

Network Coding and Reporting Guidelines

May 5, 2022

The Mobility 2045 Update/2022 Transportation Conformity roadway networks are provided in two formats in separate folders for your use, Esri ArcGIS and TransCAD 8. The networks have preset symbology to assist in your review but it can be changed according to your preference.

The ArcGIS folder contains the networks in shapefile format (a series of files beginning with “YR”), an ArcGIS map document for viewing the networks (“Networks.mxd”), and associated Basemap content. The network shapefiles have been added to the map document and symbolized by number of lanes. The ArcGIS folder can be moved anywhere when extracted, but to ensure this map remains functional, make sure the network shapefiles and the map document remain in the same folder so the map document knows where to look for the shapefiles.

The TransCAD folder contains the networks in TransCAD 8 format (a series of files beginning with “YR”) and a map document for viewing the networks (“Networks”). The TransCAD networks have been added to the map document and symbolized by number of lanes. This symbology may be removed or copied to other network years according to your preference. Features to assist in the review, such as county and MPA boundaries, have been added to the map document and may be found in the ArcGIS/Basemap folder in ESRI shapefile format.

The North Central Texas Council of Government’s (TAFT) Transportation Analysis Forecasting Tool travel demand model produces an enormous amount of data. To facilitate and expedite the review of the data, the modeled Mobility 2045 Update/2022 Transportation Conformity networks have been exported with a simplified and limited amount of data. The following fields are reported in the Conformity roadway networks;

LNKNM – Link Identifier

A link identifier field has been added to the roadway modeled networks to assist in the review of project consistency. Projects with only lane differences will have an identifier consistent in all network years. New location facilities will have identifiers consistent in the network years it is open to traffic.

STREET

Street names for major corridors indicates facility name, facility type, and direction of the link. Ramps will simply state facility type.

TR_DIR

- 1 - one-way link (traffic direction and topology in same direction)
- 2 - two-way link (topology typically coded top to bottom and left to right)

FAC_TYPE

Freeway

Tollway

Collector/Distributor

HOV – (high-occupancy vehicle lane) only vehicles with 2+ people may use (free)

HOV/Express – HOV free, single-occupancy vehicles pay toll

Express Lane – all users free

Managed Lane – HOV discount, single-occupancy vehicles pay toll

Technology Lane – shoulder utilized during peak periods, incentives for HOV users, single-occupancy vehicles pay toll

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Access/Egress – access/egress ramps to accommodate managed, HOV, express lanes or technology lanes

Principal Arterial

Minor Arterial

Collector

Ramp

Frontage

OPERATION

AM Reversible or PM Reversible (blank assumes Concurrent)

TOLL

(Y or N)

NUM_LANES

Total Lanes or Through Lanes (depending on the facility type)

RSA_ID

Segment Identifier for Regionally Significant Arterials

MTP_ID

Segment Identifier for all facilities within a Freeway/Tollway corridor

Coding and reporting guidelines were followed in developing the Metropolitan Transportation Plan and 2022 Transportation Conformity roadway networks, as well as interpreting and reporting of the data. The purpose of this document is to explain the process with the intent to alleviate confusion in the review of the networks and reports.

Freeway/Tollway

- 1) The Freeway/Tollway Summary table and the Conformity Lane Inventory reports only Through Lanes for general purpose lanes. Auxiliary lanes may be present.
- 2) The literal coding of the Conformity networks is very complex. In an attempt to relieve any confusion of determining Through Lanes when encountering lane drops within interchanges, the MTP IDs may not be coded within major interchanges. This method of assigning IDs also assists in the reporting of Through Lanes in the Freeway/Tollway summary and Lane Inventory.

HOV/Express/Managed Lanes and Collector/Distributor Lanes

- 1) HOV, express, or managed lanes have fewer access/egress ramps compared to the freeway/tollway facility to allow traffic to flow more efficiently. The facilities are coded outside both sides of the facility for ease review and reporting.
- 2) If a facility operates as reversible, the *OPERATIONAL* field in the Conformity roadway networks will describe the directional flow by time of day.
- 3) The MTP Freeway/Tollway Summary reports the total number of lanes or min/max number of lanes such as 2/3 concurrent managed lanes.
- 4) The Conformity Lane Inventory reports the number of Through Lanes with the assumption that auxiliary lanes may be included. The example of 2/3 concurrent managed lanes in the Freeway/Tollway Summary table is reported as 1 managed lane in either direction or 1 managed lane in one direction and 2 managed lanes in the opposite direction. The lanes are coded literally as *NUM_LANES* in the Conformity roadway networks.

Frontages

- 1) A continuous frontage road must be continuous on both sides of the facility. A continuous frontage must allow continuous access for the length of the segment without detours onto another functional class roadway. The end limits of the segment must connect to either an arterial street (as a reported Limit) or a crossing frontage road at an interchange (as a reported Limit).
- 2) The Conformity Lane Inventory reports the min/max number of frontage lanes for a segment by direction.
- 3) The MTP Freeway/Tollway Summary table reports the min/max number of frontage lanes for the facility by multiplying the minimum number of frontage lanes (of any link on either side of the facility) by two and multiplying the maximum number of frontage lanes (of any link on either side of the facility) by two. If a facility segment has at least one link with 1 lane (on either side) and at least one link with 4 lanes (on either side), then the min/max number of frontage lanes for that segment would be 2/8 lanes.
- 4) Two-way frontages will have a value of 2 in the *TR_DIR* field in the roadway networks. The operational characteristics of frontages are not reported in the Freeway/Tollway Summary. The Conformity Lane Inventory will report the number of lanes by direction but does not specify

which side of the facility the lanes exist. Two-way frontages may exist on both or only one side of a facility.

Regionally Significant Arterials (RSA)

- 1) The total number of lanes (NUM_LANES) will be reported in the RSA Summary and/or Conformity Lane Inventory for two-way RSAs.
- 2) One-way RSA segments that operate as a couplet or RSAs coded with a wide median will report lanes with a slash such as '2/2' in the RSA Summary and/or Conformity Lane Inventory listing. The lanes represent the number of lanes by direction with the first number representing either eastbound or southbound and the second number representing northbound or westbound.
- 3) Frontage roads that provide major through movement prior to the opening of general purpose lanes are reported as Regionally Significant Arterials. Once the general purpose lanes are open to traffic, the RSA listing will report 'N/A' in the conformity year of implementation. The frontage lanes will then be reported in the Freeway/Tollway corridor listing.
- 4) Unless the TIP/MTP specifically identifies the number lanes by direction, odd number of lanes identified in the TIP are assumed to be turn lanes. Turn lanes are coded as a divided facility. For example, the TIP may describe a 3-lane arterial going to 5 lanes. The Conformity networks will code this as an existing 2-lane divided arterial going to a 4-lane divided arterial and the RSA Summary and/or Conformity Lane Inventory listing will report existing 2 lanes widening to 4 lanes.