


MEMORANDUM

TO: Commuter Connections Subcommittee
FROM: Nicholas Ramfos, Director 
Commuter Connections
SUBJECT: Responses to Comments ON THE Draft FY 2010 SOC Technical Report
DATE: November 16, 2010

Below are responses to comments received on the draft 2010 State of the Commute Technical Report dated September 21, 2010. A comment period was established until October 22, 2010.

The comments received and associated responses from COG/TPB staff are as follow:

1. **Comment:**

As stated on page 5, the survey responses have been adjusted to correct under-representation of some racial/ethnic groups in the sample. It would be also be desirable to discuss the extent to which the survey respondents are 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

Has any comparison been done with other data (census, etc.) to verify that these are truly representative of the typical commuter in the region? For example, are 60% of commuters in professional, executive, or managerial jobs? Are 60% of the jobs in the region classified as being in one of these categories? Do 73% of the households in the region have incomes over \$80,000?

(This comment was also submitted with respect to a previous State of the Commute report. The response indicated that data for comparison purposes was not readily available. With the recent release of data from the ACS and the MWCOG household surveys, such data may now be available.)

Response – Comparisons of samples by employment type, occupation, or income from the census have not been conducted because the data would not be comparable. The SOC is a survey of workers and the census / ACS surveys are surveys of all persons, both employed and not employed.

The COG/TPB Household Survey included questions on household income and employer type that might allow comparison with the SOC, but COG/TPB staff have not released demographic data for sub-sets of the data. Data for all households have been released, however data for employed persons are not currently available. The survey did ask employed respondents their employer type and these results were included in the documentation report for the HH Survey. A comparison of the distributions from the HH Survey and the SOC survey is as follows:

<u>Employer Type</u>	<u>SOC</u>	<u>HH Survey</u>
Private, for profit	41%	46%
Federal agency	24%	20%
State/local agency	12%	12%
Non-profit	13%	13%
Self-employed	10%	9%

The percentage distributions are very close. The higher share of Federal agencies in the SOC sample could be due to differences in the sample areas. The HH Survey comprised a larger sample area than did the SOC - e.g., HH survey included Baltimore region and other jurisdictions outside the 11-jurisdiction sample area. A higher share of Federal agency staff in the 11-jurisdiction SOC area is reasonable, given the concentration of Federal employees in the District of Columbia.

2. Comment:

It would be highly desirable for the report to provide 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. 113, as the sample size decreases the confidence level expands. Whereas **6,629** samples yield a 95% confidence level of **± 1.2%**, the 95% confidence level of **207** samples is **± 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 **± 1.2%** of the survey mean, and that the true mean drawn from 207 responses is within **± 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 in fact within the margin of error and whether the accompanying text is correct. For example, Table 6 and the accompanying text on page 21 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 range for fewer samples would be higher) the “true” 95% confidence range 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 95% confidence range 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. These relationships are shown in the table below:

Table 6 Excerpt – Carpool / Vanpool Primary Mode by Ethnic Group

	N =	Table 6 Value	Confidence Level		Confidence Range	
			%	Basis No. samples	Low	High
Hispanic	328	11%	4.4%	499	6.6%	15.4%
African-American	1012	7%	2.9%	1145	4.1%	9.9%

Since the ranges overlap, it is questionable whether the statement that Hispanic respondents were the most likely to carpool of all ethnic groups. This issue should be clarified.

Another example is the data shown in Table 7

Table 7 Excerpt – Drive Alone Primary Mode by Age Group

	N =	Table 6 Value	Confidence Level		Confidence Range	
			%	Basis No. samples	Low	High
< 25 years old	172	59%	7.2%	183	51.8%	66.2%
25-34 years old	796	67%	4.0%	602	63.0%	71.0%

Thus, it does not appear that commuters who are younger than 25 drive alone less than those in the 25-34 age bracket (at the 95% confidence level).

If the above interpretation of confidence levels is correct, many of the comparative statements in the report should be reviewed for accuracy. This applies both to comparisons within the 2010 survey as well as comparisons of the 2010 survey with previous surveys.

Response – Regarding the interpretation of confidence levels shown on page 113 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).

3. Comment:

One of the findings regarding the ease of commute and commute satisfaction is that with the exception of bikers / walkers, “other respondents were about equally satisfied with their commute, regardless of the mode they primarily used to get to work” (emphasis added, p. 68). This would seem to be a significant finding that should be included as a discrete point in Section 4 (Summary and Conclusions).

Response – This is a result that could have been included in the Summary and Conclusions section. COG/TPB staff will consider adding the statement to the public version of the SOC report that will be developed in the spring of 2011.

4. Comment:

The discussion of respondents' satisfaction with their commute and their satisfaction with the transportation system should be clarified. Figure 41 and the text on page 66 indicate that “62% (of respondents?) rated their commute satisfaction as a ‘4’ or a ‘5’ on a 5-point scale where ‘5’ meant ‘very satisfied.’” On page 95, the text indicates that “only 40% [of commuters] said they were satisfied (rating 4 or 5 on a 5-point scale.)” In addition, the discussion about satisfaction with the transportation system by mode (p.97) appears to be inconsistent with the reported satisfaction with the commute trip noted above (p.68). Finally, the statement on page 109 that “only four in ten regional commuters give high ratings for satisfaction with transportation in the region” is potentially misleading, since the discussion on page 66 indicates that 62% rated their own commute as a “4” or “5” on a 5-point scale.

It appears that the discussion on pages 95-98 and refers to satisfaction with the transportation system in response to survey question 106, while the discussion on page 66-69 refers to satisfaction with the commute pursuant to question 56m. This would appear to be a major finding that should be more fully discussed in the report, and this distinction should be clarified in Section 4 (Summary and Conclusions).

Response – Yes, the results of pages 95-98 do refer to satisfaction with transportation system and pages 66-69 refer to satisfaction with commuting. Satisfaction with commute and satisfaction with transportation system are two different concepts and satisfaction with one is not inconsistent with dissatisfaction with the other. Commute satisfaction would be based on the characteristics of a particular trip while transportation system satisfaction would be based on one’s ability to make a wide variety of trips to many locations. A commuter might have found or developed a satisfying method to

commute but be dissatisfied with any of a variety of characteristics of the transportation system overall, for example, limited options for non-work trips, concerns about maintenance or safety of modes not used for commuting, desire for transit in under-served areas, or other considerations of the transportation system as a whole.

5. Comment:

The comment above suggests that it would be helpful to provide the text of the specific question when presenting and discussing individual survey responses. This comment has been submitted on previous State of the Commute reports, and the response was ***“For those who wish to check the specific question wording, a copy of the full questionnaire, including both questions and coded responses, is included in the Appendices.”*** It would nevertheless be helpful to users of the report if the text at least referred to a specific question number.

Response –Including question numbers in the text would add complexity to all sections of the text without a particular benefit. For cases in which the specific wording of a question is particularly important, such as in the telework definition (page 35), the question text has been quoted. Additionally, the survey report sections largely follow the order of the question in the survey, thus should be easy for reviewers to identify specific questions if they are interested in seeing the text.

6. Comment:

With respect to Table 31, the text on page 63 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.

7. Comment:

Some cells in some tables are shaded, but the reasons for such shading are not evident or explained (see Tables 6 and 7 as examples).

Response – The shading in the tables corresponds to comments in the text that highlight notable findings.

8. Comment:

Some terms may need to be clarified, and perhaps a Glossary would be helpful.

- How is “access to an HOV lane” defined? Or “along their route?” If someone lives in Dale City and works in Tysons, we know that they have HOV “along their route” but it would not be practical for someone to use it. How is this accounted for in the survey?

Response – Please refer to Appendix D – Instructions and Definitions of Terms. This document provides information provided to interviewers to assist them to help respondents interpret the meaning of any term they find unfamiliar. In essence, this is the “glossary” that would be available to respondents. Telephone survey methodology requires that interviewers read the survey questions exactly as written, thus the questionnaire, along with interviewer instructions and training information represent the full interpretation of terms available to respondents.

9. Comment:

Additional explanation should be provided about Figures 53 and 54, which report the use and awareness of local commute assistance programs. These figures report respondents considerably exceeding the 602 threshold in most jurisdictions (see below). Should it be assumed that these numbers include all respondents, not just the residents of the individual jurisdiction? Why are the values for Prince William County higher than those for Arlington and Montgomery, in particular?

**Figure 53
Heard of Local Jurisdiction Commute Assistance Program**

(Frederick n = 732, Arlington n = 958, Loudoun n = 660, Southern Maryland n = 1,224, Prince William n = 1,244, Prince George's n = 894, Montgomery n = 928, Alexandria n = 732, Fairfax n = 1,253)

Response – The percentages for programs reported in Figure 53 (Awareness of program) are based on the number of respondents who either live or work in the jurisdiction served by the program. The samples for Figure 54 (Use of program) are based on respondents who were aware of the program. Programs serving jurisdictions that have high employment (e.g., Fairfax and Montgomery) have larger samples because they apply to both residents of the jurisdictions and substantial numbers of respondents who work in the jurisdiction but live outside the jurisdiction.

The sample sizes presented with Figure 53 were reviewed and the sample for Prince William County (PRTC) should have been 602, rather than 1,244. Using the reduced sample base, the weighted percentage awareness for PRTC should have been 53%. In Figure 54, the sample for Prince William County should have been 314, rather than 341 and the percentage of use of PRTC should have been 20% instead of 18%. These items will be shown in a corrected format in the final report. All other samples and percentages in the two figures are correct.