




## MEMORANDUM

**TO:** Commuter Connections Subcommittee Members  
**FROM:** Nicholas Ramfos   
 Director, Commuter Connections  
**SUBJECT:** Comments and Responses for Draft 2010 State of the Commute  
 Technical Report  
**DATE:** September 21, 2010

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The 2010 Draft State of the Commute Technical Report was distributed at the July 20, 2010 Commuter Connections Subcommittee meeting. A comment period was established with an August 20, 2010 deadline for comments. The following comments were received. COG/TPB has provided corresponding responses. They are as follow:

1. **Comment:** The text frequently uses the term "respondents" when in fact the data appears to refer to the expanded sample. See page 10 – "four jurisdictions accounted for residences of seven in ten respondents." However the survey was designed to obtain at least 600 responses from residents in each of 11 jurisdictions, for a total of 6,629 responses. So four jurisdictions could not possibly account for 70% of "respondents." In fact, this sentence appears to refer to the total population, not just the "respondents." This language results in confusion in interpreting all of the data presented in the report. In these other instances, is the author actually referring to "respondents" or does the statement really apply to the expanded survey population?

***Response – Yes, in the reference cited, "respondent" refers to weighted/expanded results. This is a common convention in survey technical reports and has been the convention used in past SOC survey reports. The methodology section notes that "the percentages presented in the results tables and figures show percentages expanded to the total working population." An additional explanation has been added to this section for clarification purposes. "Note also that the term "respondent," when used in the document, reflects expanded data, unless otherwise noted. Other terms, such as "commuter," "employee," "worker," and "resident," also are used, when it is necessary or helpful to distinguish subsets of the total surveyed population."***

2. **Comment:** Table 31 indicates that each of the 3 sub-groups of people who changed either their home or work, all report that 34% had a more difficult commute, but the % for the entire group as a whole is reported at 24%. This appears to be an error; it is not clear how each subgroup can report an identical percentage, while the overall percentage for the group as a whole is different. In addition, the text in the



3<sup>rd</sup> paragraph that discusses the percentages who moved and whose commute improved is difficult to follow and appears to be inconsistent with Table 31. Finally, it is not clear how these percentages support the stated conclusion that “the move more often improved the commute.”

***Response – There was an error in the table; the percentages for “moved” and “didn’t move” were reversed. The results have been corrected.***

3. ***Comment:*** Using Table 31 as an example, all tables and graphs presented in the report should be carefully checked for mathematical accuracy.

***Response – All results have been reviewed and rechecked and adjustments were made, if necessary.***

4. ***Comment:*** It would be useful if the report provided an expanded discussion about confidence levels. The consultant has gone to extensive lengths to document the statistical validity of the survey. At the same time, however, there are some references where conclusions appear to be drawn from a small subset of the data and where the corresponding confidence levels appear to overlap.

As described on p. 114, as the sample size decreases the confidence level expands. Whereas **6,629** samples yield a 95% confidence level of  $\pm 1.2\%$ , the 95% confidence level of **207** samples is  $\pm 6.8\%$ , and so forth. Does this mean that the analyst can be 95% confident that the true mean drawn from 6,629 responses is within  $\pm 1.2\%$  of the survey mean, and that the true mean drawn from 207 responses is within  $\pm 6.8\%$  of the survey mean?

(If this interpretation is correct, it may be necessary to review many of the tables in the report to verify whether differences in various subgroups are indeed within the margin of error and whether the accompanying text is correct. For example, Table 6 and the accompanying text on page 20 that says: “Hispanic respondents were the most likely to carpool of all ethnic groups.” This is based on 328 responses where 11% said they carpool. The confidence level of 328 responses is not identified on page 114, but using a conservative value of  $\pm 4.4\%$  (reported for 499 samples) the “true” % could be anywhere between 6.6% and 15.4%. For African-Americans, the table says 7% carpool based on 1,012 responses. Again assuming a conservative range of  $\pm 2.9\%$  (1,145 samples) the true % of African-American carpoolers could be anywhere between 4.1% and 9.9%. Since these ranges overlap, the basis for the conclusion that Hispanic people were the most likely to carpool is not clear.)

***Response – Regarding the interpretation of confidence levels shown on page 114, a confidence level of 95%  $\pm 1.2\%$ , means that if the study was repeated, the results for a particular question would be expected to be within 1.2% of the results observed for this study in 95% of the other studies.***

***Regarding the significance of the particular result noted for mode by ethnicity (Table 6), the difference in CP use is significant. The confidence levels that would be reported for sample sizes of 328 and 1,012 respondents apply when the percentages are at or near 50%. For percentage results that are much higher or lower than 50%, such as the 7% and 11% results shown in the table, the confidence levels are smaller (e.g., more sensitive).***

5. ***Comment:*** Again with respect to Table 31, the text on page 62 indicates that differences between subgroups are all within the statistical margin of error. This statement indicates that the table contains information that is not statistically significant. Some users of the report will look only at data presented in tables and graphs and will not bother reading the text. The data presented in the report should consist only of that which is statistically valid; alternatively, data that is not statistically significant should be highlighted through shading or some other means to clearly identify it as such.

***Response – The convention in reporting survey results is to include all results for a question. The fact that a result is not statistically significant at a particular confidence level does not mean it isn't a valid result. Additionally, results might fail the test of statistical significance at a particular level, but be of practical interest to readers because they suggest directional patterns. An analysis report written for an academic or research audience would report statistical test results for key questions within the table and/or as a footnote to the table. These references were excluded in the tables because the report is targeted to a non-technical audience. Rather, results are highlighted that are of particular interest in the text. Results are also pointed out that might be of interest but that do not pass a standard statistical test. Additionally, some tables do include shading or highlighting to call attention to statistically significant results of interest.***

6. ***Comment:*** It would be helpful to discuss the extent to which the survey is representative of the “typical” commuter in the region. For example, the report indicates the following characteristics of the respondents:

60% “professional” or “executive/managerial”  
24% work for a federal agency  
73% with household income over \$80,000

Some of these %s are unexpected. Has any comparison been done with other data (census, etc.) to verify that these are truly representative of the typical commuter in the region?

***Response – Comparisons of sample representativeness by employment type, occupation, or income from the census or other published data will not be***

***conducted because the SOC is a survey of workers and the census / ACS surveys are surveys of all persons. Thus, the data would not be comparable.***