

VOLUME III, SECTION VIII
B. SUMMARY STATISTICS

B1. Summary Statistics for MPOs Combined. The combined MPO statistics are contained in this part. The individual MPO statistics are reported in C2 as a table of means by location and in D1 as a list of open ended categories and percentages. This part is the only summary of demographics for the sample.

B2. Mean Quality and Effectiveness Response Ratings by Location. This part presents a Table of means by individual MPOs.

B3. Differences Between MPOs. Essential information on ANOVA comparisons between MPOs.

B1. SUMMARY STATISTICS FOR MPOS COMBINED

Table B1. Overall Descriptive Statistics

Variable	n	Percent	Mean	SD
Representation	351			
Central City	31	9		
Inner suburb	40	11		
Outer suburb	65	19		
County	38	11		
Small town	35	10		
STA	38	11		
RTA	21	6		
Environ. Group	3	1		
Other	80	23		
Job	350			
Politician	87	25		
Engineer	77	22		
Planner	65	19		
Staff	29	8		
Other	91	26		
Frequency of Participation	347			
Daily	28	8		
Weekly	95	27		
Monthly	191	55		
Quarterly	32	9		
Understand plan/fund process	230		3.46	1.21
1. Very poorly		12		
2. Poorly		6		
3. Moderately		24		
4. Generally		40		
5. Very well		18		
Effectiveness of MPO				
Meeting regional needs	202		4.59	1.08
1. Extremely ineffective		1		
2. Generally ineffective		4		
3. Fairly ineffective		7		
4. Fairly effective		27		
5. Generally effective		43		
6. Extremely effective		18		
Meeting changing needs	210		4.33	1.17
1. Extremely poor		2		
2. Generally poor		5		
3. Fairly poor		14		
4. Fairly well		28		
5. Generally well		37		

Variable	n	Percent	Mean	SD
Works with RTA	193	13	4.71	.94
6. Extremely well		13		
1. Extremely poor		1		
2. Generally poor		1		
3. Fairly poor		10		
4. Fairly well		25		
5. Generally well		45		
Works with SDT	192	19	4.54	.97
6. Extremely well		19		
1. Extremely poor		1		
2. Generally poor		2		
3. Fairly poor		10		
4. Fairly well		33		
5. Generally well		39		
6. Extremely well		15		
Needs satisfied by MPO				
Additional transport capacity	194		4.03	1.14
1. Extremely poor		5		
2. Generally poor		4		
3. Fairly poor		19		
4. Fairly well		34		
5. Generally well		34		
6. Extremely well		5		
Roadway construction	194		4.03	1.13
1. Extremely poor		5		
2. Generally poor		4		
3. Fairly poor		16		
4. Fairly well		35		
5. Generally well		36		
6. Extremely well		5		
Operational/Safety improvements	192		4.19	1.04
1. Extremely poor		3		
2. Generally poor		3		
3. Fairly poor		14		
4. Fairly well		36		
5. Generally well		40		
6. Extremely well		4		
Invest in transit/bus service	191		4.01	1.21
1. Extremely poor		5		
2. Generally poor		7		
3. Fairly poor		18		
4. Fairly well		28		
5. Generally well		37		
6. Extremely well		5		

Variable	n	Percent	Mean	SD
Invest in bike/ped facilities	191		4.07	1.18
1. Extremely poor		5		
2. Generally poor		6		
3. Fairly poor		14		
4. Fairly well		35		
5. Generally well		35		
6. Extremely well		6		
MPO meets long-term needs	199		4.38	1.14
1. Extremely poor		2		
2. Generally poor		5		
3. Fairly poor		13		
4. Fairly well		30		
5. Generally well		36		
6. Extremely well		15		
Acceptability of multiple MPOs	198		2.25	1.50
1. Extremely poor		41		
2. Generally poor		28		
3. Fairly poor		13		
4. Fairly well		6		
5. Generally well		6		
6. Extremely well		7		
Fairness of TIP criteria	188			
Unfair (1) to fair (8)			5.71	1.86
Overall fairness of MPO process	191			
Unfair (1) to fair (8)			5.86	1.83
Single group has decision power (questionnaire)				
False	108	58		
True	79	42		
Public impact on MPO decisions	195			
1. Too little	57	29		
2. About right	135	69		
3. Too much	2	1		
Is MPO process able to meet rapidly changing needs?				
Yes	67	45		
No	82	55		
One group holds power? (Interview)				
Yes	97	66		
No	50	34		
SDT Process better/worse than MPO				
Better	26	23		
Worse	85	77		

Variable	n	Percent	Mean	SD
How often positive situations happen?				
Daily	23	18		
Weekly	15	11		
Monthly	36	27		
Several Times per Year	43	33		
Almost Never	14	11		
How often negative situations happen?				
Daily	5	4		
Weekly	4	3		
Monthly	8	6		
Several Times per Year	53	40		
Almost Never	64	48		

B2. QUALITY AND EFFECTIVENESS RATINGS BY LOCATION

Unless otherwise indicated, scales are 1-6, with 6 as positive.

	n	Mean	SD
Quality process (Attitude Scale)	339	4.16	.81
Dallas	111	4.51	.69
Phoenix	89	3.73	.81
Seattle	60	4.35	.68
Denver	79	3.98	.78
Self report understanding of process	227	3.45	1.22
Dallas	96	3.81	1.05
Phoenix	60	3.52	1.08
Seattle	31	3.03	1.30
Denver	40	2.83	1.39
Regional needs met	200	4.59	1.08
Dallas	93	5.11	.83
Phoenix	56	3.96	1.09
Seattle	27	4.37	1.04
Denver	24	4.25	1.03
Changing needs met	200	4.33	1.18
Dallas	93	5.01	.88
Phoenix	56	3.73	1.09
Seattle	27	3.93	.96
Denver	24	3.54	1.22
Works well with RTA	190	4.71	.95
Dallas	86	5.09	.64
Phoenix	55	4.55	1.14
Seattle	26	4.35	.89
Denver	23	4.09	.90
Works well with SDT	190	4.53	.397
Dallas	89	5.03	.71
Phoenix	55	3.93	1.05
Seattle	26	4.46	.65
Denver	20	4.00	.86
Satisfy capacity needs	192	4.02	1.14
Dallas	90	4.48	.94
Phoenix	52	3.59	1.21
Seattle	26	3.92	.93
Denver	24	3.29	1.16
Satisfy roadway construction needs	192	4.07	1.13
Dallas	89	4.52	.99

	n	Mean	SD
Phoenix	52	3.65	1.14
Seattle	27	3.93	.92
Denver	24	3.46	1.22
Satisfy operational/safety needs	190	4.19	1.05
Dallas	89	4.65	.72
Phoenix	52	3.73	1.16
Seattle	26	3.92	1.06
Denver	23	3.78	1.17
Satisfy investment in bus service	189	4.02	1.21
Dallas	89	4.62	.87
Phoenix	51	3.27	1.22
Seattle	25	3.92	1.12
Denver	24	3.46	1.28
Satisfy investment in bike/ped	189	4.07	1.18
Dallas	88	4.39	1.00
Phoenix	53	3.69	1.14
Seattle	25	4.04	1.37
Denver	23	3.74	1.39
TIP criteria are fair (1-8)	186	5.71	1.87
Dallas	89	6.34	1.74
Phoenix	49	4.84	1.62
Seattle	26	5.31	1.64
Denver	22	5.55	2.24
MPO process is fair (1-8)	189	5.86	1.84
Dallas	89	6.71	1.48
Phoenix	51	4.76	1.66
Seattle	26	5.46	1.77
Denver	23	5.43	2.04
MPO meets long term needs	197	4.38	1.15
Dallas	92	5.02	.84
Phoenix	54	3.63	1.05
Seattle	27	4.15	1.03
Denver	24	3.83	1.17

B3. DIFFERENCES BETWEEN MPOS

Differences in respondents' attitudes based on location and the background variables of representation (consistency or agency represented), job (performed by the respondent), and extent of participation in the MPO process were evaluated. Two-way analyses of variance were conducted to see whether there was a need to examine scores separately by location. Table B2 displays the results of two-way analyses resulting in significant interactions between location and the background characteristic of interest. When the interaction was significant at the $p < .01$ level, data were analyzed separately by location. When the interaction was not significant at the $p < .01$ level, one way analyses of variance were conducted. The reason for this two-stage analyses was to first see if location differences might be obscuring effects of background variables (hence 2-way anovas) prior to assessing overall effects of those background variables (oneway anovas). All significant main effects were followed up with Tukey's HSD post hoc test to see which groups, if any, differed significantly. Results are reported for strong ($p < .01$) and weak ($p < .05$) findings.

Further, analyses were conducted separately for interview and survey data. Results differing between the two methods of data collection are also reported.

Two-Way Anovas

Significant interactions were found for four variables: attitude, how well the MPO works with the SDT, satisfaction with operation and safety improvements. So, for those variables one-way analyses by location were run and are presented in Table B3. While analyses were run for each location, only results that were found to be significant at the $p < .05$ level are reported.

Differences were found by representation for Dallas and Phoenix with no significant differences by representation for Seattle or Denver. Differences for Dallas were more positive attitudes for state (STA) than for RTA participants. Differences for Phoenix were less positive attitudes for STA than for suburbs and small towns.

Differences were found by frequency of participation in the MPO process for Dallas, Phoenix, and Seattle. No differences were found for Denver. Attitudes varied idiosyncratically by location.

Table B2. Anova Results: Significant Two-Way Interaction at .01 Level

Source of Variation	SS	effect	df	MS	F	p
Attitude Survey						
Location by Representation	19.088	.22	18	1.060	2.381	.003
Location by Freq of Participation	7.147	.07	3	2.382	5.389	.001
How Well MPO Works with SDT						
Location by Representation	24.708	.19	18	1.373	2.261	.005
Location by Freq of Participation	10.898	.07	3	3.633	6.027	.001

Satisfaction with Operation and Safety Improvements

Location by Representation	31.504	.26	18	1.750	2.214	.006
----------------------------	--------	-----	----	-------	-------	------

Fairness of MPO

Location of Representation	94.699	.24	18	5.261	2.356	.003
----------------------------	--------	-----	----	-------	-------	------

Effect size reported at eta square

NOTE: The numbered differences [i.e., (1), (2), etc.] in Table C3 are explained at the end of the Table.

Table B3. Anova Results: Follow-Ups of Significant Interactions by Location

Source of Variation	SS	effect	df	MS	F	p
<i>Representation</i>						
Dallas						
(1) Attitude	6.06	.16	6	1.01	2.52	.03
(2) Satisfaction with Operation and Safety	6.44	.18	6	1.07	2.43	.04
(3) Fairness of MPO	26.03	.18	6	4.34	2.46	.04
Phoenix						
(4) Attitude	10.65	.29	6	1.78	3.92	.01
(5) How Well MPO Works with SDT	19.10	.38	6	3.18	3.55	.01
(6) Satisfaction with Operation Safety Improvements	19.04	.38	6	3.17	3.24	.02
(7) Fairness of MPO	41.41	.40	6	6.90	3.66	.01
Seattle						
No significant differences by representation						
Denver						
No significant differences by representation						
<i>Frequency of Participation in the Process</i>						
Dallas						
(8) Attitude	4.44	.08	3	1.48	3.26	.03
Phoenix						
(9) Attitude	8.13	.14	3	2.71	4.66	.01
(10) How Well MPO Works with SDT	16.20	.27	3	5.40	6.21	.01
Seattle						
(11) Attitude	4.48	.19	3	1.49	4.25	.01
Denver						
No significant differences by representation						

Effect sizes reported as eta square.

Contrasts significant at the p<.05 level were:

- (1) STA (4.83) is different from RTA (4.00).
- (2) Center (4.91) is different from Small Town (3.80)
- (3) No groups were different

- (4) STA (2.83) is different from Inner suburbs (3.83), Outer suburbs (3.83), Central (2.98), and Small Town (4.26).
- (5) STA (2.33) is different from Outer suburbs (4.25) and Small Town (4.63).
- (6) STA (2.00) is different from Small Town (4.25).
- (7) STA (2.00) is different from Small Town (6.00); County (2.67) is different from Small Town (6.00).
- (8) Quarterly (4.36) is different from Daily (5.49).
- (9) Weekly (3.34) is different from Monthly (3.92) and Quarterly (4.43).
- (10) Weekly (3.25) is different form Monthly (4.19) and Quarterly (5.33).
- (11) Quarterly (3.89) is different from Weekly (4.61) and Daily (4.92).

Since some difference was found by whether respondents received a mail survey or an in-person interview, differences were assessed separately for these groups and again for the groups in aggregate. Stronger differences ($p < .01$) are presented first, followed by weaker differences ($p < .05$) in separate tables. Table C4 presents differences found for mail surveys. Attitude differed by location as did understanding of the MPO process; understanding of the MPO process also differed by frequency of participation.

Table B4. One-Way Anovas Significant at .01 Level for Survey Group

Source	df	SS	MS	F	p	effect
(1) Attitude	3	16.5581	5.5194	10.54	.0001	.14
Within Groups	192	100.5507	.5237			
Total	195	117.1088				
(2) Understanding of MPO						
Process by Frequency	3	15.2192	5.0731	6.79	.0002	.10
Within Groups	188	140.4475	.7471			
Total	191	155.6667				
(3) Understand Process by Location	3	12.7607	4.2536	5.66	.001	.08
Within Groups	191	143.6188	.7519			
Total	194	156.3795				

Contrasts significant at .05 level.

- (1) Dallas (M=4.41) is different from Phoenix (M=3.75) and Denver (M=3.91).
- (2) Daily (M=4.60) is different form Quarterly (M=3.35), and Weekly (M=4.21) is different from quarterly and Monthly (3.71).
- (3) Dallas (M=4.06) is different from Seattle (M=3.42), Denver (M=3.5), and Phoenix (M=3.66).

When similar analyses were conducted for interview respondents, two differences were found. Attitude and rated fairness of the MPO process differed by location.

Table B5. One-Way Anovas Significant at .01 Level for Interview Group

Source	df	SS	MS	F	p	effect
(1) Attitude by Location	3	24.96	8.32	14.88	.0001	.24
(2) Fairness by Location	3	91.62	30.54	15.39	.0001	.24
Contrasts significant at .05 level.						
(1) Dallas (M=4.92) and Seattle (M=4.50) are different from Phoenix (M=3.71) and Denver (M=4.02).						
(2) Dallas (M=6.29) and Seattle (M=6.05) are different from Phoenix (M=4.34) and Denver (M=4.69).						

Finally, when the data were aggregated, providing more statistical power, the differences presented in Table C6 were found.

Table B6. One-Way Anovas Significant at .01 Level for Aggregate Data

Source	df	SS	MS	F	P	effect
(1) Attitude by Location	3	35.33	11.78	21.26	.001	.16
(2) Item 16 by Location	3	34.09	11.36	5.18	.002	.04
(3) Understand process by Location	3	33.91	11.30	8.39	.001	.10
(4) Regional needs met by Location	3	50.91	16.97	18.31	.001	.22
(5) Changing needs met by Location	3	82.44	27.48	27.79	.001	.30
(6) Works at RTA by Location	3	26.48	8.83	11.51	.001	.16
(7) Works with SDT by Location	3	48.30	16.10	23.20	.001	.27
(8) Satisfy capacity needs by Location	3	41.17	13.72	12.54	.001	.17
(9) Satisfy roadway construction by Location	3	36.32	12.11	10.95	.001	.15
(10) Satisfy operational/safety by Location	3	35.60	11.87	12.82	.001	.17
(11) Satisfy investment in bus service by Location	3	67.99	22.66	20.06	.001	.24
(12) Satisfy investment in bike/ped by Location	3	19.32	6.44	4.93	.01	.07
(13) TIP criteria are fair by Location	3	78.43	26.14	8.41	.001	.12
(14) MPO process is fair by Location	3	133.45	44.48	16.40	.001	.21
(15) MPO meets long-term needs by Location	3	76.91	25.64	27.29	.001	.30
(16) Understand process by Job	4	25.72	6.43	4.64	.001	.08
(17) Bus by RNUMYRS	2	13.36	6.68	4.73	.009	.05

Effect size reported as eta square. Contrasts significant at .05 level:

- (1) Dallas (M=4.51) and Seattle (M=4.36) are different from Phoenix (M=3.73) and Denver (M=3.98).
- (2) Dallas (M=3.18) and Phoenix (M=3.42) are different from Denver (M=2.54).

- (3) Dallas (M=3.81) is different from Denver (M=2.83) and Seattle (M=3.03) and Phoenix (M=3.52) is different from Denver.
- (4) Dallas (M=5.11) is different from Phoenix (3.96) and Denver (4.25) and Seattle (4.37).
- (5) Dallas (M=5.01) is different from Denver (3.54) and Phoenix (3.73) and Seattle (3.93).
- (6) Dallas (M=5.09) is different from Denver (4.09) and Seattle (4.35) and Phoenix (4.55).
- (7) Dallas (M=5.03) is different from Phoenix (3.93) and Denver (4.00) and Seattle (4.46); Seattle is different from Phoenix.
- (8) Dallas (M=4.48) is different from Denver (3.29) and Phoenix (3.60).
- (9) Dallas (M=4.52) is different from Denver (3.46) and Phoenix (3.65).
- (10) Dallas (M=4.65) is different from Phoenix (3.73) and Denver (3.78) and Seattle (3.92).
- (11) Dallas (M=4.62) is different from Phoenix (3.27) and Denver (3.46) and Seattle (3.92).
- (12) Dallas (M=4.40) is different from Phoenix (3.70).
- (13) Dallas (M=6.34) is different from Phoenix (4.84) and Seattle (5.31).
- (14) Dallas (M=6.71) is different from Phoenix (4.76) and Denver (5.43) and Seattle (5.46).
- (15) Dallas (M=5.02) is different from Phoenix (3.63) and Denver (3.83) and Seattle (4.15).
- (16) Planner (M=3.74) and Engineer (M=3.77) are different from Politician (M=2.94).
- (17) Group 3 (M=4.23) is different from Group 1 (3.56).