To	Jason Learned – FDOT, District 5
CC	Team CFRPM 6.0 / Interstate Access Plan Team Members
Subject	Daily and TOD Model Modifications Made to Date
From	Tim Palermo, AECOM
Date	July 8, 2016

This memorandum documents the modifications made to the CFRPM 6.0 daily and TOD models to date. The "beta" models were received from HNTB on June 30, 2016. Upon completion of the changes documented below, the models were returned to HNTB to so that they may complete inclusion of the sub-area analysis GUI scipts and application.

CFRPM Model Daily Model Updates (07-07-2016)

1.Trip generation(3)→CFRPM Standard Genvar2(3)→Matrix(5,"Calculate SADEN and Determine Area Type"), the output Lookup table has 0's in the lookup ID column. Update the corresponding script GVMAT00M.S, which generates the scripts.

```
IF(O_TAZ>0)
  WRITE RECO=1
ENDIF
```

2. Daily Model (8)→Distribution(1)→Matrix (2 "Create Transit .MAS")
Change the input directory of "Mod17lyx.syn" to {SCENARIO_DIR}\mod17lyx.syn

3. Daily Model (Order 8)→Distribution (Order 1)→MATMAN (Order 13)→Matrix(Step 2).
Need to update the directory of the three input lookup files into:
{SCENARIO_DIR}\TRUCK1.TXT
{SCENARIO_DIR}\TRUCK2.TXT
{SCENARIO_DIR}\EXTHOV.TXT

4. Daily Model (8)→Distribution (1)→MATMAN(13)-Pilot(10 "Run TPPMS Preliminary Mode Choice"). The Mode Choice model could not run correctly. Solution: update the existing Pilot program (9, "Prepare TPPMS CTL") to prepare the Batch file to call the TPPMS.EXE file befor the Pilot program.

```
PRINT LIST="CD\" PRINTO=10
PRINT LIST="{CATALOG_DIR}\progs\TPPMS.EXE {CATALOG_DIR}\cube\Hbw_TEM.ctl"
PRINTO=10
PRINT LIST="{CATALOG_DIR}\progs\TPPMS.EXE {CATALOG_DIR}\cube\Hbo_TEM.ctl"
PRINTO=10
PRINT LIST="{CATALOG_DIR}\progs\TPPMS.EXE {CATALOG_DIR}\cube\Nhb_TEM.ctl"
PRINTO=10
```

In Pilot program (MAPIL00D.s) update the script to run the TPPMS.exe program

```
;*{CATALOG_DIR}\progs\TPPMS.EXE {CATALOG_DIR}\cube\hbw_TEM.ctl
;*{CATALOG_DIR}\progs\TPPMS.EXE {CATALOG_DIR}\cube\hbo_TEM.ctl
;*{CATALOG_DIR}\progs\TPPMS.EXE {CATALOG_DIR}\cube\nhb_TEM.ctl
*"{CATALOG_DIR}\cube\TripPurpose_TEM.BAT 2>&1"
```

The same solution for the Daily Model (8)→ModelChoice(3)→ Pilot (6 “Execute TPPMS Mode Choice”). Add a Matrix program to create the Bat file to call the TPPMS.exe file correctly before the Pilot program.

```
RUN PGM=MATRIX PRNFILE="C:\PROJECTS\CFRPMV60\CUBE\MCMAT00D.PRN"
FILEO PRINTO[6] = "{CATALOG_DIR}\cube\nhb_OP.BAT"
FILEO PRINTO[5] = "{CATALOG_DIR}\cube\nhb_pk.BAT"
FILEO PRINTO[4] = "{CATALOG_DIR}\cube\hbo_op.BAT"
FILEO PRINTO[3] = "{CATALOG_DIR}\cube\hbo_pk.BAT"
FILEO PRINTO[2] = "{CATALOG_DIR}\cube\hbw_op.BAT"
FILEO PRINTO[1] = "{CATALOG_DIR}\cube\Hbw_pk.BAT"

Zones=1
PRINT LIST="CD\" PRINTO=1
PRINT LIST="{CATALOG_DIR}\progs\TPPMS.EXE {CATALOG_DIR}\cube\hbw_pk.ctl"
PRINTO=1
PRINT LIST="CD\" PRINTO=2
PRINT LIST="{CATALOG_DIR}\progs\TPPMS.EXE {CATALOG_DIR}\cube\hbw_op.ctl"
PRINTO=2
PRINT LIST="CD\" PRINTO=3
PRINT LIST="{CATALOG_DIR}\progs\TPPMS.EXE {CATALOG_DIR}\cube\hbo_pk.ctl"
PRINTO=3
PRINT LIST="CD\" PRINTO=4
PRINT LIST="{CATALOG_DIR}\progs\TPPMS.EXE {CATALOG_DIR}\cube\hbo_op.ctl"
PRINTO=4
PRINT LIST="CD\" PRINTO=5
PRINT LIST="{CATALOG_DIR}\progs\TPPMS.EXE {CATALOG_DIR}\cube\Nhb_pk.ctl"
PRINTO=5
PRINT LIST="CD\" PRINTO=6
PRINT LIST="{CATALOG_DIR}\progs\TPPMS.EXE {CATALOG_DIR}\cube\Nhb_op.ctl"
PRINTO=6

ENDRUN
```

In the mean time, update the Pilot program (MCPIL00E.S) to call the TPPMS.exe

if(purppd=1)
***"{CATALOG_DIR}\Cube\hbw_pk.BAT 2>&1"**
endif
if(purppd=2)
***"{CATALOG_DIR}\Cube\hbw_op.BAT 2>&1"**
endif
if(purppd=3)
***"{CATALOG_DIR}\Cube\hbo_pk.BAT 2>&1"**
endif
if(purppd=4)
***"{CATALOG_DIR}\Cube\hbo_op.BAT 2>&1"**
endif
if(purppd=5)
***"{CATALOG_DIR}\Cube\NHB_pk.BAT 2>&1"**
endif
if(purppd=6)
***"{CATALOG_DIR}\Cube\NHB_op.BAT 2>&1"**
Endif

***COPY {CATALOG_DIR}\CUBE\HBW_PK.PRN {SCENARIO_DIR}\output\HBW_PK.PRN**
***COPY {CATALOG_DIR}\CUBE\HBW_OP.PRN {SCENARIO_DIR}\output\HBW_OP.PRN**
***COPY {CATALOG_DIR}\CUBE\HBO_PK.PRN {SCENARIO_DIR}\output\HBO_PK.PRN**
***COPY {CATALOG_DIR}\CUBE\HBO_OP.PRN {SCENARIO_DIR}\output\HBO_OP.PRN**
***COPY {CATALOG_DIR}\CUBE\NHB_PK.PRN {SCENARIO_DIR}\output\NHB_PK.PRN**
***COPY {CATALOG_DIR}\CUBE\NHB_OP.PRN {SCENARIO_DIR}\output\NHB_OP.PRN**

5. Daily Model (8)→Transit(2)->>TNETPREP(2)->>Matrix (8, “Creat Peak/Off-peak transit line files”)
Update the path of the Lookup file “TransitSpeed.DBF” to {SCENARIO_DIR}\TransitSpeed.DBF
6. Daily Model (8)→Transit (2)->>TNETPREP(Order 2)->>PT (12 ,”Build peak access connectors”)
Update the path of the “System.PTS” to {Scenario_DIR}\SYSTEM.PTS
7.Daily Model (8)→Transit (Order 2)
Change all the path of “System.PTS” to {Scenario_DIR}\SYSTEM.PTS
8.Daily Model (8)→Transit (Order 2))
In all PT modules (4, 5,7,9, 10, 12), update the path of “Tfares.far” to {SCENARIO_DIR}\Tfares.far
9.DailyModel (8)→Transit (Order 2))→ PT (5),
Update the path of “AllWalk.FAC” to {SCENARIO_DIR}\ALLWALK.FAC
10.DailyModel (8)→>Mode Choice (3)→ Matrix 2
Update the Matrix Script “FILLMW MW[1]=MI.1.1,2,3” to “FILLMW MW[1]=MI.2.1,2,3”
11. DailyModel (8)→Mode Choice(3)→Pilot (9 Run Special Purpose Mode Choice Models)
Add the “*COPY {CATALOG_DIR}\cube\transit.mas {CATALOG_DIR}\progs\TRANSIT.MAS” in the MCPIL00B.S to run the “Modeorla.exe correctly”

12. DailyModel(8)→Distribution(1)→Matrix(2 “Create Transit.MAS file”) Start from line 94 to line 106 updated the script to:

print list='CONSTANTS-Area1 ',('{SCENARIO_DIR}\mod17lyx.syn'),printo=1
print list='CONSTANTS-Area2 ',('{SCENARIO_DIR}\mod17vol.syn'),printo=1
print list='CONSTANTS-Area3 ',('{SCENARIO_DIR}\mod17spc.syn'),printo=1
print list='CONSTANTS-Area4 ',('{SCENARIO_DIR}\mod17sun.syn'),printo=1
print list='CONSTANTS-Area5 ',('{SCENARIO_DIR}\mod17lak.syn'),printo=1
print list='CONSTANTS-MCO ',('{SCENARIO_DIR}\mod17mco.syn'),printo=1
print list='CONSTANTS-OCC ',('{SCENARIO_DIR}\mod17occ.syn'),printo=1
print list='CONSTANTS-UNI ',('{SCENARIO_DIR}\mod17uni.syn'),printo=1
print list='CONSTANTS-SEW ',('{SCENARIO_DIR}\mod17sew.syn'),printo=1
print list='CONSTANTS-DIS ',('{SCENARIO_DIR}\mod17dis.syn'),printo=1
print list='CONSTANTS-IDR ',('{SCENARIO_DIR}\mod17idr.syn'),printo=1
print list='CONSTANTS-KSC ',('{SCENARIO_DIR}\mod17ksc.syn'),printo=1
print list='CONSTANTS-PTC ',('{SCENARIO_DIR}\mod17ptc.syn'),printo=1

12. Daily Model (8)→Higway Assignment (5)→Matrix(6 “System Links Combine Two-Way Links”).
The followig lines should be commented out since “MPO” and “District” do not exist in the input DBF file: Line 25, 26, 53, 54, 76, 77, 97,98,123,124,151,152,174,175,194,195
13. Daily Model (8)→Higway Assignment (5)→Matrix(7 Directional Links).
The followig lines should be commented out since “MPO” and “District” do not exist in the input DBF file: Line 22, 23
14. Daily Model (8)→Distribution (9)→Subarea Network (19)→Network (1, “Extract original/NonSANet W Centroid Net”)
Update the printfile from “SDNET00A.S” to “SDNET00A.Prn”. The original name causes the script overwritten by the print out file.
15.Highway Network→Matrix(2, Calculate Dynamic Area Type)
Update the inpute file of Zonal Data 5 from “{CATALOG_DIR}\GIS\CFRPM5_TAZ.dbf” to “CATALOG_DIR}\GIS\CFRPM6_TAZ.dbf”
Update the corresponding script of HNMAT00A.s
FILEI ZDATI[1] = "{CATALOG_DIR}\GIS\CFRPM6_TAZ.dbf",
Z=CFRPM6_TAZ

16. Daily Model→Distribution→Subarea Network

Update all the references for input files and output files in Programs (1-5 & 7-10) of this group with {SCENARIO_DIR}, {YEAR}, {ALT}.

17. Daily Model→Distribution→Matrix (25)
Update all the references for input files and output with {SCENARIO_DIR}, {YEAR}, {ALT}.

17. Daily Model→Distribution→Matrix (28, Aggregate the subarea trip tables for assignment)
Update all the references for input files and output with {SCENARIO_DIR}, {YEAR}, {ALT}.

18. Daily Model→Mode Choice→Matrix (2)
Update all the references for MATI[2] input files with {SCENARIO_DIR}, {YEAR}, {ALT}.

19. Update all the input Zdata1_{YEAR}{ALT}.dbf files, by including the fields of "MPO" and "TAZ_REG". Without those two fields, the running error will rise at Daily Model→Distribution→Subarea Network-->Network(Order 5, Create 1st pass Temporary subarea network).

20.Daily→Highway Assignment→Matrix(19) "Divided by zero error" Need to make the following updates on the corresponding lines in the script of(HSMAT00W.s):
Add if judgement loop for the equations to calculate _S3 and _S4 to make sure that there are no Zeros in the divisors

CFRPM TOD Model Updates (07-07-2016)

1.Highway Network→Matrix(3, Calculate Dynamic Area Type)
Update the inpute file of Zonal Data 5 from "{CATALOG_DIR}\GIS\CFRPM5_TAZ.dbf" to "CATALOG_DIR}\GIS\CFRPM6_TAZ.dbf"
Update the corresponding script of HNMAT00A.s
FILEI ZDATI[1] = "{CATALOG_DIR}\GIS\CFRPM6_TAZ.dbf",
Z=CFRPM6_TAZ

2.Time of Day→Distribution→CBDEX→Matrix(2, Determine CBD & Exurban Zone)
Update the inpute file of Zonal Data 5 from "{CATALOG_DIR}\GIS\CFRPM5_TAZ.dbf" to "CATALOG_DIR}\GIS\CFRPM6_TAZ.dbf"
Update the corresponding Script of the CBMAT00A.S:
FILEI ZDATI[5] = "{CATALOG_DIR}\GIS\CFRPM6_TAZ.dbf",
Z=CFRPM6_TAZ

POPJ=zi.4.SFPOP[J] + zi.4.MFPOP[J] + zi.4.HMPOP[J] **;**Population No this records in CFRPM 6 TAZ Change the script to Refer to ZDATA1
EMPJ=zi.1.TOTEMP[J] ;Employment No this field in CFRPM 6 TAZ, Change the script to refer to ZDATA2

3.Time of Day→Highway Assignment→CBDEX→Matrix(19) "Divided by zero error" Need to make the following updates on the corresponding lines in the script:
Line 329
if((_area11+_area12+_area13+_area14+_area15+_area16+_area17+_area18+_area19)>0)
_s3=(_congspeed11+_congspeed12+_congspeed13+_congspeed14+_congspeed15+_congspeed16+_congspeed17+_congspeed18+_congspeed19)/(_area11+_area12+_area13+_area14+_area15+_area16+_area17+_area18+_area19)
Line 330
if((_area11+_area12+_area13+_area14+_area15+_area16+_area17+_area18+_area19)>0)
_s4=(_freespeed11+_freespeed12+_freespeed13+_freespeed14+_freespeed15+_freespeed16+_freespeed17+_freespeed18+_freespeed19)/(_area11+_area12+_area13+_area14+_area15+_area16+_area17+_area18+_area19)
Line 425
if((_area21+_area22+_area23+_area24+_area25+_area26+_area27+_area28+_area29)>0)
_s3=(_congspeed21+_congspeed22+_congspeed23+_congspeed24+_congspeed25+_congspeed26+_congspeed27+_congspeed28+_congspeed29)/(_area21+_area22+_area23+_area24+_area25+_area26+_area27+_area28+_area29)
Line 426
if((_area21+_area22+_area23+_area24+_area25+_area26+_area27+_area28+_area29)>0)
_s4=(_freespeed21+_freespeed22+_freespeed23+_freespeed24+_freespeed25+_freespeed26+_freespeed27+_freespeed28+_freespeed29)/(_area21+_area22+_area23+_area24+_area25+_area26+_area27+_area28+_area29)
Line 523
if((_area31+_area32+_area33+_area34+_area35+_area36+_area37+_area38+_area39)>0)
_s3=(_congspeed31+_congspeed32+_congspeed33+_congspeed34+_congspeed35+_congspe

ed36+_congspeed37+_congspeed38+_congspeed39)/(_area31+_area32+_area33+_area34+_area35+_area36+_area37+_area38+_area39)

Line 524

if((_area31+_area32+_area33+_area34+_area35+_area36+_area37+_area38+_area39)>0)
_s4=(_freespeed31+_freespeed32+_freespeed33+_freespeed34+_freespeed35+_freespeed36+_freespeed37+_freespeed38+_freespeed39)/(_area31+_area32+_area33+_area34+_area35+_area36+_area37+_area38+_area39)

Line 620:

if((_area41+_area42+_area43+_area44+_area45+_area46+_area47+_area48+_area49)>0)
_s3=(_congspeed41+_congspeed42+_congspeed43+_congspeed44+_congspeed45+_congspeed46+_congspeed47+_congspeed48+_congspeed49)/(_area41+_area42+_area43+_area44+_area45+_area46+_area47+_area48+_area49)

Line 621:

if((_area41+_area42+_area43+_area44+_area45+_area46+_area47+_area48+_area49)>0)
_s4=(_freespeed41+_freespeed42+_freespeed43+_freespeed44+_freespeed45+_freespeed46+_freespeed47+_freespeed48+_freespeed49)/(_area41+_area42+_area43+_area44+_area45+_area46+_area47+_area48+_area49)

Line 717:

if((_area51+_area52+_area53+_area54+_area55+_area56+_area57+_area58+_area59)>0)
_s3=(_congspeed51+_congspeed52+_congspeed53+_congspeed54+_congspeed55+_congspeed56+_congspeed57+_congspeed58+_congspeed59)/(_area51+_area52+_area53+_area54+_area55+_area56+_area57+_area58+_area59)

Line 718:

if((_area51+_area52+_area53+_area54+_area55+_area56+_area57+_area58+_area59)>0)
_s4=(_freespeed51+_freespeed52+_freespeed53+_freespeed54+_freespeed55+_freespeed56+_freespeed57+_freespeed58+_freespeed59)/(_area51+_area52+_area53+_area54+_area55+_area56+_area57+_area58+_area59)

Line 864:

if((_area61+_area62+_area63+_area64+_area65+_area66+_area67+_area68+_area69)>0)
_s3=(_congspeed61+_congspeed62+_congspeed63+_congspeed64+_congspeed65+_congspeed66+_congspeed67+_congspeed68+_congspeed69)/(_area61+_area62+_area63+_area64+_area65+_area66+_area67+_area68+_area69)

Line 865:

if((_area61+_area62+_area63+_area64+_area65+_area66+_area67+_area68+_area69)>0)
_s4=(_freespeed61+_freespeed62+_freespeed63+_freespeed64+_freespeed65+_freespeed66+_freespeed67+_freespeed68+_freespeed69)/(_area61+_area62+_area63+_area64+_area65+_area66+_area67+_area68+_area69)

4.Several files which are in output folder, are not generated by any programs, but are some input files for other programs (We may need to check with LCE on how to deal with those files)

OUTPUT\Temp\Tlthsc.txt
OUTPUT\Temp\Tlthls.txt
OUTPUT\Temp\Tlthmp.txt
OUTPUT\Temp\Tlthoc.txt
OUTPUT\Temp\Tlthrs.txt

4.1 The following two files should be generated by AUTOCON.EXE, however, AUTOCON.EXE in the model somehow does not work properly (TIME of DAY→Transit→TNETPREP→Pilot(17)).
OUTPUT\NTLEG2MD_{ALT}{YEAR}.NTL
OUTPUT\NTLEG2AM_{ALT}{YEAR}.NTL

The reason of the crash of AUTOCON.EXE is because the input *.lin file contain invalid keyword HEADWAY_R[]. The solution is change the key word to HEADWAY[].

5. Hard coded reference on the Transit lin
"**C:\Projects\CFRPM641.TOD\Base\BA_2010\INPUT\TROUTE_10A.LIN" in the path of Time of Day→Transit→TNETPREP(Step 2). Update the path to {SCENARIO_DIR}\Input\TROUTE_{YEAR}{ALT}.Lin**

6. Time of Day→Distribution→MATMAN(21)→MATRIX(15). Hard code error. Update all the input files and output files path with keys of {SCENARIO_DIR}, {ALT} and {YEAR})

7. Time of Day→Mode Choice→ MATRIX(12). Hard code error. Update all the input files and output files path with keys of {SCENARIO_DIR}, {ALT} and {YEAR})

8. Time of Day→Highway Assignment→ Time of Day Assignment (2). Hard code error. Update all the input files and output files path with keys of {SCENARIO_DIR}, {ALT} and {YEAR}) for Programs (1-9) in this Group.