REGION OF OTTAWA-CARLETON | REPORT
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Your File/V/Réf.

DATE 25 May 1999

TO/DEST. Co-ordinator
Planning and Environment Committee

FROM/EXP. Director, Engineering Division
Environment and Transportation Department

SUBJECT/OBJET **RICHMOND SEWAGE PUMPING STATION AND FORCEMAIN STUDY**

DEPARTMENTAL RECOMMENDATION

That the Planning and Environment Committee recommend that Council approve the recommendations as outlined in the May 1999 Environmental Screening Report for the above study, namely:

1. **Approve the recommendations as outlined in the May 1999 Environmental Screening Report for the above study, namely:**

   a) **undertake capital works needed to permit the infrequent use of Richmond Lagoon Cell C for temporary storage of sewage flows as a contingency for the Richmond Pumping Station;**

   b) **carry out improvements to the 500 mm forcemain, including twinning where it crosses underneath the Jock River and construction of a new valve chamber;**

   c) **undertake modifications to the Richmond Pumping Station to permit pumping of Jock River water to the lagoons for the purposes of enhancing the Richmond Conservation Area;**

   d) **construct fencing around the Richmond Lagoon Cell C to address safety concerns;**

   e) **the Region and Township of Goulbourn enter into a joint use agreement for the Richmond Lagoon area;**

f) the Region decommission the old Richmond Pumping Station.

2. Confirm the Regional Staff response to the Township of Goulbourn's conditions for a Shared Use Agreement of the Richmond Lagoons.

EXECUTIVE SUMMARY

An improved contingency plan is required for the Richmond pumping station and forcemain. The plan is required under the following conditions:

- a forcemain break occurs;
- major forcemain maintenance is required; or
- flows from the Richmond sewage collection system exceed pumping station capacity as a result of extreme wet weather events.

The existing plan involves the use of trucks to haul sewage to the extent practical. However, in most cases, a discharge of sewage to the Jock River or other surface water body is required. It is estimated that contingency requirements occur on average once every two to three years.

A wide range of alternatives were considered including:

1. the "do nothing" option;
2. increased control of extraneous flows entering Richmond's sewage collection system;
3. an underground tank for temporary storage of sewage;
4. use of the Richmond sewage lagoons for temporary storage of sewage;
5. a combination of options 3 and 4.

The "do nothing option" is not considered acceptable due to the risk to the natural environment. While it is recommended that the Township of Goulbourn continue to control extraneous flow, these efforts will only address one element of the problem over the long term as the Township's sewer system is improved. The underground tank option was rejected primarily due to the extremely high costs involved in constructing a tank with adequate capacity.

The use of the Richmond sewage lagoons is the recommended solution for temporary storage because:

- more than adequate storage volume is available;
- only minor infrastructure upgrades are required;
- it was concluded that potential impacts on existing lagoon habitat were insignificant;
- mitigating benefits to the lagoon habitat are proposed or are inherent to the proposed solution.

A public open house was held, which indicated no wide-spread opposition to the proposed solution.

The Township of Goulbourn has indicated support for the proposal. Stakeholders associated with the management of the Richmond Conservation Area have a number of outstanding concerns which can only be addressed through the preparation of a joint-use agreement for the lagoon area and through continued consultation during the detailed design process.

The study resulted in a number of other recommendations to improve system reliability and to mitigate the impact of the proposal on the lagoons.

BACKGROUND

The Richmond Pumping Station and Forcemain Study was approved by Council in February, 1998 (CSEDC Report 2). Connelly McManus Engineering Ltd. was awarded a contract to undertake the study.

Sewage from the Village of Richmond flows to the Richmond Sewage Pumping Station and is pumped through a 13.5 km, 500 mm diameter, forcemain to Glen Cairn (Kanata). The local sewers in the Village of Richmond are owned by the Township of Goulbourn, and the pumping station and forcemain are owned by the Region. The intent of the study was to:

- prepare an improved contingency plan for the pumping station and forcemain;
- identify improvements to the pumping station and forcemain that would increase system reliability; and
- prepare a decommissioning plan for the old pumping station, which was used to pump sewage from the Richmond area to the Richmond Lagoons until 1983.

The contingency plan for the pumping station would be executed when:

- a forcemain break occurs;
- major forcemain maintenance is required;
- flows to the station exceed station capacity.

Three forcemain breaks have occurred since its commissioning in 1983. No major planned maintenance has been undertaken since the forcemain was commissioned, but the air valves on the forcemain are corroded and require immediate repairs. The forcemain will need to be emptied of sewage before this work can be carried out.

Under most conditions, significant excess pumping capacity exists at the pumping station (Normal dry weather flow to the pumping station is about 20 L/s on average.) However, during extreme wet weather events, peak flows can sometimes exceed the station capacity of 160 L/s. These high flow rates are due to excessive extraneous flows into the Goulbourn sanitary sewer system which continue to occur in spite of on-going efforts by the Township to upgrade their system. Through the Region's Flow Management Program, the Region will continue to work with Goulbourn to identify and control these extraneous flows.

It is estimated that contingency action is required once every two to three years on average. Under existing conditions, trucks are used to the extent possible to haul sewage to the Region's

sewage treatment plant when there is a forcemain break, but typically a spill to the surface water environment will occur. When the pumping station capacity of the station is exceeded, a by-pass to the Jock River is required. The intent of the new contingency plan is to minimize the risk of sewage spills and bypasses to the Jock River.

Improvements to the pumping station and forcemain were to be identified as part of the study in order to increase system reliability. Such improvements would reduce the risk of system failures and the frequency at which the contingency plan would be required. Improvements to be examined were to include those which would provide low-cost capacity increments to offset the impacts of high rates of extraneous flow which are experienced during rare wet weather events.

The old Richmond Pumping Station which pumped sewage to the Richmond lagoons until 1983 was not properly decommissioned when the new pumping station and forcemain began operation. Under existing conditions, the old station is a potential safety hazard to the public.

DISCUSSION

The study was conducted in accordance with the requirements of the Class Environmental Assessment process and involved the following elements:

- evaluation of existing flow data, including events resulting in bypass to the Jock River;
- evaluation of critical dynamic pressures in the forcemain, pumping station characteristics and operational procedures;
- identification of system improvements;
- identification and evaluation of contingency options;
- preparation of conclusions and recommendations; and
- preparation of a decommissioning plan for the old pumping station.

ALTERNATIVES

A number of possible contingency plan alternatives were considered, resulting in the identification and evaluation of six main options:

1. The "do nothing" option

   The do nothing option is unacceptable due to the risk to the surface water environment. A variation on this option was considered which involved use of trucks during extreme wet weather events. The evaluation considered the number of truck-hours that would be required to manage large volumes of sewage, and the residual risk to the Jock River should the trucks not be able to keep up with the flow. This option was found to be impractical due the potentially high costs and large number of trucks required, the disruption to local residents, and the impact on air quality due to truck emissions.

2. Extaneous flow control

Control of extraneous flows will not address the requirement for a contingency in the event of a forcemain break or a need for major forcemain maintenance. Nonetheless, it was recommended that Goulbourn Township continue its extraneous flow control efforts. These efforts will ultimately reduce the risk of sewage bypasses due to the resulting decrease in flows during wet weather conditions. However, the degree to which the risk is reduced in the short term cannot be quantified.

3. Temporary storage of sewage flows in an underground storage tank

An underground storage tank sized to provide a significant reduction in the risk of by-pass to the Jock River was estimated to cost $3.5 million, with significant additional costs if such a tank could not be located in the Jock River floodplain, adjacent to the pumping station. This option was rejected due to the extremely high cost to benefit ratio.

4. Temporary storage of sewage flows in the Richmond Lagoons

The Richmond Lagoons had been used from 1969 until 1983 to store and treat sewage from the village. The Ministry of the Environment approved the new pumping station and forcemain with the following provisions:

- an emergency bypass to the Jock River; and
- a connection to the lagoons for use in the event of a forcemain shutdown.

From 1983 until 1986 the lagooons were not required in response to a forcemain shutdown. While not formally decommissioned, the lagoons were subsequently turned over to the Township and incorporated into the Richmond Conservation Area. Evaluation of the Richmond Lagoon bypass option involved the following:

- an evaluation of the existing 200 mm forcemain linking the pumping station to the lagoons;
- a geotechnical investigation to verify the integrity of the lagoons;
- an evaluation of potential impacts of bypasses;
- an evaluation of the capacity of the lagoons.

It was found that, under existing conditions, only one of three lagoon cells (Cell C) has the integrity to hold sewage, but that one cell would have more than adequate capacity to store flow from the most extreme emergency considered possible. An evaluation of the potential impacts on habitat was undertaken by Jacques Whitford Environmental Ltd., who concluded that these impacts would not be significant.

The use of Richmond Lagoon Cell C was recommended as the best contingency plan alternative.

5. Temporary storage of sewage flows in storage tanks and the Richmond Lagoons

Following public consultation, it was suggested that small above-ground storage tanks be used for more frequent needs, while Lagoon Cell C be used for extreme events. This option was rejected primarily due to the lack of any certainty that the use of such tanks would reduce the frequency at which Cell C would be required, the high cost of such tanks, and the likelihood of concerns about above-ground sewage storage in the Village of Richmond.

CONSULTATION

The study was carried out to meet the requirements of Phases 1 and 2 of the Class Environmental Assessment process for Municipal Water and Wastewater Projects.

The study steering committee included representatives from the Region, the Ministry of the Environment, and the Township of Goulbourn. The Goulbourn representative on the committee also serves as Township staff support for the Richmond Conservation Area Subcommittee (RCAS). Several meetings were held with the RCAS to discuss the option of using the Richmond Lagoons for contingency purposes.

A public open house took place in the Village of Richmond on 27 January 1999 to describe the problem, the alternative solutions, and the study recommendations. A total of 21 people signed in at the open house, and a total of 5 questionnaires were completed. Of these, only 1 indicated clear opposition to the study conclusions. The results of the open house, which was well publicized and conveniently located, lead to the conclusion that there is no wide spread public opposition to the proposal.

Subsequent to the open house, two letters were received which expressed significant concerns regarding the proposal. One was received from members of the RCAS, and one was from a local resident. Comprehensive responses were prepared and a follow-up meeting was held with the Township of Goulbourn and the RCAS on 07 May 1999.

The Township has indicated that it supports the proposed contingency plan provided that a joint use agreement can be prepared in which the Region commits to:

- pump water to the Richmond Lagoons to meet the broad objectives of the Richmond Conservation Area Management Plan; and
- identify a means of restricting access to Lagoon Cell C which is sensitive to the aesthetics and functions of the Conservation Area.

Stakeholder Concerns

The RCAS recognized that the lagoons may benefit from the occasional infusion of nutrients contained in sewage, but had a number of concerns including:

- visual impacts and restrictions on access to the lagoons, including potential fencing requirements;
- constraints and opportunities associated with the proposal in terms of implications to the Richmond Conservation Area Management Plan;
- potential impacts on habitat;
- routing of any pipes to be constructed;
- construction impacts.

The primary opportunity associated with the proposal was the potential future use of the pumping station to pump river water into the lagoon cells to sustain and enhance existing habitat.

A local resident had a number of similar concerns regarding the visual impacts of fencing and the potential for frequent use of the lagoons for sewage storage.

Response to Stakeholder Concerns

While it is the intent of the Region to drain back any wastewater after it has been stored in Cell C during emergency conditions, the RCAS has requested that certain water levels be maintained over the course of the year. Any river water which is pumped to Cell C would be considered to be contaminated due to the occasional presence of wastewater. It is the recommendation of our Legal Department that fencing be erected around Cell C to minimize risk to the community. However, it is also recommended that the design of the fencing be carried out in consultation with the Township of Goulbourn to address the needs of the RCAS. It is further recommended that the Region negotiate an agreement with the Township to share the cost of this fencing given the potentially significant costs above normal Regional requirements for fencing. The RCAS is not in agreement with the recommendation for fencing, preferring alternatives such as signage, vegetative barriers, or use of security personnel services.

Potential alternatives for pumping water into the lagoons were being discussed by the RCAS at the time that the study was initiated. However, the RCAS had not prepared any feasibility studies, cost estimates, or evaluations of financing options. As part of the study, it was determined that modifications to the pumping station could be carried out that would permit the pumping of water from the Jock River to the lagoons at an adequate flow rate. Although no agreement has yet been reached with the Township, it is recommended that the Township pay for the capital costs of these modifications and that the Region pay for the associated engineering services, contract administration, and on-going operation and maintenance of the water supply system. Based on the information provided by the RCAS, three to four pumping operations would be required each year, with a continuous pumping duration ranging from 2 to 12 days. Pumping of water from Cell B to Cell C using portable equipment, and drawdown of water from Lagoon Cell C to the pumping station would also be required.

As described above, the work undertaken by Jacques Whitford Environmental Ltd. indicated that the use of Cell C for contingency purposes would not have a significant impact on habitat.

Concerns related to the routing of pipes and the mitigation of construction impacts will be addressed as part of the detailed design of the study recommendations.

STUDY RECOMMENDATIONS

At the conclusion of the study, the following major recommendations were made (refer to Annex A for a figure illustrating some of these recommendations):

1. lagoon Cell C should be used for temporary storage of sewage flows for contingency purposes;
2. sewage should be drained back to the pumping station following any contingency event in order to minimize the time that sewage is present in the Lagoon;
3. the existing 200 mm forcemain linking the pumping station to the lagoons should be extended to permit direct discharge of sewage to Cell C;
4. a high capacity bypass should be constructed to link the existing 500 mm forcemain to Cell C.
5. a weak section of the 500 mm forcemain underneath the Jock River should be twinned;
6. a second starter for the high capcity pumps at the pumping station should be installed; and
7. a new valve chamber for the forcemain should be installed.

The twinned section of forcemain and the new valve chamber are needed to provide additional protection against forcemain failure due to the risk of high pressures in the forcemain. The new pump starter would permit the station to continue to operate at full capacity in the event that the existing starter were to fail.

It was concluded that there are no “low-cost” system improvements which would provide a significant increase in pumping station capacity.

In order to address stakeholder concerns it is also recommended that:

1. modifications to the Richmond Pumping Station be carried out to permit water to be pumped to the Richmond Lagoons;
2. the Region provide an outlet to Cell B as part of the construction of the 200 mm forcemain extension to Cell C (this outlet to be used for pumping Jock River water to Cell B).
3. the Region consult with the Township of Goulbourn on the design of fencing required to restrict access to Lagoon Cell C.
4. the Region and Township enter into a Joint Use Agreement for the conservation area which would address:
    - what infrastructure will be owned and operated by each party;
    - sharing of capital, operation and maintenance costs associated with modifications to the Richmond Pumping Station and construction of fencing around Cell C.

It is also recommended that the Region decommission the old Richmond Pumping Station in accordance with the recommendations of the study report.

The Class Environmental Assessment Process will require that a notice of completion be prepared and the Environmental Screening Report be placed on the public record for a period of thirty (30) days. Should there be no request to "bump-up" the study to a full Environmental Assessment, the project will be deemed approved and will proceed to detailed design and construction.

FINANCIAL IMPLICATIONS

The estimated cost associated with the all recommendations which would be financed entirely by the Region is $810,000. This includes a proposed allocation of $50,000 for the Region's share of the fencing cost. Funds are available in the 1999 Capital Budget, Account No. 932-42056, Richmond Pumping Station Upgrade, in the amount of $244,000.

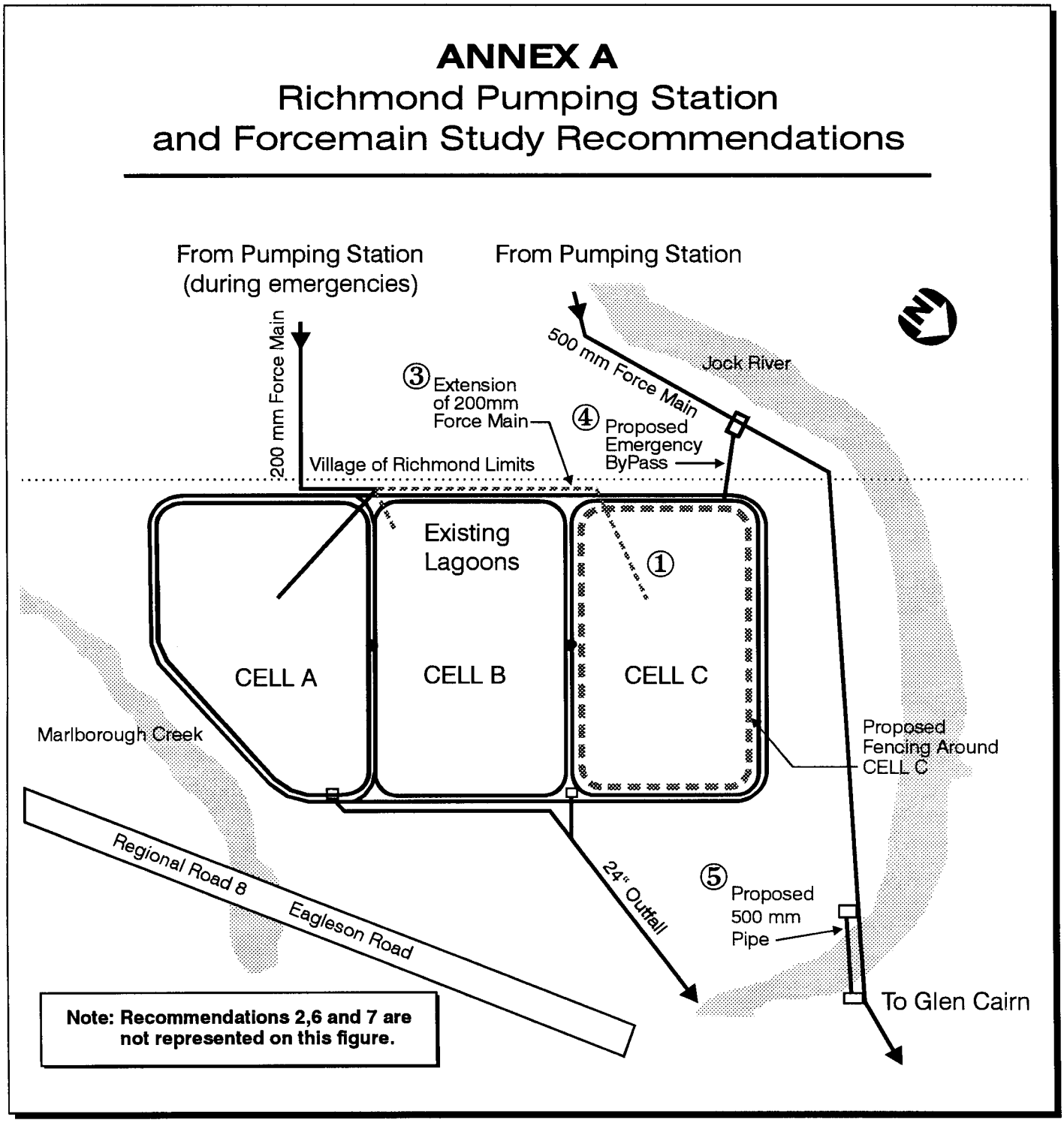
Subject to further negotiation with the Township, it is recommended that the Township pay the estimated $40,000 for the pumping station improvements which will permit pumping of Jock River water to the lagoons, and that the Region pay the estimated $13,000 annual operation and maintenance cost associated with pumping water to the lagoons. This would require that an additional $13,000 each year be included in the operational budget for the Water Environment Protection Division.

Should Council approve all recommendations contained in this report, additional capital project authority and operating costs will be identified as part of the 2000 budget process.

Approved by
J. Miller, P.Eng.

CR/

ANNEX A
Richmond Pumping Station and Forcemain Study Recommendations



Extract of Minute
Planning and Environment Committee
8 June 1999

RICHMOND SEWAGE PUMPING STATION AND FORCEMAIN STUDY

-Commissioner, Environment and Transportation Department report dated 25 May 1999

Joe Vincelli, Manager, Engineering Services Branch, Environment and Transportation Department (ETD), Chris Rogers, Engineer, ETD and Tim Marc, Manager, Planning and Environment Law, appeared before Committee on this item. Mr. Marc pointed out the staff report was presented to Goulbourn Council at their meeting the previous Tuesday and he referred to the correspondence from Mayor Janet Stavinga, dated 4 June 1999 (held on file with the Regional Clerk) which outlined Goulbourn's conditions for a Joint-Use Agreement. As well, he drew the Committee's attention to staff's response to these conditions and stated staff were recommending the Committee (as an amendment to the staff report recommendations), endorse the staff response.

As the Committee had received the staff response just prior to the start of the meeting, and had not had an opportunity to review it, Councillor Legendre suggested staff go through the response point by point. Mr. Vincelli then did so.

Councillor van den Ham referenced point 2 of the staff response and inquired about the Ministry of the Environment (MOE) giving ownership of the lagoons to the Township and portions of same to the Region. Mr. Marc advised the MOE staff would recommend to the Minister, that a transfer order be amended to reflect what is in Item 2. The Region would own the pumping station, the pipe leading to it, and the pipe leading from the pumping station to Cell C, as well as Cell C itself. The Township of Goulbourn would own the balance.

Councillor van den Ham then referenced point 12 and asked staff why the Region is obligated to pay for any of the work. Mr. Marc referred to a Confidential report distributed to members of the Committee and stated that in recognition of the Ministry's position, with respect to the ownership of the Lagoons, staff felt a cost sharing arrangement would be a suitable compromise. Councillor van den Ham then indicated he would have preferred it the other way around: the Region picking up the capital costs and the annual costs going to Goulbourn. The Councillor felt $13,000 was a very high estimate for pumping water into a cell and expressed the hope a more reasonable solution could be found during the detailed design stage.

In response to Councillor van den Ham's comments, Mr. Vincelli stated the work allowing the Region to pump water from the river into the lagoons forms an integral part of the Regional pumping station. He said staff do not want to provide access to the Regional pumping station to unauthorized persons (to avoid any possible liability or risk by non-authorized people) and this is why staff are recommending the Region fund the operating costs. With respect to the method and costs associated with the pumping, Mr. Vincelli confirmed this could be looked at through the detailed design stage.

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Chair Hunter sought clarification with respect to the Region pumping water into Cells A and B, noting the Region does not have any interest in these two cells. Mr. Vincelli confirmed the Region does not have any interest in these cells but explained this proposal was part of the compromise solution and is tied to the ownership of the land.

Chair Hunter asked how it was possible for the Township to own all of the land and the Region to own part of it. Mr. Marc explained that this would be in effect a sort of "stratified ownership"; Cells A and B would belong to the Township and the pumping station would belong to the Region. With respect to Cell C, the berms and the lagoon would belong to the Region but at some level below ground there would be a change in ownership to the Township and he likened it, conceptually, to a condominium, where there is a vertical distinction in ownership. He went on to say if the Region took a very hard line with respect to the pumping, the Region risks the chance the Ministry will take an equally hard line and go back to the terms of 1989 agreement and require the whole property be conveyed to the Township.

The Committee then heard from the following public delegations.

Eric Snyder, Richmond Conservation Area Sub-Committee of Goulbourn Advisory Committee, (RCAS) made a presentation to the Committee. Mr. Snyder began by requesting that Recommendation 3 of the staff report be clarified to require that enhancements reflect the objectives of the Richmond Conservation Area Management Plan (RCAMP). He also requested that Recommendation 4 be replaced with alternative wording which does not necessarily require that fencing be constructed around Richmond Lagoon Cell C. While fencing may be the preferred solution to restricting access to Cell C in order, that the Region may demonstrate due diligence, it has been deemed unnecessary both by the Region's Health Department and Susan Springthorpe, an RCAS member and Assistant-Director of the Centre in Environmental Micro-Biology at the University of Ottawa. He asked that no decision regarding fencing around Cell C be made at this time.

Mr. Snyder then commented on the list of conditions from Goulbourn Township, stating the conditions may need to be made somewhat clearer for the purposes of a legal contract, however, they supply the basis for an agreement between the Region of Ottawa-Carleton and the Township of Goulbourn which the RCAS supports in so far as it will allow the objectives of the RCAMP to be satisfied while preventing sewage by-passing to the Jock River. With respect to condition 8, Mr. Snyder emphasized the RCAM team must have access to Cell C for monitoring, maintenance and research in order to carry out the objectives of the management plan. He noted the wetland habitat resulting from the water management in the Richmond Lagoon Cells attracts almost 200 birds species from 4 continents. He asked that the Committee support the work the RCAS has been accomplishing for 8 years, by acting globally and thinking locally, preserving the habitat and giving them access to the site.

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Councillor van den Ham asked Mr. Snyder why the committee he represents was not contributing financially to this project. Mr. Snyder indicated the RCAS was not in a position to make financial contributions but rather their role was to advise Goulbourn Township. Councillor van den Ham then asked where the sub-committee would stand if the Region backed away from use of the lagoon. Mr. Snyder indicated that if the RCAS was not able to use Cell C it would not be able to create the wetland habitats which they hoped to create in each of the three Cells, and this would result in a reduction of value on the site.

Chair Hunter asked Mr. Snyder if the bird species using the Richmond Lagoons would relocate to the Marlborough Forest or the Richmond Fen, if the Lagoons were not there. Mr. Snyder indicated the birds coming to the Richmond Lagoons would not relocate to these areas, as they require a shoreline and beach habitat. He said the shoreline and beaches in the Region, generally have too much human activity to be suitable for these birds.

Councillor Legendre asked Mr. Snyder why the Lagoons would need to be artificially maintained by pumping water into the Cells. Mr. Snyder indicated this is an artificial habitat in so far it is created by the water management regime his group is proposing for the site. He then explained this was originally created when the lagoons were constructed and used as sewage work. Without pumping water into the Cells, the natural processes of succession are such that the same diversity of habitats would not be found if no water is pumped.

Bruce Muir, made a presentation to Committee and submitted his comments in writing (held on file with the Regional Clerk). Mr. Muir noted when he bought land in Richmond just across from the Lagoons, he verified the Lagoons would not be used for sewage works. The documents he consulted all indicated this was a Conservation Area with plans to turn it into a regional tourist attraction. The Richmond Secondary Plan even stated that "the phasing out of the lagoons once the new sewage system is fully operational was a condition of Ministry of Environment funding for the new system". Mr. Muir expressed his surprise and consternation when he learned about the possibility of using the former Lagoons for temporary storage of excess sewage flows, for the Richmond pumping station.

Mr. Muir stated he could support the use of infrastructure to divert the existing forcemain away from the Jock River to the closest lagoon cell for a 1 in 100 year event. He said as a neighbouring land owner he could contend with the potential odour and health problems once in a 100 years and, as the land would maintain a Conservation Area designation, his property would not be devalued.

The speaker then went on to explain his proposed solution, suggesting that modular cement storage tanks be placed on a gravel pad next door to the pumping station to contain the peak flows which last for about 2 hours and have occurred once every 2 years for the last 3 years. Mr. Muir estimated this work would cost between $100,000 and $200,000 depending upon desired capacity. He felt his proposal was not given correct values in the Environmental Screening Report and opined, once corrected, this option would score higher than the

recommended option and would cost no more, or perhaps even less than the recommended option.

In conclusion, Mr. Muir urged Committee to show leadership and accept Option 4 in the Environmental Screening Report (Option 5 in the staff report) which would preserve all of the conservation area, but still allow for bypass of sewage to one cell. Other sewage needs would be accommodated in above grade modular cement tanks. In Mr. Muir's opinion, this option would be better for the environment, more compatible with the Conservation area and less detrimental to the property values of neighboring property owner.

Responding to questions posed by Councillor Legendre with respect to points raised by Mr. Muir, Mr. Rogers referred to the staff report and advised that Option 5 is a combination of Options 3 (using manufactured underground storage tanks for more frequent events) and 4 (using the Richmond Lagoons for less frequent events). Option 5 was suggested by Mr. Muir following the open house and it was subsequently evaluated by the study consultant who found that the cost estimate provided by Mr. Muir, was significantly under-estimated. In terms of the storage volume recommended by the consultant, approximately 80 of these tanks would be required and, unless a large number of tanks (i.e. 80) were used, there could be no guarantee that the frequency of use for Lagoon Cell C would actually be reduced. As well, there were things such as bio-filters that were not included in Mr. Muir's estimate.

Mr. Rogers also noted there have been four overflow events to the Jock River, due to high extraneous flows in the Goulbourn collection system. The first three involved by-passes to the Jock River that lasted in the order of two to three hours, however, this year, there was a by-pass that lasted 24 hours. He stated this was an indication of the unpredictability of the system and the unpredictable nature of extraneous flows.
Mr. Muir clarified part of the confusion comes in when on page 2 of the staff report, Option 5 says a combination of options 3 and 4. He explained his proposal never involved underground storage tanks. His proposal was that the major catastrophes that last for 24 hours or longer, be handled by using the Lagoon cell (which hopefully would occur only once in fifty to 100 years); the known problem that occurs once every two years for a couple of hours would be handled in above-grade cement storage tanks and this would cost within the $100,000 to 200,000 range.

Councillor Legendre noted there was a significant difference between Mr. Muir's cost estimate and staff's cost estimate. He asked Mr. Muir if he knew that 80 tanks might be necessary, when he put forward his proposal. Mr. Muir explained the 80 tanks comes into play, when compared to the large underground tank that was going to totally negate the use of the Lagoon. He explained his option would require six tanks, at a cost of $16,000 each ($96,000) plus the cost of installing them, insulating them and finishing them to look like a building. These tanks would handle the bi-annual problem that lasts for two to three hours. He pointed out the estimated cost of the underground storage tanks was $3.5 million. As well, he calculated staff's recommendation of accommodating a sewage works in the midst of

a conservation area, to be in the order of $165,000 plus a commitment of $13,000 per year of on-going costs.

Mr. Muir went on to say, in a response he had received from staff with regards to his proposal, they indicated there would be too much maintenance involved in cleaning these tanks out. He countered what is being proposed is to maintain a 10 acre open storage tank that has to be drained and cleaned down each time it is used. Mr. Muir felt the storage tanks he proposed could be flushed out by the local volunteer fire department, as a training exercise. Another reason he was given by staff for rejecting his proposal was that Richmond residents would not like the look of above-grade cement storage tanks. He felt if the residents were given the option of the open storage tank as proposed by staff or completely closed storage tanks that look like buildings, they would choose his option.

Committee Chair Hunter noted Mr. Muir's neighbours would appear, by their absence and silence, to be more or less accepting of the proposal that the Township of Goulbourn, the Region and the Richmond Conservation Area Management have agreed to. In response, Mr. Muir indicated he had not consulted his neighbours as he felt it would be better to have one individual appearing before Committee and speaking quietly instead of having 20 unhappy people appearing before Committee. He referred to the screening report and noted there were five questionnaires handed in (one of which was his). One of questions asked respondents to rate the options and three of the five rated the option recommended by staff, as being unacceptable. Further on, the questionnaire asked if they agreed with the study's recommendations and the respondents indicated they did (i.e. it was better than putting the sewage into the Jock River), however, he pointed out they did not have his proposal, which he felt sure they would have preferred.

Nicholas Patterson addressed Committee and expressed disbelief that $800,000 would be spent to avoid the risk of a minor environmental hazard that happens every two or three years. He said to have a limited amount of sewage pour into the Jock River for a very short period of a few hours or a day or two, would in Mr. Patterson's opinion be a minor environmental event. Mr. Patterson expressed the opinion that, given the high tax rate in the Region, this should be postponed and the do nothing option should be chosen.

Councillor Hume drew Mr. Patterson's attention to the Financial Implications section of the staff report, which sets out the money for this project would come from the Sewer Reserve Fund, which currently has a surplus of $93,000,000. The Councillor offered it is an efficient, well run system, that has paid dividends. Mr. Patterson expressed his strong disagreement with the Councillor's comments.

Robert Haller, Clerk, Township of Goulbourn, stated he had been the Township's representative in all negotiations with the Region on this matter and indicated Regional staff had been very cooperative.

Mr. Haller then indicated Mr. Snyder does not speak on behalf of the Township, however, he commended Mr. Snyder and the RCAS for what they have accomplished at the Richmond Conservation Area. He went on to say he did not believe it was the Township's role to justify its actions to the Region, when in reality an agreement was signed in 1989 with the MOE, the Regional Chair and the Township Mayor which gave ownership of the entire site to the Township. At that time, the Township considered filling in the lagoons and developing an industrial park, however, it chose to develop a Conservation area and spent much time and effort in doing so. He noted the RCA Management Team has made considerable compromises to the management of that site, in an effort to cooperate with the Township in solving the sewage problem.

Mr. Haller went on to say although the Township is secure in its belief that it would be found to be the complete owner of everything on the site, Goulbourn is not interested in battling with the Region but rather they want to cooperate with the Region to solve this sewage problem. In this regard, the Township finds the use of Cell C is by far the most practical, efficient and cost effective method of doing so. He said the Township would like to come to a shared use agreement on the site and, although Lagoon Cell C would be under the control of the Region and be used for sewage, there would still be a bird habitat and certain individuals would be allowed access to the Cell to conduct research.

Responding to questions posed by Councillor van den Ham, Mr. Haller advised even if the Township was found to be the owner of the entire site, the sewage works would still be a Regional responsibility. He noted currently the sewage is being by-passed to the Jock River; the Region would have to find another solution rather than using the Township's site. He said extraneous flows from the Village of Richmond were the least of the Region's problem as there is a need to consider emergency breaks and planned maintenance (i.e. overflows from Kanata and Nepean). He said Goulbourn has been making great efforts to solve their extraneous flow problem and is committed to continuing to deal with these problems and attempt to eliminate the occasional overflow.

Councillor van den Ham then asked staff what was being done to address these contingencies. Mr. Vincelli indicated the sewage is currently trucked to the R. O. Pickard Environmental Centre (ROPEC), but every time there is a forcemain break, there is a spill to an immediate ditch or to the surrounding lands, and this must be cleaned up and the MOE advised. He said there is an urgent need to get on with the planned maintenance and the proposal before the Committee would allow staff to do so.

Councillor van den Ham inquired if the Department would proceed to do maintenance even if this proposal were not approved. Mr. Vincelli indicated maintenance would go on, however, it would not be in an environmentally friendly fashion.

Responding to comments made by Councillor Legendre, Mr. Haller indicated the Township has spent a few hundred thousand dollars to address the problem of flows to the pumping

station exceeding capacity and work is continuing in this regard. Councillor Legendre then asked Mr. Haller what the incentive for Goulbourn would be to keep addressing this problem if contingency plans were executed to address forcemain breaks and major forcemain maintenance. Mr. Haller responded the Township would prefer not to use Lagoon Cell C, but would rather it remained an environmental habitat. He said Goulbourn Council is extremely proud of its involvement in the Conservation Area.

Committee Chair Hunter noted a previous speaker had stated environmentalists would not complain if sewage were discharged into the Jock River once every couple of years. He asked for staff's comment on this. Mr. Marc felt the MOE would not look upon this favourably. He said while the Region currently has the MOE's permission to discharge into the Jock in case of extreme wet weather events, given that there is another option, the Region might see the Ministry look at its actions in further detail and the possibility exists that permission to continue to discharge into the Jock, could be taken away. He said the solution recommended to Committee by staff would prevent the occasional degradation of the Jock River and he offered his opinion that due diligence would suggest to the Region that it take advantage of this opportunity.

Chair Hunter then asked if it was correct that the Region was fined by the MOE in the last year for discharge that may or may not have reached the Jock? Mr. Marc stated it was staff's position that it never reached the Jock. He said the Region pleaded guilty to that charge and was fined $30,000, but there was no finding that the effluent from Munster Lagoon reached the Jock. Had the Ministry actually had proof of that, the fine might have been larger.

Councillor Legendre offered, in his opinion, the main difference between Mr. Muir's approach and staff's comes down to cost and the number of cells. Mr. Vincelli advised the tanks could deal with the less frequent events and for more frequent events, the Region would have to use Cell C. He said there is no guarantee the Region would use Cell C less frequently. Mr. Vincelli also pointed out that construction of these tanks would be difficult as Richmond is in a flood plain, which makes the soil unstable. Jim Miller, Director, Engineering Division, explained that large tanks in a flood plain would have to be anchored down as they could float away. He added there would be a significant cost issue if a tank were constructed in this type of environment.

Councillor Legendre asked staff to comment about tanks being able to handle the foreseeable events, such as maintenance and asked how long these events would last. Mr. Rogers indicated that to date there has not been any significant maintenance undertaken on the forcemain. What is imminently required would involve several days where the forcemain could not be operated, in order to replace the existing air valves and isolation valves. He explained the more frequent occurrences are the forcemain breaks, of which there have been three and the last one involved a 20 hour period. On four occasions, the capacity of the pumping station was exceeded.

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Responding to questions from Councillor van den Ham, Nancy Schepers, Acting Deputy Commissioner, Environment and Transportation Department added that any time sewage is released to the environment, it is considered a spill. The Region must report this to the MOE and pumping is used in most instances to clean it up. The sewage is then hauled to ROPEC. Ms. Schepers pointed out the Region has to plan for planned maintenance, it is very important as an organization to be able to do this without discharging into the environment.

Councillor van den Ham then had questions concerning the issue of the twinning underneath the Jock River. Mr. Vincelli indicated the class of pipes is adequate under the current operating conditions but higher volumes would require upgrading. He said if the pipes failed, it would take days to construct new pipes under the river and would be a very costly process.

Councillor Legendre stated he was not convinced the Region should commit to spending $13,000 every year to pump water from the Jock to the other two cells to maintain the artificial wetlands. Mr. Marc stressed the fact MOE staff have shown they are inclined to support the position of the Township with respect to ownership of the lagoons, while they are also sympathetic to the Region's needs to use Cell C for sewage purposes. He said if a compromise can be reached, Ministry staff will support it; if a compromise is not reached, there is a grave concern on the part of Regional staff that the Ministry will go whole-heartedly with the Township's position. On the issue of the $40,000 contribution to the capital cost of the work, Mr. Marc expressed the opinion that, if Committee goes along with what is recommended by staff, he does not see the Ministry backing up the Township's claim for the Region to fund 100% by threatening to take away Cell C.

Councillor van den Ham indicated he would support the report except for recommendation 3 as in his opinion this should be left to Goulbourn and the Conservation Authority if they want to maintain the Conservation Area. In his opinion, there should be some onus on the MOE to put this thing in the proper context and understand the Region has responsibilities and is attempting to do the right thing in trying to reduce the problems of Richmond's extraneous flows.

Chair Hunter asked who has the legal title for this land. Mr. Marc pointed out the legal title is with the Region, the Minister however has the power to amend its transfer order that brought it to the Region. In Chair Hunter's opinion, the Region needs to pay attention to the Township and work out a deal with them, adding that a lot of work has gone into this up to now. Chair Hunter also pointed out the lagoon is a far cheaper option than underground storage tanks and paying a series of fines because we have to close the forcemain for maintenance or due to breakages. The Chair indicated he would support a motion to not have fencing around Cell C; the money saved on this could be used to pay for the pumping work. He felt there were other ways of protecting the Region's work, such as with the use of signs advising of the risk, without fencing the whole lagoon.

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Councillor Legendre felt there would be no need for a motion with respect to not fencing the lagoon, as one could simply vote against that recommendation. The Councillor then asked that the staff recommendations be split, noting he would be voting against the pumping of water from the Jock River to the Lagoons for the purpose of enhancing the Conservation Area (Recommendation 3) and against fencing (No. 4). He added, however, he would support the "natural fencing" of the lagoon, using trees.

Councillor Hill advised the three lagoon cells in the Village of Richmond were used for sewage in the 1970's until the Village was hooked up to the Regional sewage system, at which time there was no longer a need for these lagoons. She noted the lagoon lands were at one time designated through the Richmond secondary plan to become an industrial park. The Councilor went on to say, in her opinion there was a sufficient number of wetland areas in the Region (approximately 110 hectares) and she had a problem with the creation of this small artificial wetland. However, the RCAS has come forward and been recognized by Goulbourn's Council and she indicated she would support the report's recommendations as this is what the Township of Goulbourn wants. She urged the Committee to do so as well.

Referencing Mr. Muir's proposal, Councillor Hill indicated there is no way holding tanks could be built in a flood plain such as Richmond and noted the disruption and the damage to the bird sanctuary would be enormous.

Chair Hunter pointed out the staff response to Goulbourn's conditions was also before the Committee, in addition to the staff report. Councillor Hume pointed out recommendation 3 of the staff report and point 12 in the staff response both relate to the issue of pumping water from the Jock River to the Lagoons for the Conservation Area. He sought staff's opinion as to how to deal with this. Mr. Marc stated if the Committee were to defeat recommendation 3, it would automatically mean the deletion of recommendation 12 in the staff response.

Councillor Legendre suggested the staff response also be split, with the Committee voting on recommendations 1 to 11 and holding recommendation 12, pending the outcome of the vote on recommendation 3 of the staff report. The Committee agreed.

Moved by J. Legendre

That Planning and Environment Committee recommend Council confirm Items 1 to 11 of the Regional Response to Township Conditions for a Shared Use Agreement of the Richmond Lagoons.

CARRIED

Referencing recommendation 4 of the staff report, Ms. Schepers stressed how strongly staff feel about fencing as a health and safety issue. She noted staff have learned from the Munster Hamlet incident how important it is to have full control of all aspects of sewage works, particularly when the Ministry is looking at the Region's operations and how it is controlled.

Ms. Schepers emphasized the Region must have full control and this is why staff are recommending fencing and no access to Cell C.

Councillor Hume asked Ms. Schepers to clarify what was learned from the Munster Hamlet incident. Ms. Schepers stated when the MOE investigated the Region's operations and how the site was controlled, it became very clear to the Department that full access of the facility was absolutely required to demonstrate the Region's due diligence in the operations. She said, through an internal investigation after the incident, the department realized that having individuals able to access the site was a risky situation and this was stopped. Mr. Marc added that because effluent from the Munster Lagoon made its way to a ditch, one of the allegations of the MOE was that because the Region did not physically ensure people were prevented from getting close to that ditch, the Region was allowing persons to access an environment that was dangerous to their health. He offered, similarly if the Region does not take steps to ensure that people cannot get access to Cell C after sewage has been put into it, if someone becomes ill as a result of that, there will be no due diligence defense available to the Region, because access was possible.

Councillor Beamish stated he could not imagine the Region operating a sewage lagoon without fencing around it and felt no unauthorized persons should be allowed to get near open sewage. He felt the option of trees and signs would only entice people to enter into the lagoon area.

Chair Hunter pointed out this is a lagoon that would be used for sewage once every two to three years. In his opinion, people would be able to recognize when there is sewage and when there is none. He also pointed out the Township was requesting access for a limited number of people, on a controlled basis for research purposes.

There being no further discussion, the Committee considered the recommendation contained in the staff report, beginning with recommendations 1, 2, 5 and 6.

That the Planning and Environment Committee recommend that Council approve the recommendations as outlined in the May 1999 Environmental Screening Report for the above study, namely:

1. **undertake capital works needed to permit the infrequent use of Richmond Lagoon Cell C for temporary storage of sewage flows as a contingency for the Richmond Pumping Station;**

2. **carry out improvements to the 500 mm forcemain, including twinning where it crosses underneath the Jock River and construction of a new valve chamber;**

5. **the Region and Township of Goulbourn enter into a joint use agreement for the Richmond Lagoon area;**

6. the Region decommission the old Richmond Pumping Station.

CARRIED

3. Undertake modifications to the Richmond Pumping Station to permit pumping of Jock River water to the lagoons for the purposes of enhancing the Richmond Conservation Area;

CARRIED

YEAS: D. Beamish, M. Bellemare, B. Hill and G. Hunter….4
NAYS: P. Hume, J. Legendre and R. van den Ham ….3

4. Construct fencing around the Richmond Lagoon Cell C to address safety concerns;

CARRIED

YEAS: D. Beamish, M. Bellemare, B. Hill and R. van den Ham….4
NAYS: P. Hume, J. Legendre and G. Hunter….3

Moved by J. Legendre

That Planning and Environment Committee recommend Council confirm Item 12 of the Regional Response to Township Conditions for a Shared Use Agreement of the Richmond Lagoons.

CARRIED
(R. van den Ham dissented)

The Committee then considered the staff recommendations, as amended.

That the Planning and Environment Committee recommend that Council

1. Approve the recommendations as outlined in the May 1999 Environmental Screening Report for the above study, namely:

a) undertake capital works needed to permit the infrequent use of Richmond Lagoon Cell C for temporary storage of sewage flows as a contingency for the Richmond Pumping Station;

b) carry out improvements to the 500 mm forcemain, including twinning where it crosses underneath the Jock River and construction of a new valve chamber;

c) undertake modifications to the Richmond Pumping Station to permit pumping of Jock River water to the lagoons for the purposes of enhancing the Richmond Conservation Area;

d) construct fencing around the Richmond Lagoon Cell C to address safety concerns;

e) the Region and Township of Goulbourn enter into a joint use agreement for the Richmond Lagoon area;

f) the Region decommission the old Richmond Pumping Station.

2. <u>Confirm the Regional staff Response to the Township of Goulbourn's Conditions for a Shared Use Agreement of the Richmond Lagoons</u>.

CARRIED <u>as amended</u>