

CITY OF BURLINGTON

CAO 14/84

March 20, 1984

Chairman and Members of the
Solid Waste Management Committee

Subject: City of Burlington's Response to Region of Halton
Environmental Assessment Study Draft Reports --
(1) Phase 2, Stage 2B Selection of Candidate Sites
and (2) Phase 2, Stage 2C Work Program.

RECOMMENDATION

That CAO Report 14/84 be forwarded to the Region of Halton as the City of Burlington's response to its two Environmental Assessment Study Draft Reports, dated February 1984, Phase 2, Stage 2B Selection of Candidate Sites and Phase 2, Stage 2C Work Program.

REPORT

Purpose

The purpose of this report is to respond to the subject "Candidate Sites" and "Work Program" reports, as requested by the Region of Halton, and as directed by your Committee at its meeting of March 9, 1984.

Constraints and Organization

The comments that can be made in this report are constrained by present circumstances. The City has retained the Waterloo consulting firm, Ecoplans, to advise it on the position the City should take on major solid waste issues, including the Environmental Assessment Study. Ecoplans will in fact be present at your meeting on March 23rd to present its review of the documentation and of current issues. Nothing that is said in this report should conflict with or prejudice any advice or action arising from Ecoplans' review. Although Ecoplans has been consulted in the preparation of this report, its views on some of the issues addressed in the "Candidate Sites" report were not firm at the time of consultation. In consequence, we have either avoided commenting on these issues, or have left our comments in a more general form than we would otherwise have done.

Our comments are organized under the following headings:

Site Selection Process

- Pits and Quarries
- Capacity of NSP Site
- Costing
- Common Candidate Sites, EA and OWMC

Single Site Versus Two Sites

- Transfer Stations

Parkway Belt West Plan and Landfill

[The overall thrust of our comments is to reinforce positions that we have advanced in previous reports.

Cont..../2

Site Selection Process

The "Candidate Sites" report may be the most critical report in the EA Study. For both the close and the casual observer of the study process, the analysis and the conclusions should follow straightforwardly and reasonably from the evidence presented. On our reading of the report this requirement has not been met. In the general case, a great deal of presented evidence appears to have been subjected to varying degrees and types of analysis, from which the candidate sites do not appear to follow straightforwardly and reasonably.

• Pits and Quarries. P&Q1 (NSP) is a candidate site which follows particularly poorly from the evidence and analysis. It fails easily and outwardly several of the characteristics of areas which "were specifically avoided for the siting of a landfill" (see the list on p.1). Outwardly as well, the most compelling advantage of P&Q1 must be that it is not "good agricultural land" (p.2); unfortunately, good agricultural land was not listed among the characteristics to be avoided.

We objected in a previous report to the inclusion of pits and quarries in the Stage 2B evaluation, because pits and quarries did not emerge from the screening process applied to non-P&Q areas in the previous Stage. There is nothing in the "Candidate Sites" report to invalidate our objection, and much to sustain it. "Section 5 --Hydrological Analysis and Assessment of Pits and Quarries" (p. 32ff.), which continues the unbalanced treatment given to pits and quarries, is an example of the latter.

In Section 5 it is noted that "Information gathered from qualified individuals familiar with the specific pits and quarries candidate areas was the primary source of information" (p. 34). It has occurred to us that the relatively large amount of information on P&Q1, which was collected primarily for the NSP application, may in itself prejudice the decision process in favour of its selection for landfill.

• Capacity of P&Q1. The NSP application is for a landfill site having a capacity of 1.76 million tons or 3.52 million cubic yards. The "Candidate Sites" report has identified the necessary capacity as 8.7 million cubic yards, and assigns to P&Q1 the ability to meet 100 per cent of the required capacity. The obvious discrepancy between the capacity the proponent has applied to develop, and the capacity assigned to P&Q1 by the consultant, seems to arise from the consultant's use of "conceptual" capacity "based on a rectangular shaped site" (p.108). While we can appreciate the need to make working assumptions of this sort, surely one is obliged to make (and note) an exception in the face of such a counter-factual result.

• Costing. The costing analysis appears generally to be both comprehensive and fair, given the assumptions made by the consultant. Perhaps the most reassuring aspect of the report is that four of the six selected candidate sites are among the least costly in both the Single Site and the Dual Site Analysis (Table 9). This reassurance might have been reinforced significantly if the reader were informed of the precise weight costs given as a factor in the overall selection process.

• Common Candidate Sites, EA and OWMC. Two of the candidate sites, namely, "D" and "E", are coincident with two of the eight candidate sites announced by the Ontario Waste Management Corporation on March 15, 1984 in Hamilton. If hydrogeology is the most critical factor from an environmental risk minimization point of view, then Sites "D" and "E", having been chosen by two independent and rigorous decision processes, ought to be the "most preferred" of the six candidate sites.

Cont.../3

CAO 14/84

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March 20, 1984

Single Site Versus Two Sites

One of the upshots of Acres' 1982 report for the City of Burlington, was a recommendation from the City to the Region of Halton that the Region adopt a multiple site landfill policy. The relevant reasons were (1) lower transportation costs, which the "Candidate Sites" report estimates at \$2-4 million for two sites (p.144), and (2) operational flexibility and security. The "Candidate Sites" report acknowledges flexibility but notes that "back-up" is not generally required (p.144); it puts the additional operating cost of two sites at \$2 million.

The "Candidate Sites" report also considers a number of other criteria including the Social, Natural Environmental, and Transportation Impacts, and User Convenience. The consultant's consideration of the Social and Natural Environmental Impacts is less than satisfactory, owing generally to the narrow definition of such impacts for these purposes, and to the assumption that both sorts of impacts are a simple function of landfill area.

Under User Convenience the consultant cites as mitigating devices in the single site case "a highly accessible location and/or one or more transfer stations" (p.143). The first device is contingent upon the outcome of the final selection and approval processes, and should be given no status at this point. The mention of transfer stations takes us to p. 115, where one finds what appears to be an arbitrary manipulation of the sort that gave status to pits and quarries in Stage A. We are referring to the replacing of the 80-minute one-way haul time, by a 35-minute one-way haul-time, as the criterion of economic viability for a transfer station.

Together, the casual identification of criteria for evaluating the number-of-sites question, the informal comparison of evidence, and the arbitrarily introduced support for transfer stations, render the "single site" recommendation quite untenable.

The political benefits to be derived from the perception of increased equity throughout the Region, make a second landfill site more reasonable than a transfer station. To the extent that such perceptions reduce approval costs of certain sites, there would be additional benefits.

The Parkway Belt West Plan and Landfill

The City of Burlington has stated its position that the NSP application requires an amendment to the Parkway Belt West Plan. At pages 77 and 78 the Region's consultant treats landfill as a generally compatible use under the Plan. Its mention here is merely to reinforce our previous position. *deal with this*

Phase 2, Stage 2C Work Program

At this late stage in the EA Study process we do not see any point in commenting on the Work Program leading to the selection of the preferred site(s). Given the steps the consultant has already taken, the next steps set out in the Work Program must follow, if he is not to jeopardize the integrity of his process.

Respectfully submitted,

M. H. Boggs
M.H. Boggs
Chief Administrative Officer

MHB::GV:gv:sb
0836u

APPROVED BY
MANAGEMENT COMMITTEE
MARCH 20/84 <i>DCB</i>
Date



5 M-10-84

THE REGIONAL MUNICIPALITY OF HALTON

P.O. BOX 7000
1151 BRONTE ROAD
OAKVILLE, ONTARIO L6J 6E1
416/827-2151 (338)

OFFICE OF THE CHIEF
ADMINISTRATIVE
OFFICER

*On for agenda
Shackel
Mar. 2/84*

1984 02 23

City of Burlington
426 Brant Street
BURLINGTON, Ontario

Attn: Mr. M. Boggs
Chief Administrative Officer

Dear Mr. Boggs:

Re: Regional Landfill Site - Burlington
Interim Waste Disposal Plan - 1983 and
Permanent After-Use Plans for the Close
of the Burlington Landfill Site

RECEIVED	
CITY OF BURLINGTON	
C. A. O.	
FEB 24 1984	
M.H.B.	
G.V.	
S.B.	
COPY TO:	
SWMC AGENDA	
ECOLANS	
D BROWN & GOODMAN	
R. DAVY	

Purpose:

On behalf of the Regional Municipality of Halton, I am writing to the City with certain information and respectfully requesting the City's consideration of a number of matters regarding the existing Regional Landfill Site in Burlington.

The requests are as follows:

1. Would the City commit itself to the development of a permanent after-use plan for the existing Regional landfill site in conjunction with the Region? This request is made regardless of whether the Region receives approval for continuation of landfilling beyond the existing approved contours or not.
2. With respect to the Interim Waste Disposal Plan 1983 that the Region adopted in December last, would the City reconsider its opposition to the proposed four phase landfill continuation program and enter into a Site Plan Agreement with the Region covering the usual site plan matters similar to the past Agreement covering the original expansion in 1980, such Site Plan Agreement to confirm that only as many of the proposed four phases are necessary would be utilized until commencement of operation of the long-term landfill component for Halton?
3. The opportunity for Regional politicians, i.e. the Regional Chairman, the Chairman of the Solid Waste Management Committee of the Region, and Regional staff to make presentations to both the Solid Waste Management Committee and City Council with respect to the above two requests.

BURLINGTON

639-4540

HALTON HILLS
ACTON

853-0501

HALTON HILLS
GEORGETOWN

878-8113

MILTON

878-8113

OAKVILLE

827-2151

In addition to the requests above, the purpose of this letter is to provide information to the City on the Region's Interim Waste Disposal Plan 1985 particularly the Continuation of landfilling and where it is proceeding.

Permanent After-Use Plan:

Regarding the first request to have the City commit itself to the development of a permanent after-use plan for the Regional landfill site in conjunction with the Region, this request is made in recognition of the involvement of the City with respect to passing and active recreational opportunities within the City.

This request would be current whether or not the Region gains approval of the four phase continuation proposal or not.

The basic idea would be that the Region would, as it must, assume the long term responsibility regarding the "underground" matters related thereto and also such above ground matters as settling as a result of the settling of garbage. Further, the Region would be responsible on a perpetual basis for monitoring leachate and methane gas concentrations, drawing off leachate where necessary and providing for its re-treatment, protecting the banks along Falcon Creek, etc. Basically the Region would be responsible for matters arising out of the fact that the area had been a landfill.

The after-use plan by the City would determine what activities, if any, would take place on the surface of that area; what part would be parks; what part might be recreational activities, etc.

It might be that the City may wish to provide two after-use plans - one with respect to the existing approval and one with respect to the area should approvals be obtained for the continuation.

In any case, the after-use plans should be provided now as that would allow M.M. Dillon Limited, the Engineer's consulting firm, to take into account the after-use plan which the City would wish, in doing its final design.

If it is not possible to provide after-use plan(s) now, then we would appreciate a commitment to the effect that the City would prepare a permanent after-use plan in the near future. Then, for now, the Region would prepare an interim after-use plan to submit to support the approvals process.

We would indicate to you that we believe that any after-use plan submitted to the Region in relation to the continuation program could be submitted without prejudice to the City's position as far as actual approvals for the continuation are concerned.

At one time there was thought of tying the Bayview location to the existing Regional location with respect to the parks and recreational opportunities of the City. If so, now is the time to indicate that that would be the case.

On the other hand, if the City has no interest whatsoever in the existing landfill for a park or recreational area, then the Region will prepare the permanent after-use plans and of course discuss them with the City but on the basis that the lands would remain those of the Region with the Region totally responsible for them.

In that regard you know that we are discussing with the Royal Botanical Gardens the possible rehabilitation of those lands for reforestation.

I am submitting to you for your information Public Works Report 10/84 which was sent to the Region's Solid Waste Management Committee on February 6th and approved by Planning and Public Works Committee on February 8th, and by Regional Council on February 8th, for your information regarding the permanent after-use plans.

Applications for the Continuation Option:

With respect to the continuation program and the Applications to the Province in support of the four phase continuation program:

Enclosed with this letter are firstly a copy of a letter signed by the Region's Manager of Waste Disposal enclosing a copy of the Application that has been made to continue the landfilling use at the existing Burlington Landfill Site on a four phase basis.

You have seen the four phases previously, they being Phase A, then Phase B, then Phase C, then Phase D.

As well, please find the supporting documentation available to date which was attached to the Application from M.M. Dillon Limited which was sent to the Ministry on February 15, 1984.

If you require further copies please contact me and I will arrange for more to be sent to you.

Further documentation will be submitted to the M.O.E. throughout March and as we receive it, we will send copies to you.

In addition to the Application for approval under The Environmental Protection Act, an Application was submitted for exemption under The Environmental Assessment Act to the Lieutenant Governor in Council in care of the Ministry of the Environment on February 15, 1984.

With respect to the public hearing that is to be held, we expect that the Director of Environmental Approvals will be referring this particular matter for a public hearing under the Environmental Protection Act to the Environmental Assessment Board and we have asked the Environmental Assessment Board to be prepared to schedule the hearing for early May if the submission from the Ministry is received by the end of March.

The Ministry indicates that the May hearing date is one that they can meet in the sense of them being able to complete their review and submit their comments to the Environmental Assessment Board.

Because of the urgency of the matter we would ask the City to advise the appropriate staff and Consultants of the likelihood that the hearing will be in May, and that we are hopeful by this much notice that people can arrange their calendars accordingly.

Also please find enclosed a copy of supporting Public Works Report PW.18/84 which went to Solid Waste Management Committee on February 6th, was approved by Planning and Public Works Committee on February 8th, and finally by Regional Council on February 8th, for your information. If there are any questions contained in that report, please feel free to contact me concerning same.

Referring to that report and in particular Recommendation #6, I would hope that the City would be prepared to participate in the "Burlington Landfill Advisory Committee" should approvals be received for the Continuation Program and perhaps at some future date you could give me your response concerning same.

Reconsideration:

Regional Council has requested the City to reconsider its opposition to the proposed four-phase landfill continuation program at the Regional landfill site and enter into a Site Plan Agreement with the Region to cover the usual site plan matters similar to the original matters covering the 1980 expansion. This Agreement could also confirm that only as many of the proposed four phases as are necessary would be utilized until commencement of the long term operation of the landfill component for Halton.

In Public Works Report 18/84 a number of issues that were raised by City staff in their report have been addressed.

The Region very much appreciated the input from the City regarding the Interim Waste Disposal Plan and while the City's suggestion was not accepted we believe that that should not lead to a tragic confrontation between the Region and the City at a public hearing.

Regional Council considers this matter of such importance that the Regional Chairman and the Chairman of the Solid Waste Management Committee at the Region wish to attend and make presentations to City Council and discuss this matter with City Council to see if reconsideration would not be possible and the City's opposition to the four phase program dropped.

I would therefore request that the Region be placed as a delegation to the appropriate City Committee that would consider this Regional request for reconsideration and entering into of a Site Plan Agreement and then also on the City Council Agenda thereafter.

Conclusion:

If you have any questions regarding this particular letter and/or the documentation enclosed herewith, please feel free to contact me. We look forward to hearing from you as to the meeting dates of the appropriate Committee and City Council as to when the Region's requests contained in this letter will be considered.

Thankyou very much.

Yours truly,



Dennis Y. Perlin
Chief Administrative Officer

DYP*pm

cc: D. Varley
R. Moore
P. Pomeroy
A. Mulvale

encl. - P.W. Report 10/84
P.W. Report 18/84
Certified Copies of Council re PW 10 & 18/84
Letter and Report from M.M. Dillon

DRAFT: Revised Version will be available on March 23, 1984.

Subject: City of Burlington: Response to Regional Municipality of Halton
Environmental Assessment Draft Reports.

- 1) Phase 2, Stage 2B: Selection of Candidate Sites
- 2) Phase 2, Stage 2C: Work Program

Purpose: The purpose of this report is to provide an independent response to the above noted draft reports. This response was requested by the Solid Waste Management Committee at its meeting of March 9, 1984.

Approach: The two draft reports were reviewed by C. M. Kitchen and R. S. Dorney of Ecoplans Ltd. The hydrogeological components were reviewed by Mr. Tony Crutcher of Conestoga-Rovers and Associates Limited. It was not possible due to time constraints to review the background information and reports on which the environmental assessment document was based. This material will need to be evaluated particularly in reference to the preferred site (s) that are selected as a result of the Phase 2, Stage 2C process.



ECOPLANS^{INC.}

544 Conestogo Rd. W., Waterloo, Ont.
N2L 4E2

CAMERON M. KITCHEN, Ph.D. President
Environmental Planner, M.C.I.P. (519) 884-7200

The major emphasis in this response will be given to Phase 2, Stage 2C report. The comments will focus on the selection of candidate sites as they affect the City of Burlington.

The comments in this response will be grouped under a number of headings including the following:

- 1) Selection of Candidate Sites - Process
- 2) National Sewer Pipe in Burlington
- 3) Single Site versus Multiple Site
- 4) Ontario Waste Management Corporation

Selection of Candidate Sites

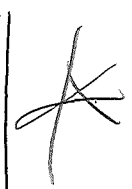
Overall the Environmental Assessment document appears to be comprehensive. The process as outlined generally conforms to the accepted process of narrowing the range of options until a preferred site or sites are selected. It is essentially a sequential decision-making process moving from the overview to the specific. It would be possible however to argue with terminology and specific interpretations in some of the sub-factors analysed. While accepting the overall process adopted in the Phase 2, Stage 2B, there are a number of "weak" spots that should be highlighted. How and why specific candidate sites came to be selected should be clearly stated in the Draft Report. At present it is lacking.

Section 14 - Selection of Candidate Sites does not provide an adequate statement of the candidate site selection process. The report indicates that the first order of importance must be given to Public Health and Safety but there is no indication of its relative importance in relationship to the other factors. In the earlier sections, ranking and numerical approaches were used in evaluating the sub-factors. However at

the critical candidate site selection stage, there is no indication of the relative weight given to each of the major factors or to the sub-factors within the factor class. How dominant was the Public Health and Safety factor in the decision-making process? As a result it is difficult to determine just how the six candidate sites actually ranked in the overall assessment. Presumably there is a reason the number was not four, five, seven or eight, but this is not clear. [For example, it states "sub-factor A.1 (Hydrologic Constraint) must be rated "low" impact in order to consider an area for land fill" (page 35).] The P and Q1 is rated low to moderate for hydrologic constraint (summary chart facing page 35, Draft Report Phase 2 Stage 2B); this fact is omitted in Table 15 (between pages 149 and 150).

Our concern with this section is the lack of a clear documented approach to the selection of the six candidate sites. How do the High, Medium and Lows in Tables 12 to 15 and the weighting given to the factors and sub-factors translate into the six candidate sites listed on page 159? The explanation provided in pages 151 to 159 is not clear. The accounting system used to reach the six sites is not explained so that a reasonable person would come to the same or nearly the same conclusion..]

The text also gives the distinct impression that the National Sewer Pipe site may be the "best" of pit and quarry options but not in the top six of all candidate areas evaluated. The document gives the impression that the "best" of the Pits and Quarries options was included along with the "best" five of clay/till plain options simply to include a pit and quarry. If this is the case, then the process is inconsistent.



The treatment of the pits and quarries within the overall study is inconsistent. It is never clear whether the pits and quarries are being treated as a "special" category of sites or whether they are meant to be evaluated on an equivalent basis with the non pits and quarries sites. The treatment of the pits and quarries at times would appear to indicate a special status; at others they are compared as equivalents. For example, Section 5 is devoted to an analysis of the hydrologic conditions of the Pits and Quarries which are then ranked according to their "favourable" or "unfavourable" condition. It is not clear how the favourable and less favourable rating ranks with High/Medium/Low constraints for other candidate sites. However this ranking does not appear explicitly in the final evaluation and selection. [The hydrological constraints factor is not listed for the pits and quarries options - appearing to reduce the constraints associated with the pits and quarries.] It could be argued that including the hydrologic constraint for pits and quarries would contribute at least a "medium" to the factor listing. Existing information would indicate at least this level of concern for most if not all the pits and quarries. The document gives the impression that the automatic elimination due to hydrologic constraints has been waived for the pits and quarries.

Perhaps the process would have been more clearly stated if the Pits and Quarries had been carried throughout the analysis as a special category as they apparently are, as evidenced by their late appearance in the environmental assessment as candidate areas. A more explicit approach would have viewed the pits and quarries as a distinct class to be evaluated internally as a group with the best of this group to be subsequently evaluated with the best options from the other class of landfill sites.

The final evaluation would compare the "best" of the two classes. All assumptions regarding the two types would be stated very clearly. There appears to be an assumption that the pits and quarries would be susceptible to an engineering solution - groundwater and leachate problems can be resolved more readily and are therefore less restrictive to the development of the site. The clay/till plain areas appear to rely on natural attenuation of the underlying materials. Overall the evaluation process does not indicate in a clear and explicit fashion how the six candidate sites were selected from the range of the candidate sites. [It is unfortunate that the Pits and Quarries were late arrivals in the evaluation process. There is a continuing impression that they are being treated differently (and perhaps less rigorously) in the process.] //

National Sewer Pipe - Pits and Quarries 1

The following comments will apply more directly to the National Sewer Pipe Site (Pits and Quarries 1) as it is of particular importance to the City of Burlington. It would appear that there are a number of inconsistencies within the analysis for this site. Existing information available to the Walker Wright Young would indicate conditions somewhat different than those indicated for the site in the evaluation.

On page 32, the report states the two primary criteria, one of which is "to minimize the potential for groundwater and surface water pollution." It is reasonably well documented that there is a real concern regarding the groundwater pollution potential associated with quarries in the fractured shale bedrock areas. This is currently under investigation.

On page 32, the criterion context is shifted somewhat to state: "There is a low potential to adversely impact groundwater users." There is a different connotation to the two statements, the latter implying that groundwater is acceptable as long as users are not affected. ✓

Then on page 33 the statement "The hydrologic constraint rating is based on the proximity of pits and quarries to water resources". This statement is too vague to be useful in any comparison without stating that e.g. a low rating is X feet from a lake or permanent stream, a medium is some other measure, and a high is X feet, etc. (The Pits and Quarries 1 site is within a 100 metre setback zones from several intermittent streams (Indian Creek Tributaries). The impact on the tributary channels and main channel seem to be ignored in the evaluation.)

The biological considerations (rare and/or significant plants) are incomplete. The plant list for Part I is known. Therefore the statement that significant plants may be found is incorrect; they are present. Other site specific information has been utilized to relegate sites. Why not use site specific data for this site?

Given these concerns, ground and surface water, biological resources it is surprising that the Pits and Quarries 1 - the National Sewer Pipe site made it to the list of six. The lack of any numerical rating, although implied on page 8, makes cross comparison of sites difficult and reinforces the skepticism of certain readers that the choice of the six sites is, at least in part, arbitrary.

Capacity of N.S.P.

The Environmental Assessment report indicates that the site is capable of receiving the estimated requirement of 8.7 million cubic yards of waste. This is more than double the amount of waste (3.52 million cubic yards) in the National Sewer Pipe proposal for a private land fill development.

Site conditions including woodland and herbaceous resources (including provincial and regionally significant species) would constrain the development of the site so that the 8.7 million cubic yard capacity could not be reached. The Draft Report indicated that the N.S.P. site may contain rare and significant plants. The site is known to contain a number of species and the report documenting this is available and has been recommended as a Regional E.S.A. In our opinion, some recognition of this condition should have been given in the evaluation process, specifically increasing the Medium rating to High.

Consideration of the existing conditions and existing plans, while possibly not eliminating the N.S.P. area as a possible landfill site, would have relegated it to a multiple site option. At least 2 of the factors listed in Table 15 (between pages 149 and 150), are unlikely to be correctly identified for the Pit and Quarry 1 candidate site mainly those relating to Hydrologic Constraints, Biophysical and Natural Resources, and the Site Capacity issues. The Community Facilities and the Population component may also be questioned.

Costing

Our comments generally correspond to those presented by the City of Burlington (CAO Report 14/84). In terms of the Pits and Quarries 1 site no cost provision has apparently been included as a contingency should the underlying shales prove to be a major constraint and a clay liner is indicated as being necessary. As a single site option, Pits and Quarries 1 rates 16 out of 20. As a dual site option, it rates 5 out of 55. If a clay liner is required, the ranking would shift.

Single Site Versus Two Sites

A major policy and direction decision within the E.A. report would appear to be the opting of a single site approach. The selection criteria in Section 14 is based on a single site option. At this point in the process it may be wise to maintain some flexibility in this area. Closer examination of the candidate sites may indicate that a multi site approach is the better approach from if not a cost point of view, a convenience and political one.

The opting for a single site approach is a major decision and the rationale for the decision is not well documented. Several major assumptions are made which can only be verified on a site specific basis. An example of this is the supposed doubling of environmental impact with the adoption of a multi site (2) approach. Intuitively this may appear to be the case but requires verification.

We concur with the City's position as stated.

"Together the casual identification of criteria for evaluating the number of sites question the informal comparison of evidence, and the arbitrarily introduced support for transfer stations, render 'the single site' recommendation quite untenable."

Unfortunately, this major decision was taken with less rigorous evaluation than was displayed in evaluating other significant issues. At minimum, the two site option should be maintained.

Ontario Waste Management Corporation

The Environmental Assessment process is running concurrently and is basically at the same stage with the O.W.M.C. selection process for a provincial toxic waste disposal site. On March 15, 1984, the Corporation announced its 8 candidate sites, two of which correspond with candidate sites for the Halton sites. The candidate sites included in both reports are candidate sites D and E. These sites have been selected by two independent and state-of-the-art selection processes. One of the two sites, E, was also selected in an earlier site selection process undertaken by Dillon. The repeated selection of these sites through three independent studies using somewhat different methodologies would indicate the suitability of these sites if not a preferred status for the areas.

It will be necessary to be aware of the O.W.M.C. process and the possibility that both processes will lead to the selection of the same site or site zone. There may be, in fact, some advantage into having the two operations nearby in terms of pooling of laboratory facilities, human resources, and other shared costs.

Conclusions

The preceding comments outline our major concerns with the Environmental Assessment document. Selection of Candidate Areas, Draft Report Phase 2, Stage 2b. The writers of the report are involved in a lengthy and complex process and it is often difficult to document how decisions are made in a report of a readable size. The major concerns are with the selection of candidate sites as presented in Section 14; the treatment of the National Sewer Pipe and Pits and Quarries in general within the overall evaluation process and the single site approach to landfilling. We do not think that these areas have been adequately explained to an interested reader, hence the proponents should either rewrite the analysis sections so it is clear why the six sites were selected, or if the analysis is arbitrary redo Phase 2, Stage 2B and correctly select a new group of candidate sites before moving on to Stage C. In the candidate site selection process, as outlined in Section 14, the analysis is more vigorous than rigorous. This must be correct.

The issue of evaluation which we are raising can be presented in another conceptual way. This falls under the concept of doing a "sensitivity analysis" of the data. This would determine whether the candidate areas are all very similar, all very dissimilar, or do they fall into clusters of similarity. The Ontario Ministry of Transportation and Communications does these sensitivity analyses by "juggling" the order and importance of the evaluation factors, e.g. giving costs the highest priority for one analysis and then giving it a low priority for a second analysis.

If the Walker Wright and Young team were to do this we would suggest using at least the two following sets (and perhaps more):

Set A: Priority I - Public Health and Safety
Priority II - Natural Environment and Social Environment
Priority III - Cultural Environment
Priority IV - Costs and Engineering Operations

Set B: Priority I - Costs and Engineering Operations
Priority II - Public Health and Safety
Priority III - Cultural Environment
Priority IV - Natural Environment and Social Environment

Set C: Other priority rankings

Set D: Other priority rankings

More sets (such as Set C; Set D) might be devised based on the perceptions of the various "actors". The idea is not to artificially constrain the selection process. If the same pattern of candidate sites for Stage 2C emerge all actors would be better satisfied that there are "real differences" between the sites. If different candidate sites emerge depending on the priority rankings then more study of the evaluation procedure would be helpful to be convincing to both technical people, political leaders, and the public at large.

Further to the above, we would recommend an alternative sensitivity test which selected the two best areas in each jurisdiction. These can then be interfaced with the sites identified in the Set A, Set B, Set C, Set D scenario above. Also these could then be used to examine multiple versus simple sites at the next refined level of analysis (i.e. Stage 2C).

A third sensitivity analysis of Pits and Quarries versus the remainder of the sites would be useful. In part this has been done, but not in a direct way.

What the sensitivity testing will do then is to provide convincing evidence that real differences in the sites are present - at least a rank order from high to low or what is called an "ordinal scale". If a numbered sequence of even steps were possible i.e. a "normal scale", this would be better; however, it may be unobtainable. If it is unobtainable the consultant should admit this explicitly to demonstrate that a somewhat higher level of subjectivity is all that can be expected in the evaluation. That is in fact what we are dealing with is an ordinal scale evaluation process.

2. Phase 2, Stage 2C, Work Program

The work program outlined in this document follows logically from the study process to date. The program outlined continues the sequential selection process. This stage will focus on the six candidate sites. According to Walker Wright Young the Stage 2C "will involve a more detailed comparison of site specific issues on the candidate sites and would address the following:

- . site specific mitigating measures where necessary and/or appropriate;
- . rehabilitation measures for end use;
- . siting of transfer station(s) where applicable;
- . designation of potential haul routes, where desirable;
- . local issues and concerns identified from community workshops."

The general evaluation factors do not change but the intensity of the analysis will be at a site-specific level.

The work program does recognize the fact that some of the sites have a greater body of available information such as Site D and Pits and Quarries 1. A major problem will be to bring all sites to an equivalent level of information.

The report does not specify how the evaluation of the candidate sites and the selection of the preferred site will be undertaken. There is no indication within the work program of the methodology that will be used in the analysis, evaluation and ranking of the six candidate sites. We think this should be included. As indicated in the discussion of Phase 2, Stage 2C, we were unable to determine just how the 6 candidate sites emerged from the list of candidate areas. The comments made in reference to Phase 2, Stage 2B would apply here as well.