Appendix IV: Detailed Survey Methodology

Developing the Interview Script

The Minneapolis Resident Survey was first administered in 2001. While some survey questions have been modified over time, residents typically have been asked their perspectives about the quality of life in the city, their use of City amenities, their opinion on policy issues facing the City and their assessment of City service delivery. Other than a few additions to the current survey, the instrument was almost identical to the survey instrument used in 2008. The instrument averaged about 20 minutes in length.

Sample Selection

A company specializing in phone survey services conducted the interviewing, purchased a random digit dial sample (RDD) where part of the sample was geocoded up-front using reverse directory look-up. Phone numbers of Minneapolis residents were randomly selected for interviewing. Once interviews were completed using the RDD list, those that had respondent address information were geocoded to determine in which of 11 community planning districts a respondent resided. The pre-geocoded list was used at the end of data collection to meet quotas set by community planning district.

If records were unable to be geocoded, they were manually examined to see if the community planning district could be identified from the information in the record. Failing obvious identification, a reverse phone directory was used to generate address information for numbers with incomplete or inaccurate information.

Quotas

An overall quota of at least 95 completed interviews was obtained for each of the 11 community planning districts within the City of Minneapolis. Additional quota systems based on racial groups and cell phone users were used.

Survey Administration and Response Rate

The survey was administered by a company specializing in phone survey services, and the data were recorded electronically using a Computer-Assisted Telephone Interviewing system (CATI).[13] Phone calls were made from February 1, 2011 to March 10, 2011. A majority of the interviews was completed during the evening hours, although calls were made on the weekend and during weekdays also. All phone numbers were dialed at least eight times before replacing with another number, with at least one of the attempts on either a weekend or weekday. Interviewers who spoke Spanish, Vietnamese, Somali, Hmong, Lao and Oromo were available for this survey; 12 surveys were conducted in Spanish, one in Hmong, one in Vietnamese, one in Oromo and four in Somali. No interviews were conducted in Vietnamese. About a quarter (279) of the completed interviews were conducted with residents of color and a similar proportion (271) were conducted with cell phone users. Although TTY capabilities were offered, no surveys were completed by TTY users.

A total of 28,787 phone numbers were dialed during the survey administration. Some of these numbers are considered ineligible[14] for the survey. Of the approximately 5,190 households called, 1,172 completed interviews providing a response rate of 23%. Approximately 863 households refused the survey.

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[13] CATI is a software program that automatically dials phone numbers, logs dispositions and records responses to completed interviews.

[14] Disconnected, fax/data line, or business phone numbers were not included as eligible households. For 8,936 phone numbers where the eligibility status of the household was unknown, 18% were estimated to be eligible. This proportion was assumed to hold for those households not contacted, or where the household refused, and therefore prevented knowing the eligibility status, and only 18% of these numbers were included in the final response rate calculation.

The dispositions of the numbers dialed during the survey are listed in the table on the following page.

Disposition of All Numbers Called for the 2008 City of Minneapolis, MN Resident Survey	
Complete	1,172
Partial	0
Refusal	863
Break off	66
Respondent never available	1,120
No interviewer available for needed language (other than the 7 languages in which the survey was conducted)	358
Always busy	202
No answer/answering machine	8,668
Out of sample - other strata than originally coded	448
Fax/data line	1,047
Non-working/disconnected number	13,774
Pager	54
Business, government office, other organizations number	711
Quota filled	213
Other	25
Total phone numbers used	28,787
I=Complete Interviews	1,172
P=Partial Interviews	0
R=Refusal and break off	929
NC=Non Contact	1,120
O=Other	358
e15=estimated proportion of cases of unknown eligibility that are eligible	18%
UH=Unknown household	8,936
UO=Unknown other	0
Response Rate16	23%

Survey Processing (Data Entry)

Use of a CATI system means that all collected data were entered into the dataset at the time of the interview. Skip patterns were programmed into CATI so interviewers were automatically "skipped" to the appropriate question based on the individual responses being given. Before the data were analyzed, an in-depth cleaning of the data was conducted as part of the standard quality control procedures.

Precision of Estimates

It is customary to describe the precision of estimates made from surveys by a "level of confidence" (or margin of error). The 95 percent confidence level for the survey is generally no greater than plus or minus three percentage points around any given percent reported for the entire sample (1,172 completed interviews). For each community planning district from the survey, the margin of error rises to as much as plus or minus 10% for a sample size of 95 (in smallest) to plus or minus 9% for 129 completed surveys (in largest). Where

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[15] Estimate of e is based on proportion of eligible households among all numbers for which a definitive determination of status was obtained (a very conservative estimate).
[16] The response rate was calculated as I/((I+P) + (R+NC+O) + e(UH+UO)).

estimates are given for subgroups, they are less precise. Generally the 95 percent confidence interval is plus or minus five percentage points for samples of about 400 to 10 percentage points for samples as small as 100.

The relationship between sample size and precision (the 95 percent confidence interval or margin of error) is shown in the table to the side. Though the margin of error decreases as sample size increases, higher cost and diminishing benefit often prohibit sample sizes larger than 1,500 to 2,000, with resident survey samples most commonly in the range of 400 to 1,000.

Sample Size	Margin of Error
100	10%
300	5.5%
400	5%
800	3.5%
1,000	3%
1,500	2.5%
2,000	2.2%

Weighting the Data

The demographic characteristics of the survey sample were compared to those found in the U.S. Census Bureau, 2007-2009 American Community Survey estimates (and City estimates for each of the 11 community districts) for the City of Minneapolis and were statistically adjusted to reflect the larger population when necessary. Other discrepancies between the whole population and the sample were also aided by the weighting due to the intercorrelation of many socioeconomic characteristics.

The variables used for weighting were respondent gender, age, ethnicity, housing tenure (rent or own) and geographic location (community planning district). This decision was based on:

- The disparity between the survey respondent characteristics and the population norms for these variables

- The saliency of these variables in differences of opinion among subgroups

- The historical profile created and the desirability of consistently representing different groups over the years

The primary objective of weighting survey data is to make the survey sample reflective of the larger population of the community. This is done by: 1) reviewing the sample demographics and comparing them to the population norms from the most recent Census or other sources and 2) comparing the responses to different questions for demographic subgroups. The demographic characteristics that are least similar to the Census and yield the most different results are the best candidates for data weighting. A third criterion sometimes used is the importance that the community places on a specific variable. For example, if a jurisdiction feels that accurate race representation is key to staff and public acceptance of the study results, additional consideration will be given in the weighting process to adjusting the race variable.

A special software program using mathematical algorithms is used to calculate the appropriate weights. A limitation of data weighting is that only 2-3 demographic variables can be adjusted in a single study. Several different weighting "schemes" are tested to ensure the best fit for the data. The results of the weighting scheme are presented in the table on the following page.

Minneapolis 2011 Citizen Survey Weighting Table			
Characteristic	Population Norm[1]	Unweighted Data	Weighted Data
Housing			
Own home	51%	66%	52%
Rent home	49%	34%	48%
Race and Ethnicity			
White alone, not Hispanic	71%	75%	70%
Hispanic and/or other race	29%	25%	30%
Sex and Age			
18-34 years of age	44%	12%	42%
35-54 years of age	34%	39%	35%
55+ years of age	22%	49%	23%
Male	51%	44%	51%
Female	49%	56%	49%
Males 18-34	22%	6%	22%
Males 35-54	18%	19%	19%
Males 55+	10%	20%	11%
Females 18-34	21%	6%	20%
Females 35-54	16%	20%	16%
Females 55+	12%	29%	12%
Household Income			
Less than $25,000	29%	31%	30%
$25,000 to $99,999	53%	53%	54%
$100,000 or more	18%	16%	16%
Community District[2]			
Calhoun	11%	9%	10%
Camden	7%	9%	7%
Central	9%	9%	9%
Longfellow	8%	9%	8%
Near North	7%	9%	7%
Nokomis	9%	9%	9%
Northeast	10%	9%	10%
Phillips	4%	8%	4%
Powderhorn	14%	11%	14%
Southwest	13%	9%	12%
University	8%	9%	8%

1 Source: 2007-2009 ACS Estimates - US Census

2 Source: 2000 City of Minneapolis estimates

Data Analysis

The results were analyzed by National Research Center, Inc. staff using the Statistical Package for the Social Sciences (SPSS). For the most part, frequency distributions are presented in the body of the report. A complete set of frequencies for each survey question is presented in *Appendix III: Complete Set of Frequencies.*

Also included are crosstabulations of select survey questions (see *Appendix II: Crosstabulations of Select Survey Questions*). Chi-square or ANOVA tests of significance were applied to these breakdowns of selected survey questions. A "p-value" of 0.05 or less indicates that there is less than a 5% probability that differences observed between groups are due to chance; or in other words, a greater than 95% probability that the differences observed in the selected categories of our sample represent "real" differences among those populations. Where differences between subgroups are statistically significant, they are marked with grey shading in the appendices.