RT-HIS: UPDATE 2000:

REGIONAL TRAVEL – HOUSEHOLD INTERVIEW SURVEY:

UPDATED WEIGHTING AND EXPANSION FACTORS

FINAL REPORT

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For the

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and

North Jersey Transportation Planning Authority (NJTPA)

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PURPOSE OF REGIONAL TRVEL-HOUSEHOLD INTERVIEW SURVEY (RT-HIS) UPDATE 2000

Project Objectives

The purpose of this study has been to obtain, process and apply Year 2000 U.S. Census data in order to weight (normalize) and expand the NYMTC/NJTPA Regional Travel - Household Interview Survey (RT-HIS) sample data collected in 1997 and 1998. This important regional survey was originally weighted with the best available data at the time – 1) 1996 estimates of the number of households at the Census tract and Minor Civil Division level, and 2) 1990 Census Public Use Micro-Sample (PUMS) data. With this project, the new and relatively more concurrent 2000 Census data, have been applied to re-weight and expand the RT-HIS in order to further extend the usefulness of this important dataset of detailed travel behavior for general transportation analysis, and travel demand modeling and forecasting in the region.

The two principal Metropolitan Planning Organizations (MPO's) in the region that sponsored the RT-HIS, have cooperated to have this update implemented -- The New York Metropolitan Transportation Council (NYMTC), and the North Jersey Transportation Planning Authority, Inc., (NJTPA). NYMTC has sponsored the update for the twelve (12) county downstate, New York City metropolitan area plus two Connecticut counties, while NJTPA has partnered with NYMTC to conduct the same work for the thirteen counties of the NJTPA region, plus Mercer County. The work has been based on the original weighting procedures used for the RT-HIS, in Task 12.2.5 of the NYMTC Transportation Models and Data Initiative project.

This project has results in an updated travel depiction from the 1997/98 survey data, which reflects year 2000 household population statistics. A product of the effort is also a set of computer software programs that can efficiently process the data and produce the optimum factoring process resulting in statistically valid year 2000 travel estimates.

The software developed in this project is capable of accepting other year's data or estimates (e.g. year 2002, etc.), as they become available and may be of interest to the planning agencies, in order to do minor updating from short-term population change characteristics. Finally, the study has produced as set of instructional materials used in training sessions conducted with the MPO staff to develop competency in operating the RT-HIS updating programs developed and delivered.

RT-HIS: Overview

The survey data collection began in February of 1997 and continued through May of 1998. The *RT-HIS* was a diary type travel survey, in which detailed travel information for each member of participating households was collected during an entire travel day. This includes the specific time, location, and mode of travel for all household members during the travel day, as well as their activities at each place to which they traveled. In addition, basic demographic, employment and other data about each household and each person in the household was collected in the *RT-HIS.*

The selection, recruiting and collecting the *RT-HIS* data from each household was an eight staged process, involving a series of mailings and telephone interviews and follow-up contacts.

These procedures are summarized in the chart below:

Survey Step	Highlight / Feature
❑ Household selected	❑ Random Digit Dialing (RDD)-based sample
❑ Letter of Introduction mailed	❑ From NYMTC/NJTPA with $1
❑ Recruitment interview conducted (by telephone)	❑ CATI*: Household & Person profiles, work/school info, assign travel day
❑ Travel Diaries received for each person	❑ Diaries, with $1 per person, Hot Line and instructions
❑ Assigned Travel Day	❑ Reminder call before / verify info.
❑ Retrieval interview(s) conducted	❑ PATI**: report diary info with probes
❑ Data checking and control	❑ Edit Checks, geo-coding and call-backs
❑ Geocoding of all locations	❑ Point (Long/Lat) location of places visited (trip ends)

*Note: * CATI – Computer Assisted Telephone Interview procedure.*

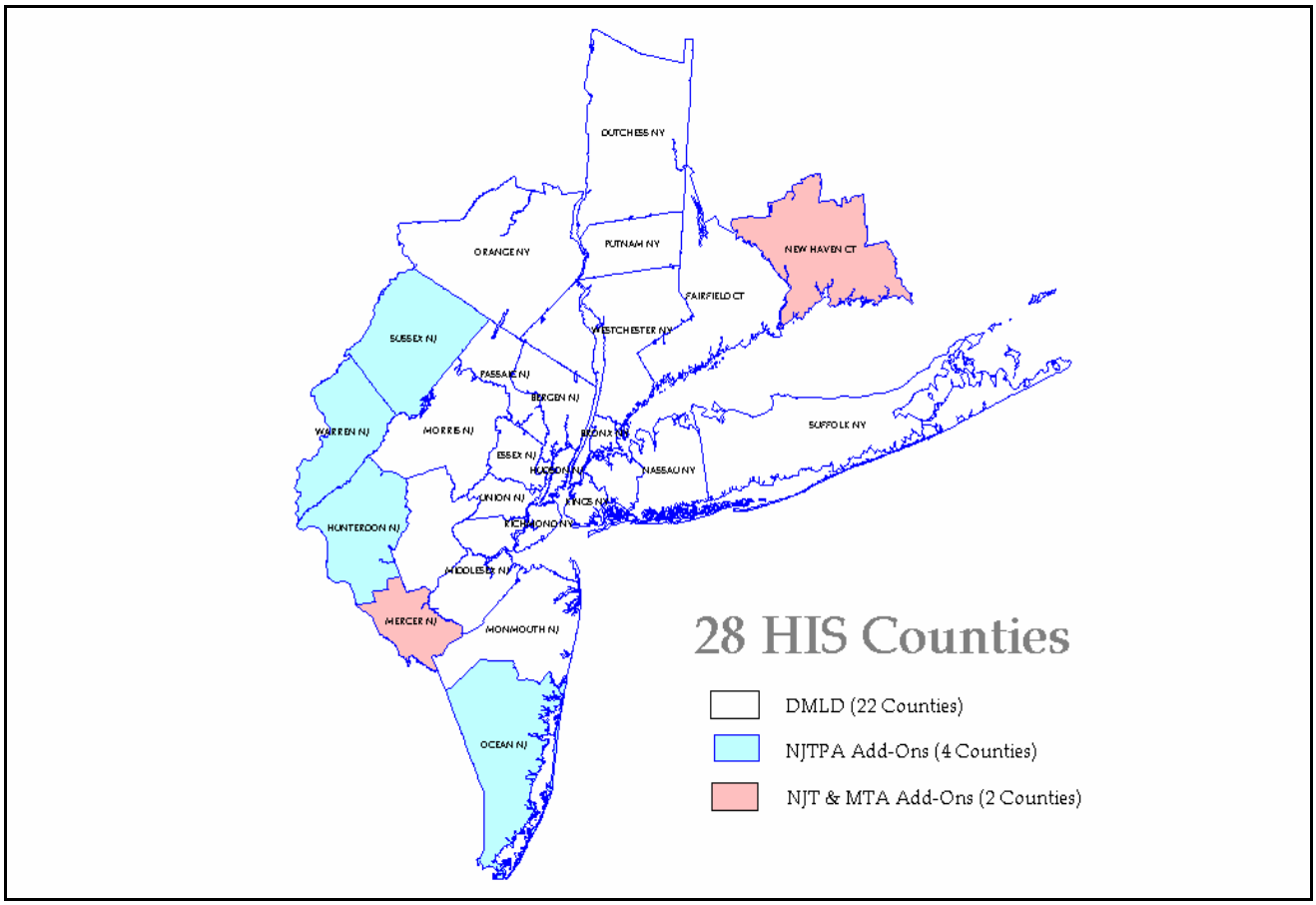
*** PATI - Paper Assisted Telephone Interview procedure.*

The *RT-HIS* data set consists of complete and usable travel information collected from a sample of 11,246 households. The sample for analysis of resident-based weekday travel is 10,971 households for the entire 28 county Metro Area. The weekend sample, it is comprised of 275 households, restricted to the NJTPA counties. This represents a sample of over 90,000 daily trips made by area residents. The sampling plan for the RT-HIS was designed to produce valid statistics for typical measures of travel at the county level, with a minimum sample size of 271 households established as a goal.

All households within the 28 counties comprising the New York/New Jersey/Connecticut metropolitan area (see Figure 1) were eligible for inclusion in the study through a random sampling process. These counties included:

New York:	Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester
New Jersey:	Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, Warren
Connecticut:	Fairfield, New Haven

Figure 1 The RT-HIS Study Area



** NOTE: DMLD – Density / Mode Leadership District (for sampling), also referred to as "MLD's" as discussed in section on Stage 1 Weighting – Updated.*

Final RT-HIS Weekday Sample – Number of Households by County

	County	Sample Households
1	New York	1,548
2	Queens	276
3	Bronx	271
4	Kings	489
5	Richmond	813
6	Nassau	384
7	Suffolk	432
8	Westchester	322
9	Rockland	250
10	Putnam	261
11	Orange	270
12	Dutchess	275
13	Fairfield	270
14	Bergen	643
15	Passaic	275
16	Hudson	489
17	Essex	418
18	Union	260
19	Morris	288
20	Somerset	266
21	Middlesex	376
22	Monmouth	433
23	Ocean	269
24	Hunterdon	276
25	Warren	271
26	Sussex	277
27	New Haven	160
28	Mercer	409
		10,971

OVERVIEW OF METHODS AND DATA

The approach taken in this project to the re-weighting of the RT-HIS data largely aimed to replicate the methods employed in the original survey weighting, but to take advantage of the more current and complete "universe" data available now with Census 2000 data. A complete description of that process and its rationale, can be found in Regional Travel Household Interview Survey: *Task 12.2.5 data Weighting and Validation – Technical Memorandum (December 1999)*.

Like the original weighting of the RT-HIS data, the updating process involves two stages:

Stage 1: The primary purpose of Stage 1 sampling is to develop a set of factors that correct for a sample design that established quotas by Density / Mode Leadership Districts (MLDs), and by counties. MLD's were used as the primary basis of sampling in order to obtain a good sample of persons in the region with a full range regional travel choices for use in the development of the NYMTC Best Practice travel demand model. These factors restore the sample to a representative, or pseudo-random sample, based on the calculated rate of sampling of all households in each of the distinct geographic subarea. In addition, Stage 1 weighting also includes a set of minor corrective factors related to the sampling probabilities and response rates associated with conducting surveys by telephone, given estimates of telephone ownership patterns among households. The key data needed to implement Stage 1 re-weighting are estimates of the total number of households (the "universe") in each county and MLD sub-area.

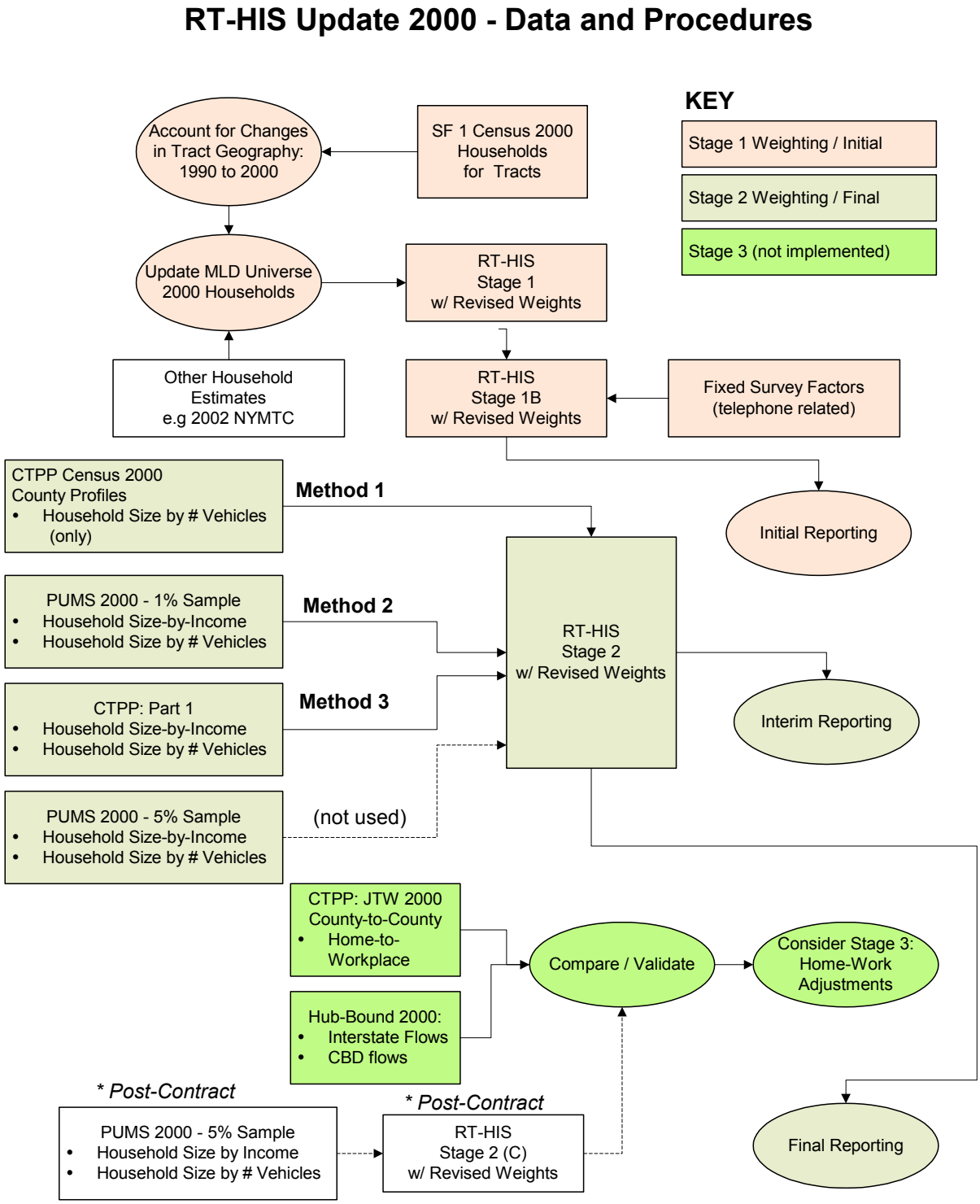
Stage 2: In Stage 2, the RT-HIS data are further evaluated and adjusted to account for possible non-response bias, associated with important household characteristics, such as household size, income, and vehicle ownership. Adjusting the survey to fit the distribution of these characteristics in the general population is done to reduce bias in the estimates of the behavior reported by the sample, by "balancing" the weights according to these household segmentation dimensions. For the original RT-HIS weighing, the only appropriate source of data for this aspect of the weighting process was from the 1990 Public Use Micro-Sample (PUMS) data, which at the time was already about 8 years old.

Unlike the original weighting of the RT-HIS, initial consideration has been given in the project to exploring the potential utility of an additional stage of data adjustment, one that would adjust the data in order to reduce deviations in the home-to-work linkage found in the RT-HIS and those reported in the Census "journey-to-work" questions.

Stage 3: With the full set of household weights applied, the home-to-work linkage reported by workers in the RT-HIS could be compared with the data from the "journey-to-work" questions found in the Census Transportation Planning Package (CTPP), and be adjusted to improve the match with Census at possibly a county-of-residence to county-of-workplace basis. Unlike the Stage 1 and 2 weighting which are strictly household based, a Stage 3 weight would be primarily applied as a person (worker) based factor. While worth further consideration, the implementation of this level of weighting in manner consistent with the standard re-weighting by households, raises additional complexities that are beyond the scope of this effort.

The overall process for the RT-HIS Update 2000, including the sequence of technical steps and the source and application of Census data, is depicted in **Figure 2**.

Figure 2: RT-HIS Weighting Update: Methods and Data Sources



PB Consult / Draft 3/15/03

Census Data Availability and Application by Method

The effort to re-weight the RT-HIS began late in 2002, when some but not all important Census 2000 data products for the region were available to support the required procedures, specifically the Stage 2 process. The following Figures document the Census data products considered and used, as well as tested in alternate methods pending delivery of products scheduled for release by the Bureau of the Census. Also shown are the sources of data used in the original RT-HIS weighting done in 1999.

As shown in **Figure 3-1**, the Census 2000 Summary File 1 (SF1) was available for the step in Stage 1 weighting of correcting for sampling rates by county and density / mode Leadership districts. For the Stage 2 work, a number of different Census products were considered and tested, along with variations in the original Stage 2 weighting procedure that was based on the 1990 Public Use Micro-Sample (PUMS) 5% dataset. The Census 2000 version of the 5 percent PUMS has not been available within the timeframe of this effort. Alternatives for Stage 2 re-weighting were tested with different Census data sets that have become available as shown in **Figure 3-2**. The data and method that were selected and have been applied in the project for Stage 2, have involved applying the same two critical household distributions -– 1) household income by household size and by sub-area, and 2) number of vehicles by household size and by sub-area – as in the original method, but with the CTPP Part 1 data (Census long form information, representing a 15% sample) instead of the PUMS 5 percent data[1].

Figure 3-1: Summary of Methods and Data – Stage 1: Original and Update 2000

Weighting Objective	Method - Original		Update Method	Data Source and Format	Release Date (NY, NJ & CT)
Stage 1: Correcting for Sample Design with Geographic Quota / Variable Rates of Sampling				**Base Year 1996 Estimates / Urbanomics** *Data:* Household and Population items *Table for Update:* # of Households *Geography*: Tracts and MCD's. *Sampling Basis:* none / estimates	1998 for NYMTC Transportation Data & Models Project
				Summary File 1 (SF1) - Census 2000 *Data:* Short form basic items *Table for Update:* # of Households *Geography*: Blocks, Block-Groups, Tracts, MCD's, etc. *Sampling Basis:* Short-Form - 100%	Spring 2002

[1] All the data required for the updated Stage 2 weighting are found in CTPP Part 1, Tables 1-063 and 1-064. Because of the timing of the release of Census products, the updating work done in this project used the exact same vehicle ownership data as found in Table 1-063, but were actually taken from the earlier release of the County Profiles. Additionally, CTPP Part 1 for Connecticut was not available at the time, and instead that data, the PUMS 1 percent file was used to obtain the income distribution for Fairfield and New Haven counties.

Figure 3-2: Summary of Methods and Data – Stage 2: Original and Update 2000

Weighting Objective	Method - Original	Alternate Method 1	Alternate Method 2	Update Method	Data Source and Format	Release Date (NY, NJ & CT)
Stage 2: Balancing - Correction for Response Bias by Key Household Characteristics					**Public Use Micro-Sample: PUMS - 5% - Census 1990** Data: Long form detail items Tables for Update: - Household Size by Income by Sub-Region - Household Size by # Vehicles by Sub-Region *Geography*: PUMA's (min. 100,000 populations) *Sampling Basis:* Long-Form - 5 percent of households	1993
					Public Use Micro-Sample: PUMS - 1% - Census 2000 Data: Long form detail items Tables for Update: - Household Size by Income by Sub-Region - Household Size by # Vehicles by Sub-Region *Geography*: Super-PUMA's (min. 400,000 populations) *Sampling Basis:* Long-Form - 1 percent of households	March 2003
		n/a			**Public Use Micro-Sample: PUMS - 5% - Census 2000** Data: Long form detail items Tables for Update: - Household Size by Income by Sub-Region - Household Size by # Vehicles by Sub-Region *Geography*: PUMA's (min. 100,000 populations) *Sampling Basis:* Long-Form - 5 percent of households **NOTE: Consdered, but Not Used**	Summer 2003 (expected)
					Census Transportation Planning Package - CTPP: "County Profiles" Data: Selected transportation related long form detail items Tables for Update: - Household Size by # Vehicles by Sub-Region *Geography*: County *Sampling Basis:* Long-Form (1/6) approx 15 percent of households	April 2003
					2000 Census Transportation Planning Package - CTPP: Part 1: Residence Based Data Data: Selected transportation related long form detail items Tables for Update: - Household Size by Income by Sub-Region (Table 1-064) - Household Size by # Vehicles by Sub-Region (Table 1-063) *Geography*: Block-Group, Tract, MCD and County *Sampling Basis:* Long-Form (1/6) approx 15 percent of households	July 2003

Figure 3-3 shows the Census Transportation Planning Package (CTPP) data sources that could be used to further extend the RT-HIS weighting if determined useful.

Figure 3-3: Summary of Methods and Data – Stage 3 Weighting (Not-Implemented)

Weighting Objective	Method - Original			Update Method	Data Source and Format	Release Date (NY, NJ & CT)
Stage 3: Adjustment for Home-to-Work / Commutation Pattern Bias in RT-HIS ***(NOT IMPLEMENTED in THIS UPDATE)***	Not Implemented			Tested / Not-Implemented	**2000 Census Transportation Planning Package - CTPP: "County-to-County Flows"** Data: Primary Workplace County for each worker by County of Residence Tables for Update: - County-to-County Home-Work (Primary job) Linkage (All modes) *Geography*: Counties-to-Counties *Sampling Basis:* Long-Form (1/6) approx 15 percent of	May 2003
				Proposed to Consider	**2000 Census Transportation Planning Package - CTPP: Part 3: "Workers Flow Data"** Data: Primary Workplace County for each worker by County of Residence Tables for Update: - Home-Work (Primary job) Linkage- By Mode Geography: Tract-to-Tract detail, to use Counties / Districts Level Sampling Basis: Long-Form (1/6) approx 15 percent of households	Summer / Fall 2003 (expected)

Stage 1 Weighting – Updated

County by Density / Mode Leadership districts (MLD): In this step, a first set of RT-HIS weighting factors were developed and applied using the Census 2000 number of households by census tract data (rather than formerly estimated base year 1996) to obtain a revised set of "Stage 1" weights and expansion factors. Using the SF1 Census, the component of the Stage 1 weighting procedures that addresses the probability of selection for each household were updated. As described above, this element of the RT- HIS weights, stems from the non-random / stratified nature of the sampling plan, with specific targets for sample of households assigned by County by Density / Mode Leadership districts (MLD) categories. This step re-established he adjustments needed for the rate of sampling based on the updated tract level household counts.

In the RT-HIS sampling plan, each household sampled was classified as to the County and MLD (or quota) that it belong to, by determining which census tract, or in some areas Minor Civil Division (MCD), it was located, and the correspondence of these Census geographic units to the county and MLD definitions. This correspondence listing of counties and MLD's was updated in this project for Census 2000 tracts and MCD, so that SF 1 could be used to provide a count of the number of households in each of these sampling "cells".

This correspondence between tract and MCD Census geography and the County / MLD sampling cells, as used in the updating process is illustrated in **Figure 4-1** and **Figure 4-2.**

Telephone Interview Related Factors: Consideration was given to updating of these factors that relate to telephone ownership patterns and sampling bias, rather that simply retaining the factors developed in the original HIS weighting. These factors account for:

- Multiple phone numbers for a household
- Multiple households sharing a phone number
- Episodic phone ownership

It was determined that these telephone related factors developed in 1998 for the original HIS weighting, used not the 1990 decennial Census data, but the Current Population Survey (CPS) also conducted by the Bureau of the Census, adjusted based on other information available to NuStats obtained from their telephone interviewing experience. Consequently, there was no compelling reason to update these specific telephone ownership related factors as part of this 2000 Update.

Stage 1 Weights Revised: The following tables illustrate the factor calculation process for county and Density Mode Leadership District strata: the number of completed weekday households, the number of households in the universe, and the weighting factor that accounts for probability of selection.

Table 1 displays the actual number of households that completed the *RT-HIS* survey for the weekday travel day, distributed by DMLD's.

Table 2 contains the populations for each county and Density Mode Leadership District strata for the survey universe.

Table 3 contains the weighting factors that adjust for probability of selection.

Figure 4-1: Mode Leadership Density Districts – Census 2000 Update
Core Region

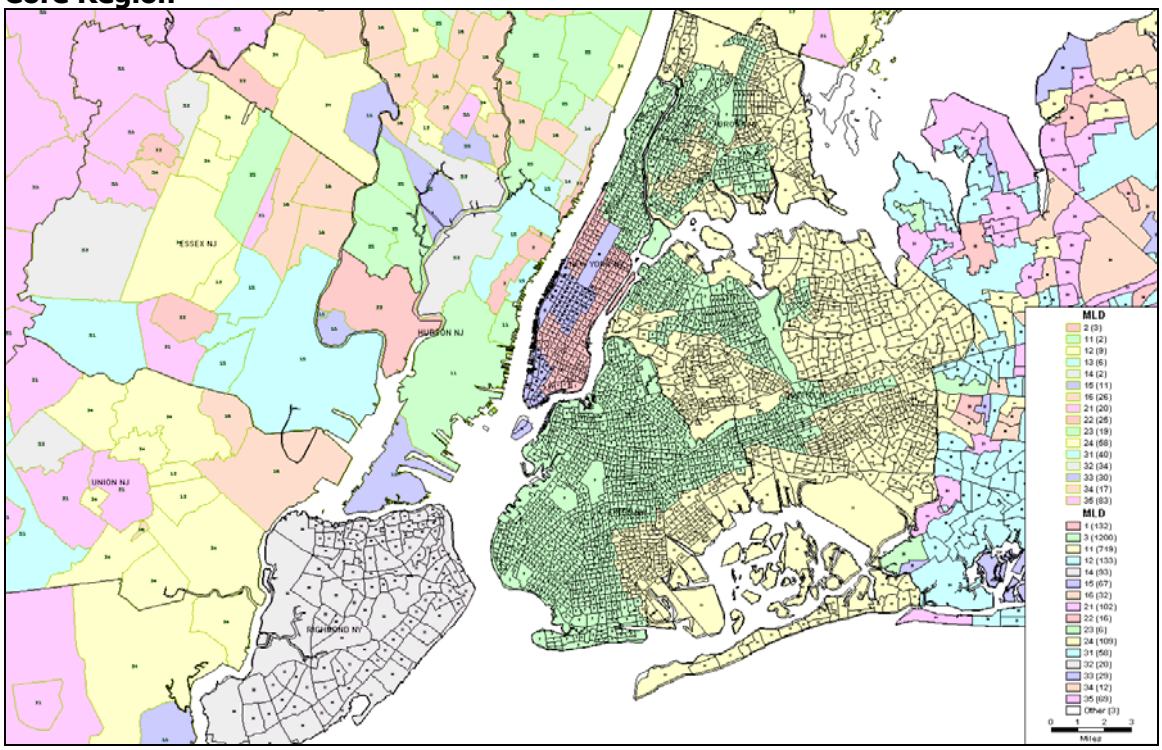


Figure 4-2: Mode Leadership Density Districts – Census 2000 Update
Northern New Jersey

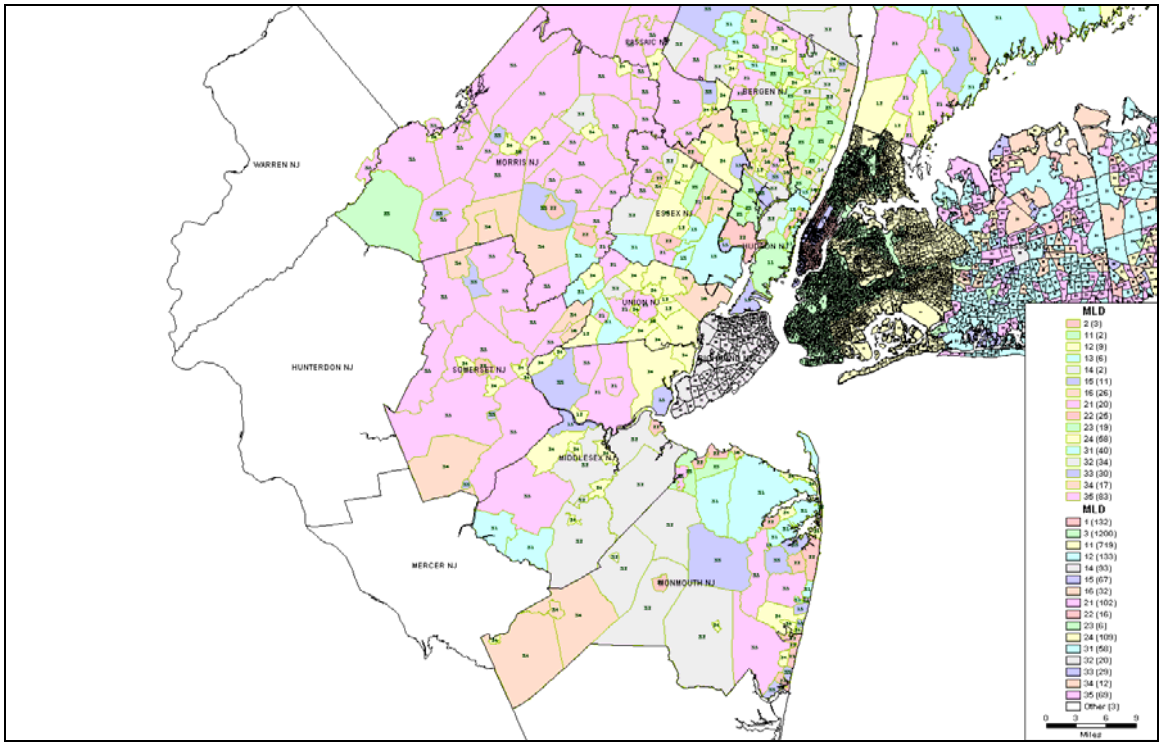


Table 1: Actual Number of Households in RT-HIS Sample - by County and Mode Leadership Density (Weekday Only)

County		Mode Leadership Density																		
		1	2	3	11	12	13	14	15	16	21	22	23	24	31	32	33	35	No MLD Defined	Total: All MLD's
1	New York	1,166		270					112											1,548
2	Queens			134	142															276
3	Bronx			172	99															271
4	Kings			428	61															489
5	Richmond							749								64				813
6	Nassau				4	160			24	29	71	37	10	8	24	1	7	9		384
7	Suffolk					7			1	20	54	13		141	50	2	33	111		432
8	Westchester					114			11		76	48			73					322
9	Rockland															250				250
10	Putnam														76			185		261
11	Orange								31			32				58	80	69		270
12	Dutchess											46		18			133	78		275
13	Fairfield									44	33			39	103	11		40		270
14	Bergen					2	9	137		95	12	10	214	23	18	70	34	19		643
15	Passaic								45	72		20		67			10	61		275
16	Hudson		142		188		56		63			27				13				489
17	Essex						232			52	11	30	30	23	11	22		7		418
18	Union					36				76	43			80	18	7				260
19	Morris										3	45	19	28	5	2	41	145		288
20	Somerset									17		31		44			5	169		266
21	Middlesex					8			41		36	9		50	13	152	49	18		376
22	Monmouth								15	5		103	26	43	59	89	43	50		433
23	Ocean																		269	269
24	Hunterdon																		276	276
25	Warren																		271	271
26	Sussex																		277	277
27	New Haven																		160	160
28	Mercer																		409	409
Total: All Counties		1,166	142	1,004	494	327	297	886	343	410	339	451	299	564	450	741	435	961	1,662	10,971

Table 2: Universe: Estimated 2000 Households (Source - Census 2000 / SF 1 Counts)

	County	Mode Leadership Density																		
		1	2	3	11	12	13	14	15	16	21	22	23	24	31	32	33	35	No MLD Defined	Total: All MLD's
1	New York	467,102		197,133					74,409											738,644
2	Queens			349,329	433,335															782,664
3	Bronx			292,151	171,061															463,212
4	Kings			776,290	104,437															880,727
5	Richmond							130,054								26,287				156,341
6	Nassau				9,117	224,454			15,772	35,807	92,860	14,725	7,681	12,829	25,338	275	2,499	6,030		447,387
7	Suffolk					11,946			1,058	19,833	59,388	10,791	1,242	147,154	57,139	1,785	38,386	120,577		469,299
8	Westchester					126,269			8,394		98,016	24,085			80,378			-		337,142
9	Rockland															87,843		4,832		92,675
10	Putnam														9,783			22,920		32,703
11	Orange								9,144			12,999				22,944	18,009	51,692		114,788
12	Dutchess											12,014		8,125			28,073	51,324		99,536
13	Fairfield									50,307	45,399			52,609	88,194	6,481		81,242		324,232
14	Bergen					3,024	4,861	26,571		99,159	12,580	3,836	87,235	24,343	8,856	32,817	14,099	13,436		330,817
15	Passaic								19,458	46,532		4,687		48,670			2,626	41,883		163,856
16	Hudson		44,084		108,050		27,211		31,448			13,539				6,214		-		230,546
17	Essex					11,885	139,438			43,632	10,910	8,833	15,020	26,468	7,015	11,370		9,165		283,736
18	Union					27,794				48,337	29,490			65,241	12,828	2,434		-		186,124
19	Morris									564	3,159	12,772	5,755	15,029	3,920	1,476	11,053	115,983		169,711
20	Somerset									7,202		4,743		11,918			821	84,300		108,984
21	Middlesex					5,899			27,619		40,128	2,967		76,243	9,833	66,047	16,500	20,579		265,815
22	Monmouth								9,572	3,872	285	38,181	13,665	26,185	34,894	49,779	14,216	33,587		224,236
23	Ocean																		200,402	200,402
24	Hunterdon																		43,678	43,678
25	Warren																		38,660	38,660
26	Sussex																		50,831	50,831
27	New Haven																		319,040	319,040
28	Mercer																		125,807	125,807
Total: All Counties		467,102	44,084	1,614,903	826,000	411,271	171,510	156,625	196,874	355,245	392,215	164,172	130,598	514,814	338,178	315,752	146,282	657,550	778,418	7,681,593

NYC	3,021,588
LI	916,686
MH	676,844
CT	643,272
NJTPA	2,297,396
Mercer	125,807
	7,681,593

Table 3: Weighting Factor 1 - Adjusting for Probability of Selection - Update for 2000

County		Mode Leadership Density																	
		1	2	3	11	12	13	14	15	16	21	22	23	24	31	32	33	35	No MLD Defined
1	New York	0.572	-	1.043	-	-	-	-	0.949	-	-	-	-	-	-	-	-	-	
2	Queens		-	3.723	4.358	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	Bronx	-	-	2.426	2.468	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	Kings	-	-	2.590	2.445	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	Richmond	-	-	-	-	-	-	0.248	-	-	-	-	-	-	-	0.587	-	-	
6	Nassau	-	-	-	3.255	2.004	-	-	0.939	1.763	1.868	0.568	1.097	2.290	1.508	0.393	0.510	0.957	
7	Suffolk	-	-	-	-	2.437	-		1.511	1.416	1.571	1.186		1.491	1.632	1.275	1.661	1.551	
8	Westchester	-	-	-	-	1.582	-	-	1.090	-	1.842	0.717	-	-	1.573	-	-	-	
9	Rockland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.502	-		
10	Putnam	-	-	-	-	-	-	-	-	-	-	-	-	-	0.184	-	-	0.177	
11	Orange	-	-	-	-	-	-	-	0.421	-	-	0.580	-	-	-	0.565	0.322	1.070	
12	Dutchess	-	-	-	-	-	-	-	-	-	-	0.373	-	0.645	-	-	0.301	0.940	
13	Fairfield	-	-	-	-	-	-	-	-	1.633	1.965	-	-	1.927	1.223	0.841	-	2.901	
14	Bergen	-	-	-	-	2.159	0.771	0.277	-	1.491	1.497	0.548	0.582	1.512	0.703	0.670	0.592	1.010	
15	Passaic	-	-	-	-	-	-	-	0.618	0.923	-	0.335	-	1.037	-	-	0.375	0.981	
16	Hudson	-	0.443	-	0.821	-	0.694	-	0.713	-	-	0.716	-	-	-	0.683	-	-	
17	Essex	-	-	-	-	-	0.858	-	-	1.198	1.417	0.421	0.715	1.644	0.911	0.738	-	1.870	
18	Union	-	-	-	-	1.103	-	-	-	0.908	0.979	-	-	1.165	1.018	0.497	-	-	
19	Morris	-	-	-	-	-	-	-	-		1.504	0.405	0.433	0.767	1.120	1.054	0.385	1.142	
20	Somerset	-	-	-	-	-	-	-	-	0.605	-	0.219	-	0.387	-	-	0.235	0.712	
21	Middlesex	-	-	-	-	1.053	-	-	0.962	-	1.592	0.471	-	2.178	1.080	0.621	0.481	1.633	
22	Monmouth	-	-	-	-	-	-	-	0.911	1.106		0.529	0.751	0.870	0.845	0.799	0.472	0.959	
23	Ocean																		1.064
24	Hunterdon																		0.226
25	Warren																		0.204
26	Sussex																		0.262
27	New Haven																		2.848
28	Mercer																		0.439

Average Expansion Factor **700.2**

In **Table 4**, the original and revised RT-HIS Update 2000 Stage 1 weights and expansion factors are shown, tabulated by the County and MLD quota cells.

Table 4:
Stage 1 / Initial - Comparison of Update 2000 with Original Weighting

			Original (96)	Update (00)		Original (96)	Update (00)	
RCO Regional County		MLD Mode Leadership Density Code	WHT_1OLD Stage 1 Weight - Normalized	WHT_1 Stage 1 Weight - Normalized	Difference	EXP_1 Stage 1 Weight - Expansion	EXP_1OLD Stage 1 Weight - Expansion	Difference
1	New York	1	0.6028	0.5745	-0.0283	401.1	393.4	-7.7
		3	1.0551	1.0464	-0.0088	730.6	688.7	-41.9
		15	0.8708	0.9491	0.0783	662.7	568.4	-94.3
		Total	0.7011	0.6839	-0.0172	477.5	457.6	-19.9
2	Queens	3	3.6759	3.7361	0.0602	2,608.5	2,399.3	-209.2
		11	4.2733	4.3685	0.0952	3,050.0	2,789.2	-260.8
		Total	3.9832	4.0615	0.0782	2,835.7	2,599.9	-235.8
3	Bronx	3	2.3755	2.4366	0.0611	1,701.2	1,550.5	-150.7
		11	2.1647	2.4344	0.2697	1,699.7	1,413.0	-286.7
		Total	2.2985	2.4358	0.1373	1,700.7	1,500.3	-200.4
4	Kings	3	2.5687	2.6007	0.0320	1,815.8	1,676.6	-139.2
		11	2.2844	2.4381	0.1538	1,702.3	1,491.0	-211.2
		Total	2.5332	2.5805	0.0472	1,801.6	1,653.5	-148.2
5	Richmond	14	0.2332	0.2486	0.0155	173.6	152.2	-21.4
		32	0.4828	0.5906	0.1079	412.4	315.1	-97.3
		Total	0.2528	0.2756	0.0227	192.4	165.0	-27.4
6	Nassau	11	3.3755	3.2770	-0.0985	2,288.0	2,203.3	-84.8
		12	2.0840	2.0112	-0.0729	1,404.2	1,360.3	-43.9
		15	0.9653	0.9392	-0.0262	655.7	630.1	-25.6
		16	1.8671	1.7738	-0.0933	1,238.5	1,218.7	-19.8
		21	1.9036	1.8723	-0.0313	1,307.2	1,242.5	-64.7
		22	0.5645	0.5722	0.0077	399.5	368.4	-31.1
		23	1.1638	1.1040	-0.0598	770.8	759.6	-11.2
		24	2.3835	2.2981	-0.0854	1,604.5	1,555.8	-48.8
		31	1.6486	1.5135	-0.1351	1,056.7	1,076.1	19.4
		32	0.4167	0.4125	-0.0042	288.0	272.0	-16.0
		33	0.5032	0.5123	0.0092	357.7	328.4	-29.3
		35	0.9904	0.9612	-0.0292	671.1	646.4	-24.7
		Total	1.7277	1.6702	-0.0574	1,166.2	1,127.7	-38.5
7	Suffolk	12	2.5728	2.4371	-0.1357	1,701.6	1,679.3	-22.3
		15	1.6362	1.4896	-0.1467	1,040.0	1,068.0	28.0
		16	1.5066	1.4182	-0.0884	990.2	983.4	-6.8
		21	1.7081	1.5773	-0.1308	1,101.2	1,114.9	13.6
		22	1.2303	1.1893	-0.0409	830.4	803.0	-27.4
		24	1.5343	1.4944	-0.0399	1,043.4	1,001.5	-41.9
		31	1.6583	1.6348	-0.0235	1,141.4	1,082.4	-59.0
		32	1.2057	1.2747	0.0690	890.0	787.0	-103.0
		33	1.6112	1.6697	0.0585	1,165.8	1,051.7	-114.1
		35	1.5002	1.5592	0.0590	1,088.6	979.2	-109.4
		Total	1.5726	1.5526	-0.0200	1,084.0	1,026.5	-57.5
8	Westchester	12	1.6657	1.5864	-0.0792	1,107.6	1,087.2	-20.4
		15	1.0757	1.0930	0.0173	763.1	702.1	-61.0
		21	1.8909	1.8472	-0.0437	1,289.7	1,234.2	-55.5
		22	0.7160	0.7187	0.0027	501.8	467.4	-34.4
		31	1.5877	1.5770	-0.0107	1,101.1	1,036.3	-64.7
		Total	1.5394	1.4996	-0.0398	1,047.0	1,004.8	-42.2
9	Rockland	32	0.5167	0.5033	-0.0134	351.4	337.2	-14.1
		Total	0.5167	0.5033	-0.0134	351.4	337.2	-14.1
10	Putnam	31	0.1834	0.1844	0.0010	128.7	119.7	-9.0
		35	0.1706	0.1774	0.0069	123.9	111.3	-12.6
		Total	0.1743	0.1795	0.0052	125.3	113.8	-11.5
11	Orange	15	0.4612	0.4225	-0.0387	295.0	301.0	6.0
		22	0.6113	0.5818	-0.0295	406.2	399.0	-7.2
		32	0.5072	0.5666	0.0594	395.6	331.1	-64.5
		33	0.3211	0.3224	0.0013	225.1	209.6	-15.5
		35	1.0453	1.0730	0.0277	749.2	682.3	-66.9
		Total	0.5966	0.6089	0.0123	425.1	389.4	-35.7

Table 4: (continued)

Stage 1 / Initial - Comparison of Update 2000 with Original Weighting

RCO Regional County		MLD Mode Leadership Density Code	Original (96) WHT_1OLD Stage 1 Weight - Normalized	Update (00) WHT_1 Stage 1 Weight - Normalized	Difference	Original (96) EXP_1 Stage 1 Weight - Expansion	Update (00) EXP_1OLD Stage 1 Weight - Expansion	Difference
12	Dutchess	22	0.4135	0.3741	-0.0394	261.2	269.9	8.7
		24	0.6422	0.6465	0.0043	451.4	419.2	-32.2
		33	0.3075	0.3023	-0.0052	211.1	200.7	-10.4
		35	0.9231	0.9424	0.0194	658.0	602.5	-55.5
		Total	0.5217	0.5184	-0.0033	361.9	340.5	-21.4
13	Fairfield, CT	16	1.8550	1.6376	-0.2174	1,143.3	1,210.8	67.4
		21	1.9825	1.9704	-0.0121	1,375.7	1,294.0	-81.7
		24	1.9945	1.9321	-0.0625	1,348.9	1,301.8	-47.1
		31	1.2580	1.2264	-0.0316	856.3	821.1	-35.1
		32	0.7694	0.8439	0.0745	589.2	502.2	-87.0
		35	2.8220	2.9090	0.0870	2,031.1	1,842.0	-189.1
		Total	1.7620	1.7200	-0.0421	1,200.9	1,150.1	-50.8
14	Bergen	12	2.2506	2.1656	-0.0850	1,512.0	1,469.0	-43.0
		13	0.7415	0.7736	0.0321	540.1	484.0	-56.1
		14	0.2734	0.2778	0.0044	193.9	178.4	-15.5
		16	1.5532	1.4950	-0.0583	1,043.8	1,013.8	-30.0
		21	1.5862	1.5015	-0.0847	1,048.3	1,035.3	-13.0
		22	0.3680	0.5494	0.1814	383.6	240.2	-143.4
		23	0.6080	0.5839	-0.0241	407.6	396.8	-10.8
		24	1.5798	1.5159	-0.0639	1,058.4	1,031.1	-27.3
		31	0.6835	0.7047	0.0212	492.0	446.1	-45.9
		32	0.6745	0.6715	-0.0030	468.8	440.3	-28.6
		33	0.5133	0.5939	0.0806	414.7	335.1	-79.6
		35	1.0212	1.0128	-0.0084	707.2	666.6	-40.6
		Total	0.7492	0.7369	-0.0123	514.5	489.0	-25.5
15	Passaic	15	0.6533	0.6193	-0.0340	432.4	426.4	-6.0
		16	0.9969	0.9256	-0.0713	646.3	650.7	4.4
		22	0.3325	0.3357	0.0031	234.4	217.1	-17.3
		24	1.0914	1.0404	-0.0510	726.4	712.4	-14.0
		33	0.3956	0.3761	-0.0195	262.6	258.2	-4.4
		35	0.9631	0.9834	0.0203	686.6	628.6	-58.0
		Total	0.8860	0.8534	-0.0326	595.8	578.3	-17.5
16	Hudson	2	0.4067	0.4446	0.0379	310.5	265.5	-45.0
		11	0.7763	0.8232	0.0468	574.7	506.7	-68.0
		13	0.6427	0.6960	0.0532	485.9	419.5	-66.4
		15	0.7345	0.7150	-0.0195	499.2	479.4	-19.8
		22	0.6920	0.7182	0.0262	501.4	451.7	-49.8
		32	0.6214	0.6846	0.0632	478.0	405.6	-72.4
		Total	0.6395	0.6753	0.0357	471.5	417.4	-54.0
17	Essex	13	0.8815	0.8608	-0.0207	601.0	575.4	-25.6
		16	1.1838	1.2018	0.0179	839.1	772.7	-66.4
		21	1.3649	1.4206	0.0556	991.8	890.9	-100.9
		22	0.4069	0.4217	0.0148	294.4	265.6	-28.9
		23	0.7022	0.7171	0.0148	500.7	458.4	-42.3
		24	1.5445	1.6482	0.1038	1,150.8	1,008.1	-142.7
		31	0.9114	0.9134	0.0020	637.7	594.9	-42.8
		32	0.7073	0.7402	0.0330	516.8	461.6	-55.2
		35	1.7459	1.8753	0.1294	1,309.3	1,139.6	-169.7
		Total	0.9275	0.9315	0.0040	650.4	605.4	-45.0
18	Union	12	1.1761	1.1058	-0.0703	772.1	767.6	-4.4
		16	0.9395	0.9109	-0.0286	636.0	613.2	-22.8
		21	1.0130	0.9823	-0.0307	685.8	661.2	-24.6
		24	1.1959	1.1680	-0.0279	815.5	780.6	-34.9
		31	0.9684	1.0207	0.0523	712.7	632.1	-80.6
		32	0.5205	0.4980	-0.0224	347.7	339.7	-8.0
		Total	1.0540	1.0253	-0.0287	715.9	688.0	-27.9

Table 4: (continued)

Stage 1 / Initial - Comparison of Update 2000 with Original Weighting

RCO Regional County		MLD Mode Leadership Density Code	Original (96) WHT_1OLD Stage 1 Weight - Normalized	Update (00) WHT_1 Stage 1 Weight - Normalized	Difference	Original (96) EXP_1 Stage 1 Weight - Expansion	Update (00) EXP_1OLD Stage 1 Weight - Expansion	Difference
19	Morris	21	1.7047	1.5082	-0.1965	1,053.0	1,112.7	59.7
		22	0.4447	0.4065	-0.0382	283.8	290.2	6.4
		23	0.4268	0.4338	0.0070	302.9	278.6	-24.3
		24	0.8568	0.7688	-0.0880	536.8	559.3	22.5
		31	1.1800	1.1229	-0.0571	784.0	770.2	-13.8
		32	1.0250	1.0570	0.0321	738.0	669.0	-69.0
		33	0.3865	0.3861	-0.0004	269.6	252.3	-17.3
		35	1.1307	1.1456	0.0150	799.9	738.0	-61.9
		Total	0.8506	0.8412	-0.0094	587.3	555.2	-32.1
20	Somerset	16	0.7480	0.6068	-0.1412	423.6	488.2	64.6
		22	0.2540	0.2191	-0.0349	153.0	165.8	12.8
		24	0.4600	0.3880	-0.0720	270.9	300.2	29.4
		33	0.2411	0.2352	-0.0060	164.2	157.4	-6.8
		35	0.6568	0.7144	0.0577	498.8	428.7	-70.1
		Total	0.5753	0.5868	0.0115	409.7	375.5	-34.2
21	Middlesex	12	1.1556	1.0561	-0.0994	737.4	754.3	16.9
		15	1.0503	0.9648	-0.0855	673.6	685.5	11.9
		21	1.6311	1.5965	-0.0346	1,114.7	1,064.7	-50.0
		22	0.5223	0.4722	-0.0501	329.7	340.9	11.2
		24	2.2798	2.1840	-0.0958	1,524.9	1,488.1	-36.8
		31	0.9471	1.0833	0.1363	756.4	618.2	-138.2
		32	0.6040	0.6224	0.0183	434.5	394.3	-40.2
		33	0.4582	0.4823	0.0241	336.7	299.0	-37.7
		35	1.4321	1.6375	0.2054	1,143.3	934.7	-208.6
		Total	1.0161	1.0126	-0.0036	707.0	663.3	-43.7
22	Monmouth	15	1.0301	0.9140	-0.1161	638.1	672.3	34.2
		16	1.2499	1.1092	-0.1407	774.4	815.8	41.4
		22	0.5670	0.5309	-0.0361	370.7	370.1	-0.6
		23	0.8269	0.7528	-0.0741	525.6	539.7	14.2
		24	1.0881	0.8722	-0.2159	609.0	710.2	101.3
		31	0.9032	0.8471	-0.0562	591.4	589.6	-1.9
		32	0.7045	0.8011	0.0966	559.3	459.8	-99.5
		33	0.4858	0.4735	-0.0123	330.6	317.1	-13.5
		35	0.7933	0.9621	0.1688	671.7	517.8	-153.9
		Total	0.7504	0.7408	-0.0097	517.2	489.8	-27.4
23	Ocean	No MLDs	1.0702	1.0670	-0.0032	745.0	698.5	-46.5
		Total	1.0702	1.0670	-0.0032	745.0	698.5	-46.5
24	Hunterdon	No MLDs	0.2348	0.2267	-0.0081	158.3	153.2	-5.0
		Total	0.2348	0.2267	-0.0081	158.3	153.2	-5.0
25	Warren	No MLDs	0.2054	0.2043	-0.0011	142.7	134.1	-8.6
		Total	0.2054	0.2043	-0.0011	142.7	134.1	-8.6
26	Sussex	No MLDs	0.2698	0.2628	-0.0070	183.5	176.1	-7.4
		Total	0.2698	0.2628	-0.0070	183.5	176.1	-7.4
27	New Haven,CT	No MLDs	2.9651	2.8560	-0.1092	1,994.0	1,935.4	-58.6
		Total	2.9651	2.8560	-0.1092	1,994.0	1,935.4	-58.6
28	Mercer	No MLDs	0.4075	0.4408	0.0334	307.8	266.0	-41.8
		Total	0.4075	0.4408	0.0334	307.8	266.0	-41.8

Table 4: (continued)

Stage 1 / Initial - Comparison of Update 2000 with Original Weighting

RCO Regional County		MLD Mode Leadership Density Code	Original (96) WHT_1OLD Stage 1 Weight - Normalized	Update (00) WHT_1 Stage 1 Weight - Normalized	Difference	Original (96) EXP_1 Stage 1 Weight - Expansion	Update (00) EXP_1OLD Stage 1 Weight - Expansion	Difference
Total		1	0.6028	0.5745	-0.0283	401.1	393.4	-7.7
		2	0.4067	0.4446	0.0379	310.5	265.5	-45.0
		3	2.2763	2.3061	0.0298	1,610.1	1,485.8	-124.3
		11	2.2670	2.3845	0.1174	1,664.8	1,479.7	-185.1
		12	1.8270	1.7501	-0.0769	1,221.9	1,192.5	-29.4
		13	0.8323	0.8271	-0.0052	577.5	543.2	-34.3
		14	0.2394	0.2531	0.0138	176.7	156.2	-20.5
		15	0.8241	0.8211	-0.0030	573.3	537.9	-35.4
		16	1.3101	1.2393	-0.0708	865.3	855.2	-10.1
		21	1.7049	1.6560	-0.0489	1,156.2	1,112.8	-43.4
		22	0.5367	0.5216	-0.0151	364.2	350.3	-13.9
		23	0.6435	0.6198	-0.0238	432.7	420.0	-12.7
		24	1.3660	1.3073	-0.0587	912.7	891.6	-21.1
		31	1.0959	1.0762	-0.0197	751.4	715.3	-36.1
		32	0.5828	0.6105	0.0278	426.3	380.4	-45.9
		33	0.4715	0.4819	0.0105	336.5	307.7	-28.8
		35	0.9311	0.9732	0.0421	679.5	607.7	-71.8
		No MLDs	0.6764	0.6709	-0.0055	468.4	441.5	-26.9
		Total	1.0003	1.0003	0.0000	698.4	652.9	-45.5

STAGE 2 / FINAL WEIGHTING – UPDATED

In this step the full updated weighting of the RT-HIS survey has been completed, including the Stage 2 adjustments that account for non-response bias inherent in the final achieved sample, namely due to lower levels of participation found in the survey, and under-reporting, by households that are larger, with lower incomes, or with lower levels of car ownership.

This second set of RT-HIS weighting procedures, have made use of the Census 2000 distributions of households by size, income and auto ownership. As discussed in the first section of this report, alternative methods were tested. In the end, it was determined that replicating the original Stage 2 weighting procedures made the most sense, and could be accomplished within the project schedule even though the PUMS 2000 5-percent data were not available. Using the CTPP Part 1 data, both of the two key joint distributions needed to further balance sample data are available. As an added benefit of using the CTPP data ,rather than the PUMS data as was done for the original weighting, the CTPP data reflects a larger sample size from the Census, about 15 percent of the population of households (1 in 6 long form), rather than the 5 percent micro-sample data from PUMS.

For households in the RT-HIS sample that provide reports of household income (8,360 or 76.2%), the Stage 2 weighting procedures further adjust the sample, already weighted with the Stage 1 factors, with respect to

- Household Income by Household Size by Sub-regional county groupings.

The following income categories were used:

- Below $25,000
- $25,000 to 49,999
- $50,000 to 74,000
- $75,000 to 99,999
- $100,000 and higher

and the following household size categories

- 1, 2 3 and 4+ persons per household

For households in the RT-HIS sample that did not report household income (2,611 or 23.8%), the Stage 2 weighting procedures further adjust the sample with respect to:

- Number of Vehicles Owned by Household Size by Sub-regional county groupings.

The same household size categories were used as, along with the following vehicle ownerships categories:

- 0, 1, 2, and 3+ persons per household

The updated Stage 2 balancing factors have employed the same sub-regional geographic stratifications as used in the original weighting of the RT-HIS.

- New York City
- Long Island (Nassau and Suffolk)
- Mid-Hudson New York counties
- Connecticut (Fairfield and New Haven)
- Northern NJ (NJTPA counties)
- Mercer County

In **Table 5**, the original and revised RT-HIS Update 2000 Stage 2 and Final weights and expansion factors are shown, tabulated by the County and MLD quota cells.

Table 5:

Stage 2 / Final - Comparison of Update 2000 (Method 3) with Original Weighting

RCO Regional County	RCO Regional County ID	MLD Mode Leadership Density Code	Original (96) WHT_F Final RTHIS Weight - Normalized - Updated	Update (00) WHT_F Final RTHIS Weight - Normalized - Updated	Difference	Original (96) EXP_F Final RTHIS Weight - Expansion - Updated	Update (00) EXP_F Final RTHIS Weight - Expansion - Updated	Difference
1	1 Manhattan	1	0.6123	0.5827	-0.0296	401.1	408.0	7.0
		3	1.0235	1.0326	0.0090	670.4	723.0	52.6
		15	0.8146	0.8635	0.0489	533.6	604.6	71.0
		Total	0.6987	0.6815	-0.0172	457.6	477.2	19.5
2	2 Queens	3	3.5295	3.5891	0.0596	2,311.8	2,513.0	201.1
		11	4.3845	4.4851	0.1006	2,871.8	3,140.3	268.5
		Total	3.9694	4.0500	0.0807	2,599.9	2,835.7	235.8
3	3 Bronx	3	2.3379	2.4361	0.0982	1,531.3	1,705.7	174.3
		11	2.2082	2.4502	0.2419	1,446.4	1,715.5	269.2
		Total	2.2905	2.4412	0.1507	1,500.3	1,709.3	209.0
4	4 Brooklyn	3	2.5593	2.6035	0.0442	1,676.4	1,822.9	146.5
		11	2.2796	2.3536	0.0740	1,493.2	1,647.9	154.8
		Total	2.5244	2.5723	0.0479	1,653.5	1,801.1	147.6
5	5 Staten Island	14	0.2271	0.2410	0.0139	148.8	168.8	20.0
		32	0.5421	0.6681	0.1260	355.1	467.8	112.7
		Total	0.2519	0.2747	0.0228	165.0	192.3	27.3
6	6 Nassau	11	2.8350	2.6425	-0.1925	1,856.9	1,850.2	-6.7
		12	2.1184	2.0066	-0.1118	1,387.6	1,405.0	17.4
		15	0.9565	0.9062	-0.0503	626.5	634.5	8.0
		16	2.0966	1.9467	-0.1500	1,373.3	1,363.0	-10.3
		21	1.8139	1.8694	0.0555	1,188.1	1,308.9	120.8
		22	0.6252	0.5988	-0.0264	409.5	419.2	9.8
		23	1.0530	0.9231	-0.1299	689.7	646.3	-43.4
		24	1.8917	2.1873	0.2956	1,239.1	1,531.5	292.4
		31	1.6204	1.5489	-0.0715	1,061.3	1,084.5	23.2
		32	1.0461	0.7657	-0.2804	685.2	536.1	-149.1
		33	0.3918	0.3792	-0.0127	256.7	265.5	8.8
		35	0.7527	0.7694	0.0167	493.0	538.7	45.7
		Total	1.7216	1.6640	-0.0576	1,127.6	1,165.1	37.4
7	7 Suffolk	12	2.9734	2.8120	-0.1615	1,947.6	1,968.9	21.3
		15	1.6500	1.5063	-0.1438	1,080.8	1,054.6	-26.1
		16	1.6820	1.4916	-0.1903	1,101.7	1,044.4	-57.3
		21	1.8340	1.7042	-0.1297	1,201.3	1,193.2	-8.0
		22	1.0171	0.9686	-0.0485	666.2	678.2	12.0
		24	1.5616	1.4936	-0.0680	1,022.8	1,045.7	22.9
		31	1.7141	1.7662	0.0521	1,122.8	1,236.7	113.9
		32	1.6124	1.9821	0.3697	1,056.1	1,387.8	331.7
		33	1.3303	1.4550	0.1247	871.3	1,018.7	147.4
		35	1.4176	1.4751	0.0575	928.6	1,032.8	104.3
		Total	1.5711	1.5515	-0.0196	1,029.1	1,086.3	57.2
8	8 Westchester	12	1.5959	1.5194	-0.0766	1,045.3	1,063.8	18.5
		15	1.3853	1.3174	-0.0679	907.3	922.4	15.0
		21	1.8548	1.8054	-0.0494	1,214.9	1,264.1	49.2
		22	0.7493	0.7665	0.0172	490.8	536.7	45.9
		31	1.6424	1.6414	-0.0010	1,075.8	1,149.2	73.5
		Total	1.5342	1.4954	-0.0388	1,004.9	1,047.0	42.2
9	9 Rockland	32	0.5429	0.5295	-0.0134	355.6	370.7	15.1
		Total	0.5429	0.5295	-0.0134	355.6	370.7	15.1
10	10 Putnam	31	0.1978	0.2009	0.0031	129.6	140.7	11.1
		35	0.1641	0.1699	0.0058	107.5	119.0	11.5
		Total	0.1739	0.1789	0.0050	113.9	125.3	11.4
11	11 Orange	15	0.4673	0.4295	-0.0379	306.1	300.7	-5.4
		22	0.6076	0.5731	-0.0345	398.0	401.3	3.3
		32	0.5358	0.6002	0.0643	351.0	420.2	69.3
		33	0.2906	0.2820	-0.0086	190.4	197.4	7.1
		35	1.0470	1.0858	0.0388	685.8	760.2	74.4
		Total	0.5944	0.6072	0.0127	389.4	425.1	35.8

Table 5: (continued)

Stage 2 / Final - Comparison of Update 2000 (Method 3) with Original Weighting

RCO Regional County	RCO Regional County ID	MLD Mode Leadership Density Code	Original (96) WHT_F Final RTHIS Weight - Normalized - Updated	Update (00) WHT_F Final RTHIS Weight - Normalized - Updated	Difference	Original (96) EXP_F Final RTHIS Weight - Expansion - Updated	Update (00) EXP_F Final RTHIS Weight - Expansion - Updated	Difference
12	12 Dutchess	22	0.4190	0.3853	-0.0336	274.4	269.8	-4.6
		24	0.6414	0.6308	-0.0105	420.1	441.7	21.6
		33	0.3020	0.3032	0.0012	197.8	212.3	14.5
		35	0.9227	0.9328	0.0101	604.4	653.1	48.7
		Total	0.5199	0.5170	-0.0029	340.5	362.0	21.5
13	13 Fairfield	16	2.0537	1.7788	-0.2749	1,345.1	1,245.4	-99.7
		21	1.9149	2.0345	0.1195	1,254.3	1,424.5	170.2
		24	2.0510	1.8410	-0.2099	1,343.4	1,289.0	-54.3
		31	1.2681	1.3236	0.0555	830.6	926.8	96.2
		32	0.6271	0.6760	0.0488	410.8	473.3	62.5
		35	2.5777	2.5526	-0.0251	1,688.4	1,787.3	98.9
		Total	1.7561	1.7151	-0.0410	1,150.3	1,200.9	50.6
14	14 Bergen	12	2.2896	2.3831	0.0935	1,499.7	1,668.6	168.9
		13	0.6393	0.5834	-0.0560	418.8	408.5	-10.3
		14	0.2550	0.2686	0.0136	167.0	188.1	21.1
		16	1.5316	1.4341	-0.0974	1,003.2	1,004.1	1.0
		21	1.5173	1.5326	0.0153	993.8	1,073.1	79.2
		22	0.3401	0.6423	0.3022	222.8	449.7	227.0
		23	0.6199	0.5948	-0.0251	406.0	416.5	10.4
		24	1.5084	1.4124	-0.0960	988.0	988.9	0.9
		31	0.6704	0.7054	0.0350	439.1	493.9	54.8
		32	0.6938	0.6769	-0.0168	454.4	474.0	19.6
		33	0.5490	0.6759	0.1269	359.6	473.3	113.6
		35	1.1078	1.1455	0.0377	725.6	802.1	76.5
		Total	0.7466	0.7348	-0.0118	489.0	514.5	25.5
15	15 Passaic	15	0.6346	0.6255	-0.0091	415.7	437.9	22.3
		16	1.0024	0.9214	-0.0810	656.6	645.2	-11.4
		22	0.2977	0.3145	0.0168	195.0	220.2	25.2
		24	1.0856	1.0148	-0.0708	711.1	710.5	-0.6
		33	0.3707	0.3728	0.0021	242.8	261.0	18.2
		35	0.9788	1.0086	0.0298	641.1	706.2	65.1
		Total	0.8830	0.8510	-0.0320	578.4	595.8	17.5
16	16 Hudson	2	0.4227	0.4631	0.0404	276.9	324.3	47.4
		11	0.7771	0.8311	0.0540	509.0	581.9	72.9
		13	0.6126	0.6803	0.0678	401.2	476.4	75.1
		15	0.7360	0.6960	-0.0400	482.1	487.3	5.3
		22	0.6389	0.6349	-0.0040	418.5	444.5	26.1
		32	0.5876	0.6287	0.0411	384.9	440.2	55.3
		Total	0.6374	0.6734	0.0360	417.5	471.5	54.0
17	17 Essex	13	0.9116	0.8751	-0.0365	597.1	612.7	15.6
		16	1.1891	1.1844	-0.0046	778.9	829.3	50.5
		21	1.5344	1.7113	0.1768	1,005.1	1,198.2	193.1
		22	0.4182	0.4635	0.0453	273.9	324.5	50.6
		23	0.8098	0.8322	0.0224	530.4	582.7	52.2
		24	1.5152	1.6891	0.1739	992.5	1,182.7	190.2
		31	0.9607	0.9379	-0.0228	629.2	656.7	27.5
		32	0.7230	0.7902	0.0672	473.5	553.3	79.7
		35	2.1073	2.3408	0.2335	1,380.3	1,639.0	258.7
		Total	0.9644	0.9695	0.0051	631.7	678.8	47.1
18	18 Union	12	1.1367	1.0497	-0.0871	744.5	734.9	-9.6
		16	0.8942	0.8604	-0.0338	585.7	602.4	16.7
		21	1.0714	1.1040	0.0326	701.8	773.0	71.2
		24	1.1976	1.1436	-0.0541	784.5	800.7	16.2
		31	1.0480	1.1393	0.0913	686.5	797.7	111.3
		32	0.4953	0.4552	-0.0401	324.4	318.7	-5.7
		Total	1.0504	1.0224	-0.0279	688.0	715.9	27.9

Table 5: (continued)

Stage 2 / Final - Comparison of Update 2000 (Method 3) with Original Weighting

RCO Regional County	RCO Regional County ID	MLD Mode Leadership Density Code	Original (96) WHT_F Final RTHIS Weight - Normalized - Updated	Update (00) WHT_F Final RTHIS Weight - Normalized - Updated	Difference	Original (96) EXP_F Final RTHIS Weight - Expansion - Updated	Update (00) EXP_F Final RTHIS Weight - Expansion - Updated	Difference
19	19 Morris	21	1.4412	1.3236	-0.1176	944.0	926.7	-17.2
		22	0.4085	0.3815	-0.0270	267.6	267.1	-0.5
		23	0.4448	0.4543	0.0094	291.4	318.1	26.7
		24	0.8338	0.7017	-0.1321	546.1	491.3	-54.8
		31	1.4825	1.4557	-0.0268	971.0	1,019.2	48.2
		32	1.1451	1.1443	-0.0008	750.0	801.2	51.1
		33	0.3520	0.3725	0.0206	230.5	260.8	30.3
		35	1.1468	1.1595	0.0127	751.1	811.8	60.7
		Total	0.8504	0.8416	-0.0088	557.0	589.3	32.3
20	20 Somerset	16	0.7417	0.5602	-0.1815	485.8	392.3	-93.6
		22	0.2675	0.2241	-0.0434	175.2	156.9	-18.3
		24	0.4251	0.3551	-0.0700	278.5	248.6	-29.8
		33	0.2257	0.2257	0.0000	147.9	158.0	10.2
		35	0.6613	0.7245	0.0631	433.2	507.2	74.1
		Total	0.5733	0.5852	0.0119	375.5	409.7	34.2
21	21 Middlesex	12	1.2263	1.1191	-0.1072	803.3	783.6	-19.7
		15	1.0974	0.9786	-0.1187	718.8	685.2	-33.6
		21	1.7519	1.7412	-0.0107	1,147.5	1,219.1	71.6
		22	0.5031	0.4176	-0.0855	329.5	292.4	-37.1
		24	2.0982	2.0069	-0.0913	1,374.3	1,405.2	30.9
		31	0.9687	1.1323	0.1635	634.5	792.8	158.3
		32	0.6004	0.6022	0.0018	393.3	421.7	28.4
		33	0.4629	0.4866	0.0237	303.2	340.7	37.5
		35	1.4945	1.8709	0.3763	978.9	1,309.9	331.0
		Total	1.0126	1.0097	-0.0030	663.3	707.0	43.7
22	22 Monmouth	15	1.0552	0.9131	-0.1421	691.2	639.3	-51.9
		16	1.4291	1.2034	-0.2257	936.0	842.6	-93.5
		22	0.5298	0.4897	-0.0401	347.0	342.9	-4.1
		23	0.8679	0.7012	-0.1667	568.5	491.0	-77.5
		24	1.0283	0.8082	-0.2200	673.5	565.9	-107.6
		31	0.8855	0.8462	-0.0394	580.0	592.5	12.4
		32	0.7465	0.8728	0.1263	489.0	611.1	122.1
		33	0.4734	0.4502	-0.0232	310.0	315.2	5.2
		35	0.8186	1.0031	0.1846	536.2	702.4	166.2
		Total	0.7489	0.7396	-0.0093	490.6	517.9	27.3
23	23 Ocean	98 Blank in CSI	1.0666	1.0640	-0.0025	698.6	745.0	46.4
		Total	1.0666	1.0640	-0.0025	698.6	745.0	46.4
24	24 Hunterdon	98 Blank in CSI	0.2340	0.2260	-0.0079	153.2	158.3	5.0
		Total	0.2340	0.2260	-0.0079	153.2	158.3	5.0
25	25 Warren	98 Blank in CSI	0.2047	0.2038	-0.0009	134.1	142.7	8.6
		Total	0.2047	0.2038	-0.0009	134.1	142.7	8.6
26	26 Sussex	98 Blank in CSI	0.2687	0.2621	-0.0067	176.0	183.5	7.5
		Total	0.2687	0.2621	-0.0067	176.0	183.5	7.5
27	27 New Haven	98 Blank in CSI	2.9546	2.8479	-0.1067	1,935.2	1,994.0	58.7
		Total	2.9546	2.8479	-0.1067	1,935.2	1,994.0	58.7
28	28 Mercer	98 Blank in CSI	0.4061	0.4393	0.0332	266.0	307.6	41.6
		Total	0.4061	0.4393	0.0332	266.0	307.6	41.6

Table 5: (continued)

Stage 2 / Final - Comparison of Update 2000 (Method 3) with Original Weighting

RCO Regional County	RCO Regional County ID	MLD Mode Leadership Density Code	Original (96) WHT_F Final RTHIS Weight - Normalized - Updated	Update (00) WHT_F Final RTHIS Weight - Normalized - Updated	Difference	Original (96) EXP_F Final RTHIS Weight - Expansion - Updated	Update (00) EXP_F Final RTHIS Weight - Expansion - Updated	Difference
Total	Total	1	0.6123	0.5827	-0.0296	401.1	408.0	7.0
		2	0.4227	0.4631	0.0404	276.9	324.3	47.4
		3	2.2379	2.2839	0.0460	1,465.8	1,599.1	133.3
		11	2.3030	2.4086	0.1055	1,508.5	1,686.4	177.9
		12	1.8257	1.7292	-0.0965	1,195.8	1,210.8	14.9
		13	0.8470	0.8295	-0.0175	554.8	580.8	26.0
		14	0.2314	0.2453	0.0139	151.6	171.8	20.2
		15	0.8201	0.7976	-0.0225	537.2	558.5	21.3
		16	1.3464	1.2431	-0.1033	881.9	870.4	-11.5
		21	1.7125	1.7122	-0.0003	1,121.7	1,198.8	77.2
		22	0.5232	0.5092	-0.0139	342.7	356.6	13.9
		23	0.6639	0.6299	-0.0340	434.9	441.1	6.2
		24	1.3406	1.2632	-0.0775	878.1	884.4	6.3
		31	1.1198	1.1386	0.0188	733.4	797.2	63.7
		32	0.6049	0.6339	0.0290	396.2	443.9	47.6
		33	0.4392	0.4595	0.0203	287.6	321.7	34.1
		35	0.9190	0.9635	0.0445	602.0	674.6	72.7
		98 Blank in CSI	0.6740	0.6689	-0.0051	441.5	468.4	26.9
		Total	0.9993	1.0000	0.0007	654.5	700.2	45.6

A direct comparison of the Stage 2 and Final RT-HIS weighted data is shown in **Table 6-1** and **Table 6-2** with the Census 2000 distribution of the two distributions:

- Table 6-1: Household Income by Household Size by Sub-regional county groupings.
- Table 6-2: Number of Vehicles Owned by Household Size by Sub-regional county groupings.

Table 6-1

Summary: Household Income by Household Size by Sub-Region - Compare Census 2000 and RT-HIS with Stage 2 / Final Weights for Households Reporting Income in RT-HIS

Household Income	Household Size	New York City			Long Island			Mid-Hudson NY			CT: Fairfield and New Haven			NJTPA			Mercer			Total Region		
		CTPP	RT-THIS	Ratio	CTPP	RT-THIS	Ratio	CTPP	RT-THIS	Ratio	PUMS*	RT-THIS	Ratio	CTPP	RT-THIS	Ratio	CTPP	RT-THIS	Ratio	CTPP	RT-THIS	Ratio
1 Below $25k	1	15.5%	15.4%	0.994	8.1%	8.0%	0.999	10.2%	10.8%	1.058	12.6%	12.9%	1.022	11.0%	12.5%	1.132	10.2%	10.2%	1.000	11.7%	12.5%	1.069
	2	8.0%	8.0%	1.004	3.6%	4.0%	1.105	4.3%	4.5%	1.048	4.7%	4.9%	1.043	4.8%	6.1%	1.266	4.3%	4.3%	1.000	4.5%	6.1%	1.359
	3	4.7%	5.1%	1.065	1.3%	1.1%	0.910	1.9%	2.0%	1.016	2.1%	2.1%	1.020	2.1%	3.2%	1.516	2.0%	2.0%	0.999	2.0%	3.2%	1.607
	4+	6.7%	6.6%	0.994	1.9%	2.4%	1.250	2.8%	2.6%	0.902	1.4%	1.3%	0.936	2.7%	4.1%	1.544	2.0%	2.0%	1.000	2.5%	4.1%	1.631
		34.9%	35.1%	1.006	14.8%	15.6%	1.049	19.3%	19.9%	1.029	20.8%	21.2%	1.021	20.6%	25.9%	1.256	18.5%	18.5%	1.000	20.7%	25.9%	1.252
2 $25-50k	1	8.3%	8.8%	1.057	5.4%	5.8%	1.081	7.0%	6.9%	0.982	8.0%	8.3%	1.027	7.1%	7.9%	1.105	7.7%	7.7%	1.000	8.2%	7.9%	0.965
	2	6.7%	7.3%	1.081	6.7%	7.4%	1.106	6.9%	8.1%	1.169	8.0%	8.0%	0.997	7.0%	7.7%	1.091	7.7%	7.7%	1.000	7.1%	7.7%	1.085
	3	4.1%	3.9%	0.969	2.9%	2.8%	0.996	3.1%	3.4%	1.101	3.9%	4.1%	1.063	3.2%	3.7%	1.146	3.5%	3.5%	1.000	3.2%	3.7%	1.137
	4+	6.6%	7.1%	1.074	4.7%	5.6%	1.192	4.7%	5.3%	1.124	4.8%	4.9%	1.011	4.6%	6.1%	1.319	4.2%	4.2%	1.000	4.4%	6.1%	1.373
		25.7%	27.1%	1.054	19.7%	21.7%	1.104	21.7%	23.6%	1.089	24.8%	25.3%	1.020	22.0%	25.3%	1.151	23.1%	23.2%	1.000	22.9%	25.3%	1.105
3 $50-75k	1	4.2%	3.4%	0.829	2.9%	2.1%	0.752	3.6%	3.1%	0.869	2.7%	2.7%	0.995	3.4%	3.0%	0.895	3.6%	3.6%	1.000	3.6%	3.0%	0.838
	2	4.6%	4.6%	1.006	6.3%	6.7%	1.057	6.0%	5.9%	0.976	8.1%	8.1%	1.008	6.2%	5.8%	0.936	8.0%	8.0%	1.000	6.8%	5.8%	0.848
	3	2.9%	2.9%	1.000	3.9%	3.8%	0.969	3.4%	3.6%	1.055	4.0%	4.0%	1.001	3.7%	3.4%	0.924	3.2%	3.2%	1.000	3.7%	3.4%	0.928
	4+	5.0%	5.1%	1.024	7.5%	7.4%	0.991	5.9%	6.2%	1.040	6.6%	6.3%	0.959	6.0%	6.0%	0.991	7.2%	7.2%	1.000	5.7%	6.0%	1.055
		16.7%	16.1%	0.966	20.5%	20.0%	0.974	18.9%	18.7%	0.990	21.4%	21.2%	0.990	19.3%	18.2%	0.943	22.0%	22.0%	1.000	19.8%	18.2%	0.920
4 $75-100k	1	1.6%	1.5%	0.920	1.1%	0.9%	0.822	1.3%	1.2%	0.928	0.6%	0.6%	0.943	1.3%	1.2%	0.922	1.0%	1.0%	1.001	1.2%	1.2%	1.057
	2	2.7%	2.3%	0.874	4.7%	4.3%	0.934	4.3%	4.2%	0.964	4.8%	4.9%	1.019	4.3%	3.4%	0.797	4.4%	4.4%	1.000	4.6%	3.4%	0.737
	3	1.7%	1.8%	1.017	3.6%	3.8%	1.053	2.8%	2.9%	1.014	3.1%	3.1%	1.017	2.9%	2.6%	0.879	3.6%	3.6%	1.000	2.8%	2.6%	0.936
	4+	3.1%	2.8%	0.932	6.8%	7.2%	1.071	5.1%	5.3%	1.046	4.5%	4.4%	0.979	5.1%	4.4%	0.868	4.9%	4.9%	1.000	4.6%	4.4%	0.946
		9.1%	8.4%	0.929	16.1%	16.3%	1.010	13.6%	13.6%	1.002	13.0%	13.0%	1.001	13.6%	11.6%	0.853	13.9%	13.9%	1.000	13.2%	11.6%	0.880
5 $100+k	1	2.3%	2.3%	1.022	1.1%	1.3%	1.189	1.3%	1.4%	1.048	0.8%	0.9%	1.103	1.3%	1.7%	1.324	1.2%	1.2%	1.000	1.2%	1.7%	1.485
	2	4.5%	4.5%	0.985	7.8%	7.4%	0.947	7.9%	7.5%	0.948	7.0%	6.6%	0.954	7.0%	5.9%	0.844	7.4%	7.4%	1.000	7.4%	5.9%	0.801
	3	2.6%	2.6%	0.984	6.4%	5.7%	0.891	5.8%	4.9%	0.853	4.3%	3.9%	0.923	5.1%	4.0%	0.779	5.0%	5.0%	1.000	5.3%	4.0%	0.750
	4+	4.3%	4.0%	0.926	13.6%	12.1%	0.889	11.4%	10.3%	0.902	8.1%	7.9%	0.982	9.7%	7.4%	0.760	8.9%	8.9%	1.000	9.2%	7.4%	0.808
		13.7%	13.3%	0.972	28.8%	26.4%	0.917	26.5%	24.1%	0.912	20.1%	19.4%	0.964	23.1%	19.0%	0.821	22.5%	22.5%	1.000	23.0%	19.0%	0.827
All HH	1	31.8%	31.4%	0.987	18.5%	18.3%	0.986	23.5%	23.5%	0.999	24.8%	25.3%	1.021	24.4%	26.4%	1.080	23.8%	23.8%	1.000	25.6%	26.4%	1.029
	2	26.5%	26.7%	1.007	29.1%	29.8%	1.025	29.5%	30.1%	1.022	32.5%	32.5%	1.000	29.9%	28.8%	0.966	31.8%	31.8%	1.000	30.8%	28.8%	0.937
	3	16.0%	16.2%	1.011	17.9%	17.2%	0.958	17.0%	16.7%	0.983	17.3%	17.3%	1.001	17.3%	16.8%	0.974	17.4%	17.4%	1.000	17.1%	16.8%	0.985
	4+	25.6%	25.7%	1.002	34.4%	34.7%	1.008	30.0%	29.6%	0.989	25.4%	24.9%	0.978	28.5%	28.0%	0.983	27.1%	27.1%	1.000	26.5%	28.0%	1.054
		100.0%	100.0%	1.000	100.0%	100.0%	1.000	100.0%	100.0%	1.000	100.0%	100.0%	1.000	100.0%	100.0%	1.000	100.0%	100.0%	1.000	100.0%	100.0%	1.000

** For Connecticut Counties: Income Distriubtion taken from PUMS1%.*

Table 6-2

Summary: Number of Vehicles by Household Size by Sub-Region - Compare Census 2000 and RT-HIS with Stage 2 / Final Weights for Households Not Reporting Income in RT-HIS

Number Vehicles	Household Size	New York City			Long Island			Mid-Hudson NY			CT: Fairfield and New Haven			NJTPA			Mercer			Total Regio	
		CTPP	RT-THIS	Ratio	CTPP	RT-THIS	Ratio	CTPP	RT-THIS	Ratio	CTPP	RT-THIS	Ratio	CTPP	RT-THIS	Ratio	CTPP	RT-THIS	Ratio	CTPP	RT-THIS
No Vehicles	1	23.0%	23.1%	1.003	3.5%	3.5%	1.000	5.8%	5.8%	0.994	5.6%	6.0%	1.058	6.4%	6.4%	1.003	6.1%	6.5%	1.059	12.5%	12.1%
	2	13.8%	13.9%	1.004	1.3%	1.3%	1.007	2.3%	2.3%	0.991	2.0%	0.0%	0.000	2.9%	2.9%	1.003	2.0%	2.2%	1.059	6.9%	6.3%
	3	7.5%	7.5%	0.997	0.6%	0.0%	0.000	1.4%	1.4%	1.060	1.1%	0.0%	0.000	1.6%	1.6%	0.995	1.3%	0.0%	0.000	3.7%	3.3%
	4+	10.8%	10.8%	0.995	1.1%	1.1%	1.014	2.2%	2.2%	1.004	1.5%	1.4%	0.949	2.4%	2.4%	1.005	2.1%	2.2%	1.058	5.4%	5.2%
		55.2%	55.2%	1.001	6.5%	5.9%	0.907	11.7%	11.8%	1.003	10.3%	7.4%	0.721	13.3%	13.3%	1.002	11.5%	10.8%	0.937	28.5%	26.9%
1 Vehicle	1	8.0%	8.1%	1.003	12.7%	12.8%	1.008	15.2%	15.1%	0.998	17.6%	18.5%	1.053	15.9%	16.0%	1.003	17.1%	18.1%	1.059	12.5%	13.0%
	2	9.5%	9.5%	0.999	8.3%	8.4%	1.009	8.9%	8.8%	0.992	8.5%	9.2%	1.084	9.7%	9.8%	1.003	9.0%	9.5%	1.059	9.3%	9.4%
	3	5.5%	5.5%	1.002	3.1%	3.1%	1.014	3.7%	3.6%	0.990	3.4%	3.8%	1.126	4.0%	4.0%	1.002	3.6%	3.9%	1.059	4.4%	4.4%
	4+	8.8%	8.7%	0.995	4.1%	4.2%	1.008	4.8%	4.9%	1.012	3.9%	3.7%	0.949	5.0%	5.0%	0.996	4.2%	0.0%	0.000	6.3%	6.0%
		31.8%	31.8%	1.000	28.2%	28.4%	1.009	32.5%	32.4%	0.998	33.3%	35.2%	1.056	34.7%	34.7%	1.002	33.9%	31.5%	0.927	32.5%	32.8%
2 Vehicle	1	0.6%	0.6%	1.016	1.9%	1.9%	0.999	2.0%	2.0%	0.990	2.3%	2.5%	1.062	1.7%	1.7%	0.996	2.1%	2.2%	1.059	1.4%	1.5%
	2	2.8%	2.8%	0.989	16.6%	16.8%	1.007	15.2%	15.2%	1.003	17.3%	17.7%	1.022	14.8%	14.8%	0.997	16.9%	17.8%	1.059	10.6%	11.1%
	3	2.4%	2.4%	0.996	8.7%	8.7%	1.005	7.6%	7.5%	0.995	7.5%	8.0%	1.068	7.5%	7.5%	1.004	7.8%	8.2%	1.059	5.6%	5.8%
	4+	4.5%	4.5%	0.994	17.5%	17.6%	1.004	14.4%	14.3%	0.999	12.8%	13.1%	1.021	13.3%	13.3%	0.996	13.2%	14.0%	1.059	10.4%	10.6%
		10.3%	10.3%	0.994	44.7%	44.9%	1.005	39.1%	39.1%	0.999	40.0%	41.3%	1.033	37.4%	37.3%	0.998	39.9%	42.3%	1.059	28.0%	29.0%
3+ Vehicle	1	0.2%	0.2%	1.008	0.5%	0.5%	1.015	0.5%	0.5%	1.004	0.5%	0.6%	1.208	0.4%	0.4%	0.980	0.3%	0.3%	1.052	0.3%	0.4%
	2	0.4%	0.4%	1.020	2.9%	2.9%	1.005	3.1%	3.1%	1.000	3.5%	3.5%	1.001	2.4%	2.4%	1.002	2.9%	3.1%	1.058	1.8%	1.9%
	3	0.6%	0.6%	0.986	5.6%	5.6%	1.005	4.4%	4.4%	1.004	4.7%	4.6%	0.991	4.2%	4.2%	0.998	4.3%	4.6%	1.059	3.0%	3.1%
	4+	1.5%	1.5%	1.016	11.7%	11.8%	1.005	8.6%	8.6%	1.005	7.7%	7.3%	0.949	7.7%	7.7%	0.997	7.0%	7.5%	1.059	5.8%	5.9%
		2.6%	2.7%	1.009	20.7%	20.8%	1.005	16.6%	16.7%	1.004	16.4%	16.1%	0.980	14.7%	14.7%	0.998	14.6%	15.4%	1.059	11.0%	11.3%
All HH	1	31.8%	31.9%	1.003	18.5%	18.6%	1.006	23.5%	23.4%	0.997	26.1%	27.6%	1.058	24.4%	24.5%	1.002	25.6%	27.1%	1.059	26.7%	27.0%
	2	26.5%	26.6%	1.001	29.1%	29.3%	1.008	29.5%	29.5%	0.999	31.3%	30.5%	0.972	29.9%	29.9%	1.000	30.8%	32.6%	1.059	28.6%	28.7%
	3	16.0%	16.0%	0.998	17.9%	17.4%	0.971	17.0%	17.0%	1.001	16.7%	16.4%	0.986	17.3%	17.3%	1.001	17.1%	16.7%	0.977	16.8%	16.7%
	4+	25.6%	25.5%	0.996	34.4%	34.6%	1.005	30.0%	30.1%	1.003	25.9%	25.5%	0.984	28.5%	28.4%	0.997	26.5%	23.6%	0.890	27.9%	27.7%
		100.0%	100.0%	1.000	100.0%	100.0%	1.000	100.0%	100.0%	1.000	100.0%	100.0%	1.000	100.0%	100.0%	1.000	100.0%	100.0%	1.000	100.0%	100.0%

REPORTING OF RT-HIS RESULTS WITH UPDATE 2000

Along with the SPSS-based procedures developed for this project to update the RT-HIS weights and expansion factors to reflect the 2000 Census data, a set of reporting SPS scripts have been developed that can be used to conduct a re-analysis of the RT-HIS data with the revised weights, replicating the contents and structure of the analysis done with the original data.

The re-weighting procedures are listed in:

- Appendix A: Stage 1 Updating scripts
- Appendix B: Stage 2 / Final Updating scripts
- Appendix C: Reporting Scripts:
    - General Final Report – All Tables
    - Compendium of Results – Selected Key Tables

It is anticipated that these re-tabulations reflecting the RT-HIS Update 2000 data will be prepared by NYMTC and NJTPA, and will be distributed for general use and review.

As shown in the following selected and illustrative tables here, in general, the updating of the RT-HIS weights to the 2000 Census data, results in relatively minor (mostly statistically insignificant) changes in the distribution of the results – tabulations by percentage. On the other hand, using the revised expansion weights -- reflecting both actual growth in the number of households in the region (from 1996 to 2000), and better quality estimates of the population of households – the revised factors show more noticeable differences in the magnitude of most measures of estimated travel.

The estimates of household trip rates by county, both original and updated, are shown in **Table 7.** In **Table 8**, total estimate of trips are shown using both the old and new sets of expansion factors. Sub-region to Sub-region home and work linkages are shown in **Table 9**, while more detail in mode of travel is analyzed with both sets of weights in **Table 10**.

Table 7

Estimated Trip Rates - Total, Vehicle, and Transit

Household File (HH_4DR2.sav)

Stage 2 / Final - Comparison of Method 3 with Original Weighting

County	Original - Stage 2/Final Weighted			Updated - Stage 2 / Final (Method 3)			Difference		
RCO Regional County ID	HRNP_TOT Total Trip Rate	HRNP_VEH Vehicle Trip Rates	HRNP_TRN Transit Trip Rate	HRNP_TOT Total Trip Rate	HRNP_VEH Vehicle Trip Rates	HRNP_TRN Transit Trip Rate	HRNP_TOT Total Trip Rate	HRNP_VEH Vehicle Trip Rates	HRNP_TRN Transit Trip Rate
1 Manhattan	6.54	3.31	1.59	6.57	3.33	1.60	0.03	0.01	0.00
2 Queens	7.38	5.75	1.38	7.39	5.71	1.38	0.01	-0.04	0.00
3 Bronx	6.67	4.77	1.16	6.80	4.84	1.19	0.13	0.07	0.02
4 Brooklyn	6.78	4.65	1.44	6.86	4.67	1.45	0.08	0.02	0.00
5 Staten Island	8.39	7.47	0.80	8.39	7.44	0.80	-0.01	-0.03	0.00
6 Nassau	9.90	8.96	0.82	9.82	8.86	0.86	-0.08	-0.10	0.04
7 Suffolk	10.49	10.03	0.85	10.29	9.84	0.81	-0.19	-0.19	-0.04
8 Westchester	9.55	8.58	0.87	9.66	8.71	0.89	0.11	0.13	0.02
9 Rockland	9.50	9.04	0.90	9.52	9.05	0.92	0.02	0.01	0.02
10 Putnam	9.62	9.15	0.84	9.43	8.97	0.84	-0.19	-0.18	0.00
11 Orange	9.11	8.59	0.73	9.05	8.52	0.72	-0.06	-0.07	-0.01
12 Dutchess	9.13	8.73	0.57	9.02	8.61	0.54	-0.12	-0.12	-0.03
13 Fairfield	9.46	9.04	0.69	9.44	8.99	0.72	-0.01	-0.05	0.03
14 Bergen	9.93	9.12	0.28	9.86	9.05	0.29	-0.07	-0.07	0.01
15 Passaic	8.21	7.53	0.14	8.27	7.57	0.14	0.06	0.04	0.00
16 Hudson	7.00	5.09	0.72	6.96	5.01	0.72	-0.04	-0.08	0.00
17 Essex	7.97	6.89	0.46	8.20	7.11	0.45	0.23	0.21	-0.01
18 Union	9.22	8.59	0.43	9.20	8.58	0.45	-0.02	-0.01	0.02
19 Morris	10.37	9.90	0.64	10.26	9.78	0.64	-0.12	-0.12	0.00
20 Somerset	10.02	9.64	0.63	10.13	9.77	0.68	0.11	0.13	0.05
21 Middlesex	8.30	7.76	0.58	8.22	7.69	0.56	-0.08	-0.07	-0.02
22 Monmouth	9.72	9.12	0.74	9.84	9.27	0.81	0.12	0.15	0.07
23 Ocean	7.36	6.90	0.67	7.34	6.87	0.67	-0.02	-0.02	0.00
24 Hunterdon	9.62	9.22	0.59	9.61	9.23	0.56	-0.01	0.01	-0.02
25 Warren	8.89	8.38	0.55	8.91	8.42	0.58	0.02	0.04	0.03
26 Sussex	9.45	9.09	0.73	9.39	9.04	0.72	-0.06	-0.05	-0.01
27 New Haven	7.86	7.40	0.32	7.76	7.33	0.35	-0.11	-0.07	0.03
28 Mercer	9.14	8.54	0.49	9.31	8.68	0.50	0.16	0.14	0.01
Total	**8.30**	**7.02**	**0.92**	**8.29**	**6.99**	**0.93**	**-0.01**	**-0.03**	**0.01**

Table 8

Estimated Total Number of Trips
Household File (TRIP_4DR2.sav)

Stage 2 / Final - Comparison of Method 3 (CTPP Part 1)* with Original Weighting

County	Original - Stage 2/Final Weighted			Updated - Stage 2 / Final (Method 3)			Difference - Number of Trips			Difference - Percent			Transit Shares		
RCO Regional County ID	Total Trips	Highway Trips	Transit	Total Trips	Highway Trips	Transit	Total Trips	Highway Trips	Transit	Total Trips	Highway Trips	Transit	Original	Updated	Increase
1 Manhattan	4,632,808	2,347,024	1,127,723	4,855,802	2,456,571	1,176,745	222,994	109,548	49,022	4.8%	4.7%	4.3%	24.3%	24.2%	-0.1%
2 Queens	5,292,552	4,124,125	987,012	5,797,275	4,470,248	1,078,778	504,723	346,123	91,766	9.5%	8.4%	9.3%	18.6%	18.6%	0.0%
3 Bronx	2,712,506	1,940,958	471,860	3,157,248	2,244,773	554,629	444,742	303,815	82,769	16.4%	15.7%	17.5%	17.4%	17.6%	0.2%
4 Brooklyn	5,484,277	3,757,568	1,168,173	6,056,596	4,111,372	1,274,413	572,319	353,804	106,240	10.4%	9.4%	9.1%	21.3%	21.0%	-0.3%
5 Staten Island	1,125,965	1,001,830	107,697	1,309,779	1,160,061	125,175	183,814	158,231	17,478	16.3%	15.8%	16.2%	9.6%	9.6%	0.0%
6 Nassau	4,287,550	3,880,181	355,023	4,376,215	3,944,551	378,712	88,665	64,370	23,690	2.1%	1.7%	6.7%	8.3%	8.7%	0.4%
7 Suffolk	4,661,434	4,457,161	376,809	4,839,087	4,619,652	381,648	177,654	162,492	4,840	3.8%	3.6%	1.3%	8.1%	7.9%	-0.2%
8 Westchester	3,091,531	2,776,309	279,903	3,225,363	2,901,883	295,407	133,831	125,574	15,504	4.3%	4.5%	5.5%	9.1%	9.2%	0.1%
9 Rockland	844,969	803,458	80,331	873,671	830,425	84,208	28,702	26,968	3,877	3.4%	3.4%	4.8%	9.5%	9.6%	0.1%
10 Putnam	286,077	272,032	25,034	304,529	289,380	26,743	18,452	17,348	1,709	6.5%	6.4%	6.8%	8.8%	8.8%	0.0%
11 Orange	958,160	903,003	76,499	1,038,215	977,451	83,343	80,055	74,448	6,844	8.4%	8.2%	8.9%	8.0%	8.0%	0.0%
12 Dutchess	855,368	817,494	53,402	900,180	859,463	55,127	44,812	41,969	1,725	5.2%	5.1%	3.2%	6.2%	6.1%	-0.1%
13 Fairfield	2,937,012	2,807,820	214,049	2,974,962	2,849,358	227,261	37,950	41,537	13,212	1.3%	1.5%	6.2%	7.3%	7.6%	0.4%
14 Bergen	3,123,789	2,868,594	89,434	3,245,013	2,977,193	94,209	121,224	108,599	4,775	3.9%	3.8%	5.3%	2.9%	2.9%	0.0%
15 Passaic	1,306,108	1,196,953	22,561	1,353,733	1,238,671	23,206	47,625	41,718	645	3.6%	3.5%	2.9%	1.7%	1.7%	0.0%
16 Hudson	1,428,277	1,039,480	147,079	1,613,499	1,165,048	163,816	185,222	125,568	16,737	13.0%	12.1%	11.4%	10.3%	10.2%	-0.1%
17 Essex	2,104,233	1,819,414	120,350	2,308,073	1,994,585	126,630	203,841	175,171	6,280	9.7%	9.6%	5.2%	5.7%	5.5%	-0.2%
18 Union	1,648,602	1,536,610	77,427	1,712,662	1,597,905	83,970	64,060	61,295	6,543	3.9%	4.0%	8.5%	4.7%	4.9%	0.2%
19 Morris	1,664,043	1,588,045	102,706	1,731,024	1,649,445	107,275	66,981	61,400	4,568	4.0%	3.9%	4.4%	6.2%	6.2%	0.0%
20 Somerset	1,000,677	962,967	62,459	1,099,441	1,059,785	73,190	98,763	96,818	10,732	9.9%	10.1%	17.2%	6.2%	6.7%	0.4%
21 Middlesex	2,069,727	1,935,546	143,599	2,195,174	2,056,766	149,897	125,447	121,220	6,299	6.1%	6.3%	4.4%	6.9%	6.8%	-0.1%
22 Monmouth	2,064,492	1,938,243	156,765	2,200,860	2,071,309	179,566	136,368	133,066	22,801	6.6%	6.9%	14.5%	7.6%	8.2%	0.6%
23 Ocean	1,383,089	1,295,813	125,888	1,470,542	1,376,236	134,394	87,453	80,423	8,507	6.3%	6.2%	6.8%	9.1%	9.1%	0.0%
24 Hunterdon	406,734	389,854	24,768	417,576	399,715	24,729	10,842	9,861	-40	2.7%	2.5%	-0.2%	6.1%	5.9%	-0.2%
25 Warren	322,994	304,550	20,016	344,546	324,810	21,885	21,552	20,259	1,869	6.7%	6.7%	9.3%	6.2%	6.4%	0.2%
26 Sussex	460,983	443,186	35,677	479,210	460,701	37,570	18,226	17,515	1,894	4.0%	4.0%	5.3%	7.7%	7.8%	0.1%
27 New Haven	2,434,770	2,290,711	100,240	2,287,436	2,146,088	87,700	-147,335	-144,624	-12,540	-6.1%	-6.3%	-12.5%	4.1%	3.8%	-0.3%
28 Mercer	994,860	929,123	53,796	1,201,409	1,118,916	66,058	206,549	189,793	12,262	20.8%	20.4%	22.8%	5.4%	5.5%	0.1%
Total	**59,583,587**	**50,428,054**	**6,606,279**	**63,369,121**	**53,352,362**	**7,116,284**	**3,785,534**	**2,924,309**	**510,005**	**6.4%**	**5.8%**	**7.7%**	**11.1%**	**11.2%**	**0.1%**

Table 9

District to District Trip Flows - Total Weekday

Trip File (TRIP_4DR2.sav)

Stage 2 / Final - Comparison of Method 3 with Original Weighting

Original / 1996 Based Stage 2 - Final Weighted

From / To:	1 NYC Total	2 Long Island	3 Mid-Hudson (all)	4 Connecticut	5 NJTPA	6 Mercer	7 Out of region	
1 NYC Total	31.0	1.2	0.6	0.1	1.0	0.0	0.1	33.9
2 Long Island	1.2	13.2	0.0	0.0	0.1	0.0	0.0	14.6
3 Mid-Hudson (all)	0.6	0.0	8.6	0.1	0.3	0.0	0.0	9.7
4 Connecticut	0.1	0.0	0.1	8.2	0.2	0.0	0.1	8.6
5 NJTPA	1.0	0.1	0.3	0.1	29.0	0.3	0.1	30.9
6 Mercer	0.0	0.0	0.0	0.0	0.3	1.4	0.0	1.8
7 Out of reg_oion	0.1	0.0	0.0	0.0	0.1	0.0	0.2	0.5
Total: All Destinations	**33.9**	**14.6**	**9.6**	**8.6**	**30.9**	**1.8**	**0.7**	**100.0**

Updated / 2000: Stage 2-Final (Method 3) Weighted Total

From / To:	1 NYC Total	2 Long Island	3 Mid-Hudson (all)	4 Connecticut	5 NJTPA	6 Mercer	7 Out of region	
1 NYC Total	31.9	1.2	0.6	0.1	1.0	0.0	0.1	34.9
2 Long Island	1.2	12.7	0.0	0.0	0.1	0.0	0.0	14.1
3 Mid-Hudson (all)	0.6	0.0	8.5	0.1	0.3	0.0	0.0	9.6
4 Connecticut	0.1	0.0	0.1	7.9	0.1	0.0	0.1	8.3
5 NJTPA	1.0	0.1	0.3	0.1	28.7	0.3	0.1	30.7
6 Mercer	0.0	0.0	0.0	0.0	0.3	1.5	0.0	1.9
7 Out of reg_oion	0.1	0.0	0.0	0.0	0.1	0.0	0.2	0.5
Total: All Destinations	**34.8**	**14.0**	**9.6**	**8.3**	**30.6**	**2.0**	**0.7**	**100.0**

Original / 1996 Based Stage 2 /Final - Expanded **Total**

From / To:	1 NYC Total	2 Long Island	3 Mid-Hudson (all)	4 Connecticut	5 NJTPA	6 Mercer	7 Out of region	
1 NYC Total	18,448,399	691,700	342,789	75,711	567,941	11,185	84,392	20,222,117
2 Long Island	697,256	7,878,376	25,802	10,199	58,304	2,874	17,204	8,690,015
3 Mid-Hudson (all)	346,293	24,419	5,112,690	71,447	168,998	567	27,651	5,752,065
4 Connecticut	61,015	10,902	72,292	4,869,944	89,666	1,434	48,001	5,153,254
5 NJTPA	578,661	62,843	170,514	80,871	17,267,611	175,998	64,628	18,401,126
6 Mercer	12,296	1,406	765	3,324	172,562	841,311	18,953	1,050,617
7 Out of reg_oion	37,070	9,558	25,734	26,364	61,841	21,754	135,421	317,742
Total: All Destinations	**20,180,990**	**8,679,204**	**5,750,586**	**5,137,860**	**18,386,923**	**1,055,123**	**396,250**	**59,586,936**

Updated / 2000: Stage 2-Final (Method 3) - Expanded Total

From / To:	1 NYC Total	2 Long Island	3 Mid-Hudson (all)	4 Connecticut	5 NJTPA	6 Mercer	7 Out of region	
1 NYC Total	20,286,022	739,568	374,826	81,662	624,710	13,781	88,362	22,208,931
2 Long Island	745,288	8,086,190	29,896	11,660	60,069	3,400	17,129	8,953,632
3 Mid-Hudson (all)	377,568	28,087	5,404,378	73,424	178,175	533	29,905	6,092,070
4 Connecticut	66,555	12,317	74,853	5,021,238	85,735	1,138	51,304	5,313,140
5 NJTPA	634,662	65,596	179,011	78,991	18,283,688	213,245	69,375	19,524,568
6 Mercer	15,231	1,585	708	3,116	209,683	986,740	22,737	1,239,800
7 Out of reg_oion	42,019	8,868	28,417	29,037	64,515	25,966	139,403	338,225
Total: All Destinations	**22,167,345**	**8,942,211**	**6,092,089**	**5,299,128**	**19,506,575**	**1,244,803**	**418,215**	**63,670,366**

Table 10

Mode Shares by Sub-Region of Residence - Total Weekday

Trip File (TRIP_4DR2.sav)

Stage 2 / Final - Comparison of Method 3 with Original Weighting

Original / 1996 Based Stage 2 - Final Weighted

	1 Auto Drive	2 Auto Passenger	3 Commuter Rail	4 Ferry	5 Subway & Other Rail	6 Express Bus	7 Local Bus	8 School Bus	9 Taxi or Group Ride	10 Other	11 Walk (only)	Total All Modes
1 ManhAttan	6.14	4.24	0.54	0.21	21.90	0.17	9.25	1.64	6.42	1.15	48.35	100.00
2 Other NYC	29.28	15.67	0.36	0.31	16.05	0.62	8.16	1.70	1.87	0.48	25.50	100.00
3 Long Island	61.68	22.42	3.00	0.06	0.26		0.46	4.68	0.53	0.51	6.40	100.00
4 Mid-Hudson (NYMTC)	57.70	21.92	3.29		0.54	0.12	1.47	5.15	1.01	0.28	8.50	100.00
5 Mid-Hudson (Other)	63.48	22.54	0.65	0.04	0.11	0.29	0.65	6.29	0.54	0.54	4.88	100.00
6 Connecticut	65.30	22.54	1.33				0.85	4.56	0.32	0.23	4.87	100.00
7 Bergen-Passaic	61.61	24.94	0.56	0.06	0.22	1.49	0.93	1.63	0.33	0.25	7.97	100.00
8 Essex-Hudson-Union	51.21	21.49	1.61	0.09	3.45	0.88	3.86	1.54	0.66	0.19	15.02	100.00
9 Middlesex-Morris-Somerset	63.82	23.22	1.37		0.24	0.39	0.39	4.93	0.43	0.36	4.87	100.00
10 Monmouth-Ocean	61.81	21.70	0.51	0.02	0.36	0.49	0.87	7.52	0.51	0.40	5.80	100.00
11 Hunterdon-Sussex-Warren	66.30	21.99	0.16		0.16	0.16	0.11	6.49	0.16	0.22	4.23	100.00
12 Mercer	61.55	24.88	1.12		0.07		1.25	4.34	0.20	0.13	6.45	100.00
	48.87	**19.49**	**1.30**	**0.12**	**6.08**	**0.43**	**3.50**	**3.50**	**1.31**	**0.43**	**14.98**	**100.00**

Updated / 2000: Stage 2-Final (Method 3) Weighted

	1 Auto Drive	2 Auto Passenger	3 Commuter Rail	4 Ferry	5 Subway & Other Rail	6 Express Bus	7 Local Bus	8 School Bus	9 Taxi or Group Ride	10 Other	11 Walk (only)	Total All Modes
1 ManhAttan	6.19	4.31	0.56	0.20	21.86	0.17	9.18	1.63	6.41	1.13	48.36	100.00
2 Other NYC	28.70	15.53	0.38	0.32	15.87	0.62	8.41	1.74	1.95	0.50	25.99	100.00
3 Long Island	61.81	22.05	3.19	0.06	0.26		0.43	4.58	0.55	0.54	6.53	100.00
4 Mid-Hudson (NYMTC)	57.60	22.27	3.40		0.55	0.13	1.34	5.16	0.99	0.27	8.29	100.00
5 Mid-Hudson (Other)	63.33	22.60	0.69	0.04	0.11	0.36	0.65	6.15	0.51	0.54	5.03	100.00
6 Connecticut	66.26	21.35	1.50				0.75	4.77	0.27	0.32	4.79	100.00
7 Bergen-Passaic	61.74	24.48	0.58	0.08	0.24	1.64	0.91	1.67	0.36	0.23	8.08	100.00
8 Essex-Hudson-Union	50.88	21.38	1.63	0.10	3.45	0.92	3.87	1.51	0.71	0.20	15.35	100.00
9 Middlesex-Morris-Somerset	64.03	22.98	1.31		0.24	0.40	0.36	5.05	0.47	0.33	4.82	100.00
10 Monmouth-Ocean	61.58	21.64	0.53	0.02	0.46	0.55	0.82	7.82	0.51	0.42	5.65	100.00
11 Hunterdon-Sussex-Warren	66.59	21.95	0.17		0.17	0.17	0.06	6.43	0.17	0.17	4.12	100.00
12 Mercer	61.27	25.10	1.20		0.06		1.14	4.24	0.24	0.12	6.63	100.00
	48.51	**19.22**	**1.34**	**0.12**	**6.18**	**0.46**	**3.60**	**3.50**	**1.34**	**0.44**	**15.29**	**100.00**

Original / 1996 Based Stage 2 /Final - Expanded

	1 Auto Drive	2 Auto Passenger	3 Commuter Rail	4 Ferry	5 Subway & Other Rail	6 Express Bus	7 Local Bus	8 School Bus	9 Taxi or Group Ride	10 Other	11 Walk (only)	Total All Modes
1 ManhAttan	284,493	196,771	24,747	9,561	1,014,830	8,080	428,295	75,686	297,696	52,902	2,239,747	**4,632,808**
2 Other NYC	4,278,876	2,289,566	53,217	46,107	2,345,021	90,600	1,192,161	248,528	273,972	71,029	3,726,223	**14,615,300**
3 Long Island	5,519,860	2,006,067	268,853	5,372	23,425		41,303	418,221	47,237	45,420	573,225	**8,948,983**
4 Mid-Hudson (NYMTC)	2,436,048	925,806	139,168		22,863	5,466	62,161	217,515	42,771	11,566	359,211	**4,222,575**
5 Mid-Hudson (Other)	1,150,930	408,494	12,046	473	2,126	5,548	11,573	114,159	9,791	9,948	88,439	**1,813,527**
6 Connecticut	3,507,761	1,210,616	71,701				46,113	245,100	17,239	12,215	261,036	**5,371,781**
7 Bergen-Passaic	2,729,361	1,104,906	24,798	2,744	9,677	65,979	41,468	72,300	14,313	11,271	353,080	**4,429,897**
8 Essex-Hudson-Union	2,653,455	1,113,641	83,220	4,880	178,524	45,852	199,942	79,713	33,928	10,012	777,945	**5,181,112**
9 Middlesex-Morris-Somerset	3,020,810	1,099,242	64,988		11,223	18,073	18,178	233,450	20,595	17,034	230,854	**4,734,447**
10 Monmouth-Ocean	2,130,664	748,209	17,527	588	12,756	17,013	30,126	259,421	17,752	13,802	199,724	**3,447,582**
11 Hunterdon-Sussex-Warren	790,209	261,764	2,145		1,749	1,863	1,046	77,012	1,802	2,380	50,741	**1,190,711**
12 Mercer	612,523	247,502	11,091		447		12,311	43,100	2,149	1,316	64,421	**994,860**
	29,114,990	**11,612,584**	**773,501**	**69,725**	**3,622,641**	**258,474**	**2,084,677**	**2,084,205**	**779,245**	**258,895**	**8,924,646**	**59,583,583**

Updated / 2000: Stage 2-Final (Method 3) - Expanded

	1 Auto Drive	2 Auto Passenger	3 Commuter Rail	4 Ferry	5 Subway & Other Rail	6 Express Bus	7 Local Bus	8 School Bus	9 Taxi or Group Ride	10 Other	11 Walk (only)	Total All Modes	Change
1 ManhAttan	300,367	209,089	26,961	9,538	1,060,996	8,242	445,428	79,061	311,095	54,436	2,347,009	**4,852,222**	**4.7%**
2 Other NYC	4,675,981	2,530,295	61,894	52,700	2,584,206	100,553	1,369,215	282,819	316,995	81,108	4,233,184	**16,288,950**	**11.5%**
3 Long Island	5,701,797	2,033,704	294,042	5,776	23,497		39,863	422,589	51,245	49,661	602,292	**9,224,466**	**3.1%**
4 Mid-Hudson (NYMTC)	2,562,901	990,532	151,191		24,697	5,253	59,225	229,387	44,221	12,033	369,090	**4,448,530**	**5.4%**
5 Mid-Hudson (Other)	1,226,079	437,646	13,430	539	2,286	6,743	12,653	119,048	9,845	10,828	97,181	**1,936,278**	**6.8%**
6 Connecticut	3,668,469	1,181,576	83,507				41,457	263,905	14,443	17,225	265,596	**5,536,178**	**3.1%**
7 Bergen-Passaic	2,851,582	1,130,480	26,540	3,265	10,983	75,757	41,994	76,909	16,695	10,317	373,297	**4,617,819**	**4.2%**
8 Essex-Hudson-Union	2,870,956	1,206,468	91,697	5,767	194,780	51,787	218,146	85,517	40,058	10,931	866,192	**5,642,299**	**8.9%**
9 Middlesex-Morris-Somerset	3,220,709	1,155,685	65,647		11,816	20,351	18,356	254,259	23,490	16,487	242,367	**5,029,167**	**6.2%**
10 Monmouth-Ocean	2,265,568	795,829	19,843	508	16,818	20,080	30,415	288,036	19,126	15,059	207,629	**3,678,911**	**6.7%**
11 Hunterdon-Sussex-Warren	826,446	272,506	2,307		1,890	1,970	1,038	79,950	1,842	2,242	51,377	**1,241,568**	**4.3%**
12 Mercer	717,820	293,744	13,788		727		13,543	49,388	2,717	1,605	77,471	**1,170,803**	**17.7%**
	30,888,675	**12,237,554**	**850,847**	**78,093**	**3,932,696**	**290,736**	**2,291,333**	**2,230,868**	**851,772**	**281,932**	**9,732,685**	**63,667,191**	**6.9%**
Change	**6.1%**	**5.4%**	**10.0%**	**12.0%**	**8.6%**	**12.5%**	**9.9%**	**7.0%**	**9.3%**	**8.9%**	**9.1%**	**6.9%**	