

REGION OF OTTAWA-CARLETON
RÉGION D'OTTAWA-CARLETON

REPORT
RAPPORT

Our File/N/Réf. **50** 14-93-0021-V
 Your File/V/Réf.

DATE 27 June 2000

TO/DEST. Co-ordinator
 Planning and Environment Committee

FROM/EXP. Environment and Transportation Commissioner
 Planning and Development Approvals Commissioner

SUBJECT/OBJET **PUBLIC MEETING TO CONSIDER
 DRAFT REGIONAL OFFICIAL PLAN (97) AMENDMENT 1
 PROPOSED WASTEWATER/LEACHATE PIPELINE FROM
 TRAIL ROAD WASTE FACILITY**

DEPARTMENTAL RECOMMENDATIONS

That Planning and Environment Committee recommend that Council:

- 1. Subject to the public meeting, enact a by-law to adopt Regional Official Plan Amendment 1 to the 1997 Regional Official Plan, attached in Annex 'A';**
- 2. Approve pipeline route selection (Route 4) from the Trail Road Waste Facility west on Cambrian Road to the Richmond Forcemain on Eagleson Road, as the preferred location of a pipeline to convey leachate from Trail Road Waste Facility and leachate contaminated groundwater from Nepean Landfill Site to the R.O. Pickard Environmental Centre for treatment and disposal.**

PURPOSE

Proposed Regional Official Plan (97) Amendment 1 (ROPA 1) is before Planning and Environment Committee for a public meeting.

BACKGROUND

The Region's landfill sites generate two separate and distinct wastewater streams that must be managed in a cost-effective and environmentally responsible manner. The percolation of rainwater and snow melt

through the garbage at the Trail Road Waste Facility produces leachate that is captured in the landfill liner of Stages 3 and 4. The leachate is currently transported by tanker trucks to the R.O. Pickard Environmental Centre for treatment. The volume of leachate transported is currently about 70,000 cubic meters per year. This translates to about 7 tanker loads per day on average, but can rise to as many as 21 tanker loads during very wet weather.

The second wastewater stream comes from groundwater in the bufferland near the unlined Nepean Landfill Site that is contaminated with leachate that is migrating away from the site and has periodically discharged to the surface outside the Region's property. As part of the closure and long-term management of the Nepean Landfill, the Ministry of the Environment (MOE) required that the Region obtain additional bufferlands and mitigate the effects of leachate contamination of the groundwater. It is proposed to construct a drainage system in the bufferlands adjacent to the landfill to intercept the contaminated groundwater. It should be noted that the contaminated groundwater is a relatively weak wastewater compared to either the Trail Road leachate or typical domestic sewage. The volume of water required to be removed is estimated to be between 350,000 and 700,000 cubic meters per year, which corresponds to between 40 and 80 tanker truck loads a day, making the alternative of truck transport to the Pickard Centre extremely difficult.

In 1995, an environmental assessment study on leachate management concluded that transportation of the leachate via a dedicated pipeline connection to the Region's wastewater collection system with ultimate treatment at the Pickard Centre was the best overall solution. With the identification of a pipeline as the best method for managing the leachate from the Trail Road Waste Facility, it was recognized that use of the pipeline for disposal of contaminated groundwater was preferable to the option of an engineered wetland for on-site treatment.

The technical consideration of various routes proceeded, however it was recognized from public consultation in 1998 that there were some concerns about a pipeline. In July 1998, a consulting engineering firm was retained to conduct a peer review of the 1995 Leachate Management Study and the original recommendation of piping the leachate, to address the economics and environmental risks and to assess advances in wastewater treatment technology. The review, completed by the firm of CG&S, concluded that a pipeline was still the best solution. The consultant's report was tabled with Planning and Environment Committee in October of 1998 and staff were directed to consult with stakeholders and the public. The subsequent public consultation included public meetings and open houses, newsletters, community newspaper advertisements, public tours of the landfill site, written and e-mail comments, a phone poll and individual meetings with stakeholder groups.

In March of 1999, staff presented the results of the public consultation to Planning and Environment Committee and subsequently Council approved the following recommendations on 14 April 1999:

1. Approve the off-site conveyance of leachate from the Trail Road Waste Facility and leachate contaminated groundwater from the Nepean Landfill Site by pipeline to the R.O. Pickard Environmental Centre for treatment and disposal, subject to the monitoring and on-going reporting to Council by the Region's Health Department.

2. Authorize the Environment and Transportation Department to undertake a pipeline route selection process.

To carry out this work, the Department proceeded with a Consultant Selection Process which resulted in the firm of J.L. Richards & Associates Limited, with Dillon Consulting Limited as a sub-consultant, selected to carry out the Route Selection Process.

A further recommendation was also approved by Council to initiate a Leachate Pre-treatment Research Programme to look at new and emerging technologies that could be used to pre-treat leachate on-site before putting it in the pipeline. This programme is underway and a status update is contained in a companion report.

In a letter dated 24 June 1999 (attached in Annex 'B'), the MOE endorsed the decision to construct the pipeline and urged the Region to proceed as quickly as possible. The Ministry also expressed support for the Leachate Treatment Research Programme.

ROUTE SELECTION PROCESS

The first step in the public consultation process was to hold an open house and workshop at Trail Road on 26 February 2000. The agenda included a number of issues related to the operation of the Trail Road Waste Facility including the Optimization Study, the Route Selection Process and the Leachate Treatment Research Programme. The proposed public consultation plan was outlined and attendees were asked to assist by volunteering to participate in Public Liaison and Technical Advisory committees for the various initiatives.

A comprehensive public consultation effort for the Route Selection Process was subsequently carried out and included the following key components:

- Participation of the public and interested stakeholders in developing the criteria to be used to select the preferred pipeline route;
- Sufficient pre-design engineering on the identified routes to provide solutions to problems related to corrosion, odour control and environmental issues;
- Two public meetings to provide information and receive input from the public;
- The process would meet the objectives of the Class Environmental Assessment for Municipal Water and Wastewater Projects.

Public participation/input was solicited through the following means:

- Direct mail-outs to key stakeholders, interested individuals and community associations;
- Three open houses;
- The creation of a Public Liaison Committee (PLC);
- Meeting with special interest groups (a separate meeting was held with rural residents);
- Advertisements in the three daily newspapers and local papers in Nepean, Kanata and Stittsville;
- Newsletters.

The details of this Route Selection Process and the public consultation are recorded in the report titled “Trail Road Waste Facility Wastewater/Leachate Pipeline - Route Selection and Public Consultation Project.” A copy of this report is available for viewing in the Regional Resource Centre. A copy of the executive summary of the report is attached as Annex ‘C’.

PIPELINE ROUTE ALTERNATIVES

During the development and identification of possible pipeline route alternatives certain constraints were identified to minimize the impact on the community and to ensure an efficient pipeline was built:

- The pipeline route must be technically and economically feasible;
- The pipeline must discharge to a sewer with adequate capacity;
- The pipeline route should follow public rights-of-way or utility corridors.

Four possible pipeline routes were identified with minor variations on two of the routes. The following is a description of these routes and a reference map is attached in Annex ‘D’:

Route 1 - North from the Trail Road Waste Facility leachate pumping station to Cambrian Road, east along Cambrian Road under the 416 to Cedarview Road, north on Cedarview Road to the Strandherd Road realignment, east on the Strandherd Road realignment to Greenbank Road, north on Greenbank Road to the railway tracks and northeast along the railway tracks to the East Barrhaven Collector.

Route 1A - This route is a variation on Route 1, in which a section of the pipeline would be located in the future Transitway corridor, located east of Greenbank Road, instead of on Greenbank Road.

Route 2 - North from the Trail Road Waste Facility leachate pumping station to Cambrian Road, east on Cambrian Road under the 416 to Greenbank Road north on Greenbank Road to the railway tracks and northeast along the railway to the East Barrhaven Collector.

Route 2A - This route is a variation on Route 2, in which a section of the pipeline in Greenbank Road north of Strandherd Road is located in the future Transitway corridor, instead of on Greenbank Road.

Route 3 - North from the Trail Road Waste Facility leachate pumping station to Cambrian Road, east on Cambrian Road under 416 to Jockvale Road, east from Jockvale Road along future road right-of-ways to the Stone Bridge Pumping Station.

Route 4 - North from the Trail Road Waste Facility leachate pumping station to Cambrian Road, west on Cambrian Road to Twin Elm, south on Twin Elm to the Cambrian Road open road allowance, west on the Cambrian Road open road allowance to the Richmond Forcemain on Eagleson Road.

The criteria used to evaluate the pipeline routes were initially developed by the consultant, in accordance with the accepted principles for conducting a Class Environment Assessment, and presented to the

Public Liaison Committee in a workshop session. The PLC reviewed the evaluation criteria and ranked their relative importance as high, medium or low. The evaluation criteria and the relative rankings was presented to the public at the first Open House held on 04 May 2000. Public comment received at the Open House was used by the PLC to revise the criteria rankings and create two additional criteria. The revised criteria and rankings were then used by the consultants to evaluate each of the identified pipeline routes. The criteria were grouped under the following categories:

- Natural Environment;
- Cost;
- Health & Safety;
- Social;
- Cultural;
- Economics;
- Agriculture;
- Planned Land Use;
- Complexity of Operation.

The results of the evaluation of the routes are summarized in the table in Annex 'E' where Route 4 with the best rating is identified as the preferred route. The results of the analysis and the identification of the preferred route were presented to the PLC on 01 June 2000 and subsequently to the public at an Open House on 08 June.

PUBLIC CONCERNS WITH THE PREFERRED ROUTE

During the public consultation process, a number of concerns were raised by members of the public and residents living near the preferred pipeline route. These concerns are summarized as follows with a staff comment:

The Integrity of a Pipeline and the Potential for Leakage

The pipeline will be constructed of continuously "butt-fused" high density polyethylene (HDPE). This material has been used extensively for water distribution mains, sewage forcemains, natural gas distribution pipes and in leachate collection systems and is highly resistant to corrosion. The same material was used by the Region for the Gloucester Street watermain "slip-lining" project, for the Carlsbad Springs "trickle-feed" water distribution system and for the new feedermain to Manotick Island, which was directionally-drilled under the Rideau River.

The pipeline will be pressure tested following construction to ensure that there are no leaks and it will be periodically re-tested to ensure continued integrity. The most common cause of leakage from a pipeline is accidental damage caused by excavation equipment. The pipe will be installed a minimum of 2.4 metres below ground and there will be markers installed along the pipeline alignment to alert people of the presence of the pipeline and where to call for a locate. If someone were to damage the pipe, the monitoring system will alarm through the SCADA system (Supervisory Control and Data Acquisition)

and automatically shut down the pumps. Staff would respond to the alarm by dispatching a crew to investigate, make repairs and immediately begin cleaning up any damage.

The Effect of a Leak on Water Wells

As noted above, the pipeline will be periodically pressure tested to ensure its integrity. Damage to the pipeline caused by careless excavation activities is unlikely to contaminate water wells because of the small amount released that would in any case be cleaned up immediately.

In the unlikely event of a well becoming contaminated, the Region would provide corrective measures that would depend upon the situation but could include well head sealing or drilling a new well in a different location. It should be noted that pipelines carrying a variety of materials, such as petroleum products as well as sewage, are often installed in areas containing water wells. To reassure residents adjacent to the pipeline, staff have offered to have their wells tested periodically for any trace of contamination from any source.

Protection of the Jock River

It is proposed to install the pipeline inside a casing pipe under the Jock River and a tributary agricultural drain using the directional drilling technique to minimize the possibility of environmental damage to the Jock River. As noted above, this technique was used successfully to construct the new watermain under the Rideau River to Manotick Island. The benefit of this design is that any leakage in the pipe under the river would be contained in the casing pipe and would be detected at monitoring locations at each end of the casing.

The Impact on Groundwater Levels and the Jock River Watershed

It has been questioned whether the removal of leachate and contaminated groundwater would have a negative effect on local groundwater levels and reduce flows in the Jock River. The leachate comes from snow and rain falling on the lined portion of the active landfill. The water proposed to be removed to control migration of contaminated groundwater will have only a localized effect on groundwater levels immediately adjacent to the Nepean Landfill. The volume to be removed is not significant compared to the volume of water in the watershed and will have no measurable impact on the Jock River. On the contrary, the effect will be to eliminate a negative environmental impact on the groundwater adjacent to the Nepean Landfill.

The Impact on Development in Richmond

Planned development in Richmond will not be impacted. The pipeline will connect to the existing Richmond sewage forcemain on Eagleson Road and the operation of the Richmond pumping station will be interconnected with the leachate pumping station at Trail Road through the Wastewater Collection SCADA system. There is excess capacity in the Richmond pumping station and forcemain system except during rare high flow periods. Analysis of flow data gathered over the past seven years indicates that the capacity of the pumping station is exceeded on average only once every two years for a period

of one to two days. During these high flow periods the leachate would not be pumped but rather would be stored at the landfill. The contaminated groundwater collection system would be turned off with no effect because of the slowness of groundwater movement.

Odour and Health Effects of Gas Venting

In pipelines carrying liquids, provision must be made for the release of entrained gases that tend to accumulate at high points in order for the pipeline to operate properly. These “air release valves” are a standard feature of all long pipelines designed to carry liquids, including water feeder mains, sewage forcemains and leachate pipelines. In the case of sewage and leachate where the gases released can be odourous, measures are taken to remove this nuisance typically with replaceable granular activated charcoal filters. It should be noted that since leachate has similar characteristics to sewage, the gases that are produced are also similar and can be effectively treated. No public health hazard results from this practice.

The preferred pipeline route discharges to the Richmond forcemain which in turn discharges to the Glen Cairn Collector in Kanata. Biological activity in the anaerobic (airless) environment of the Richmond forcemain produces hydrogen sulphide and other odourous gases. The construction of a biofilter is proposed to control both odours and hydrogen sulphide induced corrosion in the sewer. Biofilters operate by providing a controlled environment for naturally occurring bacteria that break down the gases. A temporary facility located on Corkstown Road near Eagleson Road and the 417 is currently in operation. The permanent facility will be capable of handling any additional odours produced by the leachate, however it is expected that the addition of the leachate may actually reduce the amount of gas produced in the forcemain because of the reduced detention time.

Advancement of the West Rideau and Jock River Collectors

Potential business development in Barrhaven has raised speculation that the requirement for the extension of the West Rideau Collector and the Jockvale Collector may be advanced, and therefore, that connection of the leachate pipeline to the Jockvale Collector might then become a viable alternative routing. The wastewater servicing plan for the Nepean South Urban Community, as identified in the Official Plan, calls for the West Rideau Collector to be extended from the current terminus south along old Highway 16 and under the Jock River. The Jockvale Collector would connect to the West Rideau and extend in a north-westerly direction, re-crossing the Jock River, to eventually reach the business park near Strandherd and Cedarview Roads. The construction of this ultimate collector sewer system is estimated at more than \$10 million. The City of Nepean is currently assessing interim servicing alternatives that can allow development to proceed while deferring the construction of the ultimate collector system. The timing of the ultimate solution is expected to be a number of years away.

It must be emphasized that the leachate pipeline is required to correct the on-going environmental impact of the leachate contaminated groundwater on neighbouring properties at the Nepean Landfill and that the MOE has been as urging the Region to proceed to correct the problem as quickly as possible. For this reason the Department does not recommend waiting for the future collector system to be built.

PROPOSED REGIONAL OFFICIAL PLAN AMENDMENT 1

Proposed Regional Official Plan Amendment 1 is required to implement the recommended solution as identified in the long-term leachate management study for the Trail Road Waste Facility. Section 10.4, Solid Waste Management, does not address the need for a leachate collection system to allow for this method of collecting and treating leachate. An amendment to Schedule H of the Regional Official Plan is not required since the leachate pipeline is not intended to address wastewater services in the rural area as described in Section 10.3.

Proposed Amendment 1 to the Regional Official Plan would introduce a new policy to Section 10.4, “Solid Waste Management”, which would permit the Region of Ottawa-Carleton to construct a dedicated pipeline to remove leachate from the Trail Road Waste Facility (formerly known as the Trail Road Landfill) in the City of Nepean and contaminated groundwater from the Nepean Landfill Site. The proposed pipeline would direct the leachate and contaminated groundwater flows to the central wastewater treatment facility (R.O. Pickard Environmental Centre). A policy prohibiting other wastewater connections to this dedicated pipeline is also included in the proposed Official Plan Amendment.

A copy of the proposed Amendment is attached to this report as Annex ‘A’.

Circulation of Proposed ROPA 1

Draft Amendment 1 was circulated to a number of technical agencies, Regional departments, and interested parties. In addition, copies of the proposed amendment were available at the three public open houses held in conjunction with the pipeline route selection process.

Comments were received from the Conservation Partners Planning and Development Review Team, a resident of the City of Ottawa, the Ministry of Citizenship, Culture and Recreation, the Ministry of Municipal Affairs and Housing and the Region’s Health Department.

Their comments summarized below, are available for viewing in the Resource Centre, Heritage Building, 111 Lisgar Street.

The Conservation Partners Planning and Development Review Team, the Ministry of Municipal Affairs and Housing, the Ministry of Citizenship, Culture and Recreation and the Region’s Health Department had no objections to the proposed amendment.

Mr. William Griffith of 846 Griffith Way in the City of Ottawa suggested that the policy of prohibiting other wastewater connections to the dedicated forcemain was too restrictive.

Staff Comment

The proposed forcemain will be a dedicated leachate and contaminated groundwater pipeline from the Trail and Nepean Sites with no provision for any outside connection to the system. The recommended pipeline route would connect to the Richmond forcemain north of the Village of Richmond. The forcemain would be designed and sized to safely handle the leachate and contaminated groundwater and not to accommodate or facilitate growth in south Nepean. The operation of the two forcemains (Richmond and proposed Trail Road Waste Facility/Cambrian Road Forcemain) would be integrated. The leachate and contaminated groundwater can be pumped on an intermittent basis during off-peak times; therefore, the addition of the leachate and contaminated groundwater to the Richmond Forcemain will have no impact on the capacity of the Richmond forcemain system.

CONSULTATION

The Class Environmental Assessment Process

The route selection process followed the Class Environmental Assessment Process. Upon approval of the recommended route for the pipeline, an addendum to the Leachate Management Plan will be formalized and submitted to the Ministry of the Environment.

It will then be placed on the public record for comment for a period of 30 days. The next steps in the process will depend on whether or not there are 'Bump-Up' requests. If there are no 'Bump-Up' requests, we will be able to proceed with the implementation of the recommendations, pending approval of the Regional Official Plan Amendment. Should there be 'Bump-Up' requests, they will have to be reviewed by the Ministry of the Environment, who will then provide direction on what steps will have to be taken.

Under the *Planning Act* for Proposed ROPA 1

The public was advised during the Open Houses on 26 February 2000, 04 May and 08 June, that an Official Plan Amendment would be required for the pipeline to be constructed. Notice of the Proposed Regional Official Plan Amendment was published in *Le Droit*, the *Ottawa Sun*, and in the *Ottawa Citizen* on 16 June; in the *Barrhaven Independent*, and *Stittsville Weekend Signal* on 10 June; in the *Kanata Kourier* and in the *Carp Valley Press* on 16 June; in the *Nepean Clarion* on 17 June; in the *Manotick Messenger* on 20 June and in the *Ottawa-Carleton Review* during the week of 26 June.

In addition, notice of the public meeting and a copy of the proposed ROPA 1 was mailed to various stakeholders, community associations and other interested parties.

FINANCIAL IMPLICATIONS

There are no financial implications directly associated with the Regional Official Plan Amendment.

Funds for the proposed wastewater/leachate pipeline are contained in the Capital Budget for Landfill Leachate Management.

Approved by
M.J.E. Sheflin, P.Eng.

Approved by
N. Tunncliffe, MCIP, RPP

Attach. (5)

DRAFT

AMENDMENT 1**OFFICIAL PLAN (1997) OF THE
REGIONAL MUNICIPALITY OF OTTAWA-CARLETON****PURPOSE**

The purpose of Amendment 1 is to permit the Region of Ottawa-Carleton to construct a dedicated pipeline to remove leachate from the Trail Waste Facility (formerly known as the Trail Road landfill) in the City of Nepean and contaminated groundwater from the closed Nepean Landfill site. The proposed pipeline would direct the leachate and contaminated groundwater flows to the central wastewater treatment facility (R.O. Pickard Environmental Centre). A policy prohibiting other wastewater connections to this dedicated pipeline is also included in the proposed Official Plan amendment.

BASIS

In April 1999, Regional Council approved the recommendation to transport leachate from the Trail Waste Facility and leachate contaminated groundwater from the closed Nepean Landfill site by pipeline to the Region's wastewater treatment plant (R.O. Pickard Environmental Centre) for treatment and disposal. Council also directed staff to undertake a route selection process for the wastewater/leachate pipeline.

A Leachate Pipeline Public Liaison Committee was set up to provide input to the public consultation process and to review the evaluation criteria for the proposed pipeline routes. Subject to public comment, these criteria have been used to determine the best route for the pipeline.

The pipeline route, regardless of which alignment is selected, requires this Regional Official Plan amendment before construction can proceed.

Proposed Regional Official Plan Amendment 1 is required to implement the recommended solution as identified in the long-term leachate management study for the Trail Waste Facility.

Section 10.4, Solid Waste Management, does not address the need for a leachate collection system to allow for this method of collecting and treating leachate. An amendment to Schedule H of the Regional Official Plan is not required since the leachate pipeline is not intended to address wastewater services in the rural area as described in Section 10.3.

Proposed Amendment 1 to the Regional Official Plan would introduce a new policy to Section 10.4, "Solid Waste Management", which would permit the Region of Ottawa-Carleton to construct a dedicated pipeline to remove leachate from the Trail Road Waste Facility (formerly known as the Trail

Road Landfill) in the City of Nepean and contaminated groundwater from the Nepean Landfill site. The proposed pipeline would direct the leachate and contaminated groundwater flows to the central wastewater treatment facility (R.O. Pickard Environmental Centre). A policy prohibiting other wastewater connections to this dedicated pipeline is also included in the proposed Official Plan Amendment.

THE AMENDMENT

1. Section 10.4.2, of the Plan, Solid Waste Management Policies, is hereby amended by the addition of the following after policy 7:

“8. Permit the installation of a wastewater / leachate pipeline to allow for the piped transmission of leachate from the Trail Waste Facility (formerly known as the Trail Road Landfill) and contaminated groundwater from the Nepean Landfill site as the most effective way to manage an existing environmental and health issue. This wastewater / leachate pipeline will be for the sole purpose of transmitting leachate and contaminated groundwater from the lands on and around the Trail Waste Facility and the Nepean Landfill site to the wastewater collection and treatment system. Connections to the wastewater / leachate pipeline, other than from the Trail Road Facility and the Nepean Landfill Site, will not be permitted.”



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OTTAWA-CARLETON ENVIRONMENT & TRANSPORTATION DEPARTMENT	
PM	
RECD JUL 06 1999	
FILE NO.:	
REC. NO.: 4111	
FILE:	COPIES SENT TO:

June 24, 1999

Mr. Pat McNally
Director, Solid Waste Division
Region of Ottawa-Carleton
Trail Waste Facility
4475 Trail Road
Nepean, Ontario
K0A 2Z0

Dear Mr. McNally,

RE: Leachate Management - Trail Waste Facility and Nepean Landfill Site

This is further to your letter of June 22, 1999 in which you asked for this Ministry's position or comment on a number of questions related to leachate and contaminated groundwater management at the above sites. I have now had an opportunity to review these questions and discuss them with and obtain input from staff in other Branches of this Ministry.

This Ministry supports the findings of the report entitled "Region of Ottawa -Carleton Trail Road landfill Site Leachate Treatment and Disposal Options" to construct a pipeline to convey both the leachate and contaminated groundwater to the R.O. Pickard Centre for treatment. Research into the treatment of leachate and leachate contaminated groundwater by alternative methods is also encouraged. While this Ministry is unable to commit any direct funding for a partnership program at this time, support services could be provided. This would include chemical analytical work and technical reviews and advice.

With respect to research, a pilot scale engineered wetland would be an option worth some consideration. It should be noted however, that discussions with Ministry staff have indicated that constructed wetlands have seasonal operational difficulties and would therefore require secondary facilities to ensure that discharge criteria are not exceeded at any time. Provisions would therefore be necessary to collect the effluent from the pilot plant for further treatment at the R.O. Pickard Centre prior to discharge. A Certificate of Approval would not be required for a pilot plant with no direct discharge to surface water or groundwater.

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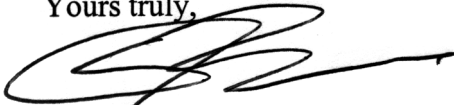
Mr. Pat McNally
June 25, 1999
Page 2

The construction of a full-scale engineered wetland would require a Sewage Works Certificate of Approval. To determine the required discharge criteria, an individual surface water assimilation study would be required as well as a full wastewater treatability study. Considering the discharge point (i.e. a seasonally dry drain) which discharges ultimately to the Jock River (a degraded Policy 2 receiving water); very stringent discharge criteria and monitoring requirements would be applicable.

This Ministry is very concerned that work proceed on the proposed pipeline as soon as possible. This groundwater contamination problem was originally identified in 1995. In May 1997 the Ministry and Region of Ottawa-Carleton agreed on an abatement program with a scheduled return to compliance date of 1999. Any work on research programs should not interfere with the timing of the pipeline installation. Recent progress with respect to the contaminated groundwater at the Nepean Landfill Site is unsatisfactory and must be resolved without further delay.

I would appreciate meeting with you by September 30, 1999 to review and formalize a revision to the schedule for the project.

Yours truly,



S. Burns
District Manager

DSH/th

EXECUTIVE SUMMARY

1. PROJECT BACKGROUND

This report comprises the record of a Wastewater/Leachate Pipeline Route Selection and Public Consultation project that will be filed as an Addendum to the Schedule B Class Environmental Assessment entitled Trail Road Leachate Management Plan advertised May 24, 1995.

The Region operates the Trail Waste Facility and is responsible for the closed Nepean Landfill site. The Trail Waste Facility is currently receiving solid waste in Stage 4. Stages 1 and 2 have been capped. Stage 3 is to receive an interim cap this summer pending completion of the Optimization Study. Stages 3 and 4 are lined with a geosynthetic composite liner which includes a leachate collection system. Excess leachate collected from these stages is trucked to the R.O. Pickard Environmental Centre for treatment. The Nepean site is capped but not lined and some leachate contaminated groundwater is migrating south and west of the site.

The 1995 Dillon Report on a Leachate Management Plan recommended "periodic removal of leachate to central sewage treatment plant by dedicated pipeline to the existing sanitary system." The Dillon assignment was carried out under Schedule 'B' of the Class Environmental Assessment for Municipal Water and Wastewater Projects. The Report did not, however, identify routes for the proposed pipeline. Dillon was then retained to evaluate possible pipeline routes and carry out a detailed design for the preferred route. In March, 1998, while the detailed design of the preferred route was in progress, concerns were raised by a number of Barrhaven residents regarding the route. As a result, the design process was stopped and further public consultation took place. In response to public concerns, the Region retained CH2M Gore & Storrie Limited to carry out a "peer review." This study reviewed a number of treatment options and the pipeline option. The pipeline option scored highest in all categories. Further public consultation then took place to present and review the findings of the CH2M Gore & Storrie Limited study.

Upon completion of the public consultation process, a report was submitted to Regional Council for approval. The following are two of the recommendations approved by Council:

1. approve the off-site conveyance of leachate from the Trail Waste Facility and the leachate contaminated groundwater from the Nepean Landfill site by pipeline to the R.O. Pickard Environmental Centre for treatment and disposal;
2. authorize the Environment and Transportation Department to undertake a pipeline route selection process.

It is intended that, once the route selection and public consultation project has been completed and the preferred alternative route and preliminary design have met with the approval of Regional Council and the Ministry of the Environment, detailed design and construction will then proceed.

In August, 1999, J.L. Richards & Associates Limited, in association with Dillon Consulting Limited and Williamson Consulting Inc., was retained to carry out the Wastewater/Leachate Pipeline Route Selection and Public Consultation project. The purpose of this project is to select and develop a conceptual design for the preferred pipeline route for transferring leachate and contaminated groundwater from the Trail Waste Facility site to the Regional sewer system, including the following key components:

participation of the public and interested stakeholders in developing the criteria used to select the preferred pipeline route;

pre-design engineering on the preferred route to identify and provide solutions to problems related to corrosion, odour control and environmental issues;

a minimum of two public meetings to provide information and receive input from the public; and

follow a process that meets the objectives of the Class Environmental Assessment for Municipal Water and Wastewater Projects.

It should be noted that the Wastewater/Leachate Pipeline project is one of three projects currently under way at the Trail Waste Facility site. The other two are the Optimization Study and a research program investigating potential on-site pre-treatment processes.

2. PUBLIC CONSULTATION

Early in the project, a Public Consultation Plan was prepared which was later discussed with and confirmed by a Public Liaison Committee (PLC). This Plan outlined the components of the public consultation program, including setting up and operating with a PLC, holding two Public Open House events and other methods and opportunities to keep the public informed and to obtain meaningful public input throughout the process.

After an initial Public Open House Information Session and Workshop held by the Region on February 26, 2000 to inform the public of all three ongoing projects at the Trail Waste Facility and to generate public interest in participating in the projects, the following were carried out:

Advertisements were placed in the daily newspapers requesting volunteers to sit on a Public Liaison Committee. All that volunteered were accepted.

A Public Liaison Committee was set up which met three times, once before each Public Open House and a special meeting held as a Workshop on evaluation criteria for route selection.

Two Public Open House/Meetings were held, one to review the evaluation criteria and the other to present, discuss and review the Consultant Team's findings and route evaluation and conclusions based upon the evaluation criteria.

It is considered that the Public Consultation process was successful as it generated significant public interest and turnout at Open House meetings, numerous questions were posed and Regional staff and Consultant Team members provided answers. As well, a special meeting was held with a stakeholder group to discuss the specific concerns of rural residents. Both the evaluation criteria development and rating, as well as the evaluation itself, were influenced by public input.

3. PIPELINE ROUTE ALTERNATIVES

In selecting the alternative pipeline routes for study, the following were considered:

the route must outlet to a sewage collection facility with adequate capacity within a reasonable distance from the leachate pumping station at the Trail Waste Facility;
and

the route will preferably follow public rights-of-way to avoid disruption to private property and the need to obtain property or easements.

Three suitable discharge points into the Regional sewer system were identified:

the East Barrhaven Trunk Sewer south of the railway tracks and east of Greenbank Road in Barrhaven;

the Stonebridge Pumping Station in the Monarch Homes Stonebridge Subdivision south of the Jock River, which discharges to the West Rideau Collector; and

the Richmond sewage forcemain along Eagleson Road.

Six alternative pipeline routes were developed. These, along with the three discharge point locations, are indicated on a map in Figure 4.1 in the Report.

The conceptual design of the pipeline indicates it would be a 200 mm (8") diameter high density polyethylene pipe with butt fused joints located along the shoulder of roadways or within the pavement at a depth of 2.4 m (8').

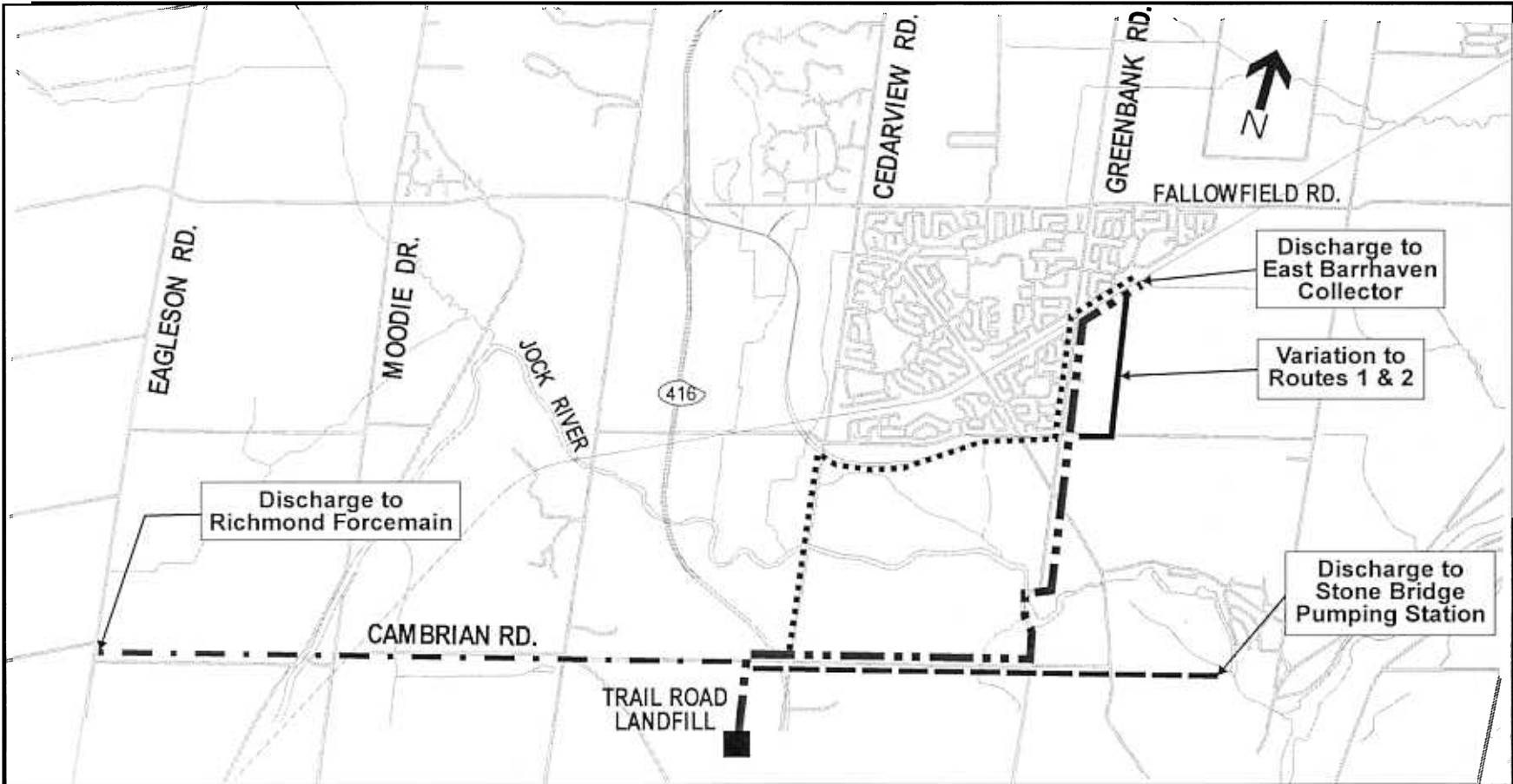
4. EVALUATION OF ALTERNATIVE ROUTES

In consultation with the PLC and the public, nine evaluation criteria groups were developed with detailed indicators, and ranked in terms of their relative importance (see Tables 5.1 and 5.2). These criteria and indicators were used by the multidisciplinary Consultant Team in collecting data on the different routes and evaluating and comparing results for each route. Conceptual level designs for a pipeline along each route were developed with respect to location within the road right-of-way, how obstacles would be crossed and probable special construction techniques and requirements. Mitigating measures to eliminate or minimize potential adverse effects were recognized in the evaluation. In developing mitigating measures, special attention was given to odour and corrosion control at discharge points venting to atmosphere and the conceptual design for all Jock River (and tributary) crossings included the use of a double walled pipe.

The Consultant Team's findings, evaluation results and conclusions are indicated in Tables 5.3, 5.4 and 5.5. **The preferred alternative route is Route 4, which follows the Cambrian Road alignment west from the Trail Waste Facility Pumping Station and connects to the Richmond forcemain on Eagleson Road.** The differences in evaluation results for this alternative Route and those for alternative Route 3, pumping to the Stonebridge Pumping Station, owned by Monarch Homes, were not major. For reasons outlined in Table 5.5, however, Route 4 was selected as the preferred alternative. This pipeline route passes mainly along the shoulder of the road past farm fields and in the centre of the road allowance from Richmond Road to Eagleson Road (road closed). The pipeline would be installed through the Twin Elm Community under the road using a directional drilling technique (trenchless technology) to avoid disruption. A similar technique would be employed in installing the double walled pipe Jock River crossing and the double walled pipe tributary crossing east of Twin Elm. No special odour or corrosion control facilities would be required at the outlet as the Wastewater/Leachate Pipeline would connect into another closed conduit at Eagleson Road. The Region has already implemented a project for odour and corrosion control in the Glen Cairn Trunk Sewer, which is the outlet for the Richmond forcemain. The addition of wastewater and leachate to this flow will not affect the design of this facility. Air release vents at high points along the Wastewater/Leachate Pipeline would be fitted with canister type air filters to prevent the release of any odour to atmosphere. As well, the addition of wastewater and leachate to the Richmond forcemain will not impact on the rated peak flow capacity of the Richmond Pumping Station. During periods when the Richmond Pumping Station is required to pump at peak design capacity (usually spring snowmelt), Stage 3 and Stage 4 Trail Waste Facility leachate could be temporarily stored on site and pumping from the Nepean site could be halted with no adverse environmental effects.

5. RECOMMENDED COURSE OF ACTION

It is recommended that the Region file an Addendum to the Schedule B Class Environmental Assessment, then proceed with the approval, detailed design and construction of a Wastewater/Leachate Pipeline Project in accordance with the conceptual design for Route 4. As noted in the Report and as advertised to the public throughout the public consultation process, an Official Plan Amendment for implementing this project is required.



Annex D

Identified Route Locations

- Route 1 (dotted line)
- Route 2 - - - - - (long dashed line)
- Route 3 - - - - - (short dashed line)
- Route 4 (dash-dot line)

Table 5.4 summarizes the route ranking by criteria group. Please note that the route rankings are relative only and have no numerical value (eg. in comparing a ranking of 1 versus 3, it does not mean that the "1" is 3 times better than the "3", only that it is preferred). Also presented in Table 5.4 are the criteria group rankings that were developed with public input.

Table 5.4
Trail Waste Facility Wastewater/Leachate Pipeline
Route Ranking Summary

Criteria Group	Criteria Group Ranking	Route 1	Route 1A	Route 2	Route 2A	Route 3	Route 4
Natural Environment	High	1	2	5	6	4	3
Cost	High	5	3	6	4	2	1
Health and Safety	High	6	4	5	3	1	1
Social	Medium	4	3	6	5	1	1
Cultural	Medium	3	5	3	5	1	1
Economics	Medium	6	4	4	2	1	2
Agriculture	Medium	Ranked Equally	Ranked Equally	Ranked Equally	Ranked Equally	Ranked Equally	Ranked Equally
PLU	Medium	3	3	5	5	2	1
Complexity of Operations	Low	2	2	2	2	6	1