



Neighborhood Meeting

Thursday, November 5, 2009

Post Point Wastewater Treatment Plant Facility Expansion

Welcome & Key Introductions - Ted Carlson, Public Works Director

AGENDA

1. Meeting Goals – Dave Christensen, CDM

Review what we learned from first meeting, present results of liquid stream process selection and general site layouts using the Triple Bottom Line + methodology, and obtain input on mitigation options

2. Review input from October 22, 2009 meeting – Dave Christensen, CDM

3. Triple Bottom Line + – Lydia Holmes, Carollo Engineers

Review Triple Bottom Line + (TBL+) methodology, defined City objectives, and describe how TBL+ methodology is used to make project decisions.

4. Present liquid stream process alternatives evaluated by staff and Peer Review team – Brian Matson, Carollo Engineers

- A. Alternative 1 - Continued use and expansion of the "core process" (activated sludge).
- B. Alternative 2 - Conversion of the core process to membrane bioreactor (MBR).
- C. Alternative 3 - Continued use of the core process, with parallel expansion using MBR.
- D. Alternative 4 - Continued use of the core process, with parallel biological aerated filtration (BAF).

5. Present site layouts for each alternative, using TBL+ methodology – Brian Matson, Carollo Engineers

6. Summarize Findings – Brian Matson, Carollo Engineers

7. Brainstorm Mitigation Options – Dave Christensen, CDM

South Site:

A. Wetlands

- a) Configure layout to minimize wetlands disturbance
- b) Work within permitting process to mitigate any impacted areas
- c) Other input?

B. Heron Rookery

- a) Configure layout to minimize encroachment on sensitive areas
- b) Sequence construction to reduce impacts during critical times
- c) Other input?

C. Open Space

- a) Configure layout to retain as much trail / open space as possible
- b) Look at options for creating visually attractive buffers
- c) Other input?

D. Other Issues? Functionality, Cost/benefit, Service access, etc.

North Site:

A. Appearance to Public

- a) Buffering
- b) Impact on Harris Street

B. Phasing;

- a) Impact on Existing Businesses
- b) Cost/Benefit Implications on TBL
- c) Long term use flexibility

C. Environmental Issues

D. Other Issues?

8. Project Schedule & Next Steps– Dave Christensen, CDM

Anticipated Milestones

Complete Facilities Plan
Complete Final Design
Construction Begins

Mid-2010
Late 2011
Early 2012

Next Neighborhood Meeting – Please join us in 2010!

At this next meeting, we will present the results of solids stream process selection using TBL+ methodology, present preliminary liquid stream site layout alternatives (with concepts for open space) and obtain additional input on site layouts and mitigation measures.

For More Information, Contact:

Rory Routh, City of Bellingham, Public Works Department
360-778-7900 • pw@cob.org

Or visit: www.cob.org/services/utilities/waste-water-treatment.aspx



Summary of Community Comments

Recap From Neighborhood Meeting 1

Post Point Wastewater Treatment Plant Facility Expansion

Technical Issues - *maximize reliability, performance, & process efficiency*

1. Evaluate use of satellite (remote) storage, treatment and disposal/reuse facilities.
2. Consider innovative, sustainable technologies for energy efficient treatment.
3. Think of wastewater as a resource rather than a problem to treat and discharge.
4. Investigate source reduction and inflow/infiltration (I/I) control.
 - a. Public education for food waste composting collection services
 - b. Reduction in use of garbage disposals
 - c. Water conservation education programs
 - d. Green Construction (LID, LEED, other sustainable features)

Financial Issues - *increase value by controlling capital and life-cycle costs*

1. Evaluate potential for delay of improvements based on slowdown in economy and growth rate.
2. Compare operating costs between conventional design and new/alternative technologies.
3. Pursue grants, loans, bonds, and energy generation funding sources.

Social Issues - *protect public health & safety; protect public assets*

1. Reduce visual impacts - maintain the appealing aesthetics around the facility.
 - a. Protect existing site lines with the new expansion
 - b. Maintain buffers with trees/landscaping
2. Maintain recreational opportunities - loop trails, adequate parking, dog access ...
3. Minimize truck traffic, especially septage haulers.
4. Minimize odors from existing and future facilities.
5. Reduce noise impacts.
6. Continue public education with signage and tours of facilities and habitat.
7. Consider use of the acquired industrial property to the north for future facilities expansion.

Environmental Issues - *minimize impact on local and global environment*

1. Protect the sensitive areas to the south (wetlands, blue heron rookery).
2. Plan for treatment to reduce the nitrogen loading to Bellingham Bay.
3. Minimize air pollution and emissions.
 - a. Compare carbon footprint/greenhouse gas emissions for alternatives



Flows & Loads Summary

Post Point Wastewater Treatment Plant Facility Expansion

Existing WWTP Capacity:

Flow		BOD Load
MM	PH ^(1,2)	MM
20 mgd	72 mgd	25,000 lb/d
Notes: (1) Secondary treatment capacity = 37 mgd. (2) Flows are hydraulically capped from the collection system at 72 mgd.		

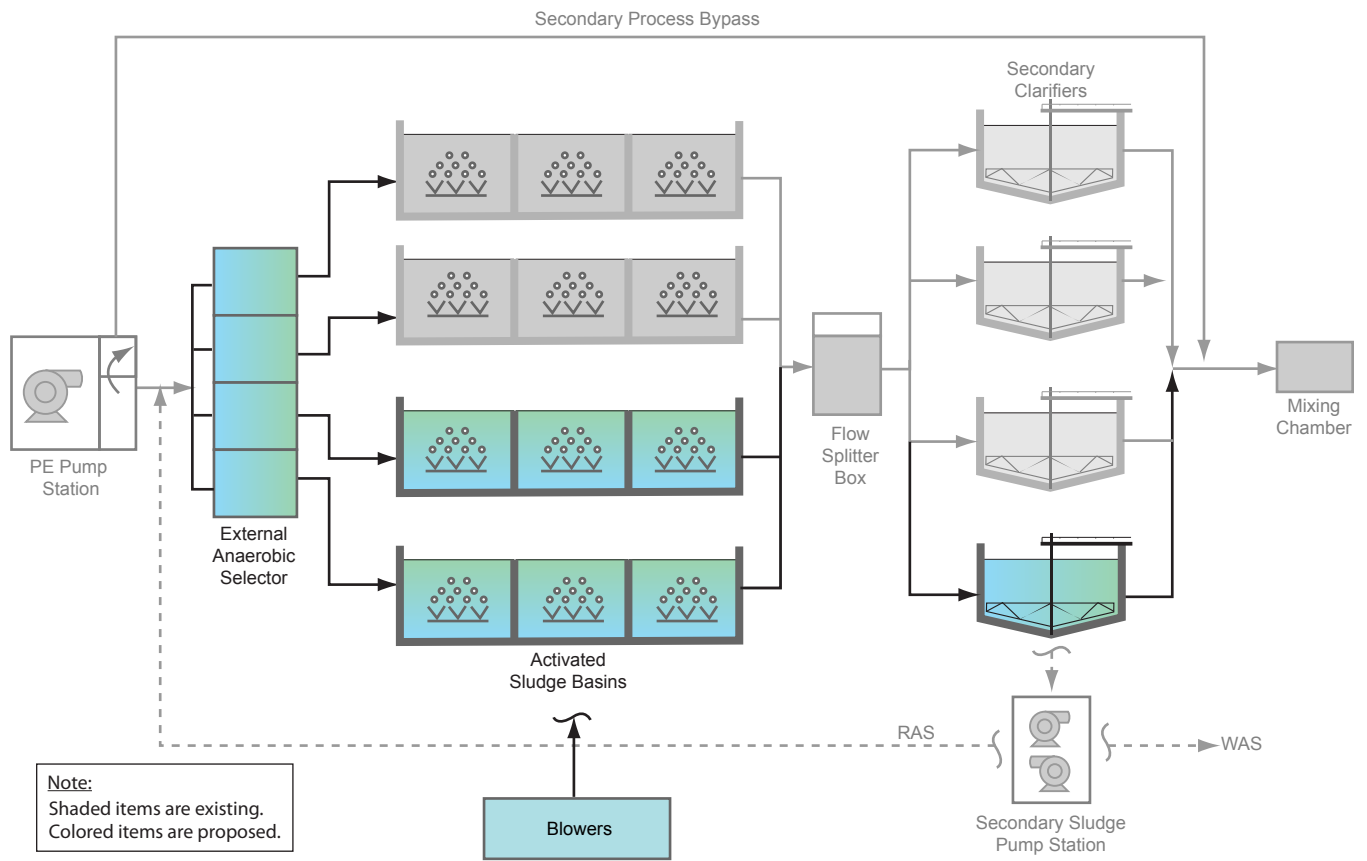
Current and Projected Plant Flows and Loads:

Year	Flow (mgd)			BOD Load (lb/d)
	ADW	MM	PH	MM
2005 ⁽³⁾	10.2	19.8	68	23,000
Design ⁽⁴⁾	17.7	34.4	72	39,900
Notes: (3) Flows reflect the projected 2005 flows based on the applied growth rate from the base flow calculated from the 2003 data, and are slightly higher than recorded flows in 2005. (4) Assumes flows will continue to be hydraulically capped from the collection system at 72 mgd.				

Definitions

- ADW Average Dry Weather. The wastewater flow least impacted by inflow and infiltration during the historically dry months of July through September.
- BOD Biochemical oxygen demand. The measurement of dissolved oxygen used by microorganisms in the biochemical oxidation of organic matter.
- lb/d Pounds per day.
- mgd Million gallons per day.
- MM Maximum Month. This may be used to quantify either flow or pollutant load. The maximum monthly flow is determined as the maximum 30-day running average of the average daily effluent flows. The maximum monthly load is determined as the maximum of the 30-day running average of the average daily influent load.
- PH Peak Hour. The maximum hourly flow.

Source: City of Bellingham Comprehensive Sewer Plan (June 2009)

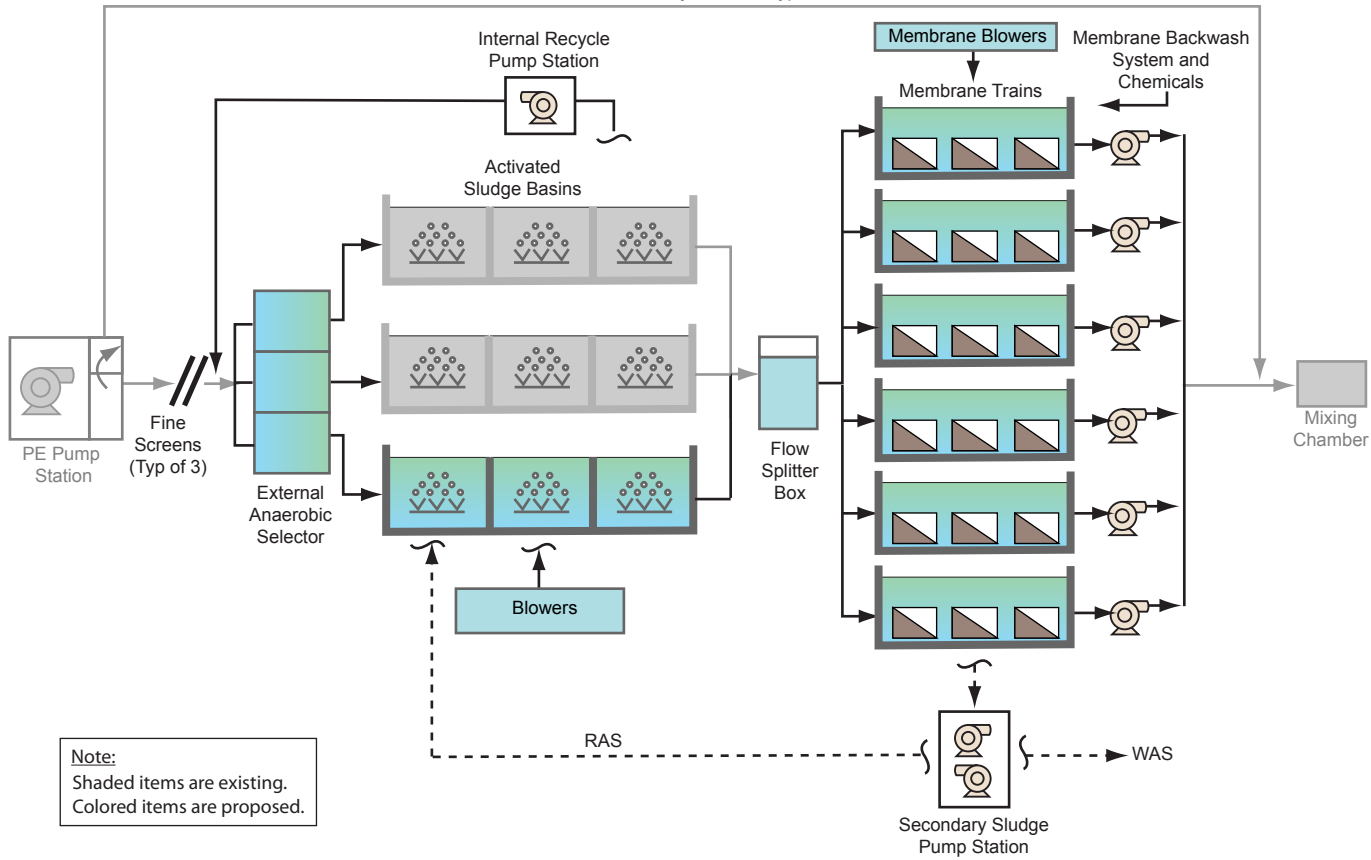


PROCESS SCHEMATIC



PRELIMINARY SITE LAYOUT

**ALTERNATIVE 1
EXPAND CORE PROCESS**



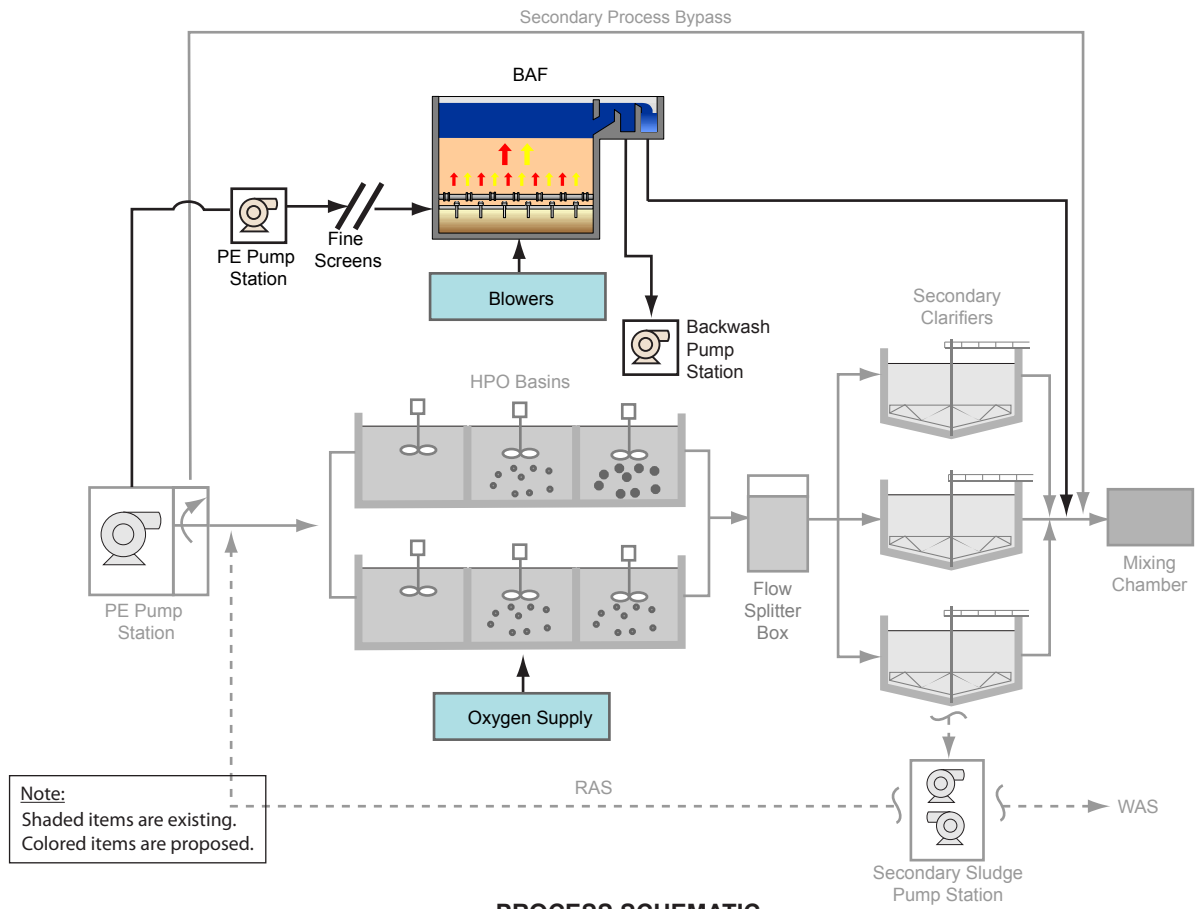
Note:
 Shaded items are existing.
 Colored items are proposed.

PROCESS SCHEMATIC



PRELIMINARY SITE LAYOUT

**ALTERNATIVE 2
 CONVERT TO MBR PROCESS**

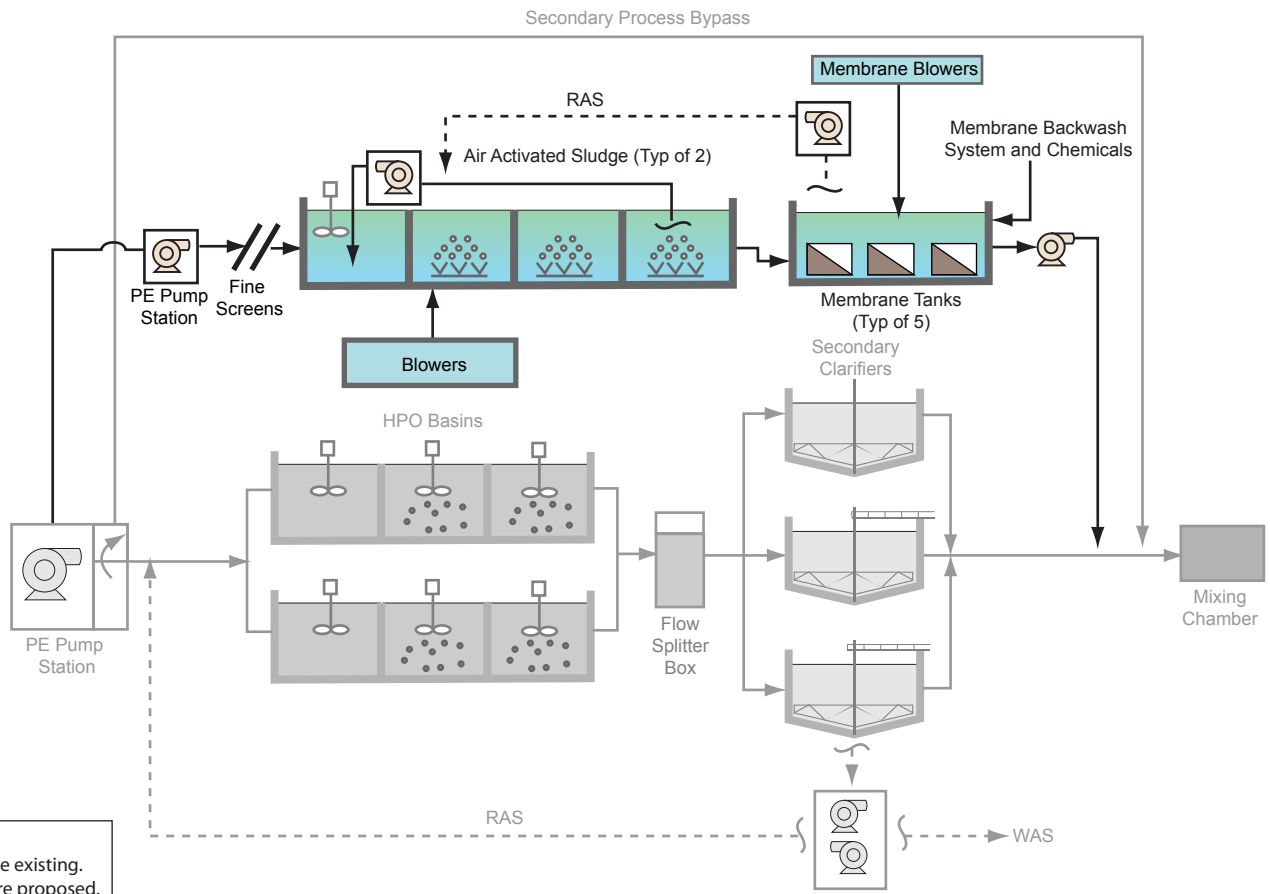


PROCESS SCHEMATIC



PRELIMINARY SITE LAYOUT

**ALTERNATIVE 3
PARALLEL BAF**



PROCESS SCHEMATIC



PRELIMINARY SITE LAYOUT

**ALTERNATIVE 4
PARALLEL MBR**

Triple Bottom Line+ Values for Phase 1 Expansion

Financial

■ **F1:** Minimize Capital Costs

■ **F2:** Minimize Life-Cycle Costs

Social

■ **S1:** Protect Public Health & Safety

- ✓ Reduce CSOs, sewer system backups, and flooding
- ✓ Minimize exposure to toxins

■ **S2:** Protect Public Assets

- ✓ Visual impacts
- ✓ Noise/odor impacts
- ✓ Buffer areas/surrounding open space
- ✓ Traffic impacts (construction, operation)

Environmental

■ **E1:** Minimize Impact on Local Environment

- ✓ Protect water quality of Bellingham Bay
- ✓ Protect local sensitive areas (wetlands, heron)

■ **E2:** Minimize Impact on Global Environment

- ✓ Low GHG
- ✓ Minimize energy use
- ✓ Minimize construction methods

Technical

■ **T1:** Maximize Reliability & Performance

- ✓ Proven technology
- ✓ Flexibility for the future

■ **T2:** Maximize Process Efficiency

- ✓ Maximize use of/integration with existing infrastructure
- ✓ Design/construct for long useful life
- ✓ Efficiency in site layout (hydraulic/spatial)
- ✓ Ease/reliability of O&M)

Comparison of WWTP Alternatives

(Secondary Expansion)

