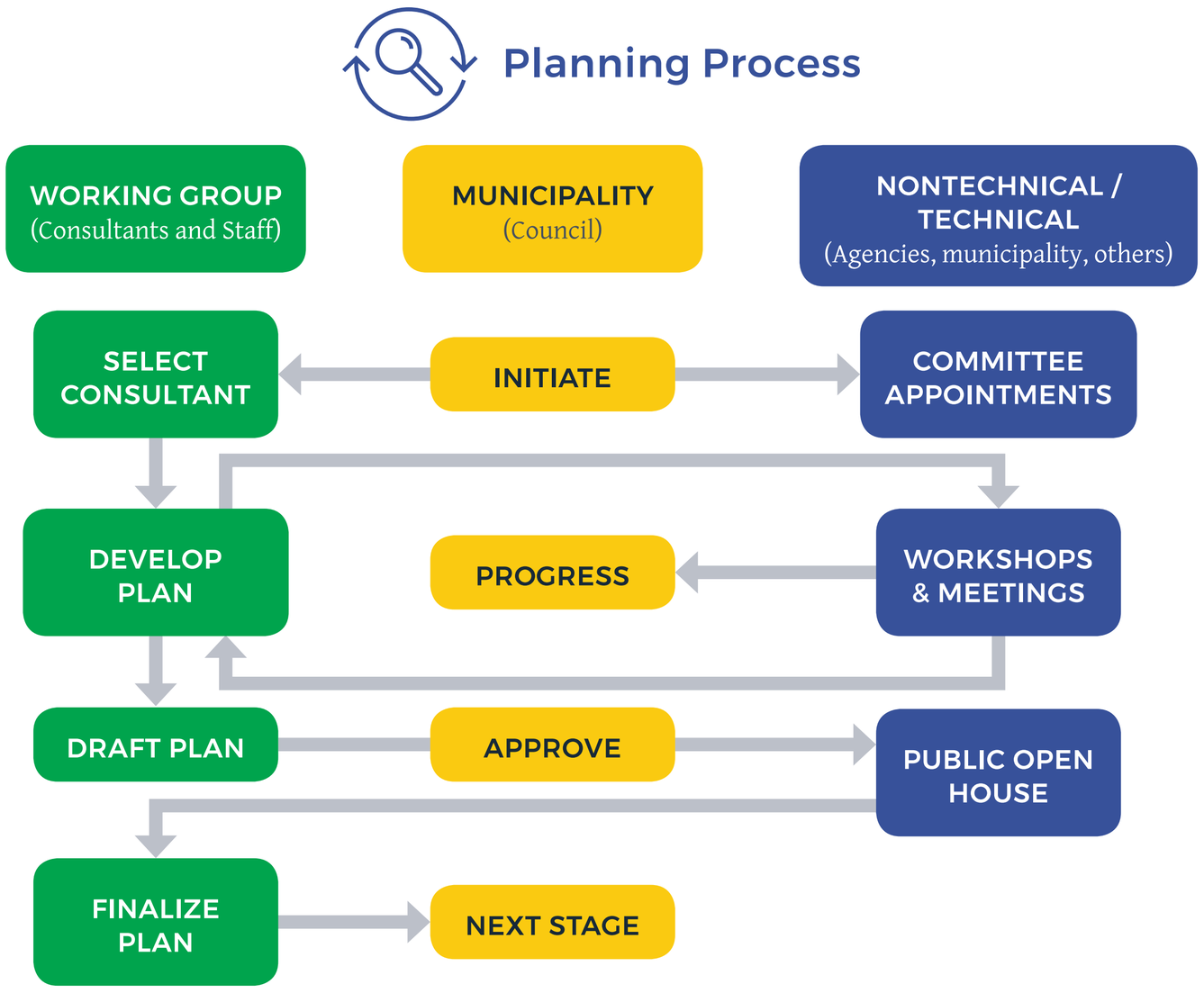
Government

Participates at the level of the Joint Advisory Committee to provide regulatory input.

Public

The public will provide input prior to approval at each stage of the planning process.

Planning Process



Three Stage Process

STAGE 1	STAGE 2	STAGE 3
Gather information Develop concepts Identify realistic options	Examine pros and cons of each option Selection of preferred option(s) Draft LWMP	Final confirmation Costs, implementation schedule, financing Approved LWMP

PEOPLE INVOLVED

PUBLIC

ELECTED OFFICIALS

ADVISORY COMMITTEE

STAFF & CONSULTANTS

COMMITTEE MEMBERSHIP

REPRESENTATIVES FROM
Rossland

REPRESENTATIVES FROM
Trail

REPRESENTATIVES FROM
Warfield

REPRESENTATIVES FROM
Area 'B' / Lower Columbia-Old Glory

REPRESENTATIVES FROM
RDKB

REPRESENTATIVES FROM
Ministry of Environment & Climate Change Strategy

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Regional District of Kootenay Boundary

Columbia Pollution Control Centre Upgrades Public Consultations

Dates and Locations

VILLAGE OF WARFIELD

Wednesday, March 13th 2019

6 pm to 8 pm

Warfield Community Hall
900 Schofield Highway

CITY OF TRAIL

Thursday, March 14th 2019

12 pm to 2 pm

Trail United Church
Hall Entrance | 1300 Pine Ave

CITY OF ROSSLAND

Thursday, March 14th 2019

6 pm to 8 pm

Prestige Mountain Resort
Conference Room
1919 Columbia Avenue

The Regional District of Kootenay Boundary has been working with regional partners to plan how the region will manage its wastewater for the next 30 to 50 years.

The Columbia Pollution Control Centre located in Trail receives and treats wastewater from Trail, Rossland, Warfield and Area 'B' before discharging to the Columbia River. It was constructed in the early 1970's and requires significant upgrades to meet current regulations. Through this series of public consultations, the public is invited to view and comment on designs and associated costs for the proposed upgrades.

This is a major investment for the region, so please participate in these events and tell us what is in your community's best interest.

For More Information

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Regional District of Kootenay Boundary
T: 250-368-0227
E: gdenkovski@rdkb.com

You are welcome to attend any of the consultation sessions no matter where you live.

Scan me

Participate online at jointheconversation.rdkb.com.

Your opinions are important to us and we look forward to hearing from you.

WSP