

LWMP Wastewater Advisory Committee Meeting #11

PREPARED BY: Paul Nash

DATE: April 25 2017

2017 Workplan

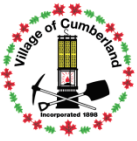


THE VILLAGE OF
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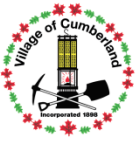
Original Mandate

“to develop an environmentally sustainable method to treat the liquid waste that is produced by the Village”

WAC expanded mandate

“to develop an environmentally sustainable method to treat the liquid waste that is produced by the Village, that is *affordable*, and, ideally, economically *productive*, environmentally *enhancing* and socially *beneficial*”

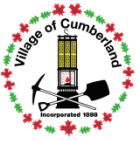




Clean Water and Wastewater Fund

- **We didn't get approved!**
- **Cumberland's Drinking Water Project (\$5m) did get approved**
- **We were "unlikely" to get approved for both...**

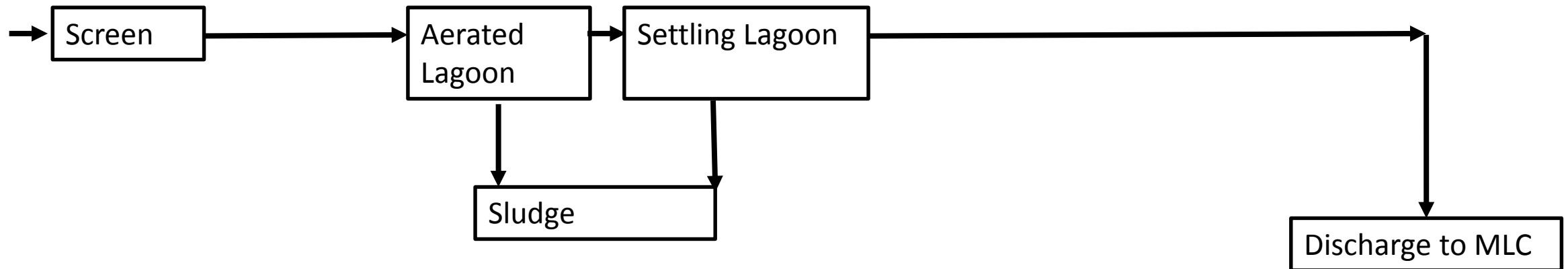




Cumberland Treatment System 2017

Black arrows = Black water

Blue Arrows = Disinfected water

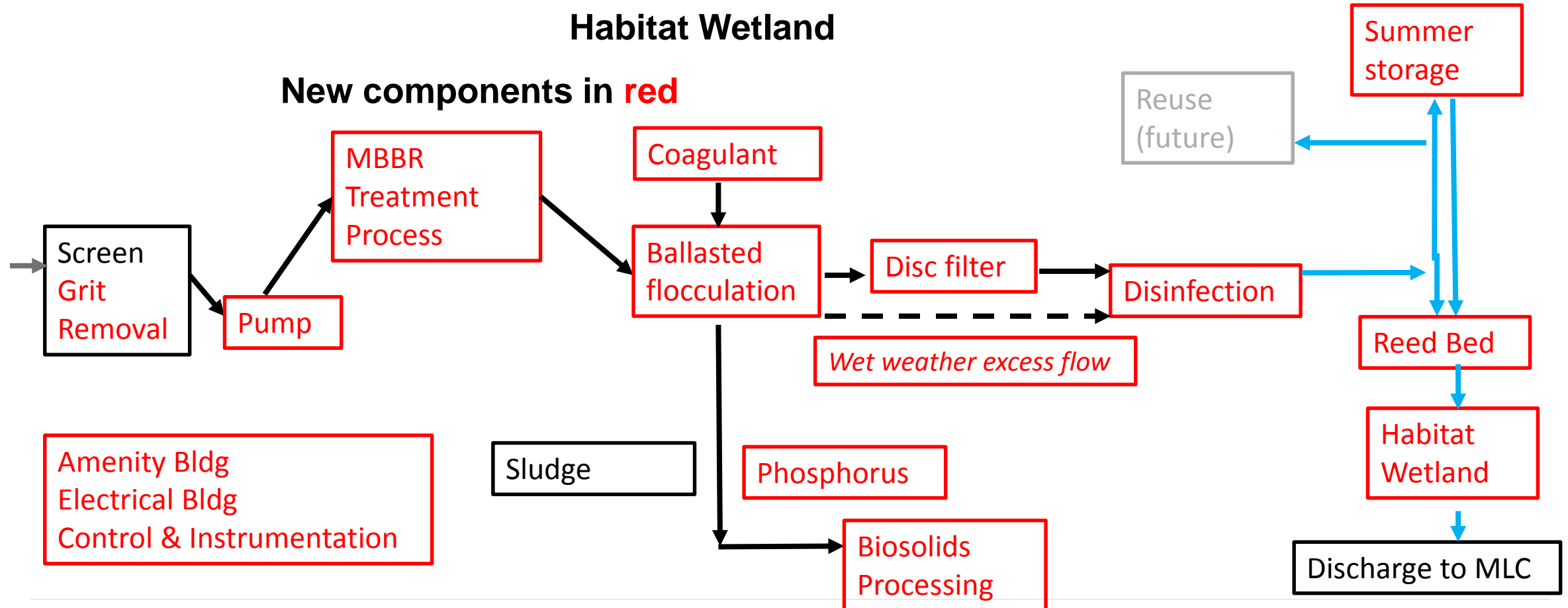


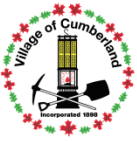


CWWF Proposed Treatment System

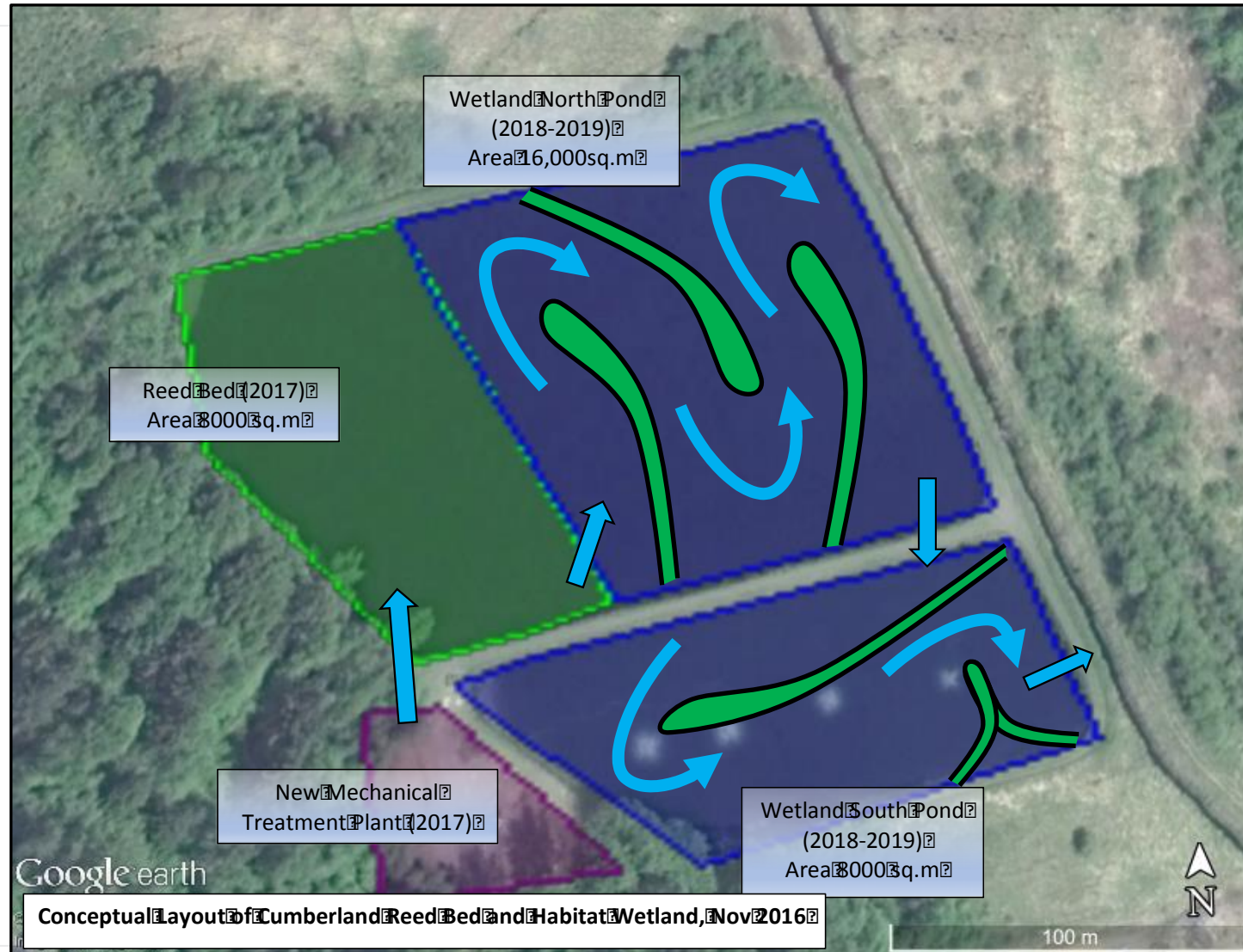
MBBR Mechanical Plant with Reed bed and Habitat Wetland

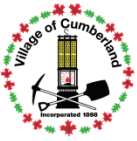
New components in **red**





CWWF Treatment Concept





CWWF Treatment Concept

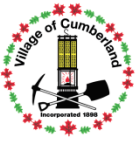
Primary Achievements

1. Disinfection
2. High *quality* summer treatment and P removal
3. High *volume* winter treatment
4. Expanded capacity from 3800 to 7000 people

Secondary Achievements

1. Pharmaceutical removal
2. *Carbon negative*
3. One year construction time
4. Publicly accessible reed bed and wetland

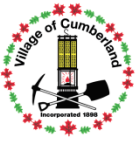




At a cost...

1. \$21m (incl 25% contingency)
2. =\$3000/person
3. Sechelt \$25m for 14,000 people = \$1800/person
4. Lion's Gate (North Vancouver) \$750m for 250,000 people
5. = \$3000/person
 - Not carbon negative
 - No pharma removal
 - Not as innovative
 - Not as "Cumberland"

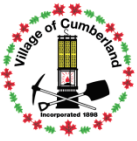




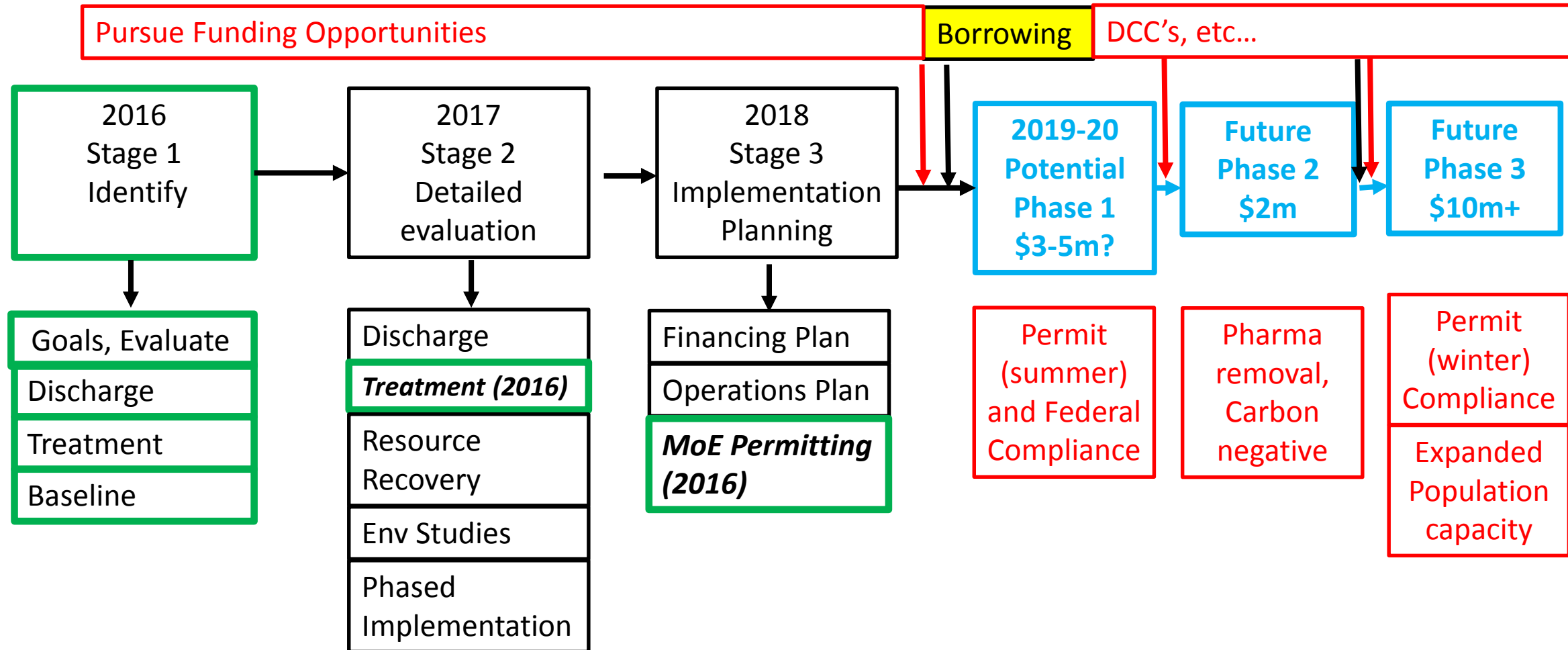
Conclusions from CWWE...

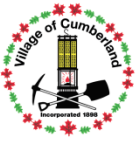
1. \$17m is too big an ask, in one hit, for Cumberland
2. All our targeted innovations did not seem to make a difference
3. We are unlikely to accumulate the funding by multiple smaller grants, in an expedient timeframe
4. Need to break the project into multiple pieces
5. That can be implemented over 5-10 years





Cumberland LWMP Road Map (April 2017)



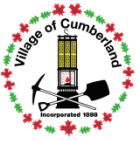


Risks

- Funding may not be obtained
- The work done sits unused for a year or more
- Forces the use of off the shelf treatment systems
- Some innovative treatment options may be excluded
- Project costs after Apr2018 not included – 100c on the dollar
- Ministry of Environment permitting must be brought forward
- Funding at 17c on the dollar
- Winter compliance achieved three years earlier
- Most or all treatment works completed, to be “reuse ready”
- Remainder of LWMP more focused
- **After 18 years of planning, the “treatment” is done!**

Rewards



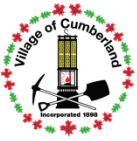


MoE Permitting

- A new look at the existing permit (1998) was revealing...
- *Required* Cumberland to make certain upgrades by 2015;
 - Disinfection
 - Treatment to 30-30 BOD – TSS
 - Phosphorus to <1.0mg/L
 - Peak flows to less than 2700 cu.m/day
 - Environmental monitoring in MLC & Trent River
 - Show plans for works to MoE

- **A miniature LWMP!**

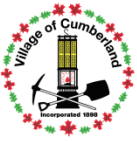




MoE Permitting

Criteria	Permit Pre 1999	Permit Post 1999	2021 Federal WSER requirements	BC MWR requirements for Reuse or stream discharge (LWMP goals)
Average Dry Weather Flow cu.m/day	910	910		
Peak Wet weather flow, cu.m/day	7,160	2,710		<2x ADWF
BOD5 (mg/L)	<30	<30 (max)	<25 (average)	<10
TSS (mg/L)	<60	<30 (max)	<25 (average)	<10
Fecal Coliforms (MPN/100mL)		<200		<1
Total Phosphorus (mg/L)		<1.0		TBD (possibly <0.005 in-stream)

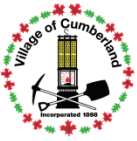




What does the MoE permit mean?

- Less work is required to meet the permit requirement of 30-30, than to meet 10-10
 - If we meet the 30-30, we will also meet the 2021 Federal deadline for 25-25
 - Cumberland will be off the polluters list
 - Future upgrades can improve quality to get to 10-10 and Reuse standard
 - Future expansions can handle increased population
 - Future options for seasonal storage
 - All of this can be done in **phases**
- The basis of a 5-10 LWMP!**

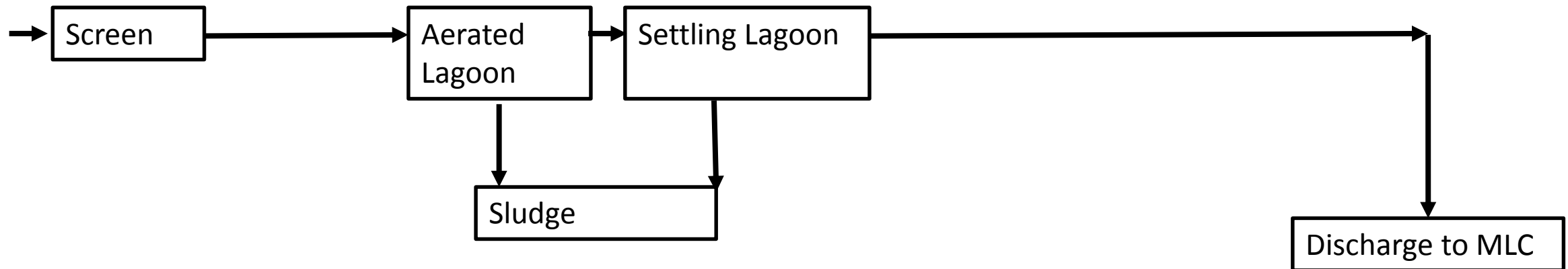


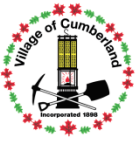


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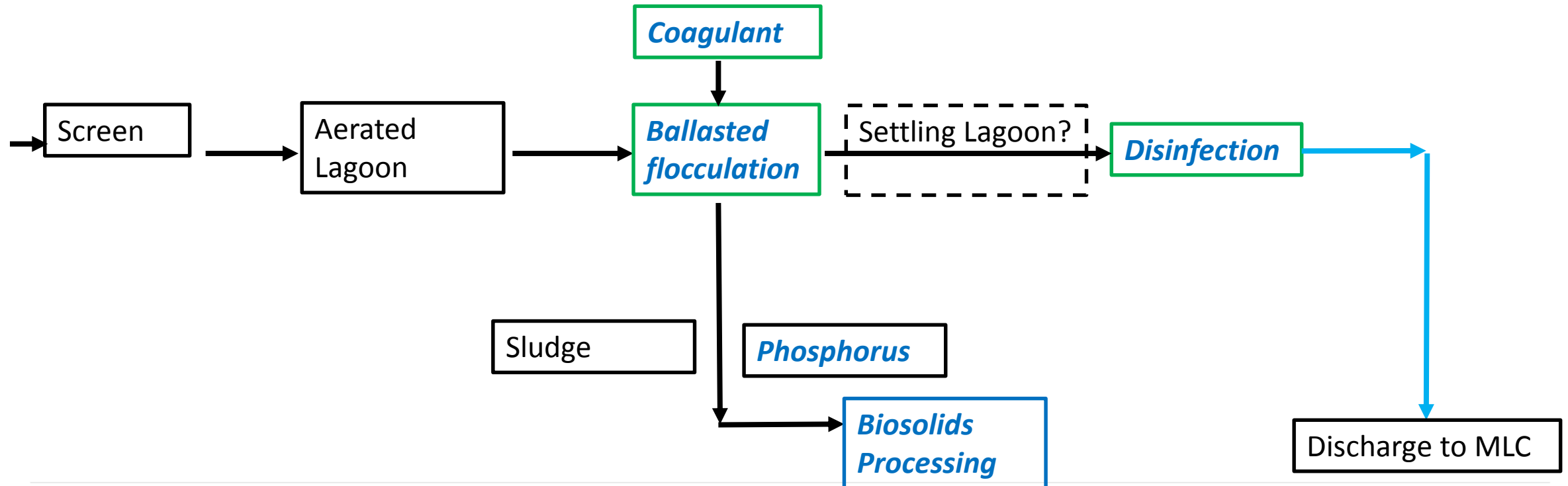


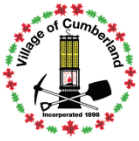


Potential Phased Approach – (to be determined)

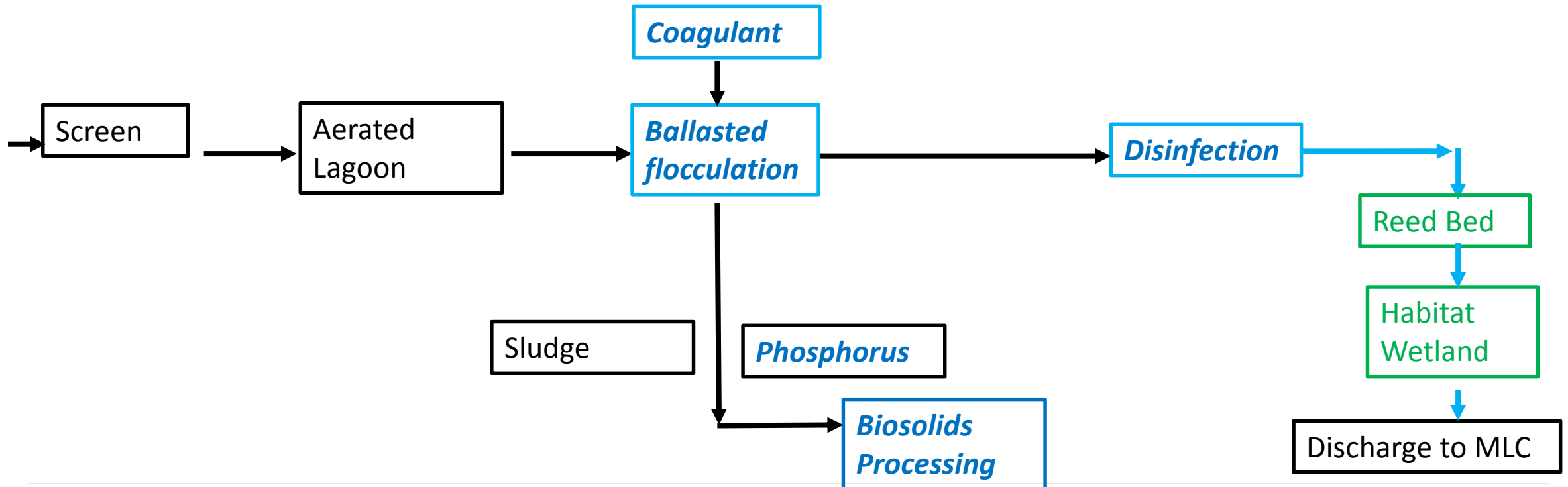
Phase 1 components in *blue*

Goal: to meet current MoE Permit, 2021 Federal Regulations





Potential Phased Approach (to be determined)
Phase 1 components in *blue*
Phase 2 components in *green*
Enhanced environmental protection, aesthetic improvement



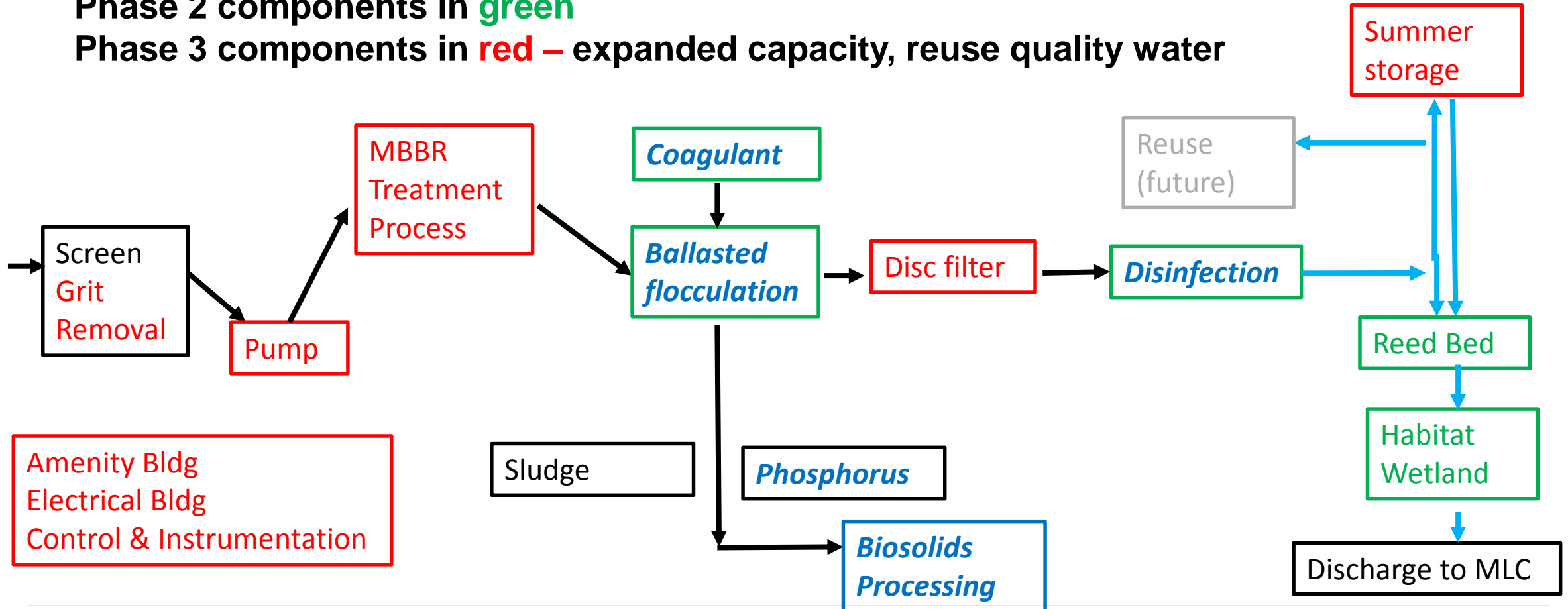


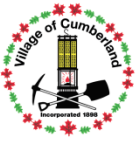
Potential Phased Approach (to be determined)

Phase 1 components in *blue*

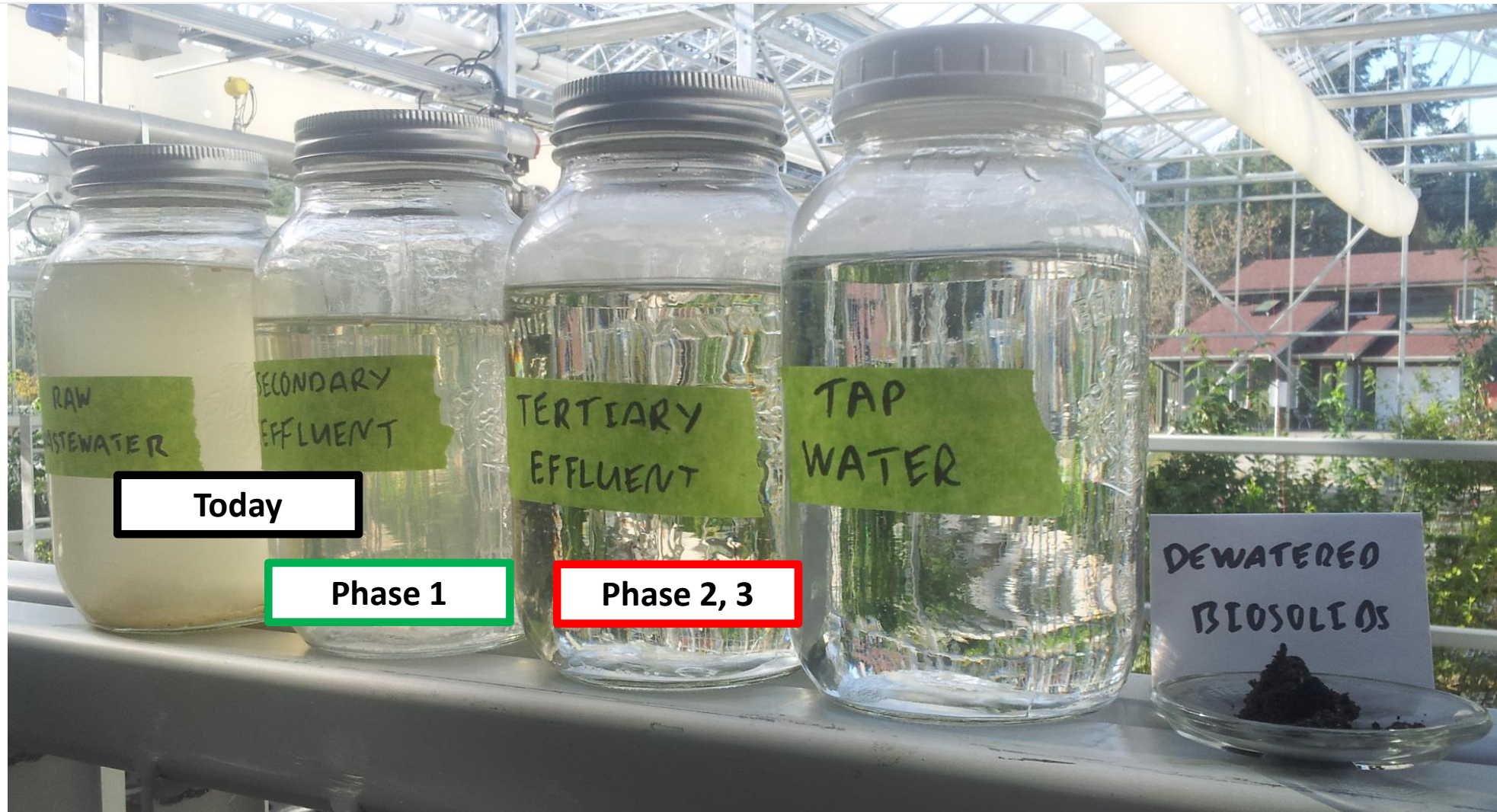
Phase 2 components in *green*

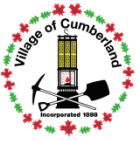
Phase 3 components in *red* – expanded capacity, reuse quality water





How Clean will the water be?



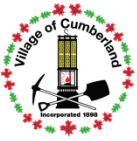


2017 Workplan Study, Study, Study...

Studies, in approximate order...

- Environmental studies on MLC and Trent, and existing lagoons
- Servicing of Comox Lake houses on septic
- Infiltration reduction
- Resource Recovery studies – reclaimed water, heat recovery
- Water Conservation – potential for reclaimed water to offset potable
- Further study on the reed bed, wetland and carbon sequestration
- Discharge Options – Storage Reservoir & wetland, MLC dilutions
- *Re-Engineer treatment process to allow phased implementation plan*



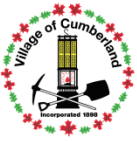


What about the WAC?

Major decisions for the WAC are at the end of the study period; Use

- Select a preferred discharge option
- Select a preferred phased implementation (if several options are available)
- Are the resource recovery concepts (reclaimed water, heat recovery) worth pursuing in the near, or long term?
- ***At the end of 2017, the preferred direction is set, completing LWMP Stage 2***

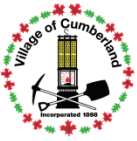




Approximate 2017 meeting schedule

11. April 25 2017 Workplan
12. Sept 8 Review of draft studies
13. Nov 2 – evaluation of options
14. Nov 23 public Open House
15. Nov 30 review feedback, finalise recommendations.
16. Dec 11 – present recommendations to Council

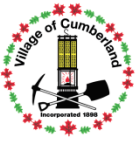




2018 Stage 3

- Refine Implementation Plan
- Financing Plan
 - Grants
 - User fees
 - DCC's
 - Borrowing
- Documentation
- Public Consultation
- Submit Final Report to MoE





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Thank You!

