

APPENDICES

Appendix 1

SURVEY SAMPLING DESIGN, PROCEDURES AND TESTS

A1.1 INTRODUCTION TO SURVEY

Six surveys were conducted in relation to the Mississauga derailment. (Table A1.1). 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 A1.2) 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 A1.1). The other sample was designed as a control to test the impact of the evacuation on peoples' risk preceptions and attitudes to compensation, as well as to give an indication of the communication patterns between households located inside and outside the evacuated area.

FIGURE A.1 LOCATIONS OF THE PERIMETER SAMPLE

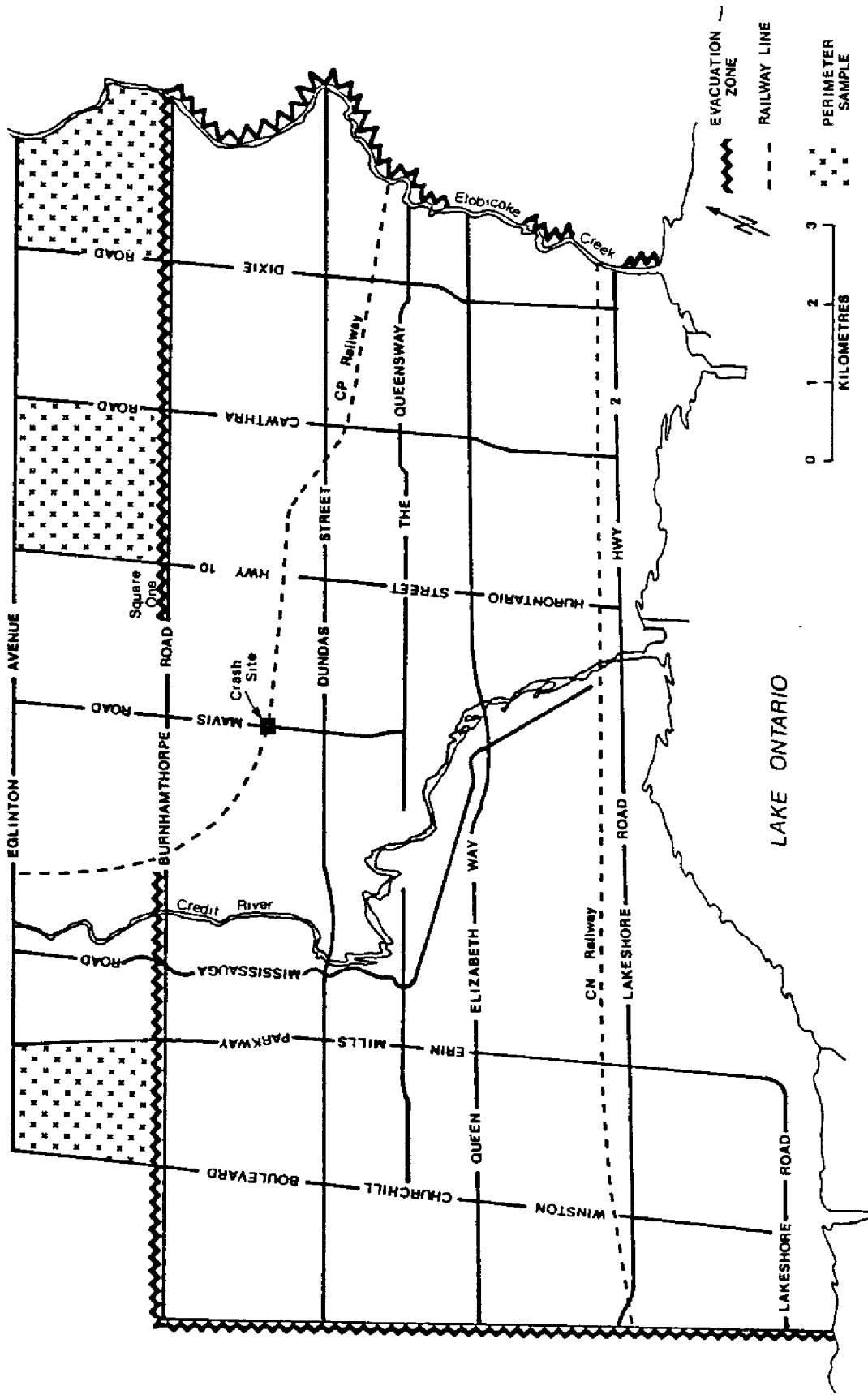


Table A1.1 Surveys conducted for the study

SAMPLE SIZE	UNIT OF OBSERVATION	TYPE OF SAMPLE	PROCEDURE	DATE
992	households in evacuation	random, stratified by zone	mailed questionnaires and telephone interviews	Nov-Dec 1979
999	households in evacuation zone	random systematic	mailed questionnaires	July 1980
500	registrations at Evacuation Centres	random systematic	mailed questionnaires	July 1980
500	households on northern perimeter	random systematic	telephone interviews	July-Aug 1980
500	households in Don Mills	random systematic	telephone interviews	July-Aug 1980
606	businesses in evacuation zone	random systematic	mailed questionnaires	1981

TABLE A1.2: SAMPLE SIZES, AND RESPONSE RATES AND CONFIDENCE LEVELS

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

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 (eg all households in area) to determine the frequency (eg.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 not-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

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

* Based on information obtained in 1971 census. Other data from 1971
 '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.

Al.4 SAMPLE SIZES, RESPONSE RATES AND CONFIDENCE LEVELS

Table Al.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 $\pm 5\%$ 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 Al.5).

Response rates were unusually high for both the mailed and telephoned surveys (table Al.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.

Al.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 tracts 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 Al.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

EMERGENCY PLANNING PROJECT
INSTITUTE FOR ENVIRONMENTAL STUDIES
UNIVERSITY OF TORONTO

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 _____ Didn'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 _____ Yes for other emergency (specify if you wish _____) _____ No, never.

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.

MISSISSAUGA EVACUATION RESEARCH PROJECT
INSTITUTE FOR ENVIRONMENTAL STUDIES
UNIVERSITY OF TORONTO
Telephone 978-6792

SURVEY OF MISSISSAUGA RESIDENTS' VIEWS

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 | <input type="checkbox"/> |
| | work | <input type="checkbox"/> |
| | both home and work | <input type="checkbox"/> |
| neither: we decided to remain inside evacuation area | | <input type="checkbox"/> |

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	<input type="checkbox"/>
	relatives	<input type="checkbox"/>
	hotel/motel	<input type="checkbox"/>
How many days did you stay? _____	evacuation centre	<input type="checkbox"/>
	second home	<input type="checkbox"/>
(Please give details) _____	other	<input type="checkbox"/>

8. WHERE did you go first? (Please give nearest main intersection or community)
-

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PLEASE DO NOT WRITE IN HERE.

9. Did you have ENOUGH information about:

	Yes	No
<i>what was happening</i>	<input type="checkbox"/>	<input type="checkbox"/>
<i>amount of danger</i>	<input type="checkbox"/>	<input type="checkbox"/>
<i>when you might be evacuated</i>	<input type="checkbox"/>	<input type="checkbox"/>
<i>when you could return</i>	<input type="checkbox"/>	<input type="checkbox"/>
<i>people you were concerned about</i>	<input type="checkbox"/>	<input type="checkbox"/>
<i>your pets left behind</i>	<input type="checkbox"/>	<input type="checkbox"/>
<i>the security of your property</i>	<input type="checkbox"/>	<input type="checkbox"/>
<i>anything else? please give details</i>	<input type="checkbox"/>	<input type="checkbox"/>

	19
	20
	21
	22
	23
	24
	25
	26

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

--	--	--

27 28 29

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

(Please specify if possible)

Radio	<input type="checkbox"/>	_____
TV	<input type="checkbox"/>	_____
Newspaper	<input type="checkbox"/>	_____
Other	<input type="checkbox"/>	_____

--	--

30 31

--	--

32 33

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

Yes No Not sure

--

34

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

--

35

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

Yes No

--

36

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

Very Concerned Concerned Not Concerned

--

37

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PLEASE DO NOT WRITE IN HERE.

16. How concerned are you TODAY about it?

Very Concerned Concerned Not Concerned

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?

CHANCE OF IT HAPPENING

	<u>Very Likely</u>	<u>Likely</u>	<u>Unlikely</u>	<u>Very Unlikely</u>
Another derailment as serious as Mississauga	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Road accident involving dangerous release of hazardous chemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plane crash involving many deaths	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nuclear reactor accident as serious as 3 Mile Island	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(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?

accommodation \$ _____

food \$ _____

travel \$ _____

other expenses \$ _____

TOTAL \$ _____

38

39

40

41

42

43 44 45

46 47

48
 49
 50
 51
 52

PLEASE DO NOT WRITE IN HERE.

19. In the 5 days following your return home, what ADDITIONAL expenses did your household have, that you would not otherwise have had?

accommodation \$ _____
 food \$ _____
 travel \$ _____
 other expenses \$ _____

TOTAL \$ _____

	53
	54
	55
	56
	57

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

	<u>No</u>	<u>Yes</u>	<u>Number of days lost</u>	<u>Income Lost</u>
Person 1	<input type="checkbox"/>	<input type="checkbox"/>	_____ days	\$ _____
Person 2	<input type="checkbox"/>	<input type="checkbox"/>	_____ days	\$ _____
Others:				

58	59	60
61	62	63

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

	<u>Workplace Closed</u>	<u>No Transport</u>	<u>Routes Closed</u>	<u>Evacuated Far Away</u>	<u>Other (please describe below)</u>
Person 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Person 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others:					

64	65	66

	67
	68
	69
	70

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

	<u>No</u>	<u>Yes</u>	<u>Number of hours overtime</u>
Person 1	<input type="checkbox"/>	<input type="checkbox"/>	_____ hours
Person 2	<input type="checkbox"/>	<input type="checkbox"/>	_____ hours
Others:			

71	72
73	74

23. Did you apply for compensation from CP Rail?

Yes No → Why not? _____

 ↓
 How much did you claim? \$ _____
 How much did you receive? \$ _____

75	76
77	78

	79
	80

1	2	3
---	---	---

EASE DO NOT WRITE IN HERE.

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?

4

5

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

6

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

7

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

Very Concerned Concerned Not Concerned

Why? _____

8

9

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

10 11

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 (\$0) \$500 - 1000 Over \$2000

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

12

30. Do you think the evacuation was justified?

Yes No

Please comment _____

13

14

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

PLEASE DO NOT WRITE IN HERE.

--	--

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

15 16

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

Do you own or rent your home?

--	--	--

17 18 19

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

1 2 3 4 5 6 7 8 9+

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20

34. How many of these are children aged

0-9 years _____

10-19 years _____

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23

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

0 1 2 3 4 5 6 7 8 9+

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24

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

--

25

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

--

26

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

--

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

Male Female

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7.

PLEASE DO NOT WRITE IN HERE.

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

40. Please complete the table below.

	Name of Evacuation Center	Time and Date of Arrival	Time and Date of Departure	Kind of Vehicle Used in Arrival	Kind of Vehicle Used for Departure
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32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
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49					
50					
51					
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58					
59					
60					
61					

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?

	<u>Excellent</u>	<u>Adequate</u>	<u>Inadequate</u>
a) Food quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Sleeping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Washroom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Recreation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Health care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: _____

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73

PLEASE DO NOT WRITE IN HERE.

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

Very well Adequately Poorly

74

Comments: _____

75 76

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

77 78

79

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/ Apt.	Sex	Inter- viewer	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
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

15

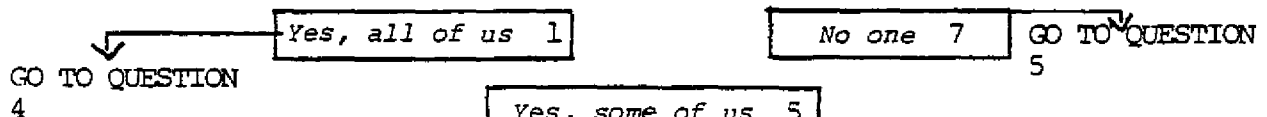
2. Were all your household members together at the time or were some away from home?

(Circle) All at home 1
Some at home 5
None at home 7
No answer 0

16

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

(Circle one)



17

- (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) _____

18 19 20

GO TO QUESTION 4

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

<u>Date left</u>	<u>Date returned</u>
(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
0 No answer	9 Other (specify) _____
	0 No answer

Left

21

Ret

22

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

DO NOT READ OUT

<u>NON-EVACUEES</u>	<u>EVACUEES</u>
(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

Non-F

23 24

Evac

25 26

6. Do you know anyone personally who did evacuate? (either inside or outside evacuation zone)

(Circle) Yes 1 No 5 NA 0

27

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

28

- (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

29

8. How concerned are you today about it?

Very concerned 1 Concerned 3 Not concerned 5 NA 0

30

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

31

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+

32

11. How many of these children are under 20 years?

(Circle one) 1 2 3 4 5 6 7 8 9+

33

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

34

THANK YOU SO MUCH. YOU HAVE BEEN MOST HELPFUL.

INTERVIEWER: Enter any additional comments here and circle below.

Additional comments Yes 1 No 3

35

Appendix 5

QUESTIONNAIRE USED IN
TELEPHONE SURVEY OF CONTROL SAMPLE

MISSISSAUGA PROJECT TELEPHONE SURVEY OF CONTROL SAMPLE

Telephone number							Zone	Month	Day	Own/ Rent	Sex	Inter- viewer	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
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 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.)

Heard or saw it happen	1	Tues. (13 Nov)	5
Sunday A.M. (11th)	2	Wed. (14 Nov)	6
Sunday P.M. (11th)	3	After Wednesday	7
Monday (12 Nov)	4	Can't remember	8
		No answer	0

15

2. How did you hear about it?

Heard/saw it	1	Friends/relatives in Mississauga	5
Radio	2	Other people I know	6
TV	3	Other (specify) _____	7
Newspaper	4	Can't remember	8
		No answer	0

16

3. Do you have any relatives or friends in the evacuated area?

GO TO QUESTION 4 ← No 1

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

17

18

19

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

20

21

22

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

23

24

25

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 → 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

26

27

7. How concerned are you today about it?

Very Concerned 1 Concerned 3 Not Concerned 5 NA 0

28

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)

CHANCE OF IT HAPPENING

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

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

33 34

Why? _____

35 36

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

37

10. Do you think the evacuation was justified?

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

Please comment _____

38

39

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

40

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

41

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+

42

14. Any how many of these are children under 20 years?

(Circle one) 1 2 3 4 5 6 7 8 9+

43

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

44

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

45

THANK YOU VERY MUCH. YOU HAVE BEEN MOST HELPFUL.

INTERVIEWER: Enter any additional comments here and circle below.

Additional comments - Yes 1 No 3

46