SACSIM/05
Activity-Based Travel Forecasting Model for SACOG
Featuring ***DAYSIM***—the Person Day Activity and Travel Simulator

Technical Memo Number 10

DaySim05 Documentation

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Prepared for

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Prepared by

John L. Bowman, Ph. D.
Transportation Systems and Decision Sciences
5 Beals Street Apt. 3, Brookline, MA 02446 USA
+1-617-232-3478 John_L_Bowman@alum.mit.edu http://JBowman.net

MARK BRADLEY
BRADLEY RESEARCH & CONSULTING
524 Arroyo Ave., Santa Barbara, CA 93109, USA.
+1-805-564-3908 mark_bradley@cox.net

This memo contains the following sections:

- A summary of the structure of the DaySim05 simulation program
- Summaries of the DaySim05 input and output files
- Instructions for running the DaySim05 program.

This memo does not describe how the DaySim05 executable program is implemented inside the Cube/TP+ framework. That is the subject of a separate technical memo.

Summary of the DaySim05 Program Structure

DaySim05 is a custom program written in the Delphi 2005 Pascal language for the Windows 32 bit platform. (Note that he Delphi 2005 Environment can compile both Pascal and C code within the same executable.)

Figure 1 is a summary of the program logic and looping structure.

Figure 1—DaySim models (numbered) within the program looping structure

Begin
  {Read run controls, model coefficients, TAZ data, LOS matrices,
    population controls, and Parcel data into memory}
  {Draw a synthetic household sample if specified}
  {Pre-calculate destination sampling probabilities}
  {Pre-calculate (or read in) TAZ aggregate accessibility arrays}
  {Open other input and output files}
  {Main loop on households}
    {Loop on persons in HH}
      {Apply model **1.1 Work Location for workers**}
      {Apply model **1.2 School Location for students**}
      {Apply model **1.1 Work Location for students**}
    {End loop on persons in HH}
    {Apply model **1.3 Household Auto Availability** }
    {Loop on all persons within HH}
      {Apply model **2.1 Activity Pattern** (0/1+ tours and 0/1+ stops)
        and model **2.2 Exact Number of Tours** for 7 purposes}
      {Count total home-based tours and assign purposes}
      {Initialize tour and stop counters and time window for the person-day before looping on tours}
      {If there are tours, loop on home-based tours within person in tour priority sequence,
          with tour priority determined by purpose and person type}
        {Increment number of home-based tours simulated for tour purpose (including current)}
        {Apply model **3.1 Tour destination**}
        {If work tour, apply model **3.2 Number and purpose of work-based subtours**}
        {Loop on predicted work-based sub tours and insert then tour array after current tour}
        {Apply model **3.3 Tour mode**}
        {Apply model **3.4 Tour primary destination arrival and departure times**}
        {Loop on tour halves (before and after primary activity)}
          {Apply model **4.1Half tour stop frequency and purpose**}
          {Loop on trips within home-based half tour (in reverse temporal order for 1st tour half)}
            {Increment number of stops simulated for stop purpose (including current)}
            {Apply model **4.2 Intermediate stop location**}
            {Apply model **4.3 Trip mode**}
            {Apply model **4.4 Intermediate stop departure time**}
            {Update the remaining time window}
          {End loop on trips within half tour}
        {End loop on tour halves}
      {End loop on tours within person}
      {Write output records for person-day and all tours and trips}
    {End loop on persons within household}
  {End loop on Households}
  {Close files}
  {Create usual work location flow validation statistics}
End.

Summary of the DaySim05 Input and Output Files

File 1: Parcel data input file. (File for year 2000. PARCEL00.DBF, has 703,799 records.)

IMPORTANT: DaySim05 can read these variables in any order, but the variable names must remain the same as given below: All values from the file are read in as integers, with no decimal.

Label	Definition
PARCELID	Parcel ID number
X_COORD	Xcoordinate – state plane feet
Y_COORD	Y coordinate – state plane feet
AREA_SQF	Area – square feet
TAZ	TAZ number
HOUSESP	Housing units – parcel (x 100)
HOUSESQ	Housing units – quarter mile radius (x 100)
HOUSESH	Housing units – half mile radius (x 100)
STUDK12P	Students K-12- parcel (x 100)
STUDK12Q	Students K-12– quarter mile radius (x 100)
STUDK12H	Students K-12– half mile radius (x 100)
STUDUNIP	Students University– parcel (x 100)
STUDUNIQ	Students University – quart. mile radius (x 100)
STUDUNIH	Students University – half mile radius (x 100)
NODES1Q	1 link nodes– quarter mile radius
NODES1H	1 link nodes– half mile radius
NODES3Q	3 link nodes– quarter mile radius
NODES3H	3 link nodes– half mile radius
NODES4Q	4+ link nodes– quarter mile radius
NODES4H	4+ link nodes– half mile radius
DIST_LRT	Distance to nearest LRT stop (miles x 100 -1 if none)
DIST_BUS	Distance to nearest bus stop (miles x 100, -1 if none)
PARKDY_P	Daily paid parking spaces- parcel
PARKDY_Q	Daily paid parking spaces- quarter mile radius
PARKDY_H	Daily paid parking spaces- half mile radius
PPRICDYP	Avg price daily parking- parcel (cts)
PPRICDYQ	Avg.price daily parking- quarter mile (cts)
PPRICDYH	Avg.price daily parking- half mile (cts)
PARKHR_P	Hourly paid parking spaces- parcel
PARKHR_Q	Hourly paid parking spaces- quarter mile radius
PARKHR_H	Hourly paid parking spaces- half mile radius
PPRICHRP	Avg price hourly parking- parcel (cts)
PPRICHRQ	Avg.price hourly parking- quarter mile (cts)
PPRICHRH	Avg.price hourly parking- half mile (cts)
EMPEDU_P	Education jobs – parcel (x 100)
EMPFOODP	Food service jobs – parcel (x 100)
EMPGOV_P	Government jobs – parcel (x 100)
EMPOFC_P	Office jobs – parcel (x 100)
EMPOTH_P	Other jobs – parcel (x 100)
EMPRET_P	Retail jobs – parcel (x 100)
EMPSVC_P	Service jobs – parcel (x 100)
EMPMED_P	Medical jobs – parcel (x 100)

EMPIND_P	Industrial jobs – parcel (x 100)
EMPTOT_P	Total jobs – parcel (x 100)
EMPEDU_Q	Education jobs – quarter mile radius (x 100)
EMPFOODQ	Food service jobs – quarter mile radius (x 100)
EMPGOV_Q	Government jobs – quarter mile radius (x 100)
EMPOFC_Q	Office jobs – quarter mile radius (x 100)
EMPOTH_Q	Other jobs – quarter mile radius (x 100)
EMPRET_Q	Retail jobs – quarter mile radius (x 100)
EMPSVC_Q	Service jobs – quarter mile radius (x 100)
EMPMED_Q	Medical jobs – quarter mile radius (x 100)
EMPIND_Q	Industrial jobs – quarter mile radius (x 100)
EMPTOT_Q	Total jobs – quarter mile radius (x 100)
EMPEDU_H	Education jobs – half mile radius (x 100)
EMPFOODH	Food service jobs – half mile radius (x 100)
EMPGOV_H	Government jobs – half mile radius (x 100)
EMPOFC_H	Office jobs – half mile radius (x 100)
EMPOTH_H	Other jobs – half mile radius (x 100)
EMPRET_H	Retail jobs – half mile radius (x 100)
EMPSVC_H	Service jobs – half mile radius (x 100)
EMPMED_H	Medical jobs – half mile radius (x 100)
EMPIND_H	Industrial jobs – half mile radius (x 100)
EMPTOT_H	Total jobs – half mile radius (x 100)

File 2: Zonal data input file: (The file for 2000, ZONDAT00.DBF, has 1309 records).

IMPORTANT: DaySim05 can read these variables in any order, but the variable names must remain the same as given below: All values from the file are read in as integers, with no decimal.

Label	**Definition**
TAZ	Zone number
AUTACC	Auto access time (min x 100) *
AUTEGR	Auto egress time (min x 100) *
PRKCOST	Parking cost in zone (cents/hour) *
DAVIS	Davis dummy (0/1)
PEDENV	Pedestrian environment score *
PUMA	PUMA code for zone
RAD	RAD code for zone
XCORD	X coordinate of zone centroid (state plane ft)
YCORD	Y coordinate of zone centroid (state plane ft)
PKNRCOST	Park and ride lot cost in zone (cents)
SQFT_Z	Area of zone (square feet)

* not used in models

Level of service files

Currently, all level of service files are space delimited ASCII files with no header record. All values are integer values, with no decimal.

File 3: Walk skim file

Label	Definition
ORIG	Origin zone
DEST	Destination zone
WALKDIST	Walk distance (miles x 100)

Files 4 and 5: AM peak and PM peak highway skims

Label	Definition
ORIG	Origin zone
DEST	Destination zone
D1TIME	SOV time (minutes x 100)
D1DIST	SOV distance (miles x 100)
D1EXTT	SOV congested time 1 (minutes x 100)
D1EXTT2	SOV congested time 2 (minutes x 100)
D1TOLL	SOV toll (cents)
D2TIME	HOV+ time (minutes x 100)
D2DIST	HOV distance (miles x 100)
D2EXTT	HOV congested time 1 (minutes x 100)
D2EXTT2	HOV congested time 2 (minutes x 100)
D2TOLL	HOV toll (cents)

File 6 and 7: Midday and evening highway skims

Label	Definition
ORIG	Origin zone
DEST	Destination zone
D1TIME	SOV time (minutes x 100)
D1DIST	SOV distance (miles x 100)
D1EXTT	SOV congested time 1 (minutes x 100)
D1EXTT2	SOV congested time 2 (minutes x 100)
D1TOLL	SOV toll (cents)

Note: Only the peak periods have separate HOV skims. HOV 2 is set to equal SOV for the off-peak periods. HOV 3+ is set to equal HOV 2 for all periods.

Files 8-10: AM peak, midday and evening walk to transit skimw (only OD pairs with valid transit paths have records in the file)

Label	Definition
ORIG	Origin zone
DEST	Destination zone
XFNUMW	Number of transfers
XFTIMW	Transfer time (min. x 100)
FWTIMW	First wait time (min. x 100)
FAREW	Fare (cents)
TRDISW	In-vehicle distance (miles x 100) *
WATIMW	Walk time (min x 100) *
TRTIMW	In-vehicle time (min x 100)

* not used in models

The reverse directions of the AM peak paths are used for the PM peak. Walk time is not used in the models because we have parcel-specific walk distances to transit.

Files 11 and 12: Peak and off-peak drive to transit skims (only OD pairs with valid transit paths have records in the file)

Label	Definition
ORIG	Origin zone (Drive end)
DEST	Destination zone (Walk end)
PKTAZD	Park and ride lot zone number
XFTIMD	Transfer time (min x 100)
FWTIMD	First wait time (min x 100)
DRTIMD	Drive access time (min x 100)
FARED	Fare (cents)
DRDISD	Drive access distance (miles x 100)
TRDISD	In-vehicle distance (miles x 100) *
WATIMD	Walk egress time (min x 100) *
XFNUMD	Number of transfers
TRTIMD	In-vehicle time (min x 100)

* not used in models

The reverse directions of the AM peak paths are used for the PM peak, but the drive portion is assumed to be egress in the PM peak. Walk time is not used in the models because we have parcel-specific walk distances to transit.

File 13: CTPP Table 1-75 file:

The CTPP table is read from file a dBase IV-format file with 66 data fields for each of the 1309 SACOG zones:

- 1: The TAZ number
- 2-66: The number of households in the TAZ in 2000 for each of the 65 non-empty sampling cells. (Loop on HH size, then HH workers, then HH income)

File 14: PUMS data input file PUMSSRT, 95,684 records, sorted by PUMA and SCELL . All values are integer.

Variable	Definition	Minimum	Maximum	Mean
1. SERIALNO	PUMS household ID	290	9999952	5030100.77
2. PNUM	Person number within household	1	16	2.27
3. PUMA	PUMA code	800	1700	1398.33
4. SCELL	Sampling cell	1	80	50.16
5. PERSONS	# of persons in household	1	16	3.55
6. TENURE	Ownership status	0	4	1.83
7. BLDGSZ	Residence building size/type	0	10	2.83
8. P65	# of persons age 65+	0	6	.24
9. P18	# of persons age under 18	0	12	1.32
10. NPF	# of persons part of family	0	15	3.16
11. NOC	# of own children in the household	0	12	1.16
12. HINC	Household income ($)	-20000	838900	62698.89
13. VEHICL	# of vehicles owned by household	0	6	1.93
14. RELATE	Relationship to householder	1	23	3.77
15. SEX	Gender	1	2	1.51
16. AGE	Age	0	93	35.21
17. GRADE	Current education school type	0	7	1.28
18. HOURS	Hours worked per week	0	99	19.97
19. WORKER	Employed worker?	0	1	.44
20. STUDENT	Enrolled student?	0	1	.30
21. NWORKERS	# of employed workers in household	0	8	1.41
22. NSTUDENT	# of enrolled students in household	0	10	1.31
23. EXFAC	Expansion factor (assigned later)	1	1	1.00

File 15: Synthetic sample output file: This is the output file from the synthetic sample generator. The name of the file is given when the file is created by that program. The exact households in the file will change if the generator is run with a different random seed. The number of households in the file will change, and the EXFAC values will change, if the generator is run with a different expansion factor. The fields in the file are identical to those in the PUMSSRT input file, with the following exceptions:

Item 3: PUMA is replaced by HHTAZ – the residence TAZ number.

Item 4: SCELL is replaced by HHCEL – the residence parcel number.

Codes for the categorical variables are:

TENURE 0 'vacant or GQ' 1 'owned with mortgage' 2 'owned free and clear' 3 'rented with payment' 4 'rented free of charge'.

BLDGSZ 1 'mobile home' 2 'detached house' 3 'attached house' 4 '2 unit apartment bldg' 5 '3-4 unit apartment bldg' 6 '5-9 apartment bldg; 7 '10-19 apartment bldg' 8 '20-49 apartment bldg' 9 '50+ apartment bldg' 10 'boat, RV, van, etc'

RELATE 1 'householder' 2 'spouse' 3 'child' 4 'adopted' 5 'stepchild' 6 'sibling' 7 'parent' 8 'grandchild' 9 'parent in law' 10 'child in law' 11 'other relative' 12 'sibling in law' 13 nephew/niece' 14 'grandparent' 15 'aunt/uncle' 16 'cousin' 17 'boarder' 18 'housemate' 19 unmarried partner' 20 'foster child' 21 'other non-rel' 22 'inst GQ' 23 'non-inst GQ'

SEX 1 'male' 2 'female'/

GRADE 0 'not enrolled' 1 'nursery/preschool' 2 'kinderg.' 3 'grade1-4' 4 'grade5-8' 5 'grade 9-12' 6 'college undergrad' 7 'grad school'

We will add the variable PERSTYPE, which has the following codes:

PERSTYPE 1 'full time worker' 2 'part time worker' 3 'retired' 4 'other non-worker' 5 'university student' 6 'driving age child' 7 'child 5-15' 8 'child under 5'

Output Files

The person, tour and trip level output files contain all of the variables predicted by DaySim, plus enough ID variables to cross-reference each other and the input data files in order to append more information if necessary.

File 16: DaySim output file at person-day level. Name supplied by user There will be as many records as there are input records in the synthetic sample, unless households are sub-sampled within DaySim.

(File structure defined in PFILETEMPLATE.DBF)

Label	Definition
SAMPN	Household ID (same as input SAMPNO)
PERSN	Person sequence number within HH (same as input PNUM)
HHTAZ	Residence zone (same as input HZONE)
HHCEL	Residence parcel ID (same as input HPARCEL)
HHSIZE	# persons in the household (same as input PERSONS)
HHCARS	# vehicles in the household – predicted
UWTAZ	Usual work zone – predicted
UWCEL	Usual work parcel – predicted
USTAZ	Usual school zone – predicted
USCEL	Usual school parcel – predicted
NTOURS1	Number of work tours – predicted
NTOURS2	Number of school tours – predicted
NTOURS3	Number of escort tours – predicted
NTOURS4	Number of personal business tours – predicted
NTOURS5	Number of shopping tours – predicted
NTOURS6	Number of meal tours – predicted
NTOURS7	Number of social/recreation tours – predicted
NSTOPS1	Number of work stops – predicted
NSTOPS2	Number of school stops – predicted
NSTOPS3	Number of escort stops – predicted
NSTOPS4	Number of personal business stops – predicted
NSTOPS5	Number of shopping stops – predicted
NSTOPS6	Number of meal stops – predicted
NSTOPS7	Number of social/recreation stops – predicted
WBTOURS	Number of work-based subtours – predicted
EXPFAC	Expansion factor (same as EXFAC x subsample rate)
WORKER	Worker dummy variable
PERSTYPE	Person type code
HHINCOME	Household income ($)
HHWORKERS	Household # workers

PERSTYPE codes 1 = full time worker, 2 = part time worker, 3 = non-worker age 65+, 4 = other non-worker/non-student adult, 5 = university student, 6 = grade school student age 16+, 7 = child age 5-15, 8 = child age 0-4

File 17: DaySim output file at tour level: One output record per tour. Named by user.

(File structure defined in TFILETEMPLATE.DBF)

Label	Definition
SAMPN	Household ID (same as input SAMPNO)
PERSN	Person sequence number within HH (same as input PNUM)
TOURNO	Tour sequence number within person day
TOURPURP	Tour purpose (1 to 7)
PRNTTOUR	Work-based subtour "parent" work tour ID (0 for home-based)
PDTAZ	Tour primary destination zone – predicted
PDCEL	Tour primary destination parcel – predicted
TIMARRPD	Tour primary destination arrival time (HHMM) – predicted
TIMDEPPD	Tour primary destination departure time (HHMM) – predicted
MAINMODE	Tour main mode – predicted
TRIPSH1	Tour # of trips in first half tour – predicted
TRIPSH2	Tour # of trips in second half tour – predicted
SUBTOURS	Tour # of subtours – predicted
EXPFAC	Expansion factor (same as EXFAC x subsample rate)

File 18; DaySim output file at trip segment level: One output record per trip. Named by user.

(File structure defined in SFILETEMPLATE.DBF)

Label	Definition
SAMPN	Household ID (same as input SAMPNO)
PERSN	Person sequence number within HH (same as input PNUM)
TOURNO	Tour sequence number within person day
TOURHALF	Tour half (1=outbound, 2=return)
TRIPNO	Trip sequence number within half-tour
OTAZ	Trip origin zone – predicted
OCEL	Trip origin parcel – predicted
DTAZ	Trip destination zone – predicted
DCEL	Trip destination parcel – predicted
MODE	Trip mode – predicted
OPURP	Trip origin activity purpose (1-7 as above, or 8=home)
DPURP	Trip destination activity purpose (1-7 as above, or 8=home)
DEPTIME	Trip departure time – predicted (HHMM)
ARRTIME	Trip arrival time – predicted (HHMM)
TRAVTIME	Trip door-to-door travel time (min)
TRAVTIME	Trip travel distance (miles)
EXPFACT	Expansion factor (same as EXFAC x subsample rate)

TOURPURP, OPURP and DPURP codes 1 'work' 2 'school' 3 'escort' 4 'personal bus' 5 'shopping' 6 'meal' 7 'social/recreation' 8 'home'

MAINMODE and MODE codes 1 'drive-transit-walk' 2 'walk-transit-drive (NA to tours)' 3 'walk- transit-walk' 4 'school bus' 5 'shared ride 3+' 6 'shared ride 2' 7 'drive alone' 8 'bike' 9 'walk'

The Coefficient File

The coefficient file is a text file that can be edited by the user to change calibration parameters, etc. The rules for editing the file are listed below, as illustrated in the example for the escort tour mode choice model:

- Each new model is headed by the line beginning with 'MOD' and the model number. The model number is fixed and should not be changed.
- After the next END line, the coefficients for the model are read in until the coefficient number -1 is encountered.
- Each coefficient line has the following format:
    - The coefficient number
    - Text, which can take up to 13 columns following the coefficient number (this text is not used by the program, but is left in to identify the coefficients to the user).
    - The coefficient value.
    - Any number or text following the coefficient value are ignored.

This format is used because it allows ALOGIT F12 results files to be easily cut and paste into the document. The user may add any notation or change any text as long as the formatting rules above are maintained.

```
-1

MOD 11  Escort tour mode choice
escort tours/trips
Created by ALOGIT version 4                              8:49:55 on  8 Sep 05
END
   7  gentime   F   -.502636132834E-01   .859295510405E-02
  30  s3-const  F   -.629282751265       .744354067396
  31  s3-hhcu5  F    .914561417054       .158496547918
  32  s3-hh515  F    .469400739150       .663633902320E-01
  33  s3-hhdas  F   -.372189286652       .133592974523
  40  s2-const  F    .267161741959       .738326108546
  41 sr-nocars  F   -5.91396318749       1.72117862426
  73 wk-ageo50  F   -.702700257428       .731158280759
  76  wk-dintd  F    .200904651012E-01   .704090953980E-02
  81  wk-hhcu5  F    .986136967403       .365736474452
  82  wk-hh515  F    .437492616128       .189918080282
  83  wk-hhdas  F   -1.62564334857       .564280951324
  -1

MOD etc…
```

Running DaySim05

The program is run from the DOS-type command line, using the command

DAYSIM05.EXE [control file name] [param1=x] [param2=y] ….

The control file name is the name of a text file containing various switch and file name settings. If no control file name is given, the default name is DAYSIM.CTL, in the same directory as the executable.

The option parameters are the same control codes that are in the control file, and must be in the format CODE=argument, with no spaces, where CODE is the 6 letter control code as listed below, and argument is the text (filename or directory name) or integer value that is expected according to the code.

The following page shows example lines from a control file with all of the codes recognized by DaySim05. The default values for all of the controls are also shown.

All of the lines except for the italicized ones would be valid lines in a control file. The formatting rules for a control line are:

- A valid six letter code (can be any combination of upper and lower case)
- One or more spaces and/or equals signs
- The code argument – an integer or a file name or a directory name
- One or more spaces
- Any comment or blank (this is ignored by the program)

Only the RUNLAB argument with the run name can include spaces.

Prefixes: If a file name or directory name contains a question mark (?), this is replaced by the TP+ file name prefix. Currently, this is read as the first 4 characters in file TPPL.PRJ, but that can be changed by changing the appropriate controls.

Command line controls: Any control that can be put in the control file can also be put on the command line, using a = symbol and no spaces.

For example, the command

DAYSIM05.EXE run22.ctl HHSRAT=10 HHSBEG=3

will use only the 3rd out of every 10 households in the synthetic sample (and will multiply the expansion factors by 10 to adjust for the sampling rate).

CODE ***Default value*** ***Comment***

```
Run label (can include spaces)
RUNLAB   DaySim05 Run

Directory and file name controls
RUNDIR   c:\daysim\              / main directory
PRNTFN   daysim.prn              / print file name
COEFFI   coeffs.txt              / model coefficient file

LOSDIR   c:\daysim\              / level of service data file directory
WALKFN   skwalk.txt              / walk skim matrix file
AMHWFN   skauam.txt              / am peak highway skim matrix file
MDHWFN   skaumd.txt              / midday highway skim matrix file
PMHWFN   skaupm.txt              / pm peak highway skim matrix file
EVHWFN   skauev.txt              / evening highway skim matrix file
PKWTFN   sktwam.txt              / AM peak walk to transit skim matrix file
OPWTFN   sktwmd.txt              / midday walk to transit skim matrix file
EVWTFN   sktwmd.txt              / evening walk to transit skim matrix file
PKDTFN   sktdam.txt              / AM peak drive to transit skim matrix file
OPDTFN   sktdmd.txt              / off peak drive to transit skim matrix file

PCLDIR   c:\daysim\              / parcel and zonal data  file directory
PARCFN   pcl.dbf                 / parcel file name
ZONEFN   taz.dbf                 / zonal fle name  (always a dbf file)
IXXIFN   ixximat.txt             / ix-xi text file

SAMDIR   c:\daysim\              / population sample file directory
SAMPFN   shh.dbf                 / sample file name (use only if file type=2)

OUTDIR   c:\daysim\              / output file directory
POUTFN   pout.dbf                / person-level file (dbf file)
TOUTFN   tout.dbf                / tour level file
SOUTFN   sout.dbf                / trip segment level file
ZOUTFN   zout.dbf                / zonal validation file
EOUTFN   eout.dbf                / employment validation file (parcel level)

CENDIR   c:\daysim\              / census data directory for pop.syn.
CTPPFN   marg.dbf                / CTPP table 1-75 data file
PUMSFN   pumssrt.dbf             / PUMS records file for sampling

HWFLFN   hwflows.txt     / Validation input file with CTPP commuter flows
V1OUFN   hwflowrad.dbf   / Validation output file with Rad commuter flows
V2OUFN   hwflowdist.dbf  / Validation output file with District commuter flows
```

CODE	*Default value*	*Comment*

Model control switches

```
RUNPOP   0   / population synthesizer switch  0 =don't draw sample  1 = draw sample
RUNWKL   1   / work location model switch  0 = use survey values  1 = run model
RUNSCL   1   / school location model switch 0= use survey values  1 = run model
RUNAUT   1   / auto ownership model switch  0= use survey values  1 = run model
RUNDAP   1   / day pattern model switch  0 = use survey values  1 = run model
RUNTRD   1   / tour destination model switch  0= use survey values  1 = run model
RUNSBT   1   / subtour generation switch  0 = use survey values  1 = run model
RUNTRT   1   / tour time of day model switch  0 = use survey values  1 = run model
RUNTRM   1   / tour mode choice model switch  0 = use survey values  1 = run model
RUNSTF   1   / stop frequency model switch  0 = use survey values  1 = run model
RUNSTL   1   / stop location model switch  0 = use survey values  1 = run model
RUNTPM   1   / trip mode choice model switch  0 = use survey values  1 = run model
RUNTPT   1   / trip time of day model switch  0 = use survey values  1 = run model

VALIDS   0      / switch to run long term model validation output (1=on)
DEBUGS   0      / switch to print more output for debugging purposes (1=on)

PRINTS   1   / print detail level switch 1 = least detail
SAMFTY   2   / input sample file type  0 = none 1 = HH survey 2 = synthetic sample
PCLFTY   2   / input parcel file type  1 = text  2 = dBF
LOSFTY   1   / input level of service file type  1 = text  (2 = TP+ not operational)

POUTSW   1                / output person-level file write switch (0=off)
TOUTSW   1                / output tour level file write switch (0=off)
SOUTSW   1                / output trip segment level file write switch (0=off)
ZOUTSW   0                / output zonal validation file write switch (0=off)
EOUTSW   0                / output employment validation file write switch (0=off)

PSSEED   12345           / seed for random number generator for population synthesis
NSBINS   9               / number of bins to use in pop.sampling
SEXFAC   1               / pop.sampling expansion factor (currently fixed at 1)

AGGLGS   1                / switch for aggregate logsums  (1 = calculate  3 = read)

RNSEED   12345       / seed for random number generator for runs
HHSRAT   1           / hh sample sampling ratio (e.g 10 = simulate every 10th HH)
HHSBEG   1           / hh sampling - postion first hh to use (5 = start with 5th HH)

WKLSSZ   100             / work location model dest. sample size
SCLSSZ   100             / school location model dest. sample size
WTDSSZ    50             / work tour destination model dest. sample size
OTDSSZ    50             / other tour destination model dest. sample size
ISLSSZ    50             / int. stop location model dest. sample size

SHOWID    0              / print current household number to output (1=on)
WAITEX    1              / wait to press return at end of program (1=on)

PREFFN    tppl.prj       / File name where TP+ prefix code is found
PREFPO    1              / File name prefix byte position in the file
PREFLE    4              / File name prefix byte length in the file
```

Other input files

There are some other input files that should be in the same directory as DAYSIM05.EXE. The names of these files cannot be changed by the user:

- Pfiletemplate.dbf: Template for person level output file
- Tfiletemplate.dbf: Template for tour level output file
- Sfiletemplate.dbf: Template for trip level output file
- Zouttemplate.dbf: Template for zone level employment output file
- Eouttemplate.dbf: Template for parcel level employment output file
- Hwflowradtemplate.dbf: Template for rad level commute output file
- Hwflowdisttemplate.dbf: Template for district level commute output file
- Trgen0702x.dat: Household survey data person-level input file
- Tours0702.dat: Household survey data tour-level input file
- Tsegs0702.dat: Household survey data trip-level input file

The last three files are only needed if the switch SAMFTY is set at 1 to use the household survey instead of a synthetic sample.