



Broward MPO 2035 Long Range Transportation Plan Update

Technical Report # 4 Model Application Methodology

Created by:

JACOBS

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1.0 Introduction to the Travel Demand Model

This report summarizes the travel demand model review and development process and explains the model application methodology used for the technical analyses. The Time of Day version of the Southeast Florida Regional Model (SERPM) version 6.5 is used as the technical tool for the highway and the transit systems planning. In addition to Broward County, this model also includes Palm Beach and Miami-Dade Counties. The model is calibrated to the year 2005 travel behaviors and has the capability of estimating traffic flows by period of the day (AM peak, off-peak and PM peak) on roadways. The regional LRTP model includes the following changes to the released version of SERPM v6.5:

- Includes logic to model reversible managed lanes;
- Includes a modified version of PT2TRNB program to take care of new transit modes (e.g. BRT, LRT, etc.) that may be added to the system for the long range plan;
- Includes logic to handle open toll road modeling; and
- Transit speeds are defaulted to 5 mph on the streets where the model estimates extremely slow congested auto speed (<5 mph).

For the previous long range plans, county specific FSUTMS travel demand models were used. This is the first time a regional model that also encompasses Miami-Dade and Palm Beach Counties is being used. Since, the three participating MPOs are using the same model and there are significant inter-county trips and interactions, it is beneficial to coordinate with the neighboring MPOs in order to update the transportation networks within Broward County. In addition to the three MPO's LRTPs, a regional plan is also being independently developed. The Regional Transportation Technical Advisory Committee (RTTAC) Modeling Subcommittee is coordinating with the three MPOs, FDOT District IV and District VI and their consultants to reach a common ground on the network and the modeling issues.

2.0 Review of the Base Year Model

Since a regional model is being used for the long range plan efforts, it is necessary to evaluate the strengths and the weaknesses of this model especially within the Broward County. This section discusses the results for the base year obtained from the model. Unless otherwise specifically mentioned, the data shown in this section are only for Broward County.

2.1 Highway Validation

There are 921 internal traffic analysis zones (TAZs) in Broward County. The highway network has about 7,700 links with 2005 AADT (AADT is bi-directional and count is directional) on about 2,225 links. The volumes estimated by the model are validated using these AADT. The overall RMSE for the county is about 29% and the average *volume-to-count* ratio is about 1.11. The *vehicle-miles traveled* (VMT) ratio calculated using the estimated volume and the counts on links with AADT is 1.02 and the *vehicle-hours traveled* (VHT) ratio using the congested speeds is about 1.03. The model performs fairly well and below the generally accepted margin of errors.

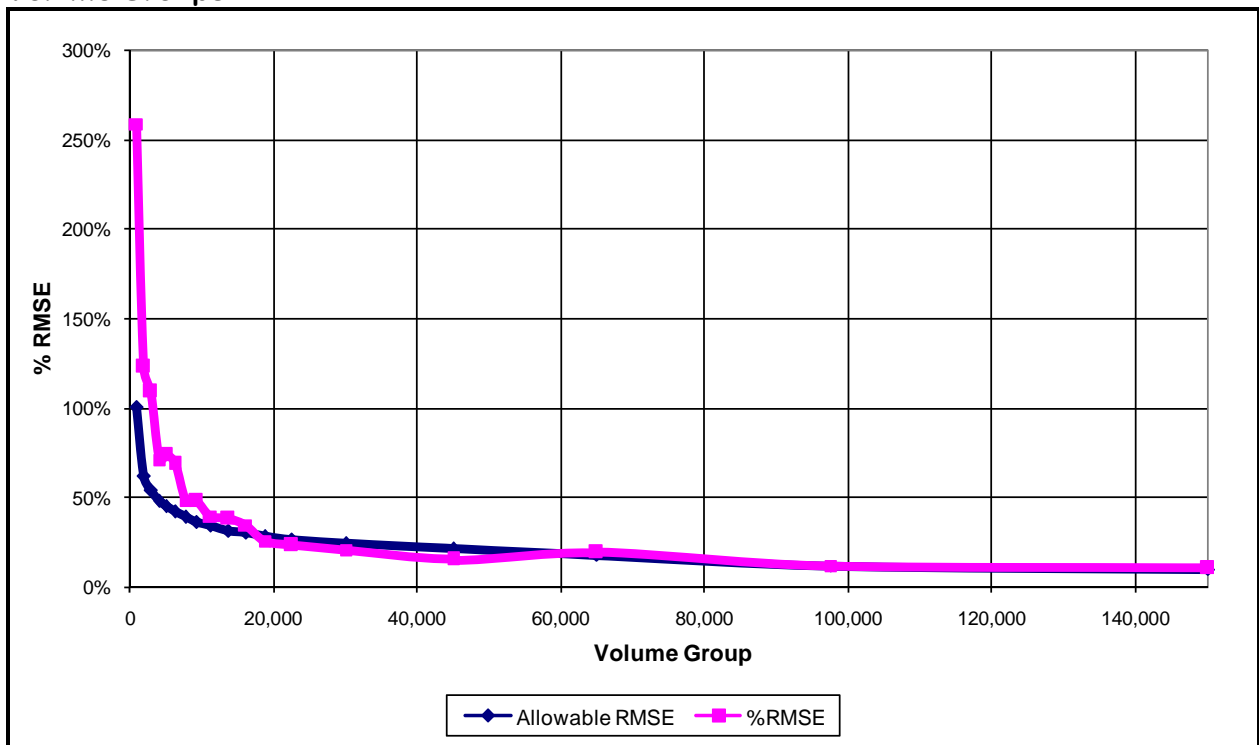
At a more disaggregate level; the overall county statistics were broken down by different roadway facility types. Exhibit 1 shows some parameter values for different facility types. The model over-estimates the volume on low speed collectors by about 20%. It performs very well on the freeways, HOV, and TOLL roadways. The average congested speed is approximately 11% lower than the free flow speeds.

Exhibit 1: Characteristics of Roadway Facilities in 2005

Facility Type	Number of Links With Counts	Average Volume-to-count Ratio	Free Flow Speed	Congested Speed	VMT (Estimated/Observed)
Freeways	78	0.99	62.5	58.0	0.99
Uninterrupted roadways	74	0.92	40.8	40.6	0.91
High speed arterials	1451	1.11	37.8	33.4	1.04
Low speed collectors	429	1.20	34.4	30.4	1.02
Ramps	8	0.83	43.8	21.9	0.86
HOV	41	1.01	61.0	53.7	0.98
Toll	144	1.00	54.8	50.0	1.01
Total	2,225	1.11	39.7	35.4	1.02

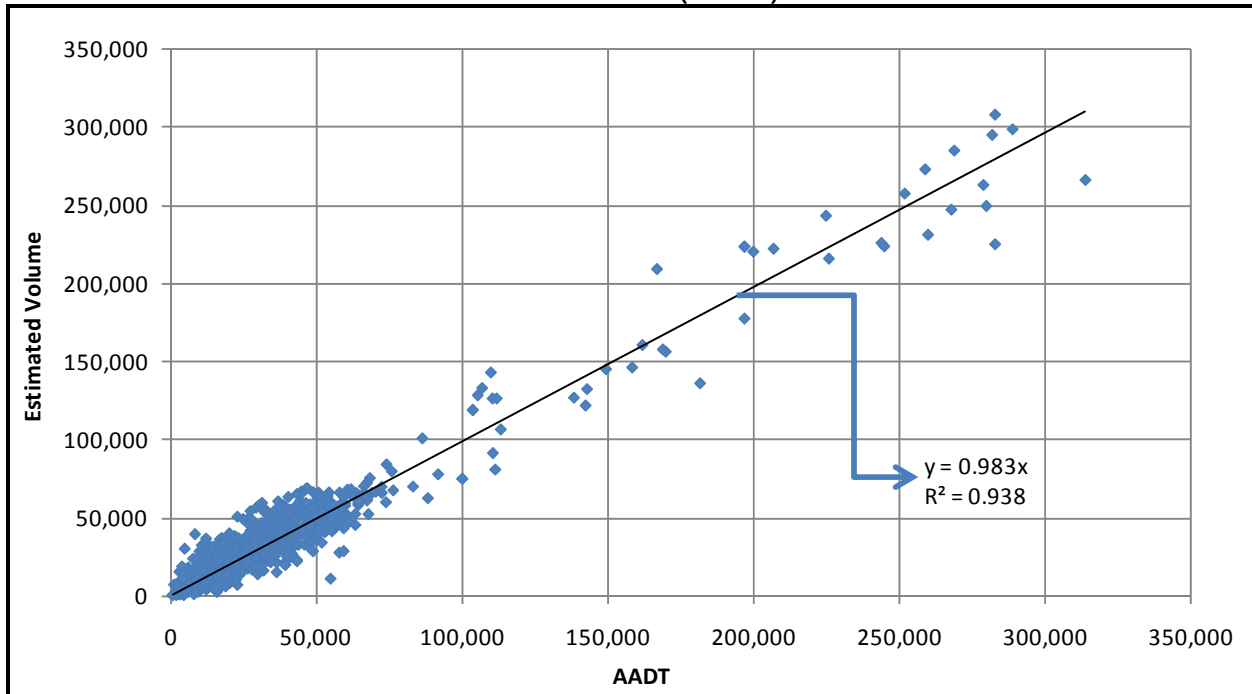
The percent Root Mean Square Error (RMSE) is an aggregate measure to show how well the model chain has replicated the ground counts within Broward County. The smaller the RMSE value, the higher is the level of confidence in the model's ability to replicate the existing traffic flows. The overall RMSE is about 29% which is below the generally acceptable range of 32-39 percent. Exhibit 2 shows the desirable level of percent RMSE for different volume groups in blue line. The desirable RMSE line is obtained from the NCHRP Report 255. The plot also shows the percent RMSE using the estimated volumes from the model for the same volume groups. The percent RMSE results for volume groups greater than 17,000 are better than or fall below the desirable level. On the other hand for the smaller volume groups, the model's estimations are outside the desirable level. However, the errors in the smaller volume groups are less likely to alter the lanes requirements.

Exhibit 2: Estimated Percent RMSE Plot Versus Desirable Percent RMSE for Various Volume Groups



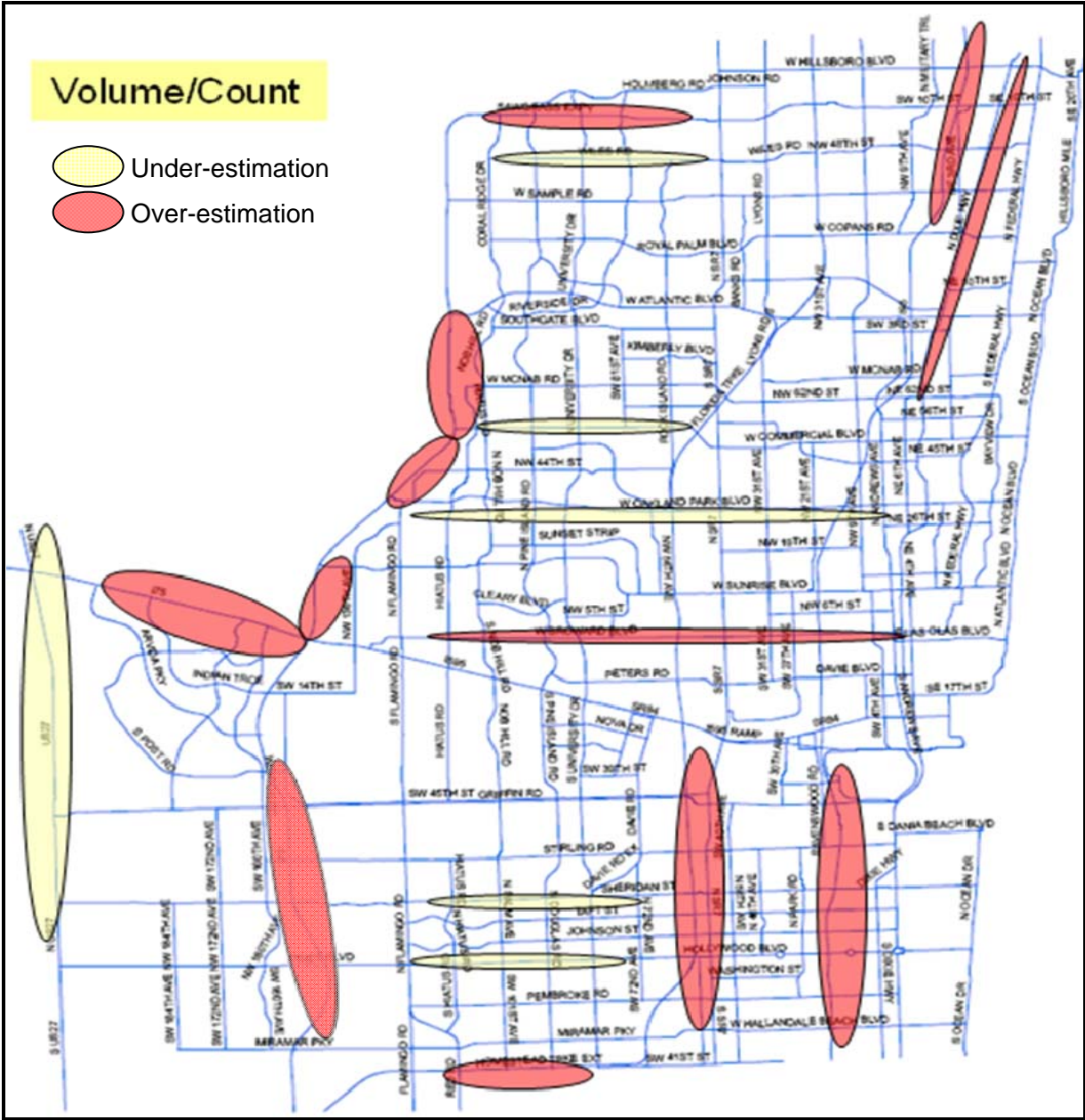
Comparisons were then made at the traffic counting stations. The bi-directional estimated volumes at a station were compared against the AADT at these stations. Exhibit 3 is a plot showing the estimated volumes against the AADT at each station. The linear fit with zero intercept almost follows a 45 degree line. Most of the dots are close to this line which means the estimated volumes are close to the AADT values. However, the volume estimation at some stations with high AADT (marked within green box) is not creditable.

Exhibit 3: Estimated Volume and Ground Count (AADT)



A plot of volume-to-count ratio for individual links with count data, however, shows a trend. In general, the regional model over-estimates volumes on north-south roadways and performs reasonably well on the east-west roadways. Exhibit 4 illustrates this trend.

Exhibit 4: Illustration of the Over and Under-Estimation of Volumes in the Base Year Model



Screenlines (SL) and cutlines (CL) are groups of roadways carrying traffic in the same direction. These lines are used to evaluate the quality of volume estimation by the model using volume to count ratios. A screenline crosses the entire model area while a cutline is drawn to intersect several parallel roadways forming a corridor. The counts of the roadways comprising these lines are summed and are compared to the estimated volume on these links with counts. The information presented in Exhibit 5 is gathered from the SERPM 6.5 validation report. It shows the results at various screenlines and cutlines falling within the county. The model over-estimates trips crossing the Palm Beach and Miami-Dade counties by 14% and 9% respectively. It is desirable that the model estimates the volumes within +/-10% of the counts. However, at some screenlines and cutlines the model estimates are off by more than 10%.

Exhibit 5: Comparison of Estimated Volumes and Count at Various Screenlines and Cutlines

	Screenline/ Cutline	Number of Links	Number of Links with Counts	Total Count	Total Volume	Volume/ Count
EW: Palm Beach/ Broward County Line	SL	17	15	489,192	559,434	1.14
EW: Broward/ Miami-Dade County Line		24	24	874,930	949,664	1.09
EW: Along Pompano Canal (south of Atlantic Blvd)		25	20	686,698	740,767	1.08
EW: Along Oakland Park Blvd		29	25	950,792	937,840	0.99
EW: Along River Canal (south of Griffin Rd)		25	23	807,498	935,528	1.16
NS: Between I-75 and Turnpike		23	19	603,100	561,463	0.93
NS: Along Turnpike (west)		32	26	1,047,300	1,126,238	1.08
NS: I-95 from Miami-Dade to I-595	CL	11	9	300,508	342,030	1.14
NS: I-95 from Palm Beach to I-595		24	24	1,009,300	965,305	0.96
NS: Along University Dr from Palm Beach to Oakland Park Blvd		20	19	487,000	406,043	0.83
EW: Collier County Line		2	2	23,672	23,530	0.98

2.2 Transit Validation

Exhibit 6 compares the observed transit boardings and the estimated boarding for Broward County. The information was taken from the SERPM 6.5 calibration and validation report. These are daily boardings and do not include the community buses. The model over-estimates the transit boardings by 11% in Broward County. The ridership on the east-west routes are over-estimated by 9% and on the north-south routes, the model over-estimates the ridership by 14%. It is also noteworthy to observe that the model over-estimates ridership by 34% on the east-west routes north of Commercial Blvd and 32% on the north-south routes west of SR 7. These are the areas with low transit ridership compared to other parts of the county. Exhibit 6 also shows the observed and estimated boarding on the top 5 performing routes (in terms of ridership). These are over generally over-estimated except for Route 36 running along Sunrise Blvd. The model also under-estimates the ridership on Route 441 Breeze by 29%. However, the ridership on Route 441 should be considered in conjunction with Route 18 which runs along the same street due to the fact that the transit path-building process combines them as one if the boarding and alighting stops are the same.

Exhibit 6: Transit Ridership Results for the Base Year

	Group	Count	Observed Ridership (A)	Model Estimates (B)	Difference [(B)-(A)]	Ratio [(B)/(A)]
EW Routes	South of I-595 (Route 3, 5, 7, 28)	4	10,048	10,525	204	1.02
	Between I-595 & Commercial Boulevard (Route 22, 20, 36, 40, 55, 72)	6	28,877	29,863	986	1.03
	North of Commercial Boulevard (Route 34, 42, 57, 62, 83, 92)	6	8,619	11,535	2,916	1.34
	EW Routes Total:	16	47,544	51,650	4,106	1.09
NS Routes	East of I-95 (Route 1, 4, 6, 10, 11, 20, 50, 60)	8	32,013	39,579	7,566	1.24
	Between I-95 and SR 7 (Routes 9, 14, 15, 17, 18, 31, 93, 97, 441)	9	28,154	27,787	-367	0.99
	West of SR 7 (Route 2, 23, 88)	3	8,672	11,453	2,781	1.32
	NS Routes Total:	20	68,839	78,819	9,980	1.14
Other Routes (12, 56, 81, 95) Total:		4	6,812	6,477	-335	.095
Total BCT:		40	123,195	136,946	13,751	1.11
Top 5 Routes	Route 18 (SR 7)		14,272	15,108	836	1.06
	Route 1 (US 1)		8,069	10,769	2,700	1.33
	Route 36 (Sunrise Blvd)		7,642	7,050	-592	0.92
	Route 72 (Oakland Park Blvd)		7,552	7,853	301	1.04
	Route 2 (University Drive)		7,006	8,813	1,807	1.26
Limited Stop	Route 441 Breeze (along SR 7)		1,712	1,216	-496	0.71

3.0 Travel Demand Model Network Coding Methodology

The network coding procedures described in the Model Application Guidelines (*Technical Report 3: Model Application Guidelines, Southeast Regional Planning Model 6.5, August 2008, Florida Department of Transportation – District IV*) and Calibration and Validation Report (*Technical Report 1&2: Model Data, Calibration and Validation, Southeast Regional Planning Model 6.5, October 2008, Florida Department of Transportation – District IV*) of the SERPM model have been followed for coding the highway and transit projects for the long range plan. Special attention was paid in coding new types of facilities that did not exist in the region when SERPM was developed. These include open road tolling facilities, HOT lane facilities, reversible lane facilities and new types of premium transit service.

3.1 Managed Lanes (I-95)

The managed lanes on I-95 are coded in the network using the methodology described in the SERPM 6.5 Model Data Development documentation. These lanes are coded with FACILITY TYPE 82 and the indicator HOT field on the links is set to 1.

3.2 Reversible Lanes (I-595)

A new link field attribute named REVERSIBLE is added to the networks to identify the facilities with reversible lanes in the region. On I-595, the reversible lanes are coded as 3 lanes operating only during the peak periods. The only access points on I-595 reversible lanes are at the Florida's Turnpike and Sawgrass interchanges. They are coded in eastbound direction for AM peak period, and in westbound direction for PM peak period. In the highway network, they are coded as one-way links in both directions. The REVERSIBLE attribute is populated with 1's on the links operating during the AM period, and with 2's on links operating in the PM direction. The model scripts were also modified to include reversible lane modeling. On links in the highway network with REVERSIBLE either 1 or 2, no traffic is assigned during the off-peak periods. Traffic is not assigned during AM peak period on links with REVERSIBLE coded as 2; while it is not assigned during PM peak period on links with REVERSIBLE coded as 1. Since these are managed lanes, HOT attribute is populated with a code of 1. Congestion based toll is applied similar to those applied on I-95 HOT lanes.

3.3 Open Road Tolling (ORT)

In the highway network, the open road tolling (ORT) stations are coded with TOLLTYPE=3 on the links. SVCMINUTES field values are set to 0 and SVCSECONDS field values are set to 1 second. The toll amount is coded in dollars in CARTOLL field on these links. The model scripts were modified to remove any acceleration and deceleration delays at these toll stations.

3.4 Premium Transit Service

The premium transit service in Broward County is either rapid buses or high capacity transit. The high capacity transit is assumed to operate on exclusive lanes with signal preemption and off-board fare collection. In the model, both rapid buses and high capacity routes are coded as "new mode" (mode number 10 and operator number 7). The rapid buses are coded on regular streets with a TIMEFAC of 0.8. This means that they are subjected to auto congestion but they run 20% faster than the local buses. The high capacity routes are coded on exclusive lanes with an assumed speed of 23.41 mph.

For coding purposes, the rapid buses are assumed to operate in mixed traffic with limited stops and improved amenities, compared to limited stop service that Broward County Transit currently operates.

3.5 Coordinating PT and TRNBUILD Mode Numbers Using PT2TRNB Program

The transit network in SERPM is coded in PT-format in Cube-Voyager. The PT-format networks are converted to TRNBUILD-format using a FORTRAN program, PT2TRNB. This is needed because the pathbuilding and assignment in SERPM is done using TRNBUILD module. Based on the mode and operator number coded in the PT-format transit network, PT2TRNB reassigns new mode numbers for TRNBUILD module. During the initial stages of the LRTP process, it was discovered that PT2TRNB incorrectly assigned limited stop and “new” modes in two situations. A limited stop bus mode and a BCT local operator resulted in a mode number for Palm Beach Limited Stop Bus being assigned for pathbuilding and assignment. In another case, a new mode and a BCT local operator resulted in a Palm Beach New Mode. These two situations were corrected. Two new operator codes (12 and 13) reflecting Miami-Dade New Mode and Palm Beach New Mode were added. The functionality to read in RUNTIME and TIMEFAC parameters was also added in the program. The new version of the executable was provided to FDOT. Exhibit 7 is the lookup table that shows the PT2TRNB logic as it processes the PT modes and operators.

Exhibit 7: Coordination between PT modes and TRNBUILD modes Using PT2TRNB

PT			TRNBUILD			
Mode			Operator		Mode	
No.	Name	County	No.	Description	No.	Description
4	Bus	Palm Beach and Broward	1	Palm Beach Local	4	Palm Beach Bus
			11	Palm Beach Express	16	Palm Beach Express Bus
			3	BCT Local	14	BCT Bus
			5	BCT Express	6	BCT Express Bus
5	Bus	Miami-Dade	4	Miami-Dade Local	5	Miami-Dade Bus
			6	Miami-Dade Express	15	Miami-Dade Express Bus
6	Express Bus	All	11	Palm Beach Express	16	Palm Beach Express Bus
			5	BCT Express	6	BCT Express Bus
			6	Miami-Dade Express	15	Miami-Dade Express Bus
7	Metrorail	Miami-Dade	8	Metrorail	7	Metrorail
8	Tri-Rail	All	10	Tri-Rail	8	Tri-Rail
9	Metromover	Miami-Dade	9	Metromover	9	Metromover
10	New Mode (BRT or LRT)	All	7	BCT New Mode	10	BCT New Mode
			12	Miami-Dade New Mode	17	Miami-Dade New Mode
			13	Palm Beach New Mode	20	Palm Beach New Mode
11	Project Mode	All	Any		11	Project Mode
12	Tri-Rail Shuttle	All	2	Tri-Rail Shuttles	12	Tri-Rail Shuttle
13	Limited-Stop Bus	All	11	Palm Beach Express	19	Palm Beach Limited Stop Bus
			5	BCT Express	18	BCT Limited Stop Bus
			6	Miami-Dade Express	13	Miami-Dade Limited Stop Bus

4.0 Summary

Overall, the model's ability to estimate the highway volumes is reasonable within the county. However, being a regional model, there are areas (at a disaggregate level) where the model falls short. Therefore the forecast traffic volumes on these links will be adjusted based how well the base year model estimates the volumes compared to the observed data.

The results on the transit ridership presented in this report are at the county level and the overall results estimated by the model at this level are reasonable; hence no adjustments were made to the estimated transit ridership.

The long range plan tries to identify the projects that are needed beyond previously committed projects to increase the mobility and relieve congestion. These are plans for year 2035. Hence, in order to determine the deficiency in the network, an alternative with E+C highway and transit networks and 2035 socio-economic data was run ("No Build" scenario). The results of this alternative run are used to identify the congestion level in the county if no new projects are added in the transportation system. The 2035 Transportation Needs Assessment Technical Report provides a detailed explanation on deficiency analysis and future travel demand.

As shown earlier in Exhibit 4, the model does not perform well in estimating volumes on some sections of the roadways. The forecast volumes on these segments may not be reliable. Hence, the estimated volumes for the future year will be adjusted based on the procedure explained in the NCHRP Report 255. This procedure is described in Exhibit 8.

Exhibit 8: Volume Adjustment Process

Forecasted volume adjustment process (NCHRP #255 procedure)

$$vol_{2035final} = \frac{vol_{2035ratio} + vol_{2035diff}}{2}$$

Where:

$vol_{2035final}$ = final adjusted volume for the future year

$$vol_{2035ratio} = vol_{2035est} * \frac{aad_{2005}}{vol_{2005}}$$

$$vol_{2035diff} = vol_{2035est} + (aad_{2005} - vol_{2005})$$

aad_{2005} = base year ground counts

vol_{2005} = base year estimated volume

$vol_{2035est}$ = estimated volume for the future year

Exception: No adjustment if the 'desirable' range of deviation of the base year volume is:

+/- 15% where $aad_{2005} \leq 15,000$

+/- 10% where aad_{2005} is between 15,000 and 60,000

+/- 5% where $aad_{2005} > 60,000$

5.0 Regional Modeling Coordination

The Regional Transportation Technical Advisory Committee (RTTAC) Modeling Subcommittee comprises representatives from the Broward Metropolitan Planning Organization, Miami-Dade Metropolitan Planning Organization, Palm Beach Metropolitan Planning Organization, FDOT District IV, and FDOT District VI. The primary purpose of RTTAC was to coordinate the travel demand modeling process between the Broward, Miami-Dade, and Palm Beach MPOs, FDOT Districts IV and VI. The RTTAC provided direction and resolved transportation network and modeling issues raised during the development of individual MPO's 2035 LRTPs and the 2035 Regional Transportation Plan.

The RTTAC Modeling Subcommittee held its first meeting on August 4, 2008. During this meeting, the subcommittee decided to use the Time of Day version of the Southeast Florida Regional Planning Model (SERPM 6.5). The subcommittee subsequently met six more times to help coordinate the development of transportation networks for the existing plus committed (E+C) network, needs plan network, and cost feasible plan network. The network development process involved the MPOs providing project lists for completed, committed, and the needs plan and FDOT District IV coded the networks and set up the model runs. The networks and the model runs were then reviewed by the respective MPOs. The MPOs provided comments to FDOT District IV for updating the networks and the model. Once an agreement was reached within the subcommittee, a final network and a model run was distributed to each MPO. The MPOs thereafter made minor changes to the networks and made their own model runs for understanding the needs plan and cost feasible plan performance. The RTTAC made sure that the important elements from the three MPOs were incorporated into the transportation network, to fully understand the regional implications of future transportation improvements. The meeting minutes of the RTTAC modeling subcommittee are attached in the Appendix.

MEMORANDUM

RTTAC Modeling Subcommittee
August 4, 2008 Meeting Minutes

Date: August 14, 2008 Project #: 9338.0
To: Wilson Fernandez, RTTAC Modeling Subcommittee Chair
From: Jessica Josselyn, Kittelson & Associates, Inc.
John Zegeer, PE, Kittelson & Associates, Inc.
Rob Schiffer, Cambridge Systematics

The following is a summary of the RTTAC Modeling Subcommittee meeting held on August 4, 2008. Meeting handouts may be found in Attachment A.

MEETING TIME AND LOCATION

Florida Department of Transportation, District IV
First Floor Administration Conference Room
Fort Lauderdale, Florida

MEETING ATTENDEES

1. Ashutosh Kumar, AECOM Consult
2. David Schmitt, AECOM Consult
3. Sung-Ryong Han, BCC Engineering
4. Ed Sirianni, Broward County MPO
5. Lina Kulikowski, Broward County MPO
6. Ossama Al Aschkar, Broward County MPO
7. Rob Schiffer, Cambridge Systematics, Inc.
8. Dan Glickman, Citizen
9. Yongqiang Wu, FDOT Central Office
10. Min-Tang Li, FDOT D4
11. Shi-Chang Li, FDOT D4
12. Phil Steinmiller, FDOT D6
13. Franco Saraceno, Gannett Fleming
14. Myung Sung, Gannett Fleming
15. Kapil Arya, Gannett Fleming
16. Jessica Josselyn, Kittelson & Associates, Inc.
17. John Zegeer, Kittelson & Associates, Inc.
18. Scot Leftwich, Leftwich
19. Arturo Perez, Leftwich
20. Carlos Roa, Miami-Dade MPO
21. Larry Foutz, Miami-Dade MPO
22. Wilson Fernandez, Miami-Dade MPO

23. Nellie Fernandez, Palm Beach MPO
24. Paul Larsen, Palm Beach MPO
25. Vinod Somdanasamy, Palm Beach MPO
26. Srin Varanasi, The Corradino Group
27. Sandeep Obulaveddy, The Corradino Group
28. Sunil Saha, The Corradino Group

MEETING NOTES

Below is a summary of the key points discussed at the meeting. The comments have been organized by agenda topic.

- I. Call to Order and Introductions
Wilson Fernandez introduced the first RTTAC Modeling Subcommittee meeting.

- II. Socio-Economic Data
Rob Schiffer presented a summary and comparison of socio-economic data received from the three counties. Palm Beach County is concerned with the school file data because the school board does not forecast school locations beyond the year 2015. Thus, the MPO had previously assumed the location of future schools (at 1500 students per school) based on population growth and the availability of vacant land. There could be a 60,000 school student shortfall in the 2035 model if a methodology is not selected for locating new schools. Unless the MPO is aware of plans for the construction of a private school, they do not assume the construction of additional schools. Paul Larsen plans to carry over the school location data that was used for the 2030 plan for the 2035 plan. The assumption used in Broward County considered the school children population by zone in identifying new school locations. Paul Larsen will make some revisions to the Palm Beach County socioeconomic data (including schools) and submit these revisions to Rob Schiffer this week.

It is anticipated that a large area around Belle Glade, South Bay, and Pahokee will be purchased by the state from US Sugar. This could result in the loss of 10,000 jobs in the western part of Palm Beach County, resulting in the need for a double set of socio-economic data for projecting growth. Shi-Chiang Li suggested that this second set of data be used for comparison purposes when alternative transportation improvements are being evaluated. Wilson Fernandez suggested that one baseline data set be established for regional coordination and that alternative data sets be used by the individual counties for their own analysis of alternative improvements. Ossama Al-Aschkar said that data that he has submitted for Broward County reflects the existing approved land use plan. Miami-Dade County was told by FHWA to use what the MPO knows today.

Miami-Dade County auto ownership rate data will be reviewed next week. Revisions will be made and submitted within two weeks.

III. 2035 External Trips

Min-Tang and Srin (Corradino Group) prepared 2035 external trip forecasts (E-I, I-E, and E-E trips) based on extrapolating count trends at external stations. These trips were developed using existing growth factors. Two corrections were made: First, the existing model has an error at the SR A1A station in Palm Beach County. The external trip forecasts at this location were revised. Second, at SR 710 (Beeline Highway), a PD&E study projected a 2030 volume that is different from the historic counts. The PD&E projection was used. Rob Schiffer described an independent assessment by Cambridge Systematics staff and found generally similar results overall.

Ossama Al-Aschkar is concerned about the external loading on I-75 west into Collier County. The growth rate appears to be high. In addition, the U.S. 1 increase from 23,000 to over 40,000 south of Miami-Dade County into Monroe County appears to be high and the percentage of E-E trips appears to be high as well. The Corradino Group will recheck and adjust both of these projections. Rob Schiffer looked at these two stations and found the suggested 2035 forecast was somewhat higher than the latest traffic count extrapolations from the FDOT CD as calculated by Cambridge Systematics staff. Shi-Chiang Li asked if there was a solution (an alternative methodology) for resolving these two discrepancies. Phil Steinmiller suggested a methodology based on revised count trend analyses (e.g., different number of years, different current year, different count station, etc.) to resolve the US 1 issue into Monroe County. Ossama Al-Aschkar suggested that one paragraph be prepared for each external count station to document the methodology that was used to project future external station traffic. Srin, Min-Tang, and Rob Schiffer will take another look at the growth trends for each external station and report back to this group by August 11th.

IV. E+C Project Review and Network Coding Specifications

Jessica thanked the three counties for submitting E+C project data. For Palm Beach County, there are no new transit projects proposed other than the east-west corridor project planned for the year 2013. (The years 2008 – 2013 represent committed projects for the E+C network.) Transit routes are being cut due to budget limitations.

In Broward County, the US 1 bypass inside Port Everglades is not in the TIP. It is not funded. Thus, this project will not be included in the E+C network. More detail is needed for the I-595 committed projects. FDOT District 4 will provide this additional project description information. These projects will include reversible lanes and ramp braiding. Ossama Al-Aschkar will provide Broward County bus route information to KAI by the end of the week.

In Miami-Dade County, there are some roadway grade-separations and transit BRT projects. For the grade-separations, Carlos Roa will provide a sheet that describes the geometric improvements as a back-up to the E+C network. The SR 826/SR 836 interchange configuration needs to be described for the E+C network.

For BRT routes that operate in mixed-flow conditions with traffic signal priority, the one-mile station spacing on the State Road 7 Breeze service has provided a reduction in travel time by about 25% as compared with local bus service. BRT service could be coded as “local bus” with improved headways or coded as a BRT mode with limited-stop service (with improved travel times). Transit service levels on the E+C network must be based on input from the transit agencies as to the cuts in service that are anticipated.

In late August, FDOT District 4 will begin coding the E+C network. All E+C projects need to be specified by the counties and submitted to District 4 by August 18th. Larry Foutz cannot guess what other Miami-Dade transit services will be eliminated beyond the service cuts that already have been implemented. By 2013, some of the existing transit service cuts may be restored. Paul Larsen suggested that if a transit agency has reduced service by resolution as of today, then that service should not be reflected in the E+C network. Phil Steinmiller agreed that existing agency cuts should be reflected in the E+C network. He anticipates that the decrease in transit ridership may not be as great as the reduction in service because the least-efficient routes are being reduced or eliminated. The group unanimously agreed that the transit service as it is currently will be used for the E+C network and should any changes occur the E+C network will be amended in 2009 when the updated TIP is adopted.

The 2005 (baseline conditions) model is completed. The Corradino Group will provide E+C transit project coding (in the form of a set of tables) information to the three counties to confirm its accuracy.

Shi-Chiang Li raised an issue regarding how to code a posted speed based on the number of lanes and the facility type for a roadway. The signal locations are also important in determining the proper speed to be coded. When a link volume is underreported in model output, this needs to be documented. When links have underreported volumes, the volumes might need to be adjusted “subjectively.” All of the posted speeds for the E+C network need to be reviewed by the three counties. It was agreed that by August 18th, The Corradino Group/D4/KAI will receive posted speed assumptions from each of the three counties for the E+C network.

V. TOD model for Managed Lanes

Sunil presented a description of the HOT lanes concept. As demand increases, the toll rate increases. SERPM65 is a time-of-day (TOD) model that implements the HOT lanes. Vehicle occupancy (two persons per auto or 3+ persons per auto) is treated as a separate mode. The model uses separate facilities for the HOT lanes – distinguished from General Purpose lanes in the same corridor. It was suggested that the Corradino Group consider data from the State Route 91 Managed Lanes project in Orange County, California to validate the relationship between v/c ratios and speeds. Corradino did not review the Wilbur Smith I-95 revenue studies. The Wilbur Smith toll rates should be used for the SERPM model. The I-95 HOT lanes are not funded

north of the Golden Glades interchange. Thus the HOT lanes will not be considered as an E+C project north of the Golden Glades interchange.

Miami-Dade County sees a need for the LRTP process to use the TOD model rather than a 24-hour model so that any managed lanes project can be properly analyzed. Both the 24-hour model and the time-of-day model have been validated in SERPM. Ossama Al-Aschkar is concerned that the TOD model is based on percentages of 24-hour trip tables and does not accurately represent peak period volumes. Thus, the TOD model does not provide a higher level of accuracy than the 24-hour model. A 24-hour model run takes 12 hours. A TOD model run takes 16 hours. This TOD run-time can be reduced if the number of "feedback loops" is reduced. Miami-Dade County MPO staffs believe that a TOD model is necessary to evaluate HOT lane use since a comparison of the speed in the HOT lanes vs. the General Purpose lanes for different times of the day is needed. Phil Steinmiller says that we have committed to a regional model. It is his understanding that this group has already made a decision to go with a TOD model. Palm Beach County is not certain that the TOD model has been fully validated but will agree to go with a TOD model if that is the desire of this group. Broward County agreed to go with the group decision, albeit with previously stated concern. Therefore, all subcommittee voting members unanimously agreed that the TOD model would be used.

VI. Use of Auto ownership Model

Due to time constraints, the auto ownership discussion was postponed until the next face-to-face RTTAC Modeling Subcommittee Meeting.

VII. Capacity and V/C Reporting Issue

The SERPM 6.5 model uses the FDOT Generalized Tables (in the Quality/Level of Service Handbook) to determine volume-to-capacity ratios. The interrupted and uninterrupted facility types are considered. The capacities in the existing model are based on Level of Service E (not LOS D) threshold service volumes. In the model, the capacities have been reduced to reflect the peak hour factors. Eventually, this group will need to take action to decide whether or not the Level of Service D capacity (service volume) values will be used in determining the adequacy of roadways in the future conditions analysis. The SERPM65 Model Validation documentation and Users Guide will be provided to the group by The Corradino Group by the end of August. Rob Schiffer will respond with his thoughts on LOS reporting for consideration. This issue will be discussed in detail at the next meeting.

VIII. Key LRTP modeling Milestone Dates and Coordination

Travel Demand Model Milestone #1 (submittal of SE data and E+C project lists) has been completed. Milestone #2 (Regional SE data and coding the E+C network) will be completed by each of the three counties and turned over to FDOT District 4 in one month. (This is consistent with the schedule that was distributed to the meeting attendees.) There is a milestone date for travel demand modeling activities every

month for the next 14 months. LRTP Plan adoption is scheduled for October 2009 in Palm Beach and Miami-Dade Counties and in November 2009 for Broward County. The schedule that is shown for the Goals and Objectives activities will be updated. The Needs Plan activity start date will need to be moved back to October 2008 in the schedule.

IX. Subcommittee Meeting Coordination / Vice Chair

It was suggested that either a face-to-face meeting or a teleconference should be held at each major milestone during the travel demand modeling activities. It was agreed that a teleconference would be held on Tuesday, September 9, 2008 (if needed). In addition, the group agreed to a face-to-face meeting on Tuesday, October 14, 2008 in the FDOT District 4 offices at 1:30 pm.

Prior to adjournment, it was voted on that Ossama Al Aschkar from Broward County MPO will Vice-Chair the RTTAC Modeling Subcommittee Meeting.

OCTOBER 14, 2008 MEETING NOTES

Regional Transportation Technical Advisory Committee (RTTAC)
Modeling Subcommittee

Date: November 12, 2008 Project #: 9338.0
To: Wilson Fernandez, RTTAC Modeling Subcommittee Chair
From: Jessica Josselyn, Kittelson & Associates, Inc.
John Zegeer, PE, Kittelson & Associates, Inc.
Rob Schiffer, Cambridge Systematics

The following is a summary of the RTTAC Modeling Subcommittee meeting held on October 14, 2008. Meeting presentations may be found in Attachment A.

MEETING TIME AND LOCATION

Florida Department of Transportation, District IV
Executive Conference Room
Fort Lauderdale, Florida

MEETING ATTENDEES

1. Ashutosh Kumar (by phone), AECOM Consult, Ashutosh.kumar@aecom.com
2. David Schmitt (by phone), AECOM Consult, david.schmitt@aecom.com
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4. Lina Kulikowski, Broward County MPO, lkulikowski@broward.org
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20. Scot Leftwich, Leftwich (by phone), scot.leftwich@lce-fl.com

21. Arturo Perez (by phone), Leftwich, ajp@lce-fl.com
22. Larry Foutz, Miami-Dade MPO, lfoutz@miamidade.gov
23. Wilson Fernandez, Miami-Dade MPO, Wilson@miamidade.gov
24. Paul Larsen, Palm Beach MPO, plarsen@pbcgov.com
25. Srin Varanasi, The Corradino Group, svaranasi@corradino.com
26. Sandeep Obulareddy, The Corradino Group, sobulareddy@corradino.com

MEETING NOTES

Below is a summary of the key points discussed at the meeting. The comments have been organized by agenda topic.

I. Call to Order and Introductions

Wilson Fernandez called the meeting to order and everyone introduced themselves. After introductions Wilson made the point that work quality and maintaining the schedule is critical to the process. All participants must do their part at 100% if we are to be successful.

II. Approval of August 4th Meeting Minutes

The August 4th meeting minutes were approved by the committee.

III. Subsequent Socioeconomic Assumptions/Revisions

Srin Varanasi presented the Input Data that was developed (see Attachment A for the presentation). A final memorandum that describes the methodology for external trip development has been prepared. All comments have been addressed in response to the review of this memorandum. A final data summary has been prepared. One concern was at the I-75 Broward County external station. A second concern was on US 1 at the northern external station boundary.

Special generators have been addressed. Airport enplanements were received from Cambridge Systematics. Employment growth factors were used from 2025 to 2035 to increase airport trips. Seaport growth factors were based on annual growth rates. Growth rates for both seaports and airports will be linear growth rates.

IV. Existing-plus-Committed Network Coding

Srin Varanasi presented on the existing-plus-committed network coding (see Attachment A for the presentation). A successful model run was completed on October 9th. For the highway network, the I-95 Managed Lanes north of the Golden Glades Interchange needs to be converted from Managed Lanes to HOV Lanes. The I-595 Reversible Lanes in Broward County are committed by the year 2013. The model runs will provide peak period and daily volume output.

Open-Road Tolling will be incorporated into the model. Toll gantry locations are coded as toll links with minimal service times. Acceleration and deceleration times at the toll plazas are also sources of impedance. For the year 2013, the Committed Network will have no toll plazas – all MDX and HEFT facilities will have open-road tolling only.

Transit coding assumes two BRT routes: Biscayne BRT and Kendall BRT. It is recommended the BRT route speeds not be "hard-coded." The actual operation for the service will be in mixed-flow. This service will be coded either as a limited-stop mode (a 20% - 25% increase in speed) or a BRT mode should be coded. David Schmitt will be providing a recommended BRT modeling approach to the group in the near-term.

V. Review and Discussion on SERPM 2035 Model Results

Rob Schiffer presented his review on the SERPM 2035 model results (see Attachment A for the presentation). He noted that since the model results were distributed just a few days prior to this meeting, the review is still in-process and that his presentation is an overview of the initial findings.

Input files checks were conducted for the socio-economic data. The school enrollment and hotel/motel figures are "a little bit off" in comparing the spreadsheets against the final figures. In projecting enplanements, the FAA approach and the BEBR approach were considered. There is need to clarify how the E+C network was built. A comparison was made between the 2035 volume projections and the 2005 volume counts. The number of HBW trips and total trips are increasing from 2005 to 2030 to 2035.

VI. ITS Toolbox

Mohammed Hadi from FIU presented to the group on the Evaluation Tools to Support ITS Planning Process FDOT research (see Attachment A for the presentation).

IDAS has limitations for ITS applications. Fourteen ITS deployments are covered with the FDOT method. The tool is built within a FSUTMS/Cube environment. Benefits and costs are determined. A methodology has been developed for each ITS application. The analysis can be conducted using a time-of-day model. Accident severity is predicted based on curves obtained from IDAS (based on v/c ratios).

VII. Performance Evaluation

The regional measures of effectiveness will be discussed with the RTTAC. The level-of-service tables should be considered for evaluation of model results rather than just consideration of the volume-to-capacity ratio. This subject will be revisited at the next meeting.

VIII. Upcoming Schedule Milestones

Jessica distributed the RL RTP schedule. We have completed the modeling milestones 1, 2, and 3. The model runs will be completed in November. The E+C network and the 2035 socio-economic data will be included. On that basis, the three LRTP consultants will develop Needs alternatives in December.

The I-95 Managed Lanes will be assumed to be completed by the year 2014. The adopted Work Plan will go through the year 2014. The next set of E+C runs will not include any anticipated projects to be funded in 2014. By this Friday, October 17th, all comments from today's meeting will be incorporated into the model for a set of E+C runs. The next set of E+C model runs will be distributed to the three counties by October 24th. The three counties will then use this network to proceed with the Needs Assessment.

The schedule for the Needs Assessment will require that alternate networks will be tested: Highway Emphasis, Transit Emphasis, and Balanced Network. At this time, we are assuming that each county submits two runs: one for the transit emphasis and one for the highway emphasis. These two runs will be "stitched together" for each county and a regional model run will be conducted. Ossama Al Aschkar suggested that a final Needs Assessment network will be distributed for a regional model run. This issue will be resolved at the next meeting.

IX. Next Steps

The next meeting will occur on December 1st (afternoon) to discuss the Needs Plan assessment. The I-595 Managed Lanes methodology will be provided by the Corradino Group by the end of this week. A teleconference will be scheduled on the morning of October 21st (tentatively).

X. Other Discussion Items

None addressed.

XI. Adjournment

Wilson Fernandez adjourned the meeting.



December 3, 2008 Meeting Minutes

Regional Transportation Technical Advisory Committee (RTTAC)
Modeling Subcommittee

Date: December 16, 2008 Project #: 8055.002
To: Wilson Fernandez, RTTAC Modeling Subcommittee Chair
From: Rob Schiffer, Cambridge Systematics, Inc.
Jessica Josselyn, Kittelson & Associates, Inc.
John Zegeer, PE, Kittelson & Associates, Inc.

The following is a summary of the RTTAC Modeling Subcommittee meeting held on December 3, 2008. Meeting presentations may be found in Attachment A.

MEETING TIME AND LOCATION

Florida Department of Transportation, District IV
Executive Conference Room
Fort Lauderdale, Florida

MEETING ATTENDEES (alphabetical order by agency/firm)

1. Ashutosh Kumar (by phone), AECOM Consult, Ashutosh.kumar@aecom.com
2. David Schmitt (by phone), AECOM Consult, david.schmitt@aecom.com
3. Sung Ryong Han, BCC Engineering, shan@bcceng.com
4. Ed Sirianni, Broward County MPO, esirianni@broward.org
5. Lina Kulikowski, Broward County MPO, lkulikowski@broward.org
6. Ossama Al Aschkar, Broward County MPO, oalaskar@broward.org
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25. Srin Varanasi, The Corradino Group, svaranasi@corradino.com
26. Andrew Velasquez, URS/FDOT Turnpike, andrew.velasquez@dot.state.fl.us

MEETING NOTES

Below is a summary of the key points discussed at the meeting. The comments have been organized by agenda topic.

I. Call to Order and Introductions

Wilson Fernandez called the meeting to order and everyone introduced themselves. After introductions Wilson made the point that we have an ambitious agenda with lots of action items that we need to get passed today.

II. Needs Plan Development Methodology

Rob Schiffer presented the methodology for developing the Needs Assessment. A common background network is needed for developing the Needs Plan. The E+C and 2030 Cost-Feasible plans are available in the current version of SERPM. Rob suggested that the 2030 Cost-Feasible Plan would be a good background network since these projects would likely be included in any 2035 needs alternatives. Recent LRTP amendments could also be incorporated.

Ossama said that it would be much easier if we were to use the E+C network. We would coordinate cross-county improvements to make the appropriate adjustments. If FDOT takes charge of the coding, then we could use the 2030 network. Shi-Chiang Li asked the question: do we need to identify the regional needs to develop a Needs Plan for an individual county? If yes, then we need to determine how to use the model to create this network. Larry Foutz said at the time that the scope for this LRTP project was developed, the assumption was that the Needs Network would serve as a basis for testing alternatives. In determining the needs assessments, the E+C network is sufficient. Then the three county Needs Plans can be aggregated by the regional LRTP team and identify inconsistencies. Carlos Roa said that all three counties have already used the E+C plans to identify deficiencies. Phil Steinmiller said that the starting point would be the E+C network except for the cross-county (regional) corridors, where the Cost-Feasible Plan projects should prevail.

Rob reminded the group that the 2030 Cost-Feasible Plans have already been coded, except for project amendments. Larry Foutz said that each county should have the ability to run Needs scenarios on any network that they choose. Wilson noted that each county would still develop their own Needs networks (lists of projects to be considered). The background network would be provided to the MPOs and their consultants to code these projects into a Needs Plan. Each county would then run scenarios to test specific projects. The E+C network requires the county to make assumptions about what will happen in the other two counties. In Palm Beach County, the transit needs will not be based on the travel demand model. One Needs Plan will be developed. Three Cost-Feasible Plans will be developed (roadway emphasis, transit emphasis, and blended). One plan will then be selected. Phil Steinmiller says that since there is divergence among the Cost-Feasible Plans, then in each county, the problem is that needs projects will need

to be removed and then recoded. Phil thinks that the 2030 cost-feasible network could represent 2035 needs projects since 2035 funds will be less than 2030 funds. In Miami-Dade, there are some major facilities under consideration for the 2035 Needs Plan that are not in the 2030 Cost-Feasible Plan.

This motion was passed unanimously: In order to create a regional needs network, each county will individually develop a list of projects that describes their project needs. The three counties will provide this list of projects to FDOT D4 and their consultants, who will then code a network that includes the three county lists of projects. The regional consultant will then review the list of projects for inconsistencies and bring those inconsistencies to this group for comment. (At that point, each county can test alternative needs scenarios using the regional model.)

III. Model Performance Measurement Tools and Statistics

Rob presented a set of performance measures that have been derived from models during previous LRTPs and that could be used to assess projects either for the regional plan or for the individual county plans. He led the group through a presentation and discussion of quantitative measures by model step and indicated which of these are currently produced by SERPM as outputs and which are not, or are only measured regionally (i.e., not by individual county). FDOT and their consultants indicated that most regional performance statistics could also be summed by County through additional scripting work with SERPM. FDOT D4 agreed to add average trip lengths and transit trips by county as SERPM outputs.

A discussion ensued on the pros and cons of intrazonal trips – relates not only to land use mix, but also the zone size and congestion on adjacent corridors. A point was made that percent of population and employment within ¼ mile of transit can also be impacted by the transit projects in the alternative. We could substitute “attractions” within ¼ mile in place of “employment”. VHT/HH might be a better mobility measure than VMT/HH. HBW transit trips are still the same thing as AM trips in mode choice within SERPM. It was suggested looking at the relationship between linked and unlinked transit trips as a passenger convenience measure.

After measures of effectiveness (performance measures) have been chosen by the counties, these measures will be provided to the regional consultant, FDOT, and their consultants. The measures of effectiveness should be quantitative, not qualitative, as the alternatives will largely be judged based on differences in quantitative measures. “Cost per unit of facility” added should be considered against improvement in travel time or mode shift to transit. An integrated transportation-land use model (which is not available to us) would allow us to measure sustainability. While the group had a few comments, there was no motion provided at this time.

IV. Understanding v/c Ratios

A study was conducted at the intersection of Atlantic Boulevard and U.S. 1. This intersection is operating at a volume-to-capacity ratio of approximately 1.0 for the westbound through lane group. The approach delay averages at about 70 seconds per vehicle. The average queue length is about 34 vehicles at a v/c ratio of 1.0. The conclusion of this research was that v/c is not necessarily a good surrogate for highway level-of-service. However, when we convey v/c ratios

to the public, we can relate this to measures that they understand, like queue length, signal failures, or seconds of delay. Likewise, no motion was made to address the use of v/c ratios.

V. Other Business

This group was formed to deal with project-based modeling issues in addition to the regional LRTP. FTA will have a modeling workshop in March that may provide guidance on the question of what background network will be assumed for the FEC Corridor in the Needs Plan for the region. The question that we should address is whether any major capital transit improvement is cost-feasible. The FTA New Starts process includes an attempt to verify the modeling for a future transit corridor. There is separation between the New Starts process and the LRTP.

ETDM will be required for all Needs Plan projects that are federally-funded. The Cost-Feasible projects must have projected volumes included with the list of projects.

The minutes from the last meeting were approved.

VI. Schedule

The Needs assessment list should be submitted and ready for coding no later than February 13. A mid-March review of the Needs network will then occur. The projects should have termini and number of lanes. A GIS format or model format would be preferred. This network will then be coded by the Corradino Group. We will tentatively have our next meeting on Wednesday, March 11. This will allow for the Regional Needs model to be completed in April.

March 18, 2009 Meeting Minutes

Regional Transportation Technical Advisory Committee (RTTAC)
Modeling Subcommittee

Date: March 19, 2009 Project #: 8055.002
To: Wilson Fernandez, RTTAC Modeling Subcommittee Chair
From: Rob Schiffer, Cambridge Systematics, Inc.
Jessica Josselyn, Kittelson & Associates, Inc.
John Zegeer, PE, Kittelson & Associates, Inc.

The following is a summary of the RTTAC Modeling Subcommittee meeting held on March 18, 2009. Meeting presentations should be provided separately via email and ftp.

MEETING TIME AND LOCATION

Florida Department of Transportation, District IV
Administrative Conference Room, First Floor
Fort Lauderdale, Florida

MEETING ATTENDEES (alphabetical order by agency/firm)

1. Ashutosh Kumar (by phone), AECOM, Ashutosh.kumar@aecom.com
2. David Schmitt (by phone), AECOM, david.schmitt@aecom.com
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4. Lina Kulikowski, Broward County MPO, lkulikowski@broward.org
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25. Andrew Velasquez, URS/FDOT Turnpike, andrew.velasquez@dot.state.fl.us

MEETING NOTES

Below is a summary of the key points discussed at the meeting. The comments have been organized by agenda topic.

I. Call to Order and Introductions

Wilson Fernandez called the meeting to order at 1:50 pm and everyone introduced themselves. Wilson said we must get through all agenda items today. First, we will be going through the Needs Plan status report and summary. We must assess where we are with modeling work and to see how it fits into the respective schedule and then determine key milestones and dates.

II. Update on SERPM Needs Plan Network Coding

Coding for the Miami-Dade and Broward County highway and transit networks has been completed. For Palm Beach County, highway and transit maps have been provided. Palm Beach transit coding is complete. There are a few Palm Beach County highway grade-separated projects that remain to be coded.

The following coding assumptions have been made:

- 1) I-75 BRT uses Managed Lanes (not reversible lanes) from Gratigny Parkway to Sawgrass Mills. Park-n-ride (PNR) connections are via "transit only" links.
- 2) SR 836 and SR 112 – conversion made from open-road tolling to Managed Lanes with variable tolling based on congestion levels (verification is needed on all vs. some lanes).
- 3) The FEC Corridor has been coded to have 7.5-minute peak hour headways from the Miami-Dade County Government Center to the Pompano Beach cross-over.
- 4) South of 71st Street in Miami-Dade County, there is additional service on the CSX tracks with 7.5-minute headways.
- 5) PNR – service miles assumed to be five miles at end stations and less at other stations.
- 6) The I-95 Managed Lanes in Palm Beach County had been terminated at Linton Boulevard in Delray Beach. In the Palm Beach County Needs Plan, the Managed Lanes now extend to Indiantown Road.
- 7) SR 710 Rail – SFRTA believes this will only be for "intercity" rail passenger service along with some possible bus service.

Coding will be completed by The Corradino Group this Thursday, March 19th. The three counties are requested to consider the transit coding mode that is used for premium transit routes (BRT, LRT, and commuter rail) between March 19th and March 26th. (Speed and service characteristics would be different between BRT and LRT. BRT in mixed-flow will have speeds that are comparable to express bus service.) Between March 19th and March 26th, the three counties will review the network coding and provide review comments to Srin and Rob Schiffer. The final Needs Plan network will be completed by The Corradino Group by April 3rd. At that time, The Corradino Group will run the Needs Plan model.

III. Summary of Needs Plan Consistency Review

Rob presented on a consistency review that was conducted for the three county Needs Plan listings. There were 14 potential inconsistencies identified including projects where only clarification was needed. Additional clarifications were sought and resolved via both the February 27th meeting and followup telephone calls. The later map identified additional regional corridors, mostly hubs (airports, ports, etc.) and other modes (freight rail, waterways, etc.). These new regional corridors, connectors, and hubs should not create any new inconsistencies. If any are found, they will be identified and provided to The Corradino Group by March 26th.

IV. MPO Plans/Schedules for Needs Alternatives Testing

Broward County will take the final Needs Assessment from The Corradino Group on April 3rd and conduct the testing of alternate Needs configurations to develop a Cost-Feasible Plan in 3 to 6 weeks thereafter. When the Miami-Dade County TIP is approved at the end of May, the E+C network will be modified (June). The Needs Plan projects will be evaluated by the Steering Committee in Miami-Dade County on April 20th and 21st. In Palm Beach County, many of the Needs projects will be removed to create the 2035 Cost-Feasible Plan. The first review of the Palm Beach County Cost-Feasible Plan will be presented on April 1st. Cost-Feasible projects on regional corridors will be identified and evaluated by the regional consultant beginning in the first week of July.

V. Outstanding Needs Plan Coding Issues

There are no outstanding coding issues. There was a general satisfaction expressed with timeliness and coordination on everyone's part.

VI. Other Business

We are on schedule for the development of a regional Cost-Feasible Plan. The SERPM E+C network will be updated in June/July to reflect new TIPS and economic stimulus projects. Updating the E+C network will be mainly for the benefit of future model users and should have a negligible impact on LRTP modeling efforts.

VII. Schedule/Next Meeting

The next meeting of this subcommittee will occur on Tuesday, June 23rd at 1:30 pm. We can identify revisions to the E+C network at that time. Other topics will include a final look at the Needs Plans, discussions of the Cost Feasible Plans, and regional measures of effectiveness.

June 23, 2009 Meeting Minutes

Regional Transportation Technical Advisory Committee (RTTAC)
Modeling Subcommittee

Date: June 23, 2009 Project #: 8055.002
To: Wilson Fernandez, RTTAC Modeling Subcommittee Chair
From: Rob Schiffer, Cambridge Systematics, Inc.
Jessica Josselyn, Kittelson & Associates, Inc.

The following is a summary of the RTTAC Modeling Subcommittee meeting held on June 23, 2009.

MEETING TIME AND LOCATION

Florida Department of Transportation, District IV
Executive Conference Room, Third Floor
Fort Lauderdale, Florida

MEETING ATTENDEES (alphabetical order by agency/firm)

1. Ashutosh Kumar, AECOM, Ashutosh.kumar@aecom.com
2. David Schmitt, AECOM, david.schmitt@aecom.com
3. Ed Sirianni, Broward MPO, esirianni@broward.org
4. Lina Kulikowski, Broward MPO, lkulikowski@broward.org
5. Ossama Al Aschkar, Broward MPO, oolaschkar@broward.org
6. Rob Schiffer, Cambridge Systematics, Inc., rschiffer@camsys.com
7. Dan Glickman, Citizen, danglick@hotmail.com
8. Shi-Chang Li, FDOT D4, shi-chiang.li@dot.state.fl.us
9. Derek Miura, FDOT D4, derek.miura@dot.state.fl.us
10. Sung Ryong Han, FDOT D6 (BCC Engineering), shan@bcceng.com
11. Andrew Velasquez, FDOT Turnpike, andrew.velasquez@dot.state.fl.us
12. Franco Saraceno, Gannett Fleming, fsarasceno@gfnet.com
13. Myung Sung, Gannett Fleming, mhsung@gfnet.com
14. Jessica Josselyn, Kittelson & Associates, Inc., jjosselyn@kittelson.com
15. Arturo Perez, Leftwich Consulting Engineers (by phone), ajp@lce-fl.com
16. Larry Foutz, Miami-Dade MPO, lfoutz@miamidade.gov
17. Wilson Fernandez, Miami-Dade MPO, Wilson@miamidade.gov
18. Carlos Roa, Miami-Dade MPO, rcf@miamidade.gov
19. Nellie Fernandez, Palm Beach MPO, nfernand@pbcgov.org
20. Paul Larsen, Palm Beach MPO, plarsen@pbcgov.com
21. Vinod Sandanasomy, Palm Beach MPO, vsandanasomy@pbcgov.org
22. Steve Anderson, South Florida RTA, andersons@sfrta.fl.gov
23. Joe Quinty, South Florida RTA (by phone), quintyj@sfrta.fl.gov
24. Ken Kaltenbach, The Corradino Group, kkaltenbach@corradino.com

25. Sandeep Obulareddy, The Corradino Group, sobulareddy@corradino.com
26. Srin Varanasi, The Corradino Group, svaranasi@corradino.com

MEETING NOTES

Below is a summary of the key points discussed at the meeting. The comments have been organized by agenda topic.

I. Call to Order and Introductions

Wilson Fernandez called the meeting to order at 1:30 pm and everyone introduced themselves. Wilson gave a brief overview of the agenda and key items to get through. Paul Larsen was recognized for his years of service to the Palm Beach MPO, Southeast Florida/RTTAC, and the Florida Model Task Force. With Paul's retirement, Nellie and Vinod will handle his duties for the remainder of this LRTP cycle.

II. Update on Recent MPO LRTP Modeling Activities

- a. Broward – needs assessment nearly complete... a few cities still have some projects they wish to see added to the Needs Plan; went with mode neutral technologies (modeled as BRT); anticipate sending out a spreadsheet summary of 2035 Needs Plan in late July; minor coding issues but need to run final network
- b. Miami-Dade – needs plan was done by scratch through public workshops; TIP was downsized due to funding issues and dropped projects were added to the Needs Plan; MDX, Turnpike, and MDTA have all had funding issues to contend with but 2035 Needs Plan is finished. No problem getting out spreadsheet to us
- c. Palm Beach – CFP is underway... 3 alternatives; SE data change was made because of BEBR change and a sector plan not being approved; minor network changes recently made to CFP network to account for coding errors; summary of coding errors and SE data changes will be sent out in July

III. E+C Network Update Reflecting TIP Adoptions

Each MPO and the Turnpike must provide listings of newly adopted TIP changes and the impacts these may have on the E+C network. July 20th was set as a deadline for getting out E+C network changes to Li, Srin, Jessica, Wilson, and Rob.

IV. SE FL RTP Needs Assessment Report

Rob mentioned this report, provided to all when transmitting today's meeting agenda. Comments are not required but are welcomed from RTTAC members. Following the meeting, comments were provided by Joe Quinty regarding Tri-Rail ridership forecasts. A teleconference with SFRTA, FDOT D4, Corradino, and Cambridge Systematics is being discussed.

V. Modeling Metrics for use in Prioritization

Rob went over a range of potential measures and would like to see an exchange on what each MPO has been using. There was general agreement to share on what's been used by each MPO in terms of model metrics, performance measures, and evaluation criteria. Regional measures should be selected that aren't overwhelming or contradictory. The regional transportation plan

should use metrics that are reasonably common to what the MPOs are already doing... don't reinvent the wheel and create additional work in terms of assessments.

VI. Cost Feasible Plan Coordination

Jessica noted that deadlines are needed such that regional prioritization work can proceed on time. August 20th was suggested for providing a conceptual cost feasible project list. Once draft CFPs in place, the RTP CFP can begin. Jessica will send out a list of what she needs to the group. Draft CFP will be coded for prioritization purposes in August/September/October. Final SERPM network coding would likely wait until after adoption (November/December). Deadline for RTP CFP is January 2010.

VII. Ongoing SERPM 6.x Enhancements

October version of SERPM (v. 6.5) will be used for all LRTP modeling.

VIII. Socioeconomic Forecasts wrt BEBR Adjustments

Palm Beach County has made changes 2035 socioeconomic forecasts as discussed earlier. Broward County does not intend to change their SE forecasts and no changes in Miami-Dade County are planned either. Any socioeconomic changes should be documented NLT July 20th.

IX. Other Business

Wilson wanted the group to discuss how we should deal with ongoing PD&E projects in relation to SERPM versions, network assumptions, SE data forecasts, etc. Li responded that such decisions should be based on timing of project deliverables as adopted 2030 model should be used until 2035 LRTP/model is adopted. Wilson added that all should be sensitive to fundamental change in going from 2030 to 2035. Utilization and transition of model

X. Schedule/Next Meeting

The next meeting of this subcommittee will occur either on Thursday, September 10th or Tuesday, September 22nd at 1:30 pm. All attendees will be notified in advance as to which date is selected for the meeting.

September 22, 2009 Meeting Minutes

Regional Transportation Technical Advisory Committee (RTTAC)
Modeling Subcommittee

Date: September 22, 2009 Project #: 8055.002
To: Wilson Fernandez, RTTAC Modeling Subcommittee Chair
From: Rob Schiffer, Cambridge Systematics, Inc.
Jessica Josselyn, Kittelson & Associates, Inc.
John Zegeer, PE, Kittelson & Associates, Inc.

The following is a summary of the RTTAC Modeling Subcommittee meeting held on September 22, 2009. Meeting presentations should be provided separately via email and ftp.

MEETING TIME AND LOCATION

1:30 pm
Florida Department of Transportation, District IV
Administrative Conference Room, First Floor
Fort Lauderdale, Florida

MEETING ATTENDEES (alphabetical order by agency/firm)

1. Ashutosh Kumar (by phone), AECOM, Ashutosh.kumar@aecom.com
2. David Schmitt (by phone), AECOM, david.schmitt@aecom.com
3. Ed Sirianni, Broward MPO, esirianni@broward.org
4. Lina Kulikowski, Broward MPO, lkulikowski@broward.org
5. Ossama Al Aschkar, Broward MPO, alalaskar@broward.org
6. Rob Schiffer, Cambridge Systematics, Inc., rschiffer@camsys.com
7. Dan Glickman, Citizen, danglick@hotmail.com
8. Derek Miura, FDOT D4, @dot.state.fl.us
9. Shi-Chang Li, FDOT D4, shi-chiang.li@dot.state.fl.us
10. Carlton Card, FDOT D6, carlton.card@dot.state.fl.us
11. Franco Saraceno (by phone), Gannett Fleming, fsaraceno@gfnet.com
12. Jessica Josselyn, Kittelson & Associates, Inc., jjosselyn@kittelson.com
13. Arturo Perez (by phone), Leftwich Consulting Engineers, ajp@lce-fl.com
14. Larry Foutz, Miami-Dade MPO, lfoutz@miamidade.gov
15. Wilson Fernandez, Miami-Dade MPO, Wilson@miamidade.gov
16. Nellie Fernandez, Palm Beach MPO, nfernand@pbcbgov.org
17. Vinod Sandanasomy, Palm Beach MPO, vsandanasomy@pbcbgov.org
18. Steve Anderson, South Florida RTA, andersons@sfrta.fl.gov
19. Sandeep Obulareddy, The Corradino Group, sobulareddy@corradino.com
20. Srin Varanasi, The Corradino Group, svaranasi@corradino.com
21. Andrew Velasquez, URS/FDOT Turnpike, andrew.velasquez@dot.state.fl.us

MEETING NOTES

Below is a summary of the key points discussed at the meeting. The comments have been organized by agenda topic.

I. Call to Order and Introductions
Wilson Fernandez called the meeting to order at 1:35 pm and everyone introduced themselves. No preliminary discussions.

II. Status Report on E+C Update Reflecting TIP Adoptions
Srin made a presentation on the process to update the E+C network. Palm Beach and Broward still need final review. Wilson established a deadline of October 1st for receiving all remaining comments on the E+C network with a final version of network distributed by October 8th.

III. Status of Draft Cost Feasible Plan Coding
Srin made a presentation on the process to code the CFP network. Unfunded fixed guideways were removed for the Cost Feasible Plan but transit only links were left in the CFP network because these will not affect the results and can be used in the future for alternatives testing. Srin will review Miami-Dade MPO comments that were already submitted and update based on that. Several partially funded projects were coded in the network, but those errors have been flagged in comments from the Miami-Dade MPO. For clarification purposes, Arturo will send a new list for Palm Beach County with projects highlighted that should have been coded.

IV. Cost Feasible Consistency Review
The following projects were discussed as part of Rob's presentation on the consistency review:

- CS will provide a listing of unfunded Needs Plan projects not removed from CFP network coding.
- Turnpike 8-laning in Miami-Dade County is not cost feasible... 4 lanes per direction ends at northside ramps to the football stadium.
- I-95 at Broward/Miami-Dade County line is apparently ok.
- I-95 at Broward/Palm Beach County line is wrong on the Broward County side (Broward MPO made the wrong assumption that the managed lanes project was unfunded).
- Turnpike should show 6 lanes from Sawgrass Expressway to PB County line. Turnpike staff will review the E+C network and provide comments on this as well as the CFP net.
- Dixie Highway and Federal Highway might be flip-flopped at the Broward/Palm Beach County line (Dixie should be 4 lanes and US 1 is 6 lanes).
- Tri-Rail should not have a new station at Glades Road and headways should be 20/30/60.
- Griffin Road should be "as is" at 6 lanes east of Flamingo Road.
- SR A1A lane drop at Broward/Miami-Dade County line is correct and reflects today.
- SW 10th Avenue should be 6-lane divided arterial in CFP (uninterrupted coding is wrong).
- It appears that the same situation exists on Flamingo Road, except with 6 lanes in Miami.
- Hillsboro Blvd extension coding is actually correct, as strange as it looks.
- Dolphin Expressway SW Extension –remove project.
- Dolphin Expressway Managed Lanes –remove west of SR 826.

- HEFT laneage reductions needed north of Kendall Drive.
- I-75 Express Lanes –not cost feasible but discussed whether or not to keep for future use.
- Tamiami Trail/SW 8th Street/87th Ave –remove interchange and reconnect crossroads.
- CS will provide listing of E+C revisions that should also be made to the CFP.

Lina will forward the Broward Cost Feasible Plan transit projects listing to Rob for review.

V. Comments on Draft Cost Feasible Plan Coding

Gannett Fleming provided their comments in advance of the meeting. The North Corridor was discussed, as well as interlining future Miami-Dade BRT (since MetroRail extension will not be funded) with BRT proposed in Broward County. A few additional comments from Broward and Palm Beach MPO consultants were discussed. Each consultant will submit their own list of comments. Wilson requested that remaining CFP comments be provided by the end of this week (9/25). Revised CFP networks will be provided to the consultants on October 1st.

VI. Remaining Work Efforts/Schedule

Final network cleanup, development of regional plan, regional performance statistics, and ongoing network maintenance will be the topics for our final meeting. Regional plan is scheduled for adoption in January, including interim years. Wilson questioned whether or not interim year networks were needed in this post-air quality maintenance era. Jess needs GIS shape files for MPO Needs Plan and eventually the Cost Feasible Plan as well (after adoption).

VII. Other Business

none.

VIII. Schedule/Next Meeting

Final meeting was tentatively scheduled for December 3rd at 9am. See item VI for meeting topics.