

WITNESS STATEMENT
BURLINGTON LANDFILL CONTINUED USE

NAME: Paul R. Hill

ADDRESS: 47 Sheppard Avenue East
P.O. Box 1850, Station A
Willowdale, Ontario

SUBJECT OF TESTIMONY: Traffic and Site Access

NATURE OF EXPERTISE: Traffic and Transportation,
Planning and Operations

TOPICS UNDER DISCUSSION: 1. Volume of Waste
2. Roadway and Intersection Capacity
3. Accidents
4. Operational Changes - Roadways

SUMMARY OF EVIDENCE:

- Traffic volume and vehicle classification counts were obtained. These, in combination with roadways currently in place, indicate a good level of traffic service is provided today.
- Waste volumes for the life of the site were estimated (by WFW) and used in the analysis of roadways.
- Using future traffic volumes and projected waste quantities the impact of the continued use of the site was determined. The resultant conclusion was that a good level of service could be provided on area roadways.

- Changes are suggested to improve operations and reduce the potential for accidents at the site access facility.

A handwritten signature in dark ink, appearing to read "Paul R. Hill", is positioned above a horizontal line.

Paul R. Hill, P.Eng.
Senior Associate
M.M. Dillon Limited

PAUL R. HILL

Senior Associate - Transportation

Year of Birth: 1940

Citizenship: Canadian

Education: B.Sc. Civil Engineering, University of New Brunswick, 1962
M.Sc. Transportation, University of New Brunswick, 1967

Affiliations: Registered Professional Engineer, Ontario
Designated Consultant, Ontario
Designated Specialist-Transportation, Ontario
Fellow, Institute of Transportation Engineers

Languages: English

EXPERIENCE

- Project Manager for the Bayview Avenue Traffic Operations Corridor Study. A 2 km section of a Metropolitan Toronto arterial street, which doubles as a major commuter route, a transit street and community shopping area, was considered. Areas of study included parking, traffic operations and community impact. Alternatives were prepared and evaluated according to the specified criteria. A treatment was recommended which satisfied the study objectives while having minimal impact on adjacent uses.
- Project Manager for the Central Area Traffic Management Study, Yonge Corridor Traffic Impact and Transit Optimization Study, Sub-Task 2. This phase of the study involved the development of alternative treatments for Yonge Street in downtown Toronto. Options included a range from full closure to the existing cross section. Changes to operation on Yonge Street required that alternatives be considered for other major streets in the corridor. This included one-way streets, street closures and contra-flow bus lanes. Each was evaluated as to impact on circulation, transit, parking and loading, and pedestrians.
- Project Manager for the Markham Transportation Planning Study. A study of the Town of Markham under the direction of the Region of York. Travel forecasting was carried out using the Region's model for intermediate, long-term and ultimate development scenarios. Road and transit alternatives were developed for testing; this to serve the requirements of Markham and within the content of the greater Metropolitan area. Sensitivity testing was carried out for possible changes in travel habits and parameters. Operational, financial, environmental and energy impacts were considered in the assessment of alternatives.

PAUL R. HILL

- Project Manager for the Region of Waterloo, Transportation Plan Review. A cooperative study was carried out with Regional staff to develop an in-house computer based transportation systems planning capability and to determine medium and long-term transportation requirements. The need for a Regional rapid transit system was evaluated, as well as the economics of the system with respect to existing and future transit demands. Recommendations were made on changes in land use which, if implemented, would substantially reduce transportation requirements. Based on this recommendation, the Region is at the present time considering an alternative land use plan.
- Project Manager for the Sault Ste. Marie Urban Transportation Study. The study components were transportation planning, transit, parking and traffic operations. Comprehensive data collection and analysis phases were carried out and short-term recommendations made. The evaluation of alternative long range transportation systems was carried out assisted by a model developed on the MTC system. Modal split analysis was carried out and recommendations made for road and transit systems to serve the future growth potential of the City.
- Project Manager for the Southeast Oakville Transportation Plan Review. A study of the transportation requirements for Oakville to the design year. Previous proposals were evaluated on the basis of need, a public participation was carried out, and a priority program of road improvements was prepared.
- Project Manager, Transportation, for the Highway 8 By-pass, City of Cambridge. As part of the Environmental Assessment process, a detailed review of options to Highway 8 were examined. This required the manipulation of the Region's model output and reassignment of trips to alternative street networks. Transportation requirements were detailed for both the intermediate and long-terms.
- Project Manager for the Brown's Corners Transportation Analysis, Town of Markham. The proposals for development in this highly accessible Highway 404 (Don Valley Parkway extension) corridor required a detailed evaluation of transportation. Using trip making parameters, a detailed review was made of the long-term requirements and additions to the road network necessary to serve a planned development for some 30,000 employees. Recommendations were made for grade separations, freeway connections and road and intersection treatments.
- Project Manager for the IBM Data Processing/Education/Administration Centre, Markham. The establishment of this new headquarters complex to eventually house some 10,000 employees on Steeles Avenue, just east of the Don Valley Parkway, required an evaluation of access. As part of this study, area transportation and planning considerations were taken into account. The resultant finding brought to light the substantial growth potential and corresponding transportation requirements of the area.

PAUL R. HILL

- Project Manager, Transportation, for the Hamilton Perimeter Industrial Road. Transportation aspects of a multi-discipline study to find an acceptable route for a facility to carry truck traffic to and from the major industrial areas of Hamilton as well as serve automobile travel in the corridor. The feasibility of including exclusive bus lanes was part of the route evaluation.
- Project Manager for the First Canadian Place. A study of the impact on the transportation system of a multi-use development (3,000,000 ft.² office and 500,000 ft.² G.L.A. retail) in downtown Toronto surrounded by Bay, King, York and Adelaide Streets. Recommendations included a direct connection to an under-utilized station on the Spadina Rapid Transit Line.
- Project Manager for the General Motors Trim Plant, Windsor. Shift changes produced a pronounced peak and with it severe difficulties in egress from the parking area. Detailed field studies of arrivals and departures were carried out and analyzed. Alternative ingress-egress and internal circulation scenarios were developed and presented for consideration. Details of operational changes and control facilities were recommended.
- Project Manager for the Chatham Downtown Redevelopment. Transportation and parking analysis was carried out to Chatham Place, a proposed major redevelopment block in downtown Chatham. Detailed traffic forecasts were prepared and analysis of major street intersections within the downtown area carried out. Field parking surveys were carried out to determine the characteristics of parkers and their willingness to walk certain distances. Supply/demand calculations were carried out for each block and recommendations made for locations of additional parking facilities.
- Project Manager for the Mayflower Mall, Sydney, Nova Scotia. A transportation planning and operations study was carried out to determine ingress/egress requirements for this shopping centre of 390,000 ft.² G.L.A. Consideration was given to the proximity of major highways and the impact certain ingress/egress patterns would have on these. Consideration was given for a ramp connection from a limited access highway. Intersection operational analyses were carried out and recommendations made for traffic control devices.
- Project Manager, Transportation, for the Markham Industrial Allocation Study. Studies were initiated to determine potential for additional industrial development in the Town of Markham. Travel forecasts carried out by the Region of York were analyzed and refined to determine if and where additional growth potential was available. Recommendations were made on the relative accessibility of the various areas being considered.

PAUL R. HILL

- Project Manager for the Raymerville Transportation Study, Markham. Transportation analysis was carried out for the proposed neighbourhood to house some 10,000 people in the northern part of the Town of Markham. Within the framework of the objectives of the Official Plan, alternative road patterns were developed and their impact on existing and future roadways analyzed. The recommended treatment was detailed and operational features suggested.
- Project Manager for the Mutual Life Development, Kitchener/Waterloo, Ontario. Traffic impact, parking and ingress-egress studies carried out for this proposed development in a built-up areas of Kitchener/Waterloo. Trip generation and distribution studies were used in determining the ingress-egress requirements and adjacent intersections analyzed to determine the impact of this development. Recommendations were made to location and quantity of parking to be provided.
- Project Manager, Transportation, for Southland Centre, Calgary. Analysis of a major office commercial and residential complex proposed for suburban Calgary was carried out. Proposals for parking and ingress-egress were reviewed and recommendations made. The primary focus for parking was that of redesign of the internal layout of the parking garage to serve the development. This redesign enabled several hundred more parking spaces to be provided.
- Project Manager for the Glen Abbey Development, Oakville. Alternative transportation plans for this community to house some 30,000 people were prepared. The street system for the residential component was integrated with that for the adjacent industrial area and taking into consideration the transportation requirements of the Glen Abbey Golf Course, the permanent home of the Canadian Open. Various alternatives were evaluated on the basis of roadway service provided and the potential for transit service. Also considered were proposals for a regional shopping centre and adjacent residential and industrial lands.
- Project Manager, Transportation, for the Lacroix-Thames River Crossing, Chatham. Travel forecasts were prepared for the intermediate and long-terms for the proposed crossing of the Thames River in downtown Chatham. In preparation for giving evidence at the Ontario Municipal Board hearing, the existing street system and its adequacy to accommodate traffic in the future was evaluated. Expert evidence was given at the Ontario Municipal Board.
- Project Manager, Transportation, Windsor Road Needs Study. An expanded transportation analysis was carried out as part of the Road Needs Study. Screenline checks of forecasts from previous studies were made with existing volumes and rationalization of these and other sources of information were employed. A program of improvements was prepared.

PAUL R. HILL

- Project Manager, Transportation, for Route 165, Winnipeg. As part of an overall feasibility and design study, travel forecasts were prepared for this facility and intersecting streets. Information from Winnipeg's model was supplemented by detailed forecasts of travel to and from the immediate areas. Travel forecasts for the staging of the facility were carried out to ensure workability during the interim period.
- Project Manager for the Gerrard Clonmore Development, Toronto. Transportation requirements for the development and impact on adjacent areas was carried out for the residential development of some 2,000 dwelling units. Transit planning was carried out and possible routings recommended for TTC vehicles to provide convenient connections to the Bloor-Danforth rapid transit line. Recommendations for minor intersectional improvements were made. Integration of this plan with that of the planned Scarborough Transportation Corridor was carried out.
- Project Manager for the Bank of Montreal Data Centre, Metropolitan Toronto. Alternative ingress-egress options were considered for a development to house some 9,000 employees in an emerging business park in the northern part of Scarborough. Modal split analysis was carried out and recommendations were made for internal site layout.
- Project Manager for the Devonshire Shopping Centre, Windsor. Detailed studies of access for the initial phase of this Regional Shopping Centre (525,000 ft.² G.L.A.) in Windsor was necessitated because of its close proximity to the E.C. Row Expressway. In addition to external access, studies of internal circulation and parking were carried out. Preliminary designs were prepared for all off-site access improvements including the revisions to a freeway interchange and five-lane cross section on adjacent arterial.
- Project Engineer for the Brady Street Expressway, Sudbury. Detail planning for this expressway included studies of signal timing for the expressway and connecting streets.
- Project Engineer for the Belfield Freeway (Highway 410), Brampton. Changes in road patterns within the municipality suggested alternate interchange locations for the freeway. Operational aspects of the proposed changes were carried out and presented for consideration.
- Project Engineer for the Fairview Mall Operational Review, Metropolitan Toronto. The need for and feasibility of an original proposal to have a direct connection from this centre of 575,000 ft.² G.L.A. to the Don Valley Parkway was studied. Detail studies of operations included interview surveys, in and out counts, and parking duration surveys. From the analysis it was determined that a proposed connection would be beneficial to both shopping patrons and to the operation of the adjacent arterial

PAUL R. HILL

street system. The implementation of the scheme required the construction of the connection and a resigning program for the shopping centre.

- Project Manager for Road Revisions at the Fairview Mall, Toronto. A proposal to make a major change to a Highway 404 ramp would have a significant impact on the access to the shopping centre and its parking. Field surveys were carried out to determine trip patterns and from there the effects of the proposed changes were evaluated. Various proposals were analyzed and recommendations made for both the existing centre and an expanded centre of some 775,000 ft.² G.L.A.
- Project Engineer for the Halifax Transportation Feasibility Study. This study involved ways and means of providing additional capacity to peninsular Halifax. Measures such as contra flow lanes, exclusive bus lanes and demand responsive bus feeder systems were explored.
- Project Engineer, Transportation, for the Scarborough Town Centre. Analysis of the internal road pattern and interface with surrounding major streets was carried out for this major shopping/office/residential development which is the Town Centre of Scarborough. The forecast of trip-making was carried out and within constraints recommendations made for the road pattern.
- Project Engineer for the McLeod-Glenmore area, Calgary. Proposal for a grade separation of major arterial streets required consideration of the impact of the proposals on existing uses. Studies and analysis were carried out to determine user cost associated with proposals, and to consider alternatives.
- Project Manager for the Brampton Parking Study. A review of parking usage, fare structure and policy was carried out for the downtown area of Brampton. Also considered was accessibility, and impact on adjacent streets of changes in ingress-egress facilities to major parking areas. Recommendations were made for changes in fares and parking policies.
- Project Manager for the Communications Road Traffic Study, County of Kent. Origin and destination studies were carried out, and from these forecasts of potential travel on a new bridge crossing of the Thames River, east of Chatham, were made. Analysis also included the effect of constructing a new bridge crossing on levels of traffic on existing crossings. A recommendation was made and the bridge subsequently constructed.
- Transportation Engineer for the Queens Avenue Extension, London. Using travel forecasts from the Transportation Study and existing count information forecasts of traffic for the extension of Queens Avenue were carried out. Recommendations were made on lane demarcation and signal phasing.

PAUL R. HILL

- Project Manager for the Rouge Shopping Centre, Metropolitan Toronto. Studies of trip generation and trip distribution were carried out to arrive at travel forecasts for this centre of 750,000 ft.² G.L.A. A roads plan was developed which was compatible with existing and planned major roads in the area. Proposals for ingress-egress included a major road realignment and integration of this plan with others in the area.
- Project Manager for the White Oaks Shopping Centre, London. The expansion of an existing centre to a regional size centre (410,000 ft.² G.L.A.) required major revisions to the ingress-egress facilities. Studies of traffic circulation and their integration with existing and future street patterns provided a framework for the overall plan.
- Project Manager for the Stone Road Mall, Guelph. Transportation planning was carried out for the development of the initial phase of this shopping centre and then for the ultimate shopping complex of 450,000 ft.² G.L.A. Alternate strategies for ingress-egress were developed and measured on the basis of providing access and their impact on the adjacent street system. A recommended treatment for the longer-term was made.
- Project Manager for the East Park Centre, Windsor. Planning for ingress-egress to this major regional shopping centre of some 525,000 ft.² G.L.A. was carried out. Forecast of trip patterns took into consideration the major existing shopping centres in the area and the attractiveness of this centre. A recommended street pattern was developed and the impact of this centre on adjacent roadways was evaluated.
- Project Manager for the Alma Shopping Centre, Alma, Quebec. Studies of trip-making to and from this centre of 295,000 ft.² G.L.A. were carried out within the context of the area to be served. An ingress-egress plan was developed and negotiations carried out with the municipality.
- Project Manager for Base Line/Murray/McNaughton intersection, Wallaceberg. A traffic analysis was carried out to determine the appropriate geometry for the redesign of this intersection. This evaluation was done for the existing and projected future conditions. Recommendations were made for length of storage lanes, tapers and general geometric configurations.
- Project Manager for the Study Area 1C Transportation Analysis, the Town of Markham. Given the transportation infrastructure existing and that planned for the future, the objective of this study was to determine the amount and location of various land uses which could be accommodated within the area. The analysis was carried out utilizing information from the Region of York model and transportation analysis for adjacent areas. Consideration was given to area wide transportation facilities

particularly Highway 404 and Highway 7. Recommendations included density and location of development, intersection spacing, additional roadway facilities to compliment the existing employment and the level of transportation investment required to serve various levels of that development.

- Project Manager for the Study Area 1A Transportation Analysis, the Town of Markham. This area is located just north of the Borough of Scarborough in the eastern portion of Metropolitan Toronto. Analysis carried out was primarily to determine the density and location of proposed uses within the study area. The forecast of trips were carried out using information from the Region of York model and various levels of development tested. Recommendations were made on the density and location of development. Intersection spacing of major streets and the coordination of the street system for this area with that for the Borough of Scarborough and Metropolitan Toronto was carried out.
- Project Manager for the North Don Mills Industrial Area Transportation Analysis, the Town of Markham. This highly constrained area adjacent to Highway 404 and bounded by future Highway 407 and the railway required detailed transportation and operational analysis. The impact of the proposed Highway 404/14th Avenue interchange was part of the evaluation. Recommendations were made as to the appropriate density of development and intersectional requirements on major roads.
- Project Manager for the Steelton Neighbourhood Traffic Operations and Parking Study, Sault Ste. Marie. This was part of a Neighbourhood Improvement Program and examined methods of increasing arterial street capacity and reducing infiltrating traffic in adjacent residential areas. Studies of parking were done to determine the numbers and location of parking spaces to replace those lost on arterial streets. A traffic control plan for the area was also developed.
- Project Manager, Transportation, for the Wallaceburg Downtown Revitalization. Traffic operational studies were carried out to determine the impact of excluding through traffic from the major downtown street and revised traffic forecasts were used to test alternate street patterns. Studies of traffic signal locations and entrances to major parking areas were also made. The plans developed were consistent with the ultimate goal of creating a pedestrian mall in the downtown.
- Transportation Engineer for the Highway 417 Corridor Study, Regional Municipality of Ottawa-Carleton. Transportation forecasts were carried out for a multi-discipline study which also involved public participation, land use planning, landscape architecture, and environmental considerations. The transportation input involved an examination of travel forecasting used in prior studies and the adjustments required to reflect changes in travel habits and land use so as to evaluate alternative transportation modes in the corridors which were studied.

PAUL R. HILL

- Transportation Engineer for the Allen Expressway, Metropolitan Toronto. A detailed evaluation of sections of the expressway and ramps were carried out for a major land use proposal to achieve higher densities along the Spadina Rapid Transit Line. Studies of freeway operations including weaving, merging and diverging movements, and arterial street operations were carried out. Travel forecasts were done recognizing the impact of the Spadina line as well as other transportation improvements in the area.
- Transportation Engineer for the Highway 416 Corridor Study, Regional Municipality of Ottawa-Carleton. Transportation analysis was carried out for this multi-discipline study. Utilization of available travel forecast, supplemented by survey data, were used to evaluate alternative transportation modes and corridors.
- Project Manager for a Province Wide Urban Needs Inventory. The end product was a determination of future urban road needs for some 60 municipalities in the province of Ontario. Transportation needs for individual municipalities were evaluated, utilizing existing transportation planning studies and supplemented by field visits and discussions with municipal representatives responsible for transportation.
- Project Manager, Transportation, for the Sudbury Area Planning Study, Ministry of Treasury, Economics and Inter-Governmental Affairs, Ontario. The objective of this study was to catalogue the constraints to urban development within the newly formed regional government structure. Constraints to development relative to transportation were evaluated along with other engineering constraints (water, sewage, flooding, drainage, foundations, energy sources, solid waste disposal and mining lands). Cost involved in expanding the transportation systems for alternative settlement patterns were determined and used in the overall evaluation.
- Project Manager, Transportation, for the Thornhill-Vaughan Community, the Region of York. The planning for a community of some 75,000 population required a detailed evaluation of transportation. Being in close proximity to Metropolitan Toronto, road and transit facilities provided therein and their possible extension into the Region of York were considered. Proposals were made for an internal street pattern and the integration with an intermediate capacity transit facility. Recommendations were made with regard to rights-of-way required for transportation purposes.
- Project Manager, Transportation, for a PCB Interim Storage Facility. One of the major components of the site selection process involved an analysis of transportation, including a review of current practices and related legislation. Several sites were evaluated according to transportation criteria, including proximity to the freeway and arterial road systems, service provided by county roads, vehicle-kilometrage from waste sources, travel through urban areas and accident probability.

PAUL R. HILL

- Project Manager, Transportation, for Halton Site F. The adequacy of transportation facilities and impact of a 256 acre Regional landfill site were evaluated. An analysis was carried out for the existing condition as well as those forecast for the life of the site. Expert evidence was given at the Ontario Municipal Board.
- Project Manager, Transportation, for the Ridge Landfill Site. The expansion of this site near Blenheim required a detailed analysis of transportation. The adequacy of area roads was undertaken for both the normal and spring break-up periods. The impact of travel through adjacent urbanized areas was also evaluated. Detailed intersection analysis was carried out and recommendations made for control measures. Expert evidence was given at the Environmental Assessment Board.
- Project Manager, Transportation, for the Oxford County Landfill Site. A detailed analysis of transportation was carried out for a facility to serve the long-term needs of the County. An evaluation was carried out of the transportation impact on the Provincial and County road systems. Roadway and intersection capacities were checked and improvements for a major intersection recommended. Expert evidence was given at a combined hearing of the Ontario Municipal Board and the Environmental Assessment Board.
- Project Engineer for the Outer Ring Road, Regional Municipality of Ottawa-Carleton; preparation of travel forecasts to determine type of facility, interchange location and staging.
- Project Manager for the AMEX complex, Town of Markham. A study of access and impact was made for this major employment complex. Traffic operational analyses were carried out to determine the desired access arrangements. The impact of this development, plus other land uses in the area were quantified, considering the existing and future street systems.
- Project Advisor for 895 Don Mills Road, Metropolitan Toronto. Access and parking requirements were determined for a 600,000 ft.² office development. Existing operations of streets in the area were analyzed and the impact of this and other proposed developments quantified. Studies of parking included a review of the proposed garage and revisions to reflect current and probable future automobile size patterns.
- Project Engineer for the re-design of Talbot Street in the Central Business District of the City of St. Thomas. This street, in addition to normal urban functions, provided a connecting link for Highway 3. Studies of traffic, parking, transit and pedestrians were carried out and forecasts of short and long term future requirements made. Recommendations were made for street widths, signal operation and parking requirements so as to incorporate the desired architectural and landscape amenities to the downtown streetscape.
- Project Manager, Transportation, for Newcastle Secondary Plans. In concert with other disciplines, alternative land use and transportation plans were prepared for the towns of Bowmanville, Newcastle and Courtice. Options were tested for both arterial street alignments and for possible connections to the freeway system.