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MEMORANDUM

TO: Toby Vigod

FROM: Frank Giorno

DATE: March 19, 1984

RE: The Burlington Landfill Site Report on Possible Continued Use, June 1983 Dillon Consulting Engineers and Planners

Background

- the Burlington Landfill Site is located on the North Service Road of Highway 403. It has been in operation since 1972. The site property is 68 hectares of which 36 hectares are approved for landfilling. The site was expanded in 1980 to its present size. The 1980 expansion consisted of 23 hectares of land being acquired and seven approved for landfilling. The basis for the 1980 application and approval are contained in Design and Operations Reports, January 1980, by M. M. Dillon Limited. Dillon has carried on a program updating the residual waste capacity and to monitor the site operations. Dillon states approved waste capacity will be exhausted by June, 1984.

Interim Plan

- Additional waste disposal capacity will be required until Halton Region's new disposal facility comes into operation. Dillon is investigating the continued use of Burlington's Landfill site on behalf of Halton Region. The increased capacity was limited to the existing site area. No additional tracts of land would be required. If the regions did purchase additional land, an environmental assessment hearing would be required. The interim plan was discussed with representatives with the Ministry of the Environment, City of Burlington, Citizens, National Sewer Pipe, West Burlington Ratepayers Association. Gartner Lee was retained by Dillon to review hydrogeological aspects of the site. Gartner Lee states no off-site groundwater or surface water impact has been detected.

Waste Quantities

- Until 1983, waste quantities increased at a rate of 2.5% yearly. On that basis, Dillon predicted an increase of waste tonnage from 15,900 tonnes per month in 1983 to 17,100 tonnes per month in 1986. Anticipated tonnage for 1983 for the region had been 15,000 tonnes per month, however, the actual tonnage is closer to 13,100 tonnes per month. That is a 13% decrease.

Phasing of Continued Use

- Continued use plans are based on the utilization of four phases that would be used only as required until the new regional site opens. Existing surface drainage works and leaching control systems will be extended as necessary. Design and operation reports will be developed in time for the application for a certificate of approval.

Description of the Four Phases for Continued Use of the Landfill Site

- Dillon examines the operations of each potential phase under the following headings:

a) contour modifications caused by the additional waste

b) increases to the site capacity in terms of month

c) impact on the surrounding area

d) drainage costs for undertaking the individual phase

f) capacity in tonnes and closure date

g) soils and geology,(a cursory comment on soils it offered).

Phase A

Site Life will be extended by 6 to 6.5 months. Contours will be modified by infilling an existing depression which now accomodates a Bell Canada Line. The increase waste will raise the contours by 11 meters and bring it to existing elevations.

Impact

- Increased site visibility is the only predicted impact.

Drainage

- The infilling will promote greater surface runoff and a corresponding decrease in future leachate generation.

Costs

- $16,000 for raising the Bell cable. An additional 36,000 meters cubed of fill still required to complete Phase A - soil is not available on site. Off site soil costs are estimated to be $3.00 per cubic meter. Construction and cover material costs including contingency but does not include excavation stockpiling of soil are $155,000.

Capacity and Closure Date

- Phase A will receive 15,000 tonnes by December, 1984 and 18,100 tonnes by the end of March, 1985.

Phase B

- To extend site use by 3 to 3.5 months. Extends the northern most section of the site onto the existing buffer lands.

Site Boundaries

- Groundwater divide acts as the basis of the present boundary. South of the groundwater divide, the groundwater flows towards Highway 403, north of the groundwater divide, the groundwater flows toward the ravine slope and Falcon Creek. For the purpose of Phase B the divide is extrapolated easterly to form Phase B's northerly boundary. Groundwater flow underneath Phase B will continue to flow south.

Revised Boundaries

- Boundaries of Phase B would extend the landfill operations to within 20 meters of a site property boundary and also 10 meters for the ravine slopes. Three additional hectares would be used for landfilling.

Contours

- There will be a blending of the final and base contours with those that are already approved. 1.5 meters overburden is provided between the proposed base contour and the shale bedrock. Overburden depths is required for the design of the existing site.

Leachate Collection System

- Lateral pipes will underlie the refuse. The Leachate Collection System will be similar to the one that is presently in use. The leachate will be collected and rerouted through these works.

Drainage and Erosion - Sedimentation Control Measures

- These will be installed to minimize offsite impact.

Visual Impact

- Phase B will only have minor visual impacts.

Costs

- Collection system, $80,000.
  Installation of three additional groundwater monitors.
  Access roads, perimeter drainage works, fencing.
  Cover material would be supplied on site. Total cost of Phase B is $138,000.

Closure and Capacity

- 15,000 tonnes per month up until March, 1985 and 13,100 tonnes per month up until June, 1985.

Soils

- Gardner Lee expect the geology of Phase B to be tight clay soils similar to the rest of the site. Dillon recommends that backhoe test pits be undertaken.

Phase C

- Extend the site operations from 13 to 15 months.

Contour Modifications

- Increase by 6 meters at the north end. Increase by 2 meters up to the Bell Telephone easement.

Contour Changes

- Contour changes would be over the existing fill areas and also that developed as Phase B.

Cost Requirements

- An additional 71,000 meters square of fill at $3.00 per meter squared. Construction and cover materials would cost $251,000.

Closure and Capacity

- 15,000 tonnes per month up until April, 1986 and 13,100 tonnes per month up until September, 1986.

Phase D

- Will extend the site operations from 10 to 11 months and an additional 2.3 hectares will be required for extension. The landfill will be extended northerly over the groundwater divide and onto the existing buffer land. The setback will be 10 meters from the ravine slopes on a northern and southern limit.

Final Base Contours

- Will be blended with those envisioned for Phase C. Maximum heights will be raised 10 meters above existing landfill and 4 meters above Phase C elevations.

Leachate Collection System

- Recommends the extension of the underdrained leachate collection system. As leachate flow is expected to exfiltrate through the base, an extension to the leachate collection contingency plan to protect Falcon Creek may be necessary.

Impact

- No significant impact.

Drainage and Erosion

- Sedimentation controls will be used. Only hedgerow vegetation will be removed.

Geology

- The soils for Phase D are anticipated to be consistent with the remainder of the site. Overburden exists to ensure 1.5 meters preparation between base contours and bedrock.

Costs

- Leachate collection works cost $95,000. Groundwater monitors. Extension of access roads. Sensing and drainage. Construction costs total $147,000.

Closure and Capacity

- 15,000 tonnes per month up until February, 1987 and 13,100 tonnes per month up until August, 1987.

Preliminary Discussions and Meetings

- Dillon and the Region of Halton have met with the Ministry of the Environment, April 18, 1983, the Ministry's reserved comment at that time.
The City of Burlington, May 4, 1983. Local Citizens, May 4, 1983. National Sewer Pipe, May 12, 1983.
West Burlington Ratepayers Association, May 19, 1983.

- Dillon reported that as a result of their meeting with local citizens on May 4, 1983, their impression was that the citizens were generally sympathetic to the Region's solid waste management problem. They wanted assurances that the National Sewer Pipe land would not be used for the regional sites. They wanted control over the future landfilling occuring on the National Sewer Pipe Land and advocated expropriation.

Dillon reported the citizen's concerns as the following:

1. Control over unacceptable wastes - no hazardous waste must be allowed.

2. Rehabilitation should be sequential and assurances must be given for perpetual care.

3. Citizens were concerned about the increase of noise and visibility of the site.

4. Hydrogeological impact of landfilling north of the groundwater divide should be assessed.

5. Trees should be planted on the completed portion, notably at the front of the site.

6. Motorbikers should be prohibited from using the site.

7. Speed limit must be reduced on roads.

8. Rightturn lane must be intalled from traffic entering the site.

- The West Burlington Ratepayer's Association expressed the following concerns:

1. The Ratepayers Group understands the problem and is will to help, but they do not want to become the Region's dumping ground.

2. Expansion might allow completion of the environmental assessment act but are generally opposed to temporary solutions.

3. It may be beneficial to incur increased cost of shipping waste to ? if it would lead council to expediate and complete the current studies.

4. Felt that they were not adequately protected against National Sewer Pipe Landfill proposal. The West Burlington Ratepayer's Association recommended the following:

i) Solid Waste incineration should be emphasized

ii) They express concern about methane gas migration for landfill sites to the urban areas.

iii) Questions and timing for the implementation for the Bayview Park Leachate Collection System.

iv) They recommended that a selected group, not counsellors should be responsible for solid waste management.

v) They recommended that waste should be spread over a number of more sites.

vi) A future meeting be established for council to decide their course of action.

vii) Action was wanted for two illegal closed sites in the Aldershot area.

Hearings

An EPA hearing is required for Phases B, C and D.

Exemption for EAA was likely because of current landfill component, Halton's environmental assessment and precedents elsewhere.