

Appendix 1

St. Stephen

Grant Godfrey, an engineering consultant who works for the Town of St. Stephen, gave a presentation on behalf of the Town.

- He indicated that the Town embarked upon a two-phase sewage system upgrade project in 2001. The first phase involved constructing a new sewage treatment.
- The new plant is meeting requirements established by the Province of New Brunswick and wastewater from the plant is chlorinated and dechlorinated prior to being discharged to the river.
- Phase 2, which has been partially carried out as resources permit, involves a \$5.6 million plan to eliminate CSOs from the Town's sewer system. The Town applied for funding to carry out this work under the Municipal Rural Infrastructure Fund program in 2001, however, it now appears unlikely that funding will be provided through this program. The application is still awaiting a decision. The cost of carrying out this work now has been estimated to be in the order of \$7.5 million.
- There are currently 28 CSOs in the St. Stephen sewer system with 11 located along the riverfront.
- These CSOs overflow:
 - in periods of intense precipitation or prolonged wet periods.
 - a long power outage when pumps are unable to work - an infrequent event and the system has storage capacity that could accommodate the resultant extra loading for a period of time.
 - pump failure – an infrequent event and there are backup pumps at all of the pumping stations.
- Without the CSOs, sewage would back up into homes and businesses on the waterfront and on to the streets.
- Before an overflow event does occur, it is necessary for the flow in the system to be 2 to 3 times greater than normal flow.
 - There can be four to five times normal flow in the system during extreme weather precipitation events.
- The only practical way to deal with the CSOs is to separate sanitary and storm sewers. The only other solution is to build a treatment plant large enough to handle increased flows.

- As funds become available for road work in the town, CSOs are eliminated and illegal flow connections from homes and businesses (e.g., roof drains) are also identified and eliminated.

Calais

Anna Leis Hafford of Olver Associates, the consulting firm that manages the City of Calais' sewage treatment facility and sewer system, gave a progress report regarding measures being taken by the city to eliminate CSOs.

- Work to remove CSOs in Calais is being carried out as part of a ten year plan begun in 2007 developed jointly between the city and the Maine Department of Environmental Protection (DEP).
- Maine Department of Environmental Protection (DEP) requires that Calais eliminate their CSOs so they can operate in compliance with regulations.
- DPE, the City and the consultant put together a schedule for dealing with the most important issues first - that is what we are working through now.
- The City decided to privatize their wastewater treatment plant because they had so many challenges that they needed somebody professional to come in and make the plant operate the way it should with process control procedures and reporting requirements and a daily report that comes to Olver's their office.
- The consultant implemented a full reporting requirement and we report it to the DEP.
- Pump stations were not large enough and were not in good condition. The goal was to get as much of the flow to the sewage treatment plant —as much as it could handle.
- All CSO events are now reported.
- Made repairs to all of the pumping stations because quite a few of them were not operating at their full capacity and there had been dry overflows in the past.
- All CSOs have been licensed through a new waste discharge licence by DEP so now the city is not operating out of compliance. Approval is based on flow and the goal is to reduce contamination flowing into receiving waters.
- The City also has a required plan of action though their CSO Master Plan.
- There was a realization that the City had to start somewhere we and the DEP agreed that we should start working on the CSOs that occur at the pump stations. They started focussing on pump station overflows because that is where they thought they could make the biggest difference.
- After the sewer work is completed pump station CSO events should be significantly reduced.

- There has been an approximate reduction of CSO events from pump stations of 89% since 2003.
- The percent reduction is expected to improve to 96% in the 2008 operating year.
- An aggressive schedule and the ability to get grants are key factors in moving forward.

Note: Slides presented at the meeting are in Appendix 2.

Maine Department of Environmental Protection

Ed Logue presented the State of Maine's perspective on CSOs:

- The CSO program started as a strategy in the late 80s, became a policy in the mid-90's and became a regulation in the early 2000's.
- On a State-wide basis there has been a large decrease in CSO volume discharged between 1987 and 2007—5.2 down to 1.5 billion gallons).
- Over last 20 years there has also been a significant decrease in the number of discharge events (from 1600 range in 1987 down to about 600 in 2007).
- There has been a progressive reduction over time (1987–2007) of about 125 million gallons to 30 million gallons per inch of precipitation.
- The number of CSOs has gone from 350 down to less than 200.
- Completely handling large storms is a major undertaking. CSOs were originally put in as a safety measure and to prevent sewage from backing up into people's homes, manhole covers popping and, if too much water gets to treatment plants, you can damage the STP.
- In terms of a CSO comparison by community, Calais contributes 1 % of overflow in million gallons percent of total. By comparison, Portland, Maine's biggest city, makes up 39% of the total CSO discharge in the State.
- Calais has come a long way since a few years ago - but DEP does not want to give the impression that we've solved this problem: it is a long-term problem.
- In conclusion, this is an old problem that was created before most of us were born and we need to work to solve the problem over time.
- As Calais is a small part of the CSO problem in the State of Maine, likewise, Maine is a small part of the problem nationally and in comparison to many other states.

Note: refer to Appendix 3 for additional details regarding this and the next presentation.

U.S. Environmental Protection Agency

Carol Wood, from the U.S. Environmental Protection Agency (EPA) Region 1 (New England), provided a brief overview of the federal perspective on CSOs in New England.

- There are one hundred communities in New England with CSOs that need to be removed
- An estimated \$ 4 billion dollars is needed to correct the CSO problem in New England - it is not an easy thing to fix and it is very expensive
- The CSO Program is regulated under the Wastewater Discharge Elimination Program.
- In the State of Maine, the EPA has delegated that program to DEP and the State runs the permitting program.
- The State is using long term control plans with defined schedules under permits or enforcement actions with the understanding that this is not an easy fix and will take time to correct.
- There is a conscious effort to look at reasonableness in terms of cost with those schedules.
- It is taking longer to fix than everybody would like because of the cost.
- From a Federal, State and local government perspective we are looking at trying to find innovative ways for addressing this situation.
- We are going for low hanging fruit - easier and less expensive ones to fix - to get immediate results and a better return on the dollar.
- The approach to eliminating CSOs is to take it on a case-by case basis within individual communities.

NB Environment

Tim LeBlanc of the New Brunswick Department of the Environment (NBDOE) gave an overview of the situation in New Brunswick relative to the regulation of CSOs.

- Wastewater treatment plants are regulated provincially by the NB Department of the Environment.
- An approval to operate deals with the effluent from wastewater treatment facilities but also covers the pump stations and the piping along the way.
- Overflow events in sanitary sewer flows or combined sewer flows, are required to be recorded by the Municipality

- If it's related to wet weather, they are required to record that and submit that information annually to us.
- If it's a sanitary sewer overflow that has resulted from a failure of the infrastructure then that has to be reported immediately through an emergency reporting number.
- These events are essentially non-compliant, however, the department has traditionally recognized the challenges of dealing with CSOs and that they are normally the result of aging infrastructure—older systems that do not meet the standards we have to-day were designed to collect both wastewater and storm water.
- However, it was recognized in 2003 that there are various issues *nationally* with respect to municipal wastewater that really needed to be addressed and part of this issue was the lack of a national standard for municipal wastewater effluent (MWWWE).
- Municipalities in some jurisdictions have very aggressive wastewater treatment systems in place and there are other areas that have next to nothing.
- Within jurisdictions, including New Brunswick, we have areas that have significantly less treatment in place than many other communities elsewhere in the country.
- In 2003 a national committee was formed through the Canadian Council of Ministers of Environment (CCME) which is a partnership of all environment Ministries across the country including the federal Environment Ministry
- The CCME got together to develop a national strategy for MWWWE to address not only the lack of standards but also the issues around CSO and sanitary sewer overflows.
- After about four years of negotiating through the CCME process, we are very close to having a national strategy that is moving before Ministers shortly and we are hoping to have it in place in the Fall.
- Part of the strategy will have a national standard for MWWWE which will require all municipalities to have a minimum of secondary treatment.
- In addition to that, because the strategy is risk-based, we are going to develop a minimum level to ensure that the treatment that is in place is suitable to protect the environment and, so as part of that, each municipality will have to do an environmental risk assessment of their whole system; CSOs would have to part of that risk assessment.
- Municipalities will be required to characterize their wastewater effluent and over the period of a year would develop a model using a predefined mixing zone, and then develop site specific discharge parameters they will have to meet in addition to the national standards.
- In addition to that, they will have to develop a plan that will look at their combined and sanitary effluent overflows and develop a long term plan to reduce those overflow events.

- Also there will be national standards for CSOs they will have to meet as well and those include no increase in CSOs due to new development or re-development and no CSO discharges during dry weather flow - if you have an overflow during dry weather, obviously you have a different problem happening.
- Floatable materials will have to be removed from overflows wherever possible so there will have to be a significant initiative to make sure plastics and other debris are not released during overflow events.
- It will be implemented based on risk and Municipalities that we feel are posing a bigger risk to the environment will be expected to move forward faster.
- We will be outlining implementation schedules and expectations for each municipality probably towards the end of this year.
- This will be mandatory and phased in and there will be communication with municipalities where we will outline time lines.
- There will be a thirty-year implementation plan to have secondary treatment for all municipalities across Canada. The plan is to have all municipalities complete their risk assessment within eight years.
- It is estimated that a risk assessment will cost somewhere between \$10K and \$50K depending on the size of the municipality.
- There is an economic plan as part of the strategy but it will be based on existing funding programs.
- Mr. LeBlanc observed: that “We see some similarities between the approach the State of Maine and the U.S. have taken - they are probably a few steps ahead of us but, hopefully, we will be able to catch up with the implementation of this new strategy starting next year.”