TRANSIMS Version 5  
Parameter Reference

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# AB\_SPEED\_FIELD\_NAME

**LinkData Control Keys** (blank)

# AB\_VOLUME\_FIELD\_NAME

**LinkData Control Keys** (blank)

# ACCESS\_FORMAT

See File Formats.

# ACTIVITY\_DURATION\_\*

**ConvertTrips Control Keys** (blank)

ACTIVITY\_DURATION\_\* 0.0 hours //---- 0.0, 0.25..24.0 hours

# ADD\_PASSENGER\_CIRCLE\_SIZE

**ArcSnapshot Control Keys** Boolean

# ADD\_PASSENGER\_SQUARE\_SIZE

**ArcSnapshot Control Keys** Boolean

# ADD\_UTURN\_TO\_DEAD\_END\_LINKS

**TransimsNet Control Keys** Boolean

This is an optional key with a default value of FALSE. The **TransimsNet** program can optionally add U-Turns to dead-end links in the network during the network synthesis process by setting this control key to TRUE.

# ADDITIONAL\_TRAVEL\_TIME

**ConvertTrips Control Keys**

This is an optional key with a default value of 0 minutes (range of 0 – 30 minutes). The **ConvertTrips** program estimates the travel time between the trip origin and destination using the user provided average speed by trip group and the straight line distance between the origin and destination activity locations. A constant value is added to this result to account for vehicle access, parking, and overall uncertainty in the travel time estimate. This key is used to define the additional travel time added to each trip.

# ADJUST\_ACTIVITY\_SCHEDULE

In version 5.0.37 of the Router, ADJUST\_ACTIVITY\_SCHEDULE and IGNORE\_ACTIVITY\_DURATION keys were added to globally control how early and late arrivals are handled. If a trip’s travel time is less than expected, the schedule adjust key will permit the activity to move forward in time, but keep the activity duration the same. If a trip’s travel time is greater than expected, the ignore durations key will permit the activity duration to be reduced to as little as one minute to enable the next trip to start as close to the original time schedule as possible. The ignore durations key also drops activity records from the output plan file. These keys can be applied separately or in combination.

# ARCPLAN\_REPORT\_\*

**ArcPlan Control Keys** (blank)

# AREA\_TYPE\_INDEX\_FIELD

**NetPrep Control Keys** Text

# AVERAGE\_TRAVEL\_SPEED\_\*

**ConvertTrips Control Keys**

This is an optional key that is used to estimate the travel time between activity locations. The straight-line distance between the coordinates of the two points is divided by the average travel speed to estimate the travel time. The additional travel time value is added to the estimated travel time to calculate the trip duration. Default value for this key is 10 meters per second (about 22 mph). This calculation is used if a SKIM\_FILE is not provided or the origin-destination cell in this matrix is zero.

# BA\_SPEED\_FIELD\_NAME

**LinkData Control Keys** (blank)

# BA\_VOLUME\_FIELD\_NAME

**LinkData Control Keys** (blank)

# BANDWIDTH\_SCALING\_FACTOR

**Draw Service Keys** Decimal

The bandwidth scaling factor is used to convert the number of selected vehicles on a link to the width of the bandwidth polygon in meters. The inside edges of the polygon follows the shape of the link centerline. The outside edge is offset from the centerline by this value. The default width factor is 1.0 meters per vehicle. The accepted range is between 0.01 and 100,000 meters.

# BICYCLE\_SPEED

The bicycle speed is optional and when provided specifies the bicycling speed in meters per second. The value can range from 1.0 to 10.0 meters per second. The default value is 4.0. Link lengths are divided by this value to convert distance into bicycle time.

# BICYCLE\_TIME\_VALUES\_\*

The bicycle time value key is optional and when provided specifies the impedance values for time the traveler spends bicycling. The values can range from zero to 1000.0. The default value is 15.0 impedance units / second. This value is multiplied by the time spent bicycling on network links. If household types are defined, this key can include a list of values corresponding to each household type. For example, 15, 20, 25 can be specified to define the bicycle time value for household types 1, 2 and 3+, respectively

# BUS\_BIAS\_CONSTANTS\_\*

The bus bias constant is optional. When provided, the total impedance value for each local or express bus segment of a transit trip is adjusted by this value. The value must be greater than zero and is applied after the bus bias factor is applied. If household types are defined, this key can include a list of impedance values corresponding to each household type. The default value is 0.

# BUS\_BIAS\_FACTORS\_\*

The bus bias factors are optional and when provided factors up the total impedance value for each segment of a transit trip that uses a local or express bus. The value can range from 1.0 to 3.0. The default value is 1.0. If household types are defined, this key can include a list of factors corresponding to each household type.

# CELL\_SIZE

**ArcSnapshot Control Keys** (blank)

**Flow-Time Service Keys** Decimal

This cell size key is optional. This key defaults to 7.5 meters when the value is not provided. The value can range from 4.5 to 9.0 meters. Note that the cell size must be less than or equal to the specified minimum link length.

# CENTER\_ONEWAY\_LINKS

**Draw Service Keys** Boolean

This key controls the way that links are drawn and has a default value of FALSE. If the key is FALSE, one-way links are drawn relative to a centerline on the left side of the direction of travel (i.e., like the centerline of a two-way street). If the first character of the key is “0”, “N”, “n”, “F”, or “f”, the key is interpreted as FALSE. Anything else is interpreted as TRUE. If this key is true, the centerline is interpreted as the center of the one-way pavement. This affects how lane lines and link direction offsets are drawn. It has no effect on links drawn with a single centerline.

# CIRCULAR\_GROUP\_FLAG

**Simulation Service Keys** Boolean

The CIRCULAR\_GROUP\_FLAG is used by LinkDelay to determine how the end time periods are smoothed.  If TRUE (the default) the volumes and speeds are smoothed across the first and last time periods.  In other words, 0:00 and 0:15 are smoothed with 23:45 and 24:00.

# CLEAR\_INPUT\_FLOW\_RATES

**Flow-Time Service Keys** Boolean

This optional key is disabled (FALSE) by default. In the router, it is used to indicate whether flows are cleared before creating new plans and link delay files. If the key is TRUE, existing flows are ignored.

# COLLAPSE\_DIVIDED\_ARTERIALS

**NetPrep Control Keys** Boolean

This key is optional and is disabled/FALSE by default. The purpose of this key is to allow the user to either (A) maintain divided arterials and multi-node signals at signalized intersections (if key is set to FALSE or omitted from the control file) or (B) collapse divided arterials in the raw GIS network data input to NetPrep (e.g., data obtained from an MPO often includes parallel links for divided arterials) and replace multi-node signalized intersections with single nodes. Using this key (set to TRUE) is not required and may even be undesirable in certain scenarios, but in general, it is recommended to collapse divided arterials. TRANSIMS Version 5 does support modeling of both divided and collapsed arterials. However, divided arterials and specifically multi-node signalized intersections are more complicated to code and simulate. Using single-node intersections will make the network easier to edit and simulate. The link file contains a DIVIDED field which is used to model link access such as parallel roadways. An illustration of the collapsing process at a multi-node intersection is shown below (Figure 1):

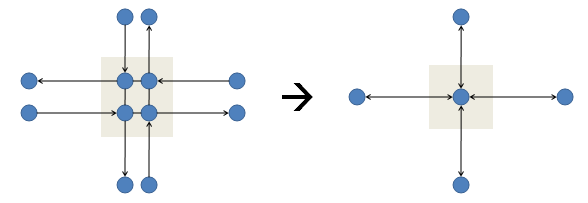


Figure Divided Arterials

# COLLAPSE\_SHAPE\_NODES

**NetPrep Control Keys** Boolean

The COLLAPSE\_SHAPE\_NODES parameter is optional. The default value is False, and possible values are TRUE/FALSE, YES/NO, 1/0, T/F, Y/N. This key was previously referred to as COLLAPSE\_NODES\_FLAG in TransimsNet V4. It indicates whether extra nodes that are used as shape points should be eliminated.

# COMPARE\_GENERALIZED\_COSTS

**PlanCompare Control Keys** Boolean

# COMPARE\_PERFORMANCE\_FORMAT

See File Formats.

**LinkSum Control Keys** FILE\_FORMAT

# COMPARE\_PLAN\_FORMAT

See File Formats.

**PlanCompare Control Keys** FILE\_FORMAT

# CONGESTED\_TIME\_RATIO

**Data Service Keys** (blank)

# CONNECTION\_FORMAT

See File Formats.

**System File Keys** FILE\_FORMAT

# CONTOUR\_DISTANCE\_INCREMENTS

**ArcPlan Control Keys** List

The contour distance increments are required when the ArcView Distance Contour file is requested. The process assumes that the input plan file is generated by a one to many path-building application of the Router. Travel distance contours are constructed by tracing the paths from a selected origin location to all destination locations. The distance along the path is calculated from the link lengths.

What the contour distance increments do is determine where breakpoints in the path trip length are generated. The key includes a comma-separated list of one or more distances in meters. If the last value is proceeded by a “\*”, the value is interpreted as a distance increment that is added to the last value in the list until the cumulative trip length reaches 1,000,000 meters. For example, “1000, 2000, 5000, \*10000” generates a trip length value at 1,000 meters, 2,000 meters, 5,000 meters, and every 10,000 meter increment after 5,000 meters (i.e.,15,000 meters, 25,000 meters, etc.). A value of “\*1000” will generate a distance point every 1,000 meters.

As each link is processed on the path, it is assigned to one of the distance ranges. If the distance range entering the link is different from the distance range exiting the link, the link is split into two (or more) link segments based on the interpolated point where the distance ranges change. This makes it possible to display the distance range value for each link segment with a different color and visualize the trip length contours. Note that each link is only processed once, so paths that enter a link from both ends will only show the segments from the first path.

# CONTOUR\_TIME\_INCREMENTS

**ArcPlan Control Keys** Time

The contour time increments are required when the ArcView Time Contour file is requested. The process assumes that the input plan file is generated by a one to many path-building application of the Router. Travel time contours are constructed by tracing the paths from a selected origin location to all destination locations. The travel time along the path is estimated using an input link delay file or free-flow travel time. If the link delay file includes turn delays and a lane connectivity file is provided, the turning delays are considered in the travel time estimate.

What the contour time increments do is determine where breakpoints in the path travel times are generated. The key includes a comma-separated list of one or more travel times in seconds. If the last value is proceeded by a “\*”, the value is interpreted as a time increment that is added to the last value in the list until the cumulative time points reach midnight. For example, “120, 300, 600, 900, \*1800” generates a time point after 2 minutes, 5 minutes, 10 minutes, 15 minutes, and every 30 minute increment after 15 minutes (i.e., 45 minutes, 75 minutes, etc.). A value of “\*900” will generate a time point every 15 minutes.

As each link is processed on the path, it is assigned to one of the time point ranges. If the time point range entering the link is different from the time point range exiting the link, the link is split into two (or more) link segments based on the interpolated point where the time ranges change. This makes it possible to display the time range value for each link segment with a different color and visualize the travel time contours. Note that each link is only processed once, so paths that enter a link from both ends will only show the segments from the first path.

# CONVERTTRIPS\_REPORT\_\*

**ConvertTrips Control Keys** (blank)

# COORDINATE\_RESOLUTION

**NetPrep Control Keys** Decimal

COORDINATE\_RESOLUTION 1.0 meters 0..30 meters

# COPY\_EXISTING\_FIELDS

**NewFormat Control Key**

Indicates whether existing fields in the location file are copied to the new file. Defaults to FALSE. Possible values are {true/false/yes/no/1/0}. If existing fields are not copied, only the basic activity location fields are included (LOCATION, NODE, LINK, OFFSET, X\_COORD, Y\_COORD, and ZONE)

# COPY\_LOCATION\_FIELDS

**LinkSum Control Keys** (blank)

# COST\_VALUES\_\*

The cost values key are optional and when provided specifies the impedance values for travel cost. The values can range from zero to 1000.0. The default value is 0.0 impedance units / cent. This value is multiplied by the cost value on Process Links, parking lots, and the transit fare. The program also looks for a “COST” field on the Link file. If household types are defined, this key can include a list of values corresponding to each household type. For example, 0, 5, 10 can be specified to define the cost value for household types 1, 2 and 3+, respectively.

# COUNT\_PROBLEM\_WARNINGS

**Flow-Time Service Keys** Boolean

# CURVED\_CONNECTION\_FLAG

**Draw Service Keys** Boolean

The default value for this control key is FALSE. Possible values are TRUE/FALSE, YES/NO, 1/0, T/F, Y/N. This flag indicates whether connections (formerly, lane\_connectivity) or phasing plans should be drawn as curved lines on the network. In most cases, setting the flag to TRUE will result in network intersections that are less confusing when displayed in a GIS.

# DAILY\_WRAP\_FLAG

**IntControl Control Keys** Boolean

**Data Service Control Keys**

The default value for this control key is FALSE. Possible values are TRUE/FALSE, YES/NO, 1/0, T/F, Y/N. This flag should be set to TRUE when the model end time is before the model start time. This may occur, for instance, when the model start time is 7:00PM (19:00) and the model end time is 4:00AM (04:00 or 4:00). In such a case, setting the flag to TRUE allows this to occur while a FALSE setting generates a run-time error.

# DATA\_FORMAT\_\*

This key specifies the format for the file defined by the DATA\_FILE key used by the LocationData program. The format defaults to TAB\_DELIMITED, but numerous formats are supported. See File Formats.

**FileFormat Control Keys** FILE\_FORMAT

**LocationData Control Keys** FILE\_FORMAT

# DATA\_JOIN\_FIELD\_\*

The name of the field in the DATA\_FILE (refer to the LocationData 5.0 program reference examples) that identifies the zone.

# DEBUG\_LINK\_LIST

**Microsimulator Control Keys** (blank)

# DEBUG\_TIME\_RANGE

**Microsimulator Control Keys** (blank)

# DEBUG\_VEHICLE\_LIST

**Microsimulator Control Keys** (blank)

# DEFAULT\_FILE\_FORMAT

**Execution Service Keys** Text

This control key is optional and can be used to change the default file format. By default, TRANSIMS creates new files in TAB\_DELIMITED format. Other options include BINARY, DBASE, COMMA\_DELIMITED, SPACE\_DELIMITED, FIXED\_COLUMN and SQLITE3.

# DEFAULT\_LINK\_SETBACK

**TransimsNet Control Keys** Decimal

This key is optional and has a default value of 7.5 meters and a valid range of 0..30 meters.

# DEFAULT\_LOCATION\_SETBACK

**TransimsNet Control Keys** Decimal

# DEFAULT\_PARKING\_DURATION

This key is optional and has a default value of 0.0 hours.

# DELETE\_LINK\_RANGE

**NetPrep Control Keys** List

The delete link range is optional and if specified defines a series of link numbers where the pocket lanes, activity locations (locations in V5), parking lots (parking in V5), process links (access links in V5) and link are deleted. The lane connectivity (connection in V5) at both ends of the link is also updated. The range is a comma separated list of link ranges. A link range is specified using two period (e.g., 1, 2, 4..10, 100..200, 300).

# DELETE\_NODE\_RANGE

**NetPrep Control Keys** List

The delete node range is optional and if specified defines a series of node numbers where the lane connections, traffic control warrants, and the node are deleted. The range is a comma separated list of node ranges or a continuous node range. A continuous node range is specified using two periods (e.g., 1, 2, 4..10, 100..200, 300).

# DESTINATION\_LOCATIONS\_PER\_ZONE

**PathSkim Control Keys** (blank)

This number is used by PathSkim to determine the number of locations in a destination zone that will be used for calculating skim. The number of destination locations per zone can range from 0 to 100. The default is 0, and it indicates that all locations should be used. TRANSIMS actually calculates Location – Location travel times, and this parameter specifies the number of locations that should be used to determine an average travel time to a zone.

# DESTINATION\_WEIGHT\_FIELD\_\*

**ConvertTrips Control Keys** (blank)

# DETECTOR\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# DIRECTIONAL\_DATA\_FORMAT

**LinkData Control Keys** FILE\_FORMAT

See File Formats.

# DISTANCE\_VALUES\_\*

The distance value keys are optional and when provided specify the impedance values for the distance traveled in a driving trip. The values can range from zero to 1000.0. The default value is 0.0 impedance units / meter. This value is multiplied by the length of the each link. It is only used for driving trips. If household types are defined, this key can include a list of values corresponding to each household type. For example, 0, 5, 10 can be specified to define the distance value for household types 1, 2 and 3+, respectively.

# DISTANCE\_WEIGHT\_FLAG\_\*

**ConvertTrips Control Keys** Boolean

# DRAW\_AB\_DIRECTION

**Draw Service Keys** Boolean

# DRAW\_NETWORK\_LANES

**Draw Service Keys** Boolean

This key controls the way that links are drawn. If the key is FALSE, links are drawn as a single centerline or as two parallel shapes if the link direction offset is non-zero. If the first character of the key is “0”, “N”, “n”, “F”, or “f”, the key is interpreted as “false.” Anything else is interpreted as “true.” If this key is true, each thru traffic lane is drawn as a parallel shape and appropriate space is provided for the right and left side pocket lanes. The width between the lane lines is controlled by the lane width parameter. If the link is a one-way link, the relationship of the lane lines to the centerline is controlled by the center one-way links key.

# DRAW\_ONEWAY\_ARROWS

**Draw Service Keys** Boolean

Direction of travel arrows will be drawn at the end of each link or lane if this key is TRUE. The default is FALSE. The size and shape of the arrow is controlled by the one-way arrow length and side offset keys. Since the arrow points are added to the link shape, a shape file that includes arrows cannot be used in NetPrep to create a TRANSIMS shape file.

# DRAW\_VEHICLE\_SHAPES

**Draw Service Keys** Boolean

The default value for this parameter is FALSE. When this parameter is set to FALSE, simple points are drawn to represent vehicles instead of directional polygons. When set to TRUE, this parameter allows for the creation of small polygons representing the vehicles and pointing into the direction of travel. This is useful when analyzing network problems graphically such as when using this key in conjunction with ArcProblem plus ArcNet (and a GIS tool). The result is a more realistic visualization of traffic (specifically vehicles) that has been loaded onto the network.

# DRIVER\_REACTION\_TIME\_\*

**Flow-Time Service Keys** (blank)

# DROP\_DEAD\_END\_LINKS

**NetPrep Control Keys** Integer

The drop dead end links key is optional. This key defaults to 0 meters when the value is not provided. This key specifies an integer value in ranging from 0 meters to 2000 meters. Dead end links that are shorter than the length specified are dropped from the output link file. Note that TransimsNet 5 also has an ADD\_UTURN\_TO\_DEAD\_END\_LINKS key (TRUE, FALSE; DEFAULT = FALSE; Boolean).

# DROP\_SHORT\_LINKS

**NetPrep Control Keys** Decimal

The drop short links key is optional. This key defaults to 37.5 meters when the value is not provided. This key specifies the minimum length of the network links. When the network link length is less than this value, the link is dropped. The value can range from 7.5 to 100 meters. Note that TRANSIMS requires a link to be at least as long as the longest vehicle that can use the link. Vehicle sizes are defined in the vehicle prototype file and are defined as multiples of TRANSIMS cells (7.5 meters).

# END\_TIME\_CONSTRAINT

The end time constraint is optional and only applied if the IGNORE\_TIME\_CONSTRAINTS key is FALSE. This parameter enables the user to add a time buffer to the end time of the trip to limit the time constraint errors to those instances where the travel exceeds the end time plus the end time constraint. The parameter is defined in minutes. The default is zero.

# ENFORCE\_PARKING\_LANES

**Flow-Time Service Keys** Boolean

This is used in the simulator. For parking lots on standard arterials (i.e., not boundary parking lots), the simulation will attempt to move the vehicle to the side of the street where the parking lot is coded prior to exiting the simulation. If the vehicle is unable to move to within two lanes of the parking location before needing to exit, a parking problem is encountered. This parameter can be used to define what happens under these conditions. If the value is YES or TRUE, the vehicle will stop and continue to attempt lane changes until it is in the appropriate exit lane. If the value is NO or FALSE, a problem message is generated and the vehicle is immediately moved to the parking lot. The default value is NO.

# EQUATION\_PARAMETERS\_\*

The equation parameters key is optional. A volume-delay equation is used by the link delay updates. The “x” at the end of the key refers to the facility type. For example, EQUATION\_PARAMETERS\_\* specifies the volume-delay equation used for Freeways. If an equation is not provided for a given facility type, the program uses the equation from a lower facility type code. Each key requires four values. The first is the functional type code. The only code that is currently implemented is “BPR.” This is followed by the three BPR parameters as floating point numbers separated by a comma. The default values are 0.15, 4.0, and 0.75. The BPR equation for computing the link travel time is:

t = t0 (1 + alpha(Volume/Capacity)Beta

Where

t = Loaded Travel Time in seconds

t0 = Base Travel Time in seconds

alpha = BPR “A” parameter (default 0.15)

Beta = BPR “B” parameter (default 4.00)

Volume = Volume on the link in a given time period

Capacity = Adjusted Capacity of a link in a given time period

Capacity of the link for a given time period is estimated as follows:

Capacity = BPRFactor x HourlyCapacity x (TimeIncrement / 3600)

Where

BPRFactor = BPR “C” parameter (default 0.75)

TimeIncrement = TimePeriod (in seconds)

Figure 2 shows the behavior of the BPR equation with an hourly capacity of 1000, a time increment of 3600 seconds, and the following parameters:

- Alpha = 0.15 (default)

- Beta = 4 (default

- Capacity = 750 (the adjusted capacity using the default BPR Factor of 0.75)

*Volume is on the x axis and t / t0 on the y axis.  Some pairs of (x,y) values include
0, 1
400, 1.01
750, 1.15
1000, 1.47
1200, 1.98
1500, 3.4 *

Figure 2 Behavior of BPR Function with Default Values (Hourly Capacity = 1000)

# EXPRESSWAY\_BIAS\_FACTORS\_\*

**Path Building Service Keys**

In the Router, this replaces the version 4 FACILITY\_BIAS\_FACTORS***.***  This is a list of impedance adjustment factors for expressways. It is optional and defaults to 1. Its valid range is 0.5 to 2.0.

# EXTENDED\_GREEN\_FACTOR\_\*

**IntControl Control Keys** List

The EXTENDED\_GREEN\_FACTOR\_\* key is optional and specifies the weighting factor for the extended green time. The default value is 0.5, and the possible values range between 0.0 and 1.0.

The EXTENDED\_GREEN\_FACTOR\_\* key is part of the group that defines how a timing plan is developed for each phase. This group includes MINIMUM\_PHASE\_TIME\_\*, YELLOW\_PHASE\_TIME\_\*, RED\_CLEAR\_PHASE\_TIME\_\*, and EXTENDED\_GREEN\_FACTOR\_\*. These parameters define how the minimum, maximum, and extended green times are computed for fixed-timed and demand-actuated phases.

The ‘\*’ is a placeholder for the first number (default is 1; range is 1..100). This is for the purpose of grouping related parameters. Thus, up to 100 parameter groups for this control key are allowed.

# EXTERNAL\_STATION\_OFFSET

**TransimsNet Control Keys** Decimal

The EXTERNAL\_STATION\_OFFSET parameter control key is a new addition to TransimsNet 5.0. This parameter is hardcoded with a value of 30 meters in TransimsNet 4.0. This key has a default value of 30 meters in TRANSIMS 5.0. The range of possible values for this key is 0..100.

# EXTERNAL\_ZONE\_RANGE

**TransimsNet Control Keys** List, Integer

This key is optional and replaces FIRST\_EXTERNAL\_ZONE\_NUMBER from Version 4. The external zone range in TransimsNet Version 5 is used to define the list of nodes where zone connectors need to be converted to network links and special activity locations are generated. This list is specified using a range of external zones which consists of two zone numbers separated by two periods (e.g., 74..85). The default value for this parameter is zero and the range of possible values is 0..10000.

# FACILITY\_ACCESS\_WARRANT\_\*

**TransimsNet Control Keys** Text

The facility access warrant control key parameter has been updated significantly in TRANSIMS Version 5 relative to its implementation in TRANSIMS Version 4. In Version 5, a single, multi-data field record takes the place of four parameters required in Version 4 in order to specify a facility access warrant.

Figure 3 illustrates the functionality in Version 4:

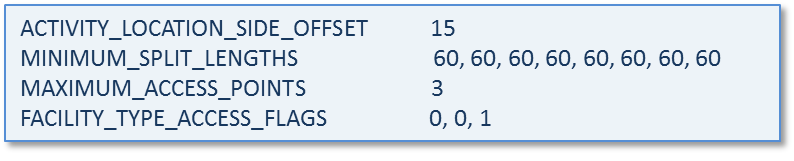


Figure 3 FACILITY\_ACCESS\_WARRANT in TRANSIMS Version 4

Figure 4 illustrates the functionality in Version 5:



Figure 4 FACILITY\_ACCESS\_WARRANT\_\* in TRANSIMS Version 5

The multi-data fields in the above record are type, at, setback, min\_len, and max\_pts, and are defined as follows:

* Type – The facility type range
* At – The area type range
* Setback – The activity location setback distance (i.e., side offset)
* Min\_len – The minimum split length
* Max\_len – The maximum number of access points per link

The ‘\*’ is a placeholder and indicates that this parameter is part of a group of related parameters. The ‘\*’ is simply replaced with a number (1..100) to indicate the group number (for grouping related parameters and/or enabling by time of day warrant groups) following the example below:

FACILITY\_ACCESS\_WARRANT\_1 PRINCIPAL..LOCAL, ALL, 15, 60, 3

# FACILITY\_BIAS\_FACTORS\_\*

# FACILITY\_INDEX\_FIELD

**NetPrep Control Keys** (blank)

# FARE\_CLASS\_DISTRIBUTION

FARE\_CLASS\_DISTRIBUTION 0

# FILE\_FORMATS

The file format keys include DEFAULT\_FILE\_FORMAT, NODE\_FORMAT, ZONE\_FORMAT, SHAPE\_FORMAT, LINK\_FORMAT, POCKET\_FORMAT, LANE\_USE\_FORMAT, LOCATION\_FORMAT, PARKING\_FORMAT, ACCESS\_FORMAT, CONNECTION\_FORMAT, TURN\_PENALTY\_FORMAT, SIGN\_FORMAT, SIGNAL\_FORMAT, TIMING\_PLAN\_FORMAT, PHASING\_PLAN\_FORMAT, DETECTOR\_FORMAT, TRANSIT\_STOP\_FORMAT, TRANSIT\_ROUTE\_FORMAT, TRANSIT\_SCHEDULE\_FORMAT, TRANSIT\_DRIVER\_FORMAT, ROUTE\_NODES\_FORMAT, VEHICLE\_TYPE\_FORMAT, HOUSEHOLD\_FORMAT, SELECTION\_FORMAT, TRIP\_FORMAT, LINK\_DELAY\_FORMAT, VEHICLE\_FORMAT, PLAN\_FORMAT, NEW\_PLAN\_FORMAT, NEW\_PROBLEM\_FORMAT, NEW\_LINK\_DELAY\_FORMAT.

These keys are optional. The default value is TAB\_DELIMITED, and other values include TEXT, BINARY, FIXED\_COLUMN, COMMA\_DELIMITED, SPACE\_DELIMITED, TAB\_DELIMITED, CSV\_DELIMITED, DBASE, SQLITE3, VERSION3.

In the previous version of TRANSIMS (v4), the default value was VERSION3. It is now TAB\_DELIMITED.

TRANSIMS applies file formats in the following order, using the first file format that is found:

1. If a .def file is provided, the format given in the first line of that file is used. Note that in cases where the file has nested fields (for example, the SHAPE file), a .def file must be provided. Otherwise it is optional.
2. If a specific file format was given in the control file (e.g. NODE\_FORMAT, CSV\_DELIMITED), then the file format given in the control file is used.
3. If the DEFAULT\_FILE\_FORMAT is given in the control file, it is used.
4. If the DEFAULT\_FILE\_FORMAT is specified in the TRANSIMS config.txt file, it is used.
5. Otherwise, the default value of TAB\_DELIMITED is assumed.

# FIRST\_HOUSEHOLD\_NUMBER

**ConvertTrips Control Keys**

This was the STARTING\_HOUSEHOLD\_ID in Version 4.This optional key specifies the integer number used to begin the household ID numbering. The default value is one or the highest household ID in the input household file. If the results of this application are to be combined with the results of other **ConvertTrips** applications, the user must define an appropriate offset to ensure unique Household IDs in thecombined file.

# FIRST\_LINK\_NUMBER

**NetPrep Control Keys** Integer

This optional key specifies the integer value of the first link number. If after copying the field name and applying the conversion script, the link and/or node numbers are not defined, the program will automatically create link and/or node numbers starting from the specified first values. If not specified, the first link number defaults to 1. The possible range of values is from one (1) to 1000000000 (one billion).

# FIRST\_NODE\_NUMBER

**NetPrep Control Keys** Integer

This optional key specifies the integer value of the first node number. If after copying the field name and applying the conversion script, the link and/or node numbers are not defined, the program will automatically create link and/or node numbers starting from the specified first values. If not specified, the first node number defaults to 1. The possible range of values is from one (1) to 1000000000 (one billion).

**FIRST\_WAIT\_VALUES\_\***The first wait values key are optional and when provided specifies the impedance values for time the traveler spends waiting for the first transit vehicle. The values can range from zero to 1000.0. The default value is 20.0 impedance units / second. This value is multiplied by the difference between the time of day when the traveler arrives at a transit stop and the time when the next transit vehicle is scheduled to leave that stop. If household types are defined, this key can include a list of values corresponding to each household type. For example, 20, 25, 30 can be specified to define the first wait time value for household types 1, 2 and 3+, respectively.

# FIX\_VEHICLE\_LOCATIONS

**Flow-Time Service Keys** Boolean

# FLATTEN\_OUTPUT\_FLAG

**NewFormat Control Keys** Boolean

Defaults to FALSE. If set to TRUE, nested data files are flattened. This key applies to the following new files produced by NewFormat: SHAPE, PARKING, SIGNAL, TIMING\_PLAN, PHASING\_PLAN, TRANSIT\_SCHEDULE, TRANSIT\_DRIVER, ROUTE\_NODES, HOUSEHOLD, LINK\_DELAY, PERFORMANCE, PLAN.

To see the impact of this flag consider the following example.

New\_Shape file with FLATTEN\_OUTPUT\_FLAG set to FALSE:

LINK POINTS NOTES

X\_COORD Y\_COORD

4206 2

179794.6 4768278.6

179548.5 4768013.4

4207 3

180318.7 4768736.6

180445.2 4768817.6

180607.3 4768932.9

New\_Shape file with FLATTEN\_OUTPUT\_FLAG set to TRUE:

LINK POINTS NOTES X\_COORD Y\_COORD

4206 2 179794.6 4768278.6

4206 2 179548.5 4768013.4

4207 3 180318.7 4768736.6

4207 3 180445.2 4768817.6

4207 3 180607.3 4768932.9

# FLOW\_UNITS

**System File Keys** (blank)

# FREEWAY\_BIAS\_FACTORS\_\*

**Path Building Service Keys**

In the Router, this replaces the version 4 FACILITY\_BIAS\_FACTORS***.***  This is a list of impedance adjustment factors for freeways. It is optional and defaults to 1. Its valid range is 0.5 to 2.0.

# FROM\_NODE\_FIELD\_NAME

**LinkData Control Keys** (blank)

# GENERAL\_GREEN\_FACTOR\_\*

**IntControl Control Keys** List

The GENERAL\_GREEN\_FACTOR\_\* key is optional. This key specifies the weighting factor for the general green time. The default value for this key is 1.0. The value for this key can range between 0.5 and 1.0.

The GENERAL\_GREEN\_FACTOR\_\* key is part of the group that determines how the total cycle length is allocated to different phases. This group includes POCKET\_LANE\_FACTOR\_\*, GENERAL\_GREEN\_FACTOR\_\*, SIGNAL\_SPLIT\_METHOD\_\*, MINIMUM\_LANE\_CAPACITY\_\*, and MAXIMUM\_LANE\_CAPACITY\_\*. These parameters define how the number of lanes or lane capacity assigned to one phase is balanced against similar values from other phases to allocate a share of the total cycle time to each phase.

The ‘\*’ is a placeholder for the first number (default is 1; range is 1..100). This is for the purpose of grouping related parameters. Thus, up to 100 parameter groups for this control key are allowed.

# HOUSEHOLD\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# IGNORE\_ACTIVITY\_DURATION

In version 5.0.37 of the Router, ADJUST\_ACTIVITY\_SCHEDULE and IGNORE\_ACTIVITY\_DURATION keys were added to globally control how early and late arrivals are handled. If a trip’s travel time is less than expected, the schedule adjust key will permit the activity to move forward in time, but keep the activity duration the same. If a trip’s travel time is greater than expected, the ignore durations key will permit the activity duration to be reduced to as little as one minute to enable the next trip to start as close to the original time schedule as possible. The ignore durations key also drops activity records from the output plan file. These keys can be applied separately or in combination.

# IGNORE\_ROUTING\_PROBLEMS

IGNORE\_ROUTING\_PROBLEMS FALSE //---- TRUE/FALSE, YES/NO, 1/0, T/F, Y/N

# IGNORE\_TIME\_CONSTRAINTS

The ignore time constraints key is optional and when provided controls how the activity start time impacts path building. The key is FALSE by default. This means that the trip must be completed before the upper bound of the activity start time. If the trip takes too long, a time schedule error is registered in the problem file. If the key is “true”, the program will continue building the path without consideration of the activity schedule. The start time of the next trip will be the arrival time of the previous trip plus the duration of the activity. If the first character of the key is “0”, “N”, “n”, “F”, or “f”, the key is interpreted as FALSE. Anything else is interpreted as TRUE.

# IGNORE\_VEHICLE\_ID

The vehicle file processing is made optional based on this key value. If TRUE, the vehicle file is not processed and the location of the vehicle is assumed connected to the parking lot attached to the origin and destination activity locations. The default value is FALSE. This implies that the vehicle file is read and the location of the vehicles is check and repositioned based on the path building result. Setting this key to TRUE can save processing time, but it is primarily used to build drive plans for transit trips as input to a PlanSum process to generate travel time skims for a model choice model.

# IMPEDANCE\_SORT\_METHOD

**Path Building Service Keys** Boolean

# LINK\_CONVERGENCE\_CRITERIA

**Router Control Keys**

When the Router is used in a multiple-iteration (as opposed to shortest path) mode, th**is** indicates a link\_gap based stopping criteria. The default is 0.0, which means that a link\_gap stopping criterion is NOT used. Valid values range from 0.0 to 10.0.

# TRIP\_CONVERGENCE\_CRITERIA

**Router Control Keys**

When the Router is used in a multiple-iteration (as opposed to shortest path) mode, this indicates a trip\_gap based stopping criteria. The default is 0.0, which means that a trip\_gap stopping criterion is NOT used. Valid values range from 0.0 to 10.0.

# INITIAL\_WEIGHTING\_FACTOR

**Router Control Keys**

When the Router is used in a multiple-iteration (as opposed to shortest path) mode, this indicates the initial weighting factor to use in a method of successive averages weighting scheme. The default is 1.0, and permissible values include 0 (no weighting), and anything greater than or equal to 0.5.

# ITERATION\_WEIGHTING\_INCREMENT

**Router Control Keys**

When the Router is used in a multiple-iteration (as opposed to shortest path) mode, this indicates the increment to be used for the weighting factor for successive runs. That is, if the initial weighting factor is 1.0 and the increment is 1.0, the second weighting factor would be 2.0. The default is 1.0 and permissible values range between 0.0 and 5.0.

# MAXIMUM\_WEIGHTING\_FACTOR

**Router Control Keys**

When the Router is used in a multiple-iteration (as opposed to shortest path) mode, this indicates the maximum weighting factor to be used. The default is 20.0, and permissible values include 0 (no weighting), and anything greater than or equal to 2.0.

# INPUT\_COORDINATE\_ADJUSTMENT

**Simulation Service Keys List**

The input coordinate adjustment key enables the user to manipulate the coordinates before they are sent to the input coordinate conversion calculation. This key is optional. It is only needed if the coordinates are not in the units expected by the conversion algorithm. By default, TRANSIMS data files store coordinate data in meters that don’t require any adjustments. The adjustment command includes four floating-point numbers separated by commas (X Offset, Y Offset, X Factor, Y Factor). The first two numbers are the X and Y offsets. The last two numbers are X and Y adjustment factors. The process adds the offset value to the coordinate and then applies the adjustment factor. In other words:

X = (EASTING + X\_offset) \* X\_factor

Y = (NORTHING + Y\_offset) \* Y\_factor

# INPUT\_COORDINATE\_SYSTEM

**Simulation Service Keys List**

This key has a CSV list format and is optional. The input coordinate command may include up to three comma-separated parts (e.g., UTM, 15N, meters; or LATLONG). The first part is the coordinate system description. The options include STATEPLANE, UTM, and LATLONG. The second part identified the code number within the coordinate system that relates to the local conversion parameters. For UTM coordinates these codes range from 1N to 23N. Stateplane coordinates are defined using four digit FIPS codes (e.g., Oregon North = 3601). A code is not needed for the Latitude/Longitude system. The third parameter defines the coordinate units. By default, UTM is in meters, Stateplane is in feet, and Latitude/Longitude is in degrees. The user can override these assumptions using the following keywords: FEET, METERS, MILES, KILOMETERS, DEGREES, and MILLION\_DEGREES.

# INPUT\_LINK\_FORMAT

**NetPrep Control Keys** FILE\_FORMAT

See File Formats.

# INPUT\_NODE\_FORMAT

**NetPrep Control Keys** FILE\_FORMAT

See File Formats.

# INPUT\_SPDCAP\_FORMAT

**NetPrep Control Keys** FILE\_FORMAT

See File Formats.

# INPUT\_UNITS\_OF\_MEASURE

**NetPrep Control Keys** Text

This key is optional and defaults to METRIC. Possible values are ENGLISH (feet) or METRIC (meters). The default distance and speed units included in data files or control keys are assumed to be in METRIC units. This key can be used to specify the units of measure as ENGLISH or METRIC. If a particular key value includes data units, the program will automatically convert the value to the specified units of measure. The standard data files created by the TRANSIMS Version 5 software identify the units associated with each data field in the definition file (\*.def). For example, a link.txt.def file, where the units are METRIC, is as follows (KPH = kilometers per hour, VPH = vehicles per hour):

TRANSIMS50, TAB\_DELIMITED, 1

LINK, INTEGER, 1, 10

NAME, STRING, 2, 40

NODE\_A, INTEGER, 3, 10

NODE\_B, INTEGER, 4, 10

LENGTH, DOUBLE, 5, 8.1, METERS

SETBACK\_A, DOUBLE, 6, 5.1, METERS

SETBACK\_B, DOUBLE, 7, 5.1, METERS

BEARING\_A, INTEGER, 8, 4, DEGREES

BEARING\_B, INTEGER, 9, 4, DEGREES

TYPE, STRING, 10, 12, FACILITY\_TYPE

DIVIDED, UNSIGNED, 11, 1

AREA\_TYPE, UNSIGNED, 12, 3

GRADE, DOUBLE, 13, 5.1, PERCENT

LANES\_AB, UNSIGNED, 14, 2

SPEED\_AB, DOUBLE, 15, 5.1, KPH

FSPD\_AB, DOUBLE, 16, 5.1, KPH

CAP\_AB, UNSIGNED, 17, 8, VPH

LANES\_BA, UNSIGNED, 18, 2

SPEED\_BA, DOUBLE, 19, 5.1, KPH

FSPD\_BA, DOUBLE, 20, 5.1, KPH

CAP\_BA, UNSIGNED, 21, 8, VPH

USE, STRING, 22, 128, USE\_TYPE

NOTES, STRING, 23, 128

# INPUT\_ZONE\_FORMAT

**NetPrep Control Keys** FILE\_FORMAT

See File Formats.

# INTCONTROL\_REPORT\_\*

**IntControl Control Keys** Text. Boolean

This optional key is used to generate a SIGNAL\_TIMING\_UPDATES report for each corresponding signal parameter group in the IntControl control file. It defaults to a value of FALSE. The \* allows for independent creation of SIGNAL\_TIMING\_UPDATES reports for each corresponding signal parameter group specified.

# INTERNAL\_ZONE\_RANGE

**NetPrep Control Keys** List

The internal zone range key is optional. This parameter defines the range of node numbers that represent internal zones so the connectors to these nodes can be deleted. Internal zone connectors are/should be deleted during the NetPrep process.  NetPrep Version 5 supports zone numbering systems that start with low values as external stations as well as the more traditional arrangement where external zones are at the end of the zone list. This key has a possible value range of 0..10000 and is turned off by default (i.e., assigned a ‘0’ value).

# INTERPOLATE\_LINK\_DELAYS

This router control key is optional, and defaults to FALSE. It enables the interpolation of the link travel time based on the time of day the path enters the link and the mid-points of the two closest time periods in the link delay file.

# KEEP\_LINK\_RANGE

**NetPrep Control Keys** List

The keep link range key is optional and if specified defines a series of link numbers where the pocket lanes, activity locations, parking lots, processing links and link are not deleted by TRANSIMS programmatically. The lane connectivity at both ends of the link is also updated. The range is a comma separated list of link ranges. A link range is specified using two periods (e.g., 1, 2, 4..10, 100..200, 300).

# KEEP\_NODE\_RANGE

**NetPrep Control Keys** List

The keep node range is optional and if specified defines a series of node numbers where the lane connectivity, traffic control warrants, and the node are not to be deleted by TRANSIMS programmatically. The range is a comma separated list of node ranges. A node range is specified using two periods (e.g., 1, 2, 4..10, 100..200, 300).

# KISS\_RIDE\_STOP\_TYPES

KISS\_RIDE\_STOP\_TYPES EXTERNAL

# KISS\_RIDE\_TIME\_FACTOR\_\*

KISS\_RIDE\_TIME\_FACTOR\_\* 2.5 //---- 1.0..4.4

# LANE\_USE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# LANE\_WIDTH

**Draw Service Keys** Decimal

The lane width parameter defines the space between lane lines on links and for lane connectivity at intersections. The default value is 1.0, which means that lane lines will be drawn one meter apart. Values between zero and 25.0 meters are permitted unless the draw network lanes key is true. In this case the value must be greater than 0.0.

# LEFT\_TURN\_PENALTIES\_\*

The left turn penalty keys are optional and when provided specifies an additional impedance value for lane connections identified as left turns. The values can range from zero to 10000.0. The default value is 0.0 impedance units. This value is added to the impedance of the departure link of a drive path. If household types are defined, this key can include a list of values corresponding to each household type. For example, 0, 100, 200 can be specified to define the left turn penalty for household types 1, 2 and 3+, respectively.

# LIMIT\_PARKING\_ACCESS

The limit parking access key is optional and when provided controls the way vehicles are associated with locations. The key is TRUE by default. This means that the vehicle must be parked at a parking lot directly associated with the location. If the key is FALSE, the program will build a walk path between the activity location and the vehicle. If the first character of the key is “0”, “N”, “n”, “F”, or “f”, the key is interpreted as FALSE.

# LINK\_DELAY\_FLOW\_FACTOR

This weighting key is optional, and defaults to 1.0. Similar to the version 4 LINK\_DELAY\_VOL\_FACTOR, it scales the input flows by a scaling factor before performing the volume / capacity calculations. Its range is 1 to 100000.

The following paragraphs need to be checked, and the user is advised to be careful about using a LINK\_DELAY\_FLOW\_FACTOR other than 1.0:

The link delay volume factor can be used in partitioned applications to provide the **Router** with a better approximation of the volume-to-capacity ratio during travel time updates. Since each **Router** in a partitioned application assigns a percentage of the total trips to the network, the volume on assigned to each link does not reflect the total traffic from all trips. This key permits the modeler to multiply the volume loaded by each partition by a factor that reflects the number of other **Router** applications that are loaded traffic to the network at the same time. The factor is only applied when the volume-delay functions update the travel times. The factored volume is not saved to the network or the plan file.

The default volume factor is 1.0. The program accepts any value greater than 1.0. Normally the factor would be set equal to the number of partitions.

# LINK\_DELAY\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# LINK\_DELAY\_UPDATE\_RATE

The link delay update rate key is optional. The value can range from zero to 1,000,000 trips. The default value of zero disables link delay updates. If the key is one or greater, the program will use the BPR volume-delay function to calculate the travel times on each link based on the current volumes in each time period. Time periods are defined by the input link delay file or default to 15 minutes if a link delay file is not provided. This parameter defines the number of trips that are loaded between travel time updates.

Note that this parameter should only be used for initial incremental loading. This parameter should be zero if the input link delay file was generated by the TRANSIMS Simulator. Microsimulator delays can be significantly different from volume to capacity based delays. If link delay updates are enabled, the delays from the Microsimulator are destroyed by the first update cycle.

# LINK\_DIRECTION\_OFFSET

**Draw Service Keys** Decimal

If the draw network lanes key is true, this key is ignored. If it is FALSE, the link direction offset key determines how paths on two way links are drawn. The default value is 0.0, which means that the link centerline is used to draw the path (written to the ArcView Link file). If the value is greater than 0.0, it represents the number of meters to the right or left that a path on a two way link is drawn. In this case, one shape and dBase records are saved in the ArcView Link file. However, the shape will have two parts. Each part is drawn in the direction of travel. If the link is a one-way link, only one shape record is draw using the centerline of the roadway in the direction of travel. This parameter is used to draw non-transit modes.

# LINK\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# LINK\_USE\_FLAG\_TYPES\_\*

**LocationData Control Keys** (blank)

Any combination of use codes separated by a slash (/) {ANY, WALK, BICYCLE, AUTO, TRUCK, BUS, RAIL, SOV, HOV2, HOV3, HOV4, LIGHTTRUCK, HEAVYTRUCK, RESTRICTED, CAR, BIKE, TAXI, TROLLEY, STREETCAR, LIGHTRAIL, RAPIDRAIL, REGIONRAIL}. Defaults to ANY.

# LINKSUM\_REPORT\_\*

**LinkSum Control Keys** (blank)

# LOCAL\_ACCESS\_DISTANCE

**Router**

This parameter is optional. The default value is 2000 meters, and valid values range from 100 to 7500 meters. If the LOCAL\_FACILITY\_TYPE key is not EXTERNAL, drive paths are restricted to higher facility types when more than the value of this parameter away from their trip origin or destination.

# LOCAL\_FACILITY\_TYPE

**Router**

This parameter is optional. The default value is EXTERNAL which disables the local facility restrictions for drive paths. Other values include MAJOR, MINOR, COLLECTOR, and LOCAL. When one of these values is provided, drive paths will be restricted to higher facility types when more than the LOCAL\_ACCESS\_DISTANCE away from their trip origin or destination. This parameter defines the upper end of the facility type restriction. The lower end is always defined as LOCAL. In other words, if the parameter is MINOR, no link with facility types MINOR, COLLECTOR, or LOCAL will be available for the line-haul portion of the trip.

# LOCAL\_IMPEDANCE\_FACTOR

Router

This optional parameter defaults to 0.0, and has valid values ranging from 0.0 to 25.0

# LOCAL\_SELECTION\_SPACING\_\*

**NetPrep Control Keys** List

This key is optional and defaults to one (1) and selects representative local streets from an all-streets network for inclusion in the TRANSIMS network. ‘\*’ is the first area type value in the list. This key supports up to 100 area types.

Example:

LOCAL\_SELECTION\_SPACING = 100, 200, 300, 400

LOCAL\_SELECTION\_SPACING\_1 = 100, 200, 300, 400

LOCAL\_SELECTION\_SPACING\_2 = 200

LOCAL\_SELECTION\_SPACING\_10 = 1000, 1100, 1200

Result = 100, 200, 300, 400, 400, 400, 400, 400, 400, 1000, 1100, 1200

# LOCAL\_THRU\_SEGMENT\_LENGTHS\_\*

**NetPrep Control Keys** List

This key is optional and, if specified, assigns local streets to the new Local-Thru facility type based on the length of a series of local links.

# LOCATION\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# LOCATION\_JOIN\_FIELD\_\*

**LocationData Control Keys** Text

This key specifies the name of the field in the Location file that identifies the zone.

# LOCATION\_SELECTION\_METHOD

**PathSkim Control Keys** (blank)

When PathSkim calculates zone-to-zone skims, it is actually calculating skims for selected locations within the origin and destination zones. The number of locations selected per zone is given by DESTINATION\_LOCATIONS\_PER\_ZONE and ORIGIN\_LOCATIONS\_PER\_ZONE. In cases where PathSkim is not using all of the locations in a zone, this parameter determines how the locations are selected. Valid values include:

RANDOM (the default): random locations are selected

CENTROID: locations are selected near the zone centroid

DISTRIBUTED: locations are spatially distributed around the zone.

USER: user specified (See ORIGIN\_LOCATION\_FILE and DESTINATION\_LOCATION\_FILE)

# LOCATION\_SIDE\_OFFSET

**Draw Service Keys** Decimal

The location side offset is used to display the origin and destination location for a travel plan. The default value is 15.0 meters. In this case, the location is draw fifteen meters to the right or left of the centerline of the link shape at the appropriate offset.

# LOCATIONDATA\_REPORT\_\*

Type of optional report produced by the LocationData program. Options include:

CONVERSION\_SCRIPT

CONVERSION\_STACK

CHECK\_ZONE\_COVERAGE

# LOOK\_AHEAD\_DISTANCE

**Flow-Time Service Keys** (blank)

# LOOK\_AHEAD\_LANE\_FACTOR

**Flow-Time Service Keys** (blank)

MACROSCOPIC\_SUBAREAS   
**Flow-Time Service Keys** (blank)

# MAX\_ARRIVAL\_TIME\_VARIANCE

**Flow-Time Service Keys** (blank)

# MAX\_BICYCLE\_DISTANCES\_\*

The maximum bicycle distance keys are optional. It defines the maximum cumulative bike distance for a given trip. If the value is zero, no bicycle limitations are imposed. Otherwise the value can range from 100 to 20,000 meters, with a default of 10,000 meters. If household types are defined, this key can include a list of values corresponding to each household type. For example, 4000, 3000, 2000 can be specified to define the maximum walk distance for household types 1, 2 and 3+, respectively.

# MAX\_CIRCUITY\_DISTANCE

The maximum circuity distance key is optional. The value can range from zero to 100,000 meters. The default value is 20,000 meters. This value is used in conjunction with the maximum circuity ratio to focus the path-building algorithm on links that are generally located between the trip origin and destination. If the origin and destination locations are far apart, the ratio calculation has little impact on the number of nodes that are considered by the path-building algorithm. This parameter is designed to help narrow the focus of long distance trips to more direct paths. The algorithm uses the minimum of the straight-line distance between the origin and destination multiplied by the circuity ratio and the maximum circuity distance to determine if a node is out of range. For example, this parameter will limit the trip distance to 20,000 meters longer than the straight-line distance between the origin and destination.

# MAX\_CIRCUITY\_RATIO

The maximum circuity ratio key is optional. The value can be zero or between 1.0 and 10.0. The default value is zero (no circuity checks are made). This key defines the maximum permissible ratio between the sum of the distance a path node is from the trip origin and destination and the straight-line distance between the trip origin and destination. If the value is zero, no circuity checks are made. A value of 2.0 implies that the length of the travel path is limited to approximately twice the straight-line distance between the origin and the destination.

This parameter is designed to reduce the processing time of the **Router**. By focusing the path-building algorithm on links that are generally between the origin and the destination, the program can avoid wasting computational time considering paths in the wrong direction.

# MAX\_COMFORTABLE\_SPEED\_\*

**Flow-Time Service Keys** (blank)

# MAX\_DEPARTURE\_TIME\_VARIANCE

**Flow-Time Service Keys** (blank)

# MAX\_KISS\_RIDE\_DROPOFF\_WALK

Optional key giving the maximum walking distance after a kiss & ride drop off. The range is 10 to 500 meters, with a default of 100 meters.

# MAX\_KISS\_RIDE\_PERCENTS\_\*

The maximum kiss-&-ride percentage key is optional. It defines the maximum percentage of the total trip length that can be used to access an auto drop off area at a transit stop. The length is calculated as the straight-line distance between the trip origin and the drop-off area and the drop-off area and the trip destination. The lots with the 10 shortest total trip lengths are selected for consideration by a kiss-&-ride trip. The value can range from 1 to 100 percent. The default value is 25 percent.

# MAX\_LEGS\_PER\_PATH

The maximum number of legs in a path is optional. The range is 10 to 10000, with a default value of 1000.

# MAX\_NUMBER\_OF\_PATHS\_\*

This key specifies the maximum number of paths. The range is 1 to 10, with a default of 4.

# MAX\_NUMBER\_OF\_TRANSFERS\_\*

The maximum number of transfers key is optional. It defines the maximum number of time the traveler can transfer between transit routes during a given trip. The value can range from zero to 10 transfers. The default value is 3 transfers.

# MAX\_PARK\_RIDE\_PERCENTS\_\*

The maximum park-&-ride percentage key is optional. It defines the maximum percentage of the total trip length that can be used to access a park-&-ride lot. The length is calculated as the straight-line distance between the trip origin and the park-&-ride lot and the park-&-ride lot and the trip destination. The lots with the 10 shortest total trip lengths are selected for consideration by a park-&-ride trip. The value can range from 1 to 100 percent. The default value is 50 percent.

# MAX\_PROBLEM\_COUNT

**Execution Service Keys** Integer

The maximum number of problems key is optional and can be any non-negative integer (i.e., >= 0). The maximum problem count defines the number of modeling problems that are permitted before the problem terminates execution. The default value of zero disables this feature. It defaults to 0 (no limitation).

# MAX\_SUBZONE\_DISTANCE\_\*

**LocationData Control Keys** (blank)

Maximum distance between a location and subzone centroid. The valid range is 10 to 10,000 meters, with a default of 1,000 meters.

# MAX\_TRAVEL\_TIME\_RATIO

**LinkDelay Control Keys** (blank)

# MAX\_WAIT\_TIMES\_\*

The maximum wait time key is optional. It defines the maximum time a person will consider waiting at each transit stop to board a vehicle. If the value is zero, no wait time limitations are imposed. Otherwise the value can range from 5 to 200 minutes. The default value is 60 minutes.

# MAX\_WALK\_DISTANCE

The new walk access field and maximum walk distance keys are used to calculate the relative accessibility of a given activity location to near-by transit stops. This calculation requires the link, node, process link, and transit network files. The number of runs at each stop and the distance between the stop and the activity location determine the accessibility weight. Max\_Walk\_Distance defaults to 1000 meters, with a range of 10 to 3000 meters.

# MAX\_WALK\_DISTANCES\_\*

The maximum walk distance keys are optional. It defines the maximum cumulative walk distance for a given trip. This includes walks to and from the vehicle and any walks required by transfers. If the value is zero, no walk limitations are imposed. Otherwise the value can range from 100 to 10,000 meters. The default value is 2,000 meters. If household types are defined, this key can include a list of values corresponding to each household type. For example, 4000, 3000, 2000 can be specified to define the maximum walk distance for household types 1, 2 and 3+, respectively.

# MAX\_WARNING\_EXIT\_FLAG

**Execution Service Keys** Boolean

If the maximum number of warning messages is exceeded, this flag directs the program in what to do. If the flag is TRUE (the default), the program is terminated with an error message about the warning messages. If the flag is FALSE, the program continues execution, but no additional warning messages are sent to the screen or written to the printout file. The warning message counter continues to count the messages and reports the total at the end of the execution. Possible values include TRUE/FALSE, YES/NO, 1/0, T/F, Y/N, and the default is TRUE.

# MAX\_WARNING\_MESSAGES

**Execution Service Keys** Integer

This key is optional and defaults to 100000 if a value is not specified. When the program generates a warning message, a counter is incremented and the total number of warning messages is reported and a warning return coded (2) is set at the end of the execution. By default the program prints up to 100,000 warning messages to the printout file. If more than 100,000 warning messages are sent, the program stops printing additional messages to the file or terminates the program with an error message based on the MAX\_WARNING\_EXIT\_FLAG. This parameter enables the user to modify the default warning limit. Valid values are non-negative integers (i.e., >= 0).

**MAXIMUM\_BANDWIDTH\_SIZE   
Draw Service Keys** (blank)

# MAXIMUM\_CONNECTION\_ANGLE

**TransimsNet Control Keys** Integer

This key is optional and has a default value of 120 degrees. The acceptable range of values for this parameter is 90..180 degrees. This key specifies the maximum connection angle that TransimsNet will employ while generating the synthetic link and node network. Link connection angles that exceed this value will not be constructed by TRANSIMS.

# MAXIMUM\_COST\_DIFFERENCE

**Select Service Keys** (blank)

# MAXIMUM\_GREEN\_FACTOR\_\*

**IntControl Control Keys** Decimal

The MAXIMUM\_GREEN\_FACTOR\_\* key is optional and specifies the weighting factor for the maximum green time. This key has a default value of 2.0. The ‘\*’ is a placeholder for the first number (default is 1; range is 1..100). This is for the purpose of grouping related parameters. Thus, up to 100 parameter groups for this control key are allowed.

# MAXIMUM\_LANE\_CAPACITY\_\*

**IntControl Control Keys** Integer

The MAXIMUM\_LANE\_CAPACITY\_\* key is optional. This key specifies the maximum capacity of a lane. This key is not used when the SIGNAL\_SPLIT\_METHOD key is set as LANES. The default value for this key is 1500 vphpl (vehicles per hour per lane) and the value specified should be greater than the value specified for the MINIMUM\_LANE\_CAPACIY field.

The MAXIMUM\_LANE\_CAPACITY\_\* key is part of the group that determines how the total cycle length is allocated to different phases. This group includes POCKET\_LANE\_FACTOR\_\*, GENERAL\_GREEN\_FACTOR\_\*, SIGNAL\_SPLIT\_METHOD\_\*, MINIMUM\_LANE\_CAPACITY\_\*, and MAXIMUM\_LANE\_CAPACITY\_\*. These parameters define how the number of lanes or lane capacity assigned to one phase is balanced against similar values from other phases to allocate a share of the total cycle time to each phase.

The ‘\*’ is a placeholder for the first number (default is 1; range is 1..100). This is for the purpose of grouping related parameters. Thus, up to 100 parameter groups for this control key are allowed.

# MAXIMUM\_LENGTH\_TO\_XY\_RATIO

**NetPrep Control Keys** Decimal

The maximum length to X-Y ratio key is optional. This key defaults to 1.2 when the value is not specified. This key is used to compare the link length in the input network file to the straight-line distance between the coordinates of the nodes at either end of the link and any shape points that are provided. If the length is less than the coordinate-based length, the output length is set equal to the coordinate-based length. If the ratio between the length and the coordinate-based length is greater than the value specified by this key, the program reduces the link length to the ratio times the coordinate-based length. For example, if the length field indicates the link is 1.3 miles long and the straight-line distance between the nodes is 1.0 miles, and the maximum ratio is 1.2, the program will reset the link length to 1.2 miles. The output printout file reports the number of links that were changed as a result of the distance checks.

# MAXIMUM\_LOADING\_TIME

**Flow-Time Service Keys** (blank)

# MAXIMUM\_NUMBER\_OF\_ITERATIONS

This optional key is used by the Router to implement multiple iterations within a single call to the Router, to attain link or trip-based convergence. The default of 0 means to NOT use multiple iterations. Valid values range from 0 to 100.

# MAXIMUM\_PERCENT\_SELECTED

The maximum percent selected is optional. If a value is not provided, all of the plans selected by the selection criteria will be written to the household ID file. If a value is provided, it specifies the maximum percentage of the total households within the each plan file that can be selected for output. If the number of selected households exceeds this percentage, the random probability function is used to determine which of the selected households will be written to the output file.

# MAXIMUM\_RIDERSHIP\_SIZE

**ArcPlan Control Keys** Decimal

The maximum ridership size determines the maximum width in meters of the bandwidth regardless of the number of riders on the link. The default maximum size is 1000 meters. The accepted range is between 1.0 and 10,000 meters.

# MAXIMUM\_SHAPE\_ANGLE

**ArcPlan Control Keys** Integer

The maximum shape angle is used to smooth the link shapes as they are offset from the centerline of the link. Smoothing helps to minimize distortions created by small imperfections in the link shape that become exaggerated when large offsets are applied. The default maximum shape angle is 45 degrees. The acceptable range is 5 to 120 degrees. If the edge of the polygon includes angle greater than this value, shape points are removed or added to smooth out the shape transitions.

**NetPrep Control Keys** Integer

This optional key specifies the maximum angle permitted in the output shape file. This key defaults to 90 degrees (NetPrep 5) if a value is not provided. The possible values range is {0, 5..120}.

# MAXIMUM\_SORT\_SIZE

Used in PlanPrep and TripPrep

The default is 0 (unlimited sort size) and valid values are either 0, or a value of 100,000 or higher.

# MAXIMUM\_SPEED\_DIFFERENCE

**Flow-Time Service Keys** (blank)

# MAXIMUM\_SWAPPING\_SPEED

**Flow-Time Service Keys** (blank)

# MAXIMUM\_TIME\_DIFFERENCE

The maximum time difference key is used in conjunction with the link delay file to determine which plans are selected for output. If the difference between the calculated travel time and the plan duration is greater than this value (in minutes), the plan is always considered for output even if the percent difference is less than the select time ratios key. The default value for this parameter is 60 minutes.

# MAXIMUM\_WAITING\_TIME

**Flow-Time Service Keys** (blank)

# MERGE\_LINK\_DELAY\_FORMAT

**LinkDelay Control Keys** FILE\_FORMAT

See File Formats.

# MERGE\_PLAN\_FILES

**PlanCompare Control Keys** Boolean

# MERGE\_PLAN\_FORMAT

**PlanPrep Control Keys** FILE\_FORMAT

See File Formats.

# MERGE\_TIME\_PERIODS

**System File Keys** Boolean

Default value is FALSE. Valid values include TRUE/FALSE, YES/NO, 1/0, T/F, Y/N

# MERGE\_TRIP\_FORMAT

**TripPrep Control Keys** FILE\_FORMAT

See File Formats.

# MERGE\_WEIGHTING\_FACTOR

**LinkDelay Control Keys** (blank)

The MERGE\_WEIGHTING\_FACTOR, which takes the place of the PREVIOUS\_WEIGHTING\_FACTOR in version 4, indicates how values in the LINK\_DELAY\_FILE and the MERGE\_LINK\_DELAY\_FILE are merged. The default value is 1.0, and valid values are either 0.0, or a value at least equal to 0.5. Let:

MERGE\_VAL = value in the Merge\_Link\_Delay\_File

CURR\_VAL= value in the Link\_Delay\_File

MERGE\_FACTOR = Merge\_Weighting\_Factor

NEW\_VAL = value in the New\_Link\_Delay\_File

In the absence of time smoothing:

NEW\_VAL = (MERGE\_VAL \* MERGE\_FACTOR + CURR\_VAL) / (MERGE\_FACTOR + 1)

# MESOSCOPIC\_SUBAREAS

**Flow-Time Service Keys** (blank)

# MICROSCOPIC\_SUBAREAS

**Flow-Time Service Keys** (blank)

# MICROSIMULATOR\_REPORT\_\*

**Microsimulator Control Keys** (blank)

# MIN\_CIRCUITY\_DISTANCE

The minimum circuity distance key is optional. The value can range from zero to 10,000 meters. The default value is 2,000 meters. This value is used in conjunction with the maximum circuity ratio to focus the path-building algorithm on links that are generally located between the trip origin and destination. If the origin and destination locations are relatively close from a straight-line distance perspective, but not as close from a network perspective, the ratio algorithm can limit the path building in illogical ways. This parameter is designed to help avoid this problem by permitting the algorithm to consider all nodes that are within a minimum distance of the origin and destination. For example, this parameter can allow the algorithm to consider nodes that are up to 2,000 meters away when the trip origin and destination are close to each other but on different streets.

# MIN\_WAIT\_TIMES\_\*

0 seconds //---- 0..3600 seconds

# MINIMUM\_BANDWIDTH\_SIZE

**Draw Service Keys** Decimal

The minimum bandwidth size determines the minimum width in meters of the bandwidth regardless of the number of vehicles (greater than or equal to the minimum value) on the link. The default minimum size is 0.01 meters. The accepted range is between 0.001 and 10.0 meters.

# MINIMUM\_BANDWIDTH\_VALUE

**Draw Service Keys** Integer

The minimum bandwidth value determines the fewest number of vehicles for which a bandwidth polygon is drawn. The default value is zero which means the polygon is draw if the link has one or more vehicles. The accepted range is between zero and 100,000 vehicles.

# MINIMUM\_COST\_DIFFERENCE

**Select Service Keys** (blank)

# MINIMUM\_LANE\_CAPACITY\_\*

**IntControl Control Keys** Integer

The MINIMUM\_LANE\_CAPACITY\_\* key is optional. This key specifies the minimum capacity of a lane. This key is not used when the SIGNAL\_SPLIT\_METHOD key is set as LANES. The default value for this key is 500 vphpl (vehicles per hour per lane).

The MINIMUM\_LANE\_CAPACITY\_\* key is part of the group that determines how the total cycle length is allocated to different phases. This group includes POCKET\_LANE\_FACTOR\_\*, GENERAL\_GREEN\_FACTOR\_\*, SIGNAL\_SPLIT\_METHOD\_\*, MINIMUM\_LANE\_CAPACITY\_\*, and MAXIMUM\_LANE\_CAPACITY\_\*. These parameters define how the number of lanes or lane capacity assigned to one phase is balanced against similar values from other phases to allocate a share of the total cycle time to each phase.

The ‘\*’ is a placeholder for the first number (default is 1; range is 1..100). This is for the purpose of grouping related parameters. Thus, up to 100 parameter groups for this control key are allowed.

# MINIMUM\_LINK\_FLOW

**LinkSum Control Keys** (blank)

# MINIMUM\_LINK\_LENGTH

**TransimsNet Control Keys** (blank)

The MINIMUM\_LINK\_LENGTH parameter control key is not implemented in TransimsNet 5.0. See DROP\_SHORT\_LINKS.

# MINIMUM\_PHASE\_TIME\_\*

**IntControl Control Keys** List

The MINIMUM\_PHASE\_TIME\_\* key is optional and defines the minimum time for a phase of a signalized intersection. The default value for this key is 5 seconds. The minimum phase time should be at least 1 second and the value should not be greater than half the value of signal cycle length.

The MINIMUM\_PHASE\_TIME\_\* key is part of the group that defines how a timing plan is developed for each phase. This group includes MINIMUM\_PHASE\_TIME\_\*, YELLOW\_PHASE\_TIME\_\*, RED\_CLEAR\_PHASE\_TIME\_\*, and EXTENDED\_GREEN\_FACTOR\_\*. These parameters define how the minimum, maximum, and extended green times are computed for fixed-timed and demand-actuated phases.

The ‘\*’ is a placeholder for the first number (default is 1; range is 1..100). This is for the purpose of grouping related parameters. Thus, up to 100 parameter groups for this control key are allowed.

# MINIMUM\_RIDERSHIP\_SIZE

**ArcPlan Control Keys** Decimal

The minimum ridership size determines the minimum width in meters of the bandwidth regardless of the number of riders (greater than or equal to the minimum value) on the link. The default minimum size is 0.01 meters. The accepted range is between 0.001 and 10.0 meters.

# MINIMUM\_RIDERSHIP\_VALUE

**ArcPlan Control Keys** Integer

The minimum ridership value determines the fewest number of riders for which a bandwidth polygon is drawn. The default value is zero which means the polygon is draw if the link has one or more riders. The accepted range is between zero and 100,000 riders.

# MINIMUM\_SHAPE\_LENGTH

**ArcPlan Control Keys** Integer

**NetPrep Control Keys** Integer

This key is optional and sets the value for the minimum shape length permitted in the output shape file. If no value is provided, this defaults to 10 meters (NetPrep 5) with a range of (0..50}. The minimum shape length is used to smooth the link shapes as they are offset from the centerline of the link. Smoothing helps to minimize distortions created by small imperfections in the link shape that become exaggerated when large offsets are applied. The default minimum shape length is 5 meters. The acceptable range is 1 to 50 meters. If the edge of the polygon includes distances between shape points that are less than this value, shape points are removed from the edge until the minimum length is met.

# MINIMUM\_TIME\_DIFFERENCE

The minimum time difference key is used in conjunction with the link delay file to determine which plans are selected for output. If the difference between the calculated travel time and the plan duration is less than this value (in minutes), the plan is not considered for output even if the percent difference is greater than the PERCENT\_TIME\_DIFFERENCE key. The default value for this parameter is one minute.

# MINIMUM\_ZONE\_LOCATIONS

**LocationData Control Keys** Integer

This key is an integer, with a default value of 4, and a valid range of 2 to 20.  It indicates the minimum number of locations that should be associated with each zone.  It is used with the NEW\_ZONE\_LOCATION\_MAP\_FILE key to suggest additional location assignment to those zones that are currently assigned to fewer than **the number specified for** MINIMUM\_ZONE\_LOCATIONS.

# MODEL\_END\_TIME

**Execution Service Keys** Time

The model end time defines the time-of-day at the end of the modeling process. The default value is 24:00. Since there tends to be a significant number of trips that start near midnight and may take some time to reach their destination, the model end time is often increased to a value such as 27:00 to ensure that all trips are completed. Other applications may wish to model travel over multiple days (e.g., hurricane evacuation studies). In this case, this control key can be set to 48:00 or 72:00. Valid values are times greater than the MODEL\_START\_TIME.

# MODEL\_START\_TIME

**Execution Service Keys** Time

The model start time defines the time-of-day at the beginning of the modeling process. The default value is 0:00 or midnight. Many activity-based models consider the start of the day to be 3:00 AM when most people are at home in bed. Valid values are times greater than or equal to 0 [seconds], 0.0 [hours], 0:00.

# MODEL\_TIME\_INCREMENT

**Execution Service Keys** Time

This is an optional key and defaults to a value of 15 minutes if not specified. The model time increment defines the standard time period resolution used for dynamic assignments. The combination of time increments and model start and end times establishes the number of time periods used for defining link travel times and speeds. For example, the default parameters create 96 different travel time values for each link. The time increment used for routing and link delay processing. Valid values are from two to 240 (2..240) minutes.

# NEAREST\_NEIGHBOR\_FACTOR

**System File Keys** (blank)

Adjusts skim values for intra-zonal skims. Default value is 0.5. Valid values range from 0.0 to 1.0. (See output\_skims.cpp)

# NETPREP\_REPORT\_#

**NetPrep Control Keys** Text

This is an optional key for NetPrep, and if used, the “#” is replaced by the number one (1) or two (2). Neither, one, or both of the following could be included in the control file if the user desires to see the associated report(s) appended to the output PRN file:

NETPREP\_REPORT\_1 CONVERSION\_SCRIPT

NETPREP\_REPORT\_2 CONVERSION\_STACK

The CONVERSION\_SCRIPT report, if included, will append the conversion script used with NetPrep (assuming one has been used) to the end of the PRN file. The CONVERSION\_STACK report, if included, will append a numeric list of the computations used, in order, to process the conversion script file. One use of this report would be to review the computational processing associated with the conversion script to ensure that values were correctly assigned to and compared with other values, in the correct order, etc. If errors are discovered, the conversion script could simply be edited and NetPrep re-run.

# NEW\_AB\_SPEED\_FIELD\_NAME

**LinkData Control Keys** (blank)

# NEW\_AB\_VOLUME\_FIELD\_NAME

**LinkData Control Keys** (blank)

# NEW\_ACCESS\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_BA\_SPEED\_FIELD\_NAME

**LinkData Control Keys** (blank)

# NEW\_BA\_VOLUME\_FIELD\_NAME

**LinkData Control Keys** (blank)

# NEW\_CONNECTION\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_DATA\_FORMAT\_\*

**FileFormat Control Keys** FILE\_FORMAT

See File Formats.

# NEW\_DETECTOR\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_DIRECTIONAL\_DATA\_FORMAT

**LinkData Control Keys** FILE\_FORMAT

See File Formats.

# NEW\_EVENT\_COORDINATES\_\*

**Turn Volume Output Keys** (blank)

# NEW\_EVENT\_FILTER\_\*

**Turn Volume Output Keys** (blank)

# NEW\_EVENT\_FORMAT\_\*

**Turn Volume Output Keys** FILE\_FORMAT

See File Formats.

# NEW\_EVENT\_LINK\_RANGE\_\*

**Turn Volume Output Keys** (blank)

# NEW\_EVENT\_MODE\_RANGE\_\*

**Turn Volume Output Keys** (blank)

# NEW\_EVENT\_SUBAREA\_RANGE\_\*

**Turn Volume Output Keys** (blank)

# NEW\_EVENT\_TIME\_FORMAT\_\*

**Turn Volume Output Keys** FILE\_FORMAT

See File Formats.

# NEW\_EVENT\_TIME\_RANGE\_\*

**Turn Volume Output Keys** (blank)

# NEW\_EVENT\_TYPE\_RANGE\_\*

**Turn Volume Output Keys** (blank)

# NEW\_GROUP\_TRAVEL\_FORMAT

**LinkSum Control Keys** FILE\_FORMAT

See File Formats.

# NEW\_HOUSEHOLD\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_LANE\_USE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_LINK\_ACTIVITY\_FORMAT

**LinkSum Control Keys** FILE\_FORMAT

See File Formats.

# NEW\_LINK\_DATA\_FIELD\_\*

**LinkSum Control Keys** (blank)

# NEW\_LINK\_DATA\_FORMAT

**LinkData Control Keys** FILE\_FORMAT

See File Formats.

# NEW\_LINK\_DATA\_FORMAT\_\*

**LinkSum Control Keys** FILE\_FORMAT

See File Formats.

# NEW\_LINK\_DELAY\_COORDINATES\_\*

**Link Delay Output Keys** (blank)

# NEW\_LINK\_DELAY\_FLOW\_TYPE\_\*

**Link Delay Output Keys** (blank)

# NEW\_LINK\_DELAY\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_LINK\_DELAY\_FORMAT\_\*

**Link Delay Output Keys** FILE\_FORMAT

See File Formats.

# NEW\_LINK\_DELAY\_INCREMENT\_\*

**Link Delay Output Keys** (blank)

# NEW\_LINK\_DELAY\_LINK\_RANGE\_\*

**Link Delay Output Keys** (blank)

# NEW\_LINK\_DELAY\_SUBAREA\_RANGE\_\*

**Link Delay Output Keys** (blank)

# NEW\_LINK\_DELAY\_TIME\_FORMAT\_\*

**Link Delay Output Keys** (blank)

See File Formats.

# NEW\_LINK\_DELAY\_TIME\_RANGE\_\*

**Link Delay Output Keys** (blank)

# NEW\_LINK\_DELAY\_TURN\_FLAG\_\*

**Link Delay Output Keys** Boolean

# NEW\_LINK\_DELAY\_VEH\_TYPES\_\*

**Link Delay Output Keys** (blank)

# NEW\_LINK\_DIRECTION\_FIELD\_\*

**LinkSum Control Keys** (blank)

# NEW\_LINK\_DIRECTION\_FORMAT\_\*

**LinkSum Control Keys** FILE\_FORMAT

See File Formats.

# NEW\_LINK\_DIRECTION\_INDEX\_\*

**LinkSum Control Keys** (blank)

# NEW\_LINK\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_LINK\_SUMMARY\_FORMAT

**ArcSnapshot Control Keys** FILE\_FORMAT

See File Formats.

# NEW\_LOCATION\_FIELD, NEW\_LOCATION\_FIELD\_\*

**LocationData Control Keys** List

This key defines new fields to add to the location file (The latter was formerly the activity location file in TRANSIMS 4.0). The values assigned to these fields are initialized to zero or blank and are typically set using a conversion script. The key can include up to three comma separated values. The first is the field name. This is followed by the field type and the field size. The type options include integer (default, I, INTEGER), floating point (R, REAL, D, DOUBLE), or string (S, STRING, C, CHARACTER). The default size is 10. Floating point fields can be defined with decimal points (e.g., 10.2). Two decimal points are assumed by default.

# NEW\_LOCATION\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_NODE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_OCCUPANCY\_COORDINATES\_\*

**Turn Volume Output Keys** (blank)

# NEW\_OCCUPANCY\_FORMAT\_\*

**Turn Volume Output Keys** FILE\_FORMAT

See File Formats.

# NEW\_OCCUPANCY\_INCREMENT\_\*

**Turn Volume Output Keys** (blank)

# NEW\_OCCUPANCY\_LINK\_RANGE\_\*

**Turn Volume Output Keys** (blank)

# NEW\_OCCUPANCY\_MAX\_FLAG\_\*

**Turn Volume Output Keys** Boolean

# NEW\_OCCUPANCY\_SUBAREA\_RANGE\_\*

**Turn Volume Output Keys** (blank)

# NEW\_OCCUPANCY\_TIME\_FORMAT\_\*

**Turn Volume Output Keys** FILE\_FORMAT

See File Formats.

# NEW\_OCCUPANCY\_TIME\_RANGE\_\*

**Turn Volume Output Keys** (blank)

# NEW\_PARKING\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_PERFORMANCE\_COORDINATES\_\*

**Performance Output Keys** (blank)

# NEW\_PERFORMANCE\_DATA\_FORMAT

**LinkSum Control Keys** FILE\_FORMAT

See File Formats.

# NEW\_PERFORMANCE\_FLOW\_TYPE\_\*

**Performance Output Keys** (blank)

# NEW\_PERFORMANCE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_PERFORMANCE\_FORMAT\_\*

**Performance Output Keys** FILE\_FORMAT

See File Formats.

# NEW\_PERFORMANCE\_INCREMENT\_\*

**Performance Output Keys** (blank)

# NEW\_PERFORMANCE\_LINK\_RANGE\_\*

**Performance Output Keys** (blank)

# NEW\_PERFORMANCE\_SUBAREA\_RANGE\_\*

**Performance Output Keys** (blank)

# NEW\_PERFORMANCE\_TIME\_FORMAT\_\*

**Performance Output Keys** FILE\_FORMAT

See File Formats.

# NEW\_PERFORMANCE\_TIME\_RANGE\_\*

**Performance Output Keys** (blank)

# NEW\_PERFORMANCE\_TURN\_FLAG\_\*

**Performance Output Keys** Boolean

# NEW\_PERFORMANCE\_VEH\_TYPES\_\*

**Performance Output Keys** (blank)

# NEW\_PHASING\_PLAN\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_PLAN\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_POCKET\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_PROBLEM\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_RIDERSHIP\_ALL\_STOPS\_\*

**Ridership Output Keys** Boolean

# NEW\_RIDERSHIP\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_RIDERSHIP\_FORMAT\_\*

**Ridership Output Keys** FILE\_FORMAT

See File Formats.

# NEW\_RIDERSHIP\_ROUTE\_RANGE\_\*

**Ridership Output Keys** (blank)

# NEW\_RIDERSHIP\_TIME\_FORMAT\_\*

**Ridership Output Keys** FILE\_FORMAT

See File Formats.

# NEW\_RIDERSHIP\_TIME\_RANGE\_\*

**Ridership Output Keys** (blank)

# NEW\_ROUTE\_NODES\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_SELECTION\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_SHAPE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_SIGN\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_SIGNAL\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_SKIM\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_SNAPSHOT\_CELL\_FLAG\_\*

**Simulation Service Keys** Boolean

# NEW\_SNAPSHOT\_COMPRESSION

**NewFormat Control Keys** Boolean

Defaults to FALSE. Indicates whether a new snapshot file produced by NewFormat should be compressed for use in the Version 5 visualizer.

# NEW\_SNAPSHOT\_COMPRESSION\_\*

**Simulation Service Keys** Boolean

Defaults to FALSE. Indicates whether a new snapshot file produced by the Simulator should be compressed for use in the Version 5 visualizer.

# NEW\_SNAPSHOT\_COORDINATES\_\*

**Simulation Service Keys** (blank)

# NEW\_SNAPSHOT\_FORMAT

**ArcSnapshot Control Keys** FILE\_FORMAT

**NewFormat Control Keys** FILE\_FORMAT

See File Formats.

# NEW\_SNAPSHOT\_FORMAT\_\*

**Simulation Service Keys** FILE\_FORMAT

See File Formats.

# NEW\_SNAPSHOT\_INCREMENT\_\*

**Simulation Service Keys** (blank)

# NEW\_SNAPSHOT\_LINK\_RANGE\_\*

**Simulation Service Keys** (blank)

# NEW\_SNAPSHOT\_LOCATION\_FLAG\_\*

**Simulation Service Keys** Boolean

# NEW\_SNAPSHOT\_MAX\_SIZE\_\*

**Simulation Service Keys** (blank)

# NEW\_SNAPSHOT\_STATUS\_FLAG\_\*

**Simulation Service Keys** Boolean

# NEW\_SNAPSHOT\_SUBAREA\_RANGE\_\*

**Simulation Service Keys** (blank)

# NEW\_SNAPSHOT\_TIME\_FORMAT\_\*

**Simulation Service Keys** FILE\_FORMAT

See File Formats.

# NEW\_SNAPSHOT\_TIME\_RANGE\_\*

**Simulation Service Keys** (blank)

# NEW\_SUBZONE\_FIELD\_\*

**LocationData Control Keys** (blank)

From Version 4: Each subzone key group consists of up to five keys. The new subzone field will include an activity location weight based on the proximity of the activity location to the subzone centroid found in the subzone file and the value of the subzone field. The average of the weights to the two best subzone centroids is saved to the new activity location field. This option is typically used to assign trip distribution weights to activity locations based on subzone population or employment data.

# NEW\_TIMING\_PLAN\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_TRANSIT\_DRIVER\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_TRANSIT\_FARE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_TRANSIT\_ROUTE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_TRANSIT\_SCHEDULE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_TRANSIT\_STOP\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_TRIP\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_TURN\_PENALTY\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_TURN\_VOLUME\_FILTER\_\*

**Turn Volume Output Keys** (blank)

# NEW\_TURN\_VOLUME\_FORMAT

**LinkSum Control Keys** FILE\_FORMAT

See File Formats.

# NEW\_TURN\_VOLUME\_FORMAT\_\*

**Turn Volume Output Keys** FILE\_FORMAT

See File Formats.

# NEW\_TURN\_VOLUME\_INCREMENT\_\*

**Turn Volume Output Keys** (blank)

# NEW\_TURN\_VOLUME\_NODE\_RANGE\_\*

**Turn Volume Output Keys** (blank)

# NEW\_TURN\_VOLUME\_SUBAREA\_RANGE\_\*

**Turn Volume Output Keys** (blank)

# NEW\_TURN\_VOLUME\_TIME\_FORMAT\_\*

**Turn Volume Output Keys** FILE\_FORMAT

See File Formats.

# NEW\_TURN\_VOLUME\_TIME\_RANGE\_\*

**Turn Volume Output Keys** (blank)

# NEW\_USE\_FLAG\_FIELD\_\*

**LocationData Control Keys** (blank)

# NEW\_VEHICLE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_VEHICLE\_TYPE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_WALK\_ACCESS\_FIELD

**LocationData Control Keys** (blank)

This is a field name. The new walk access field and maximum walk distance keys are used to calculate the relative accessibility of a given activity location to near-by transit stops. This calculation requires the link, node, process link, and transit network files. The number of runs at each stop and the distance between the stop and the activity location determine the accessibility weight. [definition to be revisited]

# NEW\_ZONE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NEW\_ZONE\_LOCATION\_MAP\_FILE

This is the name of a file that contains a list of zones along with nearby activity locations that are not currently assigned to the zones. The zones that are listed include those zones that are currently assigned to fewer activity locations than the number specified in MINIMUM\_ZONE\_LOCATIONS. For each such zone, one or more locations, near to but not currently assigned to the zone, are listed. An example appears below. Note that “activity locations” are called “locations” in TRANSIMS Version 5.0.

ZONE LOCATIONS

2 48, 9

5 46

10 13, 56

11 57, 14

12 51, 1

13 29, 37

14 58, 41

# NEW\_ZONE\_TRAVEL\_FORMAT

**LinkSum Control Keys** FILE\_FORMAT

See File Formats.

# NODE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# NODE\_LIST\_PATHS

**NewFormat Control Keys** Boolean

**ArcPlan Control Keys** Boolean

The node list paths key is optional and specifies the way the path is identified in the Version 4 input plan file. The key is TRUE by default. This means that the input plans will include a list of the node ID numbers along the travel path. If the key is FALSE, the program interprets the path as a list of link ID numbers. If the first character of the key is “0”, “N”, “n”, “F”, or “f”, the key is interpreted as FALSE.

This key is only used with version 4 plans: version 5 plans are always defined by links.

# NOTES\_AND\_NAME\_FIELDS

**System File Keys** Boolean

This Boolean key defaults to FALSE, and specifies whether a NOTES field is added to an output file. Possible values in clude TRUE/FALSE, YES/NO, 1/0, T/F, Y/N.

# NUMBER\_OF\_ITERATIONS

**Simulation Service Keys** (blank)

The Number\_of\_Iterations is used by LinkDelay to define how many times the moving average process is applied to the full set of time periods (default is 3). The range is 1 to 25.

Table 1 illustrates the effects of several values (1, 3 and 7) of NUMBER\_OF\_ITERATIONS on a single link.

Table 1 NUMBER\_OF\_ITERATIONS: Effect on link time and flow

| Time | Input | Results | | | Input | Results | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flow | 1 | 3 | 7 | Time | 1 | 3 | 7 |
| 7:00 |  |  |  | 3 |  |  |  | 14.9 |
| 7:15 |  |  | 8 | 16 |  |  | 14.9 | 14.9 |
| 7:30 |  |  | 79 | 67 |  |  | 14.7 | 14.7 |
| 7:45 |  | 194 | 324 | 188 |  | 14.3 | 13.9 | 14.4 |
| 8:00 | 971 | 811 | 714 | 399 | 11.9 | 12.5 | 12.9 | 13.8 |
| 8:15 | 1141 | 1105 | 1000 | 651 | 12.0 | 12 | 12.2 | 13.1 |
| 8:30 | 1131 | 1132 | 1056 | 845 | 12.0 | 12 | 12 | 12.5 |
| 8:45 | 1125 | 998 | 886 | 891 | 12.1 | 12 | 11.9 | 12.1 |
| 9:00 | 486 | 525 | 546 | 775 | 11.5 | 11.5 | 11.8 | 12 |
| 9:15 | 43 | 123 | 222 | 549 | 10.8 | 11.8 | 12.4 | 12.2 |
| 9:30 |  | 9 | 55 | 312 |  | 14.1 | 13.6 | 12.7 |
| 9:45 |  |  | 7 | 139 |  |  | 14.6 | 13.5 |
| 10:00 |  |  |  | 48 |  |  |  | 14.2 |
| 10:15 |  |  |  | 12 |  |  |  | 14.6 |
| 10:30 |  |  |  | 2 |  |  |  | 14.8 |

# NUMBER\_OF\_PARTITIONS

**RandomSelect Control Keys** (blank)

The number of partitions created in the selection file produced by RandomSelect. The default is 8, and valid values range from 1 to 999.

# NUMBER\_OF\_RINGS\_\*

**IntControl Control Keys** List

The NUMBER\_OF\_RINGS\_\* control key is optional and has a default value of 1. The possible value range for this key is between 1 and 4. This key is used to specify the number of signal rings for each signalized intersection by area type.

The ‘\*’ is a placeholder for the first area type value in the list. It is optional and defaults to 1 and represents area type or jurisdiction type for the purpose of grouping related parameters. A maximum of 100 area types are supported.

# NUMBER\_OF\_THREADS

**Execution Service Keys** Integer

This parameter is only used for programs where multi-thread processing is enabled. TRANSIMS uses the Boost library to implement processing threads. The software can be compiled with or without this library. If the library is included and the program is thread enabled, the number of threads key instructs the program on the number of CPUs that will be used for parallel data processing. The key value can range from 1 to 64. The user can disable the multi-thread processing by setting this key to 1. If the key value is greater than one and the particular program or compiled executable does not support multi-threading, a warning message is written to the screen. The default value is 1.

# OCCUPANCY\_FORMAT

**ArcSnapshot Control Keys** FILE\_FORMAT

See File Formats.

# ONEWAY\_ARROW\_LENGTH

**Draw Service Keys** Decimal

This key specifies the length of the arrow symbol drawn at the end of one-way links in meters. The default is two times the lane width key. Arrows are only drawn if the draw one-way arrows key is TRUE.

# ONEWAY\_ARROW\_SIDE\_OFFSET

**Draw Service Keys** Decimal

This key specifies the width of the arrow symbol drawn at the end of one-way links in meters. The default is one half the lane-width key. Arrows are only drawn if the draw one-way arrows key is TRUE.

# ORIGIN\_LOCATIONS\_PER\_ZONE

**PathSkim Control Keys** (blank)

This number is used by PathSkim to determine the number of locations in an origin zone that will be used for calculating skims. The number of origin locations per zone can range from 0 to 100. The default is 0, and it indicates that all locations should be used. TRANSIMS actually calculates Location – Location travel times, and this parameter specifies the number of locations that should be used to determine an average travel time from a zone.

# ORIGIN\_WEIGHT\_FIELD\_\*

**ConvertTrips Control Keys** (blank)

# OUTPUT\_COORDINATE\_ADJUSTMENT

**Simulation Service Keys** List

The output coordinate adjustment enables the user to manipulate the coordinates after they are returned from the output coordinate conversion calculation. This key is optional. It is only needed if the output coordinates should be in units that are different from the conversion algorithm. By default, TRANSIMS data files store coordinate data in meters that don’t require any adjustments. The adjustment command includes four floating-point numbers separated by commas. The first two numbers are the X and Y offsets. The last two numbers are X and Y adjustment factors. The process adds the offset value to the coordinate and then applies the adjustment factor. In other words:

X = (X + X\_offset) \* X\_factor

Y = (Y + Y\_offset) \* Y\_factor

# OUTPUT\_COORDINATE\_SYSTEM

**Simulation Service Keys** List

This key has a CSV list format and is optional. The output coordinate system determines how the locations from the input shape file are converted into X-Y coordinates in the output Node, Link, and Shape files. This key is only needed if coordinate conversions are desired.

The output coordinate command includes three parts separated by a comma. The first part is the coordinate system description. The options include UTM, STATEPLANE, and LATLONG. The second part identifies the code number within the coordinate system that relates to the local conversion parameters. For UTM coordinates in the U.S, these codes range from 1 to 20. Stateplane coordinates are defined using four digit FIPS codes (e.g., Oregon North = 3601). A code is not needed for the Latitude/Longitude system. The third parameter defines the coordinate units. By default, UTM is in meters, Stateplane is in feet, and Latitude/Longitude is in degrees. The user can override these assumptions using the following keywords: FEET, METERS, MILES, KILOMETERS, DEGREES, and MILLION\_DEGREES. Figure 5 shows the UTM coordinate zones for the U.S. (Public domain illustration downloaded from <http://en.wikipedia.org/wiki/File:Utm-zones.jpg> )

Map of UTM zones.  Numbers go from west to east, for example:
10 - west coast
16 - Chicago
17 - Lake Erie to Florida
18 - New York to coast of North Carolina
19 - Boston to Maine
Letters go from south to North, for example
R - Florida / south texas
S - south of 40 degrees latitude
T - north of 40 degrees latitude to Lake Superior

Figure 5 UTM Coordinate Zones for the U.S.

# OUTPUT\_XYM\_SHAPES

**Simulation Service Keys** Boolean

By default, this key is FALSE, and the output files will use X and Y coordinates. If the key is TRUE, the output file will have X, Y and M (measure) coordinates. Possible values are TRUE/FALSE, YES/NO, 1/0, T/F, Y/N.

# OUTPUT\_XYZ\_SHAPES

**Simulation Service Keys** Boolean

By default, this key is FALSE, and the output files will use X and Y coordinates. If the key is TRUE, the output file will have X, Y and Z coordinates. Possible values are TRUE/FALSE, YES/NO, 1/0, T/F, Y/N.

# PAD\_FILE\_TIME\_LABEL

**ArcSnapshot Control Keys** Boolean

# PARKING\_DETAIL\_WARRANT\_\*

**TransimsNet Control Keys** List

The parking detail warrant parameter is a new addition to the TRANSIMS toolbox starting with Version 5 of the software. This key has an ‘\*’ suffix as with the other warrant control key. This enables the user to specify warrants that are grouped by time of day. The ‘\*’ is replaced by a number when the key is used (1..100). The functionality that this key provides is the ability to add cost and time to parking lots by time of day. To this end, multi-data field records are used (at, time, use, in, out, hourly, daily). These fields are defined below:

* At – This specifies the area type range (this can be a single area type as well)
* Time – This specifies the time of day range
* Use – This specifies the vehicle use type
* In – This specifies the time required to park the vehicle
* Out – This specifies the time required to move the vehicle out of the parking lot
* Hourly – This specifies the hourly parking cost
* Daily – This specifies the daily parking cost

Figure 6 is a simple example of this key with all fields populated:



Figure 6 PARKING\_DETAIL\_WARRANT\_\* Example

# PARKING\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# PARKING\_SIDE\_OFFSET

**Draw Service Keys** Decimal

The parking side offset is used to display the origin and destination parking location for a drive plan. The default value is 5.0 meters. In this case, the parking lot is drawn five meters to the right or left of the centerline of the link shape at the appropriate offset.

# PARKING\_TIME\_VALUES\_\*

**Path Building Service Keys** (blank)

# PATHSKIM\_REPORT\_\*

**PathSkim Control Keys** (blank)

# PERCENT\_COST\_DIFFERENCE

**Select Service Keys** (blank)

# PERCENT\_MOVED\_BACKWARD

**Simulation Service Keys** (blank)

Used in LinkDelay to indicate the percentage of current period flows and travel times that are moved backwards or forward. The Percent\_Moved\_Backward defines the percentage of the current period volume that is added to the previous time period. It defaults to 20 percent. The range is 0..(100 – 50 / [smooth group size])

Table 2 illustrates the impacts of several values of PERCENT\_MOVED\_FORWARD and PERCENT\_MOVED\_BACKWARD on a single link. The values used are

* 20% FORWARD and 20% BACKWARD (the default), labeled as 20\_20
* 5% FORWARD and 5% BACKWARD, labeled as 5\_5
* 0% FORWARD and 20% BACKWARD , labeled as 0\_20

Table 2 PERCENT\_MOVED\_BACKWARD / FORWARD: Effect of various values

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time | Input | Results | | | Input | Results | | |
| Flow | 20\_20 | 5\_5 | 0\_20 | Time | 20\_20 | 5\_5 | 0\_20 |
| 7:15 |  | 8 |  | 8 |  | 14.9 |  | 14.9 |
| 7:30 |  | 79 | 7 | 102 |  | 14.7 | 14.9 | 14.6 |
| 7:45 |  | 324 | 126 | 492 |  | 13.9 | 14.5 | 13.4 |
| 8:00 | 971 | 714 | 868 | 1052 | 11.9 | 12.9 | 12.3 | 11.9 |
| 8:15 | 1141 | 1000 | 1111 | 1131 | 12.0 | 12.2 | 12 | 12 |
| 8:30 | 1131 | 1056 | 1126 | 1058 | 12.0 | 12 | 12 | 12 |
| 8:45 | 1125 | 886 | 1040 | 767 | 12.1 | 11.9 | 12 | 11.8 |
| 9:00 | 486 | 546 | 511 | 265 | 11.5 | 11.8 | 11.5 | 11.6 |

# PERCENT\_MOVED\_FORWARD

**Simulation Service Keys** (blank)

Used in LinkDelay to indicate the percentage of current period flows and travel times that are moved backwards or forward. The Percent\_Moved\_Forward defines the percentage of the current period volume that is added to the next time period. It defaults to 20 percent. The range is 0..(100 – 50 / [smooth group size]). See PERCENT\_MOVED\_BACKWARD for an example.

# PERCENT\_RANDOM\_IMPEDANCE

The percent random impedance key is optional and specifies the amount of random impedance effects. The key can range from zero to 100 percent. The default value is zero. Zero implies that all travelers perceive the impedance on a given link in exactly the same way. Non-zero parameters cause the program to randomly adjust the link impedance each time it is considered by the path-building algorithm. A value of 20 means that the impedance perceived by the traveler may be as much as 10 percent less or 10 percent more than the “actual” impedance.

# PERCENT\_TIME\_DIFFERENCE

The percent time difference key is used in conjunction with the link delay file to determine which plans have a computed travel time that is significantly different from the plan duration. The program uses the link delay information by time period to calculate the travel time using the plan links. This value is subtracted from and divided by the plan duration to estimate the percent difference. If the percent difference for a given plan is greater than the percent time difference key, the household is selected for output to the household ID file. The default value for this parameter is 0.

# PERFORMANCE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# PERIOD\_CONTROL\_POINT

**Data Service Keys** (blank)

# PERMISSION\_PROBABILITY\_\*

**Flow-Time Service Keys** (blank)

# PERMITTED\_LEFT\_FACTOR\_\*

**IntControl Control Keys** List

The PERMITTED\_LEFT\_FACTOR\_\* control key is optional and has a default value of 0.5. The possible value range for this key is 0.2 to 1.0.

The ‘\*’ is a placeholder for the first area type value in the list. It is optional and defaults to 1 and represents area type or jurisdiction type for the purpose of grouping related parameters. A maximum of 100 area types are supported.

# PHASING\_PLAN\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# PLAN\_FOLLOWING\_DISTANCE

**Flow-Time Service Keys** (blank)

# PLAN\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# PLAN\_SORT\_TYPE

**Data Service Keys** (blank)

# PLANCOMPARE\_REPORT\_\*

**PlanCompare Control Keys** (blank)

# PLANSUM\_REPORT\_\*

**PlanSum Control Keys** (blank)

# POCKET\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# POCKET\_LANE\_FACTOR\_\*

**IntControl Control Keys** List

The POCKET\_LANE\_FACTOR\_\* key is optional. This key specifies the weighting factor for the length of the pocket lane. The default value for this key is 0.5. The value for this key can range between 0.0 and 1.0.

The POCKET\_LANE\_FACTOR\_\* key is part of the group that determines how the total cycle length is allocated to different phases. This group includes POCKET\_LANE\_FACTOR\_\*, GENERAL\_GREEN\_FACTOR\_\*, SIGNAL\_SPLIT\_METHOD\_\*, MINIMUM\_LANE\_CAPACITY\_\*, and MAXIMUM\_LANE\_CAPACITY\_\*. These parameters define how the number of lanes or lane capacity assigned to one phase is balanced against similar values from other phases to allocate a share of the total cycle time to each phase.

The ‘\*’ is a placeholder for the first area type value in the list. It is optional and defaults to 1 and represents area type or jurisdiction type for the purpose of grouping related parameters. A maximum of 100 area types are supported.

# POCKET\_LANE\_WARRANT\_\*

**TransimsNet Control Keys** List

The POCKET\_LANE\_WARRANT\_\* control key in TransimsNet 5 replaces the Version 4 control key POCKET\_LENGTHS\_FOR\_FACILITY\_# and adds multiple data fields. Version 5 supports records with multiple data fields, specifically the following: |from | to | at | type | length | lanes|. This list of data fields is further defined below. In addition, the \* allows for logical grouping of parameters using an iterative approach, which is show below as well.

New Data Fields

* From - Approach facility type (e.g., PRINCIPAL) or range of types (e.g., FREEWAY..EXPRESSWAY)
* To - Departure facility type or range of types
* At - Area type or range of types
* Type - Pocket lane type (left/right turn, left/right merge, etc.)
* Length - default units are meters
* Lanes - Number of lanes

Figure 7 shows the data fields for TRANSIMS Version 4.

POCKET\_LENGTHS\_FOR\_FACILITY\_1 100, 150, 150, 150, 300, 350, 400, 500

Figure 7 POCKET\_LANE\_WARRANT\_# in TRANSIMS Version 4

Figure 8 shows the data fields for TRANSIMS Version 5.

POCKET\_LANE\_WARRANT\_1 FREEWAY..EXPRESSWAY, RAMP, 1..2, RIGHT, 100 feet, 1

Figure 8 POCKET\_LANE\_WARRANT\_\* in TRANSIMS Version 5

The following example depicts multiple pocket lane warrants in TRANSIMS Version 5:

POCKET\_LANE\_WARRANT\_1 FREEWAY, ALL, 1, RIGHT, 100 meters, 1

POCKET\_LANE\_WARRANT\_2 FREEWAY, ALL, 2, RIGHT, 200 meters, 1

POCKET\_LANE\_WARRANT\_3 FREEWAY, ALL, 3, RIGHT, 300 meters, 1

POCKET\_LANE\_WARRANT\_4 FREEWAY, ALL, 4, RIGHT, 400 meters, 1

POCKET\_LANE\_WARRANT\_5 EXPRESSWAY, ALL, 1, RIGHT, 75 meters, 1

POCKET\_LANE\_WARRANT\_6 EXPRESSWAY, ALL, 2, RIGHT, 150 meters, 1

POCKET\_LANE\_WARRANT\_7 EXPRESSWAY, ALL, 3, RIGHT, 200 meters, 1

POCKET\_LANE\_WARRANT\_8 EXPRESSWAY, ALL, 4, RIGHT, 250 meters, 1

POCKET\_LANE\_WARRANT\_9 PRINCIPAL, ALL, 1, LEFT, 50 meters, 1

POCKET\_LANE\_WARRANT\_10 PRINCIPAL, ALL, 2, LEFT, 100 meters, 1

POCKET\_LANE\_WARRANT\_11 PRINCIPAL, ALL, 3, LEFT, 150 meters, 1

POCKET\_LANE\_WARRANT\_12 PRINCIPAL, ALL, 4, LEFT, 200 meters, 1

POCKET\_LANE\_WARRANT\_13 MAJOR, ALL, 1, LEFT, 25 meters, 1

POCKET\_LANE\_WARRANT\_14 MAJOR, ALL, 2, LEFT, 50 meters, 1

POCKET\_LANE\_WARRANT\_15 MAJOR, ALL, 3, LEFT, 100 meters, 1

POCKET\_LANE\_WARRANT\_16 MAJOR, ALL, 4, LEFT, 150 meters, 1

POCKET\_LANE\_WARRANT\_17 RAMP, ALL, 1, LEFT, 50 meters, 1

POCKET\_LANE\_WARRANT\_18 RAMP, ALL, 2, LEFT, 100 meters, 1

POCKET\_LANE\_WARRANT\_19 RAMP, ALL, 3, LEFT, 150 meters, 1

POCKET\_LANE\_WARRANT\_20 RAMP, ALL, 4, LEFT, 200 meters, 1

# POCKET\_SIDE\_OFFSET

**Draw Service Keys** Decimal

# PRINT\_MERGE\_WARNINGS

**IntControl Control Keys** Boolean

The PRINT\_MERGE\_WARNINGS key is optional and set to FALSE by default. Possible values for this key are as follows: TRUE/FALSE, YES/NO, 1/0, T/F, Y/N.

# PRINT\_PROBLEM\_MESSAGES

**Flow-Time Service Keys** Boolean

# PRINT\_SIGN\_WARNINGS

**IntControl Control Keys** Boolean

The PRINT\_SIGN\_WARNINGS control key is optional and set to FALSE by default. Possible values for this key are as follows: TRUE/FALSE, YES/NO, 1/0, T/F, Y/N.

# PRINT\_UPDATE\_WARNINGS

The PRINT\_UPDATE\_WARNINGS control key is optional and set to FALSE by default. Possible values for this key are as follows: TRUE/FALSE, YES/NO, 1/0, T/F, Y/N

# PRIORITY\_LOADING\_TIME

**Flow-Time Service Keys** (blank)

# PRIORITY\_WAITING\_TIME

**Flow-Time Service Keys** (blank)

# PROBLEM\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# PROCESSING\_METHOD

**LinkDelay Control Keys** (blank)

Possible values are WEIGHTED\_AVERAGE, REPLACE\_LINKS, SIMPLE\_AVERAGE, and REPLACE\_OR\_AVERAGE

WEIGHTED\_AVERAGE uses the merge weighting factor (above) to produce a weighted average between values in the merge link delay file and the current link delay file. If a link exists in the merge file but not in the current, a value of 0 will be assumed for the current volume, and free-flow speed will be assumed for the current speed.

SIMPLE\_AVERAGE uses a simple average (like WEIGHTED\_AVERAGE with MERGE\_WEIGHTING\_FACTOR = 1)

REPLACE\_LINKS simply uses the values in the current link delay file, when they are available, and only uses values from links in the merge link delay file that don’t exist in the current link delay file.

REPLACE\_OR\_AVERAGE uses the average values when they are available, but if a value is not available in the MERGE\_LINK\_DELAY file, it simply uses the value in the LINK\_DELAY file.

Table 3 shows the impacts of these processing methods on flows. The inputs are 15-minute flows for some link in two link delay files (current and previous). The results are the new volumes for that link. The following cases are illustrated: REPLACE\_LINKS, WEIGHTED\_AVERAGE with weight of 1 (same as SIMPLE\_AVERAGE), and WEIGHTED\_AVERAGE with weight of 2. In this example, time smoothing is turned off (SMOOTH\_GROUP\_SIZE = 0).

Table 3 PROCESSING\_METHOD: Effect on LinkDelay file

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Time | Inputs | | Results | | | |
| Link\_Delay | Merge | Replace | Replace or Average | Weight = 1 | Weight = 2 |
| 7:00 | 4 | 8 | 4 | 6 | 6 | 6.67 |
| 7:15 | 3.2 | MISSING | 3.2 | 1.6 | 1.6 | 1.07 |
| 7:30 | 2.8 | 9 | 2.8 | 5.9 | 5.9 | 6.93 |
| 7:45 | MISSING | 13 | 13 | 13 | 6.5 | 8.67 |
| 8:00 | 5.4 | 15 | 5.4 | 10.2 | 10.2 | 11.8 |

Note that the missing current volume for the 7:45 time slot causes link delay to assume zero volume when simple or weighted averaging is performed. This behavior may not be desirable when performing user equilibrium using link delays from a subarea. Since the subarea is by definition a subset of the links in the network, volumes for all links outside the subarea will be averaged with zero, and speeds will be averaged with free-flow.

To properly combine link delays from the subarea and the full network:

1. Run LinkDelay with the following parameters

PROCESSING\_METHOD REPLACE\_LINKS the subarea delays as the

LINK\_DELAY\_FILE subarea\_linkdelay.txt

MERGE\_LINK\_DELAY\_FILE fullnetwork\_linkdelay.txt

NEW\_LINK\_DELAY\_FILE updatednetwork\_linkdelay.txt

The result of this step is a single link delay file for the entire network, with the new microsimulator delays for the subarea and the previous iteration delays for the rest of the network. No averaging has been performed yet.

1. Run LinkDelay again with the following parameters

PROCESSING\_METHOD WEIGHTED\_AVERAGE

LINK\_DELAY\_FILE updatednetwork\_linkdelay.txt

MERGE\_LINK\_DELAY\_FILE fullnetwork\_linkdelay.txt

NEW\_LINK\_DELAY\_FILE nre\_linkdelay.txt

The result of this step is a file of weighted-average link delays from the current iteration and the previous iteration, including the current microsimulator delays for the subarea.

# PROJECT\_DIRECTORY

**Execution Service Keys** Text

The project directory key is optional. If the project directory key is specified, it is added to all file names referenced by the program. If it is not specified, all file names should fully specify the file path relative to the current directory. This key can be specified in a config.txt file (as a global value), in any or all of the control files, or both. If a control file specifies a different directory than the config.txt file, then the control file specification overrides the config.txt file specification.

# RAIL\_BIAS\_CONSTANTS\_\*

The rail bias constants are optional, and have a default of 0. When provided, the total impedance value for each rail segment of a transit trip is adjusted by this value. The value should be negative impedance units. It is applied after the rail bias factor is applied. The resulting impedance will not be less than zero. Rail is defined as any transit mode other than bus (i.e., TROLLEY, STREETCAR, LIGHTRAIL, RAPIDRAIL, REGIONRAIL). If household types are defined, this key can include a list of factors corresponding to each household type. For example, -300, -400, -500 can be specified to define the rail bias constant for household types 1, 2 and 3+, respectively.

# RAIL\_BIAS\_FACTORS\_\*

The rail bias factors are optional and when provided factors down the total impedance value for each segment of a transit trip that uses rail. The value can range from 0.1 to 1.0. The default value is 1.0. This value factors the impedance of rail legs. Rail is defined as any transit mode other than bus (i.e., TROLLEY, STREETCAR, LIGHTRAIL, RAPIDRAIL, REGIONRAIL). If household types are defined, this key can include a list of factors corresponding to each household type. For example, 1.0, 0.9, 0.8 can be specified to define the rail bias factor for household types 1, 2 and 3+, respectively.

# RANDOM\_NUMBER\_SEED

**Execution Service Keys** Integer

This key is optional. The random number seed key specifies the starting point for a list of random numbers and is used for random impedance calculations. Any non-negative integer (i.e., >= 0) can be specified. If the value is zero or if no key is provided, the program uses the computer clock to set the random number seed. The selected seed value is written to the printout report to enable the user to re-run the model using the same random number sequence.

# RED\_CLEAR\_PHASE\_TIME\_\*

**IntControl Control Keys** List

The RED\_CLEAR\_PHASE\_TIME\_\* key is optional. This key defines the length of the red clearance interval in seconds. The default value for this key is 1 second. The minimum and the maximum values that can be specified for this key are 1 and 5 seconds respectively. The ‘\*’ is a placeholder for the first area type value in the list. It is optional and defaults to 1 and represents area type or jurisdiction type for the purpose of grouping related parameters. A maximum of 100 area types are supported. The RED\_CLEAR\_PHASE\_TIME\_\* key is part of the group that defines how a timing plan is developed for each phase. This group includes MINIMUM\_PHASE\_TIME\_\*, YELLOW\_PHASE\_TIME\_\*, RED\_CLEAR\_PHASE\_TIME\_\*, and EXTENDED\_GREEN\_FACTOR\_\*. These parameters define how the minimum, maximum, and extended green times are computed for fixed-timed and demand-actuated phases.

# RELOAD\_CAPACITY\_PROBLEMS

**Flow-Time Service Keys** Boolean

# REPORT\_DIRECTORY

**Execution Service Keys** Text

This is an optional key that specifies the report directory path if provided. If the report directory key is specified, it is added to the report file name specified by the Report File key or the default report file name derived from the control file name. By default, the report file is created in the same directory as the control file. If the control file name includes path information, the path string is removed and replaced by the report directory string.

# REPORT\_FLAG

**Execution Service Keys** Text

The report flag key is optional. Possible values are TRUE/FALSE, YES/NO, 1/0, T/F, Y/N, and the default is FALSE. If the report flag key is YES or TRUE, the report file or default printout file will open in “Append” mode rather than “Create” mode. This permits the user to consolidate the output of several programs into a single report file.

# REROUTE\_FROM\_TIME\_POINT

This router key is optional, and defaults to 0:00. When the router is used with existing plans, this key allows plans to be re-routed starting at a specified point in time.

# RETURN\_TRIP\_FLAG\_\*

**ConvertTrips Control Keys** Boolean

# RIDERSHIP\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# RIDERSHIP\_SCALING\_FACTOR

**ArcPlan Control Keys** Decimal

The ridership scaling factor is used to convert the number of transit ridership on a link segment to the width of the bandwidth polygon in meters. The inside edge of the polygon follows the shape of the link centerline. The outside edge is offset from the centerline by this value. The default width factor is 0.0 meters per ridership which means that the link segment will be drawn as a polyline rather than a polygon. The accepted range is between 0.01 and 100,000 meters.

# RIGHT\_TURN\_PENALTIES\_\*

The right turn penalty keys are optional and when provided specifies an additional impedance value for lane connections identified as right turns. The values can range from zero to 10000.0. The default value is 0.0 impedance units. This value is added to the impedance of the departure link of a drive path. If household types are defined, this key can include a list of values corresponding to each household type. For example, 0, 100, 200 can be specified to define the right turn penalty for household types 1, 2 and 3+, respectively.

# ROUTE\_AT\_SPECIFIED\_TIMES

**PathSkim Control Keys** (blank)

Either this key or the ROUTE\_BY\_TIME\_INCREMENT key is used to determine the time intervals for which PathSkim should calculate skims. The default is ALL, but this may be any time interval, or set of multiple time intervals. Examples of valid values might be

ALL

0..97200 seconds

0.0..27.0 hours

0:00..27:00

6:00..6:30, 8:00..8:15, 8:15..8:30

# ROUTE\_BY\_TIME\_INCREMENT

**PathSkim Control Keys** (blank)

Either this key or the ROUTE\_AT\_SPECIFIED\_TIMES key is used to determine the time intervals for which PathSkim should calculate skims. The default is 0 (e.g., look at ROUTE\_AT\_SPECIFIED TIMES). Valid non-zero values range from 2 to 240 minutes. For example, if 15 minutes is used, it will calculate skims for 0:00..0:15, 0:15..0:30, 0:30..0:45, 0:45..1:00, 1:00..1:15, and so on.

# ROUTE\_FROM\_SPECIFIED\_LOCATIONS

**PathSkim Control Keys** (blank)

In PathSkim, limits routing to a specified list of origin locations. The default is ALL locations.

# ROUTE\_FROM\_SPECIFIED\_ZONES

**PathSkim Control Keys** (blank)

In PathSkim, limits routing to a specified list of origin zones. The default is ALL zones.

# ROUTE\_NODES\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# ROUTE\_TO\_SPECIFIED\_LOCATIONS

**PathSkim Control Keys** (blank)

In PathSkim, this key limits routing to a specified list of destination locations. The default is ALL locations.

# ROUTE\_TO\_SPECIFIED\_ZONES

**PathSkim Control Keys** (blank)

In PathSkim, this key limits routing to a specified list of destination zones. The default is ALL zones.

# ROUTE\_WITH\_SPECIFIED\_MODE

**PathSkim Control Keys** (blank)

Routes with a specific travel mode. The default is DRIVE, and valid values include WALK, BIKE, DRIVE, RIDE, TRANSIT, PNR\_OUT, PNR\_IN, KNR\_OUT, KNR\_IN, TAXI, OTHER, HOV2, HOV3, HOV4.

# ROUTE\_WITH\_USE\_RESTRICTION

**PathSkim Control Keys** (blank)

This key indicates a particular use to be used for PathSkim routing. The default is “CAR”, and valid values include ANY, WALK, BIKE, CAR, TRUCK, BUS, RAIL, SOV, HOV2, HOV3, HOV4, LIGHTTRUCK, HEAVYTRUCK, TAXI, RESTRICTED, NONE.

In earlier versions of PathSkim (prior to 5.0.13) this parameter was named “ROUTE\_WITH\_SPECIFIED\_USE\_TYPE.”

# ROUTE\_WITH\_TIME\_CONSTRAINT

**PathSkim Control Keys** (blank)

This key indicates the time constraint to be used for routing in PathSkim. The default is START\_TIME, and valid values include NONE, START, ARRIVE, FIXED, DURATION, PASSENGER.

# ROUTER\_REPORT\_\*

**Router Control Keys** (blank)

# SAVE\_ONLY\_SKIMS

**Path Building Service Keys** Boolean

# SELECT\_BY\_LINK\_GROUP

**LinkSum Control Keys** Boolean

# SELECT\_DESTINATION\_ZONES

**Select Service Keys** (blank)

The select zones parameter enables the user to specify the destination zones that are considered for processing. This parameter is optional. If it is not provided, all destination zones will be considered by the selection process. The zone parameter is interpreted as a comma-delimited list of zones or zone number ranges. The Plan is selected if the destination of the path is included in the zone list.

# SELECT\_DESTINATIONS

The select locations parameter enables the user to specify the destination locations that are considered for processing. This parameter is optional. If it is not provided, all destination locations will be considered by the selection process. The location parameter is interpreted as a comma-delimited list of activity location numbers or activity location number ranges. A sequential range of activity locations are specified by providing the first activity location number in the range and the last activity location number in the range separated by two periods (e.g., 47..78). The Plan is selected if the destination of the path is included in the activity location list.

# SELECT\_END\_TIMES

**Select Service Keys** (blank)

The select end times parameter enables the user to specify the end times of plans that are considered for processing. This parameter is optional. If it is not provided, all end times will be considered by the selection process. It is expressed as a range, or a set of ranges, e.g., 8:00..8:15.

# SELECT\_FACILITY\_TYPES

**Select Service Keys** (blank)

# SELECT\_HOUSEHOLDS

**Select Service Keys** (blank)

# SELECT\_LINKS\_#

The select links parameters enable the user to provide a list of link numbers the plan must include before it is processed. This parameter is optional. If it is not provided, the selection process will consider all plan legs. The '#' at the end of the keyword represents a selection set number (e.g., SELECT\_LINKS\_1). Any number of selection sets can be specified. If a path satisfies any one of the selection sets, the plan is included.

Each link parameter is interpreted as a comma-delimited list of link numbers or link number ranges. A sequential range of links are specified by providing the first node number in the range and the last link number in the range separated by two periods (e.g., 1000..1010). The path must include all of the links in the list in sequential order in order to be selected. The path may include other links between links included in the list, but it must travel through all of the links in the order specified

# SELECT\_MODES

This parameter permits the user to select the modes on the trip file to be routed. The key is a comma separated list of the mode codes used in the activity file (1..9). All modes will be routed if the key is “1,2,3,4,5,6,7,8,9.” Only transit trips are routed if the key is “3”

# SELECT\_NODES\_#

The select nodes parameters enable the user to provide a list of node numbers the plan must include before it is processed. This parameter is optional. If it is not provided, the selection process will consider all plan legs. The '#' at the end of the keyword represents a selection set number (e.g., SELECT\_NODES\_1). Any number of selection sets can be specified. If a path satisfies any one of the selection sets, the plan is included.

Each node parameter is interpreted as a comma-delimited list of node numbers or node number ranges. A sequential range of nodes are specified by providing the first node number in the range and the last node number in the range separated by two periods (e.g., 1000..1010). The path must include all of the nodes in the list in sequential order in order to be selected. The path may include other nodes between nodes included in the list, but it must travel through all of the nodes in the order specified.

# SELECT\_ORIGIN\_ZONES

**Select Service Keys** (blank)

The select zones parameter enables the user to specify the origin zones that are considered for processing. This parameter is optional. If it is not provided, all origin zones will be considered by the selection process. The zone parameter is interpreted as a comma-delimited list of zones or zone number ranges. The Plan is selected if the origin of the path is included in the zone list.

# SELECT\_ORIGINS

The select locations parameter enables the user to specify the origin locations that are considered for processing. This parameter is optional. If it is not provided, all origin locations will be considered by the selection process. The location parameter is interpreted as a comma-delimited list of activity location numbers or activity location number ranges. A sequential range of activity locations are specified by providing the first activity location number in the range and the last activity location number in the range separated by two periods (e.g., 47..78). The Plan is selected if the origin of the path is included in the activity location list.

# SELECT\_PARKING\_LOTS

**PlanSelect Control Keys** (blank)

**ArcPlan Control Keys** (blank)

The select parking lots parameter enables the user to specify the parking lots that are considered for processing. This parameter is optional. If it is not provided, all parking lots will be considered by the selection process. The parking lots parameter is interpreted as a comma-delimited list of parking lot numbers or parking lot number ranges. A sequential range of parking lots are specified by providing the first parking lot number in the range and the last parking lot number in the range separated by two periods (e.g., 47..78). The Plan leg is selected if the drive path is included in the parking lot list.

# SELECT\_PROBLEM\_TYPES

The select problem types key enables the user to select travelers with specified problems from the plan file. This parameter is optional. If it is not provided, the problem types will not be used by the selection process. The types parameter is interpreted as a comma-delimited list of problem type labels. The label options include: PATH\_BUILDING, TIME\_SCHEDULE, ZERO\_NODE, VEHICLE\_TYPE, PATH\_CIRCUITY, TRAVEL\_MODE, VEHICLE\_ACCESS, WALK\_DISTANCE, WAIT\_TIME, WALK\_ACCESS, PATH\_SIZE, PARK-&-RIDE\_LOT, BIKE\_DISTANCE, DEPARTURE\_TIME, ARRIVAL\_TIME, LINK\_ACCESS, LANE\_CONNECTIVITY, PARKING\_ACCESS, LANE\_MERGING, LANE\_CHANGING, TURNING\_SPEED, POCKET\_MERGE, VEHICLE\_SPACING, TRAFFIC\_CONTROL, and ACCESS\_RESTRICTION.

# SELECT\_PURPOSES

**Select Service Keys** (blank)

# SELECT\_START\_TIMES

**Select Service Keys** (blank)

The select start times parameter enables the user to specify the start times that are considered for processing. This parameter is optional. If it is not provided, all start times will be considered by the selection process. It is expressed as a range, or a set of ranges, e.g., 8:00..8:15.

# SELECT\_TIME

**ArcNet Control Keys** (blank)

# SELECT\_TIME\_RATIOS

The total travel time recorded in the plan file is compared with the cumulative travel time represented by the current link travel times to determine if a household is eligible for re-routing. In essence, the program “re-skims” the travel path for each traveler using the latest link travel times. If the absolute difference is greater than the user-specified criteria (e.g., SELECT\_TIME\_RATIOS 2), the household is eligible for re-routing.

# SELECT\_TRAVELER\_TYPES

**Select Service Keys** (blank)

# SELECT\_VC\_RATIOS

A household is eligible for re-routing if one or more of the household members travel through a link with a 15-minute volume-to-capacity ratio greater than the specified criterion (e.g., SELECT\_VC\_RATIOS 1.2).

# SELECT\_VEHICLE\_TYPES

**Select Service Keys** (blank)

# SELECTION\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# SELECTION\_METHOD

**PlanCompare Control Keys** (blank)

# SELECTION\_PERCENTAGE

The selection percentage is optional. If a value is not provided, all of the plans selected by the selection criteria will be considered for output to the household ID file. If a value is provided, it specifies the percentage of the selected households that will be output to the household ID file. A random probability function is used to determine which of the selected households will be written to the output file.

# SHAPE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# SHARED\_LANE\_FACTOR\_\*

**IntControl Control Keys** List

The SHARED\_LANE\_FACTOR\_\* control key is optional and defaults to a value of 0.5 if not specified. Possible values for this key range from 0.2 to 1.0.

The ‘\*’ is a placeholder for the first area type value in the list. It is optional and defaults to 1 and represents area type or jurisdiction type for the purpose of grouping related parameters. A maximum of 100 area types are supported.

# SIGN\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# SIGN\_SETBACK

**Draw Service Keys** Decimal

The sign setback is used to display signs on the right side of the street. The default value is 25.0 meters. In this case the sign is draw twenty five meters from the end of the link to the right of the centerline of the link shape at the offset specified by the SIGN\_SIDE\_OFFSET key.

# SIGN\_SIDE\_OFFSET

**Draw Service Keys** Decimal

The sign side offset is used to display signs on the right side of the street. The default value is 10.0 meters. In this case, the sign is drawn ten meters to the right of the centerline of the link shape at the offset specified by the SIGN\_SETBACK key.

# SIGNAL\_CYCLE\_LENGTH\_\*

**IntControl Control Keys** List

The SIGNAL\_CYCLE\_LENGTH\_\* key is optional and defines the cycle length of a signal. The default value for this key is 60 seconds. The minimum and the maximum values that can be defined for this key are 30 seconds and 240 seconds, respectively.

The ‘\*’ is a placeholder for the first area type value in the list. It is optional and defaults to 1 and represents area type or jurisdiction type for the purpose of grouping related parameters. A maximum of 100 area types are supported.

# SIGNAL\_DETECTOR\_LENGTH\_\*

**IntControl Control Keys** Decimal

The SIGNAL\_DETECTOR\_LENGTH\_\* key is optional. This key specifies length of the detectors in meters. The default value for the detector length is 20 meters. The minimum and the maximum values that can be specified for this key are 5 and 50 meters respectively.

The ‘\*’ is a placeholder for the first area type value in the list. It is optional and defaults to 1 and represents area type or jurisdiction type for the purpose of grouping related parameters. A maximum of 100 area types are supported.

# SIGNAL\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# SIGNAL\_ID\_AS\_NODE\_ID

**TransimsNet Control Keys** Boolean

# SIGNAL\_SPLIT\_METHOD\_\*

**IntControl Control Keys** List

The signal split method key is optional. The accepted values for this key are CAPACITY and LANES. The default split method used by the IntControl program for generating the timing plans of signalized intersections is the CAPACITY method. This group includes MINIMUM\_PHASE\_TIME\_\*, YELLOW\_PHASE\_TIME\_\*, RED\_CLEAR\_PHASE\_TIME\_\*, and EXTENDED\_GREEN\_FACTOR\_\*. These parameters define how the minimum, maximum, and extended green times are computed for fixed-timed and demand-actuated phases.

The SIGNAL\_SPLIT\_METHOD\_\* key is part of the group that determines how the total cycle length is allocated to different phases. This group includes POCKET\_LANE\_FACTOR\_\*, GENERAL\_GREEN\_FACTOR\_\*, SIGNAL\_SPLIT\_METHOD\_\*, MINIMUM\_LANE\_CAPACITY\_\*, and MAXIMUM\_LANE\_CAPACITY\_\*. These parameters define how the number of lanes or lane capacity assigned to one phase is balanced against similar values from other phases to allocate a share of the total cycle time to each phase.

The ‘\*’ is a placeholder for the first area type value in the list. It is optional and defaults to 1 and represents area type or jurisdiction type for the purpose of grouping related parameters. A maximum of 100 area types are supported.

# SIGNAL\_TIME\_BREAKS\_\*

**IntControl Control Keys** List

The SIGNAL\_TIME\_BREAKS\_\* control key is optional and has a default value of NONE. The format and some examples of the possible values for this key are as follows: NONE, 6:00, 10:00, 16:00 (etc.)

The ‘\*’ is a placeholder for the first area type value in the list. It is optional and defaults to 1 and represents area type or jurisdiction type for the purpose of grouping related parameters. A maximum of 100 area types are supported.

# SIGNAL\_TYPE\_CODE\_\*

**IntControl Control Keys** List

The SIGNAL\_TYPE\_CODE\_\* control key is optional and defaults to ACTUATED. The possible values for this key are ACTUATED and TIMED. Fixed-time signals and/or signal groups are specified using the TIMED key value.

The ‘\*’ is a placeholder for the first area type value in the list. It is optional and defaults to 1 and represents area type or jurisdiction type for the purpose of grouping related parameters. A maximum of 100 area types are supported.

# SIMULATION\_END\_TIME

**Flow-Time Service Keys** (blank)

# SIMULATION\_START\_TIME

**Flow-Time Service Keys** (blank)

# SKIM\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# SKIM\_OD\_UNITS

**System File Keys** (blank)

For PathSkim, this is the type of origin or destination. The default is ZONE, and valid values include DISTRICT, ZONE, LOCATION

# SKIM\_TIME\_INCREMENT

**System File Keys** (blank)

Either this key or the SKIM\_TIME\_PERIODS key is used to determine the time intervals for which PathSkim should output skims. The default is 0 (i.e., look at SKIM\_TIME\_PERIODS). Valid non-zero values range from 5 to 240 minutes. For example, if 15 minutes is used, it will output skims for 0:00..0:15, 0:15..0:30, 0:30..0:45, 0:45..1:00, 1:00..1:15, and so on.

# SKIM\_TIME\_PERIODS

**System File Keys** (blank)

Either this key or the SKIM\_TIME\_INCREMENT key is used to determine the time intervals for which PathSkim should output skims. The default is ALL, but this may be any time interval, or set of multiple time intervals. Examples of valid values might be

ALL

0..97200 seconds

0.0..27.0 hours

0:00..27:00

6:00..6:30, 8:00..8:15, 8:15..8:30

# SKIM\_TOTAL\_TIME\_FLAG

**System File Keys** Boolean

Default value is FALSE. Valid values include TRUE/FALSE, YES/NO, 1/0, T/F, Y/N

# SKIM\_TRAVEL\_TIME\_FORMAT

**System File Keys**

Specifies the units of travel time in PathSkim. Default value is SECONDS. Valid values include SECONDS, MINUTES, HOURS, HOUR\_CLOCK, DAY\_TIME, TIME\_CODE

# SKIM\_TRIP\_LENGTH\_FORMAT

**System File Keys**

Specifies the units of length in PathSkim. Default value is METERS. Valid values include FEET, MILES, METERS, KILOMETERS

# SLOW\_DOWN\_PERCENTAGE\_\*

**Flow-Time Service Keys** (blank)

# SLOW\_DOWN\_PROBABILITY\_\*

**Flow-Time Service Keys** (blank)

# SMOOTH\_GROUP\_SIZE

**Simulation Service Keys** (blank)

Used in LinkDelay to smooth flows and times among time periods

Smooth\_Group\_Size is the number of time periods included in a moving average smoothing process.  3 is normally used for 15 minute time periods (i.e., +1 and -1 period). Possible values are 0, 3, 5, 7, 9, with a default of 3. If a value of 0 is used, time-based smoothing is disabled. Table 4 illustrates the impact of various parameters (0, 3, and 5) for SMOOTH\_GROUP\_SIZE on a single link with 15-minute volumes and travel-times. Note that a single LINK\_DELAY input file is used in this case. Time-based smoothing can also be used in conjunction with the use of two link delay input files.

Table 4 SMOOTH\_GROUP\_SIZE: Effect on link time and flow

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time | Inputs | Results | | | Input | Results | | |
| Flow | 0 | 3 | 5 | Time | 0 | 3 | 5 |
| 6:45 |  |  |  | 2 |  |  |  | 14.9 |
| 7:00 |  |  |  | 14 |  |  |  | 14.9 |
| 7:15 |  |  | 8 | 51 |  |  | 14.9 | 14.8 |
| 7:30 |  |  | 79 | 165 |  |  | 14.7 | 14.4 |
| 7:45 |  |  | 324 | 364 |  |  | 13.9 | 13.9 |
| 8:00 | 971 | 971 | 714 | 680 | 11.9 | 11.9 | 12.9 | 13 |
| 8:15 | 1141 | 1141 | 1000 | 882 | 12.0 | 12.0 | 12.2 | 12.4 |
| 8:30 | 1131 | 1131 | 1056 | 931 | 12.0 | 12.0 | 12 | 12.1 |
| 8:45 | 1125 | 1125 | 886 | 810 | 12.1 | 12.1 | 11.9 | 12 |
| 9:00 | 486 | 486 | 546 | 545 | 11.5 | 11.5 | 11.8 | 12.1 |
| 9:15 | 43 | 43 | 222 | 285 | 10.8 | 10.8 | 12.4 | 12.6 |
| 9:30 |  |  | 55 | 119 |  |  | 13.6 | 13.6 |
| 9:45 |  |  | 7 | 38 |  |  | 14.6 | 14.3 |
| 10:00 |  |  |  | 9 |  |  |  | 14.7 |
| 10:15 |  |  |  | 2 |  |  |  | 14.8 |

# SNAPSHOT\_FORMAT

**ArcSnapshot Control Keys** FILE\_FORMAT

See File Formats.

# SPEED\_DATA\_FIELD\_NAME

**LinkData Control Keys** (blank)

# SPEED\_FACTOR\_BY\_FACILITY

**NetPrep Control Keys** (blank)

# SPEED\_ROUNDING\_INCREMENT

**NetPrep Control Keys** (blank)

# SPLIT\_LARGE\_LOOPS

**NetPrep Control Keys** Integer

This control key is optional and is disabled by default. The purpose of this key is to resolve a-node = b-node type issues in a network by splitting these loops into two links and adding a node so that vehicles can be loaded onto the links. The value for this key is the distance in meters that represents the minimum loop size to be split. If a value greater than zero is specified for this key, and the loop length is less than this value, the loop is deleted rather than split. In order for this key to work properly, a shape file key must be specified in the control file and the shape file must be located in the corresponding directory location specified by the user or NetPrep will return an error message.

# STATION\_WAITING\_PENALTIES\_\*

The station waiting penalty is similar to a transfer penalty, but applies to all boardings at a transit stop coded with the “STATION” type. This is typically used to distinguish boardings at a rail station from boardings at a bus stop. The default value is 0.0. The values can range from zero to 100,000 impedance units. If household types are defined, the key can include a list of values corresponding to each household type.

# STOP\_WAITING\_PENALTIES\_\*

The stop waiting penalty is similar to a transfer penalty, but applies to all boardings at a transit stop coded with the “STOP” type. This is typically used to distinguish boardings at bus stops from boardings at rail stations. The default value is 0.0 impedance units. The values can range from zero to 100,000 impedance units. If household types are defined, this key can include a list of values corresponding to each household type.

# STREET\_PARKING\_WARRANT\_\*

**TransimsNet Control Keys** List

The street parking warrant file control key is a new addition to TRANSIMS 5. Like the other warrant files, multiple groups can be defined. This key adds the functionality of parking lane use restrictions by time of day and supports multi-data field records (type, at, time). “Type” refers to the facility type range, “at” refers to the area type range, and “time” refers to the time of day range. Figure 9 is an example of a warrant control key with representative data:

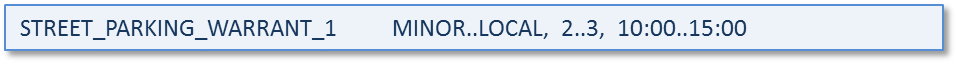


Figure 9 STREET\_PARKING\_WARRANT\_\* in TRANSIMS Version 5

# SUBZONE\_DATA\_FIELD\_\*

**LocationData Control Keys** (blank)

# SUBZONE\_DATA\_FORMAT\_\*

**LocationData Control Keys** FILE\_FORMAT

See File Formats.

# SUBZONE\_ZONE\_FIELD\_\*

**LocationData Control Keys** (blank)

# SUMMARY\_TIME\_INCREMENT

**IntControl Control Keys; Others** Time

Used for summarizing link delay and other outputs. The default time increment is 15 minutes (900 seconds), with a range of 0, or 2 to 240 minutes. This value can be specified in minutes. The time increment specifies the size of the summary time period. This key was formerly known as OUTPUT\_SUMMARY\_INCREMENT in Version 4.

# SUMMARY\_TIME\_RANGES

**IntControl Control Keys** Text

**Others**

Used for summarizing link delay and other outputs. The default time range is ALL (i.e., 0:00..24:00). A range is a comma separated list of start and end time pairs. The time values in each pair are separated by two periods (e.g., 6:30..9:00, 0..97200 seconds, 0.0..27.0 hours, 0:00..27:00). This was formerly known as OUTPUT\_SUMMARY\_TIME\_RANGE in Version 4.

# TIME\_DISTRIBUTION\_FIELD\_\*

**ConvertTrips Control Keys**

This key replaces TRIP\_TIME\_FIELD\_\* from Version 4. The trip time field is optional and is only processed when a trip time script is not provided. By default, the program selects the third field in the trip time file as the diurnal distribution values for a given trip group. The user may, however, include multiple diurnal distribution fields in a given trip time file. This key enables the user to specify the field name that contains the diurnal distribution values used for this trip group.

# TIME\_DISTRIBUTION\_FORMAT\_\*

**ConvertTrips Control Keys** FILE\_FORMAT

See File Formats.

# TIME\_DISTRIBUTION\_TYPE\_\*

**ConvertTrips Control Keys**

This key replaces TIME\_CONTROL\_POINT\_# from Version 4. This is an optional parameter with a default value of TRIP\_START.

The diurnal distribution produced by the trip time file is used to define the probability that a given trip will take place at a given time. The time assigned to a trip is based on the offset of a random number within the cumulative probability distribution. By default, this time value (in seconds) is assumed to be the time at the origin of the trip. This key enables the user to specify how the time value is applied. The options include “TRIP\_START”, “TRIP\_END”, and “MID\_TRIP.”

If “TRIP\_END” is selected, the program interprets the diurnal distribution as an arrival time distribution. The start time for the trip is then calculated by subtracting the estimated travel time from the selected arrival time. If “MID-TRIP” is selected, the program interprets the diurnal distribution as a time-in-motion distribution. The start time and the end time for the trip are calculated by subtracting and adding one half of the estimated travel time from the selected mid-trip time. The time control point is saved in the CONSTRAINTS field in the output trip file. The constraint codes are:

0 TRIP\_START

1 TRIP\_END

2 MID\_TRIP

# TIME\_OF\_DAY\_FORMAT

**Execution Service Keys** Text

The time of day format key is optional. The time of day format defines how the time data are written to the output files and reports. The default format will display values in DAY\_TIME format (e.g., 0:00:00 to 1@3:00:00 refers to midnight to 3:00 AM the next day). The format options include SECONDS, MINUTES, HOURS, HOUR\_CLOCK (e.g., 0:00 to 27:00), DAY\_TIME, and TIME\_CODE. Time codes combine a day code with an hour clock (e.g. TUE08:00). Day code options include SUN, MON, TUE, WED, THU, FRI, SAT, WKE, WKD, and ALL.

Examples of each format are as follows:

DAY\_TIME: 1@09:39:24.3

SECONDS: 34764.3

MINUTES: 579.4

HOURS: 9.66

HOUR\_CLOCK: 09:39

TIME\_CODE: TUE08:00

Internally, the DTIME data object is used, with a resolution of tenths of a second. In binary files, this is stored as a 2 or 4 byte intege\r, in text files, as a character string with approximately 12 characters.

TIME\_PERIOD\_RANGE**\_\*   
ConvertTrips Control Keys** (blank)

TIME\_PROCESSING\_METHOD **ArcSnapshot Control Keys** (blank)

TIME\_SCHEDULE\_CONSTRAINT\_\* **ConvertTrips Control Keys** (blank)

TIME\_STEPS\_PER\_SECOND

**Flow-Time Service Keys** (blank)

TIMING\_PLAN\_FORMAT **System File Keys** FILE\_FORMAT

# TITLE

**Execution Service Keys** Text

This key is optional. Any text string can be used on this line. This text is printed on the top of each output page.

TO\_NODE\_FIELD\_NAME

**LinkData Control Keys** (blank)

# TOUR\_HOUSEHOLD\_FIELD

The tour household field key is optional. It is the column header (field name) for the household number in the Tour table. A typical value might be HHOLD.

# TOUR\_PERSON\_FIELD

The tour person field key is optional. It is the column header (field name) for the person number in the Tour table. A typical value might be PERSON.

# TOUR\_NUMBER\_FIELD

The tour number field key is optional. It is the column header (field name) for the tour number in the Tour table. A typical value might be TOUR. A person in a household might have several tours over the course of a day. For example, she might travel to work, return home, and then travel again for evening activities.

# TOUR\_PURPOSE\_FIELD

The tour purpose field key is optional. It is the column header (field name) for the tour purpose in the Tour table. A typical value might be PURPOSE.

# TOUR\_MODE\_FIELD

The tour mode field key is optional. It is the column header (field name) for the tour mode in the Tour table. A typical value might be MODE. See the definition of TRAVEL\_MODE\_CODE\_\* for a list of mode codes.

# TOUR\_ORIGIN\_FIELD

The tour origin field key is optional. It is the column header (field name) for the zone where the tour originates in the Tour table. A typical value might be ORIG. ConvertTrips takes this zone, and assigns an activity location within the zone as both the starting and return point of the tour.

# TOUR\_DESTINATION\_FIELD

The tour destination field key is optional. It is the column header (field name) for the zone of the primary destination in the Tour table. A typical value might be DEST.

# TOUR\_STOP\_OUT\_FIELD

The tour stop out field key is optional. It is the column header (field name) for the zone of the outbound stop in the Tour between origin and destination. A typical value might be STOP\_OUT. Within the column, 0 is used if there is no outbound stop.

# TOUR\_STOP\_IN\_FIELD

The tour stop out field key is optional. It is the column header (field name) for the zone of the inbound stop in the Tour between destination and origin. A typical value might be STOP\_IN. Within the column, 0 is used if there is no inbound stop.

# TOUR\_START\_FIELD

The tour start field key is optional. It is the column header (field name) for the starting hour of the tour. A typical value might be START\_HR.

# TOUR\_RETURN\_FIELD

The tour return field key is optional. It is the column header (field name) for the ending hour of the tour. A typical value might be END\_HR.

# TOUR\_GROUP\_FIELD

The tour group field key is optional.

**TRAFFIC\_CONTROL\_WARRANT\_\*   
TransimsNet Control Keys** List

The traffic control warrant key has been updated significantly in TRANSIMS Version 5 and can be used in place of the TRANSIMS Version 4 sign and signal warrant keys to define traffic controls.

In Version 4, the stop sign and signal warrants are specified for area types and by node facility types (Figure 10).

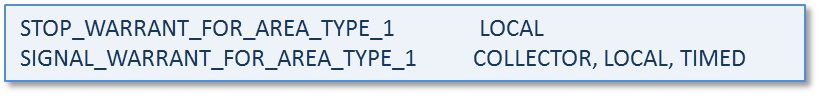


Figure 10 Stop and Signal Warrants in TRANSIMS Version 4

In Version 5, the traffic control warrant key supports time of day grouping using the ‘\*’ group parameter, and also adds multi-data field records (defined below):

* Multi-data field records (main, cross, at, type, setback, group)
  + - Main – This specifies the main street facility type range
    - Cross – This represents the cross street facility type range
    - At – This specifies the area type range
    - Type – This refers to the intersection control type (two-way/all-way stop, signal, etc.)
    - Setback – This field refers to the intersection setback distance
    - Group – This field specifies the signal group. Signal groups are used in IntControl as input parameters for generating the timing and phasing plans.

Figure 11 is a basic example of the updated method of traffic control warrant specification in Version 5:



Figure 11 TRAFFIC\_CONTROL\_WARRANT\_\* in TRANSIMS Version 5

Below is an example of an actual dataset of traffic control warrants:

TRAFFIC\_CONTROL\_WARRANT\_1 LOCAL, LOCAL, 1, ALL\_STOP, 7.5

TRAFFIC\_CONTROL\_WARRANT\_2 COLLECTOR, COLLECTOR, 2..5, ALL\_STOP, 7.5

TRAFFIC\_CONTROL\_WARRANT\_3 PRINCIPAL..COLLECTOR, PRINCIPAL..LOCAL, 1, SIGNAL, 7.5, 1

TRAFFIC\_CONTROL\_WARRANT\_4 PRINCIPAL..COLLECTOR, PRINCIPAL..COLLECTOR, 2, SIGNAL, 15, 1

TRAFFIC\_CONTROL\_WARRANT\_5 PRINCIPAL..MINOR, PRINCIPAL..COLLECTOR, 3, SIGNAL, 15, 2

TRAFFIC\_CONTROL\_WARRANT\_6 PRINCIPAL..COLLECTOR, PRINCIPAL..COLLECTOR, 4, SIGNAL, 15, 2

TRAFFIC\_CONTROL\_WARRANT\_7 PRINCIPAL..MAJOR, PRINCIPAL..MINOR, 5, SIGNAL, 15, 2

TRAFFIC\_CONTROL\_WARRANT\_8 PRINCIPAL..MAJOR, PRINCIPAL..MAJOR, 6, SIGNAL, 15, 2

TRAFFIC\_CONTROL\_WARRANT\_9 PRINCIPAL, PRINCIPAL..MAJOR, 7, SIGNAL, 15, 2

TRAFFIC\_CONTROL\_WARRANT\_10 PRINCIPAL, PRINCIPAL, 8, SIGNAL, 15, 2

# TRANSFER\_PENALTIES\_\*

The transfer penalty key is optional and when provided specifies an additional impedance value for transferring from one transit route to another. The value can range from zero to 10000.0. The default value is 0.0. This value is added to the impedance of the access link to the second, third, etc., transit boarding stop.

# TRANSFER\_WAIT\_VALUES\_\*

The transfer wait value key is optional and when provided specifies the impedance values for time the traveler spends waiting to transfer to another transit vehicle. The values can range from zero to 1000.0. The default value is 20.0 impedance units / second. This value is multiplied by the difference between the time of day when the traveler arrives at a transit stop and the time when the next transit vehicle is scheduled to leave that stop. If household types are defined, this key can include a list of values corresponding to each household type. For example, 20, 25, 30 can be specified to define the transfer wait time value for household types 1, 2 and 3+, respectively.

# TRANSIMSNET\_REPORT\_\*

**TransimsNet Control Keys** (blank)

# TRANSIT\_DIRECTION\_OFFSET

**Draw Service Keys** Decimal

The transit direction offset determines how the transit routes used by a transit plans are drawn on two way links. The default value is 0.0, which means that the route is drawn on the centerline of the link. If the value is greater than 0.0, it represents the number of meters to the right of a two way link the transit route is drawn. If the link is a one-way link, the route is drawn on the centerline of the roadway in the direction of travel.

# TRANSIT\_DRIVER\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# TRANSIT\_FARE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# TRANSIT\_OVERLAP\_FLAG

**Draw Service Keys** Boolean

# TRANSIT\_ROUTE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# TRANSIT\_SCHEDULE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# TRANSIT\_STOP\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# TRANSIT\_STOP\_SIDE\_OFFSET

**Draw Service Keys** Decimal

The transit stop side offset is used to display the boarding and alighting transit stops for transit plans. The default value is 5.0 meters. In this case the transit stop is draw five meters to the right of the centerline of the link shape at the appropriate offset.

# TRANSIT\_TIME\_PERIODS

**ArcNet Control Keys** (blank)

# TRAVEL\_MODE\_CODE\_\*

**ConvertTrips Control Keys** (blank)

Table 5 lists thetravel mode in words (e.g., DRIVE), for the trip.

Table 5 Travel Mode Codes

| **Code** | **Code (in words)** | **Travel Mode** |
| --- | --- | --- |
| 0 | WAIT | Wait (transit stops or activities) |
| 1 | WALK | Walk |
| 2 | BIKE | Bicycle |
| 3 | DRIVE | Drive |
| 4 | RIDE | Ride (auto passenger) |
| 5 | TRANSIT | Transit |
| 6 | PNR\_OUT | Park-&-ride outbound |
| 7 | PNR\_IN | Park-&-ride inbound |
| 8 | KNR\_OUT | Kiss-&-ride outbound |
| 9 | KNR\_IN | Kiss-&-ride inbound |
| 10 | TAXI | Taxi |
| 11 | OTHER | Other (magic move, etc.) |
| 12 | HOV2 | 2 person carpool (HOV2) |
| 13 | HOV3 | 3 person carpool (HOV3) |
| 14 | HOV4 | 4+ person carpool (HOV4) |

# TRAVELER\_SCALING\_FACTOR

**NewFormat Control Keys** (blank)

Defaults to 100, and has a valid range from 2 to 100. Indicates the scaling factor that was used in the old plan.

# TRAVELER\_TYPE\_CODE\_\*

**ConvertTrips Control Keys** (blank)

# TRAVELER\_TYPE\_FACTORS\_\*

**Flow-Time Service Keys** (blank)

# TRIP\_FACTOR\_FORMAT\_\*

**ConvertTrips Control Keys** FILE\_FORMAT

See File Formats.

# TRIP\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# TRIP\_PRIORITY\_CODE\_\*

**ConvertTrips Control Keys** (blank)

# TRIP\_PURPOSE\_CODE\_\*

**ConvertTrips Control Keys**

The trip purpose code is optional. Any value between 0 and 100 can be specified. The default value is 1. In some applications this value is used to define the relative priority and scheduling flexibility of a given activity. The original TRANSIMS documentation includes the following suggested trip purposes or activity types (Table 6).

Table 6 Suggested Trip Purpose Codes

|  |  |
| --- | --- |
| **Code** | **Trip Purpose** |
| 0 | Home |
| 1 | Work |
| 2 | Shop |
| 3 | Visit |
| 4 | Social/Recreation |
| 5 | Other |
| 6 | Serve Passenger |
| 7 | School |
| 8 | College |

# TRIP\_SCALING\_FACTOR\_\*

**ConvertTrips Control Keys**

The optional trip scaling factor key enables the user to factor the input trips by a scaling factor. This could be used to select of subset of the full trip table or grow the trips to a future year estimate. The factor is a floating point number, but the result of applying the factor will be an integer number of trips for each origin-destination pair. A bucket rounding process is applied to minimize the impact of integer rounding as much as possible. The default value is 1.0.

# TRIP\_SORT\_TYPE

**Data Service Keys** (blank)

# TRIP\_TABLE\_FORMAT\_\*

**ConvertTrips Control Keys** FILE\_FORMAT

See File Formats.

# TRIPPREP\_REPORT\_\*

**TripPrep Control Keys** (blank)

# TURN\_MOVEMENT\_FACTOR\_\*

**IntControl Control Keys** Decimal

The TURN\_MOVEMENT\_FACTOR\_\* control key has a default value of 0.9. Possible values for this key range from 0.2 to 1.0.

The ‘\*’ is a placeholder for the first area type value in the list. It is optional and defaults to 1 and represents area type or jurisdiction type for the purpose of grouping related parameters. A maximum of 100 area types are supported.

# TURN\_NODE\_RANGE

**LinkSum Control Keys** (blank)

# TURN\_PENALTY\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# TURN\_POCKET\_FACTOR

**Flow-Time Service Keys** (blank)

# U\_TURN\_PENALTIES\_\*

The U turn penalty keys are optional and when provided specifies an additional impedance value for lane connections identified as U turns. The values can range from zero to 10000.0. The default value is 0.0 impedance units. This value is added to the impedance of the departure link of a drive path. If household types are defined, this key can include a list of values corresponding to each household type. For example, 0, 100, 200 can be specified to define the U turn penalty for household types 1, 2 and 3+, respectively.

# UNITS\_OF\_MEASURE

**Execution Service Keys** Text

This key is optional and defaults to METRIC. Possible values are ENGLISH (feet) or METRIC (meters). The default distance and speed units included in data files or control keys are assumed to be in METRIC units. This key can be used to specify the units of measure as ENGLISH or METRIC. If a particular key value includes data units, the program will automatically convert the value to the specified units of measure. The standard data files created by the TRANSIMS Version 5 software identify the units associated with each data field in the definition file (\*.def).

# UNSIMULATED\_SUBAREAS

**Flow-Time Service Keys** (blank)

# UPDATE\_FLOW\_RATES

**Flow-Time Service Keys** (blank)

This Boolean key has a default value of FALSE. It is used in the Router, PlanSum and PathSkim to indicate if new flows in a new link delay file should be computed. //---- TRUE/FALSE, YES/NO, 1/0, T/F, Y/N

# UPDATE\_LINK\_RANGE

**TransimsNet Control Keys** List

The update link range is optional and if specified defines a series of link numbers. The range is a comma separated list of link ranges. A link range is specified using two periods (e.g., 100..200). In update mode, the program reads existing network files and deletes the existing records for the link and adds new records at the end of the file.

# UPDATE\_NODE\_RANGE

**TransimsNet Control Keys** List

The update node range is optional and if specified defines a series of node numbers where the lane connectivity and traffic control warrants are recalculated. The range is a comma separated list of node ranges. A node range is specified using two periods (e.g., 100..200). In update mode, the program reads existing network files and deletes the existing records for the node and adds new records at the end of the file.

# UPDATE\_PLAN\_RECORDS

**Router**

The update plan records key is optional. The default value is “false.” If true, the program reskims the travel time and impedance components of existing plan records while building paths for other records. In other words, the generalized cost is updated for all the output plan records based on the current specifications. The plan update can be executed without a household list or an input trip and\or activity file. The print file includes a message about the number of updates that were made.

# UPDATE\_TRAVEL\_TIMES

**Flow Time Service Keys**

This Boolean key has a default value of FALSE. It is used by the Router, PathSkim and Plan Sum to indicate whether travel times should be updated.

# UPDATE\_TRAVELER\_TYPE

**TripPrep Control Keys** Boolean

# UPDATE\_TRIP\_PARTITIONS

**TripPrep Control Keys** Boolean

# UPDATE\_TURNING\_MOVEMENTS

This optional flag defaults to FALSE. Possible values are (TRUE/FALSE, YES/NO, 1/0, T/F, Y/N). When true, turning movements are added to the output link delay file when the input link delay file does not include turning movements.

# VEHICLE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# VEHICLE\_PASSENGERS\_\*

**ConvertTrips Control Keys** (blank)

# VEHICLE\_TIME\_VALUES\_\*

The vehicle time value key is optional and when provided specifies the impedance values for time the traveler spends in a vehicle. The values can range from zero to 1000.0. The default value is 10.0 impedance units / second. This value is multiplied by the travel time on each link at the time of day when the traveler’s path enters the link or the difference in the schedule time between the boarding and alighting transit stops. If household types are defined, this key can include a list of values corresponding to each household type. For example, 10, 15, 20 can be specified to define the in vehicle time value for household types 1, 2 and 3+, respectively.

The ‘\*’ is a placeholder for the first area type value in the list. It is optional and defaults to 1 and represents area type or jurisdiction type for the purpose of grouping related parameters. A maximum of 100 area types are supported.

Example:

VEHICLE\_TIME\_VALUES\_1 10

VEHICLE\_TIME\_VALUES\_2 15

VEHICLE\_TIME\_VALUES\_3 20

…

# VEHICLE\_TYPE\_CODE\_\*

**ConvertTrips Control Keys** (blank)

# VEHICLE\_TYPE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# VERSION4\_PLAN\_FORMAT

**NewFormat Control Keys** FILE\_FORMAT

The format of the input Version 4 plan file. It defaults to VERSION3, and the other possible value is BINARY.

# VERSION4\_TIME\_FORMAT

**NewFormat Control Keys** FILE\_FORMAT

VERSION4\_TIME\_FORMAT key can be used to override the default time conversion in Trip and Activity files from seconds to some other units. It defaults to SECONDS. Possible values include SECONDS, MINUTES, HOURS, HOUR\_CLOCK, DAY\_TIME, TIME\_CODE.

# VOLUME\_DATA\_FIELD\_NAME

**LinkData Control Keys** (blank)

# WALK\_ACCESS\_TIME\_RANGE

**LocationData Control Keys** (blank)

Defaults to 0..24:00. The time ranges can be used to create multiple transit weights for different times of day. They are expressed as 0:00..6:00, 18:00..23:00, etc.

# WALK\_PATH\_DETAILS

This is an optional key that indicates whether details of the walking path are written and provided. The default value is FALSE. Possible values are TRUE/FALSE, YES/NO, 1/0, T/F, Y/N.

# WALK\_SPEED

The walk speed is optional and when provided specifies the walking speed in meters per second. The value can range from 0.5 to 10.0 meters per second. The default value is 1.0. Link lengths are divided by this value to convert distance into walk time.

# WALK\_TIME\_VALUES\_\*

The walk time value key is optional and when provided specifies the impedance value for time the traveler spends walking. The value can range from zero to 1000.0. The default value is 20.0 impedance units / second. This value is multiplied by the time spent walking on network and process links. If household types are defined, this key can include a list of values corresponding to each household type. For example, 15, 20, 25 can be specified to define the bicycle time value for household types 1, 2 and 3+, respectively.

The ‘\*’ is a placeholder for the first area type value in the list. It is optional and defaults to 1 and represents area type or jurisdiction type for the purpose of grouping related parameters. A maximum of 100 area types are supported.

Example:

WALK\_TIME\_VALUES\_1 15

WALK\_TIME\_VALUES\_2 20

WALK\_TIME\_VALUES\_3 25

…

# YELLOW\_PHASE\_TIME\_\*

**IntControl Control Keys** Integer

The YELLOW\_PHASE\_TIME\_\* key is optional. This key defines the length of the yellow interval in seconds. The default value for this key is 3 seconds. The minimum and the maximum values that can be specified for this key are 1 and 5 seconds respectively.

The YELLOW\_PHASE\_TIME\_\* key is part of the group that defines how a timing plan is developed for each phase. This group includes MINIMUM\_PHASE\_TIME\_\*, YELLOW\_PHASE\_TIME\_\*, RED\_CLEAR\_PHASE\_TIME\_\*, and EXTENDED\_GREEN\_FACTOR\_\*. These parameters define how the minimum, maximum, and extended green times are computed for fixed-timed and demand-actuated phases.

The ‘\*’ is a placeholder for the first area type value in the list. It is optional and defaults to 1 and represents area type or jurisdiction type for the purpose of grouping related parameters. A maximum of 100 area types are supported.

# ZONE\_FIELD\_NAME

**LocationData Control Keys** (blank)

**TransimsNet Control Keys** (blank)

The name of the field that contains the zone number, e.g., TAZ

# ZONE\_FORMAT

**System File Keys** FILE\_FORMAT

See File Formats.

# ZONE\_UPDATE\_RANGE

**LocationData Control Keys** (blank)

The range of zone numbers are defined as a comma separated list (e.g., 1000..1200, 3000..3100). Default is ALL.