

LinkSum Quick Reference

Version 4.0.26

Syntax:

LinkSum [-flag] [control_file]

Purpose:

1. Generate link data files of volumes, speeds, travel times, V/C ratios, travel time ratios, delay, average density, maximum density, average queue, maximum queue, and cycle failures summarized by time of day;
2. Summarize data within a subarea polygon or for specified facility types;
3. Summarize link data by zone or zone group found in the activity location file;
4. Summarize activity location data fields by link direction;
5. Report the links with the top 100 link volumes, lane volumes, period volumes, speed reductions, V/C ratios, travel time ratios, volume changes, or travel time changes;
6. Report the link groups with total volumes greater than user specified values;
7. Report the distribution of travel time, V/C ratio, travel time change, and volume change by lane kilometer and time period;
8. Select links to output using a link equivalence file;
9. Calculate congestion duration-based measures by aggregating time periods with time ratios greater than a specified value; and
10. Report various network performance statistics.

Required Keys

NET_LINK_TABLE	[net_directory]/filename
NET_NODE_TABLE	[net_directory]/filename
LINK_DELAY_FILE	[project_directory]/filename

Optional Keys

TITLE	Text
REPORT_FILE	Filename
REPORT_FLAG	FALSE {true/false/yes/no/1/0}
MAX_WARNING_MESSAGES	100,000
MAX_WARNING_EXIT_FLAG	TRUE {true/false/yes/no/1/0}
PROJECT_DIRECTORY	Pathname
DEFAULT_FILE_FORMAT	VERSION3 {(4)}
NET_DIRECTORY	Pathname
NET_LANE_USE_TABLE	[net_directory]/filename
NET_LANE_CONNECTIVITY_TABLE	[net_directory]/filename
NET_ACTIVITY_LOCATION_TABLE	[net_directory]/filename
PREVIOUS_LINK_DELAY_FILE	[project_directory]/filename
SUMMARY_TIME_PERIODS	All (1)

SUMMARY_TIME_INCREMENT	15 minutes {0..240}
MINIMUM_LINK_VOLUME	2 {>0}
CONGESTED_TIME_RATIO (7)	3.0 {0.0, 1.0..10.0}
SELECT_FACILITY_TYPES	All {list of type strings (2)}
SELECT_SUBAREA_POLYGON	[project_directory]/filename.shp
SELECT_BY_LINK_GROUP	FALSE {true/false/yes/no/1/0} (8)
DEFAULT_OUTPUT_FORMAT	[default_file_format] {(4)}
NEW_LINK_ACTIVITY_FILE	[project_directory]/filename
ACTIVITY_LOCATION_FIELDS	All {list of field names}
NEW_ZONE_TRAVEL_FILE	[project_directory]/filename
NEW_GROUP_TRAVEL_FILE	[project_directory]/filename
ZONE_EQUIVALLANCE_FILE	[project_directory]/filename
NEW_LINK_DIRECTION_FILE_*	[project_directory]/filename
NEW_LINK_DIRECTION_FIELD_*	{link delay field name (5)}
NEW_LINK_DATA_FILE_*	[project_directory]/filename
NEW_LINK_DATA_FIELD_*	{link delay field name (5)}
NEW_LINK_VOLUME_FILE	[project_directory]/filename
NEW_LINK_SPEED_FILE	[project_directory]/filename
NEW_LINK_TRAVEL_TIME_FILE	[project_directory]/filename
NEW_LINK_VC_RATIO_FILE	[project_directory]/filename
NEW_LINK_TIME_RATIO_FILE	[project_directory]/filename
LINK_EQUIVALENCE_FILE	[project_directory]/filename
NET_DEFAULT_FORMAT	[default_file_format] {(4)}
NET_LINK_FORMAT	[net_default_format] {(4)}
NET_LANE_USE_FORMAT	[net_default_format] {(4)}
DEMAND_FILE_FORMAT	[default_file_format] {(4)}
LINK_DELAY_FORMAT	[demand_file_format] {(4)}
PREVIOUS_LINK_DELAY_FORMAT	[default_file_format] {(4)}
NEW_LINK_ACTIVITY_FORMAT	[default_file_format] {(4)}
NEW_ZONE_TRAVEL_FORMAT	[default_file_format] {(4)}
NEW_GROUP_TRAVEL_FORMAT	[default_file_format] {(4)}
NEW_LINK_DIRECTION_FORMAT_*	[default_file_format] {(4)}
NEW_LINK_DIRECTION_INDEX_*	FALSE {true/false/yes/no/1/0} (6)
NEW_LINK_DATA_FORMAT_*	[default_file_format] {(4)}
NEW_LINK_VOLUME_FORMAT	[default_file_format] {(4)}
NEW_LINK_SPEED_FORMAT	[default_file_format] {(4)}
NEW_LINK_TRAVEL_TIME_FORMAT	[default_file_format] {(4)}
NEW_LINK_VC_RATIO_FORMAT	[default_file_format] {(4)}
NEW_LINK_TIME_RATIO_FORMAT	[default_file_format] {(4)}

Reports

LINKSUM_REPORT_#	TOP_100_LINK_VOLUMES
	TOP_100_LANE_VOLUMES
	TOP_100_PERIOD_VOLUMES
	TOP_100_SPEED_REDUCITIONS
	TOP_100_TRAVEL_TIME_RATIOS
	TOP_100_VOLUME_CAPACITY_RATIOS
	TOP_100_TRAVEL_TIME_CHANGES
	TOP_100_VOLUME_CHANGES
	LINK_VOLUME_GREATER_THAN_* (3)
	GROUP_VOLUME_GREATER_THAN_* (3)
	PRINT_LINK_EQUIVALENCIES
	PRINT_ZONE_EQUIVALENCIES
	TRAVEL_TIME_DISTRIBUTION
	VOLUME_CAPACITY_RATIOS
	TRAVEL_TIME_CHANGES
	VOLUME_CHANGES
	LINK_GROUP_TRAVEL_TIME
	NETWORK_PERFORMANCE_SUMMARY
	NETWORK_PERFORMANCE_DETAILS

Notes

1	Time Range (e.g., 0:00..6:00, 18:00..23:00)
2	{FREEWAY, EXPRESSWAY, PRINCIPAL, MAJOR, MINOR, COLLECTOR, LOCAL, FRONTAGE, RAMP, BRIDGE, EXTERNAL, XPRESSWAY, PRIARTER, SECARTER, ZONECONN, OTHER, WALKWAY, BIKEWAY, BUSWAY, LIGHTRAIL, HEAVYRAIL, FERRY}
3	The “*” is replaced by an integer volume criteria (e.g., _GREATER_THAN_1000).
4	{VERSION3, BINARY, FIXED_COLUMN, COMMA_DELIMITED, SPACE_DELIMITED, TAB_DELIMITED, CSV_DELIMITED, DBASE, LANL, SQLITE3}
5	VOLUME, TRAVEL_TIME, VC_RATIO, TIME_RATIO, SPEED, DELAY, DENSITY, MAX_DENSITY, QUEUE, MAX_QUEUE, CYCLE_FAILURE, VEH_METERS or VEH_SECONDS. CONGESTED_VMT, CONGESTED_VHT, and CONGESTED_TIME options are also available if the CONGESTED_TIME_RATIO key is not 0.0.
6	Link direction index is Link * 2 + Direction (0 for A→B and 1 for B→A)
7	A value of 0.0 disables the congestion calculations. A value greater than 1.0 adds CONGESTED_VMT, CONGESTED_VHT, and CONGESTED_TIME fields to the output data files. These values are the total VMT, VHT, or time of the day when the travel time ratio is greater than the specified value.

8	If this key is true, only links included in the link equivalence file are included in the summary reports and output files.
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