Appendix I

SURVEY SAMPLING DESIGN, PROCEDURES AND TESTS

Al.1 INTRODUCTION TO SURVEY

Six surveys were conducted in relation to the Mississauga derailment. (Table Al.1). Two surveys sampled evacuated households in general (one within 2 weeks of the emergency and one 9 months later). In addition, households using Evacuation Centres were sampled directly from the Centre Registrations in order to provide more information on a group that were known (from the first general household survey in November 1979) to represent only about 5% of all households. This group was of particular interest because they had experience of the officially organised shelters, and because we wanted to identify what kinds of people went to centres rather than to private homes.

The sampling procedure (see Al.2) deliberately eliminated businesses from the general samples. A separate sample of businesses was therefore selected specifically to find out about business losses during the evacuation.

Two other samples were drawn from populations outside the evacuation zone. One was of households located just north of the northern evacuation zone perimeter, but which were relatively close to the accident (Figure Al.1). The other sample was designed as a control to test the impact of the evacuation on peoples' risk perceptions and attitudes to compensation, as well as to give an indication of the communication patterns between households located inside and outside the evacuated area.
<table>
<thead>
<tr>
<th>Sample Size</th>
<th>Unit of Observation</th>
<th>Type of Sample</th>
<th>Procedure</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>992</td>
<td>households in evacuation</td>
<td>random, stratified by zone</td>
<td>mailed questionnaires and telephone interviews</td>
<td>Nov-Dec 1979</td>
</tr>
<tr>
<td>999</td>
<td>households in evacuation zone</td>
<td>random systematic</td>
<td>mailed questionnaires</td>
<td>July 1980</td>
</tr>
<tr>
<td>500</td>
<td>registrations at Evacuation Centres</td>
<td>random systematic</td>
<td>mailed questionnaires</td>
<td>July 1980</td>
</tr>
<tr>
<td>500</td>
<td>households on northern perimeter</td>
<td>random systematic</td>
<td>telephone interviews</td>
<td>July-Aug 1980</td>
</tr>
<tr>
<td>500</td>
<td>households in Don Mills</td>
<td>random systematic</td>
<td>telephone interviews</td>
<td>July-Aug 1980</td>
</tr>
<tr>
<td>606</td>
<td>businesses in evacuation zone</td>
<td>random systematic</td>
<td>mailed questionnaires</td>
<td>1981</td>
</tr>
</tbody>
</table>
### TABLE A1.2: SAMPLE SIZES, AND RESPONSE RATES AND CONFIDENCE LEVELS

<table>
<thead>
<tr>
<th></th>
<th>Main sample of evacuated households</th>
<th>Evacuation Centre Sample</th>
<th>Perimeter Sample</th>
<th>Control Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population (households)</td>
<td>75,500</td>
<td>3775</td>
<td>3000</td>
<td>2110</td>
</tr>
<tr>
<td>Sample size</td>
<td>999</td>
<td>501</td>
<td>500</td>
<td>510</td>
</tr>
<tr>
<td>Number of households Contacted</td>
<td>847</td>
<td>345</td>
<td>267</td>
<td>315</td>
</tr>
<tr>
<td>Questionnaires mailed again</td>
<td>125</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Questionnaires not counted (rejected)</td>
<td>24</td>
<td>-</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Completed surveys rec'd (as of Dec. 16/80)</td>
<td>504</td>
<td>175</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Telephone Interviews completed</td>
<td>n/a</td>
<td>n/a</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Interviews not completed (language problems or refused to participate)</td>
<td>67</td>
<td>n/a</td>
<td>67</td>
<td>115</td>
</tr>
<tr>
<td>Response Rate</td>
<td>45%</td>
<td>35%</td>
<td>75% a</td>
<td>63% a</td>
</tr>
<tr>
<td>Completed observations as % of total population</td>
<td>0.7%</td>
<td>4.6%</td>
<td>6.6%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Minimum % of population for 98% confidence level (b)</td>
<td>0.3%</td>
<td>5.5%</td>
<td>6.6%</td>
<td>9.2%</td>
</tr>
</tbody>
</table>

**NOTES**

(a) calculated on basis of number of completed interviews divided by number of residents contacted  
n/a - not applicable  
(b) from Slonin, 1960, pp 74-75.
The questionnaires used in these six surveys are given in Appendices 2-6.

**A1.2. SAMPLING PROCEDURES**

**A1.2.1 General procedure**

The procedure described was used for all the surveys, with the modifications noted below.

a) The geographic area to be sampled was delineated on a map, and a list prepared of all streets located within the area.

For streets that extend beyond the delineated area, the houses located within the area were identified either by estimation or by field observation.

b) The total of observation units (usually households) was calculated from the listings in the *Bower's Street Directory* (1980 edition).

This directory lists all residences and businesses (separately identified) on each street that are given in Bell Canada telephone directories.

c) The desired sample size (see A.1.4) was divided into the total number of observation units (e.g. all households in area) to determine the frequency (e.g. 1 in 75 for a sample of 1000 out of 75,000 households) with which sample observations would be drawn from the lists.
d) A random number (eg between 2 and 75) was obtained from the Rand Corporation's *A Million Random Digits*. This number was used as the start of the sampling. Following this, a uniform interval was used to select every nth (eg 75th) observation for inclusion in the sample.

e) Special cases

1) where an observation unit had already been included in a previous sample, the unit listed immediately below was selected instead. This occurred 10 times in the selection of the second main sample of evacuated households, and not at all in the selection of the Evacuation Centre users.

2) where an ineligible unit occurred somewhere in the sampling interval, its presence was disregarded for the purposes of calculating the interval. Thus, if a desired sample interval of 75 household units included 9 non-residences, the 89th unit (75th household) was selected. This procedure was adopted because the non-residences had not been included in the original calculation of the total number of available observations.

f) Where this procedure led to undersampling (possibly because the street totals in the directory were in error), it was corrected by resampling.

Al.2.2 **Modifications to general procedure**

a) For the sample of households using Evacuation Centres, Registrations held by the Red Cross were used instead of the Bower's Street Directory. From the 800 Registrations available, a sample of 500 units was selected according to the following pattern:
RSRSSRSS (repeated)
where R stands for rejection
and S stands for selection.

b) For the sample of businesses, the original random sample was augmented with manufacturing and wholesaling firms selected from the Yellow Pages of the local telephone directory.

Al.3 SURVEY PROCEDURE

As shown in table Al.1, some surveys were conducted using a mailed questionnaire and others were obtained through telephone interviews.

a) The mailed questionnaires were sent, enclosing a reply-paid, addressed envelope to named heads of households, and (except for the November 1979 survey) covering letters from the Project and from Mayor Hazel McCallion of Mississauga.

b) After four weeks with no reply, a telephone reminder was made to their questionnaires. (In the case of the first survey, a short form of the questionnaire was given at this time as a telephone interview).

c) Questionnaires were mailed again (a) to households who, when telephoned, said that they had not received one; and (b) when the post-office returned them to the project as non-deliverable.

d) On receipt of the completed questionnaires, the data were coded and keypunched for computer analysis. A few questionnaires had to be rejected as incomplete.
Table A1.3  Socio-economic characteristics of the control area compared to Mississauga

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Area 520 Mississauga</th>
<th>Area 304.03 Don Mills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>11,978</td>
<td>7,598</td>
</tr>
<tr>
<td>Population Increase (1971-1976)</td>
<td>319.5%</td>
<td>327.5%</td>
</tr>
<tr>
<td>Occupied Private Dwellings</td>
<td>2,140</td>
<td>3,270</td>
</tr>
<tr>
<td>% Owned</td>
<td>71%</td>
<td>86%</td>
</tr>
<tr>
<td>% Rented</td>
<td>29%</td>
<td>14%</td>
</tr>
<tr>
<td>Av. Number of Persons per Household</td>
<td>3.5</td>
<td>3.6</td>
</tr>
<tr>
<td>Av. Number of Persons per Family</td>
<td>3.6</td>
<td>3.6</td>
</tr>
<tr>
<td>Av. Number of Children per Family</td>
<td>1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>Mobility: % Movers</td>
<td>75.9%</td>
<td>80.8%</td>
</tr>
<tr>
<td>Education (Univ. Degree)</td>
<td>4.6</td>
<td>10.6</td>
</tr>
<tr>
<td>(Grade 11-13)</td>
<td>18.4</td>
<td>16.6</td>
</tr>
<tr>
<td>Labour Force Participation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>81.4%</td>
<td>85.7%</td>
</tr>
<tr>
<td>Females</td>
<td>58.6%</td>
<td>58.0%</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>4.1%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Females</td>
<td>5.0%</td>
<td>7.8%</td>
</tr>
<tr>
<td>Birthplace*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>70.5</td>
<td>69.9</td>
</tr>
<tr>
<td>Outside Canada</td>
<td>29.5</td>
<td>30.1</td>
</tr>
<tr>
<td>Family Income* (average total)</td>
<td>$10,631</td>
<td>$13,627</td>
</tr>
<tr>
<td>Average Cash Rent*</td>
<td>156</td>
<td>181</td>
</tr>
<tr>
<td>Period of Home Const.*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before 1946</td>
<td>11.9%</td>
<td>1.35</td>
</tr>
<tr>
<td>After 1960</td>
<td>40.0%</td>
<td>95.5</td>
</tr>
<tr>
<td>Occupation*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White collar</td>
<td>2.0%</td>
<td>10.2%</td>
</tr>
<tr>
<td>Blue collar</td>
<td>29.9%</td>
<td>12.1%</td>
</tr>
</tbody>
</table>

* Based on information obtained in 1971 census. Other data from 197 'short' census.
e) In the case of the telephone surveys, households were phoned during the week day, evenings, and on weekends to minimize bias in the socio-economic characteristics of the people contacted. When no one answered, or the line was busy, the interviewer proceeded to the next observation unit. "No answers" were telephoned at least twice. Completed interviews were coded and key punched according to the same format as were the mailed questionnaires.

Mailed questionnaires are more likely to be returned by households in higher socio-economic brackets so that a systematic bias is developed in the response to mailed questionnaires. This bias is less in the response to telephoned interviews. In the first main survey (Nov. 1979) the responses to the mailed and telephoned questionnaires were combined, although they were found to be significantly different in household income. This problem was not present in later surveys.

A1.4 SAMPLE SIZES, RESPONSE RATES
AND CONFIDENCE LEVELS

Table A1.2 summarizes the data for sample sizes, response rates and confidence levels. Except for the Evacuation Centre sample, the numbers of completed observations in each sample are consistent with a 98% confidence level, and an error of ±5% assuming a value variability of 50% (Slonin, 1960, p74-75). The Evacuation Centre sample falls a little short of this, but it was decided not to increase the sample size because the universe of Centre Registrations form which the sample was being drawn, was itself found to be a partial sample of the Evacuation Centre users (see section A1.5).

Response rates were unusually high for both the mailed and telephoned surveys (table A1.2); a testimony to the interest of the public in the Mississauga evacuation, and (for the mailed questionnaires) to the support provided by Mayor Hazel McCallion's accompanying letter.
A1.5 TESTS FOR REPRESENTATIVENESS

Tests for representativeness (such as, the comparison of socio-economic characteristics between the sample and the total population from which it was drawn) were not performed for the following reasons:

a) The most recent relevant data in the characteristics of the total population are only available for 1971, the year of the last 'long' Canadian census. These data are therefore 9 years out of date.

b) In the case of Mississauga, which has undergone great demographic changes (largely through immigration) in those 9 years, this time difference renders any comparison meaningless;

c) These major demographic changes also limit the validity of any scaling procedures that might be employed to produce projections of the 1980 population characteristics on the basis of the 1971 census data. The assumptions required about constant intertabular relationships over time cannot be upheld for Mississauga.

The inability to perform tests for representativeness is not considered a major problem. The surveys and sampling were conducted according to broadly-accepted and rigorous methodological principles, which would minimize the possibility of a biased or unrepresentative sample.

In the case of the Evacuation Centre users, it is now known that the Registrations from which the sample was drawn, did not include the whole population. This is because not all people registered, and Red Cross Registration Cards were available for only 9 out of 31 Evacuation Centres. Our sample does not include the small Evacuation Centres housing from 9 - 200 evacuees (see Table 4.1), and under-represents others
The sample is strongly biased towards the International Centre and Streetsville Secondary School. This bias is of most concern for the user evaluations of the Centres discussed in chapter 5, because it is believed that people's needs were best met in the (under-represented) smaller Centres.

A1.6 SELECTION AND VALIDITY OF
CONTROL GROUP

A control sample was selected primarily to test differences in risk perception between people who had similar exposure to risk but different experience (that is, lived near to a main railway track but had not been evacuated). Several census tracks near to Toronto and located close to railway tracks were examined in an attempt to find an area that was comparable to Mississauga (census tract 520 which includes the accident location and 85% of the first evacuation zone) according to the following criteria:

a) population increase over the last 30 years
b) proportion of owner-occupied private dwellings
c) average numbers of persons per household
d) average number of persons per family
e) average number of children per family
f) household mobility
g) education
h) participation in labour force
i) unemployment rate
j) birthplace
k) family income
l) occupation
m) period of home construction

The area which best fits these criteria is census tract 303.03 in Don Mills (Table A1.3). A sample of 500 households was drawn from this area to act as a control.
Tests comparing the age, sex and income distributions of the main sample of evacuees and the control sample show that they are significantly different. Analysis comparing the two samples must therefore take these differences into account.
Appendix 2

QUESTIONNAIRE USED IN FIRST MAIN MAILED SURVEY OF EVACUATION, NOVEMBER, 1979
Dear Resident:

We are undertaking a study of the public feelings and response to the evacuation of Mississauga due to the train derailment on Saturday, 10th of November. It would be of great help to our study if someone in your household could complete the following questionnaire and mail it back to us using the enclosed stamped addressed envelope within the next two weeks.

If you wish to add comments or qualify the answers to any of the questions, please feel free to do so. For more information about the study please call 978-6409.

ALL REPLIES ARE FOR UNIVERSITY RESEARCH ONLY AND WILL BE ABSOLUTELY CONFIDENTIAL.

Professor Anne V. Whyte, Diana Liverman, John Wilson

PLEASE CHECK, ANSWER, OR WRITE COMMENT IN SPACE PROVIDED

A. THE ACCIDENT

1. The accident happened around 11:50 p.m. on Saturday night, 10th of November. When did you first hear about the accident?

   Sat night 10th Nov    Sun eve 11th Nov    Later than this ___
   Sun Morn 11th Nov    Mon Morn 12th Nov    ___
   Sun aft 11th Nov     Mon aft 12th Nov     ___

   Can you specify time?

2. Where were members of your household at the time of the accident?
   (Please give how many in each category eg. 5 at home)

   At home _____ In Mississauga but not at home _____
   Travelling in Mississauga _____ Travelling outside the area _____
   In Toronto area _____ Outside Toronto area _____

3. How did you first learn about the accident?

   Radio _____ T.V. _____ (Which station)   Newspaper
   Family member _____ Friend or neighbour _____ Police
   Building superintendent ______ Saw fire or heard explosion
   Other (Please specify) ___

4. How did you pinpoint the site of the accident?

   I knew where: Mavis Road was ______ Other (Please specify
   CP line was ______
   I worked it out from the location of the evacuation zone

5. What did you think the danger was?

   Explosion _____ Gases (What kind of gas?)
   Fire _____ Didn't think there was a danger
6. Did you try to get closer to the scene of the accident at any time?
   Yes _____ No _____ (Please give details ________________________)
   Why? (Please specify) ________________________________

7. When did you first think that you might have to evacuate?
   _____ Sat eve  _____ Sun eve  _____ Mon eve
   _____ Sun morn  _____ Mon morn  _____ Tues morn
   _____ Sun aft  _____ Mon aft  _____ Later than Tues

8. Did you start to make any preparations at this time? _____ Yes _____ No
   What did you do? (Tried to confirm what had happened, pack suitcase, water plants, phone relatives etc)
   Please describe:
   ______________________________________________________

9. When were you officially told or asked to evacuate? (Give day and time)
   ______________________________________________________

10. From whom did you receive the message to evacuate?
    _____ Police at door  _____ Building Superintendent  _____ neighbour
    _____ Loud Hailer truck  _____ T. V. (_______ Which Station)
    _____ Radio  _____ Family member  _____ other (please specify)

11. Did you or anyone in your house evacuate your home? _____ Yes _____ No
    Your work? _____ Yes _____ No

   IF YOUR ANSWER IS NO PLEASE GO TO QUESTION 28

12. When did you actually leave your house? (Give day and time)

13. When you were evacuated, did you expect to be away for more than a day?
    _____ Yes _____ No  Did you plan for such an eventuality? _____ Yes _____ No

14. What did you take with you when you left the house?
   ______________________________________________________

15. Do you have any pets? _____ Yes _____ No. What kind and how many? _____
    ____________________________  IF YES, which pets did you take with you?
    ______________________________________________________

16. Where did you go at first?
    _____ Friend/ _____ Relative/ _____ Second home or cottage/ _____ moved my mobile home/ _____ Hotel or motel/ _____ Evacuation centre/ _____ Other
    (Please specify) __________________________________________
17. If possible, please state exact location you went to: ________________________________________________________________

18. How did you get there?
   _____ Your car/ _____ Friend or relatives car/ _____ Public transit/ _____
   _____ Taxi/ _____ Special bus/ _____ On foot/ Other (Please specify ___
   ________________________________________________________________

19. If you had to move again, please note: 2nd move 3rd move 4th move
   what time you moved: __________________________________________________________
   where you went to: ___________________________________________________________
   how you got there: ___________________________________________________________
   how long you stayed: _________________________________________________________

20. What made you decide to evacuate?
   _____ Warning from TV or Radio _____ Asked by police to evacuate
   _____ Neighbours were leaving _____ Family
   _____ Other reason (Please specify ____________________________________________

21. Did you have any problems in evacuating?
   _____ No gasoline for car _______ Traffic congestion
   _____ Didn't know where to go _____ No money _____ Forgot medication
   _____ Couldn't contact people you wanted to go to _____ Didn't take
   sufficient clothes ______ Did't have any means of transport
   _____ Didn't have any problems.
   Other (Please specify ______________________________________________________

22. When did you return home?
   _____ Monday afternoon _____ Wednesday _____ Saturday
   _____ Monday evening _____ Thursday _____ Later (please specify)
   _____ Tuesday _____ Friday _____ Give time of day if possible

23. Did anyone in your household try to return before you were told to?
   _____ Yes _____ No

24. Did you have any major problems in returning to your house?
   _____ No gasoline _______ Traffic holdups _____ No problems in returning
   _____ No money _______ No transport
   Other (Please specify ______________________________________________________

25. What was the first thing you did on arriving home? ________________________________
26. What did you realise you had forgotten to do? (e.g. Switch off lights, put away food.)

27. What would you do in similar circumstances next time? (Use back of page if necessary)

---

GO TO QUESTION 29 IF YOU EVACUATED. ANSWER QUESTION 28 IF YOU DID NOT EVACUATE

28. Why didn't you evacuate?

- No place to go
- Could not leave job or business
- No apparent reason to evacuate
- Too old or infirm
- Fear of looting
- Worried about pets
- Was not asked to leave
- No one else in my area evacuated
- Other (Please specify)

29. Have you ever been evacuated before?

Yes, for the Texaco fire last year

---

30. Do you think the evacuation was justified?

- Yes
- No (Please comment)

31. What were the main effects of the emergency on your household?

---

32. Were there any benefits? (Please describe)

---

33. What were you worried about while you were away from home?

- Pets left at home
- Medication left at home
- Plants left at home
- Difficulties in contacting relatives and friends
- Looting
- Other (Please specify)

34. Who do you think should provide compensation for any problems?

- Federal Gov't
- Prov Gov't
- Mississauga Local Gov't

Question continued next page
CP Rail ___ Owner of chemicals ___ Owner of rail wagons
Compensation not necessary

35. Did you know before the accident that there were hazardous materials passing by rail through Mississauga? ___ Yes ___ No

36. Were you ever concerned about this before? ___ Yes ___ No

37. Do you have any other environmental concerns? (Please specify _______

38. How would you describe your feelings about transportation of hazardous materials now? ___ No different ___ Feelings have changed (Please describe _______

39. Could you describe how your feelings about the evacuation changed from the first day to the day you returned home or back to work? (Use back of page if necessary) ___________________________________________________________ ____________________________

40. Where do you live? (Nearest intersection ___________________________

41. How far is your home from the accident site? ___ Within one mile
___ 1-2 miles ___ 2-3 miles ___ 3-5 miles ___ over 5 miles

42. How long have you lived in Mississauga? ___ years
How long have you lived in Canada? ___ years

43. Do you own an automobile? ___ Yes ___ No

44. What is the occupation of the head of household? _______________________

45. How many people are in your household? ______________________________

46. How many children are there under 18? ________________________________

47. What is the approximate age of the head of the household?
___ 18-25 ___ 30-40 ___ over 60
___ 25-30 ___ 40-60

48. In which of the following categories would you place your gross family income?
___ Less than $10,000 ___ $20,000 to $25,000
___ $10,000 to $15,000 ___ $25,000 to $30,000
___ $15,000 to $20,000 ___ Over $30,000

IF YOU WOULD LIKE A SUMMARY OF OUR RESULTS PLEASE PUT YOUR NAME AND ADDRESS BELOW:

THANK YOU VERY MUCH FOR YOUR HELP
Appendix 3

QUESTIONNAIRE USED IN
SECOND MAIN MAILED SURVEY OF EVACUATION
JULY 1980

AND SURVEY OF EVACUATION CENTRE USERS
JULY 1980

NOTE: Questions 40-44 were only used in the Survey of Evacuation Centre Users.
Please complete this questionnaire and mail it back to us, in the envelope provided, within two weeks. No stamp is needed. Thank you.

ALL REPLIES WILL REMAIN ABSOLUTELY CONFIDENTIAL AND WILL BE USED, IN TABULATED FORM, FOR RESEARCH ONLY.

The accident happened around 11:55 P.M. on Saturday night, November 10th last year.

1. How many members of your household (including children) were in your home at that time? (Please circle number)
   - people at home: 0 1 2 3 4 5 6 7 8 9+
   - people away from home: 0 1 2 3 4 5 6 7 8 9+

2. Were you evacuated from:
   - Please check one
     - your home
     - work
     - both home and work
     - neither: we decided to remain inside evacuation area

3. Did you all leave at the same time?
   - Yes ☐  No ☐

4. How many days were you away from home? (Please circle)
   - 0 1 2 3 4 5 6 7 8 9 + days

5. How many vehicles did you use to evacuate from your home? (Please circle)
   - 0 1 2 3 4+ vehicles

6. Did any member of your household go back into the evacuated area (for example, to check on pets, property)?
   - Yes ☐  No ☐

7. For your FIRST move, did you go to:
   - Please check one
     - friends
     - relatives
     - hotel/motel
     - How many days did you stay? ______ evacuation centre
     - second home
     - (Please give details) _____________________________ other ☐

8. WHERE did you go first? (Please give nearest main intersection or community)
9. Did you have ENOUGH information about:

- what was happening ☐  ☐
- amount of danger ☐  ☐
- when you might be evacuated ☐  ☐
- when you could return ☐  ☐
- people you were concerned about ☐  ☐
- your pets left behind ☐  ☐
- the security of your property ☐  ☐
- anything else? please give details ☐  ☐

10. Which INFORMATION SOURCES about the danger did you feel were most reliable?

__________________________________________________________________________

11. Which MEDIA REPORTS did you feel were most accurate?

(Please specify if possible)

Radio ☐  ☐
TV ☐  ☐
Newspaper ☐  ☐
Other ☐  ☐

12. Did you feel that you were getting the real story during the emergency? (Check one)

Yes ☐  No ☐  Not sure ☐

13. Even though the length of the evacuation could not be predicted, do you think the evacuees should have been warned that the evacuation might last for several days? (Check one)

Yes ☐  No ☐

14. Did you know before the accident that there were hazardous materials passing by rail through Mississauga? (Check one)

Yes ☐  No ☐

15. Would you say you were concerned about this (hazardous goods transport) before the accident? (Check one)

Very Concerned ☐  Concerned ☐  Not Concerned ☐
16. How concerned are you TODAY about it?

<table>
<thead>
<tr>
<th>Very Concerned</th>
<th>Concerned</th>
<th>Not Concerned</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We would like to know how people compare the risks from the Mississauga accident with other events.

17. (a) For the following events, could you please indicate what you think the chances are of the event happening in Southern Ontario in the next ten years?

<table>
<thead>
<tr>
<th>CHANCE OF IT HAPPENING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Likely</td>
</tr>
<tr>
<td>Another derailment as serious as Mississauga</td>
</tr>
<tr>
<td>Road accident involving dangerous release of hazardous chemicals</td>
</tr>
<tr>
<td>Plane crash involving many deaths</td>
</tr>
<tr>
<td>Nuclear reactor accident as serious as 3 Mile Island</td>
</tr>
</tbody>
</table>

(b) What risks or hazards concern you most?

___________________________________________________________________________

___________________________________________________________________________

Why? _______________________________________________________________________

The survey is also trying to find out how much the emergency cost Mississauga residents. Could you please tell us:

18. During the time in which you were away from home due to the evacuation, what ADDITIONAL expenses did your whole household have that you would not otherwise have had?

<table>
<thead>
<tr>
<th>accommodation</th>
<th>food</th>
<th>travel</th>
<th>other expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ ____________</td>
<td>$</td>
<td>$</td>
<td>$ ____________</td>
</tr>
</tbody>
</table>

TOTAL $ ________
19. In the 5 days following your return home, what ADDITIONAL expenses did your household have, that you would otherwise have had?

   accommodation $ __________
   food $ __________
   travel $ __________
   other expenses $ __________
   TOTAL $ __________

20. Did anyone in your household lose time at work and/or income due to the Mississauga emergency?

   No Yes Number of Income Lost
   Person 1 □ □ _______ days $ ________
   Person 2 □ □ _______ days $ ________
   Others:

21. What were the reasons for not working? (Check as many as necessary)

   Workplace No Routes Evacuated Other (please
   Closed Transport Closed Far Away describe below)
   Person 1 □ □ □ □ □
   Person 2 □ □ □ □ □
   Others:

22. After you returned to work, did members of your household do overtime to make up for the time lost?

   No Yes Number of hours overtime
   Person 1 □ □ _______ hours
   Person 2 □ □ _______ hours
   Others:

23. Did you apply for compensation from CP Rail?

   Yes □ No □ Why not? ________________________________
   How much did you claim? $ __________
   How much did you receive? $ __________
24. Would the amount of all your claims (to CP Rail, Insurance Companies and others), if paid, fully compensate your household for the damages and costs of the emergency to you?

Yes [ ]

No [ ] Is this because it would not cover: (Check as many as necessary)

- all our out-of-pocket expenses [ ]
- all our lost income [ ]
- our exposure to danger [ ]
- the disruption and anxiety suffered [ ]

(Please describe) __________________________ anything else?

25. Do you have any comments about the way CP Rail compensated evacuees?

________________________________________

________________________________________

26. What do you feel about the role the Ontario government played in relation to compensation?

________________________________________

________________________________________

27. At any time during the emergency, were you seriously concerned for your own or your family's safety?

Very [ ] Concerned [ ] Not Concerned [ ]

Why? ________________________________

28. What were the longer term good and bad effects for you, personally?

________________________________________

________________________________________

29. If someone were to offer a sum of money to you, how much would you consider necessary to FULLY compensate your household for all the effects of the emergency?

No money is necessary ($) [ ] $500 - 1000 [ ] Over $2000 [ ]

$1 - 500 [ ] $1000 - 2000 [ ] No amount of money can fully compensate us

30. Do you think the evacuation was justified?

Yes [ ] No [ ]

Please comment ________________________________
31. If you were evacuated again, what would you do differently?

________________________________________________________________________

This information is needed to help us to tabulate people's answers by evacuation zone and the usual social statistics. Individual answers are confidential.

32. Where do you live? (Nearest main intersection)

________________________________________________________________________

Do you own [ ] or rent [ ] your home?

33. How many people altogether are there living in your household? (Please circle)

1 2 3 4 5 6 7 8 9 +

34. How many of these are children aged

0-9 years [ ]

10-19 years [ ]

35. How many people in your household were employed in November 1979? (Please circle)

0 1 2 3 4 5 6 7 8 9 +

36. What is the occupation of the head of the household? (Please check below or give specific occupation here if you prefer)

Industrial or construction worker [ ] Professional or managerial [ ]

Transportation worker [ ] Clerical, sales and service [ ]

Homemaker [ ] Retired [ ]

Self-employed [ ]

37. What is the approximate age of the head of household?

Under 20 years [ ] in 50's [ ]

in 20's [ ] in 60's [ ]

in 30's [ ] in 70's [ ]

in 40's [ ] Over 70 years [ ]

38. In which of the following categories would you place your annual gross household income?

Less than $15,000 [ ]

$15,000 - $30,000 [ ]

More than $30,000 [ ]

39. Please indicate the sex of the person completing this questionnaire.

Male [ ] Female [ ]
If you stayed in one or more evacuation centers, would you please answer the following questions.

40. Please complete the table below.

<table>
<thead>
<tr>
<th>Name of Evacuation Center</th>
<th>Time and Date of Arrival</th>
<th>Time and Date of Departure</th>
<th>Kind of Vehicle Used in Arrival</th>
<th>Kind of Vehicle Used for Departure</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Center</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second Center</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third Center</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fourth Center</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return home</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please answer questions 38–40 for the evacuation center in which you spent the most time.

41. While you were staying in the evacuation center, did you, or anyone in your family, take a trip away from the center and later return?

   □ Yes       □ No

   How many times? 0 1 2 3 4 5 6 7 8 9+  
   For what reason(s)? ____________________________________________

   ____________________________________________

42. How did you feel about the following facilities in the evacuation center?

   a) Food quality     □ Excellent  □ Adequate  □ Inadequate
   b) Sleeping         □            □          □          □
   c) Washroom         □            □          □          □
   d) Recreation       □            □          □          □
   e) Health care      □            □          □          □
   f) Information      □            □          □          □

   Comments: ____________________________________________________

   ____________________________________________________________
43. In your opinion, how well was the evacuation center run?

Very well □ Adequately □ Poorly □

Comments: ______________________________________
________________________________________________
________________________________________________

44. Do you have any further comments or suggestions about evacuation centers?

________________________________________________
________________________________________________
________________________________________________

THANK YOU VERY MUCH FOR TAKING THE TIME TO ANSWER THIS QUESTIONNAIRE. IF YOU WOULD LIKE A SUMMARY OF THE RESULTS, PLEASE FILL IN YOUR NAME AND ADDRESS ON THE COVER PAGE.
Appendix 4

QUESTIONNAIRE USED IN
TELEPHONE SURVEY OF HOUSEHOLDS
OUTSIDE EVACUATION ZONE
MISSISSAUGA TELEPHONE SURVEY OF RESIDENTS IMMEDIATELY
OUTSIDE THE EVACUATION ZONE

Telephone number  Zone  Month  Day  House/  Sex  Interviewer
1  2  3  4  5  6  7  8  9  10  11  12  13  14

Hello, my name is __________________. I'm calling from the University
of Toronto. You may have heard that the University is doing a research
project on the evacuation that took place in Mississauga last November 10th.

We are trying to find out how many people who lived nearby may
have evacuated voluntarily even though they were outside the official zone.

1. Would you mind just telling me if you were at home at the time of the
accident. (Prompt if doesn't know - You remember it happened at about
midnight on Saturday night, November 10th last year - 1979).
(Circle)  Yes 1  No 5  Not sure 7  NA 0

2. Were all your household members together at the time or were some away
from home?
(Circle)  All at home 1  
Some at home 5  
None at home 7  
No answer 0

3. Did any member of your household evacuate at any time during the
emergency? (Prompt: Sat. 10 to Friday 16 November).
(Circle one)

GO TO QUESTION 4  

(a) Would you mind telling me who left?
1 children (under 20 years)
2 mother
3 father
4 older people (over 60 years)
5 visitors staying with us
6 other (specify) ____________________________

GO TO QUESTION 4
4. When did you go and return?
   (Can read out dates to help them if necessary).

   Date left                  Date returned
   (Circle one)
   1 Sun. 11th                1 Sun. 11th
   2 Mon. 12th                2 Mon. 12th
   3 Tues. 13th               3 Tues. 13th
   4 Wed. 14th                4 Wed. 14th
   5 Thurs. 15th              5 Thurs. 15th
   6 Fri. 16th                6 Fri. 16th
   7 Other (specify)          7 Sat. 17th
   8 After 17th               8 After 17th
   9 Other (specify)          9 Other (specify)
   0 No answer                0 No answer

5. Why did you decide (not) to evacuate? (Check first two mentioned only)
   DO NOT READ OUT

   NON-EVACUEES                  EVACUEES
   (Circle one)                 (Circle one)
   1 Not asked to               1 In case of danger
   2 Not enough risk            2 Saw others going
   3 Nowhere to go              3 Were advised to
   4 Not in the evacuation zone 4 Supplies short/shops closed
   5 News seemed OK             5 Worried/frightened
   6 Other (specify)            6 Other (specify)
   0 No answer                  0 No answer

6. Do you know anyone personally who did evacuate? (either inside or outside evacuation zone)
   (Circle) Yes 1 No 5 NA 0

7. Did you know BEFORE the accident that there were hazardous materials passing by rail through Mississauga?
   Yes 1 No 5 GO TO QUESTION 8

   (a) Would you say you were concerned about this (hazardous goods transport) before the accident?

      Very concerned 1 Concerned 3 Not concerned 5 NA 0
8. How concerned are you today about it?
   Very concerned 1  Concerned 3  Not concerned 5  NA 0

9. Did you feel that you were getting the real story during the emergency?
   (Circle) Yes 1  No 5  Not sure 7  No answer 0

10. Could I just ask you finally how many people are in your household (normally live with you)?
    (Circle one) 1 2 3 4 5 6 7 8 9+

11. How many of these children are under 20 years?
    (Circle one) 1 2 3 4 5 6 7 8 9+

12. What is the age of the head of the household to the nearest 10 years?
    (Circle one) Under 20 1 30's 3 50's 5 70's 7
    20's 2 40's 4 60's 6 over 70 8
    NA 0

THANK YOU SO MUCH. YOU HAVE BEEN MOST HELPFUL.

INTERVIEWER: Enter any additional comments here and circle below.
   Additional comments Yes 1  No 3
Appendix 5

QUESTIONNAIRE USED IN TELEPHONE SURVEY OF CONTROL SAMPLE
Hello, my name is ___________. I'm calling from the University of Toronto. You may have heard that the University is doing a research project on the evacuation that took place in Mississauga last November 10th.

We are calling a few people in Metro Toronto to get some idea of what other people thought about the emergency and whether they tried to contact friends inside the evacuated area.

Could I ask you just a few questions? They will take less than five minutes. Thank you.

The derailment accident in Mississauga happened around 11:55 P.M. on Saturday night, November 10th last year.

1. Could you please tell me when you first heard about the accident? (You can help respondent to remember days, dates, etc.)

<table>
<thead>
<tr>
<th>Heard or saw it happen</th>
<th>Tuss. (13 Nov)</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday A.M. (11th)</td>
<td>Wed. (14 Nov)</td>
<td>6</td>
</tr>
<tr>
<td>Sunday P.M. (11th)</td>
<td>After Wednesday</td>
<td>7</td>
</tr>
<tr>
<td>Monday (12 Nov)</td>
<td>Can't remember</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>No answer</td>
<td>0</td>
</tr>
</tbody>
</table>

2. How did you hear about it?

<table>
<thead>
<tr>
<th>Heard/saw it</th>
<th>Friends/relatives in Mississauga</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio</td>
<td>Other people I know</td>
<td>6</td>
</tr>
<tr>
<td>TV</td>
<td>Other (specify)</td>
<td>7</td>
</tr>
<tr>
<td>Newspaper</td>
<td>Can't remember</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>No answer</td>
<td>0</td>
</tr>
</tbody>
</table>
3. Do you have any relatives or friends in the evacuated area?

Yes 3

Did you try to contact them?

No 1

Yes 3

How?

Phone directly 1

 Tried to go there 3

 CB radio 5

 Asked other people about them 7

 Other (specify) 9

No answer 0

4. Did you receive any evacuees in your home?

No 1

Yes 3

How many? 1 2 3 4 5 6 7 8 9+ people

For how long? 1 2 3 4 5 6 7 8 9+ days

5. Did any member of your household (people who normally live with you) evacuate your home at any time during the emergency?

No 1

Yes 3

How many? 1 2 3 4 5 6 7 8 9+ people

For how long? 1 2 3 4 5 6 7 8 9+ days

6. Did you know BEFORE the accident that there were hazardous materials passing by rail through Mississauga and other communities in Metro Toronto?

Yes 1

No 5

(a) Would you say you were concerned about this (hazardous goods transport) before the accident?

Very Concerned 1

Concerned 3

Not Concerned 5

NA 0
7. How concerned are you today about it?

Very Concerned 1  Concerned 3  Not Concerned 5  NA 0

We would like to know how people compare the risks from the Mississauga derailment with other possible hazards in Metro Toronto.

I'm going to read out four (hypothetical) accidents and I'd like you to tell me how likely you think the chances are of each one happening in Southern Ontario sometime in the next 10 years.

It's just what you think that we're after because no one can know for sure.

8. (a)  

<table>
<thead>
<tr>
<th>EVENT</th>
<th>Very Likely</th>
<th>Likely</th>
<th>Unlikely</th>
<th>Very Unlikely</th>
<th>Don't Know</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Another derailment as serious as Mississauga</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Road accident involving dangerous release of hazardous chemicals</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Plane crash involving many deaths</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Nuclear reactor accident as serious as 3 Mile Is.</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
<td>0</td>
</tr>
</tbody>
</table>

(b) What risks or hazards concern you most? (considering more than those mentioned above)

________________________________________________________________________

Why?

________________________________________________________________________

9. At any time during the emergency, were you concerned for your own (family’s) safety?

Very Concerned 1  Concerned 3  Not Concerned 5  NA 0

10. Do you think the evacuation was justified?

Yes 1  No 3  Don’t know 9  No answer 0

Please comment ____________________________________________________________
11. Did you feel that you were getting the real story during the emergency?
(Circle) Yes 1  No 5  Not sure 7  No answer 0

12. If it were possible, how much money would you be willing to pay to AVOID having to go through an emergency like the one in Mississauga last November? (Circle one)

   No money 1  $1000 - $2000 4  No idea 9
   $1 - 500 2  Over $2000 5  No answer 0
   $500 - 1000 3  Any amount of money 6
   would be worth it

13. Could I just ask you finally how many people are in your household (normally live with you)?
(Circle one) 1 2 3 4 5 6 7 8 9+

14. Any how many of these are children under 20 years?
(Circle one) 1 2 3 4 5 6 7 8 9+

15. What is the age of the head of the household to the nearest 10 years?
(Circle one) Under 20 1  30's 3  50's 5  70's 7
   20's 2  40's 4  60's 6  Over 70 8
   NA 0

16. Is your gross household income above $15,000 or above $30,000 a year?

   Below $15,000 1  Above $30,000 5
   15 - $30,000 3  No answer 0

THANK YOU VERY MUCH. YOU HAVE BEEN MOST HELPFUL.

INTERVIEWER: Enter any additional comments here and circle below.

Additional comments - Yes 1  No 3