

PlanCompare (*version 4.0.35*)

Revision History

7 September 2010

Created by Volpe Center

The PlanCompare program::

1. Compares two plan files and selects plans that have significantly different travel times.
2. Generates convergence statistics and distribution charts by time of day.
3. Includes walk and wait time in the transit travel time comparisons.
4. Includes options to only compare drive legs.
5. Compares plan files generated on different networks.
6. Compares plan files for specified time periods.

PlanCompare is a console-based program that runs in a command window on either Windows or Linux. The command syntax is:

```
PlanCompare [-flag] [control_file]
```

The control_file is the file name of an ASCII file that contains the control strings expected by the program. The control_file is optional. If a file name is not provided, the program will prompt the user to enter a file name. The flag parameters are also optional. Any combination of the following flag parameters can be included on the command line:

-Q[uiet]	= execute without screen messages
-H[elp]	= show program syntax and control keys
-K[eyCheck]	= list unrecognized control file keys
-P[ause]	= pause before exiting
-N[oPause]	= never pause before exiting
-B[atch]	= execute in batch processing mode

The program automatically creates a printout file based on the control_file name. If the file name includes an extension, the extension is removed and “.prn” is added. The printout file will be created in the current working directory and will overwrite an existing file with the same name.

Control File Examples

EXAMPLE 1 COMPARE TRAVEL TIMES

The following **PlanCompare** control file compares travel times for two plan files, and produces a new plan file that includes plans with significant differences

```
TITLE                                Compare Plan Travel Times
INPUT_PLAN_FORMAT                    VERSION3
COMPARE_PLAN_FORMAT                  VERSION3
OUTPUT_PLAN_FORMAT                   VERSION3
NODE_LIST_PATHS                      false
```

```
#---- Input Files ----

INPUT_PLAN_FILE          8.TestBed.TimePlanA
COMPARE_PLAN_FILE        7.TestBed.TimePlanB

#---- Output Files ----

OUTPUT_PLAN_FILE         8.TestBed.TimePlanC

#---- Parameters ----

PERCENT_TIME_DIFFERENCE  10
MINIMUM_TIME_DIFFERENCE  2
MAXIMUM_TIME_DIFFERENCE  30
SELECTION_PERCENTAGE     50
MAXIMUM_PERCENT_SELECTED  10
SELECT_BY_PERCENT_DIFFERENCE YES
```

EXAMPLE 2 DUMP MANY REPORTS

```
TITLE                      Compare Plan Travel Times
INPUT_PLAN_FORMAT          VERSION3
COMPARE_PLAN_FORMAT        VERSION3
NODE_LIST_PATHS            false

#---- Input Files ----

INPUT_PLAN_FILE            8.TestBed.TimePlanA
COMPARE_PLAN_FILE          7.TestBed.TimePlanB

#---- Output Files ----

NEW_DISTRIBUTION_FILE      8.PCDist.txt
NEW_COST_DISTRIBUTION_FILE 8.PCCostDist.txt
NEW_DIFFERENCE_FILE        8.PCDiff.txt
NEW_START_DIFFERENCE_FILE  8.PCStartDiff.txt
NEW_END_DIFFERENCE_FILE    8.PCEndDiff.txt
NEW_TRIP_TIME_FILE         8.PCTripTime.txt

#---- Parameters ----

SUMMARY_TIME_PERIODS      8:00..8:30, 8:30..9:00

#---- Summary Files ----

PLANCOMPARE_REPORT_1      PERCENT_PATH_CHANGE
PLANCOMPARE_REPORT_2      PERCENT_TRAVEL_TIME_CHANGE
PLANCOMPARE_REPORT_3      PERCENT_GENERALIZED_COST_CHANGE
PLANCOMPARE_REPORT_4      DUMP_PATH_CHANGES_GREATER_THAN_20
PLANCOMPARE_REPORT_5      DUMP_TRAVEL_TIME_CHANGES_GREATER_THAN_20
PLANCOMPARE_REPORT_6      DUMP_COST_CHANGES_GREATER_THAN_20
PLANCOMPARE_REPORT_7      TOTAL_DIFFERENCE_DISTRIBUTION
PLANCOMPARE_REPORT_8      TIME_DIFFERENCE_DISTRIBUTIONS
PLANCOMPARE_REPORT_9      TIME_PERIOD_SUMMARY
```

PLANCOMPARE_REPORT_10	GENERALIZED_COST_DISTRIBUTION
PLANCOMPARE_REPORT_11	COST_DIFFERENCE_DISTRIBUTIONS
PLANCOMPARE_REPORT_12	COST_PERIOD_SUMMARY

Control File Parameters

Control parameters are defined using a control key followed by a string or number. The control parameters can be specified in any order. If a given key is defined more than once, the last instance of the key is used. The default value for each key is 0 or “Null”. Null parameters do not need to be included in the file. Note that comment lines or extraneous keys can be included in the file. They will be ignored by the program.

The keys recognized by the **PlanCompare** program are listed below. These keys can be defined in a variety of different ways to perform different tasks. The first two keys are required; others are optional.

INPUT_PLAN_FILE

The input plan file key is required. It specifies the name of the TRANSIMS plan file within the project directory. The full path and file name for the plan file is constructed by appending the value of this key to the value of the PROJECT_DIRECTORY key.

COMPARE_PLAN_FILE

The compare plan file key is required. It specifies the name of the TRANSIMS plan file within the project directory. The full path and file name for the plan file is constructed by appending the value of this key to the value of the PROJECT_DIRECTORY key.

TITLE

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

REPORT_FILE

The report file name is optional. If a file name is not provided, the program automatically creates a report file name based on the input control file name. The report file will overwrite an existing file with the same name if the Report Flag key is False or not specified.

REPORT_FLAG

The report flag key is optional. Its default is FALSE. If it is specified as Yes or True, the report file or default printout file will be opened in “Append” mode rather than “Create” mode. This permits the user to consolidate the output of several programs into a single report file.

PROJECT_DIRECTORY

The project directory key is not required. If it is specified, it is added to all non-network file names required by the program. If it is not specified, all non-network file names should fully specify the file path.

DEFAULT_FILE_FORMAT

Default format for files other than network files. Default is VERSION3. Other possible values include BINARY, FIXED_COLUMN, COMMA_DELIMITED, SPACE_DELIMITED, TAB_DELIMITED, CSV_DELIMITED, DBASE, LANL and SQLITE3.

MAX_WARNING_MESSAGES

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 print-out 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.

MAX_WARNING_EXIT_FLAG

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.

TRAVELER_SCALING_FACTOR

The traveler scaling factor key enables the user to factor the input travelers by a scaling factor. The default value is 1.0.

CREATE_NOTES_AND_NAME_FIELDS

Appears in -h, not in quick reference. Appears to have no impact.

SORT_VEHICLES

Appears in -h, not in quick reference. Appears to have no impact.

DEMAND_FILE_FORMAT

Appears in -h, not in quick reference. Appears to have no impact.

The demand file format key can be used to change the default file format. The default format is VERSION3; a tab delimited file compatible with the TRANSIMS Version 3.x software. Other options include BINARY, FIXED_COLUMN, COMMA_DELIMITED, SPACE_DELIMITED, TAB_DELIMITED, DBASE, and SQLITE3.

MAX_LINK_DELAY_ERRORS

Appears in -h, not in quick reference. Appears to have no impact.

INPUT_PLAN_FORMAT

Format of the Input_Plan. Options are Version3 (plain text) and Binary.

COMPARE_PLAN_FORMAT

Format of the Compare_Plan. Options are Version3 (plain text) and Binary.

OUTPUT_PLAN_FILE

The output file of selected plans.

OUTPUT_PLAN_FORMAT

Format of the Output_Plan. Options are Version3 (plain text) and Binary.

NODE_LIST_PATHS

The node list paths key is optional and when provided specifies the way the path is identified in the 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”.

Note that all plan files must either be node based or link based. Mixing plan files (where, for example the input plan file is node based and the compare plan file is link based) is not allowed.

HOUSEHOLD_LIST

File containing a list of households.

SELECT_TRAVELERS

ID range of travelers to be selected. The default value is ALL travelers.

IGNORE_LOCATION_DIFFERENCES

Defaults to FALSE. If true, the origin and destination activity locations do not need to be the same in the two plan files to compare the travel times and path differences. This key facilitates compares of travel plans loaded to different networks.

INDEX_BY_COMPARE_LOCATION

Defaults to FALSE. Index By Compare Location key controls which location (compare vs. input) is used for indexing the difference files when the Ignore Location Differences key is set to true.

ONLY_COMPARE_DRIVE_LEGS

Defaults to FALSE. If true, only the plan legs between parking lots (drive legs) are compared. This ignores differences in the plan travel times related to walk legs that may be included in one plan file but deleted from the other plan file.

COMPARE_GENERALIZED_COSTS

Defaults to FALSE. If set to true, the difference comparisons are based on generalized data rather than travel time data.

PERCENT_TIME_DIFFERENCE

Defaults to 10%. A plan is selected as being different from the compare plan if the difference in travel time is at least the Percent_Time_Difference. The selections are made at the trip-level instead of the traveler-level. Traveler's trips that did not change are no longer selected for output if one of the traveler's trips did change. The effect is only seen in travelers that make multiple trips. The range is 0 – 100. If 0 is used, time differences are not considered.

MAXIMUM_TIME_DIFFERENCE

Defaults to 60 minutes, with a range of [minimum_time_difference] to 1440 (1 day). A plan is selected as being different from the compare plan if the difference in travel time is at least the Maximum_Time_Difference, even if the percentage difference is lower than Percent_Time_Difference.

MINIMUM_TIME_DIFFERENCE

Defaults to 1 minute, with a range of 0 to 60 minutes (120 in quick reference, 60 in the code) A plan is NOT selected as being different from the compare plan if the difference in travel time is less than the Minimum_Time_Difference, even if the percentage difference is higher than Percent_Time_Difference.

The following table shows how the foregoing three parameters work together to select plans that are “significantly” different. Default values are assumed for the parameters.

Input Travel Time	Compare Travel Time	Selected?	Reason
7 minutes	6.02 minutes	No	Even though the Percent_Time_Difference exceeds 10%, the time difference (0.98 minutes) is less than the Minimum_Time_Difference
35 minutes	40 minutes	Yes	Percent_Time_Difference exceeds 10%
35 minutes	38 minutes	No	Percent_Time_Difference does not exceed 10%
630 minutes	691 minutes	Yes	Even though the Percent_Time_Difference is less than 10%, the time difference (61 minutes) exceeds the Maximum_Time_Difference.

PERCENT_PATH_DIFFERENCE

Defaults to 0%, with a range of 0 – 100. The range is 0 – 100. If 0 is used, path differences are not considered.

MAXIMUM_PATH_DIFFERENCE

Defaults to 100,000 legs, with a range of minimum_path_difference to 100,000.

MINIMUM_PATH_DIFFERENCE

Defaults to 0 legs, with a range from 0 to 100.

SELECTION_PERCENTAGE

Defaults to 100%, with a range from 0, and 0.1 to 100.

MAXIMUM_PERCENT_SELECTED

Defaults to 100%, with a range from 0, and 1 to 100.

SELECT_BY_PERCENT_DIFFERENCE

Defaults to FALSE

SELECT_BY_RELATIVE_GAP

Defaults to FALSE. Is active only when the Select By Percent Difference key is **inactive**. Selects plans based on the percent difference in their input and compare travel costs. Time Differences must also be specified for relative gap selection.

RANDOM_NUMBER_SEED

Defaults to the computer clock time

TIME_OF_DAY_FORMAT

The default time of day format will display values in 24 hour clock time. Other options include SECONDS, HOURS, 24_HOUR_CLOCK, and 12_HOUR_CLOCK.

SUMMARY_TIME_PERIODS

Defaults to All time periods. A Time Range (e.g., 0:00..6:00, 18:00..23:00) can be entered.

SUMMARY_TIME_INCREMENT

Defaults to 0 minutes (Zero is used to process each time period as one increment), with a range of 0 to 240 minutes.

NEW_DISTRIBUTION_FILE

The difference in travel times (MINUTES) is the Input_Plan travel time minus the Compare_Plan travel time. This file presents the data for a histogram of this difference, by one-minute increments. -8 minutes means between 7 and 8 minutes. Information is presented for both the whole day and for specified time intervals (see SUMMARY_TIME_PERIODS). An example file appears below:

MINUTES	TOTAL	P800_900
-8	3	3
...
-2	29	29
-1	7005	7005
0	140	140
1	1536	1536
2	236	236
3	8	8

NEW_COST_DISTRIBUTION_FILE

This file presents the differences in generalized cost (Input_Plan cost minus the Compare_Plan cost). This file presents the data for a histogram of this difference, by one-dollar increments. -5 dollars means between 4 and 5 dollars. Information is presented for both the whole day and for specified time intervals (see SUMMARY_TIME_PERIODS). An example file appears below:

DOLLARS	TOTAL	P800_900
-5	5	5
-4	68	68
-3	33	33
-2	65	65
-1	7033	7033
0	140	140
1	1768	1768
2	12	12

NEW_DIFFERENCE_FILE

This larger file, with one record per plan, presents time differences, in seconds, for individual plans. In the example below, households 2, 3, 4, 9398 and 9400 have a difference of 0 minutes (recall the NEW_DISTRIBUTION_FILE, above), household 5 has a difference of -1 minute, and household 9399 has a difference of 2 minutes.

HOUSEHOLD	PERSON	TRIP	INPUT_TIME	COMPARE_TIME	DIFFERENCE
2	1	1	246	239	7
3	1	1	123	113	10
4	1	1	257	254	3
5	1	1	187	217	-30
...
9398	1	1	229	184	45
9399	1	1	431	298	133
9400	1	1	284	265	19

NEW_START_DIFFERENCE_FILE

This file presents the differences in plan travel times by starting activity location.

START_ID	TYPE	COUNT	INPUT_TIME	COMPARE_TIME	DIFFERENCE
1	1	863	167432.0	177500.0	-10068.0
3	1	1959	256629.0	299727.0	-43098.0
5	1	61	9513.0	10924.0	-1411.0
...
42	1	57	14987.0	14646.0	341.0

Index By Compare Location key controls which location (compare vs. input) is used for indexing the difference files when the Ignore Location Differences key is set to true.

NEW_END_DIFFERENCE_FILE

This file presents the differences in plan travel times by ending activity location.

END_ID	TYPE	COUNT	INPUT_TIME	COMPARE_TIME	DIFFERENCE
2	1	877	162870.0	191821.0	-28951.0
4	1	1952	257189.0	310368.0	-53179.0
5	1	19	3151.0	3667.0	-516.0
...
42	1	12	2511.0	3144.0	-633.0

Index By Compare Location key controls which location (compare vs. input) is used for indexing the difference files when the Ignore Location Differences key is set to true.

NEW_TRIP_TIME_FILE

The new trip time file is appended to the PROJECT_DIRECTORY key to specify the file name for outputting the distribution of trip travel times by mode and origin and destination purpose. The number of trips or tour legs in 60 second increments of trip length is saved to the tab-delimited text file. In the example below, the trips are in 15-minute increments (e.g., the trips from 8:00 – 8:15 are in the 8:15 bucket).

PERIOD	INPUT_START	COMPARE_START	START_DIFF	INPUT_END	COMPARE_END	END_DIFF
8:00	0	0	0	0	0	0
8:15	2336	2336	0	1911	1869	-15
8:30	2354	2354	0	2328	2340	-17
8:45	2355	2355	0	2346	2328	-15
9:00	2353	2353	0	2327	2303	-19
9:15	2	2	0	488	560	-53

PLANCOMPARE_REPORT_*

These are optional reports. Examples appear below under Example 2 (page 12).

Report Options:

PERCENT_PATH_CHANGE
 PERCENT_TRAVEL_TIME_CHANGE
 PERCENT_GENERALIZED_COST_CHANGE

DUMP_PATH_CHANGES_GREATER_THAN_*
DUMP_TRAVEL_TIME_CHANGES_GREATER_THAN_*
DUMP_COST_CHANGES_GREATER_THAN_*
TOTAL_DIFFERENCE_DISTRIBUTION
TIME_DIFFERENCE_DISTRIBUTIONS
TIME_PERIOD_SUMMARY
GENERALIZED_COST_DISTRIBUTION
COST_DIFFERENCE_DISTRIBUTIONS
COST_PERIOD_SUMMARY

Sample Printouts

Sample printout files generated by the **PlanCompare** program are shown below. Each printout is an ASCII text file with a maximum of 95 characters per line and 65 lines per page. The file can be viewed or printed using a variety of text editors. For best results in a word processor, use a 10-point Courier font and 0.5 inch margins on all sides.

Example 1

```
*****
|                                     |
|      PlanCompare - Version 4.0.35   |
|      Copyright (c) 2009 by AECOM Consult |
|      Fri Sep 03 08:18:38 2010       |
|                                     |
*****

Control File = PlanCompare.ct1
Report_File  = PlanCompare.prn (Create)

Compare Plan Travel Times

Input Plan File = 8.TestBed.TimePlanA
Input Plan File Format = VERSION3

Compare Plan File = 7.TestBed.TimePlanB
Compare Plan File Format = VERSION3

Output Plan File = 8.TestBed.TimePlanC
Output Plan File Format = VERSION3

Percent Time Difference = 10.0%
Minimum Time Difference = 2.00 minutes
Maximum Time Difference = 30.00 minutes

Selection Percentage = 50.0%
Maximum Percent Selected = 10.0%
Select by Percent Difference = YES

Time of Day Format = 24_HOUR_CLOCK

Summary Time Periods = All
One Summary Increment per Time Period will be Output

Number of Plan Files = 1
Number of Input Plans = 28200
Number of Input Records = 188000
Number of Input Travelers = 9400
Number of Input Trips = 9400

Number of Compare Plans = 28200
Number of Compare Records = 188000
Number of Compare Travelers = 9400
Number of Compare Trips = 9400

Number of Trips in Both Plan Files = 9400 (100.0%)
Number of Trips Only in the Input Plan File = 0 (0.0%)
```

Number of Trips Only in the Compare Plan File = 0 (0.0%)

Number of Trips Compared = 9400 (100.0%)

Number of Trips Compared using Complete Plans = 9400 (100.0%)

Number of Trips Compared using Only Drive Legs = 0 (0.0%)

Number of Trips with Nearly Equal Plans = 9200 (97.9%)

Total Significant Time Difference = 7.2 hours (1.442%)

Total Time Difference for Non-Equal Plans = 13.9 hours (47.66%)

Average Time Difference for Non-Equal Plans = 4.2 minutes

Number of Trips Compared = 9400

Average Input Travel Time = 2.90 minutes

Average Compare Travel Time = 3.21 minutes

Average Travel Time Difference = -0.31 minutes (-9.64%)

Average Absolute Difference = 0.48 minutes (15.01%)

Minimum Time Difference = -7.88 minutes

Maximum Time Difference = 2.22 minutes

85th Percentile Range = -0.93 to 0.71 minutes

Total Absolute Difference = 75.4075 hours

Total User Benefit = -48.4225 hours

Number of Trips Selected = 200 (2.1%)

Number of Trips Written = 100 (1.1%)

Number of Plan Hours Written = 8.83 hours

Total Plan Time Difference = -13.3 hours

Maximum Plan Time Difference = 2.22 minutes

Minimum Plan Time Difference = -7.88 minutes

Average Plan Time Difference = -7.99 minutes

Number of Output Plans = 300

Number of Output Records = 2000

Number of Output Travelers = 100

Number of Output Trips = 100

Fri Sep 03 08:18:39 2010 -- Process Complete (0:00:01)

Example 2

A second example is shown below. Fonts have been changed to make the reports easier to find.

```
*****
|
|      PlanCompare - Version 4.0.35
|      Copyright (c) 2009 by AECOM Consult
|      Fri Sep 03 08:43:13 2010
|
*****
```

```
Control File = PlanCompare.ctl
Report File  = PlanCompare.prn (Create)
```

Compare Plan Travel Times

```
Input Plan File = 8.TestBed.TimePlanA
Input Plan File Format = VERSION3
```

Compare Plan File = 7.TestBed.TimePlanB
 Compare Plan File Format = VERSION3

Percent Time Difference = 10.0%
 Minimum Time Difference = 1.00 minutes
 Maximum Time Difference = 60.00 minutes

Selection Percentage = 100.0%
 Maximum Percent Selected = 100.0%

Time of Day Format = 24_HOUR_CLOCK

Summary Time Periods = 8:00..8:30, 8:30..9:00
 One Summary Increment per Time Period will be Output

New Distribution File = 8.PCDist.txt

New Distribution File = 8.PCCostDist.txt

New Difference File = 8.PCDiff.txt

New Start Difference File = 8.PCStartDiff.txt

New End Difference File = 8.PCEndDiff.txt

New Trip Time File = 8.PCTripTime.txt

PlanCompare Reports:

1. PERCENT_PATH_CHANGE
2. PERCENT_TRAVEL_TIME_CHANGE
3. PERCENT_GENERALIZED_COST_CHANGE
4. DUMP_PATH_CHANGES_GREATER_THAN_20
5. DUMP_TRAVEL_TIME_CHANGES_GREATER_THAN_20
6. DUMP_COST_CHANGES_GREATER_THAN_20
7. TOTAL_DIFFERENCE_DISTRIBUTION
8. TIME_DIFFERENCE_DISTRIBUTIONS
9. TIME_PERIOD_SUMMARY
10. GENERALIZED_COST_DISTRIBUTION
11. COST_DIFFERENCE_DISTRIBUTIONS
12. COST_PERIOD_SUMMARY

[NOTE: This report shows changes greater than 20% (the 20 in the DUMP parameters above). Using the DUMP parameters results in a large amount of output, since there is a record for each changed plan. Only a sample is shown below.]

Path Dump: Traveler=201, Start Time=29341, Change=66.7%
 Compare: -22 19 11 12 17 -15
 Input : -22 -7 4 5 8 17 -15

Travel Time Dump: Traveler=801, Start Time=31412, Compare=129, Input=172, Change=33.3%

Generalized Cost Dump: Traveler=801, Start Time=31412, Compare=189, Input=232,
 Change=22.8%

Path Dump: Traveler=901, Start Time=30963, Change=100.0%
 Compare: 19 11 12 17 -15
 Input : -19 -7 4 5 8 17 -15

Number of Plan Files = 1

Number of Input Plans = 28200
 Number of Input Records = 188000
 Number of Input Travelers = 9400
 Number of Input Trips = 940

Number of Compare Plans = 28200
 Number of Compare Records = 188000
 Number of Compare Travelers = 9400
 Number of Compare Trips = 9400

Number of Trips in Both Plan Files = 9400 (100.0%)
 Number of Trips Only in the Input Plan File = 0 (0.0%)
 Number of Trips Only in the Compare Plan File = 0 (0.0%)

Number of Trips Compared = 9400 (100.0%)
 Number of Trips Compared using Complete Plans = 9400 (100.0%)
 Number of Trips Compared using Only Drive Legs = 0 (0.0%)

Number of Trips with Nearly Equal Plans = 8921 (94.9%)
 Total Significant Time Difference = 11.6 hours (2.317%)

Total Time Difference for Non-Equal Plans = 19.6 hours (41.98%)
 Average Time Difference for Non-Equal Plans = 2.5 minutes

Number of New Distribution File Records = 12

Number of New Distribution File Records = 8

Number of New Trip Time File Records = 96

Number of Trips Compared = 9124
 Average Input Travel Time = 2.89 minutes
 Average Compare Travel Time = 3.19 minutes
 Average Travel Time Difference = -0.30 minutes (-9.45%)
 Average Absolute Difference = 0.47 minutes (14.90%)
 Minimum Time Difference = -7.88 minutes
 Maximum Time Difference = 2.22 minutes
 85th Percentile Range = -0.93 to 0.71 minutes
 Total Absolute Difference = 72.2053 hours
 Total User Benefit = -45.7942 hours

Number of Trips Selected = 479 (5.1%)

Path Change Report

Time Period	Link Change * 100 / Previous Links									Num. Plans
	-----Percentile Distribution by Time Period-----									
	50%	65%	70%	75%	80%	85%	90%	95%	99%	
000- 100										
...										
700- 800										
800- 900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.6	99.8	9124
900-1000	0.0	0.0	0.0	0.0	0.0	57.2	66.6	66.6	71.4	276
...										
2300-2400										
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.6	99.8	9400

Travel Time Change Report

Time Period	Time Change * 100 / Previous Time -----Percentile Distribution by Time Period-----									Num. Plans
	50%	65%	70%	75%	80%	85%	90%	95%	99%	
000- 100										
...										
800- 900	14.4	15.0	17.0	17.0	17.0	17.6	17.6	28.0	45.6	9124
900-1000	14.8	17.0	17.0	17.0	17.6	22.4	30.6	44.8	54.8	276
...										
2300-2400										
Total	14.4	15.0	17.0	17.0	17.0	17.6	17.6	28.0	45.6	9400

Generalized Cost Change Report

Time Period	Cost Change * 100 / Previous Cost -----Percentile Distribution by Time Period-----									Num. Plans
	50%	65%	70%	75%	80%	85%	90%	95%	99%	
000- 100										
...										
800- 900	10.4	11.8	12.4	12.4	12.4	12.8	13.8	20.4	36.4	9124
900-1000	10.8	12.4	12.4	12.8	12.8	19.8	25.2	39.0	45.0	276
...										
2300-2400										
Total	10.4	11.8	12.4	12.4	12.4	12.8	14.0	21.0	37.2	9400

Time Difference Distribution for All Time Periods

Difference (minutes)	Trips	Percent	----- Percent of Total Trips -----												
			6	13	19	26	32	38	45	51	58	64	70	77	
-8	3	0.0													
-7	28	0.3													
-6	42	0.5													
-5	30	0.3													
-4	3	0.0													
-3	64	0.7	*												
-2	29	0.3													
-1 ==	7005	76.8	*****												
0	140	1.5	--*												
1 <=	1536	16.8	*****												
2	236	2.6	**												

Time Difference Distribution for 8:00..8:30

Difference (minutes)	Trips	Percent	----- Percent of Total Trips -----												
			6	13	19	26	32	38	45	51	58	64	70	77	
-3	63	1.4	*												
-2	0	0.0													
-1 ==	3411	76.7	*****												
0	45	1.0	--*												
1 <=	881	19.8	*****												
2	47	1.1	*												

Time Difference Distribution for 8:30..9:00

Difference (minutes)	Trips	Percent	----- Percent of Total Trips -----											
			6	13	19	26	32	38	45	51	58	64	70	77
-8	3	0.1												
-7	28	0.6												
-6	42	0.9	*											
-5	30	0.6	*											
-4	3	0.1												
-3	1	0.0												
-2	29	0.6												
-1 ==	3594	76.8	*****											
0	95	2.0	--**											
1 <=	655	14.0	*****											
2	189	4.0	***											
3	8	0.2												

Time Period Summary (Minutes)

Time Period	Number Trips	--Travel Time-- Current Base	----- Time Difference ----- Average Percent Absolute Percent	-- 85% Range -- Low High
8:00..8:30	4447	2.80 3.06	-0.26 -8.53 0.43 13.97	-0.92 0.67
8:30..9:00	4677	2.97 3.31	-0.34 -10.25 0.52 15.71	-0.94 0.76
Total	9124	2.89 3.19	-0.30 -9.45 0.47 14.90	-0.93 0.71

Cost Difference Distribution for All Time Periods

Difference (dollars)	Trips	Percent	----- Percent of Total Trips -----											
			6	13	19	26	32	39	45	51	58	64	71	77
-5	5	0.1												
-4	68	0.7	*											
-3	33	0.4												
-2	65	0.7	*											
-1 ==	7033	77.1	*****											
0	140	1.5	--*											
1 <=	1768	19.4	*****											
2	12	0.1												

Cost Difference Distribution for 8:00..8:30

Difference (dollars)	Trips	Percent	----- Percent of Total Trips -----											
			6	13	19	26	32	38	45	51	58	64	70	77
-2	63	1.4	*											
-1 ==	3411	76.7	*****											
0	45	1.0	--*											
1 <=	926	20.8	*****											
2	2	0.0												

Cost Difference Distribution for 8:30..9:00

Difference (dollars)	Trips	Percent	----- Percent of Total Trips -----											
			6	13	19	26	32	39	45	52	58	65	71	77
-5	5	0.1												
-4	68	1.5	*											
-3	33	0.7	*											
-2	2	0.0												
-1 ==	3622	77.4	*****											
0	95	2.0	--**											
1 <=	842	18.0	*****											
2	10	0.2												

Time Period Summary (Dollars)

Time Period	Number Trips	--Travel Cost--		----- Cost Difference -----				-- 85% Range --	
		Current	Base	Average	Percent	Absolute	Percent	Low	High
8:00..8:30	4447	2.28	2.44	-0.16	-6.43	0.26	10.53	-0.92	0.64
8:30..9:00	4677	2.38	2.58	-0.20	-7.87	0.31	12.06	-0.93	0.60
Total	9124	2.33	2.51	-0.18	-7.19	0.28	11.34	-0.93	0.62

Fri Sep 03 08:43:14 2010 -- Process Complete (0:00:01)