

APPENDIX B:

SAMPLE DESIGN

A. GENERAL DESIGN

The recent reading (RR) methodology requires continuous year-round interviewing in order to provide projectable readership estimates for publications that are published infrequently. PMB 2009 study results are based on a two-year rolling average sample drawn for fieldwork to be conducted between October 2006 and September 2008. In the first interviewing year (Sample A), the sample included twelve monthly replicates (October 2006 through September 2007); in the second interviewing year (Sample B) the sample included twelve monthly replicates (October 2007 to September 2008). Each replicate was designed to yield about 1025 completions.

In general, the PMB 2009 sample can be described as a disproportionate national, stratified, fixed-cluster, replicated, household probability design. Both samples were constructed using the 2001 Census.

Sample A & B

The sample frame was constructed by merging two Statistics Canada 2001 Census data tapes:

- 1) Dissemination Area (DA) household summary tape with number of persons per household detail;
- 2) DA individual summary tape with average household income detail.

The universe sampled for this study included all Canadian households with a small number of exceptions as follows:

- 1) The Yukon, Northwest Territories and Labrador;
- 2) All Indian Reservations;
- 3) Households in DAs located in remote areas of the country where interviewing would have been impractical.

In total, 1617 DAs or 3.6% of the 44,697 DAs in the 2001 Census, representing 1.7% of Canadian Households, were excluded. The table on the following page details the regional impact of these exclusions.

	2001 Census Sample A & B		
	Total Households (000's) #	Total Excluded (000's) #	% Of Total In Each Case
TOTAL CANADA	13239	255	1.9
Atlantic Provinces	883	14	1.6
Quebec	2976	20	0.7
Ontario	4212	21	0.5
Manitoba/Saskatchewan	810	44	5.4
Alberta	1103	32	2.9
British Columbia	1532	35	2.3
Yukon	11	11	100.0
NWT/Nunavut	20	20	100.0

B. STRATIFICATION

Prior to selection of the actual samples, DAs in the universe were stratified by:

- 1) Level Of Urbanization
- 2) Level Of Income/Managers
- 3) Geographical Considerations

1. Level Of Urbanization

A total of 17 strata were created. The strata were: (01) Toronto, (02) Vancouver, (03) Montreal, (04) Quebec City, (05) Ottawa/Gatineau, (06) Hamilton, (07) Winnipeg, (08) Calgary, (09) Edmonton, (10) London, (11) Remaining Communities With Populations 100,000 Or Greater, (12) 75,000 To 99,999, (13) 50,000 To 74,999, (14) 30,000 To 49,999, (15) 10,000 To 29,999, (16) 1,000 To 9,999, and (17) Under 1M And Rural. Regional sub-strata were set within community size groupings [strata (11) to (17)].

2. Level Of Income/Managers

To accommodate the PMB requirement that high income DAs be over-represented in the sample, the following procedures were followed using 2001 Census data.

- a) For each DA, the average household income was identified;
- b) Within each major stratum and provincial sub-strata, DAs were sorted in descending order from high to low income;
- c) The top 20% of DAs within each stratum was classified as high income and the balance as low-income sub-strata.

In all communities of 10,000 population or greater, an additional stratification variable, Managers/Administrators/Professionals (MAPs)¹, was added to accommodate over-representation of Professionals/Managers for special reporting of business publications.

3. Geographical Considerations

To ensure adequate dispersion of selected DAs within each stratum, DAs were stratified geographically as follows:

- a) Major Communities—DAs were sorted into CMA/CA order, Census Subdivision order, Census Tract Number order and descending DA number order. This operation was carried out within each of the sub-strata.
- b) Communities of 30,000 to 99,999—DAs were first sorted by province east to west, then CMA/CA order, Census Tract Number order, Census Division order, Census Sub-Division order and finally descending DA order.
- c) Communities of under 30,000—DAs were sorted by province east to west, then Census Division Order, Census Sub-Division order and finally descending DA order.

At this stage, in locations under 10,000 to reduce travel time in the field, each DA was paired with the next contiguous DA in the same Federal Electoral District to form a new primary sampling unit.

The provincial regional groupings within each major stratum were identified as sub-strata for selection purposes.

¹. The MAP summary was created using 2001 NOC codes as follows: *A0* – Senior Management occupations; *A1* – Specialist Managers; *A3* – Other Managers; *B0* – Professional Occupations In Business And Finance; *C0* – Professional Occupations In Natural and Applied Sciences; *D0* – Professional Occupations In Health; *E0* – Judges, Lawyers, Social Workers, Ministers of Religion, Policy and Program Officers.

C. SELECTION PROCEDURES

In constructing a probability sample of this universe the following conditions were met:

- 1) Each household in the universe had some chance, which can be stated mathematically within close limits, of being included in the sample.
- 2) No arbitrary judgement was exercised in determining which households were included, or which individual in each household was interviewed.

In PMB 2009 Sample A, 18,742 households were selected from 1857 primary sampling units (DAs), and in Sample B, 18,962 households were selected from 1880 primary sampling units (DAs), widely spread throughout Canada. The sampling operation was performed at four distinct stages:

- 1) Determination of the number of primary sampling units (DAs) to be selected in each stratum and sub-stratum.
- 2) Selection of DAs.
- 3) Selections of households.
- 4) Selection of one individual per household.

1. Determination Of Sample Distribution

The distribution was based on achieving four sample allocation goals:

- a) National assignment of the basic sample across regional strata according to an index of Retail Sales/Personal Disposable Income (PDI).
- b) Preservation of specific disproportionately high sample yields in Montreal, Toronto and Vancouver of 2,500, 2,000 and 1,200 respectively.
- c) Disproportionate sampling of high income DAs—within major urban communities of 100M or greater—top 20% of highest income DAs versus remaining DAs at a 3.50 : 1.00 ratio.
- d) Achievement of a large sample of Professionals/Managers over a regular two-year period requiring the addition of an incremental sample of 2,100 interviews in DAs with highest yields of MAPs in communities of 10M population or greater; and, the subsequent addition of 4,000 interviews in these high yield DAs—2,000 in Quebec, and 2,000 in the remainder of Canada.

An index of Retail Sales per capita versus the national **per capita** retail sales was calculated and averaged with the index for **per capita** personal disposable income. The resulting index determined the allocation of the basic sample across regional strata. Adjustments were then made to accommodate the larger Montreal, Toronto and Vancouver samples.

Subsequently, in all areas where income stratification was imposed, high DAs received a sampling factor of 3.50 and low EAs a factor of 1.00. The basic sample distribution was then completed.

The following procedures were then carried out to determine allocation of the additional sample in DAs with highest yields of Managers/Administrators, again, using the 2001 Census:

- a) For each DA, the incidence of MAPs was identified;
- b) DAs were sorted into descending order from high to low incidence;
- c) The top 20% of DAs was classified as quintile "1" (Q1), that is, highest yield DAs of MAPs; the balance was identified as quintile "0" (0);
- d) Within each sub-stratum, DAs were classified and organized as either (Q1) or (0) sub-strata;
- e) The additional sample was then distributed proportionate to the (Q1) Census household count across regional and income sub-strata in communities of 10M or greater. This procedure is carried out separately for each of the incremental (Q1) samples.

2. Selection Of Primary Sampling Points

Cumulative DA household counts were computed within each sub-stratum and the required number of P.S.U.s in each case randomly picked. This procedure gives each DA a chance of selection proportionate to the number of households therein.

At this stage, as a means of avoiding selection of DAs with fewer households than required to accommodate a pre-specified number of contacts and skip interval, DAs with less than 45 households were replaced with the next listed DA of the appropriate size.

At the time that P.S.U.s were selected, systematic random procedures were used to assign each to one of the monthly waves (replicates) and to sub-replicates (1 or 2) within each wave. The result is that each replicate, within each wave, is a matched random sample of its companion replicate, and to any other replicate, in any other wave.

DA labels were computer generated for use at the field stage.

3. Selection Of Households

Households were given an equal chance of selection in each DA, but two different selection methods were used.

- a) In communities with populations of 100M or greater—reproductions of DA maps with boundaries clearly marked were provided to interviewers. Interviewers were required to list all residential household addresses on recording forms which accompanied each map. These forms were then checked by TNS Canadian Facts and systematic random samples of households were drawn in each case. Specific household address labels were then prepared and linked with the original computer generated DA labels.
- b) In remaining locations—Statistics Canada DA maps were reproduced. Boundaries were clearly marked, start points, skip intervals and travel direction designated. Start points and start households were randomly chosen in each case.

In the pre-listed areas, the skip interval varied depending upon the DA size. In all remaining DAs the skip interval was 4.

4. Selection Of One Individual Per Household

The final stage involved the selection of the one individual in each household to be interviewed. The procedure involved listing all individuals 12 years of age and over in each household. The random selection of one respondent was controlled by a selection grid.

Sample A And B: "X" Patterns—Selection Example

Please tell me the first names of those 12 years of age and older living in this household. Start with the oldest in order down to the youngest. Be sure to include yourself, any children, in-laws, boarders now living in this household.

So there are a total of **(NUMBER)** people living in this household who are 12 years of age and over! Is this correct?
(IF NECESSARY REVISE LIST)

The person whose name appears on the lowest line opposite an "X" **must** be interviewed.

I should be interviewing
(NAME)

(IF NOT AVAILABLE, MAKE APPOINTMENT:)
DATE: _____
TIME: _____
TEL. NO. _____

PRINT RESPONDENTS' FIRST NAME — OLDEST TO YOUNGEST	SELECT NAME OPPOSITE LAST "X"	MALE	FEMALE
1.		1	2
2.		1	2
3.		1	2
4.		1	2
5.		1	2
6.		1	2
7.		1	2
8.		1	2
9.		1	2
10.		1	2

Previous to 1993, the PMB selection patterns did not yield precise theoretical probabilities of selection for all people. They were correct for persons in households containing one, two or three people, were slightly deviant for some individuals in 4- and 5-person households, but clearly under-represented the oldest person in 6-person households.

The new version, implemented in 1993, is an improvement in that selection probabilities are exact in 1-, 2-, 3- and 4-person households, and the deviations in 5- and 6-person households are small.

The following patterns were used:

# IN HH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2		X			X				X		X		X	X			X
3			X		X		X		X						X	X	X
4			X							X		X	X	X	X		X
5	X				X						X		X			X	
6	X					X				X					X		

i) USE: 1/ 6/ 1/ 5/ 2/ 2/ 3/ 1/ 3/ 1/ 3/ 2/ 1/ 2/ 1/ 1/ 1/
36 36 36 36 36 36 36 36 36 36 36 36 36 36 36 36 36

ii) **Collation Order:**

7, 12, 4, 2, 1, 11, 8, 6, 9, 2, 5, 4, 7, 17, 11, 2, 14, 4, 12, 15, 9, 2, 7, 6, 4, 3, 11, 2, 16, 5, 13, 4, 9, 2, 10, 14.

iii) **Probabilities:**

Size Of Household Visited	Number Of Opportunities Of Selection Per Person	Probability
1	36	1.00
2	18	.50
3	12	.33
4	9	.25
5	9	.25
6	5	.14

D. SAMPLE DISTRIBUTION

One of the general features of the PMB sample design is the expectation that an equal number of completions would be achieved in each selected DA irrespective of its location in Canada. However, it is recognized that completions rates vary significantly across the country given a constant level of effort.

Prior to establishing the required number of DAs in total, decisions regarding anticipated completion rates for a specified level of effort were made. The overall target was a 64% completion rate. The following table details the population counts in all strata, the number of selected DAs, anticipated completion rates and number of household contacts per selected DA.

Sample A: Distribution October 2006/September 2007

			('01 Census) Number Of House- holds ¹	Per Year		
				Number Of Assign- ments	Anticipated Completion Rate	Contacts Per #
Toronto	High	Q1 ²	248460	126	60	11
	High	0 ²	31010	8		
	Low	Q1	334165	104		
	Low	0	1019940	76		
Vancouver	High	Q1	81760	53	60	11
	High	0	47570	20		
	Low	Q1	63475	21		
	Low	0	562990	68		
Montreal	High	Q1	167540	193	60	11
	High	0	73875	27		
	Low	Q1	55520	50		
	Low	0	1119080	115		
Quebec City	High	Q1	27560	28	70	9
	High	0	22510	6		
	Low	Q1	11450	9		
	Low	0	232890	16		
Ottawa/Gatineau	High	Q1	70175	37	60	11
	High	0	3440	1		
	Low	Q1	114820	37		
	Low	0	227035	18		
Hamilton	High	Q1	27255	14	60	11
	High	0	21590	5		
	Low	Q1	7640	2		
	Low	0	196555	14		
London	High	Q1	15980	7	60	11
	High	0	14720	3		
	Low	Q1	1710	1		
	Low	0	140685	9		
Winnipeg	High	Q1	27085	14	65	10
	High	0	20305	6		
	Low	Q1	5430	2		
	Low	0	216910	17		
Calgary	High	Q1	67195	33	65	10
	High	0	4485	1		
	Low	Q1	57070	18		
	Low	0	227070	15		
Edmonton	High	Q1	40085	19	65	10
	High	0	25405	6		
	Low	Q1	12400	4		
	Low	0	277965	19		
TOTAL	High	Q1	773095	524		
	High	0	264910	83		
	Low	Q1	663680	248		
	Low	0	4221120	367		

1. Excludes Yukon and Northwest Territories.

2. Q1 = Top Quintile. 0 = Other Quintiles.

Sample A: Distribution October 2006/September 2007

			('01 Census) Number Of House- holds ¹	Per Year		
				Number Of Assign- ments	Anticipated Completion Rate	Contacts Per #
Balance Of 100,000 Plus Communities:						
Newfoundland	High	Q1 ²	4065	2	70	9
	High	0 ²	4285	1		
	Low	Q1	2600	1		
	Low	0	53805	5		
Nova Scotia	High	Q1	15885	8	70	9
	High	0	6380	1		
	Low	Q1	6120	2		
	Low	0	157295	10		
New Brunswick	High	Q1	7145	3	70	9
	High	0	3875	1		
	Low	Q1	1105	0		
	Low	0	82765	4		
Quebec	High	Q1	4100	5	70	9
	High	0	4755	1		
	Low	Q1	3250	3		
	Low	0	175875	15		
Ontario	High	Q1	60790	24	65	10
	High	0	163800	25		
	Low	Q1	6025	2		
	Low	0	644895	28		
Saskatchewan	High	Q1	18135	9	65	10
	High	0	11440	3		
	Low	Q1	3430	1		
	Low	0	132545	10		
B.C.	High	Q1	11600	4	65	10
	High	0	27370	4		
	Low	Q1	6040	2		
	Low	0	196050	7		
TOTAL	High	Q1	121720	55		
	High	0	221905	36		
	Low	Q1	28570	11		
	Low	0	1443230	79		

1. Excludes Yukon and Northwest Territories.

2. Q1 = Top Quintile. 0 = Other Quintiles.

Sample A: Distribution October 2006/September 2007

		('01 Census) Number Of House- holds ¹	Per Year		
			Number Of Assign- ments	Anticipated Completion Rate	Contacts Per #
Communities 30–99.9M:					
P.E.I.	Q1 ²	1830	1	75	9
	0 ²	20525	2		
Nova Scotia	Q1	590	–	75	9
	0	31150	4		
New Brunswick	Q1	7135	3	75	9
	0	24765	3		
Quebec	Q1	3990	3	75	9
	0	256435	21		
Ontario	Q1	6150	2	75	9
	0	334010	43		
Manitoba	Q1	30	–	75	9
	0	17170	2		
Saskatchewan	Q1	710	–	75	9
	0	28425	3		
Alberta	Q1	4315	2	75	9
	0	86470	12		
B.C.	Q1	3210	1	75	9
	0	210895	33		
TOTAL	Q1	27960	13		
	0	1009845	122		

1. Excludes Yukon and Northwest Territories.

2. Q1 = Top Quintile. 0 = Other Quintiles.

Sample A: Distribution October 2006/September 2007

		('01 Census) Number Of House- holds ¹	Per Year		
			Number Of Assign- ments	Anticipated Completion Rate	Contacts Per #
Communities 10–29.9M:					
Newfoundland	Q1 ²	395	–	75	9
	0 ²	15875	2		
P.E.I.	Q1	–	–	75	9
	0	5775	1		
Nova Scotia	Q1	–	–	75	9
	0	5550	1		
New Brunswick	Q1	50	–	75	9
	0	23510	3		
Quebec	Q1	235	–	75	9
	0	89285	7		
Ontario	Q1	625	–	75	9
	0	77030	10		
Manitoba	Q1	425	–	75	9
	0	4950	1		
Saskatchewan	Q1	–	–	75	9
	0	27075	3		
Alberta	Q1	3145	1	75	9
	0	29175	4		
B.C.	Q1	380	–	75	9
	0	79260	12		
TOTAL	Q1	5255	1		
	0	357485	44		

1. Excludes Yukon and Northwest Territories.

2. Q1 = Top Quintile. 0 = Other Quintiles.

Sample A: Distribution October 2006/September 2007

	('01 Census) Number Of Households ¹	Per Year		
		Number Of Assignments	Anticipated Completion Rate	Contacts Per #
Communities 1–9.9M:				
Newfoundland	35065	4	78	8
P.E.I.	2525	–	78	8
Nova Scotia	38685	6	78	8
New Brunswick	30245	4	78	8
Quebec	235305	20	78	8
Ontario	209235	29	78	8
Manitoba	42505	6	78	8
Saskatchewan	41740	5	78	8
Alberta	106640	18	78	8
B.C.	87660	15	78	8
Total	829605	107		
Communities Under 1M:				
Newfoundland	62720	6	78	8
P.E.I.	20010	2	78	8
Nova Scotia	96035	11	78	8
New Brunswick	100805	13	78	8
Quebec	369140	32	78	8
Ontario	316245	45	78	8
Manitoba	72100	7	78	8
Saskatchewan	95705	12	78	8
Alberta	129780	20	78	8
B.C.	118290	19	78	8
Total	1380830	167		
TOTAL TOTAL	11349210	1857		

¹. Excludes Yukon and Northwest Territories.

Sample B: Distribution October 2007/September 2008

			('01 Census) Number Of House- holds ¹	Per Year		
				Number Of Assign- ments	Anticipated Completion Rate	Contacts Per #
Toronto	High	Q1 ²	248460	125	60	11
	High	0 ²	31010	8		
	Low	Q1	334165	105		
	Low	0	1019940	76		
Vancouver	High	Q1	81760	56	60	11
	High	0	47570	21		
	Low	Q1	63475	23		
	Low	0	562990	71		
Montreal	High	Q1	167540	196	60	11
	High	0	73875	27		
	Low	Q1	55520	50		
	Low	0	1119080	116		
Quebec City	High	Q1	27560	30	70	9
	High	0	22510	6		
	Low	Q1	11450	10		
	Low	0	232890	17		
Ottawa/Gatineau	High	Q1	70175	37	60	11
	High	0	3440	1		
	Low	Q1	114820	37		
	Low	0	227035	18		
Hamilton	High	Q1	27255	14	60	11
	High	0	21590	5		
	Low	Q1	7640	2		
	Low	0	196555	14		
London	High	Q1	15980	7	60	11
	High	0	14720	3		
	Low	Q1	1710	1		
	Low	0	140685	9		
Winnipeg	High	Q1	27085	14	65	10
	High	0	20305	6		
	Low	Q1	5430	2		
	Low	0	216910	17		
Calgary	High	Q1	67195	33	65	10
	High	0	4485	1		
	Low	Q1	57070	18		
	Low	0	227070	16		
Edmonton	High	Q1	40085	19	65	10
	High	0	25405	6		
	Low	Q1	12400	4		
	Low	0	277965	19		
TOTAL	High	Q1	773095	531		
	High	0	264910	84		
	Low	Q1	663680	252		
	Low	0	4221120	373		

1. Excludes Yukon and Northwest Territories.

2. Q1 = Top Quintile. 0 = Other Quintiles.

Sample B: Distribution October 2007/September 2008

			('01 Census) Number Of House- holds ¹	Number Of Assign- ments	Per Year Anticipated Completion Rate	Contacts Per #
Balance Of 100,000 Plus Communities:						
Newfoundland	High	Q1 ²	4065	2	70	9
	High	0 ²	4285	1		
	Low	Q1	2600	1		
	Low	0	53805	5		
Nova Scotia	High	Q1	15885	8	70	9
	High	0	6380	1		
	Low	Q1	6120	2		
	Low	0	157295	10		
New Brunswick	High	Q1	7145	3	70	9
	High	0	3875	1		
	Low	Q1	1105	0		
	Low	0	82765	4		
Quebec	High	Q1	4100	5	70	9
	High	0	4755	1		
	Low	Q1	3250	3		
	Low	0	175875	15		
Ontario	High	Q1	60790	24	65	10
	High	0	163800	25		
	Low	Q1	6025	2		
	Low	0	644895	28		
Saskatchewan	High	Q1	18135	9	65	10
	High	0	11440	3		
	Low	Q1	3430	1		
	Low	0	132545	10		
B.C.	High	Q1	11600	4	65	10
	High	0	27370	4		
	Low	Q1	6040	2		
	Low	0	196050	7		
TOTAL	High	Q1	121720	55		
	High	0	221905	36		
	Low	Q1	28570	11		
	Low	0	1443230	79		

1. Excludes Yukon and Northwest Territories.

2. Q1 = Top Quintile. 0 = Other Quintiles.

Sample B: Distribution October 2007/September 2008

		('01 Census) Number Of House- holds ¹	Per Year		
			Number Of Assign- ments	Anticipated Completion Rate	Contacts Per #
Communities 30–99.9M:					
P.E.I.	Q1 ²	1830	1	75	9
	0 ²	20525	2		
Nova Scotia	Q1	590	–	75	9
	0	31150	4		
New Brunswick	Q1	7135	3	75	9
	0	24765	3		
Quebec	Q1	3990	3	75	9
	0	256435	21		
Ontario	Q1	6150	2	75	9
	0	334010	43		
Manitoba	Q1	30	–	75	9
	0	17170	2		
Saskatchewan	Q1	710	–	75	9
	0	28425	3		
Alberta	Q1	4315	2	75	9
	0	86470	12		
B.C.	Q1	3210	1	75	9
	0	210895	33		
TOTAL	Q1	27960	12		
	0	1009845	123		

1. Excludes Yukon and Northwest Territories.

2. Q1 = Top Quintile. 0 = Other Quintiles.

Sample B: Distribution October 2007/September 2008

		('01 Census) Number Of House- holds ¹	Per Year		
			Number Of Assign- ments	Anticipated Completion Rate	Contacts Per #
Communities 10–29.9M:					
Newfoundland	Q1 ²	395	–	75	9
	0 ²	15875	2		
P.E.I.	Q1	–	–	75	9
	0	5775	1		
Nova Scotia	Q1	–	–	75	9
	0	5550	1		
New Brunswick	Q1	50	–	75	9
	0	23510	3		
Quebec	Q1	235	–	75	9
	0	89285	7		
Ontario	Q1	625	–	75	9
	0	77030	10		
Manitoba	Q1	425	–	75	9
	0	4950	1		
Saskatchewan	Q1	–	–	75	9
	0	27075	3		
Alberta	Q1	3145	1	75	9
	0	29175	4		
B.C.	Q1	380	–	75	9
	0	79260	12		
TOTAL	Q1	5255	1		
	0	357485	44		

1. Excludes Yukon and Northwest Territories.

2. Q1 = Top Quintile. 0 = Other Quintiles.

Sample B: Distribution October 2007/September 2008

	('01 Census) Number Of Households ¹	Per Year		
		Number Of Assignments	Anticipated Completion Rate	Contacts Per #
Communities 1–9.9M:				
Newfoundland	35065	4	78	8
P.E.I.	2525	–	78	8
Nova Scotia	38685	4	78	8
New Brunswick	30245	4	78	8
Quebec	235305	21	78	8
Ontario	209235	29	78	8
Manitoba	42505	6	78	8
Saskatchewan	41740	6	78	8
Alberta	106640	18	78	8
B.C.	87660	16	78	8
Total	829605	108		
Communities Under 1M:				
Newfoundland	62720	7	78	8
P.E.I.	20010	2	78	8
Nova Scotia	96035	12	78	8
New Brunswick	100805	13	78	8
Quebec	369140	33	78	8
Ontario	316245	44	78	8
Manitoba	72100	8	78	8
Saskatchewan	95705	12	78	8
Alberta	129780	20	78	8
B.C.	118290	20	78	8
Total	1380830	171		
TOTAL TOTAL	11349210	1880		

¹. Excludes Yukon and Northwest Territories.