8/05/04 - sustainability: stormwater-sewage sub-group meeting minutes

Thursday, August 5, 2004

Attendees:
Jennifer Hayward, Marie Matsen, Bob Mention, Margaret Robertson, Mike Ruiz, Joe Russin

Minutes:
Purpose of gathering data: To understand LCC's present impact on the environment.
Group brainstormed the following list of data to be collected.

Sewage data - By whom
Describe state of current system - Margaret
Describe state of proposed system, including sludge and electrical use - Margaret

Data to collect:

- Volume of water in, volume of water out - Mike, Jennifer
- Irrigation volume
- Suspended solids - Mike, Jennifer
- BOD - Mike, Jennifer
- Nitrogen and phosphorus out - Jackie? (class?)
- pH
- Chlorine
- Flora and fauna-pond (+surrounding soil?) - Joe
- Positives
- Precedents for proposed system - engineers?

Stormwater data - By whom
Data to collect:

- Narrative description: Russel Creek, LCC stormwater system. Include watershed limits and where Russel Creek is daylighted - Margaret
- Total volume out, through time (varies by season) - Joe
- Per cent stormwater which runs off - (calculate: Jennifer, Marg?)
- Campus size; per cent campus impervious surface - Margaret
- Metals, fertilizer, pesticides, petroleum - Jennifer
- Suspended solids - Jennifer
- Nitrogen, phosphorus - Jackie? (class?)

Sewage treatment discussion
The problems:
LCC puts too much algae into Russel Creek, robbing stream of oxygen. Native squawfish are now gone. Our lagoons are not adequate; there is not enough mixing zone to dilute our water with freshwater. Lagoons were intended to be temporary; plus rules were different then. Russel Creek does not have enough water in summer. Our stormwater is used for mixing and dilution, then flows into Russel Creek. We have short-circuiting, caused by water coming up in center of primary pond, and between secondary and tertiary ponds.

The solutions:
LCC has tried many things, e.g., holding water in the winter. (We do not aerate the tertiary water. Could the problem be solved by aeration?)

Upgrading of the sewage lagoons is the final bond project. Next week the contractor will begin a 3-week sanitary sewer rehabilitation involving lining of, grouting of, and cleaning out of lines. Then engineers will continue design work.

We have a DEQ plan: a mutual agreement, with timetables. Agreement says we will install a package plant. DEQ is used to the SDR system. Lagoons will no longer be used for treatment, but only for storage. Project is movable; it has currently moved a year. Project is scheduled to start summer 2005. Developing alternative solutions at this point would not be likely to be productive; there is a long, slow submittal process before receiving approval, and the DEQ has approved this project already. There is some urgency: there have been several delays over time, and LCC is not fully compliant.

Cost depends on I & I reduction (infiltration and influent). The current estimate is $1.6 million; however, if we find a bigger I & I, we will need to go to the next larger size of package plant. The package plant will look mechanical, including prominent tanks. Engineers have been asked to look at the installation architecturally, but that is not their field of expertise.

Project engineers have volunteered to come and talk to LCC staff. It was suggested we ask them about precedents for package plants with lagoons used as storage, and about precedents for converting lagoons to package plants.

Data:
Dan Conklin, Grounds department, is in charge of lagoon operation, under supervision of Kevin Hunt from Delta Environmental. We now have an accurate influent meter.

We will check the engineer's report first for data. Mike and Jennifer will get volume, SS, and BOD. There are no data no nitrogen, phosphorus, or irrigation volume. The Science department has water quality test kits, used by Environmental Science classes; perhaps they would be willing to measure pollutants. Joe will get information on pond flora and fauna. (For example, 8-15 species of ducks use the lagoons. This is one of the few Ruddy Duck breeding sites in Oregon.) Margaret asked whether information about flora and fauna in the surrounding soil would be helpful.

Stormwater discussion
Stormwater volume does not affect lagoon operation, either now or for the proposed package plant. What goes into the lagoons is city water.

LCC has water rights to the pond on the hill south of campus, which sits on LCC property. Might be appropriate site for future restoration; is now overrun by poison oak.

Joe will contact Bloomberg Neighbors, who have stormwater volume data. Jennifer will get water quality testing data on stormwater. In addition, perhaps Environmental Science classes would be willing to measure pollutants. Margaret will describe the current stormwater system, try to approximate total campus area and percent impervious surface, and try to answer Mike's question: "Where is Russel Creek?" (Where did it flow historically? Where does it flow now? Where are the watershed boundaries?) There was an unfinished

discussion of calculating percent stormwater runoff, e.g., comparing Weather Service rainfall data with stormwater volume data from the same time periods.

Joe mentioned regional precedents: Pope & Talbot in Halsey uses a constructed wetland. Arcata, California does sustainable wastewater treatment; Joe has a file on this. There is word that the State of Oregon will be doing stormwater treatment in some rest areas. OWEB, the Oregon Watershed Enhancement Board, has grants for watershed enhancement; their website is at oweb.st.or.us.